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Speech from the Head of the Department

I am preparing this short speech with very optimistic feeling and big hope that the 1st Biennale International Conference on Indonesian Architecture and Planning (ICIAP), which initiated in conjunction with the 50th anniversary of the Department of Architecture and Planning, Gadjah Mada University, would mark the 'new' development phase of the department. For already 50 years, the department has been established and served the community, many progressed and achievements have already been achieved. With so many progress and achievements, however, we may trapped into 'business as usual' and lost the direction. In order not to be trapped into such condition, last year, colleagues at the Department of Architecture and Planning, Gadjah Mada University, have agreed to renew their direction with a new tagline which is "better space, better living." Such tagline was consciously selected to remind everyone that the ultimate goal of architecture and planning is achieve better space for better living. Architecture and planning work, play, and create space. Such creation, of course, is aimed not to too pleased the architects and planner, but to facilitate better living. Many planning and architectural products may aesthetically grand and excellent, but if they are not facilitating better living, architects and planners then, could be considered unproductive. I have a great hope and belief that ICIAP would help architects and planners to reconsider again the directions of their practices and to remember that practices should be based on better knowledge. By sharing research findings on Indonesian architecture and planning, we would gain not only better knowledge on the subject, but better space and living as well.

Many thanks for dedicated persons preparing for the conference and for very enthusiastic colleagues participate in this conference.

Yogyakarta, 10 July 2012
Head – Department of Architecture and Planning
Faculty of Engineering, Universitas Gadjah Mada

Prof. Ir. Bakti Setiawan, MA, Ph.D

Preface

This year is a salient year for the Department of Architecture and Planning (DAP), Faculty of Engineering, Universitas Gadjah Mada since in 2012 this institution celebrates the golden age (1962-2012). In marking this notable jubilee this Dapartment cordially organizes many programs along the year that among them is the First Biennale International Conference on Architecture and Planning (ICIAP) which is conducted on July 10-11, 2012. This conference has own its important purpose not only in terms of to enhance the knowledge of Architecture and Planning but also to strengthen the exchange information regarding the related recent research among the experts.

Along 50 years, Department of Architecture and Planning, Faculty of Engineering, Universitas Gadjah Mada has played its important role in improving the quality of education and community service based on research programs mainly in the major field of Architecture and Planning. So, it is not excessive if the Committee of 50th years of DAP declares that the task of this Conference, then is to locate this conference for professors, researchers, students and all participants not only in academic purpose but also should be positioned in the real world which refers to create a better living for mankind within the change of global world without omit its identity. In the words of Rossi (1994) all great manifestations of social life and great works of art are born in unconscious life. But in this conference, it is expected that all papers materials should be discussed in conscious even though it may face antipodal ideas during the conference that may manifest itself in different point of views. It may be happened since there is a different point of view in discussing the context of topics such as the public and private sphere, the building and district or city, the rational urban design and the locus values. Some beneficial results wished for output from this conference and hopefully it can be taken advantage by public interest.

Eventually, I hope that through this conference the improving of knowledge in relation to architecture and planning is truly realized. Last but not least, I should state here that this conference could not have been conducted without cooperation of   great many people, beginning of course, with those who directly involve in preparing the conference, the committee members as Dr. Ikaputra, Dr. Laretna Adhisakti, Dr. Sani Roychansyah, Mr. Mario Lionar, Mr. Alyas Abibawa Widita and all committee members. I also would like to give a great gratitude to Professor Bakti Setiawan, Head of Department of Architecture and Planning, Faculty of Engineering, Universitas Gadjah Mada, IAI, APTARI, Japan Foundation and other sponsors which have supported this conference.

Yogyakarta, 10 July 2012
Chairman – Committee of 50 Years JUTAP
Department of Architecture and Planning
Faculty of Engineering, Universitas Gadjah Mada

DR. T. Yoyok Wahyu Subroto

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MATTERS OF IDENTITY
Searching for characteristics in Indonesian vernacular architecture

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ABSTRACT

Variety and diversity are to be considered as almost proverbial features in Indonesian culture, generated by the existence of a great number of different ethnic groups which have developed different social systems, different cultural characteristics, and different building traditions. In a particular way these differences are reflected in the great number of different phenotypes in Indonesian vernacular architecture.

Considering this situation a question rises: Are there any common features shared by all – or at least by most – vernacular building traditions in Indonesia? Is there any accordance of overall principles in construction, function, design, and symbolism?

As a rather conspicuous feature, a tripartite structure of most Indonesian vernacular building types can be noticed, a subdivision into three parts: substructure, middle part, and roof zone. Significantly this tripartite structure manifests itself in function as well as in construction, design, and symbolism. Functionally, the substructure is not used by the residents themselves, but serves sometimes as place for minor creatures like domestic animals, or just for bulky rubbish and refuse. The middle part is used as living space of the residents; and the roof zone may be kept empty, or may be traditionally reserved for storing valuable goods like heirlooms or some artefacts of religious value.

Constructionally, the substructure mostly is kept as a "naked" structure of posts, beams, and sometimes struts, while the middle part is built as a cohesive box, and the roof eventually contains a rather complex structure providing a particular roof design which may characterize local traditions or the status of the building.

Concerning the decoration of the three parts we also can observe differences: While the substructure mostly lacks a decoration, the middle part may be two-dimensionally decorated by ornaments, reliefs or paintings, and the roof often appears like a three-dimensional sculpture as it can be seen in building traditions of Sumatra, Sulawesi, Java, Bali, Sumba and others.

Finally, the tripartite division within residential houses is also expressed in a symbolic connotation. While the lower part of the house – the substructure – is connoted with the underworld and inferior beings, the middle part is connoted with the world of humans, and the roof zone is connoted with the upperworld, the transcendent sphere of mythology.

Thus we can state that the context in regard to function, construction, formal design and symbolism in the tripartite of vernacular buildings cannot be considered just as a coincidence. But does this feature actually represent an "Indonesian" characteristic? It has to be taken into account that on the one hand the same phenomenon can be found also in continental Southeast Asia, and on the other hand not in all Indonesian building cultures the tripartite structure is manifested in the same way – for example in the vernacular architecture of Java and Bali just rather low platforms instead of pronounced substructions occur.

The above-mentioned roof shapes can be considered as another example of characterizing Indonesian vernacular architecture rooting in particular regions and islands. On the one hand they can express regional identities – striking examples such as Toraja, Batak, Minangkabau, or Sumbanese roofs are well-known – on the other hand the roof shape also can express hierarchical and functional affiliations, e.g. in Java, where *limasan* and *joglo* roofs are linked with certain building types, or in Bali, where different roof types characterize different functions and hierarchies of the buildings within the compound.

The aim of this screening is to locate the identities of Indonesian building cultures. An integration of those identities of regional traditions within today's planning strategies appears as a matter of high importance to obtain and to bring forward quality and variety in contemporary architecture.

Keywords: traditional architecture, function, form and symbolism, identity

1.   Introduction

Variety and diversity are to be considered as almost proverbial features in Indonesian culture, generated by the existence of a great number of different ethnic groups which have developed different social systems, different cultural characteristics, and different building traditions. In a particular way these differences are reflected in the great number of different phenotypes in Indonesian vernacular architecture.

The obvious structural and formal differences in the building traditions of various ethnic groups living on the Indonesian islands lead to the question: Are there any correspondent features which occur in all – or at least in most – architectural cultures spread over the Indonesian archipelago? And which features do occur also in other southeast Asian building traditions, or even in those of other continents?

In this article some architectural aspects of Indonesian building cultures will be touched, in comparison with architectural traditions in other parts of the world. All these comparisons will be based on connotations of function, construction, form, and symbolism.

2.   Research Focus and Methodology

Usually researches on traditional architecture are constrained to a certain ethnic group and a strictly demarcated region. On the one hand this method allows an intense specialization on a particular local culture, but on the other hand an important aspect is not taken into account: the degree of uniqueness respectively general validity of specific building principles or architectural features within the examined culture. However, this aspect is to be considered as a decisive factor in evaluating quality and individuality of architecture.

The increasing interest in Indonesian culture has brought a large number of high-quality researches and valuable publications about specific regions and local cultures. But only a few go beyond the borders of their core topic and take a wider cultural-geographical scope into consideration. Excellent examples of such publications are R. Waterson's "The Living House" (Waterson 1997) connecting architecture and anthropology in Southeast Asia; R. Schefold's "The Southeast Asian-type house" (Schefold 2003) based on Waterson's theories and extending them; G. Domenig's "Tektonik im primitiven Dachbau" (Domenig 1980) comparing traditional Indonesian and Japanese roof constructions; or the volume "Architecture" (Tjahjono 1998) of the Indonesian Heritage series, giving an overview of Indonesian vernacular architecture. However – with very few exceptions – researches on traditional Indonesian architecture do not take building cultures outside of Southeast Asia into consideration; and the rare publications which offer a holistic view of vernacular architecture are either too much compressed like E. Guidoni's "Architektur der primitiven Kulturen" (Guidoni 1976) or focused more on descriptions than on comparisons like P. Oliver's "Encyclopedia of vernacular architecture of the world" (Oliver 1997).

So the references to some aspects of Indonesian vernacular architecture in comparison with situations in more remote building traditions – though very shortened here because of the limited article's space – should be taken as an attempt to encourage further researches on vernacular architecture based on a holistic view.

3.   Results and Discussions

3.1.   The meaning of the tripartition

In its function as well as in its construction, the living house of tropical humid regions often is partitioned in three zones: substructure, middle zone, and roof zone (fig. 1).

The substructure has the function of keeping away soil moisture, splashing rain water, dirt, and vermin from the actual living space, and furthermore to provide air ventilation under the floor. In many cases the substructure consists of a strong post-and-beam construction, open for airflow to avoid rotting. Usually the substructure is technically well-fitted, but mostly it lacks any decoration (fig. 2).

The middle zone comprises the living space enclosed by a more or less air-permeable wall serving as a visual cover, as a privacy shield, and as a burglary protection. The amount and the size of wall openings depend mainly on the regional weather conditions. In many cases the middle zone is constructed with wattle or plank walls, sometimes decorated with ornaments or paintings (fig. 3).

The roof zone has the functions to be rain-proof from the outside, but also air-permeable from the interior; constructionally the roof zone has to be as lightweight as viable, but also as sturdy as possible to withstand storms. These conflicting requirements demand a good deal of capabilities and experiences, and maybe in this regard one of the reasons can be found that the roof zone has become the most distinctive and individual part of many traditional Indonesian house types.

In mythological perceptions of southern and eastern Asian religions, the cosmic world is partitioned in three spheres: the underworld, the earthly world, and the upperworld. Basically that view of the world can be traced back to Hinduism and Buddhism – the mythical mountain Meru being a symbol of that perception – and actually there are hypotheses about such connotations in ancient religious monuments like the Borobudur, where the architectural and sculptural layout would show the tripartition in *kamadhatu* (the sphere of animal desire, the underworld), *rupadhatu* (the sphere of form, the earthly world), and *arupadhatu* (the sphere of formlessness, the upperworld) (Bernet-Kempers 1976:154ff.; Chihara 1996:118-119; et al.).

Source: Author, 2003
Figure 1: Tripartition in Indonesian traditional architecture (North Nias house)

Source: Author, 2003
Figure 2: Substructure with rubbish and animals (Karo Batak house in Lingga, North Sumatra)

Also in a residential house the partition into substructure, middle zone and roof zone is not merely a matter of function and construction (Gruber 2009:102), but is also related to a symbolic meaning (Lehner 2010:7ff.). So the substructure is connoted with a sub-world; here sometimes domestic animals were kept, and often rubbish is piled up (fig. 2). The middle zone symbolizes the earthly world, as the living space of human beings. The airy space of the roof zone is connoted with the upperworld, a virtual space of ancestors and gods; it is the place where heirlooms and cultic relics are stored up (Waterson 1991:34,59,93,174,183,224; Doubrawa 2009:192-193; Zain 2012). In cultures which are traditionally linked to Hinduism like Bali, the tripartition extends even to a wider scope:

Source: Author, 2003
Figure 3: Ornamentation of the middle zone (Toba Batak house in Lumban Julu, North Sumatra)

There the tripartite concept *Tri Angga* consisting of *Nista* (low/impure), *Madya* (middle/neutral), and *Utama* (high/pure) comprises the parts of the house (platform – wall – roof) as well as the parts of the compound (support buildings – residential houses – house temple) as well as the parts of the landscape (sea – settled land – mountain) (Budihardjo 1991:32ff.).

With such assignments, the living house is virtually incorporated into the mythological perception of the cosmic entirety. Hence on the one hand each residential house is considered a miniaturized image of the cosmos, on the other hand the residents feel rightly integrated in the cosmic cycle. So also in that respect a feeling of belonging and identity is formed.

3.2. The meaning of the substructure

The climate in tropical humid regions demands special measures for keeping off the living space from soil moisture which would cause damages to the construction as well as hygienic problems of the inhabitants. Providing a sufficient elevation above the ground is the best solution against these problems, and it is widely used in most building traditions in the tropical humid climate zone around the world.

Structurally considered there are two main kinds of elevation in use: the post-and-beam construction and the massive platform. Both kinds are widespread not only in southeast Asia, but all over the world including Oceania, America, Africa, and parts of Europe. In Indonesia, buildings on posts are more abundant in the western islands like Sumatra and Borneo, while in central Indonesia substructures of dwellings are often built up as massive platforms, and in the eastern islands also pile constructions are in use. Certainly the different climate which is more humid in the western islands plays an important role, but layout, height, and function of the substructure are also influenced by certain building traditions and mythological believes, as mentioned in the previous chapter.

3.3. The meaning of the middle zone

The middle zone of the house functions as the living space of the inhabitants. Here the most important aspect is separation: separation from the outside, but also separation within the interior – a spatial partitioning according to social hierarchies and gender.

If the middle part of the house rests on a high substructure, a sufficient grade of separation from the outside is provided by the vertical distance to the ground. In this case the living space can be positioned directly at the front side, and there is no need of any further intermediate spaces like anterooms for the transition from public space to private space. So the contact between the private interior and the public exterior can be made in a direct way. The best examples for this situation are to be considered the traditional houses on Nias island: There a ribbon window is stretching along the front side of the house, enabling the observation of the outside space from the house interior while the internal space is not visible because of the different light intensity (Viaro 2008:209). But when the people in the house move in close proximity to the window, an intervisibility outside–inside can be made instantly (fig. 4).

Source: Author, 2003
Figure 4: Moving close to the window makes the dwellers visible from outside (Central Nias house, Lahusa)

Houses lacking a high substructure need a transition zone between the public exterior and the private interior space. Generally this is achieved by a semi-open structure like a veranda. The difference to the above-mentioned case consists in the fact that the veranda space and thus everybody staying there is permanently visible from the outside. A great advantage of the veranda is the reception of guests who should not enter the more private house interior. An extended sequence of several transitional spaces between public and private zones is characterizing certain building cultures, like the Javanese noble house with the *pendopo* as a semi-public, the *emperan* as semi-private, the *dalem* as more private and the *sentongs* as the most private spaces (Tjahjono 1998:34; Prijotomo 1997:1116).

Spatial separations within the house interior can also be gender-based. This is not only a characteristic feature of Islamic cultures of living, but also of other religions and regions. In some cases this separation is concerning mainly adolescents; so for example in the ethnic group of the Karo Batak, young unmarried males traditionally do not sleep in the dwelling house but in the attic of the rice barn (Waterson 1991:59); in many other cultures of Oceania, Africa, etc. there are separate houses for men and women. In various traditional Indonesian building cultures the house interior is separated into spaces for men and women. Characteristically the "male" spaces are situated at the front, the "female" spaces at the rear, for example in the Malay houses of West Kalimantan (Zain 2012). Interestingly this situation is very similar to the spatial separation of men and women like it existed in certain regions of central Europe in the past: there a traditional farmhouse consisted of the so-called *Stube* at the front side which was a living room reserved for men, the kitchen at the rear, reserved for women, and sleeping rooms strictly separated for male and female house inhabitants except the farmer and his wife.

Spatial separations of the house interior based on the hierarchical structure of the inhabitants are expressed either by the distance to the entrance zone or by a spatial elevation of certain parts of the house. The distance to the entrance zone is to be considered as a main feature of spatial order in sacred buildings, as generally the sanctuary is positioned at the farthermost place in relation to the entrance. Also in profane architecture of various building traditions a comparative situation can be observed, both in single-room and in multi-room residential homes, in nomadic as well as in sedentary cultures. So the highest-ranking places in such prominent traditional building types of nomads like the Central Asian yurt or the North American tipi is always opposite the entrance; here is the seat of the head of the household, and all other individuals have to occupy seats in a certain hierarchical order: the lower the rank, the nearer to the entrance zone. This principle also determines the spatial layout up to much more complex building structures like ruler's palaces of sedentary cultures, where after the entrance zone a further number of anterooms has to be passed before the subordinate individual may arrive at the potentate's chamber.

Sources: Author, 2011; I. Doubrawa, 2007; F. Zámolyi, 2005; Author, 2003
Figure 5: Roof shape as factor of identification and identity of ethnic groups:
Javanese, Toraja, Sumbanese and Karo Batak

In Indonesian building traditions, the high rank of a place often is expressed by elevation. This principle complies with traditions in other cultures of Asia, Oceania or Ancient America where elevation generally is equated with a socio-hierarchical ranking (Lehner 1998).

The elevation of a building above the surrounding terrain has already been touched in the previous chapter. The elevation of particular high-ranking spaces in the building interior is mainly a matter of sacral architecture and quite common in various cultures around the globe, like in Ancient Egyptian temples in Africa, Maya temples in Ancient America, Christian churches in Europe, or Hindu temples in Asia. In a number of Indonesian residential building traditions a similar principle indicates spatial hierarchies within the house interior through floor level differences, eg. in dwelling houses of the Acehnese (Waterson 1991:183ff.), Niha (Wiryomartono 1989:171ff.) Minangkabau (Vellinga 2008:137f.), Malay (Zain 2012), Sumbanese (Doubrawa 2009:130ff.) and other ethnic groups. Such height differences in the floor level are of different extent in different regions: So for example in traditional Acehnese houses the elevated middle part as the highest-ranking space is set about 30 cm higher than the lower-ranking front and rear house parts (Collier and Collier 1997:1108) while in Malayan houses of West Kalimantan the floor level height difference of the main house and the support house ranges from 10 to 30 cm (Zain 2012). Sometimes height and complexity of floor level differences alter remarkably even in close related regions like in western and eastern Sumba (Doubrawa 2009:131-132).

3.4. The meaning of the roof zone

From a fundamental view, we can state that the primary function of a shelter – a dwelling, a house – is the protection from weather: protection from sun and rain. In this regard, the roof is to be considered the most important part of a house. Actually, the term "house" is anchored to the existence of a roof: all other parts of a building have not at least the same importance; even all the walls could be omitted as we may notice for example in Samoan building traditions (Lehner 1995:45ff.; Lehner et al. 2007). However, nobody would call a bulding without a roof a "house".

In a functional sense, the size and the height of the roof depend on the amount of rainfall during the year. Houses in arid areas have flat roofs which do not influence the appearance of the building. On the contrary, the phenotype of a house in areas with abundant rainfall is strongly characterized by the roof shape, and in many cases the roof zone appears as the most dominant part of the building. As amount and intensity of rainfall determines the steepness and thus the height of the roof, the roughness and absorption of the roof material also plays an important part; so traditional roof covers like grass or leaves require steeper and higher roofs than more recent

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coverings like metal sheets, and in modern "international" architecture the use of the compulsory flat roof even completely wipes out the roof element from the building's visible appearance.

In certain building traditions the roof zone gains a specific meaning expressing hierarchies of buildings. So at Minangkabau houses the status of a royal *rumah* is signalized by a special roof design of the central part (Vellinga 2008:138); in Java, the *joglo* roof indicates high-ranking buildings compared to lower-ranking buildings which are just roofed by a *limasan*, *kampung* or only a *panggangpe* (Prijotomo 1997:1116; Forshee 2006:92); at Karo Batak houses, an *anjong-anjong* at the roof top marks high-ranking building functions like the residence of the *sibayak* (Germain and Goes 1998:25) or the *geriten* skull house (Waterson 1998:49); in New Guinea – notably in the Sepik region – the awfully high swung gable ends of the men's houses show the high rank of these buildings (Guidoni 1976:136ff.; Hauser-Schäublin 1997:1175); in a Samoan counsel house (*fale tele*) the high rank of the building is expressed by the complexity of the roof construction (Lehner 2007:224ff.); in China, yellow colored roof tiles denote imperial buildings (Cai 2011:34), etc..

One of the most interesting examples concerning the context of building hierarchy and roof shape is featured in traditional Balinese compounds. These compounds consist of several buildings which reveal their hierarchy not only in a certain positioning within the compound, but also in their roof shapes (comp. Sularto 1998:37; Davison 2003:16-17). Usually the lowest-ranking buildings like the pigsty have a shed roof, the kitchen and the rice barn have a sadlle or semi-hipped roof, the living houses of the family members have full-hipped roofs, the main living house occupied by the compound chief has a pavilion roof, and finally the highest-ranking buildings of the compound shrine often have multi-tiered *meru* roofs. Interestingly, a very similar situation can be traced also in other building cultures, like in certain regions of Central Europe: There in a farmstead the lowest-ranking buildings like the chicken house and pigsty have shed roofs, the stables of more valued animals like cows and horses have saddle roofs, the living house of the farmer family wears a semi-hipped roof; and in the village, public buildings like the schoolhouse and the parish building have a full-hipped roof, and finally the church tower wears a pyramidal or spire roof. Thus the roof shapes are expressions of hierarchy and indicate certain functions of building types.

Furthermore, roof shapes can be considered as focal attributes of connotation with certain regions and ethnic groups (fig. 5). In particular in Asia, and especially in Indonesia, distinctive roof shapes became key attributes of ethnic identities, for example the Toraja, Toba Batak, Karo Batak, Minangkabau, Javanese, Balinese, Sumbanese, Timorese, and others. Here the roof as the most significant and eye-catching building element owns the most significant expression of the identity of the region – the house – the people.

4. Conclusion

Quality in architecture can be measured by two main factors: the affiliation or representation of a specified building type, and the recognizeability as an individual object. In the first case, the function of the building – living house, service building, public building, etc. – has to be represented. Consequently also the status of the building is expressed; high-ranking and low-ranking buildings have to be distinct in their appearance. In the second case, individuality is demanded for each building, featured by certain characteristics that make it distinguishable from other objects of the same building type.

In the past, these preconditions could have been achieved somewhat easier. Building types, established as standards during many generations, were well-known and recognized by everybody, and within the same region specific building materials and specific building methods were utilized. However, the appearance of the objects belonging to a certain building type was not exactly the same; each individual building displayed certain different features, because it was erected by individual craftsmen; a complete similarity in design was not intended and couldn't even be achieved.

In present times, this situation has changed. Within one or two generations, the established appearance of building types had undergone considerable alterations through the implementation of new building materials and new building methods. Building types lost their regional ties, and turned to an undifferentiated "international" architecture. Also the individuality of buildings suffered a lot, caused by the impact of industrial mass production of identical construction parts. As a result, countless copies of buildings, all with exactly the same appearance, sprung up. The single object, dissolved in a mass of enzygotic entities, lost its identity.

Can we turn back this development? Should we actually turn back this development?

Architecture is interacting with the behavior of the contemporary society – the contemporary culture – the contemporary technology. When we indicate tradition as an indispensable quality within the development of architecture, we have to be aware that the meaning of "tradition" is not at all a static posture, but a dynamic process. Traditions underlie modifications, and rely on social, cultural, and technological alterations. Hence tradition in architecture does not mean a thoughtless reverting to the past, but a consideration of the contemporary situation. However, such an approach nevertheless should be an invitation to chase after each new trend of architectural fashion. The positioning of architecture within the context of man, culture. and region may not get lost.

The importance of that context is evident in the meaning of cultural identity as one of the most important aspects of social life. Cultural identity means a close affiliation with a particular social background, distinct from other social groups. On the one hand, cultural identity is created by the identity of the individual, the identity of the affiliated social group, and the ethnic or national belonging; on the other hand, it is constituted by the identity of the place: the identity of the home, the identity of the settlement, the identity of the region.

Acknowledgement

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Pattern of Housing Lots and Dwelling Structure
: to understand the spatial context of Indonesian cities

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ABSTRACT

The city can be considered as a collective body composed of the fundamental elements of "ie" space, that is the house and "michi" space, that is the street or passageway. Standing on this concept, to understand the spatial context of Indonesian cities, focus attention on form of lot and traditional town house in various regions. Furthermore, look into dalem and jalan rukunan of Yogyakarta.

Keywords: form of housing lot, open space, shop-house, alley, Japanese castle town, Yogyakaruta

1.   Introduction : "ie" and "michi", two components that make up a city

One of the important functions of a city is to provide living space for the people gathered there. The basic unit of this living space is the "ie", that is, the house. The "ie" is an enclosed space for the private daily activities of the people living there. Although the "ie" is relatively self-contained, it is not self sufficient. The "michi", that is, the street or passageway, is a communal space that connects houses to each other and serves as a space where people can exchange information and goods. The city can thus be considered as a collective body composed of the fundamental elements of "ie" space and "michi" space (Figure 1).

Figure 2: Formation of square lot

Ie; Foundamental space for living

michi; space for interchange

Figure 1: Model of formation of ie "house" and michi "street"
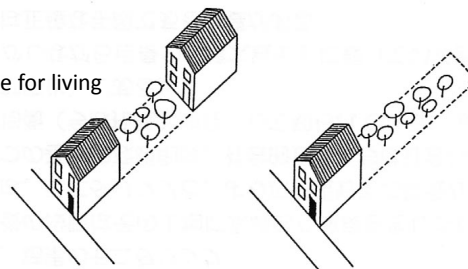
Figure 3: Formation of long & narrow lot

It is necessary for the limited area in the city land to be shared among the residents, and the basic unit of this land division is the housing lot. When a city is planned, the land can be divided into housing lots according to a certain policy or philosophy. When a city is not planned, the scale of housing lots may be uneven at first, but as time passes there is a tendency for the lots to reach a certain scale. Thus, whether intended or not, the process of land division creates a certain housing lot pattern. Housing lot forms are generally either square or long and narrow. As can be seen in Figure 2, on a square-type lot, the dwelling can either be free-standing and surrounded by a yard, or it can be close to neighboring dwellings and have a inner courtyard, or patio.

As for the long and narrow lots, the dwelling can either have a backyard-type lot and is considered the prototype form which the inner-courtyard type evolved (Figure 3). Of these two types of lots, the long and narrow lots are more suited to high density land use.

Land distribution pattern or lot forms are shaped by the people, who utilize the land and live

there. They reflect the needs of the people in that area and their socio-economic function, and also they reflect the people's philosophy of land and space utilization. Furthermore, once the land in a given area has been distributed, the resulting housing lot forms and lot patterns have strong staying power. This spatial context of an area is the basic framework around which future urban reorganization must take place. In these meaning housing lot patterns might be considered cultural heritages.

2.   Types of Japanese traditional houses

Morphologically, the Japanese traditional houses in early modern age can be roughly divided into four types (Figure 4). First prototype is the detached farmhouse. Second is the detached house with a walled-in garden for samurai, court nobles, and priests. This type is called a mansion or manor house. Third proto-type is a house for tradesmen, and called Machiya. The house of this type is built on the lot which is narrow in width and long in depth. Fourth prototype is row house for craftsmen and laborers. It is a one-storied building that shares a ridge and each housing unit is divided by a partition wall. Historically, row houses are rent houses provided for the people of low income.

まちや	ながや	のおか	ていたく
Machiya	**Nagaya**	**Nouka**	**Teitaku**
shop house	row house	farmhouse	mansion or manor house
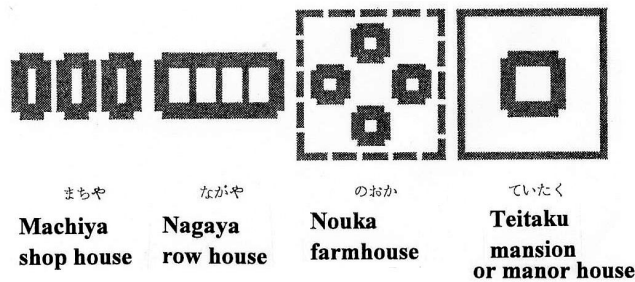
Source: (Ueda Atushi et al., 1975)

Figure 4: Typology of Japanese house

In early modern town, especially in castle town, the mansions for samurai defined the samurai district, and temples and priests' houses comprised another district. And tradesmen's houses, Machiya and row house, Nagaya were in the townspeople's district. In the townspeople's district, the tradesmen's houses stood facing the streets while the row houses were in back alleys.

Machiya served as a place both to work and live. Usually the Machiya was composed of the "mise" or shop, which faced to the street, and the dwelling area, which was located in the back. Figure 5 shows the plan of Machiya of several historical cities in Japan. These Machiya seems to be built continuously, but actually each building is an independent unit that is to say the walls of adjoining buildings are separate.
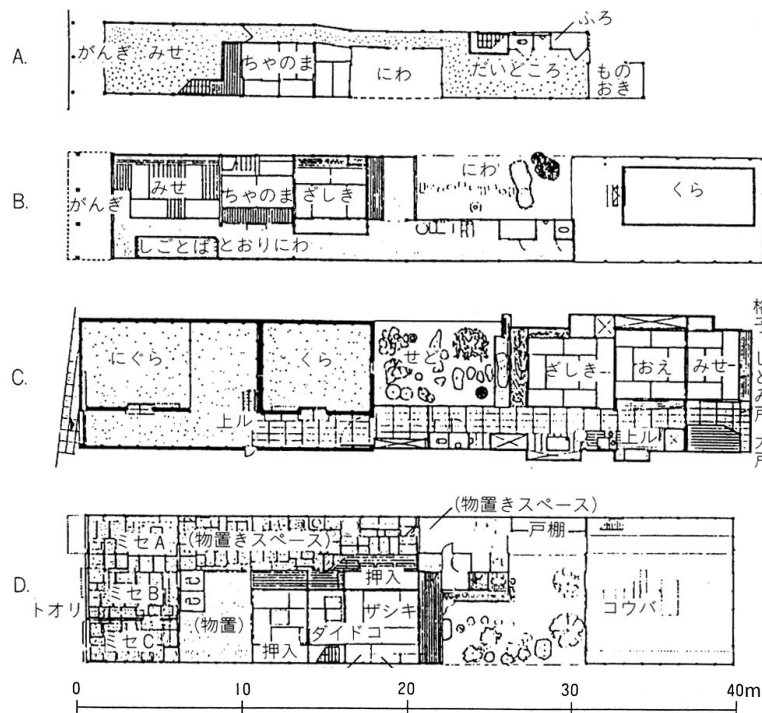
Source: (Ueda Atushi et al., 1975)

Figure 5: Machiya of several historical cities in Japan

Nagaya, low houses were built in the back of access alley like a bunch of grapes. In Edo (former Tokyo), width of alley were around 90cm and the size of each unit was from 12m^2 to 15m^2. Toilet and well were shared and on the alley there was drain ditch (Figure 6). In old Osaka, Nagaya had tendency to be built in the back side of Machiya, but condition was almost same with Edo.

Source: (»Ukiyodoko», 1813)

Figure 6: Nagaya of old Tokyo

3. Block formation of historical cities in Japan

3.1 Block formation and lot division

Original Kyoto, Heiankyo was constructed in the end of 8th century as the capital of Japan. In Kyoto, the lot pattern gradually underwent transformation to long and narrow lot pattern. As you can see in Figure 7, the block formation of Heiankyo which was based on parallel divisions, by the end of the 14th century, transformed into the block in which frontage of lot faced to all sides of block. These are long and narrow lots and where Machiya was built.
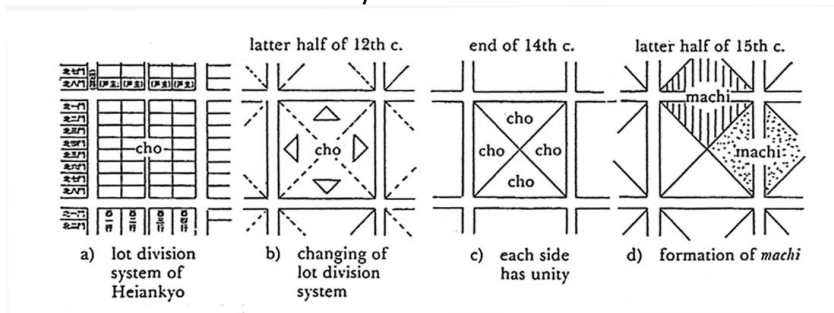
Source: (Akiyama Kunizo, 1975)

Figure 7: Changing process of lot division in Kyoto
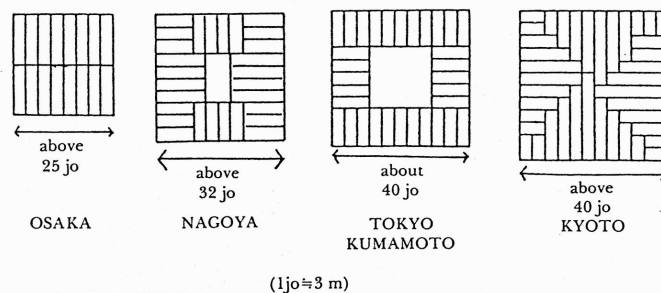
Source: (Yamori Kazuhiko, 1970 & Tamaoki Toyojiro, 1974)

Figure8: Lot division system of Japanese castle towns

Long and narrow housing lots are generally observed in the townspeople's district of Japanese castle towns. Let us look at several examples of long and narrow lot patterns in the major castle towns of Japan. In Figure 8, these examples have been placed in order of increasing block size.

In Osaka, as the block is relatively small (72m square) on the contrary in Kyoto 120m square. The depths of all lots of Osaka are equal. In the case of Nagoya, Edo (former Tokyo) and Kumamoto, the block is larger. In early Edo, the area in the center of the block was left empty, and served as a space to prevent fire from spreading or made into a pond. These areas were later transferred to prominent citizens; for example, merchants with special official status or medical men. In Kumamoto and Nagoya, temples were built in the central area of the block.

In Kyoto, by the latter half of the 15th century, the houses on both sides of the street became unified to form one Machi, community unit. In the central area of Kyoto, because of each Machiya

have frontage on all sides of block, Machi borders formed tortoise shell pattern(Figure 9). On the other hand, in Osaka, as the block is relatively small (72m square), the lots of the block was divided to face the two streets that laid from east to west and "machi" was formed rectangle and continued from east to west   (Figure 10) ; that is the direction from the castle to the sea.

Figure10: Rectangle pattern of Machi border, Osaka

———— Machi, community unit border

▓▓▓▓ Block

□ Street

Figure9: Tortoise shell pattern of Machi border, Kyoto

3.2   Strong inertial force to continue of lot form

Urban area which once developed, it is either historical urban area or newly developed area, urban form would continue to exist or transform with first condition which was given initially. This first condition is urban planning, "machi-wari", that is, the street network and housing lot pattern. This continuity of urban pattern can be clearly seen in Kyoto, since it did not suffer any air attack damage during the Second World War. As you can see in Figure 11, the historical form of lots has been maintained in central Kyoto still now. Photo 1 shows modern medium-rise building which was built on a historical long and narrow lot of Kyoto.

Thus in the case of Kyoto, some hundred years were needed to change the original planned lot subdivision pattern. As commercial activities progressed, the lot pattern gradually changed into the long narrow pattern, to suit the needs of the merchants and craftsmen. This housing lot pattern is still seen today.

Photo 1: Medium-rise building on long and
narrow lot, Kyoto, 1978
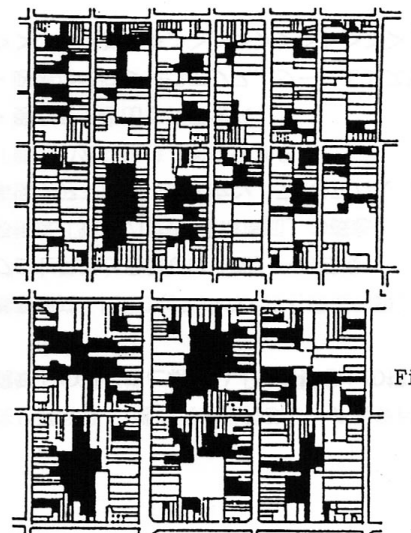
Figure11: lot division pattern of block, Kyoto, 1978

The urban core area of Osaka city was established as a castle town in 15th century. The historical core area of Osaka city is now the center of metropolitan area of Osaka. There are many high-rise buildings and tangling of activities (Photo 2). Figure 12 shows the lot pattern of historical core area of Osaka city , and we can recognize there still existing the old urban pattern. Osaka had suffered air attack damage during the Second World War and this area was completely destroyed. But the fact that lot pattern is still continue persuades that form of lot has strong inertial force to continue.
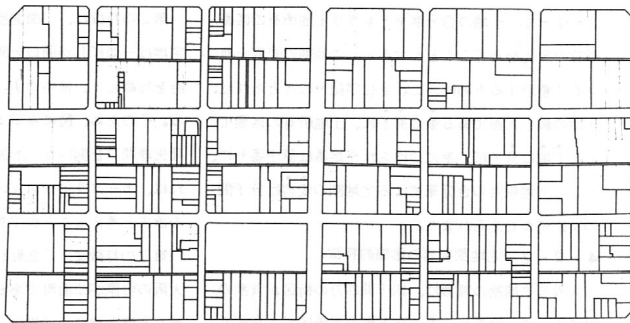
Figure12: lot division pattern of block, Osaka, 1977

Photo 2: Center of Osala, from midair

4.   Long and narrow lot in another region

4.1   The long, narrow arcaded townhouses of Taiwan

Townhouses in Taiwan have the long and narrow lots and have arcades called ting zai jiao. This type of townhouse can be seen in all over Taiwan. Among these townhouses, townhouse of Sanxa is one of most interesting heritages.

Sanxa is located at the junction of two rivers. It was established as an inland river port town in the mid 1800s during a period of increased economic activity.

Figure 13 shows the floor plans of several connected houses. The building fronts are about 6m wide, and the depth is generally around 30～50m with the longer houses reaching 80m.

This lot composition closely resembles that of Kyoto's Machiya. The fundamental difference between the merchants' houses of Kyoto and those of Sanxa is the construction of the dividing walls. In Kyoto case, each building is free standing and separated from its neighbors, whereas in Sanxa case each building is connected to the next by a shared wall.

Source: (Taiwan National University, 1970)

Figure13: Long and narrow lots, Sanxa, Taiwan

4.2   Lot division in Chinese town and European town

It's said that this type of urban residence composition is wide-spread throughout the provinces of Fujian and Guangdong of mainland China. It is likely that this housing and lot form was brought in to Taiwan by immigrants from mainland China.

Taiwan was under the control of the Qing Dynasty during the late half of the 17th century. At this time, the island as a whole had been considered as one prefecture of Fujian province, and was administered from a prefectural government office located in Tainan. In 1875, a Taipei government office was established newly, and the Taipei castle was built. On this occasion, the guideline with approx. 6m of frontage and 79m of depth for building house were specified. The form of the urban

house or lot of mainland China most likely served as references for this guideline.

In Southeast Asia, there are many towns that like those of Taiwan, were established by merchants from Fujian and Guangdong who moved abroad to do business. The common aspect of these towns is that all have merchant districts with long narrow land lots. Figure 14 is a plan of Chinatown of Medan in Sumatra, and this shows the block composed by long and narrow lots.

In the European country, also, there are the long and narrow lots. Figure 15 is a plan of historical area of Lubeck. This area was planned by the Heinrich Lion King in 12th century. The Standard size of lot was 7.2 m of frontage and 28.7m of depth.

Long and narrow lots where tradesmen's houses were built were seen in the society where plenty number of tradesmen lived and they had economical and social power. In this meaning Japan, Europe and South China had a comparable social system in old times.
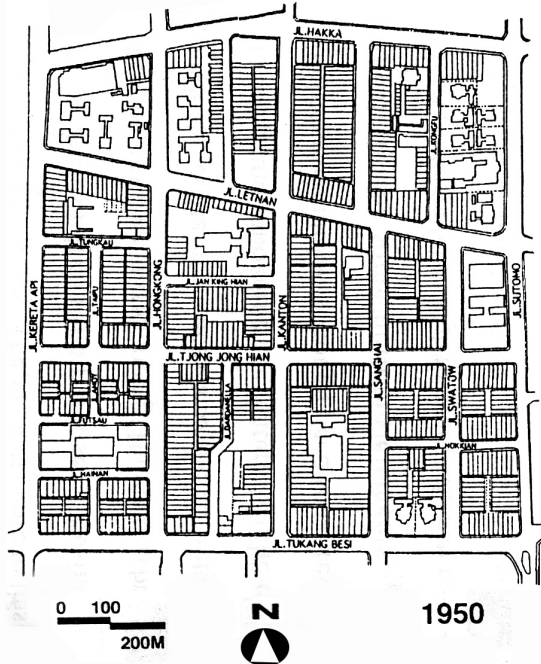
Source: (Karl Gruber, 1976)

Figure15: Lot division pattern of historical area of Lubeck

Source: (Evawani Ellisa, 1999)

Left: Figure14: Lot division pattern of Chinatown of Medan

5. Distinctive Urban Pattern of Yogyakarta

5.1 Distinctive urban component of Yogyakarta

Main spatial components of Yogyakarta are Alun-alun, Palace and areas developed in the era of Dutch administration. From Alun-alun Malioboro, main street goes straight to the north. Along the Malioboro street there are long and narrow lots, former Chinese shop-houses (Figure 16).

At the northern part of Alun-alun, the broad street goes from east to west. Southern road side of this street there are modern buildings, national bank and main post office, as the symbol of modernization. Northern part of this street, there are former Dutch area where the former manor house of Dutch governor general and fortification. In the northern part of historical area European taste residential area, developed under the garden city concept in the beginning of 20th century.

These are cognized as main spatial components of Yogyakarta generally, but I think dalems and kampung make the distinctive urban pattern of Yogyakarta.
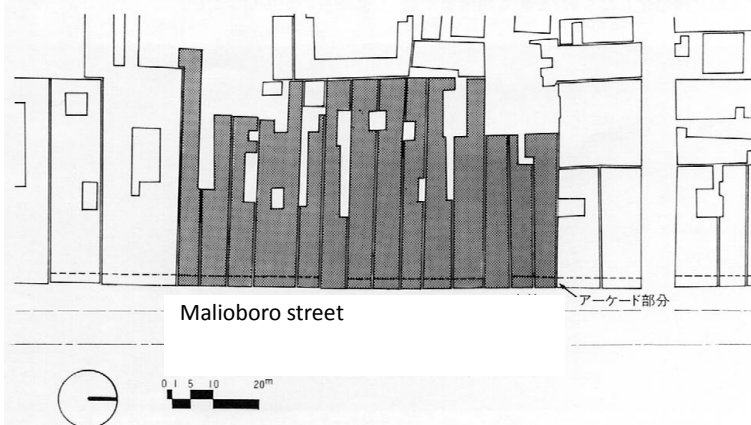
Figure16: Lots of Chinese-shops, Yogyakarta

5.2   The Noble's Residence (dalem)

In Yogyakarta, aristocratic families continue to live in the city and they usually occupy a noble's residence – the so-called dalem built around the palace and city fortification. Dalem which is representative of Javanese traditional architecture is easily distinguished from that of the less formal structures of the surrounding environment.

Originally each dalem was built in the middle of a large empty lot which today is completely filled with the houses of kampung (urban village or urban settlement). The dalem is like an "island" floating in the larger settlement. Located at the center of the lot, the dalem required an access which nowadays cuts through the houses of the kampung toward the gate of the dalem. The dalem still dominates its surroundings because of the size of the main house (made up of two large buildings), and its large yard (in which Banyan trees or other big trees).

Most aristocratic or noble's families share their dalems with servants. These servants work for the noble in exchange for a place to live, to receive the good fortune of blessing, and for the benefits of studying of the etiquette and practices of high Javanese culture by working for and serving the aristocratic family. Several dalems have been changed into other land use-such as cinema, hotels, market, schools, office etc. However, many dalems have still survived withstanding especially destructive pressures which caused the lost either its architecture or its living function. Through examination of 1987's aerial photo, it could be verified that 49 of dalems still exist (Figure 17).

Inside the block which lies next to Malioboro street in the west side, we can find out a lot of a dalem (Figure 18). The name of dalem is Sosrowijayan, it means Sosrowijaya's dalem. Sosrowijaya is the name of noble, who had title Tumenggung Sosrowijaya. Usually the title Tumenggung did not directly have aristocratic blood from the Sultan, but he got the title and land from Sultan because of his position to help manage the area of land he got. Malioboro street is usually full of tourist, but there are few tourist who remarks the dalem of Sosrowijayan. Around dalem, kampong spreads out. Kampung is composed by wooden low-rise building and alley and make up high density area.

K: Royal palace
P: Cadet family of King
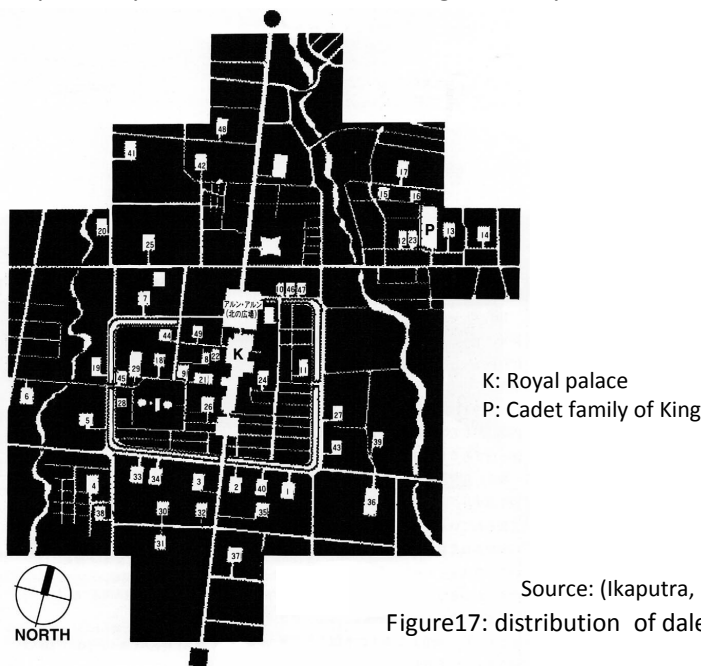
Source: (Ikaputra, 1995)
Figure17: distribution of dalems in Yogyakarta, 1993

Dalem Sosrowijayan
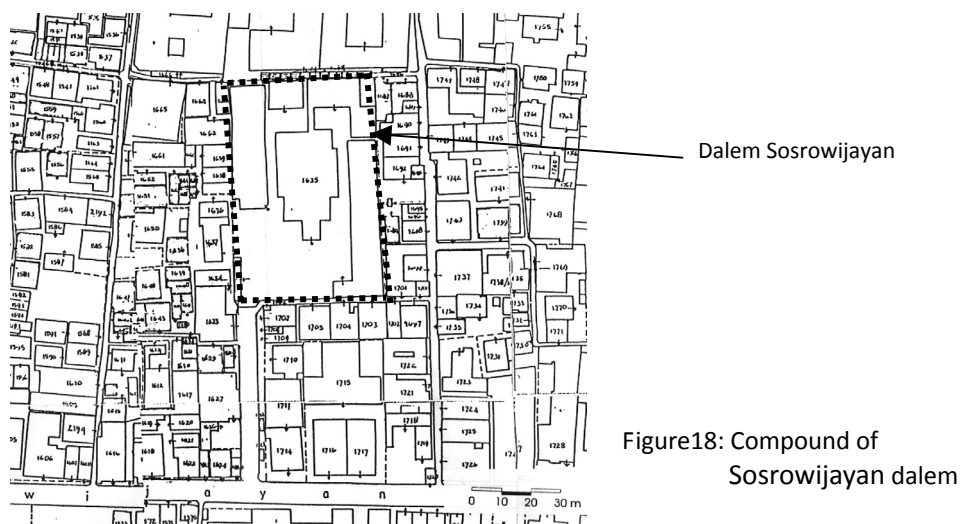
Figure18: Compound of
        Sosrowijayan dalem

5.3   Jalan rukunan, path of peace

In Yogyakarta, there is the interesting alley called jalan rukunan. Meaning of jalan is road or path, and rukunan is peace. So, jalan rukunan is path of peace, for the peace and placidity of near neighbors.

Figure 19 shows the types of jalan rukunan. These shared alleys connect the houses and compose kampung.

Figure19: Types of jalan rukunan
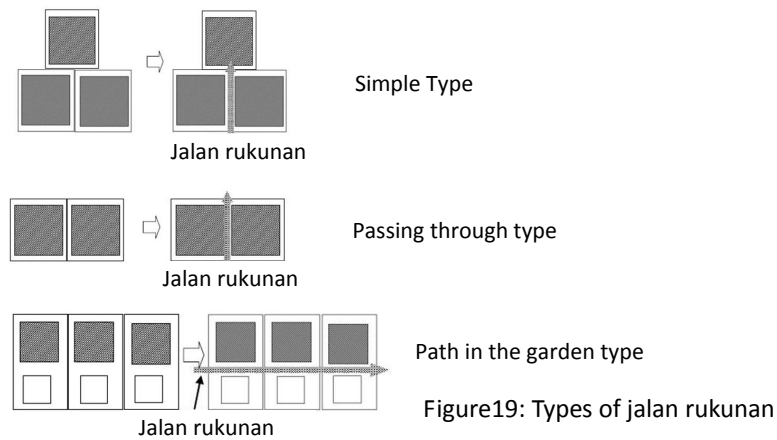
5.4   Alley network of Kauman

Kampung Kauman is a distinguished typical settlement which is inhabited by the Moslem people. Historically, kampung Kauman in Yogyakarta is inseparable from the holy mosque of Yogyakarta palace which is called Mesjid Agung and serves as the focal point of this settlement. This kampung was founded in the middle of 18th century along with the establishment of the holy mosque. This kampung initially constituted a land called pakauman which means a land for a group of people who do religious activities. The people who live in this community are led by an Islamic priest who works for the king.

Figure 20 shows built-up space and void space of Kauman. Network of alley is suggesting the existence of jalan rukunan.

Source: (T. Yoyok Wahyu Subroto et al., 2000)

Figure20: Built-up and void space, Kauman

5.5   Jalan rukunan, path in the garden

Historical town Kota Gede which was founded 400 years ago as the center of dynasty, is located 6 km fare from Yogyakarta and population is 15,000. This town had been settlement where craftsmen who were purveyors for Imperial court. Nowadays this town is famous for silver works.

The street or path network pattern of this town is quite unique. The arterial street in these districts are about 5～6m wide and the shops are built on both sides of these streets. The alleys which lead from these arterial streets into the residential area are extremely narrow, and in many case the width does not even 1m. This alley is called gang, derives from Dutch word.

This alley or gang, has a very exclusive character, as it is bordered on both sides by 3m high walls which are usually painted with white plaster. The walls may be either a building wall or an enclosing wall, and although there are doors opening into dwelling lots here and there. There is hardly any window of building which open into the gang space. Nevertheless these gangs are very properly maintained.

This network of narrow gang is passes through the district, but it does not necessarily lead to all houses in the district. There is another path, third type of jalan rukunan (see Figure 21). I call this type of jalan rukunan as the path in the garden.

Several houses are skewered with this path in the garden. Although these linked houses appear to be built in one housing lot. But, in fact, each house is built in each separate lot, and each part of the path in the garden belongs to each lot.

How did this housing formation originate? Through the interview, there is the possibility that this housing group was a group of houses of big extended family or a group of houses of intimate people in former time. Although at present the exact process of how these blocks were developed is not clear, it is considered that in the transition of a hundred of years, a housing group which once served to accommodate an extended family or group of intimate people, gradually accepted another people as residents.

Jalan rukunan, path in the garden is also observed in Kauman of Kudus (Figure 22). Kudus is located northern cost of Java. Kudus established in the mid 16th century as an Islamic proselytization centre. Kauman Kudus is the historic center of this town.
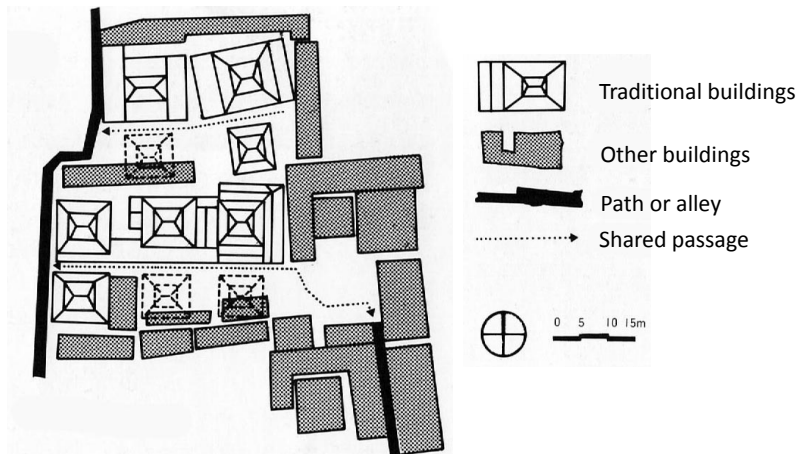
Source: (Ardi P. Parimin et al., 1987)
Figure21: Shared passage, Kota Gede
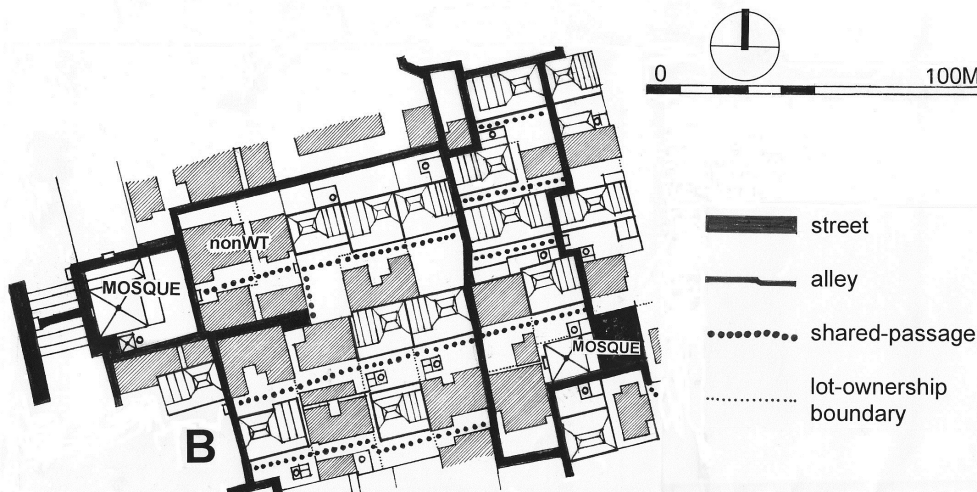
Source: (Ria Rosalia Wikantari, 2001)
Figure 22: Shared passage, Kudus

6.   Conclusion

To understand the urban form, it is useful to make model using simplified spatial components. For this purpose I proposed "ie" space and "michi" space. "ie" is the house and "michi" the street or passageway and it should be evolved to plaza or square.

Lot is the place where house is built. Form of lot and the way to build in this lot are also important to understand urban form. Form of lot has strong inertial force to continue.

In this paper I focus on the urban pattern which has long and narrow lot. In European town which originated in medieval times and Japanese town in early modern ages, long and narrow lot are remarkable. And also we can observe long and narrow lot pattern in the Southern region of mainland China, Taiwan and many Chinatown in south-east Asia. In these towns, merchants had economical

and social power.

As to Javanese town, especially Yogyakarta, remarkable components which make up urban pattern are dalem and kampung. In both case, jalan rukunan, path of peace is playing important role. Jalan rukunan, path of peace is realized on reliance of the peoples in the community.

I hope this feature of existence should develop the unique and attractive urban form of Yogyakarta in the future.

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Tsunami Disaster in Sanriku Fishing Villages and the Challenges of Disaster Mitigation and Restoration

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ABSTRACT

This talk presents key lessons in tsunami crisis management in Sanriku, Japan, based on nearly 40 years of planning experience for cities and small villages in the affected region. A major problem was the deregulation of land development, and the reliance on sea wall infrastructure rather than careful allocation of land use, to protect against tsunamis. For example, in 1973, plans for Sendai City (that I helped to produce) designated the eastern area nearest the sea as non-urban area due to its low elevation and danger of inundation. But in 1980's, the land use plan was changed due to deregulation. Thousands of people died because of wrong land use. Looking back further in history, we can trace the impact of multiple tsunamis in this area and the varied responses of different communities, especially in their choices to relocate to higher elevations or not – all of which had consequences for the impact of the 2011 tsunami. After Meiji Restoration, three big Tsunamis attacked this Sanriku Area: 1888 Meiji Sanriku Tsunami, 1933 Showa, and 2011 Higashi-Nihonn EQ. This (2011) was the biggest. This size of Tsunami we can find even earlier in history: the Jogan Tsunami 869 (9th century =before 1142 years). After 1888, 1933 the relocation of villages to higher place was discussed, but not perfectly done. The village of Yoshihama relocated to higher place in 1888 and experienced very little damage in 1933. And all was safe in 2011. In Tnohama, you can see the planned residential area in higher place relocated from the lower land after 1933. But after World War II many residents settled again in the lower land and became victims in 2011. Another important topic is how effective tide embankments are. Currently there are many arguments about building new embankments. Some of the problems with embankments include: The high embankment cuts the relation to the sea of fishery villages; not to see the sea is rather dangerous; people relying on the embankment do not evacuate; gates needing locks are weak points. On the other hand, forested embankments provide an amenity and environmental protection as well as protection against tsunamis. Evacuation routes need to be built and maintained. Finally, another important topic is social education. Monuments, in- school education and training, and oral transmission are all important elements.

Keywords:Tsunami , Fishing villages, Disaster mitigation, Recovery, Continuation, Recilience

1. Introduction

Along the Sanriku coast (stretching from north to south approximately between the Hachinohe city in Aomori Prefecture and the Ojika Peninsula in the north of Miyagi Prefecture), there are about 450 fishing villages (a census-based figure) and about 200 fishing ports. Major port cities in the region that serve as the centers of the fishing industry include Hachinohe, Kuji, Miyako, Kamaishi, Ofunato, Rikuzentakata, Kesennuma, and Ishinomaki cities. Tsunami produced by the Great East Japan Earthquake exceeded more than 14,000 individuals counted as dead or listed as missing in the coastal region between Iwate Prefecture and Ojika Peninsula in Miyagi Prefecture (Higashi Matsushima city).

2. Multi-Layered Nature of Fishing Villages in Sanriku

The Sanriku region adjoins one of the three great fishing grounds of the world where warm and cold currents meet. The region is a ria coastline characterized by deep inlets and many peninsulas. Because the region adjoins the fishing ground, it serves as an excellent base for the offshore fishing industry. The inlets and nearby areas host coastal fisheries, including stationary nets, and serve as

excellent locations for advanced resource-controlled aquaculture and catching activities. The region has excellent ports in ideal natural settings and also served as the base for deep-sea fishing of species such as bonito and tuna. The finely developed structure of the fishing industry is directly linked with various industries including the marine products processing, food production, trade, tourism, and restaurant industries. The region is well known for local marine products such as abalone, sea urchin, scallops, wakame (seaweed), oysters, and sea squid. Processed marine products produced in the region include dried abalone, saury, and shark fin. Deep-sea fishery bases such as Kesennuma are where fishing boats unload their catches of saury and bonito, and therefore, are also significant fresh fish trading, refrigeration, and processing centers. These ports are also where fishing boats dock while they are reloaded with water, fuel, bait, and food for the next voyage, and where their holds (storerooms) are cleaned. For the crew, the ports are also places to rest. Thus, the silhouette of these port cities has been defined by these and many more activities. Heavy industries that depend on ports and shipping distribution (such as the iron and cement industries and modern industries including the production of electronic parts) have also developed in the region. When we consider the post-earthquake recovery of fishing villages in the Sanriku region, we must also consider the multi-layered network of the regional economy that is not only centered around fishing but also includes other industries. We also need to understand the societal structures of the region, including the spatial constitution of villages and cities and the configuration of regional transportation networks, as we make efforts to attempt to restore them and develop a vision of resilient local communities in future, which incorporate disaster mitigation in their design.

Following the great tsunamis of 1896 and 1933, many villages in Sanriku were relocated to higher grounds. However, the relocation was incomplete and the regions suffered losses in the third subsequent tsunami of 2011. Other protective measures against tsunami, such as tide embankment protection, turned out to be unsatisfactory because tsunami went over or destroyed the embankments. On peninsulas, villages were isolated because the connecting infrastructure was destroyed. With these experiences in mind, the preparation of a recovery plan for the region includes questions regarding the tide embankment and other coastal protection facilities, the practical feasibility of relocating communities to higher grounds, and the vision of a disaster-resilient regional structure.

3.   Reconstruction Based on the Continuation of Local Communities and Regional Economy

During the period between the Great Hanshin Earthquake and the Great East Japan Earthquake, ideas about disaster recovery have evolved both in Japan and internationally. The Great Hanshin Earthquake of 1995 was the greatest inland earthquake that Japan had suffered since the Great Kanto Earthquake of 1923. Even though Japan recovered quickly from this earthquake, there were many points in regards to the recovery process to reconsider. For example, the shuffling of local communities in the recovery period disrupted the development of the regional economy. In regions where major land readjustment or urban re-development had been carried out in haste, the cityscape and regional economy failed to regain its vitality, even today, after 17 years. In the "uncharted" areas that were excluded from the scope of major land readjustment or urban planning, recovery from the earthquake was managed by the initiative of local citizens and landowners. They generally took time to have discussions with other members of the local community. It was the citizens who patiently led the process of applying urban planning methodology for the improvement of small residential districts and land readjustment, introducing new systems where necessary. These communities recovered well from the disaster. Therefore, an important lesson learnt in the recovery from the Great Kansai Earthquake was that an independent local community should lead recovery activities in such situations.

In the case of recovery from the Niigata-ken Chuetsu Earthquake of 2004, a special effort was made to preserve the continuity of local communities. Yamakoshi village, for example, came to be widely known because of the slogan "Go back to Yamakoshi!" The residents of the old Yamakoshi village were evacuated to the new town at Nagaoka, but the coherence of village communities was maintained by taking care to ensure that evacuees from the same communities were sheltered together in provisional houses in same neighborhood. The coherence of communities was also

respected during the recovery process. The re-establishment of the old communities could take place relatively smoothly because nearly 60% of the population returned to their village, and even those who did not return, generally resided in urban districts nearby. In contrast, when Hurricane Katrina hit the southern states of the United States in 2005, about 400,000 houses were flooded. During the recovery process, several hundreds and thousands people had to leave New Orleans and disperse to various locations around the United States, producing a large population of evacuees and serious concerns about the continuation of the regional economy.

Following the Java Earthquake of 2006, which brought major destruction to Jokjakarta, efforts were made to learn from lessons taken from the recovery process following the Great Sumatra Earthquake of 2004, in which extensive but uncoordinated NGO support caused disparities in support received on the ground and resulted in the re-development of only some parts of the region, causing considerable upheaval in society. Therefore, the need for "community based reconstruction" was acknowledged in the recovery plans following the 2006 Java Earthquake. The construction of temporary and permanent dwelling facilities was carried out entirely locally to build provisional houses and permanent houses just on same site and action was taken immediately to support the recovery of local craft industries such as woodwork, metalwork, indigo dyeing, and pottery. Such policy measures that aimed to support the continuity of local communities and economies enabled a rapid recovery from the disaster. Learning from these examples, when planning post-disaster recovery, how can we ensure we strengthen and not destroy the resilience of local communities? This question has brought about a major evolution in ideas about disaster recovery in the last decade. As a result, thinking has emerged that encourages greater respect for local initiatives and environmental security for future by means of symbiotic (communal) effort. Even in the planning of infrastructure-oriented measures, we should not be satisfied solely by the building of physical structures, but it is important to pursue an approach for disaster mitigation, which forefronts environmentally friendly measures and avoids negative interference with the laws of nature and the destruction of the landscape. It is now understood that disaster mitigation is achieved by combining efforts across various areas, and it ensures that people are well informed about disasters, the preparations they should make in anticipation of disaster, and the actions to be taken in emergencies. The author believes that *safety is achieved through environmental and communal "symbiosis." We name this way of thinking "Symbiotic Safety."*

4.   Success and Failure of Relocation to Higher Grounds

The relocation of dwellings to higher grounds has been attempted several times in the history of the Sanriku region. Discussion about "relocation to higher elevations," began to emerge again after the tsunami disaster following the Great East Japan Earthquake. While "relocation to higher elevations" is suggestive of relocation to newly developed land of a considerable scale on an elevated plateau, "relocation to higher grounds" is more suggestive of relocation to a selected spot that topographically provides a relatively greater elevation. Our preference is "relocation to higher grounds" because we are referring to the relocation of small communities to a higher location positioned nearby the original dwelling places.

4-1   Successful Examples of Relocation to Higher Grounds

Since the start of the Meiji Era, repeated attempts were made to relocate villages to higher grounds. However, only a limited number of communities remained on the higher grounds to which they had been relocated. However, in some places, such as the Yoshihama and Ryori-Shirahama districts in Ofunato city, for example, villagers adhered to rules regarding living on elevated land, which eventually saved these communities from subsequent tsunami. Yoshihama is a hamlet within Sanriku-cho in Ofunato city. The village community was relocated to higher grounds following the Meiji Sanriku Tsunami of 1896; the entire community was relocated again to an elevated plateau area (20 m above sea-level) after the Showa Tsunami of 1933. It is now a large village community with the population of 595 persons in 164 households (according to the fishing industry census of 2003), occupying a space of around 1 km in length. The village is known for producing "Kippin" (dried

abalone) and most villagers are engaged in both agriculture and fishing. They live on a hillside area overlooking the Bay of Yoshihama and the land at lower elevations is used mostly for agriculture. The low-lying land is utilized as rice paddy field and farmland. Cattle sheds are built on slightly more elevated locations. For this reason, the recent tsunami hardly caused any damage to buildings.
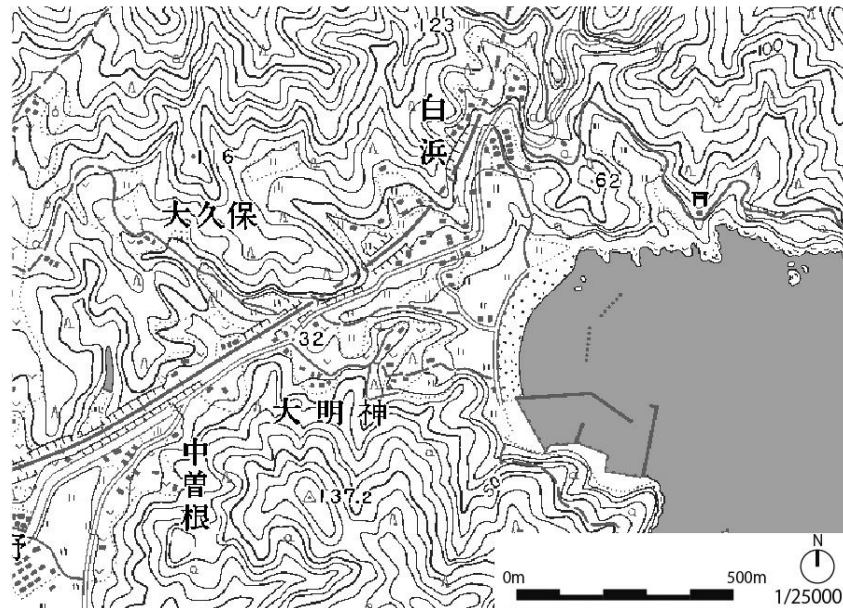
Figure 1: Yoshihama

One of the villagers (Mr. K.K., 60 years old) told us the village before it was relocated was originally a village that faced the sea with streets spreading from the village center in the middle of the lowland. The tsunami produced by the Great East Japan Earthquake exceeded the height of a two-storied, steel frame rest house close to the beach. However, the tsunami failed to reach the plateau where the residential houses were built or a cluster of trees at the edge of paddy fields on lower land. When the village community was previously relocated, the relocation distance was no more than 500 m and the gain in elevation was in the range of 20–30 m. That is, the villagers did not have to travel very far in search of an elevated location.

4-2   Examples of Disaster Resulting from Incomplete Relocation to Higher Grounds

Tanohama is a district in Funakoshi, Yamada-cho, Shimohei-gun in Iwate Prefecture. It hosts a large hamlet on a hillside area overlooking the Port of Funakoshi adjoining the Bay of Funakoshi. Residential houses and fishery facilities were tightly clustered on the low-lying land. At the time of the tsunami produced by the Great East Japan Earthquake, the village comprised a population of 1,500 villagers in 500 households. According to "Tsunami and Villages" by Yaichiro Yamaguchi, elevated land was procured for the villagers for relocation after the Meiji Tsunami, but the relocation was not thoroughly carried out. As a result, the village suffered damage again from the Showa Tsunami. In 1934, after the Showa Tsunami, all households in the village relocated themselves to a more elevated location (a little less than 15 m above sea-level) about 300 m away from the coast. The neatly planned district produced as a result of this relocation 80 years ago still remains. According to a 1934 document produced by the Ministry of Internal Affairs, the new district was developed to host 240 households in a total area of about four hectares. The tsunami produced by the Great East Japan Earthquake left this neatly planned district intact, although it caused flood and fire damage to a portion of the village found in a relatively close location (9 m) to the other portion of the elevated district.
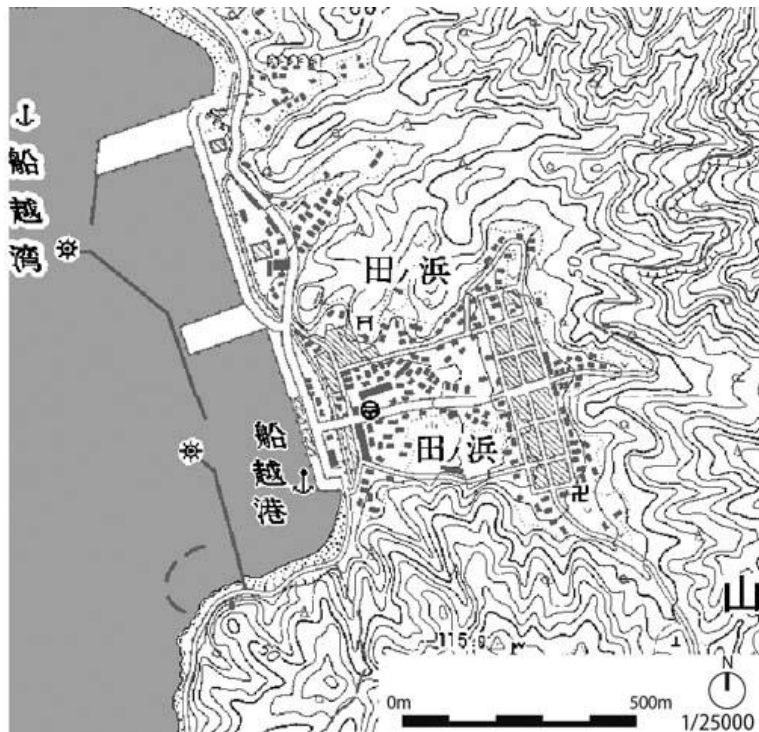
Figure 2 : Tanohama

Photo 1 Contrast between the elevated district and lower districts of Tanohama

In the elevated area, the average plot size is 50 *tsubo* (165 m^3) and the net area size per house is 40 *tsubo* (132 m^3). About 260 houses on the lowland were destroyed by the tsunami produced by the Great East Japan Earthquake. Buildings that were carried away by the tsunami were set alight by leaking fuel from fishing boats. There was some partial spreading of these fires to more elevated districts. In all, the tsunami destroyed about 60% of the houses and resulted in a number of casualties. In 1934, all households in the low-lying land were relocated to an elevated location; however, photographs taken in 1964 already show the clustering of houses in the lowland again and later on, more houses were built there. It is possible that the tide embankment, although low and containing structural design problems, gave people the illusion of safety. The community hall was built in the lowland area, and some people were killed after evacuating to this building. This tells us the importance of relocating communities to higher grounds, continuing to educate people about disaster, and transmitting information about tsunami in the past to future generations.

4-3 Future Planning Approach for Relocation to Higher Grounds

Relocation to higher grounds (or relocation to an elevated area) is a fundamental approach to disaster mitigation. It is nearly impossible to ensure complete protection against tsunami through coastal protective facilities such as tide embankments. In order to attempt to achieve perfect coastal protective facilities, we would have to be ready to spend enormous amounts of money to produce structures that would inevitably impinge on industrial productivity and local lifestyles. As a general rule, the risk from tsunami should be mitigated by proper land use; ensuring that residential houses are not built on low-lying land and riverside areas. On low-lying land, evacuation routes should be clear and land should be used appropriately, including uses such as farmland and open space. A complete ban on construction in lowland and coastal areas appears to be an impractical option. However, when it is necessary to build production, distribution, and public facilities on low-lying land, evacuation routes should be made available and structures should be protected against the risk of being carried away by tsunamis. Disaster mitigation measures should be taken with a view of facilitating evacuation, for example, rigid buildings of several stories in height should be built to serve as shelters with evacuation route to hill from tsunamis. Other optional measures include raising ground elevation in the lowlands and the construction of artificial land.

Residential facilities (e.g., permanently occupied facilities; overnight facilities; and facilities for vulnerable individuals such as infants, pregnant women, elderly citizens, patients, and handicapped citizens) should be built at an elevated location outside the destructive reach of tsunami.

A practical and workable plan for relocation to higher grounds should be developed based on community initiative. This Heisei relocation following the Meiji and Showa relocations, will be a community-driven relocation to higher grounds, which should first take place in Sanriku (Tohoku) and Northern Kanto, and subsequently take place in the coastal regions of Southern Kanto, Tokai, Kii, Shikoku, and Kyushu. In planning these relocations, effort should be made to minimize modifications to topography and careful development method required. Modest dwelling spaces should be found on elevated spots such as on ridges that extend close to present communities, and the choice of such locations should help to minimize distances people have to travel to schools, workplaces, and hospitals and also reduce distances for some production facilities that need to be located close to the coast. Fig. 3 shows a proposed model plan for the rebuilding of industrial area of Tanohama, which combines a plan for relocating residential houses to higher grounds and constructing buildings that could be used as tsunami evacuation way on the low-lying land.
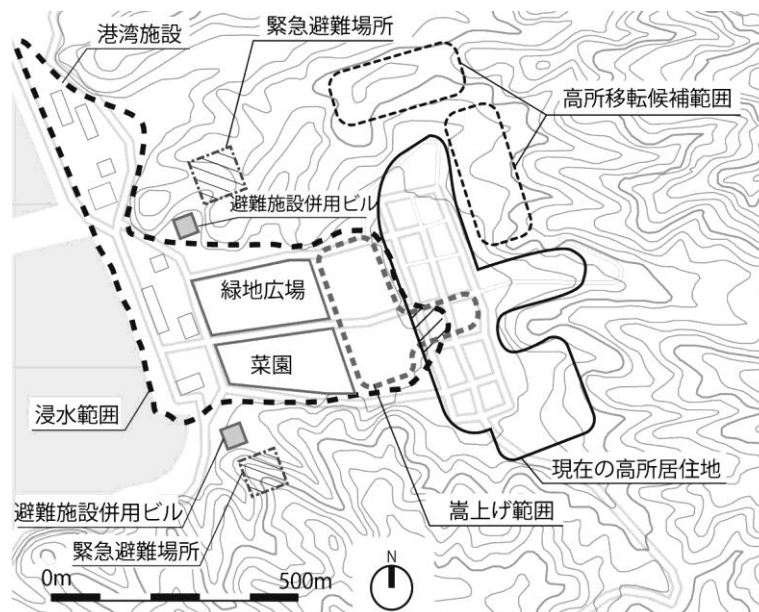
Figure 3 Proposed model for the reconstruction of Tanohama (produced by Shigemura and Mikasa Labo)

4-4   Habitation on Higher Grounds and (Proper) Land Use Planning

As a basic rule, land-use planning should primarily focus on the fitness of particular land for particular purposes, which should be evaluated in terms of land conditions and regional structures. In recent years, this requirement has tended to be neglected as a result of higher priority being given to economic facilitation or efficiency. Traditionally, the fitness of particular land for particular purposes was respected when constructing villages or determining dwelling places. In the Aneyoshi district of Miyako City, there still stands an old monument that warns people of the risk of tsunamis; it says "High Place Living for the Happiness of Descendants, Think the Calamity of Great Tsunami, Do Not Build a House Below This!" It also says "Both in 1896 and 1933, tsunamis reached this point. The entire village was destroyed: only two survived in front, only four survived at your back. Never fail to forget this in the future" (Aneyoshi, Miyako city). As in this monument, some communities have handed down the understanding of the importance of living in an elevated location. For example, school children in Shirahama, Sanriku-cho, re-enact scenes from past tsunami disasters.

The need of proper land use plan should be emphasized not only in the planning of village areas but also in the planning of measures to restrict the development of urban communities around the mouths of rivers in Sanriku and in the development of populated urban communities in the low-lying land around the Bay of Sendai. In the "Future Image of Sendai, a Capital in Forest" formulated in 1973 jointly by author in the Prof. Yosizaka's team in Waseda University and the Government–Private Cooperative Development Committee of Sendai, the low-elevation urban areas in the Miyagino and Wakabayashi wards of Sendai city were defined as "industrial and green zone," where urbanization should be restricted. However, owing to the slackening of regulation in later years, these areas were incorporated into an urbanization promotion zone. As a result, the tsunami following the Great East Japan Earthquake brought major destruction to these areas. It is necessary to enforce the strict control of land use and safety measures. Governors will have to consider the introduction of a new scheme to enhance control. As pointed out by many studies on the recovery from tsunami disasters such as the study by Akira Yoshimura in "Sanriku Coast and Great Tsunami," it is a significant problem that populations living in the lowlands begin to increase again when people forget the threat presented by tsunamis.

There are several explanations for why the lowlands become populated again in this way:

 1) When villagers live at a considerable distance from the coast, it is necessary for them to build sheds and similar facilities near the coast for the safekeeping of fishing gear. Guard-houses will also be created near the coast or ports. Some villagers spend overnight in these facilities during the fishing season and these temporary shelters often gradually develop into seaside dwellings.

2) In the past, after the occurrence of a tsunami, villages welcomed new members into their community from other areas. Moreover, as a result of the chaotic social situation after the war, villages began to be filled with more and more people who had not experienced the threat of tsunami. Furthermore the next generation did not understand the necessity for living in an elevated location and began to build their houses in coastal areas, to which they were naturally attracted owing to their convenience.

However, it should be noted that it is now possible to enforce stricter control of land use:

1) Images and videos of tsunami are widely broadcast that convey to people the threat from tsunami, which makes the need for land-use control more readily accepted.

2) Port facilities can be improved by providing better anti-theft security for fishing gear storage and guard houses.

3) Greater use can be made of automobiles to facilitate the transportation of cargo and people between the coast and the inland areas.

4) Japan is not currently in the midst of chaotic social turmoil comparable with that during the war and in the post-war period.

5) The demand for residential land development is decreasing.

The success of disaster mitigation and recovery in future depends on relocating communities to higher grounds, taking advantage of these favorable conditions, and the strict control of land use. Each village or urban community should have a plan for relocation to higher grounds (or relocation to

the highlands) and for taking measures to ensure proper land use. With the participation of residents and stakeholders (land and business owners), each community should pay minute attention to topographical details and disaster history, and produce a land-use plan based on a detailed evaluation of the fitness of the land for development.

5. Tide Embankment

The Great East Japan Earthquake destroyed tide embankments at many places. It is therefore not possible to rely on tide embankment alone to protect low-elevation urban communities from tsunamis. Moreover, tide embankment obscures the view of the ocean from the city. However, tide embankment has a role to play and some advantages in disaster mitigation. There are various types of tide embankment structures: structures constructed along the upper edge of the beach to protect the village, which may be combined with structures constructed at the ocean front that protect the port; embankment structures that are combined with offshore wave-breaking structures; and tsunami embankment structures submerged in deep water at the heads of a bay that are designed to restrict the total mass of a tsunami, delaying its arrival and reducing its height. The tsunami embankment structures at the Kamaishi city bay heads are believed to have reduced the destructive impact of the Great East Japan Earthquake tsunami and lowered the inundation height. There are also water gates structures that are built in inland locations along a river (similar to sand-trap dams) to prevent tsunamis from traveling along a river to villages further upstream. Observations of damaged embankment structures identified certain types of structures that were prone to destruction:

1) Some structures had weak foundations. The foundations had been damaged as a result of liquefaction caused by the quakes that preceded the tsunami. The tsunami could then easily cause the collapse of the structure.

2) Structures that were nothing more than soil/sand embankments covered by precast concrete panels appeared to have collapsed easily when hit by the tsunami several times.

3) Structures that were only piled-up masses of precast concrete blocks collapsed easily due an absence of joints linking them in vertical and horizontal directions.

The following structures identified were generally known:

4) Reinforced concrete structures with an integral/unitary design inclusive of the foundation proved to be rigid and many such structures resisted the impact of the tsunami that went over them. In cases where such structures were partially used only in such as water gates, only that part of the embankment remained standing after the tsunami.

5) At locks and water gates, the gates might not have been designed to withstand a large pull in the reverse direction produced by the inflow or outflow of the tsunami, and in these cases, the gates were destroyed by the fracturing of joints.

A village known as Fudai-mura suffered great losses when it was struck by the Meiji Tsunami and the Showa Tsunami. However, two hamlet communities at Futai-mura were protected from the tsunami produced by the Great East Japan Earthquake thanks to a water gate and a tide embankment structure of more than 15 m. The central hamlet of Fudai locates at a slightly elevated location (10 m above sea-level) at a distance of about 1,300 m from the coast. To prevent tsunamis from traveling up the deep gorge of the Fudai River, a 15.5 m-high water gate was built at a distance of 300 m from the mouth of the river. Another hamlet, Ohtanabe, was similarly protected by a 15.5 m-high-tide embankment that stood between the community and the sea. Although these structures in Fudai-mura are much higher, they are much more rigidly made than similar structures in other areas. They were built to a height of 15.5 m on the insistence of Mr. Kotoku Wamura, late mayor of the village having persuaded the villagers and the prefectural government of the need for such structures because he remembered the Showa Tsunami as having been 15 m high.

By February 2012, the prefectural government had announced a policy of building high-tide embankments. This provoked intense arguments about the pros and cons of high-tide embankments. Arguments against high-tide embankments include the following:

1. The building of high-tide embankments everywhere is a rather drastic approach and will sever people's relationship with the sea.

2. The embankments may increase the risk because they prevent people from seeing tsunamis.

3. People may be disinclined to evacuate owing to over-reliance on the embankments.

4. The embankments must have openings somewhere because of the need for sluiceways at river mouths and the need for gateway, which part is weak.

5. Trying to close the sluiceways in time makes sacrifice of local fire volunteers.

6. The construction of high-tide embankments will take a long time.

Primary importance should be attached to the relocation of communities to higher grounds and the preparation of evacuation routes and evacuation support facilities. Disaster mitigation should be pursued by combining these efforts with the construction of tide embankments within a feasible scale and the efforts to communicate the lessons gleaned from previous disasters to future generations.

6.   Evacuation Routes and Evacuation Support Facilities

6-1   Lessons Concerning Evacuation from Schools

The following are important at schools (and also at similar institutions housing collective activities):

1) All members of the group should be thoroughly educated about tsunami and should be ready on their own volition to take the correct actions in an emergency.

2) Evacuation route(s) should be prepared.

3) Everyone should remain in the group.

4) Instructions corresponding to a general overview of the situation should be provided.

At the Okirai Elementary School, formerly situated on low-lying land, the lives of school children were saved by a bridge that enabled direct evacuation from the second floor to the road. It had been constructed in December 2010 thanks to Mr. Takeshi Hirata, a city assembly member for Ofunato who died shortly before the tsunami disaster. At another school, Ofunato elementary school which locates on a height of 9m, the tsunami could be seen when the children were instructed to line up in the school grounds after the quake. The children were immediately instructed to evacuate and all of them were saved. Evacuation was successful because the children had been thoroughly educated about tsunami and there was a route nearby that allowed them to escape from the school ground (later flooded to a depth of 2 m) to a more elevated location.

Photograph 2 Evacuation bridge at the Okirai Elementary School

At some schools, there were reports of children who Sucummed on the way home on the way

home with their parents after they were handed over to their parents/guardians after a roll-call on the school grounds following the earthquake. More than 500 school children (including primary school, junior high school, and high school students) were killed (347 children in Miyagi Prefecture, 98 children in Iwate Prefecture, and 91 children in Fukushima Prefecture). In most cases, children would have been safer if they had remained at school. At the Okawa Municipal Elementary School in Ishinomaki city, 74 out of 104 school children and 10 out of 13 faculty members were killed. According to press reports, the school was situated on low-lying land along a river and the tsunami was not visible from the school grounds where all children assembled after the quake. The teachers first thought of climbing a hill but this idea was abandoned because of the unavailability of solid footholds. They evacuated instead to the foot of a bridge over the Kitakami River, a distance of about 200 m, where they were caught by the tsunami. This tragedy arose because they had not secured an evacuation route in advance and were unable to evaluate the situation to quickly make a correct judgment. At the Yuriage Elementary School in Natori city and at the Funakoshi Elementary School in Yamada-machi, school children and local residents took shelter in the school gym. As the tsunami was clearly visible, they immediately and successfully found a route to an elevated location. This was thanks to a warning being given by a person who was watching out for a tsunami.

These events illustrate the importance of the following:

1) Preparation of an appropriate evacuation route in advance.

2) Having proper knowledge regarding tsunami and about pertinent actions to be taken during emergencies.

3) Observing the situation and forming judgments and taking actions quickly.

4) Remaining in groups.

6-2   Evacuation Support Facilities for Villagers

At many villages, we found Shrines on either hillside of a shore. Steps lead to these shrines.None of the over 100 shrines we visited for this study had been reached by the tsunami. These shrines are a prototype of historically selected evacuation sites, handed down from generation to generation, as places where people should escape from shore to when in fear of a tsunami. In Tanohama, which is situated in the Funakoshi district of Yamada-machi mentioned earlier, the construction of a community center on low-lying land increased the number of tsunami victims. The evacuation sites should be at elevated locations to ensure (1) safety, (2) that they are recognized by people as evacuation sites, and (3) ease of access.

It is also necessary to consider the construction of buildings that function as tsunami shelters as well as of elevators/staircases that facilitate escape routes. Such elevators/staircases would be ideally located if they facilitate escape to a moderately elevated location. In the case of the Great East Japan Earthquake, medium-height buildings made of reinforced concrete, such as hotel and hospital buildings, served as emergency shelters. Judging from reports on damage suffered by buildings, it is clear that any building that will serve as such a shelter should be of reinforced concrete and should be at least five stories high (taller than 20 m in coastal districts). A building that hosted emergency response departments in Minamisanriku-machi was quite tall, but had an steel frame construction that resulted in it being obliterated. The town mayor and several others who managed to cling to the rooftop survived the disaster. Many buildings received damage on all the floors below the fourth. Some buildings collapsed after being raised from their foundations by the tsunami, and even with reinforced concrete construction, sections of weak walls tended to yield to the pressure from the tsunami.

7.   Improvement and Reconstruction of Regional Infrastructure

There are many small peninsulas along the ria coastline of Sanriku. To the south of Miyako alone, there are 12 small peninsulas, and the elevation is generally low at the roots of these peninsulas, making the roads vulnerable to tsunami. Roads were severely damaged and some entirely severed by the tsunami at these points. In certain cases, the presence of debris carried by the tsunami from nearby towns and the penetration of seawater cut the small peninsula off from the mainland. The roads connecting the villages on these peninsulas often run near the coast and are rendered unusable

after a tsunami. It is believed that in the past, people used boats to travel from village to village and that travelers on foot used narrow pathways along the ridge. The following measures should be taken to prevent the small peninsulas from being cut off from the mainland and the isolation of villages:

1) A road that is wide enough for automobile traffic should be constructed along the ridge that goes through the center of the peninsula and located some distance from the coast.

2) Where the road has to go across low-lying land, it should be constructed on an elevated bank (cause way) to give some protection from tsunamis.

3) This road should have branches that enable access to villages and prevents their isolation.

4) A community center (with open spaces, assembly hall, sport facilities, etc.) should be built at a mildly elevated location along the ridge between the hamlets(communities) served by the road in order to serve as the core facility for regional emergency responses. These public facilities should be made available for use by groups of people from villages in the peninsula. Normally, it would be used for facilities such as sports fields, gyms, and health/welfare centers. In emergencies, the center could provide a heliport and serve as a shelter, a depot for provisions, a first-aid center, and a communication base. Fig. 4 shows a proposed plan for the implementation of the abovementioned measures to the Hakozaki Peninsula and Kamaishi city. The vulnerability of urban communities near the mouths of rivers is not discussed in this study, although it is another topic that requires attention.
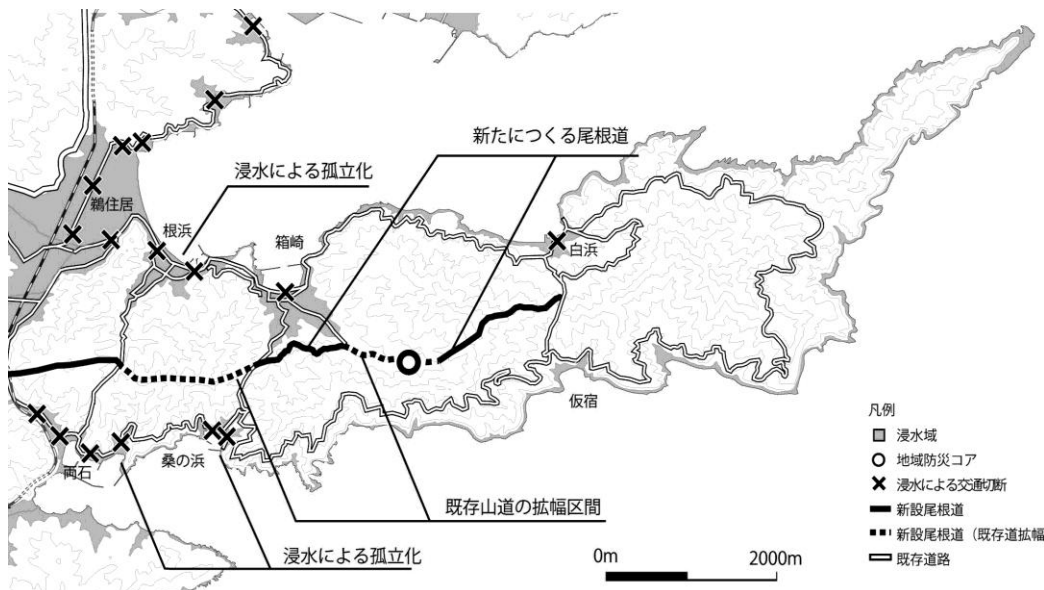
Figure 4 Proposed plan for the construction of disaster-proof roads and core facilities for emergency response in the Hakozaki Peninsula

8. General Approach to Sanriku Recovery

We should aim to revive the industries and cultures of Sanriku that have emerged from the unique natural and topographical environment of the region, the characteristics of the coastal region, and reliance on marine resources. It is important not to lose the uniqueness of local communities. Sanriku could be developed into a new regional cultural center of the 21st century, characterized by a heightened reliance on and harmonious relationship with the environment.

1. Efforts should be made to restore the land-use patterns that respect the proper land use determined in consideration of protection and harmony with the environment.

2. Efforts should be made to relocate as many communities as possible to higher grounds. The development of new sites for relocated communities must be carefully done with a minimum amount of modification to the topography and by avoiding erosion and environmental disruption.

3. The entire system of evacuation facilities, including evacuation routes, evacuation sites, and buildings functioning dually as shelters, should be rebuilt.

4. The entire system of tide embankments and coastal structures for protection against tsunamis should be reexamined and built or rebuilt for additional structural strength.

5. Small peninsulas that could be cut off from the mainland by natural disasters should be provided with ridge-top roads and core facilities for local communities that contribute to the welfare and quality of life of people and serve as emergency response facilities.

6. Populated urban centers along the coast should be supported by supplementary urban centers at inland locations. The links between them should be strengthened in daily activities so that the latter can offer support in emergencies.

7. The above measures should be combined with the establishment of emergency communication and transportation networks to establish a more fail-safe system for disaster prevention.

To complement regional planning, each district needs to prepare its own recovery plan, which considers the local topography and the status of local communities and industries. The authors are engaged in the development of such plans for four districts in Okirai area, Sanrikucho, Ofunato City, on the request of local disaster recovery committees. The following describes the plan for the Urahama district, which is one of these four districts, as of September 2011.

The Urahama district is located at the center of Sanriku-cho which was once an independent administrative division. Before the earthquake and tsunami, the district had a population of 1,732 people in 646 households. The tsunami destroyed 104 houses in this small, but densely populated community. The disaster recovery plan for the Urahama district has been built on three principles: ocean defenses against tsunami, development of small plots for the relocation of residential houses at the nearest safe elevated locations, and the restoration of the function and center of the city area.
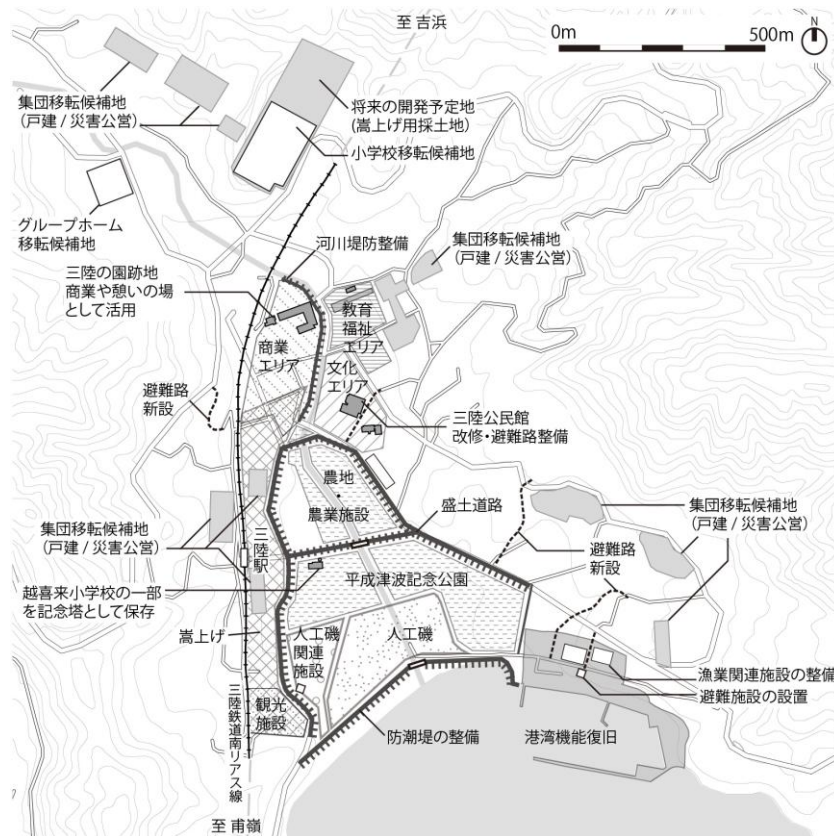
Figure. 5 Disaster Reconstruction plan for the Urahama district (prepared by Shigemura and Mikasa Labo, Kanagawa University)

1) Better preparedness against tsunami: Based on multi-layered protection, the first layer of defense will be provided by tide embankments, water gates, and detached breakwater structures; the second layer of defense shall be provided by the barrier-like construction of essential infrastructure such as a road constructed on a raised embankment and the Sanriku railway line. Furthermore, accommodation and public facilities will be removed from low-lying land. The lowlands will be used as green tracts and as space for port and farming-related production facilities. However, there will be evacuation routes and buildings that can serve as tsunami escape shelters.

2) Development of plots at safe elevations for the relocation of residential houses: Dividing the entire district into smaller blocks, each block will be allocated to the relocation of houses on the nearest elevated spot (more than 20 m above sea-level) in a hilly area surrounding the town. The rebuilding of residential houses at the nearest safe elevation will be achieved with support from institutions for collective migration and by employing various methods including the preparation of public rental houses for disaster relief. While most of the new plots will be located on sloping ground, some parts in the town center will be redeveloped as improved plots with raised ground for residential houses, for example, taking advantage of housing improvement institutions. The availability of plots with raised ground for residential houses, sufficiently protected by an appropriate disaster prevention program promises to contribute in maintaining the vitality of the town center and prevent the loss of the local population.

3) Restoration of the function and status of the city area: The city area should be attractive for both visitors and residents. Facilities appropriate to a city center, such as commercial facilities, office buildings, public facilities, and tourist facilities, shall be built in an upstream area protected by a road that runs on an embankment, a spacious, raised open space, and river embankments. Some of the public facilities that suffered damage will be brought back into service after renovation, the establishment of protective measures, and the preparation of evacuation routes. In the lowlands, green tracts and open spaces (including a tsunami memorial park, plaza space, etc.) will be constructed. The lowlands also require the preparation of evacuation routes and buildings that can serve as shelters. In addition, there will be a surf zone, culturing facilities (abalone, etc.), fishing port facilities, farmland, and agricultural facilities (seed and seedling, etc.). These facilities will be linked with tourist facilities, retail facilities, and restaurants to support the development of industries.

The residents have led preparation of these plans for eventual incorporation into the recovery plan of the Ofunato city municipal government, and the authors' research unit voluntarily helped with plan preparations. The Okirai district has a population of about 3,400 people in about 1,200 households (including about 200 households engaged in fishing). The district has four village communities—Urahama, Sakihama, Horei, and Tomari. Urahama is subdivided into four blocks: Minami, Nishi, Naka, and Higashi. Therefore, the Okirai district can be subdivided into seven blocks, each having a disaster recovery council. Based on the results of discussions at these seven block councils, the Okirai Recovery Committee produced recovery plans for negotiation with the municipal government. Land-related negotiations for the relocation of houses to higher grounds were led by these block-by-block disaster recovery councils, and the villagers have already reached consensus among themselves to a certain extent. With strong local communities in these regions, they are expected to achieve further development through their response to the challenge of post-disaster reconstruction.

Note

Descriptions in this study are based on the survey results of coastal villages in Iwate Prefecture as part of a field survey project called "Urgent Surveys on Agricultural, Forestry and Fishing Villages" conducted on April 3–6, 2011 by the Research Committee on Rural Planning and Design of the Architectural Institute of Japan (survey team members: Tsutomu Shigemura, Toshiei Tsukidate, Tomoko Okada, Ryutaro Goto, and Tomohiro Mikasa); and also on the results of field surveys that the authors (the research unit of Shigemura and Mikasa at the Kanagawa University) conducted later on (from May to October), which include tsunami-related field surveys at affected villages, surveys on disaster-recovery planning for the Okirai district (formerly part of Sanriku-machi and presently a part of Ofunato city), and surveys and project works to rebuild Fishery History Library in Kesennuma-Oshima, Kesennuma City.

Architecture's Role In Urban Transformation:
Indonesian Cities in the Age of Second Modernity

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ABSTRACT

Can architecture change Indonesian cities? Is intentional urban change even possible? Is the continued deterioration of urban conditions ever more inevitable given the increasing challenges of urbanization and global forces outside of our control? Some Indonesian architects and urbanists have proposed dramatic megaprojects pointing to Frank O. Gehry's 1997 Guggenheim Museum as a precedent for how architecture can play a significant role in urban transformation. This paper complicates our understanding of the so-called 'Bilbao Effect' briefly examining the case of Medellín, Colombia demonstrating a powerful, more complex, role played by expressive architecture. It examines the ways in which emerging models of design and governance in selected Indonesian cities might help start to deliver on the long postponed promises of larger social-cultural-political transformation. This analysis and provocation is set within the theoretical framework of recent continental sociological literature of 'reflexive modernisation' (Beck, Lash, Giddens) and the prospects for new paradigms of resilient, adaptive, entrepreneurial, flexible problem solving for the 21st century age of the 'second modernity'. Applying the principles of 'reflexivity' to the context of Indonesia reveals the potential for forging a new coalition of urban citizenship and leadership.

Heritage Mining Town of Sawahlunto – It's Future Perspective

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ABSTRACT

Sawahlunto is a coal mining town established in the late 1800's sets in a beautiful valley in West Sumateran hinterland. In it's heydays even with it's remote location, Sawahlunto was already a self contained town with more than 50 thousand population of multi ethnic groups from all over Indonesia and a substantial number of "chained convicts" who were brought over by the Dutch cokonials to mine the underground coal pits of Sawahlunto. Every aspects of the communities needs were provided by the mining company and as a result today, we can witness the complete features of a mining town typical of that era in Southeast Asia. The present inhabitants of the town are the third generation of these miners. The mining activity has reclined in the present years but the quaint atmosphere of this company town remained attractive to many who has visited the place and with the initiatives of it's present Mayor who had added many popular events and attractions in the town, had made it even more popular as a tourists attraction.

As it is now the town has gained high reputation for having the most genuine efforts in fostering the preservation of its unique entity within the network of Indonesian Heritage Cities. But it is feared that with little knowledge on urban conservation of the local administrators, the town becomes vulnerable in the future as it will become the focus of some indiscriminate exploitation of its natural and historical resources that will lead to it's physical degradation and original characteristics.

Recent visit has indicated some of these vulnerabilities. There are projects proposed to exploit it's tourism potential to the maximum an would eventually spell the doom of the town itself. This presentation will offer some views as to the impacts of these proposals in the context of Sawahlunto heritage integrity. At the same time the aim of this presentation is to propagate to the Indonesian audience about the usefulness of Heritage Impact Assessments or "Analisa Mengenai Dampak Pusaka (AMDAP)" as a tool to objectively protect the heritage integrity of a culturally significant place.

Local Authority and politicians have to be made aware that minimal intervention is the root to successful urban conservation and upgrading public amenities is the ultimate priority in maintaining a town ambience, historical/cultural characteristics and the sense of pride of it's inhabitants. The key to a sustainable heritage town like Sawahlunto is how the content are the people living in the town with their lives and how proud they are of their inheritance.

Keywords: heritage mining town, indiscriminate developments, heritage impact assessment, awareness of authorities

Why Architects and Planners Do (Not) Involve in Disaster Related Activities?

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ABSTRACT

The above question comes up when we realize that almost none of submitted papers in a conference refer to context of disaster resilient architecture and planning. This fact forces us to understand why it is happened? Are most of architects not interested in Disaster Related Activities? Do they have no feeling of empathy for people who suffer from disaster? Have they never experienced disaster? Do they know nothing how to involve in Disaster related activities share their capacity as a professional architect? These series of questions become triggers to understand why architect and planner do (not) involve in Disaster Related Activities.

Keywords: Architects, Disaster, Empathy, Disaster Management Cycle

1.   Isues on the Elitism of Architect & Planner Profession:

Schon (2001: 185) has raised the issue that the professional world is facing a crisis of confidence in professional knowledge. He highlighted that our society has become thoroughly dependent on professionals, and it makes our everyday life would be unthinkable without them. However, he exposed that many well-publicized scandals, professionals have been found willing to use their special positions for private gain.

In the profession of architects: there are two paradigms they could select to work for–one more narrowly aesthetic, the other departing from the "life-world". (von Bonsdorff, 2006 : 21) Most of architects are trapped into the mindset in creating the iconic, visible and attractive work. And in the same time they subjectively select the clients. One of various arguments why architects <u>do not</u> involve in disaster related activities can be explained as follows:

> *Architects often subjectively select "clients" who offer programmatic design which solves clear problems, employs the normative analyses-synthesis design principle, has definite design schedule, and tends to give profit oriented works. The phenomenon shares a discourse on architecture professionalism which puts architects' curriculum vitae to serve mostly to "those favorable clients". Meanwhile, the "non-favorable clients" are neglected or marginalized. The marginal clients would come into the architects' mind if the architects could share their feeling for these disadvantaged clients through empathy. The architect's empathy is expected to play a role in motivating themselves to prioritize their work for the marginal clients. The big issue is how do we make the marginal architecture into the center of architect's professions through the spirit of empathy?* (Ikaputra, 2012: 1)

Those above situation, more or less is similar to what happen in the profession of planner. The planner would like to help the authority or government to set up plan "on behalf" of people rather than directly do hearing from the community.

2.   Why architects & planner have lack of sense of Empathy?

Empathy according to Decety & Jackson (2004: 73) is resulted from the automatic activation of emotion triggered by the observation of an "unpleasant situation". The unpleasant situation can be experienced permanently or temporary by individuals, group of people, or community who

categorized into not only disadvantage people, such as people with disabilities and the poor, but also the refugee or survivors of natural disasters (earthquake, tsunami, tornado, landslides, floods, etc.) or manmade disaster (fires, accidents, etc.).

If empathy denotes a deep emotional understanding of another's feelings or problems, the critical to have this sharing feelings of others, is the ability to identify someone else's difficulties. It has been found that the subjective experience of emotions and the observation of someone else experiencing the same emotion activate overlapping brain areas. (de Vignemont,2006;180) The end result of affectively or cognitively identifying with the suffering of others is that empathetic individuals have the desire to engage in pro-social helping behaviors (Davis, 1996: In Unnever and Cullen, 2009: 288)

The process of Architect and Planner to be empathetic individuals, who has the desire to involve in concrete actions based on their profession to help the disadvantage clients, can be explained using the following diagram:
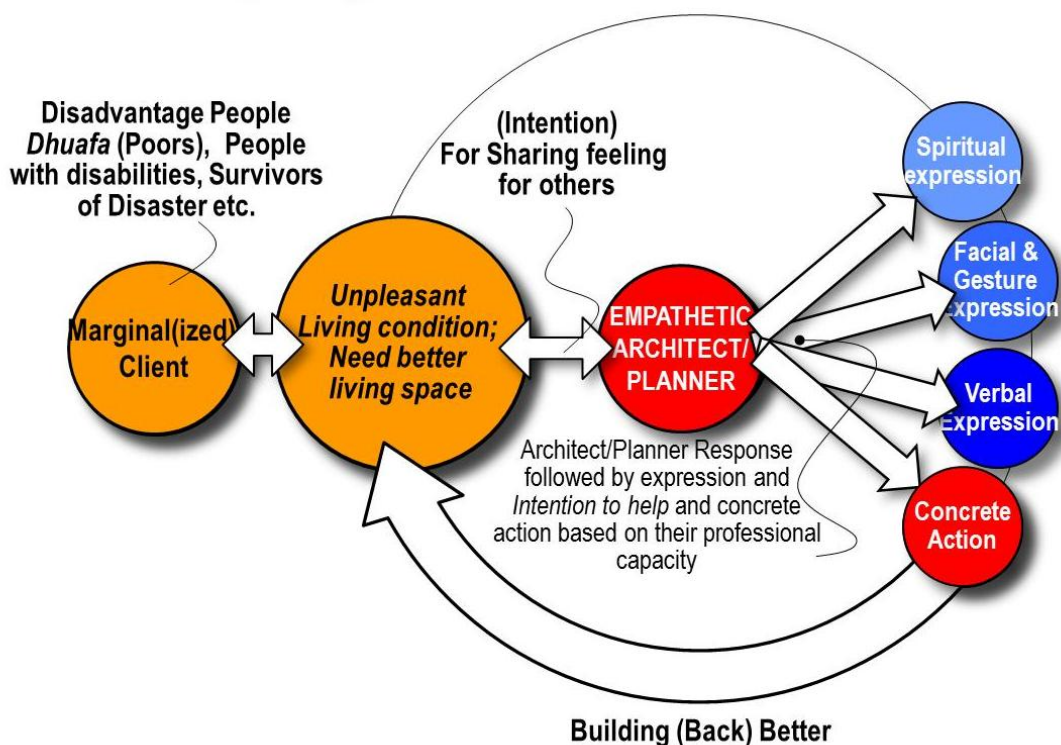
Figure 1: Architects/Planners Sharing the Feeling of Empathy

3.   The Possible Entry of Architects' involvement in Disaster Related Activities

Indonesia has been ranked at 4th for the World most disaster prone country recently, from Tsunami at Sumatra, earthquakes at various places, and Mount Eruption. Indonesia has experiences to manage the post disaster activities—from Emergency stage (survive at basic), Transitional stage (strive to normality), as well as Rehabilitation stage (reconstruction of live post disaster). The Disaster Management Cycle can also be systematisized from (1) Mitigation and Prevention that improve of community Preparedness, (2) Immediate Response During Disaster Strike, and (3) Recovery action which consists of early recovery and transition as well as reconstruction and rehabilitation. (Ikaputra, 2009; 146) Ikaputra (2011; 461) mentioned that:

Most of people are aware of the disaster management cycle after they have experienced a disaster in their life. Regardless, they are government, institutions, NGOs, community, or individual when they suffer from disaster for the first time, they will start to manage the disaster from their immediate response during or after the disaster occurred. They have to survive at basic within the very critical condition and time. They continue to do efforts returning their situation to normal as soon as possible after disaster. Most of the community or even government or NGOs stop their activities after the recovery stage is done. They often return to their own business or activities after finishing the post disaster recovery and forget the lesson learn from their last disaster experience. This condition makes them missing a stage to build a community capacity to be ready for future disaster. The stage of mitigation and prevention aimed to strengthen the community to have disaster preparedness is very important to reduce the risk and vulnerability during the disaster.
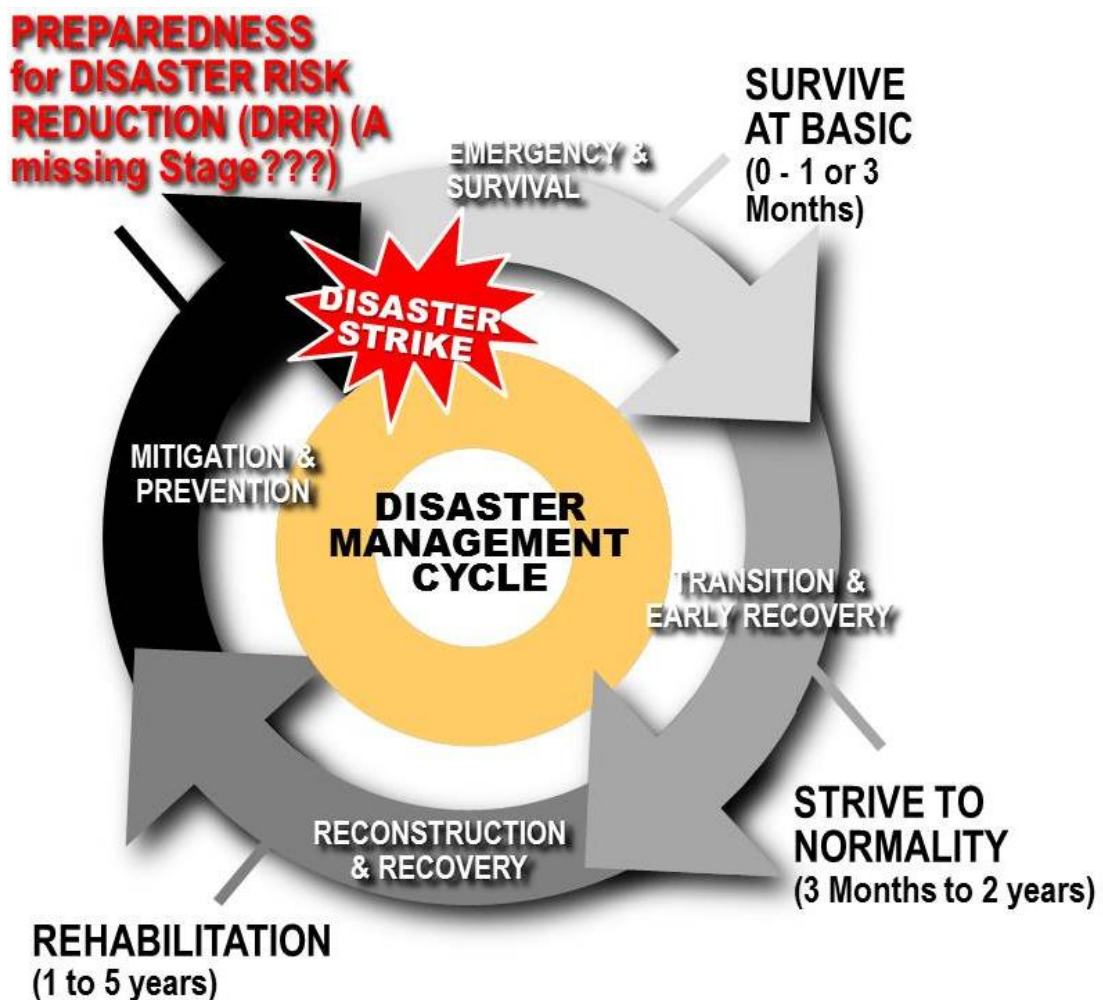
(Source: Ikaputra, 2011; 462)
Figure 2: The Disaster Management Cycle as an Entry Point for Architects to Involve

Architects are able to share their capacity to give inputs for policy related to shelter after disaster, to design the transitional shelter, core house, or to reconstruct permanent house post disaster. Architects can also work to educate community through sharing their knowledge to improve the community capacity in designing and constructing house or building against the disaster such as earthquake, eruption, floods etc. The critical situation is that they have to work in the limited time, budget, and resources, or even the readiness of the site for shelter/house aimed for building back better. This critical situation makes any architects to think twice spare their times for disaster related activities. In most cases architects—who involve in the post disaster activities—also live in the disaster prone or suffered area. The question then is how to attract other architects who do not

suffer from disaster or live far from the disaster area? Their contributions and shares to supports architects or community who live in the disaster area are definitely and urgently needed.

4.   Some Examples of Architect's Involvement

The lesson learn from the success in providing living facilities in transitional period post Yogyakarta earthquake 2006 is not separate from the fact that there was a commonality of interest among various group of people—not only local community or survivors—who worked hand in hand for transitional shelter (T-shelter) availability. Various actors can be mentioned who played important roles in providing T-shelters, such as: international and domestic agencies/donors; universities, architects, engineers, professional association and volunteers; daily newspaper and media; relatives, neighbors, individual donators, volunteers or companies employee's program on its Corporate Social Responsibility; and of course the local community.

The following scheme (figure 3) can become a reference for how some efforts by various actors including architects share their commonality of interest in providing T-shelters whether on behalf of "planned program" or "sporadic non-planned T-shelter" construction.
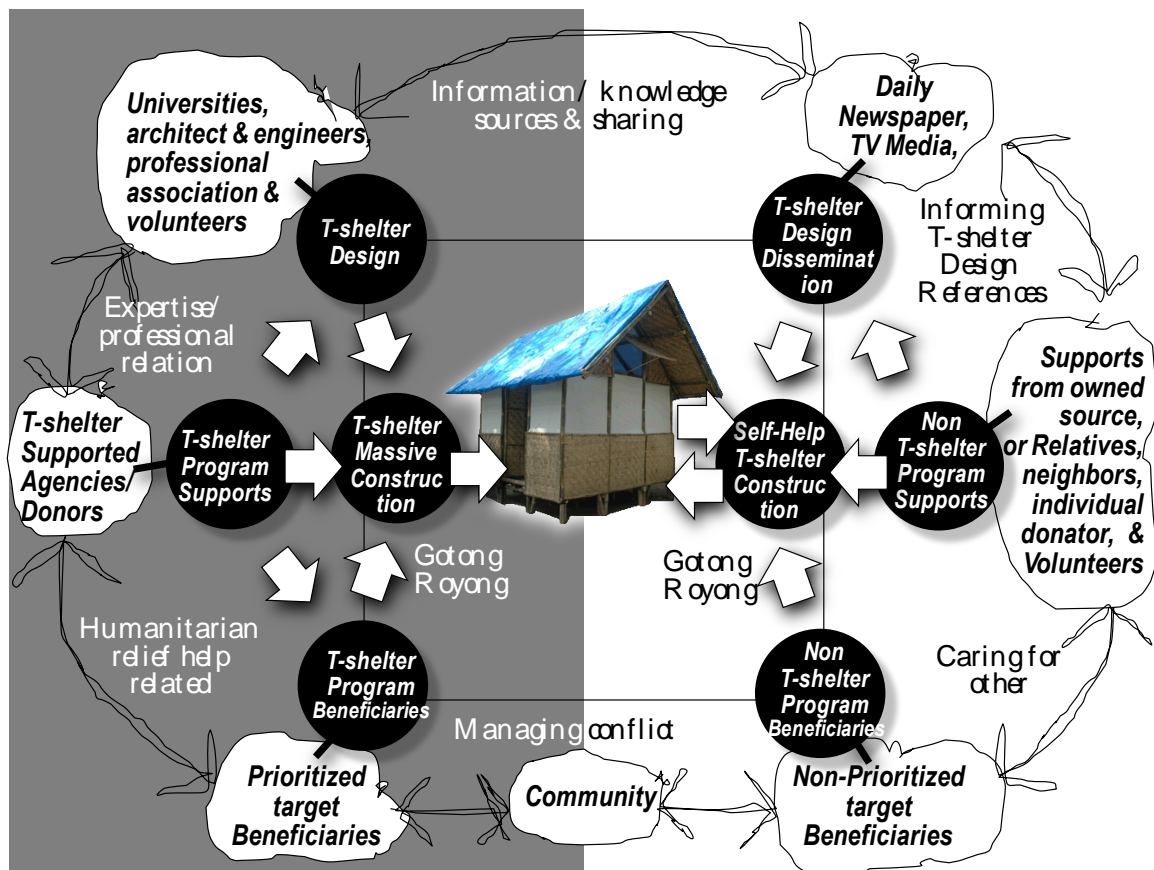
Figure 3: The Commonality of interest to provide T-shelters

Other challenges for architect to play a significant role at Disaster related activities, is to understand that all Disaster Management Cycles is usually end up at "Rehabilitation Stage." The post disaster management and policy, is often neglected the important stage following up the rehabilitation one, that is, "Disaster preparedness or Disaster Risk Reduction (DRR)" Stage. The lack of references and practices within the community and lack of supports (government, donors, etc.), is main issues why the such demand is not well developed. The DRR stage can be one of challenge for architects to share their capacity helping community to anticipate the disaster in the future.

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Searching for Tradition in Post-Disaster Architecture in Nias

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ABSTRACT

The paper explores the role of traditional vernacular architecture as objects of cultural heritage and living spaces in the context of post-disaster reconstruction. It will draw on data collected during recent empirical fieldwork on the island of Nias in western Sumatra where, in 2005, a strong earthquake caused thousands of victims and severe destruction. In the research project, which started in early 2011, an interdisciplinary team of architects and anthropologists investigates the processes and results of rehabilitation and reconstruction of the built environment in various settlements that have been affected to different degrees by the disasters and rebuilding activities.

Although our paper mainly focuses on Nias, we will attempt to compare some of the preliminary research results with the situation in Yogyakarta where post-earthquake reconstruction activities started in 2006. In both regions, the traditional architecture generally proved to be more earthquake-resistant than the, often more fragile, so-called "modern" constructions. Although this recognition has not resulted in a "boom" in traditional technology and style, it has had an impact on the popular image of traditional architecture and on its re-appraisal by local authorities and residents. In Nias, as well as in Yogyakarta, the houses built in traditional vernacular style have continued to be visible testimonies of local cultural heritage and objects of local pride but a growing number of residents live in modern-style houses, often built of brick and concrete.

In this paper, we will compare different types of old and new houses and explore continuities and ruptures in building and living styles.

Keywords: traditional architecture, post-disaster development, cultural heritage, Nias

1. Introduction

Indonesia is a country known for its cultural diversity … Bhinneka Tunggal Ika (Unity in Diversity) … and its diverse architectural traditions. But Indonesia is also located in the "Ring of Fire" and therefore affected by frequent earthquakes and volcanic eruptions. Over the centuries, the people therefore have adapted their building technologies and styles to the specific local environmental conditions and developed unique forms.

All over the country, the local people and cultures have not been completely isolated but maintained contact and exchange with neighbours and even people in far away regions or countries. Hence, their cultures, and architecture as part of these cultures, have been influenced and inspired from outside. With the Dutch colonial administration, centralised regulations affected also the building and usage of private houses, and changes/adaptations to already existing buildings had to be made. Furthermore, European building styles were introduced and adopted by the local elites and, over time, also by a developing local middle class. Many of these influences have become localised over the years, integrated into the vernacular architecture and they have become part of the respective local building traditions in such a way that today they are difficult to be distinguished from the older local traditions. One such example that can be detected throughout the archipelago is the custom to separate the kitchen from the main house by erecting separate walls and a roof, often of lighter materials like bamboo, and attaching them to the rear part of the house.

In more recent times, since the end of colonialism after World War II, Indonesia has become part of a globalised economy and been exposed to influences from all over the world. Beside these influences, which are partly spread through mass communication media, the Indonesian government has considerably influenced the construction of individual houses. In this, it has continued somehow the role of the colonial administration in executing control and authority. The local and provincial authorities went even further than the Dutch at their time, and not only "advised" the local people in the adaptation of their houses, but in many areas they encouraged the local people to abandon their old houses and traditional architecture and move into new houses according to a standardised model developed by a central government agency.

While such developments and changes have continuously taken place, they are particularly remarkable at times of disruption, which, for instance, can be provoked by a natural disaster. With a large number of houses being damaged or demolished, government and non-government organisations step in and offer help, shelter and sometimes even new houses. In most cases, they refrain from rebuilding or even repairing the old houses but rather spend their time and money in the

construction of new buildings. Neither the beneficiaries' actual needs nor local building traditions are given special consideration, and this despite the fact that the traditional architectures often were better adapted to the climate and local environment and showed a greater resistance against earthquakes. In the end, it is often rather the people being affected by the disaster that have to accommodate their lives to the new situations and often to the changed housing conditions. Alternatively, they may also adapt the newly erected buildings to their personal needs by improving certain elements, and attaching others.

Such contexts of post-disaster reconstruction and local responses are investigated in ASSIP (Architecture, Space and Society in Post-disaster Built Environments), an interdisciplinary project started in 2011. A central issue of investigation is the status of traditional vernacular architecture in selected regions, its significance for the local population and people's efforts to preserve and maintain these traditions.

In this paper, we will first give a description and evaluation of houses largely based on data collected during fieldwork in July 2011 within the ASSIP project, but also incorporating data from previous field trips as well as other archival and published material. Subsequently, we will offer a preliminary interpretation of the description of houses presented in the previous chapter from an anthropological perspective. In doing this, we will be guided by information collected during previous phases of fieldwork in Nias in 2011 in which we carried out interviews with a various people, such as house owners, residents, village heads and representatives of different organisations.

As the research is still a work-in-progress, we are not able yet to provide coherent results in analysis and interpretation but only preliminary data. Instead of giving definite answers to our initial questions, these data have rather opened more questions, which will be dealt with in the next fieldwork phase that will start in mid-July 2012.

2. Methodology

The interdisciplinary research project ASSIP is based on a multi-layered approach to study the medium-term effects of post-disaster reconstruction on Nias society with a focus on the built environment. A team of researchers from the disciplines of social and cultural anthropology, geodesy, architecture and urban planning is collecting and analysing quantitative and qualitative data about traditional, modern and post disaster architecture. The focus is laid on traditional vernacular architecture with questions that deal with the significance of this kind of built environment in the contemporary life. We investigate the efforts of the local population to preserve and maintain building traditions and look at alternatives in building and lifestyle that have been adopted out of need or desire.

Hence, a wide range of methods is used in the gathering, processing and evaluation of data. The material is organised and visualised in an adapted GIS (Geographic Information System). For the building survey conventional techniques, like measure with laser distant meters and measuring tapes are applied in order to create drawings in an accuracy that is appropriate for a comparative analysis. There are two main topics to be analysed. One is the investigation of constructive details done in a larger scale and the second is the analysis of the use of space within and outside the buildings in a smaller scale. For the second topic already available GIS data (mainly in the vicinity of Yogyakarta), maps and satellite pictures are used as source material for adding of new building and the analysis of the development.

The social anthropologists' main task is communicating with the local population. Questionnaires, structured and narrative interviews as well as open conversations are the primary methods to learn about and understand the usage of the buildings, their positions in the settlement context as well as their value and meanings for the owners, residents and other villagers. Further information is collected through participant observation.

As case studies, we have chosen two regions in Indonesia that were affected by severe earthquakes in 2005 and 2006, respectively: the island of Nias in West Sumatra and the special region of Yogyakarta in Central Java, with two key field sites in each region. The choice of the research areas in Nias, one in the north (the villages of Tumöri and Dahana Tabaloho) and the other in the south (the villages of Hiliamaetaniha and Sondregeasi) of the island, were influenced by the remarkable cultural and architectural differences between both regions. In Yogyakarta, we have selected two villages in the Kabupaten Bantul: Bangunjiwo in the Kecamatan Kasihan and Wukirsari in the Kecamatan Imogiri.

In all of these research sites, we have distinguished three different categories of buildings that are being investigated in detail: "traditional" houses and "modern" houses, both built by the owners or their predecessors themselves and being located in the main parts of the old villages; as a third category, we have included sets of houses erected by a government organisation and financed by international donors in the process of post-disaster reconstruction. Starting with the situation in Nias, we also defined three different kind of settlement structures within the frame of the study. Parts of villages with a significant majority of traditional houses (South Nias), or located on the site of traditional village with existing traditional building structures we defined as "traditional villages". Settlements with a significant majority of buildings that have been erected by the owners or their predecessors themselves are defined as "grown settlement structures" and finally settlements, or part of settlements, which consists mainly of buildings erected by help organisations after the natural disasters are defined as "planned". Whereas these definitions can be mostly applied to a complete village as an administrative unit, in the vicinity of Yogyakarta these entities have to be defined carefully. The comparison within and between the various settlements and regions is a main task in the evaluation processes.

In this paper, the main focus will be on the region of Nias and, there, on the two first mentioned

categories, namely the traditional and modern houses, which can often be found side by side in the village core areas. We will thus present and compare the main characteristics of the two building styles, as well as their advantages and disadvantages from different perspectives: the expert's and the local perspective. As vernacular architecture is the most prominent element of cultural heritage in Nias (like in many other areas worldwide), we will further ask how this has influenced the various stakeholders in the reconstruction process.

3. Vernacular Architecture and Modern Houses in Nias

The island of Nias, at the western brim of Indonesia, 125 km off the west coast of Sumatra in the Indian Ocean, is situated in the highest seismic risk zone in Indonesia where earthquakes occur regularly and frequently (Sieh, 2007). It is the largest of a group of 131 islands covering an area of approx. 5.000 km2 with a population of approx. 757.000 (Census 2010). Despite of it's small size the island is very rich in a unique and diverse architectural heritage that manifests in three distinct styles. Whereas the oval houses in the north and the rectangular houses in the south are easily to identify, the middle (or central) Nias houses look like a mixture of both types. Perhaps they even represent the original building type of Nias. As the history of the development of the architecture in Nias has not fully investigated yet, these questions are still open and further research is needed (Viaro & Ziegler 2006).

The unique architectural tradition and distinct building typologies in Nias, as well as their earthquake resistance, have been the focus of various us research projects (Gruber, 2009; Gruber & Herbig, 2009; Hämmerle & Lehner 2010; Viaro 2008;). These studies have provided the base for later research and analyses of changes that have occurred in the earthquake-affected region since 2005. The summary given in this chapter will describe the building typologies of North and South Nias. Special references will be made to the locations of the case studies chosen for investigation within the ASSIP project.

3.1 Traditional Village Structures

Traditional villages in South Nias are laid out in two rows of houses densely built together and facing each other. The long linear space between these rows is paved with stones and subdivided into areas used for different semi-private, semi-public and public functions. The overhanging roof offers space underneath for walking and resting in front of the houses while being protected from rain and sunshine. There, people also perform domestic tasks and gather with neighbours, relatives and friends. From this semi-private space, a roofed entrance platform, which in most cases is shared by te two neighbouring house units provides access to these houses. In front of this transition path between the house and the public area, a drainage channel marks the border to the so-called "wall of stones" (*öli batu*). This zone is reserved for the megaliths which indicate the rank of the house owners, the feasts of merit he has performed and the social hierarchy within the village.

The space between the *öli batu* and the public walkway in the middle belongs to the respective house and has to be maintained by the owner. It can be used for drying agricultural products or laundry. In the case of the catastrophe, which caused heavy damage to the houses, the space is used for temporary shelters. The only real public space is the narrow walkway in the middle of the open space. On the high number of stones, but also on its size, one can easily recognise the chief's house mostly called *omo sebua* or big house. It can be situated in the centre of the village but also at a prominent place within the village. Close to the *omo sebua* a separate open structure, the *balai desa* is designated for village gatherings. This, of course, means that the lines of houses often do not run parallel to each other, but instead converge at the ends of the village while going further apart in the middle and thus forming a larger space in its centre around the gathering hall. There are also some villages that have a T-shaped or cross-shaped ground plan because a second "road" in the middle of the village runs perpendicular to the "main street". Because southern villages are mostly situated on hilltops, the inhabited area can only be accessed by comparably steep stone stairways. These clearly define the beginning and the end of each village core. Along the road or path leading up to these stairs old graves can often be found as indicators of a nearby village.

Source: Herbig, 2011
Figure 1: Main road in the village of Hiliamaetaniha, South Nias

In contrast, the traditional villages of North Nias consisted of scattered oval houses in a loose structure. In former times, they were fortified with walls of bamboo and earth and by thorny bushes. At the main entrance, protective stone figures welcomed visitors. In the centre of the village, a model

house protected the decorated coffin of the deceased chief (Von Rosenberg 1878). Compared to the villages in the south, the settlements in the north were small and had no special meeting houses. People gathered in the main square of the village or in the chief's house. Graves were located within the village compound. And as a final contrasting detail to the South Nias villages, some houses were even erected outside the village defence lines. Various authors remarked that headhunting did not take place in the north, which made it possible for people to live outside the protection of the village (Viaro & Ziegler 2012).

3.2 Characteristics of the traditional house construction

As in many parts of Indonesia, the houses on Nias are erected in three distinct parts reflecting the three-parted cosmic order influenced by the Indian mythology. Like in the most prominent Buddhist cult building of the Indonesian Archipelago, the Borobudur, the connotation of the three basic cosmic spheres is manifested in residential houses. Underworld, earthly world and supernatural world are implemented in symbolic, functional and physical design of the structure. The roof area on the top, being the supreme and highest zone, is mainly non-functional and its symbolism indicates its dedication to the gods, as well as being the place of the ancestors. The middle zone is symbolising the earthly world and is the human living space. Finally the substructure symbolises the lower world associated with "animalistic desire". Therefore, this area was used as stables, as storage areas or for waste (Hämmerle & Lehner 2010:8). This constructive part shows especially well the elaborate adaptation of the building technology of Nias to the high number of earthquakes in the region. Most notable in the substructure of the Nias houses is the use of diagonal struts and piles, which is unique for Indonesia. In North Nias, a sophisticated system of transverse and vertical pillars additionally supported with stones provides a stable but also flexible base for the house in the case of movement (Gruber 2009, 2010). In the south, struts in the front part of the substructure forming a large "V" are one of the hallmarks of the architecture. Like in the north, they stabilise the building in case of lateral movements. In both regions the construction of the middle zone is not as elaborated. Wooden walls are framed by relatively simple skeletal elements to form a stiffened box with louvered openings to the street. As the walls to the street are slanted, the inhabitants can overview the activities on the street and can be seen from outside. If more privacy is desired, people can step back into the room. The connection between inside and outside the buildings is important in an area that is often hit by strong rain. On top of the building, the steeply pitched roofs are the final notable feature of the Nias houses. In former times, they were all covered with palm leaves. A part of it can be opened as a flap supporting the natural ventilation system. The roof construction consists of a complex system made of wood strutting creating a big open space on top of the building. In combination with the large openings in the wall the interior space of a palm leave covered Nias house was a place perfectly adapted to the climate and earthquakes. All constructive elements of the house were joined with plug connections, which could be repaired if needed. Houses, which have been maintained properly, could withstand even the strong earthquake in March 2005.

3.3 Use of space inside the traditional house

In the north, the oval houses are entered from the small side of the oval shape via a ladder, which is mostly replaced by a roofed staircase today. The entrance leads to the largest room of the building with a bench underneath the opening alongside the wall. This is the room where guests are hosted and it is situated next to the private rooms of the house owners. On the back of the big room which used to be the hearth before the fireplace, an extension of the building had to be erected because of a verdict under the Dutch colonial administration. Next to the big, central and more publicly used living space there are several smaller rooms for private use on both sides. This is significantly different to the use of interior space in central and south Nias. Here the publicly used room is definitely located in the front part of the house onto the street and the private part is located in the back of the house. One enters the house from an entrance platform often shared by two houses. As the substructure of the chief's house is significantly larger than that of other houses, it can be entered from there. Visitors cross the impressive v-shaped pillars of the façade and have to climb over a steep ladder to public room of the house. This room for gathering in the house and hosting guests was also the sleeping place of the young men to protect the rest of the family who rested in the private rooms of the house. There is evidence that the hearth of the chief's house was situated in the wall between the private and the public part, but the original location of the fireplace in the common houss is not all that clear yet.
However, what is evident in all regions of Nias is that a fundamental change of traditional building typology already started during colonial times and under the influence of colonial laws.

3.4 Changes in the villages

As described above, the use of space in the traditional villages in Nias was clearly defined and the structure of the settlements followed those rules. Around In South Nias, houses in traditional style predominate in the village centre, and only some of them have been replaced by more contemporary structures. Towards the outer parts of the village, we find an increasing of houses built in a modern style. Most of them are still built in wood and follow to some extent the vernacular structural model. In the more recently built extensions, a break in the vernacular village structure can be observed. The formerly small transition path is replaced by a wider road or path. As most of the villages are entered via a steep staircase, the space between the house rows is still not used for car traffic. Outside the

former village gates, the villages are expanding along a wider road, in most cases used by cars and motorbikes, replacing the former small transition path in the middle. Other features like the semi-public part in front of the house and that one behind the *öli batu* are getting smaller or vanish completely. Their function also changes in some cases as they are used for parking cars or scooters instead of for drying clothes and fruits.

Source: Petra Gruber, 2011
Figure 2: Main road in the village of Sondregeasi, South Nias

Most significant for the changes in the traditional settlements in North Nias is the increasing density due to the number of houses built between the existing ones. Like in the south, old houses have been extended. Here, the annex buildings are very eye catching. Whereas the extensions of the houses in the south are in the back, not noticeable from the road, the enlargements of the oval houses change the shape of the building substantial. The former scattered settlement layout transforms into a kind of ribbon village which grows far beyond the old village borders. Most of the distinct features, like the earth walls or other fortification elements or the model house as decoration of the grave of the chief, have vanished. Megaliths can still be found in front of the houses accompanied by flowerpots or other decorative elements.

Besides the changes to modernity, we can observe that some traditional elements of the villages are rebuilt and lead to the assumption that they are important for the village community. In Hiliamaetaniha, a new *omo sebua* was erected in the centre of the village besides a new meeting house.

In the newly planned villages, traditional rules and structures are not followed any more and the communal life has to adapt to the new structures.

With the transformation of the villages, many features for the social life in the community were altered and the analysis of the impact of these changes will be carried out in detail and in close cooperation with the cultural anthropologists.

3.5   Adaptation of traditional houses

Transition of the traditional houses in Nias started with the erection of annex buildings to host the kitchens. As additions to the shape of the oval house is a complex task, the building parts appear like a new building, whereas in the south there are just extensions of the rectangular ground plan. In some cases, the annex constructions cover the same or even more surface than the original house. Bathrooms, storage places and stables can be situated in this part of the building. The change of the material for the roof coverage is very significant. As the maintenance of the sago palm roofs is expensive, more and more roofs are covered with tin. Much of the former pleasant climate in the house is lost due to this development.
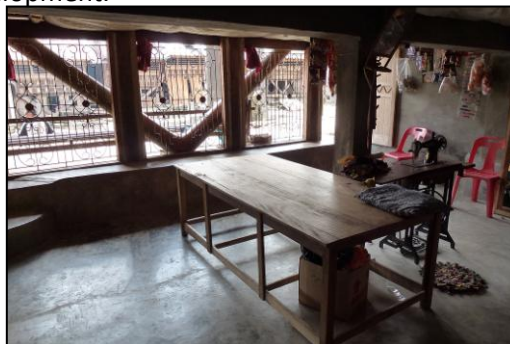
Source: Ulrike Herbig, 2011
Figure 3: New space in the substructure of a traditional house in Hiliamaetaniha

A very significant and controversial adaptation of the south Nias houses is done in the substructure. Pillars have to be removed, walls at the side is now supporting the structure and in some cases for the right height some earth has to be removed to create more space. This area is used for shops, work but also for living. The influence on the static of the structure has yet to be investigated in detail. The typical appearance of the traditional building is changing especially when the V-shape struts are cut out to provide a better place for access. Considering that the substructure meant to be the mirror of the underworld in former times, an interesting question is how this development has influenced the mythological symbolism and belief system and vice versa.

3.6   New houses

Nearly all modern houses in Nias are built in concrete because of the scarcity of wood as building material. Older houses built in wood sometimes show characteristics of the traditional structures but do not include all of the elaborate features. But we can also find houses with simpler structures called "Malaysian style houses" by some villagers. A detailed analysis of the differences in modern wooden houses will be part of the fieldwork in summer 2012.

Source: Ulrike Herbig, 2011
Figure 4: Modern wooden building in North Nias, Tumoeri

Concrete buildings can be also divided into those which have been built by the owners or their predecessors, and those which have been erected by aid organisations during the reconstruction process. The earlier concrete buildings show a lack of quality as there are not so many experienced masons for the correct use of steel enforcements or the careful preparation of concrete. Often the structure was weakened by using salty sand. In the reconstruction process, quality control for the building was tried to be improved. Still, the climate within the buildings is nowhere as comfortable as that in a traditional palm leaf covered houses. Whereas the style of the houses was changing with the modern structures, different kind of functions within and outside the buildings seemed to be remaining. So far the building analysis is going on and uncovered a number of questions which still have to be answered.

4.   The 'Traditional' and the 'Modern' – Matters of Choice and Need

As the strong earthquake in 2005 showed, earthquake resistance was an outstanding quality of traditional houses in Nias. This was proven not least by the fact that there were no casualties in traditional-style houses. Only houses that lacked maintenance over many years were badly damaged. Despite this situation, donors and aid organisations were not interested in the repair of the traditional houses but preferred to spend the money and energy on the erection of new buildings (Gruber & Herbig, 2006). Many private owners of traditional houses could not afford to pay the expensive repair works, with the effect that these buildings either had to be removed, especially in cases of severe damage, or the works were postponed until a sponsor would be found. Even six years after the earthquake, we therefore could see many traditional houses in a rather poor condition and in need of rehabilitation.

The new houses erected after the earthquake by the owners themselves or by a NGO (e.g. LPAM) do not differ much from other modern pre-disaster constructions. No special precautions have been made regarding their earthquake resistance – despite the fact that many of their predecessors had collapsed or been severely damaged in 2005. These buildings can be seen in continuity with developments that started already several decades ago. Although there is a tendency among the self-built houses to maintain the floor plan of the traditional house type, at least in its basic form, it is no general rule and variations are possible. The houses erected by the government (BRR) or their subcontractors showed greater differences: they followed a standard floor plan (2-3 different models), had three very small rooms, an equally small bathroom, but no kitchen attached. No semi-public space was provided in front of the houses as it is the norm in traditional villages and can still be seen in a smaller version in that part of the village where self-built houses constitute the majority. The general consensus in the interviews conducted with residents was that the BRR houses were of a much lower quality, also in construction, than all other types of houses. In fact, in 2011 we could already see serious damage on many of the BRR houses.

For reasons of comparability, we have focused in this paper on traditional and modern self-built houses. In both cases, and contrary to the BRR houses, the decisions regarding the construction or repair of the buildings were generally made by the owners themselves. Despite the undeniable superior qualities of traditional houses regarding earthquake resistance and climate suitability, of which the local people are very much aware, modern houses have become increasingly popular during the last few decades. This might be surprising and even seem irrational at first glance, but there are a number of reasons for such a choice:

- Modern houses are built of cement, with some parts of bricks or wood, whereas traditional houses are almost entirely built of expensive imported timber.
- Modern houses can be built within a shorter period of time by any skilled mason and few workers whereas more workers and specific local knowledge are required for traditional house-building.

- The erection of a modern house does not require the organisation of conspicuous feasts as it is the case in traditional house-building which means an extra financial and time-consuming burden.
- The size and shape of a modern house can be adapted more easily to the site on which it should be erected, whereas a traditional house has to follow a strict model. In South Nias where the traditional houses are built so close to each other that they form a line alongside the road, a new house usually has to fit into an empty space between two already existing buildings.
- With its 'proper' windows and separate smaller rooms as well as a range of other features, the modern house-type meets better the criteria of a 'healthy house' (rumah sehat) stipulated by the Indonesian government (Keman, 2005).
- Modern houses offer more privacy to the residents – privacy within the family and village. While traditional houses generally consist of two large rooms and, occasionally, one tiny bedroom which has been squeezed in between two walls, these modern houses can easily be divided in as many rooms as desired. Especially couples, old people and young girls enjoy that comfort. The doors and window shutters, both directed to the road, give the residents the freedom to choose individually what and how much of their personal life to disclose to the public.

Modern houses can be erected faster, cheaper, with less social investment, and at any location. No lengthy processes of negotiation with potential house owners and subsequent building coordination are needed. Hence, not only aid and development organisations involved in reconstruction work, but local residents too, have often chosen this easier and simpler option.

However, it would be wrong to assume that traditional houses have not received any attention and support. With the temporal distance and the most urgent needs having been fulfilled already, discussions about the value and protection of traditional houses are probably more active today than they were soon after the earthquake. The Heritage Museum (Museum Pusaka) in Gunung Sitoli, for instance, has supported individual families in their efforts to repair the damages done to their houses. It further financed new roofs of red or blue metal tiles of a large number of traditional houses in the village of Hiliamaetaniha. This roof type is seen as a viable alternative to the corrugated iron roof and the thatched roof. The Museum works also in cooperation with the Nias Islands Rural Access and Capacity Building Project (Nias-RACBP) implemented by ILO in 2009, which includes the rehabilitation of 80 traditional houses and three megalithic sites on the island (ILO, 2011).

Donors and NGOs, like the North Sumatra Heritage Association, who are interested in the preservation of built cultural heritage, have especially targeted 'public' buildings, like the omo sebua, the traditional chief's houses, and the *balai desa*, the village meeting houses in South Nias. However, the rehabilitation and maintenance of the monumental *omo sebua* is labour and cost intensive, and the future of the few remaining buildings in South Nias is uncertain. The promotion and development of cultural tourism has been identified as a possible solution by local authorities and individuals. The village of Bawömataluo, which is particularly famous for its exceptionally large and impressive *omo sebua*, is a candidate for the UNESCO World Heritage List and a major tourist attraction in South Nias, beside the surf beach of Sorake/Lagundi (cf AlSayyad, 2001). Visitors come for a few minutes or a couple of hours at the most to admire the traditional architecture and, for a small fee, they can visit the *omo sebua* from inside. The individual tourist, however, hardly leaves any money in the village. From an economical perspective, organised tourist groups are more rewarding because they are more likely to pay for the performance of traditional songs and dances and the famous stone jumping, which in the past was part of young men's initiation ritual. However, it is the built vernacular heritage that seems to have the greatest potential in attracting visitors. This has had an impact on local perceptions and valuation of their own cultural traditions and architecture. The plan to replace all metal roofs in the village with thatched roof made of sago palm leafs, can be seen as an economical strategy of a village head (*kepala desa*) who dreams of fame and prosperity for himself and his home community with the help of UNESCO. While this may in fact attract more tourists, it is rather unlikely that they will arrive in large numbers and substantially contribute to the villagers' (and not even the *kepala desa's*) wealth. We may further speculate that the village head had been influenced in his decision by two additional factors: firstly, to preserve the important and most visible element of his cultural heritage, and secondly to re-create a comfortable room climate in the houses.

Houses are not only the largest and most conspicuous but often also the most valuable objects that the local people may possess. Many traditional-style houses were built by previous generations. In most cases, the exact date is unknown but they are generally considered as 'old' by the local people and as linked to their traditional cultures. Testimonies are the carved wooden sculptures and other forms of 'decoration' of ancestral/mythical/religious significance attached either to outer or inner parts of the houses. These objects have become especially valuable for those interested in cultural traditions because much of traditional material culture in Nias has disappeared during intensive Protestant proselyisation, colonialism and other outside influence since the 19th century. The houses are the most prominent signs of the unique traditional cultures of the *Ono Niha*, the people of Nias, and, therefore, valuable assets on the tourist market. As many traditional houses have been family property over more than one generation, they are also testimonies of individual genealogy and family heritage as well as of the owners' social and cultural belonging.

Traditional, like modern, houses indicate and reflect a person's social and economical background and status. We have already mentioned the *omo sebua* in South Nias which were the biggest and most impressive buildings in the village. They belonged to the local chiefs and their families who were members of the aristocracy and of which only few have survived. Attempts of revitalising the *omo sebua* have been made by donors as well as by local people themselves. Tourism is only one incentive

for this, another one is prestige. To own a chief's house and to live in it too, may be costly, sometimes uncomfortable and certainly not always easy; but it definitely is prestigious and guarantees the owner and resident a status of authority and respect within the community. During the time of our research last year, we could witness that a completely new *omo sebua* was being built for a member of the aristocratic *si'ulu* class in one of the villages where the old one had been demolished many years ago. Although most of the building costs were assumed by a donor, the future owner Eduardo F. still had to bear a heavy financial burden due to the successive feasts to be sponsored and other forms of additional remuneration to be paid to the workers and other village people. It was a big investment for Eduardo F. but obviously worth the sacrifice. Once he will overlook the village from his brand-new *omo sebua*, the only one in the village H., his authority among the village aristocracy will no longer be questioned. Even in the traditionally more egalitarian society in North Nias, houses are markers of social differentiation. The traditional oval-shaped houses have become attractive possessions and prestigious objects for those who can afford them. A striking example is the newly built house in traditional style on a hill that supersedes the main road a few kilometres south of the capital Gunung Sitoli. It belongs to a wealthy man and, for local standard, it is luxuriously furnished. However, its practical functions are limited because the family actually lives in the modern house situated behind the traditional one and, therefore, invisible from the road. In this case, the traditional house has mainly a representational role to play; to show that the owner can not only afford such a big house but also that he is a true *Ono Niha* of local descent who belongs to the place.

Given the housing development over the past few years, single traditional-style houses standing by themselves or being attached to a modern construction have become a common sight in North Nias. They can be erected anywhere, in the middle of a densely populated settlement or at the outskirts, in a village or in the suburbs of a major town, next to other traditional or modern houses or in isolation. In South Nias, on the contrary, traditional houses are bound to so-called 'traditional villages' where traditional and modern houses, often interchangeably, are lined up in a row as if they were supporting each other – and they probably do so when they are shaken by an earthquake. The only free-standing traditional houses we find are some *omo sebua* that were erected at the far end of the village which allowed the chief to guard and control his settlement and community. To live in a traditional house in South Nias, therefore, means to live in a traditional village where, even in the present day, social and cultural norms are more strictly defined, regulated and observed than in the more open new settlements where there seems to be more space not only for housing but also for individualistic decisions and lifestyles.

If someone lives in a traditional or modern house, in a traditional or modern village or in an urban environment, is sometimes a free decision, but more often the result of a complex web of circumstances and incidents. In the above chapters, we have outlined and discussed the major advantages and disadvantages of both types of houses. It might be misleading, however, to establish a dichotomous model and speak of two categories only because many houses contain a mixture of different features that have been borrowed from different traditions and styles. 'Modern' houses in South Nias, for instance, are often built in accordance with the traditional floor plan, layout and furnishing of the back rooms. The most radical change towards 'modernism' in traditional houses is the closing of the substructure with concrete walls. In those cases, the ground floor has become the centre of sociability and prestige with the entrance and the guest room in the front area. If the owner can afford it, the floor is paved with tiles and the furniture is similar to that in modern houses. The upper floor is then used as additional bedrooms, for special occasions or for overnight guests. This newly added construction provides additional living space and, therefore, more privacy to each individual. In cases of small households, the upper floor may hardly be used anymore. The preference for the ground floor can be convincingly explained by the much lower, and therefore more pleasant, room temperature on the ground in comparison with the hot air under the metal roof. However, there is a price to pay for gaining more comfort and this is the reduction in earthquake resistance. When adapting the substructure as a living space, the thick poles in the middle, which additionally support the upper floor, have to be removed. By doing this, the structure as a whole becomes weaker. Furthermore, the concrete walls are usually not built in such a professional way that they could compensate the loss of flexibility and support. Hence, by modernising the traditional houses in South Nias, which means by equipping them with more durable metal roofs and expanding the living areas, the outstanding characteristics and main advantages of those houses, namely the cool atmosphere and the earthquake resistance, have largely disappeared. These houses are no longer perfectly adapted to the geographical conditions, the hot and humid climate and the strong seismic activities in the region.

5. Conclusion

Traditional houses are testimonies of the unique cultural heritage of the *Ono Niha*, and they are eye-catching markers in the cultural landscape. Besides such a general identification, many local people also identify with specific individual houses that belong to their fathers or grandfathers or which they have inherited already. They are markers of origin – even for people who do not live in these houses anymore (see Weichart & Herbig & Zámolyi, 2012).

In the past, the traditional wooden houses met the criteria of sustainability in building: local materials; construction techniques that allowed flexibility and earthquake resistance; a raised floor, high roof and good ventilation adapted them perfectly to the hot and extremely humid climate and kept vermin out. The domestic animals, especially pigs, that lived underneath the house ate the kitchen waste and kept the place clean. The box-like structures built on piles with doors between neighbouring houses met the social needs – offering support from kin and protection from enemies.

However, things and situations have changed over time. Local resources, like timber, palm leaves, as well as craftsmanship and labour, have become scarce and expensive. While the construction of a traditional-style house was a standard practice until a generation ago, only wealthy people can take on such a project these days. Many villagers cannot even afford to repair their damaged houses, let alone build a new one. Hence, these buildings, which once were necessary objects of daily life have been turned into 'luxury' items reserved for the economic elite.

Many of the surviving traditional houses have undergone changes and adaptations in material and construction, often for economic reasons, but also to suit individual needs. With metal roofs creating an uncomfortably hot climate in the once cool and airy house, a growing number of people has moved down to the substructure which once had been reserved for animals. By closing that area and removing supporting poles, the houses have become less earthquake resistant. Hence, the 'new traditional' houses have lost their main advantages: the adaptation to the particular geographic conditions, the hot and humid climate and the frequent earthquakes. This leads to the question why the local population should or would continue maintaining and living in their traditional-style houses. The majority of people have already moved into modern-style buildings which, too, are mostly not suitable for the area, but at least it is easier and often cheaper to build them and they offer more privacy to each individual.

In their efforts and projects to rehabilitate, maintain, or even build new traditional houses, organisations as well as individual owners, in the south as well as in the north of the island, emphasise the value of the buildings as representations of their distinct cultural heritage. The international attention that Nias and its traditional architecture have received in the reconstruction phase has had an effect on local understanding and recognition of its singularity and value. This has been reflected in large-scale plans for tourism development, but also in small individual initiatives. While traditional houses seem to have lost some, or much(?), of its attraction as a living space, they have increasingly become valuable as objects of prestige and individual as well as collective memory and heritage.

Acknowledgement

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HISTORICAL & HERITAGE
CONTEXTS

ICIAP
Better Space Better Living
1st Biennale International Conference on Indonesian Architecture and Planning

School of Architecture, Bandung Institute of Technology (ITB) Period 1920–2010

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ABSTRACT

Architectural education in the ITB is a pioneer of modern architecture education in Indonesia, which basically has been started before the opening of "*Bouwkundige Afdeeling*" at *Fakultat Teknik Universitet Indonesia* in 1950.

System of architectural education at the ITB has been amended several times. First of all embracing system of education in countries such as Holland, this lasted until World War II. When Dutch teachers return to their country, then the teacher vacancy occurs. After that American and several European teachers have arrived in Indonesia through the "*Kentucky program*" the education system was changed to American.

Likewise the architecture education organization itself has undergone several reforms, which are usually followed by changes in the educational curriculum.

ITB is one of the campus is unique; because the college environment itself describes the development history can be seen from the layout and architecture of the building.

As in the tradition of historical study, this paper can be expected to trail that tracked and taken away as a lesson.

Keywords: ITB, architectural, education, change, development

1. Architecture education in beginning time at TH te Bandoeng

Around the year 1918 the *Royal Insituut voor Hooger Technisch Onderwijs* in *Nederlandsch-Indie* (Kingdom institute for higher technical education in the Dutch East Indies) have managed to collect funds that are considered sufficient to start a *Weg-en Waterbouwkunde* majors at a *Technische Hoogeschool* (TH), while the same year was elected an architect named Henri Maclaine Pont to design buildings that will be employed the time in the future -the city of Bandung was chosen as the place of establishment TH campus.
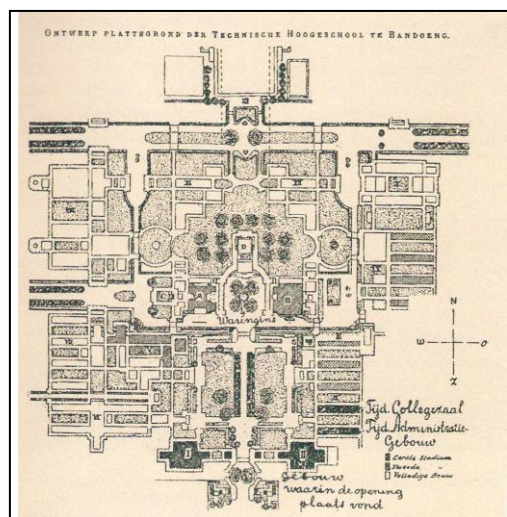
Source: (Leerdam, 1995)
Figure 1: Plan of Technische Hoogeschool te Bandoeng

Soon after the founding of TH appointed Ir. R.L.A. Schoemaker, to hold architecture and the building materials science. However, because he's in sabbatical period at Netherlands, so Ir. CP Schoemaker (brother of the R.L.A. Schoemaker) is also an architect willing to start college. Since then the knowledge of architecture has been formally taught as a course introduction in TH. Furthermore Ir. R.L.A. Schoemaker and Ir. C.P. Schoemaker teaching; architectural drawing, architectural history, urban planning, technical drawing and estimated costs and Sukarno (the first president of the Republic of Indonesia) is one of his students even Ir. Sukarno had worked as a draftsman in the office Schoemaker: "*CP Schoemaker Associate Architecten en en Ingenieurs* "in Bandung (Kunto, 1996).

In the *Gouvernement Besluit*, June 10, 1925 there are several provisions in the ordinance *Onderwijs Hooger* including the following: higher education school is called '*hoogeschool*' which contains one *fakulteit* (Faculty). *Technische Hoogeschool te Bandoeng* (TH Bandoeng) is *Fakultat van Technische Wetenschap* with *sub section Weg-en waterbouwkunde*. And then after 15 years, on 1940-1941 there are several changes: TH Bandoeng more differentiated and specialized on techniques. No more *Bowkunst* (Architecture) which still exist *Bouwkunde* (Building Constructions), *Stadsaanleg* (Town Development/planning), Civic Design and Economy (Goenarso, 1995).

Period of the 1940's can be regarded as a period of transition in the situation is not favorable for the development of academic and research, in this period that the students and faculty members participated in the struggle to fight the country's (Indonesia) independence.

On 1 April 1944 when Indonesia occupied Japan, the Japanese military government reopen the TH with the name of the Bandung Kogyo Daigaku with three parts; *Dobukuka* (civil engineering), *Oyakagakuka* (chemical), and *Denki & Kikaika* (electrical & machinery) until the time of preparation the proclamation of Indonesia, circa 1945. Immediately after the proclamation, at the same location of the Technical High School reopened as Technical High School of Bandung (STT Bandung) who had moved to Yogyakarta in November 1945 that had closed due to invasion of the Dutch army in 1949 but reopened by holding only the Civil.

1 August 1947 *Balai Universitas Guru Gambar* was founded, with Simon Admiral, Jack Zeylemaker and Ries Mulder as founder at Universiteit van Indonesie with previous named known as Nood-Universiteit founded by dutch occupation government - NICA where college at Ganesha enter in it by the name of *Technische Faculteit* after occupied previous by Japanese army. In this interaction time between Bouwkunde and *Universitas Guru Gambar* going to be "Seksi Bangunan" where at that moment present at *Fakultet Teknik Universitas Indonesia*.

2.   The development history of the School of Architecture ITB

2.1   Development of curriculum and education structure of Architecture ITB

In 1950 a new department for science buildings or architecture majors at ITB is opened. As the newly appointed head of the department J. P Thijsse and replaced in 1951 by F. Dicke. When anti-Dutch sentiment rising in 1954, many Dutch citizens returned to his country. There is a man who can still be maintained to teach architecture in Indonesia. He was Vincent Roger van Romondt who was appointed as chairman of this part of the architecture section also as Dean of Faculty from 1956 until 1961, replacing F. Dicke and J.P. Thijjse returning to the Netherlands.

The first curriculum in architectural education is to follow the structure of the curriculum at *Bouwkundige Afdeeling* at TH Delft, with minor changes to suit the local context of Indonesia. Because it is still an education on Section Building the largest portion of the curriculum is the knowledge of building construction and materials as well as the supporting sciences.

In the mid-fifties the direction of education began to change with the arrival of teachers from Germany and America. Since then, the education system is slowly leading to American education system. Since 1960 architectural education was born outside the ITB campus, whether managed by government or private. The new department is always oriented to the system of architectural education at ITB (Atmadi, 1977). Some college education open architecture is the UGM (1962), University of Indonesia/UI (1965), ITS (1965), and Unika Parahyangan (1960), all under the auspices of the Faculty of Engineering at each Technical school.

The second curriculum (1958-1962) drawn up when the educational architecture of ITB is under

Architecture and Fine Arts Section, so the number proportion of college course is increase: 14 kind of planning and design Course; construction, materials, supporting sciences and basic sciences for 20 course and history of architecture & Arts for 17 kind, it's outside the internships program (1st, 2nd, 3rd internships) and the final works. At fifth years (5th Level), there are four major options of expertise eligible, which is planning an industrial building, a monumental planning, housing and city planning, which each consist of two to four courses.

In the decade of 1960's some ITB lecturers returning from advanced studies at the United States under "*Kentucky program*" (Roosmalen, 2005) and several alumni open architecture education in various engineer colleges. This affects the curriculum, which is a new subject in ITB such as Advanced Construction, Landscape/Gardening and the reduction of the type and number of subjects in the curriculum of architectural education in all colleges. Amount of courses at ITB is changed from 33 to 37 courses, outside of internships and the final work. Average proportion is: planning and designing the architecture 39%, structure and construction 38.5%, and 22.5% of arts and humanities. Education was five years old and content of curriculum provision to be assessed as a professional architect.

In 1973, according to Minister of National Education, the school term of five years is limited to four years. *SKS* (Semester Credit Unit) system is applied, a minimum of 144 credits in an undergraduate program. In the course curriculum engineering (steel construction, concretes, woods) is reduced only to an understanding on matters of principle that is the rule of thumb for system design of building structures, but not to the ability to calculate the structure of steel, concrete and wood that has been the domain of Civil Engineering education, art education also began to develop, apart from architectural education, so many lectures in the fine arts skills are no longer given. Grouping lecture on their subject of expertise are: design of architectures for 42.6%; structure and construction 28.1%, basic engineering and the humanities that 30.25% compared with the trend seen 60's decade, the proportion of basic engineering course and the humanities enlarged beyond the structure and construction expertise decreased to below 30% while the architectural design is relatively fixed. Under these conditions raises the question of how to keep with the relatively short study materials provided for work as an architect can be quite adequate.

In a Seminar that discuss "Architecture education in Indonesia", held on 17-18 November 1977 at the ITB in cooperation IAI (Indonesian Institute of Architects) with Department of Architecture ITB raised ideas how to bridge the world of education with a professional architect embodies the curriculum. Prof. Ir. Hasan Poerbo wrote that the development in Indonesia will require experts with the very board of knowledge spectrum and specialized skills. This can include both functional specializations in the field of construction and building process, from design to sales manager. According to his opinion, it is unlikely that formal education will be able to answer all the needs of such specialization has been and will happen in practice. It gives the possibility of two mainstreams in architectural education in an undergraduate degree. First, who based on that a scholar of architecture should be able to adjust to the needs of a diverse society, and that a scholar of architecture is essentially a planner. The profile of undergraduate architecture used as an ideal planner's "generalist" and curriculum based on the profile. Second, based on the fact that most of the architectural education graduates do not work as an architect / planner, but in the areas of planning, management, education and so on (Poerbo, 1977).

The majority of colleges choose the first stream. The curriculum is a curriculum development and adjustment prior to the addition of materials based on the circumstances. That will produce the Scholar who is a planner generalist, directed to practice as an architect after gaining sufficient experience in the field. Architectural education at ITB under the direction of Prof. Hasan Poerbo follow the second concept. This concept is then applied when drawing up the curriculum in 1983 which was then revised 1988 curriculum.

The curriculum is designed with an awareness of the need for education more relevant to the future of Indonesia. Students are introduced to various approaches in the basic design, build and manage space. Social approach putting people and communities as a core; technology approach focuses on the capability of technology, and natural approach into character and natural processes as the main factor.

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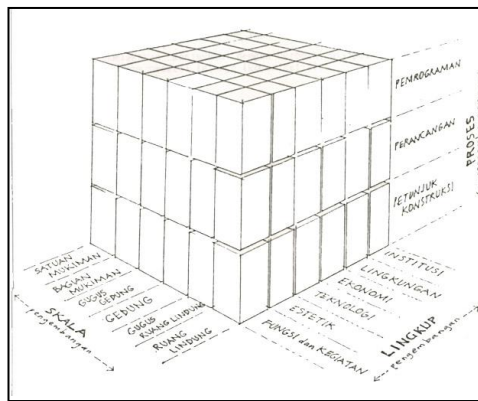
Source: (Sri Probo Soedarmo, 1985)
Figure 2: Framework of Knowledge Graduate Department of Architecture ITB

Graduates with a broad approach is expected to develop themselves as professionals in the construction industry, as a planners who arrange and formulate the model-space realization of such programming; as a designer to develop / formulate the model-space form and as a result of administrator (manager) who organize / control the process of making space (Sudarmo, 1985). To equip graduates skills, provided a variety of courses supported by the availability of human resources at the college. The number of courses that must be taken is increase from 144 credits to 160 credits and study period extended from 8 semesters to 10 semesters. Meanwhile, master program (S2), which opened since 1981 have not been fully, designed curriculum links with the degree program. But after run for five years, the evaluation results show that the architecture of ITB is too heavy/hard curriculum, only a few students who graduate on time, so need other strategies.

The thought about the need professional education curriculum in the ITB appear in 1993, which is reinforced by the publication of Decree of the Minister of Education and Culture No. 056/V/1994 on Higher Education Curriculum Guidelines. The guidelines were formally set curriculum S1 (undergraduate program) as the first stage in an academic program, a program of education with the goal of mastery of science, technology and art. Curriculum consists of 100 credits of the national curriculum subjects as the backbone of undergraduate education, which is based on the architectural design studio and shall be held every architectural education, and 44 credits of the local curriculum, is designed according to the needs of development at the local level or the local traditional culture. The ministerial decree also stipulated in the professional education program.

On 17-18 December 1995, school of architectural ITB hold an internal workshop to develop curriculum Architects Professional Education Program and curriculum integration in undergraduate (S1) and master (S2), but since there are no guidelines on its implementation, the discussion is then carried out with the UI, Trisakti, Unpar and IAI has not been able to follow up. In 1998 a new curriculum professional program are reviewed. The curriculum is based on a vision that Indonesia is a tropical island nation, with ethnic and culturally diverse educational levels, are experiencing growing inequality between Java and outside Java, and is in the process of changing from agrarian to industrial countries. The progress of science and technology, construction and industrial production processes on a global scale architecture adds to the demands of the need to produce human resources of high quality, with the adaptability and anticipation, to face many changes as a result of external factors and internal also.

To answer these challenges, organized sustainable education curriculum, leveled with a holistic and ecological approach that relies on the ability to design (design based). Education is divided into undergraduate level / stratum 1 for 8 semesters with a load of 144 credits, which are applicable; masters level / stratum 2 for 4 semesters to be exploratory with a load of 24 credits, as well as doctoral level / level 3 with a load of 36 credits during six semesters that are development.

In order to pass the stratum 1 has the ability to design appropriate interest, students may propose final work or select one of the majors offered several themes, including the form/shapes theme, building technology theme, the theme of environment and cultural themes. Degree program is designed to produce graduates with high academic ability, are able to develop them to continue to the strata of higher education or to serve the community with professional competence as an

assistant architect.

In 1999 appeared Minister Decree which establishes that the education profession out responsibilities under the Education Ministry and the Association. The head of department of Bandung, Jakarta, and IAI representatives advising inter alia that: the education of professional education is the responsibility of each association. Higher Education that the proposed program to the desired profession: curriculum, procedures for implementation, operation and protection requirements of professionalism. Higher Education will then recommend the college to carry out the professional program.

Limited forum leaders agreed that the majors later in commemoration of 50 years of architectural education in Indonesia formed the core team that will work to formulate a policy of professionalism and competence of architectural education, in three national workshops and seminars as a peak. The workshop will identify issues and discussed a new paradigm in architecture education and professionalism with unlimited participants. The results are discussed in a national seminar workshop.

Some issues in group discussions and plenary considered would affect the educational curriculum is as follows (Hanan, 2000).

- Architecture designs need to be focus and base of architectural education.
- Architecture education reorientation necessary done to remember only ± 20% that graduate is architect.
- UIA not such an intervention towards education world. Standardized quality really must be begun.
- IAI must adopt UIA so that must not quit of world outside especially in the case of certification and insurence.
- Who are competences to do educational that fill the gap between undergraduate (S1) levels with Professional competence? Association or education institutions?
- Strategy that proposed is builds agreement between industrial, education and profession association. Development in professionalism must not be accommodated educationally.

Based on these issues, ITB develop a new curriculum in 2003 which was amended in 2008 as follows:

- The fondations
  1. Design as core competence
     - Integrated studios, mastery and ability, way of thinking applications, erudition and know-how.
  2. Design activity as problem setting
     - Exploration process to determine decision, result and steps.
  3. Diverse graduate
     - The variety of student interest mediated by eligible course at study program, faculty and institution. Student pushed to take minor packet from other faculty, together with the major packet course at program studies of architecture.
- Curriculum development references
  1. Union Internationale des Architectes (UIA)/UNESCO Charter for Architectural Education (April 1996), contain ability competence, know-how and ability at sign to get professional qualification and need in practice of architecture.
  2. National Architecture Accrediting Board (NAAB), architecture education administrator institution accreditation body at America and Canada
- Curriculums of magister program
  1. Composed to face human need change challenge, nature environment condition, technology science development, art and planning.
  2. Holistic and synthesis of architecture educations.
  3. There three paradigms: life–long learning; knowledge–based learning, and student–centered learning.
- Curriculums education of prophecy program
  1. Magister program divided by two: Research program and design program. Research

program can continue to doctor program. Design Program integrated with the prophecy education curriculums, consist of; architecture studio, profession ethics, law and institutions development, and selectable courses.

2. Student can stop having completed first two-semester and get certificate ably that admitted as architect profession. Also can continue study during two-semester next to get degree magister architecture.

2.2 The physicals campus development of ITB and built environment areas

When discourse of Technische Hoogeschool establishment irformation arouse, informed also that the Dutch think of the choice between Solo / Jogja or Jakarta (Batavia) / Bandung for the place. *Onderwijs Technische Commissie* proposed place in Jakarta, but Bandung *burgemeester* (Mayor of Bandung city) B. Coops, strongly propose that the city was willing to accept TH (supposedly proposed to accept the establishment of TH derived from Abdoel Muis: one member of the *committee Indië Weerbaar*). B. Coops also with concrete to provide land in the city of Bandung in preparation for the establishment of TH.
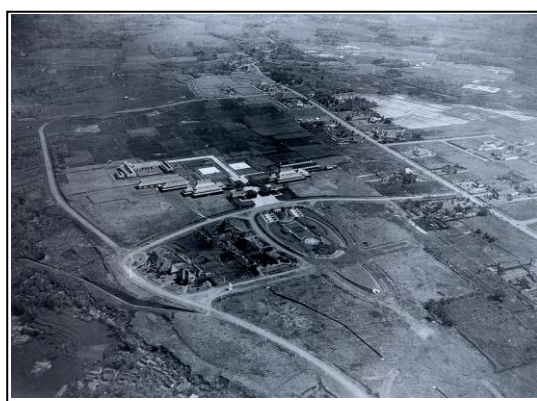
Source: (KITLV)
Figure 3: Technische Hoogeschool te bandoeng conditions in the early built

2.2.1 Preliminary Master Plan

Technische Hoogeschool built about ± 30 ha. land area. Which lies between the Cikapundung river and Dago road (± 500 m west-east and ± 600 m north-south). Four banyan trees planting ceremony by 4 girls all races are held at the beginning of development, about the center point, which is behind the gate.

Based on the evidence of the numbering of the existing building on the wall FTSP FSRD fence-present, TH campus was originally occupied the land area, divided into two large parcels. Groups of buildings west (FTSP Building and Civil Engineering Department) has the number 12, while the east building has the number 10.

The composition of natural environment around the beautiful River Cikapundung (at that moment), with rice fields in valley Siliwangi, as well as views of the beautiful Tangkuban Parahu Mount, Henri Maclaine Pont – as architect and master planner inspired to set the imaginary axis as a basic composition of mass building and space arrangement.

Technische Hoogeschool builds upon a contract between Maclaine Pont with the assignor (*Koninklijk Insituut voor Hooger Technisch Onderwijs in Nederlandsch-Indie*) in 1918 and be completed around March 1919 in Leiden with the help of a Drafter named Heemskerk. Van Leerdam (1995) in his book about Maclaine Pont tried to reconstruct the contents of a given assignment, because the original document has not been found. Instruction from the assignor; "emphasized the ability to develop in accordance with the development of science and methods of education', "the changes and developments can be implemented easily and inexpensively", and "without strict architectural composition". Based on his understanding, Maclaine Pont unify the buildings on campus in a regular layout with open space that serves as a public space as an element of the main set, so the buildings can be a simple form with function and just building a more representative gets more

arrangement.

Technische Hoogeschool initially consist only 3 main buildings *Barakgebouw* A (West Hall), *Barakgebouw* B (East Hall) and some supporting unit buildings; 2 pieces *hulpgebouwen* (outbuilding), which are all linked by *peristyl* (hall) with the processing and material which suggests at once a response to the natural surroundings and tropical climate. An experiment in combining the art of building traditional architectural style with the progress of the archipelago of modern construction techniques. Architectural style is known as the "Indies". ITB campus building complex that has a shingle roof was once dubbed the Bandung as "*Gedong Sirap*". Currently the building has become one of the landmarks of Bandung and the building has been protected by the law of cultural heritage.

One of the unique main buildings ITB (Hall east and west) are already apparent from the roof. It is said that such a form of modernization of Sundanese traditional houses called "*Julang Ngapak*", with the formation of the roof, called "*cagak gunting*" (forked Scissors). According Haryoto Kunto, planolog ITB graduates in his "Wajah Bandoeng Doeloe Tempo", some say it forms the roof of the building was taken from traditional of Minangkabau style roof. There's even think a roof form of TH it was taken from the formation of traditional Batak house, as the late Professor. Ir. V. R. van Romondt said. In addition Indra Budiman Syamwil (a teacher at the school of architecture ITB) commented: "*mark at the end of the roof of the house like a Dayak Kalimantan, ventilation fins like Goa Makassar home and stacked like roof coatings neutralization Minang homes Sumatra. Mac Pont quite clever in camouflage*". This work generates a lot of literature review and debate on the architecture of its time.
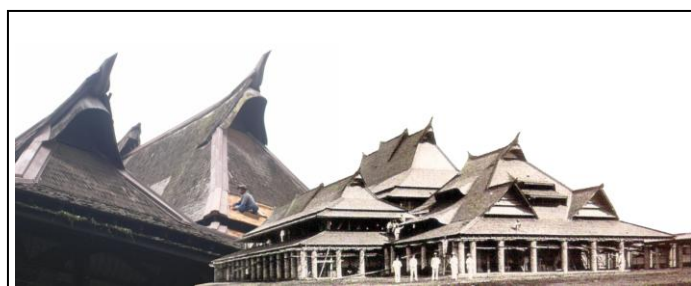
Source: (Sudarman, based on Private collection and ITB Documents/KITLV)
Figure 4: Technische Hoogeschool te Bandoeng with Indis architecture styles

From a variety of opinion, perhaps a comment Djauhari Sumitardja most closely assessed. In his book Compendium of History of Architecture, he said the roof of the building's stylish TH is refer to Great Sunda. It also approved Ir. Saliya Yuswadi M. Arch. architectural critiques, which is also a senior lecturer in Architecture ITB. Perhaps, the true shape of the roof of the ITB campus is the Great Sunda style, which is a combination of various elements contained in Big Sundanese culture, the region that includes Sumatra, Java, Kalimantan and Sulawesi.

From Maclaine Pont though TH was born be the beginning of the ITB campus we see today. An open space extending north - south to the imaginary axis with a vista to the mountains Tangkuban Parahu. At this part of the hall are planned, as a node of the meeting, with the front page of the banyan tree decorated. Not all planning Maclaine Pont built. Between ideas and their implementation is often a clash.

Buildings were also built at that time was a few buildings that became known as the Department of Civil Engineering, Physics, Environmental Engineering, Hydraulics Laboratory and building of LFM (student university film league) ITB. Outside the main campus was built some supporting buildings such as: housing lecturer who has several times changed the function, and the Rectorate building located in Taman Sari Street. Campus construction was never completed during the Dutch occupation. During the Japanese occupation there are no signs of physical development and also means there is no notes on the development of education in those days, except a few concrete frames for a building by the Japanese.

2.2.2   Further development

In the 1950s, the campus physical development budget is obtained from a number of funds and materials that are part of war reparations. There are several buildings built by the Building

Department of Architecture, Biology, Geodesy, and Chemistry are designed by CAF Knol and Ir. Ger smelt. The fourth building is a prototype building prefabricated which at that time typically used as an office / U.S. army barracks. In addition to the facilities intended for the department, also built several other buildings, namely Scientific Meeting Hall, located at Jalan Surapati No. 1 and the building is located on the campus of North, Central Research and Development of Settlement which is then donated to the ITB. Currently the building is used as a School of Business and Management (SBM). The second building was designed by Natmeisnig and Kopeignig, Austrian architects who was joined by the Bureau of Architects *Sangkuriang*.
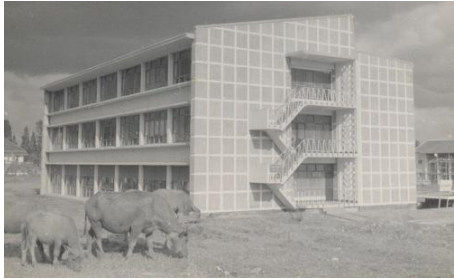
Biology Building (destroyed). Djoni Djauhari in Rahaju, 1995	Puslitbangkim, now : SBM ITB (from Internet)
scientific meeting hall building itb. Moch. Ichsan HN. dalam Rahaju, 1995	Several building of ITB (from Internet)

Figure 5-8

Entering the 1968-1973 period this ITB have an agency responsible for development control within the campus, the Development Bureau of ITB.

Initial period of 1973-1983 a number of buildings constructed with Government funds. In line with the enforcement of national development planning, preparing ITB first master plan consisting of the Master Plan Academic and Physical Master Plan. Based on the Master Plan, the ITB campus is divided into three zones, namely zones of historical buildings in the southern zone of "modern" to the north campus, and the transition zone in the center of the campus as a transitional and connecting the two previous zones. The Master Plan also gave a change in the education system in the ITB with the introduction of matriculation at the first or the First Joint Steps (TPB), which gave new needs.

Source: (ITB Documents)
Figure 9: Aerial view of ITB at 1979

To meet the needs of this new facility builds public lectures / Building Public Lectures (GKU). The need for a public facility with a large capacity due to the increasing number of students is also inevitable, he built a wide span of the building which was still relatively rare. Multipurpose Building (GSG) with a space frame structure that is the work of some of the faculty of the Department of Architecture: Goenawan Atmosoetjipto, Raswoto, Tatang SJ, Huthudi, Prabowo, and the Department of Civil: Budiharjo. Outer space area GKU / Octagon was designed by architecture students competition. Building that was built in this period also is Laboratory Techniques (Labtek) I with the consultant planner *Sangkuriang* Bureau of Architects.

In the period 1983-1990 One of the significant plans to do during this period was the idea to expand the campus area to the valley Siliwangi. Campus area of approximately 30 ha from the perceived limitations, especially with the development departments that require new facilities. In addition, also felt the need for a central sports facilities that are not only used by the ITB, but it can be utilized by the general public. For that idea to develop Siliwangi valley with many parties supported retaining the original character of the valley. In addition, there were also changes in organizational structure ITB with the shift of the role of the Development Bureau is the authority that then Vice Rector for Development. Three important buildings constructed during this period that the idea of the Central Library building was originally designed by Slamet Wirasonjaya, building Inter-University (PAU), and Building Public Lectures (GKU) Eastern. In addition to awareness of the area north of the previously set into the rear area of the campus began to be realized by holding a contest arrangement of the North Gate. The competition was won by a student, Mohammad Thamrin AR-81 which has been amended by the facility which was built later, the sunken court, an underground facilities, liaison between the campus area and the valley Siliwangi Ganesa.
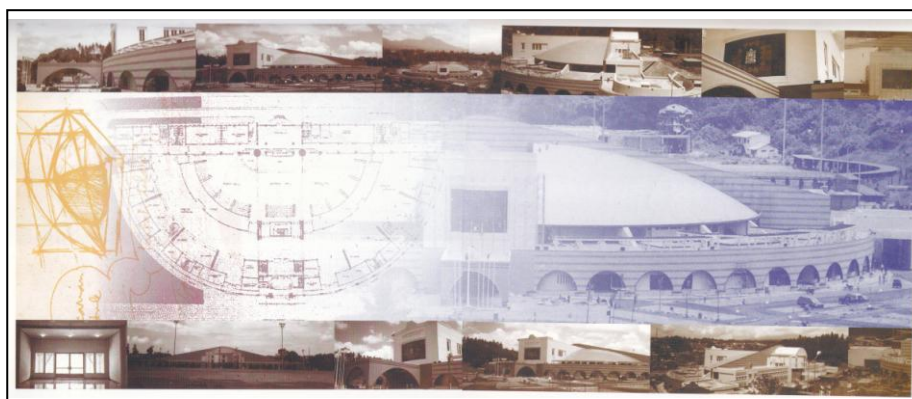
Source: (Moch. Ichsan HN based on ITB Documents, photo by Ikeda and Sketch by Slamet Wirasondjaya. In Rahaju, 1995)
Figure 10: Sasana Budaya Ganesha in process

In 1992, ITB has been successfully prepared the Master Development Plan (RIP) 1992-2001 ITB which describes the long-term planning within 10 (ten) years. RIP is based on the document stated that in this period, the priorities emphasized in the areas of strategic science and technology, which is related to material, manufacturing and processes, as well as information and telecommunications, transportation by land, sea, and aerospace, biosciences and technology and the environment.

In the 2001-2010 periods there were significant changes from the development of the ITB campus architecture. Significant changes are marked with the construction of a facility that provides a new architectural discourse in the city campus of the Campus Centre ITB to meet the needs of the campus as a public space for the community. The building that was inaugurated on July 11, 2005 this is an implementation of a design competition won by Baskoro Tedjo. At first this building will function as a showcase ITB, the faculty member including alumni and guests both local and foreign tourists can obtain information on all things related to college life. In other words, this facility is intended to be a window as well as the reception of a representative for the ITB. Spin-off mass of the building consists of 2 (two) 3-story building called the West Wing and East Wing. In the center is connected by a one-story building called the rotunda. The rotunda height is set so as not to cover of Tangkuban Perahu mount vista and monument Sukarno when viewed from the south. Two elements of this history are on the imaginary axis, which continues to be maintained in the development of the Ganesha campus master plan.

Source: (ITB Documents)
Figure 11: Sketch of Student Center ITB with Rotunda plaza

At the end of the discussion of this paper discussed the Master Development Plan (RENIP) from 2006 to 2025 as the cornerstone of its development. Policy development is part of the Long-Term Strategy to achieve the vision according to RENIP of ITB. This policy is also an element of the mission to realize the ITB as technological research institutions and leading educational institutions in Indonesia and in the Asia-Pacific to the ITB as a World Class University (WCU) in the future. The main purpose is to enhance the development multi-campus ITB role in building the future research and contribute to the development of qualified human resources (technology) in a regional or national scale.

In harmony with this, ITB has been planning the development of several campuses include Campus ITB, Ganesha (ON-G), Campus-Jatinangor ITB and ITB campus-Bekasi (OFF-G). ITB-Ganesha is the main campus established its role as the Heritage Campus ITB node cooperation with national and international academic strength. ITB-Jatinangor campus designated as a campus priority on the development of research and education that contribute to the socio-economic development of West Java and Jakarta Campus ITB-established as an umbrella campus facilities that support the development of educational programs bring together industry and applied research with industry.
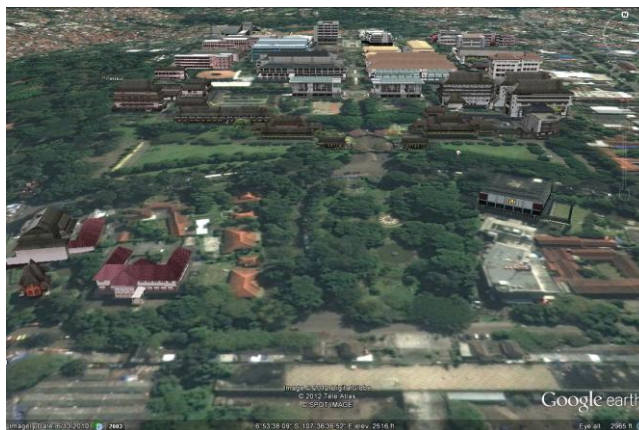
Source: (Picture taken from Google earth on May 02 2012)
Figure 12: ITB-Ganesha conditions currently

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Morphology Perennialisme City
Case of City Yathsrib (Medina) and City Cakranegara

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ABSTRACT

This study begins with the development of the city is currently dominated by the physical development of urban areas that no longer consider the environmental thresholds that make city living. Eventually occurs as a result of disaster man-made as a principal town of space development policy. Morphology of the formation of spatial pattern layout of acity built of course, the basic ideas that are abstract. One search this abstract idea is aphilosophical approach perennialisme. Perennialisme this philosophy is a philosophy which focuses on the views on the primacy of consciousness metaphysics or spirit or consciousness or awareness of the Lord *"Ilahiayah"* reflected in the form of spatial pattern layout of a city. The research was built using some review of the literature by using some analysis based on the content of the various libraries in order to formulate the concept of the layout of urban space in the perspective of a philosophy perennialisme.

Keyword: *perennialism, city*

1. INTRODUCTION

Physical formation is the embodiment of human life, the pattern is woven with the mind and hand are guided by a purpose. Physical body in the form of interwoven symbols also noted patterns of economic, social, political and spiritual civilizations and societies. Cities are places stirring the forces of culture and urban design is an expression. All have meaning and communicate the environmental section, priorities, trends, and culture of its creators are not independent of the influence of various elements including the city.

There are three basic philosophical development of a city that has been used for centuries to one another and compete with each other (Broadbent, 1990; 79), namely : (1) Empiricism which had full confidence in human reason, (2) Rationalism is working with the steps logical and (3) Pragmatism is working on solving practical problems. Empiricism was first pioneered by John Locke (1632-1704). Philosophical Rationalism pioneered by Descartes (1597-1650) was first built by the city based on this idea in France by Nancy Year 1588 and Charleville in 1605. Further ideas of pragmatism by Charles Sanders Pierce (1839-1914) William James later (1842-1910) and John Dewey (1859 -1952).

Thinking continues to increase as the growth of technology and industry in America. With the growth of this technology should be poverty, crime, disease and crime, is reduced. But not so, the events actually be a lack of spirituality, belief in God, the soul is barren, the lack of honesty and fairness. Thus need a new solution to help it understand the condition of modern man (Broadbent, 1990; 84). This phenomenon is created within the city. The indication is created slum areas, high crime and criminality in the city. Ultimately be abasis for the development of a direct return on the existence of the power of thought "Lord of Hosts". Perennialisme philosophy is a philosophy of life

and consider the wisdom of God. Consideration of the Lord is not merely in a symbolic space but constantly created in the community who are in that space. Excavation of philosophical ideas in the space including the space of a city to be one consideration in finding solutions to problems that occur such phenomena.

2. LITERATURE REVIEW

2.1 Methodology

The study was conducted using the method by examining the literature, especially literature on thinking about ideas perennialisme. Further literature on the history of the pattern and layout of the development of an urban space. Cities and Towns especially Yathsrib and Cakranegara the case studies. The analysis is performed of historical data is to use the analysis and interpretation of the various interpretations of the ideas perennialisme. Research step is to understand in advance the ideas of perennialisme then interpret the phenomena of space, especially in the sense of space that is interpreted from the history and information obtained.

2.2 Issue

Based on the explanation above, the root of the problem that occurred was the development of space in the development of a city no longer consider the existence of the "Lord of Hosts" or "God is in truth". Tendency to occur more on the development of space deify "reasonable" or "ratio". Thinking is based on an understanding of philosophy perennialisme also not in the development of an urban space. Though this philosophy is an ancient philosophy that is indicated as a philosophy of eternity. Excavation of the ideas of this philosophy, especially in the urban space will present a more in-depthrationale for the existence of space, including urban development.

2.3 Research Focus

The purpose of the ideas explored perennialisme mainly in the urban space is to identify the conception of the development of space, especially the development of an urban space that takes into consideration the idea of "Lord of hosts". The benefit is to increase the treasures of knowledge, especially in knowledge in the development plan of a city.

3. RESULT AND DISCUSION

3.1 Definition of Perennialisme

From this point of language, perennial comes from the Latin, perrenis, which was later adopted into English, means eternal, forever, or everlasting. (Komarudin Hidayat and Muhammad Wahyu Nafis, 1995). The term perennial philosophy was first suspected to be used in the Western world by a man named Augustinus Steucus (1547-1548) as the title of his work, De perenni philosophia published in 1540. The term was laterpopularized by Leibniz in a letter written in 1715, which confirms that in the search for traces of truth among the ancient philosophers and of the separation of light from the dark (Komarudin Hidayat and Muhammad Wahyu Nafis, 1995). Perennial philosophy (perennial philosophy) is a term that has been used extensively by schools of thought of the neo-Thomist to Aldous Huxley. Said the perennial philosophy as out lined so far by AK Coomaraswamy intended as knowledge and will always exist, which are universal. "There" in the sense among people of different space and time, as well as those related to universal principles. (Nasr, 1994). Metaphysics is understood in the perennial philosophy is a "divine knowledge" is not a mental construct that will change with the cultural style of an era, or the emergence of new discoveries from the knowledge of

the material world. In his book The Perennial Philosophy, Huxley (Huxley,2001) mentions three basic concepts, perennial philosophy, namely:

- Metaphysics, which tries to recognize a divine reality, which is very substantial for the material world, life and mind
- Psychology, which is trying to find in the human soul, something similar, even identical with the divine reality
- Ethics, which puts the purpose / goals at the end of human knowledge will be the basis of all being (Ground of All Beings)

3.2 Case Study Of Morphological Characteristics Yatshrib City (Medina) And Cakranegara City In Perspective Perennialisme

Morphology consists of two syllables is Morf, which means the shape and logos meaning science. In simple morphology means the study of forms of physical products cities logically. Morphology is an approach to understanding the logical form of a city as a product of socio-spatial change. Because every socio-spatial characteristics in everyplace is different then the term morphology is closely associated with the term typology. Markus Zahn (1999: 11) gives a sense of the term morphology of the formation of an object in the form of a much larger scale. Usually used for large-scale morphology of the city and region. While the typology as a classification character or characteristics of the formation of physical objects formed by the city on a smaller scale. The term typology is used more to define the shape of elements such as roads, green open spaces, building sand so forth. While Trancik Roger (1986: 98) define the morphology of the discussion of the scope of the three: (1) Figure / ground, (2) linkage, and (3) Place.

Theories of figure / ground of urban understood as a textual relationship between the built form (building mass) and open space (open space). Analysis of figure / ground is an excellent tool for identifying the textures and patterns of an urban spatial (urban fabric) and identify the problem of order the mass / urban space. Linkage group is the group theory discusses the theory that a relationship with other places of the various aspects as an urban generator, which confirms the relationships and movements (dynamics) can be observed by urban and different approaches. Discuss the meaning of a theory of placeas a place of urban area architecturally.

Morphological development of a city is influenced by many factors. The factors generally have developed a particular character that affects the face of the city in a very long period of time. Complexity in the face of such a chronological time is influenced by the history, style of buildings, regulations, road structure, building technology, regional development, or as a cornerstone of cosmology that developed in an area. Morphology in terms of its never ending and constantly evolving over time. In relation to examine the morphology of the city in this discussion over to see the physical layout of the pattern of existing urban areas.

3.2.1 Study Yathsrib City (Medina)

Nabawi Mosque, is one of the most important mosque located in Medina, Saudi Arabia because it was built by the Prophet Muhammad SAW. and a cemetery where he and his companions. This mosque is one of the main mosque for Muslims after the Holy Mosque in Mecca and al-Aqsa in Jerusalem. Nabawi mosque has been built since the first moments of the Prophet Muhammad. arrived in Medina, where a camel ride is the Prophet SAW. discontinue his journey. The site was originally a place for drying dates belonging to two brothers or phaned Sahl and Suhail bin 'Amr, who was later bought by the Prophet Muhammad SAW. Mosque to be aroused and his residence. Initially, this mosqueis about 50 m × 50m, with a roof height of approximately 3.5 m, Prophet Muhammad SAW. helped build with his own hand, together with the Companions and the Muslims. Walls on all four sides of this mosque is made of brick and earth, while the roofs of palm leaveswith a jib poles of

the palm trunk. Part of the roof is left open. During the first nine years, this mosque without lighting at night.

The city of Medina in the Ottoman Turks built a huge fence Medina carried out by Sultan Sulaiman Salim bin Sultan Al Ottoman year 937 H (1533) and ended the year 948 H (1544) and built forts continued to fence the tower is also a penetrating to the top of Jabal Sali 'in northwest buildings. The length of the fence as the city was called by Al-litany in his 3072 An Nuzhah is "working cubits" (2304 meters, because the first cubit centimeter of work = 75). This city has a fence gate is the gate of Al-Gomaa that penetrate into the Al-Baqi cemetery, the gates of Al-Qalah (castle) which was named Chapter of As-Syami that penetrate into the streets of Al-Jarf and Hadrat Hamzah, a small gate (Al-Bab ash-Syagir) that penetrate into the Al-Munakha. Can be seen in the picture below.
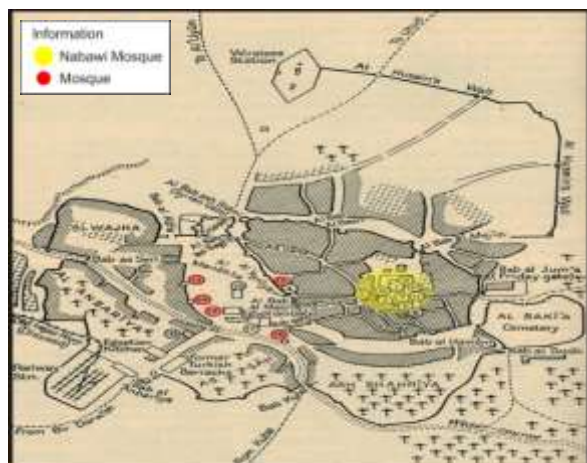
| (Source: www.lib.utexas.edu) | (Source: Hafid, 1998) |
| Figure 3.2.1. Yatshrib city (Medina) Year 1946 | Figure 3.2.2. Yatshrib city (Medina) Year 1968 |

Based on Figure 3.2.1. above appears to be the focal point is the Nabawi Mosque and several other mosques spread. Look at all Nabawi Mosque in Medina City became the center of the city. While other mosques became the center support.

Based on Figure 3.2.2. In 1968 the mosque seems to be very sporadic distribution in the urban area of Medina. The need for a mosque is not merely due to the high demand of the people who do worship, the other reason is the consideration that the mosque is a shrine set up a mosque in the Islamic religion is the practice jariah deeds which continues to flow even though the age cut off in the world. The point of an awareness of akhirati.

Based on the study of Gelani (in Ikaputra, 2001) which examines the Muslim settlement that became the case is Yatshrib expressed as follows:

"From the Existing settlement "Yathtrab", ….Muhammad s.aw. …emphasized & marked the importance of spatial boundary in housing & refers to that housing as a "Harem". A Harem has only one main focal point which is the space for Friday Gathering, i.e. the Friday Mosque. This gathering is used for settling of all—individual as well as communal—problems & for noting & sorting out matters in the Harem, along with a sermon & a short prayer. However, there can be other sub-focal points & there is evidence from Madina of Muhammad that it had 30 mosques.Allah swt tells a prophet that a population is to be viewed as a society, & to that population the prophet has to provide his prophetic talents".

Described above indicate that there is a focal point that is marked as the main mosque and dispersed 30 small mosques. Also the importance of the role of race as a social function or sub-round focal point focal point. People or the population plays an important role in conducting activities within the city. Not only for worship but also to support economic activity driving a city or town. This concept can be seen in Figure 3.2.3. below.

Apart from Gelani there are also studies of Nezar Al-Sayyad that reveal patterns of Muslim settlements in Arab cities such as Baghdad, North Africa and the Middle East in which the elements forming his hometown mosque, market and settlement. So the mosque is a major element in forming the space city. More details can be seen Figure 3.2.4. below.
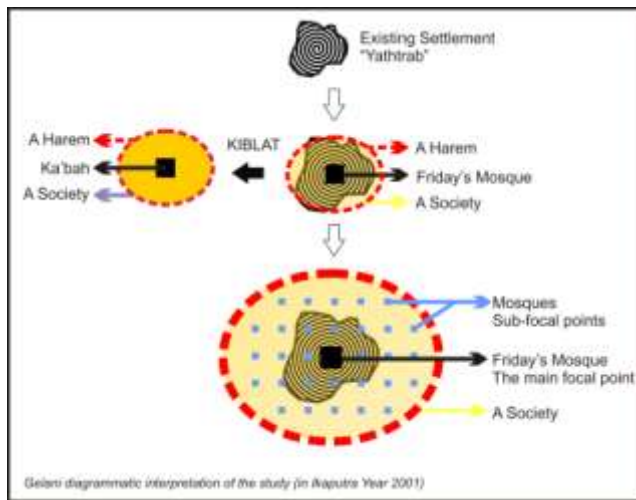
Source: (Ikaputra, 2001)
Figure 3.2.3. Muslim settlement patterns
(Source: Gelani (1996) in 2001 has been in the interpretation Ikaputra)
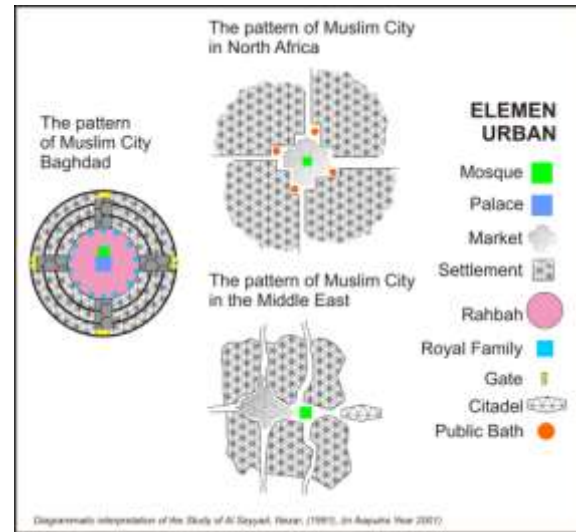
Source: (Ikaputra, 2001)
Figure 3.2.4. Settlement patterns of Muslim Arab Cities
(Source: Al-Sayyad, Nezar (1991) in 2001 has been in the interpretation Ikaputra)

Based on the above explanation can be given here are some parts that are important to explore how the Prophet Muhammad in an effort to spread Islam in a city called Yathsrib space. Mosque not only serves as a place of worship but also the orientation of the human race to keep the Lord of hosts. Prophet Muhammad SAW in building Nabawi Mosque is located at an altitude of 597 meters above sea level and is located in the City of Medina Almunawarah. This mosque is the radiant light of Islam. In addition to this Mosque of the Prophet also built a house for his family. City of Medina in addition equipped with facilities such as the Mosque of worship, there are also social facilities such as markets, educational facilities and amenities Cemetery.

The tomb is in this city are the tombs of the Companions and the Prophet's family. This tomb was built to remind the human race to death. As if there are no clear boundaries Between life and death. Given the means to improv living death such as his messages in existing grave space in the city. Fort in this city makes it a symbol of the city's defenses. The placement of the affordable markets of places of worship. Madina city that is rich in water resources management system that is managed by considering the sources are scattered and for the benefit of agricultural production and worship. Islam is very close to the water in the process of worship is thus the distribution of water is adjusted to the existence of religious facilities.

3.2.2 Review of the City Cakranegara

Cakranegara built in the mid-18th century, is a city that was designed based on the Hindu-Balinese mythology, which is rarely encountered in Indonesia, even though the island of Bali. Cakranegara is part of the city of Mataram. Where Mataram is the largest city on the island of Lombok, as well as the capital of West Nusa Tenggara. Mataram itself consists of three districts, namely: Mataram, Cakranegara and Ampenan. In the mid-18th century empire building Cakranegara Amed in Bali, Pagtandan, Pagasangan the city colony in West Lombok. Other major cities in Lombok is a Praya in Central Lombok and East Lombok Selong. Sasak people Praya is a basis for rebellion against the people of Bali. Selong is a city of Islam (Funo, 1995 in Handinoto, 1999; 22). The city was

built with a grid system, which is a colony of the royal city of Amed is located in the east of the island of Bali. Idea of the shape of the city was built by the city of Hindu Bali. Pura Meru is located in downtown, Pura dalem (temple for the dead) is located next to the corner of West and East of Temple Puseh corner. This arrangement also applies in Gianyar, Karangasem and Klungkung in Bali (Funo, 1995 in Handinoto; 1999; 23). Formation Pura Meru is situated in the center, as well as existing market outside the walls round about the same as the pattern of cities in the era of Javanese Mataram I. In the local language Cakranegara streets are divided into 3 categories, namely: dross clan, clan and clan dasa (Funo, 1995 in Handinoto, 1999; 24). Marga in Sanskrit means the road, sanga means nine. Nawa sanga means 8 compass directions plus the center, so nine. Dasa means ten. The roads are used to divide the area according to organizational unit residential housing. In a local custom residential unit referred to as the smallest clan, consisting of 2x10 unit plot. Two genera are merged into one called Kriang (2x10 +2 x10 unit plot unit). Two kriang united into one Reef, which consists of 80 units of housing plots which occupy a block (see Figure 3.2.5.). Hindus in Bali Banjar use designation for the term Coral (Funo, 1995 in Handinoto, 1999; 24).
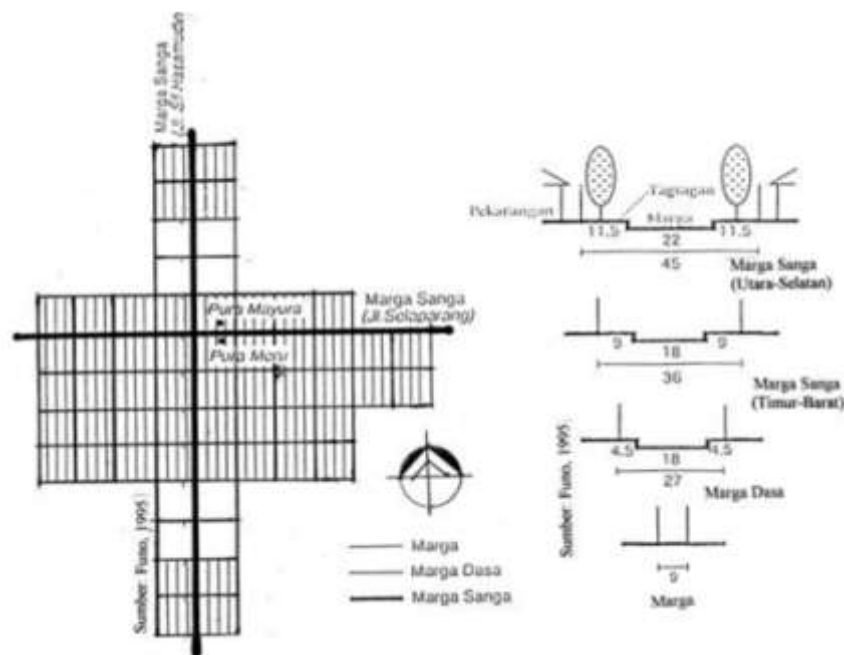
Source: (Funo, 1995 in Handinoto, 1999)
Figure 3.2.5. The structure of the city street system Cakranegara

Significance of numbers in the city that has meaning Cakranegara *vastu-purusha* astrological calculations-mandala is divided into thirty-two small squares called *nakshatras* (Narasingha, 2000). *Nakshatras* are consistent with a constellation or house the month in which the moon passes in the course monthly. Number thirty-two geometrically results from a repeated division of a single square border. It shows four of the eight positions in space: north, east, south, west. Closed polygon of thirty-two boxes show symbolic of repeated cycles of time which is calculated by the motion of the moon. Each nakshatras. This is interpreted ruled by a divine entity, called a god, whose influence extends to the *mandala*. Outside the *mandala* there are four directions, symbolic of the meeting of heaven and earth who also represent the ecliptic of the sun east to west and rotation to the northern and southern hemispheres. Center Point *mandala* called *Brahma*, the first is a universal order. *Brahma* is the place around twelve other entity known as the son of *Aditi*, who helped in the affairs of universal management. The remaining empty boxes represent the pure Akasha or space. The vastu-purusha-mandala form a kind of map or diagram of the influence of astrology which is the order of the universe and the destiny of human life. The meaning of vastu shastra states that a building with the proportion of inappropriate and incorrect orientation will create an environment that is conducive to disturbances such as disease, death and destruction, which may be inhabited by

spirits. This is the meaning of the sacred knowledge of the natural symbols that are connected between the macrocosm and the microcosm of nature. Thus humans are not necessarily able to form a space for his residence with his own or "ego" it. Within this tradition the meaning indicated the relationship between the considerations of confidence in awareness of the Lord of hosts.

3.3 Formulate A Conception Of The Morphology Perennialisme City

3.3.1 Basic Concept Formulation

The formulation is based on three elements, namely the concept of a particular meaning or conception and phenomena / objects / events or empirical reference. Understanding of concepts according to Nazir is an abstract description of a phenomenon which is formed by making a generalization of something unique. (Nazir, 1985). Besides understanding the concept are: (1) the initial idea of a generalized, (2) a development that should be improved and developed in detail later. (3) A embriotik framework that will accommodate a hassle (4) a perception that produce a form of problem (5) A mental image. Explanation in his perennialisme concept can be seen in the table below.

Table 3.3.1. Description of Related Concepts Perennialisme Morphology City

No	DESCRIPTION CONCEPTS	
1	Metaphysics factor (Aldous Huxley)	The forms of the existing building in a more urban space formed in the shape of buildings that orient buildings to the macrocosm and microcosm, the balance of nature. Besides this building form hierarchically structured to reflect the hierarchical or level of human spirituality.
2	Tradition factor (Seyyed Hossein Nasr, Rene Guenon, Frithjof Schuon)	Relationship with nature and faith in God makes the tradition of the people to keep in mind the life and death.
3	Ethics Factors (Aldous Huxley)	People who understand the patterns of ethical behavior would be "himself" and "Lord", thus laying the elements forming the urban space will always connect his behavior with the belief in God.
4	Psychological factors (Aldous Huxley)	Meaning the formation of an urban space is a factor of human psychology to realize he is a natural part of the macrocosm

Source: Adapted from various sources, 2012

Under these conditions, the morphology of perennialisme understand these concepts can be generalized from various references and related experts perennialisme understanding and morphology of a city in the explanation of the elements or parts that will be described in the morphology of the Spatial Pattern and Meaning.

Based on the description above, in the formulation of the concept of urban morphology perennialisme can be categorized in Perenialisme values, creating spatial definition and spatial patterns in general can be illustrated Figure 3.3.1. as follows :
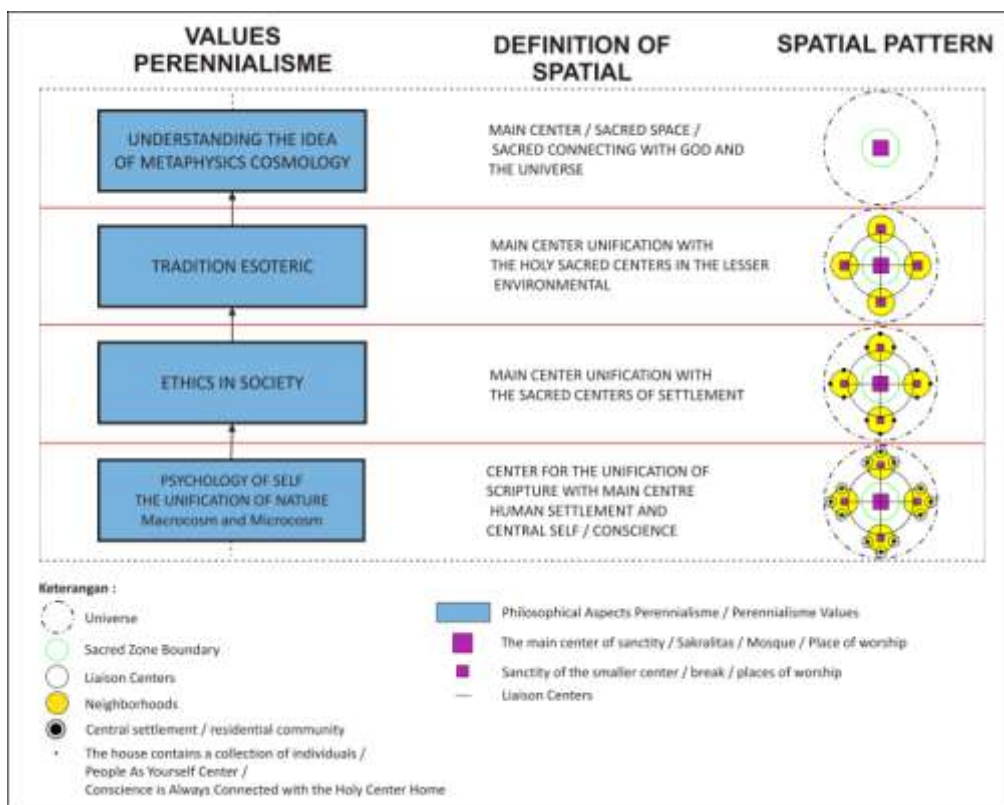
source: (Ina Helena and Ikaputra, 2012)
Figure 3.3.1. Morphology Concept Perennialisme

3.4   Unravel The Conception Of The Morphology Perennialisme City In City Yatshrib (Medina) :
3.5
3.5.1 Parse these notions in relation to perennialisme:
    Based on an understanding of perennialisme described above. Also related to the problems of space and meaning contained in this philosophy is outlined in this section limits the understanding in relation to the morphology perennialisme city.

- Urban (urbanity)   : Matters relating to urban life
- City (City)   : Physical realization of
- Physical Layout (Physical Layout)   : Expression of the symbol system of religious material, social and political
- Perennial City   : Nature, perennial values in a city
- Perennialisme City   : Provision of perennial charge in cities that already exist or have been created by the movement of knowledge derived from perennialisme in philosophy.
- Morphology Perennialisme City   : Search connection between the ideas of perennial philosophy with physical layout of the pattern of existing urban areas.

3.5.2 Unravel the case of morphology perennialisme Yatshrib City (Medina) and the City Cakranegara
    In this section attempts to outline the case Yatshrib City. Material descriptions will follow up explanations of concepts above. The material is separated in a discussion of the concept perennialisme. It is clear that the City of Medina and Town Cakranegara with its Focal Point is a Place of Worship. The road network is built even more explaining Places of Worship as a focal point. Sub other focal point is a place of worship is smaller. These settlements are connected by a network of roads is very high accessibility. Access that connects to the Nabawi Mosque. This high access in principle to connect with Natural His spirit.

4. CONCLUSIONS

The conclusion of the discussion of urban morphology perennialisme intended search terms is the link between the ideas of perennial philosophy with physical layout of the pattern of existing urban areas. From various sources there are references to the concept of urban morphology perennialisme is the realm of physical form or an urban space. Whereas "Soul" is the spirituality of the city's space filler. Forming elements of morphology itself in physical form is the form, the spatial pattern. While the aspects involved in quarrying perennialisme ideas are: Metaphysics is the brainchild of the cosmology of the universe or that connect people with God that in this case is in the mosque or place of worship. The city is microcosmos of this universe. Esoteric tradition is the ability of people to do something a space filler in achieving kemarifatan the pattern manifests itself in the relationship between places of worship that larger scale with the neighborhoods and places of worship on a smaller scale. While the aspect of ethics is an inherent aspect of the social pattern that is built in an urban space that is also based on a strong spirituality of God. Created in human interaction in the worship space and settlement environment. Psychological aspects are part of the people filling the space that is always internalized the belief in God.

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Morphological Study of Colonial and Traditional Urban Space in Java : A Comparative Study of Ten Cities

[1]Rony Gunawan Sunaryo, [2]Nindyo Soewarno, [3]Ikaputra, [4]Bakti Setiawan

ABSTRACT

Most of morphological studies of cities in Java tended to place the elements of traditional urban space – such as Alun-alun, Mosque, Palace and Market – as the main elements of city. Other elements such as the colonial urban space – Resident Office, Fort, Church, Park and so on – are often considered separately or placed as a complementary part. Through a comparative study of morphology by exploring ten cities in Java, we found both elements of traditional and colonial urban space were set in a unique and various pattern. There are some findings indicating that the elements of colonial urban space significantly influence the city structure as well as those of the traditional ones. Therefore, understanding the urban space form in Java should include and put elements of both of traditional and colonial urban space as an integral part.

Keywords: Colonial Urban-Space, Java, Morphology, Traditional Urban-Space

1.   INTRODUCTION

Morphology of cities in Java where we live today is formed through series of long process with a variety of influencing factors. Some concepts that explain the influences of Buddhist, Hindu, Islam and European coloring process of the city formation in Java were generally accepted[5]. Legacy of European influence can be seen primarily through the physical artifacts of the Dutch colonial buildings spread in urban areas of Java. Through many in-depth studies, research on the influence of Europe on the world of Indonesian architecture can be said to have found the concepts that are fairly stable[6]. In contrast to the discipline of architecture – in which the scope is one building - in urban design or urban planning discipline – in which the scope is an area until a city - , the stability of such a concept is found lacking. Explanations regarding the influence of the Dutch colonization to the urban space concept in which we live today, for example, are still quite limited and leave many questions.

Dutch colonization process in Java lasted for several centuries, since their trading posts were built in the coastal cities to control infrastructure of transportation throughout Java. Although the influence of colonization looks so dominant in building a system of urban network in Java, it is the opposite in the scope of urban space. Colonization process does not remove the concepts of urban space forms that have already existed in Java. Alun-alun, for example, is the landmark of the city center derived from the pre-colonial traditions which still survives. Until now, the determination of the city center or the area of the old town mostly still refers to the position of the Alun-alun[7]. In contrast, there are some difficulties when we have to identify the elements of the colonial urban space, partly because of the absence of the concept of colonial urban space which can be applied in general. The main colonial elements forming urban space were different from one city to another, as well as characters formed later. In some cases, the colonial elements are mixed with traditional elements, so they become harder to determine whether the urban space formed is traditional urban space or colonial urban space. These facts lead us to a lot of questions, some of the most simple questions: Does the colonial period have role in the morphology of urban space in Java? What are the elements forming the colonial urban space? How does the process of interaction between the elements of the colonial urban space and elements of traditional urban space?

This paper is the result of a brief literature review and observations on urban space in several cities in Java. The focus of this study is the morphology of urban space in the colonial period, especially in the early stages of formation of important structures in the city. The study does not attempt to find general concepts to answer the questions in the previous paragraph, but rather as an introduction to the understanding that further extensive and in-depth studies need to be done on the

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focus of the study.

2. MORPHOLOGY AS A METHOD

Morphology in the context of urban design is understood as a structuring / formation of an object or system. Meanwhile, the urban morphology as a structuring / formation of the city as object and system can be identified by structural, functional and visual (Zahnd, 1999). According to Weishaguna and Saodih (-), the morphology of the city is an approach to understand the city as a collection of geometric configuration of buildings and artefacts with the configuration of units of a particular physical space which are products of socio-spatial change. Meanwhile, Widodo (2010) asserts that in urban analysis, morphology approach is appropriate to be used to identify the structural relationships among the artifacts of the city.

In general, the steps performed in the study were:

1. Physical artifact as an archive: tracing old map and satellite maps to identify the formation process of elements of urban space from beginning until present condition.
2. Synchronic and diachronic readings: a literature review to understand the factors that influence a city formation on different period.
3. Comprehensive scale: cross-disciplinary literature review of history of social, politics, culture, architecture and urban areas in order to obtain a comprehensive understanding of inter-scale, from buildings, an area until a city.
4. Verification: Field observations to feel the space is formed. Limited interviews were conducted with city historians, residents or the building manager to get the overall picture.

3. LITERATURE REVIEW

3.1. Urban Space and Elements of Urban Form

Krier (1975:15-16) simply described the concept of urban space as: *"all types of spaces between buildings in towns and other Localities as urban space"*. He further added elements of street and square as the basic elements of urban space: *"They are differentiated only by the dimensions of the walls which bound them and by the pattern of function and circulation which characterize them"*. Studies carried out in his book entitled the same, Urban Space (1979), aimed to realize the importance of understanding the urban space as a system. Nevertheless, Krier's analysis can not be separated from his weakness by developing typologies of urban space without a historical dimension (Kostof, 1992: 146). In spite of these weaknesses, Krier's effort is an important part of the many efforts from the architects, urban designers, and urban planners to understand the city through the elements of urban form[8].

Broadbent (1990:4) concluded that the four basic principles that form the city are: the separation of the built-up area from surrounding countryside; the development of irrigation systems for intensive agriculture; the development of the power structure by which the irrigation systems, and other aspects of urban life could be controlled; and the development of craft-specialities to serve not only the needs of urban population but also as bases for trade. Meanwhile, to see the manifestation of these principles to the urban physical elements, Kostof's explanations can help us. Kostof (1992:72) described four kinds of specialized partition of the urban territory: the administrative district, where the ruling authority resides; the religious district; the district of business and commerce, and the residential component of the urban structure. Urban history in general noted that the first three points as the standard jurisdictional divisions of the public domain, and applied to the physical arrangement. Therefore, it can be concluded that the main elements forming urban space – which is public domain – will be representation of these three entities.

3.2. Forming Elements of Java Urban Space

City centers of Java in the pre-colonial period are often read through the elements of Alun-alun and important buildings in the surrounding including Kraton/Regency (The Palace) and Grand Mosque. The existence of Market element, despite its position apart from the first three elements, is the principle in the early formation of the city. The set of element is always a fixed composition and occupies important positions in the initial formation of the city. Some researchers mention Caturtunggal concept to explain the composition. Santoso's study of the Javanese cities in the pre-colonial period illustrates that this composition is a manifestation of the spatial concept that is based on the accepted principles for centuries in Java since the time of pre-historic settlement[9]. Considering these notions, it is no exaggeration to say that the set of Caturtunggal (Alun-alun, the Palace, Mosque and Markets) is a set of elements of traditional Java urban space.

A brief description of each element can be described as follows:

1. Keraton – Center of power, a keraton complex used as the residence of a king and royal family as well as the administrative center of the king (Ikaputra, 1995:31). The structure of Keraton is highly

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[8] Several similar efforts noted by Kostof (1992) are Stubben with Der Stadtebau-1924: Paul Zucker with Town and Square-1959: From the Agora to the Village Green. Michael Webb published a book with a similar topic with Zucker, A Historical Evolution: The City Square -1990 but the emphasis was on the analysis of the factors forming urban space such as political, social, cultural and ideological factors.
[9] Santoso (2008: 187) conveyed that principle of microcosmic-dualistic and microcosmic-hierarchical is the foundation of civilization of Java, from which the concepts of space and the art of building structure are derived.

complex due to its highest hierarchical position in typology of Javanese residential class system[10]. Furthermore, Santosa said (2000:90): "As a center of power, Keraton must have the capacity to express and maintain social order in which the Sultan occupied the top position." The complexity of the functions of the palace can be seen from amount of spaces that exist and its vastness, such as the Keraton of Sultan Hamengkubuwono in Yogyakarta which covers an area of 14,000 m2 wide. On areas outside the royal city, the center of power is manifested in the form of Regents Residence often called Kabupaten or Kadipaten. Although it is not as complex as Keraton, Kabupaten remains the most complex buildings in the territory.

2. Alun-alun, part of Keraton complex. The existence of Keraton is characterized by the presence of Alun-alun in front of it and vice versa. Alun-alun shape is a large rectangle square - for example Alun-Alun Yogyakarta, one of the largest Alun-alun in Java which has 275 length and 275 meter wide - with the existence of a banyan tree in the center and circumference as a symbol of the harmony of the microcosmos and the macrocosmos afforded by the king (Pigeaud, 1940 in Santoso, 2008). Activities that take place in Alun-alun are generally associated with Keraton and Great Mosque at its west side. Santoso (2008) summed up the square function in pre-colonial period as follows: a symbol of the legitimacy of the sovereignty of the king over the people; the course of all religious activities and the kingdom; a showcase of military power

3. Mosque and Kauman, located on the west side of Alun-alun[11], the city's Great Mosque. Large-scale religious activities of Garebeg (Maulud, Syawal and Gede) three times a year took place with the involvement of elements of the Great Mosque, Keraton and Alun-alun. This fact confirms the existence of unity between religion and the ruler at that time. Meanwhile, Kauman itself is a residential area such as the physical character of Kampung in general outside of the palace. The difference is the atmosphere that characterizes the Islamic religious activities in that Kampung. The existence of Kauman and Mosque in Yogyakarta case can not be separated from Keraton because the perpetrators were religious officials appointed by Sultan (Ikaputra, 1995: 36).

4. Market, a specified location for trading activity. The central function of the market activity is the social and economic interactions in a single event (Wiryomartono, 1985). Furthermore, market position in Java is not oriented to the town square as the concept of commercial space of medieval European cities; otherwise, its position tends to separate from the three previous elements. Javanese concept of space considers market as a manifestation of mundane activities (Wiryomartono, 1985:58) and the concept that the north side of city is a profane space (Santoso, 2008:177) simply describes the position of the market which is always far away on the north side of Alun-alun area.

The topic related to the study of urban space in Indonesia - or at least close to the scale of urban space, especially in cities in Java has received wide attention from many researchers, especially in the disciplines of history, architecture and urban planning. As far as I can observe, one focus that is mostly attracting attention from the researchers is pre-colonial period, which was later found Caturtunggal concept as a set of traditional elements of the central Javanese urban space[12]. Nevertheless, there are some studies that were extended up to the colonial period. In general they are explanations of factors that influence the formation of city structure and pattern[13]. The study from Sandi Siregar is one of the most in-depth studies departing from analysis of element and form of the city to illustrate the concept of urbanity and architectural identity of Indonesia[14]. Some of these studies provide an understanding that the elements formed by colonial play an important role in the evolution of Java urban spaces we inhabit today.

3.3. Colonial City Principles

The most detail town planning principles of European colonial can be seen in the Law of the Indies in 1573, that became the benchmark of Spanish colonies in forming the structure of their colony cities (Nuttal, 1921, 1922 in Broadbent, 1990: 42-48). Some rules discussing the placement of the main elements of the city, among others, stated: The placement of the main plaza as the starting point of the city (Ordinance 112 in Kostof, 1992:124); the main church as the central building - as part of the spread of religion in the colony - was placed in the main plaza; the placement of public buildings such as the royal council, city hall, arsenal, hospital, merchants is placed around the main plaza without compromising the primacy of the church. Even though it is complete and frequently used in many cities of Spain and Portugal colony, the application of Law of the Indies by the Dutch colony is still questions and doubts. One of these doubts is the fact of the different orientation of colonization[15] – the Spanish has a mission to civilize the colonies, while the Dutch is more likely to trade missions – therefore, the city established by the Dutch acts more like trading post function (Broadbent, 1990: 47). Records that might be closer to the context of the Dutch colony were a note on the concepts of

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[10] Through in-depth studies about Javanese House and its meaning, Santosa – Omah, Membaca Makna Rumah Jawa (2000) presented four cases of Javanese house from the simplest to the most complex: Kraton.
[11] Salatiga city is an anomaly because of the existence of the Great Mosque and Kauman located far apart with element of Alun-alun and Kabupaten
[12] Among others : Suryanto & Indanoe (1987) – Kotagede , A Traditional Settlement; Santoso (2008) – Arsitektur –kota Jawa, Kosmos, Kultur & Kuasa.
[13] Among others : Wiryomartono (1985)- Seni Bangunan dan Seni Binakota di Indonesia; Handinoto (1996) Perkembangan Kota dan Arsitektur Kolonial Belanda di Surabaya (1870-1940); Handinoto (2010) – Arsitektur dan Kota-kota di Jawa pada Masa Kolonial, Santoso (2009)-The Fifth Layer of Jakarta
[14] Bandung, the Architecture of a City in Development, is a doctoral thesis of Sandi Aminudin Siregar at Katholieke Universiteit Leuven, Belgium in 1990.
[15] Dutch policy clearly limited the mixing of the elements of European culture and Java with a particular motivation. Lombard (1996: 94).

the ideal city from Simon Stevin (1548-1620), a Quartermaster-General at the time of Prince Maurice of Nassau. Stevin issued ideal city concepts, among others parameters and the main elements of the city[16]. Some urban morphological studies refer the model of fortress (*Sterctenbouwing*) and the concept of ideal city from Stevin as a basis for designing Stevin VOC fortress and fortress city in the early colonial period[17].

Regarding the shape of a city, Stevin wrote: : *"The four-sided rectangle on a flat level piece of ground is in my opinion the most convenient shape for towns, in order that they may contain suitable rectangular blocks, such as plots, houses, gardens, markets and squares, which do not fit in another shape; because pentagonal and polygonal towns, although they can be drawn in a circle, with a well-ordered market in the centre and streets from there to the bastions, all with a likesided form, yet many houses, blocks and plots become lopsided and broader at one end than at the other…"*

Regarding the main elements of the city, Stevin's concept put Major Market - no less than six markets that he suggested - as the center of the city followed by Churches, Residence of the Prince, City Hall, Jail and House of Correction. The placement of these elements is placed in the center of the city, except that the Residence of Prince, due consideration to the balance between control and sense of security of urban dwellers - especially foreign merchants - not placed in the center of town but in the city wall (Heufel, 2005: 353-361)

In further developments since the second half of 18th century, fortress city pattern is becoming obsolete. Handinoto (2010: 226-230, 430-431) illustrated that from the typology of cities in the period of the early 18th century until the late 19th century there were two distinct characters, namely the Old Dutch East Indies City and the New Dutch East Indies City. The pattern of the Old City established earlier has two city centers, the native city center – with Alun-alun and Kabupaten as the main elements - and the colonial city center - with the main elements of the Residence of Resident or Assistant Resident. Meanwhile, the pattern of the New City was formed later with one city center characterized by the merging of indigenous and colonial administrative center in one location, at Alun-alun[18].

The urban pattern formed after Decentralization Act in the early 20th century was the creation of a new town center trying to appear modern and away from the traditional image of Javanese. The new elements like Municipalities Office and also the great parks were built on the site away from the old city center. Handinoto (2010) described one of the backgrounds of this new urban development is the desire to demonstrate more the existence of colonial power in the colonies[19].

3.4. Distinguishing Aspects

Kostof (1992:73) proposed a classification based on topography and dimensions of time as an aspect that distinguishes one city from another[20]. Similar classifications are also used by many researchers of cities in Java. There are aspects of geography and time period. Based on geographical character, researchers divided the cities in Java into two categories (Nas, 1986; Zahnd; 2008; Handinoto, 2010; Santoso, 2008):
1. Coastal cities which are located in the north of Java Island, on the basis of trade and culture that tends to be egalitarian.
2. Inland cities which are located in the center of Java Island, on the basis of agriculture and culture that tends to be feudal.

Kostof stated (1992: 78) that the analysis of urban form must consider the specific conditions - the context of cultural, political and social change; therefore, the dimension of time becomes significant. In general, Nas (1986: 5) divided the transformation of the Indonesian cities into four stages: the early Indonesian town; the Indische town; the colonial town; the modern town. Although this classification does not represent exactly the facts in each city - because it could be for example the context of political change in one area that is more advanced than others - but in general it can be used as a tool of analysis[21].

4. Findings and Discussion

4.1. Main Elements of Colonial Space

Although the interpretation of the colonial elements can be interpreted by elements built by the colonial party, in this study the terminology are limited to the elements that functioned primarily for

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[16] Research by van den Heufel (2005) was a complete study to discuss Simon Stevin heritage in the field of Architecture, Planning and Civil City: 'De Huysbou' A reconstruction of an unfinished Treatise on architecture, town planning and civil engineering by Simon Stevin

[17] Among other studies of Kwanda (2010:23) about Profil Kawasan Cagar Budaya Surabaya

[18] Gill disertation (1995) proposed the theory that the structure of Java greatly was influenced by the system of administration policies, changes in the system affected the structure of the form.

[19] Decentralization arose because of the rapid urbanization in the early 20th century, a dense urban population raised awareness that the city needed the local board and did not depend on the Batavia Government Center. It should be noted long time before, liberalization factor in the Netherlands, the opening of the Suez Canal was a global factor affecting economic growth in cities in Java.

[20] In the case of Western European cities, based on topographic, Kostof distinguished between the cities of the hilltop to the valley town. Meanwhile, for the aspect of time he distinguished between pre-industrial cities and the cities of the modern industry.

[21] The political, social and cultural unity can be said to occur after the 20th century, before that time the political, social and cultural changes in each city were not running equally.

direct interests of the colonial authorities[22]. The study results found that the following elements can be said to always appear in the center of the city and has a strong character in the formation of urban space. Some of the main elements in the city that can be used to identify the colonial urban space are as follows:

1. Fort: element of the colonial that gives, for the first time, color to the structure of city in Java can be said generally through its fortress. In the VOC period (before the 19th century) the fort was built for the purpose of defense, and the administrative center of government and symbols of economic and political domination of the Dutch colony in the colony (Gill, 1995 in Marihandono).

2. Resident's Residence and Office: Residents in the period before the 20th century were the officials of Dutch colonial government under the Minister of Domestic Affairs of Colonies Region (*Directeur Dept. Van Binnenland Bestuur*). The territory covers the *Residensi*, an area of approximately a district in the present. Resident's residence or office is the administrative and authority of the Dutch colonial government on the area of *Residensi*. On a smaller area under Residensi, named Afdeling, the highest official is Assistant Resident[23].

3. Church: Although the principles of Law of the Indes and Stevin's concept assert the primacy of the Church element, there was very limited sources that explain the principles of Church placement after the fortress city in Java. Some notes from Lombard and church history literature illustrate that the position of religion in the Dutch colonization did not stand out as it appeared on the Spanish colonization. The Dutch, since the beginning, did not include the special role of religion in their mission, and even tended to limit the interference of religion in the administration of the colony. Restructuring of the churches as a new institution began only after 1815[24]. Through the study of literature related to the history of the church in Java[25], we can conclude the role of Protestant missions (Catholic later) was limited to humanitarian issues such as health and education.

4. Parks: The role of parks in the colonial period rarely discussed in publication, but the fact that they were present in key locations such as in front of Church, Resident's Residence or Main Intersection in the city showed their significance in the formation of urban space structure. Handinoto (1996:81) based on the case of Surabaya illustrated that the development for open space before the phase of *Gemeente* came from private initiative. However, more studies need to be done looking at the fact that there were major parks in the colonial city center before the 19th century – in which private role was not dominant as it was in the 20th century - among other cases, Kediri, Pekalongan, Tegal and Salatiga.

5. Stations & Railways: Following the Great Post Road that connected landline of Java in 1810, the discourse to the railway came in 1840. The first network that connected Semarang-Kedungjati was completed in 1871. After the development of a comprehensive network which was intensively carried out, by the year 1894, recorded by Lombard (1996:140), the first line was completed across Java. Network construction was continued until the 1920's, called by many notes that the rail network was the most complete network and the densest in Asia at that time. The same as the pattern in Europe, the placement of the station as a meeting with the rail network and the highways was located in the city center (Handinoto, 2010:333). These facts are sufficient to show the significance of the Station as an element affecting the structure of Java urban space.

6. Telecommunications and Trade Office: Immediately after the economic liberalization in the Netherlands after 1870, the opportunity for private to conduct business in the colony was open widely. These conditions led to the needs of business & trade offices on a large scale[26]. With the increasing economic transactions of the city, the needs for communication connectivity between regions in the colonies as well as the colonies to the Netherlands were increasing, so that the telecommunications office buildings such as postal, telephone and telegraph appeared.

4.2. Set of Elements of the Early Colonial : Fortress City

The early colonial period in the 17th century was marked by the establishment of the fort in areas that were considered strategic to the economy by the VOC[27]. Departing from the initial function as a symbol of existence, it evolved into a center of government and administration activities of the territory of these business entities (Marihandono, 2007). Establishment of the fort or citadel, especially in the case of coastal cities, aimed at securing a trading post and community interests of internal security. The fort can be considered as a small town, so the set of existing colonial elements gathered in the fort.

After the VOC took stronger political position in the city, other elements grew around the castle

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[22] This is to clarify why the elements such as Mosques, and Kabupaten built by colonial on several cities are not included in the category of colonial element, or vice versa Rastenburg fortress built by Sultan Hamengkubuwono is not included in the category of traditional elements.
[23] Handinoto (1996) referring to Cobban (1970) described the structure of the Dutch East Indies before the twentieth century, it appears there are two governance structures: the Dutch and the Natives
[24] Among others, gathering all the Protestant congregation across the archipelago in Protestansche De Kerk in Oost Indie and forming the Assembly of the Church under the Ministry of Trade and Regional Development of Colonies and King William Church (now Immanuel) as its center in Batavia in 1835-1839.
[25] Regarding the relations with the church in the Dutch colonies, it can be found at Lombard (1996:97-102) part Peran Komunitas Kristen; Sejarah Gereja di Indonesia (2008, archives of GPIB Kediri); and book 75 tahun Jemaat Kristen Jawa Sawokembar Gondokusuman Yogyakarta (Majelis GKJ Sawokembar Gondokosuman Yogyakarta, 1988)
[26] Some of big trade offices in Java, among others De Javasche Bank, Nederland Handels Mij, Ned. Indische Escompto Mij, Ned. Indische Handelsbank.
[27] Handinoto (2010:429) illustrated the establishment of the VOC fortress on the banks of the river in Jepara city that serves as a storehouse of the earth before it was brought to Europe.

like: Resident's Residence, Dutch Settlement, Churches, Parks, Prisons and Markets. Placement of the elements in this period is set apart from the traditional set of elements that have been there before, namely: Kabupaten/Kadipaten-Alun-alun-Mosque-Market. The sense of the word 'separate' here describes separation by distance, as it can be seen in the case of Semarang, Salatiga, Pekalongan and Kediri. Separation that occurs between elements of colonial and traditional elements in the case of Pekalongan and Kediri is increasingly punctuated with elements of the river as a barrier.

Separation of the elements of traditional and colonial urban space, among others, was due to the relation that exists between local authorities (Duke / Regent) and colonial (VOC officials) at the time. In the early colonial period the relations were limited to trade affairs and there was no intention from the Dutch to meddle too much in the native political affairs[28]. This condition is much different from the style of the Spanish colonies, which demolished Tenochtitlan elements of traditional urban space since the beginning and replaced it with Spanish elements[29].

Source : Analysis from Map and Field work in 2011-2012
Figure 1. Set of colonial and traditional elements that stands apart at Pekalongan (left) and Kediri (right)

Case of considerable interest is found in the case of Salatiga. The separation that occurs is not limited to the elements of colonial and traditional elements, but even each element stands apart without following the general pattern. The set of traditional elements which are, in general, caturgatra pattern stands apart: the Great Mosque and Kauman with Alun-alun and Kabupaten – in which in general pattern become an integral part- stand apart in distance. Meanwhile, the set of colonial elements that form an integral set as we saw in Kediri and Pekalongan, can not be seen in Salatiga; elements of the Resident Assistant's Residence - Park - Church stand apart from the fortress and prison.

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[28] Lombard (1996:106) citing Schrieke illustrates the difference in perception between the Governor-General Van Imhoff and High Commissioner of Netherland in the year 1802 as a different perception of how the position of Regents to the Governor-General in Batavia
[29] Broadbent (1990:42-43) described the Laws of the Indes as the principles used in developing the city in the Spanish colonies, while Lombard (1996: 94-95) explained the different background of VOC policy that tended to give priority to trade with the Spanish mission of civilizing people in the colony.
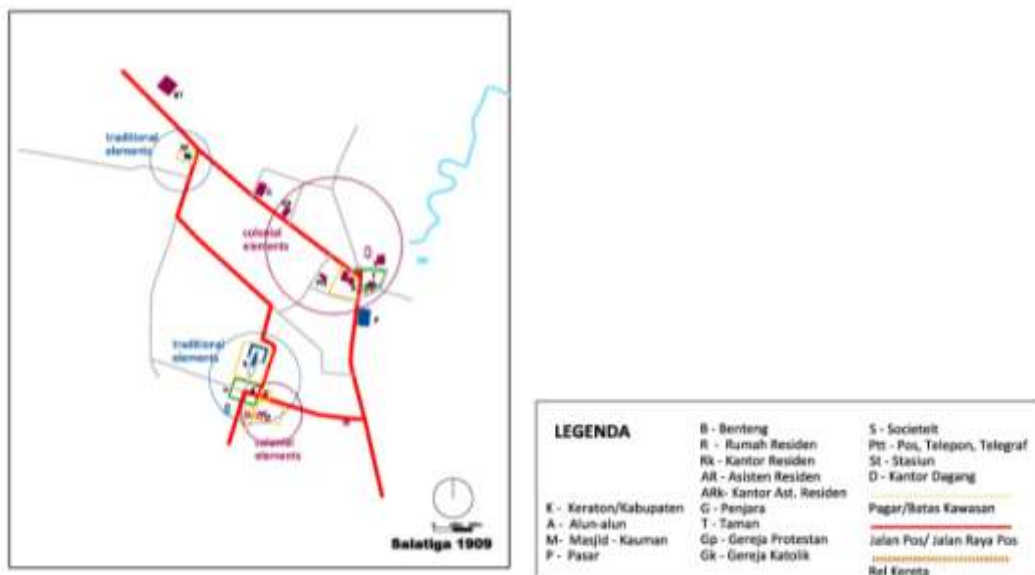
Source : Analysis from Map and Field work at 2011-2012
Figure 2. Set of traditional and colonial elements that is far from each other and does not follow general pattern in Salatiga

4.3.   Set of Elements of the Middle Colonial : Central Administration Complex

The composition in which the structures of colonial and traditional sets of elements stand adjacent can be found in the case of Yogyakarta and Surakarta. Comparing the scale of its range, Caturtunggal set of element (Keraton, Alun-alun and Great Mosque) is more dominantly visible than colonial set of elements that are set right on its northern side. Set of colonial elements in both cities - although the cities were established at different periods - almost the same as the set of elements in Kediri and Pekalongan: Fortress, Resident's Residence[30], the Church and the Dutch Settlement. In this period there is no separation of the components of the Market, two sets of elements appear to use the same market; a position in both cities is equally close to the set of colonial elements.
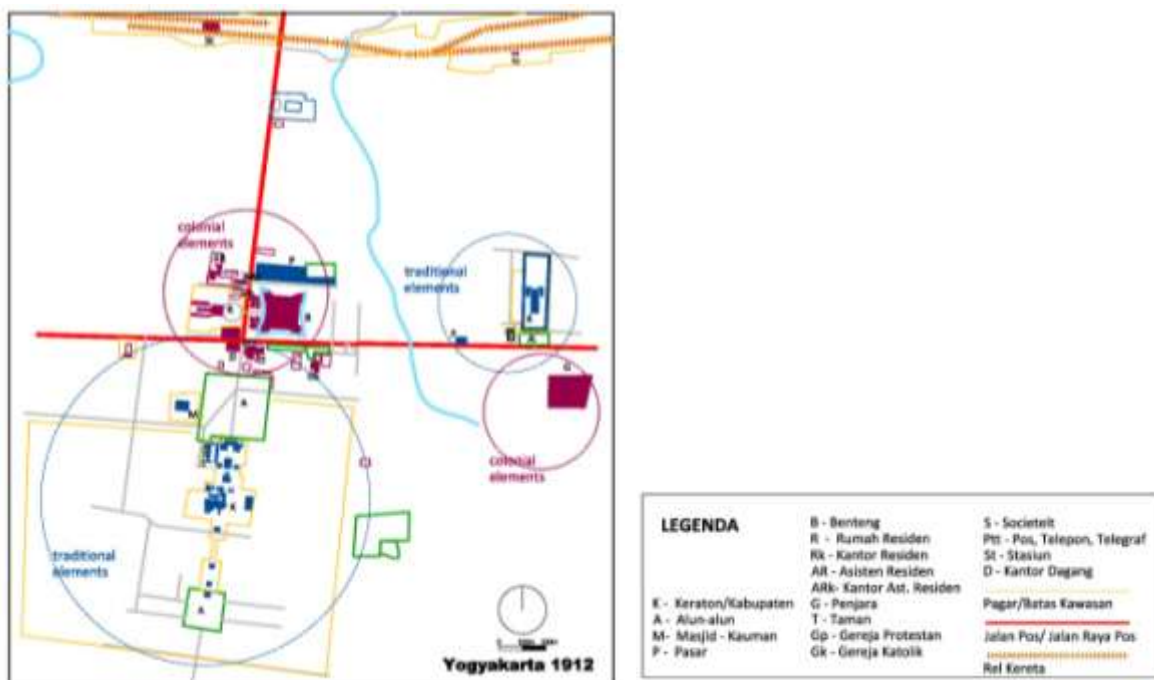
Source : Analysis from Map and Field work in 2011-2012
Figure 3. Set of traditional authority element that is adjacent with set of colonial authority

Meanwhile, in the case of Magelang, similar conditions prevail. Buildings of Kabupaten, Resident's Residence (both in the 19th century) and Gemeente Huis (after the 20th century) are in one

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[30] Placement Home Minister (herein after House Resident) in front of the Fort Rustenburg (later named Vredeburg), Yogyakarta was described by Marihandono (2007:3) as part of politics from Daendels to strengthen the European position in the central region of the Javanese Royal Cities (Vorstenlanden)

administration building complex. Differences between Surakarta and Yogyakarta were oriented to the placement of the church that was oriented to Alun-alun, and the castle that was replaced by Prison elements.

4.4. Indis Element Set: Alun-alun as the center

Some cities use the elements of Alun-alun as the center of the orientation of the main elements, both traditional and colonial. Purworejo, former the capital of Karesidenan Bagelen which became the Regency of Puworejo later, is the most obvious example. Alun-alun of Purworejo became the center of the placement orientation of main elements: Kabupaten, Great Mosque, Assistant Resident's Residence, Church, Prison, Post Office, Hospital, and even the Station.
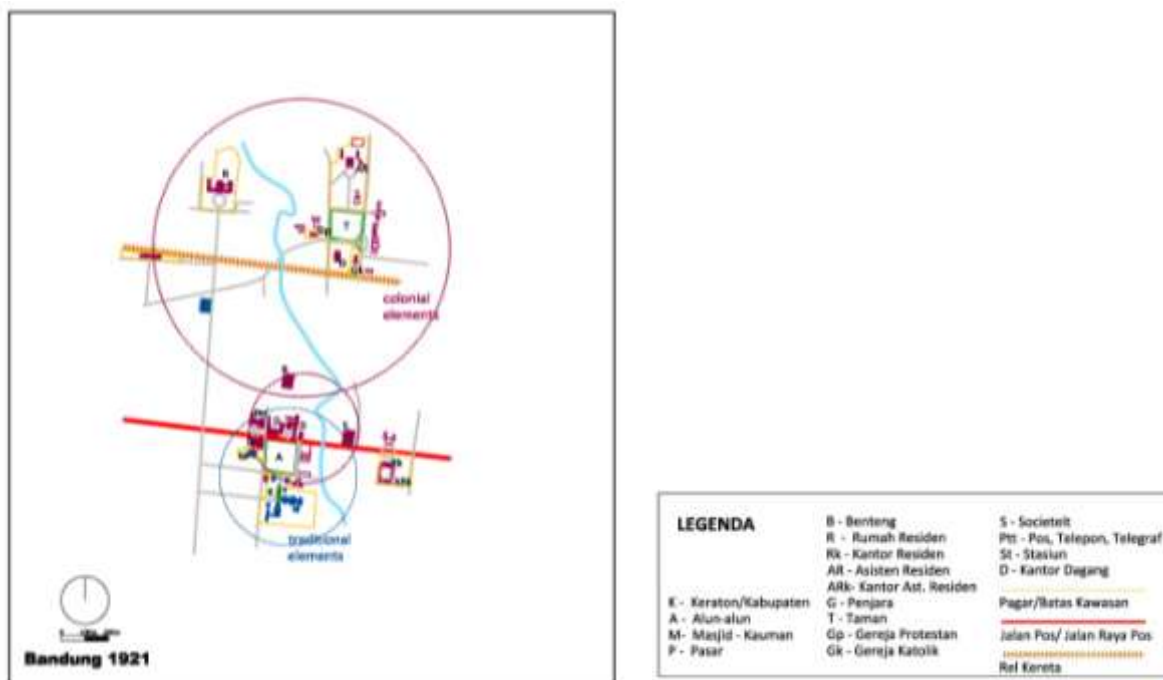
Source : Analysis from Map and Field work at 2011-2012
Figure 4. Set of traditional element which is mixed with set of colonial element at Bandung

City of Bandung at the time of initial set up was a case where the set of elements of the colonial government set was mixed with traditional elements. Alun-alun became the center orientation of Kabupaten, Great Mosque and the Resident Assistant's Residence[31]. Gill (1995) advanced the thesis of this pattern as the pattern of the New Dutch East Indies City arising from the influence of colonial policy of indirect rule system[32]. Meanwhile, further to the political aspect, in the opinion of Van den Bosch in 1833 (in Lombard, 1996:106), he described the background and motivation of the Dutch to choose to maintain cooperation with the native rulers was for the stability and profitability of the Dutch economy. Meanwhile, Nas (1986:7) assumed the composition was an example of influence from the burgeoning Indies culture at that time[33].

4.5. Set Element of the End Colonial : Central Economics and Center for Modern City

The 19th century can be said to be the influential period on the change of economic and administration system in the colonies, especially in Java. Some influential events include:
1. Bankruptcy of the VOC and the shift of power to the Government of the Dutch East Indies colony in 1800
2. The Great Post Road infrastructure was completed in 1810
3. Enforcement Cultuurestelsel in 1830, ended in 1870 with the shift in the concept of liberal economy.
4. Rail transit system across Java in the late 19th century
5. The rapid development of telegraph systems in the second half of the 19th century
6. Telephone network in the early 20th century

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[31] Analysis from Siregar (1990) based on Bandung map in 1822 showed the position of Assistant Resident's Residence just in the north of Alun-alun. In further development, the Dutch central government moved further to the north, the maps after 1900 showed a model set of elements of the colonial government around Pieters Park, or City Hall now.
[32] Regarding indirect rule termed by Lombard (1996:106-107) with "an iron fist in a velvet glove", a review of the background of this dual conception of the administration was described by a fairly complete.
[33] A brief study of Indis Culture can be read from Cribb (2003) 'Indisch' Identity and Decolonization, or a in-depth study from Soekiman (2011), with his book titled Kebudayaan Indis dan Gaya Hidup Masyarakat Pendukungnya di Jawa, which was a publication version from his disertation in 1996.

7. Implementation of the Decentralization Acts during the first three decades of the 20th century.

Record of the events above simply shows that the infrastructure of cities in Java was prepared by the Dutch to support the resilient economy system of the region. This fact explains how the main elements of the 19th-and-20th-century cities were formed. The buildings that are part of the main elements of the city at that time include: the Post and Telegraph Offices, Stations, Office of the Private Trade. The main elements of the new city form a set of elements that are inevitably affected the structure of the city. In general, the position of the main elements of this economy is contiguous and forms a set of specific composition. Look at the influential parties, it can be easily concluded that the economic element of this set is a set of colonial elements.

The unique part of the set of elements of the colonial economy is on the scale and variety of its placement. Elements such as the Post and Telegraph Office, Office of Trade are generally close together, and some even form a set of colonial urban space that is strong enough as in Pekalongan, Tegal, Semarang, Yogyakarta and Surakarta. Meanwhile, elements of the colonial economy in the city of Bandung and Magelang actually put themselves to join the traditional set of elements, oriented to Alun-alun.
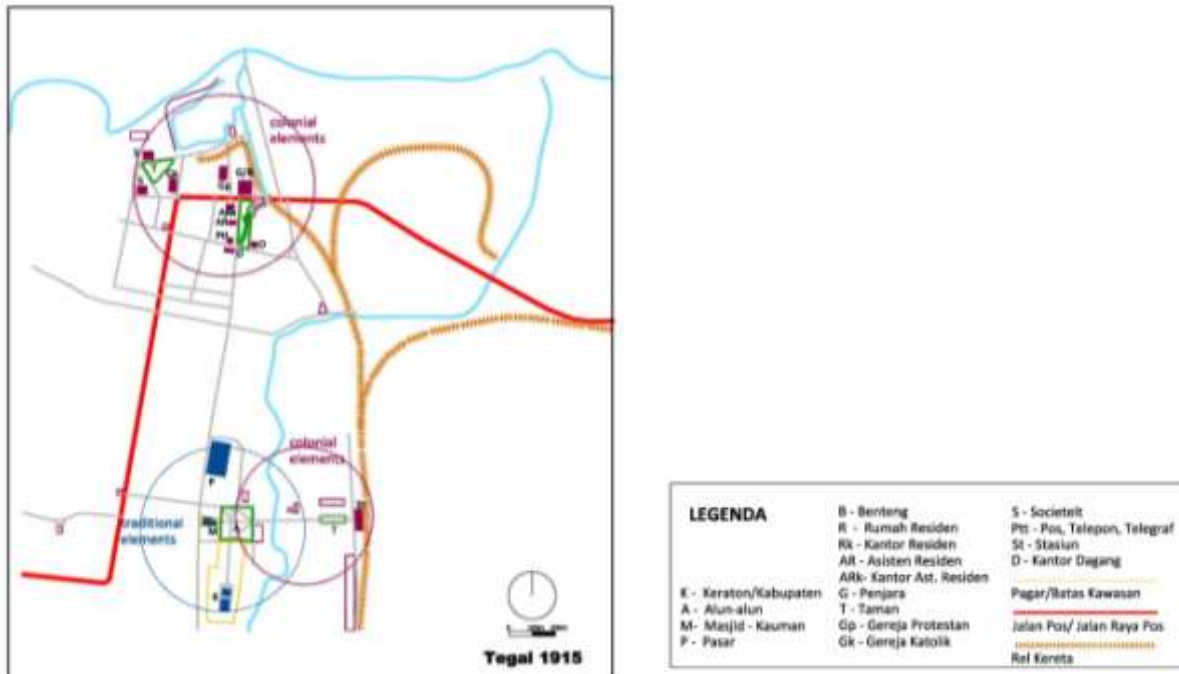
Source : Analysis from Map and Field work in 2011-2012
Figure 5. Set of station element that is oriented at set of traditional element in Tegal

Placement of elements on the station is generally oriented or at least adjacent to the Main Market of the City and is located apart from the city center. Strong character of urban space is rarely formed of this composition as in the case of Pekalongan, Kediri, Bandung and Magelang. Placement of the station as a city landmark can be seen in the case of Tawang Station in Semarang which together with a polder in front of it forms the strong character of urban space in the Semarang Old City District. Meanwhile, in Purworejo we saw the laying of the station in the city center, adjacent to the Kabupaten, but not forming a strong character of urban space. Tegal case is an example of the placement of the station elements which are integrated with elements of Parks, Office of the Bureau and Caturtunggal, the set of traditional elements. Station placement in this position is probably due to a main line and the nearest rail line to the main market, but the design of the station of Pont to combine elements of the set square is still a unique composition that is rarely found in cities in Java[34].

Local and international transportation infrastructure which were improved and the freedom to try brought by liberalism in the colony have driven the rapid rate of urbanization. Urban population increased rapidly not only from the natives, but also from Europeans who were trying their luck in the land that promised a lot of opportunity at that time. Complexity of the existing urban drove awareness that the city needed to be managed professionally by a local institution. Decentralization Act in the early 1900's brought the cities in Java to have special autonomous local administrations to manage the problems of the city. From the aspect of governance structures, new structures emerge such as the Mayor, Council and the People's Court. Elements such as the Mayor's Reidence, the House of Representatives and the Court are the last colonial element set. Placement set the last element is no longer bundled with the initial set of traditional elements or Indis set, but occupies new territory in the city. Set elements of Mayor'sOffice-Park- Church-City Council of the church and the court became a separate new town center which stands apart with the centers of the old city. Complete set of elements can be seen in Bandung, while other cities like Semarang are modified.

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[34] Among others Malang, Probolinggo dan Jakarta which have similar pattern

5. Conclusion

Looking at the findings of fact and discussion it can be concluded that:

1. Colonial period plays an important role in the morphology of urban space in Java. The changing context of social, political and cultural rights caused by the colonial authorities-either consciously or not-was significant in influencing the shape of the Java urban space we live in today.

2. Forming elements of urban space in the colonial period varies, depending on the context of time (change of political system, economy and technology) and geography (local potential and the position of the constellation of regional economies).

3. In general, Java urban space has similar main elements; the variation – if there were - comes from the composition and placement of the colonial elements.

4. Composition of colonial elements set is dynamic and there is no single pattern that can be applied to all cities. Instead, the set composition of traditional elements namely the Caturtunggal was static, fixed and found in all cities, except for the case of Salatiga. This fact suggests the role of the traditional elements of the composition of the set is a fixed element in the central Java urban space, while the role of the composition of colonial set of elements that do not fix gives diversity in each city of Java, so that each of the cities of Java is a unique entity.

5. Referring to the morphological phase of urban space that happens, the use of periodization by Nas - Colonial Cities and Towns Indies - to read the Java urban space concept in the colonial period becomes less representative to the reality. Periodization of the proposed classification is based on the concept of a dominant force at the time: The period of urban space as a space power; period of urban space as the space for administrative center; period of urban space as an economic space and the period of existence of urban space as a space of modernity.

Some researchers using the urban morphology approach stated the factor that the structure of Java urban space which was uncertain at the beginning of its formation was the cause of the weakness of the conception of urbanity of our cities today[35]. Cities in the pre-colonial Java are a collection of villages that each has different value system, so the city is not a unity of political and cultural entity[36]. This character can be seen as a problem in one hand because the absence of the conception of urbanity causes our cities unable to form complete municipal entities: physical and cultural. Even so, it can be concluded that the uncertain structure of urban space as the sole basis of the formation of urbanity may be a simplification that can lead to a hurry conclusion. The improper use of glasses could make the potential of the spatial structure of Java not identified and explored.

Today many design concepts of cities in Indonesia imported western precedent, applying without sufficient understanding of the background of the concept. New concepts are often applied regardless of the background context of the formation of concepts, which has a different history of the formation of urban space from us. On the other hand we often fail to capture the potential of urban spaces that could have been the strength and distinctiveness of the design models of Indonesian cities because of the lack of understanding of the context of our own urban space creation. Superblock concept, for example, managed to lift visual and aesthetic quality of urban space instantly, but on the other hand removed the tissues of the Kampung kota or removed the old city area, any aspect of the exclusive benefits marginalized certain economic groups.

Efforts to understand the potential of Indonesian urban space must begin from the inside, a comprehensive understanding to our urban space. Study of the interaction between traditional urban space and colonial urban space in this paper is small part in the wider efforts to understand the unique character of Indonesian urban space. The step is a basic introduction of further step which can include the study of urban space preservation, design and development of unique potential of urban space, and so forth. The understanding of the unique character of urban space will lead to recognition of problems, potential and prospects of our urban space more comprehensively. That step is the basis for us to determine the concept that best fits to create a better urban space toward better city living quality, or briefly the concept of better space - better living.

Acknowledgement

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[35] Evers (2011: 187) explained that the absence of the urbanism conception, among others, was caused by the absence of a clear city structure and city institutions. Furthermore, he asserted his thesis that the process of urbanization of post-independence Indonesia cities ran without the concept of urbanism.
[36] Santoso (2009:21) took the example of Banten to describe this condition.

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Seeking the Cultural Landscape of Magelang

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ABSTRACT

Magelang is inspirated by nature. Physically, the city has a powerful cultural identity with its nature. For a long time, natural scenery of Magelang influence the mind and the belief of the people. Each authority designed the city with each consideration about nature. Nature and culture with the people action has a power to set up the city. A wonderful scenery that combines the topography of the land, the mountains, the foots of the mountains with its villages and its life, the farm with its life and the valley with its life was used by people for developing Magelang city. Magelang in the long period reflect the interactions between people with their culture and their nature over space and time.

Nature and culture of Magelang city with the people action influence the development of Magelang city over time and over space. The Mountains, Tidar Hill which is believed as a nail of Java by the people and the rivers have been influenced the morphology of Magelang City. All of them have been creating a set of belief over time and over space. As a *watak* or *wanua* (country) in pre colonial period, the nature of Magelang was sacred by the people and decided to choose it as a special place. When as a *kademangan,* the nature of magelang was looked as a wonderful place with natural resource as rice storage. In pre colonial period, the people decided to choose the region of Magelang because of the sacred of the place, wonderful place and natural resource as rice storage. In colonial period, when England and Dutch ruled in Magelang, nature of Magelang was looked as an advantages for the authority. Magelang grew as a plantation city with its scenery as a wonderful place. Inside of the strategic aspect, Dutch decided to choose Magelang as an important city because of its scenery and natural resource as a plantation and farming area. Nature in colonial period was used as a consideration to make Magelang as a rest area and a strategic city, located between Yogyakarta – Semarang - Solo. With its scenery and strategic, a lot of people came and developed Magelang as rest area, a military city and strategic city, in spite of Magelang was chosen too as the head of the regency and residency. After independence period, Magelang have been growing up an economic city with its changing on the culture and belief of the people. Since 1980, there are new concepts to consider the nature as a part of city.

This paper will focuses on the concepts of cultural landscape in Magelang. It will be supported by exploration in the interaction between nature, people and culture. The result of this research to build a local theory of cultural landscape in Magelang.

Keywords: nature, cultural landscape, Magelang

1.   The Unique Nature of Magelang City

Magelang City as a valley is located in central Java, about 42 kilometers north of Yogyakarta City. It has an unique nature with seven mountains. Among of them, there are two twin mountain, Merapi – Merbabu Mountain (in the east) and Sumbing – Sindoro Mountain (in the west). The other mountains are Telomoyo and Ungaran (northeast of the city) and Prahu (west east of the city). The shape of Magelang valley is the product of the mountains. Each mountain with its value has an important roles for Magelang city as a valley. Included as an unity, there are a hills, Menoreh hills, and a famous hill, Tidar hill. According of the position, on the deepest place, one can see a spectacular scenery of mountains, hills, hill and shaped because of them. On the other hand, there are two rivers as the barrier between of Magelang city and Magelang regency[1]. Progo river flow among the west of the city, in other hand, Elo river flow among the east of it.

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[1] Magelang city, located in the center of the regency, is surrounding by Magelang regency (see figure 1).
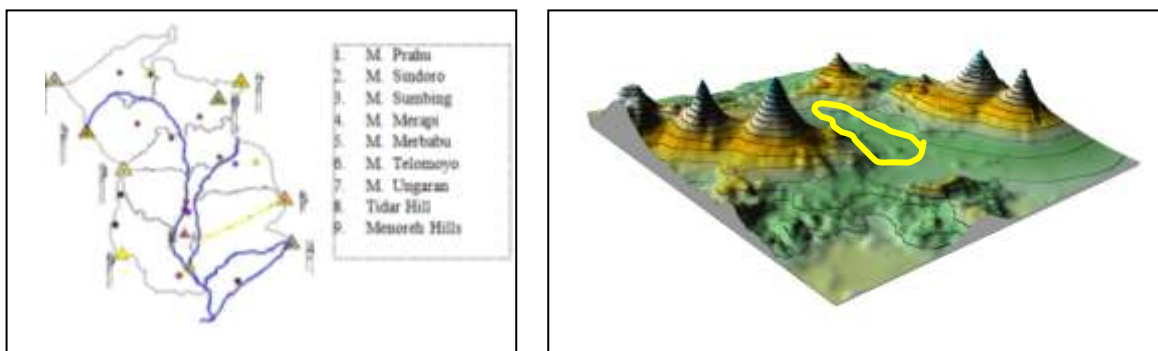
Source: (Redrawn from administrative map of Magelang city and regency, 2010 and reconstruct form the map, 2012)
Figure 1: Map of Magelang city and regency (left) and its 3-dimension condition (right)

Supported an unique nature, Magelang as a valley has a specific long period space and time. Since sixth century, Magelang was grew as an sacred valley and developed as an city after England and Dutch came to control (Utami, 2010). Beginning as the sacred valley, Magelang valley became an important place because of the unique nature. In each period, Magelang has been choosing as significant function. To describe the period and the function of Magelang, it can be classified on three period, the first period is about Magelang valley as a part of the Kingdom (… - 1810), the second period is about Magelang city with controlled by England, Dutch and Japan (1810 –1945) and the third period is about Magelang city after independence of Indonesia (1945 –2010).

Since Magelang was established in 1810 by England, Magelang was explained as a strategic city between important cities and as the head of Magelang Regency and was chosen as the head of Kedu regency in 1817. Magelang was chosen as an important city not only because of its strategic location, but also the strategic function as the fertilized area, rice storage and strategic location as defense place for local people. Magelang grew as a beautiful place, because of the beautuful scenery. Some of articles said about Magelang as a park city or central park in the central Java. After Magelang became a main place for plantation, there were some plantation fabric and plantation area, Magelang grew fast a an important city. Schools, hospitals, hotels, finance office, club were built in Magelang to complete the facilities of the city. Some military complex were built to support as defense place. There were some colonial settlement for Dutch. In other hand, there were some foreign settlement, like Chinese, Arabic and japan.   Magelang grew in colonial period with its strategic location and strategic function as plantation and defense place.

Source: (analysis, 2012)
Figure 2: Magelang Periodization as a valley and a city with the function

The nature have been giving an inspiration to the people. But because of the economic and globalization aspect, since 1980, there were some changing consideration about the unique nature of Magelang city. Some area, that have a specific area to the nature in the past time, had changed to support Magelang as an economic city. In other hand, some of places still consider the unique nature as the potential aspect, like Taman Kyai Langgeng (Kyai Langgeng Park) which use the contour and potential scenery from that location.

Since 1980, Magelang have been grew as economic city with its changing in the concepts. People and the government changed from beautiful city to economic city. Government and people make a new decision and it haven't been considered the scenery and strategies city as a valley with strategic view. The strategic location become a main consideration to create the city as an economic place. The scenery and the fertilized as the result of the nature were been left. As a modern city, Magelang grew as an economic city with its modern style. A lot of shop, supermarket and support facilities was made by government and some people. In Bayeman, Jendralan region, there are a lot of changing style and changing concept.

2.   Exploring Cultural Landscape Concepts in Magelang

2.1   Cultural Landscape Literature

Sauer, 1925, explained that cultural landscape is fashioned out of a natural landscape by culture group. Culture is the agent, the natural is the medium, the cultural landscape is the result. Recent, its definition was completed by JB Jackson (1984) and Platcher and Rossler (1995) explanation. They argue that cultural landscape reflect the interaction between people and their natural environment over space and time. In this study, researcher of cultural landscape always give the concern about the relation between three aspect, such as human, nature and culture. Culture can change human and nature. Hough, 1990 defined that natural scenery has a powerful influence on perception of places (Hough, 1990). Scenery as a nature is a combination of the topography, water, forest etc. and it is exciting because of its obvious variety and drama as rugged terrain. Process of it can be a part of the cultural landscape. To support this idea, The World Heritage Committee, December 1992 defined cultural landscape as a illustrative of the evolution of human society and settlement over time, under the influence (WHC, 1992) and developed by UNESCO, 2005 that defined cultural landscape are cultural landscape properties and represent the combined works of nature and of man (UNESCO, 2005).

In Indonesia, cultural landscape is expressed by word of "*saujana*" which means "*sejauh mata memandang*" (as far as eyes can see) and defined in Indonesian charter for Heritage Conservation (BPPI, 2003). *Saujana* (cultural landscape) heritage is the unity between nature and manmade heritage in space and time.

According to the explanation about cultural landscape theories, the main concept of cultural landscape with heritage collaboration can be shown at the figure. People take an action because of its belief to the condition, nature and culture condition. There will be a changing of the action because there are difference and developing consideration and belief. It is a process of culture and action with changing nature (figure 3).
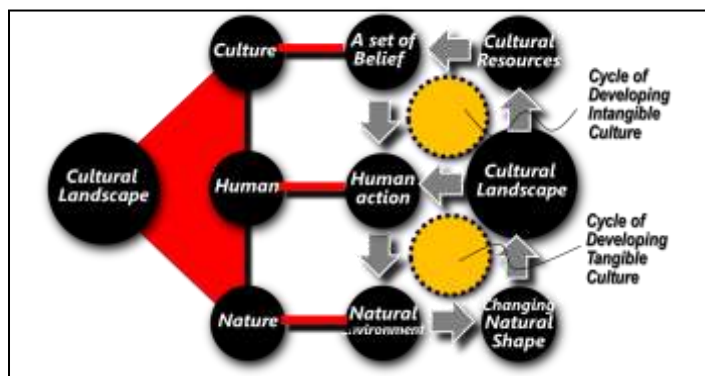
Source: (Utami & Ikaputra, 2009,)
Figure 3: Seeing heritage from cultural landscape

2.2   Research Methodology

This research focuses on the concepts of cultural landscape in Magelang. This research concerns on the urban heritage space. As a heritage city with beautiful and significant places, Magelang is required to explore to get the concept of cultural landscape.

To achieved its objective, this research have been done with two step. First step is exploring data from document, photos and document to get the past condition, second step was exploring empiric data from recent condition. First step and second step are collaborating by diachronic and synchronic analysis method and analysis to get the abstract of them.

3.   Change and continuity of Cultural Landscape of Magelang

With the unique nature (mountains, hill, foot of the mountains and rivers), for along time Magelang has been growing fast with specific function and role in each period.   From   the exploration of Magelang in each period, there are four concepts related seeking Cultural Landscape of Magelang : (1) sacred; (2) fertile; (3) scenery and (4) strategic. Magelang city has been growed because of them. Change and continuity related with space, culture and time. Time series show the process of it.

3.1   Sacred

The essence of sacred can be found related with seven mountain. Mountain as a sacred place in pre old Mataram and old Mataram Kingdom, was believed to create a sacred valley. Valley with seven mountains, surrounding the valley, is an uniqueness. People believed that the valley to be sacred too, because of surrounding seven sacred mountain.   Seven sacred mountains had been creating a sacredness related with foot mountain, some rivers and Magelang valley, included hills on the Magelang valley. Purity of river, written in Tuk Mas[2] inscription, was called as Gangga river (Sarkar, 1969, Casparis, 1975). The sacred of seven mountains and valley was believed by people until Old Mataram Kingdom and was abandoned because of Merapi eruption in 1006[3] and because of the Islamic influence (Lombard, 2008). In Demak and New Mataram Kingdom Period, people substituted the sacred of mountains to be the sacred of Tidar Hill (Lombard, 2008). There are many legend about Tidar hill to be a sacred place. The sacred Tidar hill by people because of Tidar Hill was believed as a nail of Java Island.   People with many explanation believe if Tidar Hill is broken, so Java island will be broken too (Kussendracer, 1841; AJ van der Aa, 1851; Sjouke, 1935, Lissa, 1935; AN van der Veen, 1965, Adiwiratmoko, 1988; Atmodjo, 1988, Utami, 2001, Lombard, 2008 etc). In the recent, people still believe that legend. The sacredness have been creating Magelang valley as an important place in each period, especially as a settlement. Magelang valley had been chosing as a *perdikan* and *sima* area. [4]
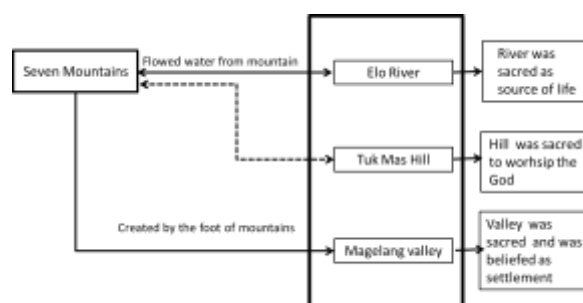
Source: (analysis, 2012)
Figure 3: Seven sacred mountain created sacred place

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[2] Tuk Mas inscription, located in the east of the Elo river and believed to build at six century, explain about the sacred valley and the purity rivers as Gangga river.

[3] Until now, it becomes controversy about the Merapi eruption in that year. According to Bemmelen (1949), there was a Merapi eruption in AD 1006 and destroyed a lot of area surrounding Merapi Mountain.

[4] *Perdikan* is a tax-free area of the kingdom; *sima* is a tax-free area of the kingdom for worship.

2.2   Fertile

The essence of fertilize can be found related the continuity of the valley function as a rice stored and a plantation. Because of eruption, mountain created a place as a fertile land. Magelang valley can be found as a fertile area in the kingdom period on the Tuk Mas, Canggal, Poh and Mantyasih inscription (Sarkar, 1969, Haryono, 1994, Darmosoetopo, 1998, Casparis, 1940, Casparis 1975). Some of them define about paddy field, paddy, farmer and its equipment.   In Demak and New Mataram Kingdom period, Magelang was chosen as a rice storage. In addition, in New Mataram Kingdom, Magelang was known as *kebondalem*[5]. In other hand, in colonial period, Magelang was chosen as a rice storage and a plantation city. There were a lot of plantation area in Magelang city. Besides that, Magelang was chosen as factory of plantation. Some factory were built to support the plantation (map of Kedu Plan, 1870).   Magelang was chosen as a main activity place and a lot of facilities was build.   In each period, Magelang valley (since colonial period called Magelang city) became an important function related with plantation and paddy field product.   Because of the fertile, England in 1810 and Dutch in 1813 controlled Magelang and made it as a head of the regency (Lissa, 1935, Magelang Government, 1936, AN van der veen, 1965). As a strategies place of Plantation product and facilities, Magelang city grew faster than the other area surounding it.

Figure 4: Paddy field and Plantation

Figure 4 describe about the paddy field which located in Magelang in colonial period (left photo) and plantation which located in the foot of the mountain (right photo).   Magelang and surrounding of it was explained as plantation and paddy field in colonial period (Kussendracher, 1841, Aa van der Aa, 1851, Buddingh, 1859, Lissa, 1935, Danoesogondo, 1936, AJ van der Veen, 1965). In Buddingh book is described about plantation along the street between Semarang – Yogyakarta (buddingh, 1859).

Related with fertile, people chosen Magelang as settlement and a production land. the mountain support the fertile of the land.

Todays, some paddy fields area are move to built area. Strategic aspect (economic aspect) is dominant than the nature. It means that todays, the fertile of Magelang land is not used for paddy field and plantation.

3.3   Scenery

The essence of scenery can be found related with the beautiful scenery from Magelang as the deepest place. Magelang as a deepest place was shaped by the mountains. From the Magelang, people can see an unity of the nature as the combine between mountain, foot the mountain, hills, hill, the fields, terraced field and the plantation. Some documents and articles about Magelang valley and Magelang city in the past, always mention about the mountain and the scenery of it. Because of it, since in New Mataram Kingdom, Magelang was chosen as a rest place. In other hand, combine between fertilized and scenery, Magelang was chosen as the head of the city, since Magelang was ruled by England in 1810. A lot of guest house, lodge and hotel were built in Magelang to support it. Inside that, especially in colonial period, there were a lot of supporting facilities, like bank, school,

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[5] *Kebondalem* is a garden of the *Sunan* (King), especially from Surakarta Kingdom. Some article which support recent time, explain that in *kebondalem,* there were a lot of fruits and vegetables

hospital etc. Magelang became a centre of activity to support the hinterland city as a rest city and plantation city.

Many article describe about the reclame of Magelang fasilities. The reclame mention about Magelang with beautiful scenery. Mountains created a beautiful scenery with its foot of it. Paddy fields, plantation, terasering and its contour make a spectacular scenery. Magelang grew as a rest city with its condition. In colonial period, one of the reason from government to built the resident office and *pendopo*[6] was related with the scenery especially in the west of the city.

Hotel Loze drawn three mountain in its reclame, Hotel Montagne[7] drawn a mountain to its symbol. In colonial period, Magelang was known as park city and a central park of Java Island[8]. One of the consideration related with seven mountains with Magelang valley. A lot of article mention about Magelang as a central park of Java Island (Lissa, 1935, Magelang Government, 1936, AN van der Veen, 1965, Soekimin, 1984). Even now it can be shown at the song of Magelang about beautiful scenery of Magelang with mountains and hill[9].

Source: (Utami, 2012)
Figure 5: Scenery to the mountain from alun-alun (east of the city)

The contour of the city creates Magelang as the deepest city and the valley city. From the deepest and valley, people can see surrounding the city. With the beautiful scenery, People come and visited in Magelang since the kingdom period until now. Some rest place are built in Magelang. Some guest house and hotel are built to support it. Magelang is grew as a rest place with beautiful scenery.

Todays, there are some places in Magelang where can enjoy the beautiful scenery like Kwarasan settlement and Karesidenan Complex. People still can enjoy the beautifull scenery from Karesidenan Complex, which built in colonial period and built in there because of its scenery. From there, people can see the beautiful scenery that created by the contour of the land, paddy field, Progo river, Menoreh hills and the mountains. It's the suitable place to enjoy Magelang as park city and enjoy the nature with Magelang regency condition. Magelang city and regency is an unity to explain the scenery (as far as eyes can see).

3.4   Strategic

The essence of strategic can be found related with geographic location. With two rivers and seven mountains, Magelang shapes as a North – South line city and connects some important city (Yogyakarta – Surakarta – Semarang). Since in the past, Magelang always become an important city because of its strategic location. In Mantyasih inscription[10], people can find about the main

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[6] *Pendopo* is a part of building and used to public meeting
[7] Montagne come from French word. The meaning of montagne is mountain.
[8] Some article and book mention Magelang with "*Magelang de bergstad van Midden Java Middelpunt van den Tuin van Java, Mooi Magelang Middelpunt van den Tuin van Java, etc* ". All of them describe about the beautiful scenery of Magelang city in colonial period
[9] The song of Magelang was created by Soekimin Adiwiratmoko. *"Magelang kota yang indah, penuh dengan pemandangan, di kanan gunung di kiri gunung di tengah pun gunung…….."*
[10] Mantyasih inscription, AD 907, located in Magelang, explains about the main transportation connecting Dieng – Wonosobo – Parakan – Magelang – Yogyakarta – Prambanan – Wonogiri – Panaraga (Darmosoetopo, 1998)

transportation line and the centrum of Mantyasih area (Darmosoetopo, 1998. Casparis, 1940, Casparis, 1975). Mantyasih was chosen as a centrum activity in that period especially in Balitung[11] period. Mantyasih as a *wanua*[12] was surrounding by the other *wanua* (Casparis, 1940). Some of the remains of Mantyasih as the centrum of the area can be shown todays with the names of the area, like Meteseh Jayengan (Jayengan means as the glory), Meteseh Krajan (Krajan means as the Kingdom) etc. Beside of that, Mantyasih was a main transportation with river (Darmosoetopo, 1998) and connected Dieng - Panaraga.

In colonial period, because of its strategic location, Magelang was chosen as a head of the regency and residency. In other hand, magelang was chosen as a military city because of its strategic to control the place surrounding Magelang. Some function of Magelang in colonial period because of its strategis are (1) the head of the regency in 1810 and 1813; (2) the head of the residency in 1817; (3) the military city in 1828 and (4) the municipality city in 1906. Because of that, Magelang grew as important city which supported by a lot of facilities.

Its strategic location support Magelang as a economic city in the recent. As the main transportation, Magelang grow up with the function of the city as military complex. Some military complex are built in Magelang. Its location grow up with the function of the city as an economic city. A lot of shop, house shop and modern market are built in Magelang. Unfortunately, some of them left the nature in the design. Its strategies change Magelang city from the park city to economic city.

According to the four concept, it can be shown at figure 6 related the change and the continuity of the concepts. Sacred concept can be described with the changing belief of mountain to Tidar Hill. It can happened because of the changing of belief of the people. Fertile concept was changed by economic aspect. A lot of new buildings are built in paddy field. Although there is no plantation and paddy field in Magelang city, but the process of the fertile show about the continuity of the consideration of the concept. As well as fertile, scenery concept has a difference consideration. Scenery come from the dominant aspect to design to the second dominant to it. The strategic concept is continuing until now, with the movement of the culture and consideration. Strategic concept as one of the cultural landscape of Magelang is the more dominant than the other. The main transportation and geographic location create Magelang as a strategic location with economic aspect.
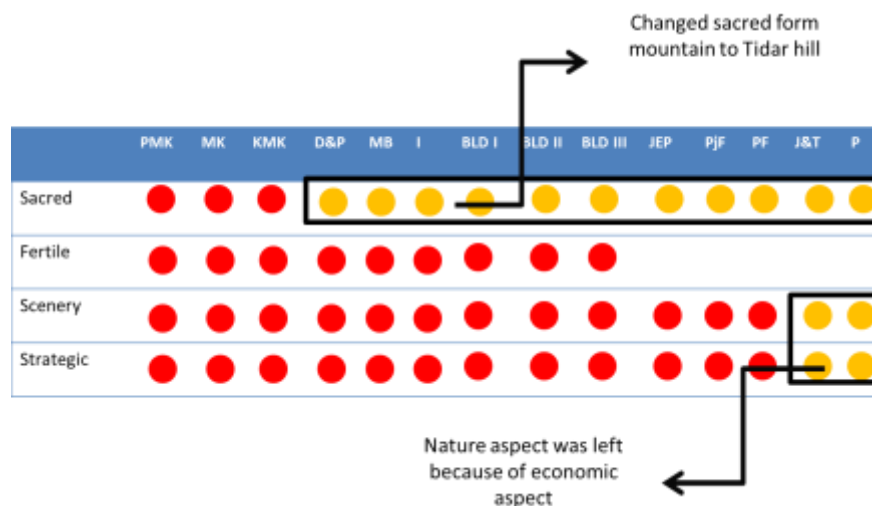
Source: (Analyzis, 2012)

Figure 6 : Change and Continuity of Cultural Landscape of Magelang

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[11] Balitung is a kingdom in old Mataram Kingdom. He was known as a powerfull kingdom who has a great influence.

[12] Wanua is a area was known today as *desa* or village under district.

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The Historic Area Conservation Toward Heritage Tourism
in Kauman Settlemet Surakarta

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ABSTRACT

The aim of the research focuses on conservation of the historic area toward the heritage tourism destination in Kauman Surakarta. Nowadays, the existence of historic area having high culture, unique value and potential of local wisdom like in Kauman area has not been handled optimally. It tends to lose its characteristics. Moreover, the main functions are changed permanently.

The research employed qualitative approach and descriptive methods. Data collection techniques consist of site observation, interview and secondary data study continued by identifying the object with reference, so that the conservation of the historic area toward heritage tourism destination in Kauman Surakarta can be found.

Research results indicate that Kauman areas built in 1800-1900 showed a Javanese traditional building with the background of views and Javanese palace culture. Kauman area, one of the historical places as a traditional *santri* settlement in central city, has one of the significant old building called *rumah ketib/ketib house,* close history of Surakarta Palace. In addition, to support the heritage tourism, changes of historical buildings have been made to form, façade, interior and function. The tendency can be seen from the building commercialized as batik showroom, home stay, and restaurant. However, one physical historic area like *muslim* scholar is still genuine but tends to have less maintenance. Therefore, the nuance of local character as *kampung santri/muslim* area is still found from the existence of social religious activity. There are changes of spatial layout and function in historical area to fulfill the concervation of heritage tourism destination.

Keywords: Kauman, conservation, historic area, heritage tourism.

Glossary:
1. *Ketib/Ulama/Abdi dalem* : *A Moslem figure choosen and given a title nobility by the King*
2. *Bangsawan/Priyayi* : *A person having special subject, he/she is choosen and given a title by the King*
3. *King of PB II* : *The name of the King Paku Buwono II*
4. *Kawulo dalem* : *Certain people choosen by the King*
5. *Tanah gaduhan/hanggaduh* : *Land donation from the King for living not for owning*
6. *Kawedanan Yogiswara/Kepengulon* : *The name of begining the place of Kauman as a toponym from the communies activities*

1. Introduction

Kauman area is a uniqueness historical area as *ulama* and *santri* (moslem community) traditional settlement in the center of city having close relationship with the history of Kasunanan Surakarta Palace (Surakarta Palace) and *Masjid Agung* (Bigest Mosque). Kauman area has uniqueness local wisdom character with the existence of some ancient building artifact which is close with the history of Surakarta Palace, for example: *ulama* houses, *langgar* (middle mosque), and other existence historical ancient building which is still can be seen and be searched its existence as a culture heritage. Therefore, it needs an attention to be recommended and to be explored its local

potential uniqueness local wisdom character consisting of the identification of historical building with its social culture value which is still exist and grows now.

Meanwhile, to explore the heritage tourism destination, it can be developed and be combined with the historic area concervation. It needs strong sensitivity and dialogue with other related side. In the other side, life dynamic and the change grow strongly. The effort of keeping the character and the sustainability of uniqueness local wisdom character is a challenge in managing a historical area as historical area tourism. Therefore, remarkable government, private institution, and the society need to corporate each other to keep it. They must be able to support each other to create double roles, filling its function as central culture creating historical area tourism and as a residence of local community that can improve their life.

Finally, this research will focused in the development of friendly and sustainable heritage tourism area. The aim of the research is focused on historical area tourism toward heritage tourism destination. This is the first research in the context of heritage tourism related to the influence of historic area concervation.

2. Research Method

The research uses qualitative research by using descriptive-analysis. The data collection was done using observation method: site observation, documentation by using photo and picture sketch, in-depth interview focused on exploring the information from the key persons. The primer data consists of the information about the informant, place, and event (by site inspection).

The informant consists of the representative of government, private institution, and society. Place and event consisted of spatial physics of building artifact's uniqueness local wisdom as well as the spatial value of customs and community's activity in the historical area of Kauman Surakarta. Secondary data consists of document references and relevant document. Research location is in Kauman Surakarta as historical area which has uniqueness local wisdom character with the history of Surakarta Palace.

The method of analyzing data uses interactive method. The result of the observation consists of empiric observation with the result of interview which is identified and considered based on the fixed aspects. It is also considered to the problem context. The result of the research is substantive theory that needs to be concluded and to be recommended.

3. Result and Discussions

a. Historical area studies.

There are many researches about historical area having been done separately. However, the research which is integrated for historical area tourism toward heritage tourism destination in Kauman has never been done.

In Wiwik (2000) shows that building character and social status as the owner and also as behavior inside are the manifestation from social life, culture, religion, and economic-prestige factor. Therefore, it is the reflection of existed culture of the society. Furthermore, in study of Kauman area society (Wiwik, 2003) found the relation between concept, behavior, and life style of the society with Kauman history and region-social activities which are reflected from palace tradition culture. Therefore, the concept of environment has traditional standard system from ritual reflection of Surakarta Palace.

In the other side, Wiwik (2004), through vernacular architecture study and building conservation and history area found that Kauman building character and historical building have relation with the content of Surakarta Palace culture value, as essential symbol, and also ritual aspect, social life, and culture manifestation. Therefore, the building and environment are influenced by the behavior and culture in around of the society. Moreover in Wiwik (2006) states that building concept which tends to symmetric, with covered concept, is symbols and reflection of behavior and way of life from inside occupant related with the culture and custom

of Surakarta Palace. Added Wiwik (2009 and 2010) found some artifacts that have high historical value, both building physical goodness and social activity. The conclusion of the research is recommend to be socialized and to be promoted to government policy, private institution, and other related services side who is able to realize and imply coordinativelly.

b. General description of Kauman Settlement as an historical area tourism area

Kauman area is an Islamic Palace typology with its main elements (Nakamura, 1983), there are: 1). The location of Kauman is at the unity with Palace, *Masjid Agung*, and *alun-alun* (town square); 2). It is a group of *santri* settlement in the center of the city having high Islamic religion; and 3). It is homogeneity as *ulama* in Palace and the generation from endogamy marriage. The existence of Kauman Surakarta area is simultaneous with the establishing of Surakarta Palace by the King of PB II on Pebruary 17th, 1745 caused from *Geger Pecinan* (name of war) in Kartasura as the completeness from the construction of *Masjid Agung* as the center of Islamic magnificence.

Kauman area begun from the existence of *Kawedanan Yogiswara/Kepengulon* (solder name of Palace), an area having high history related with the existence of Surakarta Palace, as the historical area in the center of city having uniqueness local wisdom character with the existence of some ancient building artifacts in Javanese traditional architecture and its social culture. The word Kauman stands from Arabic: *Qoum* means Islamic functionary like a chief, then becomes *Qoum Muddin* means Islamic founder (Darban, 1984). At the beginning, Kauman called as *Bumi Mutihan* or *Bumi Pamethakan* (white), which is meant as the area where only for *kawulo dalem* (Islamic special community). The based community Kauman is *ulama abdi dalem* from various *Pesantren*, they regenerate through genetic relationship in Endogamies', in the relationship of one family with other citizen (Yogaswara, 1940). Therefore, there are many *pesantren* (boarding school) and Islamic studies established there, so Kauman area is the settlement dominated by the community of *ulama* and *santri* who is ordered by the King to stay in the land around *Masjid Agung* in *hanggaduh*, that the existence of *Masjid Agung* as the orientation and landmark, and also *langgar* as the follower. Furthermore, the santri culture from ulama in Kauman influences to the attitude and the norm of social way of life. The duty of *ulama* is to teach Islam in Palace and community around there. Through Surakarta Palace policy, Palace area becomes non vehicle or zero position area to return Palace area as sacred heritage area. Therefore, as the supportive function as tourist heritage culture area, limited to not disturb the main function.

The settlement in historical Kauman Surakarta area is created organically with *Masjid Agung* as the center of the orientation and the spreading of social activities, while the activity in environment unit located in *langgar* around Kauman. The orientation creates building pattern, on the corner oriented to the main street. The street pattern comes from the settlement creation as (grid-iron) where the alley and social street is the main circulation of the settlement. Meanwhile, the path is crated spontaneously (Henry, 1993).

The unique of the name of *kampoeng* is a local wisdom which is taken from toponym given by the King based on the social activity. Kampung Pangulon is the house living of *Penghulu* (Muslem leader), kampoeng Sememen and langgar Sememen, kampong Modinan is the place for working to fulfill the palace need. Besides that, there is *kampoeng* Baladan as the place for *kawulo dalem* who make special food for palace need (Adnan, 1996). Then names are taken from the greatness symbols of Surakarta Palace which has magic power, like Wijayakusuma street and Kalimosodo street, having high sacred history.

The Kauman area is 20.10 Ha in width, consists of 6 *RW* (cluster), 26 *RT* (neighborhood), and 20 toponyms. Nowadays, Kauman community consists of various ethnic, where the original community is santri and most of them are Javanese (85%), in amount 3,477 persons, from 744 families in amount 458 house living. Kauman community are Moslem in amount 3141 persons/ 91, 82% with strong genetic tradition as *kampoeng santri* with many Islamic activities an norms there. The harmony can be seen from their life, in social activity, socio-culture activity, and

economic life. Moreover, it can be seen in Islamic life which is still being done now around *Masjid Agung, langgar*, and houses with its various Islamic activities.

Figure 1: Map of Deskription research areas of Kauman settlement

c.   Uniqueness of local wisdom characteristic in Kauman historical area

The analysis of uniqueness local wisdom character in Kauman can be classified based on the setting scale. Masjid Agung building is located southeast of Kauman which is built on *PB III* era in 1577 and it is perfected by *PB IV*. The physical appearance consists of Javanese traditional buildings, the roof shape is composed on three sides with the main room and pyramid roof in front porch. The square sketch consists of praying room for man and front porch in the left side is used for woman. *Wudlu* (place for clean by water before spray) area and *paturasan* (toilet) for man are in the right side and for woman is in the left side. It has 25 m *adzan* (call to prayer) tower located in front on the left side. Overall, within ornaments and the colors are shown the influences of Surakarta Palace.

The existence of uniqueness culture heritage from some valuable ancient building artifacts, for example Masjid Agung, *Kawedanan Yogiswara/Pengulon*; the old school (man school; Mamba'ul Ulum which is established by PB X in 1893-1939; ladies school: Madrasah Bowo Leksono; langgar Sememen as the oldest langgar in Surakarta in kampong Sememen as the donation from Ketib Sememi which is built in 1890, which has Javanese ancient architecture with adzan tower like *panggung sanggabuana /*the bigest stage in Surakarta Palace). All of them show that overall within the ornaments and the colors have strong relationship with the history of Surakarta Palace.

Other local wisdoms are can be shown in many historical buildings which still exist with its luxurious. Many buildings function still can be used, like *ulama* houses and its *langgar* houses built in 1800-1900. The orientation system is based on cosmos law which is related to the socio-cultural factor normatively faces to north-south axis. The building or main room has point of view based on trusted culture values, in *macapat* concept (hierarkies Javaness consept). It has various aspects reflect the Javanese traditional building in symmetric-balance shape like *dalem* (house of the King) in Surakarta Palace.

Ulama house has double functions, consisting of one building mass, like house living; *langgar* and *pesantren* for santri to learn holy Qur'an and also for house industry as batik-maker place. It has physical pattern territory border from the front street, as the main street marked by *regol ngarep* (entrance to the neighborhood street) and *regol butulan* (as the service gate). Room organization system is the symbolic manifestation from cosmology value and symbolic center in closed ended plan pattern. It is symmetric balance stops in *senthong* (privates' room). Hierarchy system shows the composed gradation from the front to the back based on its

functional service degree, formal and symbolic. The *senthong, dalem, peringitan*, and *pendopo* (hierarchy of Javanese room) system are in one-line, *senthong* room in the highest hierarchy located inside and it is the most sacred area. Physically it uses the highest roof construction in the shape of *joglo* and pyramid with the sirap roof as the cover and the roof tile. The wooden pole as the supporting structure, the wall with one pair-stone, and the floor use color tile.

Overall, the visual character of *ulama* house is the specific image as the identity of their local wisdom cultures which can be the indicators in exploring the heritage potential past history, and it may anticipate its development in the future. Therefore it may create spatial categorization where each visual character aspect room has the specific and unique in its classification and its meaning as the local wisdom area. Therefore, it may create the variations in the building.

Pakauman nuance and kampong *ulama santri* existence in the center of city are strong and specifically still being able to be seen with the Islamic activities everyday around *ulama* house and langgar there. The activities are still being done and still being continued by the society. It causes to the continuity of its shape, composition, and the appearance which is still exist and reflect Javanese traditional building having relationship with Surakarta Palace.

(Source : Doc. and Wiwik analysis, 2010)
Figure 2. Historic area kampung ulama/santri in Kauman

d. The historic area conservation of heritage tourism.

There are many phenomenon in 2006, Surakarta government in the effort of historic area conservation **in** Kauman area, pronounces that Kauman becomes tourism area. It causes the function change (transformation) some buildings around Kauman have been changed from settlement to tourism area which is still developing into the heritage conservation tourism area. Government policy of Surakarta supports to facilitate it by giving street furniture, information board, gate, and dustbin to support the facilities of heritage tourism area in Kauman.

However, Kauman historical area is still having many historical and ancient buildings having high potential existence history to be historical area tourism with the existence of ancient historical building, like joglo (form of roof) architecture giving the combination of Javanese and colonial architecture.

Based on the explanation above, in Kauman are divided into three classes of heritage tourism destination, there are: 1). Rreligious tourist destination (*langgar, masjid Agung*, and ulama house); 2). Cultural tourist destination (its uniqueness custom and traditional art of Kasunanan Palace); and 3). Shopping tourist destination (batik showroom). Meanwhile, the access and the circulation use signage or the written and symbolic sign.

e. The manifestation of historic area concervation toward heritage tourism destination.

It can be made in many kinds typology through identification and classification to be many kinds of historic area based on the uniqueness local wisdom character, there are:

1) The Main function as religious tourism area.

The clue of uniqueness local wisdom in Kauman area is started from religious activities as the manifestation of *ulama* and *santri* settlement with the existence of Masjid Agung as the center praying orientation and Islamic announce to Kauman community, and also *langgar* as the compliment of supporting social activities. The activity in Masjid Agung and *langgar* is used for praying daily, celebrating Islamic festival day, Islamic study, and doing such Islamic art. That activity continues and develops till now. It will not cause damage to the local physical and social environment there. Moreover, it can be developed to be religious tourism area. The religious activities are:

- The activity by enjoying Pakauman situation, like attending *Masjid Agung, langgar, pesantren* (boarding School), *madrasah* (Islamic school) Mamba'ul Ulum, *madrasah* Bowo Leksono, and others Islamic places.
- The activity by enjoying Islamic situation, like studying religious values through book and art, and buying some praying equipments sold there.
- The activity by enjoying daily life tradition, like studying and understanding *Ulama* and *santri* activities in conducting their daily life.

(Source : Wiwik analysis, 2010)
Figure 3. Kauman as a religious tourism area

2) The Supporting function as tourism culture area

It begins from the existence of Surakarta Palace that reflects to the *ulama* houses born in Islam era in the government system as *Raja Pandhita* (King from Religion system), in social community *ulama abdi dalem* with Islamic value background and Javanese culture history of Surakarta Palace. The visual character from ulama house gives the meaning as the specific image building which is combined with the culture of Surakarta Palace, it reflects Javanese traditional building image. The attitude and the way of ulama life is the manifestation of religious-ritual factor and socio-cultural influencing to the society sacred value. Therefore, it creates configuration system from double activities. It is reflected from the harmony, balance life ever after. It needs to get positive attention to be responded as the asset of historical area concervation toward heritage tourism destination.

- The activity of culture and tradition society, by attending and enjoying Javanese traditional performing art related to Javanese dance, shadow puppet, gamelan, and Javanese *gendhing* (sing) from Surakarta Palace.
- Enjoying the physical Kauman situation, by attending Javanese traditional houses with *limas an, joglo* and *pyramid* roof; indies houses is a kind of house with the combination of

Javanese tradition and Colonial style shape; art deco house with modern style dominated with wall and door with row window round most of house wall.
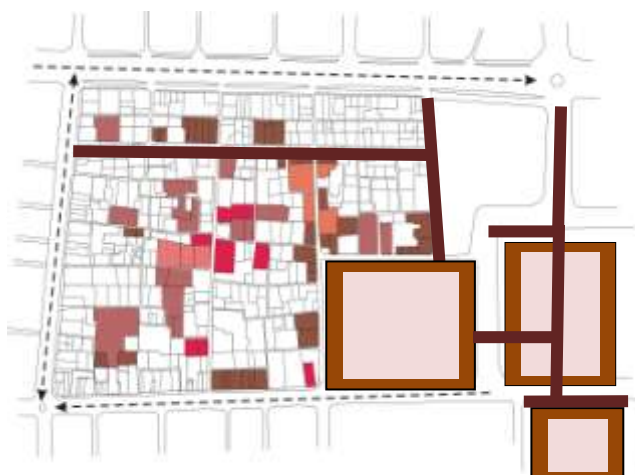
(Source : Wiwik analysis, 2010)
Figure 4. Kauman as a culture tourism area

3) The compliment as shopping tourism area (batik showroom)

Nowadays, this phenomenon arises from the comer community in Kauman to continue promoting batik as local wisdom heritage. It is visualized in business activities, by changing the function of house living to be batik showroom. Some of original communities are still beautifying the conservation of ancient building. In the other side, for young generation, it seems to be difficult to be understood then they give more priority to commercial business.

• Batik showroom.
• Food tourist resort especially in Kauman, it has many various traditional food and taste like *balad* cake from kampong Baladan. It is a special snack served to celebrate Maulid Nabi in Palace and Masjid Agung.

(Sourche : Wiwik analysis, 2010)
Figure 4. Kauman as a shopping tourist area

Based on the explanation above, in Kauman are divided into three classes, there are: 1). religious tourist destination (*langgar*, *masjid Agung*, and ulama house); 2). cultural tourist destination (its uniqueness custom and traditional art of Kasunanan Palace); and 3). shopping tourist destination (batik showroom and house industry). Meanwhile, the access and the circulation use signage or the written and symbolic sign.

4. Conclusion

a. Historical area concervation toward tourism destination

1) It must obey the existence of uniqueness local wisdom character, with its unique value area having attractive potential and local wisdom character.

2) It must relate to Community-based tourism approach that there must be enthusiasm in developing community, developing role, ability and active involvement, and having sustainable collaborative partner system (government, private institution, and local society) as the main founder role.

3) The development of Kauman tourist destination must have:

- Religious tourist (*masjid Agung, langgar, ulama* house, *pesantren*);
- Culture tourist (customs and social traditional art as the heritage of Surakarta Palace);
- Shopping tourist (batik showroom).

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TRADITIONAL & CONTEMPORARY
CONTEXTS

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The Settlement Formation:
Ngadas Village Society Based On Myth Poncokusumo District, Malang Municipality

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ABSTRACT

Myth is the event in a region in the past a mystical / magical and greatly affects people's lives in terms of the trust, so comes the rules, rituals, performed by people from an area where until recently for most people still do and provide support and foundation that affect the concept of the living space of every myth also differs according to the values that exist and thrive in it. One tribe in Indonesia which has keunikkan about the myth that is different from other ethnic communities in the Village Ngadas Tengger tribe as still adhered to the original trust (Budho Tengger) and also the belief that the soil around is holy, so affecting the community to maintain and preserve the surrounding environment with no indiscriminate felling of trees as it is believed would be fatal to do it,To find out Notching Living space in the Village Under the Myth Ngadas, so instead it will use qualitative research methods to analyze the myth that is based on the character of the community and analysis of Myths Notching Space Based in the village of Ngadas. Based on the analysis of the obtained final result is a conclusion that the existing community character in the village are traditional and Ngadas still strongly influenced by the myths that are passed from generation to generation and the rules and beliefs that affect the public interest Tengger Notching the Living Space and Sacred Space profane space in the village Ngadas.

1. Introduction

Myth is one integral part of the life of a society, because the myth is an event in a region in the past a mystical / magical and greatly affect the local indigenous beliefs, so comes rule of believed and if violated would be bad is bad luck to people's lives Tengger tribe, ritual -ritual (ceremonies, rites of sacrifice, religious ceremonies), and ultimately affect the spaces in terms of its function, its orientation and shape of the space in the living room this is an area / region specific. And myths also serve to codify, provide support and provide a foundation of traditional beliefs and behaviors that affect the concept of a living space of every myth also differs according to the values that exist and thrive in it. One tribe in Indonesia, which has unique about the myth that is different from other ethnic communities is in the village of Tengger tribe Ngadas Poncokusumo Malang district. Living space is one important element and a part that can not be separated from the life of a particular group of people, and settled character that is formed would be very influenced by a variety of conditions and the backdrop exist in the community. Where Myth is one of the aspects that have influence and be a part of the background of the formation of the existing living space in a community especially in rural communities.

From both the above phenomena can be seen that myth to give effect to Notching living space on a particular area or region, therefore it is important for researchers to investigate the influence of myth on Living Room Notching Ngadas people in the village. Villagers are masyarat Ngadas native who still has a strong attachment to the customs of the Tengger Tengger community where the origin of the first people came from Majapahit who fled to the mountains because of the pressure

converted to Islam. Ngadas Tengger community has so far seen as the only village where people are still holding fast to the tradition of the original "Wong Tengger" with the majority religion Budho Tengger / Java Buddha. Proof of authenticity can be seen from the story of a mystical myth / legend about the mysterious Mount Semeru, Mount Batok legend associated with the origin of the tribal community ancestral perch, Legend and Legend of Mount Bromo Ajisaka underlying the Tengger tribe indigenous beliefs and affect the rules / restrictions and native rituals Tengger tribe communities. in ancient times, which still adhered to today such activities, ceremonial rituals such as ceremonies Kasada, Karo, and so on still remain to be implemented. And also in every ritual that is always oriented to the sacred land and the spirits are feared. Spatial development of societies in Desa Ngadas with the space formed by Tengger Tribe myth community. The objectives of this study was to find out What shape is based on the Living Room in the Village Ngadas Myth. Targets to be achieved to realize these goals are: the myth is based on identifying the character of the people in the village of Ngadas, identify characteristics of living space in the Village Ngadas and last but not least is a formation of living space based on the myth in the Village Ngadas with space generated.

2.   Literature Review

Living space is a container that can not be separated from the activities of community life as a big group or small group of concerned men in groups and influence one another, and as part of the human container, (According to Amos Rapoport) space is a limited swath walls and roof, either by the elements of a permanent and non permanent, and is operationally defined space that can accommodate all the places or resulting from community activities that are temporal (nondimensional) or permanent (dimensional). While the system is operationally defined space as the embodiment of space based; time (permanent and temporary space), based on the function and role (culutural space and cultural core secondary), based ketradisionalannya (original space / traditional, semi traditional / mixed, and non-traditional / no contain traditional elements). (T. Nirarta Samadhi, 2004)

Myth is The events in an area in the past of the mystical / occult and greatly affects people's lives in terms of the trust, so comes the taboos (the rules), rituals (religious ceremonies, sacrifices, etc.), made by people of a region of the mystical / occult who had believed the local community and although the range of the past but for some people still believe. This myth is considered as the best way to clarify how things in the world of phenomena of the universe and all occurred in the absence of opposition to reject the truth of the events in this story, especially in animism fahaman The common feature of this myth is as follows:
1. The story is holy (sacred) b. In connection with the trust of a nation
2. The nature of gods, deities separa, in connection with the treatment of the Lord
3. Background in the primordial world or the past

Customs are rules about human life which residents agreed in a particular region to regulate the behavior of members of the community as a social group. Every human being who is in the customary life cycle is an integral part of the social unit, or in other words, the whole mechanism of social life for all members inspired by custom. And customs is an ideal part of the culture.

Definition of community according to Betran (1987): Community is the result of an accumulation period of cultural change and culture. So people are not just the population but rather as a system of relationships that form between them, thus showing a certain reality that has the characteristics - of its own. Of relationships in which they are formed of a collection of human beings who later produce a culture.

A wide variety of techniques will be employed to analyze the data including quantitative and qualitative methods, such as diagram and figure from relevant literatures, printed and electronic, which will also be reviewed to enrich the analysis of the research topic. For the purpose of this research, the data collected include culture databases, urban planning journals and articles.

The research also focused on the myth of the fabric of space and dwelt in the village of Ngadas seen from the tradition that is still valid today. The issues to be discussed in this research is based on the Settlement formation based on myth of Ngadas society?

3. Result and Discussions

Analysis Based on Character Myth Society A. In the analysis of the Mystical Stories Tengger area to be analyzed that influence the story of the character of the community in the village Ngadas today. People believe that the fertility of the soil around it is because of the holy land This can be inferred from the majority of the main livelihood in the village is Ngadas still farming. The role of leaders and Joko Seger Anteng Rara is embedded in the hearts Tengger community thus regarded as a forerunner to the public. Because this is the Tengger you feel, despite being different village, because he felt a kinship. The Role of Traditional Leaders is Mbah a mystical shaman to tell a story about the area of the Tengger people in this village for generations Ngadas order native customs and native confidence is maintained. The story about the mystical perch is still believed by the people in the Village Ngadas. It can be seen by the majority religion is still religion Budho Tengger.

Effect of trust on the analysis of the character of the community in the Village Ngadas are:
On the Farm believe that the land where they live and find food is sacred, the Land of the hand BOPO trandensi kuoso and Mother Earth are believed to be a form of creation, Believe Pedanhyangan can help the crop them. So is the farm of which the community believe there are spirits that could bring disaster for livestock, social relations are established based on the rules according to the original trust Tengger tribe in the village of Ngadas, the Role of Traditional Leaders is Mbah Shamans who became leader of this belief. It is believed that only the prayers offered by Mbah Shaman who will be granted and all of Mbah Shaman spell is a prayer of salvation for all mankind and the universe, public trust in the village of Tengger tribe Ngadas embrace 3 religions, namely: Budho Tengger / genuine belief from around the Tengger tribe people who are around the mountain Bromo Semeru and oriented to the four elements and four directions of the wind direction in each Pujon and offerings are made to influenced by the myth, the Hindu Tengger Hindu belief is not like those in Bali, but more likely in the Tengger Budho also in terms of ritual and religion of Islam has become the religion professed by the majority of Hamlet Distance Ijo influenced by the stories and myths that affect the orientation Ajisaka Legend the burial of Muslims in the village of Ngadas.

At this stage of analysis will be analyzed, namely the analysis of the effect of rules in the Village Community Character Ngadas. Are as follows: there are few rule inside the Ngadas society which is still continue, such as : Agriculture and Farming livelihoods. The rule is each activity early crops always salvation in the fields / garden with a form of prayer (mantra), and offerings are placed on the farm / garden, Still using traditional farming tools such as hoes, sickles and brokers, ax processing plant in the soil and also in maintenance, and also fertilizer that contains no chemicals are used from livestock manure and fertilizers are peliharaann jungle. And each crop will be done as early harvest of salvation. Any make rituals and celebrations must give offerings to the farm / garden. Interest in animal husbandry people follow the rules of the Tengger to treat their animals well. Must excuse me to read a spell when it will kill livestock. In the cattle raising cattle pens must not be built into a singlethe house. Rules of the ritual-related rirtual tribute to animals and also put the offerings in the corral every night every Monday and Thursday night. The existence of mandatory rules for the community to maintain "one of which Walima is Wasis (enough science).

The Rules of fraternal harmony and sustainability in the "Panca Setya "(five instructions loyalty) and the Rules and in everyday life pralima they also hold on to what they called" kawruh buda "and" Chess Paramitha "that affect the social relationships between people. The role of the Rules of indigenous shamans Mbah is a figure that must melestaraikan these rules hereditary. The rules relating to trust people who do are:

A. The existence of customary rules shall Ritual Ceremony Pujan / salvation that is in the village of Ngadas.

1. The existence of a rule to not perform ritual ceremonies at the wrong time, for example in precedence ahead of time.
2. There are rules for each community that would make offerings to the celebration should give some of which are considered sacred places and sacred.
3. Should not be building a house on the position against the direction of Sunduk the junction and traffic lights.
4. Cots are not allowed to put (place) in bed with the house against sunduk both within and outside the bedroom room.
5. Girls and women who are pregnant banned linger at the door or in the middle of the door.
6. When traveling away from home, either from the field or from somewhere else, when entering the house must first wash their hands and feet.
7. Men are prohibited from taking their own rice in baskets of rice, on the contrary be taken by the wife.
8. Placement of bathroom and cattle pens must not be in the house should be outside the home.
9. Perhaps no stove in the kitchen Putting in vain because it will be bad.

The existence of a rule to not just anyone is allowed to go chop wood. D. Rituals based on the character of the Tengger tribe is:

• Ritual at the feast of Agriculture is Every kasado people carry most of their agricultural crops to be discharged into the crater of Bromo Gunug. Liliwet that is part of the ceremony karo spell on the weapon being used as everyday tools in agriculture, Tegal pesahan in wars and the founding ceremony of the house. ie where the crops are crops with the goal of safety by placing offerings in the fields / tegal and gardens and do pujan Kapat, pujan kawolu, pujan Kasongo, unan-unan rites and ceremonies Pujon bari'an and Selametan to fields and gardens at the beginning of each activity new planting and harvest. with a prayer / mantra and offerings by Shaman on punden, Dahnyang, Mbah sedek and Field / Garden. Ritual is a honor for raising cattle and rojo forest patches that are in there. This ritual is part of the ceremony karo.

• The ritual ceremony karo. namely: the meaning Pregan Pregan This is the value of cooperativeness, Tumpeng Bandungan whose meaning is a sense of mutual help and mutual Tumpeng Ijen whose meaning is a symbol of God, the Hyang Widiwasa and as a symbol of unity for all the people of the Tengger tribe.

• The role of any character in Mr. Shaman Ngantrulin-rirual ritual / ceremonies in the village Ngadas; At the inauguration ceremony Kasado as a Shaman ritual and ritual Any major or minor in the village has always led by Mbah Ngadas Ngantrulin Shaman.

• Rituals that affect the community kepecayaan Tengger tribe is all traditional rituals both large and small all the original orientation is based on the belief that Budho Tengger Tengger tribe.

Living Space Analysis Based on the Myth of space influenced by the myth of the Tengger tribe in the village of Ngadas by:

A. Livelihoods.
• Field / moor and Gardens Pepunden
• KandangTernak Dahnyang (Raden Petilasan Flag Wulung)
• Tomb Mbah Sedek
• Studio Offerings
• Temple Mount Bromo Mount Bromo below

B. Educational level did not affect the shape of space in the village Ngadas. Education levels are influenced by the mythical space community in the village of Tengger tribe Ngadasberdasarkan social relationships are influenced by the myth space community in the village of Tengger tribe Ngadas based on the Social Relations.

C. Forms of living space.
D. Negotiate space
E. Indigenous land.

House Residential Placement Rules Role of Elders / Traditional Leaders Space is influenced by the myth according to the role of Elders in the village of Ngadas is at the foot of Mount Bromo is Tembat which is also used to perform a ritual ceremony to induct Kasodo also a shaman, led by Coordinators of the Shaman Tengger, Studio Pamujan / monastery in the village Ngadas is the usual place of religious communities and the Tengger Budho mbah Shamans perform worship BOPO Kuoso, Studio Dedication is the burning offerings that cater for all the four elements that are believed by the public, Dhanyang is a place-out of the spirits of the ancestors in the village and this is Ngadas Mbah a place that always used to do a ritual healer and also a place to meditate, meditate and Tomb punden place.

Space is influenced by the myth is based on current beliefs held by people in the village of Ngadas, which are :

1. Orientation of the tomb is oriented in 3 directions Orientation at Mount Semeru for Shaman, for the people of Mount Bromo Tengger Budho and Hindu religion and the religion of Islam to lead towards the north.
2. Building Orientation Building orientation is divided into two sacred buildings and house building.
3. Building placement and schematics and Placement of Sacred Buildings
4. For buildings that are considered sacred in this case is Sanggar Pamujan / Vihara, studio offerings, temples, Dahnyang, Studio Pamujan / Vihara and Studio Offerings
5. Pura
6. Dahnyang
7. Placement of Residential Houses
8. The forest is considered sacred forests should not be in cutting the tree is located to the east towards jemlang and a separate hamlet and Distance Ngadas seputaran Ijo and the fountain on the west.
9. According to public confidence in the village street Ngadas current road infrastructure is a myth created by the influence of the four orientations that indicate the direction of the wind as well as every bend in the road that is believed to have penunggunya every fork in the road and intersection in the hamlet and crossroads in jemlang Ngadas.
10. Based on the categorization Bentukkan Myth Of Living Space bentukkan analysis based on the living room seen from the mythical character of the community
11. Ngadas Village. It can be categorized based on the views of local people (the interview with Pak and Pak Carik Wardiono) in the activities undertaken by people in the village of Ngadas. into two categories: Sacred Space and profane space.

Sacred Space Sacred Space is seen from the community in the village Ngadas consider some Kramat place as it pertains to the rules based on a genuine belief that the public interest perch inherited by their ancestors and to date there six, although a change in placement but does not reduce kesakralannya namely:

• Studio Pamujan / monastery in the village Ngadas is where usually the local community who are Budho Tengger and Mbah Shamans perform worship Sang Hyang Widi Wasa / BOPO Kuoso. The placement and orientation rules are as follows:
   ✓ proper placement in the east toward the sunrise because the sun according to the belief Budho perch is a form of creation BOPO Kuoso that provide the source of life for them and also the fence that marks the boundaries of this sacred place.
   ✓ For buildings of worship in the studio Kuoso BOPO Pamujan / monastery that is oriented to the highest mountain Mount Semeru as the residence of Sang Hyang Widi Wasa and fine spirits were high levels.
• Offering this studio is the place designated for burning offerings to the four elements and is a central place to do the ritual burning of offerings for the Tengger tribe in the village Ngadas Unang-Unang the ceremony and should only be entered by Mr. Shaman. This building should not be built in vain where the conditions are:
   ✓ Should not be in a place full of hustle and therefore placed in the routed near Pamujan /

Vihara and fenced
- ✓ Should be placed under a big tree and marked the tree.
- ✓ Orientation
- ✓ Semeru facing the highest mountain.
- ✓ The building is a temple of worship for the Hindu Tengger people in the village of Ngadas
- ✓ because this is a place where people perform worship to the Creator / Sang Hyang Widi (the Gods). proper placement in the east toward the sunrise and the same explanation Budho Tengger. Only difference is the building on Sang Hyang Widi worship and put Sanggah at home every race like the Balinese Hindu religion and temple buildings oriented to the highest mountain is Mount Semeru as the residence of Sang Hyang Widi / gods and spirits were high levels of fine.
- ✓ Dahnyang is a place-out of the spirits of the ancestors in the village of Ngadas and this is the place that is always used Mbah shamans to perform rituals and also a place to meditate. The building placement because this is the place Raden Panji Wulung dwell and the spirits of the ancestors gathered / centers cosmology spirits. Therefore, the prohibition to reap any of the locations. resembles a mountain and in which there is a sacred stone and is also oriented to the highest mountain.
- ✓ Punde Mbah is a place that according to the Shaman is a place that is usually used by Shamans mbah to meditate and not random people can walk into this place, this place is restricted by a fence of bushes.
- ✓ For the placement of the tomb there is no rule that only the orientation is influenced by the myth of the tomb of the orientation of the three directions, namely: Mount Semeru: the elders of the village / the Shaman.
- ✓ The orientation of the grave elders of the village oriented on Mount Semeru. Mount Bromo for a religious community and the Hindu Tengger Budho.
- ✓ Common tomb in the village Ngadas both Ijo and Hamlet Hamlet Distance Ngadas oriented in three directions, namely Mount Semeru for Shamans, Mount Bromo for the Hindu religion and Budho to Islam while leading towards the north.
- ✓ The forest is considered sacred rule that should not be in cutting the tree is located to the east towards jemlang and a separate hamlet and Distance Ngadas seputaran Ijo and the fountain on the west by Mbah Shaman because there had been a dead time of felling trees in forest.

Profane space profane space that is a building that is still influenced by the myth but is not considered sacred in the village Ngadas namely: Residential Houses. Myth rules that affect the house as a home / residential building that is home placement by age based on age and role in the family and also The rules in the division of space in the house in the yard that is:
- • House occupied by the parent nucleus and is followed by building houses the oldest child starts left / back of main house and followed the next child, as well as if the parents are entitled to occupy his death the homestead was the eldest.
- • Placement
- • Animal Enclosure Bathroom and should not be in the house.
- • Should not be made firewood stoves to west direction as it would be bad.
- • For Hindu people protested on the front porch occupies the right side and orientation on Mount Semeru.
- • Rule prohibiting men entered pedaringan therefore should be made bulkhead.

The other rule is to not be publishing houses opposite direction sunduk / skewer because it is believed will lead away the bad fortune and disaster for the whole house which residents can get sick or die. The living room, From First people have to live with houses built close together / together and clumped in the middle of the village is now very solid, this is due to rule for life and helping each other mutual royonglah attitude so as to create unity in the whole society in village. Even today not all the houses were seldom fence fence fence if there is a separate comprehensive or limiting the house was just a good way main roads, footpaths, street gang. And according to him it is no different

to the villages because it still occupies an area of the Tengger and the offspring have the same rules.

Any talks of building problems and the latest news on developments in the village people always want to include to negotiate. This is a customary rule of Ngadas village. And the space used and the Headquarters Building is located at the crossroads end of Hamlet. Farm / garden Farm and Garden is a source of livelihood for the people of Tengger to treat agricultural land in village communities Ngadas and also the rule for all farms and gardens not to sell to other parties outside the Village Ngadas. If want to be sold to the public Ngadas village, which is why people say the customary land. According to public confidence in the village street Ngadas current road infrastructure is a myth created by the influence of the four orientations that indicate the direction of the wind as well as every bend in the road that is believed to have penunggunya every fork in the road and intersection in the hamlet and crossroads in jemlang Ngadas, by Therefore there is a celebration every society has always put the safety of the offerings to have a celebration for passing the road when it's not unfortunate. Increase in road infrastructure to the Village Ngadas also what causes the changes in the beliefs held by society, especially in Hamlet Distance Ijo.

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Identify the Disposition of Spaces
Case Study Kampung Peneleh Surabaya

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Theoretically we know that time can change the activities of the house's users. This study wants to see the disposition of spaces in houses in this present era when the acitivities changed. By looking at the users behavior we will see how their changed activity (ies) give new meaning to the function, hierarchy and disposition of space in the houses. Spatial arrangement follow certain rules. This spaces will be given meaning according to the behavior and function. There will be three options according to behavior setting theory, those spaces will have to be amended, adapted, or abandoned. Many logic assumption have been used to answered the problems by using critic method, by comparing the given meaning of the past and today suggestion to the spatial arrangement of houses in Kampung Peneleh Surabaya. This study will result in the knowledge that the meaning of the spaces have been shifted. This shifted meaning will have impact in the shifting of the hierarchy, function and disposition of the spaces.

1. INTRODUCTION

Activity and the act of user movement enganged in activity is the fundamental generator of space. Lionel March, Philip Steadman and Bill Hillier have theorized about the abstraction of space, and determined analytical systems to understand its usage and combinatorial qualities. Steadman and March illustrated a syntactical approach to design, defining the ordering of spaces as the ordering of relations between people and the ordering of activities in relation to people's routine (Ireland, 2012). Activity can change according to era and necessity. In the past Javaness believed the breadwinner always the male member of the family. Right now, equality, emancipation, or necessity makes female member of the family as the breadwinner too. Usually (in middle class citizen) they looked for jobs that's not too far from home or stay at home jobs. This can change the disposition of the rooms in Javaness house because of the change of value and norm. Will the rooms still have the same disposition? Will the change in the rooms disposition change the hierarchy of the rooms?

The approach of this writing using critical study, from critical 'reading' of the cases to critical thinking. So the study can described knowledge, correctly interpret dan evaluate (Attoe, 1978). All this activities belongs to the critical work.

2. ISSUES OF HOUSES IN PENELEH VILLAGE

2.1. Description of Space Function in Peneleh Village

Case 1	Case 2	Case 3	Case 4	Case 5	Case 6

a	PORCH
b	PARLOUR
c	LIVING ROOM
d	BEDROOM
e	DINING ROOM
f	KITCHEN
g	BATHROOM

Fig. 1. The scheme of houses in Peneleh Village
(source: field study, 2008)
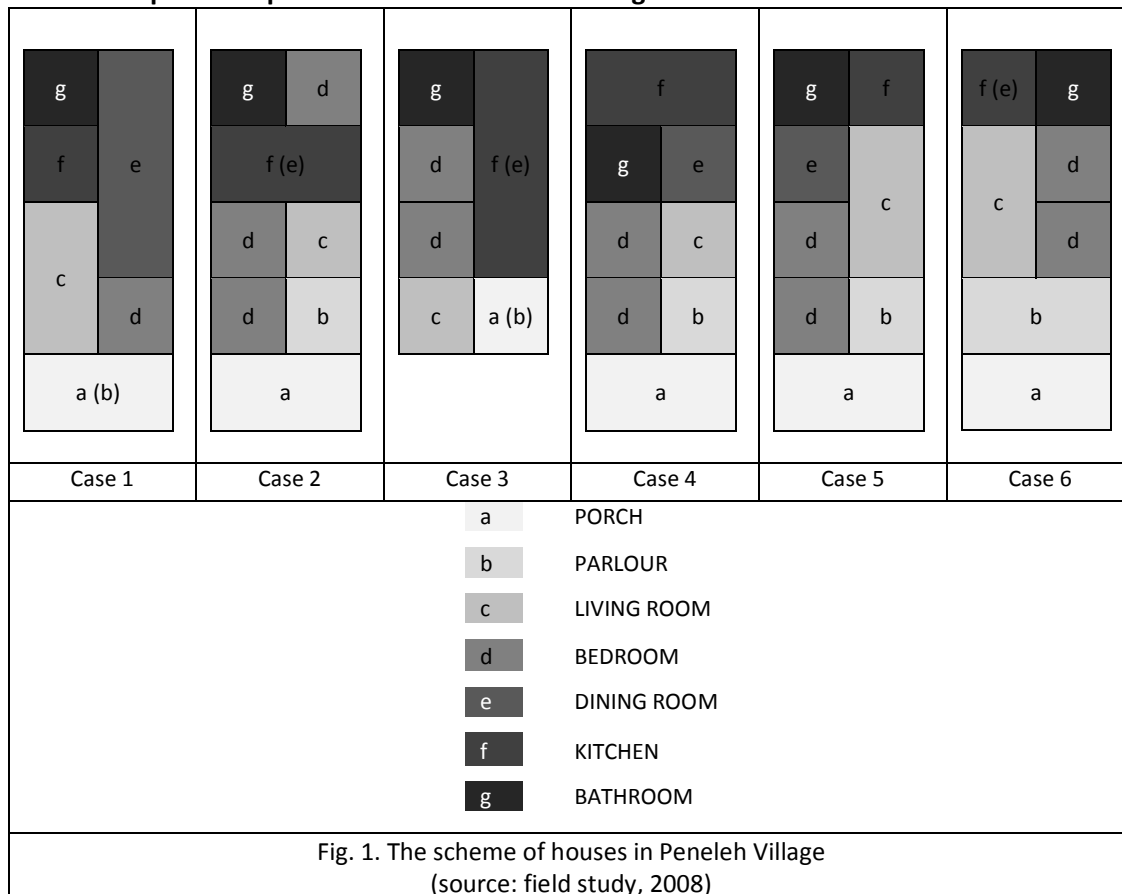
General overview function of the houses in Peneleh Village can be described as follows:
- The chosen houses facing south
- Generally every houses have porches at the (southern) front of the houses. Porches will allow for sufficient space for a person to comfortably pause before entering or after exiting the houses. Porches can be used as socialize facility (Santosa, 2000) chating, hanging out with neighbours in the morning before went to work or in the afternoon after work. In some cases, porches can be used as (small) home industry spaces by **selling snacks, opening mini general store**, or using porches as a place to parks motorcycles or hanging clothes to dry.
- Generally the houses has parlour at the front (right) part of the houses. There are 2 cases that do not have parlour. Parlour room was a marker of social status - evidence that you had risen above the majority who lived in one or two rooms. As the parlour was the room in which the larger world encountered the private sphere of middle class life, the family's face to the world, it was invariably the best room (indeed it was often colloquially called just that) in the home. The parlour frequently displayed a family's best furnishings, works of art and other status symbols (Santosa, 2000)
- Every respondents houses have living rooms. So it can be concluded that living rooms are the major rooms at the houses in Peneleh Village. Generally living rooms placed in the centre of the houses, surrounded by other rooms. Living rooms are multifunction rooms. Every activities (eating, sleeping, studying, reading, preparing food, sewing, watching television, chating, etc) can be done here except toilet things.
- Location of sleeping rooms in the houses of respondents did not always equal. Two respondent placed their bedrooms at east (right) part of the houses. Three respondent put

their bedrooms at west (left) part of the houses. A respondent placed the bedrooms at both side (east and west). This rooms always lined up sideways. And always close to the living room.

- Not all respondents have a special dining room. Other respondents generally feeding activities in the living room or kitchen. The dining room is definitely not an essential facility (major) in the houses in Peneleh.
- The next facility is services facilities include kitchen and bathroom. Kitchen are located in the rear (north). The kitchen is generally the area of gender, as controlled by women (mother, daughter). Even the female family members also receive guests (women) here. Activities of food preparation, cooking, washing, ironing, sewing and even gives advice to daughter is done by the mother in the kitchen. Neighboring women often make the kitchen as a place full swing. Whether just for a chat, or borrow a cooking appliance, ask the kitchen spices and so on (Arfianti, 2005).
- The next service facility is the bathroom. All the respondents have a bathroom located on the inside. But certainly this is generally located behind the house, adjacent to the kitchen as part of the service facility.

2.2. Description of Space Zoning in Peneleh Village

| Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 |

PUBLIC		a	PORCH
SEMI PUBLIC		b	PARLOUR
SEMI PRIVATE		c	LIVING ROOM
SERVICE		d	BEDROOM
PRIVATE		e	DINING ROOM
		f	KITCHEN
		g	BATHROOM

Fig. 2 Zoning at houses in Peneleh Village
(source: Arfianti, 2008)
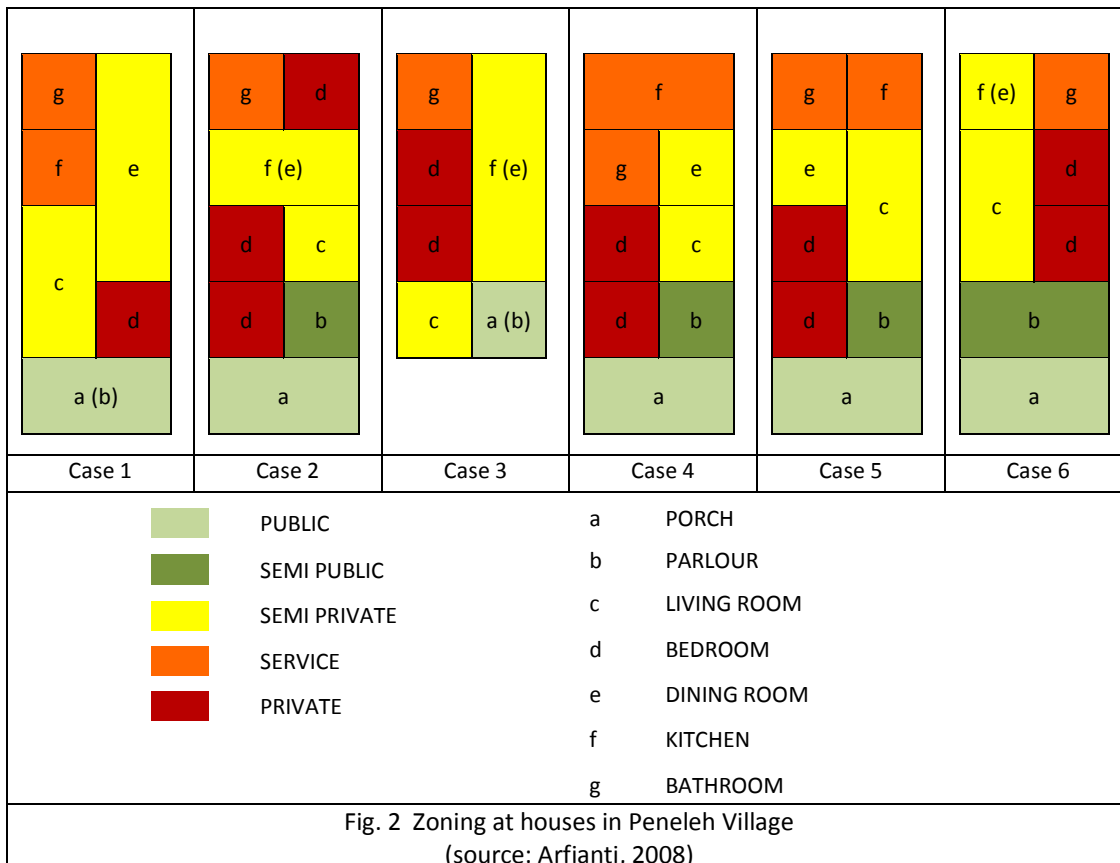
The rooms in houses at Peneleh can be categprized as 5 categories, public, semi public, semi private, private and service. The findings about this zoning can be described as follows:

- Public space used ti facilitate social function, porch is for informal guest (male) and the location always at the front part of the house.
- Parlour as semipublic facility is for formal guest. The location between public and semipublic facilities.

- Living room and dining room categorized as semiprivate rooms, because not only member of the family who used it. Informal guest (female) and close friend can be accepted here. As a semipublic facility the location adjacent with public facilities at the middle part of the house.
- Bedrooms are private facilties. Only certain member of the family who can enter it. Even other member of the family is not in liberty to just enter it.
- The last are the services facilities which area kitchen and bathroom. Although categorized as services facilities which serve all the household, kitchen also the female domain. Male member is not comfortable in this facility. The location always at the back of the house because considered as the most non-representative facility.

2.3. Description of Gender in Peneleh Village

Case 1	Case 2	Case 3	Case 4	Case 5	Case 6

FEMALE	a	PORCH
MALE	b	PARLOUR
ALL/MALE/FEMALE	c	LIVING ROOM
	d	BEDROOM
	e	DINING ROOM
	f	KITCHEN
	g	BATHROOM

Fig. 3 The disposition of gender at houses in Peneleh Village
(source: Arfianti, 2008)

The disposition of gender at houses in Peneleh Village can be described as follow:
- the disposition of rooms for male is at the front of the house. Representing male (father) as the head of the family. Whilst rooms for female (mother) is at the back of the house. Representing the female member of the family as the supporter of the male member of the family.
- Female is always hovering at the background and not allow to perform dominance activities. Even when a guest arrived looking for male member, the female members are not allowed to let them in the house. Usually they asked them to wait at the porch.
- Female guests usually will be ushered to the living room or if they were familiar they can sit at the dining room. But if the female guest arrived with a male they can be accepted at the parlour. It is not appropriate for female guest to be accepted at the porch.
- Female neighbour usually have free access to the kitchen. They can have chat with female member at the kitchen. The neighbour usually do not bother by waiting at another room for

the female member to come out but directly enter the kitchen (trough another rooms).
- This disposition is for middle class population which usually do not have maid and the mother is a stay at home housewife.

2.4. Description of spacehierarchy at houses in Peneleh Village

| Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 |

LEVEL 4 (LOWEST)	a PORCH
LEVEL 3	b PARLOUR
LEVEL 2	c LIVING ROOM
LEVEL 1 (HIGHEST)	d BEDROOM
	e DINING ROOM
	f KITCHEN
	g BATHROOM

Fig. 4 The schemes of space stratification at houses in Peneleh Village
(source: Arfianti, 2008)
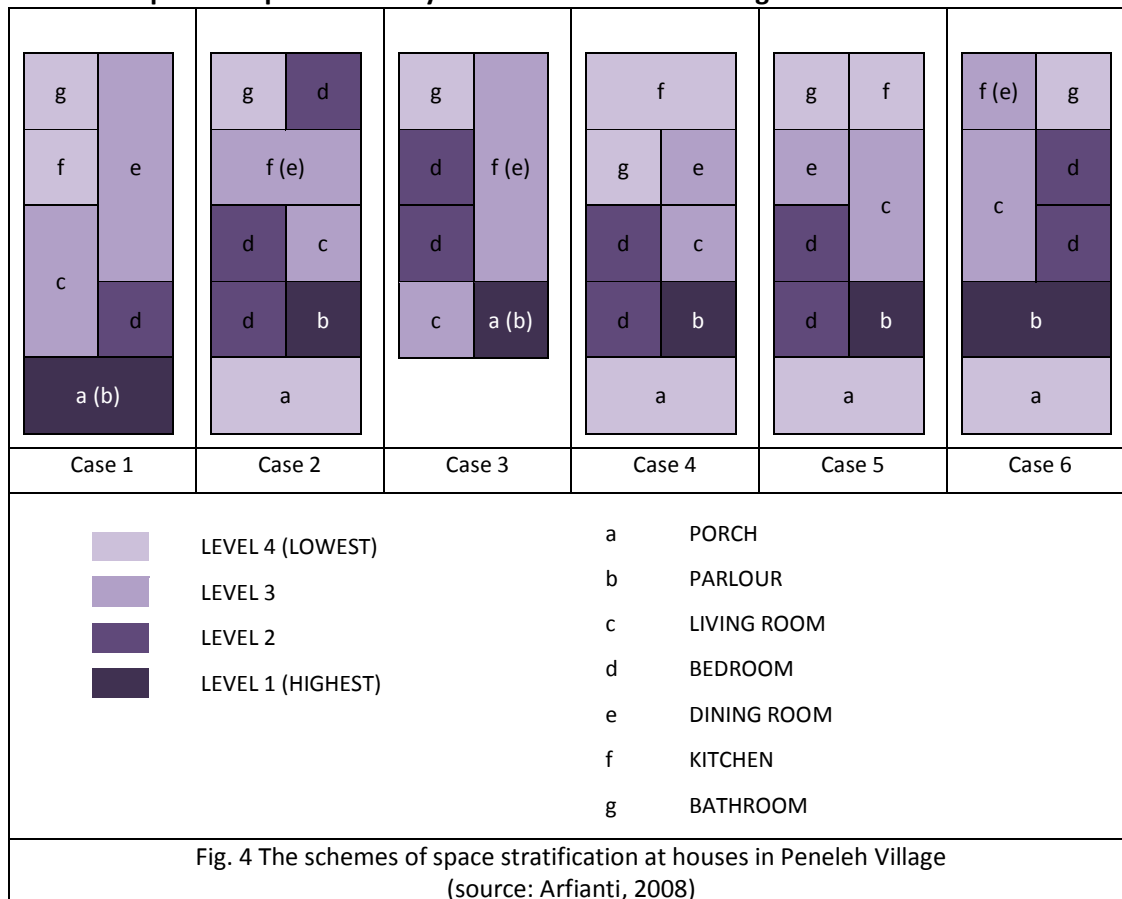
The schemes of space hierarchy at houses in Peneleh Village show some findings as follows:
- The highest rank of space in houses at Peneleh Village is parlour. Parlour room was a marker of social status, it was invariably the best room in the house. The parlour frequently displayed a family's best furnishings, works of art and other status symbols. Female member maintains cleanliness and tidiness of this room. Although it is the highest rank room in the house but it is seldom used. This rooms is the male domain who seldom at home.
- The second rank is the bedrooms. Bedrooms have second rank because it has the most private function. Bedrooms are the sanctuary for members of the family.
- The next rank is the multifunction rooms like living room and dining room where every member of the family gather around. This is a full swing rooms, every activities can be done here.
- The lowest rank is service rooms like kitchen and bathroom. The criteria for the rank is the symbolic status, tidiness, cleanliness, and privacy of the rooms (Santosa, 2000).

3. DISCUSSION

From the schemes, the thickness of the walls can be ignored, so that the walls are represented by single lines. Also we ignore any door or window openings. The actual sizes of the rooms also ignored, but not their over all disposition in relation to each other.
From the descriptions above we can draw some general rules:

- parlour has high rank because it's represent the status of the house's owner, so it must be located at the front of the house for the male domain.
- Kitchen located at the back of the house because it has nothing to do with the status of the owner and it was the female domain.
- The porch function multiple as (small) home industry space, and become female domain
- The residents of Peneleh Village came from middle class so it is necessary for the mother to help with the financial aspect beside doing household chores (in the kitchen)
- Porch adjacent to parlour adjacent to living room, living room adjacent to bedroom, dining room adjacent to kitchen, and the the porch located far away from the kitchen

From the general rules, the facts and the ideal space disposition, we can argue:

- the porch has become female domain as the making money space (selling fried snack, opening mini general store, etc.)
- the porch is too far away from the kitchen so the mother (female member) must back and forth to accomodate her activities
- if the porch become making money space will it affect the parlour as the showcase of the house? Because definitely the porch will be in fullswing activities, crowded. I think it will not affect the parlour as the high rank room of the house. Because they have different function, one for symbolic function and the other for economic function. Beside we must remember that the most crowded room not necessarily have highest rank. The parlour is seldom used but have highest rank because of the symbolic value.
- But there is a change in the domain. Usually porch is the male domain but now that mother used it as 'making money' space the domain will shifted too. Porch become male and female domain.
- There are three option to solve this problem according to Lang (1987): abandoned, adapted or amended.
- Abandoned means we left behind the house and moved to another which can accomodate the growing acitivities. Adapted means the house has the same disposition but the rooms has different function according to the needs. With the effect that the rooms will not maximally accomodate the activities. Amended means we can change the rooms location so it can accomodate the new activities.

ABANDONED		
abandoned	adapted	Amended
	The porch are used as the transition room and economic room (home industry space). The color show that the female domain separated by other rooms.	the porch divided into two rooms, one still for the porch and one for the home industry. The kitchen moved behind the home industry space so mother won't have to be back and forth to do chores. The other rooms ajust to the changed.

				The parlour still have the same location at the front of the house
		a	PORCH	
		b	PARLOUR	
		c	LIVING ROOM	
		d	BEDROOM	
	FEMALE	e	DINING ROOM	
	MALE	f	KITCHEN	
	ALL/MALE/FEMALE	g	BATHROOM	
		h	HOME INDUSTRY	
Fig. 5. Examples of rooms location to solve the needs for the domain changes (source: author thought, 2012)				

From the discussison we can conclude that to amend space disposition not necessarily change the meaning of rooms especially the room with symbolic value like parlour. By amended the disposition the needs can be accomodated maximally for better living. So by changed the space disposition does not mean we abandoned certain rules that generated spaces at the house. We can ajust the rules according to the necessity.

4. CONCLUSION

In conclusion it should be noted that this conceptual model is proposed as a way of thinking, as a method for reading house space as a set of formal potentials, built out of a number of basic concepts. In that sense it might be suggested that these ideas could be a valuable contibution to the design of houses for middle class resident in Peneleh Village or city of Surabaya generally.

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Manifestation of Buginese Cosmology and Social Stratification in Traditional Settlements

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ABSTRACT

This paper discusses the Buginese cosmology and social stratification and its influence in the formation of traditional settlements. Culture is the patterns of thinking and specific actions revealed in the activity, which affects the work of man such as buildings, spaces and settlements. Bugis society has a variety of unique cultures, particularly associated with the hereditary understood, and architectural form and space settlements that have been produced. The formation of the settlement focused on the relation to cosmology and social stratification system.

The study purpose to understand and to identify the characteristics of cultural influence specially on cosmology and social stratification system in the formation of settlements. This is expected to provide benefits primarily to the discovery of character and the concept of space is expected Buginese settlement can contribute in the design of cities inhabited by Buginese community. This study is a qualitative study using descriptive research framework. Identify the characteristics of Bugis cultural based the formation carried out by the method literature studies, interviews, and observations on some of the Buginese traditional settlements.

The study concludes that: 'Atoriolong' is derived the cultural element from Islamic era still understood and influence to the social and cultural of Buginese community on today; house layout orientation which considered good of the Buginese are across the West-East and South-Nort; residential location which considered good land are around the waterfront with a centralized pattern and spreads; hierarchical character of Buginese who refer to social stratification affects the formation of elites in the central area of settlements, but in addition to the hierarchical character of the Buginese also have a character that very concerned solidarity that gives effect to the realization of democratic space and the architecture of the house.

Keywords: Buginese, Cosmology, stratification, traditional settlements

1.   Introduction

Every individual in society has the opportunity to express cultural values and attitudes that understanding. Understood cultural values that are difficult to value abstract changed, so that should be considered in the formation of the built environment such as residential space. According to Amos Rapoport (1983), the physical changes in the environment caused by cultural changes that are grouped into two parts, namely core and *peripheral-culture*. Human socialization process that is reflected from the cultural values, in turn affects the work of man including the physical form and urban buildings. Cultural form appears in object and design of the built environment such as: home, homes layout, and public buildings (Altman and Chemers, 1984). Society and culture affect their environment and on the contrary affects the environment and community culture. The elements are strung in a system (socio-cultural) in which all parts are interrelated in an integrated manner. Thus the socio-cultural values are patterns of thinking and specific actions revealed in the activities, which in turn will affect the work of man including the physical form of buildings, settlements, and urban (Guest, 2008; Rapoport, 1983; Altman, 1984; Boaz, 1992; and Poerwanto, 2008).

Macro form of a built environment of cities is also still influenced by the cultural aspects of society. In this form of development and changes in the city is strongly influenced by the level of variation of these elements based on the historical development and the growth process of a city.

According to Kuntowijoyo (2003), a city administration was not born because maximization of technology or economics, but as a socio-cultural patterns of society. The selection of settlements can indeed be based on economic reasons such as soil fertility, but the formation of city-always with consideration of socio-cultural considerations. In this case the city is a result of the transformation of the socio-cultural conditions of society. This has become a fact of urban history in Europe of the late Renaissance city (Catanese, 1996).

Therefore, the assessment of cultural values associated with the built environment as a form of influence, should be the basis of wisdom in the form of design or creation or urban residential space is expected to meet the environmental quality of community life. In this regard, one of the opportunities presented on this occasion is to examine the culture of the Buginese community forming neighborhood space as a built environment. For this study deemed necessary to refer to the historical approach to Buginese cultural development. According to Latif (2005) that there are three elements which are recorded on the story line with three Section Bugis country's history, namely: 1) cosmological material that far is rooted in the ancient history of South Sulawesi, 2) mythological material *La Galigo* period, and 3) religious material sourced from the teachings and Islamic thought. Does social values also affect the Bugis cultural community in realizing its environment? How the built environment conditions that formed them? This is what will become of this writing study materials. That is a qualitative study that discussed using descriptive research framework with a focus on aspects of cosmology and the social stratification system of Buginese community.

2. Basic Community Profile Buginese in South Sulawesi

Buginese is one of the various tribes in Indonesia with a population of more than four million people. They are predominantly inhabited along the east and west coast of South Sulawesi region, which covers several counties and cities. One area that the center of Buginese cultural development after Luwu is Cina (as a place where the discovery of "We Cudai", the wife of Sawerigading) located in Wajo Pammana. In this area appears a Tomanurung named La Sattumpogi expected to be the origin Ogi' said that later became known Ugi' or Bugis. According to (Pelras, 2006) regions of Cina was then known as the heart of Buginese land.

Buginese are often known by other ethnic people around as the people who have character tough and highly honor. If necessary, to preserve their honor are willing to do violence. However, despite the hard nature, the Buginese also known as a friendly person and would appreciate other people, and very high sense of solidarity (Pelras, 2006). On the other hand Bugines people in their daily interactions are based on patron-client system, the solidarity group system between a leader with followers related each other. This pattern is not directly formed from the background rather rigid hierarchical, which developed in the social structure. However, they still have a strong sense of personality, and it was the hierarchical nature of the motivation to compete in achieving a high social status to them.

residence location of Buginese
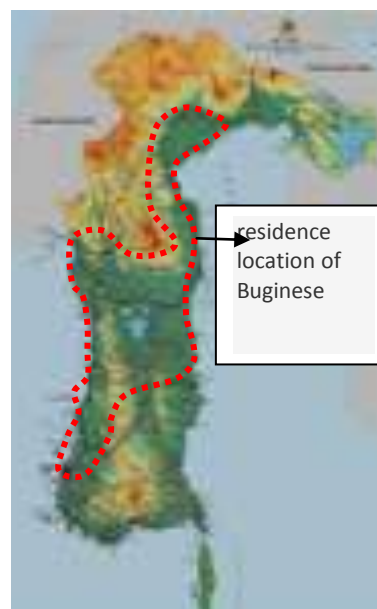
Figure 1. Location Map of the Buginese

3. Fundamental Theory

3.1 Buginese Cosmology

Koentjaraningrat (1980) states that each culture has consequences on the nature and contents, including the origin of human experiences that are abstracted into concepts, theories, and principles. Early humans discovered that his life depends on nature, if he is in harmony with it, then life will be successful. After he practice the harmonious, then he tried to justify the mythology about the origin of nature and its structure, which is currently projected to experience the past. Order of the built environment associated with this cosmology is very complex and diverse, but so would be wrong if

this is deemed not to change. According to Waterson (1990) that the sacred strength and focus that puts the power in a hierarchical relationship between the central and sub-ordinate is very similar to the ancient cosmology before the Hindu influence Indonesian archipelago.

In determining the order of space, meaning that the environment has broad coverage not only from the surrounding environment, but also can be viewed within the scope of such position in the universe, the earth, and to the human habitation. In this case required an understanding of man's place in the system of cosmology. Tuan (1977) suggests that there are two ways to understand the position and the human connection with the cosmic. First, it shows that human beings are the image of the cosmos. Second, human beings as the center of the cosmos oriented cardinal points and the vertical axis.

Associated with the formation of the built environment, Dovey (1979) suggested a connection between the function room setup with a house and its position in the settlement and its surrounding environment. This study starts from the traditional pattern of thinking that the opposition binary one of which is the position of sacred and profane. Perpetuation traditionally remain visible through the implementation of the ritual and the various stages and processes of construction of a building. In the context of Bugis culture, Christian Pelras (2006) argued that trust Buginese based on a socio-cosmic order in which the world is seen leading to a double pole at each other in pairs (polarized entry). It is likely translated into a symbol system among other pairs of heaven and earth, mountains and sea, the sunrise and sunset, right and left, the sun and moon, men and women, as well as life and death.

3.2   Buginese Social Stratification

Related to the social structure of society, Levi-Strauss (1963) mentions that people have that make them strata can be grouped into three sections. Koentjaraningrat (1992) mentions that in almost all societies in the world, either very simple or very complex in nature, in relationships between individuals, there are differences in position and degree (status). Differences position and degree of the individuals in a society that is base for the phenomenon of social stratification that exist in almost all societies of the world. This can be seen in one example suggested by Waterson (1990), the village headman's house in the Nias region located at the top of the village crossroads, while the lower part devoted to the lower strata and ordinary people.

Further, whatever is said that every village, lay out, style, and position of house, it clearly shows the difference of social strata. Family structure affect the layout of the house in one neighborhood and creating a common space for the benefit of families who are limited and only used jointly by family members. Furthermore, Levi Strauss (1963) suggested that the distribution of the genetic make community groups in the form of dualism, and the strata of society makes the division into three levels, namely levels of upper, middle, and bottom. Further revealed that the pattern of this duality result in the type of social structure and concentric diametric.

According to Mattulada (1981), the coating system that is coloring the political structure Bugis kingdoms in Lontara period (14-19 C). Coating the community or social stratification was considered very important in the search for the background view of life, character or basic nature of a society. Further fact will be disclosed relationships in community events related to behavior all activities, including activities and political behavior.

4.   Cosmology of Buginese Concept

4.1   Human Origins in Buginese Cosmology

In discussing cosmology Buginese script is always associated with La Galigo. This manuscript is a set of mythologies that have sacred value. In addition, Buginese community also refers to the great messages contained in the manuscripts Lontara 'as a piece of history, customs and messages that also sacred, even some of the view that the script can only be reached after passing through special rituals. The article pointed prose and symptoms of syncretism with Islam (Latif, 2005).

In general, the manuscript of La Galigo tells of the origin of Luwu country which is seen as the country's oldest Bugis. The story begins when Batara Guru (Patotoe' son) from the world over (Botinglangi') met with We Nyili' Timo' from the underworld (Bori'liung) in the world between

(Alekawa). The results of these marriage gave birth to son named Batara Lattu who later gave birth as a result of her marriage Sawerigading with We Datu Sengngeng. Sawerigading as a central figure in this epic gain We Cudai finally (derived from the Cina in Pammana), who later gave birth to son named I La Galigo.

This last figure then marry and then gave birth We Tenrigangka called La Tenritatta son who became the last character in the Galigo period. After that, there was an irregular situation for seven generations to the vacuum of government (chaos). Finally came the figures Simpuru'Siang in Luwu as Tomanurung and start a new era of Lontara. He is regarded as Pajung or Datu I estimated in Luwu ruled until the 14th century. Simpuru' Siang the marriage between the son named Patiangjala birth Ana'kaji which later became Pajung or Datu Luwu-II.

4.2   Concept of God and the Beginnings of the Nature in Buginese Cosmology

Bugis literature mentions that the concept of the deity of the ancient Bugis (Before Islamic era) personified as Patotoe' (the All-power). Mattulada (1995) translates *Patotoe'* as that determines the fate of everything. Creation myth of Buginese in the *La Galigo* is always mention of the supreme of Illah is the *Dewata Seuwae* or *Mattanru Ulawenge'* (gold horned god). In *Lontara* also explained about the concept of God as follows: as for God Almighty had not had the mother and father were. In *Lontara Sangkuru'* also mentioned the term *Puang Seuwae to Palanroe* (Almighty God the Creator). The Buginese have the habit of associating the composition of the universe and its contents in the form of the human body. Latif (2005) specify the composition of the real world (lino) is divided in four continents in three layers, namely:

  a. *Bottinglangi ' /bittara*, (the world over, the sky) with all its contents are maintained by the gods-gods that symbolized the sky as the human head.
  b. *Alekawa* (middle world, the earth's surface) is guarded by the Gods (grounded) which is represented as a human chest. *Paretiwi* (the earth base) is guarded by the Gods underground, and is denoted as the human stomach and hips.
  c. *Bori'liung* (water-based world, bottom of the ocean, estuaries or toddangtoja) is guarded by the Gods of water and is symbolized by the feet and the human body.

4.3   Belief of Ancestor (Atoriolong)

Until now there are still many traditional community beliefs about the unseen world Buginese from pre Islamic religion. People call these beliefs with the name which means adherence *Atoriolong* ancestors or ancestral ways. These pre-Islamic beliefs for centuries as a guideline adhered to the perfection of the nature of life and the values espoused by the majority of the Bugis and up to now.

Atoriolong in Buginese society understood as the ancient religion, while Islam is a religion of new or modern. After Islam was introduced, their supreme deity is more popularly called Dewata Seuwae , or God Almighty. Since that time the next lot of rules and norms adopted the Buginese of Islamic religion. Some facts show that *Atoriolong* until now is still part of everyday life. This is also seen in various rituals such as the implementation of thanksgiving ceremony, marriage, birth, and death, which tends to lead to the context of worship gods. Two main causes so that it can happen. First, because Atoriolong is a reflection of the original elements of his personality, which is not surprising that until now still feels atoriolong influence and affect the passions animating the social and cultural community. Second, because the method of Islamization in the development of Bugis embrace how inculturation, in which Islamic ideas and culture can be unified in a peaceful (Pelras, 2006).

5.   Stratification System in Buginese Society

Social stratification system of Bugis society based on the genetic code. According to the Bugis community origin, the structure of social strata, there are three levels (such as Levi Strauss explanation above). The genetic code that occur include the descendants of "Arung" which means royal, "*Tomaradeka*" means the descendants of ordinary people, and the descendants of "*Ata*" which means slave or servant. In addition Mattulada and Christian Pelras in writing giving the view that because the social mobility system is flexible enough Buginese (democratic) so that layer group authorities not only from Anakarung (royalty) only. This group is known as an elite society that comes

from the *Anakarung* or who have demonstrated Tomaradeka social achievements such as: *To panrita* (the scholars), *to Sugi* (the rich), *to Warani* (the brave), and *To Sulesana* (the technocrats who have special expertise).

However, after the term Ata formally abolished since 1906, the role becomes less important *Anakarung* too, so the difference between the world and also Tomaradeka a marked decrease in the occurrence of hybridization between the people (Mattulada, 1981). Can be said that since that time the coating system Bugis community in South Sulawesi in general has undergone many changes. It is seen that people tend to not be bound again in layer Ata although there are still some people who hold the title of nobility. This change is very influential on the system of community relations between the different layers. It is also influenced by developments in science, technology and modernization or development of civilization in society.

6.   Manifestation of Bugis Culture to the Formation of Built Environment

Social stratification system of Buginese society based on the genetic code. According to the Bugis community origin, the structure of social strata, there.

6.1   The Formation of Space Based on Cosmology

Mythological elements that still survive in Buginese texts (spells, folklore, ancient manuscripts, or pre-Islamic rituals) are still traces trust with double polar phenomena, such as worship of the sun and moon, or the belief in the world of and below. Confidence in the world above and the underworld, the earth is understood that the composite macrocosm of three levels, namely: *botinglangi'* (upper world), *alekawa* (the middle), and *bori'liung* (the underworld). As the center of the three nature is *botinglangi'* dwelling place of *Dewata Seuwae*. Philosophy is applied in the form of housing space, divided into three layers or three regions of the world top, middle, and bottom, which is closely related to cosmology *botinglangi ', alekawa*, and *bori'liung* (see Figure 2).

Mardamas (1985) reveals that there are places or areas that are considered sacred and off limits to Bugis society to a certain place. In pre-Islamic era, in every village there are places that are considered holy or sacred as under a large tree or a certain mountain peak. According to Latif (2005) that every traditional settlement Buginese, almost always found a place believed to be posi'tana (center of the country). In place of the home is usually manifested offerings (Saukang) which at certain moments these places visited by certain people to give thanks and charity, victim, or take action mattinja', or releasing tinja' because hunger is achieved.

Since ancient Bugis community was bound in the form of spatial appearance of the buildings as a place to stay and the communal space. In establishing settlements and their residence is usually based on several considerations: the determination of the place, homes layout and supporting facilities, selection of construction materials, structure and form of the house, and the ornament of his house. Determination of the settlement as set out in the history of Bugis community Wajo (Lontara in Zainal Abidin, 1970) that the selection of community residential location Wajo always consider three criteria, namely land includes land for residential, agricultural land, and land fisheries. Horizontal division of land in addition to socio-economic aspects can also be associated with the philosophy of cosmology is manifested in the form of three regional divisions.

Location of the Buginese homes by Yamin Data (1977) should not be arbitrary, but chosen a good location to bring happiness to the residents. The direction is good is across from the East-West or Nort-South, which is associated with the belief that the Buginese put a bed in the house, the head should be in the South or West and feet towards tamping should be considered house profane space located on the North or East, and is not allowed Qiblah direction. In this case, the sanctity of Islam in the entry specified in the West associated with the position of Muslim Qiblah (Dyayadi, 2008), and the worst direction is North in connection with the position of the corpse's head symbolizing grief/ gloom. Transverse orientation of East-West direction is also associated with strong winds that hit the house that is from the west during the dry season and from the east during the rainy season. Despite the fact the current orientation of the house did not consider it, but more interested in its orientation towards the road or the river flow direction for placement order. Kosmologi tersebut selanjutnya membentuk arah oriantasi dan perletakan bangunan rumah pada masyarakat Bugis. To detail can be seen in the following illustration.
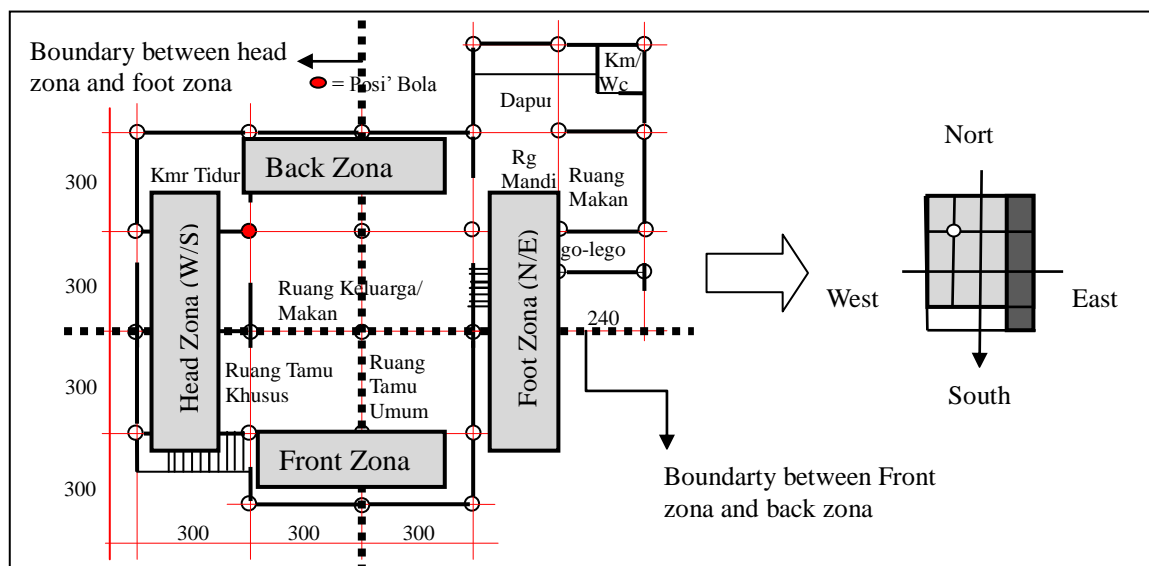
Source: (Arifuddin, 2011)

Figure 2. Layout direction and zoning space in Bugis houses traditional zone

6.2 Embodiment Sulapa Eppa' Form Based on Cosmology

In Bugis culture known form of "Sulapa Eppa" which suggests the community tradition of the number 'four' as the symbol of perfection in the run alive. Meaning the number four among others, are symbols of: land, water, fire, and wind. This philosophy is embodied in choosing a location and set up their homes. Concepts and principles of this tradition concerning the natural environment; administration buildings layout and order form (Rofaedah et al., 1994). Robinson and literal Paeni (2005) interpret it as the four sides, a view that shows the totality of the world. They concluded that, the geometric arrangement of space sulapa eppa' show of harmony and balance, the scheme covers the totality of the fundamental, social location, and the relationship of central and edge. According to Zaenal Abidin (1969) in Robinson and Paeni (2005) that, sulapa eppa' meaningful search for the ideal of perfection, in recognizing human weakness and provide tools to overcome and control weaknesses.

It has been stated previously by Mattulada (1981) that, based on mythology view Buginese-Makassarese in Lontara, known Sulapa Eppa' Wolasuji (rhombus rectangle) that contains the meaning of micro-cosmos. The next significant rectangular human body (sulapa eppa'na taue) which vertically symbolizes by the top (head), the left and right (body+hand), and the bottom (foot). This is manifested in the Buginese traditional houses are categorized into three main sections, namely: the roof (*ulu bola* or *botinglangi'*), body (*alekawa*), and below the house (*boriliung* or *awa bola.*) Function on the ulu bola space for: storing heirlooms, rice, and a place of privacy to the girls. Space on the *ale bola* functioned as a place for the main activities of house hold (residential). Space on the awa bola enabled to place livestock and farm equipment, but has now developed into a break room (*bale-bale*) or space that functioned as the development of residential space. To detail can be seen in the following illustration.
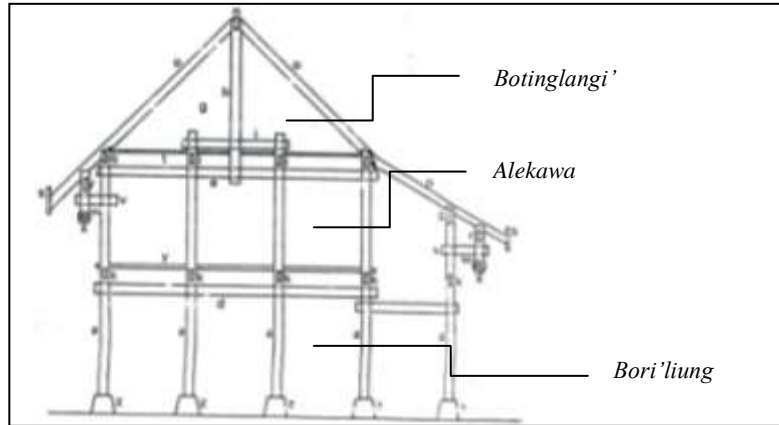
Source: (Pelras, 2006)
Figure 3. Morfologi of Buginese Tradisional House
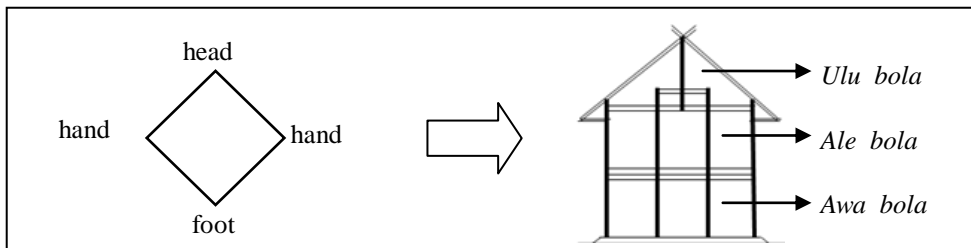
Figure 4. Embodiment Sulapa Eppa' (vertically) of Buginese tradisional house

Furthermore the   concept   of sulapa eppa 'is symbolized in   the horizontaldimension   of the space by Machmud Hasan (1978), the rhombus-shapedchamber in   which   the four   corners have the meaning of the four elements of basic human needs, namely: land, water, fire, and air (wind). The fourth element isunderstood as   an indicator of prosperity, success, and happiness is   the goal of human life in the world. Land is symbolized as a prosperous life, togethernesssymbolized water, quiet life (safe, happy), fire symbolized the spirit of work, andover the air symbolized teraga not need a spiritual and human dignity. To detail can be seen in the following illustration:
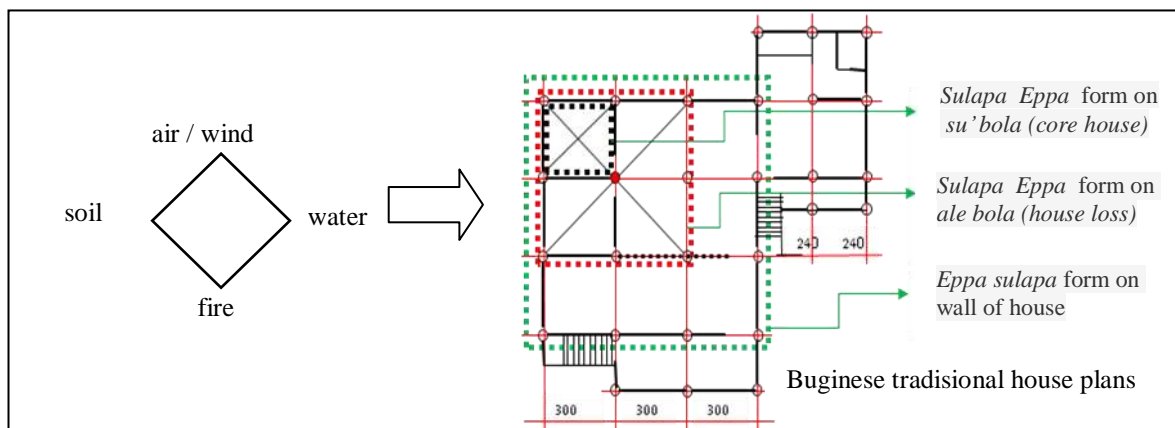
Figure 5. Embodiment Sulapa Eppa' (horizontally) of Buginese tradisional house

6.3   Social Stratification Based the Formation of Space

Understood hierarchical system Buginese refer to the social strata of society that gives distinction to any person under the origin of their offspring. Although this hierarchical system still understood, but

the Bugis still provide the same opportunities to people in the government. Although the line between people of different status to be maintained, but the competition among people to gain equal status position, influence, and wealth remains wide open. Thus they began to leave the rigid hierarchical principles of the traditional version of the Bugis in a way to do overseas. They left the system and try to get honored status in another form through the wealth (Pelras, 2006).

Can be seen as micro expressions Bugis cultural cosmology in his house layout, which assume that the center of the house is a sacred part, are the suburbs (*tamping bola*) that has a lower surface of the center of the house. Center used the house as a place to receive guests of honor or a guest room and bedroom, while the suburbs are used for regular guests, access to the back room / kitchen, and a place to bathe the body. Regional centers decent homes occupied by guests who have high levels of high social status in the Buginese house, located in central regions that have the farthest distance from the entrance (Pelras, 2006). This pattern indicates that the space in the home or the settlement shows the social structure of society. Robinson and Paeni (2005) adds that, settlement commonly spread from the center, commonly called the navel that contain spiritual or political power as a focal point. By entering a strong central concept in villages, homes, places of worship, and the object or other entity, the power can be connected to the system structure of society.

Buginese settlement patterns of people as expressed in the manuscript of La Galigo as summarized from Pelras (2006) that the Buginese settlements established in the lowlands near the mouth of the river, sea or lake edge at about the 14th century. After a period of chaos (the post-era Galigo) Buginese built a number of settlements in the highlands. Settlements tend to form in the village groups. Dense cluster patterns are found primarily in the lower mainland area, fields, the edge of the sea, river or lake, while the pattern of spread is found in mountainous areas or plantations. Embodiment village at that time many are bound by their work places.

Based on the above Pelras writing, it can be concluded that the settlements belonging to the Buginese traditional agrarian settlements on occupied land around rivers, lakes, or beaches. According to Siti Muriah in Fathony (2009) that specifically agrarian settlement pattern is divided into four kinds of patterns of cobwebs, wasp nests, river channels and coastal path. The settlement pattern as the community of Tosora and characterized as Lagosi (both located in Wajo Regency) formed settlements in upland areas around the lakes and rivers, with a shape that tends centralized settlement and spreading like a form of cobwebs. The formation of these settlements originated from a group of people residing at a particular location was gathered, which is around rice cultivation, the fields / gardens, and land for fresh water fisheries in the lake / river that became the main occupation of society. At first the local community to open a new township as a selection of appropriate locations for fertile land supported by agriculture and fisheries as potential supporters. After such a solid quarter, more people move to establish new settlements in the surrounding areas with potential supporters, as before.

Source: (Arifuddin, 2009)

Figure 6. Houses and Settlements of Buginese Community in Tosora-Wajo

Elements of traditional Buginese settlement include housing, where the ritual, road, open space (field), and the land business. Some of the Bugis community residential facilities is collected or concentrated in the center spread of settlements such as: field, mosques, houses kings, ammunition warehouse/administration, tombs of kings and relatives, markets, and the dock. Housing residents to

follow the pattern of spreading lies that formed the road. As for rice cultivation, the fields/gardens, and land the fish catch (lake) is situated around the settlements. Form of settlement at the beginning of the linear settlements that followed the pattern of roads, and further growth is spread accompanied by the formation of several centers of settlement. Pattern of road was originally formed in the access point that connects the housing to the workplace (fields, gardens, and river/lake), followed by development-oriented houses to the street. Street pattern that is formed is not guided by an axis or pivot like a neighborhood street pattern in Java or the ancient cities abroad (Arifuddin and Darjosanjoto, 2009),

Hierarchical characters referring to the system of social stratification still visible at Buginese settlement patterns which tend to place elements of the administrative center of the house kings/nobles, relatives of the king, warehouse administration/storage of ammunition, at the center of the settlement. Central region is seen as an elite area surrounding the house stood a few royal officials such as the clergy (*to panrita*), the wise (*to Acca*), those brave (*to warani*), and the rich (*to sugi*). While the exterior is spread occupied by the society in general (*to sama'*). In addition, in terms of appearance of the house also remains visible difference between the house kings / nobles, half nobles, and ordinary people, who look on: the number of layer lattice units front roof (*Timpa Laja'*), presence or absence of side hall house (tamping), form the front porch (*lego-lego*), and the number of poles in a row either home. However, in addition hierarchical character, Buginese also have an egalitarian character of great importance aspect of freedom, justice, partnership, solidarity, and togetherness in the community (mainly Buginese from Wajo). Character is what gives democracy the chance formation of such spaces: the spread of residential facilities, allowing ordinary people who have the capability to lead the kingdom (*arung matowa*) or an officer in the kingdom, which automatically becomes their home and *arung* home can shape the contours house royal society.

7.   Conclusions

a. *Atoriolong* is the value derived from cosmological pre-Islamic era still understood and influential in Bugis society today. Buginese cosmology or world view the world as a macro-cosmos of three levels then applied on their home form is divided into three layers (Panggung Shaped). The village of pre-Islamic era, there is also a place believed to be the center of the country that usually comes with the usual offerings house. On the assumed cosmology inspired social stratification system of society based on the genetic code that includes three levels.

b. In Bugis society known forms *Sulapa Eppa'* as a symbol of the natural environment: land, water, fire, and wind. Mattulada call sulapa eppa'na taue (rectangular human body) with the symbol: the head, hands, and feet; meaningful micro-cosmos, the perfection of life, the ideal, totality, harmony, balance, and the relationship of central and edge. This philosophy is embodied in: select a location, build a house, building layout, layout, and ornaments.

c. Layout orientation is considered a good home is the Buginese of East-West or Nort-West cross-linked with the South or West to put the head when sleeping, whereas feet to the East or North (on the *tamping house*). In the Islamic era, the West direction is considered sacred positions associated with mecca, and the worst is the North as the sleeping body (the symbol of sadness). Transverse orientation of East-West were also associated with strong wind. Bugis traditional settlement patterns tend to be centralized and spreads (grid pattern). Township site selection is usually based on three potential land (housing, rice fields/ gardens, and fish catch areas). In the first quarter in the form of a linear concentration of houses following the path of the road. After a solid, will form a new township in the vicinity, the area forming larger settlements are usually composed of elements: housing, where the ritual/worship, roads, open space, and land business; accompanied by the formation of neighborhood centers. In the settlement there is the main road that became the pivot of the other streets, but can not find the roads pattern concept of axis roads such as cities in Java.

d. Hierarchical characters referring to the social stratification seen in the Buginese elite formation of the central government (the king's house and relatives) in the center of the settlement, while the outer part occupied by the general public. In addition, there are also

differences in the form of house kings, nobles and a half, and ordinary people, who look at: the roof shape, the tamping, the form of the front porch (lego-lego) and the number of pole houses. On the other hand, also has a Buginese are very concerned with the character of independence, solidarity, and togetherness in the society. Character is what affects the formation of democratization such as the spread of residential facilities.

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The Truly of Indonesian Architecture
Case: The Origin of Dayak Bukit's Houses

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ABSTRACT

Indonesia has long been known to have a wealth of tradition and culture. One of the most valuable is local knowledge to build houses. Variety of residential architecture in the archipelago is a significant source of knowledge for a better life today. In the context of today's life, some issues and problems on the built environment are caused by human beings that have forgotten their origins to build a home. For traditional societies, building homes were not limited to the physical building per se, but the meaning is far in, the relationship with the natural environment. Currently, one of the traditions of living, which is genuine marked by nomad living and communal, has been seen in the Dayak Bukit tribes, who live in Meratus region in South Kalimantan Province. Studying the authenticity of the tradition and houses of Dayak Bukit is very important for the architecture, as an effort to understand the essence of living and build settlements in harmony with the natural environment. For its reason, this paper is aimed at exploring the origins of the tradition of living and houses in order to understand the creative connectivity between the culture and the architecture. This study uses ethnography method. In-depth interview and field observation are used as main tactics. From the analysis, it has known that the tradition of living and houses has derived from the cultural-cultivation of rice. To do the duty of the cultural-cultivation of rice in the beginning of the process of farming, people have built up a *lampau* (open huts) on the farm as a place to rest during the clearing process. Subsequently, *lampau* has developed into a *pondok* (hut) when the plants should be treated until the harvest comes. During the maintenance, they stay in these huts until harvest time and will move to the location of the fresh fields to create a new field again. At the last, the *pondok* eventually evolved into a balai-adat (Dayak Bukit's houses), which serves as traditional and residential places for the ceremonial phases of farming. In spite of the present day, the house has built to keep the essence of this *pondok* (hut), both in terms of function, space and form, notwithstanding the construction and materials. The tradition and adaptation that proved capable of giving a better life for this is something to learn from. That is one of the real architecture of Indonesia.

1.   Introduction

Studying architecture has many purposes and benefits. One of them is to understand and create a better space or built environment for a better human life. Although the discussions around this theme have long been prominent, and have been widely discussed by architectural researchers, however, due to increasingly number of people, the increasingly complex issues are going to always a way for the re-actualization of better space for better lives theme.

Currently, in the context of urban life, the problems that occur in human life are usually caused by human error in understanding and applying the principles of planning or designing a space, both micro scales (room scale) and the macro scale (city scale). In long period, the accumulation of these mistakes has an impact on the emergence of various 'disasters', such as (Fig. 1) flooding in residential areas, fires are due to the greater density of housing, poor quality of buildings, declining standards of

health, declining in the quality of intelligence and mental health, and various other issues. If we observed closely, the design of the existing built environment has contributed greatly to the emergence of a variety of problems and disasters.

Furthermore, in this paper, the researcher saw the root cause of planning and designing the space, especially from the designers, did not understand the cultural condition and the natural environment where space is constructed. In the context of culture conditions, the space has its own meaning based on the perceptions of local communities. While in the context of local conditions, space is made up of elements that come from the surrounding natural environment. In addition to cultural factors and the natural environment, in the field of architectural education, particularly in Indonesia, the problem was triggered by the teaching material who glorifies 'grand theory' that has been established from the western and the postscript theory or concept that built with the social, economic, cultural and natural environment are very much different from the situation in Indonesia. Even worse, the concept or theory that comes from the western conceived piece by piece by the students as well as architects and practitioners of applied without understanding its essence. Consequently, as described, the application of the theory arose from coercion in the process of planning and designing from the buildings within the city that is not in accordance with the essence of the theory and also not in accordance with the conditions of society and nature in Indonesia.

Source: ([left] www.ksacc.com, [right] www.beritajakarta.com)
Figure 1: Floods and fires in Jakarta are also common in other settlements.

Comparing the researchers already get from own research on Dayak Bukit settlements, which explain how Dayak Bukit tribes built a culture of living and settlements in accordance with social and cultural conditions and the local natural environment, this paper can be an inspiration for developing an understanding of better space for better human life.

Based on the explanation, this study is aimed at showing a holistic-integrative culture of traditional communities in Indonesia, which is Dayak Bukit tribes, who is very concerned with the values and cultural traditions of the local natural environment. The values of Dayak Bukit culture of living and settlements that can be used as inspiration to understand and create the better space and re-actualized in the development of space or built environment for a better life at this time.

2.   Methodology

Considering the characteristics of problem and research objectives, to explore and gain a holistic-integrative picture concerning the Dayak Bukit built a culture of living and settlements in harmony with nature to be able to inspire a better life today, the method use ethnography. As a method, ethnography is not intended to generate explanatory theory that can be applied to various situations but with a depiction of a very rich culture and invites readers to see the truth contained in.

The selection of the method is also referred to Creswell (1994) which distinguishes the method based on the foci (Fig. 2).
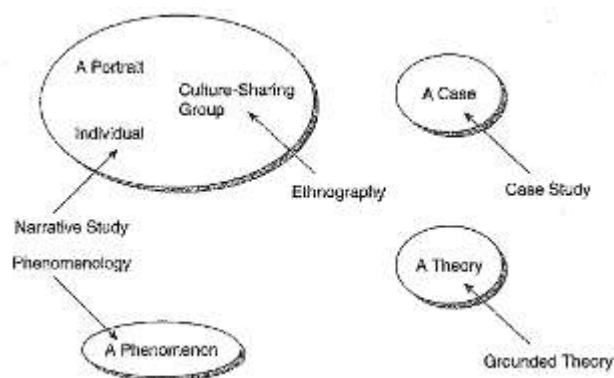
Source: (CRESWELL, 1994)
Figure 2: Comparison of methods.

2.1 Ethnography Method

In general, the term ethnography refers to the distinctiveness of writing or reporting based on intensive field research and eventually became the method is intended to produce the reporting. Distinctive feature of ethnography is holistic, integrative, thick description, qualitative analysis in order to get a native's point of view. The main data collection techniques were participant observation and open interviews and in-depth by the researchers themselves. In operational research, this method refers to structure of Spradley's ethnographic methods (1979), which there are twelve stages arranged on a repeating cycle (Fig. 3).
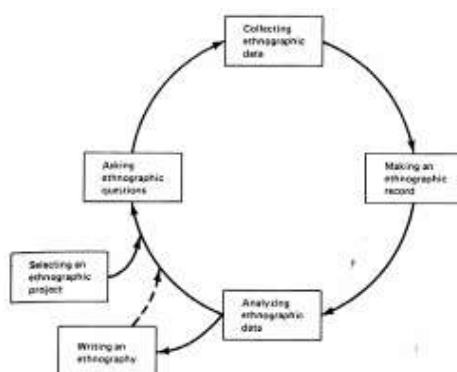
Source: (SPRADLEY, 1980)
Figure 3: Ethnography process

Beyond the selection an ethnographic projects and writing ethnography, the method of ethnography is divided into four stages; first, collecting ethnographic data; second, making an ethnographic record; third, analyzing ethnographic data, and fourth, interpretation. The analysis itself is divided again for the four kinds of analysis, namely: domain analysis, taxonomic analysis, componential analysis and theme analysis.

2.2 Research location

In general, the traditional settlements of Dayak Bukit tribes are the Meratus Mountains region in the South Kalimantan province (Fig. 4). The Meratus Mountain split South Kalimantan Province into two parts. These mountains stretch along ± 600 km from east turn north to the borders of East Kalimantan. This mountain is a real 'residence' for the Dayak Bukit tribes.

On geographic position, the Meratus Mountain region lies between 115° 38'00 " - 115° 52'00" east and 2° 28'00 " - 20° 54'00" latitude and get into the 8 districts, namely: Hulu Sungai Tengah (HST), Hulu Sungai Utara (HSU), Hulu Sungai Selatan (HSS), Tabalong, Kotabaru, Tanah Laut, Banjar, and Tapin. The Meratus Mountain region covers approximately 46,000 km2, which is still largely forested. Given the landmass of residential, local climate, the spread of settlements, and the severity of the

existing geographical conditions made it is impossible to observe all the balai-adat or Dayak Bukit's settlements. In this research, the location of research restrict on one of the Dayak Bukit tribe's residential area, Loksado sub-district.

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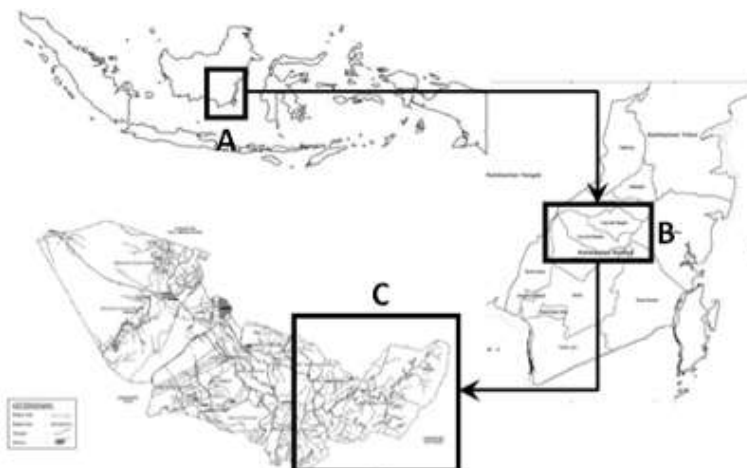
Source: (MUCHAMAD, 2012)

Figure 4: Research location: (A) South Kalimantan Province, (B) Hulu Sungai Selatan Regency, (C) Loksado sub-district.

3.   Results and Discussions

3.1.   Analysis Ethnography

As explained, the analysis ethnography was divided into four stages, namely; domain analysis, taxonomic analysis, componential analysis, and themes analysis. **Domain analysis**: on field data collection obtained very much included terms related to Dayak Bukit culture; however, the included terms can be grouped by the cover term '*huma*', and by 'X is a part of Y' as a semantic relationship. Some included terms such as; *huma, bahuma, pahumaan, lampau, aruh, manabas, manoreh, gilir-balik, baras, padi*, etc. **Taxonomic analysis**: after domain or cover term *huma* obtained from the domain analysis, the domain was analyzed with a taxonomic analysis to understand the focus of research, namely living culture and Dayak Bukit's settlements. Developing domain *huma* used taxonomic analysis obtain an overview of a farm process that the main Dayak Bukit life. This process is described starting from the process of looking for fields to be end with the ceremony to close the cycles and the blessing to enjoy the farm. **Componential analysis**: phase farming (*bahuma*) as a major part of Dayak Bukit life then analyzed by componential analysis, in particular, through the preparation of categorization to find both live stages and built stages. The results of analysis obtained componential settled categories that include: building the *lampau* (open hut) - the *pondok* (hut) – *lumbung* (barn) and expand the existing pondok into a communal dwelling (*balai-adat*). **Theme analysis**: From the previous analysis, we can conclude the theme of the values of culture living and Dayak Bukit settlements, which is based on *huma*-culture, especially the *huma*-religious.

3.2.   Writing Ethnography: culture-cultivation as a value of Dayak Bukit's dwelling

Field observations and analysis ethnography indicated various elements in best part of Dayak Bukit life associated with the *huma* (field for dry rice cultivation). Once again, various elements in the included term that has described understood from that was compiled and linked by the cover term 'X is a part of Y' as a semantic relationship. It is based on the fact that most of the religious and symbolic act of communicating with something that is seen holding the fate of the supernatural and are in all farming activities (*bahuma*). Particularly, in the Dayak Bukit life, ritual or ceremony activity prominent accompanies their faith. The ceremony performed routinely by Dayak Bukit tribe is intended to maintain existing beliefs, so that between belief and ritual are two essential and complementary elements of the rites, and ceremonies inflame beliefs justify beliefs.

   Dayak Bukit tribes always perform ceremonies that accompany the stages of farming. The ceremonies are intended to obtain approval, the petition in order to get more yield, as well as a

symbol of the implementation of the obligation to maintain and honor the rice plant. The common thread of these ceremonies takes place and togetherness, and it needs the ceremony space. This ceremony space is a 'spirit' that fills the Dayak Bukit's communal dwelling (balai-adat). From this phenomenon, the researchers began to explore how and what influences the maintenance of ceremonial space within the balai-adat as an essence of living tradition of Dayak Bukit tribes. The most important of ceremonies, in the context of architecture, is the existence of ceremony space, and the key to understand the living culture or the origin and meaning of Dayak Bukit tribes.

Based on the faith, some ceremonies must be implemented by all members of the kinship of Dayak Bukit (*bubuhan*) and related stages of cultivation (*bahuma*). The ceremonies were associated with farming activities, and there are at least nine ceremonies (*aruh*) that Dayak Bukit tribes conducted since the preparation of open fields until after harvest, namely: (1) *aruh mamuja tampa*, or a ceremony to honor the agricultural equipment, (2) *aruh batabasan*, or a ceremony to search new fields, (3) *aruh patilah*, the ceremony to chop bamboo grove when the fields were overgrown clumps would bamboo, (4) *aruh katuan* or *aruh marandahakan balai diyang sanyawa*, the ceremony to smite *Diyang Sanyawa* (holy spirit) who located in the largest trees in the land to be opened, (5) *aruh bamula*, the ceremony to start growing rice, (6) *aruh basambu umang*, which is a ceremony to cure or treat *umang*, (7) *aruh menyindat padi*, which is a ceremony to tie the grass and rice stalks and *aruh manatapakan tihang babuah*, the ceremony to establish a fruitful stalk of rice, (8) *aruh bawanang*, namely obtain the blessing ceremony or *wanang*, and (9) *aruh mamisit padi*, the ceremony to enter the rice into the barn. Three of the ceremonies (*aruh*) are done by each family (*umbun*) who own the land, while the other ceremony is performed by several groups or kinship. While the harvest come, Dayak Bukit tribe is doing the biggest *aruh* or often referred as *aruh ganal*.

Source: (MUCHAMAD, 2012)
Figure 4: Ceremonial space that is always maintained in the Dayak Bukit settlements

The origin of the ceremonial space was believed to be derived from some of the *lampau* (open hut) or *pondok* (hut) belong to senior family. Furthermore, to meet the need for togetherness of ceremony, once of *pondok* was realized by extending the space around the ceremonial space and combine it. The gathering process of all pondok (huts) increasingly gained power (vitality) in the implementation of the various ceremonies. The origins and subsequent development of the *lampau* was initially a ceremony conducted individually by each *umbun*; gradually to gain greater power it began to be implemented in the together ceremony and was led by religious leaders (*balian*). *Balian* is believed to have the ability to communicate with the god. As a result, they began to assemble and require a container (space) in a more extensive way in the ceremonial space. This is what creates the power for balai-adat.

Figure 5: (left) lampau, (right) pondok

3.3.   Interpretation

On the interviews and field observations, it is known that in every stage of farming, Dayak Bukit tribe always performs ceremonies that accompany the stages of farming. The ceremonies are intended to obtain the approval, the petition in order to get more yield, as well as a symbol of the implementation of the obligation to maintain and honor the rice plant. The common thread is these ceremonies take place and togetherness. The need of a place to hold a ceremony is realized by a ceremony space in the middle of balai-adat. This ceremony room is a 'spirit' that fills the balai-adat settlements.

Furthermore, to meet the need for togetherness the ceremonies is realized by extending the space around the ceremony room and combining all pondok in order to manage an increasingly gaining strength ceremonies (vitality).

Masa pembukaan lahan	Masa bertanam dan memelihara	Masa panen dan sesudahnya
In the early phase of open land, built a simple hut which is/was only consisted of floor and roof. Function of this lampau (open hut) is for a place to sit and rest while clearing land to plant rice seedlings.	At the phase of planting, the fields shall be maintained. For that reason, the lampau (open hut) began to be installed wall coverings for temporary living place. The whole family spends time during the growing season by staying in the hut on the field.	At harvest time, and thereafter, the function of hut) has changed into the barn to store the rice. The people in this period back to the balai-adat. The yields are still kept in the barn.

Figure 7: Transformation

From this point, the researcher believes that Dayak Bukit tribe began to develop one of the huts belonging to a senior family (umbun) becomes a gathering place and implementation of ceremony. Family -gathering process is then followed by the construction of the chamber rooms to a communal dwelling as the forerunner of balai-adat. If at first, families gathered only on one of the existing hut, the next, spatiality, they began to expand the hut. The first expansion is to increase the width of the space (floor) to all sides and is characterized by the difference in height (elevation) than

ceremonial space. The argument that balai-adat is derived from the extended of the hut supported the fact that the previous six main pillars is the construction of a hut. Hence, the ceremony room be one of the most valuable and vital existences. The second expansion is adding to the booth spaces (as a representation of the hut property of their respective family) in this ceremony room. This process that eventually created a balai-adat that has a ceremony room (*pamatang* room) in central, communal space (*laras* room) surrounding the ceremony room, and the chambers room around the ceremony room. The following figure illustrates the process.

| Lampau /pondok / lumbung that was built apart and scattered in the fields belonging umbun | One of the pondok (hut) was chosen as a place of a communal ritual. | To strengthen the implementation of the ceremony was built additional space to accommodate all members | Umbun owned pondok (hut) began to merge and built chambers around the existing of ceremonial space. |
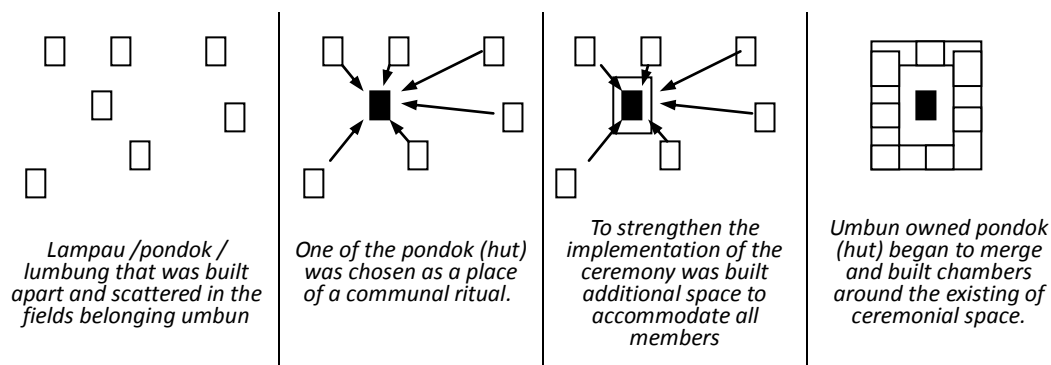
Source: (MUCHAMAD, 2012)
Figure 6: Transformation

The incorporation process of the *pondok* (hut) is also seen from the aspect of construction and building-form. Ceremonial space (*aruh* space) consisting of six main poles (*tihang guru*) and gable came from a *pondok* (hut) in the beginning, while the communal space (*laras* room) is a visible extension of the roof form and construction. The space surrounding the chamber is formed from another pondok (hut) that fit with the existing space. The incorporation is also evident to the nature of individual ownership (*umbun*) to each chamber. Almost the entire balai-adat that observed indicated that the ownership status of the chamber room impact on the chamber room conditions, both in terms of maintenance, material, to the function or use.

Having formed a communal dwelling (balai-adat), the Dayak Bukit still carries the tradition of living as before, that every family (*umbun*) who performs farming duties will build *lampau* (open hut) and *pondok* (hut) in their own fields. In other words, the beginnings of life cycles of living tradition, as previously reoccurred. However, the phase of the development / establishment of further settlements, there is some possibility of development of living tradition. Some *pondok* (hut) has joined to form a new place for ceremony (balai-adat), but there is also some family (*umbun*) seemingly straight built a balai-adat to accommodate the entire group (*bubuhan*).

3.4. Discussion: Re-actualization.

Interpretation of the analysis ethnography describes the origins of the *balai-adat* as an indigenous settlement, and explains how Dayak Bukit settlements maintain harmony with the natural environment. The picture of Dayak Bukit living tradition that upholds the value of spatial-based beliefs, especially *huma*-religious, is one subject, which can be learned / copied by today's society and makes the values of faith as the basis for the planning and design of space.

According to Dayak Bukit tribe, the concept of dwelling based on the faith has been able to make a living environment controlled. Insofar as this does not concern the key points of belief and worship, it certainly will not cause problems for the other community.

4. Conclusion

Learning from Dayak Bukit's living and built tradition has always concerned the ability of the natural environment to meet the needs and should also be aware of today's society. Some rules have been made trying to set the real carrying capacity, but the ratio is often violated by human itself in the implementation. Therefore, a more fundamental factor, namely the belief as a way of life needs to be returned to manage the aspects of human settlements. Without intending to trigger the racial

problem, but the fact, traditional society that firmly holds the value of faith-based traditions in many areas exists tend to be more than that glorified the value of pluralism. Instead, by making the value of a local tradition as rules, the immigrants have to adjust properly, especially on those aspects of their settlements. For example, the Balinese are more powerful to apply the values of the cultural traditions to secure the environment more than people in urban areas who confused with their identity. The development was supposed to respect the local values and natural values which they built, while the architecture also had to adjust and to uphold those values over all the design principles and laws that have been glorified. This is the real masterpiece of Indonesian architecture.

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Traditional Balinese Architecture:
What is Thought and What is Seen

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ABSTRACT

This conceptual article is initiated with the results of field research associated with two 'grand theories' known in the traditional Balinese architecture. These are: 1) knowledge of the concept of Traditional Balinese Architecture (TBA) and 2) *hasta koçali* scripts. This article states that in the realm of review on the reality of architecture knowledge, architecture consists of an abstraction of reality or called *thought architecture* and empirical reality, or *the seen architecture*. In regard with TBA, the findings show that knowledge about the concept of TBA included *in the thought architecture* (abstraction) is *sangamandala, tri angga*, and *natah* (open air 'court' concept), while the TBA concept included in *the seen architecture* (empirically) are scale and proportion, clarity of structure, truth of material and ornaments. From these findings, comparison between TBA and *hasta koçali* concept is conducted, in which the comparison of these two grand theories lead to the implications of how to view the TBA on which the categories attributed capable of being used either in conducting the study or designing TBA or other contemporary Balinese architecture design and other contemporary Balinese architecture grounding itself on the concepts of TBA.

Keywords: concept of traditional Balinese architecture, *hasta koçali*

1.   Preliminary

This paper based on the assumption that map of knowing realm to see the reality in the creation and realization of architecture is initiated with the reality built within the Plato and Aristotele's thinking frame in viewing the world.

In Plato's thinking frame, reality of humans in viewing the world is the abstraction of what he think, while according to Aristotele, reality is what is empirically seen by human or in other words, reality is what is seen/ felt daily by humans. In this view, architecture reality in abstraction – what is thought – and empirically – what is seen will be discussed in this article. The reality of architecture viewed in this conceptual article is about the creation and realization of the reality of traditional Balinese architecture, both at the level of thought (abstraction) as well as seen (empirical).

Traditional Balinese Architecture (TBA) as it is known today, is built on two 'grand theories', namely a) *hasta koçali* scripts and b) knowledge of the TBA concept. *Hasta koçali* scripts is a 'book' or guidelines of procedure on how to measure and calculate in building a traditional Balinese housing using the body size building owners, their ideals and caste as the basic measurement and calculation. In principle, *hasta koçali* scripts can be divided into three major categories, namely: the bulding procedure, the ritual and the physical of the building itself (Gantini, 2007). While the knowledge of TBA was 'built' based on the repertoire of knowledge on empirical field (research results). This knowledge is mainly divided into three broad categories of philosophical concept, practical concepts and utility concept (Sulistyawati, 1996:5). There are significant differences in conception between the two categories of 'theory' about the TBA. Whereas both are the fundamental conception of TBA which are frequently used by both researchers in of conducting research and practioner in designing buildings referring to the TBA.

The differences and similarities between the two have considerable implications, especially when the two concepts are used/ implemented as a physical concept category. The relation between the

two is important to investigate considering that both have become 'grand theories' in the TBA, and the two conceptions so far have not been compared each other.

Based on the significance of writing, the purposes of this conceptual article are: 1) to reveal the relation between *hasta koçali* and the theories about TBA concepts, 2) to reveal the comparison of TBA theories proposed by various researcher over the years, 3) to put the categories of the various physical concepts commonly used in viewing TBA. With these objectives, the conceptual article is not a study to resolve the problem but rather a study on theories and their empirical implications on the implementation of field conditions.

The methods used to conduct study are literature review by using empirical examples reffering to studies previously conducted. In addition, the method of discussion adopted covers introduction containing background, problems, significance of study, research objectives and research methods as wells as the writing methods, and other parts include a discussion and conclusions.

2. What is *Hasta Koçali* ?

In order to construct a building in harmonious with the macro and microcosm, Balinese tradition provide a script called *hasta koçali* describing the basic rules of traditional Balinese buildings. This script has many local versions with slightly different content from each other and has a wide range of topics. Some versions begin with cosmology, while others give instruction in religious ceremony at the building. In each version, the main part is usually filled with rules determining the ideal dimensions of the buildings. Those manuscripts look like a guideline to see certain course of action taken during process of construction from prepration phase, during construction process and after the completion of the construction, in which all cover the process of constructing procedures, the rituals to the physical building itself.

Hasta koçali is derived from *Sanskrit* in which the name is given when there was influence of the Javanese Hindu culture tailored to local circumstances and further considered belongs to the people of Bali. Before *hasta koçali* was named, people have built using *bhuwana mabah* rules and use *manusa pada* measurement. With the arrival of other cultural influences in the arts building, Sanskrit, Old Javanese language, religions and so forth, the fitted elements of culture were accepted, processed in such a way to enrich the culture of Bali in the arts of buiding. With the blending of elements with other cultures, the art of Balinese building with high, great and full of psychological values is called *hasta koçali*.

In discussing the notion of *hasta koçali*, there is a little bit difficulty to meet a wide range of different opinion which is based on:

1. According to the etymology, the word *koçali* comes from *Sanskrit* word with the root is *koçala* meaning buildings, prosperity and happiness.
2. According to grammatical rules of *Sanskrit*, when the word *koçala* is added suffix 'in', it will turn into *koçalin*. In *Sanskrit* ending in/ i means to have or possess. Thus it means to have knowledge of building or whose expertise on the building. Here 'i' means oneself.
3. In *Kawi-Balineesch-Nederlandsch Woordenboek* dictionary by HN van der Tuuk, the word *hasta* means hand, arm, *pani*. Ordinary characters are transcribed as '*ha*'. Thus, the word *hasta* is interpreted as hand, arm: while the written letter preceded with '*a kare*' (...) will have different meaning.

Thus it can be tentatively concluded that the *hasta koçali* can be interpreted as 'wise hand use (bring happiness and prosperity)'. Searching further the understanding of *hasta koçali*, the following is what Rai Wiryani(1982) wrote referring to the descriptions from some *pedanda* (priest), also referring to the Kawi-Balineesch-Nederlandsch Woordenboek oleh H.N. van der Tuuk dictionary and after a long consultation in Pura Besakih, an interpretation is taken that *hasta koçali* is more likely to mean 'the use of the wise person (expert)'s hands in the knowledge of traditional building'. The people whose expertises on building are usually innately talented. Only talented people can create something well in accordance with his talent, moreover if supported with a good education, their talent can be delivered throught their hands to create what they want.

In general, *hasta koçali* can be divided into 3 (three) major groups, namely: a) ritual, b) procedures, c) physical (see the table below).

Table 1: Three major classifications commonly existed in the *hasta koçali* script.i

RITUAL	PROCEDURES	PHYSICAL
philosophy	working procedure	door
upakara (ceremony)	*sloka*	yard
spell	details	ground
wariga (time)	wood class	room
	defect	pole
	palih	lay out
	jineng	
	wall	

Source: (Gantini, 1997)

From table 1 above, all categories of buildings that can be measured and counted belong to the category of building physical and partly contained in the procedures category (ie teh *sloka*). The sub-category of physical and procedures given more attention in TBA construction process are as follow:

Table 2: Classification of *hasta koçali* scripts based on physical buildings and procedures

NO	PHYSICAL CATEGORY & PROCEDURE	SUB-CATEGORY
1	Door	Dimension of door leaf measurement(*kori* size), *kori* hole and its *phala*
2	Residential Yard	Dimension of residential yard, side yard measurement
3	Front Yard	Distance calculation of the building mass at residential yard (*natah*)
4	Room	Dimension of room length measurement (*rongan dawa*), dimension of room width (*rongan bawak*)
5	Pole (building column)	Dimension of the measurement of column cross-section thickness, height of long column, height of short column
6	Lay out	Lay out of kitchen , lay out of barn/ *kelumpu*, lay out of well
7	*Sloka*	Calculation of the *iga-iga* number, calculation of the *likah* number, calculation of the *bataran* height, calculation of the *undag* height, dimension of *sunduk*, dimension of *lambang* and *sineb*

Source: (Gantini, 1997)

3.   Knowledge on Traditional Balinese Architecture (ATB)

In addition to *hasta koçali*, the previous concepts proposed by many researchers in various writings and other sources have been used as the basis for planning, designing and constructing traditional Balinese architecture. Some of them are:

Sulistyawati (1996:5) categoriez the concepts of TBA into: philosophical concept, practical concept and utility concepts. Philosophical concept consists of: *tri hita karana*, *buana agung* and *buana alit*, *manik ring cecupu*, *catur purusha artha*, *tat twan asi*, *tri loka*, *desa-kala-patra*, *dewata nawa sanga*, *rwa bhineda.* Practical concepts consists of *luan-teben*, *tri mandala*, *swartika sana*, *tri angga*, *natah*, ornament, color, function, materials, clarity of structure, *sikut*, *gegulak*, the size of the building. Utility concept includes ceremony, *pedewasan* or *wewaran*, *undagi*, *pengurip*, *tri premana*.

Budihardjo (1986:33) describes the main concepts of TBA are *catur ashrama* (*brahmacarya ashrama, grihasta ashrama, wana prastha ashrama, samnyasa ashrama, marga (karma marga, jnjana marga, bhakti marga), tri vargha (dharma, artha, kama), tat twam asi, tatwa–susila–upakara, catur dresta, panca cradha, panca yadnya, desa–kala–patra, rwa bhineda/semara ratih, bhuwana alit* and *bhuwana agung, tri hita karana (atma, sarira, trikaya), manik ring cecupu, tri angga (head–body –leg)/ triloka (bur–bwah–swah), nawa sanga/ sanga mandala*, human scale and proportion, open air 'court' concept (*natah*), clarity of structure, truth of materials.

Gomudha (1999:89-127) identifies the values of TBA from the concept of spatial and buildings. The concept of spatial planning and urban design *tri loka, nawa sanga, swastika sana, tri angga, natah*, ornaments, truth of materials, clarity of structure, size/ sikut.

Sastrowardoyo (undated) identifies the basic principles of TBA consists of divine models of space *bhuana agung* and *bhuana alit/ macrocosm* and *microcosm, tatwa–susila–upakara, desa–kala–patra*, orientation: *nawa sanga*, hierarchy of space: head–body–legs, *bur–bwah–swah*, *sanga mandala, kaja–kelod, jero–jaba tengah–jaba* (at *pura*), space structure: *pempatan agung*, proportion and personal statement (physical size of the building owner–the caste and ideal),

building material and structure, chronology–procession–cosmozation, maintaining the whole world: *panca yadnya* ceremony.

Saliya, Yuswadi (1975) identifies the concept of ATB as follows: orientation (the need, spatial expression, the *nawa sangah*, juxtaposition/ composition (the need, spatial expression), proportion (the personalized measurement, *pengurip* as cosmization, *pengurip* as a symbol of transitory, state of being), chronology & procession (the time notion, rites de passage), cosmization (the need).

Dwijendra (2008) identifies the TBA principles *based on studies of traditional balinese house architecture as follows: bhuana agung and bhuana alit, tri hita karana* (cosmology balance), *tri angga* and *tri loka* (the hierarchy of values), orientation (*hulu–teben* concept), *sanga mandala* (cosmology orientation), *natah* (open space concept), proportion and scale, procession and chronology of construction, clarity of structure, the use truth of the material, *desa–kala–patra, desa–mawa–cara*, ornament and color.

Table 3: Summary of TBA concepts from some sources

CONCEPTS \ SOURCES		SULISTYA WATI	BUDIHAR DJO	GOMUDHA	SASTROW ARDYO	SALIYA	DWIJEND RA
PHILOSOPHICAL CONCEPT	*Tri Hita Karana*	√	√			√	√
	Bhuana agung and *Bhuana alit*	√	√		√		√
	Tatwa-Susila-Upakara		√		√		
	Desa-Kala-Patra	√	√		√		√
	Manik Ring Cecupu	√	√				
	Catur Purusa Artha	√					
	Tat Twam Asi	√	√				
	Tri Loka	√		√	√		√
	Rwa Bhineda/ Semara Ratih	√	√				
	Catur Ashrama		√				
	Marga		√				
	Tri Vargha		√				
	Catur Dresta		√				
	Panca Cradha		√				
	Panca Yadnya		√		√		
	Swastika Sana	√		√			
	Desa-Mawa-Cara						√
PRACTICAL CONCEPT (SPATIAL AND PROCEDURES FOR BUILDING)	*Dewata Nawa Sanga*	√	√	√	√	√	√
	Luan-Teben	√					√
	Kaja-Kelod				√		
	Tri Mandala	√					
	Tri Angga	√	√	√	√	√	√
	Open Air 'Court' Concept	√	√	√		√	√
	Ornaments	√		√			√
	Color	√					√
	Function	√					
	Truth Of Materials	√	√	√	√	√	√
	Clarity Of Structure	√	√	√	√	√	√
	Sikut	√		√			
	Gegulak	√					
	Size of building	√					
	Human Scale & Proportion		√		√	√	√
	Jero-Jaba Tengah-Jaba (pada Pura)				√		
	Pempatan Agung				√		
UTILITY CONCEPTS	ceremony	√					
	Pedewasan / Wewaran	√					
	Undagi	√					
	Pengurip	√					

SOURCES CONCEPTS	SULISTYA WATI	BUDIHAR DJO	GOMUDHA	SASTROW ARDYO	SALIYA	DWIJENDRA
Tri Premana	√					
Chronology & procession of construction				√	√	√

Source: (Gantini, 2011)

From the description about the ATB concepts, aspects related to utility concept covering ceremony, *pedewasan*, (related to constructing process) is not assessed as it is not directly related to the realization of physical architecture. Two important points directly related to the realization of physical architecture is the concept of spatial and procedures for building (practical concepts), thus the study will focus on practical concept.

Summary of TBA concepts based on several sources in general can be seen in table 3 based on the concept proposed by six sources referred. Thus, the dominant TBA concepts proposed are *tri hita karana, bhuana agung & bhuana alit* (macro dan microcosm), while *desa-kala-patra, tri loka* are not discussed in this study because it is a philosophical concept animating some practical concepts, neither does the utility concept such as chronology and procession of constructing. Thus, the concepts of Traditional Balinese Architecture frequently used in the application of traditional Balinese buildings are as follows:

1. *dewata nawa sanga (sanga mandala*)
2. *tri angga*
3. *natah* (open air "court" concept)
4. human scale & proportion
5. clarity of structure
6. truth of materials
7. ornaments

Those 7 (seven) categories, have the following sub categories:

Table 4: Classification of knowledge on TBA based practical concepts

NO	PRACTICAL CONCEPT CATEGORY	SUB-CATEGORY	BUILDING TYPOLOGI
1	*Dewata Nawa Sanga (Sanga Mandala)*	Entrance lay out, 'ordering principle' of the building	'order'
2	*Tri Angga*	representing head, body, and legs of the building	'order'
3	*Natah* (Open Air "Court" Concept)	*natah* function, *'ordering principles' of the natah*	'order'
4	Human Scale & Proportion	*saka* size (pole/ building column)	'order'
5	Clarity of Structure	application of structure clarity concept of the building	'order'
6	Truth of Materials	the use of material on the building the use of material on the head, body and legs on the building	form
7	Ornaments	application of traditional ornaments on the building	form

Source: (Gantini, 2011)

From the summary of the TBA concepts from various sources above and based on the previous study (Gantini, 2011) there are two points to note as a finding at conceptual view as follows :

1. From 6 sources, Sulistyawati, 1996, is the only person investigating the function of TBA. Table 4 shows that the functions discussed is the function of *natah* and not the function of building (note: discussion of the function of the building in the Traditional Balinese Architecture is not discussed in this conceptual article).
2. That the practical concept of the above categories is more operational definition, and when the categories above are tested to see how its realization on the traditional architecture of the building, those 7(seven) concepts will be clearer when they are divided into

two categories. The first category is the conception categories and the second one is constructional/ empirical field categories. The following table can better explain the findings on the conception level in this study (Table 5).

Table 5: Findings on the conception level (reformulated TBA concept)

NO	CONCEPT (ABSTRACT)	EMIPIRICAL	BUILDING TYPOLOGY
1	*SANGAMANDALA*		'order'
2	*NATAH*		'order'
3	*TRI ANGGA*	– scale & proportion	'order'
		– structure clarity	'order'
		– natural material	form
		– ornaments	form

Table 5 above discusses the Traditional Balinese Architecture in two different levels, i.e the first level of abstract discussing the TBA in the view of 'architectural thinking' and the second level is in the view of empirical TBA, i.e seen architecture. *Sangamandala, tri angga* and *natah* conception is a conception on human minds and not an empirical reality or the reality of the field. For example, the abstract conception of *tri angga* -head-body-leg. Therefore, the empirical reality is the roof-pillar-foundation.

4.   Findings: Hasta Koçali Versus TBA Concepts Knowledge

The findings above (Table 5) shows that if the two TBA 'big theories' are compared, they would look as follows:

Table 1: Three major classifications commonly existed in the *hasta koçali* script.i

THEORY ON TBA CONCEPTS		*HASTA KOÇALI*	
CONCEPT CATEGORY TBA	SUB-CATEGORY	PHYSICAL&PROCEDURE CATEGORY	SUB-CATEGORY
SANGAMANDALA	Entrance access lay out	RESIDENTIAL YARD	Dimension of residential yard and side residential yard measurement
		FRONT YARD	Calculation of the building mass distance in the house front yard
	Building 'ordering principle'	LAY OUT	Lay out for kitchen, barn/*kelumpu*, well
TRI ANGGA	Representing head-body-legs of the building		
	Scale & Proportion	the size of saka (pole/ column of the building)	ROOM	Dimension of the room length (*rongan dawa*) measurement, dimension of the room width (*rongan bawak*) measurement
		COLUMN	Dimension of the pole's cross-section thickness measurement, dimension of the height of long and short pole measurement
	Structural clarity	the application of structural clarity concept of roof, column and foundation of the building.		*dimension of sunduk*, dimension of *lambang* and *sineb*
	Truth of material	The use of material on the building, the use of material on the		

| THEORY ON TBA CONCEPTS | | HASTA KOÇALI | |
CONCEPT CATEGORY TBA	SUB-CATEGORY	PHYSICAL&PROCEDURE CATEGORY	SUB-CATEGORY
	roof, column and foundation on the building.		
	Ornaments	The application of traditional ornaments on the building (roof, column, foundation)		
		DOOR	Dimension of door leaf measurement (*kori size*), *kori* hole and the *phala*
		SLOKA	calculation of the *iga-iga* number, calculation of the *likah* number, calculation of the height of *bataran*, calculation of the height of *undag*
NATAH (opening court between building)	*Natah* function and *'ordering principles'* of the natah		

The comparison is intended to see clearly the domains of discussion on TBA concepts and *hasta koçali*. For sub - categories - especially those can be seen on the TBA concept - can be added with the existing sub - categories in *hasta koçali*. For example in *sangamandala* conception, entrance access and lay out are not the only sub - categories that can be seen. The other sub - categories that can be seen are dimension of residential yard measurement, side residential yard, calculation of mass distance of the house front yard, layout of the kitchen, layout of the barn/ kelumpu, layout of the well as described in *hasta koçali* manuscript.

5. Findings and Implications

1. TBA concepts including in the thought architecture (abstract) are *sangamandala, tri angga, and natah*, while the TBA concept including in the seen architecture (empirically) are scale and proportion, clarity of structure, truth of material and ornament.

2. The four categories of the scale and proportion, structure clarity, truth of material and ornament are grouped in *tri angga* conception, not without a reason. The practical reason is that the four categories can be justified by using the concept of *tri angga* in the field condition.

3. The comparison betwen the knowledge of TBA concepts and *hasta koçali* is mainly very important to do given both are 'grand theories' in the TBA. Besides, there is no previous comparative study on this. In addition to this, comparing these grand theories will bring implication mainly on how to view TBA especially in the categories they belong to, which can be used either when conducting study or when designing TBA as well as any other contemporary Balinese architecture based on the TBA concepts.

4. That the function in the TBA architecture 'is not' a significant aspect in the TBA concept. This leads to this led to the conjecture that there is a need in TBA further discussion and differentiation between the traditional Balinese architecture as FUNCTION (function-role-assignment) and Traditional Balinese Architecture as USE (utility).

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Living on the Water: Spatial Planning Experiences
from The Netherlands and Indonesia

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ABSTRACT

A 'hate and love' relationship is a common term used in describing how people in waterfront cities are dealing with water. In spatial planning perspective, areas with water bring some challenges and opportunities, especially if there is a conflict of interests between flood protections and the need of lands for urban development. This paper is aimed at understanding the development process and changing relationship with water in the Netherlands and Indonesia (Banjarmasin); a special attention is paid for water-based dwellings; or the way of living on the water or next to the water. Factors that influence spatial planning and living on the water from those cities will be analyzed. In the Netherlands, In addition to the history as a trade nation, water management is highly influencial to the development of the cities. They are emphasized by some stages, the acceptation toward water; defensive actions; offensive strategies; manipulation or the era of marvelous engineering works; and the current stage – a new insight and acceptation toward water. The innovation in water management and the awareness of water in spatial planning have brought back the confidence of living next to the water and the possibilities to develop the new typology of water-based dwellings in urban areas. While in the case of Banjarmasin, Indonesia the history and cultural attachment to water does not help to maintain the positive attitude toward water in the current urban development process. It still uses old paradigm in dealing with water by avoiding it (the stage of acceptation and protection).

Keywords: : Living on the water, spatial planning, water management, Netherlands, Banjarmasin

1.   Introduction

Living on the water is not a new phenomenon for cities around the world, especially for those that sits next to the rivers, seas or lakes and by generations have made them as sources of life and a backbone for economics and transport activities. At this circumstances, a 'hate and love' relationship with water is a common term used in describing how people in those areas are dealing with the joys and threats of water. In spatial planning perspective, geographical area with water also brings some challenges and opportunities, especially if there is a conflict of interests between, for instance, flood protections and the need of lands for urban development. Netherlands could be one of the best example on how those interests have developed and been managed in such a way for a long period in order to create a resilience and attractive urban environment. However, many other water-based cities in the world are still struggling to find the way to live harmoniously with water. Cities in Indonesia such as Banjarmasin (South Kalimantan) or other South East Asian Cities such as Bangkok and Hanoi that have a strong water identity and once was heavily depended on rivers, are now facing problems with floods and also the changing attitude toward water in their urban development process. The obvious highlights are found on water dwellings; or the way of living on the water or next to the water. Both in The Netherlands and Indonesia, those ways of life still exist until now in the midst of urban areas, but with a different stage of maturity and challenges.

In understanding the development process of waterfront cities, many literature commonly analyse from the historical evolution of post-industrial cities such as the one from Wrenn (1983)

which highlighted four phases; from the early settlements next to water to the transformation of bustling port cities into derelict old harbors and then a re-discovery of new waterfront into public spaces and a mixed-use development. However, for both Netherlands (Amsterdam) and Indonesia (Banjarmasin), the point of views on geographical condition of water and land as well as the historical and cultural attachments on water for hundreds of years that have formed the present days urban landscape also need to be considered.

Through descriptive analysis, this paper is aimed at understanding the development process and a changing relationship with water in the Netherlands and Indonesia; Factors that influence spatial planning and living on the water from those cities will be analyzed. To simplify, Banjarmasin (South Kalimantan) and Amsterdam (also Netherlands in general) will be taken as a comparative study. Both cities have a strong water-based culture and also have experiences on water living from boat houses to floating houses. Two lenses will be used in analysis, firstly, to look at the history from literature studies of how the early settlements and way of living on water started; secondly, field observations will inform the current condition, changes and issues relate to living on the water from both cities.

This paper will be organized into four chapters. After the introduction chapter, chapter two will explain living on the water in the Netherlands; relates to Dutch spatial experience dealing with water and explore the houseboat living and new floating neighbourhood in Amsterdam. Third chapter will describe living on the water from past to present days in Banjarmasin; the history, challenges, and its current spatial condition. The last part will compare the difference stages and challenge in spatial planning and living on the water from those cities; issues, challenges and apportunities for future development that could be learnt and shared each other will be highlighted.

2.   Living on the Water in the Netherlands

New typology of water-based living in Dutch cities such as the ones at Borneo-Sporenberg and floating neigbourhood in IJburg, Amsterdam are emerging phenomenon to the urban landscape in the last two decades. It is a new interpretation of old tradition living on the water and also suggest the new approach of dealing with high water (floods) that have been for centuries highlighted the spatial problems of the Netherlands. However, this current possibility is not happened by chance or within a few decades; yet this took tremendous efforts and continuous experiments in water management and spatial planning for thousands of years.

2.1   Dutch Spatial Experiences in Dealing with Water

As a low-lying country that highly exposes to the sea and 24% of land is located below avarage sea level (N.A.P), the Dutch society are aware of all the natural threats. The 'war on water' has begun from more than 2000 years ago (around 800 AD), highlighted by the construction of dikes, polders, mills, dams, canals and land reclamations (Van Steen, 2012). In addition, as a trading nation, rivers and seas also have a vital role in economics and transportation activities within the region and to the outsides world. Historically, the establishment of settlements or towns always have a direct connection with water, and they are as possible located at the highest ground to avoid floods (Hooimeijer, et.al., 2005). The population growth had pushed the country to provide new lands for urban development; this have brought to the strategies and actions dealing with water. The changing attitude toward water that happened in Dutch society and have influenced the creation of new landscapes are highlighted by some stages (Table 1), those are the acceptation toward water (800 AD); defensive actions (1250 – 1600); offensive strategies (1600 – 1925); manipulation or the era of marvelous engineering works in the 20th century, then followed by current stage – a new insight and acceptation toward water (late 1990s) (Hooimeijer, et.al., 2005; Van Steen, 2012).

The global effects of climate changes and the proof that stand alone technology approach by construction dikes and dams are not enough to tackle the floods and avoid the Netherlands from sinking. Spatial planning that was initially separated from water management, since late 1990s has been integrated with and accomodated within the national spatial policy. "Room for the rivers (2005)" and "Working together with water (2008)" are the new campaign in current Dutch urban development. While providing enough water storage, the water space also offers new land use for

urban functions such as the establishment of water-based dwellings or 'dual space use' (Nillesen & Singelenberg, 2011). It also helps to ease 'urban congestion' and scarcity of lands especially in Randstad area (Olthuis & Keuning, 2010).

(a)   (b)
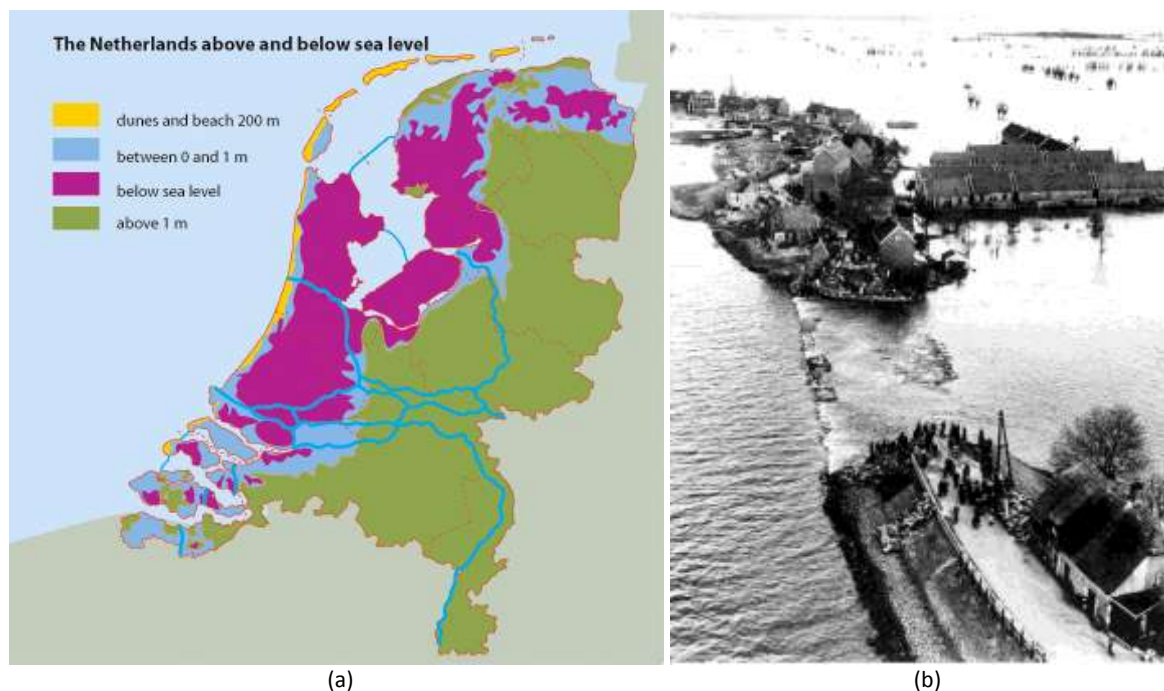
Source: (a) www.deltawerken.com; (b) Van Steen, 2012

Figure 1: (a) Map depicting areas of the Netherlands above and below sea level (b) Dikes collapsed - major floods in the Netherlands (February 1953)

Table 1: Changing Attitude toward Water in the Netherlands

Stages	Highlights on Spatial Planning & Settlements	
800 AD **Acceptation**	People took the wet surroundings (natural tidal landscape) for granted and adapted, settlements were built on higher areas such as mounds/ terps, a sand ridge, preferably around rivers. During high water the mound surrounded by water and disconnected with other areas.	A Church and houses on a terp in Friesland (Author, 2012)
1250 - 1600 **Defensive**	To protect low-lying areas againts water, people built dikes ring around the cities and production landscape, and regulated water by building canals. Settlements were built behind the dikes. The distinction between inside and outside dikes were prominant. Ring dikes and canals also offer military protection. This also a period of land loosed to the water.	Settlements inside the dikes in Paesens-Moddergat (Author, 2012)
1600 – 1925 **Offensive**	Population growth and technological improvements in water management with dam, mills, etc have made it possible to drain water lands into urban landscape (large scale land reclamation: re-conquered lost land along coast, rivers, inland). Forticifation cities with sea walls, port and encircling canals were developed at this period (no buildings	

allowed outside city wall). Fortification Law 1874 – walls then were torned down for urban expansion, some canals filled in for land transport and sewage system. Ideal city of Simon Stevin was developed with a grid-shaped street plan, a centrum (square, church and public buildings) and canal houses alongside for wealthy citizen. Amsterdam ring canals were constructed (1612-1660), 1st to 3rd layer for residentials, the fourth for defense and water management.

Old city of Amsterdam with canal houses (Author, 2012)
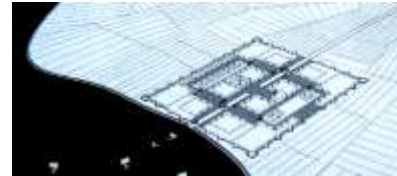
Ideal City of Simon Stevin (Hooimeijer et.al., 2005)

1925-2000 (20th Century) **Manipulation/ Century of the Engineers**	Strong belief that civil engineers could win the 'War on water'. New developments/urban expansion on water (reclaimed lands) e.g. Schiphol Airport at Haarlemmermeer; new cities on IJsselmeer (lake); Highlighted by major projects: Zuyder Sea Works, Delta Project and Delta Project of the Large Rivers – to protect low-lying areas City renewal/reconstruction after WWII and new plan for Amsterdam, Rottedam, The Hague. Water is more detached from other spatial functions, many cities turned their backs on water, also due to rise of the car.	Enclosure of Zuyder Sea with a dam - Afsluitdijk at IJsselmeer (Author, 2012) Amsterdam Bijlmer in the 1970s (Van Steen, 2012)
Late 1990s (21th Century) **New Acceptation**	River flooding in 1993 & 1995 and continuous sea level rise as an effect of climate change proved that technology alone is not enough. A new insight on Integration of water management into spatial planning (landscape/ecology); no longer "pushing water back", but "allowing water (back) on the land". Introduction of Vinex Locations for new residential development, requirement to provide at least 8-10% surface water storage for stormwater catchment.	Pile and floating residentials on water in IJburg, Amsterdam (Author, 2012)

Source: Developed by author from 'Atlas of Dutch Water Cities' (Hooimeijer et.al.,2005) & Van Steen (2012)

In the case of Amsterdam, one of a canal city where landscape works as a hydraulic system, water was one of major considerations in its spatial planning. The city of Amsterdam was started from a dam at mouth of Amstel River that was built in 1220. It was developed from natural tidal landscape in 800 AD and was enclosed by sea dikes around 12th Century to protect from IJ (a lake) and Zuiderzee (a bay). As an economic and water centre the dam attracted much activity and many people. In 1300 Amsterdam was granted city privileges; the city grew via a system of canals up until the 17th century (Hooimeijer, et.al., 2005). Inspired by Italian Renaissance, Simon Stevin (a mathematician and military engineer) developed a concept of urban defence (forticification) using a system of wide canals and earthen walls which was then formed a basis of many Dutch cities. Towards the end of the 15th century a new ring of canals was constructed around the City of

Amsterdam; It is well-knows as *Grachtengordel* built during 1612-1660, an integral design of street plan and a new water system based on existing polder design.

Followed by population growth and great damage to buildings in the Netherlands after World War II, new plans and urban reconstruction were widely undergone. The National spatial planning was introduced in 1958 focused on a better distribution (de-concentration) of population growth into surrounding areas; various large scale-residentials and new towns were built surrounding the City of Amsterdam during this period and composed the urban landscape today of the city where the legacy of *Grachtengordel* is only left at the old part of the Amsterdam. Later, water is discovered as an element of urban identity in 21th Century, a new fourth spatial planning brought back the tradition of living on the water into the urban development process, Borneo Sporenburg and artificial islands at IJburg are among the highlighted projects (Hooimeijer, et.al., 2005).

1662   1970
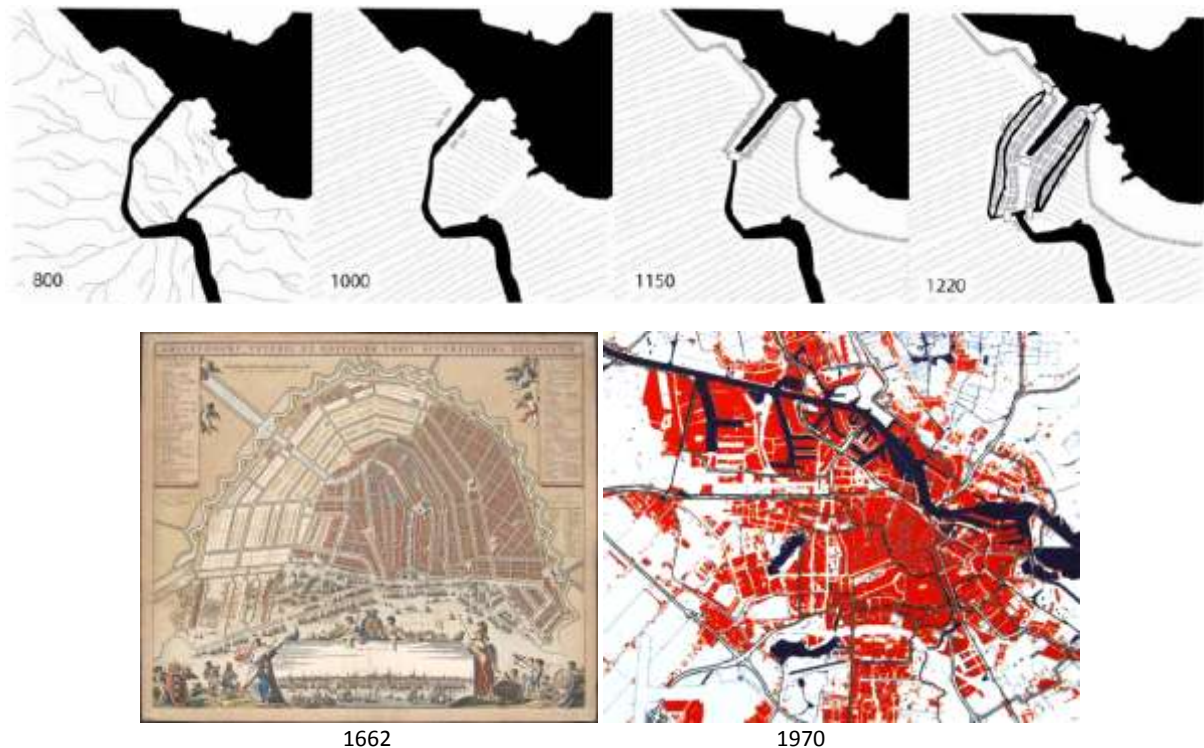
Source: Hooimeijer et.al. (2005)
Figure 2: The Development of Amsterdam

2.2 From Houseboat Living to Floating Neighbourhoods

The development of Amsterdam by its canals also introduced house boat Living in the Netherlands that historically began during the Dutch golden age of sea trade in 17th – 19th Century. This period did not only bring wealth to build the country but also the way of living on the water for the majority of tradesmen that made use of their ships and barges as a workplace and living space. Wealthy Amsterdam's merchants had transformed the canals and its watersides from the city's drainages into a pleasant residential environment and after the declining of Dutch sea trade end of 19th Century, many retired merchant vessels were converted into residences that moored in canals and waterways, this was the beginning of the famous house boat living in the Netherlands that still exists until present days (Gabor, 1979).

House boat living in Amsterdam during the past was closely related to the work and activities on canals and seas. After tradesmen period, dike and dredging workers, fishermen as well as low income groups were the people who lived on boat houses. In addition to abundant retired barges and ships, housing shortage after World War II were also the major force that made house boat become a desirable choice to live in (Gabor, 1979). Survey in 1972-1975 among houseboat dwellers in North Holland Province revealed the three major reasons living on the water those were housing shortage

(48%), free and easy congenial lifestyle (22%) as well as lower living cost (8,5%). In addition to closeness to work and economic motives, in fact living on the water also attracted Individuals with freedom life-style and expressionist such as artists, this due to the less regulations on boat and water and the different experience given by living afloat (Kloos & Korte, 2007). In addition, present house boat also act as a substitute dwelling; an alternative temporary living for an individual or young family before entering the housing market (Kruythoff, 1994).

(a) 1650	(b) 1903	(c) 2012
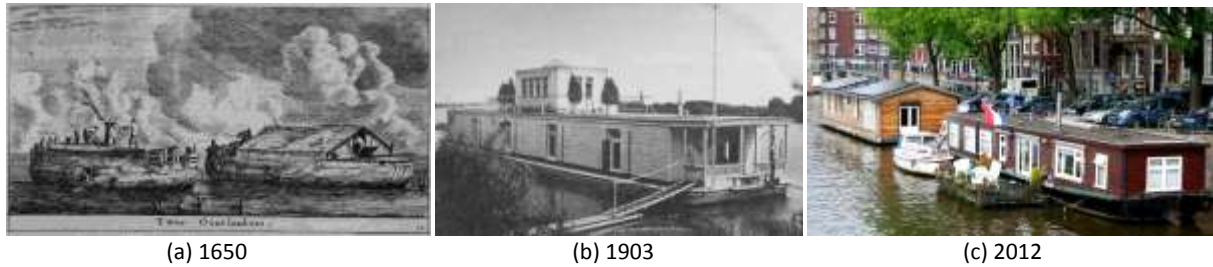
Source: (a) Kloos & de Korte, 2007; (b) Bos, 2007; (c) Autor Survey, 2012
Figure 3: Houseboat Living in Amsterdam

Although living afloat on boat houses has been a tradition in Amsterdam for thousand years as well as Dutch society has gained confidence in 'back to water' with Dutch Government policy in the Netherlands in general have positive attitudes toward living on water; a new typology of water-based dwellings such as floating house or neighbourhood remain a new entity in current spatial planning; it still exposes to difficulties in the future development due to the present laws and regulations that do not fit into this new typology of water dwellings (Nillesen & Singelenberg, 2011). The boat houses (a ship that converted into residence) are regards as a moveable property not as a real estate (land housing), where rules and regulations are applied differently for both catagories; including here the issues on property tax, legality of mooring sites, mortgage financing and so forth (Nillesen & Singelenberg, 2011; Kloos & Korte, 2007; Gabor & Blaustein, 1979).

a. Reitdiephaven, Groningen	b. Borneo-Sporenberg, Amsterdam	c. Floating houses, IJburg

Source: Author survey, 2012
Figure 4: New typology of water-based living in the Netherlands

The process of the establishment of water-based dwellings in Netherlands is still in continuous experiments either in the field of technology (buildings and water management) and regulations as a new entity in urban landscapes. However, It is acknowledged that the innovation and progress are far beyond many other water-based cities in the world; Pasternack (2009) underlines that 'architects and planners in the Netherlands are at the forefront of this field', largely due to the long experiences dealing with country's flood-prone area.

3.   Living on the Water in Banjarmasin

A Dutch colonialism for almost 350 years had influenced the spatial structure of some cities in Indonesia. As an archipelago country with two-third of the area consisted of water, dealing with water has always been a spatial issue especially in major cities that located next to water such as Jakarta (Batavia) dan Banjarmasin (South Borneo). The typology of old Dutch water system with

canals and a fortification city for military, transportation and flood defence as the one developed by Simon Stevin in 16th century had also been adopted to these cities. In addition, there has been for hundred years a historical and cultural attachment to water in Banjarmasin that has formed the establishment of living on the water; from pile houses to floating houses and market on the rivers. It is acknowledged that there has been a changing attitude toward water in the development process of the city from the past to present urban landscape, from water-based living into more land-based development with little regard to the presence of water in spatial planning.

3.1   Rivers, Canals and the Early Spatial Patterns

The embryo of Banjarmasin and its settlements were established since 15th Century and concentrated along the major rivers, such as Martapura River and Kuin River. Historically, the city was started from a small port in Kuin River that inhabited by Malay people, local kingdom from Negara Daha took over the port by a war on Kuin river, since then the Kuin become the center of Banjarese Kingdom with the name of *Bandar Masih*, before moved to Martapura River and by Dutch the name was changed into Banjarmasin. Dutch East India Company (VOC) started to settle and occupy Banjarmasin around 1865 – 1949 because the region was one of the biggest pepper production in Nusantara (Saleh, 1981 & 1986). During colonial period, Dutch built a fortress at the strategic location of Martapura River with a ring of canal enclosed the center to control economic and river trade. Some canals were also built to link the major rivers such as between Martapura and Barito River. The canals and rivers had a vital role for military expansion, trade contacts with local, regional and overseas vessels, concentration of settlements as well as cultural and religious exchanges with Java and other regions. The new settlements concentrated near the fortress and linear along the rivers and canals (Saleh, 1986; Roever & Brommer, 2008).
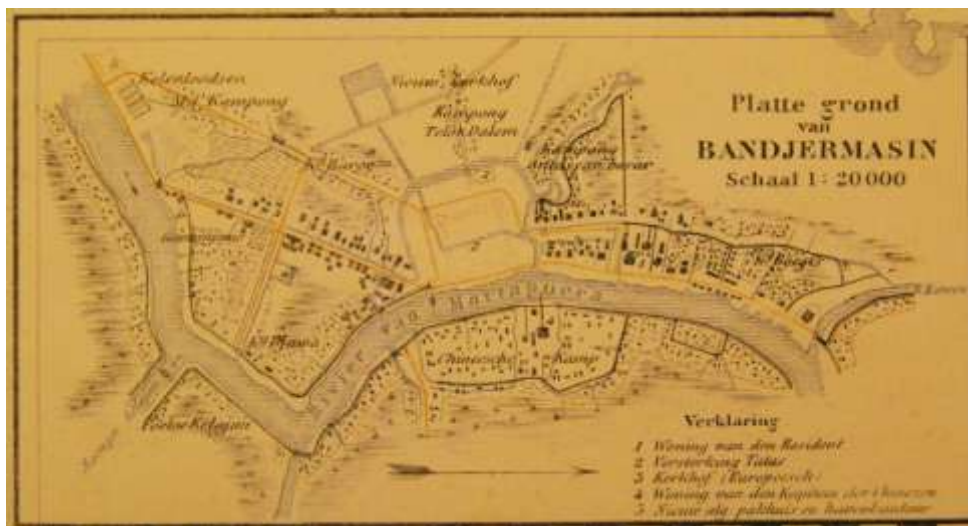
According to Wijanarka (2009), based on the study of the development of Banjarmasin City during 1700 – 1954 there have been ten canals built by Dutch in the inner city of Banjarmasin using the local knowledge of Banjarese people. Historically, canals in Banjarmasin were built to support water system in agriculture and transportation. According to its function, hierarchy and dimension, there are 3 types of canal, namely *Anjir, Handil* and *Saka*. *Anjir* is the main canal; its role is to connect two big rivers. The depth of *Anjir* is around 1 – 2 meters with a length up to 100 to 2000 meters. The secondary canal is called *Handil*, which was managed collectively for agricultural purposes. And the last one is *Saka*; it was used to irrigate the individual or private farmlands (Subiyakto, 2004).

Source: Courtesy of KITLV
Figure 5: Map of Banjarmasin with Fort Tatas (1883-1885)

Pictorial studies during the colonial period (figure 7) show that settlements were built next and on the water in the form of pile and floating houses that lined liner to the rivers and were builts as a response to the fluctuation of water level. The society had a close relationship with water, rivers and

canals acted as a backbone for transportation and economic activities and there had not been permanent roads built at that time, all the houses were still fronting to the rivers. When the street plan had been introduced, roads were built paralel to the canals or rivers and the settlements (figure 8). In some part, houses were built fronting to the street and the kitchen connected to the water, toilets and all domestic activities were done on the river at a floating platform or *Lanting*. During the day, rivers and canals acted as a center of economic activities that served society living next to the water such as floating market (Saleh, 1986).

| (a) a sketch of raft house 1850 | (b) a sketch of Banjermassing 1843 | (b) Estuary of Martapura river 1920-1940 |

Source: (a-b) http://kitlv.pictura-dp.nl; (c) www.tropenmuseum.nl
Figure 7: Early river-based Settlements in Banjarmasin

| (a)   Banjarmasin around Martapura River in 1943 | (b) Townscape of Banjarmasin in 1932 |
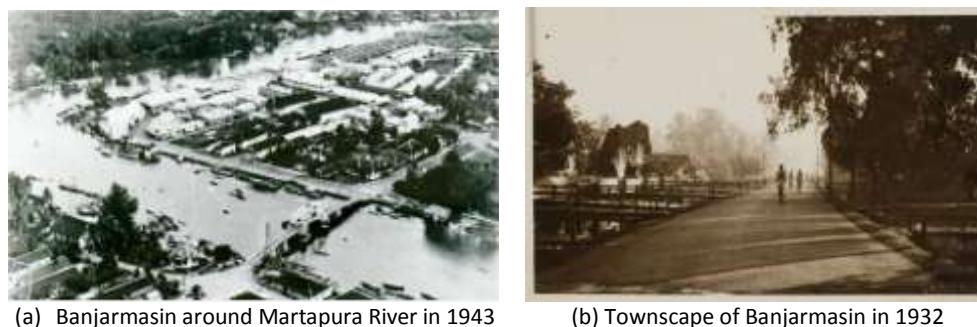
Source: http://kitlv.pictura-dp.nl
Figure 8: The spatial pattern of canals, rivers and street plan in Banjarmasin

3.2   The Change and Current Spatial Issues of Living on the Water

Saleh (1986) argues that it was due to the development of roads during colonial period the traditional village, city and society of Banjarmasin had changed, from water-based to land based society. And the construction of new roads between Banjarmasin and Hulu Sungai as well as Banjarmasin and Pelaihari (other municipalities) also claimed by Saleh to contribute to the expansion of the city, and a distance to the water. However, if we looked at the concept of canals and the city plan of Amsterdam from 16th century, water has always been a significant element of the spatial planning where there was an integral plan of canal, street and residential that working together to maintain the hydrological system of the city while creating a pleasant urban environments.

In the case of Banjarmasin, its strong natural features as a river-based city is still intake to the present urban landscape, besides the pro land-based development that continuously destroy the water identity of the city. Early 1970s was the beginning of land-based development in Banjarmasin, It was highlighted by the extensive roads construction across the city by applying landfill system; covering existing canals and marshland. Morphologically, the city of Banjarmasin is situated at approximately 50 km from the estuary of Barito River and cut across by Martapura River in the middle. It is dominated by low-laying area, with 16 centimeters below sea level. Entire landscape sits on marshland which is constantly influenced by high tide and low tide. There was hundreds of natural and man-made water channels in the form of meandered rivers and canals that constitute

the city spatial structure and function to maintain a hidrological system of the city so that can adapt to the high water.

From the past, high water (floods) has been a big issue in Banjarmasin and the surrounding area especially for agriculture lands; the idea of making a polder plan with some major canals had ever been introduced in 1951 to end the 'war on water', however, only some plans have been realized (Schophuys, 1969). This did not happen for the settlements due to the hydrological system of canals and way of living on the water by stilt (pile) houses and floating houses that worked to maintain the wetland as a water catchment. However, the role of rivers and wetland as a space to retain and flow water during high tide season currently no longer exist. Rivers and canals become narrower as a result of road widening projects and the development of new settlement along the riverbanks. As a consequence, major circumstances such as floods, puddle of water on roads and infrastructure damage bring derivative impact to urbanized areas, especially when sea water infiltrates into the land during the high tide and heavy rain. Based on its position to canal/ river, there are two types of road layout; first, road is located to the left and right side of canal and the second is the one that located between two rivers. The settlement that grows based on this new roads pattern is either formal or informal housing. Formal housing is usually distributed far from rivers (inland) and the informal one majority grows adjacent to the rivers. The development of these settlements has contributed to the disattachment of water and the capacity of urban landscape to adapt to floods (Dahliani & Mutia, 2011). Furthermore, the city is facing dilemma in the current urban development process by a conflicting interest between flood protection, city beautification and the settlements growth along the riverbanks. Adaptation to the rising water level and floods as suggested in spatial planning is done by the clearance of riverbank areas from urban functions, the building setback from the river and canals up to 15 and 100 meters, converting the land use into linier greenbelts.

(a)   City Map of Banjarmasin in 2006

(b) floating market

(c) settlements on the riverbank

(d)   Floating houses and shops *(Lanting)* on Martapura River

Source : (a) RTRUK Banjarmasin 2006-2016 & (b, c, d) Author Survey (2010-2011)
Figure 9. Present urban landscape and water-based living in Banjarmasin

Relating to the way of living on the water, some people in Banjarmasin remain live in boat houses and floating houses in the present days, those are the ones that could not afford to buy a new landed house or due to the proximity with their current jobs that relate to rivers; the attacment with the family that live near water also influence the decision of living on the water (Aufa et.al., 2011; Mentayani, 2011). In the term of urban regulation, traditional water-dwellings are untouched, they just follow the rules and customs in society that has been there for generations. The floating houses pay the mooring fee to the landed houses that sit along the riverbanks. Until 1970s, there was still a tax paid by the owners of (mooring sites) to the local port authority (Mentayani, 2011).

Modern Development has challenged the identity of water-based living in Banjarmasin. It is obvious that by the time, more people are no longer attached to water. they turn the rivers into the back for their houses; roads and land-based settlements now highlight the urban landscape of the city. While the traditional water-based living such as boat houses and floating houses remain function as the way it is for some part of society, the innovation and development of new typology that fit into modern life of urban society are absent from the spatial planning as well as the technology for water management.

4.   Concluding Remarks

Low-lying cites that situated next to the water either in Indonesia or Netherlands as well as all over the world currently face the same problems of high water as a consequence of climate changes. And the pressure on urban development has challenged the spatial planning to keep maintaining the identity of its unique urban landscape and close relationship with water while dealing with the threats of water. The urban development process in the Netherlands has reached the mature stage in dealing with both issues. The innovation in water management and engineering works as well as the awarness of water in spatial planning for centuries have brought the confidence to live next to the water and to the possibilities in developing the new typology of water-based living in urban areas. While in the case of Banjarmasin the history and cultural attachment to water and a local knowledge in building canals (Anjir) do not support to maintain the positive attitude toward water in the current urban development process. It is still at the stage of acceptation and protection. However, as the present urban landscape still has strongly attached with water with the existence of traditional floating houses and economics as well as transport activities, the city still has an opportunity to move forward to develop a new way to live on water in modern society and challenges, by to some points learned from the Dutch experiences.

Acknowledgement

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Expressions of Islamic Neighborhood in Architecture
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ASBTRACT

Since the era of Mataram Kingdom in 15th century, Islamic kampong settlements have been known by the toponym of ethnic and profession, which have spatial pattern with the centers in the palace, town squares, markets, mosques, and cemetery of Kotagede Islamic Kings. Kauman was *pekaum* settlement, Muslim immigrants who were allowed to dwell around Grand Mosque by the king and were loyal to serve Sultan Hamengkubuwono as a king and leader of Islam in Yogyakarta Palace in 1755. The changes in the life of Kotagede and Kauman settlements since 1912 have been marked by the birth of Islamic reform organization namely Muhammadiyah in Kauman, which taught pillars of Islam and emphasized Islamic neighborhood as the spirit of Muslim family life in kampong settlement. The study identifies and compares the problems of four kampong settlements, namely: Kauman, Suronatan, and Notoprajan in palace area and Jogokaryan as a new and modern Islamic kampong developed outside palace area. These kampongs are getting more crowded, complex, and declining in terms of life and environment quality. The study applies literature study and identification survey on Islamic neighborhood value and local culture in relation with architecture and kampong spatial pattern. The study is carried out by using the principles and theories of continuity and changes as well as analysis on the characteristics of permanent and temporary architecture elements as an effort of preserving Islamic neighborhood and local culture to assist providing the solution to the problems of kampong and urban settlements in Yogyakarta in the future.

Keywords: *Islamic neighborhood, kampong settlement, expressions*

1. Introduction

Principles of Islam, which are originated from Al-Quran and Hadith, require the Muslims to implement the pillars of Islam and believe in the Islamic faith within pillars of faith and emphasize the importance of maintaining good relationship with the neighbors in society. *Tauhid* emphasizes the belief of Muslims to live and devote the life to God by carrying out His orders and avoiding His prohibitions. Some of His orders in Al-Qur'an are: do good deeds to the parents, relatives, orphans, the needy, the near neighbor and the neighbor farther away; believers are brothers, People must be peaceful and devoted to God to receive His mercy; God does not love those who are self-deluding and boastful; and Human beings are responsible for the nature and environment God has created. In the effort of preserving the environment, human behaviour must be changed so as not to damage the quality of the environment.

There are also several hadiths related to the obligation to clean themselves, their families, and residences. Purity of the glory, splendor, and cleanliness become the basis of Muslims to clean their houses. Beautiful view of the green and running water form a beautiful face.

Quran and Hadith can become the foundation of Islamic view towards the problems of Islamic urban settlement in Indonesia which are different from the culture and settlement of Muslims in Arab and other Islamic countries. Kauman is an ancient Islamic settlement in Java with Javanese and Islamic culture influences in the life of its villagers around the mosques, markets, squares, and administrative centers of Islamic kingdom era. The history of Islamic kampong settlements is quite long and they are

facing problems as kampong settlements in general, namely: infrastructure and the declining quality of life and environmnent.

The study emphasizes the efforts to address the increasingly congested kampongss which are known to have Islamic values and quality of life and environment in kauman Yogyakarta. This is seen from the fact that there are many Kauman villagers occupy the areas in the west of Kauman, namely Suronatan and Notoprajan. Thus, the three kampongs, Kauman, Suronatan and Notoprajan, are getting more crowded. There are many residents who lost their yards due to house expansion; they build houses and multi-storey buildings between the narrow kampong streets causing the decrease in sunlight and fresh air flow into the room. It is difficult to regulate the density of the buildings, environmental health, and overcome inadequacy of open green spaces and shady trees, children's playground, shared facilities, roads and parking lots. Although the villagers have strong Islamic neighborhood, the declining quality of life and environment bring influences to the comfortability and privacy of the villagers living in the village. This is important and should get better attention and completion.

To get an example of what a good Islamic kampong is, a new development of Islamic kampong known as Jogokaryan at the south of the city is selected. It was ranked fourth nationally as an example of modern management in Jogokaryan Mosque as a center of Muslim life activities reflecting Islamic neighborhood in preserving culture in the environmental development. (See Figure 1 Map of the location of Kauman, Suronatan, Notoprajan and Jogokaryan)

2. LITERATURE REVIEW

a. *The teachings of Islam as Muslims' way of life, community and neighborhood character, and responsibility to maintain and preserve the quality of life and its environment*

Principles of Islam, which come from the Qur'an and the Hadith oblige Muslims to perform five pillars of Islam (profession of faith, prayer, fasting, zakat, hajj) and the Islamic aqeedah correctly within the pillars of faith (Bashir, 1990); this is a guideline of life and basic morals of Muslims. Islam teaches morals not only for personal and family but also morality in public life that emphasizes the importance of good relations with neighbors (Ilyas, 2004) and its relationship to the quality of faith and neighborly attitude.

Word of God: "Surely we created man in his best" (Surah At-Tin: 4), and "Worship Allah and associate nothing with Him, and to parents do good, and relatives, orphans, the needy, the near neighbor, the neighbor farther away, companion at your side, the traveler, and those whom your right hands possess. Indeed, Allah does not like those who are self-deluding and boastful." (Surah An-Nisa '4:36). "O you, who have believed, do not enter houses other than your own houses until you ascertain welcome and greet their inhabitants. That is best for you; perhaps you will be reminded." (Surah An-Nur 24:27).

Among those making a Muslim happy is a good neighbor, roomy house and comfortable vehicle (H.R. Hakim). He, who believes in Allah and the Last Day, let him say good or silent. And he who believes in Allah and the Last Day honor his neighbor and his guests (Bukhari and Muslim).

Islam teaches man not to damage the Environment and the need to maintain the quality of life and environment. The Lord said: "...... And do good to others, as God has been good to you and seek not corruption on earth. Indeed, Allah does not like those who do mischief (Surah Al-Qashash: 77). If people want to live clean, it is not enough for him just to clean themselves and their families, more than that he was also ordered to clean up his neighborhood. Word of the Prophet Muhammad: Truly God is good and loving kindness, He is holy and loves purity, He is noble and loves glory, He is good and loves splendor. Therefore, clean your house (Al-Jami'us Shagir).

The source of the Qur'an and the Hadith mentioned above form the basis to understand the Islamic neighborhood in relation to coexistence between the houses and in kampongs being studied.

b. Characteristics Principles of architecture and Islamic settlements

Ancient Islamic cities have spatial patterns that are organically arranged and consist of jamik mosque, local mosques, schools, market, direction and hierarchy of streets, blocks of settlements in open court yard, and public baths and the tomb (Antoniou, 1981). The specificity of Islamic architecture of the house to provide the comfortability of the climate and the level of the hills is shown in the provision of inner court at the house and the arrangement of the height of the windows with wooden lattice (*mashrabia*) to handle the heat and maintain privacy. There are also ornaments of calligraphy, geometric patterns, and arabesque architecture reflecting Islam. The shape and height of Minaret Mosque, stalactite ornament (*muqarnas*), the dome, the roof, the church bell tower, and industrial chimneys are elements of urban sky line (Kostov, 1999).

Houses and settlement systems in the Islamic cities are reflected in the systems of behaviour and activity patterns depicted schematically. The road pattern linking the public baths is semi public/ semi-private, that which links market/ bazaar is social and commercial, and that which links coffee house and a mosque for public/ especially for men is semi-public and semi-extensive private. Meanwhile, the large place is for families, women seats, and semi public/ semi-private space furnished by the mosque, and so on (Rapoport, 1977). Rapoport also explained that in the system of house and Islamic settlement, the perception of the pedestrian street characteristics on bazaar (*suq*) and Muslim spatial pattern type with grid system is street connecting between the settlements and markets (Rapoport, 1990).

This is a basic understanding of Islamic values and local culture in conjunction with the convenience of living space and privacy that distinguishes the setting system and activities of men and women in Islam and architecture and spatial patterns characteristic of Islamic settlement.

c. The history and development of Islamic architecture in Jogyakarta settlements

Islamic kampong settlements in Indonesia, especially in Java, are different from residential neighborhoods in Arab and other Islamic countries. Islamic settlement in the ancient city of Central Java's north coast is Kauman which is situated in the location of Demak Grand Mosque founded in 1401. Kauman is a part of central elements of the first Demak Islamic kingdom consisting of *sitihinggil or kedaton*/palace, square, market, settlement, mosques and tombs. Then, Kauman developed at the site of ancient mosques in Kudus, Jepara, and in the direction of East Java: Tuban, Gresik, and Ampel Surabaya.

Kotagede is an ancient city of Islamic Mataram Kingdom era in the inland of Java in the 16th century after the first Islamic kingdom of Demak. It has a spatial pattern as the first Islamic kingdom of Demak and gets the influence from the Javanese Hindu cosmological with the elements of the fort and the moat or ditch, the palace, mosque and tomb, square and the market and kampongs whose names are based on the toponym of ethnic, profession, and place of origin (Adrisijanti, 2000). Land ownership statuses of Kotagede villagers at the time of traditional government before 1920 are divided into *kuli kenceng*, *magersari*, and *pengindung*. *Kuli kenceng* has hereditary rights of agricultural land and the houses; *magersari* is allowed to build house on land of others, and *pengindung,* such as courtiers' caretaker can only join in the house of land owners (Nakamura, 1983). This gave a preliminary division of the yard, which is set by the palace. The yard grows organically, so it is getting more densed and makes it difficult to arrange the urban design, public facilities and environment quality.

The next development is Kauman at the west of Grand Mosque, which was part of the Ngayogyakarta Hadiningrat Palace in the era of Sri Sultan Hamengkubuwono I in 1755. *Dalem pengulon* is the house of pamethakan courtiers, who is a religion official given the task by the palace to manage the activities of Grand Mosque, culture and traditional ceremonies ritual. Initial conditions of spatial pattern and settlements problems are similar to Kotagede.

d. Historical and Architectural Study on Kauman Kampong Yogyakarta

Based on historical research, since the establishment of Kauman settlements and the birth of Islamic reform organization namely United Muhammadiyah in 1912, Kauman has undergone many changes: changes in religion, education and economic occurred in 1900 -1950 (Darban, 2000). Development of facilities for education, social and religion were *musholla* and *langgar*, Madrassa School, girls' boarding house, orphanage and poorhouse, and health facilities (polyclinics and hospitals). Religious social activities for women were developed by Aisyiah sorority. Economic changes also occurred in terms of changes in occupation from the courtiers of Sultanate Palace into batik artisan and enterpreneurs and other businesses in 1910. This affects the expansion of public facilities and residences in Notoprajan and Suronatan.

In the field of culture, traditional ceremonies of Kauman villagers concerned with the traditional ceremony of Yogyakata kingdom in commemorating the days of Islam such as *sekaten*, *rejeban*, *Garebeg Eed* and *takjilan* ceremony at the Grand Mosque. Sekaten is the ceremony commemorating the birth of Prophet Muhammad SAW ended with *Garebeg Muludan*. *Rejeban* is the ceremony commemorating Israa' Mi'raj of Prophet Muhammad SAW in Grand Mosque. Garebeg Eid (Rijaja) is shadaqah ceremony from Sultan on the feast of Eid al-Fitr and Eid al-Adha. *Takjilan* is shadaqah ceremony at the Sultan in the holy month of Ramadan and the recitation in Grand mosque porch.

Based on the architectural study, Kauman Yogyakarta has a spatial pattern of kampong settlement with the center in Kauman Grand Mosque (Mulyati, 1995). She also explained about spatial pattern and architecture of the mosque and spatial pattern of the settlement and houses arrangement.

Kauman Yogyakarta has its own identity as students' kampong based on a system of religious activity (Maslucha, 2009). Maslucha explained that the system of religious activities are divided based on the perpetrator, time and settings of their houses, public facilities, *musholla* and the mosque, and are affected by the accessibility, attractivity, and amenities.

Kauman settlements Yogyakarta has spatial meaning which is resulted from the agreement of the villagers in the form of place desecration which was born naturally out of the daily activities for the sake of obeying God's commands and performing good deeds in accordance with their religious beliefs (Triatmojo, 2010). In his dissertation, he explained that there are three spatial concepts such as the concept of unity of God (*Tauhid*), concept of space agreement, and the concept of origin space desecration. Space based on monotheism belief and Islamic values system. Space agreement is the solution to overcome the community problems in life. Desecration of space of origin is spatial concept which shows the loss of sacred power.

e. Issue

Are the neighborhood Islamic and local culture that has existed in the region of Kauman, Suronatan, and Notoprajan can survive in solving very complex problems nowadays? Are these values can be developed on the architecture and spatial patterns in other new kampong as in Jogokaryan, and can the study contribute to the effort of resolving the problems of the kampongs and cities in the future?

f. Focus of Study

The study identifies and compares Islamic neighborhood in the architecture and spatial pattern of Kauman, Suronatan, and Notoprajan which are located in the palace area and are compared with Jogokaryan which is located outside Palace area.

The comparison of three ancient kampongs and one new Islamic modern kampong is firstly carried out in this study. By employing literature study and survey on the characteristics of fixed, semi-fixed, and non-fixed environmental architecture elements (Rapoport, 1983), the comparison on Islamic neighborhood in architecture and kampong spatial pattern is obtained.

Source: (Ruyani, 2012)
Figure 1: Map of Kauman Suronatan Notoprajan and Jogokaryan

3. Result and Discussion

The findings of the study are divided into two parts, first is the image of differences in Islamic neighborhood in the patterns of residential space, and the second is the architectural characteristics of buildings and homes in the kampong that reflect Islamic values.

a. Architecture of Kauman Houses and Kampong: (See Figure 3 and 4 Map of Kauman; and Figure 5 Architecture Picture)

1). Kauman spatial pattern is formed by paths which converge from the entrance gate to the settlements, mosque, *musholla*, and schools. Kauman Grand Mosque as a zone of religious activity and social center is not situated in the middle of the settlement. Commercial zone is located on the outer edge of the kampong to the north, west, and south. The spatial pattern has its center at Kauman Grand Mosque supported by sub-centers at ABA kindergarten, Muhammadiyah Elementary School, and *musholla* and *langgar* that are scattered among the residential areas.

2). Modest residences in vernacular architecture and contemporary modern style generally own rooms for prayer that reflect Islamic values. Houses of batik artisan are houses of H. Bilal, H. Muhtaram, H.Maria Noor, H.Irsyad, H.Buchori, and H. Sudirjo.
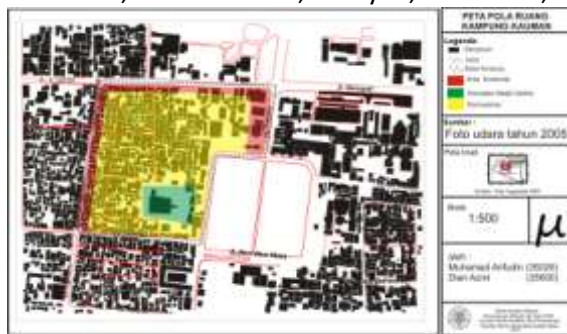
Source: (Arifudin, 2012)
Figure 3: Map of Kauman Spatial Pattern

Source: (Arifudin, 2012)
Figure 4: Map of Kauman Spatial Structure

Kauman Grand Mosque with its multi-functions yard in Javanese architecture

Langgar Aisyiah specifically for women

Kampong gate and vernacular house under Indisch influence

Kampong gate in one line with
Kauman Grand Mosque

Vernacular storey houses

Narrow kampong street and
density of buildings which reach
90%

Vernacular *Langgar* Dhuwur
under the influence of Indisch
(left) and a Javanese house
(right)

Dhalem Pengulon in Javanese
architecture for the Religious
leader and chief in Kauman
appointed by Sultan

Javanese house of businessmen
in vernacular architecture style

Source: (Ismudiyanto, 2012)
Figure 5: Architecture Picture of building and houses in Kauman

*b. Architecture of Suronatan Houses and Kampong***:** (See Figure 6 Map of Suronatan and Figure 7
Architecture Picture)

1). Spatial pattern of Suronatan has straight narrow street from the direction of Kauman crossing over
KHA Dahlan street goes in the direction of the kampong and converges at Taqwa Mosque and
Muhammadiyah Elementary School into Notoprajan street. There is a dense residential area in the
middle of the kampong which is surrounded by commercial zones at the east and south side, social
zone in the form of street at the west side, and shared facilities for commercial and religious activities
for Suronatan and Notoprajan villagers because Suronatan does not have public open space.
Suronatan has its central spatial structure at Taqwa Mosque in the west, supported by *musholla*
Aisyiah, ABA Kindergarten and Elementary School. Meanwhile, At-Tahkim Mosque serves as the
center in the north. It is located on what used to be the City Hall built on palace's land.
2). Taqwa Mosque has Islamic Middle East architecture style with metal dome roof, minaret,
calligraphy ornaments and arc gate. The office for Takmir council and PAUD (Early Childhood
Education) adopt Javanese traditional architecture with Joglo roof. Meanwhile, At-Tahkim Mosque
adopts Javanese roof architecture style with metal dome roof. The villagers' houses which seem very
dense are lined along the narrow streets close to each other. These houses have room for praying and
the doors of the house are facing each other and closed. These reflect Islamic neighborhood. The
shape of the house is simple and adopts vernacular and contemporary modern architecture. The
houses of batik artisans are Haji Daim Saleh's house and H. Sudirdjo's house in the east.

Source: (Hutomo, 2012)
Figure 6: Map of Suronatan Spatial Pattern
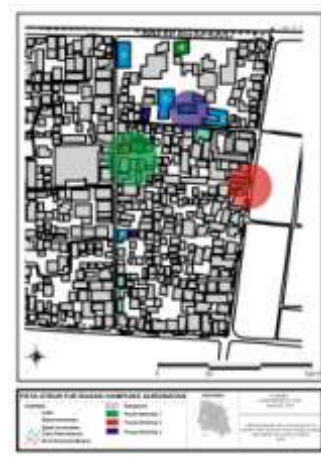
Source: (KARTAMANTUL, 2007)
Figure 7: Map of Suronatan Spatial Structure

Taqwa Mosque in Middle East dome and minaret architecture

Office of Mosque council and PAUD(Early Childhood Education), Javanese traditional house

H. Soedirjo's House, a batik artisan, in Javanese indisch influence (right); with Chinese architecture on the neighbour's house (left)

Muhammadiyah Suronatan Elementary School in 1915 Islamic modern architecture

The density of houses in Suronatan with Kauman Grand Mosque at the east side.

Villagers' houses and traditional Javanese business place

The density of Suronatan with Taqwa Mosque's minaret as the urban skyline

At-Tahkim Mosque on palace's land in Javanese architecture with dome roof

Source: (Ismudiyanto, 2012)
Figure 7: Pictures of Suronatan

c. Architecture of Notoprajan Houses and Kampong: (See Figure 8 Map of Notoprajan and Figure 9 Architecture Picture)

1). Notoprajan has spatial pattern of concentric shape with its center at *Dalem* Notoprajan which is surrounded by *magersari* houses and residential area at the outer edge. Commercial zone is located at the far north, west and south. The narrow kampong street comes from the direction of Suronatan crossing over Notoprajan Street and goes in the direction of special vehicle street to the gate of *Dalem* Notoprajan.

The spatial pattern of the kampong has its center at *Dalem* Notoprajan owned by the Royal family with a large yard and located in the middle of the kampong. Nowadays, the new center of the

kampong is Madrasah Muallimat Siti Fatimah, which is the center of Islamic education for girls located at the east.

2). Villagers' houses are along the narrow street about 2 meters wide. Many of them are adjacent. The density of the houses reaches 90%, so it is rare to find a house with large yard. However, every house owner plants trees, shrubs, and ornamental plants in pots. The shape of the house is simple, adopts vernacular and contemporary modern style, and has praying rooms which reflect Islamic neighborhood.

Source: (Fauzi; Budi, 2012)
Figure 8: Map of Notoprajan Spatial Pattern

Source: (Fauzi; Budi, 2012)
Figure 9: Map of Notoprajan Spatial Structure

Dhalem Notoprajan in high style Javanese traditional architecture

Main pillars and *tumpang sari* in the hall of *Dhalem* Notoprajan which are preserved as heritage architecture

Modern storey Mualimat Madrasah in Islamic architecture among the narrow kampong roads

Villagers' houses and Padang restaurant in Islamic Javanese architecture

Modest houses with gebyog and double doors which are facing each other reflecting Islamic neighborhood

Source: (Ismudiyanto, 2012)
Figure 10: Architecture Picture of Notoprajan

Notoprajan Street as social and commercial facility for Notoprajan and Suronatan villagers

d. Architecture of Jogokaryan Houses and Kampong: (See Figure 10: Map of Jogokaryan Spatial Pattern and Figure 11: Map of Jogokaryan Spatial Structure)

1). Spatial pattern of Jogokaryan is lengthwise because the center of the kampong is located along the major road. Jogokaryan Mosque as the center of social and religious activities is located in commercial zone on the edge of the road. The narrow straight and winding roads were made after there was a settlement before 1960. Open space in the forms of villagers' yards and moors are shared for the

public interest. Kampong spatial structure has its center in Jogokaryan Mosque, supported by Muhammadiyah Elementary School, Ali Maksum Junior High School, ABA Kindergarten, polyclinic, Kampong hall, and *mushola* which are scattered in the kampong. Jogokaryan Mosque is a storey building, elegant, and modern in Middle East architecture style with concrete dome and arabesque decoration and calligraphy, completed with parking space, office, and inn.

2). The villagers' houses are modest with yards. Some of the houses are in vernacular and contemporary modern architecture style, have praying rooms and try to reflect Islamic values through attribute and Islamic accessories.
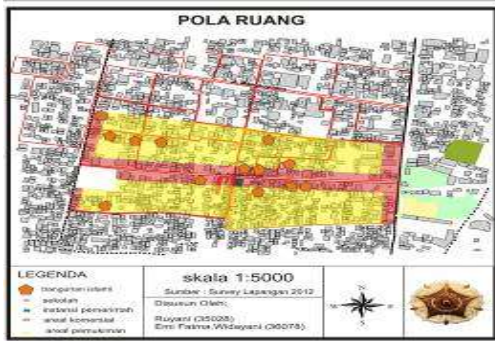
Source: (Ruyani, 20120)

Figure 10: Map of Jogokaryan Spatial Pattern

Source: (Ruyani, 2012)

Figure 11: Map of Jogokaryan Spatial Structure

Elegant and modern Jogokaryan Mosque with dome roof and minaret. The exterior and interior adopt Middle East architecture

The density of Jogokarya on spatial ribbon pattern

Preserved Javanese kampong house

Ali Ma'syum Junior High School

A modest kampong house with local tile roof in the middle of the yard and moor

The yard and moor of the villagers which are agreed to be used as kampong public space

Islamic girls' dormitory in Javanese modern house architecture

Contemporary modern houses to the west of Jogokaryan Mosque

The yard of the villagers in front of Muhammadiyah Elementary School which is agreed to be used for sport activities.

Source: (Ismudiyanto , 2012)

Figure 12 Architecture Picture of Jogokaryan

4. Conclusion

1). *Expression of Islamic Neighborhood in Kampong Settlement Spatial Pattern:*

Spatial pattern of Kauman has its center at Grand Mosque, supported by ABA Kindergarten and Elementary School. The yard of the mosque is used as public space which has multi functions: social, education, religion, and palace ritual ceremonies. *Langgar* and *musholla* are among the villagers' houses which are facing each other but maintaining closed visual privacy reflecting Islamic neighborhood.

It is different from spatial pattern of Suronatan which has its center at Taqwa Mosque, At-Tahkim Mosque, and Elementary School. The multi function open public space in Notoprajan Street is used for social and commercial interaction between Suronatan and Notoprajan villagers. Islamic neighborhood is apparent in the position of Taqwa Mosque, *musholla* and ABA Kindergarten which are located in the middle of the crowded kampong and narrow streets.

Spatial pattern of Notoprajan was Javanese traditional in closed gate for *magersari* villagers only and had its center at *Dalem* Notoprajan. Nowadays, Muallimat Madrasah is used as the center of Notoprajan as it creates more Islamic neighborhood. The Islamic structure of Notoprajan has its center in Muallimat supported by Notoprajan mosques, four *musholla*, Islamic school and dormitory which are scattered in the kampong.

Jogokaryan has a different spatial pattern, which adopts ribbon pattern and has its center at Jogokaryan Mosque and commercial area on major road in the middle of the kampong. This settlement is very crowded on each side of kampong streets and does not have open public space. Jogokaryan Mosque is the center of spatial structure of the kampong, which serves also as the center of religious activities supported by Islamic Elementary School, ABA Kindergarten, Junior High School, *musholla*, Islamic School, polyclinic, kampong hall. The role, function, and activities of Jogokaryan Mosque develop rapidly due to its strategic location, modern management of the mosque by the takmir council, ustadz/ Islam teacher and trustworthy kampong leader.

2). *Expression of Islamic Neighborhood in Architecture:*

Architecture of Kauman Grand Mosque adopts Javanese traditional architecture with stacked tajug roof, mosque porch, but without minaret. It is managed by Muslim leader who lives in *Dalem* Pengulon which has Javanese traditional house architecture. Kauman villagers' houses are modest and adopt vernacular and contemporary modern architecture style.

On the other hand, Taqwa Mosque in Suronatan has contemporary modern architecture with dome roof and Middle East minaret. The building of Muhammadiyah Elementary School is modern but rich of Islamic atmosphere. Villagers' houses in Suronatan are modest. There are many new storey buildings in the middle of the kampong which creates high density. The houses have praying room and the doors of the houses are facing each other but still maintain privacy which reflects Islamic neighborhood.

Architecture of *Dalem* Notoprajan adopts Javanese houses architecture as seen in *Dalem* Pengulon of Kauman Grand Mosque, so it belongs to Palace cultural heritage that must be preserved. Muallimat Madrassah building is modern characterized by arch shapes, arabesque decoration and calligraphy. Notoprajan Mosque and other mosques adopt simple style with Javanese tajug roof and decorated with calligrahy ornaments, arch shapes, and metal dome roof. Villagers' houses are varied in style; there are modest houses, modern houses, and storey houses, all of which have praying room. They lined up and are facing each other reflecting Islamic neighborhood and creating high density.

Jogokaryan Mosque, on the other hand, has elegant modern storey building with modern Islamic interior and exterior architecture. The dome roof is made of concrete and the minaret adopts Middle East style. The decoration involves Islamic arch details, arabesque, colored stained glass, and calligrahy. Elementary School and Ali Maksum Islamic Junior High School are modern storey buildings reflecting Islamic architecture characteristic. Some of the villagers' houses in the kampong are still modest and vernacular, but the houses on the edge of the street are modern, have multi floors and praying room and are used for commercial activities with Islamic attributes reflecting Islamic characteristics.

In every kampong, traditional landownership statuses, such as *magersari* and *Pengindung* still exist. *Magersari* villagers still can be found in *Dalem* Notoprajan and *Dalem* Pengulon, whereas *Pengindung* villagers can be found in Kauman, Suronatan, and Jogokaryan. This factor brings influence on the Islamic neighborhood and density in Islamic kampong settlement in Yogyakarta.

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Tourism Village as a Strategy for the Betterment of Klipoh Community Living

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ABSTRACT

Klipoh subvillage is one of the subvillages located in Karanganyar village, Borobudur. This village is one of the remote subvillages in Borobudur. But it has uniqly compared to other sub villages surrounding Borobudur. Klipoh is the only one village produce traditional pottery. Before, Nggundi sub village was the one that made pottery, but from time to time the condition was changed. No one in Nggundi subvillage produced pottery anymore. They prefer to look for other occasions outside Nggundi. They were thought that pottery making was not given them enough benefit. Nggundi subvillage actually is the neighbouring village of Klipoh. Therefore, the pottery tradition was brought to Klipoh people. Presently, almost 80 % of Klipoh people are involving in pottery production. But unfortunately, the living condition of Klipoh people until now are in poor condition. As it seen from their house and the way of living which are very simple. To improve it, local government declared Karanganyar as tourism village. Due to this matter, there were some graduately changes occured in Klipoh as the central point of tourism development in Karanganyar village. Some of local people encouraged to facilitate tourists by providing some facilities such as homestay, showroom, galery, etc. Hence, the Klipoh people are no longer as pottery makers but also directly involved in tourism activities which brought them into the betterment of their new life.

Based on this phenomenon, the research is addressed to search more detail about how far tourism brought good influences toward the betterment of Klipoh people. By using descriptive method, this research will hopefully give us/reader to understand the research.

Keywords: Tourism Village Program, Klipoh Daily Life, Klipoh Traditional housing

1. Introduction

Klipoh is a subvillage located in Karanganyar village. This village is included as one of the remote subvillages in Borobudur area. While, Borobudur is the most attractive tourism spot in Central Java. Borobudur is very famous as world heritage due to the biggest Buddha Temple in Indonesia. The status of Borobudur had encourage many tourists to come and visit this remarkable Buddhist Temple. But unfortunately, the economic impact of Borobudur tourist activities did not reach untill grassroot level including Klipoh subvillage. The people surrounding Borobudur mainly are still in poor condition. Due to this matter, local government had already tried many strategies to improve living condition of the people especially in surrounding Borobudur, including promoting tourism village as one of the strategies for minimizing the poverty of Borobudur people. There are more or less 15 villages proposed as torism villages in Borobudur including Karanganyar where Klipoh subvillages located. But only few of them are successfully develop as tourism village.

Tourism village actually is a village area which have some special characteristics of a place as tourism object. In this area, the traditions and culture of local community are still pure. A tourism village is also coloured by some supporting factors, such as local cuisine/food, agriculture system and social system. Besides, pure nature and environment are added points for a tourism village (Nuryanti, 2007). Through this program, it would bring positive impacts to the village physically and the people. Tourism villages are completed by many supporting facilities, such as transportation,

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telecommunication, medical, and accommodation facilities. The accommodations in tourism village are special. Visitors can spend the nights using homes stay provided in the village. It gives visitors a memorable moment because they can feel a purely village atmosphere. Beside people could easily introduce some of traditional values existed in their village to attract tourist attantion. Furrthermore, in this occasion people could easily create some economic creative to support tourism activities which then lead to the betterment of living condition of the people.

2.   Literature Review

2.1. Definition of Tourism village

Starting from definition of village, it is normally permanent, with fixed dwellings; however, transient villages can occur. Further, the dwellings of a village are fairly close to one another, not scattered broadly over the landscape, as a dispersed settlement. In the past, villages were a usual form of community for societies that practise subsistence agriculture, and also for some non-agricultural societies. (en.wikipedia.org/wiki/Village). When the tourist coming in a village, the tourist activities attracted people in larger numbers to involve working in tourism industries; the concentration of people caused many villages to grow into tourism villages. This also enabled specialization of labor and crafts, and development of many tourism facilities.

According to Muliawan (2000), tourism village is a village which has many potentials of tourist attraction. It has uniqness like physical character as well as social character. Those potentials are managed and packaged attractively included supporting facilities in a ways that could bring benefit to local people.

2.2. Main Component of Tourism Village

Based on Nuryanti (1993) there are two main components of tourism village. Those are :

1.Accommodation: a part of local housing and or development unit which based on local living concept.
2. Attraction : all of daily life of local people including physical setting of village location which gives posibility for tourist to integrate as active participation like : local dance, local language, etc

While according to Edward Inskeep (1990), gives definition of Tourism Village where small groups of tourists stay in or near traditional, often remote villages and learn about village life and the local environment.

2.3. Physical Approach of Village Tourism Development

Nuryanti (1993), the physical approach is one of general solutions for village development particularly through tourism sector by using special standarts in controlling the development as well as implementing conservation activities. Some steps done in this approach are the following:
1. To conserve some houses which have cultural and architecture value and try to change the function of houses to become village museum that could produce cost for maintaining those houses.
2. To conserve the whole parts of village and provide new lots for accommodating the local people as well as tourism activities.
3. To develop many types of accommodation in a village operated/managed by local people.

In this case local people should not change dramatically all of the performance of tradittional houses but people could just use it as one of tourist attraction. People should not need to change the whole part of the village into modern one or make any changes in any parts of the village but people could easily use the existing village as the attraction. Furthermore, in village Tourism Development, local people could establish homestay to provide accommodation instead of hotel or villa. So that local people could manage or operate it. By doing so, the impact of tourism development hopefully will drain to local people.

3. Methodology

The issue raised in this research was Klipoh subvillage. Klipoh subvillage is one of the poorest sub villages in Borobudur. By entering tourism activities at least provided some benefit to the physical and non physical condition. To learn more about how far tourism activities could bring about changes in Klipoh village, therefore the researcher used descriptive method. Some steps done in this research were 1) village observation as a process where researcher directly involved in the real world to find out what the researcher looking for and 2) the next step would be interview to find out any kinds of information especially related to physical impact of tourism activities in Klipoh subvillage. Literature studies were also done to enrich the insight of tourism village and traditional houses. In this research, documentation was also needed especially to record the physical condition of the village which then used for supporting datas related to the research material. The output of documentation used for supporting and making ease the reader to understand the manuscript. Secondary data collection was also needed in this researh to support primary data collected in the research area. Data collected would further be analyzed by researcher and try to make conclusion.

## 3.	Results and Discussions

The history of Klipoh or Banjaran 1 subvillage is very unique compare to other villages. This subvillage has a special character compared to others. According to the stated data collected from Klipoh local leader, Klipoh is a word derived from Nyai Kalipah, Kali is Krinjing River and Poh is village. Nyai Kalipah is the first person who stayed in a subvillage along Krinjing River. So, Klipoh actually means a subvillage that located along the River. Klipoh has a special scenic beauty which no other subvillages surround Borobudur have. The beautiful natural panoramic which located between Menoreh Mountain and Sumbing. Also the incredible sunrise which come up between Mount Merapi dan Mount Merbabu.

Geographically, Klipoh/Banjaran1 located in Karanganyar village, Borobudur which has administratif boundary :

Southern Part	: Giri Tengah village
Western Part	: Ngadiharjo village
Northern Part	: Karangrejo village
Eastern Part	: Tanjungsari village

Since Klipoh declared as one of tourism village in Borobudur, this village become wellknown. There are many tourists come and visited Klipoh. One of the powerful magnet attracted tourists to come and visited Klipoh is Traditional pottery. Based on data, almost 80% of the people are making pottery. This become unique because the pottery they made similar to manuscript stipulated at one of the relief Borobudur Temple. It shows that the pottery tradition is actually tradition which already existed since long time ago. According to the manuscript, Borobudur people had already made and produced many kinds of daily things, i.e. : *cowek, kuali, frying pan, vase, kendi* and *blengker*. Therefore, as young generation we should actually appreciate those wo had preserve traditional value that could sustain all the history for the young generation.
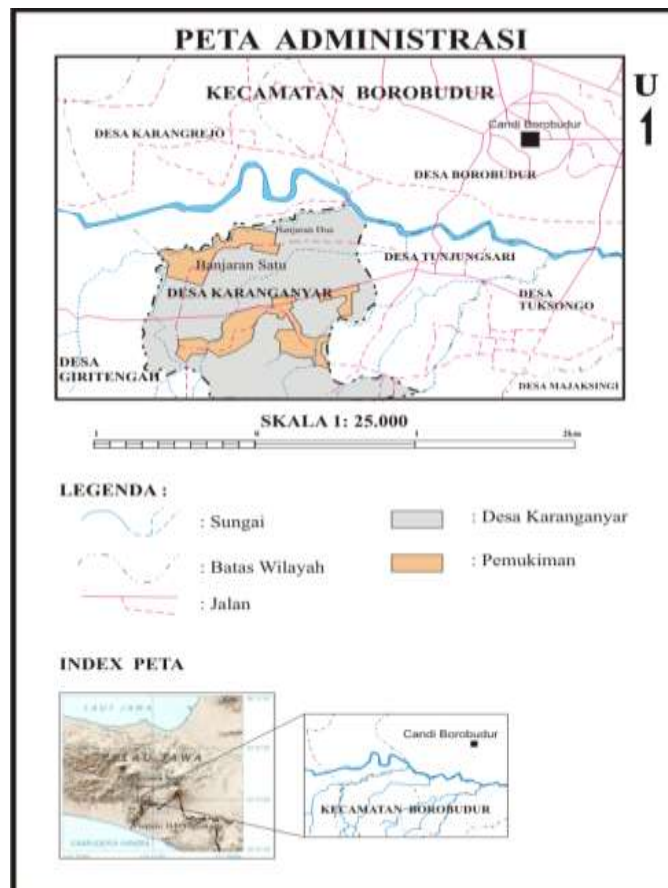
Figure 1. Administrative boundary of Klipoh Subvillage

As one of subvillages in Borobudur, Klipoh is still remain traditional eventhough there are many changes and effects including tourism activities forced local value to be changed. But if we take a look into detail, there are some traditional values are still remain and some were already changed. Some of traditional values that have degradatedly changed from time to time, i.e. traditional houses and the arrangement of subvillage spaces. Long time ago, before the Klipoh society works as potters, they worked as a farmer. Unlike potters, the farmer usually used their house only for living. But, then, the life was changed since Nyai Kalipah introduced pottery. Such condition finally influenced some people to work as pottery makers. From time to time, they started changing and rearranging their house from ordinary living to become pottery production house. There were some changes like the function of room instead of room they use for keeping the pottery production. They usually have big terrace for relaxing, but they changed into a place where they could produce pottery.

Since Klipoh declared as one of the tourism village in Borobudur, many Klipoh people were trying to involve in some of tourism activities. One of the local leader tried to explore how to make diversification of pottery products in order to ease potters to attract tourists. Through the development of bright ideas rised up by local leader, Klipoh finally succeed in inviting tourists to come and visit Klipoh. Eventhough only view of them came and visit Klipoh, but at least Klipoh people has an effort to attract them to see pottery production. Slowly, Klipoh people have introduced pottery to tourists. Hopefully, in the future, they will invite a large number of tourists to come. Due to this matter, some local leader were trying to prepare tourist facilities and provide memorable experiences for guests. In the process of creating these memories, the pottery makers tried to consumes some other resources to enrich their pottery productions. People also offered some tourists to try to make pottery. By doing so, tourists was expected to have new experience they could not get in any other places.

Moreover, since this production was introduced to tourists, there were many changes occured in every part of the subvillages. Some changes brought benefit to this subvillage. There were many improvement in some other part of subvllage. The following are the discussion about some changes occured due to tourism activities that benefit for local people.

a. Accomodation

1. Tourism village has required supporting facilities such as homestay. Therefore, many people were encourage to change their traditional house existed in Klipoh to modern one, but some are still remain traditional. Instead of fullfilling tourit's facility, local people's desire to have a nicer house for their economic status. They changed not only facade but also function of the rooms. As seen in the following figure, homes in Klipoh before tourists come were very simple, non permanent and traditional. The fasade of the house was also inattractive. But now, because of tourist needs some places to stay, they made beautification of their house. They made their house looked more "modern" with a better view and modern home materials. The house become more beautiful, modern, elegance compared the old one. Modern style building made of brick solid wall, the floor of ceramic tiles and the roof using a model ground now. Actually, in the terms of tourism village people should not have to change and develop their traditional house into the modern one, because sometimes tourists are looking for somethings special, somethings different, something unique and they could not find in their country. As mentioned by Nuryanti (1993) that people have to conserve some houses which have cultural and architecture value and try to change the function of houses to become village museum that could produce cost for maintaining those houses. People could also conserve the whole parts of village and provide new lots for accommodating the local people as well as tourism activities. By this way people could easily keep the originality of cultural value even only the house performance. To develop many types of accommodation in a village operated/managed by local people is actually difficult for them. But in this time, they were accepted some trainings (Central Java Tourism Board) and donors (NGO) to actualize their tourism village. Eventhough, they have no experience to handle such kind of business, but they have struggled to make succeed of tourism village program in their subvillage. In other side, tourists could enrich their sought about the real Klipoh lifestyle. In this case, originality is more concerned rather than the new one. But people have their own opinion, to have better house for example will make their life more comfortable.

Fig. 2. The Changes from Traditional House to Modern house

Since tourist come to Klipoh subvillage, people started to create homestay. There were 5 homestays at that time establish by local people. But because of the number of tourists come is still very limited therefore some of them have no longer existed. Homestay itself actually is a form of tourism program that allows visitor to rent a room from a local family to better learn the local lifestyle as well as improve their local language ability. This kind of homestay occurred in any destination worldwide, some countries do more to encourage homestay than others as a means of developing their tourism industry. But in Klipoh the homestays are little bit different. Tourists stay and learn to make pottery in one place. So, instead of ordinary living, tourist could joint to make pottery.

Klipoh declared as tourism village in 2011, but some local people had already tried to provide local accommodation for the tourist before 2011. They changed their ordinary house into homestay. They used some rooms to become tourist's rooms. They improved and made some betterments of every corner of their house. Tourist usually rent such kind of room. Tourists have to pay some money for room and other facilities including tour package and pottery making package. In the fact, one of the reason tourist stay together with the local people was in order they could get any experience about the lifestyle of Klipoh people, and specifically, they like to have experience how to make pottery as well as try to interact with the people. This moment could be lesson learned for the tourist. They could not find this kind of experience in their country. They could not just learn how to make pottery but they could also learn more the history of Klipoh pottery.

Fig. 3. Rooms for supporting tourist activities

b. Amenities

Tourism activities also required amenities to support their activities in tourism village. One of the facilities needed is a place where they could have spacial memory of Klipoh subvillage. Because the main attraction of Klipoh subvillage is pottery, therefore, potters tried to expose their pottery products to tourists. To support this activity, some local people changed their house for promoting the pottery product. They create a space where they could show their product to tourist. By this way, it will ease tourist to see, watch and buy the product. Usually, potters use terrace or living room to become showroom and place, but some troubles arrised. Tourist felt the showroom space was so crowded due to the placement of pottery products which scatterd over the living room or terrace as seen in the following picture.

Traditional showroom

Figure 4. Terrace for Showroom

The measurement of terrace itself is around ± 1.5 m x 8 m. This terrace is actually enough to show the pottery products, but because of the placement of the pottery are unplanned and scatered in every corner of their house, therefore, it made the space become smaller for tourist to do their activities. It was clearly visible in figure 4. that the terrace was filled with pottery production and leaves little space for the circulation of visitors / tourists who will see, choose and buy pottery. While as for producers, the terrace space is still proper to do their daily activities. They never thought that they let tourist faced some dificulties in doing their activities due to a very limited space. They have to be careful so that no broken pottery. But on the other side, the existancy of showroom is assist potters to make direct promotion and sell their products to tourist. Eventhough tourists felt uncomfortable because their activities disrupted by the presence of pottery that is placed in the terrace, but at least there was an afford of Klipoh people to provide showroom that could increase added value of their product.

c. Public Toilets

Klipoh is one of the poorest sub villages in Borobudur. Hence, there are many simple traditional houses exist in this sub village. One problem rised up in this sub village is about toilet. There are very limited clean toilet in this subvillage. People usually used river or their very simple and improper toilet in their house. Due to this matter, one of the concerns of local government regarding the implementation of tourism village in Klipoh, they developed public toilets in the middle of traditional houses closed. The location of toilet covered traditional deep well that has traditional value. This well was built in the middle of housing. This well is supposed to serve people surrounding the well. But because of the location of the new toilet closed to the well, hence it will polute the well. One unit of public toilet consisted three toilets. People surrounding toilet building could use it. Even the position of toilet polute the well but Klipoh people was really helped by the existance of public toilet.

Fig.5. Public modern toilets provided by government

d. Tourists Attraction

The main tourist attraction in Klipoh is pottery production. Through this pottery Klipoh people could receive economic benefit from tourist. Before, they only produced poteery for local consumption. They sold the pottery product in local market. But, since tourist visited Klipoh, some of local people tried to make differsifying pottery products. To attract more tourists, the potters likewise invite tourists to directly involve in the process of pottery making. Trough this package, the potters could earn little money. The consequencies, potters should provide special space or rearrange the existing space for tourist activities.There is also galery special developed by local people to present their products to tourists. Even only small room, but it could assist local people to promote their product, remembering during this time they have difficulties in selling their pottery products.

Fig. 6. Production space

e. Communal space

The communal space created by potters for meeting, interact with other people and sometimes for rilexing. In Klipoh subvillage there is special space where local people and tourist could interact each other. The space used for communal space is small space in front of house. They put some "lincak" traditional bench made of bamboo. They could sit together, talk and eat some meal to tighten the friendship between potters and tourists.

Fig 7. Communal space

4.   Conclusion

At its best, tourism village program in Klipoh village generate the financial resources needed to invest in the rehabilitation of pottery technology and facilitiy especially in case of Klipoh village. Tourism activities can help people generate some money to provide the impetus for artisans/potters to continue their traditional crafts. Tourism can also provide new livelihood opportunities for large numbers of people in Klipoh communities.

Furthermore, tourism village program as supplemental income can contribute to the increase of wellbeing of Klipoh subvillage inhabitants, the reduced poverty and to the development of the village areas. Tourism is increasing the life quality of the inhabitants of the Klipoh subvillage and it reduces the differences between the Klipoh subvillage and other subvillages. It seems important to note that the tourism can not be a dominant sector of the Klipoh subvillage itself however it may be a driver force with the other branches of the regional economy which drive the betterment of the people quality of life.

Acknowledgement

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East-West Axis of Traditional House:
Recognizing Complexity in Pucung Village, Sangiran, Central Java, Indonesia

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ABSTRACT

This paper explains the East-West Axis on the design of traditional Pucung houses in Sangiran from a local cultural perspective. East-West Axis principle, that is used to harmonize people with their house and environment to ensure prosperity and structured the Pucung houses, refers to the cosmology of an ideal space in nature where the spatial arrangement of houses embodied the ideal culture of living. The method of research is exploration which the data are obtained in the site of village on June 2012. In depth interview is important to see the idea of local people in understanding their living space. The focus of the research is on the analysis of spatial setting of the house which refers to the house plan in terms of what room should be where in the context of four cardinal directions points as the directions of north, east, south, and west. This analysis is directed to see the order of where things are placed. Emphasizing orientations and positions, the house plan manifested the ideal structure model of arranging space which was derived from the order of cardinal points and houses structure sequence. Through architectural symbolism, the East-West Axis principle were applied in indoor space that reflected and reinforced the order of traditional space. Pointed out the space structure based on East-west Axis , this study shows that traditional beliefs and local rules hold great significance and 'power' in the design of traditional house in Pucung . It is occured since they reflect local cultural character which tune in the house into its social and cultural background and contain symbolism shared by its inhabitants.

1.   Introduction

In traditional community point of views mainly in South-East Asian countries, the such four cardinal directions or cardinal points as the directions of north, east, south, and west, are well known to be used as a guidance to determine the spatial setting of their living space. In Java, with the arrival of sailing traders from distant shores, the Javanese first learnt of various aspects of India and its civilization and culture, particularly in the areas of art and architecture. In terms of living space, it has emerged variously both in spatial morphology of settlement and spatial setting of house form. It is noteworthy that most traditional buildings in Central Java in particular, has own their character in term of space and form which is created based on the idea of Indian architecture as the basic idea. The absorption as one method to get a new idea from other culture in creating architectural object may become the method of the Javanese in constructing their house. This absorption probably came through the influence of already 'India-nised' Java rather than directly from India and Indians. As recognized name for the region where the absorption of culture was occurred, this region then has known as 'East Indies'. It was common in early written histories and this region then has known as Indonesia afterward where the island of Java is existed.

In many cases the cultural influence of India has been applied in the arrangement of Javanese settlement and houses not only in spatial and physical terms but also in setting the virtual

space which emerges as non spatial and physical terms as a sign and symbol of space which refers to their inward spirit in their actual life. In Java, the existence of traditional houses nowadays are still scattered in an inland village of the island. Unfortunately, as it is well known, those traditional houses has been threatened not only by such natural disaster as an earthquake, eruption of volcano or flood but also by the change of Javanese cultural values which is caused by modernism in city life style. It is worsened by the age of houses and the inheritance system of Javanese culture which have contributed a negative impact in term of conservation missions. It resulted the amount of Javanese traditional houses decrease time by time.

Among others, there is a village called Pucung in Sangiran, Central Java which still preserves their living culture and tradition. Tradition can be defined as the hereditary customs of a society which is a collective consciousness with its broad, covering all aspects of life. Pucung is just one of the many small villages of Java, but without a doubt, its location within Sangiran -as a village where the ancient man Sangiran as an archaeological excavation site on the island of Java in Indonesia- is one of the most famous village of Indonesia. The area comprises about 48 km² and is located, about 15 kilometers north of Surakarta in the Solo River valley. In Pucung village, it is easy to find indigenous traditional houses which is set in a particular order that merges in natural environment surrounding. The unique traditional village of Pucung is reflected by its existence which is still own its character as an old traditional settlement with their own rules in organizing the space both in their traditional house and settlement.

As mentioned above, similar to other villages in Java, during its existence in fact, Pucung experiences some influences from outside of the village such as the modernity of city life style and the change of house form which in the point of view of maintaining the originality of settlement and houses it becomes the threat of the continuity of the origin culture and living space of local people. To respond such issue, the research of this village is necessary in terms of understanding the spirit and symbol of the spatial arrangement of the houses. Due to such condition, this research is directed to explore what is the concept behind the spatial setting of house plan in Pucung, Sangiran, Central of Java?

2.   Methodology and Site Field Review

The method of research is exploration which the data are obtained in the site of village on June 2012. In depth interview is important to see the idea of local people in understanding their living space. The focus of the research is on the analysis of spatial setting of the house which refers to the house plan in terms of what room should be where refers to the four cardinal directions or cardinal points as the <u>directions</u> of <u>north</u>, <u>east</u>, <u>south</u>, and <u>west</u>. This analysis is directed to see the order of where things are placed. In understanding the reason of the spatial setting of indoor rooms, the triangulation method is conducted among the empirical data which have been explored in some themes from some cases in the village. Some local words which contain a symbol of local spirit in relation to the house form and space arise during the exploration. It is important to be known its meaning since it relates to the reason behind the physical and spatial element of the house and its surrounding. There are 45 houses and related households have been explored as the main target of this research. Those houses are located in 2 (two) neighborhoods unit of Pucung in the slanted-land in such that the setting of houses have not possessed a grid pattern but tend to compose as an organic spatial setting which conforms to the natural land-contour.

Most inhabitants are peasants who work on informal sector. The land are planted by a paddy rice field which is only supported by the rain-catchment system. The barren land of Pucung caused the village is suitable for the teak plantation which give the benefit of local people to use it for the construction of their houses as the major material construction during years and years. So, it is not surprising that all traditional houses in Pucung become a wooden structure which its spatial setting is arranged based on their traditional views. The only orientation of the house which is known by the position of front entrance are <u>south</u> and <u>north</u>. The main, core and initial house in Pucung is called '*keprabon*' which belongs to the head of the household or the parent. '*Keprabon*' as

also the main house has own a significant role in determining the setting of the following building or another houses in the site. Normally, the first son who has married will occupy the house in front of his parent's house '*keprabon'*. It symbolizes the role of the worship of the guardian of the son as well as to provide a safety space for their son. To do so the position of '*keprabon'* is on their son's house behind. In some cases, it is noted that the '*keprabon'* is moved to the backside of its initial position. It is also directed   to give a chance for his son to get the position of his house to be in front of his parent.

The second phase in constructing the building tend to the direction of east side of the *keprabon.* Such kind development process of houses in terms of spatial pattern are taken place in both houses which has an orientation toward the direction of south and north in Pucung. The orientation of houses in Pucung is not only identified by the existence of the front entrance but also based on the existence of the top roof   wooden beam called '*wuwunan'*. '*Wuwunan'* or '*sinuwun'* is a local term which refers to someone who should be worshipped. To do so, this '*wuwunan'* should be put in the highest position of the house which simultaneously becomes the main structure of the roof to construct the whole of roof form called *limasan*. The direction of the front entrance to be set up on a right angle of '*wuwunan'.* It means that the access flow of moving inside the *keprabon* from front entrance and the position of '*wuwunan'* are not aligned. By this situation, it is known that there are only the three directions to enter the house in Pucung as the direction toward the north or south and the direction toward the east where the position of the front entrances are in the south or north and the west of the house (see Figure 1).
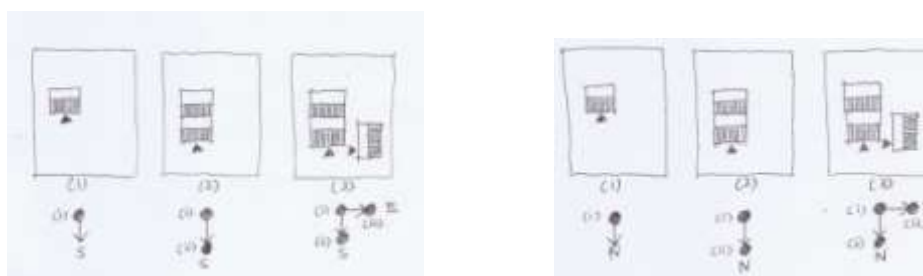
Figure 1: The Sequence Construction of House Unit in Pucung
(E: East; N:North; S: South; i: *Keprabon*; ii: House of Son, iii: House Daughter)

The house plan of '*keprabon'* generally consist of such 6 (six) rooms as *emper, serongan, tongkrongan, senthong, dhimpilan* and *pawon. Emper* is a front space face to the empty front-yard which is used for leisure of family members especially the housewife and children. In some cases, this space also becomes a space for storing the building materials. It is noteworthy that this *emper* constitutes a peculiar space for the inhabitant since it does not coincidentally that the placenta plot of their son and daughter are buried in the *emper* (see Table 1-1-d) . The position of the placenta plot is in the west side of the entrance door of the '*keprabon'* of both houses with toward the direction of the south and north orientation. It means that its position takes a distance with the position of the east area where the *amben* (stool made of bamboo) (see Table 1-1-c) and *geritan* (a bamboo's tools for a baby to practice standing and walking guided by his/her mother) is also positioned in *emper*. In transcendental point of view the position of the placenta plot in the west side is symbolized the world death whereas the position of *amben* and *geritan* are symbolized the life.

Source: (Subroto, 2012)
Figure 2: The Profile Traditional House in Pucung, Sangiran
(i)   *Keprabon*   (ii). *Emper* (iii) *Tongkrongan*

The position of *serongan* is behind the *emper* as an indoor space (see Table 1-2-c). This domain actually becomes the empty space for circulation to the '*pawon*' (kitchen) in the east side of '*keprabon*' (see Table 1-6-c). Behind the *serongan*, the *tongkrongan* is located next to *senthong* where in ancient time the Goddes of Rice is placed (see Table 1-3-a and Table 1-3-b). Nowadays, the *tongkongran* becomes the common place for indoor family members gathering meanwhile the *senthong* becomes a bedroom for parent. The position of local people when they sleep in *senthong* and other bedrooms in '*keprabon*' is peculiar since they should sleep the body stretches with the head toward the west (see Table 1-4-c). Consequently, all family members must be face to the east when they wake up. Such kind of position is also conducted by their son/ daughter who live in other building which is located on the south, north and or east side of '*keprabon*'. The purpose of such sleeping position is to avoid the position of foot of their children to be in 'the head' of their parent. It is a kind of local rule which refers to the politeness to the older person mainly their parent.

In the east side of *serongan*, *tongkrongan* and *senthong*, the *pawon* is located. It is noteworthy that this room actually is not under the '*wuwunan*'. The word of *pawon* for local people refers to the *tungku* (fireplace or stove). The *pawon* lays in the direction of north-south whereas the hole for making a fire is in the south side of '*pawon*' (see Table 1-6-a and Table 1-6-b). As the hole of fire located in the south side of *pawon* so it is known that for the hole of *pawon* or *tungku* the its direction toward the east tend to be avoided.
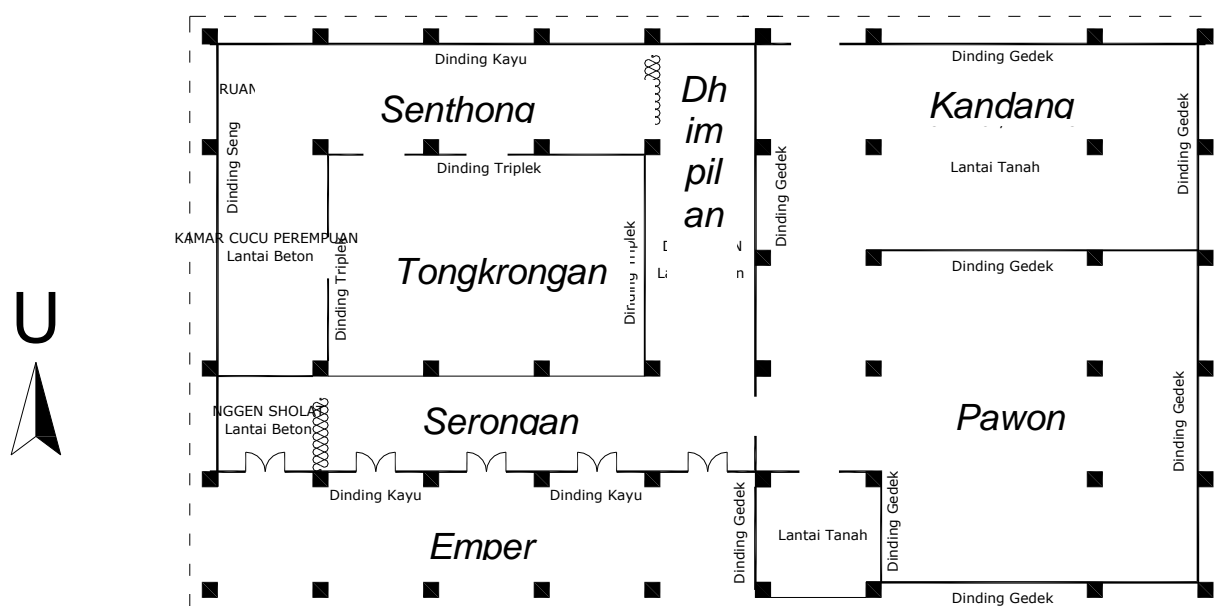
Source: (Survey, 2012)
Figure 3: The Plan of Typical Pucung House in , Sangiran having 7 (seven) rooms

So, the orientation of *keprabon* and *pawon* becomes similar to be the line of north-south meanwhile the position of *pawon* is in the east side of *keprabon* for both houses which face toward the south and to the north become a particular phenomenon in Pucung. Normally, the *tungku* has the position in the direction axis of north-south and tend to be located in the east side of *pawon*. (see Table 1-5-a and Table 1-5-b). Consequently, the housewife should face toward the east while her right-hand is used for managing the wood for fire as well when she makes a cooking since the position of the hole of fire is in the south.

(a) *Sentong* (b). *Pawon* (c) *Tungku*

Source: (Subroto, 2012)
Figure 4: The Important Room in Keprabon

Outside of the *keprabon* in the east side, there is a *kakus* (toilet) and *sumur* (well). In some cases those service facilities are located in the back side of the *keprabon*, but tend to occupy on the east area of the backyard. By this condition, it is known that the domain of service area as *pawon*, *kakus* and *sumur* tend to be placed on the outdoor east side of *keprabon*.

It is not coincidentally that the existence of 5 (five) 'mountain' called the hill of '*pendawa lima*' (five knight of Pendawa symbolize of kindness in puppet performance originated from India) is on the east side of Pucung. The people of Pucung believe that their divine ancestor is in this hill so they tend to treat this place as a sacred area which means that the sacred toward God is the east. Based on the existence of the hill of '*pendawa lima*', the houses in Pucung are arranged in such setting of houses that have a peculiar orientation of the house (*keprabon*). The orientation of houses (*keprabon*) are not facing to hill of '*pendawa lima*' or toward the east but they have own their orientation as toward north and south.

3.   Result and Discussion

According to the empirical fact, it is known that all houses in Pucung have only 2 (two) orientation that the *keprabon* facing toward north and south. It seems that this orientation is directed to avoid facing the hill of *Pendawa Lima* in the east side of this village as a sacred place.

There is a myth saying there is divine ancestors in the hill that should be worshipped. Here the understanding of east have additional understanding toward a directional concept. The important aspect of Pucung people orientation is not merely the hill but the sun. In the local word the east means *wetan* and this word relates to *wiwitan* or to begin (the life). So it is known that the direction of east presents their wish to be alive.

In order to learn the meaning behind the orientation of *keprabon* toward north and south, the observation on how the sequence of construction of houses in Pucung is conducted. The *keprabon* should always be built first and other structures should follow. The usual sequence is (i) *keprabon* (ii) house of son (toward north or south) and (iii) house of daughter (toward east) (Figure 1). In relation to the sequence of construction of houses, it is noted that the construction of orientation toward north and south is begun by the setting of *keprabon* as the first structure which is located at the back side of the site. The people of Pucung are cautious about the selection of the setting of dwelling in the sites. A site for *keprabon* should be located in the back side of the site. By this situation the next structure should be placed toward north and south of the *keprabon.* So, in case there is a *keprabon* facing one onother, the wider enclosure space in between two *keprabons* will be provided. It will create an open space or an empty land in front of *keprabon,* where the sunshine can come into their both dwelling site. It seems the cosmic force is controlled by the presence of empty land in between two facing *keprabons.* This cosmic force is believed can give a spiritual force for local people. By the sequence of construction of houses mentioned above, *keprabon* is also offering the additional building in front side of it without disturbing the line of sunshine from the east. Here, the direction of four cardinal directions become important to be noted. The orientation of *keprabon* which refers to the North-South axis, has been developed and tend to respond on the order of East-West axis of the sun orbit. By this phenomenon, it is clear that people of Pucung understanding about their cosmic environment that is interpreted to the sense of space which represents as an empty space in front of *keprabon.*
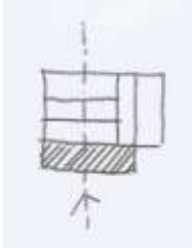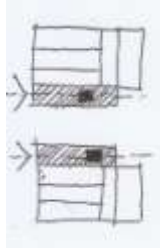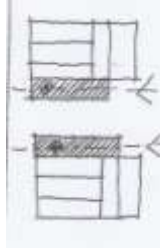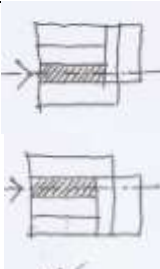
It is not a coincidence that the top roof beam in *keprabon* as mentioned above is called *wuwunan* or *sinuwun*. The *wuwunan* actually also refers to human body as the central part of the skull. As the orientation of *keprabon* toward the north and south whereas the position of *wuwunan* should be in horizontal position and it aligns to the axis of east-west, so the aim of such orientation order refers to the process of local people to enter the *keprabon*. The inhabitans should avoid facing toward the east when they enter the *keprabon*. It seems that the direction of east to be the special point among the people of Pucung mainly in relation to the process of entering the *keprabon.* In this case, there are two main orientations as the first the orientation toward east or sun which is pointed by the existence the hill of *Pendawa Lima* in the east side of this village and second the orientation toward north and south or the Goddes of Rice where the *senthong* is located in *keprabon.*
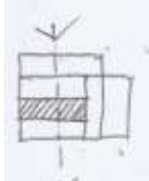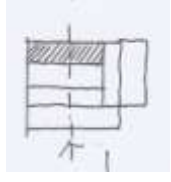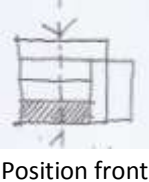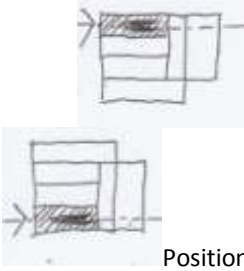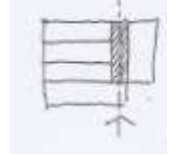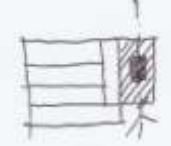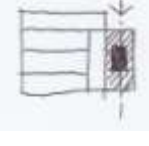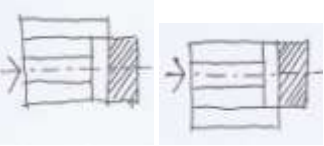
Emper for the people of Pucung is not only as a threshold for creating a buffer space to avoid the stranger. The existence of the placenta plot in west side of *emper* (see Table 1-1-d) strengthen the concept of the cosmic force in *keprabon* since it creates a polarity with the *amben* and *geritan* in the east side of *emper* (see Table 1-1-c). The position of *serongan* (see Table 1-2-c) and *tongkrongan* (see Table 1-3-a and 1-3-b) does not emerge a peculiar fact in indoor space of *keprabon* except the level of *tongkrongan* is not as a significant level since its level is about 2 inchies above the *serongan* level. But this level reflects a significant meaning that in ancient time refers to its function as for meditation facing to *senthong* (see Table 1-4-a and 1-4-b) where the God of Rice is 'existed'. The other inner space which own its important role in *keprabon* is *pawon* (see Table 1-6-c)*.* As mentioned above, *pawon* is the place of fire and it has a significant relation to the east where the sunrise occurred daily. So it is not peculiar that its existence has a relation to the God of the Sun and is commonly worshipped as being creator of the world. This understanding may rise a question as to know the reason why *pawon* for the people of Pucung become the place to be closed for public. On the other hand, it is not a coincidentally that the existence of *tungku* (see Figure 4-c) in *pawon* is compulsory even though there is a gas stove nearby. Fire has a special position in the life of the people of Pucung where the *tungku* actually represents of an altar (see Table 1-6-a and 1-6-b).

This altar may constitute a house of sanctuary with has a strong relation to their divine ancestors. So, it is understood that is why the housewife should face toward the east when she make a cooking in *pawon* that simultaneously should face to the sun. The position of *pawon* in *keprabon* drive our understanding that *pawon* has its particular position in the east. It relates to the existence of *tungku* which cannot be separated by the fire in *pawon.* In cosmological point of view the *pawon* thus relates to the existence of the sun. It is known that the position of *pawon* on the east in Pucung has a deep relation to the position of *tungku* in *pawon* which may represent their divine ancestors are placed. The 'slice-room' in *keprabon* is *dhimpilan* which is stretched toward north-south orientation (see Table 1-5-a and Table 1-5-b). This room seems to be a threshold between the align rooms such as *serongan, tongkrongan* and *senthong* in the west side with the only *pawon* which is placed in the east side. With this fact, it arrives at the understanding that *pawon* constitutes an important space for the inhabitants as a space which own a symbol of space which refers to their inward spirit in their actual life.

The antipodal of *pawon* is *keprabon* where the *serongan*, *tongkrongan* and *senthong* toward the west and 'lower' elevations away from the holy hill. *Keprabon* is 'down' or 'underneath' less sacred than than *pawon* of east. East is the direction of the sun, an important manifestation of God, rises. Village of Pucung is aligned East-West Axis. The *pawon* dedicated to *Brahmana* where it is symbolized by the fire place and it is continued on the hill of *Pendawa Lima* in the east, upslope end. In Pucung, the daily attitudes and behavior of the Pucung reflect peculiar directional space different from other Javanese people in which use compass directions as East West rather than left-right or here-there.

Table 1. Position of Rooms in *Keprabon* in relation to the four cardinal directions

No	Name of Room	Orientation toward NORTH (a)	Orientation toward SOUTH (b)	Orientation toward EAST (c)	Orientation toward WEST (d)
1	*Emper*	Position front entrance flow of moving inside	Position front entrance flow of moving inside	Position of *Amben*	Position of placenta plot
2	*Serongan*			Position access flow toward *pawon*	

3	*Tongkrongan*	 Position front entrance flow of moving inside	 Position front entrance flow of moving inside		
4	*Senthong*	 Position front entrance flow of moving inside	 Position front entrance flow of moving inside	 Position of the body stretches	
5	*Dhimpilan*	 A threshold between *serongan, tongkrongan , senthong* and *pawon*	 A threshold between *serongan, tongkrongan , senthong* and *pawon*		
6	*Pawon*	 Position of *tungku* in *Pawon*	 Position of *tungku* in *Pawon*	 Position *pawon* in the east side of *keprabon*	

Related to the previous view of the self as relational in Pucung can be found a concept, that the East-West Axis is situated within contexts. This way of looking at the self stems from the position I described earlier: life and death, bright and dark. The emphasizing here is we discussed this notion as pointing out the de-essentially tendency of the Pucung. Understanding and behavior must meet local criteria and perspectives. There is no one way of understanding something, nor does one correct code of conduct exist. Depending on bipolarity of East and West, one acts differently, or one confronts the world differently.

4.   Conclusions

The house in Pucung is not just a collection of rooms. Its indoor space has been arranged by the concept of cosmology. The main aspect of Pucung cosmology is polarity which is reflected by the setting of indoor rooms: the "east world" (the sunrise) where do live divine ancestors and Gods (the *pawon*) and the "west world" (the sunset) where the placenta plot located in *emper*. The 'highest' east space as a *pawon* in Pocung is considered to be palace the Gods, that may refer to the God of *Brahma* (*Agni*), and the "west world" (the sunset and 'underneath') which are haunted by witches, demons and other dark forces refers to the west side of *emper*. Between them the cultivated spaces are the "human world" as *tongkrongan* where the Pucung by their cults, are due to balance the different forces (good from the "high world" and bad from the "low world").

The Pucung people consider their village to be supported by the spirit of their ancestor in their house and they feel responsible for the maintenance of this cosmologic order which is controlled by the east-west axis as the orbit line of the sun. In that particular way Pucung is not a prototype village in Java can be. The axis of East-West in Pucung is the instruments to be used by humans to respect the cosmological order and create balance in the invisible world. The home-grown mythology, is the primary faith of Pucung inhabitans, and so deeply woven into the fabric of their daily lives that the line between the spiritual (belief) and the material (house/ *keprabon*). This set of east-west orientation is a consequence of the Pucung conception of cosmic structure and organization. This east west axis is directed to produce balance and harmony with their living space and environment. This whole concept fits nicely with the Pucung people idea of East-West Axis where everything in the world has its place and harmony will only be achieved if things stay balanced. This concept is a skeleton key to Pucung mentality.

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The Definitions of Space in Traditional Malay Dwellings
of West Kalimantan, Indonesia: A Case Study

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ABSTRACT

A house has the function as a shelter for the occupants against direct physical influence of environmental changes such as temperature or precipitation. A house also provides segregation roles for human beings between the external and the internal world and covers privacy from the observations of others. The traditional Malay dwelling of West Kalimantan as the shelter for its occupants also has a defined space sequence. The influences of religious concepts, beliefs and community culture is expressed in the physical architectural form of the dwellings. Research objects of traditional Malay dwellings taken as the case on this study are representative of the shape of traditional Malay dwellings in former cities of the Malay kingdom of West Kalimantan. According to the identification of space, the author found the definitions of corresponding rooms in the traditional Malay Dwellings of West Kalimantan linked to the religious belief of the Malays itself. The principles of Islam are manifested in the creation of the spatial concept in the house and its elements that support the space inside the dwellings. Malays identify space as room to segregate the activities of females who live in the house from guest(s) or other male(s) who are not *muhrim* and it is defined as an architectural element within the boundaries.

Keywords: traditional dwellings, the Malays, space, identifications, definitions, religious belief

1. Introduction

Human beings need a house as a place for living, growing up and carrying out the activities of their ordinary life. A house has functions as a shelter for the occupants protecting from direct physical influence of environmental changes such as temperature or precipitation. A house also provides segregation roles for human beings between the external and the internal world and covers privacy from the observations of others.

As a place for human shelter and living, homes have continued to evolve from era to era. In the past, primitive people occupied caves as dwellings and took shelter from predators and extreme weather. After having experiences in the development of dwellings by the influences of their own culture and increasing knowledge humans began to control nature and start thinking about building houses. During the next development era, houses continued to evolve from simple building structures with simple posts or beams and a roof (regardless of the rooms division) into buildings with more complex construction and spatial arrangement. The changes were made to follow the environmental conditions where humans erected their residences. Natural and environmental conditions were the main factor that caused people to make adjustments to their residences.

Lefas (2009: 19) mentions that buildings were established by observing the nature or the environmental conditions and then embodying it in an artefact. The need for a house as a residence arises when humans become able to organize themselves, and to control their environmental conditions. In the subsequent era, houses are not just a place to dwell, but also part of the social status of a man in his community. In Indonesia's traditional societies, and also many other places in the world, home ownership is often the way to measure the level of a man's responsibility toward his family. A man who did not own a house was always assumed to lack responsibility toward his wife

and children. Therefore, people are always pushing themselves to own a house, even it is a very simple one. A house was built to fulfil the physical and spiritual needs of the occupants. Through the order and function of space and facilities, values and ways of thinking as norms of a family can be traced.

Human needs in dwelling will continue to evolve following knowledge developments and interactions with environment conditions and society. A house is needed to provide security feeling and also to fulfil the functions of comfort, privacy and identity.

The traditional Malays dwelling of West Kalimantan as the shelter for its occupants also is defined by its space sequence. The influences of the religious concepts, their beliefs and the community culture are expressed in the physical architectural form of the dwellings.

2. Background Knowledge

Unwin (2003: 53-54), identified the place as an architectural element. A place for certain activities may be identified in many ways, with the platform, with the lighting, or with the numbers of pillars which mark the area as a determination of the land. Meanwhile, according to Arnheim (1977: 10, 32), space is physically defined by the physical extension of the material or areas adjacent to each other. Space is created and structured by objects that fill it. This means that the mass of buildings and distances between them, and the shape boundaries and axis, set the place of the human occupancy either outside or inside. Arnheim also mentions space as the organization of the building and the surroundings environment. Norberg Schulz (1979: 5), explains that humans is said being a live creature when they can orientate themself and when they identify themselves in the surroundings environment, or in short understanding, when they feel the environment more meaningful. The place of residence implies something more than just "shelter". Since ancient times, the genius loci or the spirit of a place people have recognized a place as a tangible reality that humans must acceptance and it appear to make peace between people with their everyday life. So, a shelter should be protective.

3. Research Scope

The Objects of Malay traditional dwellings in this research are selected samples intended to illustrate the difference of the house shapes in each location to obtain objectives according to the research purpose. The number of samples taken in each location generally consists of 2 up to 4 houses in each locations and is directed to represent each type of Malay traditional dwellings in West Kalimantan. House types found in the study sites are consists of:
1. Type 1: *Potong Limas* (Limas shape)
2. Type 2: *Potong Kawat* (Kawat shape)
3. Type 3: *Potong Godang* (Godang shape)

The traditional Malay dwellings used as sample of the research objects are 31 houses in total, spread over 10 locations of the West Kalimantan province area. The observation was conducted on Malay dwellings established in cities which were capitals of the Malay kingdom in the past. From each of these cities, the author chose three types of dwellings as research objects. The distribution of the research object locations can be seen in the following map on figure 1.

The survey sites chosen in the cities of the West Kalimantan Province are still in their original condition lacking considerable alterations. The objects of the traditional Malay dwellings in this research are samples illustrating the difference of the house shape in each location. The classification cases is presented in table 1.

Source: (Author, 2012)
Figure 1: The distribution of locations of the research object

Table 1. Distribution of the research objects based on the house's shapes

No.	Research objects	Code			
		culture inherent	Type		
			Type 1	Type 2	Type 3
1.	Malay Traditional dwellings	A			
	Pontianak	A.1	A.1.1	A.1.2	A.1.3
	Mempawah	A.2	A.2.1	A.2.2	A.2.3
	Sambas	A.3	A.3.1	A.3.2; A.3.4	A.3.3
	Ngabang	A.4	A.4.1	A.4.2	A.4.3
	Tayan	A.5	A.5.1	A.5.2	A.5.3
	Sanggau	A.6	A.6.1	A.6.2	A.6.3; A.6.4
	Sekadau	A.7	A.7.1	A.7.2	
	Sintang	A.8	A.8.1	A.8.2	A.8.3
	Ketapang	A.9	A.9.1	A.9.2	A.9.3
	Sukadana	A.10	A.10.1	A.10.2	A.10.3

Source: (Author, 2012)

4. The Architecture of the Traditional Malay Dwellings

The traditional Malay dwellings are basically constructed on a stage using wood as the main material. Jee Yuan (1987) mentioned that they basically look like floating buildings above the ground, supported by a post and beam structure with wooden walls and thatched roofs or shingles. In general, the traditional Malay house uses hardwood materials for the main structure such as ulin, belian or meranti. Many windows and dense walls providing good air circulations, and attractive ornaments complement the appearance of the facade of the traditional Malay house. Malay people are generally open to outside people and cultures; the reflection of their openness is indicated by the formation of a large open space with minimal partitions in the house interior. Also as an approach to the house, Malays began to see solids and voids in the house, doors, windows and wall panels, solid columns; and various openings in the house. And if we look closely, we can find carvings and ornaments - in various panels found in home. Jee Yuan (1987:20) said that at a long distance view of the object, the traditional Malay house introduces to the observer the elegance of the building itself,

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as a beautiful mass, and if we observe more closely, the intricate carvings and the beautiful ornaments give emphasis to the existence of Malay works and show the richness of Malay cultures.

Speaking on the Malays, Djamour (1959: 7) noted that "ideally they liked to live in a wooden house built on stilts, with a verandah, a front room for receiving guests, one or two bedrooms and a kitchen" (Milner, 2008: 7), while Muhamad Rasdi et. al. (2005) mentioned that a traditional Malay house normally consist of two basic units; *rumah induk* (main house) and *rumah dapur* (kitchen house). In addition, Irene Doubrawa and Ferenc Gábor Zámolyi (Kuhnt-Saptodewo et. al., 2010; Feest, 2007: 122), states that the space-defining architectonical elements of the Malay house are the core house including the annexes (verandah) on different floor heights, the connection gangways (corridor) and the kitchen house (support house). Zain (2003) mentioned that Malay traditional dwellings of West Kalimantan generally consists of two parts, the main house (*rumah induk*) and the support house (*rumah anak*). The main house referred in this research is the main building which consists of the spaces i.e. front *serambi* (verandah), middle *serambi* (guestroom), rear *serambi* (livingroom) and bedroom, while the *rumah anak* is defined in this research as the support building and consists of kitchen, platform (*pelataran*) and *selang* or corridor (if any). However, from the observation of Zain (2003), a transition space was also found in similar functions without a cover also known as *pelataran*. A side door to the kitchen is also situated here. The connection of the transition space (*selang*) is a very effective transition area for the main house and the support house because it forms an open space between two parts that is good for air circulation and for lighting the rooms on both building masses during daylight by sunlight.

In addition to definitions given by the style of the house roof, Jee Yuan (1987:26) or Embi and Said (2008: 24) also wrote that a traditional Malay house is also classified by the number of columns of the main house. A six-columns house is called *rumah tiang enam*. This type is also called the house of *bujang* which means an unmarried's house. This term refers to the small houses that consist only of a core house (mother's house), without a separate house for the kitchen, toilets or other washing facilities. The *rumah bujang* with a verandah (*serambi*) is called *rumah bujang berserambi*. There are nine columns in this house. *Rumah tiang dua belas* is a 12-columns house which is also called *rumah besar* (big house). This is a much larger house consisting of the *ibu rumah* with the *serambi samanaik*.

According to Zain (2003), in West Kalimantan, Malay people classify traditional dwellings on the level of hierarchy. They divide traditional Malay dwellings into 3 main types; Limas shape (*potong limas*), Kawat shape (*potong kawat*) and Godang shape (*potong godang*). Generally, the traditional Malay dwelling has one large massive building and one other small building in the back or side of it. The large massive building is the main point of view for the observer and it is basically formed of a rectangular shape extending to the rear site (the similar condition is also found in Malaysia traditional house, see the details in Yao-Ru, 2008: 251).

Based on the survey, Zain (2003) mentioned the traditional Malay dwellings layout consists of two parts: the main house and the support house. In the main house, we can find a verandah (the front *serambi* or *serambi depan*), guest room (the middle *serambi* or *serambi tengah*) and living room (the backward *serambi* or *serambi belakang*), while in the support house is acts as the kitchen; and we can find also one other additional element called *pelataran* (platform). The *pelataran* is the element which is always found both in the main house or the support house (see Figure 2).
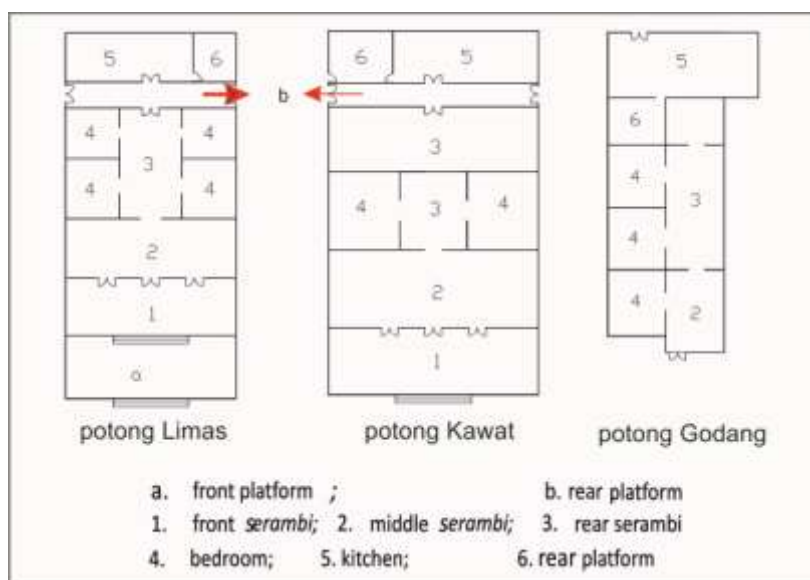
Figure 2. The basic floorplan of three types of the Traditional Malay dwellings in West Kalimantan

The functional explanation of each room is as follows:

- The verandah (the front *serambi* or *serambi depan*) situated at the front of the building, has the function of a guest reception room before entering the house. This section is the main entrance to the dwelling with a single characteristic: the ladder leading to the veranda floor.
- The guest room (the middle *serambi* or *serambi tengah*) is situated in the center between outside and inside part. This room functions as a guest room, typically formed by a spacious, elongated room. This room is usually used as a formal parlor and the banquet space for men when conducting traditional ceremonies such as newborn ceremony (*aqiqah*), the ceremony of the expression of gratitude to God (*selamatan*), marriage ceremony (*akad nikah*), and so forth.
- The living room (the rear *serambi atau serambi belakang*) is a private space for family members and consists of bedrooms and a communal room (family room).
- The kitchen is a small massive building situated at the back and is usually connected by a wooden ladder (*gerata'*) from the courtyard. This room functions as the place for the family's food preparations.
- The open platform (*pelataran*) is usually situated in the front of the main house (the front *pelataran*), in the middle between the main house and the support house (the middle *pelataran*) and in the back of the support house (the rear pelataran). The front pelataran is usually used as a place for drying crops such as paddy, corn, fishes, etc; the middle *pelataran* or *selang* is used as a connector for linking two parts of the house; and the rear pelataran is used as a place for washing clothes or vegetables, a place for the cooking utensils, bathing place for girls/women, and also the place to put rainwater reservoir.
- The attic (*loteng* or *parak*) located at the top of the main house, between the ceiling and roof, is a place for everyday activities of girls or women, especially to rest after cooking. In this room, they usually do weaving or knitting.

5. Outlines of the investigations

The main house uses wall partitions to separate the functions of the different space. The space commonly found in the main house (rumah induk) is the front *serambi* (verandah), the middle *serambi* (guest room) the rear *serambi* (living room) and the bedroom (in Malaysia, *rumah induk* is called *rumah ibu*, see in Yao-Ru et.al., 2008: 248). The support house does not have any wall partitions to separate the function of space, but in some cases the author also found a bedroom with the given walls as partition.

Malay people visualize the honour of distinguished guests by different sitting positions to receive male and female guests (Mohamad Rasdi et. al., 2005: 33). Differentiation of the recipient place of

guests are in accordance with the Islamic teachings, as specified in the Qur'an where God instructed the believing women that they should hold their views, and maintain their genitals, and do not reveal "their jewelry" except the usual look of them (Md. Zohri, 2010: 30). Jewelry is meant here as the whole female body sections except the face, palms and feet soles Malay's people commonly know as *aurat*.

> "*And tell the believing women to lower their gaze and be modest, and to display of their adornment only that which is apparent, and to draw their veils over their bosoms, and not to reveal their adornment save to their own husbands or fathers or husbands' fathers, or their sons or their husbands' sons, or their brothers or their brothers' sons or sisters' sons, or their women, or their slaves, or male attendants who lack vigour, or children who know naught of women's nakedness. And let them not stamp their feet so as to reveal what they hide of their adornment. And turn unto Allah together, O believers, in order that ye may succeed*". (Ministry of Hajj and Endowments the Kingdom of Saudi Arabia: Qur'an Mushaf Al-Madinah An-Nabawiyah revised, 24:31)

> "*As for women past child-bearing, who have no hope of marriage, it is no sin for them if they discard their (outer) clothing in such a way as not to show adornment. But to refrain is better for them. Allah is Hearer, Knower*". (Ministry of Hajj and Endowments the Kingdom of Saudi Arabia: Qur'an Mushaf Al-Madinah An-Nabawiyah revised, 24:60)

The front *serambi* is the place to serve male guests, while the rear *serambi* is the place to serve female guests (Md. Zohri, 2010: 53, 56). A special room for females is located in the *parak* (attic), with stairs or a ladder as the access to the *parak* which is placed on the backward side of the living room. the *parak* has no wall partitions as boundaries and is usually found with carpets, mats or mattresses which are placed on the floor as the marking of the area. The placement of females on this area has the meaning to maintain the safety, honour and dignity of them as family members. To keep observing the girls' behavior for interacting with the opposite sex is the main effort to maintain their purity from inappropriate attitudes. Therefore, in the Malay culture, for an adult male it was not easy to meet an adult female because their parents always supervise the conduct of their daughters. For Malays, the family honour depends on the family behaviour. In accordance to this, Malay people usually strictly give the Islamic learnings to their childrens both in education and the basic behaviors in society.

The building masses of traditional Malay dwellings are formed with an uniform pattern of floor plans. The main house is marked by a higher floor level compared with the support house (Gibbs et.al., 1987: 31-32). According to Ghaffarian Hoseini (2011: 99) the floor levels of a Malay house change in different spaces to denote the boundaries of each functional space in addition to indicating the priority and value of these spaces. Generally, the difference between the floor elevation of the main house with the support house ranges from 10 to 30 centimeters. This relates with the comfort of foot steps for human to step on different floor levels. A characteristic main house has a front *serambi* (verandah) and wall partitions that envelopes the whole sides of the building mass and are found with a lot of windows or door openings. Meanwhile, the support house has a platform (roofed or un-roofed) with a narrow space divisions and some of the wall sides is commonly found without cover.

The floor level of the main house elevating from the support house or to the surrounding environment is intented to purify by Islamic teachings, because the main house is meant as a place to perform the worship to God, including the prayers which are conducted in several times daily by maintaining cleanliness of the main house as well as the efforts to carry out God's commands, as mentioned below:

> *.........Allah loveth the purifiers.* (Ministry of Hajj and Endowments the Kingdom of Saudi Arabia: Qur'an Mushaf Al-Madinah An-Nabawiyah revised, 9: 108)

In their daily conversation, Malay people use the term of *naik* (up) as a sign to permit the guests for entering the house, while to express leaving the house usually the term of *turun* (down) is used. The living room is usually identified as the front section for most Malay people. In addition, also another term is found, which is the way of Malay people to indentify space between "inside" and

"outside": While inside is the clean place, outside is the non-clean place. So then, *naik* means stepping toward the clean area, while *turun* means stepping towards the non-clean area.

Generally, the front *serambi* in Malay traditional dwellings is divided into two types: one with roof cover and fence; another just with a small canopy without a railing. The front *serambi* with a small canopy is usually found on main houses with 2 grids and some of 3 grids, while the front *serambi* with roof covers is found on main houses with 3 or 4 grids. The front *serambi* is laid out as a wide room and it is part of the main house. The front *serambi* with roof was attached to the structure of other rooms.

The middle *serambi* plays the role of a front room (*ruang depan*), In daily conversations, Malay people usually ask the male guest(s) to sit on the *ruang depan* as their expression of the guest room. This term is used as a means to honour the guest served in the glorious space of the *ruang depan*. The front (*depan*) is referring to the term of honour and clean area in Malay people expression, while the back (*belakang*), usually refer to the kitchen as the dirty and wet area (Gibbs et.al., 1987: 29). Therefore, the related guests who come from afar will be "forced" to sitting on the guest room, even though these relatives did not want to sit there or they would feel more relaxed sitting on the rear *serambi*. The atmosphere on the middle *serambi* is felt more formal than on the rear *serambi*. The fundamental differences of these two rooms is the providing of chairs in the middle *serambi* while in the rear *serambi* the guests usually are served by sitting down on carpets or mats spread out on the floor as a symbol of formality and honour to guests (Muhamad Rasdi et. al., 2005: 36). Mats are also rolled out in the main house for praying and sleeping at night (Gibbs et.al., 1987: 10). In some cases, in the traditional Malay dwellings a special room for guests who stay overnight is also found. These rooms are located at the front and adjacent to the living room.

The space composition in the traditional Malay dwellings shows the levels of functionality and is based on the space allotment of defined activities (Ghaffarian Hoseini, 2011: 99). The floor level distinguishes the room functions according to their hierarchy. In the hierarchy of the main house, the more we walk from the front into the interior, the more private get the defined activities (see figure 3; Sim, 2010: 18).
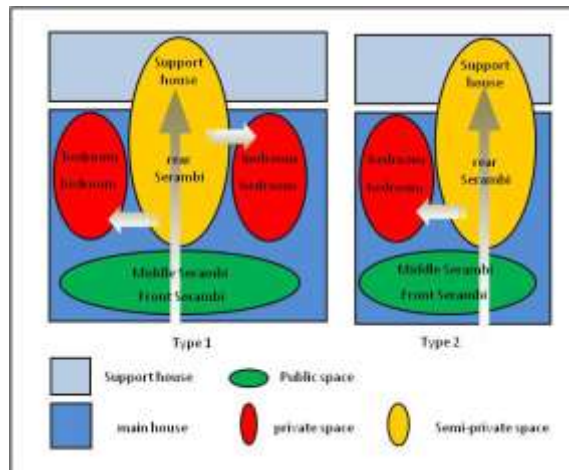
Source: (Author, 2012)
Figure 3. The hierarchy and the composition of space in the traditional Malay dwellings of West Kalimantan

This figure shows the path circulations for male guests entering the house (only with permission) from the front *serambi* (public space) toward the support house (semi-private space). The placement of the bedroom next to or on both sides of the rear *serambi* is an effort to "hide" the private space and also to avoid the passing of female(s) with male guests who are not the Muhrim of the daughters or wife (see figure 4.). This also includes the placement of the stairs of the *parak* in the back of the rear *serambi* to anticipate if there are male guests who are not Muhrim of daughters or the wife and want to enter the inside house; so then the father will ask the daughters or the wife to go into the bedroom or run up to the *parak* immediately (A(h)mad et. al., 2007: 285).

Normally, all the rooms in traditional Malay dwellings has specific names, functions and meanings. The first space found in the front section is the *selang* or usually called front *selang*. The

front *selang* serves as the place to store the goods of guests which can not brought into the room. The front *selang* is an open platform that also serves as the drying place of agricultural crops, fishery or plantations. Malay people usually call it *pelataran depan* (front platform). In the past, these platforms were found on some traditional dwellings of West Kalimantan. According to Zain (2006), an open platform is found in the Malay traditional dwelling of Sambas town. The *selang* serves as the end point for the guests to use the footwear. Typically, guests who come will put their footwears on the front *selang* before entering the room, while the guests without footwears will clean their feet on this platform. Therefore – normally in the past – there is a watertank (*tempayan*) found on this platform as a water source to clean up the guest feet. In all cases of these research, the author did not find platform anymore, instead in some cases was designed without any platforms at the front. In case A.3.1., the front *selang* was found in decay but the author still found the *gerata'* (the wooden foot steps) as remains of the front *selang* before entering the house. Without front *selang*, footwears were placed on the ladder of the front *serambi*. *Selang*, in the Malay expression means also *jeda* (the gap). The front *selang* is the gap between the dirty exterior and the clean interior. So the dirty things should be cleaned before entering the house. Cleaning of dirt is also referred to the guests visiting the house. They should clean up their dirty purposes or minds to the owner of the house. Putting the footwears on the front *selang* or cleaning the feet before, mean that the guests must behave modestly to the owner of the house. The water for washing their feet relieves the anger of guests, if they come with any bad purposes, so it can be immediately cooled.

Source: (Author, 2012)
Figure 4. The *gerata'* (the wooden foot steps) as artifact of front *selang* before entering the house. I also found the decayed foundation of the front *selang* (the photo was taken from the front facade of the case A.3.1)

According to Wan Hasim and Nasir (2011: 17), the front *serambi* (verandah) serves as a place to serve male guests or neighbours, and the elders. The middle *serambi* as the guest room is the formal place to serve the high respected guests. The rear *serambi* is the place to receive female guests. Usually, if female guests come, either relatives or foreign guests, they will be served on the rear *serambi* by the wife of owner, while the male guest is served on the front or middle *serambi* by the family head (Sim, 2010: 21). If a guest comes while the family head is not at home, usually the front door will not be open and the male guests will not be allowed to enter the house. In Islamic teachings, the wife may not accept guests who are not muhrim at the time her husband was not at home (Md. Zohri, 2010: 28). These acts have been culturally accepted as the married Malay women should guard their chastity and their husbands honour to avoid *fitnah* (the untruth scandals).

> *"And if ye find no-one therein, still enter not until supplication hath been given. And if it be said unto you: Go away again, then go away, for it is purer for you. Allah knoweth what ye do."* (Ministry of Hajj and Endowments the Kingdom of Saudi Arabia: Qur'an Mushaf Al-Madinah An-Nabawiyah revised, 24:28)

Meanwhile, the rear selang also serves as the place to put items that are not brought into the rear *serambi*. Usually the female neighbour will enter the main house from the side door of the rear *selang*, or uses the support house door. The rear *selang* is also called *pelataran belakang* (the rear

platform). This place is an entrance for female guests who are accessing from the *gerata'* which is found in the side of the main house, or directly from the side entrance of the platform at the support house (Sim, 2010: 21; Wan Abidin, 1981: 59; A(h)mad et. al., 2007: 280).
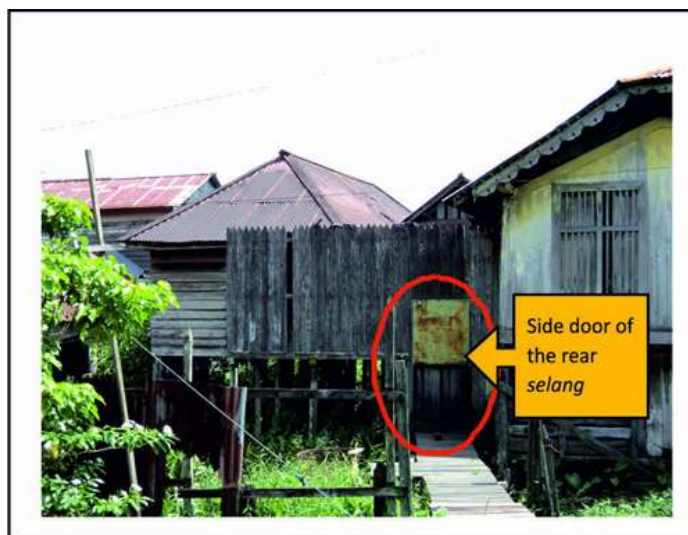
Source: (Author, 2012)
Figure 5. The side door of rear selang of the traditional Malay dwellings West Kalimantan. The door could be found in both sides (photo was taken from the left side of the case A.1.1)

The support house consists of kitchen and platform. The kitchen is used for cooking food and storing the kitchen goods. Sometimes, the kitchen is also the place for serving food to the family members. Because of the placement of the wooden floor which was constructed with gaps, the cooking waste material can be discharged directly to the ground. The main function of the rear *selang* at the support house is separating the two parts (Said and Embi, 2008: 130) with the aims to reduce the fire danger from cooking activities in the kitchen; another function is the area for washing vegetables or clothes. The rear platform was found in all cases with two purposive functions: First, separating the area with fire danger from the area for washing food or clothes (see in Sim, 2010: 21); second, combining both functions at one space.

The bedroom is provided mainly for the parents and commonly found also for the girls. The parents' bedroom is usually placed near the main house post the Malays call *tiang seri*. *Tiang seri* is the first erected column when building a new house (Milner, 2008: 188; Said and Embi, 2008: 133). This column becomes a central pillar for the surrounding spaces. Boys (Malay people usually called them *anak bujang* – the adult but unmarried boy) have not own bedrooms. In the past the *anak bujang* should sleep in the mushalla (small mosque) or in the middle *serambi*. In some cases, bedrooms for *anak bujang* are found in the support house. This aims to separate the adults boys from girls, and also the boys act as the guardian of the main house.

The rear *serambi* or living room is the gathering place for family members. This space is located on the area after the front *serambi* section but is usually flanked with the bedrooms. In this space is the area for the mother and the girls for doing daily activities. Sometimes this space is also used as a food room serving for the guests. This is also the control room for activities of the children, so they cannot step out of the house without being detected by the parents.

The separation is conducted to restrict the space in the main house. In all cases 3 types are found, i.e. massive walls; partitions; and thresholds. As the transition and also the separation of space between public and semi-private, the boundaries between these spaces in the main house are marked by a threshold placed at the front entrance. In all cases, this feature was found on the floor of the verandah before entering the front *serambi* and also at the door bottom of the front *serambi* before entering the middle *serambi* or on the door bottom of the middle *serambi* before entering the rear *serambi*. In addition, in the support house this condition is also found as a boundary marker of the dry area to the wet area. Generally, all cases gives the space restriction of the semi-private and the private marked by massive walls with doors or curtained openings. Curtains on doors are used to

ease the transition from one space to another (Gibbs et.al., 1987: 9). An interesting method separating the bedroom was found in case A.2.1. The room boundaries were marked by a partition of the cabinets and curtains. According to the house heir, the mark boundaries were always like that way since the first occupation because of the influence of the origin of his parents. His parent came from Macassar and according to him, Buginese usually use curtains to separate the bedroom. According to Irene Doubrawa and Ferenc Gábor Zámolyi (Kuhnt-Saptodewo, 2010; Feest, 2007), speaking on spatial organisation and floor plans of Bugis architecture, a private rear area is served for female as a sleeping place and it was featured by a slightly elevated floor or a light wall.

Source: (Author, 2012)
Figure 6. Beams above the floor as the boundaries of spaces found in the traditional Malay dwellings of West Kalimantan (photos were taken from the inside room of cases of A.3.1. and A.3.2.)

Source: (Author, 2012)
Figure 7. Partition as the spaces boundaries is found in the traditional Malay dwellings of West Kalimantan (photo was taken from the inside room of case A.2.1.)

In some cases a special room called *puadai* is found. The *puadai* is the special room for bride and groom to stand and sit at the ceremony when they get married. In addition, in some cases also a special room for newly married couples for staying in the house is found. The couple will leave the room after there is a newly married couple in the family, or the couple already has its own home. For Malay people, marriage is the way to implement the Sunnah of prophet Muhammad. For the Malays, marriage as one of the religious teachings of Islam and moslems is encouraging to do so. In the understanding of moslems a man who got married is doing *ibadah* to fulfil the teachings of Islam. Therefore, giving a special place for newly married couples is a joy for the bride happiness (Muhamad Rasdi et. al., 2005: 33).

"And Allah hath given you wives of your own kind, and hath given you, from your wives, sons and grandsons, and hath made provision of good things for you. Is it then in vanity that they believe and in the grace of Allah that they disbelieve ?" (Ministry of Hajj and Endowments the Kingdom of Saudi Arabia: Qur'an Mushaf Al-Madinah An-Nabawiyah revised, 16:72)

"And of His signs is this: He created for you helpmeets from yourselves that ye might find rest in them, and He ordained between you love and mercy. Lo! herein indeed are portents for folk who reflect." (Ministry of Hajj and Endowments the Kingdom of Saudi Arabia: Qur'an Mushaf Al-Madinah An-Nabawiyah revised, 30:21)

"Narrated By 'Abdullah : We were with the Prophet while we were young and had no wealth whatever. So Allah's Apostle said, "O young people! Whoever among you can marry, should marry, because it helps him lower his gaze and guard his modesty." (Sahih Bukhari, translated from Muhammad Uwaidah, 1998: 398).

Source: (Author, 2012)
Figure 8. *Puadai* in the traditional Malay dwellings (from left on clockwise: photos was taken from the inside room of case of A.2.1.; A.3.1., A.6.3. and A.5.3)

Source: (Author, 2012)
Figure 9. Special room for newly married couple with pink curtains on windows and an ornament on the door top (photo was taken from the inside room of case A.9.1.)

At the support houses, the space is not separated with massive walls or partitions but it has boundary areas formed by the occupants. There are 3 boundary areas created on the support house: The first area is the place for cooking food, characterized by the fireplace (*tungku*) and the firewood interspace; the second area is the preparing place or the processing food place as well as the area for eating together; and the third area is the place for washing the cooking utensils, the processed food or vegetables, or clothes. These three spaces are called as the rear *pelataran* (Embi and Said, 2008: 25). The two spaces mentioned firstly are usually known as the dry area, and the last is the wet area. The fireplace and firewood interspace usually are placed in one corner of the support house. Each area usually has boundaries marking the space. A threshold is used to mark the space between dry and wet area, while carpets or mats laid down on the floor are markers of the seating area such as the area for processing food or eating together. Usually, after the cooking time is finished, the food is served on the mats and the family members are asked to eat together. A unique placement was found in case A.1.3., a cooking space firmly separated from the preparing area, formed by rooms with a separate roof structure.
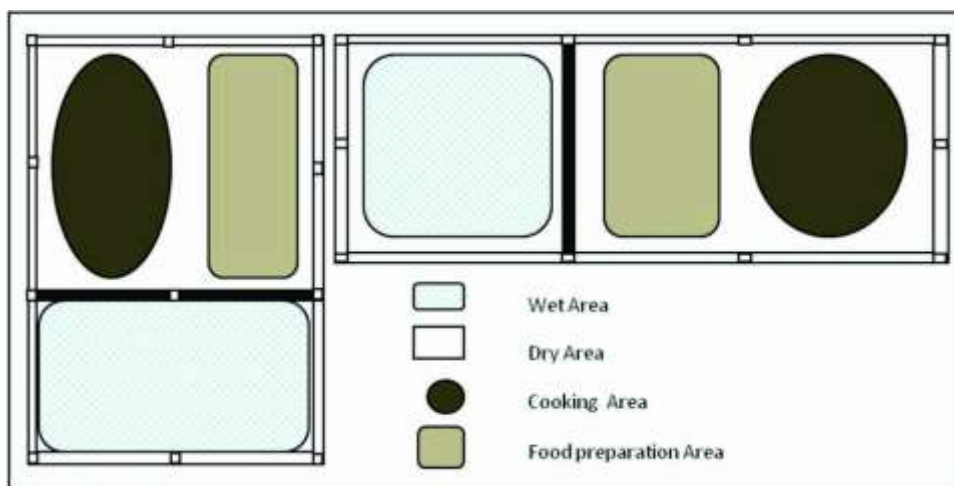
Source: (Author, 2012)
Figure 10. The pattern of dry and wet areas found in the support house of traditional Malay dwellings
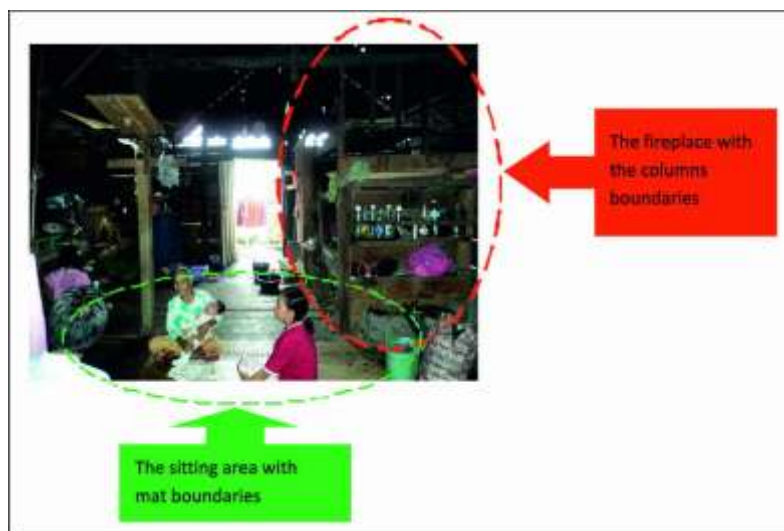
Source: (Author, 2012)
Figure 11. The area boundaries found in a traditional Malay dwelling (photograph was taken in the sup-porthouse of case A.5.1)

6. Conclusions

- Physical barriers surrounding the space and also limiting human access to the spaces caused by the similarities and differences of the term of privacy are found in the Malay traditional houses of West Kalimantan.
- The religious belief of Islam is manifested in the creation of the house form and elements supporting the space inside the Malay dwellings.
- Malays identify space as room to segregate activities between females who live in the house with guest(s) or other male(s) who are not muhrim, and it is defined as an architectural element within boundaries.

7. Acknowledgements

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SOCIO-CULTURAL-POLITICAL & ECONOMIC *CONTEXTS*

ICIAP
Better Space Better Living

1st Biennale International Conference on
Indonesian Architecture and Planning

Pattern Determination Living Space Tribe Atoni
Case study in District Insana of North Central Timor

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ABSTRACT

Since the first to realize that the culture of living is one of the important legacy handed down from generation to generation. In societies that uphold culture, such as in Bali, the pattern of settlement is determined by the cosmic system is realized through the mountain as a sacred space orientation, and the sea as the orientation of the profane space. At the Jogja, settlement patterns are determined by a person's life cycle described by sea to the south of Mount Merapi. One of the philosophies in mementukan pattern space is a system of kinship and gender. Atoni tribal communities also organize residential space based on kinship, where the organization of space is formed on the basis of sex. Atoni people living culture can be recognized from the spatial symbolism, which is strongly associated with gender diktonomi. Each cardinal direction is associated with one sex is not always consistent, because the head of the tribe called "man-woman" who was a man, but does the job of women. Houses are specifically placed in a special way the rules are directly related to the solemnization of new building. Through this study can be seen the formation of space-based settlement Atoni tribal culture.

Keywords: pattern of space, culture, and Atoni.

1.   Introduction

Living comes from the word "habitation" (or residence), while the living are living together or the environment sector in certain areas, where there is a meeting of persons inter-personal. Settlement is the process sequence of event/ actions be a resident. The house is a place where someone lived individually and found a family.

According to the story of ancestors, living tradition has been known since the time they were, even in ancient times, people already know and understand the importance of a settlement, it is characterized by patterns of living in nomanden or move from one right to another place. This nomadic lifestyle made man at first to defend themselves from danger or activity threaten the survival. Caves and the Fountain is an effective location to place human life, to settle and form a community. Human living patterns continue to evolve according to changing patterns of human thought and a place to live in interacting with others. Human mindset manifested through patterns of human behavior, which is one important aspect in the review of the history of the city. Through the observation of these behaviors, the cultural and anthropological approach, it is understood some of the basic culture of living, then as a cultural heritage that must be preserved.

Indonesia is a country rich in culture various, one proof that Indonesia has a living culture that the patterns of existing settlements is various area, such as living in Bali with the concepts of *Tri Hita Karana*, this concepts which is based on belief systems and religion (Hindu), in Yogyakarta area with the concepts *Manunggaling Kawulo Gusti,* settlement patterns in the Toraja region has always been at a high land. From the few examples of existing settlement patterns in Indonesia, shaowed that the basic settlement pattern formation based on the belief system. Belief system is that the existence of a large force that controls the universe (*macro cosmos*) and some small power subject to the authority of the (*micro cosmos*). The relationship between these two elements is called cosmologi. Picture of the traditional house of Timor, especially ethnic Atoni, the counties of North Central Timor (*here in after abbreviated TTU)*, was also demonstrated with specific characteristics which are densely packed with houses and cattle sheds and scattered around the village.

The original homes of the people of Timor in villages with beehive-shaped roofs that nearly reach the ground by one family inhabited mind. In the last activity in the home, such as sleeping, eating, working, and receiving guest. The house is also a woman's place to weave, cook, and store the results of their field. Besides, the house is also a place to run native religious ceremonies that related with their clan.

Timorese traditional house made from blocks of woof for poles, from thin bamboo for the wall, and leaves for roof thatch. A house consists of two parts, namely outside and the inside. The outside is called the *Sulak* and the inside is called *Nanah*. The outside is for guests who visit, the guest bed, and the place to stay for girls are married, is she came to visit.Families who live the house, sleep on a hall that is available there, according to the position an the family. Current conditions show observations of changes in both shape and pattern of settlement in tribal Atoni order, this change occurs in the form of residential pattern for both men and women, who are not in accordance the philosophy of forming settlements in tribal Atoni space.

(Source : Survey result, 4 may 2012)
Figure 2 : Atoni house in Miomafo

Traditional house of Timor above, then performed a study to identify the factors forming the pattern of settlement pattern formation Atoni see Atoni tribe settled. In TTU there are three area of the district Biboki, Insana , and Miomaffo. The meaning of living space Atoni tribe, can observed in all three districts. However, because of modernization, leading to changes in the traditional form of settlements, one area that still maintains the traditional settlement is a village traditional Tamkesi in district Biboki, without ignoring the Miomaffo and Insana.

2.   Methodology

The metodology used was etnographic methods, by integrating the study of cultural antropology, which deals with the study of special space. Technically, the colledcted data is conducted semi structured interview technique. In determining the source, usong snowball sampling technique snowball sampling is a sampling techinique which originally amounted to a little later a member of the sample(respondent) appointed his friends to be sampled so that the amount will be more and more.

Every cultural activity, alway takes place at the location, track, and orientation. To indicate the use of space in each event, first all semi-structured interviews were counducted on the key (*key informants)*, who know the things pertaining to the theme. Key Indormants will the recommend other informants associated with the belief systems and kinship systems, for which interviews were conducted with tribal chiefs and community leader who know the problem with belied systems and kinship systems. As an Informations and mocking the information obtained will then, society is also a guest speaker in study, this is because as the community in the capacity as a user or user space.
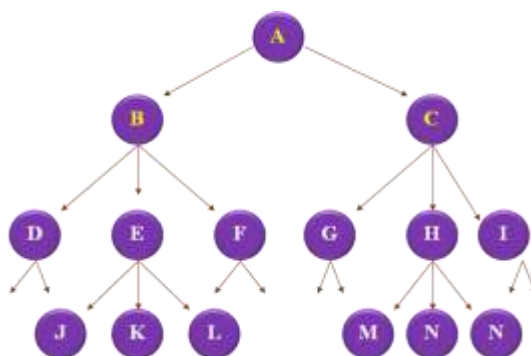
(Source: Hamid Patilima, 2005)
Figure 1: Schematic Snowball Sampling

The interview data was obtained, then the summarize, resulting in the depiction space dwelt on trust and kinship systems. Of these two parameters, the obtained elements forming room, but not all elements of settlements examined in this study, then the selection of data. Data are selected and then categorized and classified, so as to obtain syestematic data. The next step is, test reliability and adquacy of data with reference to the previous process in check the adequacy of the data, either in the form of information or documentation, and subsequently in consistens. The data consistent with this later in the plot, if not then check the data in return. Cosistency of data and then mapped, according to the criteria obtained. Mapping data, including theree it is the pattern of living location, and track of the settlement. The result overlap(*overlay)* from the third data obtained Atoni tribe living space.

3. Result and Discussions

Origin of the Atoni there are several versions, but the theory is in use is Auktonus in habitan, or an existing population, where they originally lived in the area between Lurasik and Manufui, and there is one area in Silawan (Why is it called speckle resisted by the people, because in that area there are Dawan), silawan area eventually turned into the power of the Belu (racial mastery is bangasa Melus) and Dawan people were expelled. Atoni communities continue to migrate over and over again, but in the book We Seek Our Roots, says the migration of people Atoni there 10 times, based on Aura instinctive. For example Atoni People sit and reflect on the nature, is an integral part of life, because it depends on the nature, form in fact is a form of respect for nature. If there is a sign of nature, is a reminder that nature can be angry. All forms of man and nature appreciation dikemasa the rite. In a matter of time rite seen, sign in Emblem, Genesis-Genesis in 3 Dimensions (Yesterday about the ancestors, Now and the action yesterday and today again revitalized to improve the next generation). The relation of the three time dijembatasi by human respect for nature. For example, they appreciate the mango tree, used to give the fruit is good for our ancestors, so that gave birth to us, for it now so we kept him, there's mango enjoyment can give us such ancestors and we can give something for the next generation. Kosmos is a Linear merupakimensi and have stage time.

East of the island known as Sandalwood pengahasil for Chinese people, the island is a meeting of the Austronesian-speaking residents and non-Austronesian-speaking population. One of the tribes who occupied the island of Timor is Atoni tribe, commonly known as Atoin Meto or Dawan. Number of their members, based on the wikipedia site. com, said their numbers reached 600,000. The language used is subject UAB Meto. Timor architecture is different from one tribe to another tribe, but there are many similarities in understanding the meaning and pralambang. Houses are specifically placed in a special way the rules are directly related to the solemnization of new building. As like other areas in Indonesia, home and order of the pole where the pole-pole, with a pole or a pair of poles for a special ceremony. If viewed from the pole, then the home of Atoni, can be classified into 2 (two) types namely, a house with 4 (four) pillar and a house with 2 (two) pillars.

More can be seen in the table, the classification based on the number of homes Atoni pole.

According to Clarke Cunningham, a entograf German culture Atoni living person can be recognized from the spatial symbolism, which is strongly associated with gender diktonomi. Each cardinal direction is associated with one sex is not always consistent, because the head of the tribe called "man-woman" who was a man, but does the job of women.

(Source : Survey result, 7 May 2012)
Figure 2 : Atoni house in Insana

In space, the inside of the house is a symbol of Atoni contrast to the lack of spaces in such porch, and the couple outside and inside and outside of it associated with sex and the sanctity of the ceremony. Without exception area that is considered as "local" defined as "women's space", associated with the fire cooking and storage of rice grains. Under the roof is also associated with women, often have the sole right to enter and be understood as the most sacred part of the building. Arrangement of space in the house Atoni symbol (West Timor) involve intricate stitching between fields and the shaft. Some common adjustments can be drawn between pairs of spatial coordinates, such as "high" and "low", "in" and "outer", "left" and "right", and meaningful social group "men" and "woman", "relatives "and" descent ", the" old "and young "," high status "and" low position ". So in the plane, he Atoni people associated with the outdoors and the right, while the female is identical to the inside of the house and left.

Connection of this space relative and binding. Examples of community Atoni patrilinear divided into tribes, women who go and live with their husbands after marriage can not reach into the innermost part of the house until they are accepted into the tribe of the husband's family. Women are not allowed to sleep in the "big stage" on the right, but at a certain event father and brother have the honor to sit there.

Upright, the attic most sacred, a house ehere the family heirloom stored a stone altar use in agricultural ceremonies and other equipment. Rice and corn are stored here and only male offspring only(*agnote)* are allowed to enter this sacred space; that is not going to cast agnote rice and maize resulted in losses at harvest time. Architecture Atoni Meto in Insana, is determined by a circular ground-plan and beehive- shaped roofs that are used both for simple family residences (*ume)* and the meeting with a large (*Lopo)*. In the past, Lopo also use ful as a granary and a fourth pole support top floor covered with a large wooden plate to prevent rat walls. Due to large roof, the Lopo remain dry. The inside is devided like other Atoni home. The forth pilar is intended as a *Ni Ainaf*" pillars of the parent", but one corner of south pole, defined *Nakan* " mass head" of the ascet to the top is located here.
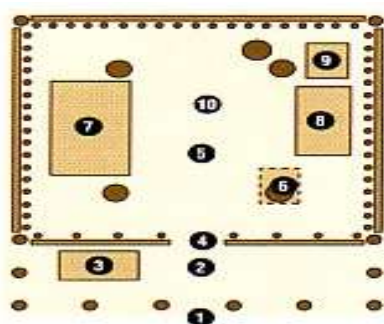
Descriptions:
1   *mone* ; "out/"man"–page
2   *si'u* : "elbow"– the outside
3   *harak* :"stage"– important guest sit in here
4   *eno* : "door"
5   *nanan*: " in the"/"middle"
6   *ni 'ainaf(nakan)* : "(head) pole mom" and entrance to the attic
7   *harak ka'u* : "big stage"
8   *harak tupa*:" sleep stage"
9   *harak maba'at* :" approval stage" "–food served to the guest and were women give birth
10   *tunaf* :"fire place"

Source: Gunawan Tjahyono, 2005)
Figure 3: Division of the Atoni house

"Ume" (house / home) whose territory is located in the offspring form the basis and core of all social organization Antoni. As a descendant of a limited, ume is part of the clan (*kanaf*) consisting of those who claim descent from a common ancestor and, it is this which makes them have the same name (*kana*f). They all share the places / villages where their names are related. Here, some of the existing descendants of the territory which has separated from each other. Moreover for *kanaf*, they have some plants and animals that become *taboo*, which should not be hunted benda or at meals. The reason is *taboo* for some specific kanaf only based on the myth that already exist. Ume was adopted eksogamik. However it is based on the natural relationship between affinal ume. In theory eksogamik *kanaf* also thought, but according to Van Wouden though this is a rule in practice this is not completely done. According to Van Wouden, there is some evidence for the existence of asymmetry, calculation Connibium associated with familial multiple system is not straightforward. T last thing on the hitherto existing in East otnografi very few provide evidence to convince that this is a real fact for the East. Middelkoop has provided some meaningful contribution to our knowledge where affinal relationships are built. He did not touch the clan connections, "the web of kinship / family web" even though he followed the rationale that concludes Fisher basis of this terminology, that there are circulating connibium "terminology of kinship / family even suggested a real marriage through the exchange". Cunningham also argues that the term kinship / familial found here "section indicates that there are two systems of marriage, as is done through direct exchange."

In the system of relatives after marriage, filososi shelter is that tribal lands never be traded, and the common property. For example, an outsider who married the sister of the parent tribe. He will be given land, with the calculation that he should not come out, work on tribal lands, the position is not the owner, and should not be on sale. Communal Land Rights sustainability of land still held. But this comprehension already fading, since modernism.

In addition to house, Lopo also one of the of the buildings used by people in the living Atoni. If the review of aspects of the typology Lopo is a traditional custom home. In general Lopo division can be seen from three aspects: the size / area, the location and quality of material Lopo. The types of lopo are as follows:

a. Lopo family(*Lopo Uem Tuas*)
   Lopo is small, with a diameter of 1.5 to 2 meters. Location of lopo usually in front of the home/*ume.* The material used is an easy and in expensive materials.

b. Lopo Klan(*Lopo Suku*)
   Lopo is owned, with diameter 1,5 of 2 meters by a clan of a certain trible collectively. Size is usually 2,5 to 3 meters. The pole of lopo usually has its own unique carving.

c. Lopo Kingdom(*Usif)*
   Lopo towering royal general, and was in sonaf / palace. Lopo is made of rare materials. Lopo diameter of 4-5 meters. Lopo uniqueness of the kingdom, where the number of columns indicate the number of buffer terms in the kingdom

(Source : Survey result, 7 May 2012)
Figure 3 : Lopo in Biboki tribe

4. Conclusion

Atoni ethnic settlement patterns, has a very distinctive uniqueness. The uniqueness lies daripembangian space, where space-cheerful dimagi according to the philosophy of sex. Well-known tradition that still maintain the tradition was Feto-Mone "Brothers and sisters". This means that all the good space allotment ruamh, in the village, is always associated with the philosophy of sex. With memimjam term used by Mircea Eliade in his book The Sacred and The Profane (1957), dividing the space into a ritual of sacred space and profane space. Firmly on the Atoni, not clearly visible, the scientific division. However, if the ritual is running, then the profane spaces, will develop into a sacred space. For example, in everyday life, the home page is used as a social activity, when the ritual Tapoin manun Lian Olif (Removing the placenta), when prayers were offered to the Divine, then the home page becomes a sacred place. Changes in the space of the profane into the sacred, in the search very difficult, because of personal thinking style (personal mindset), and patterns of social thought (populist mindset), have been poisoned by the thought of the all of the minor nature of the trust and the essence of spirituality Atoni community before Christianity entry.
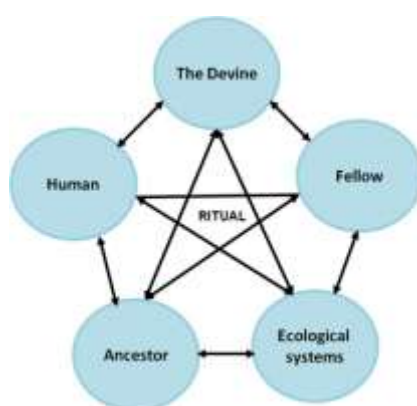
(Source : Thought the writers)
Figure 3 : Meaning of Space for Atoni

Not The Firm, the space is not separated Atoni between the sacred and the profane, but in everyday pengahayan there automatically, but not prominent, common room space will be outstanding if the ritual. For example like this, the profane space will become a sacred space if there is a ritual. Displacement space of the profane into the sacred space depending on personal opinion and the opinion of the collective. Personal opinion, based on the experience of an event that is different from the others, when he is in a particular context, the experience is mixed and implanted into a group tertentu.Celakanya this group is only an intellectual experience, but experience is not understood hearts. This experience is understood in a part of it, without understanding the mind set of deeply personal experiences. Religion is part of the culture, and religion is also part of science. Religion is the term that comes from the heart because of interest: fear, safe, do not understand.

Changes in the shape of traditional houses, because Religion (Christianization), changes the traditional to the modern mind set. The traditional house was in ferr politisir, for example, people want electoral / legislative, would go into the custom home with a sacrifice slaughtered a lot, so the thought is concerned it depends on the business of custom home. In the meantime, a request to the Church also included. If it failed, did not know who to blame, but if successful, to the church and home penghayaatan semkin ditingkatkan.Sebernarnya Indigenous interests is camouflage, in the absence of komintmen the customs and the church. There must be a movement to explain why the behavior of the ritual of traditional houses, without the intervention of the Christian religion. Human life will be in custom homes, custom homes there because of the ancestors and the divine.

in addition to the division of space according to kinship, the Atoni also appreciate nature. according to them, if we care for nature, then nature itself will sustain us. From this understanding of

the stone, natural wood and can be spoke. Mysticism / or feeling of knowaldle and feeling of spirituality. Spirituality comes from religion, without actually pengatahuan. Space of the profane and the sacred is a unity. Sacred and profane space difference occurs because the mind set. Trying to find meaning, based on an engagement. Consider the attitude of every rite, with situasai created, then get out the meaning of a ritual. Talk about the divine, could have come from the heart.

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The Gap of Theoretical Explanation
To The Growth of Local Node Along Corridor:
A Review of Growth Theory

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ABSTRACT

Corridor development as a development strategy that in practice has conducted since ancient Rome till this modern era. And the impact of the strategy is the springing many local nodes along the corridor. Some of the real evidences of the implementation of the strategy are the growing of many cities along highways in America, along Grote Postweg road in Indonesia, and in many other countries. But till now, it can be said that there is not adequate theoretical explanation to the growth of node along the corridor, especially to the transport-stop node along the corridor. One of the teories that closest to the phenomenon is Development-Axes (DA) theory that originally stated by Pottier (1963), restated by Hilhorst (1972) and is used and applied as an alternative growth theory by Paelinck and Nijkamp (1975, 1978) and Richardson (1978, 1981,2011). But in detail of DA theory, there is not adequate theoretical explanation about how the flow of goods and people in DA can make impact on the growth of transport-stop node along DA.

This paper focuses on seeking theoretical explanation about how the flow of goods and people in corridor can make impact on the growth of transport-stop node along the corridor. The method of this study is focused on literature review. We found that the growth cannot be explained by resource-based growth theory alone and neither other conventional theories of urban growth (export base theory, Concentric theory-Burgess, Sector theory-Hoyt, multiple nuclei theory-harris & Ullman, Myrdalian-Cumulative causation model, corridors theory-whebell, or Development axes theory as the closest theory). In fact, not all transport-stop node along DA could have same growth wheter the flow of people and goods are equal along the DA.

Keywords : growth theory, corridor development, development axes, transport-stop node, city growth

1. Introduction

Corridor development as a development strategy that in practice has been conducted since ancient Rome till this modern era. And the impact of the strategy is the springing many local nodes along the corridor. Some of the real evidences of the implementation of the strategy are the growing of many cities along highways in America, along Grote Postweg road in Indonesia, and in many other countries. One of the teories that closest to the phenomenon is Development-Axes (DA) theory that originally stated by Pottier (1963), restated by Hilhorst (1972) and named as an alternative growth theory (Paelinck and Nijkamp, 1975, 1978; Richardson 1978, 198, 2011). But in detail of DA theory, there is inadequate theoretical explanation about how the flow of goods and people in DA can make impact on the growth of transport-stop node along DA and how is the growing process. Another theory which rather close to the phenomenon is the theory of articulation point[1], but it is just match

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[1] An articulation point is a location that promotes the continuity of circulation in a transportation system servicing a supply chain. It is the interface between different spatial systems that includes terminal facilities, but also the numerous activities linked with freight circulation such as distribution centers, warehouses and even insurance and finance. If it connects a global and a regional system of circulation through intermodalism the articulation point acts as a gateway (Rodriegue, 2009).

to one of the node along DA in which fulfils the criteria as articulation point. On the other hand, other theories from clasic to modern era, can not explain the growth process of node along corridor, especially the transport-stop node along corridor in which without natural resources expoitation and before existency of firm or industry oriented export and not as articulation point.

This paper tries to show the gap of theoretical explanation of how the growth of transport-stop node along the development axes or corridor from infant node tobe larger settlement. If we could complete DA theory with meso and micro perspectives, we will able to develop place along DA in high opportunity to succeed. And the successful effort may be replicated to other place along DA in many other countries or region.

Method that be used to reach the aim of this paper, is focused on literature review.

2. Review of Growth Theory Related to the Growth of Transport-stop Node Along Development Axes or Corridor

2.1. Theory of Urban Growth Staging

Friedman (Friedman and Alonso, 1969) describes the development of the city, like as ancient cities which had grown in the world. Urban development is expressed as a result of the development of innovations in agriculture and transportation. Cities grew up around land which fertile deltas and large rivers around the world. Mutualistic relationship ensued between city and rural areas. Innovation in industry and transportation in the city will increase employment in the city, and influence the urbanization which then resulted the growth of the city both physically, social demography, and economics which the farther left the rural areas, as it later developed become cities at the next time.

Douglas C. North (in Friedman and Alonso, 1969) describes the "theory of regional economic" which includes 5 stages in the economic development of the region, including cities, namely: 1) economy susbsistence stage that in which there is little investment or trade and the basic economic is in agriculture according to the natural resources 2) phase of market expansion and improvement of transport (at the time, downtown has functioned as an agricultural service center and export center); 3) improvements in farming to intensive farming instead of exstensive, 4) shift stage from agriculture towards industry concentration; 5) into the mature economies, which export of capital, skills, and specialized services to the region undeveloped. The staging of North is like as in the development stages of the activity sectors (from primary to secondary and tertiary).

Related to the theory of regional economic growth that the growth started from primary sector, into secondary and tertiary, or North stated the growth in 5 staging of growth, it can not be explained properly about the growth of local node along corridor, especially the transport-stop node along development axes or corridor. Frequently, the growth of local node along corridor is not started from primary sector, but may be started from tertiary sector that provide service to the flow of people along corridor or development axes.

2.2. Theory of Corridor Staging and Structure

Friedman (1966) also stated the corridor as the formation of urban system, which is formed in the four stages era/period (Friedman, 1966). Rodrigue (2009) calls the conception of Friedman as a core-periphery Stages of Urban Development in a System. Others also call the theory with the stage of development of urban system. The theory (Friedmann, 1966 in Rodrigue, 2010) describes the existence of urban system in four major stages which goes on par with the development of transportation.
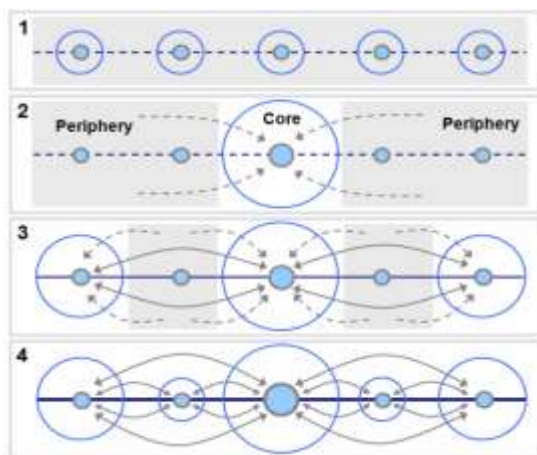
Source: Rodrigue, 2009
Figure 1 Core-Periphery Stages of Development in a Urban System
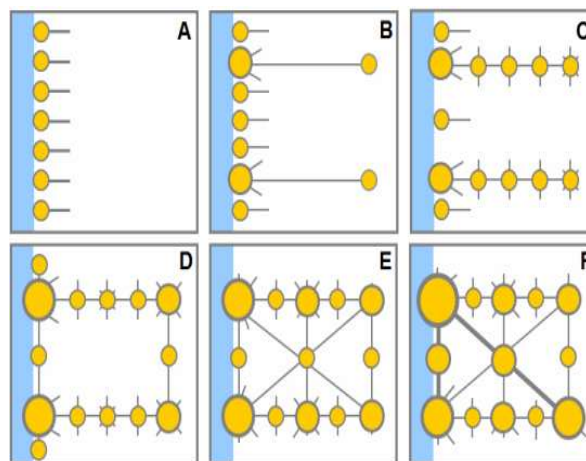
Source : Rodrigue (2009)
Figure 2. The Staging and the strutcture of Corridor Development

At the Stage 1 (Pre-industrial, independent local center). This Era is in which agricultural society, with localized economies and a small scale settlement. Each center of settlement is independent and no hierarchy. At the Stage 2 (Transitional, a single strong center). There are concentration of the economy in the core begins as a result of capital accumulation and industrial growth and arising of mobility of entrepeneur, intelectual to the strong center. At the Stage 3 (Industrial, A single national center with strong peripheral subcenter). Arising the economic growth of the strong center that have large industries, and give diffussion efect to the other places. This diffusion is derived by increasing of the interactions among   centers of the urban system and the construction of transport infrastructures. At the Stage 4 (Post-industrial/mature era, a functionally interdependent system of cities). The condition that major goal of spatial organization are fulfilled. The national integration, eficiency in location, the growth are in optimum circumstance, and inequalities are reduced significantly.

The theory doesnt explain how the process of growth of the independent local center that initially spring up in the corridor, but just explain generaly the organization of urban system from unorganized condition (independent and isolated each other) to the integrated system. So it can not explain adequately how the growth of local node along corridor, especially the growth of transport-stop node along development axes.

In the 1969, Whebell stated Corridor theory as a theory of urban system. In this theory, the term corridor is defined as a linear system of urban places together with the linking surface transport media. Corridors are very persistent historically, and they form one of the major types of urban systems in the New World. In general, the development of urban system in corridor form can be described in five cumulative historical stages: 1) initial occupance; 2) commercial agriculture; 3) railway transport; 4) motor transport; 5) and metropolitanism. The description of each stage is described below.

At the first stage, the condition of the rural economy is more subsistence than having surplus for trade, and with a little money. At the second stage, the increasing amount and intensity of land settlement, with resulting quantity of agricultural commodities, create the demand for better transport. This demand may be met by local capital employed in turnpiking the busiest roads (with or without government help) and/or canalizing rivers that are not naturally navigable. At the third stage, entrepreneurs, chiefly in the main towns, promote and invest in railways. The railways services lead the location of manufacturing industries in such towns, so replacing the handicraft production. The most successful lines are those joining already well-developed towns. At the fourth stage, there is increasing of using motor car and inovations of road and then leads to change the activities in low order central place in which formerly in manufacturing and wholesaling, extend to retailing and

services. At the fifth stage, the using of motor car and developing of road of motorway manifests the dominant influence of metropolitan places on the entire landscape system. Many arterial roads are built for the convenience of the inhabitants and businessmen of these senior urban places. Rural dependency on urban places is now largely complete, and the problems of economic life become more and more polarized between the rural have-nots and the metropolitan areas which have very rapid growth

The theory of corridor as urban system theory (Whebell, 1969) is just a general theory of urban system which have tendency to form corridor formation in the earth landscape. This theory does'nt have explanation on how the growth of the node along corridor, in which not all local node along corridor be able to grow equally while the flow is equal. So it can be said that the theory still can not explain properly how the process of growth of transport-stop node along corridor.

Taaffe (1996 in Rodrigue, 2009) stated the phase/stage and structure of corridor systems of cities from small individual nodes to be the larger centers in corridor. He explain his theory in six stages of the corridor development as urban system. The model specifically as empirical evidence from his transport development in West Africa. The six stages of development of corridor consist of: 1) Phase A (Scattered ports); 2) Phase B (Penetration lines and port concentration); 3) Phase C (Development of feeders); 4) Phase D (Beginning of interconnections); 5) Phase E (Complete interconnection); and the 6 stage, 6) Phase F (Emergence of high priority links).
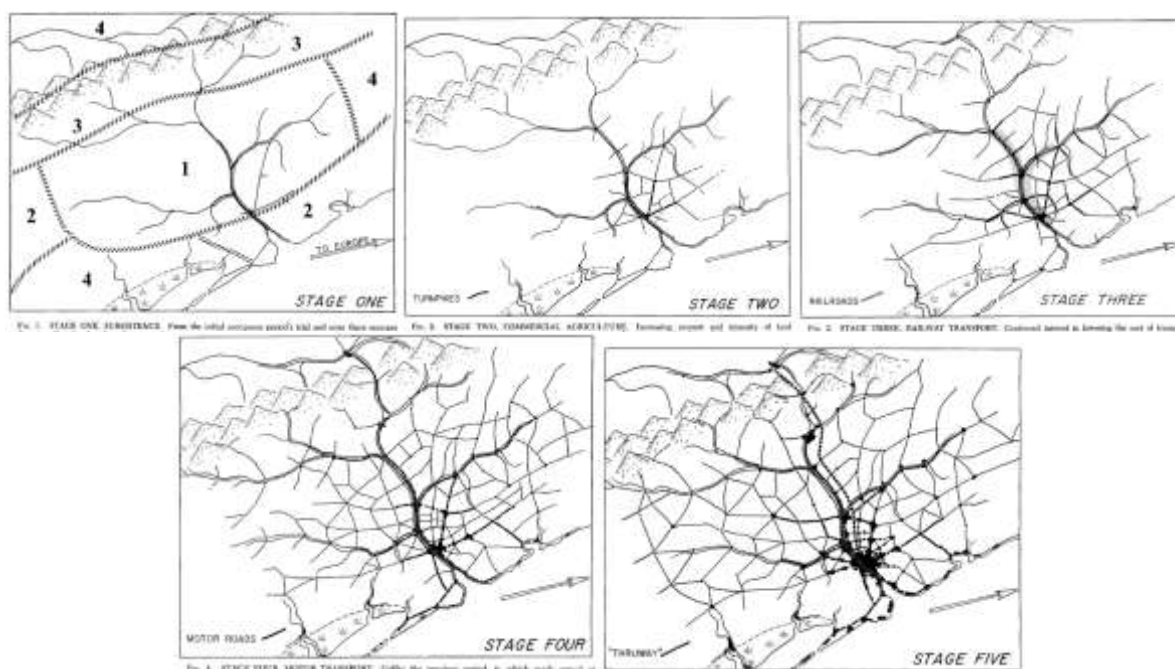
Source: Whebell, 1969
Figure 2. The growth of urban system at Theory of Corridor as urban system

At the first stage, a set of small trade ports are established along a coastline. They are connected to a wider network of trade and provide access to locally supplied resources. At the second stage, trade lines accessing the hinterland are constructed permitting the development of new resources and/or markets. The ports to which they are connected grow in proportion to the new traffic generated. At the third stage, the hinterland of penetrating lines is further expanded by the development of feeders. At the fourth stage, the transport networks that have so far been developing independently gradually become interconnected. Intermediate centers also start to emerge. At he fifth stage, as the level of connectivity increases, traffic tends to concentrate in the most connected ports (often corresponding to the largest cities), implying that several less well connected ports decline or disappear. At the sixth stage, economies of scale favor the concentration of the traffic along the most efficient links, supporting the emergence of transport corridors. Links having lower volumes can even be closed down. The regional transport system has thus reached a

phase of maturity and the structure of the network is unlikely to change unless of significant economic or technological developments.

Pointed to the theory (Taaffe, 1996) at fifth stage after emerging the interconnected largest center at far distance, explain that as the level of connectivity increases, traffic tends to concentrate in the most connected ports, implying several less well connected ports decline or disappear. But this point doesnt explain how the springing of the local node after two or more large centers have been connected, because not all node along corridor can grow equally while the flow are equal. So it can be said that theory of staging and structure of corridor development, also have poor explanation on how the process of growth of local node along corridor.

2.3. Theory of Economic Base

Theory of economic base of Douglas North (North 1955, 1956 in Friedman and Alonso, 1969) also explains how a city can grow, which is based on the basis of export oriented activities (base sector). Whereas' non-sector basis (service) produces good and services consumed in the internal areas of the city. Only in the presence of a base of economic activity, the city will be able to grow. (Richardson, 1976). This theory is more general and does not have explanation on how the process of the node to be larger center before emergence of base sector. In fact, many local nodes along corridors can grow without base sector (export oriented activities). So it can be said that the theory can not explain properly on how the process of growing the local node along corridor when the base sector has not emerged. If the base sector has emerged, we can say that the process of later growth can be explained by "model of Myrdalian-cummulative causation"

2.4. Theory of Urban Growth Process and Urban Form

Burgess (1922) explains the growing trend of development of concentric city that growing radially from the Central Business District (CBD) or downtown area (Friedman and Clyde Weaver 1979: 59 and Richardson 1976: 145-150). Homer Hoyt (Hoyt 1939, in Friedman 1979 and Richardson 1976) and then refine which concentric urban development in sectors which better describe the development of the city in various cities at that time. In the Hoyt model, light industrial zone / lower case does not occupy the second circle as the model of Burgess, but in certain sectors which were started in the circle after the CBD to suburban areas. And so is the low-income settlements (settlements industry workers), medium-and high-income settlements are not only located in just a loop.

Harris and Ulman (Friedman and Clyde Weaver in 1979 and Richardson 1976) provides an alternative with the formation of many central cities. Deepest center still occupied by the CBD (down town), which is then surrounded by light industrial/ industrial workers and small settlements.Whereas medium and high income settlements tend to stay away from the CBD and then form a new center in the center surrounded by medium and high income settlements. Residential location of middle to high-income relatively away from the CBD and close to suburban areas.

Related to the theory of development process and urban forms above, it can be seen that all of the theories can not explain how the process of local node especially transport-stop node along corridor or along development axes.
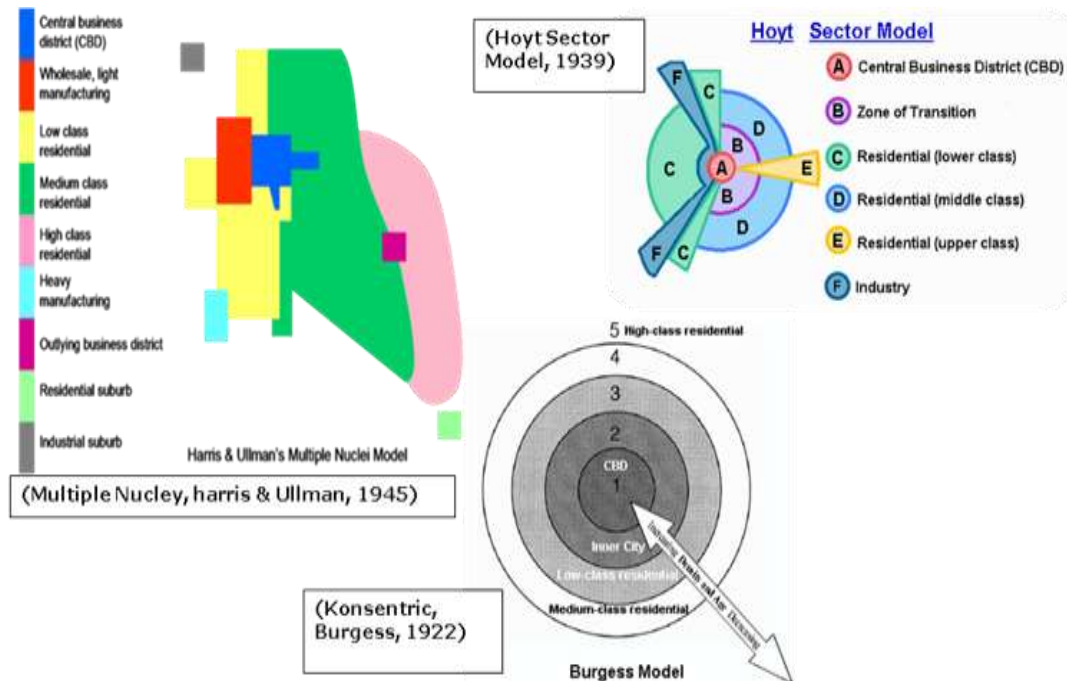
Source: Friedman and Clyde Weaver, 1979
Figure 4: Model of Urban growth and urban form from Burgess to Harris & Ullman

2.5. Model of Myrdalian "Cummulative Causation"

The model of urban development that is more dynamic, shown in the theory / model of "Cumulative causation", which once expressed by Myrdal (1957), and then developed by Pred, Keeble, and Goodal in a variety of different variables (Moseley, 1974 and Stillwell, 1995). This model
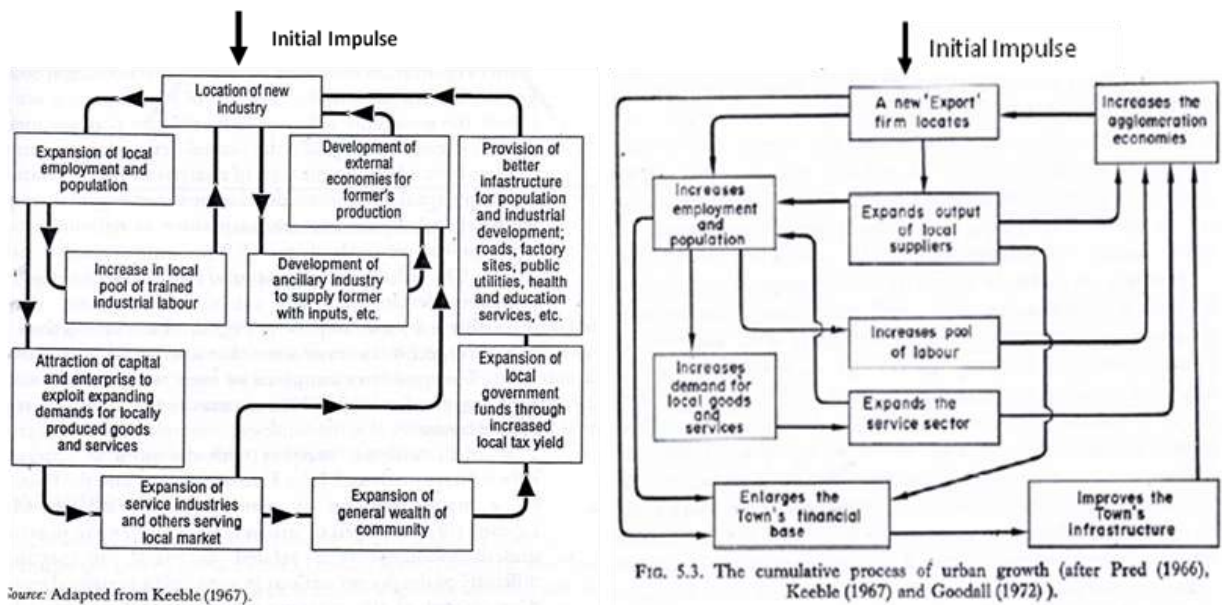
Source: Stillwell, 1995 and Moseley, 1974
Figure 5: Theory of "Cumulative Causation" Myrdalian from Keeble (in Stillwell, 1995) and after Pred, Keeble, and Goodal (in Moseley 1974)

is based on economic base theory, which is based on the basis of export-oriented activities. The following figure shows the progression of the model of 'cumulative causation' that have different version between on the book of Moseley (1974) and book of Stillwell (1995). The equal of the models is that each model based on the initial impulse of the growth on the existency of new industry or firm export-oriented. The models is more simple and clear in explaining the process of the growth urban/metropolitan that is initialy driven by new industry or firm export oriented.

The model of "cumulative causation" is also unable to give an adequate explanation of the growth process of transport-stop node along development axes. This theory just give frame of thinking that the process of growth maybe in circular process and there is cumulative process in which the formerly condition maybe influence of the later condition cumulatively.

2.6. Development Axes (DA) Theory

Theory that closest to the phenomenon of growth of local node along DA is theory of DA. This theory originally stated by Pottier (1963), restated by Hilhorst (1972) and is used and applied as an alternative growth theory (Paelinck and Nijkamp, 1975, 1978; Richardson 1978, 198, 2011). But in detail of DA theory, there is not adequate theoretical explanation about how the flow of goods and people in DA can make impact on the growth of transport-stop node along DA.

The nature of DA theory is communicating or joining of two or more Growth Pole/Growth Center at continental, national, and sub national with development axes infrastructure directly (Hilhorst, 1972). The rationality of the theory is that the development axes will reduce transport cost along the axes, and able to raise the advanted of the End Node. So It will raise growing each of End point. After that stage, it will grow the place about midpoint along DA, and then the place along the axes. There are three component in DA: 1) itinerary, which it would be better that the itinerary is not single way and would pass away many center of settlement and the place with important economic activities; 2) infrastructure along the axes itinerary, that it is developed many intermode junctions with variation of gasoline station, rail station, automotive rapair shop, hotel, motel, etc; 3 strem of traffic, which comprise of people and goods. The flow of people will create potential demand to all node along the axes, and then rise creating of new activities to fullfil the demand. The flow of goods will tend to rise producing of the complementary goods with cheaper price. Refer to Richardshon (1978), the axes will strengthen economic agglomeration, minimize gap of price, reduce transport cost, and rise economic of scale of activities along the axes. It will put the place/node/city along the axes in higher level in efficiency and will strengthen each of End Point.

From the detail of DA theory above, it can be said that there is not sufficient theoretical explanation, especially in explanaining how the process of growth of the node along the axes influenced by the flow of goods and people along DA. Because, in fact not all of the node along the axes can grow in the same level, eventhough the flow is equal, and have lower level of transport cost along the axes.

3. The Gap of Theoretical Explanation

The explanation of friedman (1966, 1969), North (1955,1956), Burgess (1922), Hoyt (1939), Harris and Ulmann (1945), Whebell (1966), Taaffe (1996, Myrdal, Pred, Kebble (1957, in stillwell 1996; and in Moseley 1974) have not been able to explain the growing of transport-stop nodes along the development axes. The DA theory, as the closest theory to the phenomenon of local node growth along corridor, also can not explain properly in detail of how the process of growth as impact of the flow of people and goods that flow at the development axes or corridor. Therefore, there is still a chance to explain the development of urban growth which comes from the transport-stop node along DA or corridor.

Among the various theories and models of urban development, we can conclude that there is no theory of urban growth that have been able to provide adequate explanations about the growth process of transport-stop node along the DA tobe a larger settlement nodes (cities), until the condition that have been able to be explained by "Cumulative causation model" or before the transport-stop node along DA has a large industries or export-oriented companies.

Incompleteness of explanation of the DA theory as well as the insufficient description of the theories of urban growth in explaining the development of transport-stop node, it is important to do research and completion of DA theory with meso and micro perspectives (meso and micro theoretical explanation). The prinsipal of the cumulative causation model and reciprocal theory of Landuse-Transport system,can be used to be the frame of thinking in building the theoretical explanation to the growth of local node along corridor or DA.

4. Research Related to the growth of local node along DA

Theory that links between land use with transportation systems, is the theory of reciprocal 'land use'-'transport system' (LUTS). The theory states that there is reciprocity (reciprocal) between the land use system with the transport system. The the relations between the two systems, has resulted "travel behavior", as well as in site selection decisions of individuals and organizations (Van Acker, 2005). This LUTS theory can be used to build the frame of thinking in explaining the growth of local node along DA. From the theory, we can adopt that the growth of local node along DA, can not be sparated from the interaction between the land use aspect and the transportation system as the other aspect which interactively each other in circular condition. The transportations system can not be sparated from the phenomenon, because the location of local node is along the development axes that driven by the existency of the transportation infrastructure which connect two or more growth pole, and the growth is presumed dominantly influenced by the development axes.

Influence of Land use system on travel behavior has been studied many experts (Crane, 2000; Golledge, 2001; Gordon, 1989; Handy, 2002; Hurst, 1970; Koppelman, 1978; Lovejoy, 2006; Noland, 2004; Marshall, 2001; Schiesel, 2000; Schlich, 2001; Stead and Wegener and Furst, 1999; Van Acker, 2005). But which specializes in studying travel behavior directly related to the development of the transport-stop node on the development axes, has not been found.

5. The Chance in Completing With Meso and Micro Perspectives

DA theory as a theory of regional development and planning is theory at the macro-level. It has not provided enough explanation in meso and micro perspectives, especially in explaining how the transport-stop node along development axes can grow in different way althouth the flow of people and goods along the DA is in the same condition. So it need more explanation at meso and micro perspectives, therefore there are chances in completing the theory with meso and micro perspectives. Besides that concern, the absence of theoretical explanation in city growth theory, make the chance more significant.

Some of perspectives to complete the theoretical explanation of DA theory, are the perspectives which be able to answer few questions: 1) What the pattern of decision making of traveler to decide stop over his trip along DA; 2) What activities of traveler in the transport-stop node; 3) What the factors that support the attractiveness of transport-stop node that influence the traveler to stop the trip at the transport-stop node; 4) What are the factors that influence the development of transport-stop node along the DA; 5) How the pattern or process of growth of transport-stop node from infant node to larger settlement; and 6) How the relationship between the attractiveness of the transport-stop node with the growth ot transport-stop node (node size).

6. Conclusion and Recommendation

It can be said that from the terrain of the urban growth theory (including staging, general process, formation, structure) it can be said that there is inadequate explanation to the growth of local node along Development Axes or corridor from infant node to be larger settlement, before the existency of firm or industries export-oriented. There is the chance to complete the theory of Development Axes as the closest theory to the pehnomenon of growth of local node along development axes. There are two other theorie/models that can be bridging theory in building the explanation of the growth of local node along development axes/corridor. The other theories are: 1) Reciprocal theory of Land Use-Transport System; and 2) The Myrdalian cumulative causation model.

It is recommended to complete DA theory with theoretical explanation in meso and micro level, in order to get best result in implementing of the theory as strategy of the national or regional development that will have great contribution in making of place, around the world.

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Spatial Settlement Changes
in Kampung Karangmalang Yogyakarta Indonesia

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ABSTRACT

Lied in the border area of the Gajah Mada university campus, kampung Karangmalang is part of the "pedukuhan" Karangmalang. In the early 80's this area was only a common village in the outskirt of Yogyakarta city. As the Gajah Mada university and the Yogyakarta State University extended their complex, this area also changed in its physical appearance and economic activity. Considering the rapid change from village into the crowded area in the outskirt of town, this phenomenon is interesting to be investigated. The aim of this research is to understand the spatial changes in the area near the university campus.

The findings of this research suggest that the change of the land use was the initial trigger of the spatial changes in this area. The change of the land use made people realize of its economic benefit. On the other hand, they still hold their traditional value firmly which can be seen trough the existence of the wail.

Keywords: Spatial Changes, Value System.

1.   Introduction

1.1   Background

Located in borderland between Gadjah Mada University and Yogyakarta State University, Kampung Karangmalang in the early 80's was only a common village in the outskirt of Yogyakarta city. As the Gajah Mada University and the Yogyakarta State University extended their complex, this area also changed in its physical appearance and economic activity. Rice field around kampung sold to universities and wasteland inside kampung was built building to board student. Economic facility like food stall, telephone-stall, computer rental, and others start to emerge. It triggered space condensation, land stricture and economic activity changes. The aim of this research is to understand the spatial changes in the area near the university campus.

1.2   Kampung Karangmalang, Yogyakarta
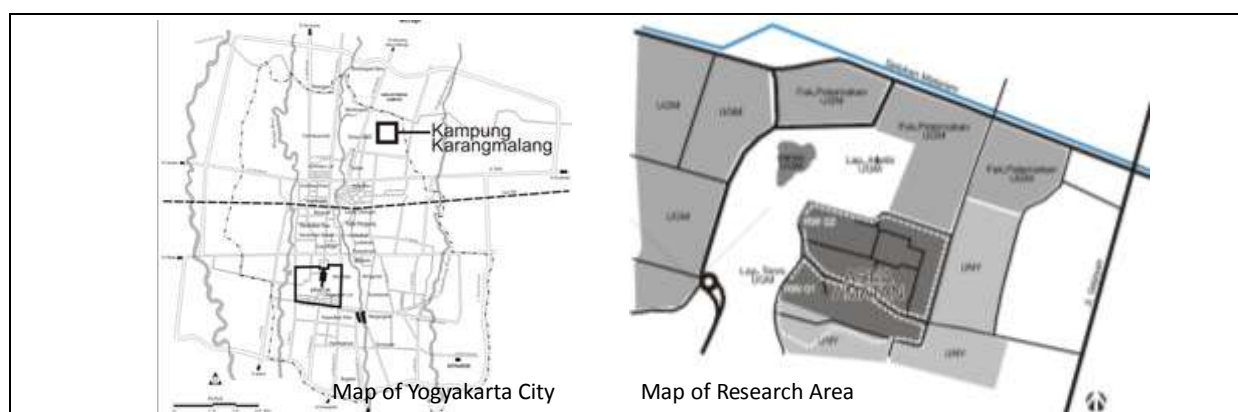
Figure 1: Kampung Karangmalang, Yogyakarta

The research area is in Dusun Karangmalang, Kecamatan Catur Tunggal, Kelurahan Depok, Kabupaten Sleman (Fig.1). This area lied between two oldest and biggest university in Yogyakarta (Gadjah Mada University and Yogyakarta State University). The total wide of research area are 100 ha.

2.   Land inheritance system and spatial settlement changes

2.1   Land Inheritance System

Most of land ownership condition in Kampung Karangmalang today is from old fellow heritage. In inheritance system, each child expected to obtain part matching with its rights. Fair and flatten and also candidness in giving and take part of inheritance element is represent especial element in course of this.

TYPE 1	TYPE 2	TYPE 3
Building and land as separately inheritance element	Only building (house) as inheritance element	The old building being demolish, the new house build by the heir

NOTES :   building and land as inheritance element   land as inheritance element
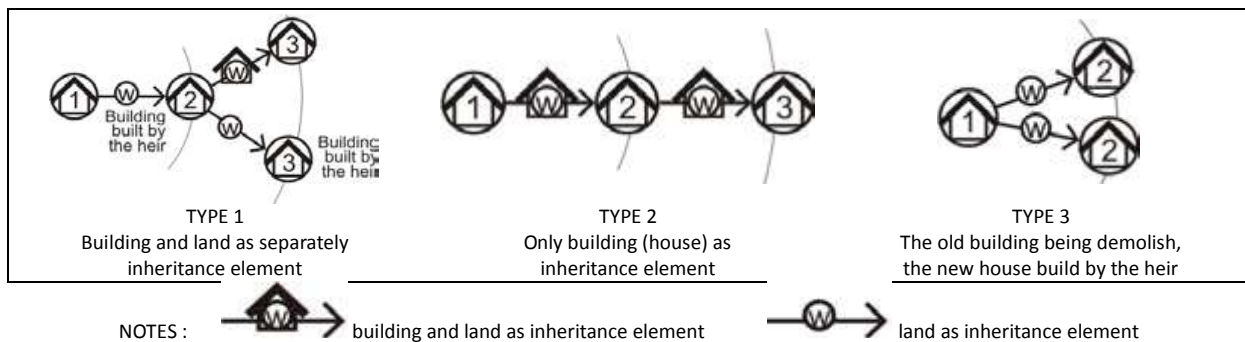
Figure 2: Type of inheritance element

There are several types of inheritance element (Fig.2). First type, land and building as separately inheritance element. Second, building as inheritance element. Third, land as inheritance element. The old building was demolished and the next generation will build new house above the land its property heritage.

There are some type exploiting of heritage land and building for economic activity (Fig. 3). First type, the early building function is residence. There are three building treatment for this type. First, land and building is sold. Second, there's addition of function at building (as economic function). Third, there's change of building's function, from residence become economic function. Second type, the early building function is residence. There are two treatments for this type. First, the function of building is not change. Second, there's an additional function at the building. Third type is the early building use as residence. There are two treatments for this third type. First, building function became economic function. Second, there's changing of building function; as residence and also as economic function. The fourth type, the early building function are residence and economic. After inheritance process, the building function is not change. Usually after inheritance process, the main house has several changes. Whether transformations of building's shape, increase its floor number, and also change its material.

TYPE 1	TYPE 2	TYPE 3	TYPE 4

NOTES :   Inheritance process   ⓣ Building as residence   ⓔ Building as economic function
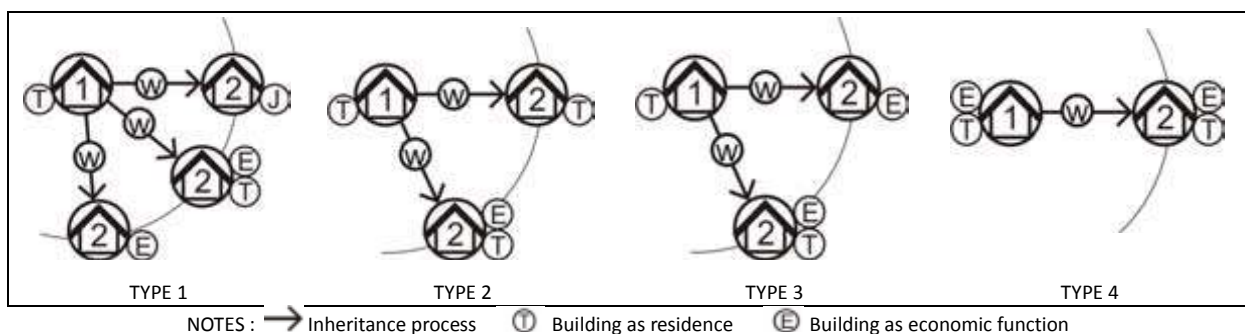
Figure 3: Several types of land and building inheritance usage for economic activity

2.2 Land Ownership

Besides inheritance factor, the change of land ownership is also coloured by land trades. Whether to individual buyer, the land also sold to education institution. The last process was recognized by the people with proses rombakan tanah (process of land trades to the education institution that making radical changes in spatial, economic and social). This process happened around 1970-1980. There are two types of land trades (Fig.4). First, the land that sold to individual buyer usually located inside kampung. Second, land that sold to education institution located outside kampung.

TYPE 1   TYPE 2

NOTES: ▭ Land outside kampung was sold to education institution   ▭ Land inside kampung was sold to individual buyer
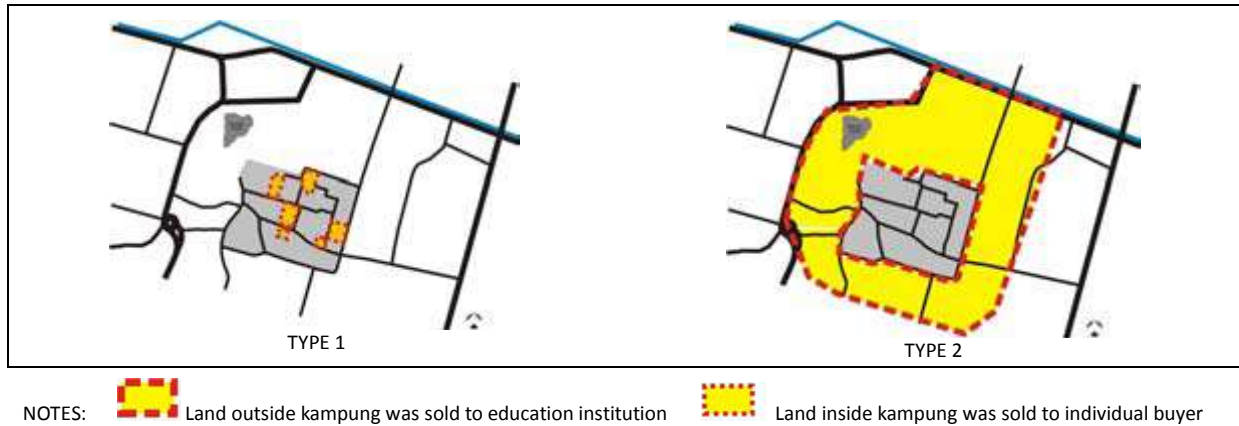
Figure 4: Land trades inside and around kampung

2.3 The System of Wail in the Settlement

There is a usage change of clean water source. Initially resident take clean water from *Belik* Pace (a small spring at Westside kampung. Belik means spring). Later, in kampung emerge some private well. These wells also can be used by a group of resident who live around the well. When land around *Belik* Pace bought by university party (education institution), resident cannot use Belik Pace anymore. Finally, resident start to build their own well. The number of private well inside kampung increase. Today we can find well almost in every house inside kampung.
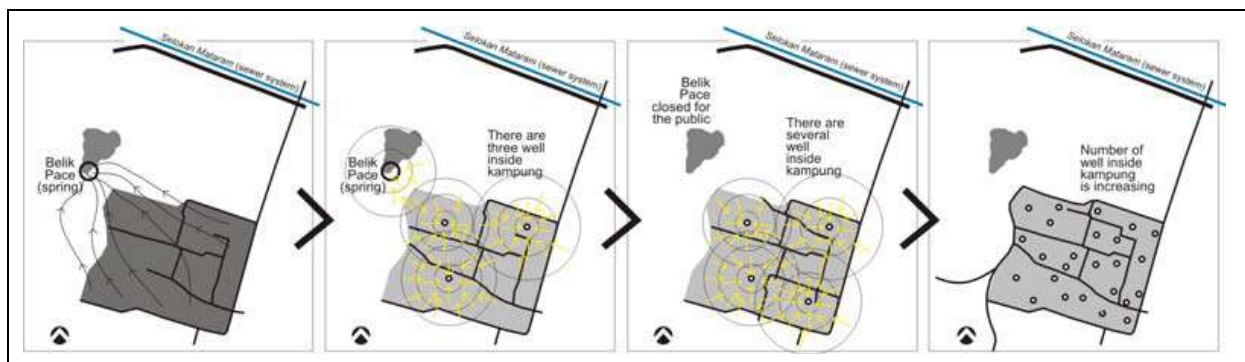
Figure 5: Change of clean water source usage by the kampung resident

2.4 Economic Activity in The Inhabitant Context

At decade 70's, most resident still work as farmer. After the process of *rombakan tanah*, land farm around kampung was sold to education institution. So, people are forced to change their occupation. Today most resident manage kos-kosan (room/house rental; usually its rent for student) in their house. Alongside main road, there are many economic activity, for example : telephone-shop, booth selling notions, booth eat and computer rental. Beside that, they also have work remain to in other

place.

Some events that occur both inside and also around kampung caused of economic activity change in this area. This affect at physical and function change of houses. Some old building was changing its function, from residence to economic function. In some other cases, new economic function was infill in the old building. Some new building was build for economic function purpose.

3. The Socio-Spatial Changes in Settlement

3.1 Spatial change from the effect of displacing the ownership of land

There are three process commutation or displace the real property ownership (land and building) that happened in Kampung of Karangmalang. That are effect of inheritance process, land sales process and process of rombakan tanah (Fig.6). Commutation of land and building inheritance owner can from old fellow to its children (resident), or from resident to others, or also from resident to education institution (university).
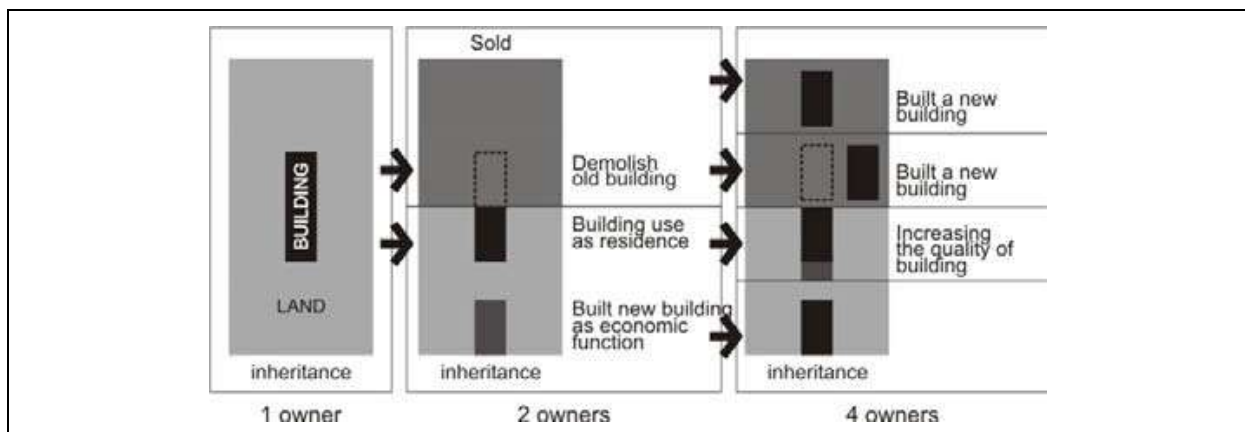
Figure 6 : Change from the effect of displacing the ownership of land

At inheritance process, land and building are the main element that transferred. Similar with heritage process, trades process also transfer real property (land and building). Besides, process of rombakan tanah transfer land in the form of rice field and non irrigated dry field. The process of rombakan tanah effecting of entire activity. People's land becomes stricture. Rice field around kampung also have sold up and build for the campus initiative.

3.2 Spatial change from the effect of economic activity

The process of rombakan tanah have change kampung economic activity in general (Fig.7). When rice field still spread around kampung, people more agrarian. Rombakan tanah caused change function from farmland to education area. These conditions (indirect and also direct affect) alter society economic activity. Process of rombakan tanah make elementary domino effect at kampung economics changes.
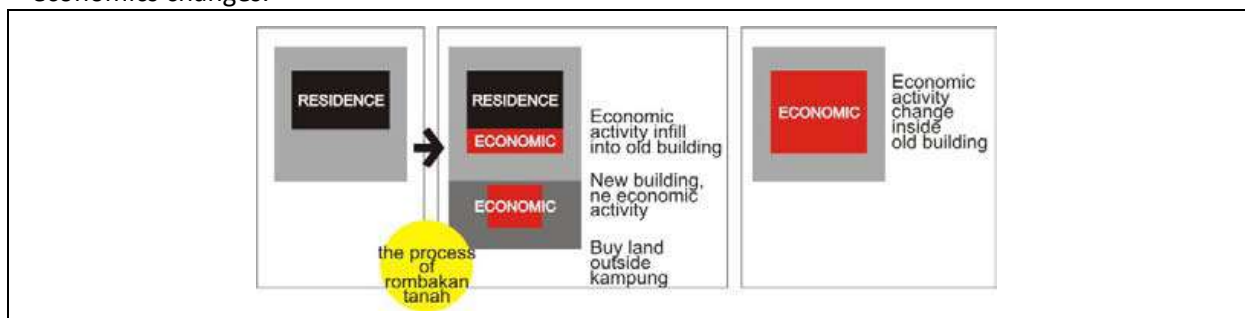
Figure 7 : Spatial changes effect of economic activity changes

The process of *rombakan tanah* change land and structure of building's physical condition. Buying new land (outside kampung), building a new house, and improving or repairing the condition of old house conducted by people with money from land trades (the process of rombakan tanah).

The change of area around kampung become education area was a trigger to manage an economic activity which is supporting education function. Particularly to societies which have not got rice field, other economic activity as source of vital earnings is very importance.

3.3 Spatial change effect from change of situation and usage of well (clean water source)

There are changes from communality become individuality of water source domination in Kampung Karangmalang (Fig.8). This process has an effect on spatial condition. Building which was orienting to certain water source or well, today changes. Today building orientation is not anymore to the source of certain water source or well.

One source used together   Several source used together   One source used private
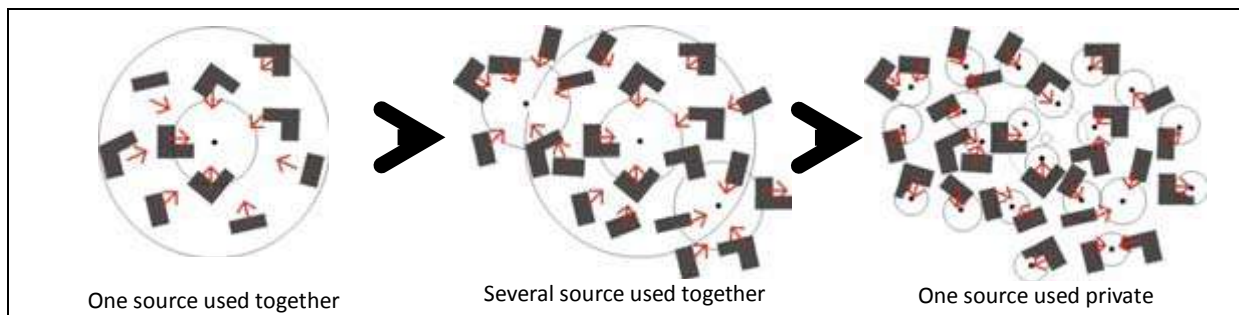
Figure 8 : Change effect from usage of water source inside kampung

4. The Socio-Spatial Changes based on Socio-Economic Power

4.1 The Spatial Changes Process

Spatial change process in Kampung Karangmalang can be divided to three phase, that is : (1) Before process of *rombakan tanah*; (2) At process of *rombakan tanah*; 3) after process of *rombakan tanah*, until now (Fig.9).
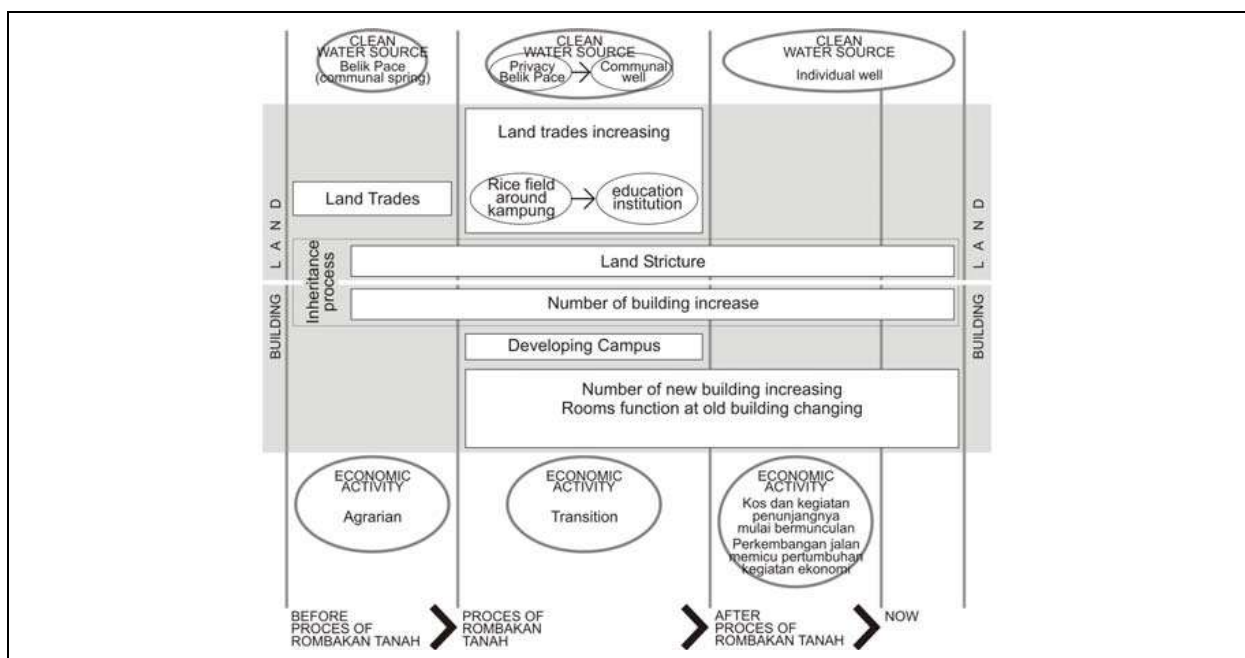
Figure 9 : Spatial Changes Proces in Kampung Karangmalang

First phase, is phase before the process of rombakan tanah. At this phase the strongest characteristic is agriculture activity. Increase of building number and land stricture are more resulted from inheritance process. Activity of land trades start to emerge. That moment Belik Pace is the main clean water source for the people. Well is still very rare in kampung.

At second phase, there's a great change of land function around kampung. Rice field bought by education institution. As a result, agrarian activity stop of the moment. People change over work. They look for possible economic activity that relevant to education function around their settlement. So, people managed room rental activity (room rental) inside their house. Building with education function started to cluster kampung. The money from land trades, use by people to build their house, or to buy land in other place. The inheritance process (land and building) still occur. The kampung resident cannot access Belik Pace, because land around it was bought to the university party. Finally, resident start to build their own private well.

Third phase, education function settled around kampung. Inheritance process (land and building) still emerge. But it is no too influence the kampung's spatial changes. There's raise of new building, or expansion and increasing of room's wide and amount, more influence by the growth of street around kampung. Well as main clean water source have been met in every house. From various effect of change that influencing the spatial change process, there's can be identified two factor; First, the external factors that is process of rombakan tanah and development of campuses around kampung; Second, the internal factors that is inheritance process, land trades, growth and road-works and also the development of well.

4.2   System Value constituting the Spatial Change

The spatial change process in Kampung Karangmalang influenced by eight factors, that is : the process of rombakan tanah, land trades, inheritance process, development of campus, road-works and growth, Belik Pace privatizes and development of well. The factors are based on some value system, that are :

- The way of society approach to problem of land ownership. Today people easier to sell their inheritance land.
- The way of society approach to inheritance system
- The way of society approach to clean water source system. Some people have a direction/guidance in build their house, considering with surrounding environment condition. Change of building's facade direction effected by location of a well, is one of the example.
- The way of society approach about economic activity. The development of new buildings inside kampung with economic function (like room rental and other economic function) represent influence of economic factor. The development of road in front of a house and leaving of usage of bailer, are representing some other example.

5. Conclusion

The spatial change process of in Kampung Karangmalang is initially influenced by the process of rombakan tanah. This caused to change at the way of society approach in seeing their surrounding environment. All land and building have high economic value. On the other hand, some of native still hold traditional cultural values in looking at its environment. This found at their view about clean water source and well.

This change is also influenced by external and internal factors. The external factors are factor that occur outside kampung, i.e.: the process of rombakan tanah, development of new ring road and campus around kampung. Whereas, the internal factors are factors which its occur from inside kampung. There are land trades and inheritance process. The factors are based on some value system, i.e.: the way of society approach to problem of the ownership of land, the way of approach to inheritance system, clean water system, and the way of society approach about economic activity.

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Social Order: The Greatest Value of People's Economic Activity From A Case Study of the Market in Bantul Region, Indonesia

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ABSTRACT

This study investigated the economic activity in the market in the District of Bantul, Indonesia. 'Space' can be viewed as a space (physical shape that can be seen visually) and as a place (a container of human activity which may reflect cultural values of their users), become the background of the study to reveal the cultural and values underlying the creation and development of the space.

This research was conducted with the paradigm of phenomenology, as a descriptive method with strict systematics to explain the phenomenon known by consciousness directly. This can be interpreted as paradigm wich study a life experience.

Variation patterns of activity and physical patterns developed in a comprehensive analysis in the relationship of three aspects, they are physical order, social order, and human activity. Economic mobilization as a specific system of economic activity turned out to have an impact and is dominated by the growth and the development of social systems. This order is realized in the physical order of economic activities in the market. This is one of local wisdoms that succeeded restoring people's lives quickly in the 2006 earthquake disaster in Indonesia.

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Keywords: *human activity, physical order, social order*

1. Introduction

A behavior approach needs symphatic understanding based on the holistic explanning and dialectic relevance among the space, the human, and the user community. With this approach, the space is also seen as a place that covers psychological and physical complexity. A Space consists meaning and value which its user reaction depends on the cultural background and the values of the user. This approach sees the space in the relevance with the community's psychology, culture and norms. Space as a space is physical form that can be seen visually, while space as a place is a kind of human's activities container that may reflect the culture and values of its users (Schulz, 1977). Once created the space will grow and develop along with its inhabitants (Habraken, 1998). These activities then give breath, meaning and value for the space.

The research about the activity system will connect three aspects, which are the physical order, social order and human's activity. In this relation, the human's activity is the subject component that can control the physical and social order around it, eventhough it's incontestable that physical and social order can also influence the human's activities, but basically, human is the component who has the power to control the other components (Lawson, 2001). The existence of the human component in this link represents a comprehension that there are "thoughts" in the research using behavior approach. As an intelligence creature, human has opinion and thought in responding its social and physical environment.

The individual assesment of its environment is the interpretation about a setting of each individual, based on the cultural background, logical reasoning and experience of the individual (Haryadi, 1995). This assesment involves human's five senses (Lawson, 2001). Based on the assesment, human's life space can be devided into three levels (Kuo and Minami, 2008) which are: the direct contact space (the space level that enables direct contact that involves human's five senses), the enviromental affordance level (the space level that can still be reached) and the cognitive

image level (the space level that can be recognized through cognitive imaging). The knowledge background above used in the research about the economic activity in the market in Bantul District, Yogyakarta Special Region.

As a reflection of its users culture and value order, the forming and using of this market describes the human's economic activities influence on the space, and on the contrary, the influence of the space to its users activities. Basically, the market/public economic space can be seen as psychological, social, and cultural reflection of its users (developed from Lawson, 2001). In this case, the utilization of the market can be studied covering its many forms, which are the system of idea, the action and the form of the space it self as human's creation in their life (Koentjaraningrat, 1990). The survival of people's economic sector in Bantul District ought to be studied deeply to uncover the local cultural and value order that is proved able to maintain the continuity of society's life, especially the weak economic group.

2.   Literature Review

The District of Bantul is a district in the province of Yogyakarta Special Region, Indonesia. The district's capital city is Bantul. This district is verged with the town of Yogyakarta, and Sleman District in north, Gunungkidul District in east, Hindia Ocean in east and Kulon Progo District in west.

The District of Bantul consists of 17 subdistricts, which can be devided again into 75 villages and 933 subvillages. The governance center is in Bantul subdistrict, about 11 km south of Yogyakarta. The southern part of the district is karst, which are the west point and Sewu Mountain. On 27th of May, 2006, a major earthquake with 5,9 SR caused a major disaster of this area with at least 3000 casualties of its residents. The worst area due to the earthquake was Pundong and Imogiri

The Bantul District lies between 07° 44' 04" - 08° 00' 27" south altitude and 110° 12' 34" - 110° 31' 08" west longitude. The wide of the area is 508,85 km2 (15,90 % of the Yogyakarta province wide) with the topography 40% lowland and 60% less fertile plateau. In general, the area of the district consits of: a) the west part, a less fertile slope area and also hills that strech out from north to south for about 89,86 km2 (17,73 % of the District), b) the mid part which is the fertile lowland and slope, 210,94 km2 (41,62%), c) the east part, which is aslant, steep and slope area that the condition is better than the west part, 206,05 km2 (40,65%) and d) the south part which actually is part of the mid which is a bit sandy and lagooned, lies acroos the south coast from Srandakan, Sanden and Kretek subdistrct.

The land usage in Bantul District can be devided into: 18.327,15 ha of yard (36,16%), 16.823,84 ha of wet field (33,19%), 7.554,45 ha of dry field (14,90%) and 1.697,80 ha of forest (3,35%). There are six rivers that flow in Bantul District with a full length of 114 km2, Oya river (35,75 km), Opak river (19,00 km), Code river (7,00 km), Winongo river (18,75 km) Bedog river (9,50 km) and Progo river (24,00 km). Among those rivers, three rivers are the major rivers which are Progo river, Opak river and Oya river.
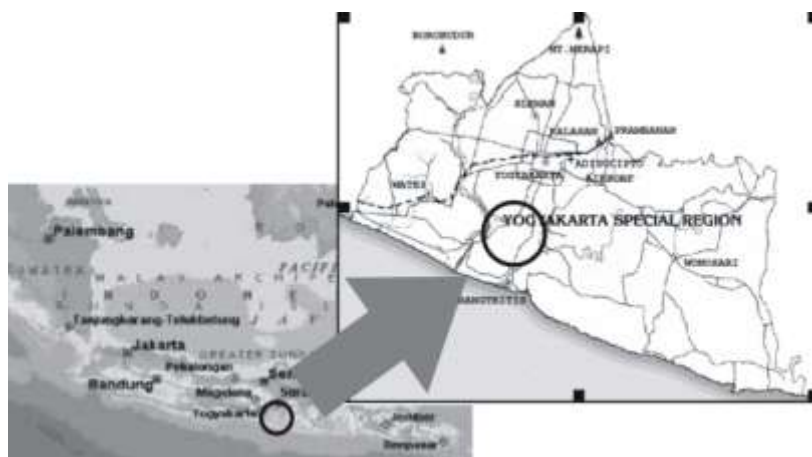
Fig. 1 The location of Bantul District in Java, Indonesia

The number of the population is 789,745 people, consist of 386,777 male (48,97%) and 402,968 female (51,03%). The growth rate average of the people is 0,85 % with the density about 1.558 people/km2

The people of Bantul is the people with Javanese culture background. The goverment administration is managed with populist system. So as the economic system. Within the system, the economic development is stressed on the people's dominant economic sector.

Bantul District, the main economic chain drive is the agriculture sector. Most of the economic transaction are conducted traditionally, with traditional markets as its economic activities container. In this system, the economic order is build based on mutual relationship. The system considers efficiency as a universal principal because it can solve scarcity problem through cooperation.

Most of the economic activities in Bantul District are contained in traditional markets. Developed from Srivani's (1985), market is one of the urban component design which is a public space, which can be accessed by everyone. The activities happen in the market covers main activity which is trading, and support activities that covers all activities that strenghten the market's function and activities. The space and the activities always complete one and another.

According to Tibbalds (1988), the market as a physical form of a space, is the realization of people's interpretation about the space. Matched with Smith (1998), the market's spaces are formed through democratic processes of its users, by the meaning that there is freedom for the people to create and use that space by having compromise among them. It's also matched with Scurton (1984), that every public spaces have 4 characteristics, which are: a) its forming through a process of designing, b) everybody has the right to access that space, c) the interaction among the individual in the space happens freely and sometimes unplanned, and d) the user's behavior on one and another is based on the social norms which are applied in the area. According to these opinions, a public space is formed through a designing process so it brings the people's intervention record on the physical form. Most of the designing process happen naturally along with the user's activities. During its using, the space continually changes due to the user's activities and the intervention of the other spaces.

3.   Methodology

The involvement of culture, reasoning and individual experience on the space assesment gave consequences in this research, which was, a depth interview was needed to reveal the ideas, concepts and the basic thoughts behind the assesment given by the individual to the space. The depth derivation was possible if the research was conducted by uniting the object and the subject of the research. Based on this consideration, this research used phenomenology paradigm as descriptive methods with a firm system (rigorous) to explain about the phenomenon known as direct conciousness (Siregar, 2005). Literally, phenomenology is a philosophy that consider phenomenon as the source of knowledge and truth (Maksum, 2008). According to Husserl, the essence of phenomenology thought always refers to human's life, can be interpreted as the phylosophy of life/the experience of life. On the other word, phenomenology is a study about culture/culture "soul" with a real scientific basis (Welton, Donn, 1999). Phenomenology wants in-depth phenomenon sounding out instead of a common sense reality perception and by reflecting it, takes the meaning before the meaning (Lincourt, Michel, 1999)

The economic activities in the market is seen as a unity of phenomena. These economic activities is also seen as a system, which means it has connection with other activities. The system has three components, which are the subject, the market and the activities. The mentioning of "system" on the economic activities is also to describe the connection of those three components. In this research, the phenomenon was observed derivatively according its environmental context to comprehend its essence. It was addressed to reveal the value order that underlay the forming of market in Bantul nowadays.

First, the research observed the forming and the developing of the space order in the market. This observation connected three orders, which were physical order, social order and activities order of the space users. The physical order observation covered individual space order and also the group space order in the market; the social order observation covered the relation and the order among the

space users that consist of the sellers, the buyers, the market's managers, the goods suppliers and the people around the market; while the activities order observation covered many activities which were conducted by the market user.

Second, the observation about the market as a setting economic activities was done by viewing the economic activities as a system. The using of word "system" was aimed to give description about the connection happened between the economic activities and the other activities in the people's daily life; and the connection happened among those three orders which are connected in it. The field phenomenon observation and derivation was committed intensively to gather maximum information and redraw it to find the essence of the economic activity itself, its connection with the space that become its container, up to its connection with the wider environment. The information derivation was done by asking everything about the phenomenon which appeared to the subject.

4.   Results and Discussions

The space utilization in the market in Bantul District that is recently seen is formed through a consolidation process between the users and the people in general. This is the representation of the people's interpretation to the space. As the representation of people's interpretation to the space, the market describes the people's culture. The market as an economic activities space, basically, is a general space that may contain people's economic activities as an individual or groups. According to Shirvani (1985), the market as a public space can be used by anyone to do economic activities. Yet, the definition of "anyone" is limited by its users compromises which become the rules (general aggrement) of the space utilization.

Among the trading space forms at the market in Bantul District are *los* and *bango*. *Los* is a type of "readily used space", and *bango* is a type of "building" in the market. *Los* is a trading space which is built by the government and the people buy its "using right", which is readily used to contain the trading activites. *Los* is a semi opened in row space, a long space with horizontal boundary (the floor and the roof) that doesn't have the vertical partition. Los is built as a lied alongside space in the market. Its using is devided into some allotments. The *bakul* (sellers) bind their spaces with certain markers, usually their trading utilities such as mats, tables or even their goods. There are some *los* in a market with circulation areas among them.

Bango is a trading space which is built by its users independently. Beside *los*, the government also provides some empty areas in the market which can be built as trading spaces by its users. *Bango* is built as an in row, semi opened space. A *bango* is usually used by some sellers, that's why a bango is built by the sellers jointly. In general, *bango* is built with cheaper materials than *los* is.

Fig. 2 *Los*, a trading space in Pundong market, Bantul District

Fig. 3 *Bango,* a trading space in Pundong market, Bantul District

The trading space physical order develops adequately with its users aspiration, in this case the *bakul* (seller). This order considers several things, the most dominant thing is the easiness to serve the buyer. The definition of "to serve" here, covers the economic service (trading) and the social services that support the economic activities.

In relevance with the easiness to serve the buyer, the trading activies in the market can be grouped in three types, which are a) *lesehan* (sitting on the floor) trading, b) *lungguh* (sitting) trading

and c) *ngadeg* (standing) trading. The *lesehan* trading is a trading activity which the *bakul* (seller) does the trading activity by sitting on the floor with some kind of mat. In this kind of trading, usually the buyer will do the same, sitting on the floor or stooping, when the buyer wants to buy something. It seems that the trading activity is attracted toward the space foundation. The type of this activity is a trading activity that developed in the early era of Javanese economic activity development. This is also the basis of *dasaran* (foundation) for Javanese trading activity space. The *lungguh* (sitting) trading is a trading activity which the *bakul* (seller) does the trading activity by sitting. On this activity, the trading activity equipments have developed that enables the goods to be easily reached by the seller while sitting. Whereas the *ngadeg* (standing) trading is a trading activity that most of the activity done by the seller by standing, supported with appropriate goods order. The last two types need more trading equipments that enable the goods to be easily reached by the seller.

In the economic activities spacing pattern, occurs the concept of "*ruang bakul*" (the seller space) and "*ruang wong tuku*" (the buyer space). *Ruang bakul* is the space which is authorized by the seller. In this space *bakul* put many trading equipments and goods. *Bakul* as the authority of the space, usually place him/herself in the center of the space to facilitate the access for the goods around him/her. The area of *ruang bakul* order adjusts the *bakul's* ability to access his/her goods. On the *lesehan* trading where the *bakul* mobility is limited, the area for *ruang bakul* order is also limited. The *lungguh* (sitting) trading activity has a larger *ruang bakul* area order. Whereas the *ngadeg* (standing) trading activity which has the most *bakul* mobility also has the largest *ruang bakul* area order.

Wong tuku (buyer) space is the space which can be accessed by the buyer. Formally, the *wong tuku* space is supposed to be outside the *bakul* space. However, in the markets in Bantul, this space order is well influenced by the social values that develop within the commmunity. The trading space authorization level by *bakul* forms specific order that can be classified as following:

a. *Longgar* (loose) trading space, a trading space which its space order enables the spacial interaction between the *bakul* and the buyer occurs freely.
b. *Setengah longgar* (semi-loose) trading space, a trading space which its space order enables the spacial interaction between the *bakul* and the buyer occurs with certain limitation, for example certain buyers, or for certain scope.
c. *Sakleg* (limited) trading space, a trading space which its space order doesn't enable the spacial interaction occurs between the *bakul* and the buyer.

The limitation which is built by the *bakul* as the authority of the trading space shows their thought and aspiration.
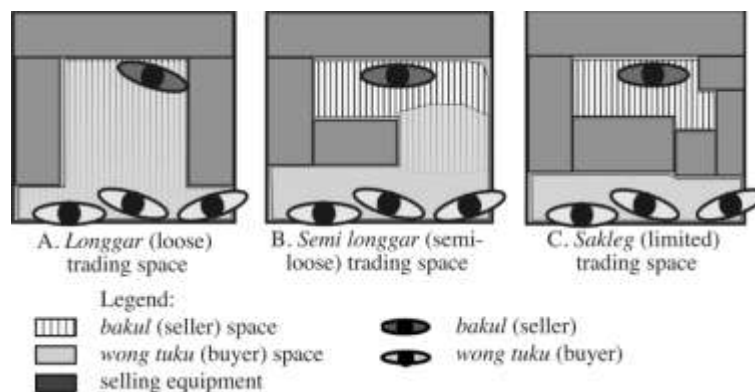
Fig. 4 The typology of trading space in the market based on the economic space authorization.

Space is formed and created through a process, and the process continues during the using of the space (Habraken, 1998). After being created, the space will grow and developed along with the people that become its inhabitants. This activity that then gives breath, meaning and value for the space. The response of the market users go on from time to time as the implementation of their interpretation of the space. The space order that exists nowadays is the phsysical implementation of the thoughts that develop along with the development of the culture and value order that they understand.

In a different way Schulz (1977) explained that the definition of a space may cover the physical

and psychological aspect. The definiton of space physically directs to the definition of space that is well connected with the space physical aspect – space is a physical form that can be seen visually; while the definition of space psychologically directs to the definition of place that is well connected with psychological aspect – space as a human's activities container that can reflect the value order and the culture of the human who uses it.

In relevance with place, space can be described as its user identity. It's matched with Schulz's opinion (1984), that specified character (form and quality of the space) can form an identity, which generally called sense of place. Developed from the statement, the market is not only an economic space container, but it also can be connected with another life sectors comprehensively, including the people's social and culture, that is influenced by the people's life history record. This development that forms the character and identity of its user, which the reflection can be seen in the physical form of the market.

In the market, the space physical order will be connected with the economic activity and also the social and culture activity in it. The user's activity in the space forms the spacial behavior which is manifested in the action/response of the user to the physical environment (Rapoport, 1990). The march of these various activities in the market causes the emerge of various space orders (Fig. 5)

The main activity in trading space is buying and selling activity, that involves *bakul* (seller) and buyer. In this case, the trading space is an economic activity container. The trading space order is equipped with equipment such as a cupboard/wooden box which is used to store the goods, mat to sit *bakul*, and mat for the goods and also another supporting equipment like weights.

There are many supporting activities that can be found in the market in Bantul District, some of them are *arisan* and saving and loan. These activities involves saving and loan/*arisan* manager, *bakul* and also buyers as the followers. Beside as an economic interest, for the market community in Bantul District, these activities are more seen as a social interaction media that can build and nurture the social relationship among the market users.

The spesific atmosphere in the market in Bantul District is the strong social atmosphere occured in the trading space. In the meantime, the trading space also accomodates various social activities that sometimes are more dominant in using the space and time in the trading space. However, based on the space and time intensity used, these activities seem to be the main activity in the trading space. In this social interaction activities, there are also information, culture and knowledge exchange among the subjects of the activities that involves *bakul*, buyer and even their family.

Taking care of the children is also another activity that gives a special atmosphere in the trading space. It's often that the *bakul* intentionally completes their trading space with many kinds equipment for taking care the children such as toys, tablewares and portable bed. It shows that taking care the children activity has shifted into an activity with the same importance as the trading activity itself. This taking care the children activity is also done by some buyers. The development of this activity then extends into inter-family/institution interaction.

The relation among market users has a very good quality. It is shown by the closeness and intimacy built among them, even when they had just known one and another. Based on the field derivation, this response and behavior is based by the willing to build brotherhood based from the thought that brotherhood will lengthen age.
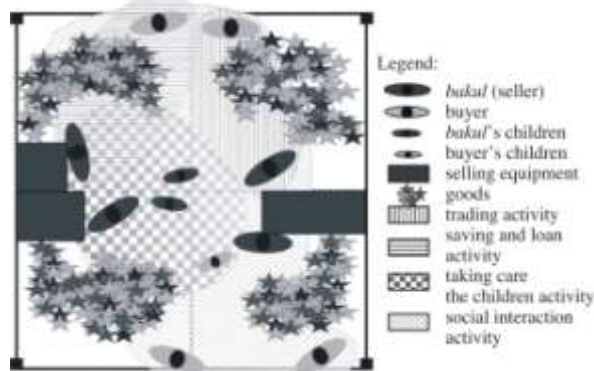
Fig. 5 Various activities in the trading space in the market in Bantul

Beside those comunal activities, individual activities are also occured in the trading space, such as resting and praying activity. In the context of market as an economic space, the research conducted in Bantul District market showed different things. The space in the market beside became the cointainer of economic activity (trading), it also showed the relevance with another activity cycles of its user, such as:

a. trading activity
b. saving and loan activity
c. taking care the children activity
d. institution interaction activity
e. social interaction activity

f. exchange information activity
g. culture exchange activity
h. knowledge exchange activity
i. praying activity and
j. resting activity

The complexity of the activities occurred in the market in Bantul District build a specific athmosphere that may give character for the space. The complexity of economic, social and cultural contents in the market is the realization of the representation of Bantul District people. The behavior order of the space user within this physical environment forms the spacing pattern as following:

a. the praying activity space order
b. the resting activity space order
c. the taking care of children space order
d. the trading activity space order
e. the saving and loan activity space order

f. the institutional interaction activity space order
g. the social interaction activity space order
h. the information exchange activity space order
i. the knowledge exchange activity space order and
j. the cultural exchange activity space order

Fig. 6 The simulation of the various activities in the trading space in the market in Bantul

Those space orders above are overlapped one and another in the same space, which is the trading space. Some of the space orders can be happened at the same time, and they can also be happened at a different time. Those various space orders developments create market's physical order that reflects the culture of its users. The social activities domination in the trading space shows that social value dominates the people of Bantul District activity in general.

The strengh of the social value is implemented by the community on the strengh of people's motivation to always interact on each other. Not only seen in the complexity of the activities in the trading space, but it is also formed in the space order physically.
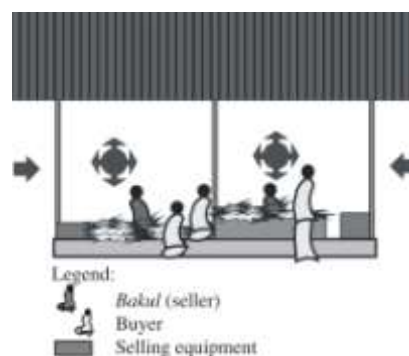
Fig. 7 The economic space without vertical partition, able to facilited communication and visual interaction among its users.

The trading space in the market develops as a semi-opened in-rows economic space, without vertical partition between one space and another. The order enables various interaction and communication between one space user and another. A good communication either visually or even individually can be done freely between one trading space and another, and also between the user in the trading space with the people outside the trading space.

Beside communication and visual interaction, the trading space order in which without partition is also grows due to the demand of physical closeness between one user and another, either inter-sellers, sellers and buyer, even inter-seller family, and the seller family and the buyer. The close relation among the space users develop due to the understanding of "family" for the pople in the market. The people in the market that may covers sellers, buyers, manager, goods suppliers and their family is a big family of the market. This understanding develops due to the perception among the people in the market that their close relatives are the people around them. This "family" relationship is not only limited on the cognation of each family member, but its more to the feeling that they are dependent, emphaty, taking care of one and another.
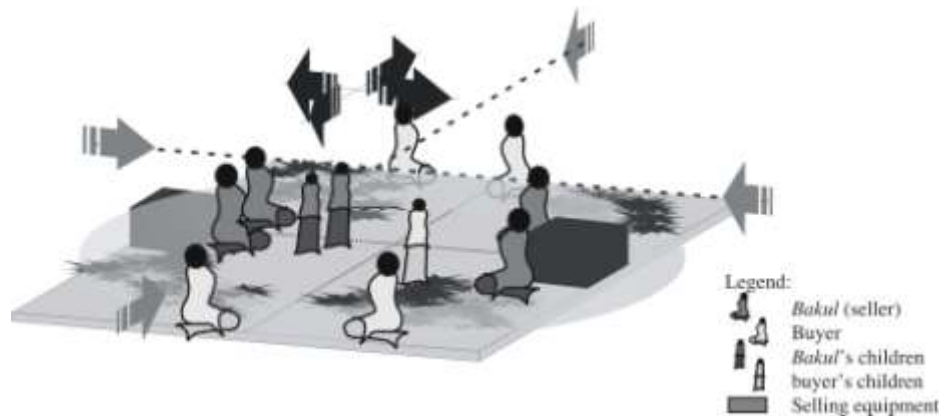
Fig. 8 The strength of the social value controls the trading space order in the market in Bantul

In the market in Bantul District, the social value dominates the utilization of the trading space. The seller acceptance for another user in his/her selling zone shows that the seller's control on his/her selling zone is very loose, it is realized by allowing another user to access his/her selling zone. The social relationship closeness among the market users create a certain perception for the market space. For seller, the market space is a social space where the social order gives a big control on the space.

The various activities occured among various users in the market can be simplified based on the kind of activities' group. Many kinds of activities are done in the market in Bantul District either done for economic interest, social interest or even personal interest.

As a public space, the overlapping of these various activities is reasonable considering the high space accessibility that enables the activities complexity in the space. The human that becomes the space user is full of socio cultural background that forms the activity character inside the space.

5.   Conclusion

According the configuration of activities that occurs in the market in Bantul District, market as a public space is more dominated by social activities. This is the evidence that in its development process the social values within the people of Bantul culture are implemented in the social order as motivation to develop and nurture the social interaction among the community member to create the harmony. It influences the other activities order wthin the community, including the order form in the economic activity in the market.

The complexity of activities that occurs in the market covers trading activity as the primary activity, organizing administration activity as the secondary activity, and socio economic activity (the activity which has economic objective but full of social contents like *arisan*, saving and loan and another economic activity) which develops after the primary economic activity. Yet, in the process, the activities with social contents dominate and build the specific character of the people's life in the market in Bantul District.

Various kinds of socio economics activity which are done in the market emerges various kinds of social interaction that then build a specific atmosphere of people's economic activity in Bantul District. This condition becomes one of the identities of people's economic activity in the market in Bantul District, that social aspect dominates the utilization of the economic space. On the other words, the social characteristic in the people's economic activity is very dominant, so that the people's economic activity can also be mentioned as a socio economic activity.

Legend:
a   The praying activity space order
b   The resting activity space order
c   The taking care of children space order
d   The trading activity space order
e   The saving and loan activity space order

f   The institutional interaction activity space order
g   The social interaction activity space order
h   The information exchange activity space order
i   The knowledge exchange activity space order
j   The cultural exchange activity space order

Fig. 9 Various interaction among the people's economic space users (without considering the intensity and activities scale comparison)

The developing of socio economic activity in the people's economic activity has a major role in the developing of the socio cultural of the people in Bantul District. Market as the place where so many community member meet one and another has various role in developing socio cultural of the people in Bantul which are: role by the mean for information exchange, role by the mean for knowledge exchange and role as cultural exchange among the group in the community.
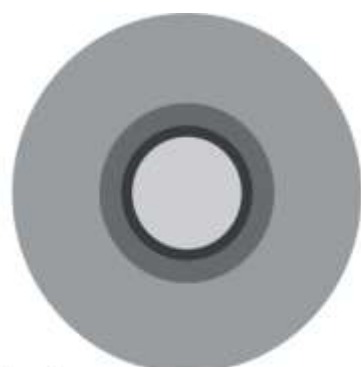
Legend:
- Trading activity
- Management activity
- Socio economic activity (saving and loan)
- Socio economic activity

Fig. 10 The domination of activity in the market in Bantul District.
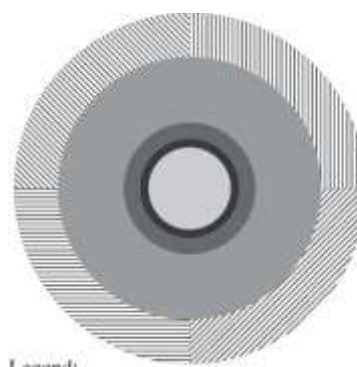
Legend:
- Trading activity
- Management activity
- Socio economic activity (saving and loan)
- Socio economic activity
- Attending feast activity
- Attending funeral activity
- Attending islamic preaching activity
- Family interaction activity

Fig. 11 The emerging activities that develop in the people's economic space.
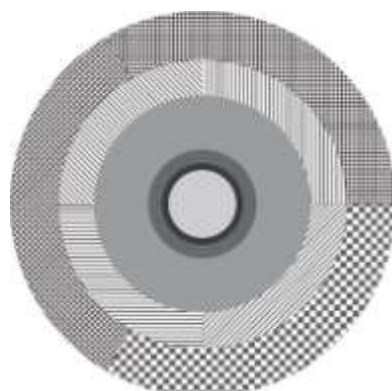
Legend:
- Trading activity
- Management activity
- Socio economic activity (saving and loan)
- Socio economic activity
- Attending feast activity
- Attending funeral activity
- Attending islamic preaching activity
- Family interaction activity
- Role by the mean of information exchange
- Role by the mean of knowledge exchange
- Role as cultural exchange among the group of the community

Fig. 12 The role of the people's economic space to the socio cultural development of the community

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Theoretical Study: Position Of The Communal Land In The Land Market

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ABSTRACT

The shift in the nature of planning from orthogonal design planning (physical planning) to modern and postmodern planning is characterized by a shift in the application of rationality in planning, i.e. from instrumental rationality to communicative rationality. This shift is flowing from authoritative knowledge to the involvement of various stakeholders in planning. In a postmodern planning, planning process starts from community level and those who have interests in planning. This nature of multi-party and multi-interest in the planning process is implemented in a spatial form which is physically accumulated on land.

Meanwhile, the meaning of a land components for human life is always changing in line with the changes in social aspirations, economic perspectives, politics, and technology. Those characteristics make land has different values. In a condition where land is available in limited quantities, land supply and demand will result in land market mechanism.

The issue of land is coupled with the fact that there is no single system of land ownership. In addition to the liberal perspective view of land as individual property ownership, there is also another perspective on land ownership, i.e. communal/traditional ownership system. Therefore, this paper will discuss land in the discourse of planning theory, the concept of land market and the position of "traditional ownership" in procedural planning.

Keywords: planning process, land market, communal land

## 1.	Introduction

The topic of this research is on the existence of communal land in land market. The idea of this research is originated from the fact that urban areas in developing countries have grown rapidly which, as a consequence, require land. The characteristic of developing countries is indicated by rapid development of urban area (Firman, 1997). The development is indicated by internal restructuring in social-economic and physical aspects. The prominent characteristic in this process is the concentration of service activities in the core city, whereas manufacturing and property activities have shifted to the fringe areas (Firman, 1995). Physically, the restructuring is marked by land use change, both in the core city and the fringe area. Business and service activities dominate the city center. On the other hand, land use conversion from mainly agriculture to non agriculture land use is taking place in the fringe area. The development in the fringe area is strongly influenced by investment, especially manufacturing and large scale housing activities (Winarso and Kombaitan, 1995; Henderson, Kuncoro and Nasution, 1996). In Indonesia, many fringe areas with rural characteristics and dominated by land with communal ownership system can be found. This has become an interesting topic if it is associated with the topic mentioned above.

The assessment on communal land has been a center of attention in many researches. Studies that have been conducted are generally based on empirical assessment in various places in the world, such as Babiker, 2008; Bakker, 2008; IDA, 2007; Muñoz-Piña, 2003; Kariuki, 2003; Dowall, 1991; Callander and Fraser, 1987; Bateman, 1989. Those studies focused on regulations/policies on communal land and privatization of land resources. The cases that are raised in the studies spread to Europe, Africa, Latin America, and Melanesia islands. The studies generally start from communal land cases from colonialism and religious mission. The perspectives used in these studies tend to be based on neoclassical/capitalist thinking.

Theoretically, there are view differences between the Marxists and the Capitalists over land that causes a debate. The debate originates from the rationality used by both, i.e. market rationality by the capitalists and social rationality by the Marxists. These differences in rationality also underlie the debate in looking at land. If the capitalists perceive land as a factor of production that encourages its ownership as an individual property asset, the Marxists perceive land as natural resource which has social value.

These two views reunited in the problem of land market as a response to the need of urban development. In the context of comprehensive development, a question emerges as to the role of land market, i.e. whether land market is on the side of minorities in reducing poverty or on the contrary. The core of the problem refers to the rationalities of the Capitalists and Marxists over land i.e. land price vs. land value.

Traditional notion about land that applies in general is that ownership system, right of use and transfer of land ownership, refers to positive law theory. The view which is called neoclassic (capitalism) totally encourages privatization in property ownership. The perspective used here is market mechanism that emphasizes supply and demand aspects and the price it produces in the ownership transaction (Mattingly, 1993).

Referring to the ownership system, philosophically, there is a fundamental difference in view between liberal classic, socialism, neo liberal and communism. The liberal classic view (objectivist) which was pioneered by John Locke, Frederic Bastiat, and Ayn Rand with three things underlying its ideology base (life, liberty, and property) is supportive to property rights and individual freedom. The tradition in this view states that each individual has their own lives so that they have to own the products of life and have the right to trade it freely with other parties.

Meanwhile, socialism criticizes liberal classic by emphasizing more on the benefit of ownership for the general public (public interest) (Bryant, 1972). This socialism views that the cost for maintaining private ownership on a property is higher than the benefit obtained where the holder of the property right are more encouraged to produce private wealth over their ownership which might not suitable with the benefit for other people or public in general.

Furthermore, neo liberal or also called socialism libertarian has another way of looking at property ownership. This view accepts private ownership but with limited period which depends upon its continuity in utilizing the property; whereas communism is more supportive to collective ownership of the means of production through politics or state to minimize injustice/inequality of public welfare in general.

The differences in the view of capitalist/neoclassical (that encourages private ownership) and socialist (that encourages communal ownership) on land and associated with urban land market mechanism, caused the need on a research on the position of communal land in land market as a consequence of urban development to the fringe area. In this context, this research aims at exploring the factors that make the "modern" approach on land market accepted and agreed upon by the communal community with traditional view based on various empirical events at the communal land.

This research will complete the assessments on land with communal ownership system which has not associated social aspect in communal community with land market mechanism. In addition, this research will contribute emphirical explanation on the view supporting the function of land as a social-vaued property.

This paper puts the research into the domain of planning theory. In the context of procedural planning theory, this research belongs to the ideological pole of planning politics, i.e. "Planning for Social Transformation" (Friedmann, 1987). In planning for social transformation, the process of social change can be completely controlled by the state and it is bottom-up or decentralized. Planner plays bigger role as facilitator and mediator. Planning in this situation is more based on communicative rationality (originated from post-modern paradigm) by acknowledging that knowledge is formed socially so that it emphasizes more on subjective interpretation of the society in the planning area. Since this subjective interpretation will be varied, so that planning cannot be separated from political process.

2.   Literature Review

2.1   Theoretical Base
2.1.1   Economic Planning: Market Rationality and Social Rationality

Healey (1997) in outlining the tradition of economic planning, describes that the development of economic planning is basically moving between pro market continuum (market rationality) and pro planning intervention (pro planning). The application of the two type of rationalities has shown a failure, where the excessive use of market rationality has resulted in market failure. On the other hand, the use of social rationality in an extreme way in the form of centralized planning such as Ex-Soviet Union model, is proven to fail in actualizing common welfare.

This reality proves that the two types of rationality can not be applied extremely, where Friedmann (1987) concluded that state has to keep the foundation of living together, at the same time encouraging capital interest through market mechanism. The debate on whether planning as mentioned above is needed or not indicated that planning is needed to safeguard public interests. Related to planning in public sector, Faludi (1973) proposed planning theory as a procedure of thinking and action by applying scientific method to formulating a policy. Brooks (2002) stated that planning is definitely needed, but the problem is how planning is conducted in a capitalistic community.

2.1.2   Paradigm Shift: From Modern Planning to Communicative Planning

Through the definition of planning by Friedmann (1987), where planning is perceived as a link between 'technical knowledge' and 'action in public domain', two factors can be indicated as the guideline in describing planning. The first factor: technical knowledge, where technical knowledge in the form of systematic knowledge owned by planners should be able to provide guideline on how to act to actualize a better condition. This, certainly requires not only the capability of describing and explaining knowledge, but also requires 'suitability' of knowledge with real condition, in order to make it a strong prescription. This clearly shows that discussion on the range of planning cannot be separated scientific epistemology, i.e. the way to obtain scientific knowledge (systematic knowledge). Different methodology reflected the use of different rationality, then will give a different point of view on how the planning process should be conducted. Second factor: public domain, where the discussion can not be separated from the discussion of politics, particularly the process of governance, i.e. a process where community develop ways to manage common life (Healey, 1997). With the confirmation that planning is in public domain, the range of planning will also follow the government system as a context where the planning process is taking place.

a.   The Application of Instrumental Rationality
The enlightenment process during the Enlightenment period in Europe was a momentum of change in planning from orthogonal design to modern planning. The enlightenment process was characterized by the separation of the use of absolute science from the authority such as religious leader or noblemen, to the use of knowledge originated from the human logical capability, which is perceived to be more objective and rational. In addition, Friedman (1987) and Sandercock (1998) also argued that the birth of modern planning is because in the middle of 19th century, the culture of Western Europe started to make a drastic change toward planning in the past. This was called the period of enlightenment for planning, although orthogonal design planning was still conducted by architects. The main characteristic of this modern planning is a planning which in practice is a socio-political process involving many actors such as politician, economist, geographers, and social worker; whereas orthogonal design is only a small part of planning practice.

The first large wave of change in planning taking place after the Second World War was during the 1960s. Taylor (1998) stated that this change is a shift from morphological conception of space to sociological conception of space. The shift caused a shift in planning focus, from merely physical design to evaluation of social life and economic activities. During this era an awareness emerged that planning is impossible to be conducted just by looking at physical design only, by has to be related to a system of an activity which is interconnected one to another which include social life and economic activities (as content) and physical aspect (as container). The second wave of change of

planning took place in the 1970s with the emergence of the criticism to the contentless and implementability of planning. Planning theory that has been accepted by the community as a process combining rationality and system approach was criticized as only providing the enlargement of definition of planning without explaining the practice and the impact of the planning itself. The second criticism over the implementability of planning, asking the understanding on the emphirical fact of planning. The second wave (the second thought) is the application of instrumental ratrionality to the application of communicative rasionality.

Along with the development of the enlightenment process, rationality which was relied on during the 1960s was rooted in modern paradigm which prioritizes objectivity in obtaining science and should be value free. Healey (1997) argued that there are two main sources of planning in an era which he called a modernist instrumental rationalism, i.e. scientific knowledge and instrumental rationalism. Scientific knowledge provides an objective basis to identifying problems and predicting the probability in the future. On the other hand, instrumental rationalism focuses its attention in an effort to connecting the objective that will be achieved with a systematic and logical way. These two sources, both scientific knowledge and instrumental rationalism can only be possessed by those with expertise/capabilities for that, i.e. the expert. Therefore, planning in this era emphasizes more on planning conducted by the state as the main actor. The planning model with modern epistemology, by Sandercock (1998) is called Heroic Model , where this planning model was developed with five pillars, i.e.: Rationality, Comprehensiveness, Scientific method, Faith in the future as guided by the state, Faith in the capability of the planners to understand what best for the public

Based on this thinking, Allmendinger (2002) also called modern planning as positivist planning, with the reasons of approaches that are used, i.e. system and rational.

Therefore, it can be said that the scope of planning has widen, covering all aspect of society's life which are perceived as a system. In the end it is clear that the shift of planning from only a design of physical environmental into modern planning, has placed social and economic aspects as important factors in planning.

b.   The Application of Communicative Rationality

Modern planning has caused critical condition in the society, as stated by Friedmann in Sandercock (1997). He argued that in the post industrialized society (particularly in America) there have been two crisis, i.e. crisis of value and crisis of 'knowing process." The crisis of value started from the collapse of absolutism under modernization paradigm; whereas crisis at the knowing process (a crisis of knowing) is reflected by the emergence of conflict between the knowledge of the experts and personal knowledge obtained from experiences. As the result of the polarization toward these two poles, the differences between planning knowledge from theoretical side and knowledge existed in the society originated from experience are widening. This is in line with criticism by Brooks (2002) toward the weakness of RCP, that the assumption used by planners (experts) about anything best for the society, apparently very different with the perception of the society itself. The gap between knowledge of the planners and the society as the client of the planning, proves that there a lot of ways, point of views, value and interest coloring planning process, and sometimes the difference can not be reconciled.

Another critic toward this modern planning is also stated by Healey (1997) about materialistic view in modern planning which has opened up the mask on how the government power has dominated society's life and thinking. Modern planning is also considered as ignoring moral, emotion, cultural differences and aesthetical issues of public life. Furthermore, Healy called modernity as a thinking with models that are maximizing individual benefit, is narrow minded, stiff, and very hierarchical.

Critics toward modernity in the end shifted the understanding of modern planning to a new thinking which is called postmodern planning. Healey (1997) argued that the shift of modern planning to postmodern planning can not be separated from the contribution of some thinkers such Gidden and Habermas who emphasized institutional activity in the power structure to focusing on the process of collective dialogue and the effort to confronting the deviation of dialogue which is dominated by power. In the postmodern era, Hemmens in Brooks (2002) concluded that there is no best way to act. The crisis in planning is in line with the wave of intellectual change as mentioned by

Hudson as breakdown paradigm (Allmendinger, 2002).

c.   The Shift of Application Rationality

Healey (1997) stated that the shift from the application of instrumental rationality (in modernization paradigm) to communicative rationality (in postmodern paradigm), is a communicative turn in planning. Planning caused by this shift is called by various names such as: argumentative, communicative, collaborative, consensus, or interpretative planning.

The changes of modern paradigm toward postmodern has had a tremendous impact on the thinking and practice of planning. Sandercock (1998), using heroic planning model, witnessed changes in planning which included:

1. A shift from instrumental rationality to communicative rationality.
2. Planning is no longer perceived exclusively as consent toward integrative, comprehensive and coordinated action, but tends toward negotiation, politics, and focused planning.
3. Planning is no longer dominated by engineering mindset, rooted in positivist science filled with quantitative modeling and analysis, but it has acknowledged other knowledge suitable with planning, such as hermeneutic, action research, and feminist
4. Planning is no longer completely directed by the state, but community based planning practice has begun to grow where planners act as enabler and facilitator.
5. Planning is no longer perceived as in operational for public interests as formulated by planners, but planning is for multiple public or heterogeneous public. Therefore, planning models that are developing in post modern era are planning models emphasizing the need for dialogue process (communication), participation, collaboration and consensus building.

Friedman in Sandercock (1998) emphasized the need of mutual learning process to bridge theoretical knowledge of the planners with practical knowledge of the society through planning model, which he called transactive planning. Using the perspective of the theory of communicative action from Habermas, some theoreticians emphasized the importance of interactive process through communication, emphasizing the need to understand the uniqueness of a planning location, and the need of a more qualitative approach. Planning models appeared from this perspective are Colaborative Planning from Healey (1987), Consensus Planning from Innes (1995), and Planning as Shaping Attention from Forester (1989).

This development of this planning illustrated that the role of social aspect has become more important in planning. In the era of modernization paradigm, social aspect is perceived as a unit of system consisting of social, economic, and physical aspects. If in this era social life was perceived by principles that applied in general, that can be valid in all location (originated from rationality which applying scientific method as the only valid source of knowledge in planning), then in the post modern era, the life of the society can no longer be viewed as homogeneous. In the postmodern era, the life of the society is tied to the context of where they are conducting social interaction; therefore planners should understand how social interaction takes place in a certain context. Without the understanding on this social interaction, planning will be difficult to succeed. Since the life of the society cannot be perceived as homogeneous, then public understanding cannot be considered as single and represented by planners (who generally works in government), who can decide what is the best for the society.

3.   Results and Discussions

3.1   The Context of Land in Planning Theory Discourse

Naturally every interest in the society has different characteristics and therefore has a high potency of causing a conflict. Each interest group –with different perspective- will try to win each own goal. The same is true with land as spatial physical media which is accommodating human activities with various interests and perspectives. Related to the theme of land in the research, the focus of discussion in this part covers perspective on land, system of traditional land ownership and land scarcity causing market mechanism.

1. Perspective on Land: Planning Model and the Role of Planner.

According to Chapin (1995) there are three big determining factors having general and substantial role in land use, i.e.: First, economic factor which is oriented toward the interest of financial capital development (profit making values); Second, factor to fulfill basic needs and maintain the sustainability of the life of the general public (public interest value); Third, factor of social values which grows in the region where the land is (socially rooted values).

The interconnection among the three interests determines the form and pattern of land utilization in a specific area. Ideally, before the pattern of land use is decided, each interest with all interest and objective differences are at the equilibrium point. (See figure 1).

Source: (Chapin, 1995)
Figure 1: Correlation between Determining Factors in Land Utilization

A perspective which perceives land more on its economic value can be found in liberal classic view (objectivist). In the classical theory, land is considered as one of base production factor in economy, together and interrelated with labor and capital (Greer and Farrell, 1983). The view which is pioneered by John Locke, Frederic Bastiat and Ayn Rand supported property rights and individual freedom, where tradition in this view refers to "labor theory of property" which stated that each individual has their own life so they have to own life products and can trade them freely with other party. In their activities, producers will utilize production factor to achieving maximum profit. In its application, this theoretical perspective views that urban economic is heavily depended on the market of the components (land, labor force, and capital).

Meanwhile, there is another perspective in looking at land, as socialism which criticizes liberal classic by emphasizing more on the benefit of land ownership for general public (public interest) (Bryant, 1972). This socialism argues that the cost to maintaining private ownership over a property is higher than the obtained benefit, where property right holders are more encouraged to produce private wealth over their ownership which might not suitable with the benefit for other person or society in general. On the other hand, neoliberal or socialism libertarian has another way of looking at property ownership. This view accepts private property rights but with limited period depending on its continuity in utilizing the property (Bryant, 1972). Whereas communism is more supportive of collective ownership of means of production through politics or state to minimizing injustice/inequality of the society welfare in general (Adams et al. 1991)

The next very important thing in the correlation between determinant factors of land utilization is how the balance of interest from the three interest groups can be achieved. The previous diagram demonstrates that each group has different need, goal, plan and decision because they are based also on different perspectives. Kaiser, Godschalk, and Chapin (1995) conducted a study related with this and put it in a concept which is known as Theory on Game (Game Theory). This study is oriented at finding the basic format where the determinant factors of land use pattern are conceptualized to be in an environment for together pursuing balance in addition to the fulfillment of the need of land. Furthermore, this theory stated that each interest group is bounded with Games

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Rules in an interdependent environment), where the agreement of each party is needed before individual interest of a group can be realized.

In reality, each group is not in a harmonious relation, each might have conflicting interests with other. In fulfilling the need of land, each group is in a tight competition. One group may obtain benefit from decision and action taken by another group. In this case, the capability to anticipate action by another group to obtaining the opportunity of fulfilling own group's necessities, is very important (Rudel, 1989). Here, the strategic role offered by games rules, in its functions, becomes the judge and also mediator who organize and mediate the competition.

Figure 2 demonstrates the central position of games rules in land use planning mechanism. The role of planner is shown as its own unit although in many cases (in countries in the world) this role is often held also by the government. Even if this role is not represented by the government, planners are usually affiliated and bounded with working contract with the government to participate in planning activities. This can be explained as the role of planner as technocrat (Faludi, 1973).
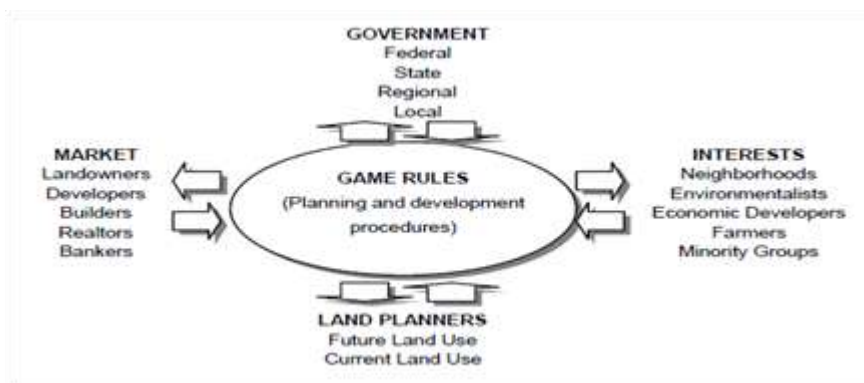
Source: (Kaiser, Godschalk and Chapin, 1995)
Figure 2. Land Use Planning: Stakeholders, Planners, and Games Rules

In this Games Rules, the government has a role as decision maker in formulating regulation (decision maker, regulator). Planner has a role as mediator of a conflict of interest by adopting the relevance of regulation and rules produced by the government. Approach and solution proposed by planners are based on the existing land use at the time the planning was implemented and projected for the possibility of the condition in the future. This process is based on various considerations, such as transportation system, job opportunity, population growth and other factors. It is clear that the planning approach applied is planning for societal guidance (Friedmann, 1987), where the process of social change is controlled and directed by the state, executed centrally, and top down. The role of planner here is as expert, trusted to possess a capability to determine the best solution for problems in the society. Planning implementation in this type is based on instrumental rationality, with an assumption that the best way to overcome problems in the society is through scientific knowledge and objective scientific logic (authoritative knowledge).

Starting from the knowledge on role mechanism in Game Theory, the potency of conflict of interests is actually in the hands of two groups: economic interest (market) and interest in the society (public interests). In many places, this economic interest has a great change to dominate public interest. However, by paying attention to the function played by planner as judge and mediator, this group will have an expertise and professional capability that will strengthen the weak position of the society. Sager (1993) grouped this type of planning into Advocacy Planning under bounded communicative rationality and limited instrumental rationality type.

3.2 The Concept of Land Market in Microeconomic Perspective

Land market can be regarded as a set of activities in which an exchange of value and rights over transferred land are taking place (Mattingly, 1993). In the classical economic perspective, the exchange refers to transaction which is closely related to transaction cost (Furubotn and Richter, 1991).

In the meantime, Filatova (2007) modeled land market as shown in figure 3. The structure of

land market as presented by Filatova started from the result of previous researches on spatial economics. Although it is not as precise as the situation in the field, this scheme tried to model the formation of market price and transaction. Related with the theme of communal land that focuses on the interaction between the outside and the communal society, the discussion of land market in this article will be limited only on the problem of transaction and transaction cost.
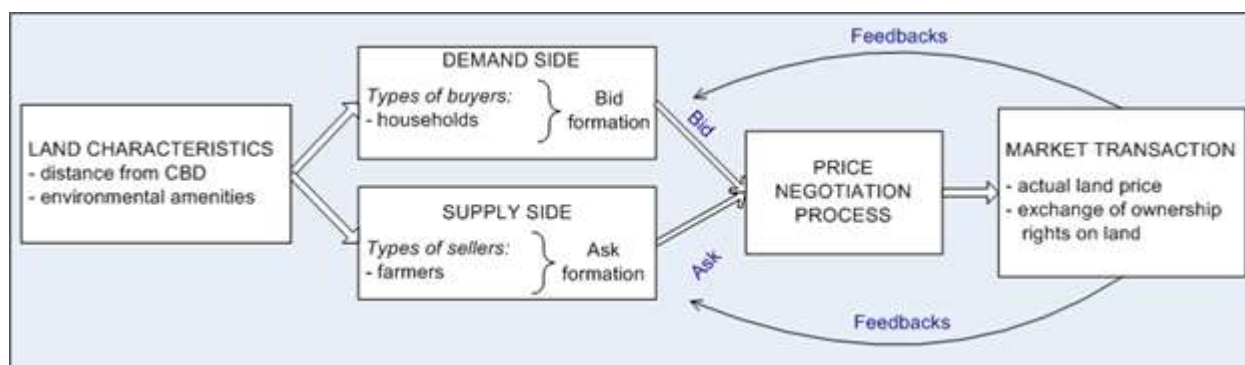
Source: (Filatova, 2007)
Figure 3. The Scheme of Land Market Concept

So far, the neoclassic considered market as moving perfectly without any cost because the buyers (consumers) have perfect information and the seller (producers) are competing each other that produces a low price. However, in the real world the situation is the opposite, where information, competition, contract system, and the process of buying and selling can be very asymmetrical. This causes a transaction cost, which can also be defined as a cost for conducting negotiation process, measuring, and force exchange.

In short, the theory of transaction cost uses transaction as the unit base of analysis, while the neoclassical theory uses product as unit base of analysis. Ronald Coase (1960) explained transaction cost in neoclassical economic theory by demonstrating that inefficiency in neoclassical economic can happen not only as a result of imperfect market structure or the explanation of another standard, but because of the implicit presence of transaction cost. In the case of monopoly, for example, inefficiency is not only the result of the concentrated market structure, but also because the difficulty of the monopolist in deciding the number of buyers and in conducting negotiation among them. In the externality case, inefficiency occurs if the production social cost exceeds the cost of private production (negative externality) so that the company is not capable of providing compensation for the additional cost.

The truth is, defining transaction cost is very complicated. However, as an effort to understand the concept of transaction cost, it is important to recognize the form and structure of an exchange/transaction (Furubotn and Richter, 1991:8). According to Williamson (1996), transaction takes place when goods and services are transferred through separated technology where one stage of activity ends and another stage begin. Furthermore, Furubotn and Richter (2000) defined transaction as a transfer of goods, services, information, knowledge , etc. from a place (community) to another place (community) or transfer of goods from producers to consumers, or transfer of goods from one individual to another. This type of transaction model is known as physical/delivery transaction (economic transaction). Another type of transaction model is an acquisition or transfer of the right of ownership over goods from the owner to other party (transaction from legal aspect). Another form of transaction according to Weber (Hamilton, 1991) is political transaction, i.e. an action that is needed to determine, maintain and/or change social relation. This definition includes the formation and effort to defend institutional framework wherein the economic transaction process might happen.

It is understandable that a transaction as the last unit of an activity should contain three principles, i.e.: conflict, mutual, and order; whereas according to Mburu (2002), transaction cost are: (1) cost of searching and information; (2) cost of negotiation (bargaining) and decision or contract execution; and (3) cost of monitoring, forcing, and compliance. In more detail, the process of negotiation itself can be very long and costly. All the actors of the exchanges should bargain one with

another and each time has to conduct a new process of negotiation periodically. Then, measuring can be very expensive because it has to do with the desire to understand thoroughly about goods and services that are going to be traded. Buyers do not only want to know the price, but also information on the condition of the goods going to be bought. Lack of information about goods can cause additional transaction cost. If in one process of exchange all the deals can be conducted well, the next transaction cost can be reduced. However, if the contrary happened, a mechanism of coercion is needed which will guarantee the process of exchange, which will cause transaction cost.

In the context of land market, the transaction model that is in effect is acquisition or transfer of ownership right of goods from the owner to other party (transaction from legal aspect). The related transaction cost is the cost of negotiation (Mburu, 2002) and political transaction cost, i.e. things related to the supply of organization and public goods associated with political aspect (Furubotn and Richter, 2000). In general, this political transaction cost is none other the cost of offering public goods through collective actions, and can be considered as an analogy of managerial transaction cost.

4. Conclusion

The position of communal land ownership in land market in relation to urban land development, focused on factors causing the acceptance of communal society in the agreement of the transfer of the right of communal land. Therefore, the assessment in this research is based on modern economic perspective in land market theory and theory on traditional normative at communal land. The relationship between the two can be seen on figure 4

Land market as a mechanism in urban land development uses modern economic perspective over land ownership which is assumed as individual ownership. The assumption used in this land market mechanism is based on land demand and supply so that price is the basic reference in this approach (Mattingly, 1993).

The principles in this land market mechanism that embrace neo-classical view are grouped as factors of interests which consist of: benefit, clarity of ownership status, transparency, transaction cost, good registration, and legal aspect based on positive law.

In the mean time, the principles in communal land ownership are based on traditional normative attached to communal society such as: social relationship, the embraced value system, harmony between human and the nature, and common usefulness.

By understanding economic perspective in land market and traditional normative perspective in communal society, certain factors which might be able to bring together the interest of the "outsider" with the principles of communal society over land can be assessed.
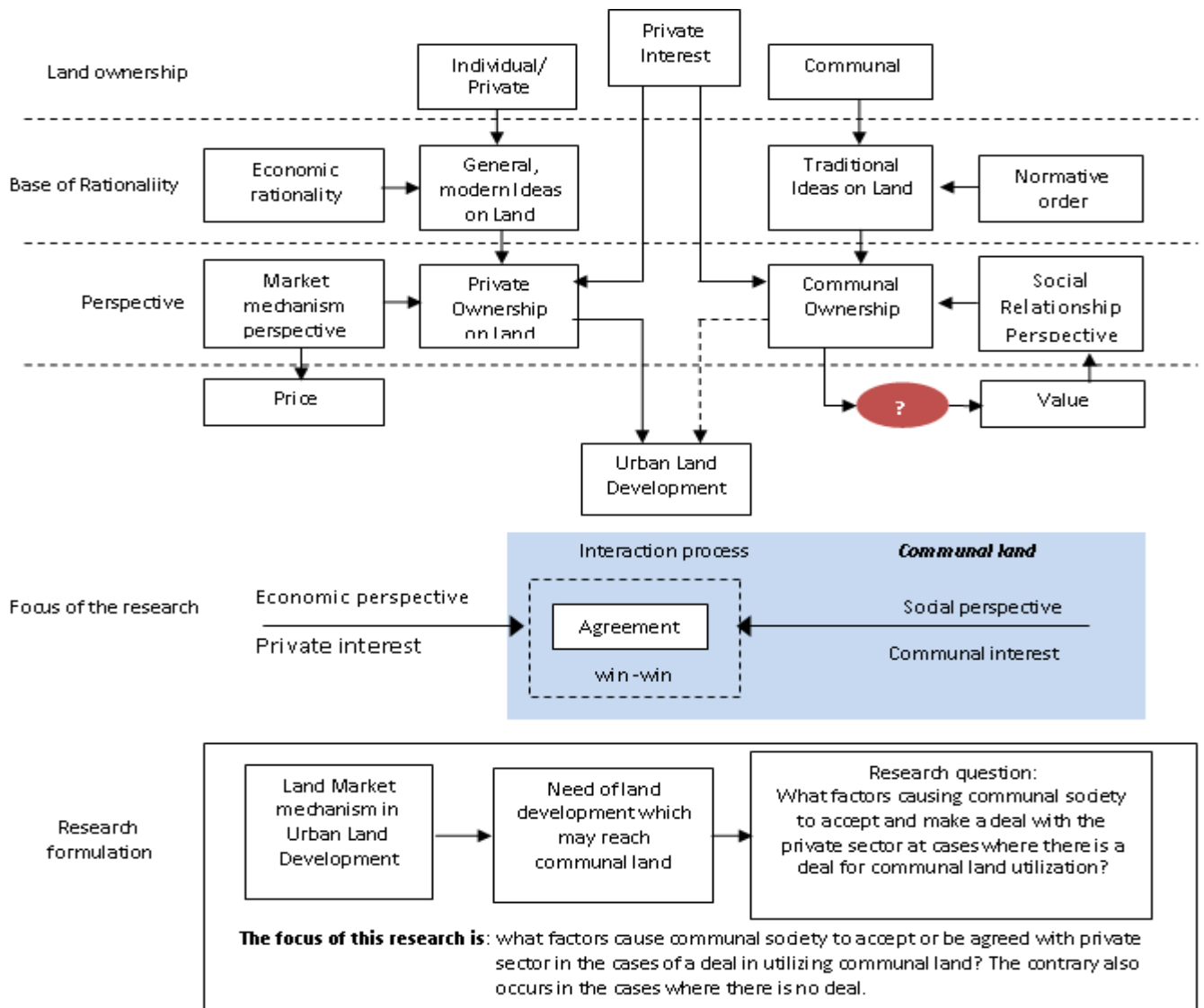
Source: (Author, 2012)
Figure 4. Theoritical Framework

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The Settlement Review of Wisdom
In The Cultural Dimensions of Spatial Planning
Case Study Puyung Village, Lombok, West Nusa Tenggara, Indonesia

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ABSTRACT

One of the essential parts in the spatial planning is related to the order of space which describes also the demand of people lives. The constellation these spaces will be organized in a specific pattern that can be understood in accordance with their respective cultures. Therefore, the Organization of space will also depict or symbolize the notion to be able to read in a certain sense as the structure of space. The spatial planning in traditional community are based on local knowledge about the planning system which consists of a system concept of local wisdom, as well as trust and knowledge of the local culture. A lot of local knowledge or wisdom is a system of spatial planning that has a role in an attempt to keep the continuity of the cultural dimension that is often overlooked by planning.

At this time, the determination of design unit in the city in force in the town planning system in Indonesia is carried out through the administrative approach. Like for example, the area of the village, sub district, and city as well as the determination is carried out based on a functional approach to urban areas, such as the downtown area, the area of the historic area, industry, and others. Village of Puyung, in the city on the island of Lombok, West Nusa Tenggara, is one area that had a local culture that certainly cannot be abandoned for granted especially in every stage of the planning of the town. In this research the local culture will be described in particular the aspect of field, especially in the settlement which would later become an important aspect in the spatial planning dimensions of the areas.

Keywords : Cultural Wisdom, Spatial Planning

1. Introduction

Levi Strauss's concept of structuralism showed that people has a complex social structure based on the dualism form as a binary opposition. This dualistic pattern correlated with kinship system established under the rules of marriage and social stratum. This pattern makes the division of society in the dualism form and grouped in the three levels (triadic system). Settlement in Bororo showed that it has a certain pattern, where in the central for men also for meeting room and to store food that has been cooked, and it is forbidden for women. Around this area is for bush. Furthermore, the center is also used for ceremonial and dance, there is an open space around the centre. Road or path way in the bush is used for connecting between people who has married with their children. Land is property of a women, while homes for men (Levi Strauss 1963: 141-142)

Kinship system and role distribution for each person and also the arrangement of housing's elements show us that spatial pattern and housing for people is based on marriage and kinship systems. Belief has an important role in the settlement formation in accordance with their culture. In Nias for example, people belief system is based on the cosmos as macro and micro cosmos which is represent the upper and the underworld. This pattern suggests the existence of life in the context of the position in the universe, and it can be said that it is referred to micro-cosmic dualistic (Santoso, 2008: 40). In Baduy, settlement pattern indicated the existence of community as inside and outside based on social stratum and beliefs system. The number of people who stay should be constant also how to communicate with the people who come form outside of Baduy's settlement should be limited (Waterson, 1990: 97).

In the context of spatial planning in Indonesia is always associated with the administrative aspects in the level of national, provincial, regency/city, district, and village. In relation to the culture, spatial planning has a different scale, depend on the people custom, belief, and kinship system. The meaning of spatial determinism, especially settlement patterns is indicate that the formation of settlements based on their culture. On the other hand, it can be seen that the existence of a value system affects the formation of spatial pattern and housing in each area. In planning context, the settlement pattern is highly constituent with harmony living as members of society and in the position of the universe.

Sasak people who stay in Puyung Village come from a long history. In general, people can be grouped into nobleman and common people. Nobleman stay in the center of the village, while the common people dispersed around the village form various cluster system consist core or extended family. The influence of beliefs and social stratum is shown by the orientation of houses, and others housing elements, especially *berugaq* for daily meetings and ritual. Kinship system which applied in settlements formation indicate the cultural wisdom in Sasak settlements.

2. Literature Review

2.1 Concept of Settlement

There are many determinants in forming of settlements pattern they are physical aspects, socio-cultural, economic, even political. In traditional society or in rural area socio-cultural aspects has an important role. Rapoport (1977: 276) show that the order of settlement depends was variety depend on rules, norms, and behavior of the local community, which can vary from one place to another. Further Rapoport (1969: 47) states that there are many factors determine the order of settlement pattern, but the socio-cultural factor is more important than others.

Fundamental concepts in relation with social factor in the community is the concept of structuralism developed by Levi Strauss. In particular, Levi Strauss showed that people in Eastrn and Central Brazil has a social structure in dualism form, as a result of dichotomous symmetrical balance between social groups, between the physical and moral aspects of inter-or meta-physical attributes.

The dualism concept is determined such as superior - inferior, old - young, strong - weak and so on which is used to describe the existing situation. These relationships form a hierarchy of forms. In he concept of concentric dualism, inequality shown by the proximity to the point of reference, or proximity to the center. This pattern suggests that there is a link between center and periphery, such as differences between male - female, sacred - profane. At the center for men while for women the periphery. This pattern suggests that the social structure of society embodied in the settlement pattern.

To understand the meaning of settlements, human realize his position in the cosmos system, called micro and macro cosmos, then they stay in harmony living that people feel safe and comfortable in their environment. In this context, people fully aware of the power outside of himself, which are manageable, giving blessings and may disturb their living. So that the concept of harmony living with nature should be well maintained. There are some ways to maintain harmonious living through various symbolism perform in the ritual. Douglas (1973) stated that the system of ritual, as a manifestation of social classification is highly developed in the cross-culturally system. This is not universal value, but rather a mode of symbolic focus (Dovey, 1999: 42).

In particular, ritual is shown as a public event, occur in a sacred places at specific times. Anthropologists are also often linked ritual with preliterate society (Norget, 2000: 80). Contemporary Anthropologists has a point of view that ritual as a kind of formal activities as: structure, repetition, and the stereotype of a sequence of events, and socially show in a certain behavior (Norget, 2000:80). How do we see that the ritual will always be associated with power (power - here seen in the context of coercive authority). Something that comes from outside, which in turn is defined as *sacred* (supernatural), or not. Then we can see that the ritual makes something special about space and place in a specific social experience, and an important part of social life. Ritual has performed routinely from generation to generation. Ritual will be performed as a cultural message, collectively held norm and beliefs as an identity. Through the participant in ritual can be seen in connection with

its representation, ritual has a special objectives for specific purpose in society (Norget, 2000; 82).

How the affect of activity in community and ritual perform in settlement, Hardie explored Tswana society. As an example is the house where one of a society member have died, the house should not be blank out. In fact the family's and his relatives together to sing all night at home to avoid the influence of the evil. Likewise the house and windows should be closed until the bodies are buried. Similarly, when a mother has a baby, she was separated from the main house, and made a small space in front of the main house. Only women who are not menstruation allowed to see her. This because mothers was assumed 'hot' than she must be separated to the baby (Hardie, 1985: 142).

Based on Levi Strauss's binary opposition, Roxana Waterson (1990) describe that there is a certain tipical settlements in Southeast Asia which Levi Strauss's terminology as concentric dualism'. Hierarchically it representation of an expression in political relations, as well as way of life as a public concern (Waterson, 1990: 95). The settlemen in Baduy is highly related to believe, previously they were Hindus then gradually they become Moslem. Until now they still hold the old custom with many taboos and refuse modernity. Their territory is forbidden for stranger or outsiders, and they refuse for: modern farming, reading, using the money, and window glasses.

Balinese are very concerned to the orientation in everyday life. They believe to the opposition between the mountains and the sea or the *kaja* and *kelod*. Gunung Agung is occupied by the gods while the sea for the devil. For people who stay in the South the north is a sacred, but for people who stay in the North, the South which Agung Mountain exist is Sacred and the north for devil.

In contrast to the concept of Levi Strauss-structuralism, Foucault show that there is instability of a social structure as the result of power and knowledge, which are disseminated through discourse. In relation with space, Foucault not only changed the model of stable concept, but also shows the influence of power and knowledge controlling social behavior (Leach, 1997: 283). Furthermore discourse which is constantly produced will always be interpreted in relation with other discourse.

Power will only be applied within the scope of discourse, then discourse constantly changing and transforming in itself. Transformation of discourse and power in itself presupposes the transformation of the truth. The truth is not stable or has been exist, but it stay and exist in history (Kembung, 2O02: 35). Power-knowledge has highly perform in religion. Religion is an institution which product power-knowledge in a certain society such as in Indonesia. It could not be separated from the mechanisms and normative power and disciplinary techniques. Religion set up individuals and communities through the similarity, good behavior, language and ritual. This way would be compliance and fears for followers who do not participate (Haryatmoko, 2O02: 16).

In associated with Architecture Foucault (Leach, 1997: 368) indicate that the architecture has been politicized, especially in the eighteenth century, from buildings to urban scale, then it can even be seen that architecture is part of the discourse and politic. How the concept of discourse of power is applied in the architectural design can be seen in the concept of panoptican, where all prisoners behavior as can be controlled in discontinuous with continuous effect, because the presenting of the guard cannot be seen but it can be felt. Likewise, the various practices prevailing distribution of power in society.

Another case is the formation of the village in Paraguay, in the South America showed village is arranged around the square, in the corner there are church, in which besides of it is school, and cemeteries. The house is placed on linear pattern with across as a symbol of Catholic. Through this Christianity made a remark through space and geography in the South America (Leach 1997:356).

2.2 Method

This research of Sasak's settlement stared from Sasak culture especially in relation with settlement pattern, then developed in the concept of cultural wisdom in dimensions of planning. Based on this type of study, qualitative is applied using ethnographic approach (Groat and Wang (2002). Ethnographic research is used to study cultural aspect in the point of view through of the subject in the field study by studying their behavior, habits and way of life (Muhajir, 2000). Literature review is used to support and enrichment the settlement patterns using : *babat, lontar* , sasak history and some publications. Supporting ethnography, especially to get the meaning of Sasak living,

phenomenology method is used.

Using of ethnography and phenomenology can be described a variety of cultural events in settlements pattern, and meaning of settlement formation in the Puyung village. Enrichment and the description of field's study used interview through the key person, kampong leader (*keliang*), religious leader, informal leaders, and fortune teller or medicine man (*dukun*), ritual leader whom have better knowledge of house, determine of house location and also ritual leader. Interviews using a snow ball system.

3. **General condition and discuss**

3.1 Settlement in Puyung Village

Historically Sasak people in Puyung Village come from the arrival of Raden Puguh, and his house placed in the North East as nobleman's house. Further more there is also a nobleman who come later and the house was placed in the North - West or it is famous called as *Bat Rorong*. At that time the land so wide than the nobleman need some farmer. In a long time, the people stay and it become a new settlement or kampong. Previously the kampong exist in the south then later develop in the north part.

Sasak Marriage's system in Puyung Village is influenced by the kinship system, where there is a tendency to maintain social stratum, so that the people would prefer marry with the same strata, nobleman would get marry with nobleman, and common people also prefer to marry with common people. If there is a marriage between nobleman with common people; the level of nobility would come down. This also occur in the Puyung village so that people would not stay in the north - east but in the south west. While the descendants of the noblemen of Singasari placed in the South East. This pattern suggests that the settlements are generally oriented to the main direction North - East.

Observing of Sasak people in Puyung village shows that the North has a higher place and its situated of Mount Rinjani, so that the North has valuable as a place where the water come from. While the East is interpreted as the beginning of living marked by sunrise. Finally the direction of North - East is the place used by nobleman.

Sasak people in forming the settlement through the family system could be in the small or large scale as a core or extended family as a family compound (*rumpun keluarga*). The settlement element of Sasak people generally consist of: home (*bale)*, a place for ritual, receiving guests and relax (*berugaq*), bathroom and place for ablution (*bong*), kitchen (*paon*), seating from bamboo (*ampik-ampik*), a place to store rice or raw food (*barn*), and the narrow street or corridor. In the Puyung Village, family compound has not always has complete one, some families do not have *berugaq* and barn.

Nobleman families have more tighten rules to develop their settlements, because they hold the family system and seniority position, while the common people are more influenced by the position or seniority in their family. How to provide each house in every cluster or family compound can be different from one another, but generally follow a certain pattern. Every new family compound was started getting wide land to accommodate their relatives in one system. When the people will build a house, the house roof should be faced to the Mount of Rinjani, and its forbidden that the roof make a cross road to Rinjani Mount. Parent house or the oldest family placed in most strategic location, it could be in the centre or in the North - East.

Some settlement patterns in the hamlet of Gubug Punik for example, parent's house is placed in the North - Central, then the first son house east of parent's house, the second son situated in the western part of parents. In some cases is in the East part for the first uncle, while the west for the second uncle. Further in the south for the children of each family.

In the other family compound, the houses built in a single line and the roof exist in the North - South which leads to the Mount Rinjani, a building made face a face, while the most senior stay in the North East in a row was built towards the south, and when space is not enough, then they develop new house in the West - the North, then others building next to the South. Thus the orientation is to the center.

In accordance with their custom and believed, the people in Puyung village, in form of settlement pattern always performed various rituals, from ritual to determine the location for a family compound, the location for the placement of the house, procedures for building a house, and also various facilities. When the people would build a house, a series of ritual should be allowed, such preparation, making the foundation, installing brick, make the roof, until when they will occupy the house. Preferred direction of the roof of the North-South with a reason not to back to the Mount Rinjani. Generally each family compound in determining the door of the house can be divided into two part, they are facing each other or facing the same direction. When they build houses face each other, the door should not directly in a line, when they made to the same place, then the house that was in front have to make the door at the back part, so it does not impress each other.

In family compound, among the house there is a yard that is used together for various purposes, and the most important part is for ritual. At birth ritual, the page is used to bury the placenta, the wedding page are used for burial the placenta, in the wedding ceremony it is used for dancing or other activities, and at the time of death are used for bathing the bodies, including various other rituals are performed in the yard.

In relation with life-cycle rituals people required they "show" to hold a ritual procession, especially at the time of circumcision and marriage. At the circumcision ceremony of children paraded around the village through the main street, while at a wedding ceremony especially in *nyongkolan* paraded from man house used Gendang Beleq visiting woman's house. This suggests that the road has a ritual function that connects between the people who has done the ritual and people around.

3.2 Discussion

Sasak people in Puyung Village can be classified as a nobleman and common people. Nobleman family compound occupied at the best place on the North - East and their relatives also occupies around the main cross road of Puyung Village. Common people stay spread of in some places. In associated with Levi Strauss concept in Puyung Village show the binary opposition in which nobleman family compound as a centre and common people family compound as periphery and it is also used for agriculture. This pattern suggests that the social structure emerged in settlements pattern. At the central village there is also main facility Puyung Village: Al Ihsan Mosque and Puyung Market. The existence of faciiities directly or indirectly will strengthen the position of the village center. Waterson and Santoso study on Nias settlements also showed the role of the central as a power indicated by a place of the leader.

Referring to the study panoptican and Jesuit Colony, Foucault show that there are power relations in space distributed through discourse, then the placement of residential and the various aspects of the ritual show that there is continuity of power in the context of family compound and its ritual system in their day living. The main aspect of settlement pattern and the provision of house for a new family in the family compound control by parent and continue by his son. Parent's house occupied the important place that also functions to control the overall of the family compound, both in the construction of homes for the new family and the implementation of various rituals.

Formation of space or settlement pattern and the provision of housing is done continuously with local knowledge systems and it is obeyed by the people. In this reason there was the continuity of local wisdom in the context of settlement pattern. The parent has an important role in arrangement and provision of settlement, so it can be said that there are power relations in Sasak Living and spread out by local knowledge through discourse in daily living. Then its become the philosophy of Sasak people's lives into their cultural wisdom.

In the context of spatial planning, the determinant of the order of settlement pattern is not simply based on the carrying capacity of land, land prices and accessibility, but it turns out cultural factors play an important role. Settlement's pattern in the form of clusters with a central nobleman and main village facilities while the other hamlets of the village as well as various facilities spread out to form a cluster of settlements. Event along the main road in Puyung Village has changed in the function space such as the stores, kiosks, souvenir shop, etc. This pattern is made along the main road corridor Puyung Village changed its function, but the family still maintained the family, also in the village

scale.

The continuity of the culture through various rituals and customs make settlement pattern is still well maintained so that the local wisdom as cultural wisdom of Puyung still exist up to now. Harmonization of life among strata of society created by the formation of family compound and supported by many rituals.

4. Conclusion

Binary opposition system as introduced by Levi Strauss was also appeared in the Village Puyung performed by social stratum, marriage systems which are both also appear in the settlement pattern in Puyung village. Further more power/knowledge in relations with space are also emerge in the settlement arrangement indicated by the placement of a nobleman family compound at the center while the common people in the spread out in the village. Overall it can be concluded:

1. Spatial patterns of settlement and also the provision of family housing in the family in Sasak people is reflected in the implementation of the ritual, marriage systems, social stratum and their beliefs.
2. Settlement pattern formed in accordance with the habits of society in their settlement, there are changes in the function space on some part of the settlements, but it does not change the meaning of settlement pattern its still based on seniority in the family, as well as the beliefs held.
3. Harmonization in life based Sasak culture also makes the settlement still proper with principles and people habit through the determination of the location of the family compound, the procedure and order of building a house in family compound and the provision of space as a yard for the implementation of the ritual.
4. Overall settlement pattern its need for review of the settlement pattern more focus on socio-cultural aspects of society according to the conditions of each area.

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Structuring Tourism Area of Sidomulyo, Batu City, Using The Method of Community Based Tourism

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ABSTRACT

Structuring the tourist area are expected to be able to develop objects and tourist attraction, moreover, through a community-based approach will give you the impact of social-cultural as well as being a great opportunity where tourist areas are managed by the local community and local businessmen. The participation of local communities in involving themselves in the decision-making process gives advantage to the development of tourism and can empower the community so it maximize community participation in various aspects of tourism development.

Public participation in community based tourism efforts are aligned with the purpose of tourism development of the city of Batu in East Java, Indonesia which is ecotourism. The tourist area of Sidomulyo with semi natural tourism potential for the adventurers, enjoyed cycling, and scenery as well as the centre of coolness area that is good for producing flowers inlaid with setup as vast tracts of land have the particularity of each floral blend with neighborhood residents became a tourist attraction as well as very attractive allows optimal utilization is done in this area, where most of its community planting flowers by leveraging their respective home pages as a medium of his planting.

Community Based Tourism approach provides opportunities in society can control and was directly involved in tourism development efforts those gives the value of benefits for the local community. Knowing the size of the participation of local communities in decision-making and the presence of sustainability that give you an advantage in the development of community accepted the region tourism is a result in Sidomulyo expected in this study.

Keywords: community based tourism, tourist areas

1.   Introduction

Tourism today is an absolute human need, both the leisure traveler and the community around a popular tourist destination, as well as Tourism City of Stone, in East Java Province. Travelers need to satisfy his desire, while the community around the site hoping to get the positive implications of increased revenue to support the economy. This phenomenon should be the concern of policy makers in the City of Stone, as mandated by the national tourism development is directed to become the leading sectors and is widely superior, as the largest foreign exchange earner that will drive economic growth, increase revenue, empower the community's economy, expand employment and business opportunities.

In general, in Southeast Asia, Indonesia is still far behind from Thailand, Singapore, and Malaysia in the capture of international tourist visits. If not clean, it is not likely we will just be a spectator in the increasingly fierce global competition. In line with the vision to the district of Batu CityTourism is to realize a more prosperous society. Therefore, development of tourism in Batu be able to benefit equally to all levels of society. Stone is entitled to the entire community the opportunity to enjoy the role and development of tourism in accordance with the roles he does.T

ourism is one sector that is expected to be a major foreign exchange earner, and was instrumental in the development of the region. It also contributed to job creation, increased local revenues, while increasing incomes. while maintaining the natural environment, physical, social, and cultural. Ability of the region in developing sustainable tourism that provides benefits to each party is a challenge that must be answered every region in the era now. The perceived benefits of local communities on income and involvement in tourism development likely to impact on the growing contribution of tourism to regional income.

Community-based tourism as an empowerment approach that involves and lay people as an important actor in the context of the new paradigm of development that is sustainable development (sustainable development paradigm) community-based tourism is an opportunity to mobilize all potentials and the dynamics of society, in order to compensate for the role of large-scale tourism businesses . Community-based tourism is by no means small and local efforts alone, but needs to be placed in the context of the global community cooperation.

Of some of the above definitions can be concluded that community-based tourism is tourism in which the public or local residents play a major role and influence in decision making and provide benefits to life and the environment their. In concept of community-based tourism is contained in the concept of community empowerment efforts community empowerment is essentially always associated with the characteristics of the target as a community that has characteristics, background, and community empowerment, the important thing is starting with how to create.

Batu City is one of the newly formed in 2001 as a fraction of Malang Regency. Previously the city of stone is part of the Sub Regional Development Unit 1 (SSWP 1) North of Malang. The city is preparing to be able to do the planning, implementation and development projects mengevaluasian independently so that the people in this region the rneningkat kesejahterannya Batu Citywhich is located 800 meters above sea level is blessed with natural beauty that captivated. This potential is reflected in the wealth of agricultural production, fruit and vegetables, as well as the panorama of mountains and hills. Thus dubbed the real tourism city of Indonesia by Bappenas.

Source :RTRW Batu, 2010
Figure 1: The Map of Batu City

By nature and by itself is formed as Batu agropolitan city, supported by the state of nature and environmental tourism potential. Potential areas in the field of tourism and agriculture became the mainstay of comparative commodity. Agro-tourism or farm tourism sector is one of the options to be developed in the City of Stone by exploiting the potential of agriculture and tourism potential that exists. Development of Batu City as a city-based Farm Holidays declared by the City of Batu in 2008 - 2012 is getting a positive response from the community because the community has long Batu generally interact with the environment of life, especially to benefit from agricultural lands, livestock and fishery products and tourism services for its survival. With the efforts aimed at developing tourism and agriculture sectors is then not a new thing anymore for people to participate.

Agro sector in Batu City has a strong potential that is supported by the state of nature and the environment is conducive, but still needed infrastructure development more optimally by taking into account environmental sustainability factors. In general, all the attractions in the city of Stone always show the potential of agriculture in the city of Stone and can be purchased at the same time visitors as souvenirs. Starting from the production of upland vegetables such as potatoes, cabbage, carrots, cauliflower, etc., and various kinds of ornamental plants, cut flowers as well as the production of fruits such as apples, oranges, strawberries and that is not less interesting is the product processed food made from apples and other agricultural products.

Development of the built area of rural tourism in the area Sidomulyo, Batu city is a good concept in a model of community empowerment program (community) based on the wisdom of local value. In addition, this program can also be increase the attactive of the Regional Tourism Destination.

(RTD) in support of program development as the Batu City Tourism. Environmental management is an integrated effort to preserve the environmental functions that include planning policy, utilization, development, maintenance restoration, monitoring, and environmental control.

Management of the built environment in the tourist area in Sidomulyo ekowisata area is a concept model of good environmental management are managed by community-based social value of local wisdom, which can have a positive impact of reciprocity for the community and local environment. In support of the tourism program, the management of the social environment guided village tour rates can increase the attractiveness of destination regions so as to attract tourists.

According Sunartiningsih (2004), empowerment is defined as an effort to assist communities in developing their own capabilities, so free and able to solve problems and make decisions independently. Thus empowerment is intended to encourage the creation of the power and capacity of communities to be able to independently manage themselves based on the needs of the communities themselves, and be able to overcome the challenges of the problems in the future.

Empowerment must be followed by strengthening the potential or power possessed by the community. This is necessary in order to more positive step and not just create a climate and atmosphere. Empowerment is not just include the strengthening of individual members of society, but also institutions. Instilling values like hard work, thrift, openness, accountability is an essential part of the effort the empowerment(Kartasasminta,1996).

The basic question that arises is How the structure of tourism development that is expected by the public Sidomulyo?

2. Methodology/Issue/Research Focus/etc.

This research is naturalistic, with a qualitative-descriptive approach is a model of research that seeks to create a picture / exposure and dig carefully and deeply about certain social phenomena without intervention and hypotheses. Study site selected is determined by purposive or intentional, which is a community built on the tourist village agropolitan Sidomulyo ecotourism village, district Bumiaji, Stone town. Subjects purvosive determined, namely:
1. leaders and local community leaders,
2. The Farmers & Merchants Sidomulyo Ornamental Plants,
3. tourists, and
4. members of the community.
   While the informant research include:
1. Department of Tourism Batu,
2. travel environmentalists,
   Engineering Data Collection, includes:
1. Interview Indeept
   In-depth interviews (in-depth interviews) are the same as the other interview methods, only the role of interviewer, the purpose of the interview, the role of informant, and a different way of doing interview with interviews in general. Dilakukukan depth interviews many times and takes the lam with informants in the study site, for which this condition does not occur in the interview in general.
2. Observation
   Observation means observation that aims to obtain data about a problem, to obtain an understanding or as a means of re-checkingin or verification of information / information obtained sebelumnya.Sebagai usual scientific method of observation is defined as the observation and recording of phenomena are investigated systematically. Observation in the broadest sense is not only limited to the observations made, either directly or indirectly.
3. Technical Documentation.
   Data analysis technique used is descriptive techniques-interpretive-kualitaif with the description of analysis.

4. Results and Discussions

Sidomulyo village in Batu city is synonymous with Flower Village. There are over 1,000 species of plants and flowers are cultivated in three hamlets (Tinjumoyo, Tonggolari and Sukorembug)

that were located close together. Sidomulyo village located only about 8 km from the center of Stone. To reach it is also not difficult. Entering the village Sidomulyo, you can instantly listen to the charm of the color of the flowers at the edge of the left and right of way. Farm house and the yard was filled with flowers that it looked like a garden. Ever since the Dutch colonial era, the village has been famous Sidomulyo by the flowers, especially roses. This is due to the cool air. Geographically, the village is situated at an altitude of 1,100 meters above sea level with temperatures around 18-23 ° C.
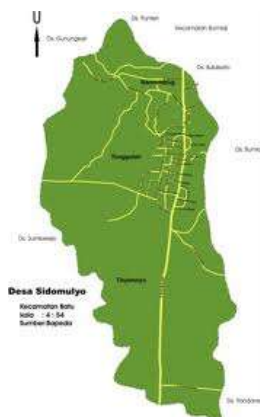
Source: RTRW Kota Batu,2010
Figure 2: Map of Sidomulyo

From the results of the study, the researchers get a general idea that the management of physical and social environment as a local social capital, which made the villagers Sidomulyo developed to target rural areas and villages Punten tourist interest as the traditional tourist village, is a good model in efforts to create jobs, so as to improve the condition of social welfare local.

Characteristics of natural and social environment and rural villagers Sidomulyo Punten very supportive in the development of the rural environment and the region with Punten Sidomulyo as rural tourism and rural tourism interest customs / culture. Sidomulyo village geographically and sociologically very supportive in the development of the Batu Cityas the city flower, because its potential is the village Sidomulyo specifically developed as a tourist village development area of cultivation of flowers and ornamental flowers. Determination of the village Punten the development of cultural tourism in the Batu city, given punten the development of cultural tourism village (indigenous) in the Batu City given Punten villagers still adhere to cultural traditions (adat) which could serve as a local tourist attraction.

Source: RTRW Kota Batu,2010
Figure 3: One of the flower stall in the village Sidomulyo

Public participation in support of program development and management of environmental areas and rural villages Sidomulyo Punten as rural tourism and rural tourism interest customs / culture is verty high.

Most of the villagers agree Sidomulyo have the attitude and support towards the

development of rural areas Sidomulyo rural tourism as an area of interest, however there are still concerns from the public, especially related to the fears of the investors entered into the master program and master the marketing of flowers. Similarly, the public agrees with Punten rural development as a tourist village customs/culture, given that the village is a village Punten considerable tourism potential in the framework supporting the Batu City in terms of customs/ culture. Besides the development of rural areas as region Punten traditional tourist village/ culture will assist in developing and preserving local ancestral culture.

Dimensions of tradition, values and norms that exist in rural communities and villages Punten Sidomulyo can be concluded as follows:

1. Punden ceremonial traditions that are a reflection of society in environmental concerns.Ritual is actually thank the people of the ancestral form which has natural and beautiful and lush environment. Meaning the value contained in this ceremony is that the public should maintain, conserve, and utilize the natural environment as well as possible
2. Norms that form the rules that apply to Persatuan Pedagang Tanaman Hias Sidomulyo (PPTHS) where they are obliged to always pay attention to the environment. This rule is binding, so that all members PPTHS which amounts to 100 people, must be obeyed; and
3. in general the values that exist in rural communities and villages Sidomulyo Punten put the natural environment as part of their lives.

Benefits arising from tourism village program Sidomulyo interest are:

1. Economic development because it can create employment of Field where people can trade in flowers;
2. Environment is more orderly, beautiful, beautiful and harmonious; and
3. People can gain knowledge in agriculture, particularly on the management of ornamental plants, because of the extension program pertaninan, so farmers can become more creative.

While the benefits of rural development as a tourist village Punten customs / cultures are among others:

1. Preservation of traditional values of rural traditions Punten;
2. Development of traditional / cultural Punten village as a tourist attraction;
3. Development of rural cultural traditions eventevent Punten
4. Development of economic value added management of customs / culture and traditions of rural communities Punten; and
5. The presence of tourists who appreciate the customs / culture and traditions of rural communities Punten.

Development of rural tourism interest, is part of the development of ecotourism. indeed ecotourism can conceptually be regarded as a concept of sustainable tourism development in order to support efforts to conserve natural and cultural environment and increase community participation in management, so that the economic benefits to local communities. In terms of management, ecotourism can be said to be an organization of responsible tourism activities in areas where natural or made under the rules of natural, sustainable and economically to support efforts to conserve the environment and improve the welfare of local communities. One of the identity of the Batu City is a city synonymous with the city of interest, therefore the development of the tourist area of interest to the attention of governments and local communities.

Sidomulyo village geographically and sociologically very supportive in the development of the Batu City as the city flower, because its potential is the village Sidomulyo specifically developed as a tourist village development area of cultivation of flowers and ornamental flowers. Tourism has a great chance to be applicable and effective medium poverty.. Approach to tackle community-based tourism (community-based tourism) could pave the way for the wider community to participate menikmat poor and the development of tourism opportunities.

Source: RTRW Kota Batu,2010
Figure 4: Welcome to the Village Board Sidomulyo

Development of the built area of interest in the tourist village of Batu City tourism, Malang, is a good concept in the model of community empowerment program (community) based on the potential and wisdom of local values. In addition, this program can also increase the attractiveness of destination regions (DTW) in support of program development for the city of Batu City Tourism. Environmental management is an integrated effort to preserve the environmental functions that include planning policy, utilization, development, maintenance, restoration, monitoring, and environmental control. Local economic development is a process whereby local governments and / or community-based groups to manage existing resources and enter the new partnership arrangement with the private sector, or among themselves, to create new jobs and stimulate regional economic activity.

Source: personal documentation
Figure 4: Farmer in Sidomulyo

The main feature of local economic development lies in its central point that led to the policy of endogenous development potential use of human resources, institutional and local physical. This orientation leads to focus in the development process to create new jobs and stimulate the growth of economic activity (Blakey, 1989).

However, taken the form of development policy, local economic development has one orientation, namely: increasing the number and variety of available job opportunities for local residents. In achieving this, local governments and community groups are required to take the initiative and not just a passive role only. Any development policy and public decision and the business sector, as well as decisions and actions of society, must comply with local economic development orientation, or synchronous and supports local economic development policies that have been dispakati together. Each community has unique local conditions of the potential that can help or hinder economic development. These local attributes will form the seed, from which Local Economic Development strategies can grow to improve local competitiveness. To build the competitiveness of each community needs to understand and act on the basis of the strengths, weaknesses, opportunities and threats to make the area attractive to business activity, the presence of workers and institutions that support. From the research data can then be assessed on the general concept of community-based model of local potential through the development and management of rural tourism and rural tourism interest customs / culture at the study site.

4.   Conclusion

Development of the built area of interest in the tourist village of Batu City tourism, Malang, is a good concept in the model of community empowerment program (community) based on the potential and wisdom of local values. In addition, the program is also able to increase the attractiveness of destination regions (DTW) in support of program development for the city of Batu CityTourism. Environmental management is an integrated effort to preserve the environmental functions that include planning policy, utilization, development, maintenance, restoration, monitoring, and environmental control.

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Social-Culture, Economic and Politic Aspect
In Revitalization of Chinatown Semarang

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ABSTRACT

Semarang's Chinatown is one of the traditional settlements which have unique characteristic and strategic position. These unique characters had been formed by the Chinese immigrants who most of them were political refuges from China while the strategic position had been set by Dutch government that ran their political trade in Indonesia. Since the political changes in Indonesia, the government attempted to make this area as a tourist destination through revitalization. Next, this effort evolved into a commodity that gives the economical advantageous prospective for tourism entrepreneurs and government. These conditions lead to collusion and short-term economic interests, which caused many conflicts due to the difference between hope and reality, and the negative response that ended with the rejection of the local community of the revitalization. This paper aims to discus the aspects of social, culture, economic and politic in revitalization of Chinatown Semarang. Through the exploratory research with a qualitative inductive method, this research tries to describe, analyze and uncover many things behind the incident. Research objects are people who were born and grown in Semarang's Chinatown and have Tri Darma religion, and some people who were appointed by the informant prior to the interest of information triangulation. The techniques of data recording used in-depth interviews, observations and photographs. From series of analysis processes it was found that: community is made up of numerous ethnic groups; bad experience in the past influences on their psychological; worldview which can not be bothered and they did not want to look for problems, trade and business activities as priority of life; the aspect of social and culture did not developed selectively and did not set in harmony with the environment in the revitalization, that caused the emergence of community outrage; and the last the view that the revitalization efforts seeking to develop and support a Chinese.

Keywords: Social-Culture, Economic and Politic Aspect, Revitalization, Chinatown

1.   Introduction

In 2003, the city of Semarang started to revitalize Semarang's Chinatown with the preparation document of a Revitalization Strategic followed by the implementation of the   program "Implek Semawis night market". The injection of this new activity is transplanted from market activity of Gang Baru that is usually conducted before Chinese the New Year, which is called Pasar Malam Senggol in the past. First night market activity was held on 21-22nd January 2004 and the second one from 5-8th February 2005 coincided with the celebration of Chinese New Year.

The development of new activities adopted from tradition of local communities has disturbed ritual activity of Tri Dharma communities. As a result of the organization of the night market some communities make emergency fence. These conditions lead to the assumption that revitalization activities impressed only to move the Johar's market clutter to Chinatown (Suara Merdeka, February 4, 2005). Based on that previous experience, in the implementation of the second night market, some local communities made the fence (Jamilla Kautsary, 2006).

Revitalization of Chinatown area proposed by the Kopi Semawis Organization (organization for Semarang's Chinatown Community for Tourism) is not as easy as one might imagination. Some people have raised concerns on the various forms of rejection from local communities. This rejection

due to revitalization tends to consider the short term economic benefits. While the socio-cultural and psychological conditions that associated with the policy in the past obtain less attention. Besides that revitalization efforts are also only based on the tradition of high level design (height-design traditions), with theories that focused on the work of planners and designers, and ignore the environment and tradition, designed by the common people/popular tradition of the community (Rapoport, 1984).

From the above description, it is important to search and understand many aspects of social, economic, culture and politic in revitalization of the area in Chinatown. The results of this study are expected to provide input so that the revitalization effort will have an emotional relationship with the local community and culture.

2.   Literature Review and Methodology

2.1. Revitalization

Preservation of historic areas is the one of the form of urban planning. It is relatively new although it has been long attention to this subject. Classification of terms associated with conservation activities is usually associated with a range of strategies dealing with old buildings and areas. Preservation and conservation can be done by restoration, replication, reconstruction, and adaptive reuse/revitalization (Catanese, 1986: 401).

Revitalization is one type of preservation by adapting old buildings that are no longer impractical to serve the new uses and at the same time maintain the original shape characteristics. Revitalization can be done without or with changing the shape of the building. Sometimes it is unavoidable when judging from the cost benefit analysis is not profitable to be preserved, then let the facade of the building be maintained so that the observer can imagine the face of the city in the past (Budihardjo, 1991: 44).

Revitalization of the old city area is not just preserving the building, but it was also an attempt to revive the region's economic decline. We must not be influenced by the excellence of the past. Making the building as a monument will stop the history of the building. Old buildings can not stand alone and do not mean anything without being part of city life at this time (Cohen, 1999: 35).

Conservation efforts at this time have shifted from simply considering the sheer beauty of the issue towards a holistic effort. Revitalization aims to provide the quality of people's lives better by the power of the old resources, and perform a life of interesting, creative, sustainable, and involve the community by taking into account the economic value. Management is a means to an end, including the involvement of communities to manage themselves (Laretna, 2000).

2.2. Variable of Social dan cultural

Rapoport (1967), revealed that one of the definitions of culture relating to the ways of life and lifestyle of a group. Many variables have been used to describe the groups inter-cultural and through history, such as age, gender, initiation, ethnical, racial, ideological, religious, caste, ethnicity, occupation, position and class to be relevant to the environment only when we look to the specific life style.

Involved in the relationship with the environment is social variable that can be demonstrated through social networks, status, roles, institutions, kinship and family as it relates to the specific patterns and environmental attributes. For example, social networks can help to describe the environment with respect to the city and even larger units, explaining the use of urban spaces and settings and can also be used to plan a residential setting for the analysis and design.

Social status is usually related to the location, space organization and access, size, color, material and so on. Activities such as recreation, commerce, shopping and the like can be seen very differently in different groups and can be easily connected settings they need. In other words, social

variables such as other aspects of culture are relatively more easily linked with various environmental components.

Variables like culture, lifestyle have been widely described by many ways. This definition has been studied and an operational definition of lifestyle has been generated. It describes the lifestyle as a result of people who make different choices about how to allocate resources (money, time, effort, and so on). It can further be applied and expressed graphically as the profile that makes it easy to imagine and control.

2.3. Methodology

The study of social, cultural, economic and political aspect for revitalization in Chinatown area is exploratory study, so the research methods used tend to be inductive qualitative. Through this qualitative inductive approach, researcher can deeply uncover, describe and analyze the fact that actually happened and what is behind the incident.

Research object is the head of the family who was born and raised in Semarang's Chinatown neighborhood and religion Tri Darma (purposive sample) as well as some figures out of objects of inquiry appointed by the informant for information triangulation. The implication of this research is the selection of informants to determine the number of samples first. Data recording techniques were in-depth interviews, observations and photographs.

3.   Results and Discussions

3.1. Result

The results of in-depth interviews and observations in this research will be explain in four aspects are social, cultural, economic, politic. This theme is closely related to assessment and the Chinatown community response to policy and program of revitalization.

3.1.1. Social Aspect

Chinatown community leaders revealed that 99% of the populations in Chinatown were Chinese. There are citizens descendants of the various tribes who came from different provinces in China. Each of these tribes still has their own clubs and still has elders. This society is secret and is usually shaped like a social gathering. These tribes have different characteristics of the activities that appear from the underlying skills daily activity/type of work. Activity or the characters of each of these tribes in general are:
  a) Babah is easy to blend in with native;
  b) Hokkien (Min Nan) who has trade skills, in general Hokkien is the most widely Chinese tribe in Indonesia;
  c) Heng Hua, who is engaged in the business auto rickshaw and car rental;
  d) Hakka /Khek who usually has a grocery business;
  e) Kong Fu (Kwong) as a carpenter, cooker or restaurant businessman;
  f)   Tio Ciu have restaurant business, a blacksmith or carpenter;
  g) Hokja / Fu Qing usually started as a loan shark (banking), or a fabric store that mostly found in the Gang Warung.

From some information's it can be seen that the majority of Chinatown community's have livelihoods in secondary and tertiary sectors. This is because since the beginning Chinatown neighborhood has been planned as trading area by Dutch. In the other hand, there is another character of ethnic groups in Chinatown. This character is not only not easily blend among the group and among ethnic, but also there are some groups who hold to traditions that consider their

interest is more important than other and have limit in their relationship in determining the matchmaking and association.

From field observations conducted by researchers for triangulation, researchers found patterns of activity based on the grouping of goods selling. Such as vegetables that are in the Gang Baru, that in history occupied by Hokkien, then Gang Warung dan Gang Tengah are the central of cloth wholesale sales and banking (character Hokja / Fu Qing), then Gang Lombok and Gambiran is the centre of cookies factory and sale of food (Kong Fu) and Gang Besen was once the center aisle selling iron (Tio Ciu).

Social or community organizations in Chinatown are rare. Organizations/associations such as neighborhood meeting had not been there. Communities in Chinatown, who are the majority of traders, prefer the business activities to join neighborhood meeting.

From in-depth interviews, the only one social organization in Chinatown is Rasa Dharma. This society was founded in 1876 and still exists up to now. This organization changed to Kakyo Shokai during World War-1. This society is engaged in social harmony and art. Gatherings of Inter-tribal were very difficult to trace, because of its confidential.

In the beginning this group is for the cultural association that aims to foster harmony among its members by way of developing Kwan Lam music. Their current activities can be viewed in the building Rasa Dharma (Gang Pinggir no. 31) is a bevy of seniors that are held every Wednesday. The condition is associated with the number of people living in this area dominated with old people.

(Source: Jamilla, June 2005) .
Figure 3: The Activities of Rasa Dharma Association

The absence of other forms of public gatherings, whether in the form of community meetings is considered very difficult for them to deliver the notice from the government related to the revitalization program or other environmental problems. These conditions eventually made the community leader lazy to deliver the news. They only make some copies of notice and distribute that notice from the government if they have time.

3.1.2. Cultural aspect: Religion, Belief and Tradition

In the Chinese community in Semarang, there are three religious or beliefs that developed before the advent of other religions such as Christianity, Catholicism and Islam. These three religions are Buddhism, Tao and Kong -Hu-Chu that incorporated in the Tri Dharma. In Semarang's Chinatown area, residents who have many descendants who converted to Catholicism, Christianity and Islam are still holding some belief in the philosophy of Buddhism, Taoism and Confucianism. This is because of the prohibition in the New Order Era (Orde Baru).

While some other informants stated that the three pillars of trust are harmonious only in Indonesia. In their own country, those three religions/beliefs are separated because of differences in philosophy. There are also differences in the principles of good individual philosophy of Buddhism, Confucianism and Taoism, although there is a common understanding about The God. This

disagreement will inevitably also affect the judging of each individual for rituals and traditions that existed at the time. Most of the people who met researchers at the celebration of Sam Poo Tay Jin at Tay Kak She temple, said that Tao give influence on the development of Tri Dharma religion first and this time Confucianism begins to show its influence through the procession of ritual.

Associated with the ritual performed by the Tri Dharma, many people do not know their origin. Mostly they just run the tradition of their parent. Some rituals are carried out by the principal in Chinatown, among others, the Tao Pe Kong ritual to the Cap Go Meeh (a series of celebrations Implek), King Ho Ping, Po Seng Tay Te, and Sam Poo Tay Jin. These rituals are performed to continue the tradition of the ancestors. Tradition is sometimes a mixture of religious rituals and habit in society, and lasts for generations, but in essence they are trying to hold and pray to God.

All ritual performed by the entire temple in Chinatown adjust the calendar/schedule of H.U.T The Buddha (Sien Hoet) of Great Temple of Tay Kak Sie at Gang Lombok. Tay Kak Sie temple is the main temple in Semarang in spite of any of the deities worshiped in this Buddha temple. Buddhism that developed in Chinatown was greatly influenced by the tradition that has developed in China, so it is flexible to the teachings of Tao and Hu-Chu-Kong and can be explained in the spirit of Maitri karuna.

(Source: Jamilla, September 2010).
Figure 1: Many of Tridharma Rituals.

(Source: Jamilla, September 2010).
Figure 2: Some images of the Tridharma god.

The diversity of the background philosophy of Tri Dharma belief is very influential on the behavior patterns of each individual. Differences in the philosophy of human life that brought each of these are also an effect on social interaction and community life as well as views of the public response to the efforts to revitalize Chinatown area. Revitalization effort that would turn the procession got many protests from the Kong -Hu-Chu followers, because the procession is one of Kong Hu Chu Ritual

Besides that, the narrow view of the Confucian philosophy that also led to a lot of people is less concerned about the environment, because the rules of classes and relationships between classes in society that was decided according to hierarchy / wulun consisting of relations jun-chen (king-minister), fu-zi (husband-wife), fu-fu (father-son), in-Xiong (younger- brother) and peng-you (friend-friend). The existence of these rules because many adherents of Kong-Hu-Cu still regard China as a country even though right now they are already exist in Indonesia. The things mentioned above would be an obstacle to the government to implement a new activity of the revitalization program.

3.1.3.   Economic Aspects: Behavior (Worldview And Values)

In general, the background view of life of the community was formed as trader. The world view of the trade community life in general is not going to bother, do not want to look for problems in carrying out the activity/pursuit/search for profit. This value was adopted as reflected in the priorities of life that tend to interest more to business than other common interests.

This condition causes the local community very hard to attend to neighborhood meeting although it is for the common good. Perceptions of the trade community have established personalities who are very individualistic. These individuals also appear due to the influence of the view of one tribe to another, who feel that their group is better than the others.

The world view of Confucianism also increases the formation of an individualistic society. This is caused by the view of the Confucian to the relationship between people. They tend to limit the interaction with a group considered as the inferior. In the other hand, the habit of being more concerned with their own business is also a barrier for residents to meet each other. The existence of barrier between the individual and the choice of the values espoused, make it hard for citizens to hold a meeting to discuss common interests. This condition is one obstacle to the government to interact with their policies and programs to promote the revitalization of the Chinatown.

3.1.4.   Political Conditions and Past Experience Chinatown Community

The indifference of society to the government's plan is not their fault, because it was conditioned that way since long time ago due to the unfair policies of the government in the New Era, for nearly 32 years Chinese communities should not be involved in any field except the economy. According to them if the communities are being apathetic/do not care does not blame them, because they had already established to be apathetic.

The fear of Communities in Chinatown   is not unfounded. Some of the problems that entailed the anti-Chinese riots had so often happened. Anti-racial riots are the most frightening for people of Chinese descent, especially in the Chinatown neighborhood. This happened in 29 November 1980. At that time the other communities destroy buildings / houses of the Chinese with stones and sharp weapons and ethnic persecution. They thought that a riot is more frightening than the events of the G 30 S-PKI.

In the New era, many Chinese were said to be supporters of the activity of the Communist Party of Indonesia (PKI). At the same time the relationship between Indonesia and China was very close, so that political relations were created by Jakarta-Peking Axis. After the outbreak of the September 30th Movement, the New Era regime banned all things that link to China culture. All religious activities, beliefs, and customs of China were not allowed to be done again.

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This prohibition was poured into a Presidential Instruction No 14 in 1967. In addition, Chinese was suspected of having strong ties with their ancestral lands and their sense of nationalism against the State of Indonesia is doubtful. As a result, exit policy was discriminatory against people of Chinese in both the political and social culture. In addition to the 1967 Presidential Directive No 14, also issued a Circular Letter No.06/Preskab/6/67 which contained the name change.

(Source: Jamilla, June 2005) .
Figure 4: The remnants of racial unrest.

According to the policy, the descendants of China must change its Chinese name becomes the name that sound like Indonesia, for example, Liem Sioe Liong be come Sudono Salim. In addition, the use of Chinese language was banned. It is poured into the Decree of the Minister of Trade and Cooperatives No. 286/KP/XII/1978. Not only that, the movements of the Chinese communities were overseen by a body called the Agency for Coordination of China (BKMC), which became the part of the Intelligence Coordinating Agency (Bakin) .

This bitter experience is still a barrier for people to play a role in other sector beside of the economy. Their impression does not matter to develop Chinatown is still very strong. This is one big obstacle for the government to involve them in the process of revitalizing the area.

3.2. Discussion

The diversity of tribes with ancestral rules of society and the characteristic that have been brought by communities have formed a unique society in Chinatown. Some of the rules, especially concerning to their interaction with their community and other groups, have helped to build the social character in Chinatown.

The influence of the values that brought each tribe and the limits of their properties in the association led to high individualism Chinatown community. Many people do not know the name their neighbor or names of the neighborhood leader. This condition is very influential on the low level of public awareness of what is happening in their environment or what common interest is. They tend to be more concerned with personal interests, especially business over other interests. This is one of the problems that complicate the government's socialization development programs.

So it is with religion, beliefs and traditions of their respective adherents Tridarma (Buddhism, Confucianism and Taoism) also contribute to the formation of community's attitudes and behavior brought about because of the influence of each trust. Confucius uses the rules "wulun" the teachings of ancestors that still have a strong influence in the daily life. Adherents tend to question the issue of social status and existence in society while adherents of Bhuda tend to not concerned with the life in the world and not care with social status.

In Semarang's Chinatown, the majority of the populations are merchant community who would not look for trouble in running the activities for profit. This is a strongly held in life. The top priority of trading community is running their business. Their businesses are more important than just joining in the common interest and this is a reflection of the values espoused in their life. Outlook on

life and the values and beliefs, shape the character of a unique social culture. Moreover, a long history during the New Era government with all the rules that restrict the activities of Chinese people also have scored a mental character of the people who are reluctant to contribute in any field except in the economic field. These conditions have much effect on the formation of a highly individualistic culture and society who does not care about the environment.

The lack of social association or institutions that is still active in this area has created a gulf between the governments and communities. Many of communities' desires are not accommodated in the development of policies and revitalization program and the other hand the government is also difficult to communicate with the communities in the implementation of policies and revitalization program. This condition would have caused misunderstanding among the communities and the government, and developed of opportunities of the other stakeholder to take advantage in this conflict.

Bad experience of the Chinese in Indonesia in the past, especially after the New Era that ran for 32 years, also take effect on the behavior of these segments of society. Discrimination in a variety of terms and restrictions in activities for ethnic groups has led to the emergence of problems that foster ethnic apathy towards government policies and programs. Political climate and conditions in Indonesia are not conducive to develop the Chinatown area as an area of cultural tourism. This is due to the conditions and historical development of the Chinatown area where since the Dutch governmental had got many   problems. Here descendants of Chinese and minorities are completely wrong and have been always discriminated.

A series of problems arising from the diversity of ethnicity, religion / beliefs, world view and values, the absence of community organizations or community meetings, and communities' experiences are not so good, that cause a gap dan a barrier between government and the communities in understanding the policies and revitalization programs. This gap is widening as social organizations at the local level are not able to bridge between two different interests. This condition causes lost communication among them. As a result many misunderstandings between the communities and the government that led to the emergence of a negative response to the revitalization.

4.   Conclusion

From previous discussion, it can be seen that the consideration of social, economic and political culture is needed in the revitalization of the old with a particular ethnic community in a society which are multi culture. Without consideration of these aspects, revitalization will not be successful. No matter how good the planning product to restore the old area, if not desired by the community, there would be no benefit. Consideration of social, economic, cultural and politic can not eliminate the problems, but at least it can minimize the impacts arising as a result of revitalization activities in the old area with a particular ethnic community

Acknowledgement

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Women Works and Tourism in Kasongan Village

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ABSTRACT

Tourism development since the influx began Kasongan some expert and artists who -developed pottery indu try which is the main job for most of Kasongan people. Tourism development in Kasongan not only provide economic benefits for local communities but also gives a growth of showroom. Besides the economic impact, the tourism also give an impact for women. The impact for women are segregation of work in particular in manufacture of pottery. of pottery.
Based on this phenomenon this study tried to examine the relationship among tourism, women and the division of labor. Division of labor will be associated also with home and workplace. The Studies are using GAP approach (Gender Analysis Pathway) to see the division of labor and the impact of these activities for women in tourism development and intersectional analysis and cultural constructivist framework to see the women perception about work

Keywords: women, works, tourism.

1.   Introduction

Tourism has a fairly high impact on social and cultural life of the local community activity so it is certain that local communities will be affected by the presence of tourism (Davidson, 1993 in Wiwien, 2005). Tourism in some places women are more involved in the economic changes brought about tourism and benefit from this change than men (Brown & Switzer, 1991, in Wiwik,1997).

The involvement of women in economic activities in rural areas is a common phenomenon that has lasted a long time. In Kasongan pottery making has been a common profession for many generation even up to the present day. It has long provided a livelihood for many region's inhabitants. Growing of tourism in Kasongan which began since some artist and scholars such as Sapto Hudoyo, Soeliantara Solaeman, and other artists simply provide a new color in the development of pottery in Kasongan.

At the beginning Kasongan initially only made pottery and functioned as home appliances such as *cowek*, *kren*, *pengaron kuali* and others. The globalization and the development of plastic and aluminum industries had shifted the role of pottery as a household appliance and replaced by plastic and aluminum. This change would also impact on the manufacture of pottery like Kasongan.

The growing of pottery industry has led to a shift of work. At the first and generally pottery making is done by women, with the exception of certain pottery wares, and the man only help by gathering the clay and the material for burning. They also help to bake the pottery and afterwards sell the fineshed products. Today pottey making is no longer dominated by women. Men that comes form outside Kasongan (Kuningan and Brebes) also became a pottery maker. Changing of the role in pottery making, give the consequences of any change in working space between male and female.

2. 1.   Literature Review

2.1.1 Gender and Work

Conceptually. Grown and Sebstadt group of women working in three types, namely (1) system of subsistence production or non-market. (2) work without pay in a family of production systems, (3) the putting-out system (Grown and Sebstadt. 1989). In another sense, the work of women in the rural economy can be categorized into several types, which include home-based workers (home work-

ers), workers in home-based business (home-based workers), domestic worker).

Observations on the question of relations in the family of one business unit division of labor associated with the business and domestic work. The emergence of division of labor is not a thing that only happens because of cultural construction. but associated with the capitalization process in rural areas. (Moore, 1998). Ann Stoler in her research in Java found that women control the household finances and plays a dominant role in the decision making process within the household. Stoler research shows that capitalist penetration into the rural economy does not made the increases of dichotomy in the division of labor based on sex.

Mies, suggests two things about the invisibility of women not involved in major industries, the first is family employment status that determined by the work of men as heads of households, and the second is that women as workers are not visible due to the prevailing ideology, and so that they are just as housewives who fill their leisure time in a way favorable. Invisibility of women's work is increasing due to the ways the putting out system. (Mies, 1985)

2.1.2 Gender, Work in Tourism

Tourism sector has grown and became an alternative sector, which was able to drive the growth of region development. The tourism sector was able to provided multiplier effect to growth of other sectors. The improvement is able to revive many informal small businesses associated with tourism activities. Besides tourism is one sector, which also absorb local labor in the fields of tourism, particularly women workers.

The gender dimension of cultural commoditization were examine by Swain (993) in Sinclair (2004) showed that most of the Kuna and Sani women who produced handycraft for tourist gained increased power within the household but not within the wider society, where traditional roles persisted.

Segmentation in the structure of men's and women's work in tourism also occurs, in many ways like part time and full time job, low paid and or unpaid work for women. A gendered division of labour also prevails in the accommodation and retailing sector where local men perceive women's participation in servicing activities in the context of their domestic caring and mothering role (Momsen, 1994)

Many women are responsibe for managing small-scale enterprised and also work such in activities in informal sector (Wilkinson and Pratiwi, 1995). Their tourism induce work load has not been offset by greater help with chilcare from their male patner. Employment in relatively large enterprises in the formal sector are dominated by non locals

2.1.3 Gender and Space

According to Rendell (2007), that gendered space is produced through intentional act of architectural design according to the sex of architect, or whether it is produced through the interpretative lens of architectural criticism, history and theory. Harvey and Soja (1989) said that space is socially produced, but that space also a condition of social production. Anthropologist have also argued that space is materially and culturally produced and architecture is here taken to be one of many culturally produced artefacts. Lefebvre is suggest that social production of space work through three different, yet interactive processes; spatial practice (material or functionl space), representations of space (space as codified language) and representational space (the live everyday experience of space). According tto Spain (19850, there is segregation typology on workplace for women and men. Women tend to work in open space (open floor jobs) while men more likely work "closed door". In line with Spain, Lefebvre and Carteau (1984) said that the situation are influenced by control and power from the opposite sex (men)

2. 1. Methodology Research

Types of research used to be very important. In the context of this study, consideration is to be able to capture the pattern of employment of women and their work environment became a major aspect in this study. Therefore, aspect of the "depth" is an important consideration in selecting

and implementing research strategies. Referring to this issue the right kind of research is the kind of qualitative research from a gender perspective.

However, the actors reveal the relationship of gender relations based on use case study is not enough. The consideration is the method of research (including case studies) in general is still gender bias. Subjects and the size of the subject is still gender bias that women's reality (existence, experience, and needs) in relation to the invisible man (Robert, 1981; Harding, 1987). Therefore, the need to integrate a gender perspective in this case study or case study method using a gender perspective. Characteristics of the study according to the gender perspective Harding (1987), are as follows: 1) has a theoretical and methodological approaches that focus on women's lives, 2) has a purpose for the benefit of women (emancipation), 3) put the researcher and researched at the same place, and 4) put the construction of gender, gender imbalance as a major focus of research.

The analysis tools to look at the relationship / work patterns of men and women and setting the location of both home and work locations and activities related to the process of making pottery in this case study is taken as the houses that functioned not only as homes but also as a workplace. Whereas, as a comparison also seen the work of men at work (*brak*). The selected interviewees were women who worked as a home-based pottery maker. In terms of data mining done using a more in-depth interviews of women and men of pottery workers to gain a balanced perspective menngenai relationship issues, systems and work patterns and the impact of the system.

Gender analysis is the next thing to do to get an idea of work system and its impact on family life. This analysis is done by carrying around an ungainly Patways Gender Analysis (GAP), which is analyzed a the profile of activities of both women and men, access and control profile of women and men also.

3. Results and Discussions

3.1. Women Worker Profile

Conceptually there are several kinds of groupings of female labor, such as subsisten production systems, work without pay in a family production system, the putting-out system, a home-based workers, workers in home-based business (home-based workers), wage labor, and business independent (self employed).

Micro enterprises are very close to the woman. On the one hand this provides opportunities for women to carry out productive activities, but on the other hand it's own micro business conditions continue to be in poor condition and almost no change from time to time. Most micro businesses involving women in it are mostly subsistence. Income derived from such efforts are largely depleted for everyday family consumption. In this case, micro-enterprise can not be viewed as part of the achievement of development, but as a potential tool to generate income and welfare (White, 1991: 20).

Model development has thus been changed lifestyle of the people and cause a shift in economic and social structure. Unfortunately, this process does not occur in harmony, but it creates an imbalance that ended in exclusion (marginalization) poor groups to sectors that are not profitable, such as micro rural enterprises. It also has led to the widespread feminization of poverty as most women are in it. The following will be presented the profile of women in the Kasongan village. The following profiles are 2 (two) forms of female employment to those who become home-based workers (taking raw materials and then worked at home) and female workers who work in the workshop with a more regular working hours.

3.1.1. Home Worker (Home Based Worker)

Women home based workers display a diversity of schedules and work routines. One advantage of working home is flexibility in scheduling time for various activities. Women may also feel liberated when they no longer have to follow a fixed job schedule (Salmi, 1993 in Estrada, S 2002).

Development of tourism brings both positive and negative result. One positive impact of tourism is its ability to absorb a lot of manpower and opening opportunities for local people to run a tourism business that can improve people's lives. Kajen village have 3 (three) hamlet and in every

hamlet is largely (75%) their livelihood comes from industrial pottery. The entering modern influence and culture from outside through various media and the first introduction of Kasongan to public by Sapto Hudoyo around 1971-1972 with artistic and commercial touch. Now the functions of the pottery has grown to be one part of the interior of the house. The impact of tourism in pottery work are that making pottery not only dominated by women but also done by men (from outside Kasongan). From information Mrs Lita is known that women only making a pottery just for warehouse like jugs, vases and jars with height below 1 meter. Doing pottery that height more than 1 meter is men work.

> ."..........if this to print, it is not too difficult, but if using a rotated method it very difficult, because it is to high to made, and no women in Kasongan can do that, only Brebes people (men) can do that method."

Mrs Lita is a working mother does not stay in one big home-based businesses in Sentanan, (works only when the order is a lot) with a relatively lower intensity of the operation. although with low intensity, but she was also given a target to her that must be completed within a certain time limit. As presented by Ms. Lita this work is tailored to the ability and desire to be away from family, and still be able to perform other household activities. He did not want a job that would take up his time. Women instinctively feel the attachment to domestic work that seemed to have no end. Before and after making a living of women still feel obliged to take care of everyday needs, such as preparing food and clothes, cleaning houses, caring for children (especially if there is a baby or someone was sick). In addition, women are still dealing with tasks outside the home such as social relations with neighbors, relatives and school children.

> ". ......i can not work hard because I have appendictis, and this job is not main job for me, i just help my husband, my job is to care my family..........."

In the tourist village Kasongan homeworkers and demand looks very much this is due to work hours that can be managed by a home-based workers are women, as it is known that the hours of work can take place from 08.00 am then to take care of the household such as cooking and other sweep-another, then resumed work on About a day at 13.00 until late afternoon. But if it is considered women's work has been completed then there is also an obligation to help resolve the husband's work (a sense of responsibility towards work Javanese woman's husband b), as told Mrs Lita and Mrs Tugilah.

3.1.2. Wage Labor

Women work as wage labors in the manufacture of pottery, usually the work done by women are usually only working pottery with a more difficult level below the work done by both men and paint some pottery work has been completed and will be marketed burned.

Usually women who worked as a labor before the work was completed ahead of domestic work or after work. Usually the distance to the location of the house is not too much work and the relationship between female workers with employers usually neighbors or relatives to allow women workers get the spare time of the burden and expense of domestic production.

> ……in the morning my duty is to take care my family, and if I have time, I will work my pottery, but the important is my family, because I still have a baby . ..., and i can work at night until morning only if I have finish my duty,

Wage labors earn wages through a contract system, and it largely depends on the speed of working women, however, the employer also provides flexibility in terms of wages, although work has not resolved all of them but if labor is needed money, then the employer will provide, so that the relationships built between workers and employers typically are family relationships.

> ....How the wage system ??... it is whosale system, and I am paid around Rp 3000-Rp 3.500/100 pieces, for souvenir….

I like work here because, i can ask my salary if i need, for example when my daughter entered to school, i could take my salary first so my daughter can attended school. ....

3. 2. Women Spaces and Places

Women's space is the space used by women or space that manifests the condition of women. In this case the space which is used by women and women's space is symbolized as a domestic space. Domestic space is a space where women played their reproductive functions such as cooking, educating children. While public space is more open space and is usually symbolized by a man. Work space or as they call it work "**brak**" are used by men and women but in fact *brak* for women and men are differ. *Brak* women's work around the house, like terrace and other places at home that is comfort for them to their work, while the male *brak* are individual rooms that blend well with home or separate from the house. Workspace women usually use the front porch, this location is the most widely used by women when they perform the process of making pottery. In addition to the location of the terrace which is also frequently used by women were in the house itself. As seen in some of the following plan. Based on the profile of women above the workspace *(brak)* for women who do work at home (putting out system), is as follows.

work sites (brak) of the women on the putting out system. Usually the space used for the work is terrace either on side part or in the front house. As it is known that this location not only used for work but also to be used as a place to share information with neighbors and teach their children
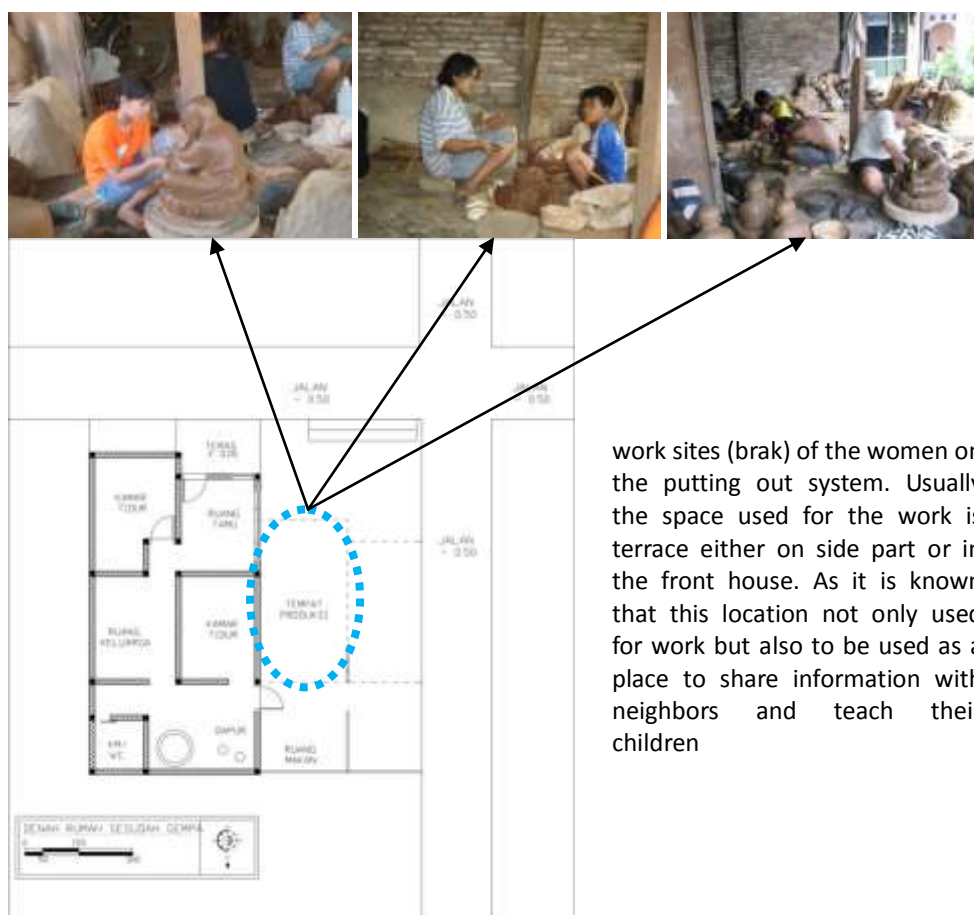
(Source : Author reconstruction, 2010)
Figure 1 : Women location work as putting out system

In addition to women who worked with the putting out system, it is for women workers who work as laborers will do more work on the bracts), while the locations they used in the bracts, are not dominant for women because it fits with the work they do is not the main job, they occupies a small portion of the bracts, which are dominated by male workers.
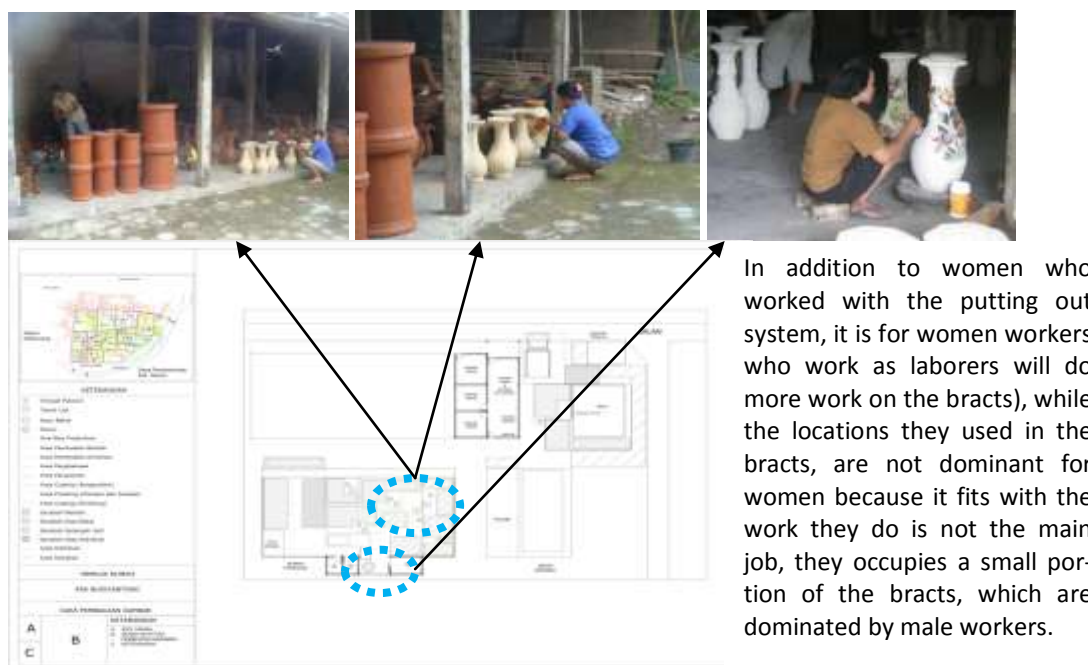
(Source : Author reconstruction, 2010)
Figure 1 : Women location work informal worker

Table 1 (Access, Control and Impact due Women Worker in Kasongan)

No	Criteria	Before Tourism Development	After Tourism Development
1	Access	Women accsess to jobs related tourism is still few. Women only making pottery for warehouses	After developing rural tourism as well as with increasingly conscious citizens to increase education so the more women who work but until now still the most popular home-based workers,
	Control	The role of women in the craft of pottery is actually not new because these activities have been carried out for generations but a big role no impact on the ability of women to obtain equal opportunities with men, it is closely related to the division of labor time and the necessity for more prioritize family over work, all this is always given to women (reproductive responsibility)	Although rural tourism continues to grow and the more women become employee in tourism like shopkeeper but this situation did not make the control of women in the capital, land and any resource more better the biggest decisions are still on the their husband (male)
3	Benefit/Impact	The benefits directly felt by women at that time there has not been entirely due to the manufacture of ceramics was only done in order to meet the demand for household appliances	With the development of tourist villages provide great benefits for society that is an increase in revenue was also offset by an increase in education and the role of women in the organization, although not completely helpless

(Source : Researcher, 2009)

This table shown that before tourism development in Kasongan women only a pottery making, but after the tourist developing many women not only work in pottery maker but also work in tourist activity Even many women work in tourist activity even in pottery making but there are no evidence that women have more control in development tourist and pottery industry, The male-female divide between productive and reproductive labour is doubtedly in part responsible for greater share of men household decision making.

4. Conclusions

Based on the above analysis shows that some conditions of women in Kasongan still have discrimination and marginalization in the name of globalization .The patriarchal system is still a part in the lives of women, not least in the house but also occurs in the workplace. As was the case in the Kasongan village *Brak* is a place used by women and men in Kasongan to make pottery.

Female employment pattern shown that women are commonly work as home based eork and wage labor. *Brak* used by women is either a terrace house located in the front or side of the house. Brak used by men are separate locations around the home or outside the home. Brak functions for women other than where the work is also a place to socialize with neighbors, or a place to play and learning for their children (as a social space), while the *brak* are used by men only functioned as a mere job site.

On the other hand the division of labor of women and men in the manufacture of pottery are also divided by gender segregation, this can dilhat the *brak* are used by women and men together. In these conditions shows that women are only doing jobs that do not require high skill levels (unskilled work (such as a finished painting the pottery burned, or just a bit cracked pottery smoothing) while men do the main job of making pottery, Even if women can make their pottery can only be made pottery with a high of not more than 1 meter.

Women who worked as a worker on the putting out system, do not feel that it is part of globalization and capitalist play to attract women to stay at home (the domestication of women) it is submitted by various slogans that make the women stay at home.

Acknowledgment

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Silvofishery Implementation Study Related with Society Participation for Spatial Utilization in Bugulkidul, Pasuruan

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ABSTRACT

This research aimed to: (a) know the characteristics of fishpond region in Bugulkidul, Pasuruan city, (b) know the interaction of local people toward environtment based on participation parameters, (c) know the potent of environtmentally silvofishery model implementation through local people involvement related to coastal space utilization. Descriptive analysis method was used to identify the characteristics of fishpond region on Bugulkidul. Crosstabulation analysis and descriptiveanalysis method were used to identify willingness and capabilityof local people, land suitability analysis with overlay method in Geographical Information System (GIS) was used to identify the opportunity of local people in utilizing their physical environtment related to identification of local people interaction toward environtment based on participation parameter. Human behaviour theory was used to explain the phenomenon of local people interaction to the environtment in order to know the potent of environtmentally silvofishery model implementation. The result shows that the local people is not ready yet to participate in coastal space establishment through environtmentally sylvofishery model implementation as sustainable space utilization in coastal region, Bugulkidul, Pasuruan City. This is related to insufficiency of participation parameters within the society. The potential community participation that found within their behaviour are the willingness and opportunity of physical environtment that facilitating their behaviour. The constraint is incapability of local people using their cognition to change their physical space into a sustainable space utilization through silvofishery model.

Key words: space utilization, human environtment interaction, participation, silvofishery

1. Introduction

Coastal zone is defined as aninterconnectingplace for the terrestrial ecosystems, marine, and air (Dahuri et. Al., 2001). Potential economic and ecological value of coastal aquaculture activities attracts a lot coastal biodiversity use. Development of aquaculture activities reduces the extent of the natural ecosystems and coastal biodiversity. It is said that in Java, the mangrove vegetation decreased drastically caused by the high spatial dominance of aquaculture (Setyawan et al., 2003:142). This phenomenon also occurred in Bugulkidul, Pasuruan. Utilization of coastal dynamics eventually leads to a decrease in mangrove area in Bugulkidul, Pasuruan. In 1981 and 1994, there were significant changes in land use of mangroves into ponds (Muryani, 2008). At the moment, the aquaculturearea which exists in Bugulkidul is 409.900 hectares or 23.21% of the area Bugulkidul, while only 49.65 hectares of mangrove area.

Sustainable utilization of space or sustainable land useshould follow the rules of which consists of three aspects: economic, ecological, and social. Sustainable land useassociated with society participation in the development. Silvofishery is a concept of sustainable land use which iscombination of mangroves area and aquaculture in one land use. This concept was implemented on a large scale in coastal Aceh and involves local communities in restoration efforts after the tsunami (Wibisono & Suryadiputra, 2006). The results obtained from the application of this concept in 2009 was an increase in the coastal ecosystem services, increased natural marine biotic, as well as an increase of commodity farmers farming community. Harahab (2010:168) argues that the spatial

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pattern dominated coastal aquaculture should have a proportion of 60% and 40% of mangrove pond. Related to this, silvofishery can be positioned as a tool for implementing sustainable land use. Related to the issue of dominance in the coastal aquaculture in Bugulkidul, Pasuruan, astudy needed on the potential application of sylvofishery, and society participation in the land use planning in Bugulkidul, Pasuruan.

2.   Research Methods

The method used in this study is a systematic method of interpretation to the phenomenon with qualitative-quantitative approach. The method is intended to answer the research question; (1) Analysis of the interaction of the society and environmental in terms of the participation conditions by cross tabulation analysis of the society willingness and ability variables. The overlaymethods for a set of physical parameters is used to identify the capability of the land for silvofishery 2) Analysis of the readiness of public participation is done by using the theory of human behavior as a phenomenon interpretation on the tendency of society to the environment and social interaction pattern are evaluated based on the requirements of participation.

3.   Results And Discussion
The Community Interaction to the Environment
a.   PublicWillingness

Variations motivation of people to utilize mangroves can be seen from its association with aquaculture activity patterns. Based on the results of cross tabulation analysis with chi-square, the resulting P-value of 0.013 or less than 0.05 so that it can be concluded that there is influence between motivation to utilize the mangroves with aquaculture activity patterns. Therefore we can conclude that the behavior of society as reflected into aquaculture activity associated with the influence of the impulse (motivation) to utilize the mangroves. There is a correlation between the motivation of people to the mangroves with aquaculture activity pattern is an indication of willingness to participate in forming community land-use with silvofishery ponds. This is happened because there are two interests that can be synchronized to produce the related aquaculture behavior patterns in order to achieve its goals with the motivation to utilize mangrove. Aquaculture activity patterns of relatedness with the motivation to utilize mangroves can be seen in Table 1.

Table 1. Cross Tabulation Result of Society Motivation to Ulitize Mangrove with Aquaculture Activity

Activity	Mangrove Utilization Motivation						Chi-square	
	House Hold Needs		Natural Disaster		Preserve Mangrove Sustainability		P Value	Df
Comodity Variability	51	37,5%	10	7,4%	17	12,5%	0,013	6
Produtivity	19	14%	2	1,5%	1	0,7%		
Minimation of Harvest Failure	14	10,3%	11	8,1%	4	2,8%		
Harvest Frequency Stability	5	3,7%	2	1,5%	0	0%		

b.   Community Capacity

Community capacity is people's perception of a problem in the environment and associated with the activities undertaken to address the problem.

- Income

People in the aquaculture environment Bugulkidul, Pasuruan represented by 136 respondents, the satisfactory of rate income received from the pond, 36.76% said that the income is enough, 8.82% said their income is not enough, 21.32% satisfy, and 9.56% is very satisfy. Perception is associated with activities that people do to manage the activities of farms increased diversity of commodities,

increase productivity, minimize crop failure, as well as maintaining the stability of the frequency of harvest activity. Based on the results of cross tabulation analysis with chi-square, there is a value of 0.873 or greater than 0.05 so that it can be conclude that there is no influence between the public perception that assess income is less or very satisfied with the activity of managing the farm that seeks to improve revenues. This means that the current community perspective in assessing the income is not related to managing activities of pond shape. It means that people are not addressing the issue of lack of income or sufficient income to aqua culture activity. More can be seen in Table 2.

Table 2. Cross Tabulation Society Income Perception to Aquaculture Activity

| Activity | Income | | | | | | | | | | Chi-square | |
	Very Inadequate		Inadequate		Adequate		Satisfying		Very satisfying		P Value	df
Comodity Variability	8	5,9%	17	12,5%	28	20,6%	16	11,8%	9	6,6%		
Produtivity	3	2,2%	5	3,7%	8	5,9%	5	3,7%	1	0,7%		
Minimation of Harvest Failure	1	0,7%	9	6,6%	12	8,8%	5	3,7%	2	1,5%	0,873	12
Harvest Frequency Stability	0	0,0%	1	0,7%	2	1,5%	3	2,2%	1	0,7%		
Total	12	8,8%	32	23,5%	50	36,8%	29	21,3%	13	9,6%		

- Productivity

People in the aquaculture environment Bugulkidul Pasuruan said that aquaculture productivity resulting from the 34.56% is enough, while 11.03% said their income is very less, 27.21% said less, 21.32% satisfy, and 5 , 88% is very satisfy. Perception is associated with activities that people do to manage the activities of farms increaseddiversity of commodities, increase productivity, minimize crop failure, as well as maintaining the stability of the frequency of harvest activity.

Based on the results of cross tabulation analysis with chi-square, there is a P value of 0.275 or greater than 0.05 so that it can be said that there is no influence between the public perception that the productivity rate is less or very satisfied with pond management activities aimed at improving productivity. It's mean that people are not addressing the issue of productivity is less than satisfactory or sufficient to aquaculture activities. This could mean that the current community perspective in assessing the productivity is not related to pond management activities.

Table 3. Cross Tabulation Embankment Productivity Perception to Aquaculture Activity

| Activity | Income | | | | | | | | | | Chi-square | |
	Very Inadequate		Inadequate		Adequate		Satisfying		Very satisfying		P Value	df
Comodity Variability	12	8,8%	24	17,6%	28	19,1%	14	10,3%	2	1,5%		
Produtivity	3	2,2%	5	3,7%	6	4,4%	6	4,4%	2	1,5%		
Minimation of Harvest Failure	0	0,0%	7	5,1%	11	8,1%	7	5,1%	4	2,9%	0,275	12
Harvest Frequency Stability	0	0,0%	1	0,7%	4	2,9%	2	1,5%	0	0,0%		
Total	15	11%	37	27,2%	47	34,6%	29	21,3%	8	5,9%		

c. **Space UtilizationOpportunity**

This analysis aimed to identifythe size of the society opportunity to do activities through the utilization of space or land use. In the concept of community participation for the implementation of silvofishery, the opportunity to participate can be done through a physical approach to the identification of the distribution of environmental suitability of mangrove plants can be grown in ponds. Physically suitable land can be considered as an opportunity for people to move to rehabilitate the function space of pond life through the use of land owned for silvofishery.

The magnitude of the opportunity to do with the size of the ponds in the study area that can be leveraged into the achievement of the proportion of farms Silvofishery to use space that can support the stability of coastal ecosystems.

Table 4. Land Suitability Evaluation for Mangrove Vegetation

Parameter	Study Area Condition	Suitability Criteria	Evaluation
Soil Texture	Mud-clay, Clay-sand	Clay-sand-silt-mud	Suitable
Altitude	0-10 m	0-4 m	Suitable for some area
Salinity	≤5‰ - ≥10‰	5‰ - 30‰	Suitable for some area
Average Rain Intensity	1500-2000 mm/year	1500-3000 mm/year	Suitable
Water temperature	27-29◦C	≥20 ◦C	Suitable

Based on the overlay analysis of land suitability for mangrove vegetation, it was found that the physical condition of the environment around the villages in the area support the community behavior to form a coastal space through silvofishery. The mean ponds area that can be used to silvofishery in each village reached 73.85% to 99.84%. Related to this, the total land in Bugulkidul appropriate to apply silvofishery is 513.68 hectares or 86.57% of the total area of the entire area of aquaculture ponds in Bugulkidul, Pasuruan.
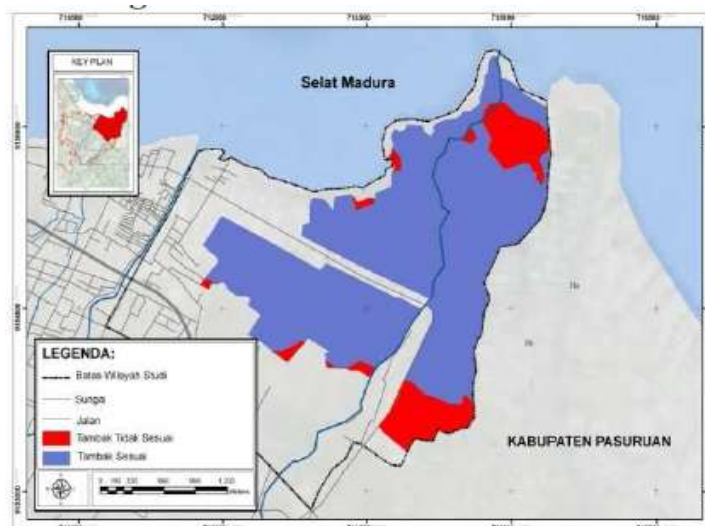

Figure 1. Spatial Distrubution of Silvofishery Land Suitability

d. **Tendency of Community Interactionto The Environments**

The tendency of the interaction of the environment portrayed in the series of received stimulus, the public cognition, and motivation.

- Stimulus

Communities in Bugulkidul farmers depend on natural resources environment. Use of natural resources is reflected in livelihood options to farming aquaculture ponds. Subsistence fish farmers can generate income once judged satisfactory for the cultivation of abundant and high economic value. Shrimp is a commodity that generates the highest economic value compared to other aquaculture commodities. Benefit of one ton of shrimp is equivalent to five tons of milkfish. The economic value of shrimp is high and this is an indication of the environmental stimulus to the communities that responded to the behavior of the magnitude of benefit through the management of space in his life. The picture is indicated by the physical changes in the pre-chamber in 1981, years 1981-1994, until the period after 1994. Equitable distribution of mangrove conditions on the pre-year 1981 is an indication that that period was a period when people were not able to assess the stimulus in the form of shrimp commodity as a commodity of high economic value so that the space is still dominated by mangrove vegetation.

Changes in land use mangroves to ponds that occur significantly in the period 1981-1994 is an indication that people are starting to assess the environmental stimulus in the form of economic value through the utilization of shrimp where his lifeas an effort to respond to stimulus. This phenomenon is illustrated by the behavior of local people who felt that society would be better if people are able to respond to the stimulus through the conversion of mangroves into ponds in order to obtain benefits from shrimp farming.

- Cognition Society

Stimulus that is recognized by the public in the form of higher selling prices of shrimp treated with the behavior of the opening of new land aquaculture ponds. A series of changes in the physical form of space phenomena, penetration stimulus phase, as well as activity patterns that occur in society portrayed into Table 6.

Table 6. Spatial Management Activity Pattern from Spatial Physical Change and Environmental Stimulus Penetration Phase

No	Avtivity categories	Pattern of activity to manage spatial	Spatial physical change because of stimulus penetration					
			Before 1981		During 1981-1994		After 1994	
			Spatial physical	Stimulus penetration	Spatial physical	Stimulus penetration	Spatial physical	Stimulus penetration
aquaculture								
1	Increase the diversity of commodities	Filtering activity of shrimp and other fish in the river	Dominance distribution of mangrove vegetation	Communities have not been able to assess the stimulus (the economic value of tiger prawns)	Transitional Mangrove into ponds	Transitional community to identifying stimulus	Pond dominance	Communities are able to assess the stimulus
2	Increased productivity	fertilization						
3	Minimization crop failure	Removal of sludge						
4	Consistency of harvest frequency	Water quality management						
non-aquaculture								
5	Utilization of resources	Fishing in rivers and wetlands for somestic consumption						

Pattern of activity in managing space both aquaculture and non-aquaculture activities tend to be similar to the pre-year 1981, the year 1981 to 1994, and after 1994. Difference only in the physical form of space and penetration of environmental stimulus that received by the community. When the environmental stimulus in the form of economic value of shrimp has become a popular community, the community is strengthened through a phase response to stimulus. Strengthening the individual

response to the stimulus portrayed in the public perception of welfare better if cultivated shrimp in an environment where they live. Therefore, the behavior that occurs is the transfer function through the expansion of the pond during the transition from stimulus known to the public.

Knowledge related to the stimulus response behavior based on cognitive behavioral theory of impetus, which means that they are able to assess their level of prosperity and overcome through the provision of ponds for shrimp cultivation. With the change of physical environment, the transition is said to have the ability to respond to the penetration of shrimp stimulus. But if it is based on the ability to solve problems in the form of commodities that are not shrimp can be harvested in their farms through the management of space, people do not have the ability.

This is illustrated into the public perception that is only able to assess their farms decreased performance and productivity in terms of revenue, but no activity can be done to overcome it.Community only complained about the performance difference is that they manage ponds during theshrimp can still be harvested.Ecological functions of mangrove forests as spawning is (nursery ground) for marine life such as shrimp or other animals that can be used as household consumption and aquaculture farming. Space changes in the form of significant reduction in mangrove vegetation can mean that the spawning room for shrimp seed will come down significantly as well. This condition is a phase of the environmental stimulus in another form after the physical space changes have occurred. Stimulus in the form of commodity culture change associated with the reduced space for marine spawning significant penetration of the stimulus is a phase that has not been able to overcome the public through the form of changes in the activity.

Based on the quantitative parameters, it is seen from the absence of linkages between the public perception that assesses the performance of farms decreased overcome this behavior is illustrated in Chi-square values are not significant (> 0.05) the P value of 0.873 for perception of earnings and a P value of 0.275 for perceptionproductivity.

• Community Motivation

Based on the changes that occur due to the space community behavior, the behavior of the fish farmers in the district Bugulkidul in shaping the space of behavior encouraged by the response to a stimulus on the basis of human nature. This is illustrated form of cognitive behavioral tendencies to gain maximum benefit from available resources in the places of his life. If the motivation is reviewed based on the characteristics of the community, local communities manage the space place his life on the basis of fundamental motivation needs (basic needs) as well as psychological motivation needs (psychological needs). There is a correlation between the utilization of mangroves by aquaculture activity in basic needs and psychological needs are an indication of people's behavior in the management of space to walk through a series of behaviors that they realized and not realized. Such behavior is behavior that is shaped motif conscious and unconscious motives. Here is a picture of the relationship management of space activity patterns based on utilization patterns of mangrove.

Table 6. Spatial Management Activity Pattern based on Mangrove Utilization Motivation

Activity Pattern	Mangrove Utilization			
	Concious Motivation		Unconcious Motivation	
	Fundamental	Psychology	Fundamental	Psychology
Aquaculture	Strengthening the embankment	-	filter shrimp seedlings in river	-
Non-aquculture	-	▪ Natural disaster ▪ Preserve environment sustainability	Catch fish and crab in swamp or river	-

Pattern of activity if the review is based on awareness of the utilization of mangrove can be classified into conscious and unconscious motives. Utilization of mangroves in the public conscious aquaculture activity is the use of mangroves as reinforcing embankments. Utilization of mangroves

in this form of society is a culture that taught earlier to reduce crop failure that can occur when the levee embankment damaged by high water flow rates that are too large. Utilization of mangroves in order to prevent crop failure as a motivation categorized on the basis of fundamental needs. This is because the presence of a minimum level of crop failure, the public can meet their basic needs better. In addition to reinforcing embankments, cultural values are taught the parents is a good activity to actively manage mangrove planting of mangroves to avoid natural disasters or passively by just letting it grow lush mangroves. The following is a narrative of local farmers associated with the teachings of the parents of the functions of mangrove vegetation, "If the parents when I was little time to teach the many benefits of mangroves, and even some of the remaining mangrove plots pond today is the result cultivation by parents old days "(Waluyo, 2011).

Community activities that filters of shrimp seed in the river is a passive form of mangrove utilization. These activities are not recognized by society as a form of dependence on the physical condition of the environment around the mangroves. This activity pattern only they knew of knowledge from generation to generation that shrimp and other biota are pretty much in the space where they live. Patterns of activity that people do not realize that there are also utilizing mangroves in the category of activity that is non aquaculture additional forage activity around rivers and swamps. The following is a narrative of the Ba'i (2011) as the local farmers:

"Besides embankment activities, fish farmershere both day and nightalways look for addition foodof crab oranything in the swamp or inriver. Since from the firsteven now this is what we do habitually."

Can be concluded that the pattern of activity in space is based on the motivation to manage the basic needs and psychological needs. Basic motivation manifested in two forms. The first form is motivated by basic needs of livelihood aquaculture, while the second form is the motivation of basic needs in the form of mangrove utilization either actively or passively. Mangrove utilization activities that are categorized as active and recognized by the local community are strengthening dike construction through mangroves. While the utilization of mangroves in the passive activity but is not recognized by the public isfiltering activity of shrimp seed for aquaculture as well as finding additional food from the river or swamp. Space management activities are based on psychological needs is just a form of investment activity to avoid natural disasters as well as allowing vegetation a passive activity.

•CommunityEnvironmentalInteractionPatterns

Behavioral tendencies that are constructive to the expected pattern of space utilization are a form of public participation that can be done independently without the involvement of the vertical (government agencies). Behavioral tendencies that lead to the management of the space where life can be evaluated based on a systematic relationship between the penetration of environmental stimulus, cognition, and motivation. The penetration patterns are addressed by the stimulus to form patterns of the current space management activities into the diagram illustrated the interaction with the environment.

Readiness of Community Participation in Land Use through silvofishery

Community readiness to participate in an ideal form of coastal space through silvofishery variable will have on the physical land and opportunity. Unpreparedness of the people there to use a variable ability to take control knowledge on the environment. Based on the study of the interaction of the environment both before and after the change of space, the public can be said to have the will for the implementation of identified silvofishery because there is a correlation between the two inter-related activities, namely the utilization of mangroves by aquaculture activity. Willingness to current conditions is still visible from the utilization of mangrove association chisquare value with significant aquaculture activity, namely 0.013. Potential willingness to participate in the community relating to the teaching of earlier societies that manage the space on the basis of psychological needs (sense of belonging) to the presence of mangroves. A teaching of the previous trend of behavior is shaped to control the environment in which local people live.

The nature of willingness to participate in terms of everyday behavior managing the space currently has limitations in terms of motivation levels held to encourage constructive behavior to the concept silvofishery. A change in behavior in response to a stimulus in the form of the economic value of shrimp has an impact on community control of neighborhood decline. This is evidenced by the conditions of utilization of mangrove decline in the hierarchy of psychological needs boost levels (ownership) to boost basic needs. Dominance of mangrove communities tend to utilize only the level of satisfaction of basic needs (household goods) that is in the form of conscious motives as reinforcing the dike embankment in order to reduce crop failure due to damaged levees and other forms of unconscious motives in the form of filtering the seed shrimp in the river. Activity patterns that utilize the mangrove communities are doing right now is the result of previous successful teaching people to take control of the environment to some degree of psychological needs (self-belonging). Such a pattern of activity represents a potential participation of managing space within the community to grow organically. Manage the activity patterns of space supported through the utilization of mangroves with the appropriate physical conditions for silvofishery. The physical condition of the existing environment in the aquaculture sub Bugulkidul silvofishery generally applicable throughout the villages in the study area.

Suitability of land suitable for pond silvofishery reached 86.57% of the total area of the pond. The total land area of the largest pond that can support the activities of people manage existing space through the village Kepel silvofishery the 210.12 Ha. A willingness to manage the space and opportunity to participate through silvofishery not enhanced by the capabilities of the community. Communities do not have the knowledge to overcome the problem of shrimp stimulus environment by improving the physical condition of space as a form of control over the environment. This condition is a form of powerlessness of the public to environmental stimulus. Psychologically, the powerlessness of the people that are experiencing is learned helplessness. The existence of learned helplessness is an indication of the tendency of behavior that will take back control of the environmental properties such as the former had lakukan.Kondisi is supported by the persistence of the impulse activity utilizing the mangroves at the instigation of basic needs. Potential participation to grow organically for the farmers in the district Bugulkidul only form of encouragement to take control of the environment on the basis of motivation and the basic needs of older people who are teaching the fulfillment of psychological needs. There is a growing problem in the public nature of environmental control. These obstacles is the lack of knowledge that can strengthen the motivation to manage the space through the concept of silvofishery. However, the growth properties in the control of the environment can still be influenced by external conditions that influence the development of perception and knowledge of the community in assessing the behavior of the best options to do. External factors may include the development of science and technology and the impact of the development and progression of Pasuruan City.

4. Conclusion

A. The interaction of the environment in terms of growing conditions of participation

Changes in the shape of space conversion of mangrove land into ponds in the District Bugulkidul hierarchy due to decreased motivation of people in the management of public space have properties that cause loss of control to maintain the physical form of space. Form of loss of control in the system of community interaction on the environment, is that government (interest) in the form of motivation to manage space by utilizing mangroves but is not supported with the ability to recognizeenvironmental problems where the physical conditions of life through improved utilization of space with mangroves. Nevertheless, there remains the opportunity to behave in the physical condition of the land to support the growth of mangroves on the pond. (silvofishery).

B. Readiness of Community Participation in Land Use through silvofishery

Community participation in maintaining the ideal form of coastal space in the District Bugulkidul through silvofishery can be said is not ready. This is because not all variables can be found on the public participation in the District Bugulkidul. The nature of people's behavior in the ideal form of coastal space through silvofishery only in the physical variables and the opportunity will land, while the creation of the participation constraint is the inability to use the knowledge society in addressing the issue of life through improving the environment in which physical space. The emergence of the ability of people to be influenced by external conditions that may affect the development of perception and knowledge society inassess the behavior of the best options to do. These external factors of development of science and technology and the impact of the development and progression of Pasuruan City.

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URBAN
CONTEXTS

Public Open Space and Quality of Life
Medan Case Study

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ABSTRACT

It is a fact that public open space becomes decreasing both in quality and quantity, mostly because of economic pressure. Thus, public open space has to compete with privatized public space, which is, in contrast, grows so fast with its better quality. The privatized public space almost controls who could enter it or what activity could be done there. This condition is contrast with normative concept of public open space, where it is accessible for every class of people, where they could have many activities there and meet their physical and social needs. This research is meant to investigate how intensive people use public open space, which factors affect people perception about public open space, and whether public open space affect people quality of life. The data about people perception about quality and activity of public open space collected by interviewing 486 respondents which visit four public open spaces in the center of Medan. It found that people perception about public open space affects positively and significantly to their quality of life. The better people perception about quality of life, the higher their activities intensity there and then it would make their quality of life becomes better too. This study would contribute to city planning in determining factors should be considered in planning and designing public open space which could increase quality of life of people.

Keywords: *public open space, quality of life, urban*

1. INTRODUCTION

Chattanooga in Tennessee, United State of America, became a death city, when quality of life decreased by air pollution, jobless and crime, caused by economic crisis in the beginning of 1980s. The middle class of citizens leaved city center to get more clean air and green environment in sub urban area. The local government, businessmen and community group then tried to repair urban quality by revitalizing public open space in the city center. Now, quality of life in Chattanooga becomes better, citizens back to live in the city center, and it drives economical activities going better (www.travisclosehomes.com).

The fact, gives an illustration that among the problems of cities all around the world – the social economical gap, the decreasing of environment quality, the weakness of social cohesion – public open space has an opportunity in making a better quality of life. Physically, public open space is a green space where tree and vegetation grows and maintains urban ecology. Many researches show that natural elements of public open space would give relaxation effect which relate to mental health (Abraham, Sommerhalder and Abel, 2010). Also, public open space becomes a comfortable place to do various physical activities, which give positive influence to physical health (Sugiyama, 2010; Franzini *et al*, 2009; Maller *et al*, 2009). In social aspect, public open space is a place where everybody can enter in, where people meet each other and have social interaction (Zhang, 2009). A public open space is a place to celebrate diversity (Thompson, 2002), to express culture and tradition, and to discharge social boundary (Yeoh and Huang, 1998). Public open space would be a place to official-nation activity, as a community identity and symbolize an urban culture (Carr and Francis, 1992). It also becomes a place to exchange talents and experiences, goods and stuffs, opinion and view (Gehl, 1996).

The researches about the relationship between public open space and quality of life have been conducted all over the world. Chiesura in Amsterdam found that public open space affected quality of life in aspects of environment, economy and social (Chiesura 2003). Study of Lynch (2007) in Canada found that factors would be influenced by public open space were physical, social and psychological

health, economy and environment quality. CABE in United Kingdom stated that the relationship between public open space and quality of life was a complicated study in national scale, but studies in smaller scale found that there is a strong relationship (Beck, 2009).

With such important functions and roles for quality of life, now urban public open space faces many problems. Recent studies in many cities have found typical problems of public space, such as the increasing of changing environment and the decreasing of quantity and function of public open space. The similar problems could be found in many Indonesian cities. The cities development represented by a growing fast gated community and malls, as a representation of middle class needs and the global capital rush (Dick and Remmer, 1998; Douglas, 2006). For instance, in 2002, 20 shopping malls developed in Jakarta. Although some of them are socially friendly, but mostly does not pay attention in providing public space (Douglas, 2006). This reality is contrast with the fact that in along this 30 years, public open spaces in many capital cities in Indonesia tends to decrease, from 35 % in 1970s, to become less than 10 % in 2006 (Departemen Pekerjaan Umum, 2006). The tendency to diminish public open space and to expand gated community has been a paradox to harmonious social life, which leads to "the end of public culture" (Sennett, 1977; 1995).

2. LITERATURE REVIEW

2.1 Successful Public Open Space

Public open space is outdoor spaces with free access for people (Jacobs, 1961; Madanipour, 1999), such as cafes, retail, bazaar, parks, streets and pedestrian paths. Public open space is successful while it becomes a conducive place for social interaction (Danisworo, 1989; Whyte, 1985), attracts many visitors to do their activities in there (Danisworo, 1989; Whyte, 1985), with a wide range of activities occur (Rivlin, 1994; CABE and DETR, 2001), individual or group (Rossi, 1982; Gehl, 2002), informal and suitable for recreation (Whyte, 1985; Project for Public Space, 2000), democratic and non-discriminative (Car, 1992), accessible for all class and age of people, including disable people and informal sector (Gehl, 2002; CABE and DETR, 2001).

Successful public open space should promote psychological comfort and safety (Danisworo, 1989). In the physical dimension, the criteria of high quality public open space is the clear and easy access and movement system (Danisworo, 1989; Car, 1992; Rivlin, 1994; Project for Public Space, 2000; Gehl 2002; CABE and DETR, 2001). It could be attained by creating linkage as clear paths which connect each other (Project for Public Space , 2000; Gehl, 2002; CABE and DETR, 2001) and by integration of transportation mode and land use, the present of landmark as orientation (CABE and DETR, 2001), with human scale design (Asihara, 1981; Shirvani, 1985).

Pleasant public open space could be reach by high quality architecture, (Danisworo, 1989; Carr, 1992), attractive building facade, (Gehl, 2002, CABE and DETR, 2001) and interesting scene and details (Gehl , 2002; Avila 2001). Natural elements are important factor in public open space that improve comfort, relaxation, pleasant experience and anticipate unpleasant climate by placing tress along pedestrian path and sitting area (Kaplan and Kaplan, 1989; Carr, 1992; Gehl, 2002; Avila, 2001).

2.2 Public Open Space and Quality of Life

All aspects of the development programs aimed to enhance people quality of life (QOL). Research in QOL becomes important to ensure that planning and investment reach the goal effectively (Beck, 2009). 'Quality' refers to level of goodness of any character/condition, but it would be different among people. Schoemaker *et al* (1990) defines QOL as 'individual's overall satisfaction with life'. Cutter (1985) defines QOL as "... an individual's happiness or satisfaction with life and environment, including needs and desires, aspirations, lifestyle preference and other tangible and intangible factors which determine overall well-being."

QOL can be seen from two indicators, they area (1) objective indicators, by measuring actual condition of built environment, natural environment, and social and economic aspects; (2) subjective indicators, by measuring evaluative statement of what people feel about any living factors (Maclaren, 1996; Grayson dan Young, 1994; Dissart and Deller, 2000). In research about QOL in urban area, QOL dimension relates to environment factors which has been considered in a broader sense, they are physical, social and economic environment (Das, 2008). One important element in an urban

environment is public open space (Shirvani, 1985). Public open Space can be seen in various forms, but all have important functions, such as conservation, recreations, relationship with nature, mental and social health maintenance (Lynch, 1965/1990). Study conducted by Marans (1988) states that quality of place, such as public open space, is a subjective phenomenon, everyone has a different perception.

Many studies give information that public open space relates to QOL aspects, such as physical and psychological health, social interaction, rate of crimes and economical value of property. Research carried out by Cattel (2008) shows that a wide range of everyday public open spaces were perceived as having a positive influence on both individual well-being and community life. Jackson (2002) claims that greenery elements must be incorporated into relatively high-density neighborhood designs that include public buildings, open space, mixed land use, and pedestrian walkways to increase physical exercise and enhance civic life. The other works show how public open space relates to physical and psychological health (Chiesura, 2004; Harlan *et al.*, 2006; Hansmann *et al.*, 2007; Song *et al*, 2007), social interaction and cohesion (Kweon et al 1998 ; Ravenscroft & Markwell, 2000; Sugihara and Evans, 2000; Tinsley *et al.*, 2002; Cohen, Inagami & Finch, 2008), criminality rate (Kuo and Sullivan, 2001) and economical value of property (Lutzenhisher dan Netusil, 2001; Irwin, 2002; Jim and Wendy, 2007)

2.3.   Methodology

This study will explore factors of public open space which would contribute to quality of life based on user perception. The researches about quality of life in urban area have been conducted by many scholars. One of them is the study by Campbell (1976), which measured urban quality of life by measuring people's perception and satisfaction and evaluated them. Another study was conducted by Marans (1988), who argues that a quality of a place, such as public open space, is a subjective phenomenon, when every person would have different view about the place.

In developing country, people's wellbeing does not always fit automatically with the objective condition of economic environment *(Hoornweg et al, 2007),* thus the quality of life measurement more focused to subjective measurement, which based on one's personal perception. According to Das (2008), objective and subjective indicator are associated each other, but give a low correlation value. It means that the subjective quality of life would be different with the objective one. In this study we investigate the relationship between public open space and quality of life by using the level of satisfaction of people as the indicator. The study will formulate the relationship between public open space and quality of life and then identifying the factors of public open space which would affect quality of life.

The data collected by questionnaire-based interview to 486 people who visit four public open spaces in the center of Medan. Data collected in one weekday and two days of weekends. The level of satisfaction of public open space is measured in a five-point Likert scale ranging from "1" for very unsatisfied, "2" for unsatisfied, "3" for neutral, "4" for satisfied and "5" for very satisfied. Using the mean values of the scale, "3" is considered to be the midpoint. Thus, any value above 3 is considered somewhat satisfied but of higher level. Similarly with any value below 3, it is considered to unsatisfied but of lower level.

Technical analysis used is Structural Equation Modeling (SEM¸ a second generation of multivariate which could test a relationship among variables simultaneously to get a comprehensive description about the model. SEM could test multiple regression and factor analysis simultaneously. The analysis tool used is AMOS (Analysis of Moment Structure) which could be used any data including SEM, analysis of covariance structures and causal modeling.

3.   FINDINGS AND DISCUSSION

The study analyzes public open space in Medan by two indicators; first, user aspect, and second, activity aspect (Danisworo, 1989; Car, 1992; Rivlin, 1994; Project for Public Space, 2000; Gehl, 2002; Whyte, 1985). The user aspects can be viewed from the demographic characteristic of respondents, including age group, gender, education, economical status, life style and demographic status. Activity aspects can be viewed from the intensity, duration and frequency of people visits and the range of activities done in there. The people who visit public open spaces in Medan are mostly permanent

resident of Medan (79.9 %), 12.8 % of them are temporary resident and 7.3 % are tourists. The visitors come from almost all area of Medan, from the area around the public open spaces to those who come from the fringe of Medan.

From age group aspect, it found that almost all age groups come to and doing their activities in public open space, dominated by teenager age group (56.8 %). The facts that teenagers are the most age group visit public open space confirm many empirical studies that their aims are (1) releasing their selves from adult's control and (2) enjoying their group's social activities (Ari, 2001; Gehl, 1996; Travlou, 2006). The teenagers, psychologically, need space and media to their selves-actualization, as well as recognition in their group, and public open space fulfill the needs. They could have many physical activities there, mostly in group, such as playing, exercising or just walking and sitting.

In social-economic aspects, almost people who visit public open space are those who are not married, mostly students, from middle to low income people, with less than 2.5 million IDR incomes per month. The facts confirm what Siu (2008) argued that people of middle-up income class tend to have change their needs to material goods, as a reason the growth of privatized public space as their social class representation (Dick and Rimmer, 1998).

Rapoport (1990) said that lifestyle would determine people's choice to come or not to public open space. The lifestyle would be indicated by the tradition in spending their times in the weekend or holiday. The study shows that that people who visit public open space mostly those who always go there in their weekend or holiday (53.9 %). But, there are a number of them which prefer to go to the shopping mall or restaurant/cafe outside the shopping mall (46.1 %).

In activity aspect, public open space in Medan lived by mostly recreation -"choice" activities (Gehl, 1996), such as sitting, eating, playing, exercising, or socializing with friends or other people. They mostly do their activities together in group. But there are any activities relate to political or National Special Day. People's perception and level of satisfaction for public life in public open space shown 3 (neutral) to 4 (agree) grade of Likert scale. A few indicators for this fact are (1) frequency of visit (2) duration of stay and (3) the range of opportunity to do various activities. When they asked "what is your opinion about : you (1) visiting public open space whenever have time (2) staying long time in public open space (3) doing various activities in public open space ", although more than a half of respondents say 'neutral', but those who say 'agree' bigger than 'disagree'. It can be said that people visit to public open space in a higher frequency (more often), in a longer duration and doing many activities there. This would be an indicator that public open space in Medan is a livable public space (Gehl, 1996).

The successful public open space characterized by its ability in providing social interaction (Danisworo, 1989; Lang, 1994; Whyte, 1985). Gehl (1987) defines social activity as "all activities depend on the presence of another people in public open space". Coming to public open space becomes a beginning of physical contact. The bigger the number of people spends their time in public open space, the higher the frequency of them to involve in social interaction. According to this study, the frequency and duration of stay in public open space becomes a decisive factor which generate physical contact. In his book The Social Life of Small Urban Space, Whyte (1985) states that a plaza which functioning as a public open space is a plaza where people would be socializing, having a date, there are large numbers of groups, and people meet each other. The level of satisfaction of people for "social interaction in public open space" mostly shows 3 (neutral) and 4 (satisfy) score. Although the people who say 'satisfy' are smaller than who say 'neutral', the sum of this 4 score are still bigger than those who say 'dissatisfy' and 'very dissatisfy'. Almost all people state that they do their activities together in groups, meet friends or other people in public open space. It shows that there is social contact in there, so public open space becomes a successful place to social interaction. When people meet their social interaction needs, it can be said that a dimension of quality of life have been achieved.

The other activity is exercising. This activity occurs in the morning from 05.00 to 10.00 am and in the afternoon from 04.00 to 06.00 pm, and has a peak time in the weekend. People's perception about the function of public open space as a place to do exercise is generally good. Almost people say 'neutral' for this aspect, but those who say 'satisfy' bigger than those who say 'dissatisfy'. Exercise is a physical activity which contributes positively to physical and mental health. When people get the needs for physical and mental health, it can be said that they have met a dimension of quality of life.

Beside 'social interaction' and 'exercise', the other activity occurs in public open space is recreation, such as playing, walking, eating or just sitting. Similar with the first two kind of activities, people perception about this aspect in public open space shows similar score, generally from 3 to 4 score, and the number of people who give 4 score bigger than who give 2 or 1 score. It can be said that when people have an opportunity to have a recreation activity, it would give positive influence to their physical and mental health and give contribution to quality of life.

From the description above, we conclude that, generally, public open spaces in Medan are successful public spaces, where the users come from all age groups and doing a wide range of activities. Although almost people who visit public open space are teenager-age group and come from middle to low income class, their perception about public open space are generally fine. In other words, subjectively, public open space has met people needs.

When people have a good perception about public open space, they will visit the place in a higher frequency, in a longer duration and do a wide range of activities. The more intensive people visit public open space, the more advantages they will get, such as mental and physical health, relaxation and social interaction. A good condition of mental and physical health, for instance, will influence productivity, and more than that, a happiness, so they have a good quality of life.
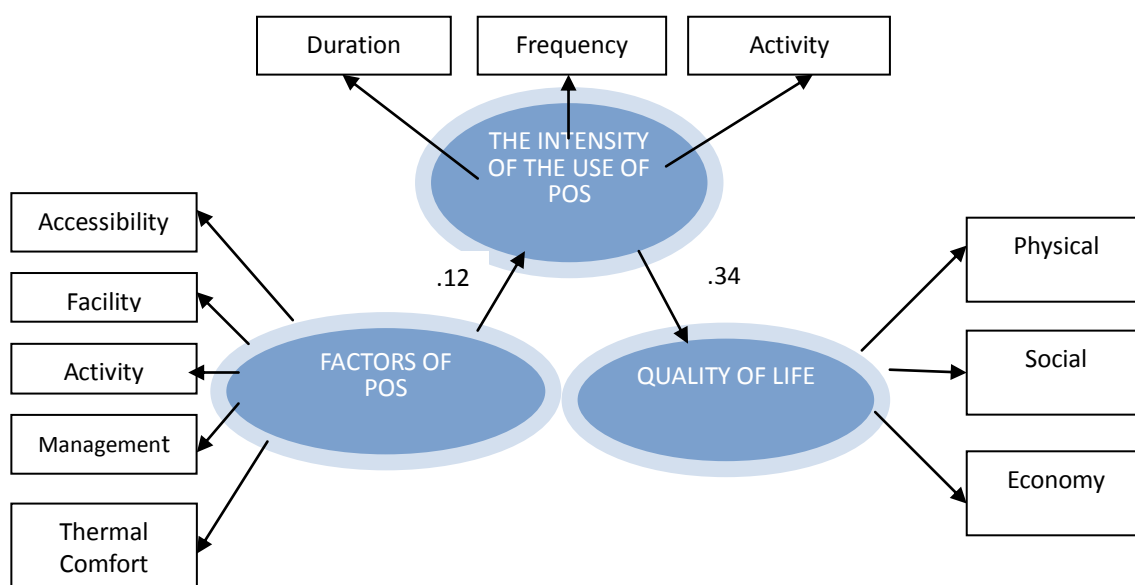
Figure 1. Model of The Relationship Between Public Open Space and Quality of Life
(Source: Data Analysis, 2012)

The analysis of the study generates a model of the relationship between public open space and quality of life. There are two variables analyzed, public open space and quality of life. The independent variables 'public open space' influenced by several factors, such as accessibility (Danisworo, 1989; Car, 1992; Rivlin, 1994; Project for Public Space ,2000; Gehl 2002; CABE and DETR, 2001), facility (Danisworo, 1989; Car, 1992; Rivlin, 1994; Project for Public Space ,2000; Gehl 2002; CABE and DETR, 2001), activity (Gehl, 1996; Whyte,1985; Rivlin, 1994; CABE and DETR, 2001), management (Beck, 2009) and thermal comfort (Kaplan and Kaplan, 1989; Whyte 1985, Martopo *et al*1995). The dependent variable is quality of life; consist of three indicators, such as physical, economic and social dimensions (Chiesura, 2003; Massam, 2002; Marans, 2003; Das, 2008; Salleh, 2008). Between the two variables, there is a media factor, which is called 'the intensity of the using of public open space'. This factor has several indicators, such as duration of stay in public open space, frequency of visits to public open space and the range of activities could be done in public open spaces. As shown in F**igure 1,** there is a strong correlation between people perception about public open space and the intensity of the using of the place. Statistically, the path coefficient value of the relationship between the perception of public open space and the intensity of people's activities in public open space is 0.12; it means that every increasing of perception of public open space will increase the intensity of activities as high as 0.12 values. In other words, the perception of public

open space will have positive and significant influence to the intensity of people's activities in public open space. Then, the perception about the intensity of public open space use will have positive and significant influence to quality of life. Statistically, path coefficient value for the relationship is 0.34. It means that when the intensity of public open space use increases, the quality of life will increase too as high as 0.34 values.

According to survey and data analysis, there are some factors that influence people's perception about public open space, as follow:

a.   Accessibility.
Leanne (1994), states that the quality of urban public open space influenced by the location and the accessibility to approach and enter in the place. The indicators of this factor are distance from home, transportation mode and traffic and the accessibility to enter in. The study found that these factors have a positive and significant influence to perception of public open space, with the path coefficient value as high as 0.82.

b.   Facility
Facility is a physical factor of public open space which influences the intensity of public open space use. The availability of the facility would support people to do their activities in a more safe and comfortable way (Danisworo, 1989; Car, 1992; Rivlin, 1994; Project for Public Space, 2000; Gehl, 2002; Montgomery 1997). The indicators of this factor are the dimension, parking lot, playing area, praying facility, dining facility and informal-street vendor. This factor has a positive and significant influence to the perception of public open space, with the path coefficient value as high as 0.86.

c.   Function and Activity
The function aspect of public open space relates to user's need to do several activities. According to Gehl (1992), there are three kinds of activities: necessary activities, choice activities and social activities. The study found that several activities done in public open space, such as recreation, sport/exercise, social interaction and political activity, influence people perception about public open space significantly, with the path coefficient value as high as 0.78.

d.   Management
According to Beck (2009), well design and management of public open space would be a favorable and successful public open space. Management aspect in public open space associated to several indicators, such as comfort, cleanliness, beauty, regularity, safety and management as a whole. This study found that this factor has a significant influence to people's perception about public open space with the path coefficient value as high as 0.76.

e.   Thermal Comfort
Comfort is an important factor in public open space. Lang (1984) defines comfort as "the level of freedom from illness in all dimension of environment experience". The comfort aspect in public open space would depend on climate condition and safety. In this study's context, the comfort aspect will be investigated is thermal comfort, which relate to micro climate in public open space. Physically, public open space's features which affect thermal comfort is vegetation. Thermal comfort in public open space would be influenced by the presence of vegetation. This aspect has a significant influence to people's perception about public open space with the path coefficient value as high as 0.58.

Based on the result of statistical test for factors which may influence people's perception about public open space, the facility factor, has a highest coefficient value compares to the other variables which studied in this research. The result indicates that the facility – provided by city government - is the most important aspect to satisfy the users of public open space. The existing facilities in public open space are parking lot, public toilet, playing, exercise/sport, and sitting, dining area and cafes or restaurants. By the facilities, people would come to public open space in a higher intensity and would get all advantages that public open space could offer to maintain their quality of life.

4.   CONCLUSION

The result of analysis indicates that people's perception about public open space has a positive and significant influence to quality of life. When people have a good perception about public open space,

they will visit the place in higher frequency, in longer duration and do a wide range of activities. The more intensive people visit public open space, the more advantages they will get, such as mental and physical health, relaxation and social interaction. A good condition of mental and physical health, for instance, will influence productivity, and more than that, a happiness, so they have a good quality of life.

Several physical and social factors of public open space also has a positive and significant influence to people's perception. The factors are accessibility, facility, function/activity, management and thermal comfort. Each factor has several sub factors which also has positive and significant influence to people's perception about public open space. The result of statistical analysis indicates that among all factors, the dominant factor is the facility. It means that the facility in public open space will influence the intensity of the using of public open space.

The study generates a model to look out the influence of people's perception to public open space. The model shows a strong correlation between people's perception about public open space and the intensity of their visit and activity in the place. Then, the perception of the intensity of activity in public open space has a positive and significant influence to quality of life.

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Reviewing the Pedestrian Facilities' Accessibility for Blind Users
Case Study: Spaces Around Rehabilitation Center for Visually Impaired Persons in Bandung, West Java, Indonesia

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ABSTRACT

Accessibility has become an important aspect that should always be considered in designing spaces. Some countries applied accessible design principles in accommodating people's life, in order to ensure that every member of the community can safely and comfortably perform all their activities. In Indonesia, the issue concerning accessibility has not become integrative part in planning and materializing space.

This paper is aimed to support the efforts for enhancing awareness of accessibility in designing space in Indonesia. Research described in this paper is focused on facilities for blind or visually impaired persons as the users of spaces.

This research is based on curiosity about the current condition and quality of pedestrian facilities which support blind or visually impaired persons' activities that exist around the rehabilitation center for visually handicapped in Bandung, Indonesia. The rehabilitation facility which is named "Panti Sosial Bina Netra Wyata Guna" is located on Jalan Pajajaran 52, Bandung, West Java, Indonesia.

This rehabilitation center has accommodated the education and training process for visually impaired persons for several decades. Based on quick and brief observation, it can be assumed that the pedestrian facilities around that rehabilitation center have not adequately accommodated activities of blind or visually impaired person who usually circulate through those facilities. It seems that rehabilitation center, which has existed there for years, have not given much impact in improving quality of pedestrian facilities around it.

The paper describes the attempts to answer this question " How far have the pedestrian facilities around 'Panti Sosial Bina Netra Wyata Guna' accommodated the blind or visually impaired walkers?". By using available standards or guidelines in analyzing the elements of pedestrian facilities around the rehabilitation center, the problems or inadequacies can be identified. The coverage of analyzed area is limited within 400 meters around the rehabilitation facility, based on consideration about maximum comfortable walking distance. Hopefully, the result of this research can be used to convince the Authorities to improve pedestrian facilities around 'Panti Sosial Bina Netra Wyata Guna', in order to ensure better safety and comfort of every user, including blind persons.

1. INTRODUCTION

Rehabilitation center " Panti Sosial Bina Netra Wiyata Guna" is located on Jl. Pajajaran 52, Bandung. This rehabilitation center has educational and accommodation facilities for visually impaired people, such as class, massage training, guest house, offices, multi purpose building, kitchen, mosque, church, guest house, clinic, and football yard. As an important accessible facility in Bandung that has existed for decades, it looks strange if the spaces around this rehabilitation center are not adequately accessible. This research is trying to describe accessibility around the rehabilitation center and focused on pedestrian facilities. The observed area is limited within 400 m radius around the rehabilitation center, based on assumed average comfortable walking distance (Otak, Inc., 1997). There are other streets around rehabilitation center that have similar width with Jl. Pajajaran (about 8 m), such as Jl Cicendo (on the east side), Jl. HOS Cokroaminoto (on the west

side), Jl Wastukencana , and Jl Cipaganti (on the north side). There are also narrower streets such as Jl. Dr. Rum, Jl. Dr Rajiman (on the north side) and Jl Muhammad Yunus (on the south side).

North
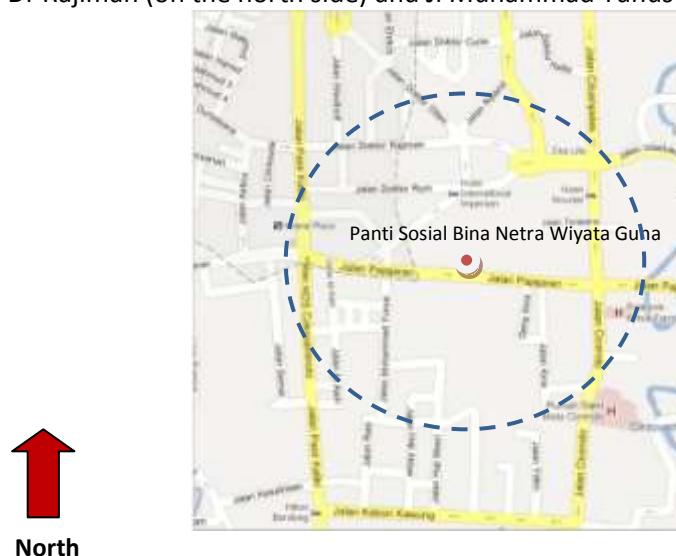
Observed Area
(Source : Google Map, ©2012 Google)

According to California Vehicle Code Section 467(Pedestrian Master Plan: The City of Oakland, 2002):
a) A "pedestrian" can be defined as any person who is afoot or who is using a means of conveyance propelled by human power other than a bicycle.
(b) "Pedestrian" includes any person who is operating a self propelled wheelchair, invalid tricycle, or motorized quadricycle and, by reason of physical disability, is otherwise unable to move about as a pedestrian, as specified in subdivision. By that definition; roller skaters, in-line skaters, and skateboarders are also pedestrians.

2. ACCESSIBLE FACILITIES FOR PEDESTRIAN

Accessibility means: capability to ensure the mobility of all users by accommodating the needs of people regardless of age or ability;

Accessibility principles consist of (Ministry of Public Works, 2006) :
- **Safety**, buildings and facilities should ensure safety of all their users
- **Convenience**, buildings and facilities should be easy to be entered and be used
- **Functionalities**, buildings and facilities should be capable to be utilized
- **Independence**, buildings and facilities should enable utilization by all people without assistance

Accessible pedestrian facilities should have:
- **Safety & Security:** Routes and facilities should be designed and built to be free of hazards and to minimize conflicts with externals factors such as noise, vehicular traffic, and protruding architectural elements. Users should not feel threatened by adjacent traffic and criminal activities.
- **Shelter:** Facilities should be able to protect people from weather. Plantings and other elements should create desirable microclimates and support the psychological and visual comfort.
- **Convenience:** Routes should facilitate the desired journey without undue deviation or difficulty.
- **Efficient mobility:** Routes should enable comfortable walking distance with access to other modes of transportation
- **Adequacy:** One person walking together should be able to pass a second person in the same route comfortably, and different walking speeds should be facilitated. In areas of intense pedestrian use, routes should be wider to accommodate the greater volume of walkers.
- **Clean environment:** Routes should look and be pleasant to use, by minimizing or eliminating act of littering and other kind of environmental problems that can cause injuries or diseases.

- **Visibility:** Design should allow the user to be seen by, and to see, other pedestrians and vehicles to promote personal security and road safety.
- **Continuity:** The walking route should be obvious and should not require pedestrians to travel out of their way unnecessarily.
- **Connectivity :** Routes should link origins and destinations
- **Social interaction:** Paths should provide places for people to interact, such as places for standing, visiting, and sitting.
- **Attractive element:** Routes should contribute to the character of neighborhoods and environment, and strengthen their identity.

Pedestrian facilities include (Otak, Inc., 2003)**:** Sidewalks; walkways; crossing facilities; ramps; stairs; curbs**;** traffic calming and control devices; furnishings that create atmosphere (such as benches and landscaping); and other elements and strategies intended to encourage pedestrian travel (such as: speed humps, planting strips, shelters, public art, and lighting)

2.1 Sidewalks and walkways :
A sidewalk means property between the curb lines in the lateral line of a roadway and adjacent property, set aside and intended for the use of pedestrians or such portion of private property parallel and in proximity to public highway and dedicated to use by pedestrians. (Otak, Inc., 2003) Sidewalks are usually raised.

Referring to "Pedestrian Master Plan : The City of Oakland" (2002):
Sidewalks consist of the through passage zone and the utility zone. The through passage zone is the paved part of the sidewalk pedestrians use. This zone should be wide enough to accommodate different walking speed and shared use by people with mobility aids. All streets require a utility zone to accommodate public infrastructure and street furniture. Locating this infrastructure in the utility zone prevents it from encroaching on the through passage zone. The utility zone also creates an important buffer between pedestrians and motor vehicles.

Walkways are routes usually built over the existing ground surface without being raised. (Bicycle Federation of America Campaign to Make America Walkable, 1998)
According to 2010 ADA Standards of Accessible Design (Department of Justice, 2010) :
- Route should have a clear width at least 60 inches (1525 mm) and provide passing spaces at intervals of 200 feet (61m) maximum. Passing spaces shall be a space 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum.
According to Building and Construction Authority, Singapore (2007) :
- If the width of the routes is 1200 mm, a maneuvering space of at least 1800 mm by 1800 mm should be provided every 30 m to facilitate the turning of wheelchairs.
- Way finding cues (such as: sculptures, pillars) should be used to direct users to accessible routes.
- Gratings should be equal with the finished floor level to prevent tripping hazards. Gratings located on walking surfaces should be located outside routes. If this cannot be avoided, the long dimension should be placed across the dominant direction of travel and the grating gap should be less than 12 mm wide and in one direction.
According to "Pedestrian Master Plan : The City of Oakland" (2002) :
- Plantings are dramatic street improvement that creates an attractive visual and psychological separation for pedestrian between the sidewalk and the roadway. They may also encourage drivers to move through an area more slowly.

2.2 Crossings (Pedestrian Master Plan : The City of Oakland, 2002)**:**
Crossing treatments help pedestrians get from one side of the road to the other and provide continuity to sidewalks. Crossing treatments are classified as either passive or active treatments. Passive treatments are physical improvements do not change in time. Active treatments have multiple states that are triggered by automated detection or activated by pedestrians.

2.2.1 Passive crossing treatments (Pedestrian Master Plan : The City of Oakland, 2002) :

- Crosswalk is an area of roadway designated for pedestrian crossings and is a continuation of the sidewalk across an intersection. Marked crosswalks should be straight for easy navigation and perpendicular to the sidewalks to minimize crosswalk length.
- Crosswalk striping should correspond to the width and location of sidewalks. High contrast crosswalk striping also helps people with visual impairments to cross streets.
- Curb ramps. All street with sidewalks and curbs or other barriers must have curb ramps at intersection.
- Texture and contrast. Sharply contrasting colors and textures help people with visual impairments to identify crosswalks and boundaries between sidewalks and roadways.
- Bulb-outs reduce the crossing distance for pedestrians, increase visibility for motorists and pedestrians, prevent illegal parking at corners and provide additional room for people waiting to cross the street.
- Refuge islands are located at crosswalks in the middle of streets to provide a safe waiting area for pedestrians
- Safety barrels, posts, and bollards can be used for slowing motor vehicle traffic; improving safety at pedestrian crossings; and temporarily testing and fine-tuning proposed crossing treatments. They also can ensure access for people with wheelchairs.
- Flashers and overhead signs. Flashers are signs showing the universal pedestrian symbol hung from a mast arm that extends over the street. They alert drivers to pedestrian activity and mitigate safety concerns.
- Speed limit signs should be posted regularly.
- Stop signs, may be installed where the combined crossing volume of vehicles and pedestrians is comparable to the main street traffic volume.

2.2.2 Active crossing treatments (Pedestrian Master Plan : The City of Oakland, 2002):

- Traffic signals provide protected crossing opportunities for pedestrians and may be used with other solutions categorized as either passive or active.
- Pedestrian signals work in conjunction with traffic signals to assign right of way at intersections.
- Pedestrian call buttons and kick plates are used to request a signal phase for safe crossing.
- Pedestrian flags increase the visibility of pedestrians who carry them at crosswalks.

2.3 Materials (Department of Justice, 2010) :

Floor surfaces of the routes should be stable, firm, slip resistant and durable. A stable surface is one that remains unchanged by contaminants or applied force, and able to return to its original condition when contaminant or force is removed. A firm surface resists deformation by either indentations or particles moving on its surface. A slip resistant surface provides sufficient frictional counterforce to the forces exerted in walking to permit safe ambulation.

2.4 Ramps

- Changes in level of ¼ inch (6.4 mm) high maximum shall be permitted to be vertical. Changes in level between ¼ inch (6.4 mm) – ½ inch (13 mm) high shall be beveled with a slope not steeper than 1 : 2. Changes in level greater than ½ inch (13 mm) shall be ramped (Department of Justice, 2010).

According to Building and Construction Authority, Singapore (2007) :

- Ramps should have a minimum width 1200 mm. The gradient of a ramp should not be steeper than 1 : 12 and should be consistent between landings. Wherever possible, gradients that are gentler than the recommended gradients for lengths of a single run should be adopted.
- Where the ramp exceeds the maximum length, landings should be provided. Level landings should be provided at the top and bottom of each run as well as where a run change direction. To facilitate easy maneuvering and resting, landing of 2000-2500 mm by 2000-2500 mm is

recommended. Landings should prevent the accumulation of water and not encroach on any circulation routes.

- Outdoor ramps and their approaches should be sheltered where possible and should have good drainage to prevent ponding.
- Ramp and landing surfaces should be made of non-slip materials and should not obstruct the use of moving aids.
- Tactile warning indicators in contrasting colors should be provided at 300 mm away from the edge of ramps. Markings to indicate the direction of human traffic flow are also recommended.
- Ramps and landing that are not adjacent to a wall should have an edge protection in the form of one of the following :
  o A curb of at least 75 mm high
  o A raised barrier with its lower edge not more than 75 mm between the protective barrier and the ramp surface
  o A handrail with the bottom edge bit more than 75 mm from the ramp surface

According to 2010 ADA Standards of Accessible Design (Department of Justice, 2010) :

- Curb ramps and the flared sides of curb ramps shall be located so that they do not project into vehicular traffic lanes, parking spaces, or parking access aisles. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides.
- Counter slopes of adjoining gutters and road surfaces immediately adjacent to the curb ramp shall not be steeper than 1:20. The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level. Where provided, curb ramp flares shall not be steeper than 1:10 .

2.5 Stairs :

Referring to "Pedestrian Master Plan : The City of Oakland" (2002) : stairs should have non slip surfacing, contrasting striping, and sufficient clearance from surrounding vegetation. Stair flights should be 12" in length or less and separated by 5" landings with concrete footings

Referring to 2010 ADA Standards of Accessible Design (Department of Justice, 2010) : All steps on a flight of stairs shall have uniform riser heights and uniform tread depths. Risers shall be 4 inches (100 mm) high minimum and 7 inches (180 mm) high maximum. Treads shall be 11 inches (280 mm) deep minimum. Open risers are not permitted. Nosings that project beyond risers shall have the underside of the leading edge curved or beveled.

2.6 Handrails (Department of Justice, 2010) :

Handrails are required on ramp runs with a rise greater than 6 inches (150 mm) and on certain stairways. Handrails should be placed at 800 mm to 900 mm above the finished floor level. Handrails should be continuous throughout the entire length of the ramp and be extended at least 300 mm at the end of a horizontal run. Handrails extensions should not project into another path of travel. Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. The bottoms of handrail gripping surfaces shall not be obstructed for more than 20 percent of their length. Handrail gripping surfaces and any surfaces adjacent to them shall be free of sharp or abrasive elements and shall have rounded edges. Handrails shall be at a consistent height above walking surfaces, stair nosings, and ramp surfaces. Clearance between handrail gripping surfaces and adjacent surfaces shall be 1 ½ inches (38 mm) minimum.

2.7 Lighting (Pedestrian Master Plan : The City of Oakland, 2002) :

Pedestrian-scale lighting improves accessibility by illuminating sidewalks, crosswalks, curbs, curb ramps, and signs as well as barriers and potential hazard. Pedestrian-scale lighting and motor vehicle-scale lighting each should be provided as a complement to the other to ensure that both sidewalks and travel lanes are effectively illuminated.

2.8 Placement of Objects :

Placement of objects (such as : object with leading edges , free standing objects or protruding objects) shall not reduce the required clear width for accessible routes.

3. BLIND PEDESTRIANS' FACILITIES

Sheffield (2011) describes, according to WHO (World Health Organization), visual impairment consists of blindness and low vision. Blindness is defined as visual acuity worse than 3/60 meters (10/200 or 20/400 in US terms), or a visual field of less than 10 degrees in the better eye with best possible correction. Low vision (previously referred to as "partial sight"), is a significant reduction of visual function that cannot be fully corrected by ordinary eyeglasses, contact lenses, medical treatment and/or surgery. A person with low vision will have some sight but it will be reduced and will usually interfere with everyday activities, such as cooking, reading and writing. If the visual field is reduced, the person may have difficulty seeing well enough to walk alone or drive a car. WHO defines low vision as visual acuity or worse than 6/18 (US 20/60), but better than 3/60 (10/200 in US terms), or a visual field of less than 20 degrees in the better eye with best correction.

According to California Department of Social Services, activities of blind people are related to orientation and mobility. Orientation and Mobility are used by visually impaired persons so that they may "travel" safely and efficiently (California Department of Social Services). In this context, "travel" means moving around inside one's home or outside within the community. It includes walking with or without a mobility aid and using all modes of transportation.

Orientation is a process of using senses to determine position in surrounding context or environment (Ministry of Education and Culture, 1983). According to California Department of Social Services, orientation refers to the relationship between a person and the physical space that surrounds him/her. It includes conceptualizing spatial relationships, such as right angles for negotiating intersections and understanding the layout in one's own home or office so that a person can confidently and efficiently function in these environments.

Mobility is a capability to move accurately and safe from one position to another (Ministry of Education and Culture, 1983). Based on description from California Department of Social Services, mobility refers to techniques used to move safely through the environment while getting from Point A to Point B. For visually impaired persons, mobility can be a particular challenge when attempting to move about safely in an environment full of obstacles and pitfalls. Yet mobility is essential to personal and professional progress, productivity, independence and self-esteem.

A blind person should accustom and develop their skills of orientation and mobility, in order to adapt with the environment independently. Blind person identify surrounding context or environment, by receiving and processing information related to environment condition; which are sent by other senses through perceptional process. More often a blind person trains his/her other senses to develop his/her skills of orientation and mobility, faster and more accurate he/she can identify surrounding environment. Senses that can be used by a blind person to identify surrounding contexts are: Tactile sense (related to textural and thermal elements), Hearing sense (related to audial elements), Smelling sense, and Sixth sense (related to intuition and sense of balance)

Blind person identify space and room by : using elements which have special or certain character as point of direction or orientation; measuring dimension of space and elements; and marking possible obstruction.

Several apparatuses which usually support blind people in their activities are : Braille letters, Long cane, Audial Facilities, and Guide Dog.

Leboyer (1982) argues that generally, the comfort standards of the environment for blind person are not much different from those of a person with normal vision. In order to be considered as comfort, an environment should have certain temperature, humidity, radiation, and air flow. Safety, mobility, and acoustic should also be considered in designing comfortable environment.

The guidelines described below are summarized from several sources and can be applied in designing comfortable pedestrian facilities for blind person, without causing problem for the others.

- **Space & Circulation**
  - Circulation paths should have simple form and minimize crossing or intersection, especially non-perpendicular crossing / crossroad. Circle or arc, can cause confusion for blind person.
  - Pedestrian ways should be separated from paths of vehicular traffic
  - Width of pedestrian way (two ways) is ranged from 1.50 m to 1.80 m (considering wheelchair users)
  - Width of personal space for "long cane" user is 1 m^2 at least. "Long cane technique" is a method of swinging cane side to side to search an area approximately 46 cm in front and approximately 30 cm to either side of them at ground level. The cane is swung back and forth with each pace taken. It is important to emphasize that nothing is projected more than about 30 cm out from a wall or post, which can be detected by the cane at ground level.
- **Element and material**
  - Different floor level need ramp in circulation path. Ramps should not use slippery materials.
  - Sidewalks, ramps, and stairs should have railings.
  - Elements of outdoor spaces such as : street furniture, plants, columns, gutters, hydrants; should consider orientation and mobility of blind person; and not endanger or obstruct pedestrian circulation.
  - Details of elements can be used to give directions for blind person, but should not be hazardous. Sharp edges should be avoided, because they might harm blind person.
  - Certain textural characters of floor and wall can be used as information for blind person.
- **Supportive and Informative functions**
  - Information signs should be placed in necessary areas or positions. Too many sign might be inefficient and can cause confusion. Information signal or distinction of materials are necessary on certain points or locations, which have different level (such as : ramp) and several directions (Such as : intersections, crossings, corners). Signs that use Braille letters must give distinct information that should be written as brief as possible
  - Signals that are using symbols and colors should provide a clear distinction that is readily identifiable for people with limited vision. Audible call buttons should be installed in conjunction with audible pedestrian signals. Tactile symbol can be used alongside call buttons to provide crossing information on lane configurations for visually impaired person.
  - Adequate lighting should be provided along accessible routes at all times.
  - Audial technologies can be utilized to support blind person's activities. Misuse or misplacement of these technologies can cause confusion for blind person.
  - Materials or elements that have contrasting colors and certain fragrances can also provide information for blind person.

4. OBSERVATION RESULTS

The findings from the field observation cannot be described entirely in this paper, due to limitation of pages. In order to obtain comprehensive descriptions, reported materials are categorized into two groups: positive and negative attributes, which hopefully can represent all captured conditions. Those attributes are determined based on their connection to these aspects: space, elements, materials, and function. Description of these attributes shows how accessible the observed pedestrian facilities are.

Table 1
Positive Attributes of Observed Area

Positive attributes	Examples	Notes
Adequate spaces, enable two way direction for various kinds of pedestrian		At certain locations on Jl. Pajajaran and Jl. Cicendo

Proper division of through passage zone and utility zone		At certain locations on Jl Nyland and Jl Pajajaran
Transit shelters, facilitate alternative modes of transportation and connectivity to other places		At certain locations on Jl Pajajaran
Crossing facilities, support safety aspect for pedestrians		At certain locations (Jl Pajajaran, Jl. Cicendo, Jl. Wastukencana, Jl. HOS Cokroaminoto)
Ramps, provide comfort and shelter for cross walkers		Ramp for crossing bridge on Jl.Pajajaran
Railings, enhance comfort and safety aspects for different kinds of user		At certain locations on Jl Pajajaran
Plants, provide shelters and support comfort aspect for pedestrians		Plants can be found on almost every observed sidewalk
Curbs, minimize hazardous condition for visually impaired walkers		At certain locations on almost every observed sidewalk
Different surface materials, support paths' detection process for visually impaired people		At certain locations on Jl. Pajajaran and Jl Cicendo

(Source : Author's Documentation, 2012)

Table 2
Negative Attributes of Observed Area

Negative attributes	Examples	Notes
Narrow walkways, minimize walking comfort		At certain locations on Jl. Dr. Rum and Jl. Dr Rajiman
Takeover by the kiosks, eliminates safe spaces for walking		At certain locations on Jl. Cicendo, Jl. Dr Rum, and Jl Dr.Rajiman
Takeover by the parking, hinders walking paths		At certain locations on Jl. Cicendo and Jl Wastukencana)
Shared spaces, where pedestrians use the same space with vehicles and other activities; produce narrow & hazardous walking routes		This kind of shared spaces mostly exist on narrow streets located on the south side area of Rehabilitation Center
Obstructing elements (street furniture, plantings, infrastructure, objects) reduces walking spaces and comfort		At certain locations on Jl. Pajajaran, Jl.HOS. Cokroaminoto, Jl Dr Rajiman, and Jl. Dr. Rum
Unblocked gutters, can cause stumbling		At certain location on Jl Nyland
Damaged facilities and/or elements, diminish comfort and can be hazardous for walkers, especially visually impaired people		Damaged facilities and/or elements can be found on almost every observed sidewalk
Unpaved surfaces minimize the comfort and safety factors for walkers, especially visually impaired people		At certain locations on Jl. Wastukencana, Jl. Dr. Rum, and Jl. Dr. Rajiman)

(Source : Author's Documentation, 2012)

5. CONCLUSION

Based on quantities of described positive and negative attributes, which look balanced, it might be assumed that pedestrian facilities in observed area are quite accessible. Nevertheless, in reality, locations that have negative attributes are wider and greater than the ones with positive attributes. A location could have several negative attributes or several positive attributes, and could also have both positive and negative attributes. The facilities that have the most positive attributes are the ones situated on Jl Pajajaran, where rehabilitation center is located. The accessibility level of nearest spaces to rehabilitation center is quite good, which shows impact of the center's existence.

It can be concluded that accessibility of pedestrian facilities in the observed area is still far from sufficient. The further those facilities from the rehabilitation center, the less accessible they are. There are many things that should be done to improve the conditions and to make those facilities become more accessible. The responsibility of making more accessible spaces does not lie on the government only, but belongs to all people. Hopefully, the results of this research can be used to improve accessibility of facilities and spaces, not only in observed area, but also in other areas in Bandung city. This research provides a small contribution for enhancing accessibility and quality of people's living spaces. There are many possibilities for developing related aspects in other researches, to obtain comprehensive views in creating better and more accessible living spaces.

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Urban Public Space for Kids:
The Comparison between Urban Kampong
and Housing Neighborhood in Malang

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ABSTRACT

Public open spaces in a settlement neighborhood scale other than as a green open spaces, it also functions as space to socialize. Needs of open spaces mainly come from the kids as their playground, in which nowadays is not the main concern within society or within the local government. The playground plays a very important role to kids in the urban housing area when it comes to the fact that development of information and technology and urban lifestyle are directing the kids to an individual, consumptive modern life. The rapid growth of Malang city is putting aside the playground for kids because enormous growth in some housing areas within the city.
This paper will try to study the playground phenomena's, how the development of the kids playground tends recent tendency it's activity with the case study in the urban kampong and the residential neighborhood in Malang city. By using observation method phenomenology, interview technique and literature study hope that it can understand the problems of kids playground in Malang city. Based on the observation, the phenomena of kids playground in urban kampong, the kids tend to use the street, alley, isle or whatever spaces left as their playgrounds because the lack of the proper playgrounds. Meanwhile on the other hand, in housing neighborhood, the function of existed playgrounds are not maximized to the most due to the lack of concerns from the local society. Eventually, the open spaces which supposed to be playgrounds will suffer a change of function into an unmaintained public spaces which will suffer again into becoming negative spaces.

Keywords: *public spaces, kids space, kampong, housing*.

1. INTRODUCTION

Public spaces is one of an important component in a built environment, because public space is a social space for society. Public space is a space that enable people from different class, ethnic, gender and age blending as one (Madanipour, 1996). Children is one part of public space user, but is there a public space which can fulfill children needs exist and already planned as a development of built environment especially in crowded Indonesian city? Children public space in this paper focus at children playground and playground as important element in urban city environment.

Playground became important element both as education media and as supporter of growth kids era, in spite that children as a nation successor generation, that character building efforts needs attention, especially in urban settlement environment. City people's lifestyle which tends to consumtive and individualist are already affects development of children mind style, beside the kids that grow in nowaday urban environment tends directed to playing in the mall or other play facility that far from social and environment value. On the other side, the information and technology development are also change the play style of kids and tends to emphasize individualistic character, beside the other negative influence that can affect children's growth, like easy pornography access for kids, violence etc. Those phenomena indicate that kids which grow in the city spend their

playtime far from nature. Like the study done by Nixon (1997) indicate that kids spends only below 15% of their playtime in the natural public space. This shows that the natural public space like playground in one settlement environment, especially in the city, needs attention.

Playing is a children's needs as a process to learn their environment, develop their creativity, their sociality with their friends and grow their sensivity (Dewiyanti,2010), so that in the playing activity, the kids can develop their cognitive skill, physic and social (Yatiman and Said, 2011). This thing shows that kids playing process have important role in the children growth stage, in the physical building and non physical character and child's personality. This provision that shape the children's development in the other stage of adultery. Children as future investment are expected to be a good human being that can give positive contribution.

Big cities in Indonesia, like in Malang with high crowd level already move children's playground, especially in the settlement area. The city settlement that consist of kampong settlement and residential is the place where the kids grow. The crowded urban kampong settlement condition not provide special space for kids to play. The children tends to use the remnants space and public facility like alley, aisle, river's boundary line or the other unexpected area. Urban kampong settlement that mostly dominated by middle and low economic state, tends to ignore playground for kids sometime. The economic factor and space limitation redact the children play facility that can also reduce their needs. While in the other condition, the play ground at some of the settlement in Malang provide play space as playground, but their condition is not maintained and is not applied optimally because of the lack of social attention.

2.   METHODOLOGY

The methodology that used in this research is phenomenology observation for the kids activity and play style by taking sample in Kidul Dalem kampong, Kota Lama and in Griya Shanta residential. Moreover supported by interview technique with the kids and neighbor society respondent.

3.   PUBLIC SPACE FOR CHILDREN : CHIDREN PLAYGROUND AS PLAY SPACE

According to Ali Madanipour, public space is a space that can give society easiness to access and accommodating driven, controlled and moderated public activity, also as a place that enable and let different classes, ethnic, gender and age of society blend as one (Madanipour, 1996). Public space inside of environment have important role because it served as a social space for their society. Children as a part of built environment resident needs attention in order to effort environment that responds with children's role. In realizing kids decent city, the kids role in built environment design purposed to (1) provides that a decision affecting his city. (2) appreciate their opinions about the city they want. (3) Participate in family life, community and social. (4) Receive basic services such as health and education. (5) to obtain fresh drinking water and have access to improved sanitation. (6) are protected from exploitation, cruelty and abuse is wrong. (7) Safe to walk in the street. (8) Meet and play with his friends. (9) Have green spaces for plants and animals. (10) Living in a pollution free environment. (11) Participate in social and cultural activities. (12) Every citizen in a balanced way to access each service, regardless of ethnicity, religion, wealth, gender and disability.

Public space as playing activity (playground for kids in environment scale needed as a attempts to support children growth and develop stage. The important of playground for children is to cultivate friendship through interaction with other (Yatiman and Said, 2011). Public space is regulated in the laws of children's protection no.23/2002 as a reference play space facility affordness like in the school, sport park and places to picnic. This is a mean to protect children's right to use their spaces as their place to rest, socialize, play, relax, and having fun. This shows children are indeed one of the most important elements, concluding that children's playground is absolutely necessary.

During these years, caused by narrowing spaces in the cities and also reducing open public sphere, city's society have been indirectly incline to have their children play in the mall as new playgrounds. Normally, parents would take their children to the mall to have them enjoying the playgrounds there during the weekend, which inevitably create consumptive trait to children. Other than previous reason, another thing to take into considerations is the fact that the playground in malls are artificial, thus setting children apart to natural open space, which in turn alienates them

from local environment. Socially, habituating children to play in mall's playground will eventually reducing their awareness of their own social environment. It is a known fact that not every single child is able to play in the plaza. In order to get there, some might need to spend some resources on it, while in real playgrounds in their environment, children would be able to interact as all children in their environment are gathering together.

The expansion of technology and information is also known as the changer of children's playing pattern. In most big cities, children tend to spend their playtime at home playing video games or surfing the internet. Children spend their time playing indoor more than children would years ago. According to some research, generally children these days only spend less than 15% of their time playing outside. This fact would suggest that the pattern of playing in most children in modern cities will eventually create the characters of children as unaware of their environment, which also would affect their cognitive and motoric skill.

4.   RESULT AND DISCUSSION
4.1   CHILDREN SPACE IN URBAN KAMPONG
Urban kampong is one of residential places that informally evolves and develops into urban area. Generally urban kampung is densely populated without much planning and strict regulations. The high-density population level and occupied mostly by middle-class citizens make the urban kampung has the necessary character to be called social sphere. The close relations between people within the society creates social sphere in the small alleys; interactions between classes of citizens including gender and age are blending into the society.

The same thing can also be seen in the children within the same society. The fact that the children play in the same place in kampung created new spaces and also encourage the use of other elements within the kampung. Small alleys in the kampung are the perfect example; not only used as pathway into and exit the kampung, the small alleys are also potentially used by children to play games such as hide and seek, soccer, and others, which optimalize the use of the alleys.

a.   Children Space in Kampung Kidul Dalem
Kampung Kidul Dalem, one of the urban kampung in the heart of Malang Town is one of the urban kampung that has quite high population density level. Municipalities of Kidul Dalem is physically divided by Brantas River, making the delta river occupied with high density level. The residential that violated government rule about setting houses near the river is one fact that happened in this area. As a typical urban kampung, Kampung Kidul Dalem also suffers from the same problems that hit other urban kampungs; population density, lack of green open spaces, and also social economic problems within the society.

The lack of open spaces and the absence of children playgrounds in Kidul Dalem encourage the children to use kampung's alleys and unnoticed open spaces as their playgrounds

Source: Arif et all, 2012
Figure 1. Kids playing in kampong street, using pick up car cover.

According to observation done in Kidul Dalem, children tend to use the street as playgrounds; most of them play soccer, draw on streets surface, chasing one another, and use the street as hanging place with their peers. In some cases, children even use whatever items found as toys, such as pickup cars cover.

Those phenomena shows that the kids in Kidul Dalem settlement didn't have a playground so the kids tend to use the other function places. In result, those playing activity can disturb other activity as well, like disturb street passsenger. It also has high rate of accident risk which can endanger

children safety. Lack of children's playground in Kidul Dalem also direct the kids to use the river area of Brantas. In some times like rain season, these area can be dangereous and accident can happen anytime to anyone. Recently there are accident of a kid who dragged by river's flow and cost his life while playing.

b. Children Sapce in Kota Lama

Kota Lama also suffers from the same problems that occur in Kampung Kidul Dalem. Quite densely populatied which located in the southeast of Malang City. Generally, society in the municipality of Kota Lama is economically located between middle and low level. Physically, this urban kampung appears more slum-like, indicated by messed up street planning and bad sanitation. The high density level of the population has caused the lack of open spaces, especially for the children to use. One of the phenomenons appeared in the area is the fact that children use streets and alleys as their playground, due to the fact that there is not that much of that open spaces left for them.

Source: Arif et all, 2012
Figure 2. Kids playing at less area in kampong

The same phenomena in Kidul Dalem also happens here. The children use streets and alleys as their play spaces. One of the reason is there are no place for kids to play. The kids usually use other resident empty lot. This empty lot also serve as the public space for residence. The decent facilities make the children plays naturally, like playing soccer, climb the tree and other activities. The phenomena is pretty good in one side, but in the other side needs touch of facility so that it have educational function and give positive impact to the environment. The unmaintaned open space can direct to negative activities too.

4.2 CHILDREN SPACE IN URBAN RESIDENTIAL : Case Study Griya Santa Residential

Other than kampung as a residence, residential is also becoming one of the characters of settlement in the city. Residential is a settlement that planned by private developers or government, causing them to become formal settlements, and which of the residence is generally come from middle up class.

Griya Shanta is one of decent residential in Malang. Facilities given in this residence is quite complete. Located on strategic place near the business center in Soekarno-Hatta Boulevard make the residence has great value within the city. Residential consist of blocks with quite wide areas, facilitated with security posts and playgrounds in each block.

Source: Arif et all, 2012
Figure 3. One of the unmaintened park in Griya Shanta Residential

Just as common residential, generally the owner of the houses within the residential is individualistic. There aren't many social gathering in the open spaces, as so the children living there. Children in the residential tend to spend more of their time playing indoor such as playing videogames or computer. Even more, playgrounds and parks that have been built aren't visited often by the residence there.

4.3 CREATING PLAY SPACE BY COMMUNITY PARTISIPATORY DESIGN : Experience on the Procces of Landscape Design Studio Student Works.

The existing of playground is already became part of need to fulfill children's rights and create ideal environment for children growth stage, so it can be both children's playgound and positive facilities for kids in urban state. The role of community are really needed to plan a plyground in settlement environment. It needs community's participation in the planning process, design stage until post design. The Participation Design Method by community is one of an exact approach to design playground in settlement scale like in Kidul Dalem kampong, Kota Lama and Griya Shanta residence, as the study experience Landscape Studio course by the author.

Community Design is the art of making sustainable living places that both thrive and adopt to people's needs for shelter, livelihood, commerce, recreation and social order (B.Hall et all, 2001:3). In order to fulfill deciding what communities needs, this method is fit for the architect and policy maker to plan children playground, as the efforts to learn precise local communties needs , so that the design can be appropriate with community wish.

The first stage is approach the local stake holder like RT, RW, society and kids as study object. The observation process and interview are performed to identify the playground problem in the study area, and then playground design stage in studio by college student. The next stage is presentation to the local society and children. In this process needs respon and recomendation by society in efforts to do design improvement. After the design get social approve, then it will enter the implementation stage.

a. Design Recommendation in Kampung Kidul Dalem

Source: Arif et all, 2012
Figure 4. Design result of playground in Kampung Kidul Dalem by Landscape studio student work

b. Design Recommendation in Kota Lama

Source: Ubay et all, 2012

Figure 5. Design result of playngground in Kota Lama Dalem by Landscape Studio student work

5. CONCLUSION

Children is a future investment, therefore it needs attention in every aspect in their life, one of them is for built environment where the kids grows there. Children's character built from their neighborhood in some aspect physically or non physically. It is time that settlement environment as the closest environment for kids needs play space as a positive container and play facility.

Through design and development that can accomodated their needs, it is expected that the kids play needs aspect through the initial movement of play space in settlement environment can create positive play media. Similiary as the play space design and development, needs to considering the kids needs aspect that compatible with the kids will in their neighborhood with participative method.

Everybody awareness is totally needed to realizing the settlement environment that can accomodate the kids play needs, both in the society and government. The social understanding is needed as a main motivator in one settlement environment in the design or pasca design stage as an effort to manifest its sustainability. The government role as a policy holder is also needed in order creating play space policy in every settlement environment.

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Developing Urban Open Space into a Tourist-Place
Case study: Urban Open Spaces in Large Cities of Indonesia

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ABSTRACT

The origin of the present Indonesian large cities is partly rooted in indigenous centres and colonial settlement. Most of Indonesian colonial city has an urban open space called 'Alun alun', which actually meant an open area in the city center. The image of the Indonesian cities comes from the quality of urban space around the Alun alun, since important activities took place there and where many important buildings such as the palace, the great Mosque are located. Much effort has been done in order to maintain the function of urban open space as a public space by making it as a *tourist place*. Placemaking must therefore be involved with creating something special out of or within space. The question that arises is what makes a part of space particular, special and/or significant. This explanation leads to the concept of 'sense of place', image of place and identity of place. Several urban design principles will play very important roles, especially those that relate to the existence of an activity, streetscape characteristics and the existence of a historical area. Observing from the experiences of cities in Southeast Asia, it can be stated that an urban open space as a 'colonial heritage' can be turned into an attraction of urban tourism if packaged in a certain way.

Keywords*: urban space, open space, tourist-place*

Introduction

Tourism is not just an aggregate of merely commercial activities; it is also an ideological framing of history, nature, and tradition; a framing that has the power toreshape culture and nature to its own needs.

MacCannell

Places are widely conceived of as having an essential component of character, identity or 'spirit'. Thus, Tuan (1977) describes a place as a 'centre of meaning constructed by experience'; while for Relph (1976) it is a "concentration of our intention, our purposes, attitudes and experiences". A place is not just a geometric location in space, or a mere physical setting. When it comes to the city, the variety and vitality of the city may be identified as: attraction, accessibility, and amenity.

The cultural context in which urban tourism occurs has changed nowadays: central to the concept of new modernity is the idea of movement. In relation to urban tourism, the acceleration of mobility in our era entails a sort of 'time-space compression' that has radical effects on how people actually experience contemporary world changing both their forms of subjectivity and sociability and their aesthetic appreciation of nature, landscape, townscapes,and other societies (Dietvorst & Ashworth, 1995, pp. 2–4). Forms of social discipline into which people used to socialize and entertain themselves do not function as they used to do in the past. Individualization and an increased sophistication of individual participants in leisure tours reinforce the personal basis of decisions about what to do or not to do in specific places (Boerwinkel, 1995, p. 241). Diversity becomes a

magic word nowadays involving many contemporary social activities—and tourism in particular—and expressing the idea that the 'world of otherness', the different opposing or co-existing fields, define their own rights of being and tend to reproduce themselves. In this framework, new divergent leisure and recreational urban activities appear to require for themselves and consume more and more space in our cities; tourist-historic urban cores, urban open spaces, urban waterfronts, theme parks, etc. Urban open spaces that offer great diversity have potentiality to become a tourist place. This paper attempts to investigate the potential of urban open space in its new cultural context, as tourist place.

Urban open space

Urban open space, it is an open-minded space that can be defined where the space itself is likely to be used for activities of a less hurried nature, such as watching, walking, eating and talking (Wooley, 2004). During the last decade we have been able to observe a renewed interest in urban public spaces in general, and most particularly in streets and squares. The term "renewed" is particularly adequate here as what we see is a reaction to the conception of urbanism which quite simply ignores squares and describes the traditional urban streets only as being the central point of an unbearable disorder (Le Corbusier. 1946; 1957). To give back life to cities made arid by modern urbanism. Three types of attitudes emerge. Firstly, one which is often put into practice for instance in French new towns, an improvement by creating as dense an urban centre as possible within the new towns. An accumulation of retail trade and collective facilities are arranged around squares. But while squares are rediscovering their traditional vocation as places for meeting and meandering, they are nonetheless just one accessory among other.The second attitude is more critical of functionalist urbanism and finds its expression in the desire to integrate recent squares into the history of a given to town (Krier. 1980). Finally, the third attitude occurs in an already existing urban space, often quite ancient, and involves a program for make it more livable.

Characterics and quality of urban open space

Central park in New York and Hyde Park in London are the two urban open space which is a tourist-city destination. Those two open spaces have a strong and unique characteristics, in terms of scale and activity. Central Park is a public park at the center of Manhattan in New York City, United States. The park initially opened in 1857, on 341 hectares of city-owned land. In 1858, Frederick Law Olmsted and Calvert Vaux won a design competition to improve and expand the park with a plan they entitled the *Greensward Plan*

Figure 1. Central Park, New York

Central park in New York especially attractive for tourists because of the diversity of its activities, such as boating, birding, carriage horses, sports and zoo. The presence of the Public Theater dan open air performance of New York Philaharmonic Orchestra, become special attraction.

Figure.2 Hyde Park London

Hyde Park is one of the largest parks in central London, United Kingdom with overall area of 253 hectares, and one of the Royal Parks of London. Sites of interest in the park include Speakers' Corner (located in the northeast corner near Marble Arch), close to the former site of the Tyburn gallows, and Rotten Row, which is the northern boundary of the site of the Crystal Palace. Hyde Park has been the venue for some famous rock concerts.

There is a fundamental difference in the value and character of open space in urban and rural situations. In the Rural Area, the County is often seeking to conserve large systems of land of particular value (such as agricultural and forestry lands) or to preserve areas of significant resources (mountain ridges, stream valleys, wildlife habitat.) Whereas, in urban areas some preservation of natural areas (such as stream valleys) occurs, but more often, open spaces are designed and created. Their value to the community is determined by their shape, configuration, and relationship to buildings and other built forms, as well as their natural attributes. Urban open spaces will become more important as the county's development areas become denser and as additional urban areas are developed. In addition, specifically designed open spaces should be incorporated as amenities into urban developments to offset the higher densities. Understanding the varied functions of urban open spaces is an important part of helping to improve their effectiveness, both by enabling better management of existing urban spaces as well as improving the design of new ones. There are many attempts to list these functions, but the following summary divides the functions up into three main groups: environmental and ecological functions, social and societal functions and structural and aesthetic functions.

Urban Tourism

Renewed interest in urban tourism since the beginning of the 1980s has brought about a sharp upturn in this kind of tourism. Various interlinked factors have undoubtedly played a part in this: the need to breathe life back into and rehabilitate the historic centres of towns and cities, wider-ranging and more diversified cultural pursuits, consumers' interest in the heritage and urban development and their search for things to do and for spending opportunities. The fact that people are taking more, but shorter, holidays, the advent of the single market and the general increase in mobility have also helped to build up urban tourism. The broader range of activities and leisure pursuits that visitors are seeking is extending what is on offer. This diversification is also due to a growing awareness of tourism among political decision makers who are increasingly keen to promote it as a key factor in economic development bringing wealth and employment.

Many studies have interpreted leisure and tourism activities as a temporary distancing from the familiar situation that may place the individual in another existential context—as attempts to escape everyday life and seek 'new worlds'. In this framework of tourism and leisure interpretation, scholars have introduced idea of 'new worlds': anti-structure expresses the other world organized around a different 'centre' than everyday life.

Holidays were mostly understood as a break in work and other everyday activities in order to do something different—in any pleasant environment. On the contrary, contemporary forms of urban

tourism tend to predominantly reflect the individual's search for counterstructures in the formal dimension of the environment. Nowadays, activities such as for instance work, creativity and leisure may simultaneously occur in spaces without clear functional identity or in 'non-places' ('*non-lieu*') to use the words of Mark Auge´ (1992). This kind of functional homogenization of the individual's everyday environment allows someone to argue that nowadays the urban tourists' search for counterstructures is mainly oriented towards the formal dimension of the urban environment. In other words, urban tourism is gradually becoming an activity based on the projection or reflection of *'homogenized' everyday activities* and habits within a mirror of completely *different spatial settings*—i.e. radically innovative forms of urban space.

Building on this basis, one can attempt to both interpret why certain forms of urban space seem to actually 'work' as counterstructures attracting urban tourists as well as investigate which other forms of urban space may also have the potential to perform as counterstructures in the context of contemporary urban environments. Among forms of urban space popular to tourists, historic urban areas, *urban open spaces* and theme parks, have been doubtlessly representing the most attractive ones in the last decades.

On the other hand, the physical environment appear to attract individuals and tourists in particular; they seem to serve important psychological and social needs of individuals and on this basis, they need to be understood by architects, planners and others, rather than snobbishly criticized, or dismissed. Taking into account diversity and individualization that characterize contemporary urban tourism, one could further deepen his/hers understanding about the tourists' attraction to urban open space, the former can be seen as formal fragments of the city which, in the course of history, have become rich in meaning and can be interpreted again and again in different context. In this sense, the urban open spaces are not rich in meaning neither by form, nor by history; though they can become meaningful to tourists due to their huge variety of spaces in terms of both form and function; thus, they allow individuals to make their own (different) choices.

Urban Open Space as a Tourist Place

Indonesia has the potential of open space to be tourist attractions, such as the National monument in Jakarta, *Northern Alun Alun* Kraton in Yogyakarta. The area of the National monument is an important area in Jakarta because there are important buildings around it, including the Presidential Palace. This area is also becoming an important place for big events like New year's celebrations. The main attraction in this area are the monument, museum , statues and the dancing fountain. This area become major attraction to citizen of Jakarta mainly because the lack of open space.

Figure. 3 National Monument

While the *alun alun* in Yogyakarta, better known as the alun alun Lor which is part of the Kraton Yogyakarta, already has a direct appeal for visitors. *Alun alun lor*, rectangular with an area of 150 x 150 meters with two large banyan trees fenced in the middle of the square. Two large banyan tree, each name Kyai Wijayandaru and Kyai Dewandaru.

Figure.4 Alun alun Lor

This area become major attraction for tourist coming to Jogyakarta mainly because it is part of Krtaton and many events are performed in Alun alun. Some of those events related to the Kraton's activities.

In order to investigate spatial patterns that can be attractive to urban tourists, Boerwinkel approaches the idea of 'leisure' in relation to the concepts of 'creativity' and 'stimulation'. According to Boerwinkel, 'creativity' can be defined as the ability to come up with rather divergent associations; and it is encouraged by those physical environments that can provide individuals with intensive sensory stimulation. 'Stimulation' has to be absorbed in a climate relatively free from pressure. On this basis, 'freedom' appears as one of the core aspects of leisure and thereby, it can serve as a main concept in the analysis and evaluation of which spatial patterns fit or do not fit into leisure activities.Regarding the basic categories of buildings and public open spaces that are addressed to urban tourism (e.g. museums, exhibition halls, parks, etc.), Boerwinkel distinguishes two fundamental types of spatial order underlying the formal variety: (a) 'successive arrangement' and b) 'simultaneous arrangement'. The former corresponds to spatial systems in which there is a step-by-step uncovering of the particular spaces to the observer in terms of both sight and movement. The latter corresponds to spatial systems that, while the observer is moving in any particular space, provide him with multiple choices in terms of both sight and movement.

According to Boerwinkel, buildings and public open spaces characterized by 'simultaneous arrangement' are more attractive to tourists because this type of spatial order encourages relatively 'free exploration' of space by the individual, and as already described, freedom is a core aspect of leisure activities. Building on Boerwinkel's ideas, one could add that 'simultaneous arrangement' by offering a description—evaluation in terms of diversity, individualization and space syntax. to the visitor multiple choices in terms of sight and movement. Whilst 'simultaneous arrangement' corresponds to spatial systems that are shallow in syntactic depth. In spatial systems shallow in syntactic depth, the core of the best-connected spaces—the 'integration core'—tends to be relatively extended, including many parts of the spatial system. On the contrary, spatial systems with high syntactic depth tend to generate fragmented integration cores including only a few parts of the system.

Given that high use-densities of space—especially in the cases of public open spaces— creates a lively atmosphere mostly appreciated by tourists, it can be argued that, also from the syntactic point of view, the spatial pattern of 'simultaneous arrangement' tends to be more attractive to tourists than the spatial pattern of 'successive arrangement'. Turning onto the formal or representational discipline of urban space, the investigation of patterns that may potentially be attractive to urban tourists, could be helped by the concept of 'counterstructure' and the quest of tourists for counterstructures to their familiar environment, as earlier introduced.

For an Indonesian historic town, with its heritage, this means a high standard of environmental attraction with a few historical 'anchors'. Attractions are seen as the foundation of a 'healthy' centre. On the other hand, quality of *accessibility* that is determined by the balance among modes of travel, traffic management and car-parking provision has been associated with the success of a place. Urban open spaces surrounded by historical buildings and the unique activities that occured there is the key to the success of urban open space.

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Growth Shape of Commercial Functions on The Arteries Road in The Medan City

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ABSTRACT

Problem statement: The growth of the commercial function in the Medan City has increased rapidly. The tendency growth of the commercial functions apply are at arterial streets. The growth of the commercial function in Medan city has a characteristic pattern that follows the progress of arterial roads construction. Growth of the commercial functions in Medan city became important to be studied because of its existence as a transit and business city. **Approach:** This research uses qualitative methods. Researchers conducted a research to create a map of the growth form of commercial functions in every kecamatan of the Medan city. Then the researchers conducted observations for the tendency of the growth form of commercial functions that occur in each kecamatan. The tendency of the growth form of commercial functions in every kecamatan identified a pattern. Characteristic forms found in the research connected with the theory of city shape. **Results:** This research will result a pattern of the growth form of Medan City commercial functions that the characteristics may have similarities with other shape of cities in other countries. The pattern of growth can only prove and strengthen the existing theory, because the supporting factors have a similarity. This research will result concept theory, which links the presence of decision makers in Medan city, growing function estate, and development of street construction towards appearance of an city shape. **Conclusion:** Growth form of Medan City commercial functions is strongly influenced by lifestyle and needs of the urban community. Growth form of Medan City commercial functions tends to lead to a linear pattern. Growth of commercial functions shaping apply on the main streets of the city. Commercial and residential functions tend to grow on the edge of the city's main street. Thus the growth shape occur because the growth road connecting towards the Medan city's economic generators.

Keywords: *growth shape, commercial function, characteristic forms, main streets*

1.　　Introduction

There are a number of research programmes that look at different aspects of the relationship between society and its spatial structure. Hillier has made a distinction between research into the effects society has on space and the effects that space has back onto society (Hillier 1985; Hillier 1999). The first strand of research inquires into the way in which society creates spatial structures for its own reproduction. Research of this kind seeks to answer questions about the mechanisms and rules by which buildings and cities are created for social needs.

The second kind of research looks into the often-unintended social consequences that these spatial structures then have back onto society. Once a spatial structure such as an urban area has been created, it seems to offer unexpected social potentials and problems. The way that people use an area depends not on what planners or architects might have expected but on these potentials offered by the spatial structure itself. What are the laws that govern the use of spatial structure that we find, however it was created and for whatever original purpose? This is the starting point for a research programme that attempts to isolate the independent role of spatial structure onto the functioning of society, to which this thesis seeks to contribute.

The thesis investigates the effect of urban layout on the pattern of commercial rent in Medan City. Urban layout will be defined as the morphology of the street network- the configuration of streets and public spaces. The pattern of rent will be defined as the spatial differences in commercialrents

that cannot be explained by intervening variables and are assumed to be a premium for location. Location can justifiably be treated as an independent variable in rent determination because individual tenants cannot be said to change the pattern of streets for themselves by letting commercial space at a higher or lower rent. There are some interesting theories about long term mechanisms that condition the layout of streets in response to rent patterns (Ratcliff 1949). However, in the short to medium term any causality can safely be viewed from layout to rent pattern and not vice versa: companies are faced with a series of location choices on the market and they value each through their bidding more or less for each.

2.   Literature Review

Commercial Rent, as a value in marketplace transactions, falls within the traditional concerns of economics from the very beginning. The spatial characteristics of rent were, however, not the initial concern in the early development of economics. Adam Smith's great theoretical contribution in 'The Wealth of Nations' was to posit value not as inherent to the object itself but rather as an emergent consequence of the interaction of supply and demand (Smith 1776). Smith's 'hidden hand' of the market is a mechanism of an emergent process and it made economics a pioneering science in the study of emergence (Krugman 1996). By introducing emergence Smith had a huge impact on the way that economics and social science was to develop.

Smith's concern was with regional and international economic trade and he was not concerned with intra-urban commerce or spatial organisation. His spatial units were, if not entire nations, then region of cities with their surrounding agricultural hinterlands. This viewpoint was important because it began a tradition in economics of disregarding the spatial organisation of society except in the very macro-scale: intra-urban processes were seen as secondary to the primary generator of longer distance trade between rural areas and towns and even between nations. Writing at the time of the explosion of agricultural productivity that occurred in Britain with the beginnings of rapid urbanisation, Smith's interest in trade between the city and the county was founded on an explicit assumption about the fundamental dependency of the town on the rural economy: The town, in which there neither is nor can be any reproduction of substances, may very properly be said to gain its whole wealth and subsistence from the country (Smith 1776, pg. 479).

In Germany a more spatial tradition developed in economic geography known as 'central place theory'. The development of the theory arose from an empirical interest in the distribution of settlements within the landscape, reflecting the geographer's perspective. Christaller's work on the location of towns in Southern Germany (Christaller 1933) began this tradition. Central place theory developed the idea of a relationship between distance from settlements and market size and experimented with spatial forms of its solution. It was concerned with the geometry of location hierarchy on a two dimensional landscape. Whereas the Von Thünen model had been confined to a single city, central place theory attempted to handle the geography of multiple settlements. Causal relationships were suggested between location and settlement size through the function of market size within the region. The idea that a functional relationship existed between economic and social parameters and the location of cities was highly influential in geography, as Batty has noted: central place theory is the cornerstone of human geography because it explains how economic dependence within the hierarchy of cities translates into their location (Batty 1995, pg. 574).

The geometric view of urban market formation embodied in central place theory suffered from a huge disadvantage in its theoretical formulation that prevented it from making headway in describing the market process as a whole. It did not seem to attempt to come to terms with the main 'problem' for social science as perceived by the economists: how can we explain the emergence of social phenomena that are constructed by individuals and yet independent of any particular individual. The problem for economists, as Krugman has noted, was that these geometric approaches were 'not about how sensible actors should make decisions nor...about how the decisions of these actors might interact to produce a particular outcome' (Krugman 1995, pg. 39). The absence of rent from these models is symptomatic of this lack of an accounting for emergence in the model. The spatial variable was a matrix of location advantages upon which towns developed. Yet it is not clear how the actions of individuals acting within social constraints can be derived from such higher order phenomena as

this pattern of settlements.

Methodology

As for the methodology used is Using the street map representation of the street system, a number of measures of the network properties of this system can be calculated. These measures will all be tested for significance against the empirical data in the thesis and are described below from the simplest to the more complex.

The simplest of all morphological measures that can be derived from the artery street map is the length of the longest possible street along any street or space. This is effectively the length of each named street, as by convention the vast majority of streets in Medan City are straight lines with a single name and the name changes if the street bends significantly. When the street system is represented as a set of longest street, the pattern that emerges is very hierarchical, with a small number of very long lines. Street Map shows the length of lines coloured according to a spectral range, using the same convention as the rent maps as described in section Results and Discussions below. The average length of artery lines in Medan is between 500 metres - 12.5 km. The distribution of street lengths is not a normal distribution, it is hierarchical one reflecting the importance of a very small number of key streets within the network as a whole.

The most local spatial measure of artery street lines is the number of connections or intersections with other lines. Where as the length of each street line is independent of other lines, the connectivity of each line depends on how it relates to the others. The connectivity is a property of each line within the network of interconnected lines. It is therefore less local than the length of lines, but it is still a property that would be more or less visible to anyone standing on a street without further knowledge of the system as a whole.

Medan city has 21 kecamatan. Researcher observed the tendency of commercial functions found on arterial streets in each kecamatan. Researcher takes the form of an artery due to the growth of the commercial functions is easy to find on the street section. Researcher has to make observations on the growth of the commercial function in arterial streets in each kecamatan. Researcher interprets any process of growth through the primary data. Primary data on commercial growth of the arteries obtained through field observation. Then the researcher connected Primary data on commercial growth with the morphology theory.

3. Results and Discussions

Medan city consists of 21 kecamatans (Figure 1). Each district has a spatial pattern of commercial functions which have the same growth principle. Each kecamatan has a function of spatial pattern of commercial development that occurs at a certain time. Researcher observed the growth of the commercial functions on arterial streets in each kecamatan are managed and developed effectively.

1. Kec. Medan Tuntungan	12. Kec. Medan Petisah
2. Kec. Medan Johor	13. Kec. Medan Helvetia
3. Kec. Medan Amplas	14. Kec. Medan Barat
4. Kec. Medan Selayang	15. Kec. Medan Perjuangan
5. Kec. Medan Polonia	16. Kec. Medan Tembung
6. Kec. Medan Denai	17. Kec. Medan Timur
7. Kec. Medan Baru	18. Kec. Medan Deli
8. Kec. Medan Maimun	19. Kec. Medan Marelan
9. Kec. Medan Sunggal	20. Kec. Medan Labuhan
10. Kec. Medan Area	21. Kec. Medan Belawan
11. Kec. Medan Kota	

Figure 1 Map of Medan which consists of 21 Kecamatan

3.1 Spatial patterns of Commercial Function in the Kecamatan Medan Tuntungan

Commercial functions in the Kecamatan Medan Tuntungan formed because the growth of

settlements development along Jalan Jamin Ginting. The Settlements development growth in Jalan Jamin Ginting supported by function of the road itself is a main route connecting the Medan City with Brastagi City, in Kabupaten Karo. Settlements developments encourage increased land values along the class arterial streets in the Kecamatan Medan Tuntungan (Figure 2). High land values increase people's desire to utilize their land as commercial facilities and rent the land for commercial activities.
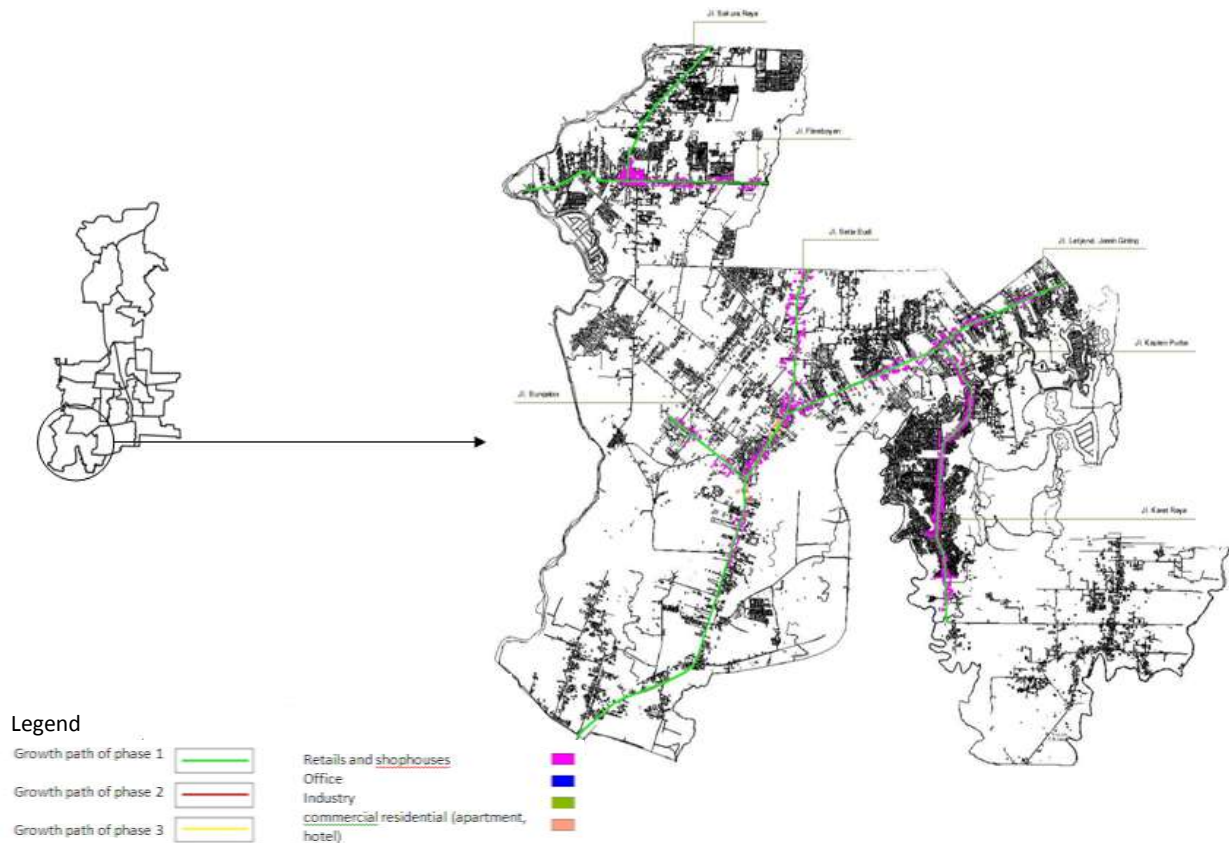

Figure 2 The spread of commercial functions in the class arterial streets in the Kecamatan Medan Tuntungan

3.2   Spatial patterns of Commercial Function in the Kecamatan Medan Johor

Kecamatan Medan Johor has a commercial area spread over several arterial streets point (Figure 3). Corridor Jalan Jamin Ginting, Jalan AH. Nasution (Jalan Karya Jasa) and Jalan AH. Nasution (Tri Tura) into the main line of growth in the commercial area. The impact of this situation is the three corridors is growing as a center for the development of commercial functions in the Kecamatan Madan Johor. Development of commercial functions in the Kecamatan Madan Johor, to be expanded again to Jalan Brigjen Katamso, Jalan Karya Wisata and Jalan Karya Jaya. Jalan Brigjen Katamso, Jalan Karya Wisata and Jalan Karya Jaya is an important corridor located approximately Kecamatan Medan Johor.

   On the Jalan Karya Jaya and Jalan Karya Wisata has many areas that developed as the commercial areas. Commercial functions grow in Jalan Karya Jaya and Jalan Karya Wisata one by one. The situation is characterized by the stalls, cafes, mini markets, shophouses, restaurants and traditional markets. Kecamatan Medan Johor is an area that is currently being developed as a residential district. There are growing residentials occurs naturally because they were built by the community and there are formal residentials grew because they were built by the developers. The existence of the rapid development of residentials functions in Kecamatan Medan Johor, impact upon the appearance of commercial areas on the Jalan Karya Jaya and Jalan Karya Wisata and arterial class streets.
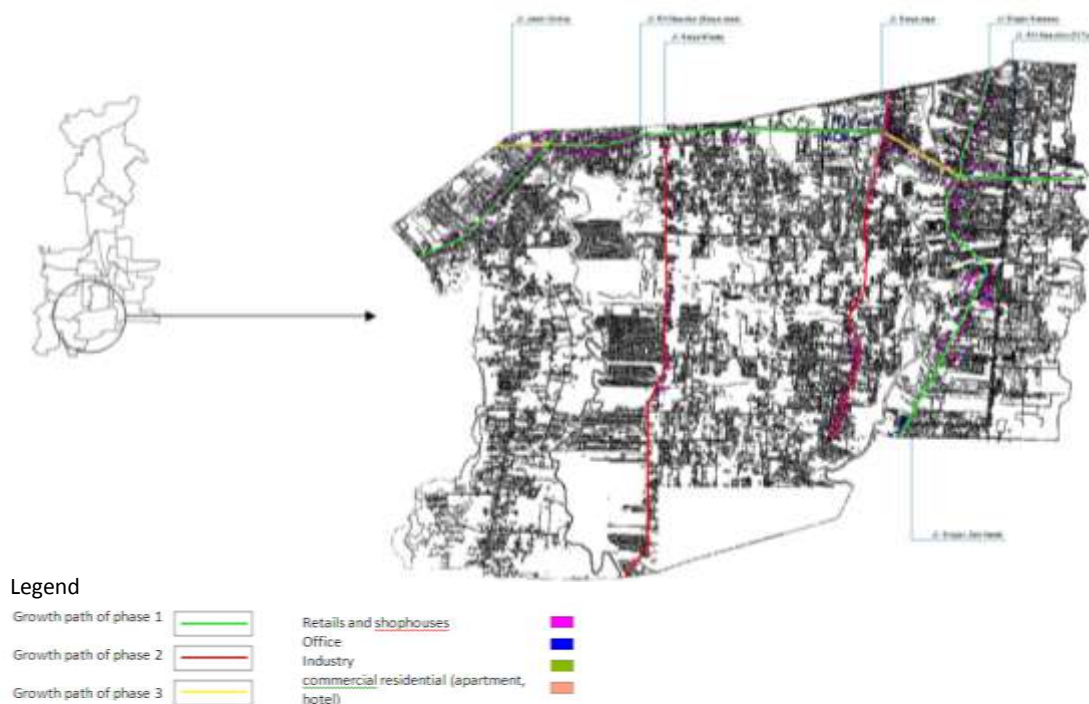
Growth path of phase 1		Retails and shophouses	
Growth path of phase 2		Office	
		Industry	
Growth path of phase 3		commercial residential (apartment, hotel)	

Figure 3 The spread of commercial functions in the class arterial streets in the Kecamatan Medan Johor

3.3 Spatial patterns of Commercial Function in the Kecamatan Medan Amplas

Kecamatan Medan Amplas is the district of Medan city gate in the east Medan City. Commercial functions in the Kecamatan Medan Amplas appear to be triggered by residential development along Jalan Sisingamangaraja. Jalan Sisingamangaraja is the main route connecting between the provinces, thus encouraging an increase land values along the street. High land values increase people's desire to utilize his land commercial facilities and lease the land for commercial activities (figure 4).

Legend

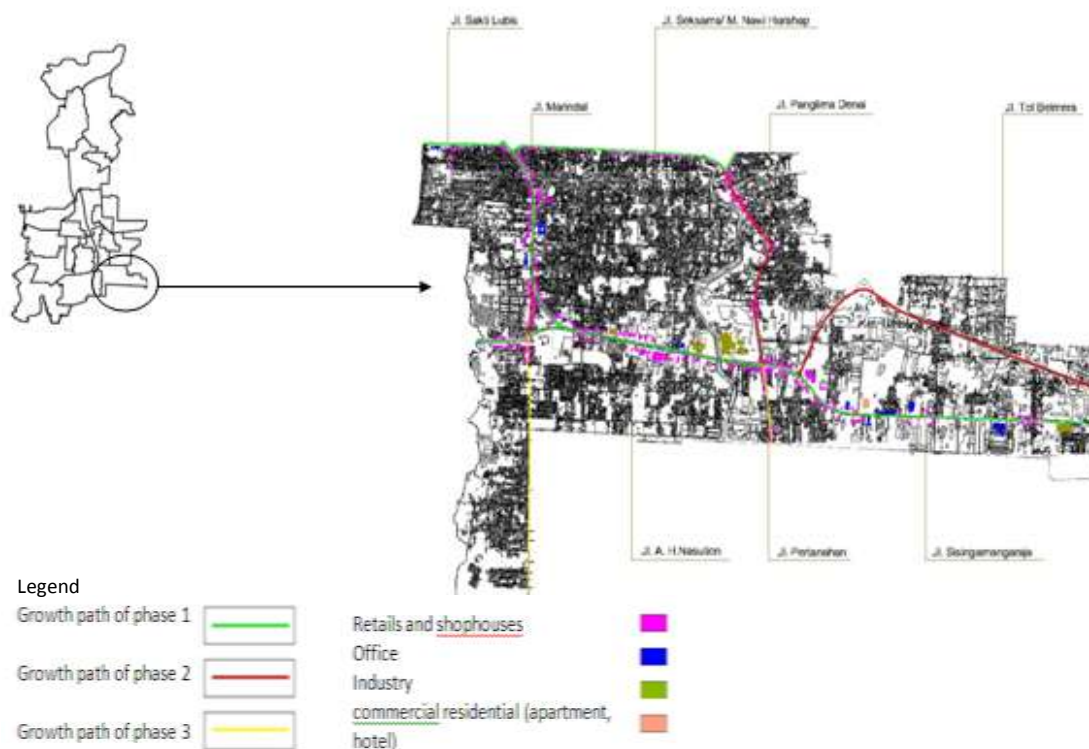| Growth path of phase 1 | | Retails and shophouses | |
Growth path of phase 2		Office	
Growth path of phase 3		Industry	
		commercial residential (apartment, hotel)	

Figure 4 The spread of commercial functions in the class arterial streets in the Kecamatan Medan Amplas

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3.4   Spatial patterns of Commercial Function in the Kecamatan Medan Selayang

Commercial functions in the Kecamatan Medan Selayang are driven by the rapid development of residential real estate over the upper middle class strata around Jalan Setia Budi. In addition, the presence of several universities in the district is also increasing public demand for commercial functions (figure 5).
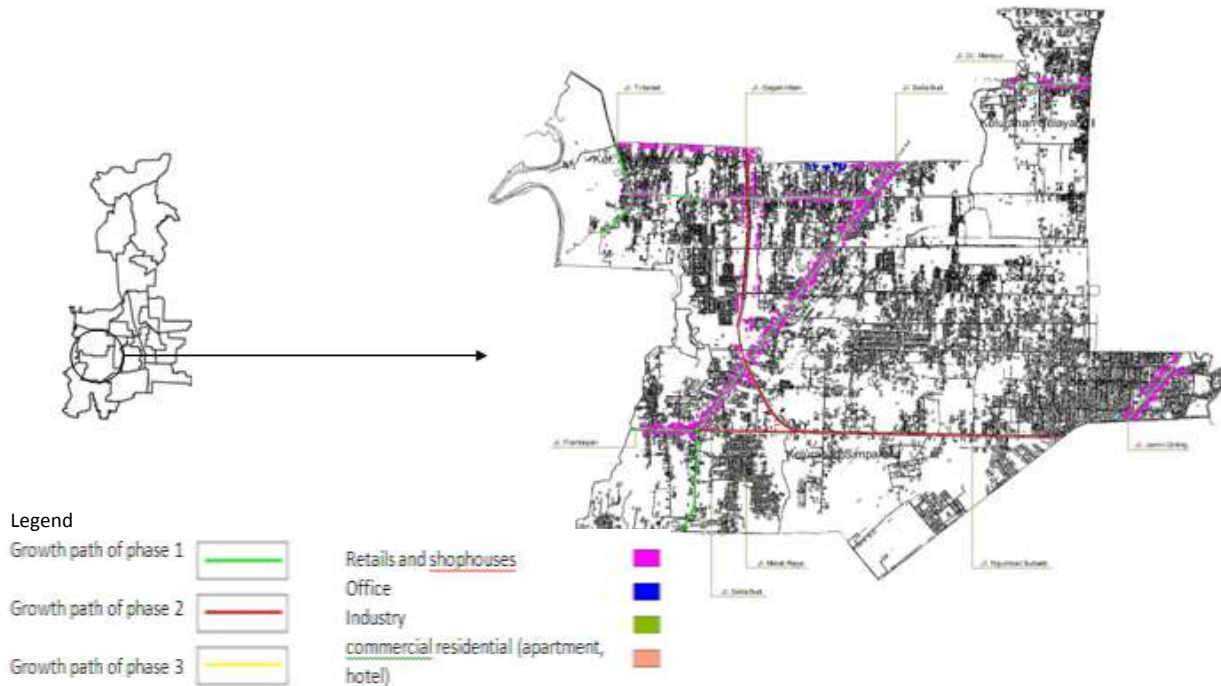

Legend

Growth path of phase 1		Retails and shophouses	
Growth path of phase 2		Office	
Growth path of phase 3		Industry	
		commercial residential (apartment, hotel)	

Figure 5 The spread of commercial functions in the class arterial streets in the Kecamatan Medan Selayang

3.5   Spatial patterns of Commercial Function in the Kecamatan Medan Polonia

Polonia Airport in Kecamatan Medan Polonia is situated as the gateway Medan City. The existence of Polonia Airport in the Kecamatan is providing impact the rapid growth of commercial. Kecamatan Medan Polonia has a commercial area spread over several points (Figure 6). Jalan WR. Mongonsidi, Jalan Mustang, Jalan Komodor Adi Sucipto, and Jalan Diponegoro, become an important point of the growth of the commercial areas. Then the functional development of commercial centers in the Kecamatan Medan Polonia extends into Jalan Imam Bonjol and Jalan Padang Golf Polonoia.

Legend

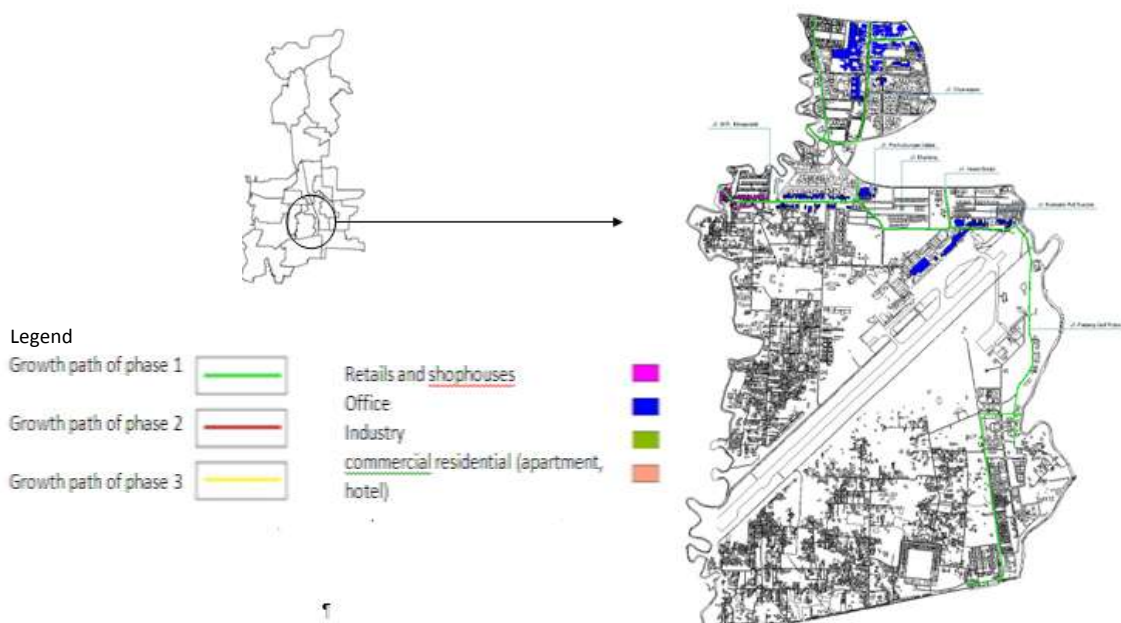| Growth path of phase 1 | | Retails and shophouses | |
Growth path of phase 2		Office	
Growth path of phase 3		Industry	
		commercial residential (apartment, hotel)	

Figure 6 The spread of commercial functions in the class arterial streets in the Kecamatan Medan Polonia

3.6 Spatial patterns of Commercial Function in the Kecamatan Medan Denai

Commercial facilities in the Kecamatan Medan Denai effective spread in commercial areas. Areas said to be effective as commercial areas in the Kecamatan Medan Denai are Jalan Denai, Jalan Panglima Denai, Jalan Mandala by Pass, Jalan Bromo, Jalan Menteng Raya (Pasar Merah), and Jalan Seksama. (figure 7). These areas are said to be effective because the presence of commercial facilities at each distribution point to support its other functions in the vicinity.
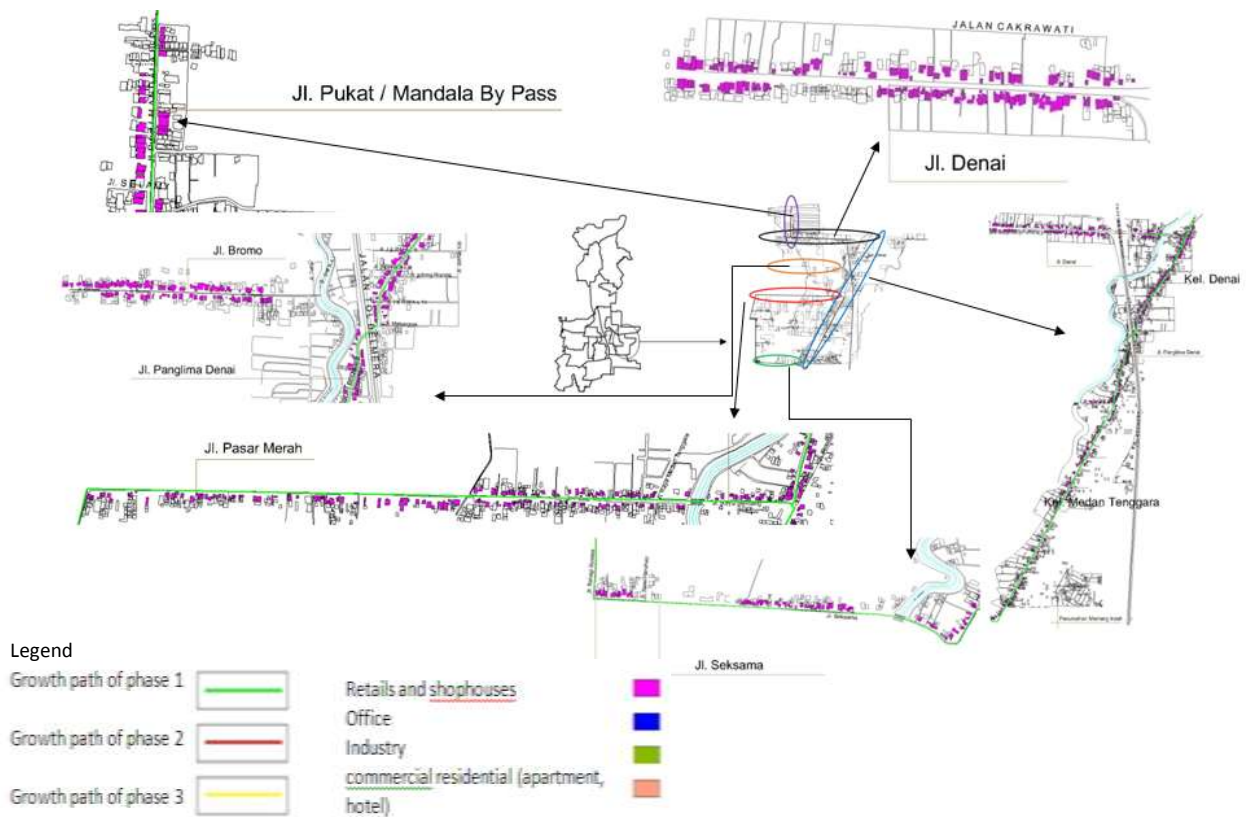

Figure 7 The spread of commercial functions in the class arterial streets in the Kecamatan Medan Denai

3.7 Spatial patterns of Commercial Function in the Kecamatan Medan Baru

Commercial functions in the Kecamatan Medan Baru spread in Jalan Jamin Ginting, Jalan Dr.Mansyur, Jalan Iskandar Muda, Jalan Pattimura, and Jalan S. Parman. Commercial functions are also located in Jalan Abdullah Lubis and Jalan Wachid Hasyim with a number of commercial areas are relatively small

Figure 8 The spread of commercial functions in the class arterial streets in the Kecamatan Medan Baru

3.8 Spatial patterns of Commercial Function in the Kecamatan Medan Maimun

Commercial areas in the Kecamatan Medan Maimun spread at some point. Jalan Brigjend Katamso is the center of the development of commercial functions in the Kecamatan Medan Maimun. Then the commercial area that extends into Jalan IR. H. Juanda, Jalan Sakti Lubis , Jalan Multatuli, and Jalan Pandu.

Figure 9 The spread of commercial functions in the class arterial streets in the Kecamatan Medan Maimun

3.9 Spatial patterns of Commercial Function in the Kecamatan Medan Sunggal

In the Kecamatan Medan Sunggal, there is Pinang Baris Terminal that has become one of the factors that support the growth of the commercial function in the critical areas of Kecamatan Medan Sunggal. Jalan Pinang Baris, Jalan Gatot Subroto, and Jalan Setia Budi are the center of the development of commercial functions in the Kecamatan Medan Sunggal. Then the development of commercial functions is growing into new streets Jalan Gagak Hitam (figure 10).

Figure 10 The spread of commercial functions in the class arterial streets in the Kecamatan Medan Sunggal

3.10   Spatial patterns of Commercial Function in the Kecamatan Medan Area

In the beginning of commercial functions in the Kecamatan Medan Area occurred at the intersection of Jalan Arif Rahman Hakim and Jalan Sutrisno which   are moving on to the traditional markets Sukaramai (figure 11). However now, the development of the commercial function not only occur in the surrounding area of traditional markets Sukaramai only, but for most of Jalan Arif Rahman Hakim which developed into shopping areas, housing and even banking offices. Development of commercial functions in the Kecamatan Medan Area are be characterized by physical growth of shop houses on the arterial streets class.
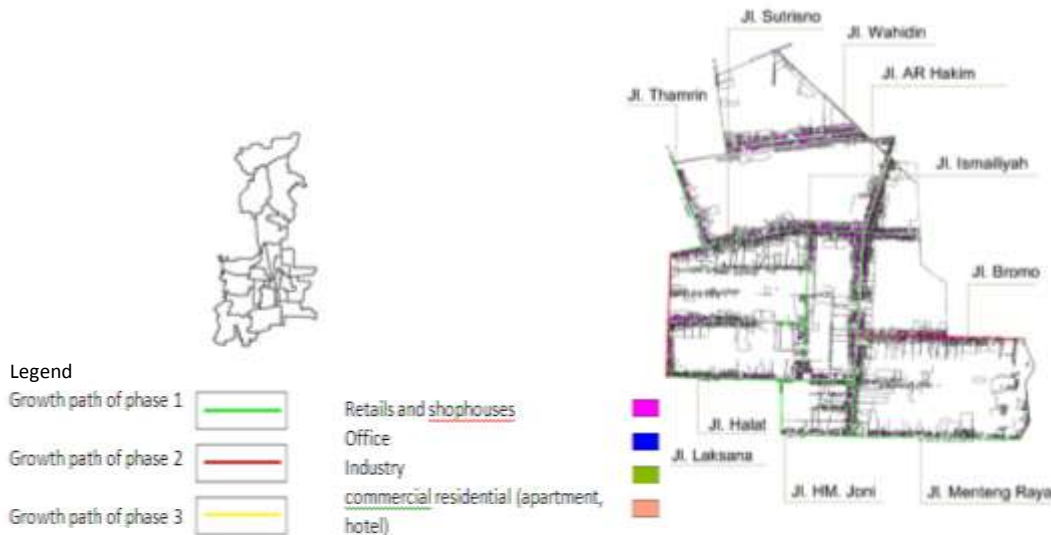
Figure 11 The spread of commercial functions in the class arterial streets in the Kecamatan Medan Area

That is the reality that apply in kecamatan Medan Tuntungan, Medan Johor, Medan Amplas, Medan Selayang, Medan Polonia, Medan Denai, Medan Baru, Medan Maimun, Medan Sunggal, and Medan Area also apply in other districts. The phenomenon of the growth pattern of commercial functions in these districts also applied in the kecamatan Medan Kota, Medan Petisah, Medan Helvetia, Medan barat, Medan Perjuangan, Medan Tembung, Medan Timur, Medan Deli, Medan Marelan, Medan Labuhan and Kecamatan Medan Belawan. Morphology of commercial functions in the Medan City is affected by time and the difference in scale of the street. In this case, the scale refers to the function of the street to the Medan City. Based on the function, the street in the city of Medan is classified into arterial streets class, collector streets, local streets, and environment streets. Patterns of Growth form of commercial functions in the Medan City tend to apply on streets arterial class (Figure 12).

Figure 12 The spread of commercial functions in the class arterial streets in the Medan City

4. Conclusion

Forms of urban development model of the Medan City refer to Linear beaded models. A linear form beaded (beaded linear plans), smaller urban centers grew on either side of the main urban centers, urban growth is limited only along the main road, the pattern is generally linear, alongside a road usually occupied by commercial buildings and occupied residential areas behind . Growth of the Medan City was limited along the main streets in a linear form. Some of the smaller town centers grew on either side than in the city center. Through this form, open the opportunity extended to the side that has not been developed. Through this form, open the form of open opportunity extends to the side that has not been developed. The edge of the road is occupied by commercial buildings, such as shops and other businesses and industries, while at the rear of housing occupied by residential.

Growth development in the city center occurred on arterial class streets in the Medan City. The edge of the arterial class streets is dominated by commercial buildings, shop houses, modern commercial buildings, and residential. Orientation of the original building facing the street is generally appropriate orientation of the artery class-based economic activities. Subsequent development of orientation activities is increasing, especially in the area south of Medan City, the orientation of the building facing the inclined inner kecamatan and more functional aspects, and accessibility.

Acknowledgement

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Defensible Urban Park in Preventing Crime and Vandalism
Case Study: Flexi Park in Bandung City

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ABSTRACT

Along with the growing awareness on the importance of green space, its development started to consider in urban development planning. Furthermore, in recent often found phenomenon that the presence of green space became space for negative activities. Vandalism and illegal graffiti on public facilities are often found as a form of vandal activity in an urban park. Even in some cases urban park become location of crime. This phenomenon occurs in Flexi Park Bandung where is as a case study in this paper. Besides the damage of lighting, fences and park benches, this park is also suspected to be the location of negative activities such as drinking and drug use which known by discovery liquor bottles and needles from drug use in this park. In addition, the park is a corner of the city's youth violence-prone activity. In many respects, public safety is a vital role for productivity and quality of life of its citizens. A corner of the city known as the location of crime and vandalism will certainly make people reluctant to come and to play there. Feeling threatened, insecure and always be alert to make everyone uncomfortable to stay and linger in the environment of such images. Associated with it, one thing that is often overlooked is; role in facilitating the built environment and limit the opportunity for the emergence of a crime. Started from the field of environmental psychology of defensible space theory and the like, this paper discusses how the structure of space and physical design of urban parks provides opportunities for criminal activity and vandalism. Through a review of case studies in the Flexi Park Bandung can be explained that the structure of space around the urban park and the park site it self affect the physical design to make the park as a negative space. The results of this study to formulate some concepts which need to be considered (on the spatial structure of urban space and the physical design of the environment) in the planning and development of urban green space, i.e.: The spatial pattern of the park and the surrounding, streetscape, landscape, and park furniture. This concept is derived from a model of defensible Flexi Park design and support in the creating of urban green space for better living.

1.   Introduction

Along with the growing awareness of the important role of green space, provision of this space began to be considered in urban planning and development. In recent developments often encountered the phenomenon of the existence of urban green space became a space for negative activities. Vandalism and illegal graffiti on public facilities are often encountered in urban park. Even in some cases, urban parks became space for criminal activity. This phenomenon also occurs in Flexi Park Bandung which is as a case study in this paper. Besides the park lighting, fencing and park furniture damage, Flexi Park is also suspected as location for drinking alcohol and drug uses. This is evident by often found liquor bottles and used needles of drug use. In addition, the park is a corner of the city's crime-prone activity.

In many respects public safety as a vital role for a city, on productivity and quality of life of its citizens. A corner of the city known as the location of crime and vandalism will certainly make people reluctant to come and play there. Feeling threatened, insecure and always be alert to make everyone uncomfortable to stay and linger in the environment with such images. Associated with it, one thing that is often overlooked is; role in facilitating the built environment in order to limit the opportunity

for a crime (criminal).

Zelinka (2001) defines crime prevention as a pattern of behavior that directly reduce the threat of crime and improve safety. The effects of both a positive effect on the quality of life in our environment and support for the development environment as an environment in which crime will not appear. That definition confirms a link between the physical environment and public safety. The pattern of how the physical environment is designed, built and developed will influence the attitudes and feelings of everyone who was inside. Planning and design disciplines need to understand these points and to learn how environmental features that are at risk of crime and vandalism as well as bring up how do we reduce it by design.

Carmona (2003) suggests two main approaches in preventing crime, namely: first is **Dispositional** - reduce the motivation of individuals to commit crimes through moral education, social development and economic sanctions. The second approach is **Situational** - making criminals can not do the crime, by creating a situation where that is not possible for them to do evil. Ron Clarke (1997) describes a situational approach by focusing attention on the opportunities for crime and this approach depends on the type of crime that occurs. The principle of this approach was first noted by Jane Jacobs (1961). Further developed with more applicable by Oscar Newman (1972) and Hillier (1996a).

This study departed from the field of environmental psychology of defensible space theory and the like. Theories related to the environment is reflected in the setting of Flexi Park. Furthermore, descriptive analysis was performed to determine the explanatory variables-setting environment variables from the Flexi Park (the physical elements and spatial patterns) that provide opportunities for vandalism and criminal activity.

2.   Literatures Review

The relationship between the environment, human interaction and criminality have been tested through a number of different approaches since the 1960s. The theme of the popular concepts discussed today is the "eyes on the street" presented by Jane Jacobs (1961), defensible space by Oscar Newman (1972), crime prevention through environmental design (CPTED) and more recent theories of Bill Hiller again "broken windows "(1996a).

In the book The Death and Life of Great American Cities, Jane Jacobs (1961) emphasized the importance of the existence of 'activities' to provide oversight for the environment and a clear definition of territory to distinguish between the private and the public. According to Jacobs, public safety as a result of the relationship between the person with the others, where they know each other through sight and through naming. The existence of variation in residential and commercial use can maintain the activity and the presence of people on the street all day and night. Jacobs calls this theory as the "eyes on the street". Jacobs (1961) requirements in an environment that is successful is if everyone felt safe during their stay on public roads with a stranger. Jacobs (1961) argued that the roads in town should facilitate and ease activities, and from which one goes where. Roads must not only withstand the evil aliens, but also should provide a sense of security and gives the impression of comfort with strangers.

Oscar Newman (1972), developing some ideas Jacobs, with emphasis on natural surveillance and territorial definition. Based on the study of crime locations in New York housing project in his book Defensible Space restructuring Newman filed an urban environment so that it becomes a livable environment and controlled not by the police, but by the communities that inhabit it. Newman (1972) identifies three factors worked together to increase the rate of crime in residential environments blocks, namely: 1) Anonymity, lack of recognition of the surrounding environment so that there is no sense that encourage residents to take part in protecting the environment, 2) Lack of supervision of the building makes the perpetrator do the crime without criminals easily visible to others, and 3) Availability of escape routes so that criminals can be blurred away. Of these factors, Newman developed the concept of defensible space consisting of four main characters of the physical environment, among others:

1.   A clear definition of territoriality, that is; from public to semi-public, and from semi-private to private. This concept can be done through the use of symbolic barriers such as surface texture, walkways and street lights, as well as the use of concrete barrier walls.

2. Available opportunities for natural surveillance; to available natural surveillance opportunities from the house into the open area around it; would happen if the placement of doors and windows allow people to see the areas of public and semi-public in their environment as part of the daily activities of the building . This condition reduces the occurrence of antisocial behavior that is not visible.

3. The use of building form and building materials that are not associated with conditions that cause crime. This condition can be achieved if the mass of the building, site plans and building materials have a positive relationship with the community.

4. Laying or localization of residential development in one functional area, which houses the smallest model of the environment in which everyone does not feel threatened by crime. This can reduce the sources of anti-social behavior.

Research has been conducted Newman (1972) prove that the symbolic barriers are not effective in areas with endangered residents of high crime, unless coupled with physical appearances are obvious. In this condition, the barrier is needed to generate a lot of symbolic barriers against the environment and residents claim.

The Crime Prevention Through Environmental Design (CPTED) has many elements of the approach is similar to the concept of Newman. The main idea is that the physical environment can be manipulated to reduce the incidence of crime and fear, by reducing the things that support the emergence of criminal behavior (Crowe, 1991). Supervision through the design approach provides a strong basis for the physical intervention of a place, covering Principles defensible space principles. Emphasis on the territorial definition in Newman and CPTED approach, tend to support the creation of a segregated neighborhood layout and not continuous (e.g., cul-desac), with a view through the layout pattern of criminal offenders will be easily caught / arrested (Mayo, 1979).

Hillier (1998) criticized the concept of defensible space that blocks the natural movement through the creation of segregated environments. He argued that, where people can enhance the feeling of safety in public spaces and provide a sense of security through a supervised space naturally. In his study of the relationship between spatial configuration and movement, Hillier argued that the character of the particular spatial presence increases the chances he could improve safety in the neighborhood. The study also showed that the location which is integrated weakly the have a greater crime than on the site that is integrated with a more strength.

From the above description can be understood there is a contradiction between the existence of the relevant design strategies and eye on the street to improve safety (Hillier, 1998; and Jacobs, 1961) by blocking access to the design strategy and permeability in order to improve security in an area (Newman, 1972 ; and CPTED). In addition, the four concepts above have agreed on three aspects of the subject in a design environment that reduces the chances of behavior or crime, namely through the Territorial Space Control, Environmental Monitoring, and through activity. While these ideas are tested by experts to each other, this paper will attempt to review the relevance of these concepts in the local context of Bandung, through discussion of case studies Flexi Park Bandung, suspected as the location of juvenile crime and vandalism in the evenings.

3. Result and Discussion

3.1 Reflecting Theories on Flexi Park Setting

Flexi park is one of the parks in the middle of Bandung City. An area of 1300 m^2 is located at the junction between Ir. H. Juanda Street, Ranggamalela Street and Ranggagading Street. West side of the park there is Singapore International School, just south of there is a vacant residential building, directly adjacent to the east of Jalan Dago and crossed with office buildings. While in south there is a shop "Circle-K" and "Dunkin Donuts".
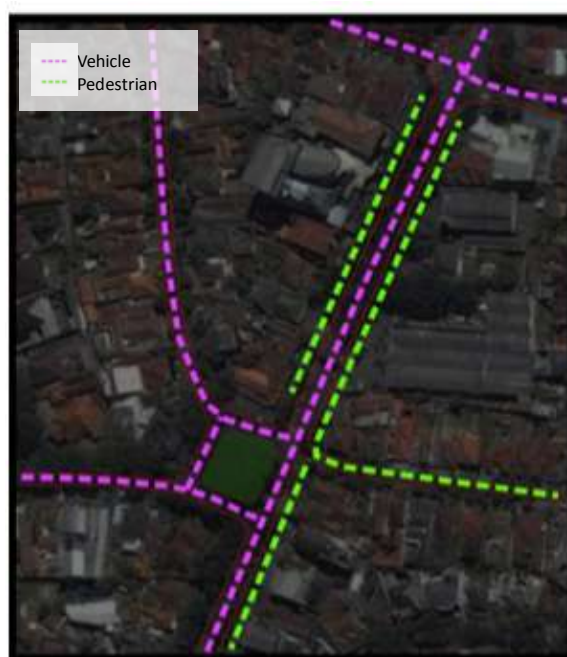
Figure 1: Location Flexi Park   Figure 2: Circulation

Flexi park bustling with activity of young people every Saturday night. They get together with each group, high school gangs, motorcycle gangs and punk gang. However, the activity tends to occur a negative activity. Vandalism is often found around the Flexi Park. This is shown in the traces they left behind like a dirty graffiti on the fenced park and other public facilities, garbage and even bottles of liquor and lately often found needle-syringe drug used (Kompas, 2009). Even in some high school teens talk, Flexi Park is known as a negative connotation, the "Park of Hell".

On environmental aspects of territorial structures, Flexi Park appears as a truly space-defined as a public zone. But may be too obvious, so it is physically completely separated from the surrounding environment. As said by Jacobs (1962) that the hierarchical territorial restriction zone will form a sense of ownership of space. In the case of Flexi Park, making it the territorial limits of public space zone is physically constrained by the road Rangggamalela Ranggagading and 8 meters wide. The limit is confirmed again by the use of fences on every building site in Flexi Park. As a public space that is completely free from a sense of ownership of the surrounding environment, resulting in a sense of freedom that is really for everyone who was at the Flexi Park site, and an opportunity for criminal activity and vandalism.

This is slightly different from the few cases that have been raised in his book Defensible Space Newman concluded that the territorial definition clarity can reduce the opportunity for the crime. Newman cited the clarity of the definition of territorial space as a solution in the revitalization of Pruit-Igoe. In this case, the private sphere is directly related to public space, then given a fence around the entrance to the private sphere, to create semi-public space around the entry under the ownership and control of its inhabitants. This solution had to reduce 80% of criminal cases. But author see this is not entirely a solution to reduce crime opportunities, since the installation of the fence is just an attempt to fortify the occupancy of the crime will continue to take place in public spaces, and when the occupant came out of semi-private room in the back of their public spaces are under threat. As seen in the case of Flexi Park, Singapore International School building, located on the west park fence Flexi Park with a fence that completely enclosed access physically and visually from the site Flexi Park. The move is good for defense from crime, but did not reduce crime and vandalism in the Park Flexi, even reducing the environmental control of an increasingly enlarge Flexi Park opportunities for the sustainability of crime and vandalism there.

Figure 3: Vegetation surrounding Flexi Park dominated by leafy trees

East
Offices is only active during the day

South
Liveless house there is no activiy

West
School shield themselves from the surrounding, and only active during the day

North
Circle-K and Dunkin Donuts Shop, view obstructed by the hedge tress

Figure 4: Side by side surrounding Flexi Park

The issue can be said in terms of territorial control is territorially defined Flexi Park as a separate space from the surrounding environment, no man's land, purely for the public there is no control of the surrounding community, and no sense of ownership to control the environment. A group of adolescents who often gather at the Park Flexi has a chance to be free to do anything in space that no man's land, including criminal activity and vandalism.

Basically territorial space whih defined by a fence and road obstruct "environmental monitoring" (as second aspect). Flexi park became a separate and completely out of controled by sense of ownership of the surrounding. On the east and south even though there was no fencing because it does not give much influence to bring surveillance ownership blocked by 8 meter wide road. This opinion is contrary to the theory advanced by Jacob and Hillier, which they argued that with the access will invite people to pass through it and directly increase the "eye on the street" which acts as an element of environmental controls to reduce the chances of the emergence of crime. But is not happened in Flexi Park. Flexi own surrounded by a fairly dense network of main roads on Saturday night. Jalan Ir. H. Juanda as the main road is jammed on Saturday night, as well as road and Ranggamalela Ranggagading as access to U-turn at Jalan Ir. H. Juanda. Yet at the same time, vandalism also occurs, although not at a level that is not too severe, such as kissing and drinking.

While at night when the streets began to slow (> 11 pm), neighborhood parks are becoming increasingly vulnerable to the presence of negative activities of biker gangs.

From the condition known in the neighborhood park that does not happen Flexi supervision although many people there, maybe the people who were on the street is only able to observe what is happening but not to the control response. According to Newman (1972) there are several requirements of a situation that allows a person to be able to supervise (observe and respond to), ie the situation is possible for someone to identify the behavior as a crime and the situation might be for someone to provide an effective response. Newman's opinion, there are two possibilities that could occur in case of Flexi Park, first of them (the people on the street) can not see / identify an existing criminal behavior or the possibility of a second-look but do not impart them to respond effectively because they feared themselves among the victims. The second possibility is very likely to occur due to their position (man on the street) was in the car and their physical access control out of the car is quite limited and also allows them the cover of darkness cannot see and there are fears she becomes the victim of crime and vandalism. In contrast to the concept that has been submitted Jacobs and Hillier, the existence of access that supports eye on the street is pedestrianized, which pedestrians will feel as a user environment and the willingness to participate in providing control.

Another thing that makes the existence of access and the people on the street not in a supervisory role is due to the lack of the beacon. Based on observations, crime and vandalism do occur in locations that dark, little or no public lighting. Initially in some spots there are never any lighting facilities, but currently in a state of disrepair. The condition is caused by the act of vandalism itself is deliberately damaging the lamp so that the atmosphere became dark and they have a greater opportunity to do crime and vandalism. Associated with supervision by pedestrians, as Jacobs theory, might be a good model to revitalize the neighborhood in Flexi park. As it happened in front of the shop "Dunkin Donuts," became one of pedestrian concentration, and the location is free from vandalism.

In the third aspect of activity, Jacobs (1961) suggested that the presence of an excellent activity to reduce crime. In line with the theory of Jacobs, the park's Flexi reduced activity leads to the beginning of the negative activity there. This can be seen at half past 9 pm, when the store closed Aquarius, our stores are located in the east of Park Flexi is instantly becoming a teenage punk together, and supported in another setting dark. Similarly, in the west and south of Park Flexi, a location directly opposite the empty house and the fence of Singapore International School is closed and if it was dark, the area became a gathering place for teens and dating. The same condition occurs on the eastern side of the Flexi park opposite the office which is no longer active at night. In fact the whole side of the park environment Flexi No other activity that occurs is to hang out with the opportunities adolescents are free to do anything. The existence of pockets of positive activity of the circulation of pedestrians and which, according to Jacobs and Hillier to increase the level of natural surveillance and the presence of neighborhood environment around the site which, according to Newman will provide effective supervision and control to reduce the chances of crime and vandalism.

3.2 Root Cause

Situations which were identified previously structured into root cause analysis to find the subject matter of the environmental setting of Flexi Park that provide the opportunities for crime and vandalism. Frame of root cause shown as Figure 5.

The root causes framework above describe the things that provide opportunities for criminal activity and vandalism in the Park Flexi can be summarized as follows:

a. Territorial definition that is too obvious. This resulted in the Park Flexi completely separate physically and even visually from the surrounding environment and a space that does not get the supervision and control or public spaces that are not proprietary. A definition that is too thick in the form of the element 5 meter wide road network surrounding the site Flexi Parks and utilization of high fences and closed;

b. Weak oversight of the natural surroundings. It is heavily influenced by the lack of lighting environment that resulted in each person it is difficult to identify criminal activity and vandalism and it is difficult to measure the effectiveness of responses, lest he himself be helped victims of

vandalism;

c. The lack of activity in the Flexi Park. This resulted in the conditions did not have a sense of ownership, responsibility, supervised and controlled by one of the Flexi Park neighborhoods.
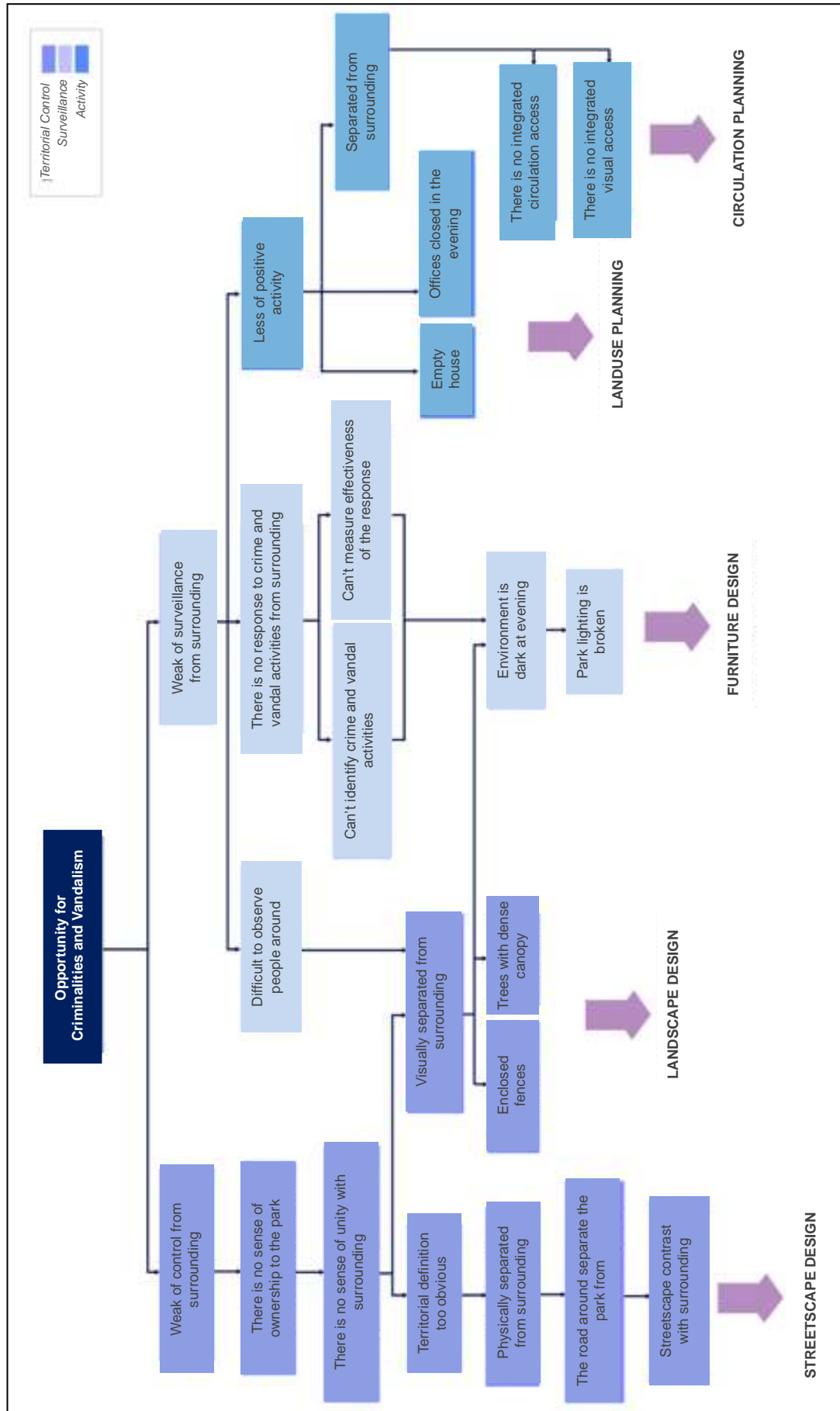

Figure 5: Frame of causes root

3.3   Modification Concept

There are several concepts that can be applied to improve the environment Flexi Park, where the design is intended to establish an environment as possible not to give opportunity for the emergence of vandalism and criminal activity, among others:

a. Land use and Circulation Planning, Flexi Park environment needs to be directed to use site that would be positive and inviting pedestrian activity in the neighbourhood. Through these activities it is hoped will be able to provide control and monitoring for Flexi Park, both from management and from visitor's activities. More specifically, a vacant house as a café or restaurant could act as a point of interest in the new environment that can attract pedestrian and positive activity from activity other pockets around Flexi Park. Not far from the site, there is Plaza Dago and KFC as positive activity and pedestrian pockets nowadays. Those can be directed to the activities there can be extended to Flexi Park, as a parallel activity with Dago Plaza.

b. Streetscape, road network surrounding the Park Flexi becomes elements that provide a large enough influence and make separated from the surrounding. Since that recommendation to reduce the sense of separateness is the design streetscape and the use of materials that blend with the surrounding environment. This concept is expected to slightly blur the definition of territorial park Flexi with the surrounding environment so that it will cause a sense of ownership of the park Flexi as an integral part of the activity of the surrounding environment and invite the supervision and control environment of the Park Flexi. Streetscape design is also expected to make the Plaza Dago and Flexi Park site into a single movement of pedestrian access, with easy access between the two and a uniform design element of the environment.

c. Landscape, landscape design for Flexi Park site design itself. This design is intended to facilitate the activities of London teenagers, it's just expected to facilitate their activities in a positive direction and reduces opportunities for criminal activity and vandalism, by designing the landscape as a skateboarding arena and communal spaces for teenagers sitting in a group.

d. Furniture. The design elements are most needed furniture environment is lighting. The design concept is expected that the model is not at risk of vandalism, of dimension (height), kind of lamps, and the use of the material that is not risky. Vegetation single acacia tree in the middle of the park can be maintained as the identity of the park as well as a shade for the park site. In addition it is expected to avoid the use of other lush plants on each side of the park and avoid rowing vegetation more than 1 meter high, which can impede visual access from the surrounding environment Flexi Park to deter territorial control and supervision of environmental Flexi Park and surrounding activities.

4.   Conclusion

Based on the results of the overall discussion of the previous section can be concluded following matters:

a. Formation of neighbourhood design affects public safety through the size of the opportunities provided by the physical layout environment for the occurrence of crime in the neighbourhood.

b. Theory to reduce the opportunities for crime and vandalism through environment design through three aspects, namely through the territorial definition, supervision and activities. The third figure is the originator of the theory, Jacobs, Newman and indirectly Hillier has agreed these three aspects. Clarity on the definition of territorial extent this can reduce the chances of crime, but if too much will result in a physical separation that block a sense of ownership and responsibility to supervise and control the public space as seen in Flexi Park. Surveillance and response in certain circumstances can succeed, but if it is blocked for identification, limited access and lack of effectiveness as people in cars tend not to respond to crimes that occurred in Flexi Park. So can conclude that the application of each of the above theories is very caustic and not directed to apply, previously have seen their relevance to existing.

c. Similarly, its application in the case of Flexi Park. To reduce the chances of crime and vandalism have reduced the clarity of the definition of territorial quality, which is contrary to the theory of

Newman and not only make access and activity for someone to come to the site (Jacobs, 1961), but also to condition how the people who come to observe and respond to crime and vandalism that is happening.

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Utilization Patterns of Public Space Based on User Behavior
Case Study: Taman Kusuma Wicitra, Tulungagung

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ABSTRACT

Creating a successful better public space for a better community living is not only seen in terms of physical characteristics, but also people's behavior in using it. Taman Kusuma Wicitra is a public space in the central district that is used actively by the community and has been redesigned in 2007. Therefore, this study is needed to find the utilization patterns of Taman Kusuma Wicitra based on user behavior after being redesigned. This study aims is identifying the physical characteristics and users of Taman Kusuma Wicitra public space and determining the utilization patterns of Taman Kusuma Wicitra public space based on user behavior. In this study, physical and user characteristics of Taman Kusuma Wicitra and its utilization patterns based on user behavior described in the behavior mapping. Behavior mapping is used to illustrate the patterns of public space utilization by the users that observed in three times a day on weekdays and weekends. Physical characteristics of Taman Kusuma Wicitra consist of soft elements and hard elements. Most of the users are come from the Tulungagung district, although there are also users from outside the district and even from outside Tulungagung region. Utilization pattern of Taman Kusuma Wicitra which is reflected in user behavior mapping showed several patterns of user behavior patterns such as clustered pattern near some facilities and vegetation, linear along some facilities, centered on a particular facility or theatrical activity, and spread on the free space.

Keywords: *utilization patterns, public space, user behavior*

1.   Introduction

The role of public space is very large for the community and government to meet the task in welfare. So it is important to always provide a better public space for better community living. Initially Taman Kusuma Wicitra is a Tulungagung district square that did not maintained well and surrounded by street vendors. The street vendors have now relocated and Taman Kusuma Wicitra has been redesign and was unveiled on October 22, 2007. A public open space is not only the form of outer space of a landscape design for urban parks or green areas just inside the city, but much more to human involvement in it as a facility's user (Budiharjo, 1999). The success of creating a better public space for a better community living is not only in terms of physical public space, but also people's behavior using it. Therefore, the utilization patterns of Taman Kusuma Wicitra as a public space based on user behavior needs to be studied. As was stated by Rapoport, in solving the problems of architecture and urban design now takes new approaches that give more attention to the dialectical interaction between humans and their environment, which understand that this interaction process involves individual human decisions that can't always be modeled and developed mathematically (Haryadi, 2010). These considerations are later stimulating behavioral approaches growth in developing the concept of space.

According to Haryadi (2010) from a variety of survey techniques that can be used in architectural environments and behavior study, behavioral mapping techniques which developed by Ittelson since the 1970's is a technique that is very popular and widely used. Apart from relatively easy to understand, this technique has major strengths in spatial aspect. That is, through this technique we will get at once a form of information about a phenomenon (especially personal and human group's

behavior) related to the spatial system. Behavior mapping is a systematic observation technique for documenting a specific space or a site's utilization (Driskell, 2002). It is said by Sommer that behavioral mapping is described in the form of sketches or diagrams of an area where humans do various activities. The aim is to figure the behavior on the map, find the type and frequency of behavior, and shows the link between these behaviors with a specific form of design (Haryadi, 2010).

Tulungagung District Government's budget spent for maintenance and improvements to Taman Kusuma Wicitra annually. However this is not supported by earlier research to decide the things that need to be improved based on user's utilization behavior. Public space utilization's activity in Taman Kusuma Wicitra is very diverse. Taman Kusuma Wicitra which formerly underutilized but now has many users and the improvements made periodically by the government in the Taman Kusuma Wicitra without research to determine the pattern of utilization, encouraging researchers to find the utilization pattern of Taman Kusuma Wicitra based on user's behavior. It needs attention to provide recommendations for making Taman Kusuma Wicitra as a better public space that bring benefit for the society's better living.

Based on this background, this study aims at: (1) identifying the physical characteristics and users of Taman Kusuma Wicitra public space, (2) determining the pattern of utilization of Taman Kusuma Wicitra public space based on user's behavior.

2.   Methodology

This study used a qualitative descriptive method. Qualitative methods are used to examine public space utilize based on user behavior. The descriptive analysis used to determine the physical characteristics, user characteristics, and patterns of utilization based on user's behavior in utilize Taman Kusuma Wicitra. The descriptive analysis used by description using behavior mapping (place-centered mapping) as a visual and spatial images of the descriptive analysis. Behavior mapping techniques with place-centered mapping is used to determine how the people or group of people utilize, using, or accommodate his behavior in a particular time and place. In other words, this technique attends a specific place, both small and large (Haryadi, 2010). Variables that will be described are the physical condition of public space, public space users, and utilization patterns based on user's behavior of the public space.

3.   Results and Discussions

3.1   Overview of region

Taman Kusuma Wicitra is located in Kampungdalem Village, Tulungagung District, Tulungagung Region. Taman Kusuma Wicitra covering an area of 1.3 ha limited by a variety of land use around such as settlements, mosque, school, garden, public services, trading, government office, and social culture office. Taman Kusuma Wicitra is also directly next to the RA Kartini Street.

3.2   Public space characteristics

### 3.2.1   Taman Kusuma Wicitra's Physical Characteristics

The physical characteristics of public space are consisting of soft and hard elements. Soft elements in Taman Kusuma Wicitra, based on observations, made up of various types of plants, animals (fishes and pigeons), and fish pond/fountain consisting of a fish pond/fountain in the center of Taman Wicitra Kusuma, a fish pond/fountain at the main gate, and two fish ponds/fountains on the east and west sides of public space. The elements of the floor/pavement in Taman Kusuma Wicitra are land, grass, paving, cement, and natural stone. Taman Kusuma Wicitra's barriers are iron fence and five entrances. In addition there are also buildings and furniture such as shed, toilets, park benches, lamps, bird houses, speakers and trashes. In the physical characteristics of Taman Kusuma Wicitra is also obtained noise sources i.e. from speakers within public space and from RA Kartini Street located around Taman Kusuma Wicitra. Here is the picture of Taman Kusuma Wicitra's areas to help the identification based on the pedestrian path (footpaths) within Taman Kusuma Wicitra.
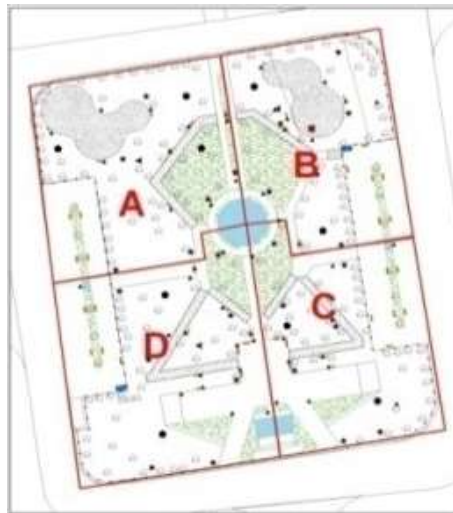
Source: (Wardhani, 2012)
Figure 1: Taman Kusuma Wicitra's areas

3.2.2 Taman Kusuma Wicitra's user characteristics

Taman Kusuma Wicitra's user characteristics are differentiated by gender and age. Most of the users based on gender are female users both on weekend (54%) and on weekday (55%). Meanwhile, according to age, most of the users are ⩾ 22 years old with a percentage on weekend by 52% and on weekday by 63%. Distribution of users by age is spatially can be seen in Figure 2. Users aged ⩾ 22 years spread across the zone, while users ages 0-5 and 6-13 years centered on areas A and B. In addition, the characteristics of users are also viewed from users residential. Based on residence, the majority of users come from Tulungagung district that is equal to 24%, while the rest come from outside the Tulungagung district and outside the Tulungagung Region.

(a)   (b)
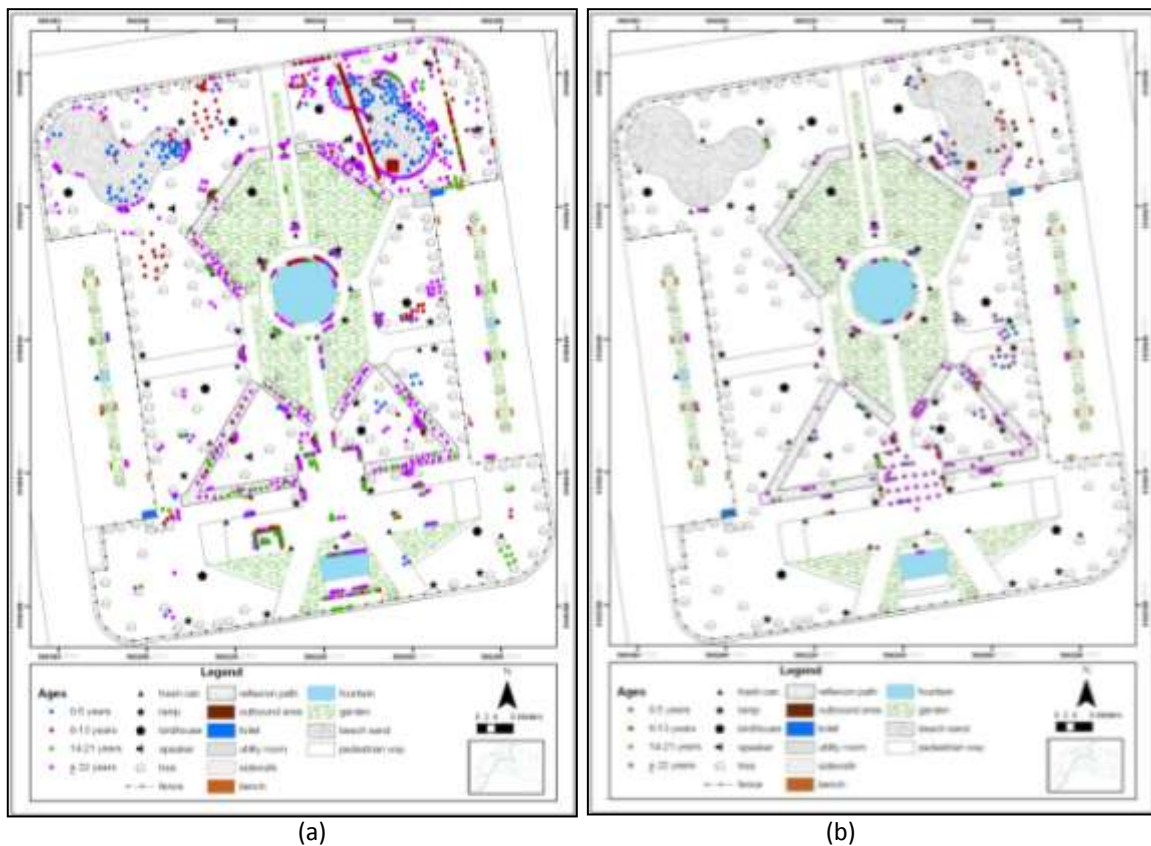
Source: (Wardhani, 2012)
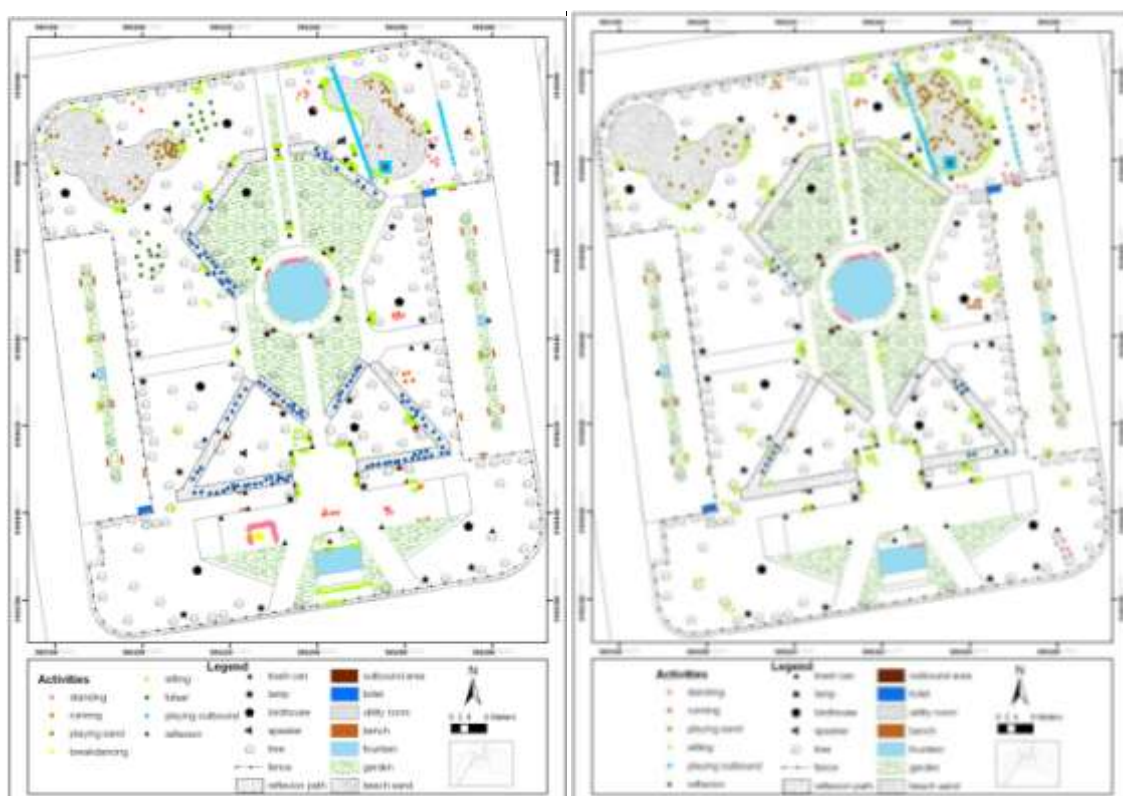Figure 2: Mapping of users based on age in (a) weekend and (b) weekday

3.3 Public space utilization patterns

3.3.1 Behavior Mapping of Taman Kusuma Wicitra's Users

User's behavior mapping in utilize Taman Kusuma Wicitra differentiated on weekend and weekdays in the morning (6:00 a.m. to 07:00 a.m.), afternoon (12:00 p.m. to 01:00 p.m, and evening (4:00 p.m. to 5:00 p.m.). Through the behavior mapping we can also note that based on observations, utilization patterns based on user behavior in Taman Kusuma Wicitra on weekend and weekdays both in the morning, afternoon, and evening is clustering by the same activities and facilities available at the Taman Kusuma Wicitra which support the user's utilization activities.

In the weekend behavior mapping that can be seen in Figure 3, especially in the afternoon, shows that the user's behavior in utilize the public space tend to close to the shelter from trees, as seen in sitting and reflecting activities that most of them are choosing a place that gets shelter from surrounding vegetation. On weekend morning the most common activities is sitting at 41% and reflexion activities as much as 17%. On weekend morning there are futsal activities by 4% and breakdance activity by 1% that are not found at any other time. On weekend afternoon the most activities were also seen in sitting activities as much as 58% and sand play activities by 14%. As for the weekend afternoon, sitting is still being a major activity by 56% and the second major activity is standing as much as 24%.

In this weekend observation, the most crowded area based on the number of users is B area. This is because the number of users in B area is more than other areas and it is supported by facilities that can stimulate users to make voices such as outbound facilities and sand play areas. Based on observations in the field, facilities in the B area support the children to gather at two points in the facility (outbound and sand area). The facilities exist that can support users with the same age group and interactions that occur among them can stimulate the conversations that make a sound. This is also supported by the facilities in the area which can invite those users to speak more as a side effect of the activities undertaken. The quietest area on the weekend is C area in the morning and afternoon, while in the afternoon is the A area. It is not only due to the small number of users in the zone, but also caused by activities carried out in these areas do not stimulate the user to make a sound, such as reflexion activity.
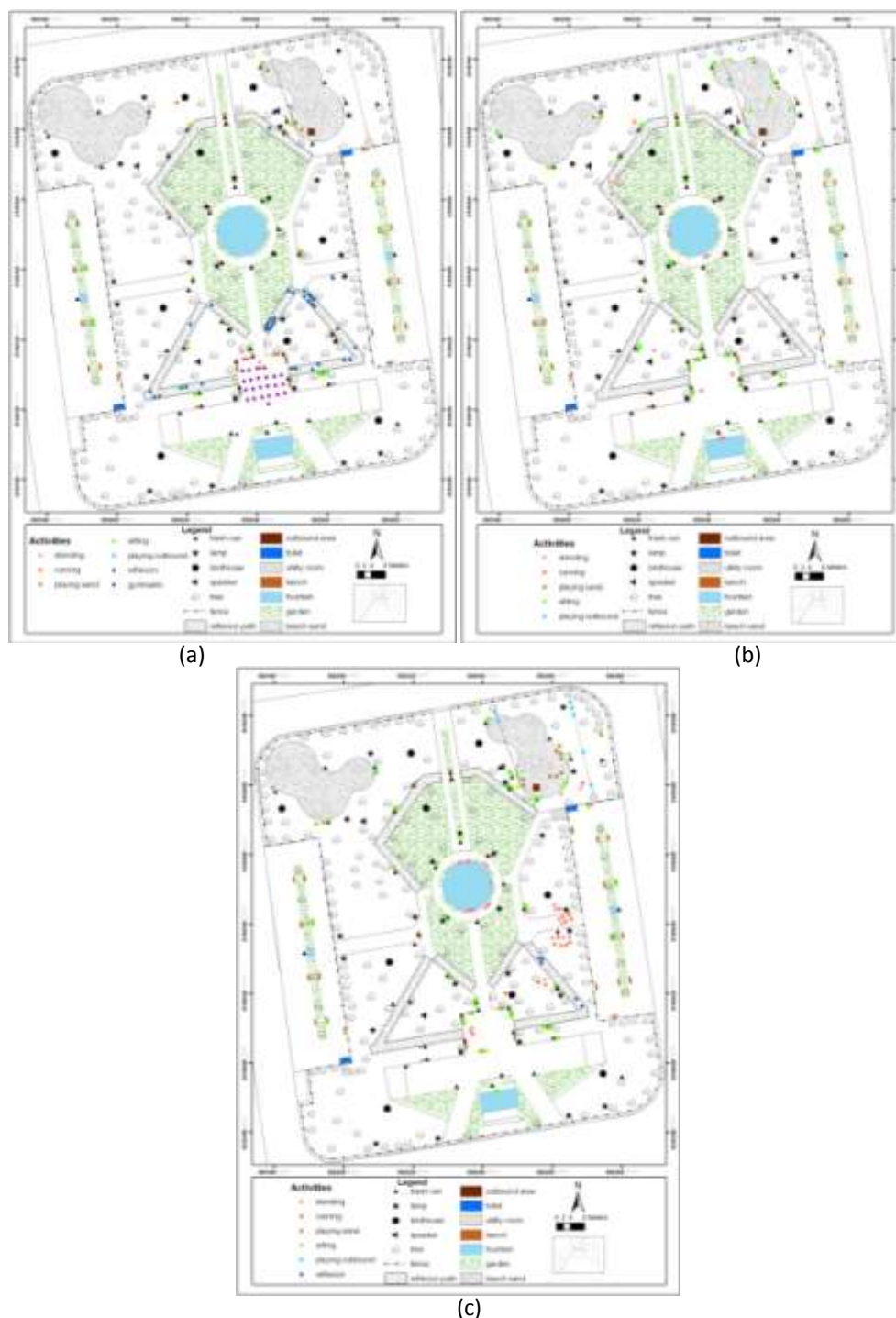
(a) (b)

(c)

Figure 3: Behavior mapping of user on the weekend (a) morning, (b) afternoon and (c) evening

Based on the user's behavior mapping on a weekday like in Figure 4 can be seen that there are different activities in the morning, afternoon, and evening such as gymnastics activity that present only in the morning and reflexion activity that present only in the morning and afternoon. On the weekday morning, reflexion activity has the largest percentage which is 36%. This reflexion activity most performed on C and D areas because in addition to closer to the entrance, it is also closer to the gymnastics activity so it is more attractive to users. This is supports C and D areas to become the most crowded areas when viewed from the number of users on the weekend morning observation.

On the weekday afternoon and evening activities, the largest percentage of utilization is sitting activity with the percentage of 72% in the afternoon and 51% in the evening. Distribution of users with sitting activity on a weekday afternoon as illustrated in Figure 4 are scattered throughout Taman Kusuma Wicitra. Majority of users is sitting on a park bench. In addition nine users (16.4%) do sitting activities under a banyan tree and sheltered sand playground as seen in the B area. Through behavior mapping can be seen that during the afternoon users utilize Taman Kusuma Wicitra particularly in locations adjacent shelter from trees. This is because users priority the shelter in the utilize Taman Kusuma Wicitra.

On the weekday afternoon the quietness of public space areas are nearly equal, with majority of activity is sitting. As for the weekday evening, B area is the most crowded zones with the highest number of users. This is supported by facilities in zone B such as sand play area and outbound which potentially stimulates users to speak out. In addition, there are also activities such as standing and running around the bird house with the most of the users are children who also have potential to make a sound.

(a)   (b)

(c)

Figure 4: Behavior mapping of user on the weekday (a) morning, (b) afternoon and (c) evening

Utilization patterns based on observations both on weekend and weekday shows that most of the utilization patterns related to the facilities available. It can be seen from the pattern of utilization of linear, centered, and clustered in a particular facility or activity in the public space. The utilization pattern follows the facilities provided such as linear patterns in outbound activities follow the rope bridge facilities, linear along reflexion facilities, and linear along the fish pond/fountain on the C and D areas. Centered utilization pattern formed at the sand play facilities, through the net climbing outbound, centered on theatrical activities of breakdancing, and centered on the main pond/fountain of public space. Utilization with clustered patterns is also formed on the user's behavior who utilizes the park bench, near the trees, and near the bird house. While the spread pattern is also formed in areas which has more free space with activities like futsal, gymnastics, standing, and running. Taman Kusuma Wicitra utilization patterns based on user behavior can be seen in the Figure 5.
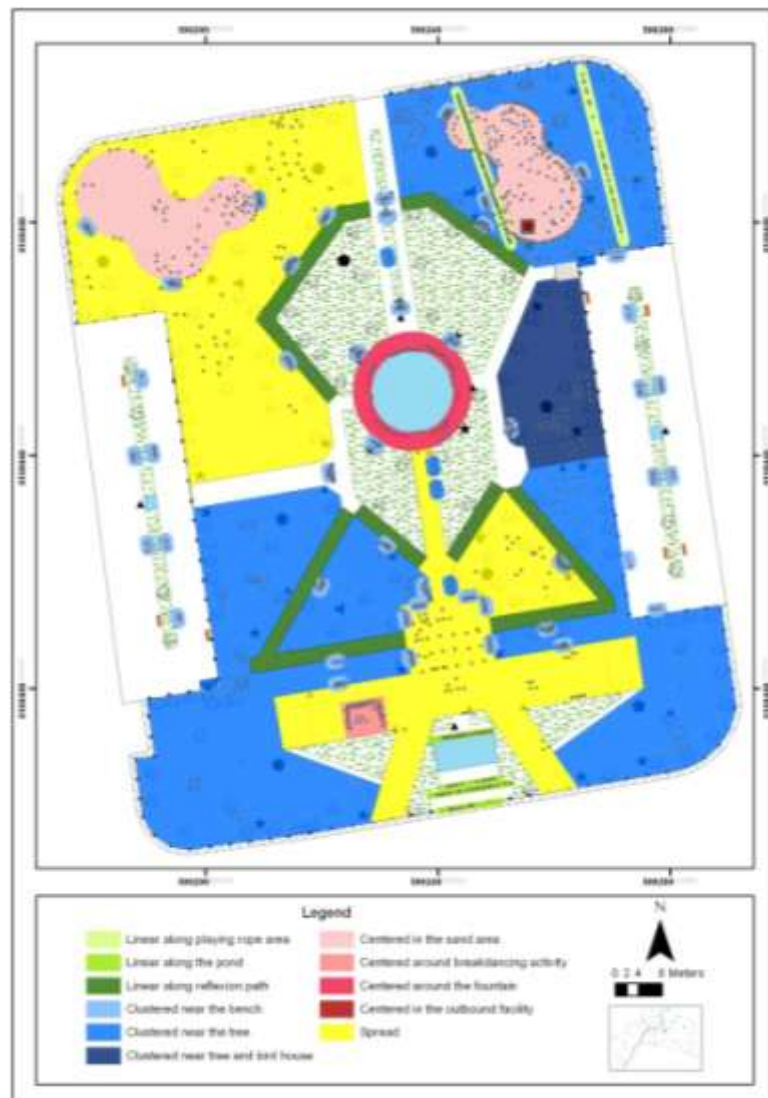
Figure 5: Utilization pattern of Taman Kusuma Wicitra

Here's the level of utilization in each area obtained from the behavior mapping on weekend and weekday.

1) Zone A (low), to accommodate the activity:
   a) Reflection
   b) parents who oversee the child activities (sitting activities)
   c) children who play sand (most age category 0-5 years)
2) Zone B (high), to accommodate the activity:
   a) reflection
   b) parents who oversee the child activities (sitting activities)
   c) child playing outbound and sand (most age category 6-13 years)
3) Zone C (low), to accommodate the activity:
   a) reflection
   b) gymnastics
   c) enjoy the coolness
   d) the most of users are ⩾ 22 years old
4) Zone D (medium), to accommodate the activity:
   a) reflection
   b) gymnastics
   c) enjoy theatrical activities such as breakdance
   d) the most of users are ⩾ 22 years old
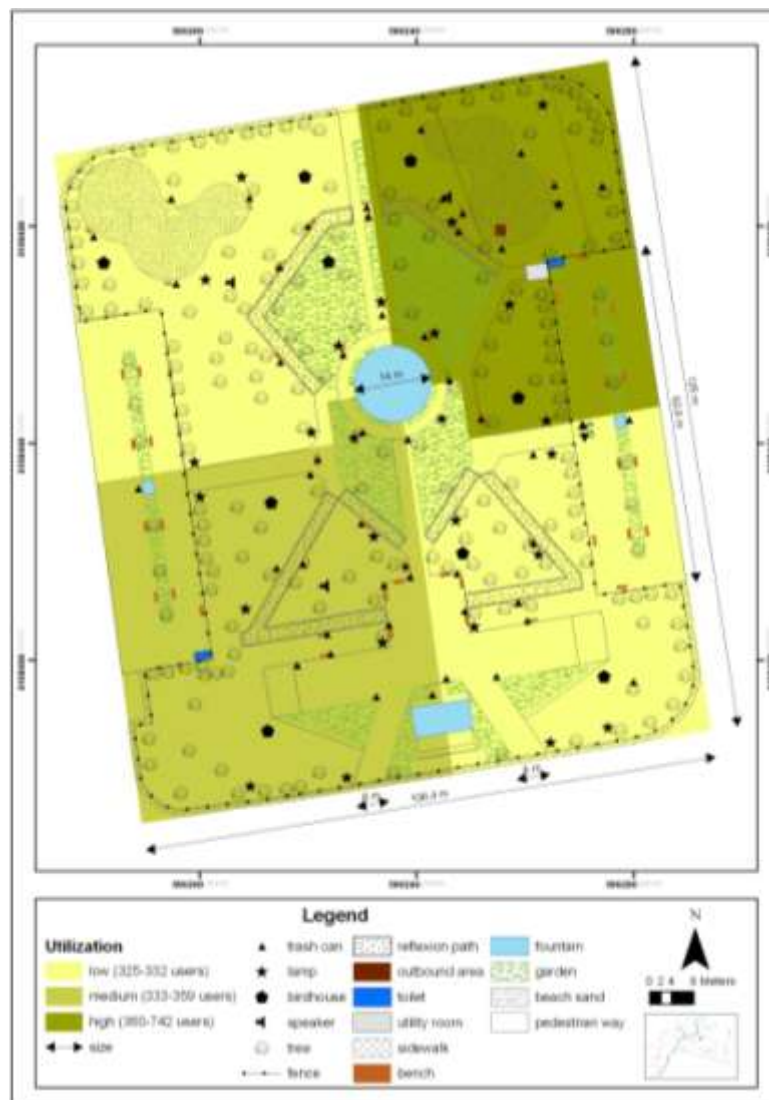
Figure 6: Taman Kusuma Wicitra utilization rates in each area

4. Conclusion

Based on the research can be concluded that:

1. Physical and user characteristics of Taman Kusuma Wicitra public space
   a. Hard elements in Taman Kusuma Wicitra public space consists of floor, wall/barrier, and roof/shade. Taman Kusuma Wicitra's floor has the form of pavement paving, natural stone, soil, and grass. Taman Kusuma Wicitra's walls/barriers are the iron fence and five entrances. While the roof/shelter on the Taman Kusuma Wicitra is a transparent roof which formed from the composition of the plant canopy. Soft elements on Taman Kusuma Wicitra consist of various types of vegetation, fish, pigeons, and fish pond/fountain.
   b. Characteristics by gender, on weekend and weekday are dominated by female users with almost the same percentage that is on weekend by 54% and 55% on the weekday. When grouped according to age, both on weekend and weekday were similarly dominated by users aged ⩾ 22 years with a percentage on weekend by 52% and on weekday by 63%. Users who utilize Taman Kusuma Wicitra are not only come from Tulungagung District, but also from outside the district.
2. The utilization pattern of Taman Kusuma Wicitra public space based on user's behavior

Utilization activities on weekend and weekday have some differences such as futsal and breakdance activity on the weekend that is not found on weekdays. Otherwise, on weekday there is gymnastics activity that is not found in the weekend observation. While the activity on both are activities of standing, running, playing sand, outbound, sitting, and reflexion. Utilization patterns of

behavior described by the mapping can be seen that there is a user activity concentration in B area which has outbound facilities that are not available on the other areas. Through the user's behavior mapping, it also can be seen that the utilization pattern of Taman Kusuma Wicitra influenced by shelter from the surrounding vegetation. Utilization patterns based on observations both on weekend and weekday also shows that the utilization patterns most related to the facilities available. It can be seen from the linear, centered, and clustered utilization pattern in a particular facility or activity in the public space.

Acknowledgement

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A Study on Land Use Control and Zoning System Learning from Japan and Singapore

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ABSTRACT

As part of development control, land use control attempts to ensure that the implementation of land use planning is appropriate to the planning. It is also useful in developing the quality of livable space and to create better space for better living of human. Based on Spatial Planning Act No.26/2007, land use control in Indonesia is carried out through the establishment of zoning regulation, licensing, provision of incentives and disincentives as well as the imposition of sanctions. In Indonesia, zoning regulation is a new instrument as land use control instrument. Essentially zoning regulation is an instrument of land use control and prepared on a detailed plan for each zone and as guideline for land use control. Local governments have to create zoning regulation and use it to control land use in their area. Therefore, comparative study is needed to learn from the other countries that apply land use control and zoning system successfully. Japan and Singapore are relevant as cases study because of their success on land use control and zoning system.

This study used a descriptive qualitative approach with literature sources. The results show that: (1) there is similarity between Japan and Singapore in success of land use control with its discretionary system. This system provides opportunities for local government to consider a development proposal based on the development plan, including zoning regulation and other aspects that are considered important as a consideration in making decisions; (2) In the development of planning system, Japan is influenced by European and American planning system, while Singapore is influenced by the Britain; and (3) there are different variations of land use zone categories on zoning system in these countries. Japan applies zoning system with simpler variation of land use zoning categories than Singapore.

Keywords: *land use control, discretionary system, zoning*

1. Introduction

Based on legislation, land use control in Indonesia is carried out through the establishment of zoning regulation, licensing, provision of incentives and disincentives as well as the imposition of sanctions (Spatial Planning Act No.26/2007 Section 35). Essentially zoning regulation is an instrument of land use control and zoning regulation is prepared on a detailed plan for each zone and as guideline for land use control. For Indonesia, zoning regulation is a new instrument and not many regencies/cities that have developed and implemented this regulation as an instrument of land uses control, so that the success of its application also can't be viewed. Style land use control such as what is good for Indonesia is still growing. In applying its own zoning regulation still need time for this zoning regulation become more known to the public and local governments.

Some countries have successfully made the zoning regulation as an instrument of land use control, such as the United States of America which has developed zoning regulation since the early of 20th century (Leung, 1989). First modern comprehensive zoning regulation applied in the New York City in 1916. Japan and Singapore also have successfully succeeded in land use control and zoning system. Therefore it is necessary to study about the success of land use control and zoning system in Japan and Singapore that use zoning regulation as land use control instrument. This study aims to know the

land use control and zoning systems of Japan and Singapore.
2.   Literature Review

2.1.   Land use control

Various forms of land use control have existed since the beginning of settlement formation. The basic purpose of controlling land use is usually to establish restrictions on the use and development of land that are considered important and the general public desires. There are several instruments of land use control in accordance with the objectives of urban planning (Branch, 1985), among others: (1) building regulations, (2) the distribution of parcels, (3) zoning regulation, (4) the imposition of sanction, (5) provision of incentives and disincentives, and (6) environmental impact analysis.

According to Booth (in Cullingworth, 2009), spatial planning in the world, can be divided into two systems are regulatory system and discretionary system. In the regulatory system, the implementation of land use planning based on legal certainty in the form of zoning regulation. One of countries that apply this system is the United States of America. Regulatory system is the first time in Germany and then spread to the United States of America (Booth, in Cullingworth, 2009). While the discretionary system, decision-making towards a request for land use based on the consideration of a planning authority. Countries that adopt this system are such as England and Singapore. In practice of discretionary system, the development plan and zoning regulation is used not as a fundamental instrument in the land use control (Ratcliffe, 1974). The plan set out in the land use map is not the sole basis for decision-making development. A planning authority is entitled to consider other aspects that are considered important for making decisions.

2.2. Zoning regulation

Essentially zoning regulation is an instrument of land use control so that this discussion will look at the position of zoning regulation in urban planning. Implementation of land use planning involves three stages, namely: a) making of land use planning, b) implementation of land use planning, and c) controlling of land use implementation.Implementation of land use to conform with land use planning that has been made, require the rules that control land use. One of land use control instruments is zoning regulation. Zoning regulation has been prepared based on detailed plans for each zone and conceived as land use control guidelines. Zoning regulations has been recognized as one instrument to regulate land use, not only in the United States but also many other countries (Gallion and Eisner, 1994 and Lang, 1994). In some countries, zoning regulation also is known as land development code, zoning code, zoning Ordinance, zoning resolution, zoning by-law, urban code, panning act, and etc.

According to Babcock (1979: 416), zoning is defined as: "Zoning is the division of a municipality into districts for the purpose of regulating the use of private land." The division of regions into several areas with the rule of law enacted through zoning regulation, in principle, aimed at separating development in the industrial and commercial areas from residential areas.

The concept of zoning was developed in Germany in the late 19th century (Leung, 1989: 158) and spread to other countries like the United States and Canada in the early 20th century as a response to industrialization and the increasing public complaints of privacy disturbed. It is the adverse effect of urbanization and population growth so that the government should immediately act to find ways as solution.

Zoning regulation is a tool for the government as holder of authority (police power) to protect the health, safety, and welfare of the public (Gallion and Eisner, 1963). Expressed similar views of Lai and Schultz (in Lang, 1994), zoning regulation is an instrument that regulate urban growth and development associated with the public interest. Zoning regulation focuses on environmental sanitation, land use distribution arrangement and to create an efficient circulation pattern (Lang, 1994). Among its many purposes, general zoning regulation may be used to:

- Protect public health, safety and general welfare
- Promote desirable development patterns

- Separate incompatible uses
- Maintain community character and aesthetics
- Protect community resources such as farmland, woodlands, groundwater, surface waters, historic or cultural resources
- Protect public and private investments
- Implement a comprehensive plan

2.   Research Method

The study of zoning regulation as an instrument of land use control used a descriptive qualitative approach to the literature study. Sources of literature review are from various sources such as book, paper and journal.

3.   Results and Discussions

3.1. Japanese planning system

Planning system in Japan includes legal and legislative control, manufacturing planning, land use planning, zoning, and population density control. Based on the level of planning, planning in Japan consists of three levels, namely: (1) national planning, (2) regional planning, and (3) local planning (Srinivas, 2009).

A. National Development Plans

Comprehensive National Development Plan (Comprehensive National Development Plan) is made under the Comprehensive National Land Development Act 1950 and set by the prime minister of Japan (Srinivas, 2009). Srinivas explained that Japan's first comprehensive plan was adopted in 1962 as a response to the rapid growth of industrial activities after World War II. These activities were adversely affecting the industry with the increasing population in the metropolitan city. Its also caused chaos and lower socio-economic conditions in rural areas. With the establishment of regional development plans, regional development strategies were adopted to support the removal of the growth of industrial activities from urban areas. Part of this strategy was the implementation of The New Industrial City Development Act 1964. There were 15 new industrial cities designed in 1964 to 1966. This plan included setting targets industrial development, population, land use, road networks, sea ports, land use for industrial and residential. National plan also contained strategies in the economic and employment growth with sustainability objectives.

The second national plan was adopted in 1969 by trying to develop a national transportation network nationwide transportation network of bike Airways and rapid national railways ('Shinkansen') system in conjunction with the project development of large-scale industrial area. It also made the transfer of industry from an already crowded area into a planned industrial area and not solid. The third national plan was established in 1977 with a focus on the development of comprehensive development projects for human habitation. This strategy aimed to support industry development plan. The fourth national plan applied from 1989 to the present and the different focus of previous national plans. The focus of this national plan is in the National Capital Region (NCR) and it is very useful in the development Japan thoroughly. Attention to population growth, strengthening the industrial sector growth in the globalization and information as a driver of Japan's economic progress and investment in social infrastructure, are part of the strategy in the national plan in Japan until 1989. The fourth national plan is valid for 15 years starting from 1989 and still valid today. NCR is divided into two zones: Tokyo Metropolitan Area and surrounding area. This strategy shows that the development of NCR as a center of national and international political, economic and cultural activities.

B. Regional Planning

Japan's territory is divided into eight regions, with the three largest metropolitan areas include: (1) National Capital-NCR (Tokyo), (2) Kyoto (Osaka-Kobe-Kyoto), and (3) Chubu (Nagoya) and then the (4) Hokkaido, (5) Shikoku, (6) Kyushu, (7) Tohoku and (8) Chugoku. NCR and Kinki regions plans contain

policies and important strategic projects, particularly in controlling the location of industry in the city center, the construction of an industrial site on the outskirts of town, new town development plan on a large scale, and construction of the metropolitan road network.

C. Local planning (city planning)

Urban planning in Japan is to determine the basic provisions for the planned development in urban areas. This provision is including (1) the type and standard of urban planning, (2) planning procedures, (3) control development and (4) urban development projects. Detailed rules and implementation of planning are set out in separate legislation, such as the Building Standard Act that regulates activities related to the zoning plan and the Land Consolidation Act provides procedures for land consolidation projects in areas that have been set according to city plan applicable.

The City Planning Act of 1968 is the basis for urban planning in Japan. The main things that set forth in this law include: (1) effective control of land use, (2) functional urban planning and (3) delegation of authority to local governments. Town plans in principle could be decided by local authorities of cities, towns and villages.

Draft plan is prepared and informed to the public, then the public are welcome to provide input and local governments will pay attention to community input. Further, draft plan is improved to be proposed city plan and the public is allowed to provide written input for two weeks. Local Planning Council was formed for the implementation and approval of the Minister of Construction sought after coordination with several ministries. The final product is the Final City Plan that will already be implemented. Regulation of land development consists of several laws including the Nature Conservation Act, Agricultural Land Act and the Forest Act. Associated with urban areas, there is a development permission system that regulates the location and form of development and building confirmation system that regulates the use and structure of the building's security.
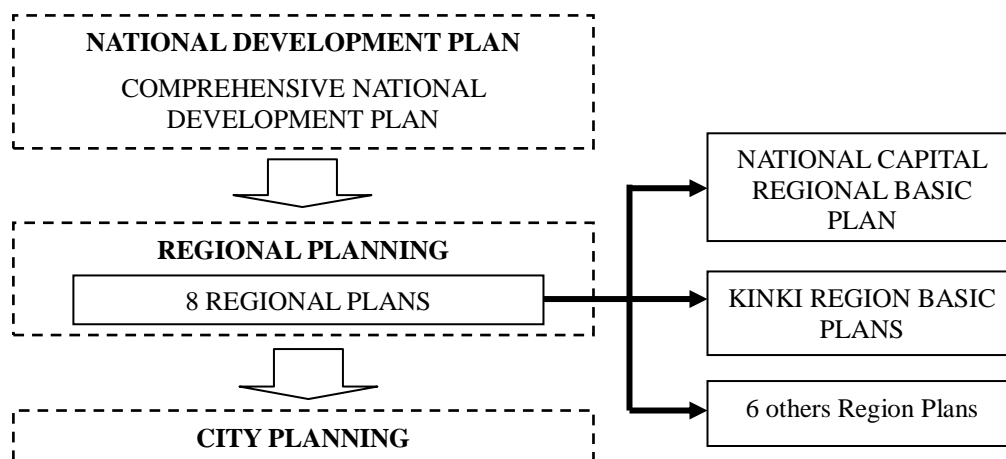
Source: Srinivas (www.gdrc.org)
Figure 1: Japan Planning System

3.2. Japanese zoning system

Japan's first zoning system has a simple form because there are only three types of zones: the residential, commercial and industrial. This zoning system is not implemented such strict zoning in the United States. Japan's first zoning system was developed by Hiroshi Ikeda (Sorensen, 2002: 15). Ikeda served as head of the Home Ministry Roads Bureau in 1911. After two years in office, Ikeda went to Europe and America to study the development planning system. Ikeda attended the international conference on road planning in London 1913, then went to Germany to study the progress of city planning, including the variations of zoning system. On the way back to Japan, Ikeda visited New York to study the debate on the 1916 New York zoning Ordinance (Watanabe, 1993 in Sorensen, 2002: 115). Ikeda became the first Japanese to Western experts on the zoning system and then used this knowledge for the development of Japan's zoning system.

Sorensen further explained in his book "The Making of Urban Japan", zoning system which was developed by Ikeda, did not regulate the separation zone such as zoning in general. Ikeda had his own zoning concept where he argued it at the first meeting of City Planning Research Committee in the discussion about the draft planning laws in 1918. Ikeda's zoning concept held that the purpose of separation zones to control the allotment of space is not a strict spatial arrangement, but rather to describe the structure of the city by designing the zones to overcome urban development problems in the future (Okata, 1980 in Sorensen, 2002: 115). In 1919, Japan enacted a City Planning Law of 1919. This Act was the first city planning system in Japan and consists of five main parts, namely: (1) Land use zoning system; (2) Urban Building Law which included the building code and provided detailed rules for the zones in the zoning system; (3) Building-line system to control the growth of urban fringe; (4) The system for designing of public facilities and it was a revision Tokyo City Improvement Ordinance (TCIO); and (5) Land Readjustment (LR) system. Ikeda's zoning system was accommodated in the City Planning Law 1919 and can be seen in the table 1.
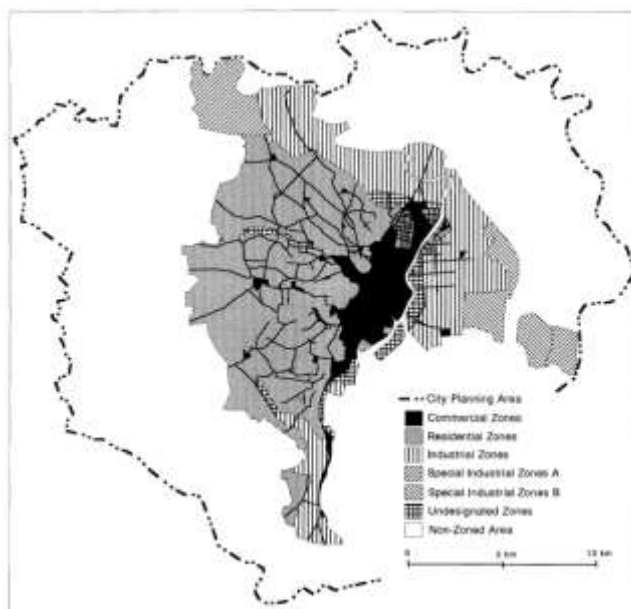
Source: Ishida, 1987 in Sorensen, 2002: 117
Figure 2: Tokyo's First Zoning Plan, 1925

Japan's zoning system is the most important in Japan planning system. Urban city planning area is divided into two types of are, urban promotion area (UPA) and urban control area (UCA). UPA is an area which local government recommended as urban area and the remainder as urban areas that is controlled by the UCA. Zoning is created only to be held on UPA and not for UCA. The development in the areas that do not implement zoning regulation requires permission from the government. In principle, the development on urban control area (UCA) is prohibited except for agricultural and forestry. Now Japan has twelve types of zones with three main zones: commercial, industrial and residential. Zoning regulations also regulate the types of buildings that may be established, floor area ratio and building coverage ratio. Besides that, Japan also has some rules that regulate the types of facilities may be built in special areas or special zone.

Table 1. Evolution of Japanese land use zoning categories

1919	1950	1968	1992	Purpose
Residential district	Residential district	Category 1 Ex-clusively Residential district	Category 1 Exclusively Low-storey Residential district	To protect living environment for low-rise housing (maximum height: 10m, 2 small store of offices up to 50 m permitted)

			Category 2 Exclusively Low-storey Residential district	To protect living environment for low-rise housing (maximum height: 10m, certain types of stores and of-fices up to 150 m² permitted)
	Category 2 Exclusively Residential district	Category 1 Exclusively Medium-high Residential district		To protect living environment for medium-high-rise condominiums (certain types of stores and offices up to 500 m² permitted)
			Category 2 Exclusively Medium-high Residential district	To protect living environment for medium-high-rise condominiums (certain types of stores and offices up to 1500 m² permitted)
		Residential district	Category 1 Residential district	To protect a residential environment (certain types of stores and offices up to 3000 m² permitted)
			Category 2 Residential district	To protect a mainly residential environment
			Quasi-Residential district	To ensure harmony with housing and motor vehicle related facilities, etc by a roadside
Commercial district	Commercial district	Commercial district	Commercial district	To facilitate commercial and other business activities
		Neighborhood Commercial district	Neighborhood Commercial district	To situate stores for the residents in the neighborhood (theatres and dance halls are prohibited)
Industrial district	Industrial district	Industrial district	Industrial district	To facilitate the industrial function
	Quasi-Industrial district	Quasi-Industrial district	Quasi-Industrial district	On the premise of intermingling with housing, small-scale factories that do not cause serious hazards are permitted
		Exclusively Industrial district	Exclusively Industrial district	To formulate large-scale industrial area (housing is prohibited)

Source: Japan Ministry of Construction City Bureau (1996) in Sorensen, 2002: 301

3.2. Land Use Control in Singapore

3.2.1. Singapore's planning system

The first town plan in Singapore was prepared by Lt. Jackson in 1827, under the supervision of Sir Stamford Raffles and is known as Plan of Jackson. The plan showed the various zones intended for the different ethnic communities. Thus, the European, Indian, Chinese, Malay and Arab communities were physically segregated, and this system of separation of the races continued until the post independence era when a deliberate policy was introduced to provide public housing on a massive and impressive scale whereby all races could co-exist in harmony in the various public housing estates.

England legislated the Housing, Town Planning etc (sic) Act of 1909 had influenced and with the emergence of awareness of environmental health, the colonial government of Singapore to enact regulation of Planning (Planning by Law) in 1913 to regulate housing development. The colossal destruction caused by the Second World War gave the impetus for the application of new ideas in planning and the land use control in England. The present system of planning control was introduced by the town and Country Planning Act 1947. Many countries have benefitted from the English experience including Singapore. The meaning of develop in the Planning Act of Singapore is based on the English town and Country Planning Act 1947. England is also the pioneer in the development of new towns, which serve as a lesson Singapore in the planning of its own new towns, though not

necessarily with the same objectives in mind.

The planning system in Singapore, as in England, is concerned not only with the making of plans but also with the control of development. The control of development, or to be more specific, the control of change in land use and buildings, is exercised through development control. While the Master Plan and the Concept Plan set out the land use policy. Development control is concerned with the implementation of that policy and is through this scheme that most people come into contact with the planning system. It is the application for permission to build which links the development process to the planning process. Development control is primarily concerned with public control of land use and is carried out through the legal machinery operating under the Planning Act. In view of this statutory foundation, development control in Singapore is usually referred to as statutory planning (Khublall and Yuen, 1991:2).

The purpose of government intervention in the use and development of lands is to guide developers collectively to make the best use of national resources in the interests of the community as a whole. Furthermore Khublall and Yuen (1991:6) said that the main objective of the statutory planning is to prevent undesirable development of land and to ensure that in the development of land public interest is fully considered.

In 1957, Singapore made a Statutory Plan and the Non Statutory Plan to manage the physical development (Khublall and Yuen, 1991:13). The England Act gives effect in the preparation and implementation of master plan for Singapore. The Master Plan is a comprehensive physical plan with emphasis on the arrangement of land use in order to regulate the physical development, whether conducted by private parties or by the government itself. The Master Plan 1958, subject to 5-yearly reviews, had many characteristics that were similar to the 1944 Greater London Plan. The Master Plan gave emphasis to comprehensive development through physical planning, specifically the control of land use through zoning and density controls. Property owners wanting to change the use of their land must conform to the requirements of the Master Plan (Yuen, 1998: 2).

To provide legal support, a Planning Ordinance 1959 was the first statute of major importance directed at planning matters in Singapore and was supplemented by the Housing and Development Ordinance passed around the same time (Khublall and Yuen, 1991). This legislation was formulated to develop a planning system in conformity with the Master Plan. Development control is primarily implemented through the zoning and density prescriptions set out in the Master Plan and the rules and regulations embodied in the Planning Ordinance, now the Planning Act (Yuen, 1998: 2). In the rapidly changing economic and social conditions of post-independence years, the Master Plan soon inadequate. Its uses as a planning document has since been overshadowed by the Concept Plan, a strategic land use and urban transportation plan. Present day Singapore is to large extent an expression of the planning principles embodied in the Concept Plan.

The Singapore Concept Plan was first drafted in 1970 with the assistance of a United Nations expert team to guide the country's long-term development. It is a land use planning blueprint designated by a specialized role for meeting the national goal of modernization and to raise Singapore's economic standing underlain in respect of industrialization, public housing, infrastructure and building a modern central financial district (Wong and Goldblum, 2008: 7).

The Singapore Concept Plan has a longstanding reputation for being continuous, and its consistency has been rendered possible by the same government being in charge over the last four decades. Established in 1971 on the basis of an export and multinational-led land use strategy, a full urbanization and infrastructural provision, supported by a "garden city" notion had been conceived to lift Singapore from a small to a large regional centre (Ministry of Trade and Industry 2003 in Wong and Goldblum, 2008). Since 1990 Singapore uses Two Tier System (two-level system) in the Non Statutory Plan. The first level is the Concept Plan which laid the general framework of development policy and strategy, while level two is The Development Guide Plan.

In 1998, a new approach to planning was adopted that the Concept Plan maps out the long term land use and development strategy for the year 2000 and beyond whilst the Development Plans (DGPs) translate the intentions of the Concept Plan to guide development at the local level. The whole of Singapore is divided into 55 planning areas. The contents and provisions of the Development Guide Plans for the various planning areas when incorporated into the Master Plan are applied to guide physical development through development control. These contents and provisions, and in

particular any upgrading or change of zoning or plot ratio, do not confer development rights nor should they be taken as the basis for determining the liability for payment of development charge (URA, 1998). The planning Act requires all development and subdivision of land to obtain written permission in the form of a formal approval from the planning authority before they can be carried out. To optimize land distribution among competitive uses, all development activities related to land use planning and land allocation are administrated and coordinated by a central planning authority, presently the URA (Urban Redevelopment Authority) since 1 September 1989 (Yuen, 1998: 2).
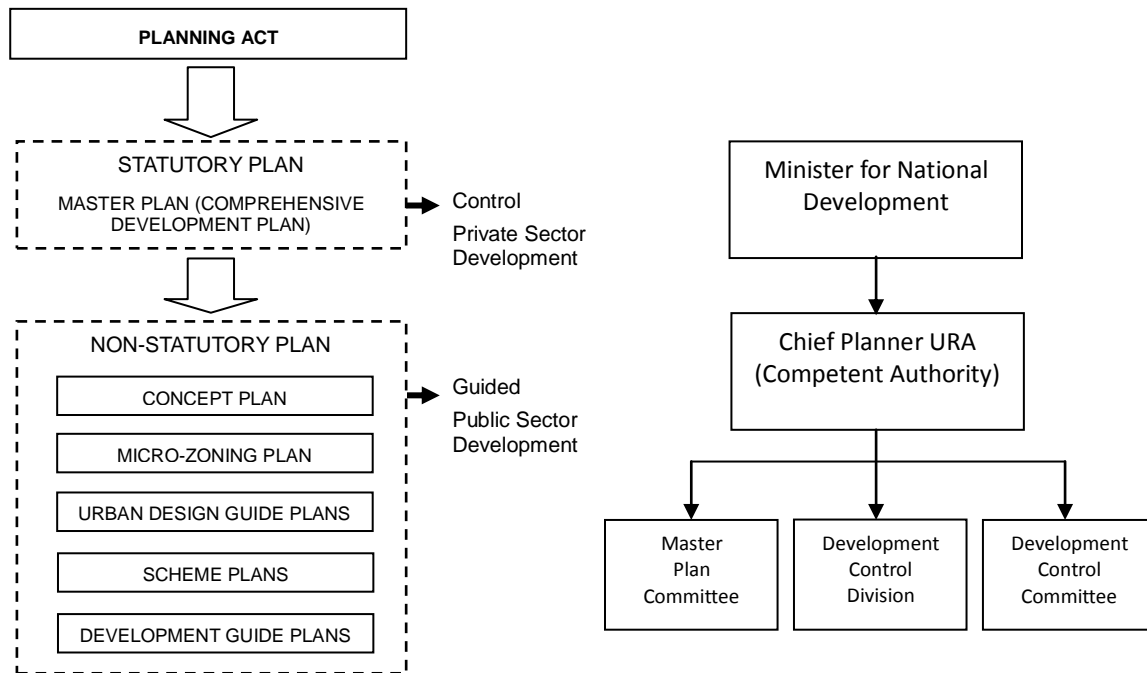
Source: Khublall and Yuen, 1991

Figure 3: Planning System &Institutional Framework of Planning Authority in Singapore

3.2.2. Singapore's zoning system

Singapore's zoning regulation is as part of Master Plan. The Master Plan is a comprehensive physical plan with emphasis on the arrangement of land uses in order to regulate the physical development whether undertaken by private parties as well as by the government through zoning regulations. Master Plan is divided into two of parts, namely (Winarso, 1991 in Hariyono, 2010: 227):

1. Maps that show the plan and development proposal for the Central Area, Area Town and other areas throughout Singapore.
2. The written statement gives details and explains the plans.

Master Plan is revised every five years. The other plan, since 1973 Singapore had a Micro-Zoning Plan for certain areas. Micro-Zoning Plan provides more detailed plans than the Master Plan in a particular area. It is intended to provide direction clearly about the density, shape and height of buildings that appropriate to the existing conditions. Micro-Zoning Plans help the preservation and improvement of the environment in the old residential areas. Micro-Zoning Plan is also intended to prevent from land speculation and strengthen the implementation of urban planning. According to Master Plan Written Statement 1998, there are 30 types of zones (table 2).

Table 2: Zoning Interpretation of Singapore

Zone	Examples of Developments
Residential	Flat, condominium, townhouse, cluster housing, strata bungalow, terace house, semi detached house, detached house
Residential with commercial 1st	commercial use at the 1st story only and flats above

story only	shop house
Commercial & residential	mixed residential & commercial
Commercial	Office, convention centre, commercial school, bank, market/food centre/restaurant, cinema, entertainment, foreign trade mission
Hotel	Hotel
White side	These are areas to be used commercial, hotel, residential or other compatible uses.
Business park	Business park, science park
Light industry	Printing, publishing
General industry	Manufacture of electrical apparatus & supplies, vehicle repair & servicing, furniture & fixtures
Warehouse	General warehouse, open storage, central distribution centre
Residential institution	Residential development, association premises
Health & medical care	Hospital, polyclinic, dental clinic, veterinary clinic, nursing home
Educational institution	Kindergarten, primary school, university, foreign school, polytechnic
Place of worship	Temple, Church, Mosque
Civic & community institution	Court, police station, prison, fire station, welfare home, library, museum
Open space	Wooded area, swamp area, nature reserve, natural open space
Park & garden	Regional park, community park, park connectors
Beach area	
Sport & recreation	Stadium, swimming complex, golf course, recreation club, etc
Water body	River, major drain & canal, reservoir, pond
Road	Expressway, major arterial road, arterial road, primary access road
Transport facilities	Car park, heavy vehicle park, trailer park, terminal, petrol station, etc
Rapid transit	MRT/LRT station
Utility	Electric substation, power station, water tower, water pump, etc
Telecommunication	Transmitting station, earth satellite station, post office
Cemetery	Cemetery, Crematorium, Columbarium
Agriculture	Agrotechnology park, plant nursery, hydroponics farming
Port/airport	Airport, port area
Reserve site	
Special use	

Source: Master Plan Written Statement 1998

4. Conclusion

There is similarity between Japan and Singapore in success of land use control with its discretionary system. This system provides opportunities for local government to consider a development proposal based on the development plan, including zoning regulation and other aspects that are considered important as a consideration in making decisions. In the development of planning system, Japan is influenced by European and American planning system, while Singapore is influenced by the Britain. here are different variations of land use zone categories on zoning system in these countries. Japan applies zoning system and has variation of land use zoning categories simpler than Singapore. Japan has twelve types of zones with three main zones: commercial, industrial and residential. Meanwhile, Singapore has 30 types of zones which are regulated on Master Plan Written Statement 1998.

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ENVIRONMENTAL & GREEN
CONTEXTS

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The Application of Participatory Planning Process
in Designing the Non Green Open Spaces in Tidore Island

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ABSTRACT

Can not be denied again that community involvement in the setting of absolute space is to be implemented. Pursuant to Act No. 26 in 2007 about Structuring space (UUPR), explained that the State has granted authority for designing the space to Governments and local authorities, in terms of setting, coaching, implementation, and supervision. Whereas in Act No. 32 of 2004 on local governance, as the autonomous region has the authority to manage and take care of the interests of the local community. The autonomous region also has great authority in charge of organizing and structuring of space, i.e. planning, utilization and control of utilization of space, on its territory respectively. As one of the region's coastal and archipelago made Tidore has distinctive characterisitics of the utilization of space in the development of its territory. Area of land and coastal owned requires a different approach in planning, utilization and control of utilization of space at Tidore. Based on the policy areas related to space allocation in the provision of open space, one of the potential to note in the development of the utilization of space in the area is the provision of open space as a major factor that influenced the development of settlements and infrastructure needs/means of urban areas.

Keywords: participatory planning, non green open spaces

1.   Introduction

The spatial problem structuring space in urban area of which is progressively decreasing quality of settlements indicated among other things by: jams, slum, pollution (water, air, noise, Waste), and loss of public space and green open spaces (RTH) for the articulation of social and public health, lack of availability of means of pedestrian networks, unavailability of space for informal sector activities, natural disasters, earthquakes, floods and landslides which frequency the more often and its impact more broadly, especially in the area of protected works. In accordance with the Law number 26 in 2007 about the Structuring of space article 28 mentioned that the mutatis mutandis RTRW City is by planning RTRW district and added with the settings of the plan provision and utilization of RTH, RTNH, infrastructures and means of pedestrian network, public transport, activities of the informal sector, and the evacuation of disaster. Whereas, in article 65 mentioned that the event space is done by Setup with Government involves the public role.

Tidore is a town in North Maluku province, Indonesia. The city has a total area of 9.564 km and a population of as many as .7 98.025 inhabitants. The city was already famous since time immemorial occupation because of cloves and nutmeg. As one of the areas that thrive, physical development area will join the relic is of course affected along with the rising of construction in the city of Tidore. Development of the town not only develop the city and upgrade it to a more far-reaching level but rather to optimize land use efficiency at fulfillment of the needs of the community, the city, and the achievement of continuous infrastructure and infrastructure town of sustainable and regular basis (Eko Budihardjo, 1998). As one of the region's coastal and archipelago made Tidore have distinctive characteristics of the utilization of space in the develop-

ment of its territory. Area of land and coastal owned requires a different approach in planning, utilization and control of utilization of space at Tidore.

Based on the policy areas related to space allocation in the provision of open space, one of the potential to note in the development of the utilization of space in the area is the provision of open space as a major factor that influenced the development of settlements and infrastructure needs/means of urban areas. The existence of open space as a public space is an integral part of development activities and the presence of an urban area (Darmawan, 2005). In the context of the provision of open space then almost all towns in Indonesia suffered a deficit because the number of quantity/broad open spaces provided by the City Government is unable to accommodate the needs of a few social activities forfeits the right of citizens of the capital city is. One of the primary functions of public space is as a place of community interaction for many purposes, both individuals and groups. In this public space is part of the social system of society whose existence could not be released from the social dynamics. Based on Judge et al. (2003), public space also functions add value to the environment, such as the aesthetics of the city, air pollution control, climate control, micro as well as provide "image" of the city

Based on the background of these problems faced by local governments in the development of urban activities and urban development Influence:

- Tend to ignore the provision of open space.
- Lack of involvement of the community in the provision of the role the public urban space.

In research roles as well as communities in planning space ternuka non green in Tidore will formulate a development form an open space designed by involving the community's role in the plan design of urban public space in the form of the provision of the Non Green Open Space (RTNH).

2. The Purpose of the Research

This research aims to increase the quality of the space with the mandate of implementing the Legislation law is associated with the role Setup Space as well as the community and City Government in planning open spaces Non-green (RTNH). While the targets to achieve in this research is to: to make identification of the location and the type of activities that will be required for the provision of non green open space, making a design's guidelines for non green open spaces. It also encourages community participation and the City Government through the Organization of plan the provision of open spaces non green needed to run the function area of the city as the Centre of social services and economic growth center area. With the accomplishment of these things then expected to build awareness, active participation, as well as the initiative of the community in improving the quality of the space of the city.

3. Literature Review

The definition of Non Green Open Space NGOS :

- Based on act no. 26 / 2007 on the spatial known that the green zone , were areas longwise / lanes and / or clumped , that their uses acted more open , the growing crop , good growing naturally wilfully and planted . explanation
- Based on article 29, paragraph (1) the law no. 26 / 2007 on the spatial known that : Non green open space zone is owned and managed by the local government of a city that is used for the society in general . Including the green open to the public, among other things, the city park, a public park, and green line along the way, the river, and a beach. Including the green zone, the private among other things, is courtyard of a house / buildings public / private who cultivates plants.

Based on guidelines for the provision and utilization of Green open spaces, note that: Green open spaces (RTH) is an elongated area/line and or clumped, that its use is more open, where growing plants, growing plants naturally or deliberately planted. The open space of the non green is an open space in urban areas that are not included in the category of RTH, The build land as well as in the form of a body of water. Green open spaces are private property of certain

institutions or RTH those individuals who use for limited circles, among others, in the form of a garden or home page/public/private building property of cultivated plants. Green public open spaces is an RTH owned and managed by the local Government of the City/County that used to benefit society in General.

A published definition is widely present on The Dimension of Urban Design by Carmona (2003) defines open space as land Tracts are not awakened: or in minimum woke up with some type of use (examples: golf courses, agricultural land, Garden, low density residential) or land that is left not woken up for the purpose of aesthetic or ecological, health, welfare, or safety (for example: green line, line floods, slope or wetlands). Open space can also be classified on the basis of ownership: (1) open space private (residential or agricultural land on private property); (2) the open space for the public interest (land that is intended or planned as open space with access to and use of the general public); (3) public open spaces (publicly owned land for recreational use of the good society is active or passive).

4. Methodology in Participatory Planning

The success of the implementation of Community development is highly dependent on the role of Government and society. Both have to be able to create the purpose should be one main idea. Without engaging the public, the Government will not be able to achieve development results optimally. The development will only give birth to new products that are less meaningful to its community, does not comply with the needs of its community. And vice versa, without the optimal role of the Government, the construction will run in irregular and not directional, which will eventually give rise to new problems. In addition to requiring the involvement of the community, the development also requires proper strategies in order to be more efficient in terms of financing and effective in terms of results. Selection of development strategy is important because it will determine where the role of Government and where the role of the community, so that both parties are able to be optimized and synergistic.

Development through community participation is one of the efforts to empower the public in planning development potential with regard to potential local resources based on the study of deliberations, namely an increase in the aspirations of the real wants and needs that exist in society, increasing motivation and involvement of community groups in the process of development, and an increased sense of community groups — has a program of activities that have been drawn up. In the planning needs of the RTNH one of the methods in facilitating the Community initiatives is to do one participative planning techniques that participatory research and development (PRD) is meeting the needs of the community in the efforts to identify common requirements and then perform joint activities to meet those needs by digging the information from the community through the forum focus group discussion (FGD).

Development plan RTNH directed at the centre location of Tidore, Tidore Island subdistrict with some alternative determination of location. Location of the town in the island of Tidore directed at this location because the progression is quite rapidly with the number of residents who occupy most of the island and is the capital of Tidore. In determining the location of RTNH using multiple criteria is proposed:
1. The urgency to change the face of the city's current conditions are very irregular current conditions could potentially become irregular conditions currently in regular condition
2. Conformance with policies of development and the development of City-Building strongly support the vision and mission of Building enough support the vision and mission of the construction has yet to support the vision and mission of the city of
3. Compliance with priority development area-location a priority development area-location is not yet a priority development area
4. The potential of the region in fostering economic area-location planning very potentially grow the economy of the community-planning Locations not potentially grow the economy society

Table 1. Visualization Of Alternative Planning Area Conditions

Alternatives Location	Visualization Of Alternative Planning Area Conditions
Coastal area Tugulafa	
Open Space around The Office Spatial planning	
The Area of Mangrove Forest of Tugulafa	
Rum Bali Bunga Beach and recreation	

Sources : Survey results

From the results of selected priority area of FGD to planned as the RTNH in Tidore is a mangrove forest area will be integrated with The Beach Tugulafa.

5.   Result and Discussion

The results of community involvement in designing the location option in the activities of these communities do the process of Forum Group Discussion design or designed the location of RTNH. Each group discuss and devise RTNH on site development RTNH already agreed with.

Figure 1. Group discussions took place with good and facilitated by the author

Figure 2. Design Process in Group 1(left) and Design Process in Group 2 (right)

Figure 3. Design process in Group 3

When you are finished designing, then designed a/each group presented his work. This presentation is displayed only for the course and conducted discussions and then set a grand design that would later be used to design the region. (Figure 5, 6, 7)

Figure 4. The design and result of group 1 (left) and result of group 2 (right)

The results of the Design Group 1 group discussion results one can be inferred that one wants to identify existing land use planning at the site, after which they planned the rest of the mangrove area which still exists as a natural tourist attractions for the people of nuanced Tidore, mangrove dilokasi they wanted the existence of bridges and roads that could be used to explore the area, as well as a children's playground in the location of mangrove forest, thus children can play while learning what the benefits of mangrove forests so that they can contribute to safeguarding the sustainability of mangrove forest.

The result of the Group 2 recommended mangrove forest area design can be used as Mangrove beach resort, so expect to increase revenue in this area of Tidore and the Government can also provide job opportunities to the communities around the location planning, thus ditwarkan is a concept that is a place of rest cottage and also the gazebo, jogging track, the streets from

materials that are friendly to nature, so it does not damage the functionality and benefits of the mangrove forest area.

Group 3 recommends some important things in the conservation of mangrove forests as catchment areas, namely water and protects the area around from abrasion and wind, in addition also makes a proposal in order to built a clear boundary line so it is not mixed with the area woke up so it will be easier in the plan, it is expected there is also a tether the boat near the location planning as well as a place for fishing for local residents.
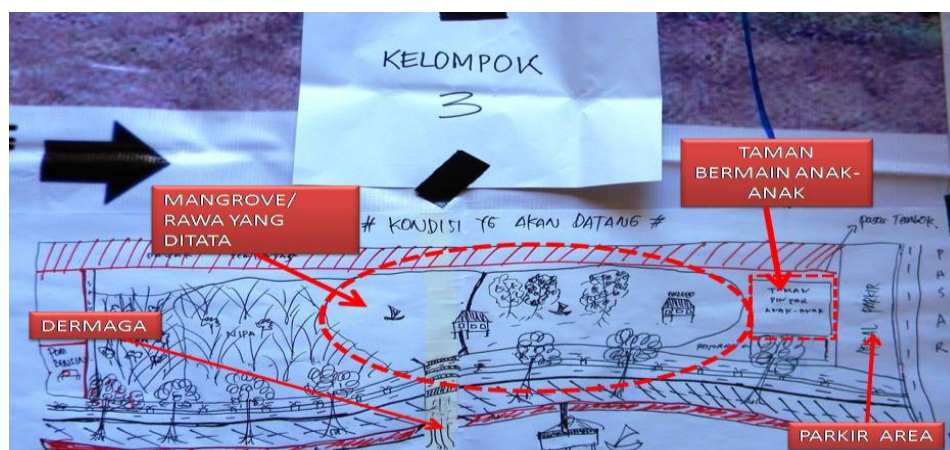
Figure 5.The design and result of group 3

6. Conclusion

The conclusions of the joint community of FGD, produce support communities to conserve mangrove forest in the coastal areas of Tugulufa and also expects that their ideas in developing regions can be accommodated in the planning especially in RTNH Tidore. They will be keeping digging and also wanted the results or ideas they can be poured in the planning the mangroves area and development of the region. The process of community participation was expected to be applied also to other regions so that the community can participate and designing his own building. Based on the thought we will develop their raw design to be a final design of the mangrove forest in Tidore Island.

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The Analysis of Visual Comfort in Workspace

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ABSTRACT:

Visual comfort Parameter is the level sufficient of illumination recommended, which is not exceed the threshold contrast, stated brightness level and no room glare occured. Not only to illuminate the work space, level of illumination also effects on the room condition (comfort and fun) that create visual comfort for office room. The goal of this research is to recognize the influence of work place layout and armature placement on the work room, and the color of wall materials to have effect on the reflectance value. In this study, statistic descriptive metode applicated on the Dialux program. Conclusion of research that placement lamp armature and work place layout made effect on the illumination level of the work space. The color of wall materials in arround room the influence the effect of refflectance, so greatly affet the visual comfort of work room. This research is expected to serve as guidelines in designing office work space inaccordance with the recommended illumination level.

Keyword : illuminance, luminance,visual comfort

1. Introduction

Indonesia National Standard SNI -03-6575-2001 about the procedure of How to Design Lighting Building, recommends standard for illumination in the office work space is 350 lux. Visual comfort is achieved when the level of illumination on the workspace is as recommended, so that activities can be implemented properly and comfortably. Illumination values should be distributed uniformly so that the arrangement of desks can be positioned with some kind of planned designs. The planning of light points placement also affects the illumination value on the working space,so that the light distribution in the field of work also affects the placement point of lights.

Research applying quantitative methods by using dialux program to determine the value of illumination on the working room and on the surface of the wall. This is to determine whether there are differences in the illumination (lux) in the working field of the light points and whether there is effect of the luminance (cd/m2) against the different reflectance values based on the color of wall materials. The results could be the basis of the distribution of lighting design work, by minimizing the energy use for artificial lighting so that it can create energy efficient buildings.

2. Literatur Review

Office layout is based on the flow of office work activities so the office work space setting can help workers to improve productivity (The Liang Gie, 1983:62). Layout is the preparation of furniture and office supplies on the floor area (Littlefield and Peterson, 1956:117). Layout is the process of determining the need for space and on the use of the room in detail to prepare a practical arrangement of the physical factors that are considered necessary for the implementation of office work at reasonable costs (Terry, 1988:200).

Visual performance is closely associated with the level of luminance, task luminance, background luminance, contras, glare, brightness, age, observer distance, and angle vision. Some experts explain the factors that affect the visual performance are lighting conditions, the condition of the observer and the activities which are categorized as follows: a) Activities: size /distance

proximity, time constraints, the brightness, contrast, familiarity, (b) The condition of illumination: the illumination level, ratio levels of light, glare, (c) Observer: eye conditions, adaptation, level of consciousness (Norbert Lechner, 2007: 386-387). Improved illumination of 0 to 50 footcandle will enhance the light and the visual performance up to 85 percent, while next improvement of 50 footcandle will improve visual performance by only 5 percent. The conclusion is that the large increase in light levels is through the increasing of level of illumination, but a very small increase in visual performance (Norbert Lechner, 2007:387).

Yonemura and Kohayakawa (1976) explains that the level of clarity decreases above 1 cd/m2 (footlamber 0.292)by using the test grating and 100 cd/m2 (29.2 footlamber) on the writing test. The study considers the written clarity by a luminance difference value.

Pritchard (1986: Ed.6) stated that the lighting plan generally aimed to achieve a uniformly lighting strength in all areas of work. Completely uniform light distribution is difficult to be achieved, but the acceptable standard is when the illumination strong is minimum, as low as 80% of the value of the recommended average illumination. That is, if the illumination strength is 100 lux, the illumination strength of all the measuring point should be greater than 80 lux. These requirements must be met for at the required level of illumination is not met, it will disrupt the activities that result in decreased productivity.

Saunders (in Boyce: 295) observed about the suitability of the quality of light in reading activities. In this study suggest that, at levels between 100-500 lux illumination, the increases of light quality is very high and very low when 500 to 1600 lux.Tommy Goven and Lotta Bangens (2002:87-89) in their research designed 4 positions of desk placement, the position of the point of view of the luminary as follows: (1) angle of 45° above the eye-level, (2) 45° above the eye -cross, (3) 25° above the eye-level, (4) 25 ° above the eye line-cross. Research room sized 4.8 m x 6m with workbench 1.4 m x 1.70 m, 0.72 m in high, luminary height 2.40 m using a downward and upward flux of 2x28 watt dimmable, T5-3000K. The results show the highest ratings for 63% of respondents in the table position with a 45° angle above the eye-line and the location of luminaries parallel to the position of the respondent.

Color temperature expressed in Kelvin scale (K) is the color rendition of the lamp itself and the light it produces. In candescent lamps, color temperature is a true color, for fluorescent lamps and high intensity discharge lamps (HID), the value is an estimation and of so-called color temperature correlation. Color temperature will make the temperature of the light source lamp will seem warm, neutral or cool, and generally the lower the temperature, the warmer the source and vice versa. (UNEP, 2005:4)

3. Results and Discussions

The research was conducted on the workspace with the activities of administrative staffs. Workspace range is 10 m x 10 m for the capacity of six employees which are one leader and five staffs. Privacy workspace is designed with cabinets as dividers between the placement office staffs, so that there is a private work space for each staff,. This workspace is equipped with a reception area. There are 12 armatures of Fluorescent lamps, Philips TMX204 2xTL-D36W/840 CON + GMX440 in this room. The luminance value required for this administrative office is 350 lux. Visual comfort is achieved when the level of illumination at the appropriate office workspace is as recommended, especially in the areas of employment, so that activities can be implemented properly and comfortably. Furnitures layout design in the workspace as shown below, with the reflectance values on ceiling 20%, 80% floor and the wall for 50%

Figure.1. Workspace Furniture layout.

The analysis using the program Dialux to know the value of illumination on the working space and nilai luminance on the wall, is as follows:
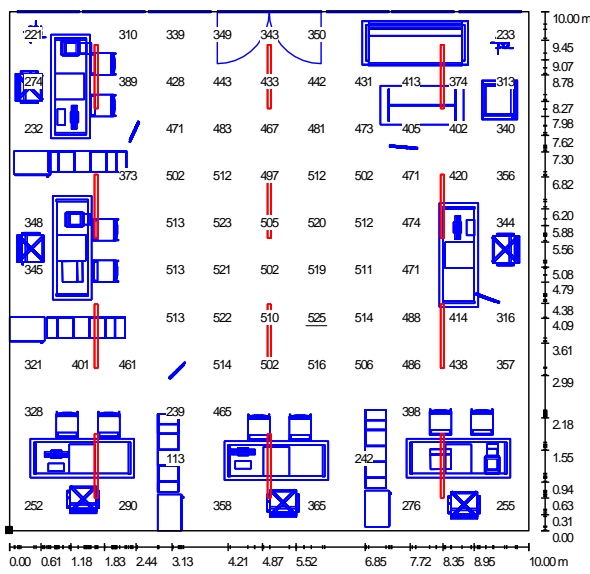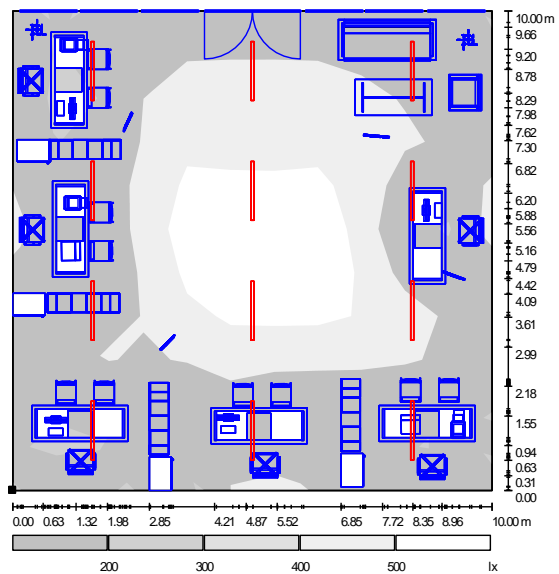

Figure 2. Illumination Level of Workspace

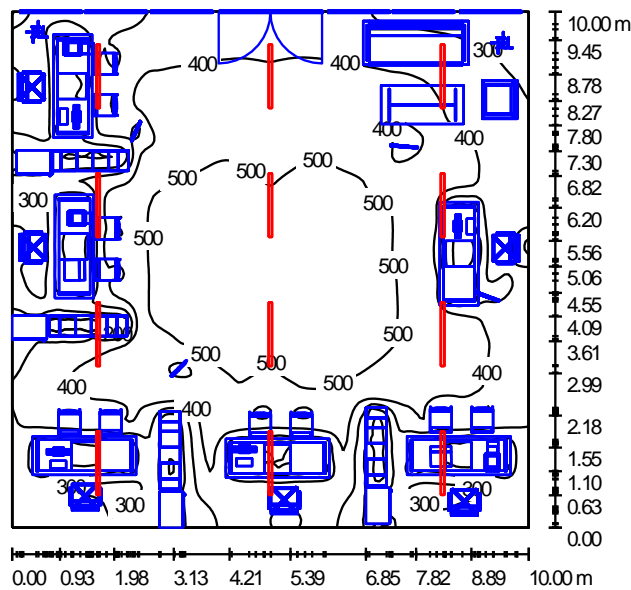Fig 3. Illumination gradation of Workspace

Fig 4. Illumination Level of Workspace

The above figure shows: the illumination on the working space (height = 0.760 m) of 500 lux in the middle of the room, while the position of the employee's desk at 300-400 lux illumination that meets the requirements of the recommended value of 350 lux. Based on the placement of light point designed on the workspace, the result value of the illumination can express the nature of space. In the middle of the workspace area, with illumination value of 500 lux that can be perceived as a public or open space, while the surrounding space as space for employees can be perceived as private or enclosed rooms with a value between 300-400 lux of illumination. The measurement results using the program Dialux, ie. the illumination on the working area, a minimum of 46 lux, 525 lux maximum and average value of 378 lux. The maximum luminance value on the wall is 419 lux, minimum 41 lux and 208 lux average with reflectance value of 50%.

Tabel 1. Measurement of Illumination Value

Surface	$p(\%)$	$E_{av}(lx)$	$E_{min}(lx)$	$E_{max}(lx)$
Workplane		378	46	525
Floor	20	275	19	483
Ceiling	80	97	75	137
Walls(4)	50	208	41	419

On this design, the colored cream of wall material with reflectance 50%. The results of the analysis of the luminance on the surface of the wall are varies, that is, the average value of on the wall 1st is 34,wall 2nd by 33, wall 3rd 34, and wall 4th by 31.

Tabel 2. Measurement of Average Illuminance & Luminance

Surface	Average illuminances (lx)			Reflection factor (%)	Average luminances (cd/m2)
	direct	indirect	total		
Workplane	304	74	378	/	/
Floor	211	63	275	20	17
Ceiling	0.14	97	97	80	25
Wall 1	136	80	216	50	34
Wall 2	131	76	208	50	33
Wall 3	138	74	212	50	34
Wall 4	119	78	196	50	31
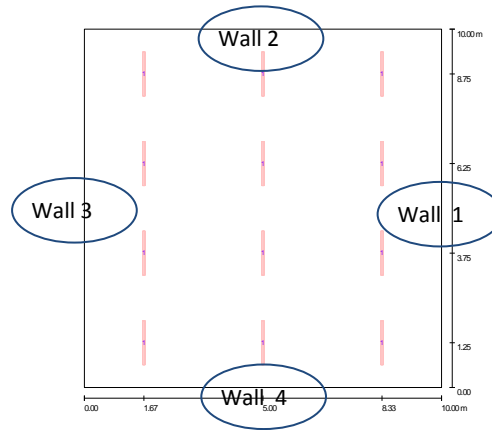
Fig. 5. Area of Wall Illumination Level

The figure below shows the value of luminance on each wall surface of the working space, as follows:
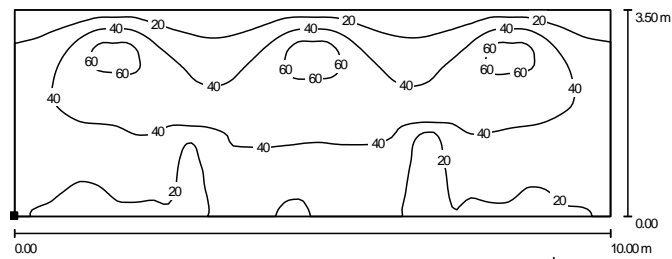
Fig 6. Value of illumination Wall 1st
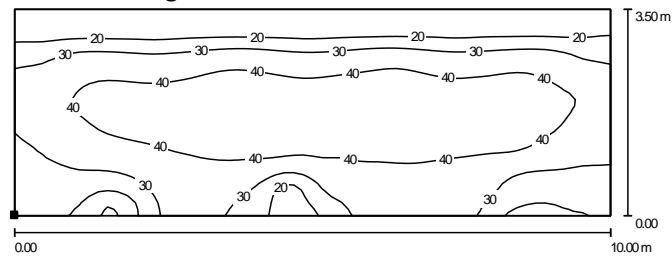
Fig 7. Value of illumination Wall 2nd
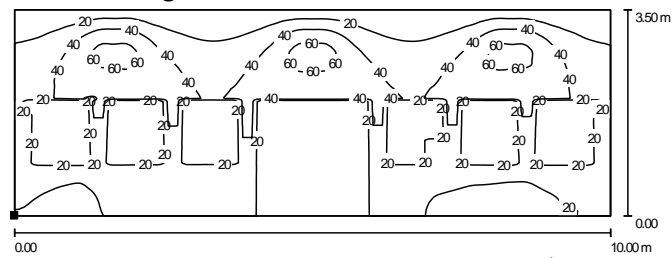
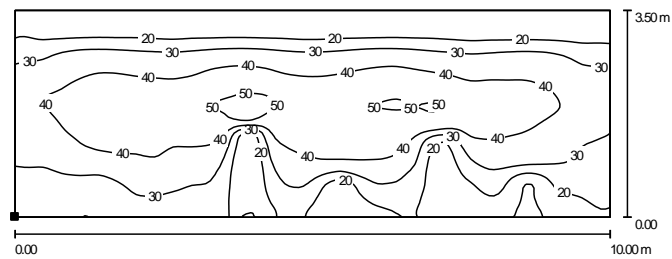Fig 8. Value of illumination Wall 3th

Fig 9. Value of illumination Wall 4th

On this design, the wall material is cream in color with reflectance of 50%. The results of the analysis of the luminance on the surface of the wall are greatly varies , as follows:

- wall 1: max illumination value of 67 cd/m2, min of 8.16 cd/m2, and average 34 cd/m2
- wall 2: max illumination value of 49 cd/m2, min of 8.36 cd/m2, and average 33 cd/m2
- wall 3: max illumination value of65 cd/m2, min of 8.31 cd/m2, and average 34 cd/m2
- wall 4: max illumination value of 53 cd/m2, min of 6.51 cd/m2, and average 31 cd/m2

Fig 10. Workspace Furniture layout

The analysis showed a maximum value of illumination 547 lux, minimum 26 lux and an average of 363 lx. Illumination value on this setting is different from the first which is the maximum illumination value is 484 lux, minimum 29 lux and average is 341 lux. This suggests that if the design of placement and height of the light point is different, then the value of illumination is also different. If the point is lower then the higher the value.
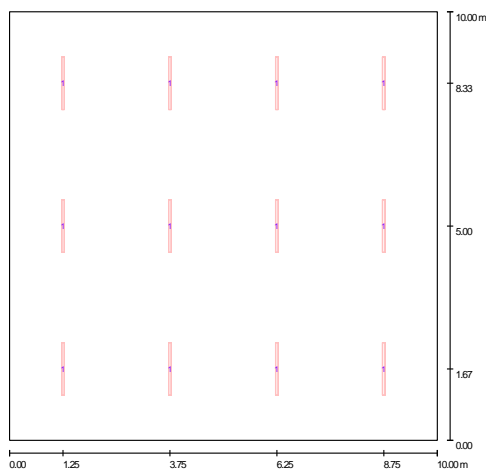
Fig. 11 layot lamp Armatur
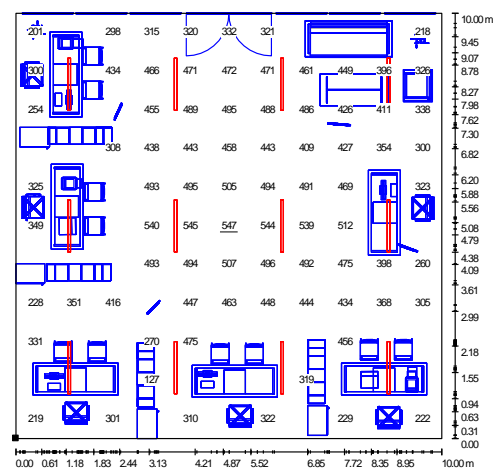
fig. 12. Illumination Level of Workspace
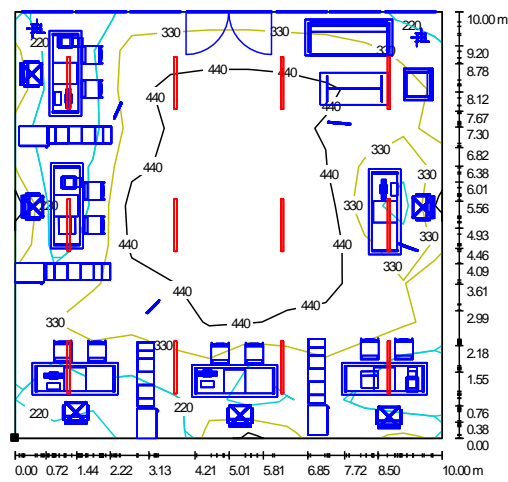
fig. 13. Illumination Level of Workspace

This study is analyze   whether there is influence of the reflectance values on the color   of the material being used. Is there an increase or decrease when the value of the reflectance on the wall surface is not the same and, whether the color effect on the reflectance values.

The analysis in the study with the same design but by changing the color of the walls and the reflectance value, as shown below.
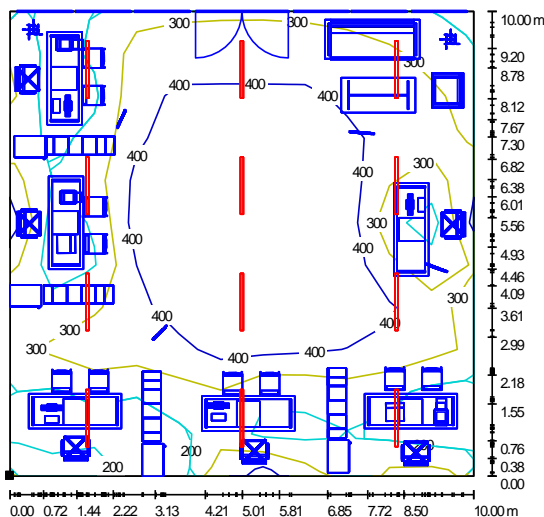

Fig 14. Workspace Furniture layout

Fig 15. Level Illuminance in workspace
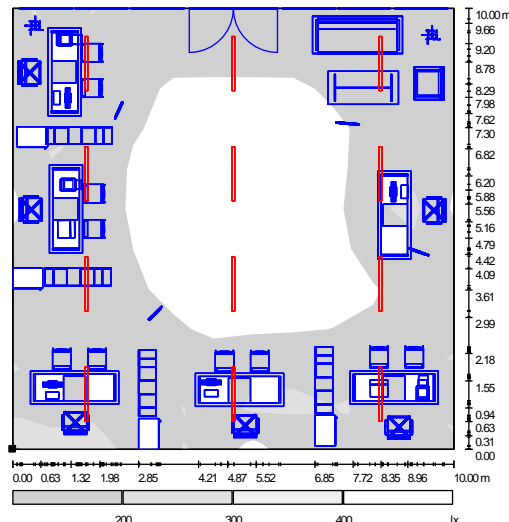
Fig 16. Gradation Illuminance in workspace
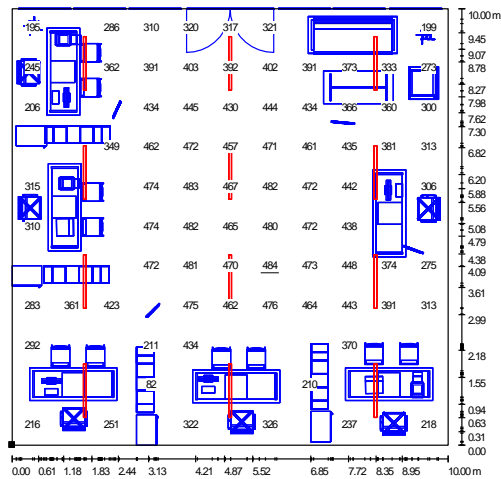
Fig 17. Level Illuminance in workspace

Tabel 3. Measurement of Reflection Factor, Average Illuminance & Luminance

Surface	Average illuminances (lx)			Reflection factor (%)	Average luminances (cd/m2)
	direct	indirect	total		
Workplane	304	37	341	/	/
Floor	211	34	245	1	7.79
Ceiling	0.14	56	56	70	12
Wall 1	136	46	182	30	17
Wall 2	131	42	173	30	17
Wall 3	138	39	177	30	17
Wall 4	119	45	164	30	16

Tabel 4. Measurement of Illuminance value

Surface	p(%)	E_{av}(lx)	E_{min}(lx)	E_{max}(lx)
Workplane		341	29	484
Floor	10	245	14	443
Ceiling	7	56	41	68
Walls(4)	30	174	25	378
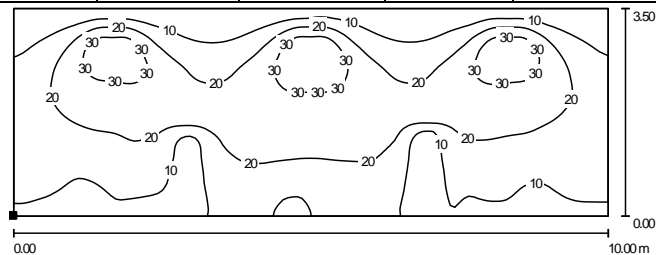
Fig 18. Value of illumination Wall 1st

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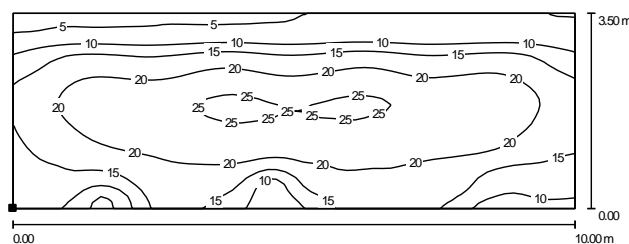
Fig 19. Value of illumination Wall 2nd
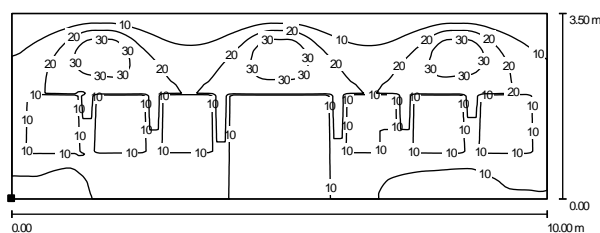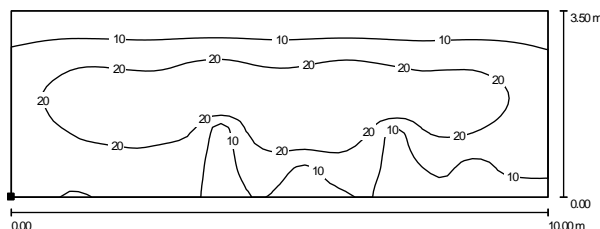
Fig 20. Value of illumination Wall 3th

Gambar 21. Value of illumination Wall 4th

On this design, the wall material colored blue with reflectance 30%. The results of the analysis of the luminance on the surface of the wall are greatly varies, as follow:

- wall 1: The illumination of 17 cd/m2 max, min 3:23 cd/m2 and average 36 cd/m2
- walls 2: The illumination of 17 cd/m2 max, min 3.36 cd/m2 and average of 26 cd/m2
- wall 3: The value max 17 cd/m2 illumination, min 3.22 cd/m2 and average of 35 cd/m2
- wall 4: The illumination of 16 cd/m2 max, min 2.36 cd/m2 and average of 30 cd/m2

4. Conclusion

Visual comfort office workspace is created if it meets the recommendation of 350 lux illumination level. Level of illumination effects on the placement of the light point and reflectance value of the wall surface. Reflectance values affect the color of a wall Surface. Furniture layout design was also influenced the level of illumination, especially in the areas of work. The study explains that color of material in the workspace affect the luminance value, such as research on wall 1st with a beige reflectance 50% give an average value of 34 cd/m2 while the blue color with reflectance 20% give an average value of 17 cd/m2, so could be concluded that if the wall material light in color, the reflectance increases and higher the luminance values.

Position of armature lights on the field work is very influential on the luminance , where the position of the lamp above the working area of 413 lux and lamp position on the top-front of work areas is 344 lux, that to be concluded there is the influence of light points placement on the field work. A special attention is needed to create the visual comfort of the workspace, which are the furniture layout, placement of the light point and, the color of material.

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Learning From Sustainable Urban Energy Development Study in Surabaya City

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ABSTRACT

Consumption of annual energy in cities reaches two-thirds of the world's energy and contributes to 70 percent of the world's greenhouse gas (GHG) emissions. This share is expected to be higher in the future, as an impact of urbanization and income growth, especially in developing countries. In early 2011, the World Bank initiated a pilot study concerning sustainable urban energy in three pilot cities, i.e. Surabaya in Indonesia, Da Nang in Vietnam and Cebu in the Philippines. The study was called Sustainable Urban Energy Development in the East and Asia Pacific Region and was financed by AusAID. The objective of the study was to help pilot municipal governments in the East Asia and Pacific region begin formulating long term sustainable urban energy developing strategies, in the context of cities' overall development plans. The study was carried out through three steps, i.e. assessing six sectors using TRACE (Tool for Rapid Assessment of City Energy), assessing urban green house gas emission, and assessing the energy balance of the city. The six sectors assessed in this study are transportation, solid waste, water and waste water, power and heat, public lighting and municipal buildings. The author was engaged as local consultant who helps to carry out the study in Surabaya City. From the assessment, there are three sectors ranked as prioritization, i.e. street lighting, private vehicles and municipal buildings. The recommendations taken for street lighting are Public Lighting Assessment Program, Lighting Timing and Dimming Program as well as Public Lighting R & D Program. The recommendations taken for transport sector are Non-motorized Transportation Modes and Public Transport Development. The recommendations for municipal buildings are Computer PowerSave Program and Energy Efficient Building Code Revision. The overall recommendations given for Surabaya City to increase energy efficiency and energy security are setting target for energy performance, implementation timeline for reduction measures, assignments of roles and responsibilities to city departments and implementation of detailed costs and financing mechanisms.

Keywords: urban energy, development, greenhouse gas emissions, sustainable

1. Introduction

The contribution of cities to the world's greenhouse gas emissions has been known widely. It is predicted that urban population is expected to increase by 50 percent between 2000 and 2030, and East Asia's urban share of its total population is expected to rise from the current 46 percent to 60 percent by 2030. It is than important for East Asia and Pacific (EAP) region to consider particular challenges on how to meet the rapidly increasing energy demand in a sustainable manner.

The background above drove The World Bank to initiate a study called "Sustainable Urban Energy Development in the East Asia and Pacific Region" in the middle of 2011. This study took three pilot cities in East Asia and Pacific Region - Surabaya in Indonesia, Da Nang in Vietnam, and Cebu in the Philippines. The Bank found that developing countries may have difficulties in starting action to overcome the climate change and energy efficiency issues, especially at the city level. The Bank thought that for the first step, it is required to give some technical assistance, include evaluating baseline energy consumption and supply options, and identifying priority sectors for promoting sustainability and achieving measurable improvements.

This article reviews the process of Sustainable Urban Energy Development Study, hereafter called SUED, in Surabaya, Indonesia. It is important to review, as this study has an objective to help pilot

municipal governments in the EAP region simulate the city energy production and use and finally begin formulating long term sustainable urban energy developing strategies, in the context of cities' overall development plans. The author was engaged as local consultant who helps to carry out the study in Surabaya City. Did the study run well in the process without any difficulties? And what lessons can be learned from this study? Those two questions will be reviewed in this article.

2.   Research Focus and Methodology

Sustainable Urban Energy Development Study carried out based on the fact that cities currently account for about two-thirds of the world's annual energy consumption and about 70 percent of the world's greenhouse gas (GHG) emissions. Furthermore, East Asia and Pacific Region is facing particular challenges in the coming decades, such as increase in urban population and energy usage as a consequence. The speed and scale of urbanization in the EAP region also provides an unprecedented opportunity to plan and invest in sustainable energy systems. The program of Sustainable Urban Energy Development is part of the AusAid-supported Sustainable Energy Development program as a follow-up to the Energy Flagship Report on East Asia's Sustainable Energy Future.

The study on Sustainable Urban Energy Development which took place in three pilot cities was supported by the Aus-Aid. The program aims to provide guidance to municipal governments in the EAP region for formulating long term urban energy and emissions sustainability plans.

The procedure in running Sustainable Urban Development Study in Surabaya broke down into several steps as described below:

1. Phase I: Deployment of Tools
    - TRACE - Tool for Rapid Assessment of City Energy
      This tools is used to evaluate energy efficiency opportunities under direct municipal government control
    - Urban Energy Balance
      This scheme covers traditional evaluation of city energy consumption as a whole, including public and private sectors
    - Urban GHG Inventory Data Collection Tool
      The GHG data collection tool supports GHG estimates for a number of sectors, such as buildings, transportation, water, public lighting, waste and power & heat
2. Phase II: Develop a Roadmap
    - Prepare a "roadmap" in collaboration with IEA for the municipal government officials in the region and develop realistic and practical sustainable urban energy strategic development plans

Source: TRACE
Figure 1: Overview of TRACE

Figure 1 shows TRACE which consists of Energy Benchmarking, Sector Prioritization and Energy Efficiency Recommendations. TRACE is considered as a practical tool for conducting rapid assessment of energy use in cities, that identifies and prioritizes sectors, and suggests specific energy efficiency interventions (The World Bank, 2011). The six sectors covered in TRACE are buildings, transportation, water, public lighting, waste and power & heat.

3. Results and Discussions

This section is mainly taken from the Draft Final Report of Sustainable Urban Energy Study in Surabaya. The review is then structured into six sub sections as follows:

3.1 Review of Current Energy Use and Expenditure

The Study on Sustainable Urban Energy Development was carried out by assessing the current energy use and expenditures at first. Stigge (2011) summarized Surabaya's energy flows and profile into a Sankey diagram. The author thought that the Sankey Diagram is considered very useful in describing the energy use and expenditure, as the diagram can describe and visualize the energy transfers. The Sankey Diagram is commonly used to visualize the energy accounts on a regional or national level, in which the width of the arrows is shown proportionally to the flow quantity. It was firstly used by Matthew Henry Phineas Sankey, who used this type of diagram in 1898 in a publication on the energy efficiency of a steam engine (www.wikipedia.com).
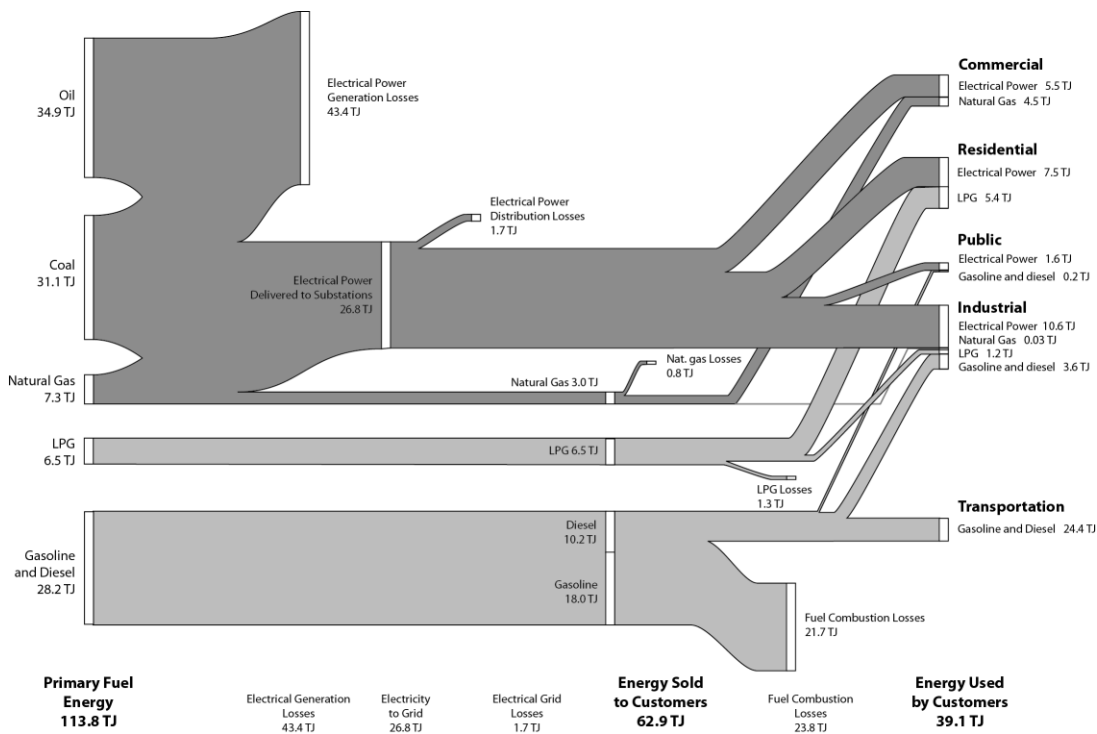
Source: SUED Draft Final Report for Surabaya City, 2011
Figure 2: Total Surabaya Energy Flows in 2010

The Sankey Diagram above showed that the total of primary fuel energy is 113.8 TJ, while the energy sold to customers is 62.9 TJ. The energy in Surabaya is used for activities such as commercial, residential, public, industrial and transportation. Energy sources from oil and coal are mainly used for commercial, residential and industrial, while gasoline and diesel are mainly used for transportation and industrial. The shape of the diagram corresponds to the number of each energy sources and uses.

3.2 Review of Existing Urban Plans and Initiatives on Energy Usage

Plans and initiatives on energy usage can be seen from the national level. At the national level, the Government of Indonesia has National Energy Conservation Master Plan in 2005, National Energy Management Blueprint in 2006, National Energy Policy in 2006, and Presidential Decree No. 2/2008 on Energy and Water Efficiency. At the city level, Surabaya City has followed up the national plan through Mayor's Letter on Energy Saving. This letter mainly has been implemented in government's offices. Besides existing urban plans, several initiatives have also been implemented in Surabaya City, such as Car Free Day Program every Sunday, Composting Program, Green and Clean Program, CDM landfill gas capture program, vehicle emission test and water efficiency program.

3.3 Review of Sector Analysis and Recommendation

In the section of sector analysis, it shows Surabaya's current energy and emissions with respect to the six sectors as found in TRACE Tool, i.e. transportation, solid waste, water and wastewater, electricity generation, buildings and public lighting. In each sector, there are three points prepared, first is discussion on previous and ongoing initiatives to improve energy efficiency and mitigate emissions, and secondly is discussion on challenges and opportunities for improving energy efficiency and mitigating emissions and finally discussion on illustrative recommendations for improving energy efficiency. The review is mainly done based on the data gathered in before and during the mission. Due to unavailability of secondary data, the SUEP team had to run primary survey, such as interviews with related institutions as well as meetings, in order to obtain required data to initially execute TRACE.

Recommendations on energy efficiency for each sector have been prepared in TRACE. They are grouped by sector with total of 51 recommendations. Each recommendation is completed with general description on each respective sector, methodology of implementation, monitoring and several attributes such as how much energy savings potential can be made, first cost needs to be provided, speed of implementation and benefits. The recommendations which are taken can vary from city to city based on the existing condition as well as previous and ongoing initiatives to improve energy efficiency of each sector. For Surabaya, the SUEP team has discussed those all recommendations which correspond to Surabaya condition. Among the 51 recommendations, the team chose 17 recommendations for all sectors. These 17 recommendations included 4 new recommendations suggested by the team.

According to the Draft of Final Report on the Sustainable Urban Energy Development Study in Surabaya, the six sectors analysis can be summarized as follows:

3.3.1 Transportation

The transport energy intensity per capita in Surabaya is considered low, mainly due to high share of motorcycles use. Restrictions on new vehicle registrations are applied in the form of progressive taxes on second, third and fourth vehicles. Public transport is not yet developed comprehensively. Irregular schedule of public transport also worsen the situation. At this moment, the city government is planning to build BRT networks as well as LRT line, development of ITS, Park-and-Ride facilities, etc. To address this condition, the SUEP Team recommends a Municipal Vehicle Fleet Efficiency Program, leads by BAPPEKO. The other recommendations are Vehicle Emissions Standards Testing and Data Collection Program which should be led by Transportation Department. The team also suggested the establishment of Surabaya Regional Transportation Planning Authority.

3.3.2 Waste

In the waste sector, domestic waste contributes nearly 707,000 tons annually. However, the city has green and clean program as well as composting program which runs continuously. Surabaya has also initiated waste to energy program for the landfill site in Benowo, however, this is still on progress of biding. The SUEP Team found that the waste collection vehicles need to be renewed in order to reduce energy use. Therefore for energy efficiency in the waste sector, the team suggests Vehicle Maintenance Program, Vehicle Operations Program, Composting Programs and Landfill Gas Capture

Program.

3.3.3 Water

Water losses were identified high in Surabaya, as many distribution pipes existed. The water network and water treatment facilities also need to be observed. PDAM explained that they require financial aid to run either consultancy or leak detection project. In the water sector, the SUEP team encourages Pump Replacement Program for energy and GHG emissions reductions. Leak Reduction Program also needs to be taken to proceed. This would need long term partner which can be run through a performance contract. In addition, the city also needs to initiate a Water Awareness Program as a compliment to the water use reduction efforts.

3.3.4 Power and Heating/Cooling

Electricity needs in Surabaya are mainly fuelled by coal and oil. The city has relatively low percentages of transmission and distribution losses. PLN as the state owned enterprise is executing maintenance on transformers in substations in order to reduce T&D losses. The SUEP team thought that this is a good energy efficiency program. Another good program recommended by the team is a Distributed Generation Program which would utilize the natural gas network capacities.

3.3.5 Public Lighting

The SUEP team identified that street lighting coverage in Surabaya is relatively good, that is 79%. Almost 95% of 40,000 street lights are High Pressure Sodium (HPS). The suggestion for public lighting is running a Public Lighting Assessment Program in order to improve data collection and availability. In addition, there is a Lighting Timing and Dimming Program recommended by the team. This would needs installment on new technologies and lamps replacement. However, DKP as the public institution which provides street lights requires funding to test new technologies, therefore the team recommends Public Lighting R&D Program. This program is considered important to ensure the decision makers that the new low energy technologies lead to better performance.

3.3.6 Municipal Buildings

The category of municipal buildings consists of government offices, municipal schools and municipal hospitals. In some municipal buildings, in which the SUEP team had chances to visit, there seems that the buildings use low energy rather than other private buildings. Therefore, two recommendations given for this sector are Computer PowerSave Program and Energy Efficient Building Code. Computer PowerSave Program is effectively implemented in large number of government buildings. The building code is expected to address the increases in building energy consumption.

3.4 Review of Priority Sectors for Energy Efficiency Improvements

Sectors are prioritized based on several considerations such as greatest potential for improvement and scope of influence. These two considerations taken due to limited budget and resources as well as the degree to which the municipal government can affect the energy consumption and emissions in other sectors. Due to some fiscal and human resource constraints, the city should consider the most potential sectors that can improve energy efficiency and mitigate greenhouse gas. The other consideration relates to the degree of city authority control on each sector that varies from city to city.

TRACE presented nine sectors for energy efficiency improvements which are categorized into two separate lists, i.e. list of sectors under City Authority Sector Ranking and list of sectors under City Wide Sector Ranking. City Authority Sector Ranking consists of street lighting, private vehicles and municipal buildings, while City Wide Sector Ranking consists of potable water, public transportation, power, district heating, wastewater and solid waste. The principal factors that are utilized in prioritization are energy spend (either by the city authority or on a city-wide basis), the opportunity for energy efficiency improvements in the sector (or subsector where control of sectors is divided), and the degree of control or influence the city has over the sector or issue.

Public Transport: 85%

Private Vehicles: 2%

Municipal Bldgs: 95%

Street Lighting : 95%

District Heating: 0%

Power: 5%

Potable Water: 95%

Waste Water: 75%

Solid Waste: 85%

Source: SUED Draft Final Report for Surabaya City, 2011
Figure 3: City Authority Control on Each Sector

Figure 3 depicts the level of city authority control in each sector. There are 7 (seven) level of city authority control exist in TRACE, i.e. as National Stakeholder, Local Stakeholder, Local Committee, Multi-Agency, Policy Formulator, Regulator/Enforcer and Budget Control. Among those level of authority control, the lowest level is National Stakeholder and the highest level is Budget Control. For example, as the National Stakeholder, the city authority is represented or consulted, alongside other CA's at national-level policy formulation. CA has no specific advantage over other CA's, while as the Budget Control, the city authority has full financial control over the provision of services, purchase assets and development of infrastructure. The figure shows that the city has high authority control in municipal buildings, street lighting, potable water, public transport, solid waste and waste water. On the contrary, the city has very low authority control in power and private transport. The assessment was given because the SUEP team thought that there is no sufficient restriction on vehicle ownership and the electricity company is not owned by the city. In addition to the assessment of city authority control, the sector energy spending also needs to be seen in order to evaluate the amount of money that the city spent per calendar year on each sector.

Source: SUED Draft Final Report for Surabaya City, 2011
Figure 4: Sector Prioritization for Energy Efficiency Improvements

From Figure 4, it can be concluded that there are two sectors chosen based on city authority sector ranking and four sectors chosen based on city wide sector ranking. Out of the nine sectors, it can be seen that the city spent high amount of money in public transport sector, followed by potable water and street lighting. The amount of money spent on municipal buildings and solid waste are not as high as in three sectors mentioned previously. After finishing entry on city spending, the score was obtained from prioritization calculation, which is based on a simple multiplication of potential for improvement factor, time spending and degree of city authority control. The calculation shows that Surabaya should prioritize street lighting, followed by private vehicles and then municipal buildings. The term private for vehicles here refers to municipal vehicles. On a city-wide ranking, the city should give focus on potable water, public transport, and followed by solid waste.

For institutional and city-wide recommendations, the SUEP team recommends five points, i.e. Energy Governance, Integration of City Planning and Infrastructure Planning, Procurement Policy, Capital Investment Planning and Data Management/Inventory. Energy governance refers to the city government organizational framework established specifically to deal with energy.

3.5   Review of Overall Process of SUEP Study

The process in running the Sustainable Urban Energy Development Study in Surabaya was planned to be finished in three months. It was broke down into three stages, i.e. pre-mission which took about 6 weeks, mission (TRACE implementation which took about 2 weeks, and finally post-mission which took about 4 weeks. In pre-mission stage, the author as the local consultant had to prepare and gather all data required for analysis in TRACE Tool, GHG Emissions and Energy Balance. The operation of TRACE Tool was introduced to the author during this stage. In the mission stage, the international consultant (Happold Consulting) and representatives from the World Bank came to execute several agenda such as meeting with related government agencies, collecting the missing data, assessing the most promising sectors and preparing the draft for final recommendations.

Table 1: Time Schedule of SUEP Study

Pre-mission		Mission/TRACE Implementation				Post-mission
Preparations for Mission-Data Gathering	City Energy Use Benchmarking	RAF Introduction/ Sector Meetings	Assess Most Promising Sectors	Review Recommendations in Priority Sectors	Prepare Final Recommendations	Prepare Final City Report
6 weeks		4 days	1 day	4 days	1 day	4 weeks
March 18 – April 22, 2011		May 2-13, 2011			Mid of May, 2011	June, 2011

Source: The World Bank, 2011

As presented in Table 1, the Sustainable Urban Energy Study in Surabaya would need around four months to carry out. The schedule is broken down into three steps, i.e. Pre Mission, Mission/TRACE Implementation and Post-Mission. The Pre-Mission step was mainly used for data collection which is required in TRACE and related assessment. During the mission, the SUEP team focused on the collection of missing data, interview and meeting with respective institutions. The team also set a presentation of study result to BAPPEKO and other respective institutions. In addition to this, the team also planned to provide a session for TRACE training to government staff. Unfortunately, either the TRACE training or presentation of study result could not be carried out due to the time limit.

The step of Post-Mission was set for preparing the final city report that should be submitted first to Surabaya city government in order to be checked and approved. In the implementation, the draft of final report was finished in September, 3 months after the time scheduled. This report was finished by the international consultant hired by the World Bank. The task of the author in this step was to give comments for the draft final report. The outline of the report as well as the maximum number of pages has been set previously. After the submission of draft final report, The World Bank arranged a meeting with the Mayor of Surabaya to present and discuss the result of SUEP Study together with the other World Bank studies. The meeting was held in October 12, 2011. All respective agencies and departments were invited in this meeting. In the time schedule planning, there was an agenda to present the 3-cities SUEP study results in Surabaya. However, this agenda was shifted into October 21, 2011, along with the Workshop of Energy Efficiency Policies in ASEAN Region in October 18-20, 2011. Overall, there was time delayed in finishing such a project.

3.6   Lessons Learned

3.6.1   Sustainable Urban Energy Development Study Mission and Objectives

The mission of Sustainable Urban Energy Study in the EAP Region was initiated by the World Bank as part of sustainable energy development program. The objective of this activity was to help pilot cities begin formulating long term sustainable urban energy developing strategies, in the context of cities' overall development plans. To support this activity, the World Bank proposed three urban energy monitoring, reporting and verification tools to be utilized. Those are Tool for Rapid Assessment of City Energy (TRACE), Urban Greenhouse Gas Inventory and Energy Balance. TRACE as a web-based tool for evaluating energy efficiency opportunities can give quick assessment on the amount of energy use in the sector of municipal buildings, transportation, water, public lighting, waste and power & heat. At the end, this tool can help the city government prioritizing the sectors for energy efficiency improvement. Urban GHG Inventory Data Collection Tool is an Excel-based workbook for estimating emissions across all sectors. In the process, it is not that easy to entry all required data into this Excel sheets as the repective data were often not available. Urban Energy Balance is used to evaluate the city energy consumption as a whole, including public and private sectors. Evaluation of energy balance is considered important as it is also stated in the Law No.30/2007 on Energy. It will show the balance of energy sources supply and energy use in a periode of time.

The analysis on sector prioritization actually helped the city in choosing which sector in the city that should be taken to start the energy efficiency improvements. However, this can be considered as an initial study which perhaps needs a more comprehensive additional analysis. Looking at the overall process, it is seen as a good process, as it involved all agencies and departments related to SUEP

study within the city government. In the implementation, besides interviews, the team and the respective institutions could sit together to give responds, share ideas as well as existing and new initiatives which were already executed in the city. This kind of activities can be continuosly performed in order to increase the level of coordination and integration among the institutions.

3.6.2   Next Steps toward Energy Efficiency in Surabaya

SUEP Team has developed recommendations on Action Plan that the city needs to implement to meet the energy efficiency. There are three recommendations given, 1) Prioritize City Operations, 2) Establish Energy Efficiency Policies, and 3) Implement Projects. These three steps are reasonable to take, while the city has the authority to provide and control some basic services in the city. The first step, prioritize city operations, is required because the city has large operational activities that needs high energy consume in providing basic services. Setting the main energy efficiency in the city operations will bring positive impacts, such as saving the government money, decreasing energy use, etc. The second step, establish energy efficiency policies, is an important step to take in order to create changes in city-wide energy use. It will have impact on energy use in residential, commercial as well as commercial sectors. Implement projects are set up as the final step, as it usually requires more resources, time and involvement of third parties to develop energy efficiency activities within the city government.
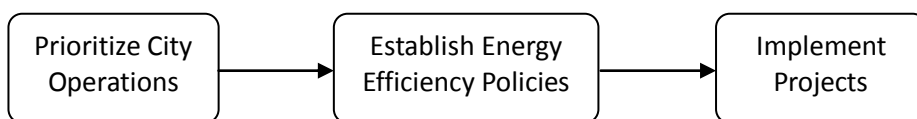
Source: SUED Draft Final Report for Surabaya City, 2011
Figure 5: Energy Efficiency Action Plan

The three steps shown in figure 5 clearly gives guidance that Surabaya has to establish energy efficiency policies as a next step after distinguishing the three priority sectors. Once the policies have been established, the city government can involve all related instituions and third parties to run the projects, while at the same time setting the time frame for each project. As recommended previously, Surabaya should prioritize street lighting, then followed by private vehicles and municipal buildings.

### 3.6.3   Important Notes for Surabaya City Government

The Study on Sustainable Urban Energy Development in Surabaya has been planned to be executed in four months. The study gave significant input, from the pre-mission stage until post-mission stage. Here are the important points which need to be highlighted:
a. Availability on Particular Data
   The three urban energy monitoring, reporting and verification tools - TRACE, Urban Greenhouse Gas Inventory and Energy Balance, require very specific data. The experience in executing this study showed that difficulties in running the tools mainly related to the unavailability of required data. Therefore the author found that all data listed in the three tools must be noted for further data development and improvement.
b. TRACE as Quick Energy Assessment and Benchmarking Tool
   Before the mission stage, TRACE was introduced to the author to be used for energy assessment within the city. Though there was high amount of data required, TRACE is considered as quick energy assessment tool which can give overview on energy use, city spending and sector prioritization for energy efficiency. Therefore the author suggests to use TRACE continuously time to time. Figure 6 shows the benchmark result in Primary Energy Consumption per GDP. The bar with dot sign shows the amount of primary energy consumption per GDP in Surabaya in 2010. The amount is much lower in comparison to Singapore and Shanghai. For more information, the results of Singapore and Shanghai were taken from 2006. Moreover, eventhough the year of the data taken was up to date, the sets of data taken were not always the recent data due to the limited data available. Thus, it must be taken into account that TRACE can benchmark all sets of data in different year, therefore sometimes it cannot be directly compare the benchmark result among all Key Performance Indicators of each city.
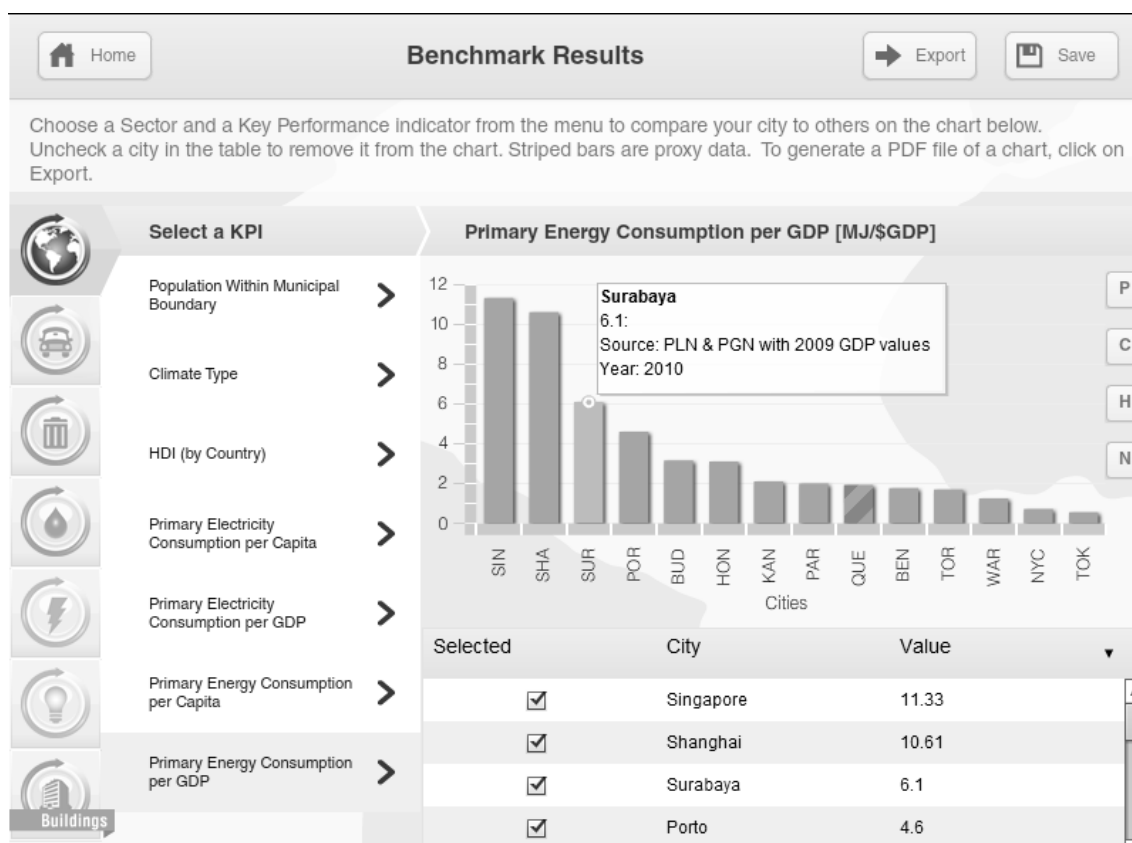
Source: TRACE

Figure 6: Benchmarking Results of each Key Performance Indicator in each Sector in TRACE

c. Sustainable Urban Eenergy Development Study for Real Actions

Based on the result of Sustainable Urban Energy Development Study, it is proposed that Surabaya city government should, as the next step, establish the energy efficiency policies. While the priority sectors have been set, the government can start to formulate the energy efficiency policies. It is believed that formulation on real actions will rely on the policies defined.

d. Support the Recent Energy Savings Initiative

Recently, in June 1, 2012, the President of Republic of Indonesia launched the National Energy Savings Initiative which should be implemented throughtout Indonesian cities. This initiative includes control of distribution system at every gas station, prohibition of subsidized fuel for government vehicles, both central and regional, as well as for state and local-owned enterprises, prohibition of subsidized fuel for farm vehicles and mining, conversion of fuel to natural gas (CNG) for transportation and saving electricity and water use in government offices, local government, as well as in state and local-owned enterprises, and in addition, saving the electricity for street lighting. The recommendations given from SUEP Study correspond to the President's speech on energy savings initiatives. Therefore, the author thought that Surabaya city government can be one of the city governments which is ready to implement the energy savings movement.

4.   Conclusion

This article concludes that Sustainable Urban Energy Development Study which was carried out in three pilot cities in East Asia Pacific is significantly excellent in helping the city to quickly assess the energy use and the respective priority sectors for energy efficiency improvements. The overall process showed that the SUEP Study can be carried out very well. However, there exist several difficulties faced both in the pre-mission and on mission stage. To address this situation, it needs quite good coordination among related agencies and departments. The SUED team felt that the

respective agencies and departments within Surabaya City really supported this study. The Sustainable Urban Energy Development Study was viewed as a pilot study initiated by the World Bank that can help city municipalities in formulating the energy efficiency strategies for the long term.

Acknowledgement

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