

## Kampung Melayu Urban Design Study: Problem Identification and Recommendations for Dense Settlement Arrangement

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### Abstract

*Kampung Melayu is a densely populated residential area located on the banks of the Ciliwung River in East Jakarta, which has experienced organic growth without systematic spatial planning. This area faces various urban problems, such as irregular land use, a lack of green open spaces, narrow circulation, and environmental conditions that do not meet the principles of sustainable urban design. This study aims to identify the main issues in the physical structure of the area and formulate recommendations for its development using Hamid Shirvani's urban design theory, which includes eight elements: land use, building form and mass, circulation and parking, open spaces, pedestrian paths, supporting activities, signage and orientation systems, and area image. The methods used include field observations, spatial analysis, and review of regulations such as SNI 03-1733-2004, the Jakarta Capital City Regional Spatial Plan (RTRW), and Law No. 26 of 2007. The results revealed significant inconsistencies in most design elements, particularly in terms of circulation connectivity and the provision of public spaces. This study recommends micro-zoning-based planning, the revitalisation of open spaces, and the strengthening of local identity to achieve sustainable housing in densely populated urban areas.*

**Keywords:** *Urban Design, Dense Settlement Arrangement, Kampung Melayu*

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## INTRODUCTION

Urban growth in developing countries such as Indonesia is characterised by settlement development that does not always align with planned spatial principles. The rapidly increasing demand for housing amid limited land availability has led to the emergence of densely populated areas that develop organically. As a result, informal settlements grow in high-risk locations, such as riverbanks, under bridges, and other marginal lands. Irregular zoning, overlapping functions, and the absence of basic infrastructure are recurring issues in many major cities.

One area that reflects this complexity is Kampung Melayu, located in the Jatinegara subdistrict of East Jakarta. This area is one of the oldest settlements in Jakarta and has significant historical value. According to historical records, Kampung Melayu has existed since the 17th century, originating from Malay settlements that migrated to Batavia during the colonial period. The area later developed into a commercial hub, residential area, and centre of social activities for the community. To this day, the historical traces of this past can still be seen in the presence of old mosques, educational institutions, and a strong social structure within the community.

However, the development of Kampung Melayu cannot be separated from the pressures of rapid urbanisation. As the demand for housing increases, this area has experienced extremely dense spatial growth. Buildings have been constructed in close proximity to one another without consideration for orientation, natural lighting, ventilation, or evacuation routes. The narrow streets lack green open spaces, and pedestrian paths often overlap with parking or commercial activities. The area is also prone to flooding due to its location along the Ciliwung River, yet it remains a place of residence for thousands of residents due to economic factors and accessibility to the city centre.

These conditions show that Kampung Melayu is a clear example of a densely populated residential area that has not only experienced physical degradation, but also social and ecological irregularities. Addressing such areas cannot be done through a purely sectoral approach, but requires a holistic spatial approach. The planning of densely populated areas requires integration between the evaluation of existing conditions, compliance with spatial planning regulations, and an understanding of the social and historical context of the area.

In the context of urban design theory, Hamid Shirvani (1985) offers a systematic conceptual framework for evaluating the quality of the built environment. According to Shirvani, there are eight key elements of urban design that need to be considered in area planning: 1) land use, 2) building form and mass, 3) circulation and parking, 4) open space, 5) pedestrian pathways, 6) supporting activities, 7) signage and orientation, and 8) area image. This theory is relevant in analysing densely populated areas like Kampung Melayu, as it can reveal the functional, visual, and social aspects that influence the comfort and sustainability of urban spaces (Shirvani, 1985).

A number of previous studies have used Shirvani's approach to evaluate the quality of residential areas, but few have directly linked it to the local historical context and conditions of extreme density such as those found in Kampung Melayu. In fact, historical value and long-established social structures can be potential assets in formulating planning strategies that are not only technical but also contextual. Therefore, it is important to integrate urban design approaches with historical understanding and local character as the basis for planning decisions.

This study aims to analyse the existing conditions of Kampung Melayu using eight elements of urban design according to Shirvani, and compare them with national regulatory standards such as SNI 03-1733-2004, Law No. 26 of 2007 on Spatial Planning, and the Jakarta Capital Region Spatial Plan (RTRW) 2022–2042. The analysis was conducted through direct field observations, literature reviews, and spatial interpretations of land use and the circulation system of the area (Badan Standardisasi Nasional, 2004).

It is hoped that the results of this study will provide a comprehensive overview of the issues in Kampung Melayu and formulate recommendations for contextual, humane, and sustainable urban planning. These findings are also expected to serve as a reference for local governments, academics, and urban planning practitioners in addressing similar conditions in other urban areas.

## **RESEARCH METHOD**

This study uses a qualitative descriptive approach with direct observation methods in the Kampung Melayu area, East Jakarta. The focus of observation was directed at densely populated residential areas located slightly away from the banks of the Ciliwung River, but still within the administrative area of Kampung Melayu. The selection of this location was based on environmental characteristics that reflect typical dense urban areas in Jakarta: high building density, narrow circulation routes, mixed use of space, and a lack of green open spaces.

Data collection was conducted through direct field observations, supported by visual documentation in the form of photographs of existing conditions such as narrow alleys, building masses, environmental signage, and informal economic activities. Additionally, data was obtained through literature reviews of spatial planning documents such as the Jakarta Capital Region Spatial Plan (RTRW) 2022–2042, SNI 03-1733-2004, and other spatial planning regulations. Visual and textual data were then analysed based on Hamid Shirvani's theory of the eight elements of urban design, namely: land use, building form and mass, circulation and parking, open spaces, pedestrian paths, supporting activities, signage and orientation, and area image.

The analysis was conducted descriptively and evaluatively by comparing the actual conditions of the area with the ideal parameters formulated in Shirvani's theory and national planning standards. Through this method, the study aimed to identify the main spatial problems in Kampung Melayu and formulate contextual, adaptive, and locally-based recommendations for the densely populated urban area.

## **RESEARCH RESULTS AND DISCUSSION**

### **The existing conditions of the Kampung Melayu area reviewed from eight elements of urban design according to Hamid Shirvani**

Densely populated residential areas in large cities such as Jakarta reflect major challenges in managing urban spaces that are humane, function optimally, and are sustainable. Kampung Melayu, as one of the historic areas in East Jakarta, is a typical example of the dynamics of densely populated urban areas that have grown organically, without strict planning. Amidst limited space, high socio-economic pressures, and inadequate urban infrastructure, this area has developed in response to the daily needs of its residents. However, it is precisely in such conditions that theory-based urban design evaluations become crucial as a foundation for developing targeted redevelopment strategies.

To identify spatial issues in Kampung Melayu, Shirvani (1985) theory of Urban Design Elements was used. In *The Urban Design Process*, Shirvani formulated eight elements that can be used to assess the quality of the built environment of an urban area, in terms of function, form, and perception. These eight elements not only assess visually, but also consider spatial efficiency, user comfort, circulation functionality, and the strength of the area's identity. The use of Shirvani's theory in this study provides a structural approach to evaluating complex, densely populated environments such as Kampung Melayu.

The use of this evaluation framework is increasingly relevant when compared to national standards and regulations such as SNI 03-1733-2004, RTRW

DKI Jakarta 2022–2042, and Law No. 26 of 2007 concerning Spatial Planning. All three establish normative guidelines regarding spatial functions, open spaces, road systems, and healthy living spaces in urban areas. Thus, the analysis in this study is not only theoretical but also normative, i.e., to what extent the conditions in Kampung Melayu deviate from or align with existing spatial planning standards.

Field observations indicate that most of the urban design elements developed by Shirvani have not been properly implemented in this area. The existing conditions reveal extreme spatial density, a lack of public spaces, narrow alleys, and poorly organised building structures. Despite this, the area still exhibits high social and economic vitality, reflected in the widespread micro-scale household activities. Therefore, area planning cannot be solely focused on physical aspects but must also consider social, historical, and cultural factors.

The following discussion elaborates on each element of Shirvani's urban design based on observations, visual field data, and relevant regulatory standards. This analysis forms the basis for formulating recommendations for the contextual and applicable redevelopment of dense settlements in Kampung Melayu.

#### **Land use**

Land use in Kampung Melayu is mixed and has developed without clear micro-zoning. Along a single street, one can find residential houses, shops, laundries, workshops, and public facilities such as hospitals and universities. This mixed land use is a form of adaptation by residents to spatial constraints, but in the context of spatial planning, it has the potential to cause conflicts of use, irregular circulation, and a decline in environmental quality. According to Shirvani, ideal land use should have a rational and hierarchical distribution of functions. SNI 03-1733-2004 also stipulates that there must be a minimum separation of residential, commercial, and open space functions to ensure comfort. The absence of micro-zoning also complicates evacuation planning and utility provision.

#### **Building Form and Massing**

Buildings in this area are constructed close together with almost no space between them, without consideration for sun orientation, cross ventilation, or boundary limits. Houses are generally 1–2 storeys high, built according to the economic means of the owners without technical supervision. This contradicts the basic principles of urban design, which emphasise visual hierarchy, volume regularity, and control of the Building Floor Area Ratio (BFAR) and Building Floor Area Coefficient (BFAC). The absence of evacuation routes and poor air circulation also affect thermal comfort and fire safety. According to Alexander et al. (1977) in *A Pattern Language*, building mass configurations should consider transition spaces, public-semi-private spaces, and privacy.

#### **Circulation and Parking**

Circulation conditions in Kampung Melayu are very limited. The width of main roads such as Jalan Kampung Pulo is relatively narrow, while alleys are only 1–2 metres wide, which is not wide enough for emergency vehicles to pass through. Private vehicles are parked on the road or pavement because there is no formal parking area. This situation contradicts Law No. 22 of 2009 on Road Functions and Ministry of Public Works Regulation No. 03 of 2014 and the Normative Law in Indonesian Constitutional (Pratama & Apriani, 2023), which mandate minimum width requirements for circulation lanes. According to Shirvani

(1985), the circulation system must ensure connectivity between spatial functions and accessibility for users of various modes of transport.

### **Open Space**

Open spaces in this area are very limited. There are almost no yards, and public land has been fully utilised for residential or economic activities. Although there are inspection paths along the riverbanks, their function is more for circulation than for social or ecological purposes. However, according to Law No. 26 of 2007, at least 30% of urban areas must be allocated as open space, with at least 10% as public green open space. The lack of open space directly impacts air quality, microclimate, and social interaction among residents.

### **Pedestrian Ways**

Sidewalks and pedestrian paths are almost non-existent. Alleys are shared by motorcycles and pedestrians, causing a high risk of accidents. The surfaces are uneven, narrow, and often used for parking or trading. These conditions are in stark contrast to Ministry of Public Works and Housing Regulation No. 03 of 2014, which mandates a minimum pedestrian path width of 2.5 metres, accessibility for people with disabilities, and adequate lighting. Shirvani emphasises that pedestrian circulation is a crucial element in creating an inclusive and comfortable city.

### **Activity Support**

The Kampung Melayu area shows high economic and social activity. Food stalls, laundromats, photocopy shops, schools, and even hospitals are all located side by side in one area. Unfortunately, these activities are not supported by adequate infrastructure and spatial planning. As a result, there are circulation disruptions, conflicts between space users, and uncontrolled density. According to Jacobs (1992) in *The Death and Life of Great American Cities*, microeconomic activities are important for urban life, but they must be organised so as not to disrupt the primary functions of the space.

### **Signage and Wayfinding**

The lack of directional signage is one of the obstacles to spatial orientation in Kampung Melayu. There are few alleyway markers, and there are no maps or directional information. This makes the area difficult to access for outsiders or in emergency situations. According to Shirvani, orientation systems are part of a city's imageability and are very important in building the legibility of urban spaces for residents.

### **Imageability**

Although Kampung Melayu has strong historical value and cultural identity, the image of the area is marred by a chaotic and crowded visual environment. There are no strong visual markers, building facades are untidy, and there is a lack of public space. This hinders the formation of a strong spatial identity. The concept of imageability developed by Kevin Lynch (1960) shows that the visual legibility of a city is very important for building area identity and a sense of place.

By reviewing the existing conditions of Kampung Melayu through Hamid Shirvani's eight elements of urban design, it can be concluded that most of the elements have not been optimally fulfilled. This area reflects the typical reality

of dense urban settlements in Indonesia—where spatial growth occurs organically, adaptively, and responsively to the economic needs of residents, but is not guided by a structured spatial framework. The absence of micro-zoning, narrow circulation routes, limited open spaces, and irregular building mass forms reflect the weak application of the fundamental principles of human-centred, functional, and sustainable urban design.

Despite its high social and economic vitality, this condition has the potential to cause functional conflicts, a decline in environmental quality, and spatial discomfort that hinders the development of a healthy and inclusive living environment. Within the framework of Shirvani's theory, this area is still far from meeting the criteria of a well-structured city with a clear spatial hierarchy and the ability to create a strong area identity. Even the minimal orientation and signage systems, coupled with the absence of safe pedestrian spaces, exacerbate the alienation of public spaces from their function as shared spaces.

Furthermore, the discrepancy between actual conditions and national spatial planning standards such as SNI 03-1733-2004, Law No. 26 of 2007, and the Jakarta Spatial Plan 2022–2042 indicates the need for more substantial intervention strategies. It is not merely about physical revitalisation, but also about formulating context-based designs that can accommodate community dynamics, the historical value of the area, and spatial constraints. The application of Shirvani's theory in this context is not merely as a measurement tool but also as the foundation for developing a holistic concept for the planning of densely populated areas.

### **Inconsistencies between Urban Design Elements and Planning Standards and Spatial Representation in the Kampung Melayu Area**

An evaluation of the Kampung Melayu area using Hamid Shirvani's eight elements of urban design approach has revealed various complex spatial issues. However, these findings become more significant when further examined by comparing them to national and regional planning standards, namely SNI 03-1733-2004 on Guidelines for Residential Area Planning, the Jakarta Timur Regional Spatial Plan (RDTR), and the Jakarta Capital Region Spatial Plan (RTRW) 2022–2042. These three documents contain technical and normative principles for urban spatial planning that should serve as a reference for the development of residential areas, including densely populated areas like Kampung Melayu.

However, field observations show that most urban design elements in Kampung Melayu do not yet meet these standards. This non-compliance is not only administrative in nature, but also evident in the physical form and spatial structure that can be directly observed through visual documentation of the area.

#### **Land Use**

The Kampung Melayu area has developed organically with no clear zoning of land use. Residential areas, small and medium-sized enterprises, schools, places of worship, and health services are mixed together in a single corridor without clear functional boundaries. According to the East Jakarta RDTR, this zone is classified as R3 (high-density housing), but it must still comply with spatial function divisions. This irregularity violates Articles 5 and 11 of the DKI Jakarta RDTR, which require clarity of function and spatial integration between units. Building Form and Massing.

Most buildings do not comply with GSB (building boundary lines), KDB (building base coefficient), or KLB (building floor coefficient). SNI 03-1733-2004 requires natural lighting, cross ventilation, and a minimum distance of 1.5 metres between houses—something that is almost never found in practice.

### **Circulation and Parking**

The majority of neighbourhood roads are narrow alleys (<2 metres) that cannot be accessed by emergency vehicles. PUPR Regulation No. 03/PRT/M/2014 stipulates that the minimum width of neighbourhood roads in densely populated areas is 3 metres. In addition, illegal parking on roads and pavements hinders pedestrian access and circulation.

### **Open Space**

According to Law No. 26 of 2007, at least 30% of a city's area must be open space, and 10% must be public green space. In Kampung Melayu, there is almost no adequate open space. The only open space is a river inspection road, which is not used for social or ecological purposes.

### **Pedestrian Path**

Sidewalks are either unavailable or very narrow, often used for trading or parking. PU Regulation No. 03/2014 states that sidewalks must be at least 2.5 metres wide, non-slip, and disability-friendly. None of these standards are met.

### **Activity Support**

Although economic activities such as food stalls, laundromats, and small shops are active in the middle of the village, they are not supported by formal zoning or official business permits. SNI 03-1733-2004 actually allows mixed zones as long as they are supported by adequate circulation, which is absent in this area. Signage and Orientation.

The lack of navigation systems such as signboards, maps of the area, and alley information makes the area difficult to navigate. This violates Shirvani's principle of spatial orientation and does not comply with SNI 03-1735-2004 on urban information systems.

### **Imageability**

The image of the area is very weak due to the absence of landmarks, open spaces, or distinctive visuals that reinforce local identity. In fact, the Jakarta Spatial Plan emphasises the importance of revitalising areas with high historical value, such as Kampung Melayu.

By reviewing the existing conditions of the Kampung Melayu area through the lens of Hamid Shirvani's eight elements of urban design and comparing them to planning standards such as SNI 03-1733-2004, the Jakarta Timur RDTR, and the DKI Jakarta RTRW 2022–2042, it can be concluded that this area exhibits significant disparities between theory, regulations, and on-the-ground reality. The inconsistencies are not limited to one or two aspects but are widespread across nearly all elements: from unstructured land use, building forms and masses that disregard safety and comfort aspects, to the scarcity of open spaces, pedestrian pathways, and spatial orientation.

This situation reflects the weak implementation and supervision of spatial planning policies, as well as the lack of synchronisation between the needs of residents and the technocratic approach to urban planning. Organically grown

areas such as Kampung Melayu have complex social, economic and historical dynamics, so that normative planning approaches are often ineffective if they are not adapted to the local context. This mismatch between regulations and reality is clearly evident in the dense, narrow, and unstructured spatial form of the area, as reflected in the field photographs and zoning maps accompanying this analysis.

Spatially, the fragmented form of the environment shows a lack of integration between spatial functions and accessibility. The absence of public open spaces, sidewalks, signage, and evacuation routes are important indicators that the quality of life of the community has been neglected in physical development. This not only impacts environmental comfort but also increases the risk of disasters and exacerbates social inequality. In this context, Shirvani's approach, which emphasises aspects of spatial legibility, accessibility, visual orientation, and area identity, is highly relevant for uncovering the structural weaknesses of densely populated areas like Kampung Melayu.

On the other hand, these findings also emphasise the importance of urban planning that is not only based on regulations and technical standards, but also adaptive to the realities on the ground. The evaluation using Shirvani's theory has opened up space for a more comprehensive understanding of the limitations and potential of the area, so that future planning can be more contextual and based on the real needs of residents. In other words, the process of redeveloping densely populated areas such as Kampung Melayu requires an integrative approach that considers social, economic, historical, and ecological aspects.

Therefore, these findings of inconsistencies are not merely intended as criticism of the weak implementation of urban planning, but as a strong basis for developing a more humane, inclusive, and sustainable redevelopment strategy. A collaborative approach between the community, local government, and urban planners is essential to reconstruct living spaces that are not only functional but also dignified and have a strong cultural identity.

## **CONCLUSION**

Based on the results of an urban design study in the Kampung Melayu area, it can be concluded that most of the eight elements of urban design according to Hamid Shirvani have not been optimally fulfilled. This area has developed organically without adequate planning control, characterised by extreme building density, irregular spatial functions, a lack of open spaces, and infrastructure that does not meet technical standards. This mismatch becomes even more evident when compared to spatial planning regulations such as SNI 03-1733-2004, the Jakarta Timur RDTR, and the DKI Jakarta RTRW. Land use is not organised according to micro-zoning, buildings violate setback lines and floor area ratios, and there is a lack of adequate public spaces. Visualisations of the area reveal a fragmented, narrow, and chaotic spatial form. These issues indicate that top-down, normative planning has failed to address the complexity of densely populated and historically significant areas like Kampung Melayu. Nevertheless, the area still possesses strong social, economic, and historical potential. Local identity, microeconomic activities, and cultural values embedded in the community constitute important social capital for a more human-centred and contextual planning approach. Shirvani's urban

design approach has proven effective as an evaluation framework for identifying issues and designing area planning based on community needs.

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