

# Revitalization of river front for establishing socio- cultural connect

P. A. Shirke<sup>1\*</sup>, A.N.Bore<sup>2</sup> and P. Kulkarni<sup>3</sup>

<sup>1,2,3</sup> MGM's Jawaharlal Nehru Engineering College, Aurangabad

Mahatma Gandhi Mission (MGM), N-6, CIDCO, Aurangabad -431003, Maharashtra, INDIA

\*Corresponding author: pratikshirke16@gmail.com, Tel: +91 240 2482893, Fax: 91 240 2482232

## ABSTRACT

Any successful development needs to balance the relationship between existing and natural resources, open spaces, built forms of architecture and infrastructure. Very few places have managed to revitalize with creativity, quality and connectivity relative to their natural resources. However, in certain cases, this attempt to create vibrant streets with moving traffic and pedestrian walkways, reclaimed waterfronts, safe sites for retail and lodging is a goal for many towns. Waterfronts represent environmental, aesthetic and economic opportunities as well as a record of the maritime culture and history. Lack of interesting design can make these spaces monotonous; which can make them socially dysfunctional and culturally blank. This may lead to a strained interaction between the people and these valuable areas. This often generates unhealthy and unstable environments within the existing socio-economic systems. The article discusses certain principles & guidelines to be followed while designing a riverfront along with the case studies where these guidelines and principles are implemented.

**Keywords:** Riverfront, socio-cultural need, guidelines, Sabarmati, Godavari, sustainability

### 1. Introduction:

A waterfront is the zone of interaction between urban or rural developments and the water; a waterfront area is considered as an unique and irreplaceable resource where it is the interface between land, water, air, sun and vegetation. Moreover, the waterfront is characterized as a place integrating land with water and having a natural attraction to people. In real, the sea shores and riverfront are the most inviting water features for any human settlement and in most countries, the land in next to the water is developed on priority than the inland areas. Waterfront development refers to any development in front of water and a water body; a river, lake, ocean, bay, creek or canal. In the development area, taken into account waterfront development may not necessarily need to be directly fronting water but may only need to look attached or next to the water body. They believe that commanding a view of water can still be considered as a waterfront property.

Today, people across the world seek a riverfront that is a place of public enjoyment. They want a riverfront where there is ample visual and physical public access - all day, all year - to both water and the land. We also want a riverfront that serves more than one purpose: we want it to be a place to work and live as well as a place to play. In

other words, they want a place that contributes to the quality of life in all of its aspects - economic, social and cultural.[1] Another reason for reclaiming the waterfronts is that they serve recreational purposes. They could be used for jogging, cycling, open areas, boating, fishing and other active and passive uses. These activities along river edges served three purposes - recreation, healthier environment and healthier people. History plays an important role in shaping a place. Each riverfront has a different context and history. It gives any place its unique identity. Historic buildings can be restored; forms can be derived from architectural or historical features and used symbolically as signage, sculpture etc. It can also be used to educate people about the place. [2] Location, topography, soils, climate, existing urban fabric and land use, movement pattern, etc. help shape the riverfront and proposing the future development. For example development in a northern region will be quite different from that of one located in southern area, although the basic functions will be the same.

### 1.1 Issues of existing riverfronts:

The cultural, religious, functional and ecological values attributed to the rivers in Indian context have allowed the cities with images of their own. They bespeak if the Ghats are socio- cultural hubs of public- life. Since the



times immemorial, the riverbanks in India have been considered to be a mirror reflecting the society. However, with the passage of time, these ghats have deteriorated, the river water has been polluted and the urban human has turned back to this source of life.

Much to the distress of environmentalists and civic bodies, many rivers are on the verge of extinction. The settlements along the riverbanks transformed over a period of time into a large urban region. Industrializations drifted away the river bank from the towns and towns started finding other foci and became extrovert from introvert.

### 1.2 Environmental aspect and sustainability :

There are several environmental issues related to riverfront development. New development should be sensitive to the natural habitats in the ecosystem. There are other environment hazards like floods or toxic residues of abandoned industrial sites. These factors must be taken into account and desirable solutions should be proposed to maintain safety along urban riverfronts. Riverfront development has major impact on the environment because of huge amount of construction and accommodating greater number of people on the site. Interaction with the river has become important for planning of sustainable development. This can be addressed by selecting building materials, heights, native plants for landscaping, reusing disturbed areas and building within the context.

The riverfront redevelopment projects can have a favorable effect on water quality because the water pollution is taken care of and also the surrounding land uses are improved. Zoning restrictions control the inappropriate land uses. The appropriate development of land also brings more local citizens and tourists who have a favorable impact on economy. Riverfronts are public spaces. They can be used for a variety of activities e.g. a festive gathering place, a variety of recreation resources (active and passive), a city landmark, mixed use, residential, retail etc.[3]

### 2. Riverfront development:

India is referred to as the "Land of Rivers". The multitude of tributaries and the close building of Indian civilization and culture to the local rivers is the reason for this characterization. Aap- water is one of the fine elements in Panchamahabhutas is worshipped and respected to the highest order in India. Throughout the history it has been manifested that the rivers are not only for satisfying the

basic necessity of providing water but also play an integral role in every aspect of life of a human being from the "Beginning till the end". The government is looking to harness the country's 50,000 km of sea and river fronts as waterways and mulling innovative ways of financing to raise around Rs 70,000 crore to develop these stretches.[4]

**2.1 Guidelines for riverfront development:** In most countries, various forms of regulations were implemented to correct physical, economic, social and spatial imbalances. These guidelines for riverfront development are structured around seven principles:-

**i. Identity principle:** Typically displaying deep cultural stratification of waterfront identity resources, coupled with the willingness and ability of institutions and technicians to optimize such resources, in addition to a population which is aware of the importance of interaction and its active role in the transformation process. These elements are most frequently encountered in historic waterfronts, places where a sense of belonging is rooted in both space and time, along with an high awareness of cultural values.

**ii. Economic sustainability principle:**

Which calls for a pre-existing, solid economic base—either internal or to be set up in financial partnerships—to activate and maintain waterfront regeneration within a context of policies and regulations aimed at facilitating their completion. In those areas we have to improve the use of public-private partnership tools or policies of business improvement districts have to be in place for setting up some incentive to encourage new business into the area.

**iii. Potentiality principle:**

Appraises area experiencing an imbalance between the top-level potential envisaged or recognised by analysts, planners, artists and entrepreneurs and sets this against its current circumstances and decision-making trends. This imbalance acts as a sort of transformer, converting potential energy into the "kinetic" one needed for regeneration. Just think of the extraordinary reserves of both quality and opportunity for transformation possessed by port districts with large tracts of brownfield sites and factories, just waiting to be transformed into incubators of activity, into developer of smartness or to provide the necessary space for large-scale service facilities.



#### iv. Dynamism principle:

Hands back the know-how, competence and tools needed to set creative process in motion and produce future transformation in the fields of culture, science and technology. Think of the enormous contribution made by cultural associations or micro-enterprises which forge the very nerve centre of the new socio-economic framework of town planning. Another great, dynamic resource is the presence of communities of artists, creative and talents taking up residence in disused areas; redefining functions, opening galleries, setting up theatre programmes and organising cultural, educational and leisure activities.

#### v. Interaction principle:

Allows us to test out opportunities for informal, spontaneous forms of communication as well as checking for the presence of suitable environments for diversity and variety, as is the case of riverfront linked with historic centres, home to a range of diverse ethnic groups, or neighbourhoods close to large ports, traditionally areas

development of both technique and art, production and housing, businesses and leisure.

**vii. Perturbation principle:** Provides us with a tool to recognize the creative milieu, an indication of the latent energy required to produce a disturbance within that context and the resultant imbalance between the current situation and a vision for the future, through positive tension experienced by the population in residence, moving it to be proactive and overcome the marginal role the area has been assigned. This sort of latent energy is often found in declined waterfront areas where marginalization has produced a certain social unity and widespread discontent generates positive tension, ripe to be guided in the right direction.[5].

#### 2.2 Factors while planning a riverfront:

The elements of a successful waterfront development is shown in Fig.1

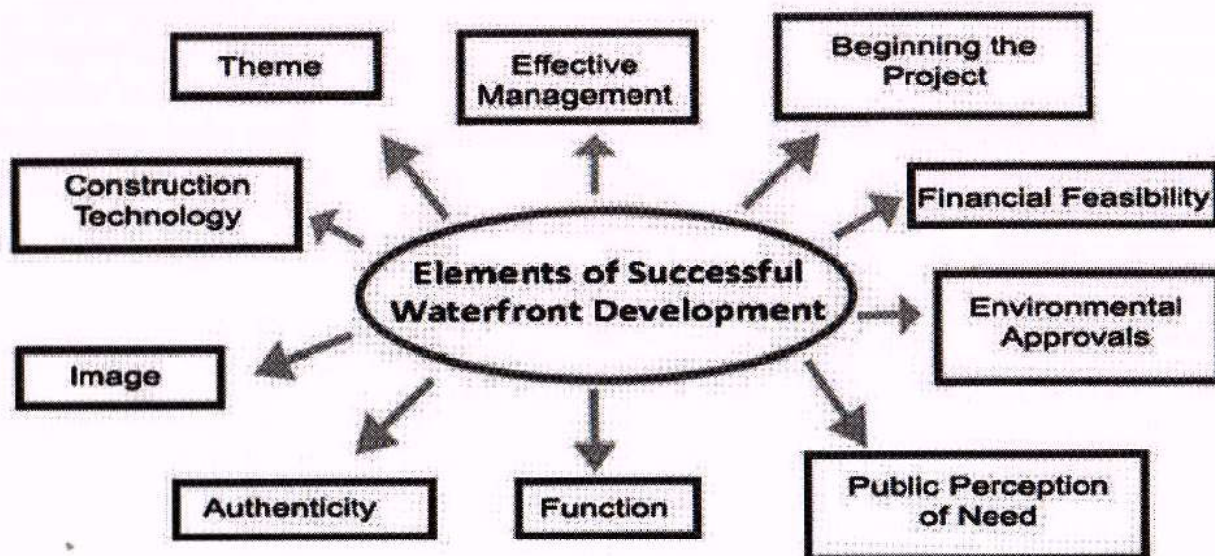


Fig.1. Elements of a Successful Waterfront Development [6]

which excel in the ways of trade, transfer and the most lively sort of multicultural community.

**vi. Multi-sectorality principle:** Highlights the importance of a multifaceted, non-homogenous environment, comprising a combination of living accommodation, manufacturing and commercial businesses, high quality cultural activities and folklore. A dynamic, synergetic environment capable of bridging the

i. Land side issues – site preservation, orientation, scenic views, vegetation, drainage, runoff control systems, limiting non-point pollution sources, solid waste management,

ii. Technical and Financial Assistance - agencies and Grant Programs, community development blocks, growth management implementation, NGOs, etc.

iii. Water quality assessment and management – sewage treatment plants, waste water disposal mechanisms, solid



waste disposal, grey water management, green water harvesting, etc.

iv. Environmental considerations – point and non-point pollution sources, natural water bodies, aquifers, ecosystems, etc.

v. Cultural and Religious aspect – ascribed holiness, national standing in terms of piety, significance in Hindu life, potential World Heritage site, etc.

vi. Legal systems and existing customary rules and rights, public access, etc.

vii. Climate, topography, etc.

### **2.1 Advantages and benefits of riverfront development:**

Riverfronts have become a key site of urban transformation with the power to recapture economic investment and signal its post-industrial dawning. New amenities and activities are defended by the state as essential engines to propel the city as a cultural destination-the riverfront being the most promising landscape for this to happen. With the development of Riverfront there would be creation of jobs in developing the front, jobs as it gives way to starting up a host of commercial activities in that region and also indirect job creation associated with the set of activities. Source of revenue for government – government would be able to earn revenue in terms of taxes from the commercial activities in the region. The commercial activities include shops, restaurants, sport activities, transportation, boating etc. which can be leased out or giving to private operators. [7]

Development of tourism in the region- with the development of riverfront the tourism in the region can be increased by offering a variety of attractions like water sports, entertainment arenas, parks, shopping areas etc. Economic Spin-offs – rise in the value of properties in and around the region, acting as a catalyst for redevelopment and renewal of nearby places. Habitat protection and restoration. A proper design of projects in conserving river and maintenance of rivers will be ensured by Water conservation practices- development of Riverfront projects.

Beautification of riverfront with a natural outlook will provide the general public with an open space for leisure and recreation. Providing employment opportunities for nearby people and helping in development of region. Encouraging recreational activities like walking, jogging, biking, sports activities etc. Improving quality of life of nearby community by revitalizing the neighbourhood. [8]

### **3. Case studies on various watererfront development principles:**

#### **3.1 Marine drive project, Mumbai:**

The influence of Multi Sectorality , Identity & Interaction Principles can be seen in this project. The project aims at strengthening Mumbai's image as an emerging globally competitive city. Along with the other developments planned for the city by the MMRDA, an area of prime concern was the Marine Drive stretch. This is one of the longest man made promenades by the Arabian sea which Mumbaikars frequent, not to mention the tourists who travel from other parts of India and the world to take a breathtaking view of the large expanse of the sea. It is a place where the rich and poor alike stroll along the promenade, each with their own agenda which ranges from just from seeing the sunset, to day dreaming, to relax, to enjoy, to be in solitude or with friends, etc.

Mumbai Metropolitan Region development authority's objective for the Marine Drive Project was to refurbish and revamp Marine Drive as an important public place through improvements based on an integrated design approach involving planning, designing and conservation inputs for convenient and efficient pedestrian movement provisions of parking spaces, railings, paving, landscape street furniture and signage and other measures required to conserve and enhance the Art Deco character of this waterfront. The assignment included preparation of refurbishment strategy and a physical plan, design of individual elements, and provision of services required for its implementation and supervision of work during the execution of the project. [9] The refurbishment of marine drive masterplan is shown in Fig.2a. The pictorial view of marine drive, Mumbai is shown in Fig. 2b.



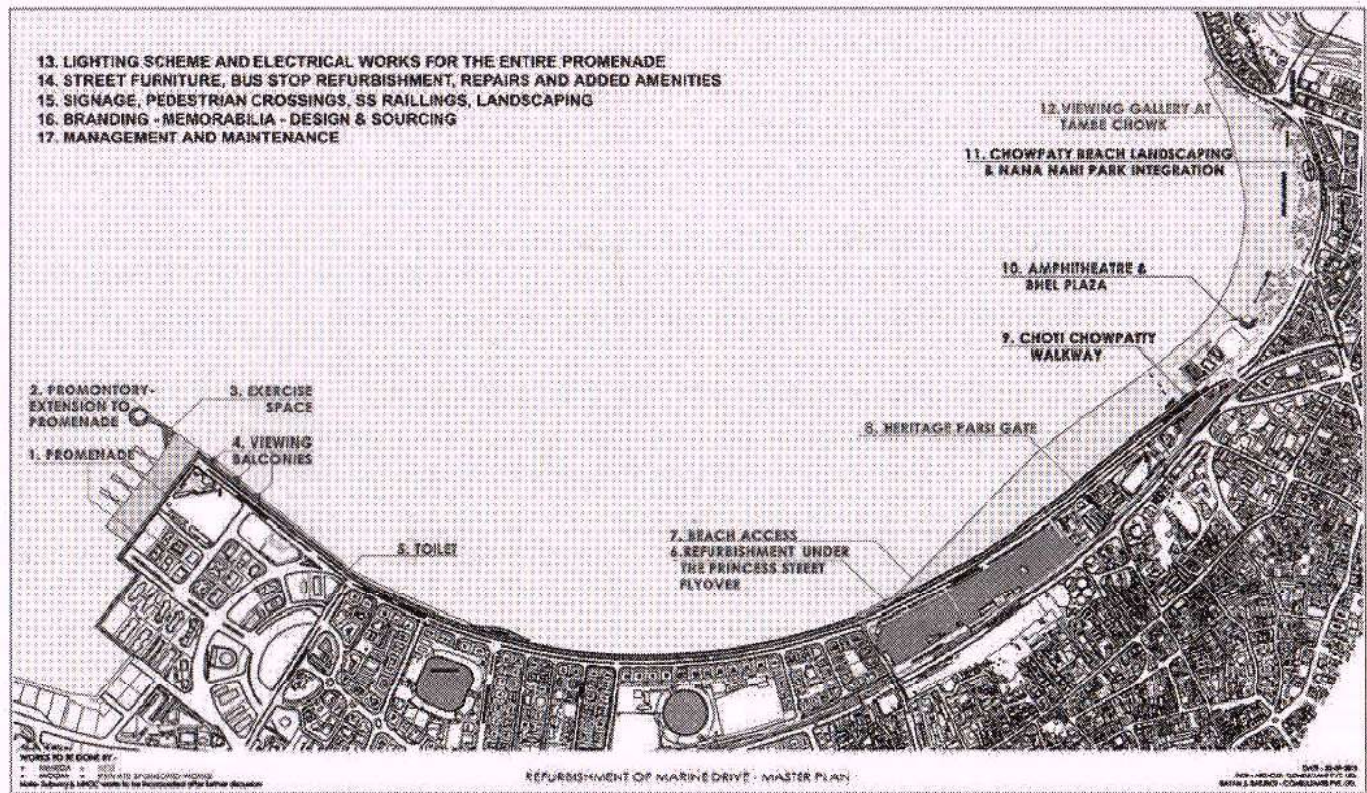


Fig.2a. Marine drive waterfront development project plan, Mumbai [9]



Fig. 2b. Pictorial view of Marine drive waterfront, Mumbai [9]

**Sabarmati riverfront development:**

It is observed that Sabarmati project has given importance to the Interaction principle as well as the Identity & Dynamism Principle guidelines. The sabarmati Riverfront Development project began as an urban renewal project to significantly improve the spatial structure and

habitat conditions of the river and adjoining areas. This project aims to transform Ahmedabad's historic yet neglected river into a vibrant & vital focus for the Ahmedabad City. The development project encompasses both banks of the Sabarmati for a 10.5 kms, stretch, creating approximately 185 hectares of reclaimed land.



The project includes water management systems to minimize flooding in traditionally flood-prone areas and to clean up the Sabarmati with new sewage treatment infrastructure. [10] Master plan of Sabarmati riverfront development, Ahmedabad is shown in Fig.3a.

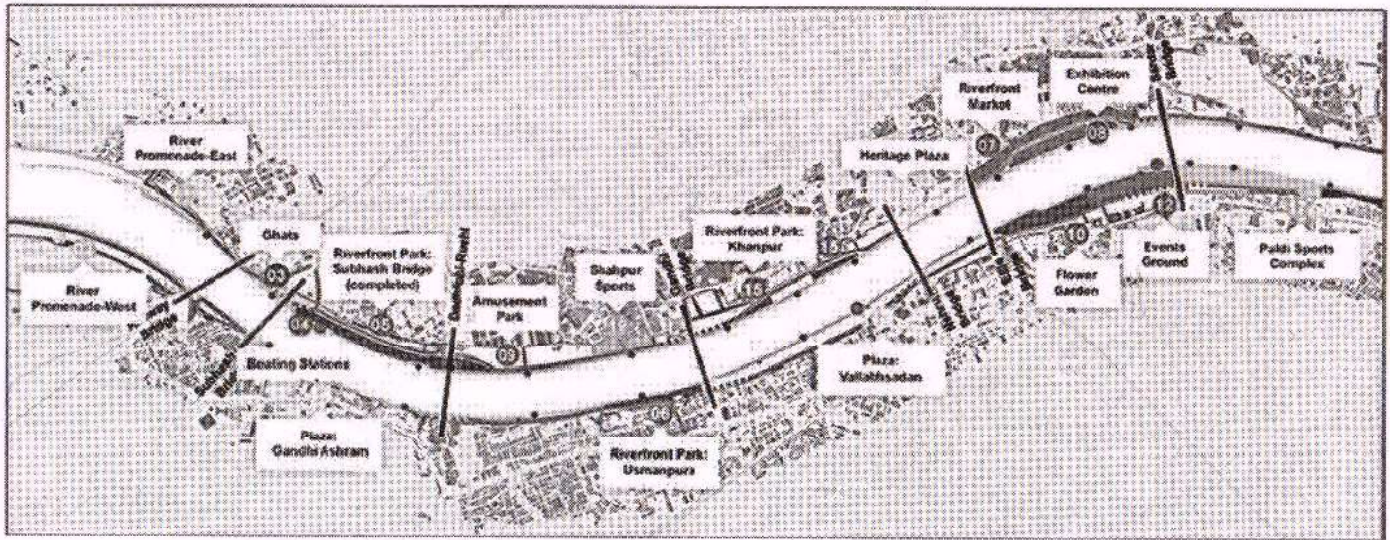


Fig.3a. Master plan of Sabarmati riverfront development, Ahmedabad [10]

These include providing interceptor sewer lines along both banks of the river to divert sewage to Ahmedabad's two sewage treatment plants; and building retaining walls which will protect the low-lying areas near the riverbanks from flooding. A key element of the project is a new linear two-level promenade. The lower promenade with a minimum width of 10 meters will be just above water level, providing uninterrupted pedestrian access to the water. The upper promenade will host a variety of public buildings, cultural and educational institutions, public parks and plazas and a few areas for commercial development, while new traffic infrastructure will connect the riverfront to the city.

The project aspires to create a unique identity for Ahmedabad by creating a unique skyline for the city. Being a landmark project with far reaching impacts, it is the backbone for rejuvenating inner city neighborhoods adjacent to the riverfront project, thereby spurring future developments within the city. The pictorial view of Sabarmati riverfront development is shown in Fig.3b.

### 3.3 Three river waterfront, Pittsburgh:

Three River Waterfront has applied the Multi-sectorality & Economic Sustainability Principles guidelines. Most of Pittsburgh's riverbanks were polluted & abused due for Industries located, and it creates negative impact

parking lot. Development of continuous trails and green space along the 21 km waterfront loop between the West End Bridge on the Ohio River, the 31st Street Bridge on the Allegheny River and the Hot Metal Bridge on the Monongahela River. Amenities like Restaurants, River



Fig. 3b. Pictorial View of Sabarmati riverfront development, Ahmedabad

to fresh water systems. It degraded their riverfronts. Hard surfaces and retaining walls created hostile environments for native birds, fish, and mammals. Industrial processes and toxic runoff contaminated the soil and water. Structural embankments increased the damage caused by major storms and floods.

The following objectives considered for development of Riverfront in Pittsburgh: Expanding Point State Park from a singular pendant to a necklace of two strands. The Mon Wharf as a river destination, not just a



Access, Shops, Waterfront Settlements, Gardens, Fountains, Walkways, Amusement parks, Golf Course, Water sports are provided. [11]

### 3.4 Godavari-Pravara sangam project:

The aim of Godavari-Pravara project would be transform Godavari river precinct as a unique cultural platform with recreational and entertainment facilities serving the villages, its people and tourists with new dimension, meaning and scale of development. The riverfront development shall be envisaged as a place's identity on its waterfront." The project would look into the ways to rejuvenate the rural life and the space through improved quality of life, facilitating recreational and cultural activities, organizing informal businesses and designing better public spaces with creative amenities. The goal is to plan a development that would be oriented towards creating a form that is wholly consistent with the physiographic feature of the area. A land area of 104 acres is set to be designed which shall include recreational, hospitality activities along with religious activities which will be carried out within 4 heritage temples precinct. As far as possible it has been tried to incorporate all the principles like Economic sustainability, Dynamism& Identity principle and Multi Sectorality principles. [12] The three dimensional view of Godavari- Pravara sangam riverfront redevelopment is shown in Fig.4.

### 4. Results and discussions on case-studies:

In the Marine Drive waterfront project the development plan of waterfront devpt. clearly suggests that

Mumbai Port Trust no longer needs this land for its operation, so it should be given back to city and protected as a open space. Except for proposal for ecological park, all other proposals are in the direction of denying the open spaces which the city like Mumbai desperately needs.

Sabarmati Riverfront Devpt. is an environmental improvement, Social and Urban rejuvenation project by development of riverfront along Sabarmati River in the commercial capital of State. The Objective of the project is to improve spatial structure and habitat conditions of the river and adjoining areas. Basically it is an Urban renewal project. As discussed in case study 3 since the development of Pittsburgh's Riverfronts, Three Rivers Park has also supported a significant increase in downtown residential living. Hundreds of new residential units, both for sale and for rent, have sprung up along the rivers' edges. Downtown living reduces the severity of regional sprawl, energizes our downtown, and supports our many service businesses and cultural attractions. The lives of these new downtown residents are enhanced by the outdoor enjoyment, healthy lifestyle, and recreational opportunities created by the park recreation. As per the fourth case study on Godavari-Pravara sangam The urban-like form integrated with the natural landscape would create an enriching experience in a rural backdrop, by responding to the context of water and existing diversity of activities thereby, create a visually dominant landmark. This vision will engage people with activity, beauty, nature and the scenic views of the River Godavari. People who live, work and visit or travel from Kaygaon & Pravara are the subject of the vision.

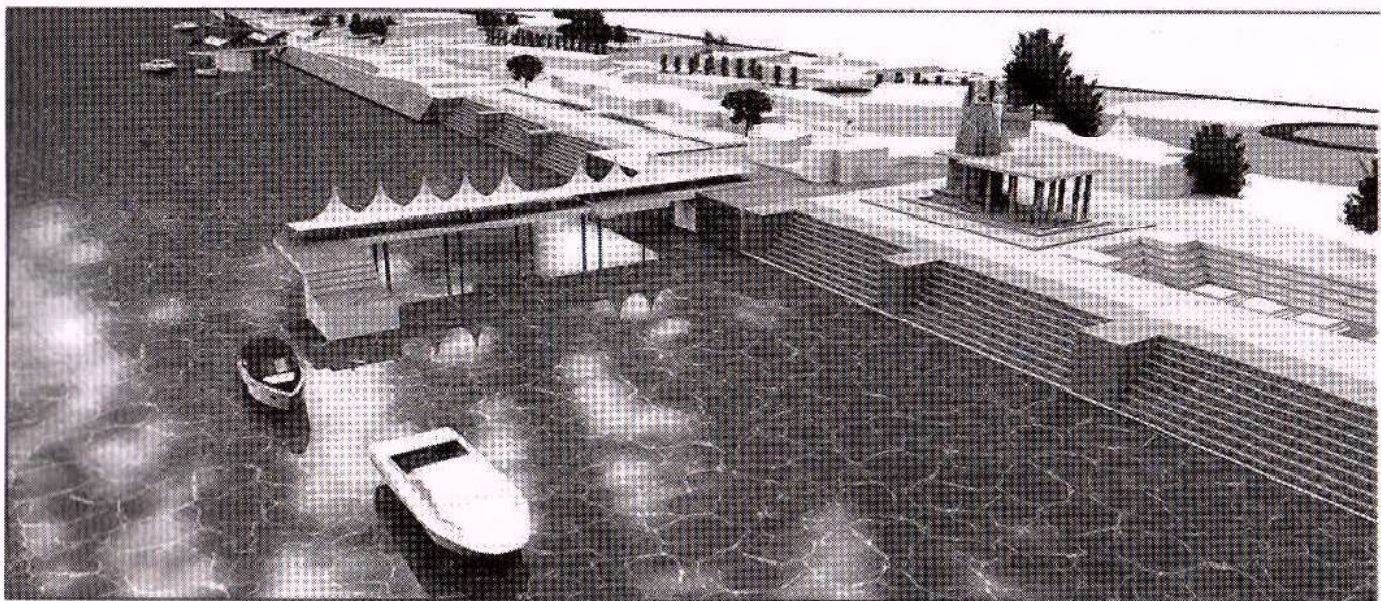


Fig.4 Godavari- Pravara sangam riverfront redevelopment 3D view. [12]



### 5. Conclusion:

The riverfront development project and study of case studies has resulted into following key conclusions:

- i. The rivers are said to be the lifeline for living beings, as all types of developments, directly or indirectly relate to them. They have played a vital role in the development of human civilization since they provide basic necessities of life, water and food, on which depends the survival of living-beings.
- ii. In a way, rivers are also the ultimate sink of all types of terrestrial and aquatic pollution. On the other hand, the rapid industrial development and demographic explosion, during the last few decades, have resulted in a galloping pace of environmental degradation and irrational exploitation of riverine resources. Hence, it has become extremely important to have a check on the river and riverbank activities.
- iii. An often neglected, but essential element of riverfront development is evaluating whether or not the development has achieved its vision, leading to important insights for new project idea.
- iv. It is the duty of architects to create an important link in ecological cycles to generate, promote and support life, culture and civilization; thus revitalizing the riverfront and reviving its heritage identity.
- v. There is a need to improve the quality of life by creating a riverfront as a nucleus of leisure activities for nearby towns.

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