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River Edge Development: A case of West Zone, Surat City

Nency A Patel[1], Palak S. Shah[2]

[1] M.E. in town and country planning, Sarvajanik college of Engineering and Technology, Surat, India
[2] Ad hoc Assistant Professor, Sarvajanik college of Engineering and Technology, Surat, India

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Abstract - *Rivers have always been critical to any human settlement's survival. Waterfront areas are one of the most difficult urban locations to develop, but they are also one of the most promising. Communities with a range of characteristics in close proximity to water bodies, as well as aid in adjusting to economic and social conditions. Not just in terms of the waterfront, but in terms of the city as a whole. It combines numerous threads of placemaking, such as environmental responsibility, social equality, and economic viability, as well as planning and transportation policy, and architectural design, to create places with distinct identities and beauty. Various case studies and analysis will be used to propose options for a successful riverfront with significant socio interaction spaces.*

Key Words: Environment, riverfront, green space, sustainability, socio-interactive

1. INTRODUCTION

The waterfront is an important area. The value of the waterfront increases when it is located within the city. A robust waterfront development boosts a community's quality of life as well as its economy. Over time, waterfront locations have served a variety of purposes. A number of them functioned as ports and docks. They have grown obsolete as transportation technology has improved, and they are no longer used as operating ports. Governments implemented waterfront revitalization plans for these locations when the docklands were abandoned in the late 1970s and early 1980s. The city's waterfront restoration has opened up opportunities to reuse vacant docklands for commercial, residential, or public open space purposes.

Waterfront development is a global phenomena that involves a lot of trial and error and learning. Waterfront development projects must take into account not just engineering technical factors, but also systematic planning and long-term administration. Waterfronts are the meeting point of the aquatic and terrestrial worlds, the home of complex intertidal communities, the release point for wave motion, and the vehicle for numerous dispersal patterns in the non-human domain. Waterfronts have a long history of shifting types and levels of use in relation to human history and use, and are now returning to potentially vibrant and complex public use.

1.1 Riverfront Development

A riverside is the area where an urban settlement meets a river. Riverfront refers to a section of a city or town that is right on a river. Festivals, marketplaces, fireworks displays, concerts, spontaneous celebrations, and other high-energy events take place there. The riverfront presents a difficult task in urban development. It's also a great place to get away from the stresses of city life. The urban rivers give citizens with a variety of options that improve their quality of life in many aspects, including economic, cultural, and social. Furthermore, the riverside and its greenery corridor reduced water pollution, increased species diversity, and even moderated climate change in their urban and surrounding areas.

1.2 Types of Riverfront Development

1. Environment Riverfront
2. Historic Riverfront
3. Mixed-use Riverfront
4. Recreational Riverfront
5. Residential Riverfront

1.3 Benefits of Canal Oriented Development

1. Creation of jobs
2. Source of revenue for government
3. Development of tourism
4. Economic Spin-off's
5. Habitat protection and restoration
6. Maintenance of river bank
7. Flood control measures
8. Provide the general public with an open space for leisure and recreation.
9. Revitalizing the neighbourhood
10. Creates a healthy and active urban environment

2. CASE STUDY

1. Sabarmati Riverfront Development Project

By channeling the river to a constant width of 263m, riverbed land has been reclaimed to create 11.25 km of public riverfront on the both banks. The total land reclamation is 202.7 hectares.

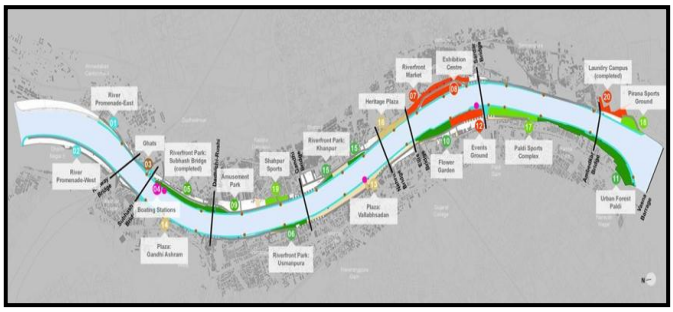

Fig.1 Sabarmati Riverfront, Ahemdavad
(Source: SRFDCL)

Infrastructure Facilities:

Facilities at the promenade: Access points from the city level via staircases and ramps at regular intervals and under every bridge, Ghats at key locations, Boating facilities, Concrete paved flooring, Parks and plazas.

Amenities: At the exhibition centre, the riverfront will host trade-fair facilities to serve the business community. The events ground offers venues for holding organized events of local and national importance.

The laundry campus provides facilities for the washing community that traditionally used the river banks for laundering. Integrated outdoor vending areas, situated all along the length of the project, will accommodate street vendors.
(Source: SRFDCL)

2 Huangpu Riverbank Development Project, Shanghai, China

In the Spring of 2017, the City of Shanghai decided to transform River site, into the Cultural Park.

The design vision of the Cultural Park integrates and re-connects the site into the larger ecosystem and urban context of the city. This allows the creation of strong connections to existing riverfront parks and a proposed green corridor, as well as areas of mixed-use development and transit connections to surrounding urban districts. The site is aligned along an ecological "spine" which connects the Huangpu River with the open space corridor to the south. The park will become a destination for multiple user groups with a wide variety of activities, reflecting a culture of equity and openness.

Four themed corridors

- the River Link Corridor
- Culture Corridor
- Energy Corridor
- Nature Corridor

Serve as the connecting framework for the park.
Size of the cultural park is 189 hectares.

(Source: Shanghai cultural park, china, Saaki projects)

Fig. 2 Sanghai Cultural Park, China
(Source: Shanghai cultural park, china, Saaki projects)

3. STUDY AREA PROFILE

The selected site is in the West Zone in Surat City. Which is in the fast-developing part of the city. The West Zone consists of 8 wards. The area of the West Zone is 51.279 Sq.Km. and the population is around 5,61,329 as per the 2021.Selected site is in Pal-Bhatha area of west zone, Surat city.

Table 1 Details of selected stretch

Details about study area		
1.	River Width	470 m
2.	Stretch of River	1.13 km
4.	Road Width	5 m
5.	Area of the site	35 ha

Fig. 3 Study area

4. PLANNING PROPOSAL

This figure shows the components are proposed to the Study Area.

Fig. 4 Road connectivity

Table 2 Area of Components

Sr. No	Purpose	Area (sq.m)	Area (Hectors)
1	Parking	10000	1
2	Children Play Area	13300	1.33
3	Amphitheatre	12700	1.27
4	Event Ground	23700	2.37
5	Landscape Garden	65000	6.50
6	Flower Park	33000	3.30
7	PBS Station	500	0.05
8	Food Court	12300	1.23
9	Biodiversity Park	65100	6.51
10	Walkway & Cycling Track	41200	4.12
11	Roads & Other Utilities	73200	7.32
	Total	235600	35

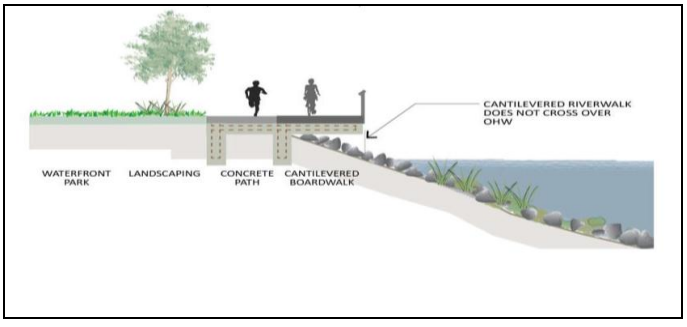

Fig. 5 Cross Section of Riverfront Walkway

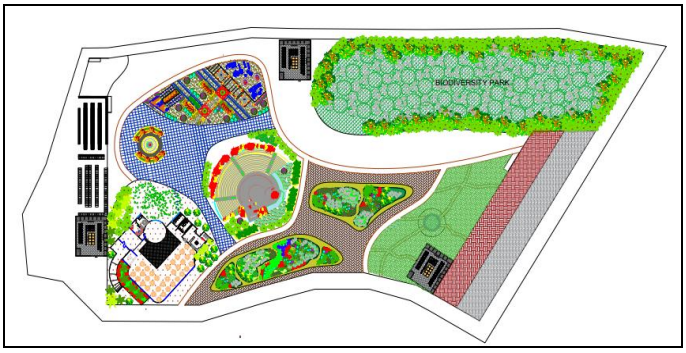

Fig. 6 Plan of Proposed Site

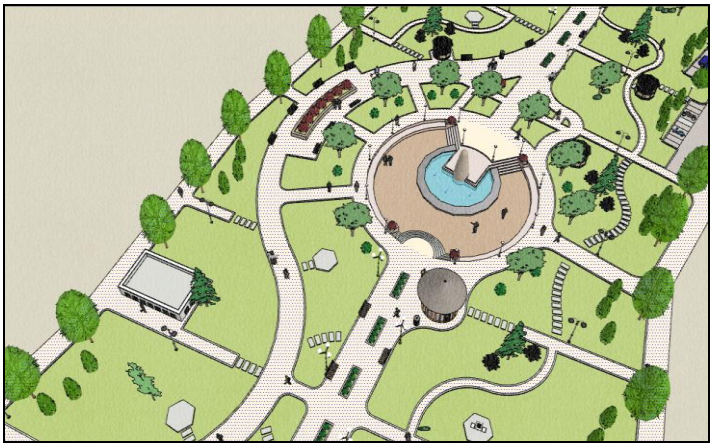

Fig. 8 Plan of Landuse Garden

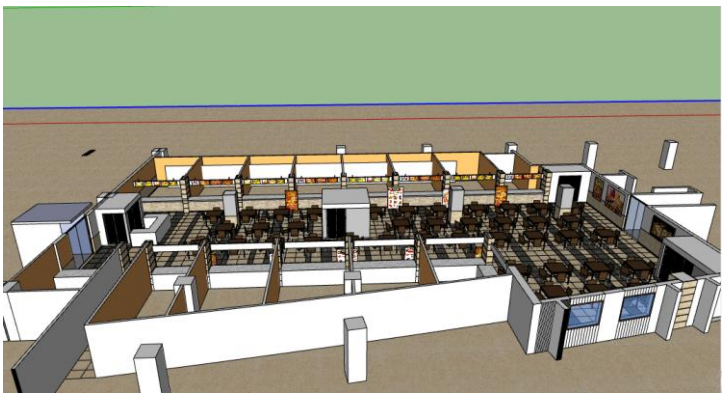

Fig. 8 View of Food Court

Fig. 5 Cross Section of Riverfront Walkway

5. CONCLUSIONS

Cities are looking for a shoreline that can be enjoyed by the public. They want a shoreline with plenty of visual and physical public access to both the water body and the land — all day, all year. Cities also desire a waterfront that serves several purposes: it should be a location to work, live, and play, as well as a place to visit. The river, as a natural potential and asset for the city, can provide significant benefits. Water attachment can be demonstrated through a variety of activities involving the dependent and independent usage of water. The goal is to re-establish the relationship between the river and the city.

Through a planning proposal, turn the river into a key help for the enhancement of the city's based and quality of life, making Surat more appealing and the river beautiful.Planning proposals like biodiversity park and green spaces also helps to improve the environment of the city.

The planning proposal involes recreational areas, promenade, green corridor, biodiversity park, flower park etc. River edge development proposal covers 35 hector area of west zone of Surat city. Total cost for development of walkway & cycle track is 3.95 crores.

Other planning proposal of the area will develop by PPP work.

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