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## A STUDY OF DEPOK CITY MORPHOLOGY IN A CENTURY

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### ABSTRACT

This paper examines the morphological changes of Depok City in one century (1920- 2020) by using a morphological component approach of land use, road patterns, and building patterns. This study used the historical method, which includes four stages: heuristics, criticism, interpretation, and historiography. The results showed that the morphological growth of Depok City showed significant growth and changes. The land use of Depok City in the last century has shown changes with an increase in the residential, trade, and service sectors, and industry, on the other hand, a reduction in the agricultural and plantation sectors. The street pattern network of Depok City shows a change from a linear pattern to a spinal pattern and currently has a mixed pattern. The building pattern that was previously linear then spread to cover almost the entire Depok area. The residential, religious, and colonial-style agricultural products storage buildings are now developing into modern-style residential.

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## 1. Introduction

The morphology of a city is influenced by historical aspects that shape and influence the city's development. The function of time becomes very important in the process of understanding the morphology of cities. According to [1], the city's development is a process of accumulation of manifestations from physical and non-physical activities carried out by humans. In other words, the city can act as *an urban artifact*. Every year there are always significant changes and developments occurring in a town. Several aspects significantly affect these changes, ranging from population density, geographical patterns, community activity patterns, and government policies related to the area.

Depok City is one of the regions in Answerarat Province. It is located adjacent to the capital city of DKI Jakarta, so the city of Depok becomes a strategic place for commuter settlements (trains). In addition, Depok City is one of the large cities in the Greater Jakarta area. This city is located just south of Jakarta, between Jakarta and Bogor. Formerly, Depok was a sub-district within the Bogor Regency area, which later received city status on April 27, 1999. In 2021, the population of Depok City was 1,886,890 people, with a density of 9,421 people/km<sup>2</sup>. As a large and long-established city, indeed, in the last hundred years, the changes and development of the town are very significant, from its people and geography. Therefore, morphological studies will play an essential role in the development of a city.

The growth of Depok City is certainly influenced by various factors, including its history, culture, politics, economy, social, and demography. It is interesting to examine how the morphology of Depok City has changed from the last century through the study of urban morphology theories, according to experts. Smiles in [2], revealed that in the

morphology of the city, there are three elements, namely *elements of land use*, street patterns (*street plan/layout*), and types of buildings (*architectural style of building and their design*). *Land use* (elements of land use) This temporary element can be used as a basis for rebuilding and planning new building functions to be created, namely by combining or reducing building lots and changing road patterns. Street plan (road patterns) Road network patterns are formed through a long process and are part or continuation of existing patterns. *Architectural style of building and their design* (types of buildings) The mass of buildings has a vital role in shaping the structure of the area and road network. The development of buildings can reach a saturation point with built-up areas covering the entire plot area. After that, there will be an intervention process in plots and buildings in the form of addition, subtraction, or the formation of new buildings and plots. These three basic elements are influenced by the social, economic, and cultural forces that drive urban development.

In observing morphology, there are three components: regional land use that reflects regional activities, circulation patterns or road network patterns that connect regions, and building patterns and their functions [3].

City-shaped *theory* states that the structural patterns of urban space manifest through social, economic, and political-administrative processes. These processes convey the meaning of architecture and manifest in the form of spatial pattern structures, land use, and architectural characters of buildings that overall describe the image of the city [4].

In previous research on the results of [5]'s research, entitled "Morphological Identification of the Kampung Melayu Area of Semarang City," which can be

concluded that based on the results of the analysis, namely when viewed from the figure-ground analysis, Kampung Melayu has regular and irregular building patterns and from linkage analysis has elements that connect between regions.

In previous research on the results of [6]'s research, entitled "Cities of former residency kedu morphological studies of historical cities" the data show that in the perspective of urban archaeology, historical cities in this case former kedu residency cities pay attention to elements of their buildings, urban inner structures, mini-topomini toponymy that shows certain spatial functions.

## 2. Material and Methods

The research method used in this study is the historical method, namely "*The process of critically examining and analyzing the records and survivals of the past. The imaginative reconstruction of the past from the data derived by the process is called historiography*" [7]. In general, it is understandable that historical research is a study and other sources that contain information about the past and are carried out systematically.

Historical education research is fundamental research for several reasons. Historical research intends to make a systematic and objective reconstruction of the training period by collecting, evaluating, verifying, and synthesizing evidence to support evidence to support the fact of obtaining solid conclusions. Where there is an entirely complete relationship between people, events, time, and place chronologically regardless of the pieces of objects observed.

## 3. Results and Discussions

Morphological form is viewed from three components: land use, road network patterns, and building patterns. The

characteristics of these three components are input in the analysis of morphological forms. Component characteristics have their respective roles or contributions in morphological form. The combination results show the morphological shape of the Depok city area, which has changed in every colonial period until now.

### Land Use of Depok City

#### Depok City During the Colonial Period

Depok was originally not a colonial city like other cities such as Jakarta or Semarang. Although its location is close to Jalan Raya Pos (Grote Pos Weg), a 1000 km road made by Deandles that stretches from Anyer to Panarukan, Depok is only a small resort village on the banks of the Ciliwung River, which is the crossing between Batavia and Buitenzorg. The existence of colonial city characteristics such as urban planning or squares is not found in Depok, which is enough to prove that Depok is just an ordinary village. In addition, housing in Depok Lama is not equipped with good supporting facilities, such as the absence of sewers or ditches for rainwater runoff and household waste disposal.





Figure 2. Map of Depok City in 1970s  
Source: usgs.gov/ has been accessed in 2021.

In 1976, the Depok area developed quite rapidly which was marked by the construction of housing and the University of Indonesia campus in Beji District. In addition, the growing service and trade sectors increasingly need faster and more responsive services, so in 1981, the Indonesian government decided to form the Depok Administrative City with the parent area of Bogor Regency, referring to Government Regulation No. 43. In 1981, it was decided that Depok consisted of 3 sub-districts with 17 villages.

The area of the administrative city of Depok at that time was 6,794 Ha. The dominant land use is still in mixed garden land types, covering an area of 10,048.03 Ha, about 50% larger than Depok City. The area of built-up land has also experienced a significant increase with an area of 622.5 Ha.

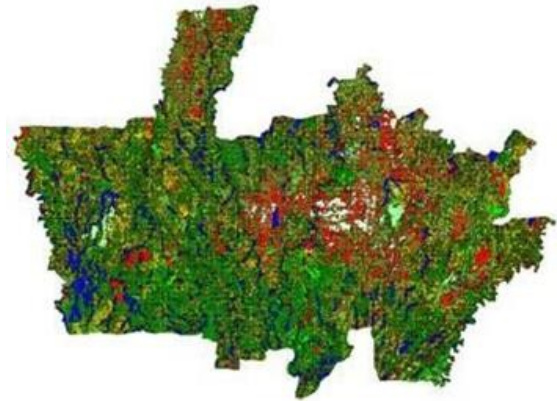


Figure 3. Map of Depok City in 1990s  
Source: usgs.gov/ has been accessed in 2021

The development of Depok Administrative City and the large desire of the people who requested that Depok become a municipality made the Bogor Regency government propose to the central government to make Depok a municipality. Through Law No. 15 of 1999 which was enacted on April 20, 1999, Depok was decided to become a level II regional municipality.

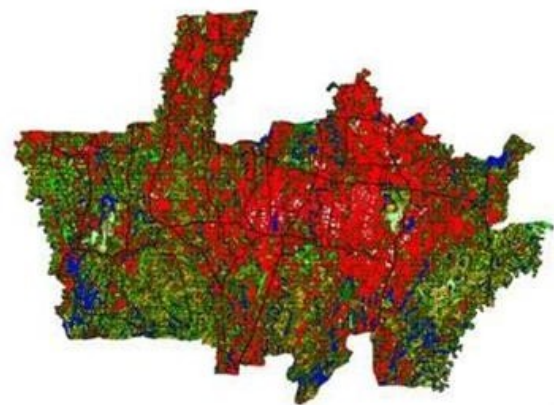


Figure 4. Map of Depok City in 2000s  
Source: usgs.gov/ has been accessed in 2021

In 1999, Depok became a city from the previous administrative city. Depok City experienced an increase in area from 13,912 Ha. The very high population density of the city of Jakarta also has an impact on the growth of land built in the city of Depok. this year the area of built-

up land decreased by 813 Ha and open land decreased by 250 Ha.

Land use in 2020 shows the development of Depok City as part of the Jakarta metropolitan area dominated by irregular settlements or settlements covering an area of 8,008.83 ha. The large enough land this year is a field or dry land covering an area of 3,383.52 Ha or about 16% of the total area of Depok.

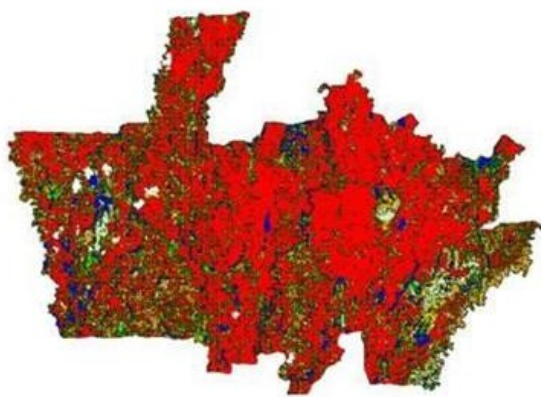


Figure 5. Map of Depok City in 2020s  
 Source: usgs.gov/ has been accessed in 2021

main road, which was generally a paved road (Everhard Weg). In addition to the main road, there are also alleys and footpaths (voetpad) connecting locations in Depok Lama and railway crossings connecting Jakarta-Bogor. Street names in Depok Lama include Kerk Straat (Church Street), Passer Straat (Market Street), Grote Passer Weg (Market Highway), Midden Straat (Central Street), Saartje Alley, Lonely Alley, Bakker Alley. Depok's road network pattern in the colonial period was linear, seen from the distribution of settlements to the main road section (Kerk Straat).

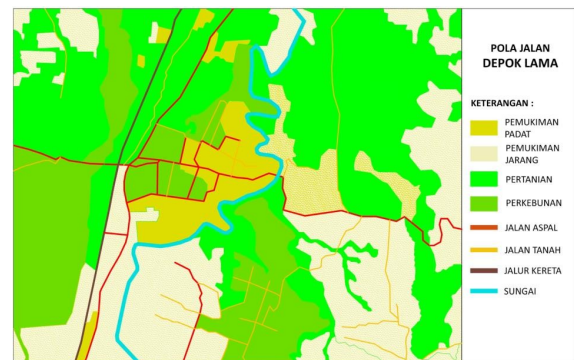


Figure 7. Map of Depok City's Street Pattern in 1924

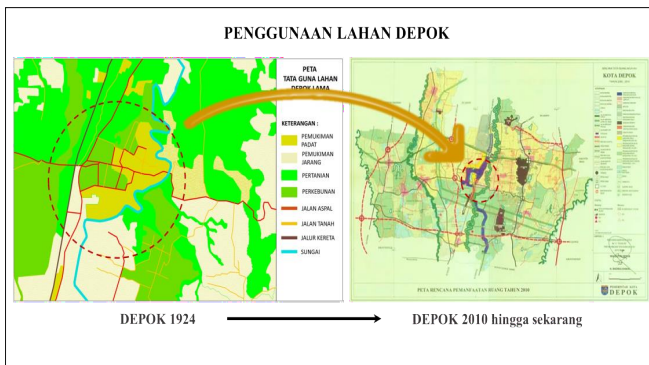


Figure 6. Map of Depok City's Land Use in 1924-2020

### Street Pattern of Depok City

#### Depok City During the Colonial Period

Depok Lama can be identified as a historical landscape of colonial settlement type when viewed from the dominance of its elements in the form of colonial residences. Settlements in Depok Lama were initially concentrated near the

#### Depok City After Independence

After independence in 1949, the power of Gemeente Depok was abolished, causing the abolition of particle land. The development of the area in the old Depok in the form of expansion of agricultural and plantation land, as well as the addition of land functions to facilitate the community's needs in the fields of education, religion, and other public facilities. This has led to new roads to reach these additional facilities. The emergence of new roads from the existing primary road access forms a pattern of branching roads (spinal).

### Depok City in the Present Era

After the establishment of Depok City as a municipality, the Depok area developed quite rapidly, marked by the development of the residential and education sectors. In addition, the growing service and trade sectors increasingly need faster and more responsive services. Since 1979, many new roads have been opened with access coverage in all directions to meet the need for these services. This shows that the relationship between the residential area of the Depok City sub-district and its sub-district is increasingly rooted. Application of road patterns that previously had a branching pattern.

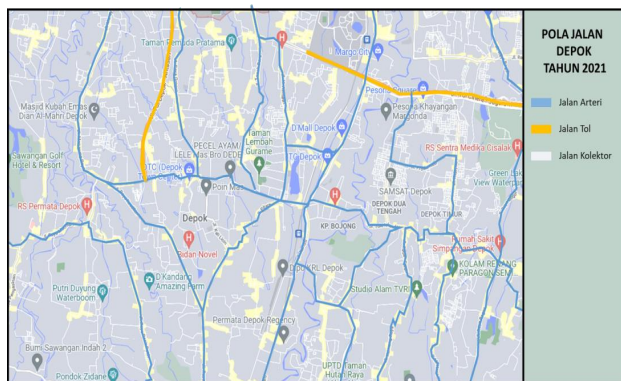


Figure 8. Map of Depok City's Street Pattern in 2020s

### Building Patterns of Depok City During the Colonial Period

In the colonial period, the building pattern was based on the center of the area spread on the main road, namely on *Jalan Kerk Straat* and *Jalan Passer Straat*. The center of the area has religious and residential land use characteristics. The development of the regional center continued with built-up land that followed a linear pattern. The density at the branching of the region is lower. The shape of buildings in the

colonial era was generally small but had large yards. Large buildings were usually in the form of warehouses/storage barns.

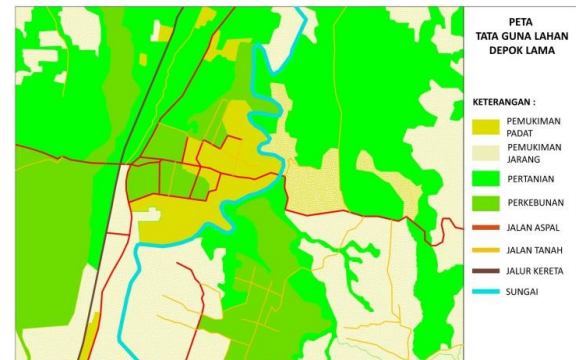


Figure 9. Map of Depok City's Building Pattern in 1900s

### Depok City After Independence

After independence, the pattern of distribution of buildings widened following the previous pattern (linear); some land that was previously agricultural and dry land was built by gemeente halls, schools, as churches, pastories, meeting halls, Christian cemeteries, and the Cornelis Chastelein Institute Foundation (YLCC) in 1952 where the shape of the building was colonial style.

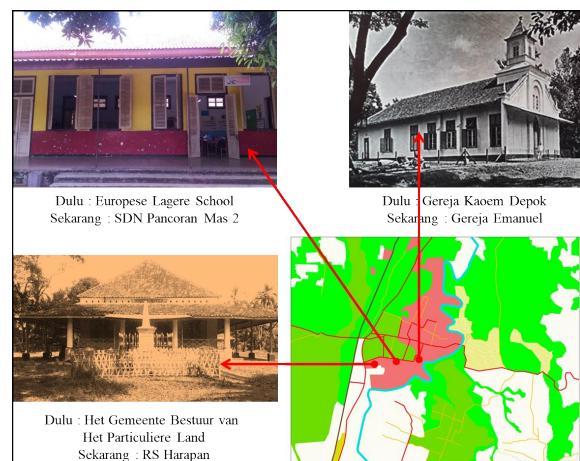


Figure 10. Map of Depok City's Building Pattern After Independence

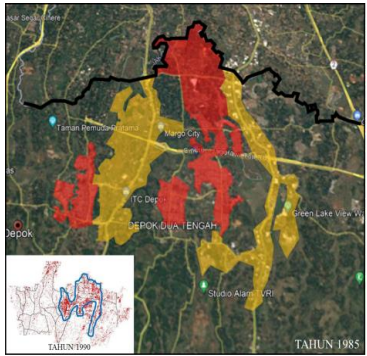
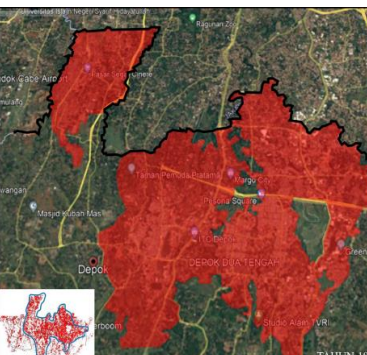
### Depok City in the Present Era

In the current era, the distribution pattern of buildings has not changed much, still widening following the previous pattern (linear). In 1985, many modern buildings have been established, and the pattern of distribution of buildings in Depok leads to Jakarta, where the sub-district

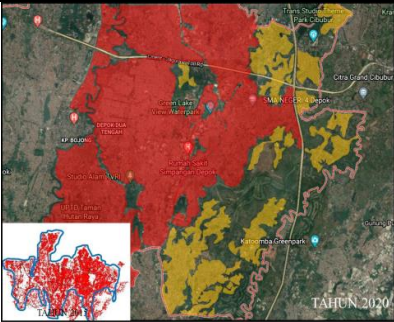
Beji is the busiest sub-district with significant building growth; besides being closer to Jakarta, another reason is the establishment of the University of Indonesia. In 1995, the Cinere sub-district showed a substantial increase in building density.

The distribution pattern of buildings from year to year is increasingly

spreading on main roads, branch streets, and alleys. The main streets, previously residential buildings, are now increasingly set aside with trade, service, and industrial buildings surrounding the area. In 2020, Depok became more crowded and denser, and other districts such as Cimanggis, Pancoran Mas, Limo, Sukmajaya began to experience a surge in building density because the area in the northern part has progressed and began to be congested. High-rise buildings are familiar to stand in Depok City.

No	Distribution Patterns	Information
1		<p>The building pattern is linear. The buildings are spread along the main roads (Jalan Raya Bogor and Margonda), and the density of the buildings lean towards Jakarta.</p>
2		<p>The building pattern spreads and widens not only on the main streets, but also on the branching streets and alleys. The density of buildings is leaning towards Jakarta. As the building pattern spreads and widens, the border area between Depok and Bogor begins to be filled with buildings, as are almost all areas of Depok City.</p>



No	Distribution Patterns	Information
3		<p>As the building pattern spreads and widens, the border area between Depok and Bogor begins to be filled with buildings, as are almost all areas of Depok City.</p>

### Conclusion

From the description and results of the analysis of the morphological components of the Depok City area, several conclusions can be drawn as follows:

The land use of Depok City in the last century has shown very significant developments, especially in the residential sector, and reductions in the agricultural and plantation sectors. In the colonial period, Depok was still a village where most of the land was intended for agriculture and plantations; continuing in the era after independence, Depok's land allocation did not change much, but the allocation for supporting social functions such as religion and education was widely carried out. In the current era, Depok has become a city with an area of 200.3 km<sup>2</sup>. Withdrawing from the 1980s, the area of agricultural land is around 50%, and 40 years later, in 2020, agricultural and dryland use is only 16%. The erosion of the agricultural sector is accompanied by the growth of Depok City as a residential area; besides that, other sectors, such as trade and services, also develop and become part of the morphology of Depok City.

Depok's road network pattern in the colonial period was linear, seen from the distribution of settlements to the main road section (Kerk Straat). There is a need for new roads to reach supporting facilities for

the needs of the community in the fields of education and religion, as well as public facilities in the post-independence period. Requiring new roads from existing primary road access forms a branching pattern (spinal). Application of road patterns that previously had a branching pattern (spinal). Since Depok City became a municipality, the application of grid road patterns began to be widely applied, such as in housing or residential complexes. As a result, as can be seen from Depok City today, the road network pattern has a mixed pattern, where the main road has a Spinal pattern and at its branches has a grid pattern. Applying this road pattern is more widely done because it is more practical and efficient in arranging plots. With this pattern, a four-square shape will be obtained, which is relatively more based on regional conditions in Indonesia for practical reasons (design) and trust (feng-shui).

During the colonial period, the pattern of distribution of buildings was based on the center of the area spread on the main roads, namely on *Jalan Kerk Straat* and *Jalan Passer Straat*. The shape of buildings in the colonial era is generally small but has a large yard, large buildings are usually in the form of storage warehouses. The center of the area has the characteristics of religious buildings and residential Dutch architectural style. The development of the regional center continues with built-up land that follows a linear pattern where the density at the

branching of the area is lower and scattered. After independence, the pattern of distribution of buildings widened following the previous pattern (linear); some land that was previously agricultural and dry land was built by gemeente halls, schools, churches, pastorates, meeting halls, Christian cemeteries, and the Cornelis Chastelein Institute Foundation (YLCC). At present, the pattern of building distribution has not changed much; it is still widening following the previous pattern (linear). The pattern of building distribution in Depok leads to Jakarta, where Beji district is the busiest district with significant building growth; in addition to being closer to Jakarta, another reason is the establishment of the University of Indonesia. The shape of buildings in this era has changed a lot; from previously only one to two-story buildings, now high-rise buildings are familiar to be found in Depok City.

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