

## Tracking The Urban Fabrics of Kuching Waterfront

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### ABSTRACT

Kuching Waterfront menarik peneliti untuk mengevaluasi signifikansi dan kontribusinya terhadap desain perkotaan. Konsep urbanisasi yang dianut masyarakat saat ini terkait dengan kehidupan utilitarian telah melampaui setting suatu tempat. Tulisan ini mengkaji elemen perkotaan melalui teori-teori yang mengkaji peran penting yang saling mempengaruhi dalam memahami dan meningkatkan karakter tempat. Analisis elemen perkotaan sepanjang Java Lane yang merupakan lokasi awal Kuching waterfront hingga Apartemen Riverside seluas 1,3 kilo meter dibuka pada tahun 1993. Dengan mengkaji infrastruktur jalan, ruang publik, dan fitur arsitektur beserta gagasannya berdasarkan teori Lynch, Shirvani, Weisenburger, Hillier dan Hanson, penelitian ini mengkaji struktur perkotaan yang berkontribusi terhadap konteks dan perannya dalam lanskap kota. Data-data dikumpulkan dengan cara observasi lapangan dan wawancara. Kajian dilakukan dengan cara menelusuri struktur rumit tepi laut, dan berfokus pada signifikansi dan tantangannya. Temuan penelitian berkontribusi pada pengembangan pemahaman mengenai peran jalan dalam lanskap perkotaan serta menawarkan rekomendasi untuk mendorong pembangunan perkotaan berkelanjutan di Kuching.

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*Kuching Waterfront attracts researchers to evaluate its significance and contribution to urban design. The concept of urbanization in today's society related to daily utilitarian living outlives the setting of a place. This paper examined the urban elements through the theory forwarded by leading scholars and examined the crucial role interplay in understanding and enhancing the character of the place. The analysis of the urban elements along Java Lane as the outset of the waterfront's location in Kuching stretch until the Riverside Apartment that covers 1.3 kilo meters was declared open in 1993. By examining road infrastructure, public spaces, and architectural features along with ideas based on the theories of Lynch, Shirvani, Weisenburger, Hillier and Hanson, this research examines urban structures that contribute to context and their role in the urban landscape. Data was collected by means of field observations and interviews. The study was carried out by tracing the intricate fabric structure of the waterfront and shedding light on its significance and challenges. The research findings contribute to the development of understanding of the role of roads in the urban landscape and offer recommendations to promote sustainable urban development in Kuching.*

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## 1. Introduction

Kuching Waterfront is located at the lush riverine site and one of the earliest settlements in Kuching, Sarawak (Figure 1). The expansion and spread of settlement on both sides of the river are vital indicators of development (Chin et al., 2020; Wahid et al., 2021). As more settlements stretch out from the riverfront, farther away from the water itself, it is a sign of successful development of the area as society ventures into utilizing more land ethically while also increasing accessibility and road connections into other districts and divisions.

James Brooke, a British adventurer, landed in Kuching in 1839 and befitting the recorded history that mesmerized the romantic story of this area (Yassin et al., 2015). As the security of the Kuching River was established in the early years, the Chinese migrants were attracted by its navigable waters and potential for trading ports for the exchange of goods locally and regional business for British interests (Azlina et al., 2016; Azmah & Wahid., 2023). This led to rows of shop lots built along the Java Lane until Main Bazaar. These areas were developed and served as a marketplace during the Charles Brooke's government; the area also functioned as a trading post and shipping dockyard. The marketplace extended from Ban Hock Wharf to the Square Tower, consisting of the segmented market that sold sea products, fruits, and poultry later became the Pasar Ceko, which was demolished for waterfront development. Over time, Lebuh Java and the whole stretch of the riverine (Figure 2) became a bustling hub of activity, with Ban Hock Wharf as the traders' centre for loading and unloading of goods either regionally or from overseas. The Indians, Chinese, and merchants exchange goods and mineral resources from upcountry to the downtown.



Figure 1. The Sarawak River and its Vicinity

In the early month of 2008, the marketplace and wharf were shut down and demolished for the waterfront extension (Azmah & Wahid., 2023). The vendors were then relocated to a newer market at Tabuan Laru and Satok Road. Since then, the juncture of

the waterfront begins at Lebu Java has experienced a decline in activity and vitality. The demolition of the marketplace and wharf disrupted the traditional trading and cultural activities that once took place in this area. The relocation of vendors to Tabuan Laru also resulted in a loss of the vibrant atmosphere that was once synonymous with Lebu Java and the whole stretch until Main Bazaar.



Figure 2. An Aerial view of the riverine frontage

After the completion of the waterfront, it changed the urban landscape of Kuching, and it complements the existing activities along the riverine and the old town of Kuching. The urban linkage that interweaved the existing secondary activities at India Street and the primary activities at the landing platform from the village settlements across the Sarawak River enriched the urban activities (Abdullah et al., 2022; Wahid et al., 2021) as propagated by Jacobs (Fuller & Moore, 2017; Jacobs, 1965). The existing urban fabrics at the waterfront bestow the natural features of the riverine, the village settlements, and the traditional activities that couldn't be found elsewhere in any new development. Although the physical development along the waterfront only enhanced the urban street furniture and the path organized according to the cultural pattern of the local dwellers, the linkage and integration of primary and secondary use of the urban phenomenon enliven the existing waterfront. The urban fabrics and pattern of the path are enriched with intricate Dayak, traditional Malay, and Melanau designs, which are presented in the urban street furniture. Although it does show the conscious integration visually, however, it helps to show the presence of ethnic participation at the waterfront development. The buildings facing the waterfront are two-storeys shophouses of average design from the early years of the Chinese and Indian Muslim migrants to Kuching (Karsono et al., 2021).

## 2. Material and Method

The city's form should be "imageable", coherent, and clear, creating a visually pleasing and symbolically representative landscape (Lynch, 1964, 1984). This requires a physical reshaping of the urban environment and a new attitude on the part of the city dwellers. The understanding of seeing and visual perception is crucial in the development

of the city's image. A highly developed art of urban design is linked to the creation of a critical and attentive audience, resulting in daily enjoyment for the city's inhabitants.

The five elements of the city's image, namely paths, edges, districts, nodes, and landmarks, that have been highly regarded in the field of urban planning and design were applied to prove the comprehensive urban fabrics (Lynch, 1984; Thomson et al., 2017). Paths refer to the channels along which people move, such as streets, walkways, and transit lines, or even canals and rivers. They are important in shaping the overall image of the city and how people perceive it. Meanwhile, edges are the boundaries or transitions between different areas or elements in the city. They can be physical features like riverbanks or walls, or they can be visual or perceptual boundaries. Other than that, Lynch also speaks about districts, which are areas within the city that have a common identity or character. Wahid et al. (2021) do not consider the edge as the termination of physical continuity of the urban fabrics, yet it can be defined by their function, architecture, or cultural significance in considering the objective of the development. Next, nodes are points of concentration or intersection within the city, such as squares, plazas, or intersections. They often serve as gathering places or focal points that can be interacted with or entered by the users. In contrast, landmarks are prominent physical objects or features that serve as reference points in the city and cannot be entered by the general user. They can be buildings, signs, or natural features, and they help people navigate and orient themselves within the urban environment. All these elements are not subjective to literal interpretation; however, the way the designer or urban dwellers interpret the urban elements based on their familiarity and regularity of the area.

On one hand, Hamid Shirvani's (Shirvani, 1985) highlighted urban design involves the collaboration between the public and private sectors in achieving common goals and improving the quality of the environment. According to his observation, the type of land use determines the function and purpose of different areas within the city. This includes the allocation of space for residential, commercial, industrial, and recreational purposes. On the other hand, Jacobs (1965) criticised the zoning system of urban land use that led to the failure of urban activities. By strategically planning and optimising land use, urban designers can create a balanced and harmonious environment that meets the needs of the community. Based on the land use, the form and massing of buildings and open spaces then play a crucial role in creating a visually appealing and cohesive urban landscape, providing a sense of harmony and balance within the cityscape.

Whilst Bradley Weisenburger (Bradly, 2013) included the visual analysis portrayed by the height and width of the façade, as well as its proportions, geometry, and architectural features of the urban place. He stressed on the entrance of the urban environment is crucial because it helps to enhance the image of the city. He concluded that the linkage of a building feature to its environment helps to reflect its identity. Visual analysis can help one to understand how visual material communicates and functions, whether it develops meaning, stimulates emotion, or creates a mood (Abrams, 2021; *MADA: Visual Analysis, The Essence of Visual Analysis*, 2022).

Hillier and Hanson's on "Space Syntax (Hillier et al., 1976) mentioned a theoretical framework and analytical method that examines the relationship between spatial configuration and human behaviour in urban design. It focusses on understanding how the layout and connectivity of urban spaces influence movement patterns, social interactions, and accessibility. Space syntax helps to analyse the spatial properties of urban environments, such as street networks, building layouts, and public spaces, to identify patterns and relationships (Pafka et al., 2020; van Nes & Yamu, 2017). By using techniques like axial analysis and visibility graph analysis, space syntax can quantify and visualize the spatial characteristics of urban areas.

Gordon Cullen emphasized the importance of creating a cohesive and visually pleasing urban environment in "*Townscape*" (Cullen, 1961; Guy, 2023). He argues that superficial decorative elements, such as bollards and cobbles, do not contribute to the true essence of the townscape. Instead, he advocates for a deeper understanding of the relationship between man and the environment and the need for effective communication between planners and the community. This includes design factors like scale, proportion, visual coherence, and the manipulation of elements like light, height, and enclosure to create a more engaging and harmonious urban experience. He highlights the significance of these elements in enhancing the overall aesthetic quality of urban spaces. In terms of serial vision, he mentions that the image formed by walking around the city can help to give the observer an interesting experience. The visual stimuli start unfolding, forming an evolving visual experience (Guy, 2023).

This paper was started by the researcher along the Kuching Waterfront, starting from Java Lane until the Golden Triangle, i.e., Jalan Tunku Abdul Rahman. Few techniques of data collection were employed to enrich the findings. The combination of a case study technique, digital analysis, and observation were also engaged. The case study focused on a specific urban area to analyse and evaluate the impact of urban design strategies on the sense of place and activities of the community. By integrating the urban design principles and theory, the researcher seeks to understand the effectiveness of the implemented strategies in fostering a sense of neighbourhood and promoting a sustainable environment.

(i) *Digital Analysis*

The data in this report is sourced from credible online publications, research websites, and certified sources. A variety of reliable sources is applied to ensure a comprehensive understanding of urban typologies within the site. The compiled information is presented through text and graphics formats for enhanced reader comprehension and future reference.

(ii) *Observation*

The observation technique complements the case study where the vicinity of Lebu Java (Figure 3) until the Golden Triangle exposed the colour of the urban fabrics. Both direct observation and participant observation techniques were employed to relate the urban elements with the theory forwarded by the urban designer's scholars. The data was collected through

careful observation of the area and analysed to gain critical insights into the functioning and development of the urban features.

*(iii) Photo-tracking*

As a saying goes, “a picture paints a thousand words”. In architecture and urban design studies, the scenic frame to represent the context of the study area is indispensable. The location of the landmarks, nodes, district, edge and path were tracked to assist in the study. From here, the understanding of the urban language can be comprehended (Lynch, 1964).

### 3. Result and Discussion

Judging from the theoretical elements mentioned earlier, the stretch of the waterfront, the buildings, the path, the district, the landmark, and the edge are clearly shown in the study. Table 1 shows the presence of each element as explained in the study. Hillier and Hanson's Syntax Analysis demonstrates the axial analysis that is present at Lebu Java as a starting point of pathways until the 1,3 km stretch for an axial visual to the scenic view of the riverine across as well as the continuity of the pathways. Thus, the existence of movement and connectivity in space is recorded. Meanwhile, the other side is well connected to the rest of the waterfront, providing fluidity in movement and a sense of direction.

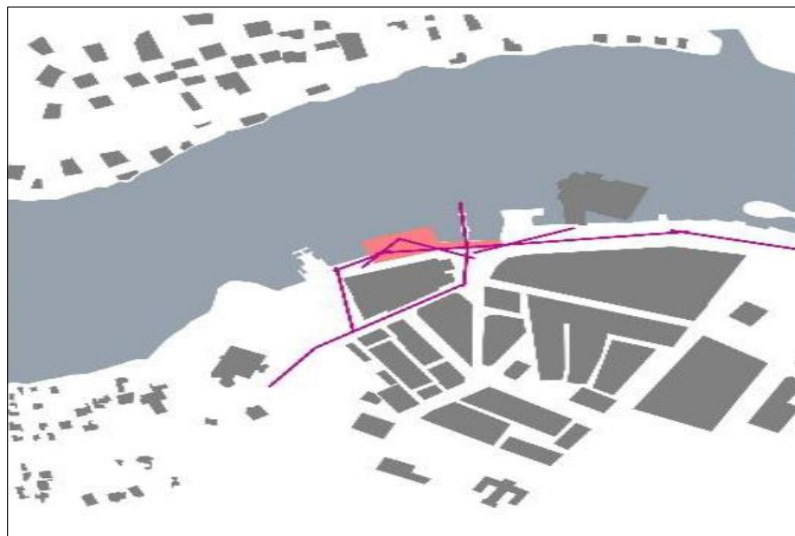


Figure 3. Axial analysis of Lebu Java Street

Besides, Lynch (1961) dictates that the district nodes emerge as points of activity and interaction. These nodes can be seen in the form of bustling marketplaces, cultural centres, and gathering spaces where people come together. Although the marketplace is no longer here, the spirit of the marketplace is upheld by the activities at India Street and spice shops at Main Bazaar, which is just five meters away from the waterfront (Figure 4 and 6). They serve as focal points within the urban fabric and contribute to the vibrancy

of the community. These are the following nodes and landmarks that can be found on site. In the case of the waterfront, the site is surrounded by shop lots and commercial and government land use. This marked the area as a historical trading area, and the land had been preserved for tourist trading and attraction purposes. The visually appealing old shop lot and the open space in the area create space for people to leisure, recreation, and purchase eateries and goods. Most of these shops are converted into cafes, restaurants, and family eatery places to cater to the locals and tourists who frequent the waterfront.

Shirvani also mentioned the impact of parking on the city's fabric. Parking is an essential component of urban design, as it has significant implications for traffic flow, accessibility, and the aesthetic appeal of the city. Properly designed and integrated parking areas can enhance the overall image of the city, while poorly planned parking can disrupt the flow and visual coherence. Meanwhile, around the waterfront, based on observation, carpark space is insufficient. Historically, the site is not for cars except for the loading and unloading of the goods at the wharf. The opening of the alley at Ban Hock Lane further causes a slowing down of traffic as people keep finding places to park.

**Table 1. Theoretical Elements**

ELEMENTS	LYNCH	WEISENBURGER	HILLIER & HANSON	GORDON CULLEN
Path	V	V	V	V
Landmark	V	V		
Node	V	V	V	V
District	V	V	V	
Edge	V	V		

(Source: Wong et al 2023)



Figure 4. The edge formed by the river (left) & the path that is shaped following the river (right).

Shirvani and Trancik highlight the importance of public spaces in urban design, emphasizing their role in promoting social interaction and community engagement (Figure 5). These spaces, including parks, squares, and plazas, foster a sense of belonging and support activities both within and around buildings. As well as pedestrian ways, which are an essential element of urban design connecting different parts of the area, providing comfort, supporting retailing, and promoting a human-scale system. Similar at the waterfront, a huge pedestrian pathway was provided leading to the whole stretch.

However, even with the huge space provided, not a lot of activity is spotted on site except for the sunset viewing deck and ongoing installation of the kiosk.



Figure 5. The bustling of the waterfront during regatta night's event



Figure 6. Old shop lot along Lebuhraya Java Street

Furthermore, Shirvani also emphasizes the importance of preservation in urban design to maintain the cultural, economic, social, and planning benefits of the urban fabric. This can be seen with the preservation of old shop lots near the site and some of them still maintain wood as the upper floor structure. In the waterfront case, the site is surrounded by two or three-storey high buildings (spanning roughly 12 m). The colourful shop lots are distinguishable with their "kaki lima" architecture and the multiple small windows on top. On the left side, Brooke Dockyard reminisces about the old factory steel architecture as its previous function to repair ship, separating its looks from the shop lot. The site is also surrounded by greenery, which softens the tone of the tar pavement of the site. The traditional summerhouse, as claimed by the locals situated at this green space, is used for shelter while waiting for the boat, and it became fully utilized during the regatta festival.

In Cullen's perspective, a "place" is not merely a physical location but a complex interplay of various elements that contribute to its overall identity and atmosphere. He also mentioned the importance of place in urban design. The sense of partially owning a public space helps people to generate experience and from activities within invisible (or visible) site boundaries. Next, Cullen also described "content," the architecture detail that existed on site. This can be referred to as the colours, style, scale, and uniqueness of the buildings. However, given how much change the buildings around the site had undergone previously, it is hard to tell as the buildings have a similar style. Example figure for comparison from the same area.



#### 4. Conclusion

The analysis of the waterfront in Kuching draws on urban planning theories such as those of Lynch, Shirvani, Weisenburger, Hillier & Hanson, and Gordon Cullen and demonstrates the historical, cultural, and architectural significance of the street. The evolution of the waterfront from a dynamic market to its current state reflects the dynamic development of Kuching. This may be the beginning of the physical development of the Sarawak riverine and alternative activities nowadays; perhaps in the future, along with digital technology, the waterfront may experience a more extensive design.

Shirvani's principles emphasize the importance of protecting cultural heritage, optimizing land use, and integrating parking solutions. Weisenburger's visual analysis highlights unique architectural features, while Hillier and Hanson's space syntax highlights connectivity in the waterfront. Kuching by nature is still holding to the rules and regulations of the state of Sarawak in all development strategies. The vision 2030 of Sarawak is aligned with the physical, social, and economic development of the state. Culture as the main ingredient in the development is considered by the state as the essence of propagating harmony, especially since Sarawak consists of more than 20 ethnicities.

Despite a decline in vitality, post-waterfront redevelopment helps to assess the success of the development and provides a foundation for recommendations. Preserving history, optimizing land use, enhancing connectivity, and promoting community engagement are essential for rejuvenating the waterfront and contributing to Kuching's urban fabric. This synthesis offers a holistic understanding, guiding future interventions to honour the street's heritage while addressing contemporary challenges.

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