

# Transformation of Kuthagara: Continuity and Change in Yogyakarta Heritage City

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**Abstract**— Heritage Cities today take advantage of the status of UNESCO's world heritage property and its strategies of conservation. Since these cities experience substantial urban transformations, especially as an object of urban tourism, changes are a substantial part. One of the focuses of the 2011 UNESCO Historic Urban Landscape recommendation is the management of change. However, the management of change in recent times needs to reassess how changes were handled in the past to be learned. Yogyakarta, one of the major heritage cities in Indonesia, has a similar phenomenon. The transformation of the heritage city of Yogyakarta is the case to be observed. The paper tried to reveal continuity and changes in the transformation of Yogyakarta's Kuthagara which defines Yogyakarta Heritage City today, as the act of management of change. The methodology was urban morphological analysis and grounded theory analysis. The result reveals that although the Kuthagara has survived changes and maintained its cultural continuity, the dynamic changes from economic and cultural forces need to be managed further through the Historic Urban Landscape approach.

**Keywords**— change; continuity; transformation; management; urban morphology

## I. Introduction

The positive image shown by heritage cities which are well-known tourist destinations such as Prague, Edinburgh, Florence, Fez, and Kyoto illustrates the enormous potential of heritage cities both economically and socio-culturally for a country. These cities encountered an urban culture that Thorns [1] classified as urban tourism, to name the two others as shopping and theme parks. The relationship between urban conservation and tourism is mutual, in which tourism has a positive impact on the economy and it would ensure the conservation of heritage areas as the main attraction [2]. Urban tourism had a significant effect on cities in South East Asia and especially in Indonesia since many cities were built in the 19th century under Dutch influence. The nostalgic theme for these cities to replicate the ambience of the 19th and early of the 20<sup>th</sup> era has raised the specific tourism market, especially for European descendants who find a connection with their ancestors, or Indonesian citizens who are willing to learn about historic urban cultures. Bandung, Malang, Semarang, and Jakarta played showcases for this kind of urban tourism. Yogyakarta has the same trend but with a different theme. Along with Surakarta, the two cities were the last cities built by the Mataram Kingdom, in the era before the Dutch governed the entire territory in early 1800. Although the Dutch had also a significant role to define urban life in these cities, the concept of the city originally came from Javanese culture itself. Fig. 1 shows the street view of areas around Braga, Bandung as the example of urban tourism destination in Indonesia .



(a)



(b)

Fig. 1 (a) Street view of Braga Street Area, Bandung in the early 20<sup>th</sup> century (source: KITLV); (b) Street view in the same area in recent days

One crucial reason that triggered the phenomenon of urban tourism was the impact of UNESCO's efforts to grant status for historic cities as world heritage properties since 1972. Its success stories all around the world have put the status of world heritage property to be more demand by many countries. In 2011 UNESCO issued a recommendation called Historic Urban Landscapes (HUL). The recommendation was the latest breakthrough toward comprehensive heritage city conservation. Contemporary thinking on urban heritage conservation points to a need to reassess the historical divide between 'conservation' and 'development' in the theory of urban planning [3]. In developing countries, the dichotomy should be minimized or even eliminated since heritage cities have a significant role not only in the context of an economic object and a source of livelihood but also due to the fact that more than half of the world's population currently lives in a city or urban area.

Assessment of conservation and development could be clearly observed in the tangible aspect of a city through its morphology. By observing the continuity and changes in the morphology of the city, the transformation process would be described. Experience of differences in giving a clear morphological explanation of some historic cities which contains both natural and man-made contexts made UNESCO develop the definition of the historic urban landscape. The definition is helpful for the type of cultural landscapes which show combination of these natural and man-made contexts. This is the reason why many historic cities in Asia took benefit of the HUL concept since most of them took the natural setting as a crucial context. Uniqueness of Yogyakarta which takes Javanese culture as the central theme of an urban tourism destination. It is also caused by the fact that the Yogyakarta Sultanate is the only monarchy that persisted and legitimated in the governance of the Republic of Indonesia.

The uniqueness of Yogyakarta lies in the concept underlying of the city's planning and design. It is built in a series of Javanese philosophical and intangible considerations in which the city was the apex of Javanese urban planning and design evolution. As the capital of the Islamic kingdom on the island of Java, the urban planning of Yogyakarta demonstrated the continuation of adopting the concept of the previous capital cities of Mataram, which were Kotagede, Kerta, Plered, Kartasura, and Surakarta. Even it can be traced back to the earlier kingdom's capital cities, which were Pajang and Demak. The city was built based on a certain cosmological concept, which illustrates the role of the king as the leader of the region. The cosmological concept in Java was aimed to attain prosperity and world peace through the creation replica of the universe as a macrocosm into a smaller form, which was the inhabited area, as a microcosm [4]. In Javanese philosophy, it is the king who has the responsibility to make connections and emerge harmony between the macrocosm and the microcosm.

At present, Yogyakarta is classified as a fairly well-conserved city in terms of its city's structure morphology. The morphology which describes the core concept of the city's design is well kept through regulations, conservation of primary symbols, and memories of narration about the philosophy of the city. Although it has to be observed deeper to define which parts of the city maintain the values and parts that are opposed in the context of preserving the form and shape of the urban heritage space. One of the most important features in the Yogyakarta heritage city's conservation effort was the establishment of Kuthagara delineation as the focus. On the contrary, the highly demanded economic necessity and modernization inside Kuthagara become periodically a real challenge, especially to tackle the impact of urban tourism. Kuthagara was taken as the study case due to its position as the central concept of the city's philosophy. The article tries to answer these questions: How continuity and change in Kuthagara's morphological development be learned as the act of management of change? How the transformation of Kuthagara's morphology as a case study could contribute to the improvement of UNESCO's Historic Urban Landscape approach?

## II. Literature Review

The conservation effort for heritage cities is focusing on the management of change. It is highlighted by the statement of Widodo

[5] that conservation effort for historic cities itself is the management of change. The major considerations for mainstreaming management of change in heritage city's conservation effort were the fact that more than half of the world's population currently lives in a city or urban area while in general, the core of heritage preservation ideology was to keep the authenticity of the property by maintaining keeping monuments and its surrounding environment in the most original state. Instead of emphasizing authenticity and integrity, heritage cities have to replenish and recreated through modernization, adaptation, and regeneration to sustain their vital functions [3]. It is the reason why ICOMOS with its various charters, is among the first to enclose management concepts in heritage conservation, as in the Burra Charter along with the attachments and revisions. The concept of continuity and change would be the essence of various recommendations, including ICCROM's Living Heritage and particularly UNESCO's Recommendation on Historic Urban Landscape. Nevertheless, the management of change is a conservation approach to anticipate and regulate, but not to plan, the market-driven processes or urban development in, or adjacent to, historic cities [3].

A good conservation management plan according to Widodo [5] should have four key elements: empowered community, sustainable environment, robust infrastructure, cultural authenticity, economic viability, and social-cultural continuum. The concept of the social-cultural continuum was also elaborated in ICCROM's The Living Heritage by Wijesuriya [6], which beside accentuated the continuity of the original function of the heritage, put forward the three other crucial elements that include: 1) continuity of community connections; 2) continuity of cultural expressions (both tangible and intangible); 3) continuity of care (through traditional or established means). The continuity of cultural expressions in many ways also demonstrates the continuity of community connections as Jeremy Whitehand [3] argued that the involvement of individuals or groups in an area was shown in the spirit that is objectivated in the historico-geographical character of the urban landscape. The historico-geographical process in some terms is similar to morphogenesis in urban morphology studies.

The analysis of urban morphology made it possible to investigate the formation process and gradual transformation which would show the inner ordering principles of the urban structure that ensures the natural continuity of urban evolution [7]. The urban structure is composed of complex objects, and through urban morphology, their relationship is identified 'from the part to the whole' and recognizes the hierarchical view of the city [8] to explain the whole character. Meanwhile, spatial groupings of form elements if related to morphological periods would recognize divisions of the urban landscape as their particular characteristic [9]. To grasp the characteristics of the urban landscape, it is also important to identify details in the scale of urban space. Krier [10] stated that urban spaces created urban structures, which are defined by our conscious perception of the clear legibility of geometrical characteristics and aesthetic of bounding building elevations. In this sense, not only the legibility of achieving enclosure of such geometrical characteristics but a balance with other considerations like permeability will also influence how well the space is used [11]. This theory is parallel with the characteristics of Asian cities which in many cases, the inner ordering principles in Asian urban architecture might come from intangible aspects, such as religious or political expressions. It is caused by the urban space in Asian cities that might not always be defined by clear geometrical form and qualities, although there must be some primary elements that connect to the city design.

The intangible aspects in Asian cities could also be traced indirectly by looking further into the details of urban architectural typologies. In this regard, besides the importance of the analysis of urban morphology, urban architectural typology would be a robust tool for analyzing a heritage city. The origins from where successive types of urban architectural typology had derived, as pointed out by Caniggia [12], would also give another point of view in order to capture the meanings and significance of the historic city. As part of the city, the significance of urban architecture also is understood with the view that buildings and their environment as a cultural landscape are created in layers because they are not static entities and change through time [13]. It means that the architecture typologies are classified in layers to understand the significance of urban landscapes that is mostly also intangible.

### III. Methods

The analytical process of morphology is carried out based on three principles: the classification of elements, the principle of identity, and morphogenesis [14]. The classification of elements is arranged based on the characteristics of specific measurements, such as shape, position, size, material uses, and other structural characteristics. In addition, functional characteristics are also needed to provide a complete picture of these elements. The principle of identity in morphology means that every physical form that is created has an emphasis on history and represents a culture in a certain period. It is attached to the urban form as an attribute, such as economy, religion, legal norm, and political system. Morphogenesis is a representation of a continuous process where the form of buildings and open spaces are observed at their first-time appearance and the changes over time.

As mentioned previously, urban morphology uses the hierarchical view of the city, to be structured according to a set of fundamental physical elements which comprises a set of elements of urban form—streets, street blocks, plots, and buildings [8]. This set of elements of urban form is the basic elements that constitute cities and their tissues. As Kropf in 1996 identify the urban tissue according to different levels of resolutions, Scitarocci [15] proposed five essential components to plan the conservation of historic towns which are urban grid or pattern, urban blocks, squares and parks, streets, and buildings. This level of resolution is closer to

the scale of the urban design commonly.

Historical urban landscape elements were traced to each sub-area to match the previously developed procedures. Since layers of significance are one of the main focuses for HUL, the morphogenesis of the area is analyzed by its historical timeline. For the case of Jetis, the historical timeline used for morphology analysis is based on the development timeline of Yogyakarta Historic City. The development timeline of Yogyakarta Historic City is described as follows:

- 1<sup>st</sup> Period (1755 – 1812): First establishment of the Palace complex, early urbanism of Yogyakarta until completion of all kingdom's urban symbols.
- 2<sup>nd</sup> Period (1812 – 1855): Chaotic period due to governance change in the Dutch East Indies, the British Invasion, and the Java War, between the reign of Sultan Hamengku Buwono II, III, IV, and V, which showed the stagnation of Kingdom's urban symbol development and initial strengthening of colonial urbanism.
- 3<sup>rd</sup> Period (1855 – 1908): Consolidation of Dutch East Indies Governance along with the resurrection of Yogyakarta Sultanate to set the foundation for the modernization of Yogyakarta urbanism.
- 4<sup>th</sup> Period (1908 – 1945): Modernization of Yogyakarta City, ethical politics, and the rise of the national movement.
- 5<sup>th</sup> Period (1945 – 2012): Post Republic of Indonesia establishment and the merging of the Sultanate with the republic, which showed many shifts of political power and policies in the development of Yogyakarta City as a part of the Republic of Indonesia.
- 6<sup>th</sup> Period (2012 – now): Keistimewaan of Yogyakarta Period, which shows different policies due to many specific authorities given by the Central Government to Yogyakarta Special Province as the recognition of Yogyakarta contribution to the Republic of Indonesia's establishment.

The analysis of morphology and typology was amplified by the grounded theory method to obtain data inductively and was addressed to get a more systematic approach to the qualitative data [16]. The qualitative data obtained were tabulated into a table containing the arrangement of events, places, memories, and history of objects or elements of permanence in Kuthagara. In this case, the cultural toponym of settlement blocks is included as the element's origin of a place's permanence and signifier. To comprehend the concept of authentic morphology of an area, cultural toponyms can be a marker of its morphological shape. In the Indonesian context, oral culture was more elaborated than written expressions in society, which was very helpful to ascertain the authenticity of a place. Many local folklores still mark a place today as toponyms and it made an important tool to explore the significance of the place and develop it as layers. Although these toponyms have already appeared in the old maps, the origin of the words was kept in oral tradition. The table would clarify the things that contribute to and shape Kuthagara's authenticity.

#### IV. Results

##### A. Yogyakarta the City of Philosophy

City design in the past took various considerations throughout history. Many Asian cities took political, religious, or philosophical considerations, especially cities in South Asia and South East Asia which were influenced by Indian cultures. One of the most crucial features of city design influenced by Indian cultures was the utilization of Mandala. The concept of a Mandala is mainly based on a geometrical concentric shape to attain balance for a certain purpose. For religious purposes, especially in Hinduism and Buddhism, the Mandala would describe the balance of power by creating layers or divisions of cosmology in which the center of the circle will be the apex of power and the equilibrium point. Since Javanese culture was initially influenced by Hinduism and Buddhism as seen in temples such as Borobudur and Prambanan, the utilization of a Mandala-similar concept would be taken as the legacy in the future cultural development instead of Islamic influence. Thus this concept is a common thread from the pre-Islamic period which shows historical continuity to the present time.

Yogyakarta City has two major concepts of city design. The first concept utilized Javanese's mandala-similar concept with some modifications. T.E. Behrend [17] in 1983 gave a clear identification of the utilization of a Mandala-similar concept in Yogyakarta's Sultanate Palace complex. In his identification, the concentric circle was created by layers of cosmology from the center to the outside. The palace is placed as the center of an *Imago Mundi* (Image of the world). It is intended to indicate that the center has the highest position and the farther it goes, the lower and more profane it is. When expanded, this circle will become an imaginary concentric circle that forms the concept of center and periphery [18,19], and form the boundaries of the territory of the kingdom itself. The layers of the circle, which start from the center to the outside, consist of Core (Kraton) - Negara - Negara Agung - Mancanegara [17,18,19]. Soemardjan in 2009 describes that each circle shows the power and governance structure of the Mataram Kingdom [20] and also marks the degree of civilization.

Negara is the capital city of the kingdom, which is in recent regulation called Kuthagara. Kuthagara is a place where the King's Palace is located and also plays the role of the core and the center of the royal's living system [20]. Kuthagara possesses a broad organizational structure due to being the seat of the kingdom's governance [21]. The outer circle, called Negara Agung, according



to Giyanti Treaty in 1755, consists of 53.100 cacah or equivalent to 318.000 inhabitants [22] and covered an area that includes Yogyakarta Special Province at present and some areas covering parts of the Province of Central Java today. The outmost circle called Mancanegara covers areas up to parts of the Province of East Java which all contains 633.950 cacah or equivalent to 203.700 inhabitants [20,22]. But the Dutch arranged these sovereign land ownership areas unorganized, and in the future, the pattern would create tensions between the two new kingdoms. One of the tensions occurred during the Java War in 1825-1830. The concentric circle of the Mataram Kingdom is drawn in Fig. 2 below.

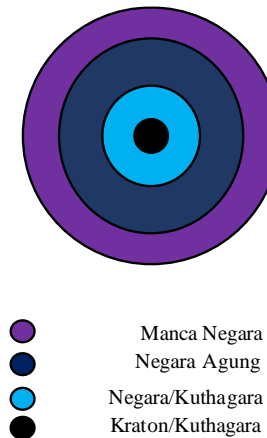


Fig. 2 The concentric circle of Mataram Kingdom

The second concept is a concept that has just emerged in Yogyakarta as an evolution of the latest Javanese city on a city-wide scale. The concept originated from the Islamic era of previous Javanese capital cities known as Catur Gatra Tunggal. Catur Gatra Tunggal characterizes the center of traditional Javanese cities, which is composed of elements that are almost similar to Kostof's theory that the development of cities in the past was based on the division of four aspects which consist of administrative centers, religious centers, business centers, and settlements [23]. The new concept develop Catur Gatra Tunggal as the city center and applied the philosophy behind its physical form. The philosophy gives the illustration of Javanese's perfect circle of life, namely Sangkan Paraning Dumadi. This philosophy of Sangkan Paraning Dumadi describes the cycle of human life from birth to death and follows the principles of Javanese highest values in accordance with Islamic doctrines. Sultan Hamengku Buwono I designed his royal capital to accommodate the philosophy through symbols assigned to the city elements, such as streets, buildings, and vegetation.

In physical form, the manifestation of the philosophy in Yogyakarta's spatial planning is divided into two major parts. The first part is the Sangkaning Dumadi segment which shows the early stages of life to adulthood. This segment started from Panggung Krapyak as the symbol of women who gave birth, connected by the city's main street axis to the Kraton complex via Nirbaya Gate, the entrance of Baluwerti fortress. Kraton Yogyakarta took the role as the center of destination of the philosophy for the two segments to describe the journey from south to north and from north to south to emphasize this pattern [4,18,19]. The Sangkaning Dumadi Segment endpoint is in the southern part of the palace, while the Paraning Dumadi Segment endpoint is in the northern part. The southern part of the Kraton describes a phase of someone reaching adulthood and making a marriage. When a couple experienced this phase, they had to wander out of Kraton to find the Golog Gilig Monument or Tugu. Tugu Golong Gilig symbolizes the ultimate consciousness of a Javanese man, especially as a leader, namely "Manunggaling Kawula Gusti". A ritual then follows the discovery of this consciousness to re-enter the Paraning Dumadi segment through the first path (Marga Utama), the mundane path (Maliyabhara), and the noble path (Marga Mulya) to re-enter the Kraton as the endpoint.

The manifestation of the philosophy in Yogyakarta also created a unique urban architecture character. Although it was built in an Asian city, somehow it has a thoughtful architectural concept with a straight street as the main element. The straight street has a practical superiority, in that it connects two points directly [24]. The connection of the two points which are Panggung Krapyak and Tugu Golong Gilig illustrates the philosophy of Sangkan Paraning Dumadi and called as 'Philosophical Axis'. Meanwhile, the two buildings were designed to create a certain vista and provided a climax at the end of an approach, similar to nymphaea or hinge building in Roman cities [24]. The vista is amplified by trees lining along the Philosophical Axis which have a particular message according to which segment it stands [4]. Fig. 3 below illustrates the philosophy of Sangkan Paraning Dumadi in the design of Yogyakarta's heritage city or Kuthagara.

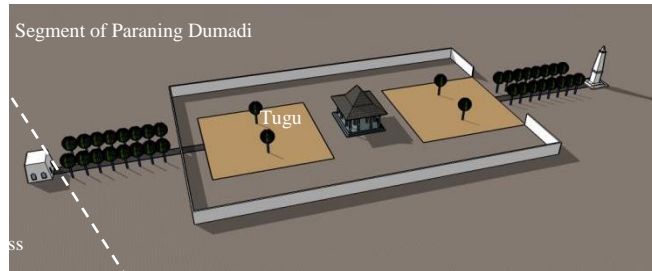


Fig. 3 Illustration of Philosophy of Sangkan Paraning Dumadi in the design of Kuthagara

## B. Morphogenesis

### 1) 1<sup>st</sup> Period: Completion of Traditional City and Initial Phase of Urbanism (1755-1812)

The period is the initial phase of Kuthagara development when the Yogyakarta Palace complex which is enclosed by the Baluwerti fortress was completely built in 1812. Although the palace was first resided by the King in 1756, all the elements of the Yogyakarta Palace complex were not already built. Based on the concept of concentric cosmological layers in Yogyakarta Palace, the layers were built by the erection of a series of cepuri walls [19]. The wall was erected as among the first elements of the Palace. The finishing timeline of other important buildings would include Tamansari royal garden in 1767, Masjid Gedhe (Royal Mosque) in 1775, Kadipaten (Residence of the Crowned Prince) in 1787, and finally the Baluwerti fortress in 1809 [22]. The final addition was the bastion on four corners of the fortress in anticipation of new threats from the Dutch East Indies Government. Inside the Baluwerti fortress which is also called Kuthanagara, also exists the settlement of soldiers and palace workers. Almost all of the soldier units were settled inside the fortress, except the Jager unit [25]. Kuthanagara has been completed as the first phase of urban areas during this period. The map of Kraton and its surrounding area as the center of Kuthagara is shown in the Fig. 4.

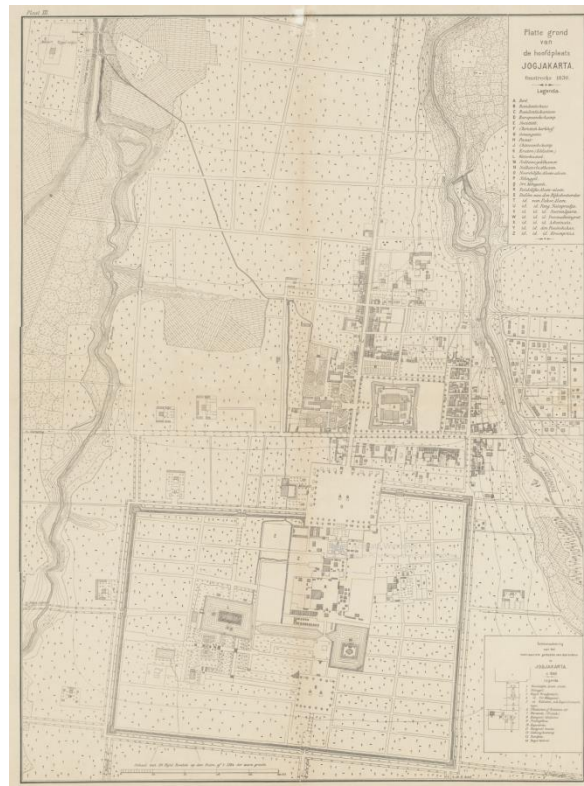


Fig. 4 Map of Sultan's Palace/Kraton and surrounding areas in 1830 (source: KITLV Leiden, Netherland)

### 2) 2<sup>nd</sup> Period: The Early Dutch Influence (1812-1855)

In the second period, The Yogyakarta Sultanate faced fundamental changes in power. Sultan Hamengkubuwono I was famous as the strongest king in Java and had undisputed authority during his reign, including with the Vereenigde Oostindische Compagnie (VOC) existence. When VOC fell into bankruptcy in 1799, its assets and control of territory were taken over by the Republic of Netherlands and the Dutch East Indies Government at the end of 1800 [26]. Although the Dutch East Indies were taken over by the British in 1811 and restored in 1816, these changes also made some impacts on the Sultanate. The biggest change was the intervention in Sultanate's sovereignty in 1810 by Dutch East Indies Government and the British invasion in 1812. Since 1812, Sultan has had to share powers with the British and then Dutch East Indies Government. The impact of sharing power was seen in the city's development. Residents or the residence for the Resident, the head of the Dutch East Indies Government in Yogyakarta, began to be built in 1824 and completed in 1832. This development led to more influence of western urbanism in Yogyakarta City. However, the traditional structure of the city remains untouched. The Dutch East Indies Government developed buildings on the left and right sides along the city's main axis. To foster economic activities, the Dutch have long been involved the Chinese ethnic groups as their business counterparts in the most of Dutch Indies territory [27]. This partnership also happened in Kuthagara and has shaped Malioboro to be a unique city's shopping promenade today.

Despite the western modeled urbanism introduced since the events aforementioned, the fall of Kraton due to the British invasion in 1812 took consequences in Yogyakarta's traditional urbanism instead. The defeat to the British made Sultan Hamengkubuwono III sign an agreement about army role and position on 1st August 1813 [25]. One of the most significant impacts of the agreement was the relocation of soldiers' settlements to outside the fortress during the reign of Sultan Hamengkubuwono IV (1814-1820). The settlements were spread to the west, east, and south of the Palace complex, even outside Kuthagara. It has also significantly influenced Yogyakarta city's shape since then, due to changing livelihood of the soldiers. They are reduced in size in each unit and no longer allowed to take the role of the kingdom army, but only as Sultan's security guard.

Another form of traditional urbanism was the development of Noble houses. These noble houses took a significant role as primary urban units of Yogyakarta [23] In this period, there were only two developments of Noble houses outside the Baluwerti fortress: Ndalem Sosrodipuran and Ndalem Sosrowijayan. The position of the noble houses has also expanded the cosmological concentric circle to the outside of the Kuthanagara, whereas the nobles are part of the core circle. The trend of the expansion of noble's house position and relocation of soldier's settlements outside Kuthanagara thus highly contributed to the delineation of Kuthagara today.

### **3) 3rd Period: Balance of Power and Influence Between Sultanate Traditional Urbanism and Dutch Western Model Urbanism (1855-1908)**

The influence of the Dutch Indies Government was more extended in the third period. Although Yogyakarta Sultanate still hold the right of land ownership in its territory, the governance went otherwise. Since the fall of Kraton in 1812, Yogyakarta had been a protectorate kingdom of the Dutch Indies. After the devastating and exhausting Java War in 5 years duration between 1825-1830, the Yogyakarta Sultanate and Dutch Indies made consolidations of power. Not only consolidate the power, but both sides also agreed to do many reforms.

During the third period, Dutch Indies Government modernized infrastructures and introduced many new building typologies. The oldest infrastructure that connects the western tip and the eastern tip of Java island was built by Daendels, the Governor General of the Dutch Indies in the early 19th century. The infrastructure which was known as de groote postweg, was not enough to cope with the recent needs. On the other side, Dutch Indies Government enjoyed prosperity and wealth as the result of the Cultuur Stelsel policy between 1830-1850. To maintain the positive momentum of economic development, the Dutch Indies built a railway system. The Java railway line was among the oldest in Asia, which began to built in 1864 and reached Yogyakarta in Yogyakarta in 1872 with the completion of Lempuyangan Station and Yogyakarta central station or now well known as Tugu Station, in 1887 [28]. Whereas the new building typologies, other than train stations, would consist of hotels and banks, European's model of public schools, and Sugarcane factories with their supporting facilities, began to be built in the late 19th century. The European model of public schools which taught in Dutch was built as the impact of education reform which started in 1845 [29]. While the sugar-cane factories with their supporting facilities were established due to the economic reform in 1875 [30].

The Sultanate itself still developed the traditional city through the development of noble family houses in abundant amounts. Most of the houses were located outside Baluwerti fortress. There were about no less than 36 noble houses built during this period. Besides, for the first time after 50 years, the king built a residence for the crowned prince in 1865. The location was still inside the Baluwerti and indicated as the ex-soldier's settlement site. These noble houses significantly transformed areas around into urban areas, due to attracting people from villages to work as their workers and the opportunity to live in the city.

These two trends showed the balance of powers between the Sultanate and the Dutch-Indies Government in developing the city. The Sultanate expanded the city by developing the noble houses, while the Dutch-Indies Government modernise the city center and areas surrounding the main axis. The two types of development could be divided into two zones: the north zone was dominated by Dutch Indies while the south zone was dominated by the Sultanate. Although there were two zones, both zones were keeping the

original city structure designed by Sultan Hamengku Buwono I as the basis of the development.

#### 4) 4<sup>th</sup> Period: Modernisation, the Culmination of Western Urbanism (1908-1945)

The fourth period was the culmination of western modeled urban development by the Dutch Indies Government. It was identified by a more intense development that shaped today's city facade. The development can be classified into two types, infill and city extension. The Dutch Indies Government built the city extension in the north of the city, at present known as Jetis Area, and in the east of Code river, been given the name Nieuw Wijk or today Kota Baru, the translation in Indonesian. Instead of the city extension, the Dutch also did a massive development along the city's main axis with infill type. The most notable examples of infill type were located in the city center. They are the De Javasche Bank building which was built in 1879, the post and telecommunication office building which was built in 1912, and the first private office building in Yogyakarta, the NILMIJ building was built in 1921. These infills introduced new architectural building typologies mainly for commercial public functions. Adjacent to the city center, Pasar Gedhe, the primary traditional market, was fully renovated, modernized, and renamed Beringharjo Market in 1925 [31]. Improvement of economic prosperity in the early 20th century brought many private businesses to Yogyakarta, as illustrated by the development of numerous private offices and retail shop buildings along Malioboro and Mangkubumi streets. In this period, all of the lots in Malioboro and Mangkubumi street were completely built. The completed development of the areas also marked the culmination of western urbanism brought by the Dutch in the Kuthagara.

Although the development of notable Noble houses in this period was decreasing in number, the transformation of surrounding areas as an urban area would be more intense. There indicated more kampung development surrounding the noble houses and destroyed royal facilities due to the massive earthquake in 1867 and also triggered by the better economic opportunities offered in the city. These kampungs created new toponyms which different from before. The name came from the ruins of royal facilities such as Kampung Taman which came from the Tamansari royal garden and Kampung Nagan which came from the royal palace's water-flushing facilities [31].

#### 5) 5<sup>th</sup> Period: Rapid Urbanism, the Competition between Development and Urban Conservation (1945-2012)

The Republic of Indonesia was established through the declaration of independence on August 17th, 1945. Even though the declaration took place in Jakarta, Yogyakarta had a very special role for the newly-born country. Sultan has long been known as a supporter of the establishment of the republic due to his active involvement in independence. In 1946, chaotic moments in Jakarta as the capital city of Indonesia caused Sultan to offer Yogyakarta as the temporary capital. This happened between January 4th, 1946, and December 27th, 1949 [32]. Not only offer Yogyakarta the capital of the republic, but also Sultan provided buildings for offices and settlements for almost 50,000 employees [33]. The other role was to provide significant financial assistance to the republic to run the government. The Round Table Conference in Den Haag, the Dutch on 2 November 1949, had led returning the capital to Jakarta. Post capital returning to Jakarta on 27 December 1949, most buildings in the area began to be functioned as previously.

Right after returning the capital city to Jakarta, the whole of Yogyakarta reverted to the local territory, but in a different form of authority. There is no longer support for a central government similar to the Dutch Indies Government in quantity, caused by the new Republic having to find new sources specifically in financial means. To anticipate the immediate needs of the people, Sultan had offered its asset to be utilized as public facilities. The assets are plenty of noble houses around the Kuthagara. These noble houses were converted into hospitals and schools. The former residence of the crowned prince even had also been converted into a higher education facility, a university. The first state-owned university in Indonesia which was established in 1949, namely Universitas Gadjah Mada, was fully supported by Sultan Hamengku Buwono IX. Not only gave the noble houses but also give some parts of Kraton as the first facilities for teaching and laboratory purposes. After 1951, the campus was beginning to relocate to the Bulaksumur area, and another land owned by the Sultanate was granted to the university [34].

For the following decades, Kuthagara still functioned as the center of Yogyakarta Special Province administration offices and economic activities. Some periodic efforts were done to keep Kuthagara's carrying capacity and to increase the vitality of the city center while conserving the urban structure. The efforts were the establishment of the corridor of a shopping arcade along Malioboro Street and relocation of the bus terminal in the 1970s, and the relocation of the fruit and vegetation central market and shopping center in 2005. to outside Kuthagara in 2005. Relocation of those three facilities was also intended to spread economic activities evenly.

This period had shown many changes were made, primarily to cope with the new status of Yogyakarta as part of the Republic of Indonesia. Due to the dynamic forces of development, Kuthagara was not the only economic activity center in Yogyakarta. It might be retained in symbols as the center, but it has many new competitors in new areas of development. Some newer architectural typologies for economic activities were built outside Kuthagara, such as shopping malls. Although the first shopping mall was built in the Malioboro area, the limitation of space made investors demand to build in a bigger lot outside Kuthagara. The competition



almost declined the vitality of Malioboro at the beginning of the 21st century. To maintain Kuthagara functions, local governments have also carried out many efforts and it is done dynamically. With strong regulations, some of the development the intention was not to preserve the artifact in the first place, but some of the adaptive re-uses had made the properties conserved better.

#### 6) 6<sup>th</sup> Period: Heritage City in Contemporary Manner, the Legacy of Keistimewaan (2012-2021)

The enactment of Law Number 13 of 2012 became the starting point for further conservation efforts by awarding special authority to the Government of Yogyakarta Special Province. One of the special authorities given was spatial planning and management. Due to this authority, Yogyakarta had a special regulation to manage the city and region-wide spatial planning. Supported by a special fund, the Yogyakarta Special Province Government began to implement the previously planned conservation and even further with newer concepts. The recent trend was to restore the city's physical visage as the first period designed by Sultan Hamengku Buwono I and conserve it in a more contemporary manner. Some romantic restorations were the restoration of Baluwerti's bastion at the northeast side and the Alun-alun Lor boundary fence. The Malioboro has been the focus of development since the Dutch development in the early 20th century and was more intense during this period. The first was pedestrian ways revitalization began in 2015 and continues today with a series of projects. The latest attempts were the Malioboro traffic management in 2020, the revitalization of surrounding streets, and followed by the relocation of street vendors in 2021. The sixth period showed that changes are still made but in a more manageable manner. There are more contemporary adjustments to the heritage city, starting from the city center areas. Figure 5 shows the street view of Malioboro street after the revitalization project compared to the ambience of the same street in the early 20<sup>th</sup> century.



(a)



(b)

Fig. 5 (a) Malioboro street in the beginning of 20th century (source: KITLV) and (b) Malioboro in 2019, after the revitalization of pedestrian ways.

The morphogenesis process has revealed that Kuthagara was built on three characteristics: the traditional, the Dutch-influenced urban areas, and the contemporary developments. Each period showed a significant contribution to the present condition. Even though there was a massive challenge from the need for investments, most of the city's crucial elements persisted. Some elements that being the more dynamic than others are the settlements and commercial strips. Most of the commercial strips are the conversion of previously settlement areas. They gave crucial character to contemporary development recently. Figure 6 below describes Kuthagara's urban morphological analysis through morphogenesis.



Fig. 6 morphogenesis of Kuthagara

### C. Kuthagara’s Urban Architecture Typology

The architecture in Java before the 19th century mainly has not been classified as an urban architecture typology in the western view. As mentioned in a record by a French soldier when he visited Surakarta in the middle of the 18th century, the Javanese city is nothing more than a compound of villages encompassing a cluster of houses surrounded by gardens, and noble residences around the king’s palace with a square-shaped plan enclosed by high walls [17]. Javanese conception of space in the feudal time focused to emphasize the degree of nobility. The only clear feature was the existence of walled residences as a differentiation between the noble ones and common people. Even the squares at the center of the capital city were not enclosed by buildings to define the space, but more to demonstrate philosophical features. In this regard, it is indicated that the influence of urban architecture in Javanese cities today, is brought by foreign nations and ethnicities. Mostly it was brought by Dutch or other Europeans and Chinese who migrated to the city. In the case of Yogyakarta, the urban morphological analysis had shown that the traditional city development was focused on settlement expansion, where the urban places, mainly the commercial and services development along the main streets were influenced by the Dutch and Chinese. In the contemporary era, these two types of architecture style are continued to create a hybrid urban architecture. Perhaps the building architectures varied over time to follow trends, but the pattern of western urban architecture is clearly shown.

Basically, Kuthagara was built with traditional Javanese architecture. However, as a city that passed through the developmental timeline during the colonial era, Kuthagara was also influenced by Dutch architecture. In the initial stages, the Dutch created landhuis style [33] which referred to the architecture of Dutch residences in Batavia, and its mature evolution reached in the mid of 18<sup>th</sup> century. Handinoto [36] divided the architectural style during the Dutch Indies era into three, namely the indische empire,

transitional architecture, and modern colonial architecture. Instead of these three categorizations, it is common to be denoted as colonial/indische architecture only in many local building codes throughout Indonesia at present. Colonial/indische architecture is a form of adaptation of Dutch architecture in the tropics as a result of an adjustment process that has taken place since the 18<sup>th</sup> century. Fig.7 shows the examples of colonial/indische architecture style in Kuthagara.



(a)



(b)

Fig. 7 (a) and (b) Examples of colonial/indische architecture style in Kuthagara

In general, the urban architecture in Kuthagara evolved into several types which are determined by morphological aspects and architectural style in two major parameters. The first parameter was the position of the buildings from the street or city's corridor and the second was the permanence element which constitutes a specific block. Based on these considerations, there are five types of urban architecture in Kuthagara. Type 1 is mainly the urban architecture located along the city's corridor, especially in the philosophical axis. Type 2 is noble houses that created settlement blocks and spread throughout the entire kuthagara. Type 3 is kampung or urban settlement with unique characters in most Javanese cities. Type 4 is Chinese settlements, and type 5 is buildings with contemporary architecture in the city's corridor. Each type has sub-types depending on architectural and morphological differentiation.

Type 1 is the most dominant urban architecture which defines the facade of Kuthagara. It evolved through the hybridization of buildings with Indische or Chinese architecture style that was built as infills into traditional city layouts. This type mainly developed along Malioboro and Margo Utomo streets. These buildings, in which most of their functions are commercial, were continuously intertwined to create an urban facade along the philosophical axis. Type 1 has four variations of sub-types. The first sub-type (Type 1-a) is commercial buildings with Indische or Chinese architecture style. It is built on small lots, has full frontage, and creates a row building mass. The second sub-type (Type 1-b) is almost the same first sub-type with differences in using Indische architecture style only and built on a relatively bigger lot. The third sub-type (type 1-c) is commercial buildings with an Indische architecture style which are built on a large lot, have building position setbacks, and create a cluster inside. This sub-type emerged in the last 3rd and early 4th periods which introduced a hotel function. The fourth sub-type (Type 1-d) is now mostly functioned as government office buildings. It is either a former Dutch government or private building with Indische architecture style which was built on a large lot, has building position setbacks, and originally a single mass or a cluster inside. It has more open space and a relatively big garden. Type 1 is not found in the central and southern parts of Kuthagara, which is named Njeron Benteng and Panggung Krapyak areas. The morphogenesis showed that there were no substantial interventions of the Dutch Indies Government in these areas. Fig. 8 shows example of a sub-type of type 1 in Malioboro Area.



Fig. 8 Type 1-a in Malioboro Area

Type 2 is basically called Ndalem, to denote the residence of noble families. This type is unique and would only be found in the city of Yogyakarta and Surakarta. Ndalem is typically a stand-alone complex which connected to the city's tissue through gledegan and only accessed via a gate. Ndalem is named specifically to indicate the noble's name who lives inside. Although it is a stand-alone complex, the existence of Ndalem attracts people to settle around, and made a settlement is named the same as Ndalem's name. There are three sub-types, which the first (type 2-a) is a Ndalem which still functioned as a noble residence. Usually, it has a limited modification since many Ndalems are appointed as heritage buildings. The second sub-type (type 2-b) is a Ndalem which has been converted into a government or public facility such as an office or a school. Most of this sub-type has undergone modifications, but some of the main building parts persisted. The third sub-type (type 2-c) is a Ndalem which has been converted into a commercial facility. This sub-type mostly had witnessed a major modification or even been demolished. It is caused by the handover of property ownership in the past which was bought by private companies which were not concerned with conservation efforts. In some cases, Ndalem architecture is utilized as an attractive factor, especially recently many of them have been adapted to re-use as interesting places. Fig.9 below shows an example of type 2-b.



Fig. 9 Example of Type 2-b

Type 3 is kampung or Javanese urban settlements. This type has two sub-types. The first type (type 3-a) is urban settlements built surrounding Ndalem, with higher intensity of building mass with or without courtyard and mostly built in smaller lots and traditional Javanese architecture. One of this type's distinctive features was the existence of the cepuri wall as a spatial barrier between Ndalem and the settlements. The wall also made road access more limited. The second type (type 3-b) was the settlement of palace clerks or workers with specific tasks and expertise. After the Sultanate merged with the republic, it became a common settlement, but still, continue using the original toponyms. This type has individual mass or compound, surrounded by a courtyard, wide road access, built in a fairly bigger land lot, and traditional Javanese architecture. Some of the type 3-b areas had been taken over by Chinese ethnic groups and became clusters of typical shophouses. The pictures of Fig. 10 below illustrates the type 3-a.





Fig. 10 Example of Type 3-a

Type 4 is a cluster of Chinese settlements. This type originally existed next to Pasar Gedhe (Grand Market) and some of them also served Sultan as tax officers [31]. Today, the area still maintains the original toponym, Ketandan. In the past, the settlement was extended to other areas and since many traditional professions began to diminish, the Chinese ethnic group took over traditional settlements surrounding Malioboro street and became Chinese settlement clusters. The local government has seen the uniqueness of this area for tourism and has renovated some buildings to maintain its character. Fig. 11 shows an example of a renovated building in Ketandan. Some other areas of Chinese settlement close to the philosophical axis area are Gandekan, Pajeksan, and Ndagen.



Fig. 11 Example of Type 4 building

The last type is type 5, which was begun to emerge in the post-independence period. This type was built with modern and contemporary influences. These types are not evolved in the main city axis corridor but only on the east and west sides of the area. Nonetheless, development along the main city axis corridor has been protected by specific building codes, so there would be a finite change in the corridor. There are two sub-types. The first sub-type (type 5-a) is commercial buildings, mostly shops, with a row or individual mass or compound configuration, higher intensity, built in relatively small to moderate size land lots with high intensity and contemporary architecture. It tends to replicate type 1-a but with contemporary architecture. Meanwhile, the second sub-type (type 5-b) is commercial buildings with an independent mass or cluster of moderate intensity, built in a larger land lot and with contemporary architecture. Type 5-b is mostly hotels, department stores, and shopping malls. The illustration of the two sub-types is illustrated in Fig. 12



Fig. 12 Example of Type 5-a

The hybrid urban architecture in Yogyakarta today has been maintained by some regulations, such as local ordinances, governor's regulations, and mayor's regulations. The newest Yogyakarta urban plan has accommodated these types of urban architecture. There is still a challenge to cope with these typologies due to the contemporary nature of recent development. Instead of making high-quality architecture, the regulation tends to create a falsification and facadism to the heritage areas. Otherwise, the new-modern architectural style often is not sensitive enough to create a proper dialogue with the surrounding historic environment.

Despite a solid effort during the 6th period to resurrect the original image of the Yogyakarta City urbanism designed by Sultan Hamengku Buwono I, there might be some forgotten elements that actually made the overall image complete. It is the revitalization of noble houses or Ndalem and settlements surrounding it. The government seemed to give only a minimum portion to conserve the elements. On the other hand, settlements provide communities that would give better opportunities for carrying out the conservation since they are the inhabitants. A similar problem also occurred in Ndalem's conservation, since these properties are mainly private. Higher maintenance budget along with the demand for investments gave threat to the properties to be handover in irresponsible ways.

## V. Discussion

The urban morphological and typology analysis of Yogyakarta demonstrates some basic considerations in the city's transformation. It is reinforced by the data on intangible factors that have significant contributions to the city's development timeline. The intangible factors consist of political, sociocultural, and economical emphasis. The political emphasis would be the strongest factor to contribute to the city's development. It also gave a crucial opportunity for the continuation of the city's permanence elements. The position as the seat of the Provincial Government head office (Kepatihan), along with the existence of Sultan's Palace (Kraton) as the Governor of Yogyakarta, the seat of Provincial Parliament's building complex, and one of the Republic's Presidential Palace where the head of the country would stay during his visit in Yogyakarta made Kuthagara as the focus of development. Before Republic's independence, the governance had always been split in half between Dutch East Indies Government and the Sultanate. Due to the duality of these governances, Kuthagara's spatial configuration was maintained to demonstrate a balance of power. After 1945, the position of Governor was always held by crowned Sultan or Paku Alam. It also influenced the spatial policies which never been neglecting Yogyakarta's traditional spatial concept. The Dutch East Indies government, instead of giving significant architectural legacies, also put the city center area as the center of economic activities. While the changes were also mainly driven by the political emphasis which the goal was to maintain the city center's vitality. Furthermore, the center of economic function was also being kept along the city center's vitality maintenance.

After the Government of the Republic of Indonesia gave special autonomy status to Yogyakarta Special Province in 2013, the influence of political and sociocultural factors was more evident. The fact that the contribution of tourism to Yogyakarta Special Region's economy is substantial, it did not make the economical factor the first concern. It was seen in the trend of development policies that mainstreamed the romanticism of 1st period urbanism as planned by Sultan Hamengku Buwono I. Although it has a significant impact to be the ultimate tourist destination and made Yogyakarta experience a tourism boom during the 6th period, the local government choose the type of development and investment selectively. It managed to consider conservation as the first place rather than facilitate the development of tourism facilities and amenities massively.

The demand for economic development has put more pressure on urban conservation. The problems of architectural heritage protection mainly exist in three aspects: inadequate protection, excessive development, and isolation [37]. Yogyakarta might have fairly enough protection, not to say inadequate. But it sometimes misdirection. While the excessive development would put heritage properties in danger, the safeguarding tools often seemed insufficient. There are no isolated architectural heritage properties in Yogyakarta, but a museumification effort could make isolation indeed. According to OWHC, Yogyakarta was classified as a city containing historic centers which cover the same area as the ancient area but are now enclosed by the modern city [38]. In this regard, the management of architectural heritage should be reviewed on regular basis to anticipate the newer trends in economic activity

The newer type of management as aforementioned was the result of the Keistimewaan status. In the past, there was a real struggle for Yogyakarta to undergo the conservation effort. It was caused by the lack of detailed arrangement of Yogyakarta's status as a special region, despite the central government had stated the status in 1946. Law Number 13 the year 2012 of Keistimewaan Yogyakarta gave detailed autonomies which are very important for conservation efforts. The three autonomies are spatial planning, culture, and land ownership. Furthermore, in 2017, Yogyakarta City was inserted into the tentative list of UNESCO World Heritage properties. The process is continued today to gain the permanent status of UNESCO World Heritage City and to achieve this goal, one of the prerequisites was to evolve a Management Plan. The management plan has been adopting Historic Urban Landscape as the major recommendation. One of the first anticipated tools that had been adapted was regulation tools. The regulations have mainly been based on the primary concept of the spatial plan by Pangeran Mangkubumi which contains many philosophies. According to the regulations, changes are allowed but must incorporate the continuity of the spatial plans with the concept of the

city of philosophy. However, the changes are not permitted for properties that are enlisted in the national and local heritage preservation index. In the future, the Yogyakarta heritage conservation effort must adopt and develop more Historic Urban Landscape recommendations, such as community engagement. The strong willingness of local government to make a solid regulation as a political emphasis was not followed by policies to empower the community for conservation. The observation during research showed that the community is highly involved in the management on daily basis and in small-scale activities. It might not have a big impact but made significant incremental changes over time. Community engagement has proven as a strong strategy for conserving heritage properties worldwide and being a major recommendation of international institutions. On the other hand, the concept of participation in heritage interpretation and decision-making which is declared in many international and local programs often misunderstood and misused [39]. Participation in heritage management also lies in the dichotomy between democracy and science [40]. The two poles would determine who is the most appropriate and legitimate actors for participation in heritage management. This is why the development of community engagement tools of HUL in Yogyakarta should be developed further and implemented properly

## VI. Conclusions

The result reveals that the Kuthagara has survived adapting to changes and maintaining its cultural continuity. The continuity and change in Yogyakarta city dealt with the management carried out by both the government and the communities. Before Indonesian independence, the continuity of urban structure and intangible cultures was mostly done by the Sultanate of the communities. Meanwhile, substantial changes in the urban realm were done by Dutch Indies Government, private companies, and private institutions. After independence and in the contemporary era, both the government and communities did action for change but with an awareness to maintain cultural continuity. It has many underlying factors as considerations, especially intangible ones.

The transformation of Kuthagara has shown that Yogyakarta has its own legacy in Javanese culture. As the latest built capital of the kingdom in Java island, Yogyakarta has to deliver the Javanese philosophical heritage clearly. Although philosophy is considered intangible, Sultan Hamengku Buwono I wisely put the manifestation into its city structure. This genuine idea thus is maintained and honored by his successor, even by the Dutch Indies Government and finally the Government of the Republic of Indonesia. The city development has never been unrelated to the city axis, city boundaries, and traditional symbols. The western modeled urbanism enriched the city development, and the traditional architecture of Java has not recognized new architectures brought by the Dutch and the Chinese ethnic group. On the other side, traditionally modeled urbanism spreading the urban settlements through the existence of Noble houses that were surrounded by kampung became one of the most unique features in Yogyakarta. In the future, there should be more researches further about the detailed form of urban architecture of Yogyakarta, since it has many unique features due to hybridization.

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