A STUDY ON THE BUILDING TRANSFORMATION IN THE HISTORICAL CORE CITY AREA

Case study : Medan, North Sumatra, Indonesia

歴史的な中心地区の建築物の変容に関する研究

—インドネシア, 北スマトラ島メダンを事例として—

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This study aims to reveal the existing of physical urban transformation in the former colonial city of Medan, North Sumatra, Indonesia. The analyses of the study was based on the investigation of the existing built archives in the core city area which was conducted in 1995. The study concludes that buildings transformation in the core city area had led to the change of land use characteristic, but still maintained the existence of balance between living and commercial activities. However, the rapid process of building transformation has triggered the degradation process of physical urban landscape by demolition of old buildings which displayed the highly architectural significance's.

Keywords : *Indonesia, Medan, Building Transformation, Historical Core Area, Old Building, New Building, Building Use*

インドネシア, メダン, 建築物の変容, 歴史的な中心地区, 古い建築物, 新しい建築物, 建築の用途

1. INTRODUCTION

It has been accepted that the establishment of colonial powers contributed the great influence to the development of cities in Asian countries. Notwithstanding the variety, these foreign contributions had led to the recognition of the similarities upon the city structure which was generally created by the dualistic nature between indigenous and western concept¹⁾. During the process of urban evolution in the post colonial ages, despite the development tend to be amorphous, the historical old centers formed by the colonial powers remained to be the most important city centers which suffered the most dramatic changes. Some primate cities find themselves the revolutionary global transformation that generated the new phenomenon of mega cities. These rapid changes have been displacing the attractiveness of the historical center area into the high intensity of commercial development and destroying the bustling life in the central area. We see examples of this in many capitals urban cities among others in Singapore, Hong Kong, Kuala Lumpur and Jakarta.

Indonesia is known as one of the Asian countries with the largest archipelago and the fifth largest population in the world. The state's "Unity in Diversity" motto becomes a symbol of the co-existence of many people with many cultures unified in one nation²⁾. In the political and administration context, the need to

coordinate the development of the regions which spread in Indonesian archipelago has led the existing cities to become the subject of centralization development system. This system makes the second large cities in Indonesia holding the important role as economic, administration and political center for the small and medium cities after the capital city of Jakarta. While many capital cities in Asian had already faced the dramatic transformation producing some problems of environment, the second large cities in Indonesia are still in the beginning to undergo the process of urban transformation. However, since there is a tendency for those cities to develop from the provincial town into metropolis, it is highly probable that the urban transformation from now on will be astonishingly rapid. Learning from Jakarta, recognizing the characteristic of transformation of the core city area in the second large cities becomes very important, before the rapid transformation in the future would make them becoming the target of destruction. This study tries to identify the characteristic of building transformation, based on the result of detailed field examination of the existing built archives in the historical core city area of Medan, North Sumatra, Indonesia. The study finding may become the important basic data for the process of urban (re)development in the inner city areas, concerning to the fact that in Indonesia most of the urban redevelopments in these

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areas currently have been implemented on a wide scale without guided by detailed field examination³⁾.

2. THE IMPORTANCE AND THE AIM OF THE STUDY

There are two fundamental reasons for choosing Medan as the case study area. Firstly because Medan was established by the Dutch colonizer in the end of nineteenth century, and the development reached its peak during the nineteen thirties, the time when the Dutch colonial period had nearly ended. Since the city has grown less than 100 years after it was established, the backbones of the core city layout formed by the Dutch are still clearly recognized until nowadays. Secondly, while many ex-colonial cities are mostly typical of medium and small cities, Medan is ranked as the third biggest city in Indonesia after Jakarta and Surabaya. Holding the role as an former colonial city as well as the commercial and trade city, the townscape condition of Medan represents the phenomena of townscape in the second large cities that can be described as "violently mixed". In one hand, to serve the economic growth as the metropolitan city, Medan is now starting to undergo an intensive urban redevelopment and face the rapid changes which threat the urban scene. On the other hand there is still a positive hope that for Medan it is not too late to safeguard the urban heritage, since the rest of urban heritage for some degree still maintains the contextual capacity to display the existence of Medan as the former pure colonial city.

This study aims to reveal both the tendencies of changes in the urban land use characteristic and the emerging new pattern of townscape in the process of urban transformation during fifty years. The study may prove to become a helpful basic data in solving the problem of core city renovation. It will become the important consideration factors in the formulation of criteria's guidelines for the urban design control and land allocation in the center area of Medan, as well as other second large cities in Indonesia which face the similar problem with Medan.

3. METHODOLOGY OF THE STUDY

The study covered about 540 hectare or 80% of the historical core city area, a place that became the starting point of the city formation set by the Dutch (See Figure 1). The criteria for the study areas was based on the significant content of their special environmental characteristic that contributes to the status of the areas as historical area. Four typical areas were selected-each area represents the area typology formed during the colonial age. They consist of the government area, the former European residential area or Polonia area, the commercial area and Deli Sultan area, formerly the native ruler area⁴⁾. As the physical boundaries are difficult to be decided, we tried to make the imaginary boundaries which were drawn stressing on the spatial domination during the end of colonial ages (See Figure 2).

Data collection was conducted by two kinds of method. The

first was by compiling detailed base maps of 1950 representing the condition in the end of colonial age and the newest base maps of 1987 representing the actual condition. Both maps which were

Fig. 1 Location of the Case Study Area

Fig. 2 Block Divisions of the Case Study Area

drawn using the scale of 1 : 1000 were the property of Department of Public Work from the Town Planning unit (*Dinas Pekerjaan Umum sub bagian Tata Kota Medan*). Identification of the physical urban transformation was based on the result of pure observation survey of the built archives exist in the case study area. We conducted the surveys twice in May 1995 and October 1995, and we were supported by 24 architectural undergraduate students from the local universities. The data collected from the observation surveys became the information map which was then super imposed to the old map of 1950. In this step, each building can be distinguished whether they changed or stagnated. By using this method the transformation pattern which occurred in the core city could be exactly identified. We also conducted an interview with the limited respondents and observation of the area atmosphere to understand the problems and highlight the analyses in forming the hypothesis.

4. TYPOLOGY OF BUILDING TRANSFORMATION

We try to make the typology of the existing transformations by distinguishing the buildings into two groups, single building type and shop houses building type (See Figure 3). For single building type we distinguished the transformed building into minor and major transformation. Minor transformation is a natural process of building renewal which took place by the individual who rebuilt the old building when the building had passed their period of usefulness. Major transformation is a transformation process which usually relates to the process of urban renovation and

involves the concern of many parties who play the role in this process. It related to the property business and large numbers of individual who are directly involved in any real estate transaction.

For bi-functional building type or shop houses which usually consists of row building type, as each block consists of great numbers of unit we simplified the observation by distinguishing the existing transformation based on the building block consisting several units rather than based on each unit. The states of building category for both types are shown in Figure 4.

5. ANALYSES OF BUILDING TRANSFORMATION IN THE CASE STUDY AREA

The whole transformation process in the core area of Medan can be seen in Figure 5. The investigation revealed that each part of the historical core area set by the Dutch had undergone transformation process with the different intensification and characteristic from one to each other. Each area is described as follows :

a. Government Area

During the colonial period, the government area was arranged into building blocks with practically no residential building. The average size of each block was 2-5 hectare and divided into large scale of building lots. The blocks were arranged in the area near *esplanade*, a square that took a single block in the city center and was set up as the key composition of the structure of the town. The study showed that transformation process had demolished several old buildings, and left the remaining building into 21% of total buildings, most of them fortunately were considered to be important and qualified enough to become the historical building stock. The study also revealed that the big size blocks formed during the colonial age provided various forms of developments. They were able to form the new building plot several times bigger than the original one such as in the development of the shopping malls. At the same time they were also able to create the new smaller blocks when they were on the hands of developers who transferred the single old buildings into new row buildings and then each unit was sold to individuals. The investigation showed that the former case reached only 7%, while the latter case reached almost 50% of total buildings from the whole transformation in the government area (See Figure 5A.). The increasing numbers of residential building provided by this type of transformation had drastically changed the characteristic of land use from formerly government and business domination into mix land use. This transformation had not only changed the urbanscape, but also increased the buildings as well as the population density in the government area (See Figure 7: Government Area Block G1). Discussion about the changing process of government land and building ownership into private ownership can be read in detail in the following discussion about the former European residential area.

Fig. 3 Category of the Building Transformation

SINGLE BUILDING

PAST	PRESENT
The whole exterior appearance of the building still maintains the condition of the building as it's originality. It is possible that an attempt of restoration or reconstruction was done for the building. In this case since it emphasized on the external facade which recalled to the past appearance, the building is still categorized as original building.
The main structure of the building is still in its original condition. However some changes and additions had been done to adapt the need of the users. This can be an addition of architectural element such as an attachment of the signboard covering the facade of the building. In this case, the additions had contextually changed the whole appearance and the original characteristic of the building.
The original building still exists and does not undergo any important change. The addition of the new building within the site of original building still maintains the existence of the original character of the building. The increasing need for the floor space contributes to the increasing of building density in the surrounding area.
The new building was reconstructed by demolishing the old building without increasing either the Building Coverage (BC) or Floor Area Ratio (FAR) of the building. This kind of transformation usually took place soon after the Indonesian independence during nineteenth fifties and sixties.
The new building replaced the old building by demolishing the old building and extended the building coverage. This transformation contributed to the increasing of the building density in the surrounding area.
The new building replaced the old building by demolishing the old building and increasing the building floor without increasing the building coverage. Most of the cases in this type of transformation use the rest of the building lots for parking area. The increasing of the building height indicated the pressure of demanding for the more space floors. This transformation contributed to the change of the urban skyline in the surrounding area.
The new building replaced the old building by demolishing the old building and increasing both the Building Coverage (BC) and Floor Area Ratio (FAR). This transformation contributed to the increasing of building density as well as the changing of the urban sky line in the surrounding area.
Transformation by consolidation of some lots into one had produced a huge unified building or group of buildings. It consisted of the large scale of building facilities which do not led themselves for further sub division and distribution.
The investor rebuilt one or group of old buildings by dividing them into smaller units. Then each unit was sold to the individual owners. It could be either detached house type or <i>ruko</i> type, a new style of shop houses. The word " <i>ruko</i> " derived from the abbreviation of " <i>ru</i> " as <i>rumah</i> (house) and " <i>ko</i> " as <i>toko</i> (shop). As each building unit is owned by the separated individual, it is highly possible that in the future each unit would undergo the different process of transformation.

SHOP HOUSE

More than 50% of the old units in the same building block are still maintained to be preserved.
Old Units in the same building block are still maintain to be preserved in the equal numbers with the transformed units.
More than 50% but less than 100% of the units in the same block had transformed into new units.
All units in the same building blocks had transformed with out maintaining the old units.

Indicate Old Building
Indicate New Building

Fig. 4 Typology of the Building Transformation
(See the description in page 3)

b. Former European Residential Area or Polonia Area

During the colonial period, this area was a low density residential area which was designed based on the garden city concept named as Polonia area⁵⁾. Setting between the two rivers, *Deli* and *Babura* river the area was divided into various sizes and shapes of blocks by secondary streets. With the size of building lot approximately 600 until 1,800 square meter, the buildings set as single family dwelling with the ground floor occupied not more than 50% of the building lots. After the Dutch had been forced to leave Indonesia during the post colonial age, under the regulation of "*Huisvesting*"⁶⁾, the European district in Polonia was occupied by the government of Indonesia. Many residential buildings were changed into the senior official residences. During fifty years after the government occupation, the changing process of ownership begun to emerge, when those who inhabited these buildings for certain time were allowed to purchase the properties in a low price. Although this regulation did not apply for all official housings, it encouraged the transformation process in the large scale. Observation showed that from 522 buildings surveyed in Polonia, 53% of them had totally changed. The transformation process in Polonia area also had lead to the process of internal restructuring inside the area that generated three different characterized areas as 1) the transitional area 2) the stable area and 3) the expansion area (See Figure 5.D and Figure 6). The transitional area refers to the area which had transformed drastically during those fifty years. The stable area refers to the area which for a great degree still maintains the characteristic of the area as the garden city area in the past. The extension area refers to the area inside Polonia which was still undeveloped when Polonia was left by the Dutch due to the end of colonial age. Each area is described as follows :

1) The Transitional Area

Located in the northern part of the area, in the first layering process during the colonial period, the Dutch set the area as the mix use area by setting some non residential buildings between the existing residential areas. In the process of urban transformation, this reacted to the condition that the remaining residential use would soon be replaced into commercial use. The existence of this new non-housing building stocks simply triggered the rise of land value that lead the surrounding area to become the place for the competition among the investors for obtaining the land. Hence, the area suffered from the most rapid transformation of both physical and spatial lay out, function and ownership in great degrees. About 13% of the buildings in Polonia transformed without increasing the building coverage but increasing drastically the building floors and most of them were located in this area. This kind of transformation usually took place on the old buildings which transformed from residential into commercial uses. The rest of the lot of buildings mostly were provided for parking area, one important element that should be included as

Fig. 5 Building Transformation in the Historical Core City Area

Fig. 6 Building Transformation in Polonia Area

the building changes their status into commercial use. Now, along with the growth of Medan into metropolitan city, there is a tendency that this area becomes one of the most profitable area with the highest land value in Medan. Some Dutch government

office buildings have been taken over by the private investors under the negotiation process of *ruislaag*⁷⁾, followed by the construction of the middle rise buildings. Now, the original urban fabrics of the area are totally changing from residential building domination into the emergence of new CBD (Central Business District) by developments of several middle rise offices, hotels and other public buildings (See Figure 7: Polonia Area Block P2).

2) The Stable Area

The stable area is located in the southern part of Polonia and covered about half of all Polonia area. The buildings in this area were mostly occupied by the high class society mainly the official government elites. Bringing the role as the most prestigious and elite neighborhood in Medan, the area has successfully maintained resistance from the encroachment and the degradation process. From all buildings in Polonia area, most of the unchanged buildings are situated in this stable area. Unlike the transitional area, the premises underwent minor transformation process conducted by the individual owners become more dominant, while major transformations by the investors still become a rarity case. About 18% of the buildings in this area are horizontally transformed by extending the building coverage without increasing the building floor. We found 20% of buildings in Polonia horizontally and vertically transformed, indicating that

Government Area Block G1

Commercial Area Block C2

Polonia Area Block P2 (Transitional Area)

Commercial Area Block C5

Polonia Area Block P8 (Stable Area)

Deli Sultan Area Block D1

Source : Field Survey July and September 1995

Basis for Map : Redrawn from 1984 Medan Detail Map 1:1000, Department of Public Work Medan

STAGNANT Original Condition Exterior Addition Building Extension	MINOR TRANSFORMATION BC&FAR Unchanged Horizontally Growth Vertically Growth Horizontally & Vertically Growth	MAJOR TRANSFORMATION Big Scale Single Development Shop House or Row Building Type FRESH DEVELOPMENT	SHOP HOUSES BUILDING TYPE Old Unit Dominant Equal Between Old&New New Unit Dominant All Unit Transformed
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Fig. 7 Sample Blocks from the Case Study Area Showing the Patterns of Building Transformation

the process of total rebuilding of the old residential buildings now becomes a new trend. Constructed into two or three story's buildings and covered the building lot as much as possible, this type of transformation has changed the building scale of previous old buildings into the giant block of residential buildings.

It should be noted that changes of both physical and ownership of the buildings do not always replace the building use. Almost all the transformed building in this area still maintained their usage as residential buildings. Yet, the existing non residential usage in the area did not spoil the characteristic of neighborhood since the activities carried out in the buildings are particularly stressing on service business or small offices. We founded in the stable area 14 buildings were used for medical specialist home bases and 16 building for the consulate offices. All of this kind of building usage still utilized the mansions which were hardly distinguished with the other residential buildings (See Figure 7 : Polonia Block P8).

3) The extension area

This area is located in the outskirts and set near the high density of urban squatter which scattered along the bank of Deli river. If we look in the old map, during the colonial age the blocks in this area were vacant for some degree. However, the street pattern was laid continuously with the previous developed area. In the post colonial age most of the building developments in this area were typical of fresh building development which consisted of middle type residential buildings that were different in their character from the well to do neighborhood such in the stable area. The intensive use of land also had generated the high density of population and buildings as well.

c. Commercial Area⁸⁾

During the colonial age the commercial area had been generated mainly by the Chinese immigrants who were encouraged by the Dutch to develop the commercial sector of the colonial economy in the central area of Medan. It was very common that the commercial area consisted of double floors of bi-functional buildings called shop houses. The buildings set in line formed the long narrow blocks accommodating a tight series of deep parcel. Since the buildings were built and formed into a series of small units with the limited possibility to expand, rebuilding upward is the only solution in anticipating the process of building transformation.

As shown in Figure 5B, old shop houses in Block C1 and C2 are still preserved in a great number, but their numbers have gradually become smaller, when entering the other areas. Block C4 and C5 showed that the buildings dominated by the old unit had continuously decreased. Block C3, C6 and C7 represented the typical areas of which almost total of existing single buildings type have been transformed into shop houses. As can be shown in Figure 5C, the investigation showed that 19% of the building blocks were dominated by new unit, and joined together with the

rest of old units that mostly appeared to be in rundown condition. Only 4% of the blocks maintained the old units in equal numbers with the transformed units while 45% of the blocks transformed all their units into the new ones by increasing the building floors into more than 3 floors. The rest which consisted of 32% of shop house building blocks were dominated by old units but unfortunately most of them remained to be in dilapidated condition. Many old shop houses had replaced only their facade with the biggest possible sheet of glass and hidden the rest of the old buildings behind the big billboards. Single building type in this area tended to change into new modern shop houses while the fresh building development in the formerly vacant land area also constructed into typical new shop houses (See Figure. 5A). This rapid transformation had lead the area to become typical of China Town accommodating the high density of buildings which consisted of hundreds unit of shop houses. Transformation in this area also triggered the degradation of urbanscape. While the series of remaining old shop houses formed the impressive ensemble of townscape, the new shop houses mostly designed without any aesthetic consideration that they displayed the dull and monotone townscape (See Figure 7 : Commercial Area Block C2).

d. Sultan Deli Area

During the colonial age the area of former native ruler, Sultan Delilaid separately from the Dutch municipal area in the southern part of the city. This "small scale state center" consisted of Sultan Palace, Sultan mosque, Sultan court, *madrasah* (Islamic School), the Royal Park and the residential areas provided for the noble men. Near the area was the indigenous settlement of Malay settlement in Kota Maksu and Mandailing settlement in Kampung Aur. The process of the city extension and expansion had transformed the area from the peripheral area into the part of city center. This condition had led the area to the emerging process of commercialization along the main streets. Comparing to the other areas in the core city, Deli Sultan district can be said as the area that suffered the most serious degradation. Some royal buildings had been ridden gradually by abandonment, decline and demolition process. The other old buildings also faced the penetration process of new development. Moreover, the surrounding Palace has emerged as the area which is displacing the anonymous business character due to the construction of the dull new *ruko* (shop houses) that concealed the remaining important historical features founded by Sultan Deli. Original old building premises remained into 31% from the total buildings, mostly dominated by residential buildings located in *kampung* area. The rest had undergone the process of rebuilding (See Figure 5A). The vacant lands provided in great numbers during the colonial age soon were infiltrated by new buildings. For this reason this area now is becoming one of the most high density area in Medan. Illegal settlement consisted of non permanent

Fig. 8 Characteristic of Land Use in the Historical Core City Area : Past and Present Condition

Fig. 9 Transformation Pattern in the Historical Core Area

buildings scattered along the unused railway line and the valley of Deli river (See Figure 7 : Deli Sultan Area Block C2).

6. THE CHARACTERISTIC OF TRANSFORMATION AND URBAN LAND USE IN THE CORE CITY AREA

The whole transformation process in the core area of Medan can be seen in Figure 8 and Figure 9. Starting from the beginning of post colonial age, the built archives in the core area have continuously changed. They expanded, constructed and underwent the internal restructuring as a result of the spatial adjustment within the urban areas in Medan. This process has continued to increase very rapidly during the last decades. The area set in the best location tended to transform either into

Table. 1 Characteristic of Stable Buildings in Each Type Area

B \ A	A			
	GOVERNMENT AREA	COMMERCIAL AREA	OLONIA AREA	SULTAN DELI AREA
Building Type	Public & Office Buildings	Shop Houses	Residential Building	Palace Complex
Building Style	Colonial Classic Renaissance	Chinese Oriental	Colonial Vernacular	Islamic Traditional
Potentiality for Townscape Design	Single Landmark	Collective Long Facade	Combination of impressive architecture & landscape design	Special Malay historical district
Building Condition	Satisfactory Overall	Deteriorating in whole or part	Satisfactory Overall	Deteriorating in part
Dominant Ownership	Government	Individual	Individual & Government	Public and Individual
Use & Disuse	Satisfactory Used	Unsatisfactory used or disuse	Satisfactory Used	Unsatisfactory Used

A : Type of Area B : Building Characteristic Factor

CBD (Central Business District) or big scale single unit buildings that occupied the vast plot areas. Indeed, as the lands become a very scarce commodity, the infiltration of the vacant lands became the first choice that soon they were occupied by the fresh building developments. Commercial area characterized by the existence of shop houses has grown and expanded out side the border of Chinese neighborhood set during the colonial age, especially in the area which was formerly known as government area.

The southern part of the core area represents the area of which the transformation process is considered to be low, remains to be the stable neighborhood area. This area can be said as the best preserved area. The other old quarters in the core city area formed the spots situated sparsely between the transformed buildings (See Figure 9). The characteristic of the stable buildings of each area is shown in Table 1.

Considering the transformation of building use, the study clarifies that even though the physical appearance of the buildings has continuously changed, the core area of Medan is still mixing of the residential, commercial, business and government area. Investigation of the building usage from the sample buildings in the core city showed that the living activities are still dominant in the center area (See Figure 10). In Chinese district area, co-existence between the business and living activities had played the important role to maintain the flexible formation between both activities. The high class residential area in the southern Polonia was capable to sustain the economic pressure and maintain the original characteristic as the low density neighborhood area. The lower class neighborhood formed the high density residential

Fig. 10 Correlation Between Transformation and Usage from the Sample Buildings Located in the Core City Area

area in the extension area of Polonia and Kota Maksu area. The informal and unskilled workers who were in surplus supply, tend to reside the sprawl along the two rivers. According to the census of 1990 the core area which covered about 546 hectares was inhabited by 67, 805 people, and formed the average population density of 124 people per hectare⁹⁾. This was considered to be high compared with the other areas in Medan. This condition gives the important role in maintaining the lively and continuous activities in the core city during the day and night.

7. CONCLUDING REMARK

The study revealed that the rapid process of building transformations in the historical core area of Medan in the last decades has triggered the physical degradation through the continuous demolition of abundant old buildings. Although the urban structure and the rest of building heritage for some degree still have the contextual capacity to display the existence of Medan as the former colonial town, the future condition of old buildings in Medan still become a big question. As had been mentioned in the study, the marker forces now are beginning to become the significant factor which stimulate the process of internal urban restructuring in the central and most strategic sites. With regard to the fact that the necessity of putting the economic development needs always advocate, it is easy to predict that this trend will continue, and the process of intrusion will expand more and more to the neighboring area. We suggest the local government of

Medan as the main actor to consider the citizen's awareness and movement for preservation which have been grown recently¹⁰⁾, and take a concrete action to preserve the remaining particular old buildings in Medan.

The study also shows that although the tendency of changing of the building use from residential to commercial is considerably high specially in the area where commercial purpose is prevalent, many parts of areas are still being resistant for functional change and residential is remaining to be the dominant function. The finding of this study brings about the consideration that the core city of Medan still maintains the existence of balance between the living and commercial activities. For the city of Medan where the public transportation system is not well established and the formation of small scale business is important, we recommend that the present condition should be maintained. We hope that this physical urban transformation study will become the useful background for our further research about the community's expectation to maintain the liveliness as well to preserve the building heritage remaining in the core city area of Medan.

NOTES :

- 1) See for further information in Murphey, Rhoads. (1996). *Urbanization in Asia*, Ekistics. 21, and Nas, Peter J.M. (1986). *The Indonesian Towns*, (Dordrecht, Holland : Foris Publication).
- 2) Indonesians are basically of Malay and Polynesian stock comprising of 300 ethnic groups and sub group having their own tradition, religion and cultures.
- 3) We realized that the relationship between the urban transformation and the other non physical factors are very complex. Therefore, it should be note that in the future, this study should be analyzed in relation with the urban planning factor reflecting in the local planning policy, building codes and land use control as well as the external factors within the mechanism of urban transformation framework, which are not represent enough in this study.
- 4) For detail explanation see in Evawani Ellisa, Tahara Naoki and Kunihiro Narumi. (1995). *A Historical Study of the Urban Area Composition and Character of Medan Town during the End of Colonial Age*, in papers on City Planning No.30 (Japan : City Planning Institute of Japan), p.451-456.
- 5) Polonia was designed by the Dutch urban planner Thomas Karsten who built his reputation as the town planning advisor for many local authorities in Java and out side Java. His principles of urban design were much influenced by the garden city movement featuring the spacious roads, square at intersections and ample public space and greenery. See Passchier, Cor. (1995). *Medan, Historical Development, the Late 19th and Early 20th Century*, paper presented at the Seminar and Workshop, Urban Dynamic and Heritage, Medan 25-29 September 1995 and Nas, Peter J.M. Op.cit
- 6) After the war, almost all the properties left by the Dutch were considered as the war reparation properties and occupied by the government.
- 7) *Ruislaag or tukar guling* (Indonesian terminology which literally mean demolish and return) is a negotiation process between the government and the private enterprise to undertake the acquisition of the government buildings, usually located on the right prominent site in the historic town center. The investors then will construct the new government buildings that are usually more spacious and modern but located in the outskirts of the city as the compensation.
- 8) See for the more detail explanation in Evawani Ellisa and Kunihiro Narumi. (1996). *Classification and Transformation Typologies of Shop*

Houses in the Core City Area of Medan, Indonesia, in paper on Technology Report of the Osaka University, Vol. 46, No. 2263 (October, 1996), p.281-290.

- 9) According to the research conducted by team planner of Medan Master Plan 2005 in 1990, see for further explanation in *Rencana Umum Tata Ruang Kota, Kotamadya Medan Tahun 2005*, (unpublished report).
- 10) Many big cities in Indonesia during these ten years have been established the local cultural heritage organizations like *The Indonesian National Heritage Trust*, *Paguyuban Pelestari Budaya Bandung*, *Yayasan Jati Diri of Semarang*, *Yayasan Panunggalan Yogyakarta*, *Pemerhati Arsitektur Surabaya* and many other civic trusts. In Medan, the growing awareness for the movement of conservation has been aroused that initiated the local architects to conduct the Seminar and workshop on Urban Dynamic and Heritage organized by Indonesian Institute of Architect (IAI) and *Bond Nederlandse Architects (BNA)* in Medan, September 25-29, 1995.

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- 3) Couch, Cris. (1990). *Urban Renewal Theory and Practice*, (London : Macmillan Education Ltd.).
- 4) Doxiadis, C.A. (1966). *Urban renewal and the Future of the American City*, (Chicago : Public Administration Service).
- 5) Evawani Ellisa, Tahara Naoki and Kunihiro Narumi. (1995). *A Historical Study of the urban Area Composition and Character of Medan Town During the End of Colonial Age* in Papers on City Planning No. 30, (Japan : City Planning Institute of Japan).
- 6) Evawani Ellisa. (1996). *Study on the Spatial Composition and Transformation of the Historical Core City Area in the Colonial City Case Study : Medan, North Sumatra, Indonesia*, Master Thesis Department of Environmental Engineering Osaka University. (unpublished).
- 7) Evawani Ellisa and Kunihiro, Narumi. (1996). *Classification and Transformation Typologies of Shop Houses in the Core City Area of Medan, Indonesia*, in paper on Technology Report of the Osaka University, Vol. 46, No. 2263 (October, 1996), p.281-290
- 8) Ford, Larry R. (1994). *Cities and Buildings, Skyscrapers, Skids Rows and Suburbs*, (London : the John Hopkins University Press).
- 9) Gill, Ronald. (1988). *The Morphology of Indonesian Cities an Introduction to the Morphology of Colonial Settlements and Towns on Java*, paper presented at the seminar Change and Heritage in Indonesian Cities, Jakarta, 1988.
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和文要約

1. 研究の意義および目的 インドネシアのジャカルタを除く人口第2位以下の大都市は、他の東南アジアの大都市と比較すると、開発も国際化も端緒についたばかりで、その今後の動向を認識することは、これらの都市の将来を考える上できわめて重要である。オランダの植民地として建設されたメダンは、現在は人口180万の都市となっているが、およそ100年が経過した現在でも、都心部には当時の市街地の形態をまだ明確にとどめており、かなり良好な歴史的な中心地区が形成されている。しかし、その一方で新たな都市開発が進んでいることもたしかで、歴史的遺産との整合性を欠くゆえの混雑が、人口第2位以下の大都市にありがちな都市景観として露呈しつつある。

こうした市街地における建物および土地利用の変化の実態とその動向を明らかにすることは、中心市街地におけるデザインコントロールおよび土地利用計画のために重要な指針を与えてくれるものと考えられる。このような詳細な市街地変化の調査研究は、インドネシアでは他に例がなく、同じような問題を抱えるインドネシアの他の大都市にも参考になるものと考えられる。

2. 研究方法 研究の対象地域として以下の4つの特徴的な地区を選んだ。①官庁施設エリア、②ヨーロッパ風住宅エリア（ポロニア・エリア）、③商業エリア（チャイナ・タウン）、④デリ・スルタン・エリア（スルタンの宮殿とモスクを中心とする地区）であり、歴史的市街地である都心部の約80%を占めている。調査資料としては、1950年および1987年の2時点の地図を用いその変化を分析するとともに、実地調査によって現存する建築物の特性を調べた。

3. 建物変容の類型と建物の変化の分析 建物は独立建築物（single building）と長屋形式の建物（row building）に類別し、独立建築物は、建物の変化の程度の大小に類別した（図3、図4参照）。先に設定した4つのエリアでは、次のような変化のプロセスが生じている。

- ① 官庁施設エリア／住宅開発により、業務的な機能が主であった官庁地区は混在型土地利用に大きく変化した。また、当初の大街区は小街区に分割され、新しい沿道建築物の建設によって、建物密度が増大している。
- ② ヨーロッパ風住宅エリア／本地区では1) 遷移エリア、2) 安定エリア、3) 拡張エリアの、三つの特徴的な地区が生じている。遷移エリアは、ほとんどが住宅であったものが全面的に変化し、新しいCBDとなった。植民地期に田園都市の概念に基づいてつくられたこの地区の中で、安定エリアは高級な住宅地の特徴を今も維持している。この地区全体の住宅のうち、建物に変化していないものの大部分はこのエリアに存在し、変容をしたものも住宅としての利用が継続している。拡張エリアは、植民地期が終了した時点にはまだ未開発であったが、中間層向けの住宅開発が進み

つつあり、前記の安定エリアとは異なった環境を形成している。

- ③ 商業エリア／植民地期の商業エリアでは、ショップ・ハウスと呼ばれる住居とその他の機能を合せ持った2階建ての建物が一般的であった。連続する小ユニットで構成されたこの建物は、上部への増築だけが床面積を増やす解決案であった。急速な再開発によって、古いショップ・ハウスが減少し、新しいショップ・ハウスが増加することになり、その結果、都市景観の全体印象が単調で面白味のないものとなりつつある。このような建物の変容にもかかわらず、多くのショップ・ハウス群で構成されているこの地区は、その性格を存続させている。
- ④ デリ・スルタン・エリア／以前は都心周辺であったが都市拡大によって中心的な市街地に組みこまれた。この変化によって、デリ・スルタンが築いた重要な歴史の特色が表現されていない新しいショップ・ハウスの建築ブームが発生した。いくつかの貴族の建物も、放置、衰退あるいは徐々に新開発によって失われつつある。

図5は、中心市街地における地区別の建物の変化状況を示しており、図6は、調査対象地域における建物変化のパターンについて、いくつかの街区を例示的に示したものである。

4. 中心市街地の建物および土地利用変容の特徴 図7に示すように、この50年ほどの間の変容プロセスは土地利用の性格に変化をもたらした。また、図8に示すとおり、建物の状況から見て、地域は大きく保存エリア、変容エリア、新開発エリアに分けることができ、その結果新たな都市景観のパターンが形成されている。

以上の分析により、それぞれの地区における安定した（あるいは保存された）建物は、異なった特徴をもっていることが明らかになった（表1）。さらに、建物の物理的な外観が絶えず変化しているにもかかわらず、メダンの中心市街地においては、住宅・商業・業務・官庁機能が混在していることが明らかになった（図9）。

5. 結論 メダンの歴史的な中心地区では、市街地形態と残存する建築遺産が、旧植民都市としての姿を示しているが、古い建築物の将来は依然として大きな問題である。近年インドネシア各地で生じている歴史的環境保存運動の意義を理解し、メダン市においても歴史的建築物保存への具体的な行動が取られることに期待したい。

また、多くの地区で居住が優勢な機能として存続していることが明らかになった。このことは、居住と商業的な活動がバランスしていることを示唆している。公共交通機関が未整備であり、小規模ビジネスが重要であるメダンのような都市の都心では、このような状態が維持されるべきであると考えられる。この研究が、都市の活力を維持し、建築遺産を保存したいという人々の期待に応えていくための、有効な基礎となることに期待したい。

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