

The Contextual Integration and Sustainable Development of Kuala Lumpur's City Centre Waterfront: An Evaluation of the Policies, Law and Guidelines

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Abstract- The contextual integration between the water bodies, waterfront and the city has long been established in history when water used to be the main transportation mode. The importance of the integration of water bodies to many cities is globally acknowledged. Over the years, many of these cities have lost their integration with their water bodies due to many factors such as the industrial revolution, development in transportation system and technology. In an attempt to achieve sustainable development, most cities have attempted to reintegrate the city with the water body even to the extent of removing highways which had been constructed parallel to the water body. These expensive approaches are some of the many efforts done due to the increasing awareness on the benefits gained through waterfront regeneration. This has, however, helped to secure the sense of place as well as increasing the quality of living and working environment of the urban community. The lost of integration between the city and the water bodies is also experienced by the capital city of Malaysia, Kuala Lumpur. In the case of Kuala Lumpur city, the Klang and Gombak Rivers that run through the city centre act as the main water bodies. It used to be the life lines of the City when it was the main transportation mode for the people. It was from the rivers and the waterfront area that the morphological development of the city evolves. There are also attempts to reintegrate the rivers to the city since 1979. Based on a qualitative method, this paper employs content analysis and focus interview as the research tools to evaluate existing policies and guidelines available on the contextual integration between the waterfront and the urban river. This paper provides the six main findings which directly contributed to the existing contextual integration between the waterfront and the water bodies. These are i) absence of policy and guidelines before the third morphological period ii) existing policies and guidelines are general and mostly referring to zones rather than according to plots iii) Policy and guideline developed and implemented in isolation by different government agencies iv) lack of guidelines which is suitable to the Kuala Lumpur waterfront. v) lack of detail master planning for Kuala Lumpur waterfront vi) guidelines which are not legally bounded are making implementation difficult. These aspects are important to be underlined so that they are clearly identified, acknowledged and overcome for a more sustainable development of the waterfront in the city centre of Kuala Lumpur.

Keywords: Contextual integration, waterfront, policies, law, guideline

I. INTRODUCTION

Many cities with significant waterfront areas have used urban design as one of the main tools to create a better public realm in an approach towards achieving more sustainable development (Hoyle, 2001). In achieving a better public realm, contextual integration is one of the key factors of urban design and essential in achieving a more sustainable urban environment (Hoyle, 2000). The operational term of contextual integration in this research is the physical and functional relationship that a development/ building has with its surroundings (Carmona et.al, 2003). The context upon which this research will concentrate is the water body itself. Cities which have a positive contextual integration with their water body allow the public to enjoy this amenity for a better quality of life. Therefore, law, policies, and guidelines which are geared towards achieving good contextual integration are important frameworks for a city to achieve this goal. This research aims to examine the development of laws, policies and guidelines in relation to the contextual integration of Kuala Lumpur waterfront with its urban rivers in order to understand the existence of the contextual integration in the current context. It is hoped that this research can contribute as a reference for the future implementation towards achieving a more sustainable development of the City's waterfront.

II. METHODOLOGY

The research adopted a qualitative approach using content analysis techniques of available official documents (laws, policies and guideline) and archival records together with focused interviews of key decision-makers. Though the process can be limited and slow, its application is still widely used in varied topics and disciplines. It is an especially useful tool for 'summarising and handling relatively large quantities of qualitative material and for comparing different sets of data (from a range of sources, time-periods, localities, etc.) and its flexibility is particularly valuable, allowing adaptation to a wide range of problems and studies (Bird, 1983). The findings will be discussed based on three significant morphological periods:

- i) Early waterfront establishment – river decline (1857 -1910)
- ii) River decline - the commencement of the ‘waterfront regeneration’ (1911 – 1978)
- iii) ‘Waterfront regeneration’ till current (1979 – 2010).

III. BACKGROUND STUDY

Policies are government agendas established by the central government for other government agencies and local authorities to implement in their local areas. Policies are sometimes made legal for the purpose of mandatory implementation but sometimes they are not legalized. The roles of national policies and political philosophies have to be recognised as vital factors that cause changes to waterfronts (Riley and Smith, 1988, p.43). Clear evidence of the impact of national policies can be seen in UK towards urban regeneration through its Inner Urban Area Act, 1978. It was in 1972, that Peter Walker, the Secretary of State for the Environment gave the first public recognition of the need for urban regeneration in Britain. He appointed consultants to work on three deprived inner-city areas in Lambeth, Liverpool and Birmingham. The result of these studies and the subsequent Government White Paper in 1977 underlined the acute level of deprivation in the inner city. As a result, focus was switched to the urban programme with the government channeling financial resources from its new town programme ‘to urban areas to help the cities’. Slowly but gradually public attention on the issue increased during the first half of the following decade. Subsequently, the transformation of the downtown often focused upon the regeneration of the waterfront (Colquhoun, 1995).

The impact of law, policies and guidelines towards the regeneration of waterfronts can also be seen in the US. West (1989) mentioned an increase of environmental regulations and policy formulation in the US in 1970s and 1980s. Indeed, the Clean Water Act (see US Public Law 91-190) and the National Environmental Policy Act (see US Public Law 92-500) had significant impact upon waterfront. With the implementation of these policies, there were high demands on water clean-up to make waterfronts more attractive. These have led to the water quality improvements that have encouraged new investment in waterfront areas by developers and users alike. These policies also led to the reclamation of brownfield sites resulting in new parks and other multi-use developments which have visually enhanced waterfront areas (Breen & Rigby, 1996).

Many cities have implemented waterfront policies and guidelines that instigate contextual integration through design guidance and control. An example of this can be seen in the policies adopted by the Government Office for London that focused upon the River Thames as the core contributor to the quality of the London’s environment. Indeed, new development has to demonstrate consideration of how it integrates with the river (Carmona et. al., 2003).

IV. AN ANALYSIS OF KUALA LUMPUR WATERFRONT

A) Early Waterfront Establishment – River Decline (1857-1910)

The first settlement in Kuala Lumpur started at the waterfront in 1857. The earliest law which included aspects relating to the urban river - the Sanitary Board Enactment – was introduced in 1907. The enactment concentrated on health and sanitation including drainage as part of the law. The river was part of the drainage system but according to Norris (1980) under the newly established Sanitary Board, this enactment was primarily of a piece-meal and regulatory type. It was later reviewed and renamed as the Municipal Ordinance Cap 133 / 1913 and the Town Improvement Enactment 1917. This focused more on health and the habitation of houses (setting of back lanes and open spaces for sanitary conveniences) and did not specifically discuss the river or the importance of it. Though there were no planning policies or laws, many of the earlier waterfront developments consisting of residential buildings, public buildings and shops were contextually integrated with the urban river because they depended on the river as the main mode of transportation and for daily life resources. The residential houses often had direct access to boats on the river (A1 in Figure 1).



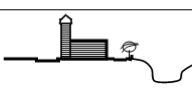
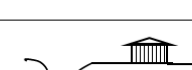
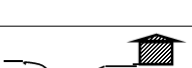
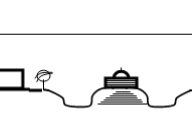
Early waterfront establishment - river decline (1857-1910)		
Type	Diagram of type of waterfront treatment	Description
A1		Building abutting the river on stilts and backing it
A2		Building built parallel with the river facing the street with side elevation next to the open space in between the building and the river
A3		Building with double frontage facing the main road and at the same time having entrance from the riverside with street in between
A4		building built facing the road and backing the river
A5		Building built facing the river with street in between
A6		Building with entrance and steps directly from the river

Figure 1. Relationship of waterfront and the waterbody between 1857-1910.

Public buildings often had double frontages (A3) with direct access from the river (A6). Some shops faced the river across a street or pathway (A5). Only a few buildings backed onto the river and faced the street (A4). Sadly, with the introduction of the railway and motor transportation during this period, the waterways became redundant and became the backyard of the city. From then on, contextual integration of the waterfront and the urban river started to decline.

B) River Decline – The Commencement of the “Waterfront Regeneration” (1911-1978)

. The specific law in relation to the river was in place starting in 1920s which is known as the Water Act 1920. This law is still use by the current Department of Irrigation and Drainage (DID) but only partially was adopted by Kuala Lumpur City Hall (KLCH) into its Street and Drainage Act 1974 (Act 133). The Water Act 1920 gave the definition of river, the responsible authority of the river and the riverbanks and those involved in the appeal board.

The Water Act 1920 was the first specific law that related to Kuala Lumpur's river. This Act is still in use by the current Department of Irrigation and Drainage (DID) but only partially was adopted by Kuala Lumpur City Hall (KLCH) into its Street and Drainage Act 1974 (Act 133). The Water Act 1920 defined the river and the responsibility of authority of the river and the riverbanks.

In 1923, with the introduction of town planning in Kuala Lumpur, a new Town Planning & Development Bill, 1923 was enacted. This marked the beginning of planning legislation in Malaysia. It embodied the zoning concept and included drainage and irrigation (including beautification) related to river improvement under sub-section 86 in consultation with the Chief Hydraulic Engineer and the Chairman of the Sanitary Board (Reade, 1924). In 1927, the Town Planning & Development Bill, 1923 was re-drafted due to 'inter-departmental jealousy' in relation to the power dilution (of the Sanitary Board) and also because the new Town Planning Committee was relegating an established authority of the Sanitary Board to a subordinate role (Kamarulddin, 2008). The revised Bill was simplified and did not specify matters relating to the river and improvement schemes were not included.

In the 1930s, amendments were made to the earlier Sanitary Board Enactment that consolidated various previous enactments incorporating the Town Planning Bill which included the Town Planning enactments in preparation of the zoning plan or better known as the General Town Plan. This was still inadequate because it did not include 'legal provision for community facilities' such as road reserve or river reserve (Lee, 1990). It gave statutory power to the Sanitary Board to 'prepare, administer and approve plans' that were prepared by the local authority (Lee, 1990). This enactment was later amended in 1955 and renamed as the Town Boards Enactment (Cap 137) which under section 89 included a requirement for building design in terms of appearance in relation to context, materials, height and relationship (access and egress) to the street and back lanes for the purpose of the night-soil services (Nordin, 2008). Though the importance of contextual integration was mentioned, it did not specifically mention the response towards the urban river despite the importance of the river to the city.

During this period, many other laws were enacted that incorporated penalties for polluting the waterways including the Irrigation Areas Act 1953 (Act 386); the Undang-undang Kecil Bangunan Dewan Bandaraya KL 1958; followed by the Akta Ibu Kota Persekutuan, 1960 (Act 190); Environmental Quality Act 1974; Street and Drainage Act, 1974; Local Government Act 1976 and Fisheries Act 1985 (Act 317). The

Land Conservation Act 1960 (Act 385) also incorporated control of the silting and erosion of the waterways. Other related laws in relation to the power for the river and its riverbanks were introduced in the National Land Code 1965 (Act 65) which confirmed the river as the property of the State and declared the river as a reserve. Currently, while this research is being conducted, DID is in the process of preparing a new 'River Law'.

There was a plethora of related laws enacted during this period, however, most of them concentrated on penalties for the pollution of waterways. This was clearly important in the achievement of good contextual integration because without a clean waterway, development is unlikely to be built with a positive relationship to the river (Pidwill, 1993). Despite these laws, there were minimal policies and guidelines to govern how waterfront development was contextually integrated with the river (KLSP, 1984). As a result, the majority of the waterfront developments were built backing onto the water (B1, B5, B6, B7 in Figure 2) with no direct access from the river.



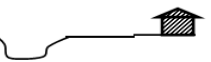

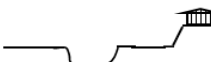
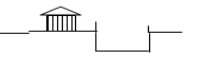
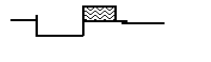
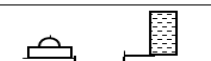
River decline- commencement of 'waterfront regeneration' (1911-1978)		
Type	Diagram of type of waterfront treatment	Description
B1		Building backing the river with backlane in between
B2		Building facing the main street perpendicular to the river with street in between
B3, A5		Building built facing the river with street in between
B4		Double frontage with open space in between building and river
B5		Building backing the river facing the road with street in between
B6		Building backing the river with backyard in between
B7		Building facing the street and abutting (backing/perpendicular) to the river
B8, A2		Building built parallel with the river with open space in between

Figure 2. Relationship of waterfront and the water body between 1911-1978

One of the reasons for this was due to the polluted condition of the river and regular flooding due to over-development (Interviewee 24, Interviewee 28). Towards the end of this period due to a major flood in 1971, the government took the decision to focus upon the importance of the river by controlling development and upgrade and cleaning-up the river and its waterfront (Interviewee 5). In

1978, concrete channeling for the river was proposed to ensure easier maintenance and ‘upgrading’ (Interviewee 12, Interviewee 29). This signaled the commencement of waterfront regeneration although it was primarily engineering work to mitigate flooding.

C) Waterfront Regeneration Through to date (1979-2010)

The first policy - the Kuala Lumpur Structure Plan 1984 - that stated clearly the importance of the waterfront and the river for the public realm was gazetted in this period. According to this Structure Plan, previous attempts by the public sector to improve environmental quality were handicapped by three main aspects:

- (i) a lack of manpower and technical expertise;
- (ii) development approaches that prioritised economic and engineering feasibility; and
- (iii) a low priority in the allocation of funds for landscaping and beautification programmes.

This situation also contributed to the situation at the waterfront resulting in developments - as in Figure 2- that were not contextually integrated with the urban river. Specific concerns about the waterfront and river pollution was mentioned due to the ‘*absence of positive policies and guiding principles for development of the natural features such as rivers*’. In its policy and Goal No.9 concern for the balance of the ‘*development, ecology and national heritage*’ were highlighted (KLSP 1984). Based on this, involvement of the private sectors in the beautification and landscaping provision with additional laws and regulations is stressed as part of the future development plan (KLSP 1984). Increasing the public, private and other agencies awareness of the importance of this matter was also in the plan. The Environmental Improvement Policies in the KLSP 1984 under sub-section LC7 specifically highlighted and acknowledged the waterfront as a potential public place. The Plan also stressed the need for future consideration of the relationships of buildings to the surrounding environment as part of the development control process. However, it was five years later in 1989, that the improvement of the contextual integration between the waterfront and the urban river were implemented (KLCH, 1989). The walkways along the waterfront especially in the historical area were improved with pavements to allow the public to have a continuous flow of movement along the river (Interviewee 10, Interviewee 3). Though indirectly mentioned, the 5th Malaysia Plan (1986-1990) stressed the need to preserve the environment, a concern for the enforcement of law, environmental planning and balanced development of socio-economic and environmental needs. Following from this and based on the available documents, the concern and awareness on the importance of the waterfront slowly increased. These can be seen through the increase in the number of policies and guidelines implemented.

In the 6th Malaysia Plan (1991-1995), the Ten Year Rehabilitation Programme and ‘Love Our River Campaign’ were launched in 1992 to improve the waterfront and the river. Out of 119 rivers monitored in 1995, 52 rivers were

found to be clean, 53 rivers are slightly polluted and 14 rivers were categorised as highly polluted and the Klang River was one of them. Unfortunately, 10 years later in the 2005, the campaign was announced as a failure by the Environmental Minister due to its concentration on beautifying the riverbanks rather than cleaning up the river (Star, 2007). The condition of Klang River is still recorded as a polluted river (Class III) in the Environmental Quality Report (2008).

Other initiatives included the amendment of the Town and Country Planning Act 1976 in 1994 to improve measures on the conservation of the environment in all planning applications. The Town and Country Planning Department provided advisory and management services to the Federal, State and Local Authorities towards improving the environment. However, their advice was rarely sought in the implementation of Kuala Lumpur planning because the Kuala Lumpur City Hall has its own Planning and Masterplan Department (Interviewee 16).

The following 7th Malaysia Plan (1996-2000) not only focused upon ensuring more sustainable development through the preservation of environment but also emphasized the integration of environmental considerations with the economic and social development process. It is a continuation of the 6th Malaysia Plan that introduced measures to protect the environment and to conserve natural resources. For example, starting in 1987, all major projects were subjected to environmental impact assessments. The proposal for a National Environmental Policy was introduced in the 7th Plan with the Plan of Action to enforce and monitor the environment effectively. Education on environmental awareness and campaigns were also intensified to ensure active participation from all sections of society. It also highlighted the importance of improving the quality of life side by side with the rapid development of economy. Greater aesthetic values especially the ‘*appreciation and preservation of the arts and culture and heritage*’ were also acknowledged as part of it. Heritage in this context can be related to the river as part of the natural heritage. Efforts involved including environmental considerations in town planning and in-land clearance, upgrading of the national sewage system and the cleaning-up of the activities of the rivers and several flood mitigation projects were implemented. Since then the National Environmental Policy was the guide for environmental and resource management in ensuring long-term sustainability and improvement in quality of life and during the Plan period, there were legislative mechanisms ‘*...being streamlined at different level as an integral part of overall project planning in order to reduce the adverse environmental impact of proposed projects*’ (7th Malaysia Plan, 1996).

In the 8th Malaysia Plan (2001-2005), the pursuit for sustainable development becomes greater. One of the key strategies during the Plan was to adopt an integrated and holistic approach in addressing environmental and resource issues to attain sustainable development. During this plan also the new Kuala Lumpur Structure Plan 2020 was gazetted

in replaced of the previous KLSP 1984 which was found to be inconsistent with the rapid economic growth of the country. Under its Urban Design Policies in subsection no. 700 :Urban linkages- river corridor was recognised as the potential of the river corridor and future actions will have to be made to increase the value of amenities in this area. The riverfront development guideline shall be formulated and implemented. Since then, various other guidelines in relation to the waterfront were drafted by several departments. This include the 'Facing the River Concept Guideline' by DID (2003), Waterfront as Recreational Area by Landscape Department (2005) and the Planning Guideline for River Reserve as Public Open Space by Town and Country Planning Department (2005). Unfortunately, it was found that these ungazetted guidelines were only use in isolation within the department or agencies which produced them.

Under this Plan also the National Physical Plan (2005) was also launched which highlighted in one of its policies the importance of the conserving the rivers and the surrounding environment under the sub section NPP 22. This is also an important policy to increase the quality of the contextual integration between the waterfront and the urban river. One of the more recent acts, the National Heritage Act 2005 incorporated provision for the conservation and preservation of national heritage including the natural heritage, which includes the rivers. The Act was welcomed after a long wait to preserve the deteriorating national heritage. The implementation and enforcement of the Act were questioned, however, when one of the historical buildings gazetted was demolished in the name of 'urban regeneration' in 2006 (Phang, 2006).

The 9th Malaysia Plan (2006-2010, p.10) highlighted five main thrusts including one that was '*...to improve the standard and sustainability of quality life*'. Though general in manner, the thrust can be indirectly related to the aspiration to improve the integration between the waterfront and the urban river. This was clearly stated under the environmental section with the provision of RM510 million for the improvement and beautification of the rivers and RM4 billion for the purposes of flood mitigation. During this Plan, one of the measures taken to mitigate flood which is the RM1.8million Smart Tunnel Project, was realised in 2008. Also under this Plan, policies were further strengthened with the launch of the National Urbanisation Policy (2006) that carried an aim to achieve more sustainable urban development. Being general in manner, it does not specifically focus on the importance of the waterfront but mentions the importance of promoting the usage of the existing facilities and returning vitality to urban centres thereby implying the importance of the waterfront and the urban river. This can be seen implemented in the newly drafted Local Plan for Kuala Lumpur 2020 which in detail specifically focused upon one segment of the guidelines to guide the future development of Kuala Lumpur's waterfront. Unfortunately, it is yet to be revised and gazetted after the public review session in August 2008.

Surprisingly, with all the various laws, policies and guidelines put into place during this period, many of the waterfront developments built were still not contextually integrated with the urban river. This can be seen in the findings of the waterfront treatments in Figure 3 (C3, C5, C6, C7, C8, C9, C10, C13).

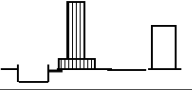
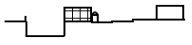

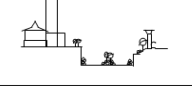
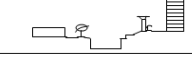

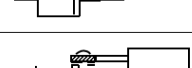


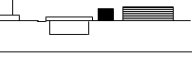

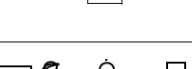
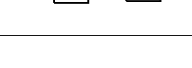
Type	Diagram of type of waterfron treatment	Description
C1, B1		Mid and Highrise building backing the river with backlane in between
C2, B7		Building facing the street and abutting (backing/perpendicular) to the river
C3, B6		Building backing the river with backyard in between
C4		River feature 'naturalised'
C5, B3, A5		Building built facing the river with street/LRT line in between
C6, B2		Building facing the main street with side elevation facing the river with street in between
C7, B5		Building backing the river facing the road with street in between
C8		Building perge at the river bank with columns in the river channel
C9		Building - on top of the river
C10		Building which originally faced the river is now blocked
C11		Building facing the river with public space in between building and river
C12		Terraces built facing the river for public
C13		Building which originally has direct connection to the river is now doesn't

Figure 3. Relationship of waterfront and the water body 1979-2010

Many high-rise buildings were built close to the river thus blocking the public's view towards the river (C1). There were also new buildings constructed abutting and backing onto the river thus blocking the view, preventing the continuity of the walkway along the river and not allowing any activity to happen in between the waterfront and the river (C2, C3). Buildings which are built perched and over the riverbanks can also be seen in this period (C8, C9). These buildings became obstacles for the public to view the urban river and obstructions to activity happening in between the waterfront and the urban river. Sadly, it was also during this period that some of buildings that used to have a strong

contextual integration with the river became one that did not (C10, C13). With the existence of this type of development, the implementation of the available laws, policies and guidelines is in question and serious focus should be given to this matter. Indeed, it is worrying that this situation had occurred if more sustainable development is going to be achieved in the future development.

Only recently, after the KLSP 2020, some positive implementation was seen where new developments have begun to open up towards the urban river again. For example, C12 (Figure 3)- terraces were built on the waterfront facing the urban river allowing for contextual integration to take place. There were also developments built facing the river with a well-landscaped public space in between the waterfront and the urban river (C11). This gave some indication of an increase of positive development responding to the laws, policies and guidelines available.

V. CONCLUSIONS

The research results indicate that although there were laws available, the absence of policy and guidelines before the third morphological period was one of the main influences contributing to the lack of contextual integration between the waterfront and the urban river (Figure 4).

Related Law/ Policy/ Guideline to the waterfront development and the Urban River according to the years			
Year	Law	Year	Policy/ Guideline
Waterfront Establishment - River Decline (1857-1910)			
1907	Sanitary Boards Enactment		
River Decline to the Commencement of Waterfront Regeneration (1911-1978)			
1913	Municipal ordinance Cap 133/ 1913		
1920	Water Act 1920 (Act 418)		
1923	Town Planning & Development Bill, 1923		
1927	Town Planning & Development Bill, 1927		
1930s	Sanitary Board Enactment Cap 137, 1930		
1955	Town Boards Enactment of the Federated Malay States (Cap 137) amended in 21 st April 1955		
1953	Irrigation Areas Act 1953 (Act 386)		
1958	Undang-undang kecil Bangunan Dewan Bandaraya Kuala Lumpur, 1958		
1960	Akta Ibu Kota Persekutuan, 1960 (Act 190)		
1964	Land Conservation Act		
1965	National land Code 1965 (Act 65)		
1974	Environmental Quality Act 1974		
1974	Street and Drainage Act, 1974		
1974	Federal Constitution		
1976	Local Government Act 1976		
1985	Fisheries Act 1985 (Act 317)		
1970s	City of Kuala Lumpur (Planning) Act, 1973 (Act 107)		
1976	Town and Country Planning 1976		
Waterfront Regeneration to Current (1979-2009)			
1982	Federal Territory (Planning) Act 1982 (Act 267)		
		1984	KLSP 1984
		1986-1990	5 th M'sia Plan
		1991-1995	6 th M'sia Plan
		1996-2000	7 th M'sia Plan
			KLSP 2020
			National Environmental Policy
			National Physical Plan
2005	National Heritage Act 2005 (Act 645)	2001-2005	8 th M'sia Plan
2005			River reserve (JPBD)
2005			Konsep Pembangunan Mengadap Sungai (JPS)
2005			Waterfront as Recreational Area
2006		2006-2010	9 th M'sia Plan
2008			National Urbanisation Policy
			Draft Local Plan 2020

Figure 4. Chronology of law, policies and guidelines related to the waterfront development periods

Much of the earlier planning of Kuala Lumpur was undertaken without any master plan that included the waterfront. Most planning was done according to necessity and ad hoc situations. This resulted in waterfront areas that were not well linked with the city. Many of the waterfront developments were already in place before the third morphological period and were there before the river reserves were established. It is obvious that many of the developments built during the second morphological were not contextually integrated with the urban river. In the third morphological period, however, though policies and guidelines were in place, they were very general and mostly related to zoning rather than specific plots. This resulted in difficulty monitoring and controlling development. There was also lack of guidelines that were suitable to Kuala Lumpur's city centre context. There was also a lack of a detailed master plan, which resulted in ad-hoc and piecemeal implementation on the ground. Some of the guidelines were not law or gazetted and this also created difficulties for implementation. Some of the available guidelines were also used in isolation within the agencies or departments that produced them. This prevented a holistic approach towards achieving a more sustainable development of the waterfront. Based on the findings, more detailed research is recommended to identify possible solutions to the problem of realising the more sustainable development of the Kuala Lumpur waterfront.

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