

# EVALUATION ON THE FUNCTIONAL DIMENSIONS OF THE CONTEXTUAL INTEGRATION AT 'KUALA LUMPUR WATERFRONT'

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## ABSTRACT

'Kuala Lumpur Waterfront' is a term that maybe unfamiliar to many. Kuala Lumpur is a city that originates at the confluence of two rivers, Klang and Gombak River. The waterfront used to be very busy with activities when it was once a trading post for the export of tin at the turn of last century. This was when the river was the lifeline of the city – its main mode of transportation. The activity at the waterfront has changed over the years with the change of social, economical and physical development of the city. Many waterfront cities throughout the world have gone through similar changes when the mode of transportation changed from water to motor system in their country. A number of cities have made efforts to integrate the cities' activities with their water body. This research attempts to investigate the activities at the Kuala Lumpur waterfront within the city centre in terms of its level of contextual integration with the urban rivers in the current context. The technique adopted for this research is field observation which include building use survey and time interval observation to investigate the activities in ten demarcated zone along Kuala Lumpur waterfront within the city centre. The research concluded with the findings that all the zones exhibited medium level of contextual integration between the waterfront and the urban river in terms of its building use which depends much on the continuity of activities, their positioning location, accessibility and the provision of space and facilities.

Keywords: Contextual integration, waterfront, urban river, activity

## 1. INTRODUCTION

Many effort of waterfront re-integration are taking places all over the world in the aim towards sustainable development advocated in architecture and engineering practices globally. It has become the consideration of many cities that in order to create a better public realm at the waterfront areas, urban design with contextual integration is use as one of its main tool (Hoyle, 2001) The definition of contextual integration in this research relates to the physical and functional relationship between a development with its surrounding (Carmona, 2000); in this case is the water body itself. A positive contextual integration with its water body will allow the public to enjoy the existence of water body in their city.

In Malaysia, the re-integration effort started with the 'love our river' campaign in 1993 by the Department of Drainage and Irrigation in the effort to return peoples' awareness and love towards the importance of those rivers which had declined over these years (The Star, 2003). Some states have resorted to a recreational type of waterfront regeneration in their efforts to give back the river to its people but many have not integrated it well with the river (Shamsudin et.al, 2008) which include the capital city of Malaysia, Kuala Lumpur. Kuala Lumpur waterfront used to have a functional integration with the urban river in its early days of establishment when the river used to be the main transportation mode. Throughout the years of development, many changes that had happen at the waterfront may have loosened its functional integration with the urban river. It is the aim of the paper to evaluate the functional aspect in terms of its level of contextual integration between the waterfront and the urban river in the current context of city centre, Kuala Lumpur.

## **2. FUNCTIONAL DIMENSIONS BETWEEN THE WATERFRONT AND THE URBAN RIVER**

In the search of an appropriate dimension to evaluate the functional aspects in terms of the level of contextual integration between the waterfront and the urban river, integrative theory of urban design by Sternberg (2000) is found to be closely related to explain the research. He categorised vitality as an important principle related to the functional aspect. It explained the relationship between developments with its surrounding which promotes the integration across property lines. This is very much related to this research that seeks to evaluate the contextual integration between the waterfront with the urban river which situated across its property boundary. This principle is advocated by Jacobs (1960) whom criticised the planning of the mid-century which neglects the importance of the diversity of urban life through their creation of dead vacant zones, 'clearing' the city through the urban 'renewal' programme and planned to separate uses through the concept of zoning. Jacobs opined that the bustling street life is important in good cities and the closer the grain on the density of uses will allow them to support each other better. In achieving balance, cities should not only have the bustling street with mix use activities and at the same having the provision of quieter streets for residential area. Through vitality her ideas promote integration across the property lines and relate well to the integrative theory (Sternberg, 2000). This is also accorded by see Browser (from Nasar, 1998) whom highlighted that people do not really want to see sameness in all part of the city. In reference to this principle, drawn from the literatures related to waterfront developments, two main dimensions are identified vital in the evaluation of the functional aspects of the contextual integration between the waterfront and the urban river: i) the diversity of use and activity in the area that can allow the user to stay longer at the water edge; ii) continuity of activity at the building along waterfront.

### **2.1 Functional diversity**

Most of the literatures mentioned in the following discussion stressed the importance of functional diversity to allow the public to be reconnected to the river and should not reduce the opportunity of the general public to enjoy the waterfront (Donald Wood, 1965). This is similar to streets, according to see Schumacher (from Moughtin, 1992) the liveliness of the street depends much on the variety of activity and attraction it can offer and will make the user stay longer.

The same encouragement was given in the redevelopment of harbour communities in the downtown of America, where these activities are urge to be considered in the earlier part of the development before any other activity take place (Kotval, Z and Mullin, J, 2001). Petrillo (1985) mentioned that having human activity can enhance the waterfront area and add to the natural setting. In enhancing the waterfront area, it is better to consider the existing surrounding activity as the California's coastal program took a move in making sure that the new construction of the urban waterfront will be compatible in the type of use with the existing surrounding to avoid from introducing something that is out of place or not being able to be accepted by the locals themselves.

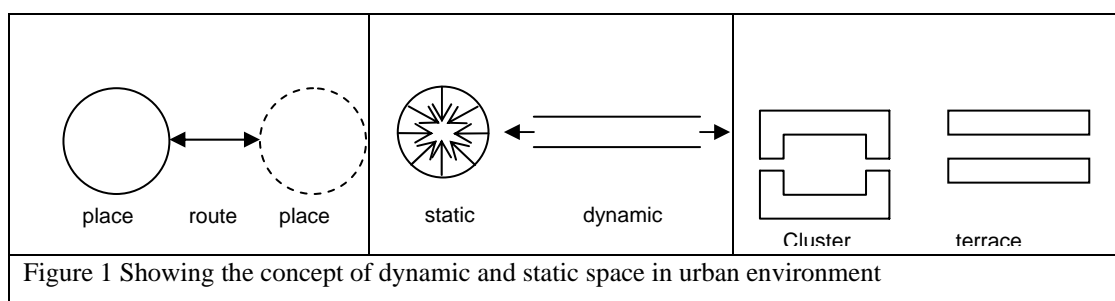
The integration on the diversity of use and activity in both land and water is found significant to allow for '*more dynamic opening onto the water*' and vibrant waterfront area (Mann, 1988). Some cities increase the waterfront attachment through commercial investment by having diversity of use through their public water transportation such as ferry services and water buses. Waterfront transportation is also very much related to recreational appeal through the viewing and visits of the working vessels, educational vessels and water taxis (Tunbridge, 1988). West (1989) stated that in North America, many of the renewal effort are concentrated on waterfront enhancement activity such as up-scale restaurant, cafes, condominium, hotel, gift-shops which has higher benefit for both environmentally and economically compared to waterfront dependent activities. Waterfront dependent activities such as boating, marinas and others are considered low-profit operations and operated because it is perceive to be more related to the waterside activity than because of the profit-making motives.

Significant different of waterfront usage is perceived in the context of the waterfront in Ujjain. The activities are very much dependent on the water for ritual and daily worship and the water is also highly use for daily chores such as washing and laundry. At the periphery of the area many commercial activities enhances the waterfront further. This mix of activities makes the waterfront and its water body an inseparable entity (Samant, 2004). The study by Hoyle (1994) on ‘Canadian Perceptions of Waterfront Development’ towards the difference between waterfront development and other development in the inner city has found that the respondent stressed the importance of the recreational facilities to be provided in the area should not only be on land but with a ‘*careful blending of land and water use*’, water that is an amenity is the right of everyone. Balsas (2007) mentioned that a public place in a city can become lively if they maintain their sense of place and reinforce their uniqueness that originates from the diversity of uses. It is obvious from many of the examples across the literatures suggested the importance of diversity of use to integrate the waterfront with the water body.

## 2.2 Continuity of activities along waterfront

Trancik (1987) mentioned that it is important to have a continuity of the walls as the frontage at the public place to create an enclosure of space in providing a setting for activities to happen at the ground floor area. He further explained that the frontage’s character and the continuity of the wall is one of the most important factors in determining the public place’s success or failure. If related to the waterfront, and drawing from the literatures the suggested dimension can be in the context of the ‘continuity of activities along water body at the waterfront area’. As mentioned by Petrillio (1985), it is the variety of the surprises of activities in different ‘*shape, scale and locations*’ that makes one journey becomes meaningful and pleasurable. Owens (1993) opined that buildings which are spaced closely will be able to give the sidewalk or street a ‘*strong spatial enclosure*’ this is especially so if the buildings are of ‘mixed used commercial area’. The buildings create an edge to the street rather than ‘*as a free standing object in a space*’. Whereas if the buildings spread apart form one to another the definition of the street is weaken. Jacobs (1965) opined that by having continuous activities along the streets will provide a natural surveillance and gave the feeling of safety for the user.

Continuity of activities in the urban space can also be experience through the dynamic and static of space. McCluskey (1992) suggested that the urban environment comprises of ‘*system of places connected by routes*’. The dynamic spaces are mostly linear in shape that can be related to ‘route’. However, static space may be in the shape of a square or circular and can be related to ‘place’. Clear example in the urban area can be seen in the terraced buildings which create ‘route’ and clustered layout building that formed a ‘place’. The static space provides a ‘*sense of completeness and rest*’ and for the dynamic space it implicated the sense of ‘*change and movement*’. He opined that a good townscape which has its major concern in creating a sense of place should be aiming at increasing the static and reducing the dynamic aspects of space (Figure 1).



Source: McCluskey, 1992

Gehl (1986) argued that the pedestrian activities vary according to the quality of the environment. There are three categories of activities highlighted which are ‘necessary’, ‘optional’ and ‘social/resultant’ activities. The necessary activities are those which will happen and not dependent on

the environment. The example of this type of activities are such as walking to work or to school that will not depend on the quality of the environment because they need to be done somehow. However, optional activities are those activities that existed as a result from the situation and highly sensitive to the surrounding environment such as sitting and strolling. It will happen more likely if the environment is more inviting. The social or resultant activities are activities which happen when other people is around in the same area.

May (2006), in her discussion of 'Connectivity' in Urban Rivers' highlighted the importance of continuity of activities along riverfront through the Buffalo Bayou Master Plan. The urban planners for the masterplan had emphasised the connection with the urban river to human. This is done through connecting the social and cultural attraction along the river which connects both the waterfront and the urban river. Its aim is to create balance between the built environment and natural environment for sustainability. They believe with having an attractive and lively urban river, it will reduce the need for the resident to travel outside the city for recreation and fresh air. This is also consistent with the opinion of the Project for Public Spaces Team ([www.pps.org/waterfronts/](http://www.pps.org/waterfronts/)) that had more than thirty years of experience in designing public places which include waterfront. They suggested the importance of having continuity of activity for pedestrian that has a wide variety of activities as one of the key to have a positive integration between the waterfront and the water body. From the literatures it is apparent that continuous activity along the river is one of the key dimensions that may contribute to the integration between the waterfront and the urban river and this dimension will be used to evaluate the Kuala Lumpur context.

### **3. METHODOLOGY**

#### **3.1 Data Collection**

In investigating the functional aspects at the waterfront, direct observation study is employed. The technique of study is being divided into two parts which is i) the building survey to identify the building use and continuity of activities ii) time interval samplings to record the activities that happen and the continuity of activities in the area in relation to the urban river using the narrative methods (Brandt, 1972 from Friedmann et al, 1978) and supported by photographic documentation (Davis and Ayers, 1975 from Sanoff, 1991). Areas of observation were chosen based on the availability of visual point that can see both the waterfront and the urban river without obstacle. To reduce errors in judgments, two observers were located in each zone (Friedmann, 1978) to note the activities and at the same time mapped the activities in its location as it happens with an interval of one hour. There are 15 demarcated zones. Zone 2 and left bank of zone 4b are excluded from this study due to safety reasons. Zone 5 and Zone 8 are excluded due to the existing highway which totally blocked the integration between the waterfront and the urban river.

Ten zones within the fifty metre range from bothsides of the riverbank (DID, 2003) were involved in the research (Figure 2) within the city centre. No categorization of activities was made on site. Types of activity are given labels for easier mapping. Photos documentations were done every hour accordingly for every zone. The days covered for observation done are: Monday (6:30am -8pm) as (representative of Tuesday to Thursday which are the normal working days); Friday (6:30am-8pm). There is a congregational prayers (compulsory for Muslim man) at noon time which may changes the activity in the city centre during noon; Saturday (6:30am-8pm). It is a half-day working for some people and it may have some difference in the activity; Sunday (6:30am-8pm). Full day not working that may have some difference in the activity. Public holidays or any other festive seasons are not included due to the one-off situation (Norsidah Ujang, 2008).

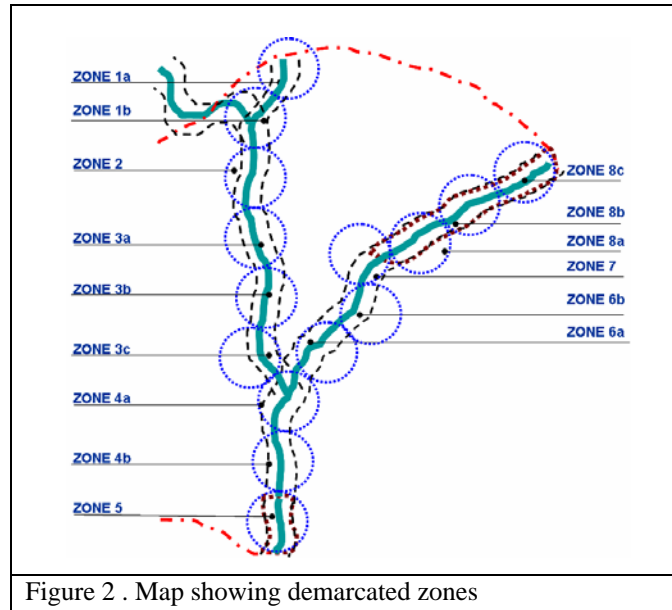


Figure 2 . Map showing demarcated zones

Source: Author, 2009

### 3.2 Data Analysis

Building use are later categorised according to the high, medium and low (Lynch, 1976) level of contextual integration with the urban river. The parameters used are as follows (Figure 3):

|   |        |  |
|---|--------|--|
| 2 | High   | Water-dependent + water-related building use   |
| 1 | Medium | Water-related + water-independent building use |
| 0 | Low    | Independent building use                       |

Figure 3 Parameter and scoring technique use to evaluate the level of integration in the functional diversity dimension in the demarcated zones. Source: Wren, 1983 and Lynch, 1976

Water-dependent building uses are the one which are dependent on the availability of the urban river for the building to function. Without the urban river the building cannot function. Example of these types of building uses are marina, jetties and boathouse and water-taxi station. The second category is water-related uses. These are building use which will have an advantage if it is close to the water but can also function in other areas. The example of these type of buildings/ development are restaurant, open space/park/terrace/ and resort/hotels. Finally, water independent uses are those uses that can function equally the same in other areas of the city without the water. Examples of these types of developments are shophouse/ shopping complexes, office, workshop, mosque, residential, school and clinic.

|   |        |                  |
|---|--------|------------------|
| 2 | High   | Static activity  |
| 1 | Medium | Dynamic activity |
| 0 | Low    | No activity      |

Figure 4 Parameter use to evaluate level of integration in the continuity of activities in the demarcated zones. Source: McCluskey, 1992 and Lynch, 1976

As for the user activity identified through the time interval sampling observation and mapping, each and every activity found were later categorised in five related groups of leisure, commercial, transportation, administration and maintenance, and others according to the time and days in table format. Each of the activity occurred is given numerical figure (1) according to the hour it happened to find the frequency the activity occurred. Bar charts were produced from the results for easier understanding of the type and pattern of activity throughout the days in every zone. Combined with the scale used by Lynch (1976) on high, medium and low, the activities are evaluated using the scale/ parameter as above (Figure 4).

#### 4. RESULTS AND DISCUSSIONS

According to Jacobs (1960), the functional diversity and continuity of activities are important to sustain the vitality of a city. Through the use of scoring technique (Figure 3), it is suggested that all demarcated zones studied are in the medium level of integration with the urban river (Table 1).

This is because in all areas there is a mix of both water-related and water-independent building use only. And none of the area has only the water-independent building use which may contribute to a total low level of integration and none of the area has the water-dependent building use which may contribute to the high level of integration between the waterfront and the urban river. Therefore, the functional aspects (building use and activity) are further investigated in terms of continuity of activities which may contribute to the vitality in all zones. This is important to establish why and how these aspects are contributing to the level of integration between the waterfront and the urban river.

Table 1 Building use in all zones

| Zone    | Dependent (H) |       |           | Water-related (M) |              |       | Water-independent (L) |                        |         |          |        |             |        |        |
|---------|---------------|-------|-----------|-------------------|--------------|-------|-----------------------|------------------------|---------|----------|--------|-------------|--------|--------|
|         | Marina        | Jetty | Boathouse | Restaurant        | Park/Terrace | Hotel | Public Transport      | Shopping shops/complex | Offices | Workshop | Mosque | Residential | Clinic | School |
| Zone 1a |               |       |           | √                 | √            | √     | √                     |                        | √       |          |        |             |        |        |
| Zone 1b |               |       |           |                   | √            | √     |                       |                        | √       | √        |        | √           | √      |        |
| Zone 2  |               |       |           |                   |              |       |                       |                        |         |          |        |             |        |        |
| Zone 3a |               |       |           |                   |              | √     | √                     |                        |         |          |        | √           |        | √      |
| Zone 3b |               |       |           | √                 |              |       | √                     | √                      | √       |          |        |             |        |        |
| Zone 3c |               |       |           | √                 | √            |       |                       |                        |         |          |        |             |        |        |
| Zone 4a |               |       |           | √                 |              |       | √                     | √                      | √       |          | √      |             |        |        |
| Zone 4b |               |       |           |                   |              | √     | √                     | √                      | √       |          |        | √           |        |        |
| Zone 5  |               |       |           |                   |              |       |                       |                        |         |          |        |             |        |        |
| Zone 6a |               |       |           | √                 |              |       | √                     | √                      | √       |          | √      | √           |        |        |
| Zone 6b |               |       |           | √                 |              | √     | √                     | √                      | √       |          |        | √           |        | √      |
| Zone 7  |               |       |           | √                 |              |       | √                     | √                      | √       |          |        | √           |        |        |
| Zone 8a |               |       |           |                   |              |       |                       |                        |         |          |        |             |        |        |
| Zone 8b |               |       |           |                   |              |       |                       |                        |         |          |        |             |        |        |
| Zone 8c |               |       |           |                   |              |       |                       |                        |         |          |        |             |        |        |

Source: Author, 2009

#### 4.1 Water-related building use

Based on the observation done, though the type of water-related use existed in most of the zones (Table 1), there are other factors suggested to be vital in instigating the contextual integration between the waterfront and the urban river. This situation can be seen in zone 6a, the three restaurants that open 24hours, did not depend or directly related with the urban river, but allow people to connect to the river visually and enhance the riverfront. It invites people to hang out in the area till late night and created an overspill of optional/static activity at the pedestrian walkway along the waterfront. Though other zones (1a, 3b, 3c, 4a, 6a, 6b, 7) do have restaurant in their areas but the positioning of the restaurant plays an important factor in determining its function as to relate the waterfront and the urban river. This is observable at zone 4a, 6b and 7 which has the provision of restaurant in the areas but due to its positioned which backed the river, there are no activity generated that may relate the waterfront and the urban river. As the case of 1a, 3c though there is the existence of restaurant in the area, the accessibility and no continuity of activities to the restaurant are other suggested factors that becomes an obstacle for people to reach the place. Therefore it lessened the concentration of people in the area and reduced the efficiency of the place to be an element to integrate the waterfront with the urban river. This is also the same with the hotels. Hotels in some waterfront city took the advantage of the location to combine activities with the water but it is not the same case with the hotels in Kuala Lumpur waterfront. The hotels are only visually connected (in Zone 1a) or backed the river (in Zone 3a).

As for the green pocket space at Kuala Lumpur waterfront, it is suggested that without any building use nearby to the green pocket space to generate activity, not many people will come to the area and created a potential ambushed area (Manley and Guise, 1998). Based on the observation, it is

suggested that most of the user stayed away from green areas which are isolated from the main pedestrian route (Zone 1b, 3c). Though it may offer a nice break in the city and may give the opportunity for the contextual integration between the waterfront and the urban river to happen, it is currently dominated by undesirable people (Whyte, 1980).

## **4.2 Water-independent building use**

Based on the observation, though there are water-independent building use which can function without the existence of water and give a low level of integration between the waterfront and the urban river, some of these building use may indirectly contribute to the integration in the context of KL waterfront. Examples of these are the public transportation point, shops/ commercial nodes and mosque which have the strength to pull the concentration of people due to its necessity in daily life.

Though public transportation and shops are highlighted by many literatures on its importance to bring people to waterfront, it contributed more to the necessity/dynamic activity rather than to integrate the waterfront to the urban river in the context of Kuala Lumpur. Static activities that may allow people to stay longer in an area with the opportunity to be integrated with the urban river will only be generated in the nearby water independent building use which had provision of ample space and seating for people to sit or socialised around (Whyte, 1980). In addition to that, the integration is suggested to be able to happen if the positioning of these open spaces or seating is facing the urban river (Carr, 1992). This situation can be seen evident in the right bank of Zone 1a and the right bank of Zone 4b. In contrast to Zone 4b, though there is an ample space of plaza provided below the Light-Rail Transit (LRT) station and the plaza around it next to the river which invite people to the area, none of the facilities such as seating or terrace provided encourage the integration between the public and the urban river to happen. Though there are leisure activities available in the area none of it is observed to be integrated with the river.

This situation is also observed in the left bank of zone 6a, though the concentration of people are in the area are enhanced by the existence of public transportation point, the pulling activity is very much due to the shopping area along Jalan Melayu and Jalan Masjid India. Based from the observation, one of the factors contributed to the non-integration between the people in the area and the urban river is due to the non-provision of space or seating in the area that faced the river. This is also the case with residential (Zone 1b and 3a), offices (Zone 1b and 4a) and schools (Zone 3b and 6b), clinic and workshops (Zone 1b) which will need some open space, seating, continuity of activities and building positioned that relate to the urban river to allow for the integration to happen. As for the mosque (Zone 4a), the occasional concentration of people which is accordance to the prayer time, may contribute to the static activity but its position in allowing visual accessibility to the river is important to allow the contextual integration between the waterfront and the urban river to occur. If not, the uses of these building will only be concentrated within the boundary of the buildings.

## **5. CONCLUSIONS**

The finding from the research that aim to evaluate the vital dimensions (functional diversity and continuity of activities) that are highlighted by literature, suggested these dimensions are also essential in the current context of Kuala Lumpur waterfront that contributed to the loosened of its functional integration with the urban river over the years. Though that is the case, there are other important factors identified which are relevant to the context of Kuala Lumpur that need to be look into such as the positioning and location, accessibility and the provision of space and facilities which may generate the static activities and allow people to stay longer to enjoy the urban river directly or indirectly. Without which it will not be able to generate activity at the waterfront that integrate with the urban river. The absence of the water-dependent building use may be related to other physical dimensions that should be considered. The physical dimensions which are vital for the contextual integration between the waterfront and urban river are not exhaustive in this paper due to the limitation of space and further research on this matter are recommended.

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