

## PATTERNS AND CHARACTERISTICS OF URBAN MORPHOLOGY IN THE OLD CITY OF BENGKULU

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### ABSTRACT

*Urban Morphology is an applied science that studies about how the pattern of urban space was made by history and also learned about the development of a city. The old city area of Bengkulu is a British-formed city starting in 1719 which has unique characteristics. This paper aims to identify the pattern and unique characteristics of the urban morphology in the old city of Bengkulu City. The methodology used in this study is a qualitative descriptive with diachronic reading and typo-morphology analysis. Getting the pattern and characteristics of those mentioned areas, the detail aspects such as buildings and materials, road and block patterns, land use activities and open spaces were used as an indicator. The result of the studies shows that there is a change in the urban planning of Bengkulu city. At first, British colonial planned Bengkulu as a port and trade city where the beach of the bay area was the center of the city. However, later, with the development of the city, Bengkulu is no longer a seaside city anymore. Now, Bengkulu has been growing towards the south and west of the city. It is showed by the transfer of the city center from the fortress area into the Bentiring area. In term of material, road and block patterns, and also land use activities, can be seen that there was a concentration of road and block patterns where almost all the blocks had the same size with close distance, at first of British colonialism. There are also three central nodes which confirm the city center, along with another small node that marks the city area. However, nowadays, morphological characteristics of Bengkulu city especially for the road and block patterns are heterogeneous, where there are two or more patterns were collides, and the central road axis has the north-south pattern. The buildings also have changed, from the adoption of European architectures at first, into a vernacular architecture that adapts the Indonesian climate by using gable and shield roof now.*

**Keywords:** morphology, pattern, characteristics, history, old city of Bengkulu

## **INTRODUCTION**

The development of a city is closely related to the function of time, and this reminds us of the past that is history which has an essential role in the formation of the morphology of the city (Mumford, 1967). Cities in Indonesia are currently developing very rapidly, as well as the city of Bengkulu. The city of Bengkulu is one of the colonial cities which is a former British and Dutch colony which until now many of its remains can be found in the city of Bengkulu, especially the old city of Bengkulu. The old city of Bengkulu is an area in Bengkulu which was used as a trading center in the 16-18th century and built a fortress named Fort Marlborough as the center of its defense.

The British began to build the city of Bengkulu starting in 1719 as the colonial ruler of England formed and designed the city of Bengkulu well and uniquely. Besides that, the UK also adopted the form of a city that had different characteristics in every city it controlled.

As the ruler at that time, the British placed the city of Bengkulu based on its function, as a city whose economy was focused on shipping and trade. The focus of structuring the city is to adjust the location of the city of Bengkulu, whose city is located along the coast.

The growth and development of the city of Bengkulu are directly proportional to the physical changes in the city, socio-cultural, economic and political developments including it. The development of this city was also accompanied by an increase in population which resulted in changes in the pattern of the shape and morphological characteristics of the city. Judging from the morphological and characteristic aspects of the city, it has exclusive functions ranging from the livelihoods of the average population, the existence of job specifications, population density, permanent settlements, as well as heterogeneous citizens' characteristics and complex social relations. The present developments have left the characteristics of the early cities formed by England whereas the old city (Benteng area, Kampung China and Padri Padak) was used as a cultural heritage area developed for superior tourism in the city of Bengkulu (Regional Regulation on Spatial Planning of Bengkulu City, 2012). This study is to examine the morphology of the old city area of Bengkulu to find patterns and characteristics.

## **THEORY / RESEARCH METHODS**

### **Theory**

Korpf (2002) states that urban morphology is one of the characteristics of urban forms, namely urban structures that are distinguished by roads/blocks, the shape of the mass of buildings that change from time to time or can also be said as urban history. While Rossi (1982) says, morphology is an urban artifact. Whereas Whitehand (1977) mention the study of the history of a city is an essential basis for conducting a study

of the morphology of a city, wherein there are urban physical characters which are changes that occur from time to time which is then applied to urban design.

Morphology is often used on an urban and regional scale. Urban morphology is a spatial existence from the characteristics of the city which consists of an analysis of the shape of the city and the factors that influence it (Yunus, 2000). According to Zahnd (1999), analyzing the morphology of a city can be done using figure/ground analysis. Figure/ground theories are understood from urban planning as a textural relationship between building mass and open space.

### Research Methods

By using qualitative methods, the research technique is carried out by analyzing data archives sourced from the old city map of Bengkulu, observing and evaluating detailed aspects which include buildings and materials, road and block patterns, land use activities, open spaces. All of them are intended to identify the pattern and characteristics of the old city of Bengkulu which produces a unique system of places.

**Table 1.** Schema of The Analysis Process Scheme

Target	Analysis of	Analysis techniques	Results obtained
Identifying the pattern and morphological characteristics of the old city center of Bengkulu	Detail Analysis Identification: <ul style="list-style-type: none"> <li>• Building and material</li> <li>• Road and block patterns</li> <li>• Land use activities</li> </ul> Open Space	<i>Diachronic reading</i> and typology morphology with <i>figure-ground</i>	Getting the Pattern and Characteristics of the Old Town Morphology (Marlborough Fort Area, Chinese Village, and Padre Site)

Source: Wardhani, 2018

This study is to identify the patterns and characteristics of the morphology of the old city of Bengkulu which begins with analyzing the details of the identification of buildings and materials, road and block patterns, land use activities and open spaces. The identification was carried out using diachronic reading and typo morphology analysis techniques. From the results of the identification, it is expected to obtain the patterns and characteristics of the old city morphology (Fort Marlborough area, Chinese Village and Tapak Paderi).

## RESULT AND DISCUSSION

### Identification of Building and Material Details by Using Typo-Morphological Analysis Techniques

#### Building Details 1895-1945

Bengkulu port is a component of the city that serves as an economic area, Fort Marlborough as a defense area and china village, Kebon Keling, Jitra Dining Complex as a residential area and its facilities, while for government areas located in the southeast of the Marlborough Fort.

The form of the government building has colonial influence, and the building is two floors with an arched entrance that is decorated with pole pillar and curved door on the front of the building. While the Chinatown which was established since the colonial period of British, that also function as an appropriate selling place. Where the houses in this town use Chinese architecture.

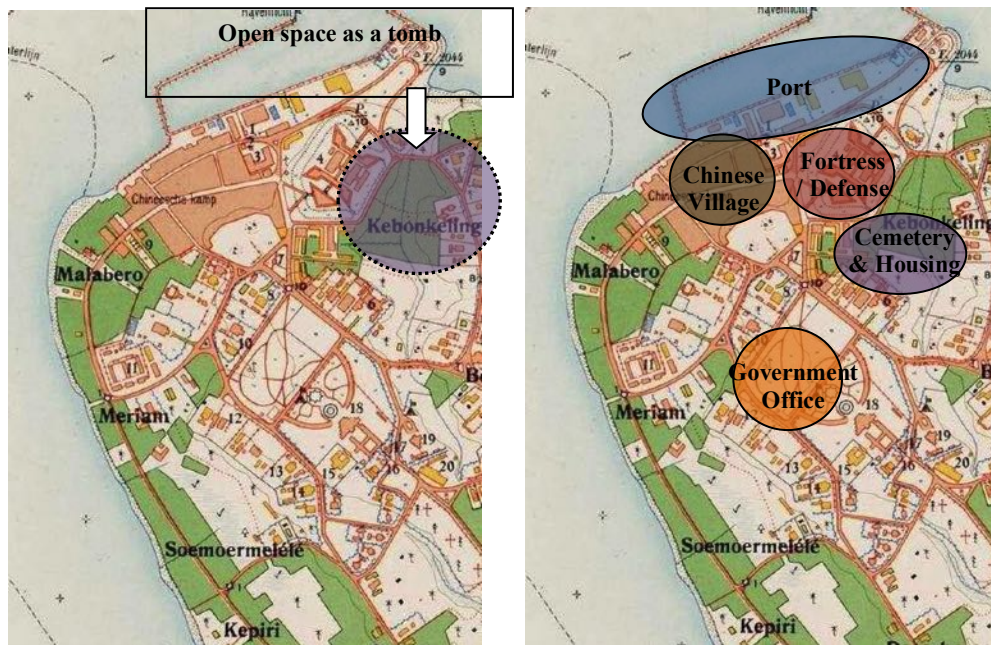


Figure 1. Structuring of the Dutch Map Source 1924

As many as 20 houses are Chinese architecture in this area. The houses generally extend towards the back, 2-storey, and arched roofs. It was also seen that the house was given a Terawangana ornament which was above the window which functioned as ventilation as is generally the case with Chinese home architecture. Housing in the keeling garden complex adopts home architecture in England which has the characteristics of a large courtyard, a red roof, and pointed shape.



**Figure 2.** China Village



**Figure 3.** Housing in Bengkulu, 1900



**Figure 4.** British Government Office

### Building and Material Details from 1945-Present

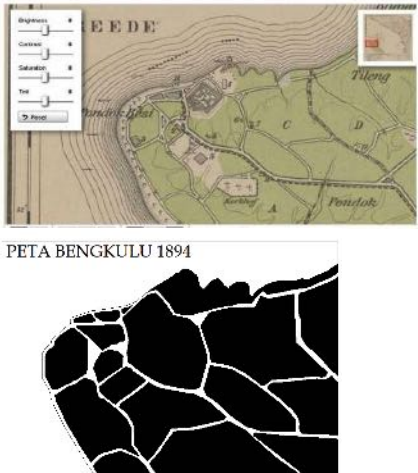
The colonial architectural style that dominates government building in this area has been abandoned. Government buildings are now turning to the current architectural style that is suitable for tropical regions that use shield roofs or saddles. Even so, the British heritage building that was formerly the Office of the Governor of England is now converted to the residence of the Governor. However, now the Chinatown area, which was once a trading center in the city of Bengkulu, is now sinking and is almost a dead area. The existing building has been renovated into a shop that adopts more traditional Bengkulu architecture with the characteristic of using carving on its list plank. The area around the port which is famous for its footprint name is now a function of being a beach and water tourism area in the bustling city of Bengkulu.

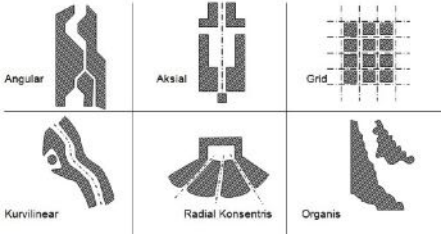
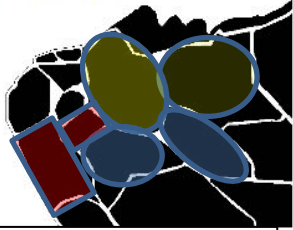

### Identification of Road and Block Patterns, Typo-Morphology

Road and block patterns are the second identification to determine the pattern and morphological characteristics of the old city of Bengkulu. The analysis was carried out using an analysis of ground figures. This analysis is used to identify road and block patterns by looking at the texture and patterns of an urban fabric.

The urban morphology identification of the city which is done by using the figure/ground analysis technique can find out the existing road and block patterns by looking at the existing and past historical information. This analysis is carried out on the map of the city of Bengkulu in 1867-2018, so it will be known the changes and characteristics of the road and block patterns in this old city area.

**Table 2.** Analysis of Road and Block Patterns

No	Map	Identification
1. Road and block patterns in 1894	 <p>PETA BENGKULU 1894</p>	<p>Based on the ground figure analysis, it can be seen that the pattern of the road is a Rounded Cities (round) form. This pattern is an ideal form for the city, because it can develop in all direction and has balanced, as the advantages.</p> <p>Besides that, the pattern of roads and mass blocks formed in 1894 is a concentric radial pattern. The old city of Bengkulu is a city formed by the United Kingdom as a place for trade and defense that are focusing the city on the fort area.</p>



No	Map	Identification
		
		<p data-bbox="834 513 1016 533">PETA BENGKULU 1894</p> <p data-bbox="852 774 1103 799"><b>Rounded Cities Form</b></p>
		<p data-bbox="858 846 1020 865">PETA BENGKULU 1894</p>

2. Road and Block Patterns in 1914



In 1914, the road and block patterns were still the same, but the distribution of mass blocks was growth, and there were several additional roads, but the pattern and initial shape of the road were still maintained. Concentric patterns have been changed. The broader distribution of the mass made current pattern tends to be heterogeneous.

The center of Bengkulu city in British colonial period was located on the beach, so it was called the coastal city which emphasized its social economy on shipping and trade. The City Center was designed to have three main node arrangement patterns that confirm the city center. The road pattern forms the city into a form of a constellation a series of city blocks that almost have the same size close. The road pattern produced by this area in the colonial era is homogeneous,

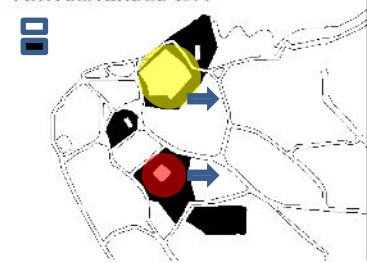


No	Map	Identification
3. Road and Block Patterns in 1924		<p>where there is only one road arrangement pattern.</p> <p>In 1924, The pattern of mass distribution had become broader and denser. The main road pattern is still maintained but the mass distribution is increasingly widespread. Concentric patterns have shifted not to the fortress anymore because the growth of the city and the spread of the masses are expanding to the south.</p>
4. Road Patterns and Blocks in 2018		<p>At this time after the Independence of Bengkulu, there were many changes. If Bengkulu city development used to be on the beach, but now the development of the Bengkulu city moves in the direction of the north and west of the city, no longer on the beach. This development is marked by the relocation of the city center in an area known as the Suprpto area which is the current trade and government area. The Urban Patterns no longer follow the pattern of British heritage where the primary path is to use a north-south oriented linear pattern. Resettlement blocks are no longer in the form of concentration. The composition of the area becomes increasingly complex. No longer homogeneous but now heterogeneous, where two or more patterns are colliding because of the influence of building masses and higher building density.</p>



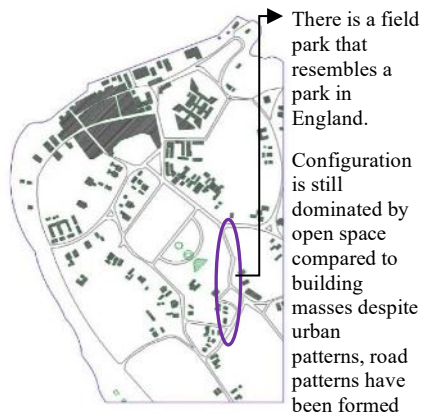
So based on the analysis of road and block patterns it can be concluded that in the early 1800s the pattern of roads and rounded cities (round). The concentric radials centered on the fortress area as a center of defense and trade later in its development the form was abandoned where the pattern of roads and blocks was becoming increasingly complex and heterogeneous. The trade and government center has shifted towards the middle of the city of Bengkulu while the fortress area has been abandoned and turned into a tourist attraction for cultural heritage and beaches.

### Identification Land Use and Open Space Activities by Using Typo Morphology and Figure-Ground Analysis Techniques

**Table 3.** Analysis of Land Use and Open Space Activities

No	Map	Identification
1.	<p data-bbox="315 666 521 695">PETA BENGKULU 1894</p> 	<p data-bbox="754 627 1207 782">In 1894, there is only small that land had been built. Green open space is still extensive. The built land is intended for the center of defense, and the center of government.</p>
2.		<p data-bbox="754 966 1207 1275">It can be seen that in 1914 the existing land used as a built-up area has become wider while green open spaces have become lesser. The allocation of built land for the center of government and the defense center in terms of location is still in the same place. While currently, the development occurs is for the settlement or residential area of Malabero Village and the Keeling Garden.</p>
3.	<p data-bbox="391 1333 548 1362">PETA BENGKULU 1924</p> 	<p data-bbox="754 1362 1207 1719">In British colonialism, open space provided was still quite a lot, especially the green open space. The mass density of buildings is still not too high, so the allocation for open space is sufficient in the center of Bengkulu city. The most number of open spaces is provided on the beach and in front of the fort which is an English burial complex at the time. There is also a field around Marlborough Fortress that still have the New England village atmosphere feels.</p>

No	Map	Identification
		<p>This comparison of open space and building mass in the colonialism era is visible, where the open space is still very numerous, and the building mass is still not dominated at that time. Nonetheless, the road pattern and urban form were made and planned by British colonial, what left needed was to fill the open spaces only.</p>



4. Land Use and Open Space Map 2018



At present, the open space in the Bengkulu city, especially in the center of the old city, is getting less and fewer, considering the current density of mass building, especially in the center of the Bengkulu old city is very crowded. The allotment of land for green open spaces becomes very narrow. The British cemetery complex which was very spacious which can accommodate 1000 more headstones is now turned into a residential village and school facilities.

At present, the ratio between the mass of buildings and open space has changed where the mass of buildings has dominated urban patterns now, and fewer open spaces. Nevertheless, the urban pattern still follows the pattern that was made in the colonial period. What happened now is the building mass only filled the open space that had been planned and formed by the colonial formerly.

## CONCLUSIONS

So the results of the study can be concluded that the city of Bengkulu began its development occurred during the influence of the power of the kingdom of Aceh and Banten. However, a significant influence on the arrangement of the city of Bengkulu when the colonial period was British colonial. England arranged the city of Bengkulu to become a port and trade city whose city center is on the beach, which is on the edge of the Bengkulu bay. However, in its development now the city of Bengkulu is no longer a seaside city but has centered and developed towards the south and west, not by the beach anymore. This change was evident from the transfer of the center of Bengkulu city which was no longer in the fortress area but now in the Suprpto area.

In terms of the city elements, it can be seen that Bengkulu city at the beginning of its development in the colonial period has a concentration of road and block patterns where almost all the blocks had the same size with close distance. There are also three central nodes which confirm the city center, also supported by other small nodes as city markers but at present Bengkulu city elements, especially road and block patterns are heterogeneous, namely where there are two or more colliding patterns, the main road now patterned north-south. The building, which initially adopted many European architectures, now grows with archipelago architecture that adapts to the Indonesian concept by using gable and shield.

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