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## ANALYSIS OF URBAN DESIGN ELEMENTS WITH A CASE STUDY AT HERITAGE BUILDINGS AND FISHERMAN VILLAGES, GEORGE TOWN, PENANG



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### ABSTRACT

This paper studies the urban transition characteristic between heritage buildings and fisherman villages in George Town, Penang. This study has been done by analyzing the five urban design elements by Kevin Lynch (1960), with experiencing the site through a visit, and observation on site, also with studies of literature reviews from publishing journal, articles, and online resources. This study shows that the hierarchy of urban design elements perceived by the observer, of the colonial and traditional in the case study site are noticeable although they may differ in appearance from one another. Studies concluded the hierarchy among five urban design elements found are district and edges defined by the presence of local culture which influence the development of modern urban and tourism in George Town, Penang.

**Disciplinary:** Architectural Sciences.

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## 1. INTRODUCTION

Deeper research and implementation of urban planning started to take place in Malaysia after Independence Day was announced. However, for Penang, as it was being associated amongst three federated cities the 17<sup>th</sup> century by British, had been going through massive development comprises of modern and heritage elements. These two significant identities are visible depending on the development of the city area. Being the capital city of Penang, George Town poses interesting traits of cultural assimilation within the tangible and intangible lifestyle of the people. In an attempt to preserve and conserve this heritage value brought by the colonization period, especially in the inner city of George Town area, Penang government has adopted various laws and heritage conservation policies. It was designated in such there are specific building guidelines must be followed by land or building owners.

Similar goes to other federated states in Malaysia, all the heritage buildings and areas have been

protected under the famous world association of UNESCO (United Nations Educational, Scientific and Cultural Organization) for World Heritage Site Categories. Both are well recognized for their significant charming ancient heritage and historical cultures, besides posing a good tourism market. In particular, this heritage element has influenced not only the lifestyle of its George Town people but also has vivid masterplan design within the stretch of the inner city to the surrounding Chinese jetties. Population growth stated by Department of Statistics Malaysia in 2018, Penang has more than 1.7 million people and concentrated in George Town area.

Urban City, as mentioned by Kevin Lynch (1960) in his book of “The Image of The City” is stated that there are no specific rules or “mandatory” for an area to be recognized as urban, but it can be identified by the image based on form and function. This has been widely accepted by the public, specifically on the physical appearance, use, and location about its immediate context. The literature review will further discuss all the five elements of urban study which are paths, nodes, edges, districts and landmarks. According to Buchanan (2011), it is vital for urban areas to capture certain qualities or that is associated with the traditional city, which is the sense of place, order, transition or continuity and richness of experience and belonging. This lies in between planning for people and architecture.

Nevertheless, urban design requires full cooperation from broad streams of works such as architects, town planner, quantity surveyor, contractor, engineer and city councils to make it happened.

## **2. LITURATURE REVIEW**

Urban design as explained by Peter Webber (2010) city, will be molded throughout time. For others, it means bridging the gap of a concrete building with the activities, and all these will soon form the image or identity for one city. According to Pete Bachelor, David Lewis, from the American Institute of Architects, define a city as a design in an urban context. As architect Peter Buchanan stated that urban design is imperatively about place-making, where a place is not specifics space, but all activities and events make it possible written in “The Architecture of Town and Cities” (Spreiregen, 1965).

In reality, the environment is about what is being perceived and, noticed and its effect on this perception will determine whether the surrounding is observed has an identity. Carmona et al., (2003) also contend that appreciation is also a product of appreciation of perception and cognition in which it relates to interpretation, processing information in the way which it appeals our minds and emotions. They argue that awareness of environmental experience and perception of place is an essential dimension of urban design.

### **2.1 IDENTITY OF HISTORICAL CITY**

In the past, when the pace of development was rather slow, there was enough time given to consider the effects of each new building that was added to the streets (Samsudin, 2011). Although the building was designed and built by different people, the final output was usually a unique composition achieved through a principle of variety within uniformity. That is why many old cities have a more charming townscape because the art of weaving was done that arouse the emotional reaction through a clever interplay of positioning of buildings and spaces created. The significant difference between remarkably old townscape and the contemporary one is the attention to details that are often associated with the historic townscapes.

Historic townscapes are associated with the earliest settlement of the town or locally known as the old town centre, where the genius loci or the spirit of the locations can be traced (Samsudin, 2011). One can even regard the historic townscape as signifying the soul of the town or city exposing the character of the town and the secret of past trapped within its fabric. Lang (1987) based on Gestalt law, this often associated with the image of the city since the visual organisation that refers the relationship of the object. There is also a slightly different version of this definition of identity which its emphasis on its experiential rather than its visual characteristics. Relph (1976) stated that the notion of identity as being an expression of adaptation, assimilation, accommodation and socialisation of knowledge of each other.

Since places have meanings, they are characterised by the beliefs of man and have historical components (Teo and Huang, 1973). This is related to the George Town area, where the site was chosen has two distinct images.

### **2.1.1 GRIDIRON CITY**

The most obvious characteristic that can be perceived from Historical part George Town is the linear roads forming significant gridiron look. Historically based on Hassan (2014), the Grid plan is dated back to the Greek civilisations was a versatile method of city structuring taking five importance forms as the main hierarchy of boxes nesting on each other, or checkerboard pattern. The gridiron method is the flexible method of urban configuration which allows for the efficient sub-division and sale of development land and, it is a popular urban form adopted in many cities especially in developed countries, Samsudin (2011).

During British colonialism, the application of gridiron at Weld Quay area is not adequately applied to create an imperfect grid, Hassan (2014). Due to that time this area was not the major administration area and was developed by unskilled British officer hence, it is named as informal grid development. Another impactful effect that can be seen from this formation of the grid is the “divide and rule” concept of administration. This concept has helped the British to avoid any intense fight and unity from forming among the villagers of different races. It can be traced in the figure-ground study later since there are two significantly different districts of the gridiron and traditional fishermen villagers.

## **2.2 LEGIBILITY AND URBAN DESIGN ELEMENTS**

Legibility or visibility is a means to extend which cityscape can be ‘seen’ since people are moving in or through the city using wayfinding methods. Based on “The Image of the City”, in the process of wayfinding, the strategic link is the environmental image, the generalised mental picture of the exterior physical work that is held by an individual. This image is the product both the immediate sensation and of the memory of experience, and is used to interpret the information and to guide action (Lynch, 1960).

### **2.2.1 PATH**

One of the significant elements for any places to grow and become a city is a path. It acts as a track connecting people from one destination to another either for human or transportation system and usually fit into a larger network. A path can be considered as streets, roads or pedestrian pathway system that move people throughout the city (Lynch, 1960). Cited as the backbone of any city, paths

can be developed from auxiliary to secondary network or tertiary for dense traffic for any cities.

### 2.2.2 NODES

Nodes are the points in the city that is an open area or partially enclosed for any human activities. It has a similar concept as path since the nodes will be defined at the junctions of paths or events of the journey. The strategic locations of this convergence will be the place for the observer to view the start and next point the path chose for the journey. Lynch (1960) writes that nodes may also be places of concentration such as public squares or plazas, sometimes signifying a centre of a city in terms of both its location and importance.

Nodes could be the intensive loci for travelers to come as written by Samsudin (1987). It is not only marked as important due to junction or convergence but also by the concentration of people and activities or even core that symbolises that area. One may think that nodes are relatable for the road but, in our real life, we could find the nodes at the playground area, in front of temples or masjid where people gather for events, and others.

### 2.2.3 LANDMARKS

Landmarks, as defined by Lynch (1960) is an external point of orientation, usually easily identifiable physical object in the urban landscape. In simpler words, any contrast in the background of any places will become a place that is memorable for either local or travelers are considered as a landmark. It can be found either in a city itself or even in an isolated space. Characters found generally for landmarks may come in the form of a tower, dome, vibrant building or even sculptures. By the presence of the landmarks, the place will be easily recognized by the locals or even visitors.

### 2.2.4 EDGES

Edges in urban neighbourhoods is easier to understand as a wall or separation in the form of land or water that distinguish one area from another. While there would lots of notions used to represent boundary in the city, edges may act as a seam that draws both sides together. It is well supported by the famous writer, Kevin Lynch (1960) “edges are the boundary and breaks in continuity”. In the book, *Townscape Revisited* written by Samsudin (2011), edges either act as seams joining two regions or barrier that close off from the other. Edges are easily identified at the waterbody area due to its major recognition but also can be represented at the railway tracks, bridges, roads, walls, etc.

Despite thinking edges is a vivid straight line as per human perception, it can also involve hidden line that blend with the surrounding. For the study, we can relate that the human pathway and the road are edges in smaller context due to different materials used on both sides and height. Hence some of the edges can also give sense of direction and boundaries to in term of visual image to humans.

### 2.2.5 DISTRICT

District or zoning is used for a smaller portion of the state to define cities extension in particular notion. The design and identity of buildings within any district may appear to have strong similarities to one another due to the influence within small scale area. The other elements of urban design are the skeleton that builds the district, the rest filled in by less dominant aspects of the urban environment (Architectural Press, 1985).

According to Watson (2003), districts are medium to large sections of the city, which have some ordinary identifying character. They are often thematic qualities which are a combination of

activities, people and physical qualities. If we go by the site involved in this study, there are two prominent districts of colonial architecture and fisherman village separated by auxiliary road. It is far more convenient to identify the two different regions due to different architectural languages, activities and also functions of building. However, there will be subtle districts if the human perception is involved without having strong differences in background.

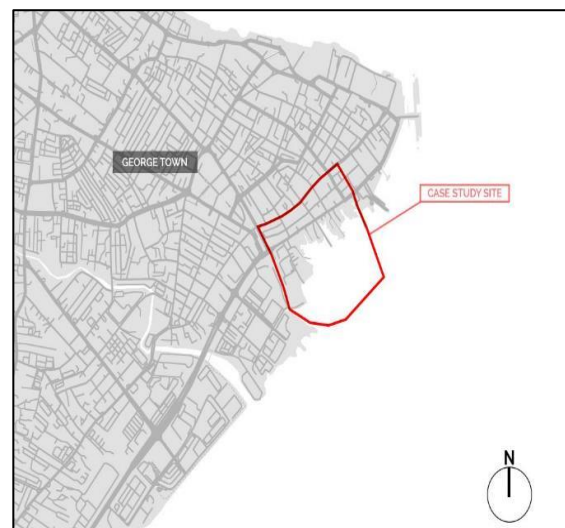
### 2.3 CASE STUDY: WELD QUAY AND BEACH STREET

The location of Site study is at Weld Quay and Beach Street of George Town, Penang. It is a transition of colonial settlement to a traditional quay site. Based on Hassan (2014), Weld Quay is located in zone 3 during British colonialism era. Zone 3 is an area that acts as commercial, finance and port city. Beach Street is part of the central business district it has served as the financial heart of Penang in the past 200 years ago. Compared to Beach Street, Weld Quay is actually a reclaimed land during the 19<sup>th</sup> century and served as the port of Penang. The major part of it is covered by the stilt house on the sea, which is also the home of Chinese Clan Jetties, the Chinese labours at the harbour. The whole area is protected by the UNESCO World Heritage Site.

This area is one of the busiest and crowded streets in George Town, where it has been visited by tourist around the year and most administrative buildings are near to the site. Today, it has also turned into an entertainment area during the night with a new generation of café and accommodation business startup.



**Figure 1:** A Key plan of Weld Quay and Beach Street, George Town, Penang.



**Figure 2:** A Location Plan of Weld Quay and Beach Street, George Town, Penang.

## 3. METHODOLOGY

This research paper is to study the characteristic of Colonial to traditional planning of its urban design elements. Therefore, qualitative methods were conducted through the study to document relevant data and information. Figure-ground mapping of the site was produced using AutoCAD and traced to the existing layout, for better understanding and data collection during the site visit. It is also for the ease of observation survey during the site study of identifying the five urban design elements. The data and information were collected through site visit on Friday 12<sup>th</sup> of April during working hours to evening hours. Accumulative information and data were later on reproduced with the related photos capture on site by mapping in the paths, edge, district, nodes, and landmarks using Adobe Photoshop software.

### 3.1 PATH

Based on Kevin Lynch (1960), some of the methods to measure the scale of path quality will depend on the following factors:

- a. Width of the streets or path. This will indicate the usage of the path as well as the hierarchy of the network.
- b. Directional quality. One direction can easily be identified from the reverse. Or the steady change of movement from the secondary road to auxiliary road.
- c. The sequence of known landmarks or nodes along the path. This is to give a sense of direction and scaling to a path.
- d. Pavement texture. It is fundamental but often regarded as less important for the continuity of the path.
- e. Details of planting alongside the path
- f. Origins and destinations of the path. This will help the people to have a better sense of directions.
- g. A number of entrances for the path will give clearer ideas of density of traffic.

This can be done by counting number of blocks or units of building in between to get the distance of important landmark along the path.

### 3.2 EDGE

Measuring the quality scale of edges can be done by identifying following characters:

- a. Shore lines.
- b. Waterfront or riverfront.
- c. Position of the hill with the low land area
- d. Railroads or highway
- e. Topography
- f. District boundaries

### 3.3 DISTRICT

A District is often recognized as having same characteristic within the area. Based on Lynch (1960) it can be recognized internally or on the external view of the area. To understand the quality of the district, the scale should be accounted for the following criteria:

- a. Organization and configuration of building
- b. The orientation of building and paths
- c. Thematic continuities components: texture, space, form, detail, symbol, building type, use, activity, inhabitants, degree of maintenance, topography, ornament, colour, skyline
- d. Ethnic concentration
- e. Major human activities. This will show the contrast in certain areas.

### 3.4 NODES

As mentioned by Kevin Lynch, nodes are often associated with junctions or intersection of space.

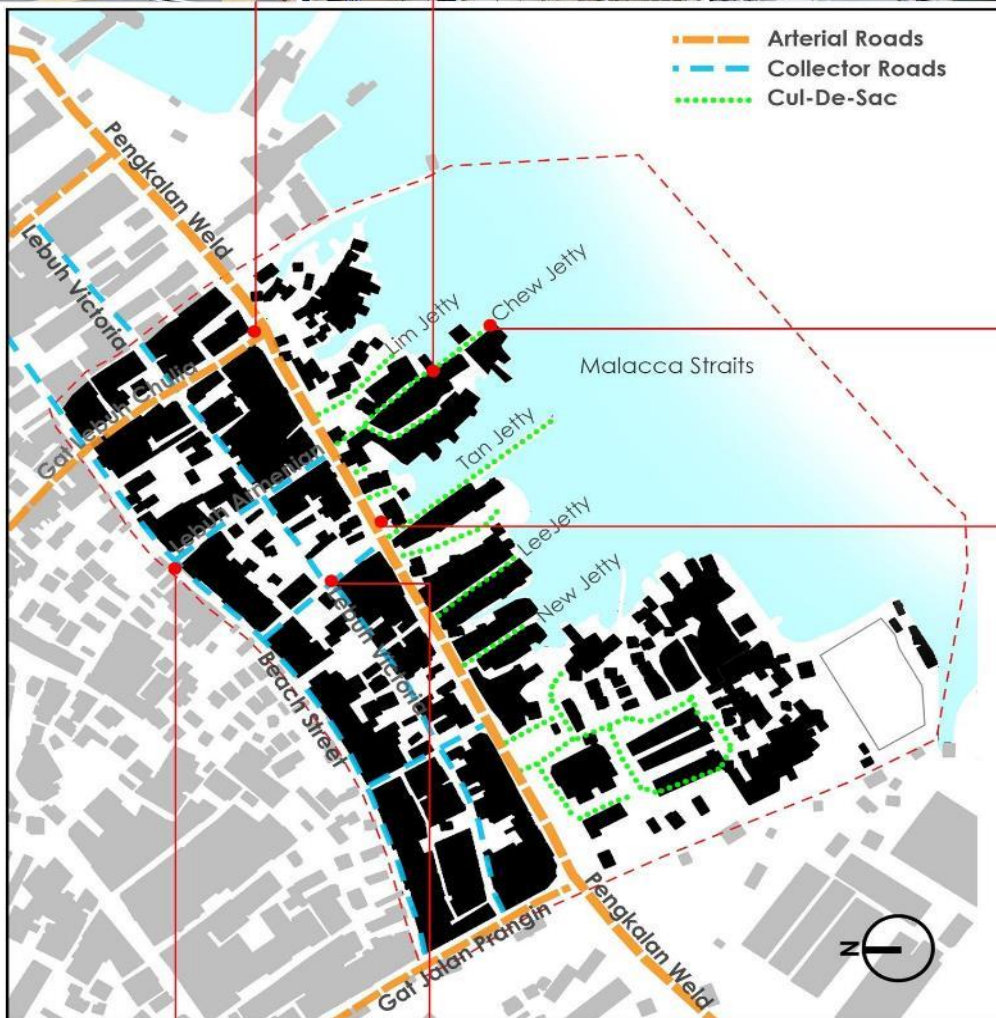
The scale of quality will depend on the following factor:

- a. Large square
- b. Break in the transportation area: railway station, subway station, bus depot/terminal. Switch points of one direction to another or multiple directions.
- c. Thematic concentrations: gallery with plaza, jetty point area. As nodes are indicated as either junctions or concentrations area.

### 3.5 LANDMARK

Defined as the prominent area or building where it can be identifiable easily.

- a. Singularity. The key physical give memorable and unique in context.
- b. Clear and contrast form. The building or structures may be standing out if compared to its background and no repetition of same building in nearby.
- c. Spatial prominence. Any elements can be established as significant if they are being set up a local contrast with nearby elements and variation of setback and its height.
- d. Prominent points that is visible from many positions. This is very important in giving better sense of direction.



**Figure 5:** Paths of Site that stretch from the Beach Street towards the Clan jetties.

## 4. ANALYTICAL RESULT

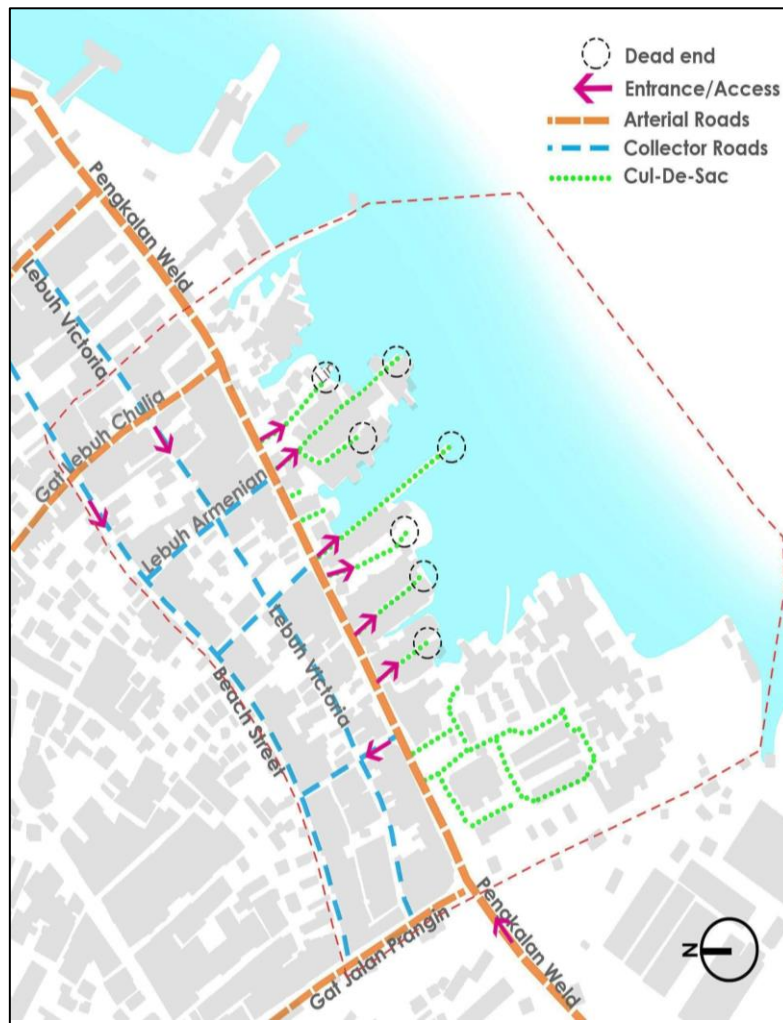
This research is based on the categorized elements of Lynch's theory in urban design elements, which is paths, edges, districts, nodes and landmarks.

### 4.1 PATH

A path is the dominant element among the five elements (Lynch, 1960). In Figure 5, the site is penetrated and intersected by four types of path which is Highway (yellow), Arterial road (red), Collector road (blue), cul-de-sacs (green) Path Access to Jetties. The differentiation of the path is determined by the distance of connection, width, the density of its usage throughout the day and its

planning pattern.

In Figure 5, the paths pattern of inner part appeared to be in gridiron comprises the connection of highway, arterial roads, and collector roads that has several entrances and access within the sites as according to British colonial style of divide and rule planning (Hassan, 2014). These paths are more organized with proper infrastructure along with it. On the other hand, the outer part has more narrow entrances, but all are accessed to a dead end, and uses the same path for entering and exit the site, according to the traditional planning pattern. These Cul-de-sacs Jetty paths used to be the private path for accesses to the clans, but due to tourism development, some clans have become more public for tourist access and visit.



**Figure 6:** The street connections based on the hierarchy

#### 4.1.1 ARTERIAL ROADS

Figure 6, Weld Quay (*Pengkalan Weld*) is the primary Arterial path that penetrates the site and connects Tun Dr Lim Chong Eu Highway with Pesara King Edward. The transition between colonial and traditional planning of the site is through this path that disseminates into a colonial gridiron pattern and traditional cul-de-sac dead end. It is the connection of path that accesses to both the fisherman village and heritage building. It is the busiest path of the site that converge access to jetties, and beach street commercial area of George Town, that often people use it for direct access to Tun Dr Lim Chong Eu Highway. Often Chinese festive season, part of the path will be closed for the festive season event like held by the temples of the clan jetty. Figure 7 shows the Weld Quay (*Pengkalan*



Weld) primary arterial path has a width of approximate 20m (66') two ways in total and will be in a high jam during the peak season. The other Arterial roads, which is the Prangin Street (*Gat Jalan Prangin*) and Chulia Street (*Gat Lebuah Chulia*), covered only a small part of the site, it connects the collector roads and channels the way out to the highway from the inner part of George Town. It is a less event path and likely moderate jam in the peak season.



**Figure 7:** Pengkalan Weld.

#### 4.1.2 COLLECTOR ROADS

This is the Collector roads of the commercial zone of colonial heritage building area, which is Victoria Street (*Lebuah Victoria*) and Beach Street. Victoria Street (*Lebuah Victoria*) and Beach Street are parallel to each other with the connection of collector roads in between for interchange. The street is mostly filled with shop lots of cafes, bars, homestays, and old trading tenants. Often part of the street is filled with walking or cycling tourist, landmarks and nodes will emerge along these paths and are mostly tourist attraction area. It has a width of approximately 8m (26') to 10m (33') with parallel side parking, part of it will be in a moderate jam during the peak season.



**Figure 8:** Photo of Beach Street.

#### 4.1.3 CUL-DE-SACS

These paths are mostly accessed by pedestrian, bicycle, and motorcycle. It is the path within the residential of the fishing village stilt houses. The path is also the representation of entering a single clan's village; each access has no connection between other clan's paths or as private paths to 7 clans namely, Ong, Lim, Chew, Tan, Lee, Yeoh and New Jetty. Accesses from one clan to another is only through the entrances. All the access is only to the clan's jetties have turned into tourist attraction and filled with pedestrian of the tourist along the path, it is covered with the crowd during the holiday season. In Figures 9 and 10, these paths have a width of approximately 2m (6.6') and made by timber. However, the width might differ based on the function of the area.



**Figure 9:** Photo of Path in Chew Jetty

**Figure 10:** Path in Lee Jetty

#### 4.2 EDGE

Based on Lynch (1960), that edge is usually but not always, the boundaries between two differential areas. Sometimes it is less noticeable by people who does not has a strong cognitive map of the site. Referring to the edges in Figure 11, the water body and area of the jetties has the strongest distinguishing edge. Another less distinguishable edge is by the path of Weld Quay (*Pengkalan Weld*) that distinguishes the colonial heritage building and traditional timber fishing village stilt houses. It is also distinguishable through the heights of buildings of two zone, that the traditional fisherman village has lower height and single storey buildings and the colonial zone has a higher height of double-storey building.

More than that, the other significant edges that are found throughout the site survey are the edges of each village at fishermen jetties and the edges along with the districts of the colonial area. They form less dominant edges but can be perceived directly on the site.



**Figure 11:** Prominent edges of the area between the land and sea.



**Figure 12:** Edges that separate the waterbody



**Figure 13:** A view from Clan jetty.

#### 4.3 NODES

From site observation, the nodes do not emerge distinctively in our study area. As shown in

figure 16, that the nodes of the site do not appear as a square or central public space, but rather the junction of paths with higher concentration of people, which is the junction of Armenian Street (*Lebuh Armenian*), see Figure 14, and Chew Jetty entrance, in Figure 15. It is a self-form node by tourist and both the nodes are the link to the tourist spot. While the other thematic nodes are formed by the vehicular junctions and it is showed in the figure 16 below. The yellow nodes indicate junction of Armenian Street (*Lebuh Armenian*) where could be linked to the heritage walk; the area is filled with street arts and souvenir stall. While the other yellow nodes show the Chew Jetty entrance with food stalls and temples as an attraction spot for tourist, Similar with a square function where it is part of the space to gather and meet at the intersection of area.



**Figure 14:** Junction of Lebuh Armenian



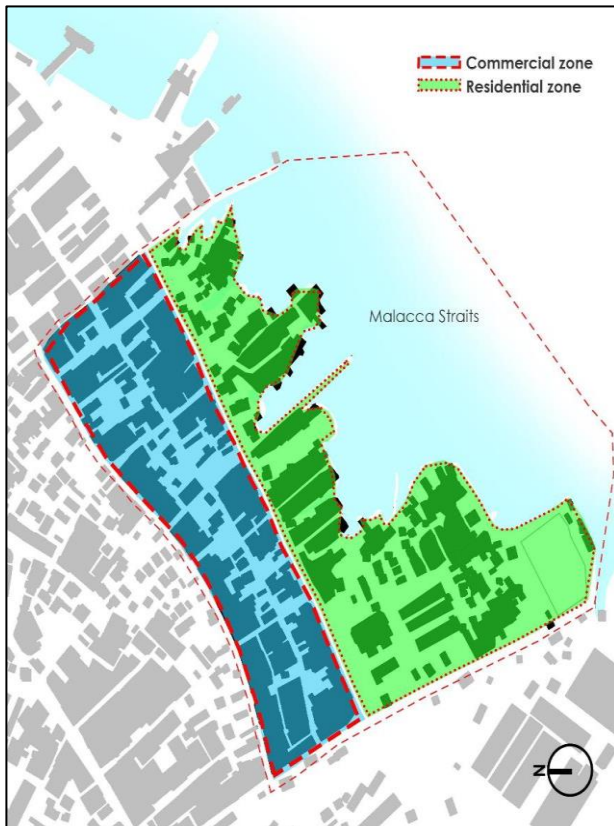
**Figure 15:** Chew Jetty entrance.



**Figure 16:** The nodes are formed by thematic concentrations and junctions along the streets.

#### 4.4 DISTRICT

Based on the history of Beach Street and Weld Quay that the Beach Street is the Central Business District of George Town that serves as the financial and commercial zone of Penang, and the Clans jetty used to be the shelter for the Chinese labourers. Figure 17 shows the district highlighted in the drawings of the site. Beach Street is still served as a financial and commercial district today but these shophouses slowly replace by new generation of tenants and mainly focus business toward tourism. However, the Clans Jetty shelter of Chinese laborers which is still occupied by the Chinese now has partly become the commercial purpose that tenants used to make it as homestay to rent or turn the houses into a shop, loses its essence of a district as Chinese shelter and fishing village.



**Figure 17:** Districts of the site



**Figure 18:** Districts in detail of the site

The layout pattern is also well differentiating that colonial planning seems to be in more organized and consistent rigid pattern and traditional has a more clustered and inconsistent pattern, as shown in Figure 18. If we look closely to the figure- ground map above, as per human perceptions, the number of sub-districts will start to increase, this is since human tend to perceive that one area will be defined differently from the other due to its position and separation from the major roads. Let say even in the colonial district area; we will find that there are few different regions due to building facades and human activities. Commercial and residential is blending well in this area, but they are still significant in creating different visual organisation.

Another districts that is formed based on visual observation on site are the different name for the clan jetties. As Figure 18 shows that there are namely 6 jetties; Ong, Lim, Chew, Tan, Lee, New, Yeoh Jetty. All these jetties are not different from each other, but the name gives an impactful perception to human that they are forming or encapsulating different villages although they live nearby each other.



**Figure 19:** Districts of site that comprises the Clan Jetties.



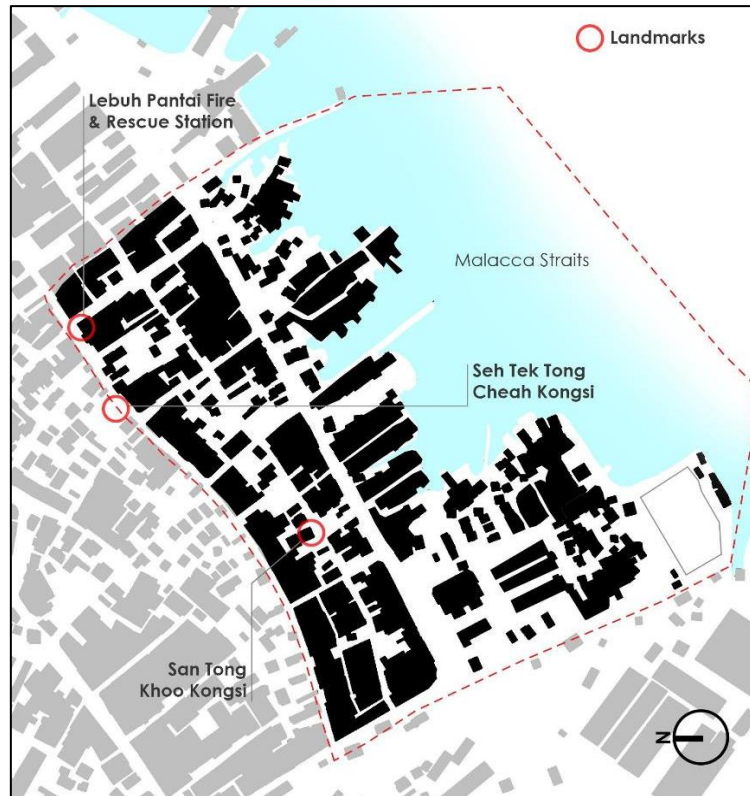
**Figure 20:** District of commercial area at Armenian Street.

Figure 19, the house on stilts is rather a significant character in comparison to the landed area.

Figure 20, Language and decoration of building is influenced by colonial architecture whereas the 5 foot walkway adds minor character to this district area.

#### 4.5 LANDMARK

There are a few reasons that make a landmark memorable which are its significance, uniqueness, contrast to the background and its distinctive location. Based on the major district mentioned above, the landmarks for the waterfront and the commercial district can be categorized based on the focal point, see Figure 21, and prominent function of the building or statue.



**Figure 21:** The important landmarks for the local or tourist along the arterial and collector road.

For instance, there are few buildings that shows the landmarks quality by having flamboyant ornament as their facades. There is also different scale to determine if the structure can be used as landmarks; the different height or setback as well as singularity of the structure that has no repetition in nearby area. All these are important for people to recognized the landmarks from distance and easier to indicate as reference point from one place to another. The red dots in Figure 21 indicate the significant area of Khoo Kongsí, a temple with vibrant colors and stand out from the rest of the buildings, Figure 22. This building has become one of the most visited places in George Town area due to its character and function.



**Figure 22:** The ornaments of the Khoo Kongsí.

The landmarks found on site also demarcate different architectural elements for instance Bomba Station has Neo Classical elements to it, shows in Figure 23. This will emphasize not only the identity but also let people reminisce the history part of the building. Whereas the other image is the Khoo Kongsu is obviously originated and mainly influenced from mainland China. The ambience of the building gives people especially the visitors to imagine that they are partially entering different eras of time. Hence, the similarities of both landmarks are not just limited to their nobility but also reflects the timeline of that regions. In this case, these will make tourists to ponder upon the structural timeline and visible aesthetic they offer. Along some of the path towards these landmarks there are also few 2D and 3D artworks done by international and local artists.



**Figure 23:** Landmarks of the Site of Fire Station and Temple. This indication of landmarks has the qualities of the function of the building , and different architecture in relation to the background or surrounding area.

## 5. DISCUSSION

### 5.1 PATHS

Perceptually there will be two types of path based on the total site area. One will be the vehicular paths where it involves 12m width of major road, 6m arterial road for both lanes and another small channel in between the shophouses. The other type of path involves human body which is the walkways as any vehicular cant enter. Based on these two types, the application of the function of paths is different when it comes to gridiron or the colonial area and the traditional fishermen village. As for the colonial area, the road is mostly dense due to the functions of the area. Some of the roads such as Victoria Street, Armenian Street, and Weld Quay may have heavy traffic especially during festive events. The roadside area is limited in width as in the old times British has set the front area of shop should follow 5-foot walkway. It can be quite narrow for pedestrian if some of the shops extend their operation towards the front. The walkways provided at this area is not really defined by different materials except at the arterial road of weld quay where two districts blend together where they used proper roadside bricks. The most interesting part of the path provided at this area is they are dissecting towards the row of shop lots making most of the shops has double frontage and served both sides. This can be seen at China House Cafe.

Whereas for the fisherman, the path is accessed from the Weld Quay and there are two type of pathways provided. The tarmac road is laid from weld quay towards the nodes of the Chew Jetty's temple for villagers to park their car. Then starting from the Temple, there timber walkways of average 2m will be accessed towards the end of the cul-de-sac area. This wooden walkway gives viewers especially visitor vivid and unique experiences as it is a historical villages merge with commercial and the walkways offer open view towards the sea. Villagers whom stay there will use motorcycle to reach their house. And it is the only way for them to access their homes as there are no back doors or alternative routes. As per our observation during peak school holiday, this village especially Chew Jetty will be packed with visitors.

## 5.2 EDGES

Human tend to perceive things faster using visual recognition especially when things and movement are in vivid motion. However, there are some less dominant edges that can be traced along the fishermen villages. For instance, the tarmac road for parking heading towards the fisherman timber jetty is one type of edges as they form linear element. Besides that the other linear elements that is associated with function of the space are the roadside and 5 foot walkways at the colonial shophouses area. Although it may give less significant impact in terms of visual from far, but it helps the user to determine their directions. Edges are actually helping the path directional quality increases.

The other edges elements that can be found along the touristy Khoo Kongsi area is the walkways of the outside and inside of the temple's compound are different as well as the walls surrounded the Khoo Kongsi area demarcate the regions or district that belong to the temple. The function of edges is not limited of helping directional and functional quality to the human, but it also helps to secure one place from the other as the boundary is clearly defined.

## 5.3 NODES

A pedestrian friendly open space where activities happen and people gather around in an intersection focal point, is what the site is lacking off to dominantly show its nodes, maybe the reason is that the site originally does not planned with nodes, but due to the development ,usage of local and tourist, its location, eventually became nodes to the site. Even though the junction of Armenian is crowded with tourist and local open business stall but it can be improved by creating a differential of road material to indicate that spot as a node in the future, and the changing of pavement road material will also help to slow down vehicles for a better pedestrian movement. On the other hand, Chew jetty location has cause pedestrian to lost the direct connection due the Weld Quay (*Pengkalan Weld*) high traffic road, perhaps zebra crossing or traffic should implement to smoothen the pedestrian flow. Concept of a place or creating a centre which is the goal of meaningful event are experienced.

## 5.4 DISTRICTS

The district of Colonial and traditional fisherman village are easily access from the Weld Quay, and both can be clearly distinguish by its function of zone and appearances of building. However, the traditional sub-district that has no connection between the clans jetty can be improved by adding collector path between each clans to become a whole dominant district with connection among each other. This will make the traditional zone to become a clearer parcel of district. In among clan of jetties Chew jetty seem to be the hierarchy, but Lee jetty has the most iconic appearance due to its newly added decorative elements.

## 5.5 LANDMARKS

A strong image or identity of places can be embodied by having the significant element. It is apparent that some areas have different images due to its representation in its sculpture or structural building. This kind of representation will eventually attract people to perceive it as assisting directional and orientation quality. For instance, Khoo Kongsi as significant landmarks has not only attracts high numbers of international tourist every year but it also helps the local people to determine how far their location with regards to the surrounding context. Sense of place are also relevantly related with the existence of this temple since all the activities such as prayers, cultural performance associated with this temple has impactful image to the local people. Perhaps this area will be avoided

by locals during festive season while high chances of tourist will come due to its valuable history and cultures.

Meanwhile, as for the fire station (Bomba) the term landmark is quite significant here due to the strong influence of neo-classical facade with white and red stripes that is considered different from the background elevation. The function of this building is entirely on services, but it does not mean that function does not contribute the differences since the neighboring buildings are only filled with commercial areas.

There are another landmark located at fishermen district which is the Chew Jetty's temple. It is located at the one of the important nodes along the Weld Quay Street. It is hard to differentiate other villages since the houses are made from similar materials and design. However, there is one entry point that has temple and it is located at Chew Jetty. This is a very small temple but the painting made from vibrant and lively colors.

## **6. CONCLUSION**

From the Studies, the most dominant urban design element found at the site of Beach street heritage building and traditional fisherman village is the districts and edges. The Weld Quay that stands out as an arterial road that separates the colonial and traditional zones of fisherman villages. That the transition characteristic between colonial double-storey shophouses and single-storey timber house is well distinguish by the arterial road of Weld Quay. Its functional of space can also be clearly acknowledge by its environment that in the fisherman village appears to be narrower like a private housing place, compared to colonial has a wider path that is publicly open for commercial. Even though the transition of colonial and traditional planning is distinguishable by its contrast of planning, building, materiality, but both zones still preserved its identity and been connected by the tourism development as a whole district of heritage site of George Town.

## **7. AVAILABILITY OF DATA AND MATERIAL**

Data can be made available by contacting the corresponding author.

## **8. ACKNOWLEDGEMENT**

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