

# THE POSSIBILITY TO ENHANCE THE QUALITY OF BUILT ENVIRONMENT BY DENSIFYING, MIXING AND COMPACTING THE HISTORICAL AREA OF KOTA TUA JAKARTA

## *Peningkatan Kualitas Lingkungan Binaan dengan Konsep Pemadatan, Pencampuran dan Perapatan dalam Kawasan Bersejarah Kota Tua Jakarta*

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### **Abstrak**

*This research is part of multi-year research, which is undertaken for two years. This research aims to analyze the possibility of applying three principles of Transit Oriented Development's (TOD) concept. Those three principles are densifying, mixing, and compacting. By analyzing the option of applying those principles, it have been proposed the best solution to issues and problems within the historical area of Kota Tua Jakarta. The significance of this research is the historical area in Indonesia, particularly Jakarta Kota Tua, which has been regarded as a historical area within a metropolitan city. Since that the idea of TOD itself has been known as a perfect solution in some countries, particularly within metropolitan cities that have a relatively large population. This research has conducted the qualitative method using a case study as a way of thinking to get a clear description and fact. Kota Tua Jakarta has been designated as a case study because this area is one of the study significant historical regions in Jakarta. The result of this research will support another about the historical district and Transit-Oriented Development's concept.*

**Kata Kunci:** *Densifying, mixing, compacting, TOD concept, historical area, Kota Tua Jakarta*

### **Abstract**

*Penelitian ini merupakan bagian dari penelitian multi-tahun, yang dilakukan selama dua tahun. Penelitian ini bertujuan untuk menyusun opsi peningkatan kualitas lingkungan binaan kawasan bersejarah Jakarta melalui penerapan prinsip TOD yaitu pemadatan, pencampuran, perapatan. Dengan menganalisis opsi penerapan prinsip-prinsip tersebut, telah dicoba diusulkan solusi terbaik untuk isu dan masalah di dalam wilayah historis Kota Tua Jakarta. Signifikansi dari penelitian ini adalah kawasan bersejarah di Indonesia, khususnya Jakarta Kota Tua, yang selama ini dianggap sebagai kawasan bersejarah di dalam sebuah kota metropolitan. Sejak saat konsep TOD telah dikenal sebagai solusi sempurna di beberapa negara, terutama di dalam kota metropolitan yang memiliki populasi relatif besar. Penelitian ini telah dilakukan menggunakan metode kualitatif dengan studi kasus sebagai cara berpikir untuk mendapatkan deskripsi dan fakta yang jelas. Kota Tua Jakarta dipilih sebagai studi kasus karena daerah ini merupakan salah satu kawasan bersejarah yang signifikan di Jakarta. Hasil penelitian ini akan mendukung penelitian lainnya yang berkaitan dengan konsep penataan tentang Kawasan Bersejarah dan konsep Transit-Oriented Development.*

**Keywords:** *Densifying, mixing, compacting, konsep TOD, Kawasan Bersejarah, Kota Tua Jakarta*

### **INTRODUCTION**

Purwantiasning et al. (2019) have discussed that Kota Tua Jakarta has been regarded as an area of urban heritage in Indonesia which has suffered from the impact of globalization. They have also mentioned that one of the efforts of the government is to preserve and conserve all historic buildings.

The aim is to enhance and upgrade the quality of the historic buildings themselves. Kota Tua Jakarta's District has many historical old buildings within it, from Masjid Luar Batang, Museum Bahari, Pelabuhan Sunda Kelapa, Jembatan Kota Intan, Toko Merah, Museum Bank Mandiri, Museum Seni Rupa dan Keramik, Pasar Ikan, Menara Syah Bandar,

Galangan VOC, Stasiun Beos Kota and Museum Fatahillah.

This research will not discuss all the above historical old buildings but will explore the existing condition of Kota Tua Jakarta, which is related to the buildings within the area. Afterward, the research has analyzed the issue, and problems arose within the region and solved it by presenting the possibility of implementing three principles of Transit-Oriented Development's concept, which also has been known as a TOD.

Historical areas have always become a crucial and significant matters for authorities particularly local government. Chen (2023) has said in his research that the universal issue for authorities is to plan land use more effectively and efficiently, and to provide more sustainable mobility in urban areas. He also has mentioned that Transit-oriented Development (TOD) is a city planning method that coordinates the mass transit system and the land use pattern.

Kapoor and Brar (2022a) have said that although there are many similar definitions of Transit-Oriented Development (TOD) by different authors worldwide; but, in high-density countries context, TOD aims to create a moderate to high density development with mixed land-uses within maximum walking distance of 800 m from a transit station. This will allow citizens to perform maximum pedestrian-based trips and access wide facilities such as work, leisure and shopping close to each other. Moreover, in their research, Kapoor and Brar (2022b) also have explained that Transit Oriented Development (TOD) is a multi-functional, moderate to high-density, compact, mixed land-use and pedestrian environmentally friendly development around transit nodes that is achieved by providing a mixture of employment, accommodation, shop and relax activities to transit users within walkable limits.

Since that historical area had existed years ago, many problems have arisen within it, particularly problem which related to the lack of utilities. Purwantiasning et al. (2019) have mentioned that Kota Tua Jakarta that has started to revitalize the area since 2010, still needs more improvement activities within the region. The condition of Kota Tua Jakarta itself is enhancing gradually, since that the area become a significant tourist destination, mainly domestic tourist. The central government itself is keen to improve; some institutions, either private or government sector, have supported each other to enhance the quality of the built environment within Kota Tua Jakarta.

Purwantiasning, et.al (2019) has mentioned that one of the best solutions to enhance the quality of Kota Jakarta is by delivering a new concept which is synergized to improve and enhance the quality of the built environment as well as the quality of local community who live within the historic area. This new concept has been known in many countries that have delivered it in their metropolitan cities—this concept known as a concept of Transit Oriented Development. Concept of Transit Oriented Development itself could be explained as a concept to integrate all functions within one area. As mentioned ITDP (2017) in Purwantiasning (2017), TOD which stands for Transit-Oriented Development could be defined as *“an integrated urban place designed to bring people, activities, buildings and public space together, which easy walking and cycling connection between them and near excellent transit service to the rest of the city....”*

To conclude the definition of TOD, Gleave (2009) explained that a district of an area which implemented the concept of TOD is an area or a neighbourhood that could be said as an area or a zone which could accommodate the community in doing many activities within it. In other words, this area or region should have various zones, not only for residential but also for commercial, public use, and green space.

On the other hand, the need for a pleasant built environment will become a particular attachment for the local community. In this case, historical attachment for the historical area of the local community is an essential thing in the enhancing or improvement process of the historic district. As Magdin (2013) said that historical attachment also becomes an appropriate approach in digging up the level of emotional and memory of an individual to cultural heritage, mainly historical buildings within the historic area. By using this approach, the need of the local community in enhancing and improving the quality of the environment of the historical area, as well as the quality of life the local community could be revealed—this approach to determining the sustainability of the historic district.

One of the principles in Transit-Oriented Development is to upgrade the quality of infrastructure within the historic area. The significance of infrastructure itself could be reached by applying the concept of Transit Oriented Development, which prioritizing the need for comforts and safeness for the community. As mentioned by Taki (2018), a well-regulated and well-planned city is characterized by the conditions of land use and transportation system, and it indicates economic prosperity. This statement has

been supported by Huang (2019), that said even though the TOD (Transit-Oriented Development) concepts contribute great innovations to our next-generation metropolis, their means and focusing are primarily on the sustainable transportation dimension. It is debatable that the development mode advocated by TOD seems to lack relative considerations of both the ecological and environmental dimensions. Consequently, to achieve a better urban life, our urban planning and design should incorporate the consideration of peripheral areas that have not been further valued in the past, such as ecology diversity, natural energy recycling or reuse, and livable habitat, rather than just focusing on the sustainable transportation dimension of conventional TOD.

Bai, et al (2023) in their research have mentioned that Transit Oriented Development (TOD), which often focuses on the core areas of particular city, is believed to be a substantial contributor to the development of the city to become a smart city. They also mentioned that until now, the concept of TOD has been widely implemented in urban planning practice, but different interpretations have emerged around the world due to the diversity of urban development. TOD has formed the basis of new urbanism to achieve smart growth.

Xia and Zhang (2022) have also mentioned that applying Transit-Oriented Development (TOD) has been extensively recognized as a major approach to promoting sustainable and wholesome urban development. TOD strategy is capable of integrating advisable land use and well-designed transit systems, thereby mitigating urban disease to create urban vibrancy.

As one of the efforts to apply the concept of Transit-Oriented Development is by implementing three central ideas of TOD. Those three principles are known as mixing, densifying, and compacting (ITDP, 2017). Those three concepts of TOD have been applied in some districts in Jakarta as a solution to a rapidly growing population. One of the solutions is by providing low-income vertical housing or apartment and mixed-use building. Three concepts of Transit Oriented Development have managed the solution of Jakarta as a metropolitan city. The mixing idea is one of principle in TOD's theory, which mixed some functions, activities, uses, needs with the variety of economic level and demography condition of community within a designated area or district. This concept has been formed as a mixed-use concept which designed some function into one area or one building. The second principle is densifying, which has been implemented in metropolitan cities with a high density of

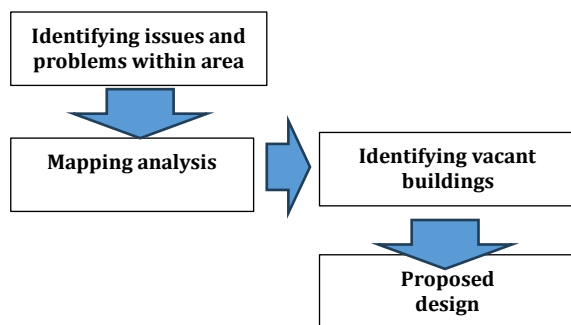
population. To maximize the density of the area, a planner should consider by densifying the region or district to justify accommodation in all communities. One of the best solutions is by providing vertical housing such as apartment, rental hotel or hostel, as well as Rumah Susun. The last concept of principle TOD that has been discussed in this research is compacting. Compacting is one of the basic guiding principles in TOD's theory. The excellent planning in an area or district is by compacting one function to another. By delivering compactness within a region or district, all functions within the area or neighborhood could be accessed easily.

Referring to the above explanation, we have conducted the historical area of Kota Tua Jakarta as a case study. We believe that the development of the area Kota Tua Jakarta could cover all aspects of economic, social, and activities, which is based on the community's need. Bahri et al. (2018) mentioned that Transit-Oriented Development is the best solution to be conducted within the historical area of Kota Tua Jakarta. The reason is that the area of the core zone has been regarded as a particular area with significant character and has more appreciation for the memory of the past in the colonial era. The core zone also has a function as a central orientation and centre of the living heritage. By delivering three principles of Transit Oriented Development's concept, hopefully, the quality of the built environment, as well as the quality of life the local community, will be enhanced and improved.

## METHOD

To obtain the right solution and conclusion, we have conducted a qualitative method. We have designated a historical area of Kota Tua Jakarta as a case study. Researcher have chosen this area because this area has a significant historical value, which could become the identity of the city and has excellent value in the past. Some mapping analysis has been done to identify the existing condition of Kota Tua Jakarta. Some mapping analyses also have been done to describe the possibility of implementing three principles of TOD's concept: mixing, densifying, and compacting.

Some activities also have been done to support the research. Those are literature study, survey, and observation, as well as questionnaires distribution. At the end of this research, we have provided some recommendations to answer the aim of this research. The flowchart diagram of the research framework has be shown in the Figure 1, as follows:



**Figure 1** Flowchart Diagram of the Research Framework

## RESULT AND DISCUSSION

This research aimed to analyze the possibility of applying the three principles of Transit-Oriented Development's concept within the historical area of Kota Tua Jakarta. Thus, to obtain the right solution and result, we need to identify issues and problems within the historical district of Kota Tua Jakarta. Also, some analyzes of the existing condition have been obtained to support the research. We have conducted three steps in this research:

1. Identifying issues and problems within the historical area of Kota Tua Jakarta by exploring the area and interviewing some respondents
2. Mapping the existing condition within the historical area of Kota Tua Jakarta with some approaches from land use, vacant buildings, and zone
3. Identifying from mapping analyzes the possibility of applying the three principles of Transit Oriented Development's concept.

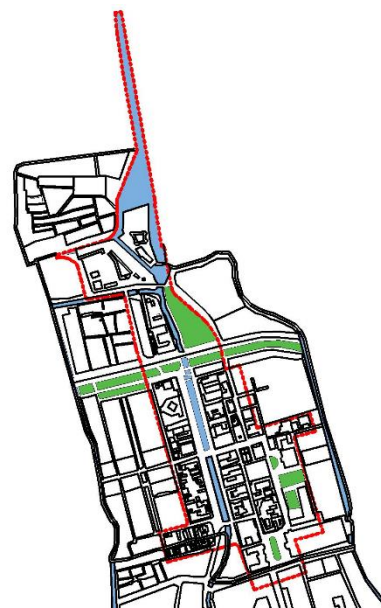
### Kota Tua Jakarta

Before starting to identify issues and problems, we need to describe the historical area of Kota Tua Jakarta. As seen in Figure 2, Kota Tua Jakarta has five zones, which is a core zone or zone 1 and 2 is the designated area for this research.

Those five zones are: Zone 1 - Sunda Kelapa, Zone 2 - Fatahilah Square, Zone 3 - Pecinan or China Town, Zone 4 - Pekojan or Kampung Arab, and the last one is Zone 5 - Kawasan Peremajaan or rejuvenation area.

Figure 2 also shows the core zone of the historical area of Kota Tua Jakarta, which is shown with red line boundaries. Kota Tua Jakarta has many historic buildings (see Figure 3); this is a reason why Kota Tua Jakarta has been designated as a historical area. Some buildings within the core zone have been

abandoned for years. On the other hand, some buildings have been adapted with a new function to support the activities of tourism (see Figure 4).



**Figure 2** Kota Tua Jakarta: Core Zone is the One with Red Line Boundaries



**Figure 3** Kota Tua Jakarta: the Area of Canal Batavia with Many Historical Buildings



**Figure 4** Kota Tua Jakarta: some Buildings that have been Adapted with New Function as Museums

### Identifying Issues and Problems

Since the historical area of Kota Tua Jakarta consists of many historical buildings, the function of the buildings is almost similar. Those historical buildings used to have a role as a government office in the colonial era. Some buildings remain the same appearance because they have distinctive characters. Thus, the central government needs to preserve and conserve them. But, on the other hand, there are still many abandoned buildings that have significant potency to be enhanced their quality. Before we have analyzed the existing condition of the historical area of Kota Tua Jakarta, we have identified some issues and problems related to the three principles of TOD's concepts.

The first one is to identify issues and problems related to mixing concepts within the historical area of Kota Tua Jakarta. According to the principle of mixing, a well-planned area should have a land-use with mixed function. But from observation, we have determined and defined issues and problems as follows:

1. Many buildings within the historical area of Kota Tua Jakarta have the same function in one area (see Figure 5)
2. There is no mixed land-use within the historical area of Kota Tua Jakarta, either for residential or non-residential (see Figure 5).
3. Commercial function and service function have a dominant role within the historical area of Kota Tua Jakarta (see Figure 4)

4. The residential area is just a small area within the historical area of Kota Tua Jakarta (see Figure 5)

Moreover, we have identified issues and problems related to the densifying concept within the historical area of Kota Tua Jakarta. According to the principle of densifying, a well-planned area should have buildings or an area which could optimize the density of the area. One of the solutions to densify the area is by delivering a concept of vertical housing within the region. Since the historical area of Kota Tua Jakarta has been known as a government office area, thus, there are no buildings that have been designated as a residential area.

But from observation, we have determined and defined issues and problems as follows:

1. There is only a small part of Kota Tua Jakarta which has been designated as a residential area (see Figure 5)
2. Some buildings only have one function each. Thus, this is a contradictive concept with TOD's concept.
3. Since that has been designated as a historical area, the area should provide residential buildings with a vertical housing concept to fulfill the needs of the local community as well as tourists.

In the last one, we have identified issues and problems related to the compacting concept within the historical area of Kota Tua Jakarta. Referring to

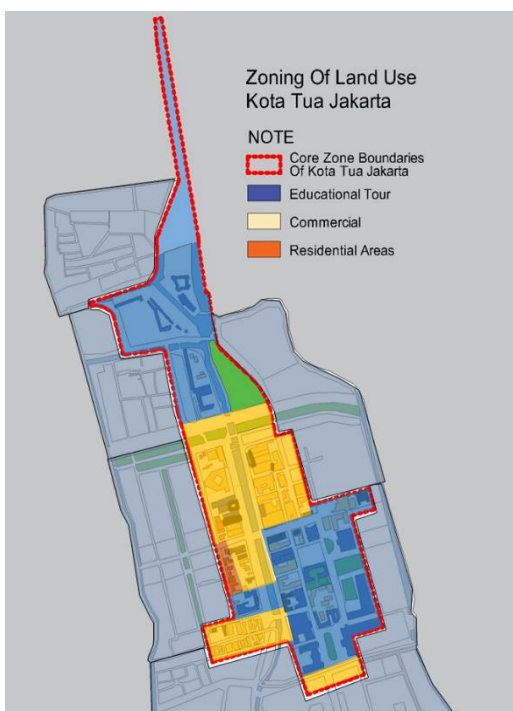


Figure 5 Land-use of Kota Tua Jakarta

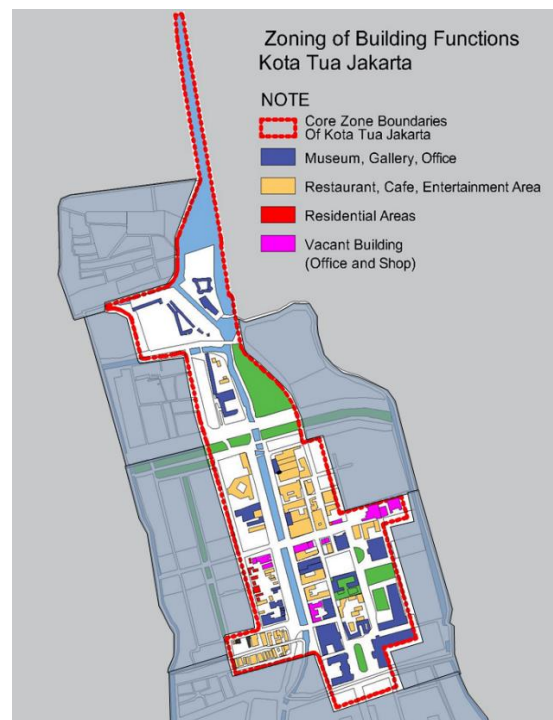


Figure 6 Buildings within Kota Tua Jakarta

the principle of compacting, a well-planned area should design buildings and functions which can be accessed quickly and have a short distance from one to another.

According to the observation, we have determined that the historical area of Kota Tua Jakarta has a substantial area with a short distance from one building to another. The issues and problems that we have identified referring to this principle, as follow:

1. There is a lack of compactness because there are many abandoned buildings within the historical area of Kota Tua Jakarta (see Figure 6)
2. The linkage between one building to another has been disrupted because of the existence of abandoned buildings within the historical area of Kota Tua Jakarta

### Mapping Analyzes

From the identification issues and problems, we have tried to translate the existing condition through mapping analyzes. This mapping analyzes been used as a tool to see the issues within the historical area of Kota Tua Jakarta and to see the appropriate solution. We have completed the mapping analyzes of three principles of Transit Oriented Development's concept.

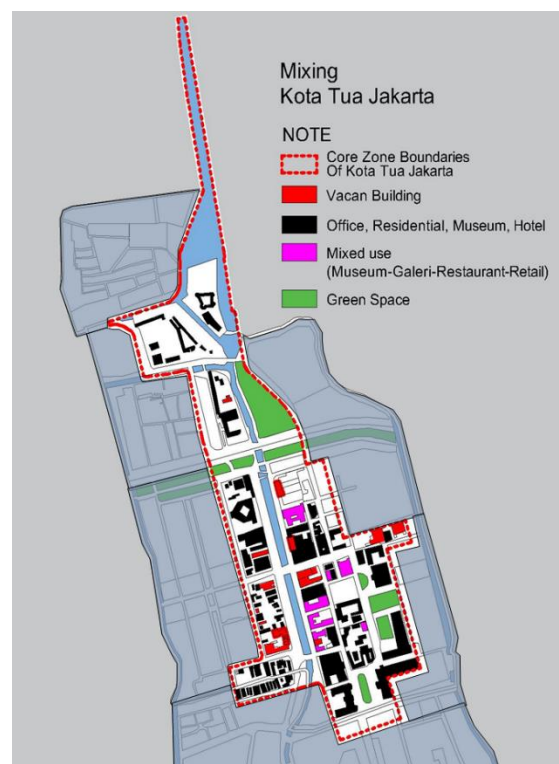
The first mapping analyzes is about the possibility of applying the principle of mixing. We have identified some buildings that still vacant to be adapted as a new function (see Figure 6). We have also identified some abandoned buildings that should be revitalized as a new appearance with a new function. The challenge to revitalize the abandoned buildings is about the grade of the buildings. Since there are three levels or grades of historical buildings within Kota Tua Jakarta (see Figure 7), we need to classify all those abandoned buildings refer to their grade, either grade A, B, or C.

To fulfill the principle of mixing, we have proposed some vacant as well as abandoned buildings to be a mixed-use building with accommodating a residential function on the above and commercial purposes, such as a shopping area on the ground floor.

The second mapping analyzes is about the possibility of applying the principle of densifying. Since that we have identified some buildings still vacant to be adapted as a new function (see Figure 8), we have proposed those buildings to become vertical housing (with a maximum story and using an existing building appearance). This proposed idea has fulfilled the principle of densifying because the need for housing and commercial function could



**Figure 7** Classification of Building's Grade within Kota Tua Jakarta



**Figure 8** Mapping Analyzes of Mixing Principle within Kota Tua Jakarta

be densified in one building, and the density of the area could be managed thoroughly.

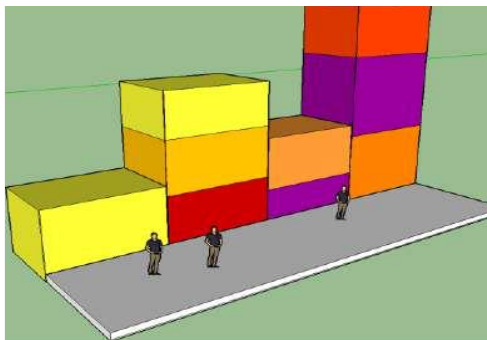


**Figure 9** Mapping Analyzes of Densifying Principle within Kota Tua Jakarta

Those two principles of Transit Oriented Development's concept cannot be separated with a compacting principle. By implementing the principles of mixing and densifying, it also should implement the principle of compacting. Using the compacting principle, the proposed design of mixing and densifying, which has delivered as a mixed-use building, could be accessed easily from one to another. The distance between one function to another could be compacted in one area as well as in one building.

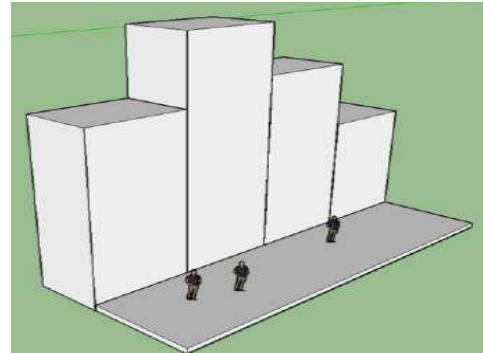
**Proposed Design**

Basically, the three principles of the Transit-Oriented Development's concept could be described as visualized in Figures 10, 11, and 12.



**Figure 10** How the Principle of Mixing has been Described, with Some Functions in One Building

Figure 10 shows how the principle of mixing has been described, and some functions could be mixed and combined in one building within the historical area of Kota Tua Jakarta. The function could be residential mix with office or commercial function such as shopping area.



**Figure 11** How the Principle of Densifying has been Described, with a Vertical Concept



**Figure 12** How the Principle of Compacting has been Described, with a Complex of Building with Short Distance path from One to Another

Figure 11 shows how the principle of densifying has been described in the diagram. To fulfill the principle of densifying within the historical area of Kota Tua Jakarta, some buildings should be built vertically. There are some abandoned and vacant buildings within the historical district of Kota Tua Jakarta. To apply this principle of densifying, we have proposed those buildings into new functions vertically, such as vertical housing (apartment or hotel) and commercial purpose (office or shopping area).

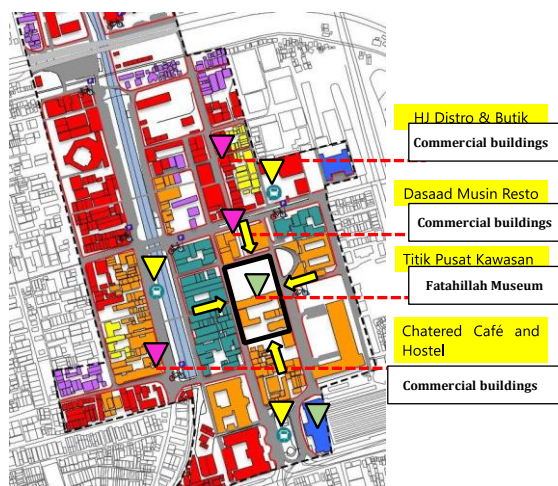
And the last one in Figure 12, which shows how the principle of compacting has been described in the diagram. To meet the need of the area, some buildings within the historical district of Kota Tua Jakarta should have connectivity to each other with a short distance path. Path and open spaces

between buildings should be designed as quickly as possible to give compactness within the area.

**Tabel 1** The Proposed Design of Existing Vacant Buildings within the Historical Area of Kota Tua Jakarta

No	Building	Grade	Proposed Design
1	HJS	C	<b>Ground Floor:</b> Restaurant and Retails <b>Upper Floor:</b> Offices and Rental Apartment
2	Dasaad Musin	B	<b>Ground Floor:</b> Arts Space and Co-Working Space <b>Upper Floor:</b> Galery and Rental Apartment
3	Chartered Bank of India	A	<b>Ground Floor:</b> Restaurants and Retails <b>Upper Floor:</b> Hotel and Rental Apartment

According to the mapping analyzes before, there are some abandoned and vacant buildings within the historical area of Kota Tua Jakarta. We have chosen some vacant buildings to be adapted as a new function. Those buildings are HJS, Dasaad Musin and Chatered Bank of India (see Figure 13), and the detail of the buildings.



**Figure 13** The Location of Three Vacant Buildings which have been Proposed with New Functions

## CONCLUSION

To conclude this research, we have stated that there is a big possibility to implement the three principles of Transit Oriented Development's concept. To apply the mixing, densifying, and compacting principles, we have proposed some abandoned and vacant buildings to be adapted as a new function. This new function should apply not just one

purpose, but more than one function such as housing function and commercial function, or commercial function with government office function. By implementing the three principles of Transit Oriented Development's concept, the historical area of Kota Tua Jakarta could become an integrated area with a specific character which provides vertical housing and commercial as a mixed-use building within the region. By implementing those three principles of Transit Oriented Development's concept hopefully could enhance the quality of the built environment to be more comfortable, safe, attractive, and sustainable.

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