Urban Redevelopment of Dockland area adjoining an existing Dock:Case Application at Kidderpore, Kolkata, West Bengal.

An Urban Design Thesis Report

Submitted in partial fulfillment of the requirements for

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The still small voice of gratitude pays utmost respect to my guide Sanghamitra Sarkar for her valuable insights and constant support during the entire course of my thesis project. Her perceptual guidance and constructive criticism has been of immense help during each stage of development.

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Lastly, during the entire course of work, there were many people who helped me directly and indirectly, I would like to thank them all. I have thoroughly enjoyed the entire course of my project and learnt a lot from it. The entire experience which I acquired during these months will always be cherished in my memory.

Thank You,

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ABSTRACT

Kolkata Port is one of the oldest Ports of the country that has been handling the Cargo & Passengers for many years. Changing trends in shipping industry ie.increase in ship size and evolution of containerization technology and subsequent development of a second port at Haldia have brought Kolkata Port to a stage of metamorphosis where it now needs to reinvent itself.

Major Ports of the world like Baltimore, Miami and Barcelona where huge metropolitan cities have come up, have had to create a new vision for themselves that has focused on waterfront development entailing water transport and sea tourism.

Kolkata Dock has a vast chunk of land of approximately 4543 acres, spreading across several districts of West Bengal. There are around 3000 tenants including big industries. a vast holding of land along the river Hooghly and also in the heart of the city of Kolkata are presently derelict and abandoned as with time port activities changed and shifted as port became less land intensive. Proper Management and monetary utilization of these land assets is a major problem for a long time.

Therefore, the issues which are being faced in respect of lands holdings under Major Ports exhibits dilapidated structures, encroachments, expired leases, breaches/unauthorized transfers, resistance to revision of rents, slums, etc. This scenario highlights the available opportunity of development of some of the estate lands adopting objectives of Smart Cities for optimum utilization of the scarce land resource.
Thus redevelopment has become necessary for Kolkata Docklands given their location within the large metropolises.

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1.0 INTRODUCTION.

1.1. BACKGROUND

1.1.1 URBAN REDEVELOPMENT

URBAN: Related to a place/area which is a city or town.

URBAN AREA: An urban area is a human settlement with a high population density and infrastructure of built environment.

REDEVELOPMENT: The act or process of changing an area of a town by replacing old buildings, roads, etc. with new ones.

URBAN REDEVELOPMENT: Urban Redevelopment is conceptually similar to land readjustment, with the exception that it happens in existing urban areas and often involves a rezoning of a given area from a low-density to higher-density development. It is also accompanied by a provision of infrastructure improvements (mass transit, such as metro lines) that can support such up-zoning.

FIGURE 1: (SOURCE: Author)

1.1.1 URBAN REDEVELOPMENT

Evolution of Urban Redevelopment

1950s	1960s	1970s	1980s REDEVELOPMENT
After world war II, Reconstruction & extension of old areas of town & cities based on a master plan & sub urban growth.	Continuation with attempt of rehabilitation, along peripheral growth	In situ renewal & neighborhood schemes, continuation of periphery development	Major schemes of development & redevelopment

Table 1: Evolution of Urban Redevelopment {Sources: after Stohr(1989)and Lichfield(1992),Pugalis and Liddle 2013 as cited in (Roberts,2017,p19-20)}

WHY URBAN REDEVELOPMENT IS NEEDED?

- Land is highly underutilized
- Unplanned
- Slums / encroachment
- Lack of proper recreational
- Congested area around transit points
- Need conservation of Heritage
- Crime zone
- Partially isolated from main city
- Dense population
- Pollution

WHAT ARE THE BENEFITS OF URBAN REDEVELOPMENT?

- Land value is utilized & revenue generated
- Planned area with functional district
- Slums are rehabilited
- Measures taken for efficient & smooth movement of traffic.
- Improvement of transportation network.
- Recreational Facilities.
- Reduction in crime.
- Reduction in pollution.

TYPES OF URBAN REDEVELOPMENT

- **Urban In Fill Development**: e.g., redevelopment of an industrial site into a mixed-use development.
- **Reconstruction:** wherein existing houses are constructed with denser land usage
- **Recycling or Adaptive Reuse:** wherein older buildings/structures are refurbished/ improved to fit for current market use.

1.1.2 DOCK

Dock:A dock is a place, usually man-made area of enclosed water, which can accommodate a ship and can be closed off by locks to allow regulation of the water level, where ships are loaded, unloaded or repaired. it denotes an area of water.

Dockland:The area that surrounds the docks in a port.

Area adjoining a Dock: A piece of land or parcel of land next to or joined with a Dock.

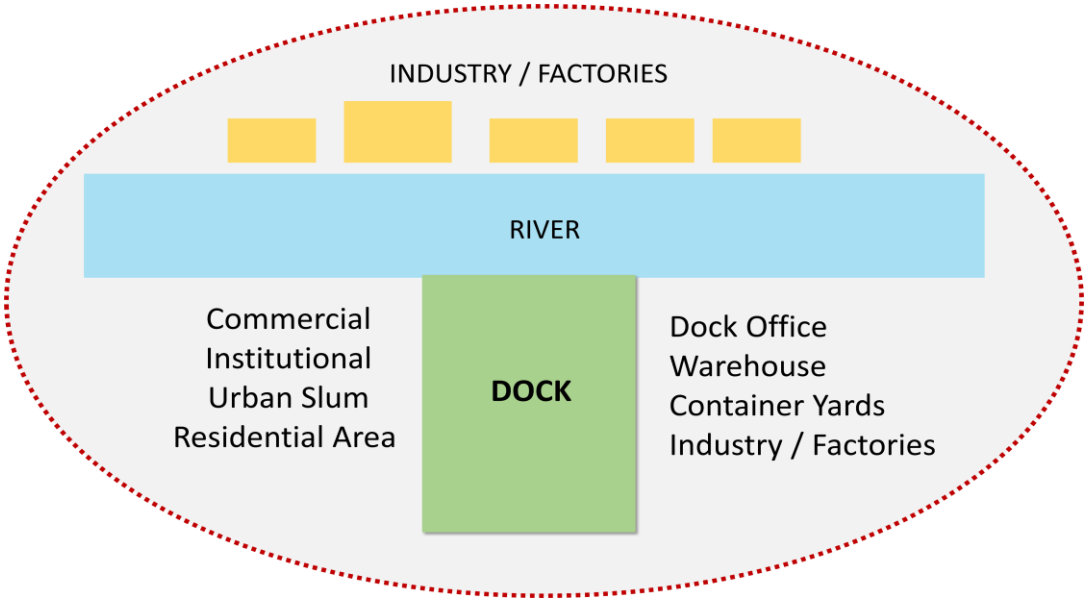


FIGURE 2: Area adjoining a Dock (SOURCE: Author)

Why Urban Redevelopment is needed in areas adjoining a dock?

- Docks are separated from urban context spatially and mentally cut-off from the city (with their own employment, operators and administration structures).
- Docks have unused buildings & land parcels in an around the dock area and this Resources that are costing them money to maintain without any current potential to generate income.
- Docks need to either utilize their empty buildings and spaces to generate income, or sell them off for redevelopments such as new housing, shopping centres, recreational facilities or office spaces.

Reasons for which the Docks area went to decline and Redevelopment was done Worldwide?

- An increase in ship size found it difficult to come down the river to the dock where the river wasn't deep.
- Connectivity to dock was hinterland due congestion of roads and railways linking the dock .Because most docks were located within an urban area, most often next to the commercial centre of the city.
- As city grew in size and port expanded their facilities, an initial spatial and functional segregation between the port & city emerged.
- Containerization meant few Dockers were needed with large cranes used to lift containers from ships so less manpower needed.
- Relocation of industrial activity due to modernization of manufacturing and goods handling methods led to dereliction and redundancy in land and dock side properties.
- Increase in Urban Pollution since most of the docks were located in urban area.

International Examples of Dock Area Redevelopment

- London Dockyards,U.K.
- Rotterdam, Netherlands.
- Bilbao, Spain.
- Baltimore Harbour, Baltimore, USA

FIGURE 3: BILBAO REDEVELOPMENT (SOURCE: https://www.mascontext.com/issues/30-31-bilbao/bilbaos-strategic-evolutionthe-metamorphosis-of-the-industrial-city/)

1.1.3 KIDDERPORE

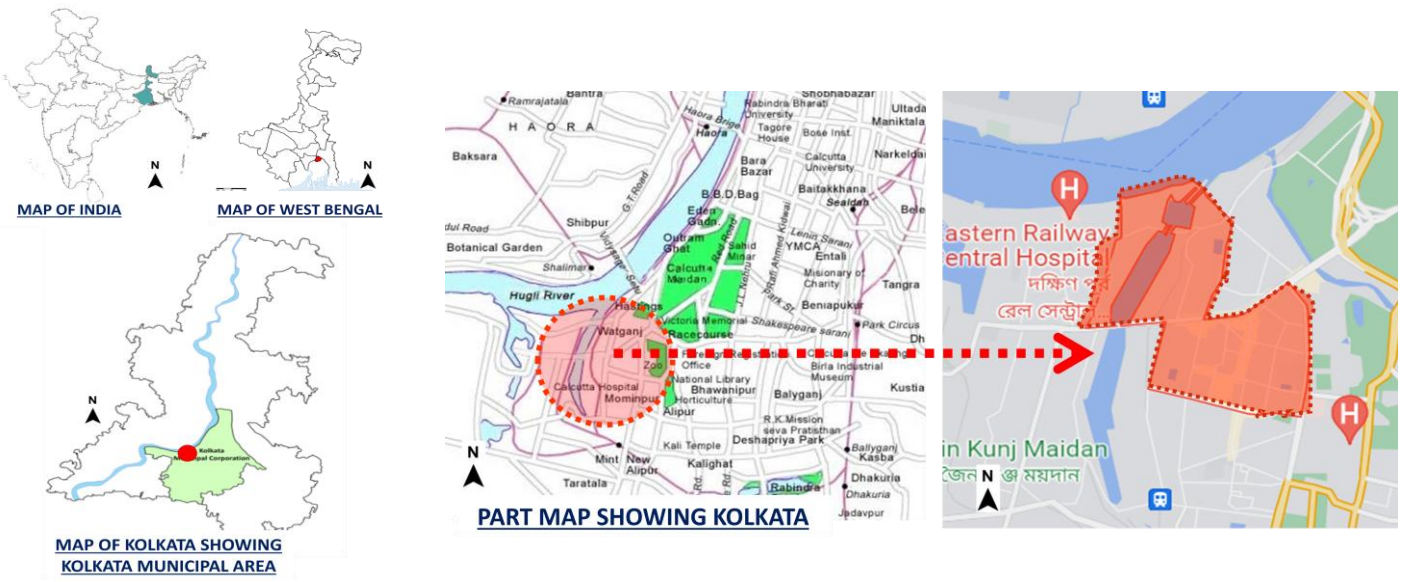


FIGURE 4: Kidderpore Map with images that depict image of the city (Source: Authors illustration Google images)

Kidderpore is a densely populated neighborhood of metropolitan Kolkata in Kolkata District, West Bengal, India. Kidderpore, located in the central-west part of the city, is bounded by

- Alipore in the east
- Mominpur in the south
- Hastings in the north east
- Garden Reach in the south-west
- Hooghly River in the north.

A part of Kidderpore is included in Kolkata Port Trust (Kidderpore Dock) which is the oldest port & the only river based major port of India. The port probably got its name from JAMES KYD, a 19th-century engineer who designed and supervised the building of the Lock Gate that connects the nearby port to the Hooghly River.

Evolution of Kidderpore Dock

In the early 16th century, the Portuguese first used the present location of the port to anchor their ships. (Oldest port in India)Nucleus of Kolkata Port lies much earlier -during Moghal Emperor Aurangzeb with the grant of trading rights to the British Settlement in Eastern India. In 1869 and 1870, eight jetties were built on the Strand.

1870 -Kolkata Port was initially conceived to promote and protect the British colonial interest wet dock was set up at Kidderpore in 1892.The Kidderpore Dock II was completed in 1902.In 1925, the Garden Reach jetty was added to accommodate greater cargo traffic. A new dock, named King George's Dock, was commissioned in 1928 (it was renamed Netaji Subhash Dock in 1973)Though the port was conceived to be a commercial port and gateway of eastern India, the port played a very important role in the Second World War. It was bombed twice by the Japanese forces.

Reasons for decline of Kidderpore Dock

The Kolkata port is the only riverine port in the country, situated 203 km from the sea. The river Hooghly, on which it is located, has many sharp bends, and is considered a difficult navigational channel.

An increase in ship size found it difficult to come down the river.

Since bigger ships were unable to reach Kolkata port a new port was developed in Haldia, so the cargo handling got significantly reduced in Kidderpore and the area started to decline.

Slowly industries around the dock started to move making the area urban blight.

FIGURE 5: Kidderpore Dockland (SOURCE: Author)

1.2. RELEVANCE AND JUSTIFICATION

Urban areas around an adjoining dock are highly unorganized /underutilized, with high density population, slums & encroachment.

This area lacks proper recreational facilities with congested area around transit points and partially isolated from the main city. So it is important to redevelop this area and link up with the main city by improving the transportation network.

So, arranging the unorganized/unutilized dock lands with proper urban design guidelines & measurements can turn the area into successful Commercial & Recreational Hub, to improve the overall image of the area.

Kidderpore is a densely populated neighborhood of metropolitan city Kolkata with a dock around it and since the dock has gone to decline, so redevelopment of the area is needed.

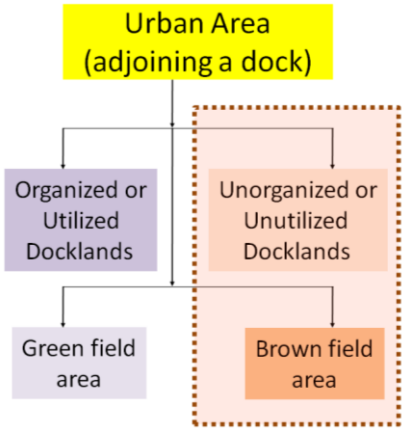
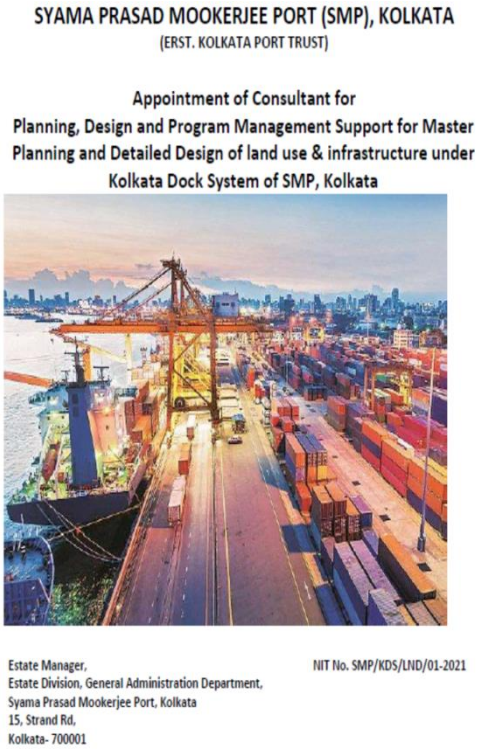


TABLE 2: INTERVENTION AREA (SOURCE: Author)

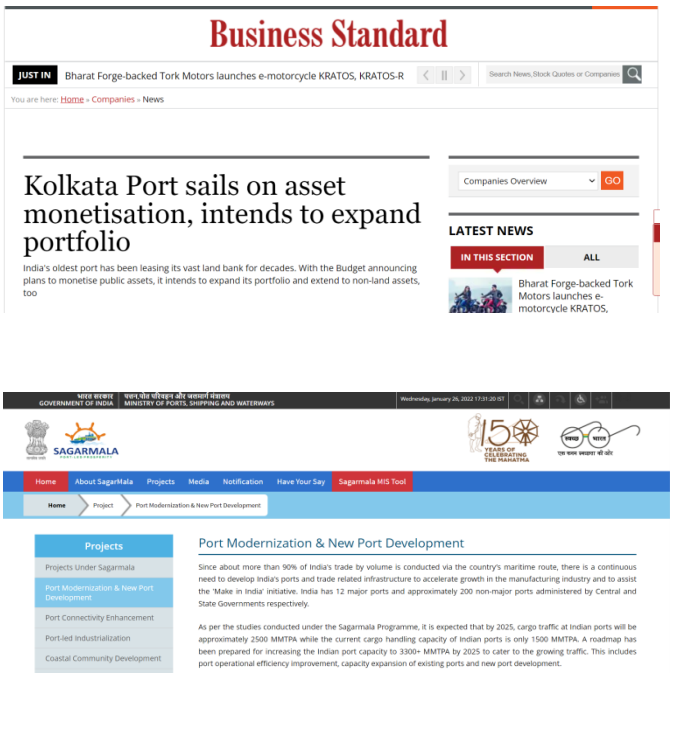
- This is a live Project proposed by Central Government under Syama Prasad Mookherjee Port (SMP),Kolkata.
- It is a mass level project and is developed in similar pattern in other Indian Port also.


SYAMA PRASAD MOOKERJEE PORT (SMP), KOLKATA
(ERST. KOLKATA PORT TRUST)

Appointment of Consultant for
Planning, Design and Program Management Support for Master Planning and Detailed Design of land use & infrastructure under Kolkata Dock System of SMP, Kolkata

Estate Manager,
Estate Division, General Administration Department,
Syama Prasad Mookerjee Port, Kolkata
15, Strand Rd,
Kolkata- 700001

NIT No. SMP/KDS/LND/01-2021


Business Standard

JUST IN Bharat Forge-backed Tork Motors launches e-motorcycle KRATOS, KRATOS-R

Kolkata Port sails on asset monetisation, intends to expand portfolio

India's oldest port has been leasing its vast land bank for decades. With the Budget announcing plans to monetise public assets, it intends to expand its portfolio and extend to non-land assets, too

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Since about more than 90% of India's trade by volume is conducted via the country's maritime route, there is a continuous need to develop India's ports and trade related infrastructure to accelerate growth in the manufacturing industry and to assist the 'Make in India' initiative. India has 12 major ports and approximately 200 non-major ports administered by Central and State Governments respectively.

As per the studies conducted under the Sagarmala Programme, it is expected that by 2025, cargo traffic at Indian ports will be approximately 2500 MMTPA while the current cargo handling capacity of Indian ports is only 1500 MMTPA. A roadmap has been prepared for increasing the Indian port capacity to 3300+ MMTPA by 2025 to cater to the growing traffic. This includes port operational efficiency improvement, capacity expansion of existing ports and new port development.

FIGURE 6: Live Tenders & Newspapers ad for the projects (SOURCE: Google & Newspaper)

1.3. AIM

Redeveloping an area adjoining Kidderpore Dock in order to create a Commercial & Recreational Hub, to improve the overall image of the area.

1.4 OBJECTIVE

- To study and analyze similar urban redevelopment projects in India & abroad.
- To identify the various urban issues, plaguing the area adjoining Kidderpore Dock.
- To redevelop the area so as to develop well connected transportation network.
- To Maximize Utilization of the potential of land, buildings etc which are in dilapidated condition and unused for long period of time for the overall benefit of City and environment.
- To create a landmark for the city of Kolkata and uplift the image of Kidderpore.

1.5. METHODOLOGY

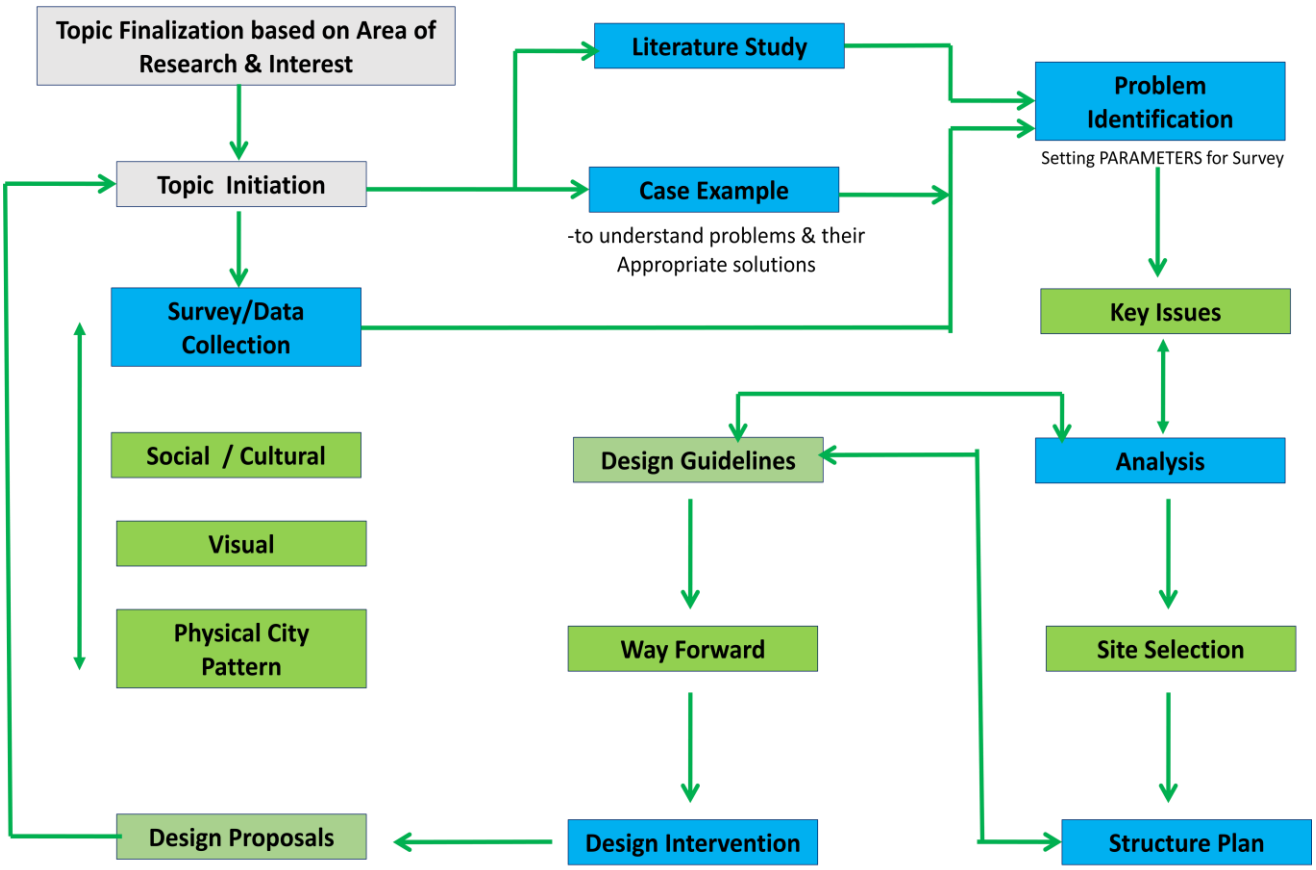


Table 3: *Flow diagram of methodology (Source: Author's illustration)*

1.6 SCOPE OF WORK & LIMITATION

- Propose Master Plan along with urban design strategies surrounding the core zone.
- Improving of existing connectivity as well as proposing new modes of connectivity as per requirement.
- Proposing functional districts and creation of paths, landmarks etc.as per requirement.
- Nature Park to be redeveloped as public recreation area with urban green for the citizens.
- Redevelopment of unutilized spaces into relevant functional zone.

LIMITATION

- Looking into the area proposed by Port trust and not focusing into the port & port allied areas.

2.0 LITERATURE STUDY

2.0. LITERATURE STUDY

2.1. THEORY

URBAN REDEVELOPMENT

Koebel (1996) *has examined the urban redevelopment during the period after World War – II (WW-II) and notes that urban redevelopment happened through different processes, such as:*

- *slum clearance,*
- *clearance for public housing,*
- *national promotion of social change,*
- *redevelopment of central business districts,*
- *And the federal retreat from cities.*
- *It notes that the redevelopment problems, which federal urban renewal/redevelopment programme attempted to address, are the serious failures.*
- *It concluded that the lessons learned from post-WW-II redevelopment provide important guidance for the future efforts towards urban renewal/redevelopment*

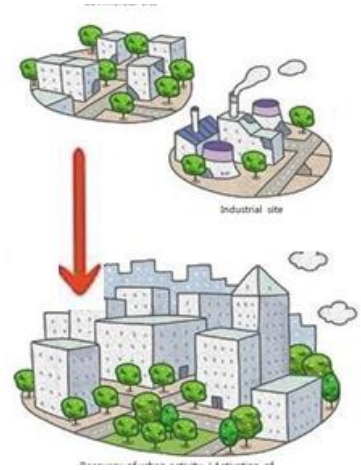


FIGURE 7: Urban Redevelopment Process (Source: Author)

Gotham (2001) *reviews Urban Redevelopment - Past and Present - with a focus for urban theory and urban research.*

It highlights ambiguities, inconsistencies, and contradictions in the nature, meaning, and consequences of urban redevelopment.

THE IMAGE OF THE CITY-Kevin Lynch

Some Conceptual Features of image ability are:

- *Remembering your city on images is meaningful. Eg.Well defined paths include special lighting, clarity of direction etc.*
- *Similarly with nodes, landmarks, districts, edges and these elements placed in good form increase human ability to see & remember patterns and it is this pattern which make easier to learn*

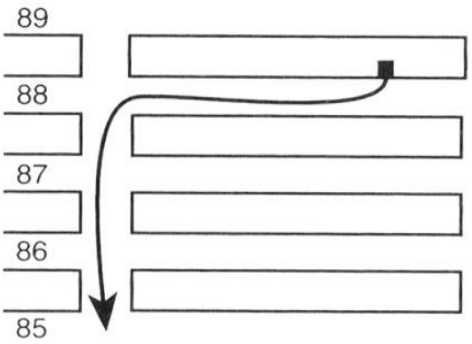
SOURCE:https://www.researchgate.net/publication/337388395_Evaluation_of_Urban_Redevelopment_Projects_A_Citizen_Survey_in_Pune

2.1. EXISTING THEORY

PRINCIPLES TO BE USED DURING DESIGN STAGE
The Death and Life of Great American Cities-Jane Jacobs

"Jacobs in her book says the key principle is diversity. The benefit of diversity is mutual economic and social support. She advocated that there were four principles to create diversity"

- *Mixed Primary uses activating streets at different times of the day. Rather Than separating into separate areas the commercial, industrial, residential and cultural spaces.*
- *Blocks should be short. This would promote walking to get to other parts of the neighborhood (and buildings with other functions) and it would also promote people interactions.*
- *Neighborhoods should contain a mixture of older and newer buildings.*
- *Denser Neighborhoods created "eyes on the street" more than separating and isolating people.*



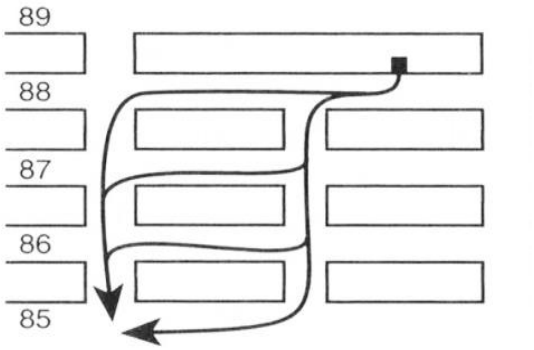


FIGURE 8 & 9: Movement along Long Blocks, Movement along Short Blocks (Source: The Death and Life of Great American Cities-Jane Jacobs)

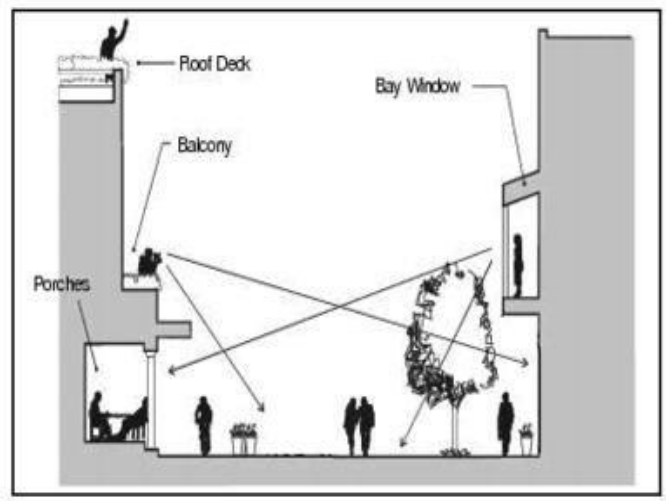


FIGURE 10: Eyes on Streets (Source: The Death and Life of Great American Cities-Jane Jacobs)

2.2. EXISTING CONCEPTS

DOCKLAND REDEVELOPMENTS

Similar situation occurred to major old ports across the world. They had similar physical condition such as old dilapidated buildings, lack of infrastructure due to reduction in the port activity. These ports are now transformed into thriving townships. Some of the examples are as follows:

- London Dockyards
- Battery Park City
- Baltimore – Inner Harbor
- Barcelona Harbour

A comparative statement of the all the above examples to assess the contextual development pattern are given below:

DOCK REDEVELOPMENT COMAPARATIVE ASSESMENT OF EXISTING DOCK AREA REDEVELOPMENT

Project	Isle of Dogs London, UK	Battery Park, City, New York, USA	Baltimore Harbour, Baltimore, USA	Barcelona Harbour, Barcelona, USA
Time period	1980s	1980s	1958 - 1980s	1988 - 1992
Area (Approx.)	350 ha	37 ha	60 ha	-
Previous use	Port related activities	Port related activities	Port related activities	Port related activities
New Development Character	Business District	Mixed – Use District	Tourist and Business District	Tourist District
New Uses	• Residential • Commercial • (Offices & Rental)	• Residential • Commercial • (Offices & Rental) • Recreational	• Residential • Commercial • (Offices & Rental) • Recreational	• Residential • Commercial • (Offices & Rental)
Reason for redevelopment			Economic downturn, high unemployment, Olympics 1992	
Redeveloped by	LDDC (corporation)	BPCA (Authority)	PPP (60% Public – 40% Private)	Autonomous Port of Barcelona/ Port 2000
Public Transport	Bus, Metro, Rail	Bus, Metro, Rail	Bus, Metro, Rail	Bus, Tram, Metro, Rail
Water Transport	Inter/ intra city Water Bus Ferry	Inter/ intra city Water Bus Ferry	Inter/ intra city Water Bus Ferry	Inter/ intra city Water Bus Ferry
Ropeway / Cable Car				Cable Car

Table 4: *Comparative Assessment of Existing Dock Area Redevelopment (Source:* Report on Existing Situation Study by M/s HCP Consultants)

Upon comparing the four existing redevelopment projects, it is found that the development of all four port lands is dominated by business and tourism activities. This, and other takeaways like development of water transport, ropeway, mixed use, open space, etc.
So after analyzing the existing Dock area redevelopments Importance was given on the following urban design Parameters such as Route, Pathways, Activities, Vista & Skyline & landmark.

2.3 IDENTIFICATION OF URBAN DESIGN PARAMETERS

The urban design parameters are necessary for an in-depth analysis on case specific examples and implementation of principles for Urban Redevelopment of Dockland area on site has been derived from the above research study.

Various authenticated literary sources and a comprehensive understanding of Urban Redevelopment of Dockland area forms the foundation for drawing inferences related to the fundamental study parameters.
The table below showcases the parameters and sub-parameters essential for preparing design guidelines.

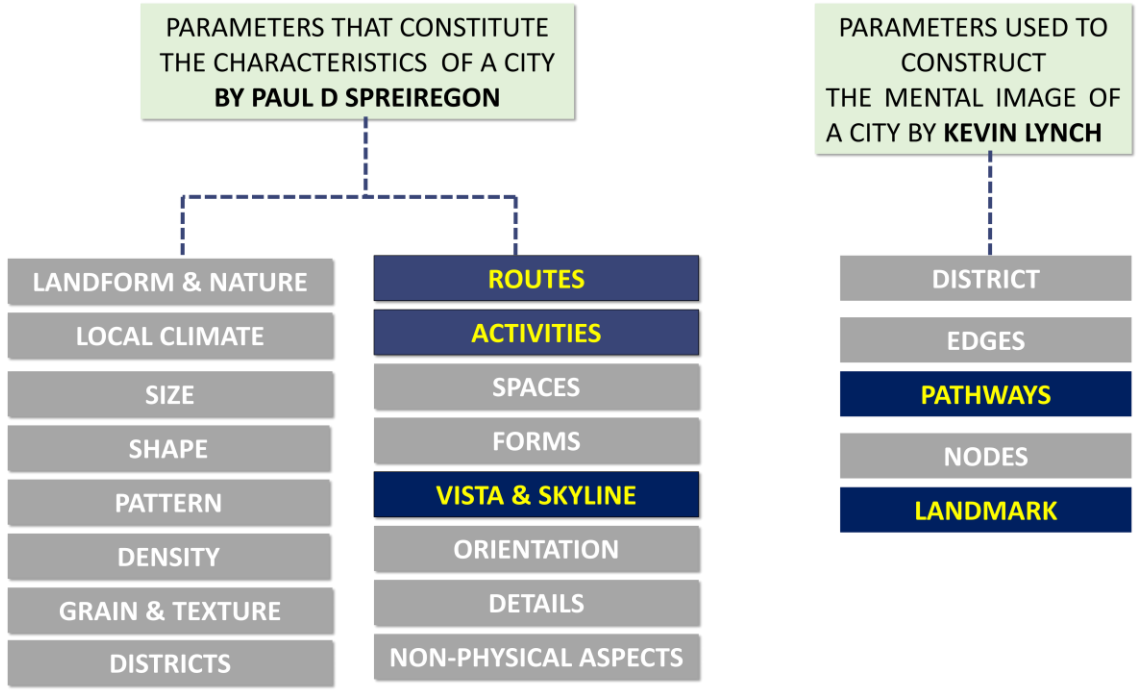


Table 5: Urban design parameters for study (Source: Author)

3.0 CASE EXAMPLE STUDY

3.0 CASE EXAMPLES

3.1 SELECTION OF CASE EXAMPLES

Criteria for selecting the case examples with respect to the site:

- Similar texture and pattern
- Development by engaging natural setting
- Local level interventions aimed at people
- Enhancing public amenity
- Creating a sense of place
- Retaining urban character
- Improving visual aesthetics
- Contextual fit of modern elements

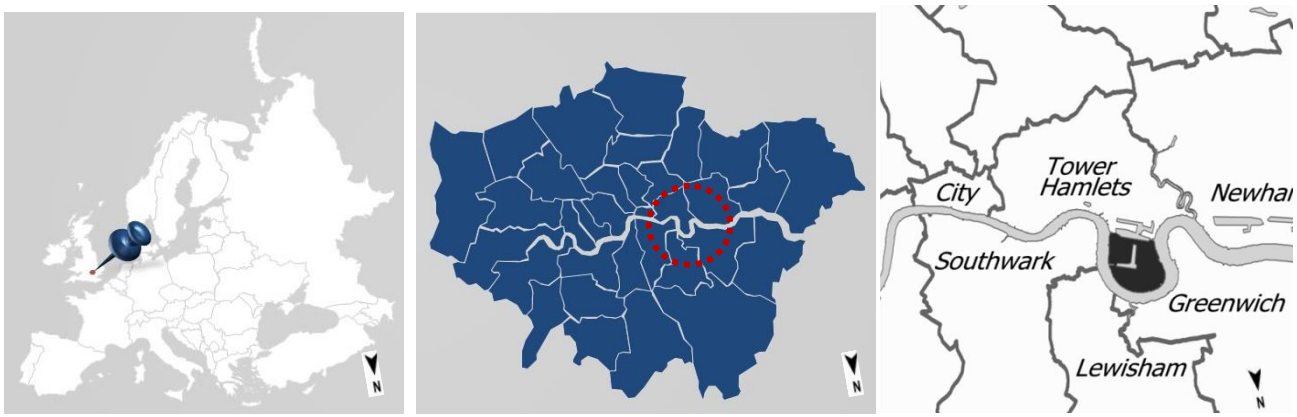
CASE EXAMPLE-01: ISLE OF DOGS LONDON DOCKYARDS, U.K.	**CASE EXAMPLE-02** MUMBAI PORT REDEVELOPMENT	**CASE EXAMPLE-03** KHOLONG TOEY PORT REDEVELOPMENT
		
• Study is based on international context. • Successful urban Redevelopment project similar to the site and river based dock.	• Study is based on Indian context. • Urban Redevelopment project similar to the site and it is an ongoing project.	• Study is based on ASIAN context. • Urban Redevelopment project similar to the site and it is an ongoing project.

Figure 11: Representations of Case Examples (Source: Author)

3.2 CASE EXAMPLE - 1 REDEVELOPMENT OF LONDON DOCKYARDS (ISLE OF DOGS), U.K

3.2.1 LOCATION & DESCRIPTION

BACKGROUND: The ISLE OF DOGS is a large peninsula bounded on three sides by a large meander in the river THAMES in East London, England. Isle includes Cubbitt Town, Mill will & Canary Wharf districts.



MAP OF EUROPE **LOCATION OF LONDON** **LOCATION OF LONDON DOCKYARDS**

Figure 12: Location of London Dockyards1 (Source: Google)

The major focus in Redevelopment of London Dockyards is in these aspects

- **Derelict Land** were **regenerated, old Houses Restored & new housing developed**.
- **Mixed-Use Development** along with Tourism and Convention Centre
- **Transport Improvement**
- Park & River side paths were developed

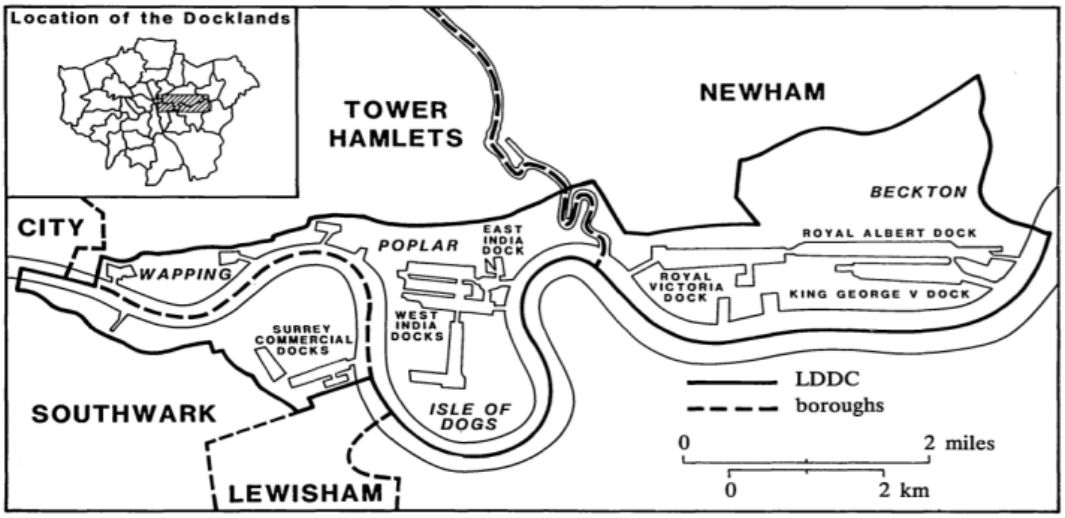


Figure 13: Location of London Dockyards 2 (Source: LDDC)

3.2.2 SURVEY & ANALYSIS

ROUTE

OBSERVATION: The main focus has been kept upon the mode of transport & implemented by grade separated movements. Dockland Highway: For through traffic movements Sub Arterial road for connections between local areas and arterial roads. Collector Street: carry traffic having a trip end within the specific area. Local Street: direct access to properties /pedestrian movements

ANALYSIS: Roads are mainly grade separated according to the requirements.

CONCLUSIONS: Classification of roads according to movement requirements.

Figure 14: Route Map of London Dockyards (Source: Author)

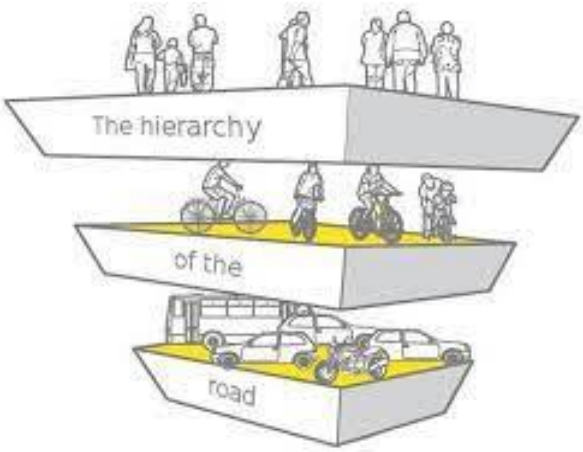


Figure 15: Hierarchy of Roads (Source: https://m.facebook.com/roadssg/posts/1761034163928979)

PATHWAYS

OBSERVATION: Proper demarcation between walkways, parking & vehicular road. Pedestrian walkways throughout. Connection to the docklands by Bus, Railways ,Water Transportation, Private Vehicles, Goods Vehicles / Deliveries & Pedestrian Walkway .

ANALYSIS: Traffic movement is fast as the road is demarcated according to user. All streets are interconnected to each other. The pedestrian route allows free movement on both sides of the road with landing access to the River / Water body /Public Realm .Provisions for Parking in given in Arterial Roads.

CONCLUSIONS: Hierarchy of streets in the dockland area makes it a vibrant community along its edge. Dedicated pedestrian walks along water body and street to increase workability. Robust Street Network with Transit oriented Development.DLR & Water Transport to cater the movement load.

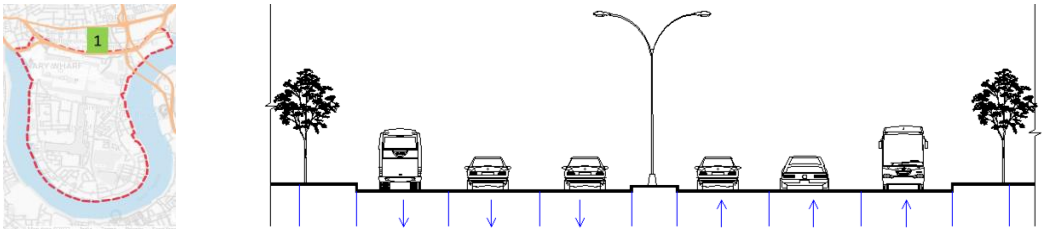


Figure 16: Existing Arterial Road Plan & Section (Source: Author)

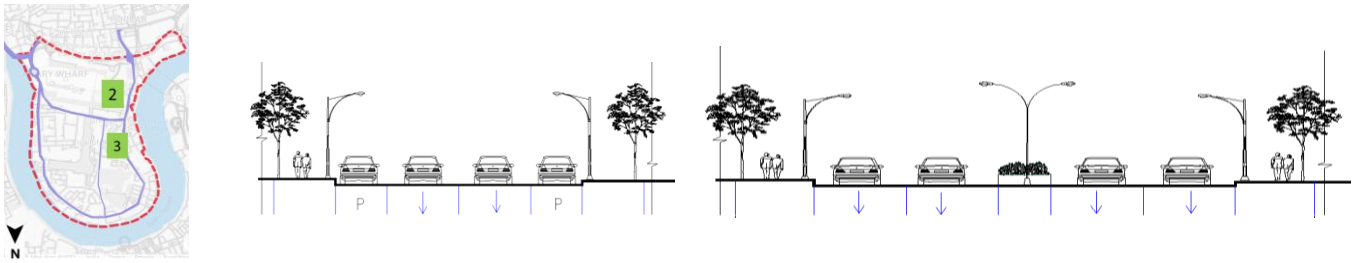


Figure 17: Existing Sub-Arterial Road Plan & Section (Source: Author)

Figure 18: Existing minor & internal Road Plan & Section (Source: Author)

ACTIVITIES

OBSERVATION: All major open spaces around this area are full of designated activities for public. Daily and seasonal activities around the river edge / Parks aimed at gathering public dedicated activity spaces like parks and square.

ANALYSIS: Day time activities are more compared to night drawing fewer crowds. Commercial & Public activities in Parks & River walkway form a vibrant edge along the street.

CONCLUSIONS: Dedicated activity areas .Multifunctional Activities increase the Robustness of the area.

Figure 19: Plan of Activity Area (Source: Author)

Figure 20: Canada Square Park (Source: Google)

Figure 21: Thames Pathway (Source: Google)

LANDMARK

OBSERVATION: Existing Heritage Structures itself act as a landmark. The landmarks across the city are very prominent in scale. Also these landmarks are visually connected.

ANALYSIS: The landmarks across the city are very prominent in scale. Landmarks are visually connected.

CONCLUSIONS: The landmarks across the city are very prominent in scale. Landmarks are visually connected. The existing historical landmarks make high legibility.

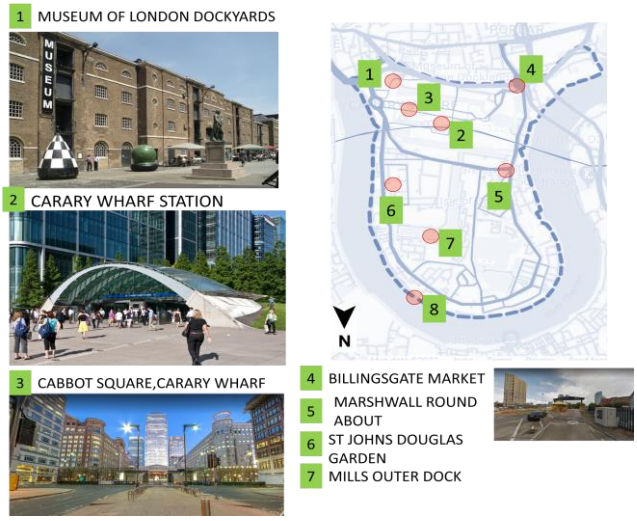


Figure 22: Existing Landmarks (Source: Author Illustration)

VISTA & SKYLINE

OBSERVATION: Majorly uniform skyline throughout the city. Design measurements have been taken to maintain uniform skyline throughout the city.

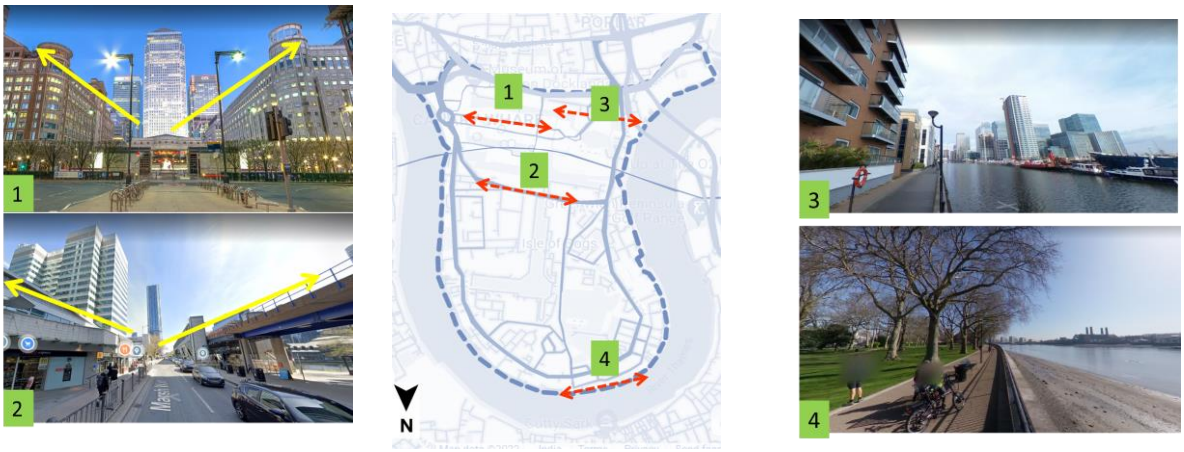


Figure 23: Vista & Skyline (Source: Author Illustration)

ANALYSIS: Uniform building height & Uniformity in building lines, materials in the new development area.

CONCLUSIONS: Straight line roads create some good vistas to enjoy. Significant building guidelines have been established to form better skyline.

3.2.3 CONCLUSIONS

PARAMETERS	INFERENCES
ROUTE	Classification of roads are generally according to movement requirements
PATHWAYS	Hierarchy of streets in the dockland area makes it a vibrant community along its edge. Dedicated pedestrian walks along water body and street to increase workability. DLR & Water Transport to cater the movement load.
ACTIVITIES	Dedicated activity areas. Multifunctional Activities increase the Robustness of the area.
LANDMARKS	The landmarks across the city are very prominent in scale. Also these landmarks are visually connected. The existing historical landmarks make high legibility.
VISTA,SKYLINE	Straight line roads create some good vistas to enjoy. Significant building guidelines have been established to form better skyline.

Table 6: Inferences based on study Parameters (Source: Author)

3.3 CASE EXAMPLE - 2, MUMBAI DOCK REDEVELOPMENT

3.3.1 LOCATION & DESCRIPTION

LOCATION: Mumbai is the capital city of Maharashtra .It is the most populated city of India. Financial, Commercial &entertainment hub of India.

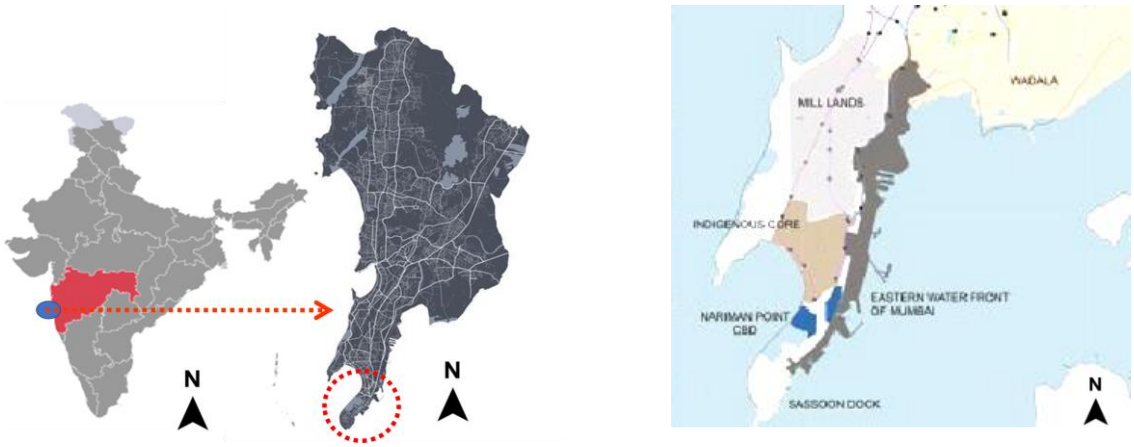


Figure 24: Location of Mumbai Dock with respect to India Map (Source: Author Illustration)

MUMBAI PORT: The area of Mumbai Port is in close proximity to some of the most valued areas of the country in terms of real estate such as NARIMAN Point, Colaba etc. Established in 1873.First wet Dock constructed in 1875.Port Trust Railway started in 1915.The Mumbai Port Trust area, spanning about 10 kms, along the Eastern Waterfront is one of the best waterfront properties located in the heart of Mumbai city. An area of about 500 Ha is available for redevelopment.

REASONS FOR REDEVELOPMENT

- Structurally inadequate to meet the requirements of modern cargo handling.
- Shallowness of the channel, congestion of roads and railways through the Mumbai city linking the port to its hinterland.
- So centrally located Eastern Waterfront / land is highly underutilized & present a scenario for redevelopment.
- Depilated and old structures needed renovation/ restoration.

THE MAJOR FOCUS IN REDEVELOPMENT OF MUMBAI PORT AREA IS IN THESE ASPECTS:

- Proposed to meet dual objectives – of repurposing the port lands and of integrating it with the rest of the city, providing public spaces and facilities to the citizens.
- New financial centre, a Government office, hotels, commercial as well as residential properties in close proximity to the proposed metro line and the existing sub-urban railway stations.
- Waterfront area is also proposed as a Tourist and Recreational Zone.
- Reflects on cultural amenities and conserves heritage sites to retain their historic significance.
- The future development will also open up multiple east-west street connections to connect Mumbai to MPC and the Eastern Waterfront. `

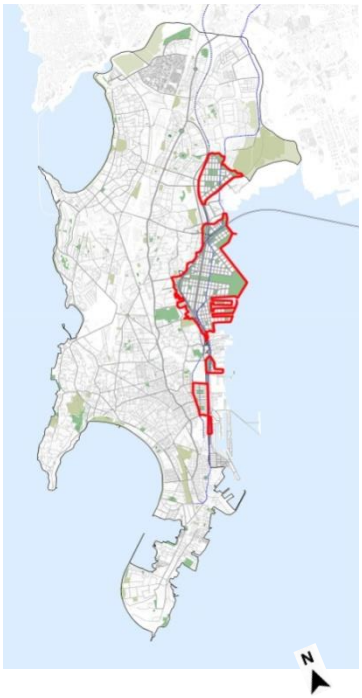


Figure 25: Mumbai Dock Redevelopment Area (Source: M/s HCP Consultants*)*

Figure 26: Existing & Proposed Mumbai Dock Redevelopment (Source: Author & M/s HCP Consultants*)*

3.3.2 SURVEY & ANALYSIS

ROUTE

OBSERVATION: The hierarchy is not based on the ROW width, but is prepared based on the function, connectivity and character of the streets. In Planning Area, the street hierarchy is categorized as follows:

• Major Arterial
• Minor Arterial
• Major Street

• Local Street

An integrated network with these hierarchies shall aid in seamless movement of traffic as well as planning of bus networks, bicycle routes etc.

Figure 27: Existing & Proposed Route (Source: Author & M/s HCP Consultants*)*

ANALYSIS: It utilizes many of Mumbai port's existing streets and is designed to provide a hierarchy of arterial & sub-arterial streets to ensure a smooth flow of vehicular traffic. More junctions - facilitate change of direction and alternate route selection and allow permeability.

CONCLUSIONS: Roads are mainly grade separated according to the requirements. A Robust Road Network Have Been Provided.

PATHWAYS

OBSERVATION**:** the Major arterial road widths are ranging from 30 mt to 70 mt for accommodate faster moving traffic, and public transport routes whereas the Minor Arterial road Width are from 18mt to 30mt. Major Street width are from 12mt to 30mt. & the Local Street width area from 9mt to 18mt .Continuity of street lighting for carriageway and pavements. Pedestrian walkways& cycle routes throughout.

Planning Area comprises of four major modes:

- Rail: Metro, Harbour, CSMT-Panvel Fast Train
- Road: Bus network
- Water: Ferry & Ro-Ro
- Air: Ropeway

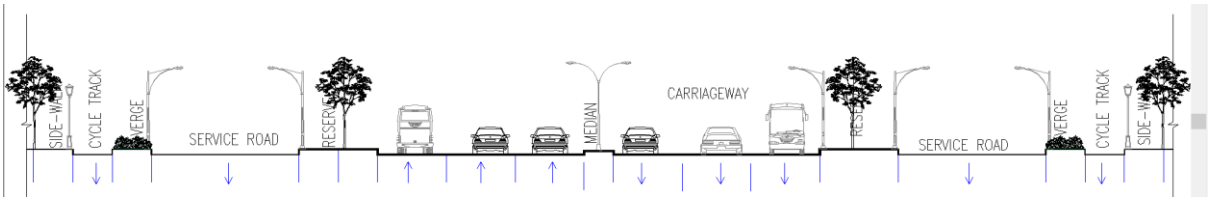


Figure 28: Proposed Major Arterial Road Section (Source: Author*)*

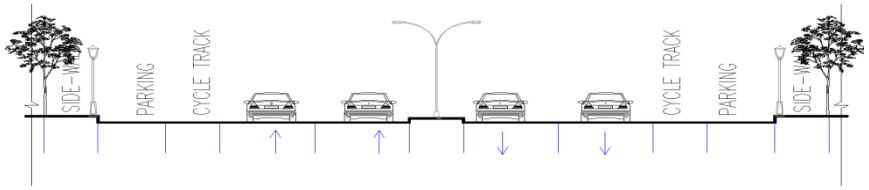


Figure 29: Proposed Minor Arterial Road Section (Source: Author*)*

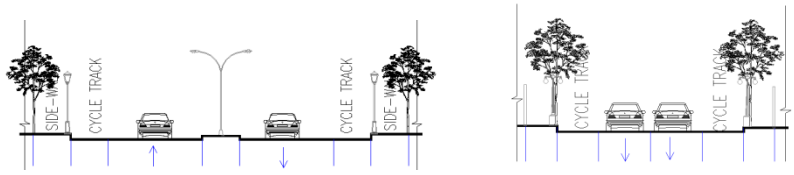


Figure 30 &31 : Proposed Major & Local Street (Source: Author*)*

ANALYSIS: Seamless integration with existing and proposed transportation projects in surrounding areas such as the existing Monorail, existing Harbour line network, and proposed CSMT-Panvel Fast Train network is the key aspect of the mobility network of Planning Proposals

CONCLUSIONS: Pedestrian walkways throughout. Alternative routes - allow for pedestrian only streets catering to the inter-block movement of pedestrians over walk able distances.

ACTIVITIES

OBSERVATION: Recreation water front activities. Theme Pedestrian Street will promote vibrant cultural & commercial activities. Literature, Maritime, Maharashtra, Bollywood, Museum, Mixed use activities such as destination shopping, leisure & culture along with the residential will increase robustness of the area.

Figure 32: Proposed Walkway (Source: Author & M/s HCP Consultants*)*

ANALYSIS: City level recreational activities, cultural facilities and social amenities along with space for business and financial services. Activities supported by residential population so as to ensure a lively environment. Activities includes education, health, sports, socio-cultural, security, communications, religion, and social segregation and cremation .Activities are classified as city level, community level, and neighborhood level.

CONCLUSIONS: Dedicated activity spaces like parks promenades &theme streets. Robustness of the area is increased with multi functional activities in site. Classification of activities.

Figure 33: Proposed Activity Area (Source: Author & M/s HCP Consultants*)*

LANDMARKS

OBSERVATION: Straight line roads create some good vistas to enjoy creating landmarks.

ANALYSIS: Existing Heritage structures acts as landmarks in marking location and providing a sense of place. Planning Proposals have tried to reinforce the heritage and also tried to replicate the theme in the new development.

CONCLUSIONS: Existing Heritage structures acts as landmarks in marking location and providing a sense of place. Landmarks will be visually connected through straight roads.

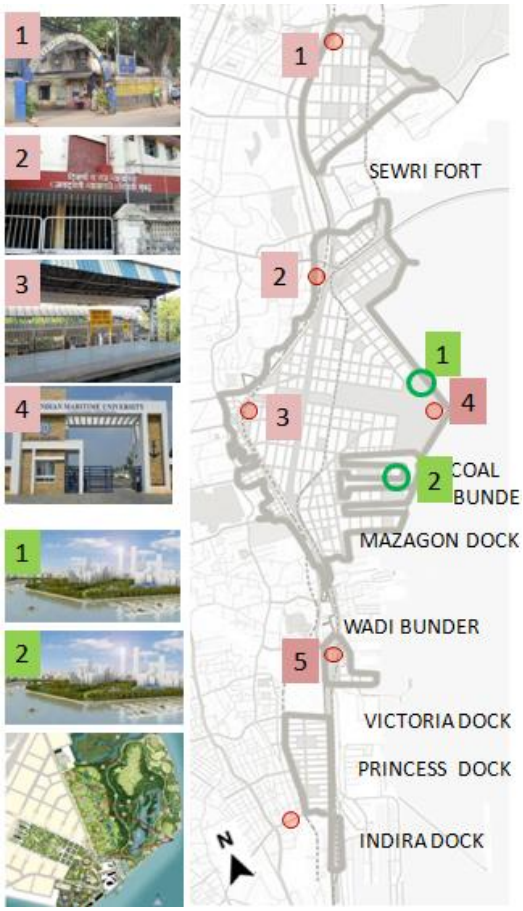


Figure 35: Existing & Proposed Landmarks (Source: Author*)*

VISTA, SKYLINE

Figure 34: Proposed Skyline (Source: M/s HCP Consultants*)*

VISTA, SKYLINE

OBSERVATION: As skylines change with redevelopment features of Eastern Waterfront will make cities image-making thus making, Mumbai's water edge evolves to become a memorable skyline of the City.

ANALYSIS: Straight Roads and Waterfront on other side sides will create vista. Urban Design Guidelines followed.

CONCLUSIONS: Urban Design guidelines are formed to control the new skyline. Sea Promenade walkway and sea itself act as a vista. Legibility is increased with the existing Historical structures.

Figure 36: Proposed Vista (Source: M/s HCP Consultants)

3.3.3 CONCLUSIONS

PARAMETERS	INFERENCES
ROUTE	Roads are mainly grade separated according to the requirements.
PATHWAYS	Pedestrian walkways throughout. Alternative routes - allow for pedestrian only streets catering to the inter-block movement of pedestrians over walk able distances.
ACTIVITIES	Dedicated activity spaces like parks promenades & theme streets. Robustness of the area is increased with multi functional activities in site. Classification of Activities at city level, community level, and neighborhood level.
LANDMARKS	Existing Heritage structures acts as landmarks in marking location and providing a sense of place. Landmarks will be visually connected through straight roads.
VISTA,SKYLINE	Urban Design guidelines are formed to control the new skyline. Sea Promenade walkway and sea itself act as a vista. Legibility is increased with the existing Historical structures.

Table 7: Inferences based on study Parameters (Source: Author)

3.4 CASE EXAMPLE -3, REDEVELOPMENT OF KHOLONG TOEY PORT, BANGKOK.

3.4.1 LOCATION & DESCRIPTION

LOCATION: Bangkok, officially known in Thai as Krung Thep Maha Nakhon and Colloquially as Krung Thep,is the capital and most populous city of Thailand.

KHLONG TOEI PORT: Bangkok Port, popularly known as Khlong Toei Port, is an international port on the Chao Phraya River in Khlong Toei District of the Thai capital city, Bangkok. It is operated by the Port Authority of Thailand. Bangkok Port is located in Bangkok, Thailands's capital; the economic centre is surrounded by important industrial and consumer resources. Until recently, Bangkok Port was one of the world's 100 busiest container ports. The first phase of the port was completed in 1947 and opened for the first time.

Figure 37: Location of Kholong Toei Port Dock (Source: Author Illustration)

3.4.2 SURVEY & ANALYSIS

ROUTE& PATHWAYS

OBSERVATION: Redevelopment Area, the street hierarchy is categorized as follows: Major Arterial, Minor Arterial, Major Street &Local Street .Redevelopment Area comprises of major modes: Rail: Metro,Fast Train ,Road: Bus network &Water: Ferry .

ANALYSIS: It utilizes many of port's existing streets and is designed to provide a hierarchy of arterial & sub-arterial streets to ensure a smooth flow of vehicular traffic.

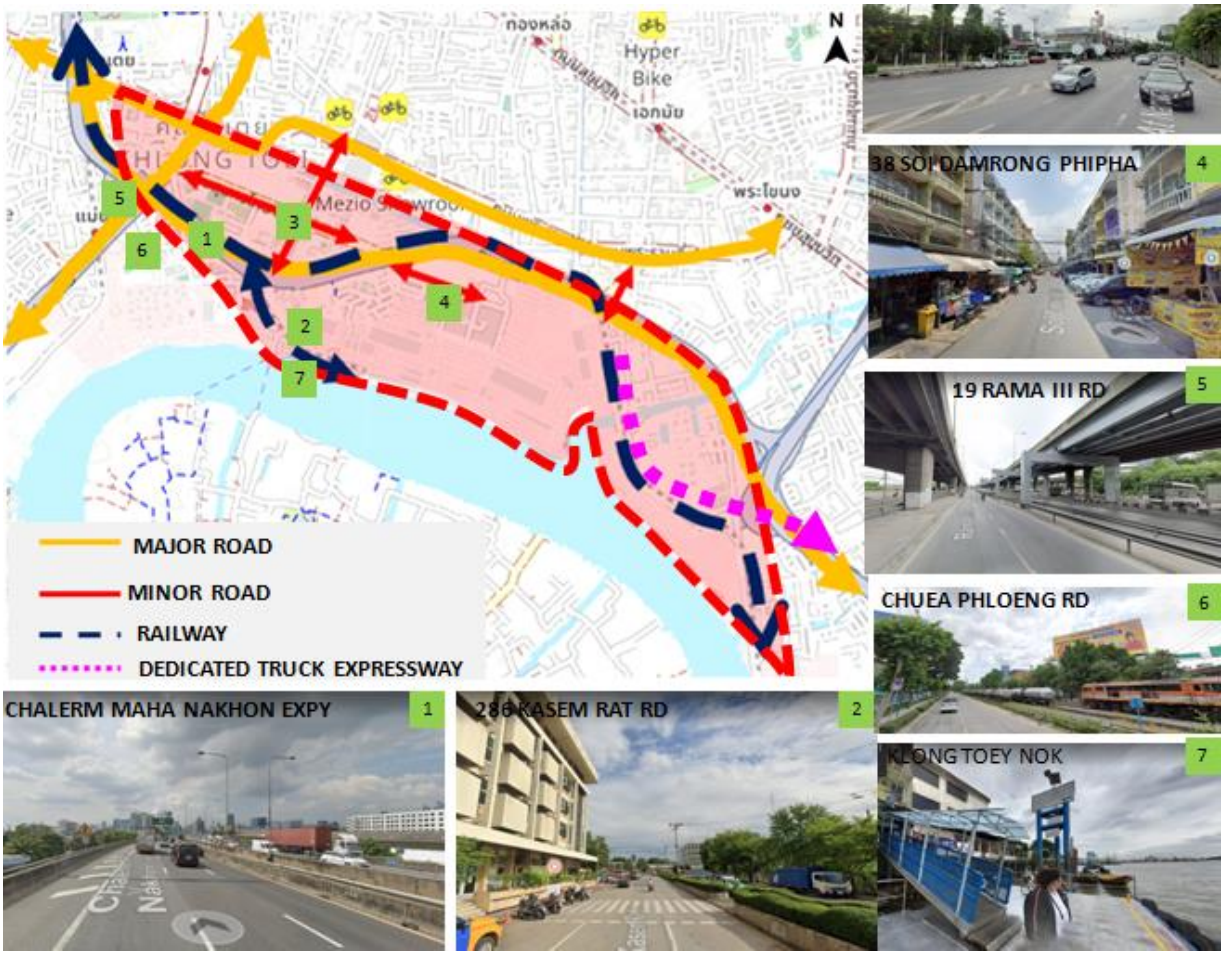


Figure 38: Route &Pathway Map (Source: Author Illustration)

CONCLUSIONS: Roads are mainly grade separated according to the requirements. Dedicated Transport Expressway.

ACTIVITY

CONCLUSIONS: Dedicated activity spaces like Mixed use,commercial,Passenger Terminal.

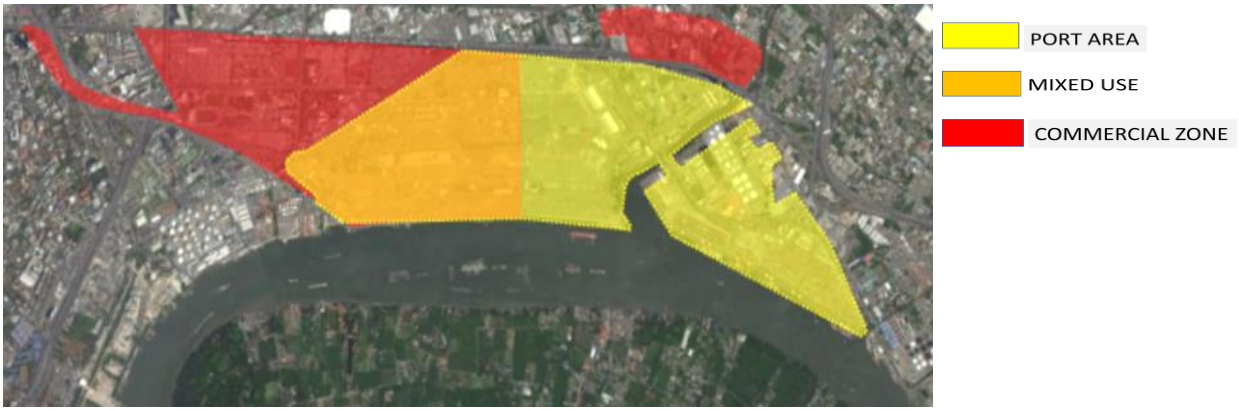


Figure 39: Activity Map (Source: Author Illustration)

LANDMARK

ANALYSIS &CONCLUSION: Existing Heritage structures acts as landmarks in marking location and providing a sense of place. Landmarks will be visually connected through straight roads.

*Figure 40: Existing Landmarks,Wat Klong Toei Nok& **Thai Customs Department** (Source: Author Illustration Google)*

VISTA, SKYLINE

ANALYSIS: Planning Proposals have tried to reinforce the heritage and also tried to replicate the theme in the new development. Urban Design Guidelines followed.

CONCLUSIONS: Urban Design guidelines are formed to control the new skyline.

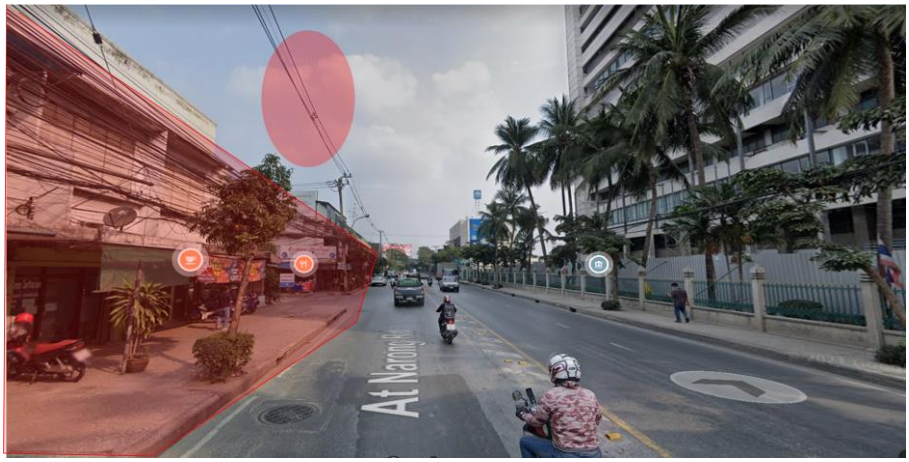


Figure 41: *Existing Vista (Source: Author Illustration)*

3.4.3 CONCLUSIONS

PARAMETERS	INFERENCES
ROUTE	Roads are mainly grade separated according to the requirements.
PATHWAYS	Pedestrian walkways throughout. Alternative routes - allow for pedestrian only streets catering to the inter-block movement of pedestrians over walk able distances.
ACTIVITIES	Dedicated activity spaces like Mixed use, commercial,Passenger Terminal.
LANDMARKS	Existing Heritage structures acts as landmarks in marking location and providing a sense of place. Landmarks will be visually connected through straight roads.
VISTA,SKYLINE	Urban Design guidelines are formed to control the new skyline. River Promenade walkway and sea itself act as a vista. Legibility is increased with the existing Historical structures.

Table 8: Inferences based on study Parameters (Source: Author)

3.5 OUTCOMES FROM CASE EXAMPLES

PARAMETERS	LONDON DOCKYARDS	MUMBAI DOCK REDEVELOPMENT	KHOLONG TOEY PORT REDEVELOPMENT
ROUTE	Classification of roads are generally according to movement requirements	Roads are mainly grade separated according to the requirements.	Roads are mainly grade separated according to the requirements.
PATHWAYS	Dedicated pedestrian walks along water body and street to increase workability.DLR & Water Transport to cater the movement load.	Pedestrian walkways throughout. Alternative routes - allow for pedestrian only streets catering to the inter-block movement of pedestrians over walk able distances.	Alternative Transportation routes
ACTIVITIES	Dedicated activity areas. Multifunctional Activities increase the Robustness of the area.	Dedicated activity spaces like parks promenades & theme streets. Robustness of the area is increased with multi functional activities in site. Classification of city level, community level, and neighborhood level.	Dedicated activity spaces like Mixed use, commercial, Passenger Terminal.
LANDMARKS	The landmarks across the city are very prominent in scale. Also these landmarks are visually connected. The existing historical landmarks make high legibility.	Existing Heritage structures acts as landmarks in marking location and providing a sense of place. Landmarks will be visually connected through straight roads.	Existing Heritage structures acts as landmarks in marking location and providing a sense of place

VISTA,SKYLINE	Straight line roads create some good vistas to enjoy. Significant building guidelines have been established to form better skyline	Urban Design guidelines are formed to control the new skyline. Sea Promenade walkway and sea itself act as a vista. Legibility is increased with the existing Historical structures	Urban Design guidelines are formed to control the new skyline. River Promenade walkway and river itself act as a vista.

Table 9: Comparative Analysis of Inferences based on study Parameters (Source: Author)

4.0 CASE APPLICATION STUDY

4.0 CASE APPLICATION STUDY

4.0 CASE APPLICATION: KIDDERPORE

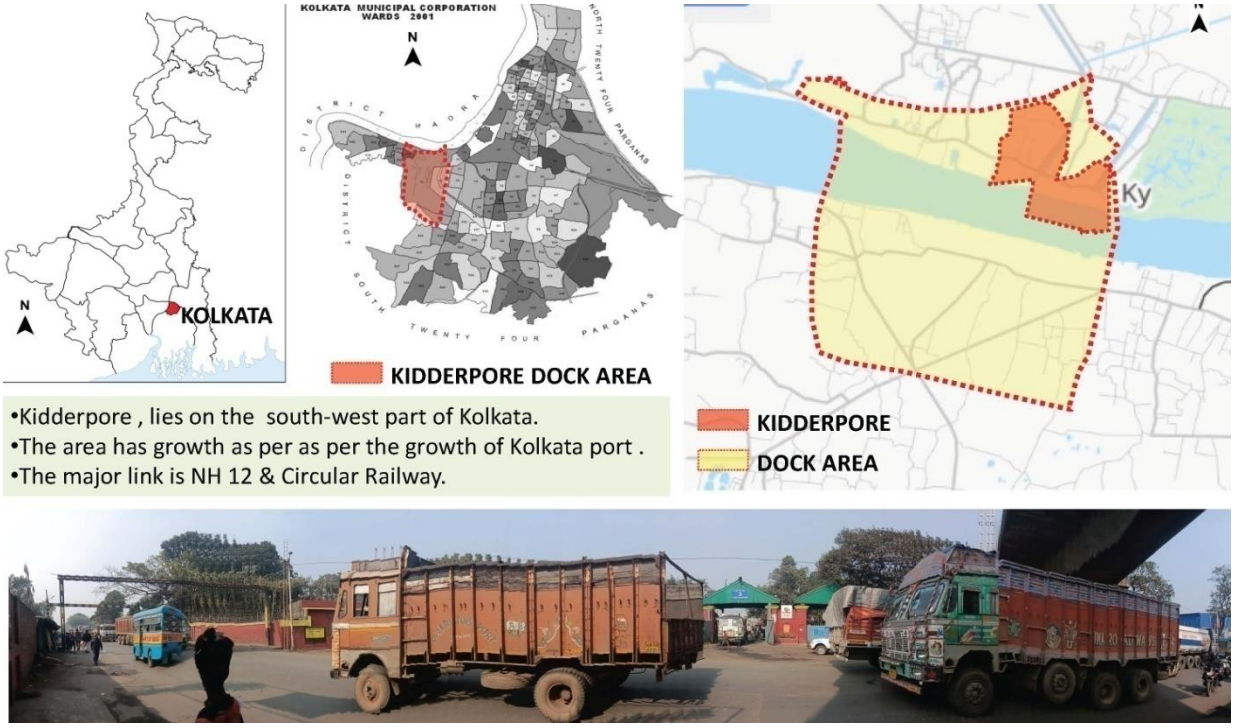


Figure 42: *Kidderpore Location & Image of the area (Source: Author Illustration)*

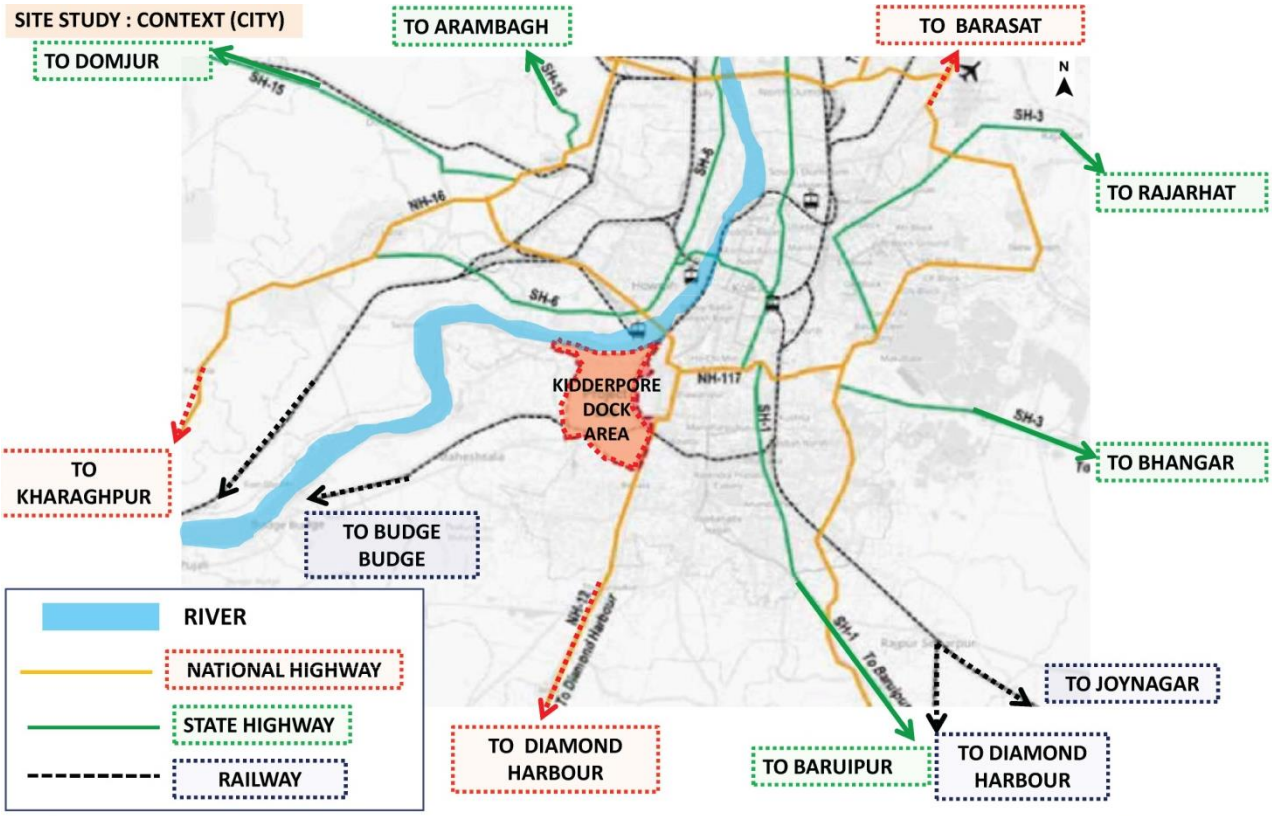


Figure 43: *Site Study, Contect, City (Source: Author Illustration)*

4.1 AREA LEVEL STUDY

4.1.1 SELECTION OF THE AREA

JUSTIFICATIONS FOR SELECTION OF THE AREA:
The area has been identified as proposed by Port Trust. Major area for redevelopment is available on this area, since the other areas are either custom bonded, dock allied services or private property. Two major stations Majherhat & Brace Bridge are located in this area .The area will be connected to East-West Metro Project once it is completed. Nature Park, An existing Water body with green spaces is located in the area.

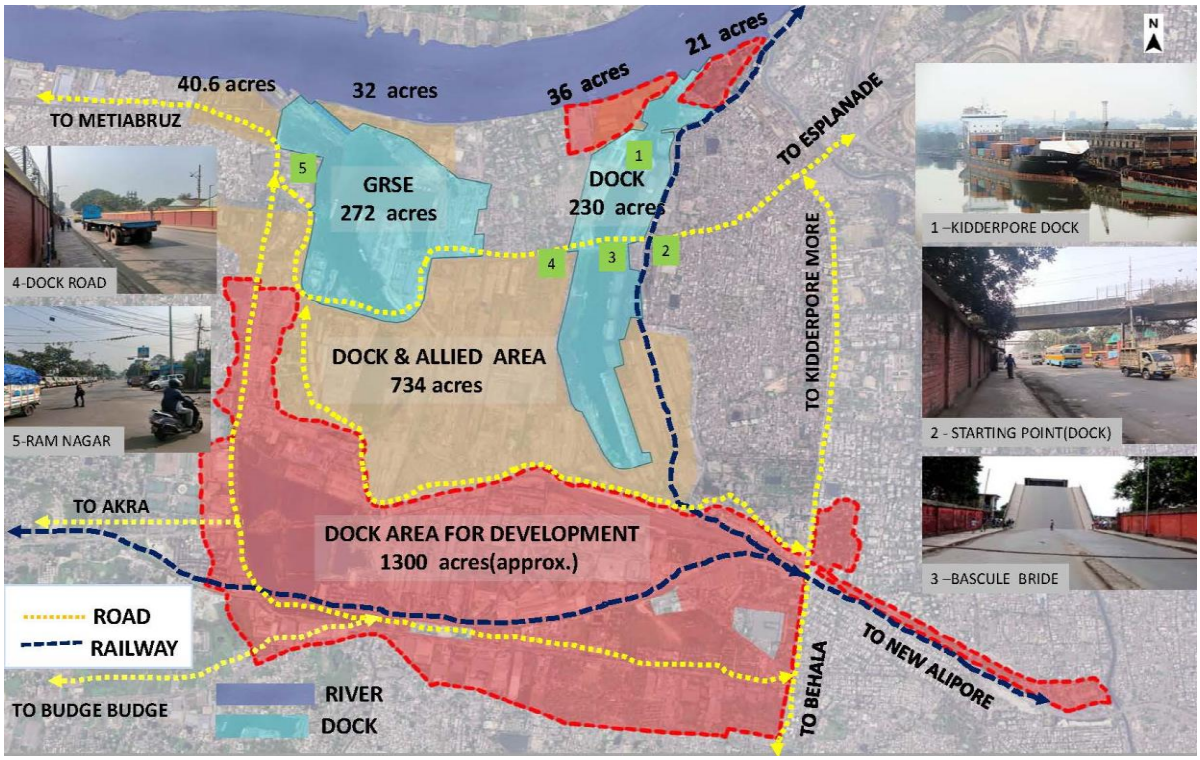
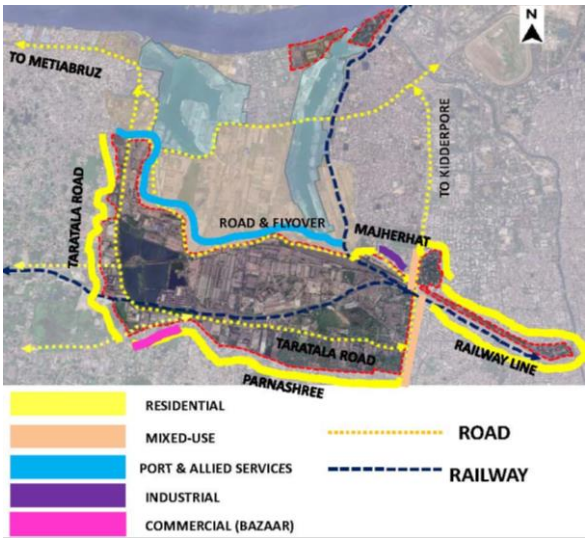


Figure 44: *Site Selection Area (Source: Author Illustration)*

4.1.2 DELINEATION



The delineation around the site is as follow:

- Residential
- Port & Allied Services
- Industrial
- Mixed Use
- A Bazaar and Commercial

Figure 45: The delineated area of Kidderpore Dockland with their surrounding areas (Source: Google Earth Pro; Author)

4.1.3 DESCRIPTION

The Site can be described as an industrial area with lack of proper transportation &Connectivity from the site to nearby areas.
WESTERN SIDE: On the western side most of the area is industrial/warehouse with illegal truck parking on both side of the road. Nature Park on south west part
EAST SIDE: Canal towards Bailey bridge, Taratala Mint, Part Till Ajanta Cinema &Mixed Use
SOUTH SIDE: Parnashree & KPT Canal (Residential), Zinjira Bazaar (Commercial) &Brace Bridge (Industrial)
NORTH SIDE: Transport Yard, Flyover, Majherhat Railway &River View.

Figure 46: Dockland with their surrounding areas (Source: Author)

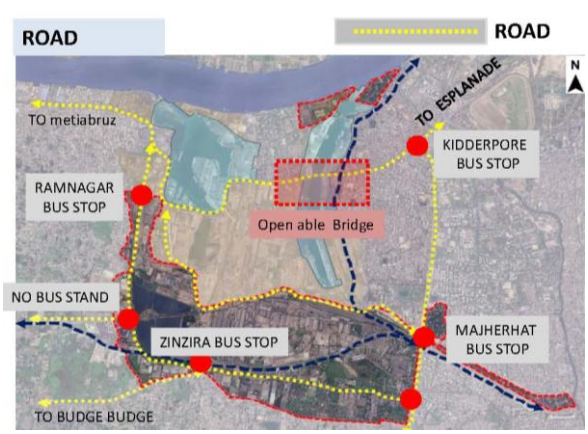
4.1.4 SURVEY

ROUTE

OBSERVATION: No separation of vehicular & pedestrian movements. Inadequate Road width to fetch actual traffic load. Illegal Parking along roads.
CONCLUSIONS: Classification of roads is needed according to movement requirements. Maximize The effective Road Width by providing sufficient width.

Figure 47: Dockland Existing Road Conditions (Source: Author)

PATHWAYS



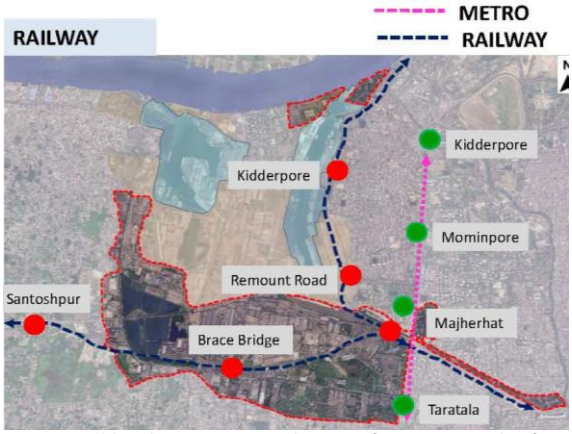


Figure 48: Dockland Existing Pathways (Source: Author's illustration)

CONCLUSIONS: Pedestrian walkways to be provided throughout. Proper connectivity needed to be upgraded between Ramnagar to Zinzira Bazaar. Connectivity in the Redevelopment area needed to be upgraded to connect the ongoing metro & railways.

ACTIVITY

OBSERVATION: Nature Park is a water Body (113.5 acres) with urban green area (22.25) which acts as a tourist place, but it needed intervention. Since most of the area is Industrial there is a lack of proper Recreation space.

CONCLUSIONS: Nature Park zone has potential to grow as a Recreation Place along with proper Transportation connection to it. Utilization of the potential of land, buildings etc which are in dilapidated condition and unused for long period

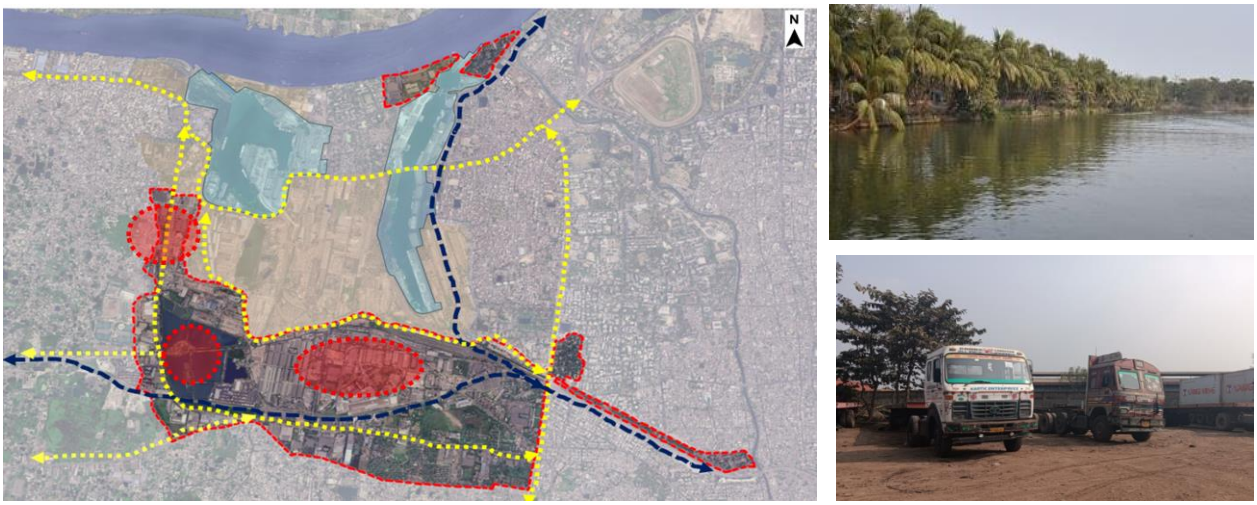


Figure 49: Dockland Activity (Source: Author)

LANDMARK

OBSERVATION: Some of the Existing Industry is itself a landmark. Clock Tower, Brace Bridge,Britania,Majherhat,Hide Road and many others landmarks are present.

CONCLUSIONS: Existing Landmarks should be more prominent to cater the area character & improve recognizabillity.Proper Signage required to identify the place.

Figure 50: Britannia &Clock Tower as existing Landmark. (Source: Author)

VISTA & SKYLINE

OBSERVATION: Absence of Proper skyline. Linear Roads itself creates vista. Hoardings block the views
CONCLUSIONS: Major roads are almost linear; vistas must be enhanced by design measurements.

Figure 51: Existing Vista Taratala Road. (Source: Author)

4.1.5 IDENTIFICATION OF INTERVENTION ZONES

Based on the study done it is established that the selected zones have the most potential to be developed.
ZONE 1: Area Surrounding the Nature Park.
ZONE 2: Area between Railway Lines and Garden Reach Flyover
ZONE 3: Area around River Hooghly.

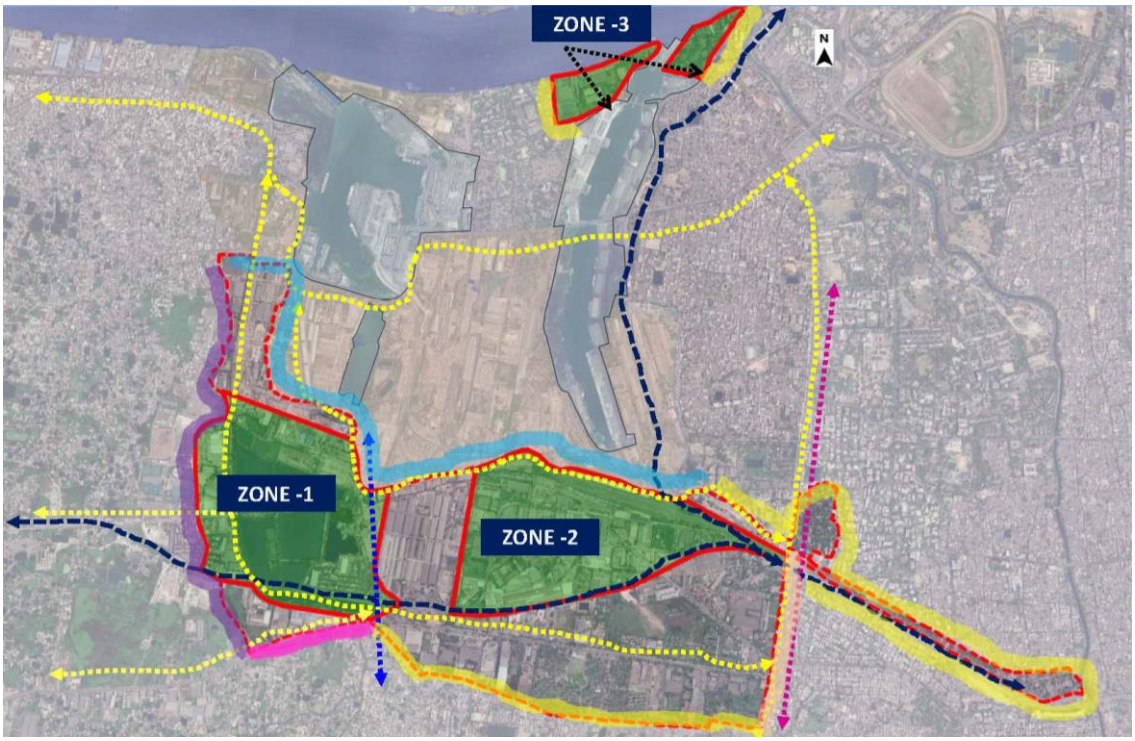


Figure 52: Existing Identification of Intervention zones (Source: Author)

Figure 53: Zone-I,II&III Respectively (Source: Author)

4.1.6 PROPOSALS: AREA LEVEL

Two categories of design potential have been established

Green indicating major redevelopment opportunities due to the factors such as unutilized potential land.
Red - areas where minimum redevelopment needed.

The proposals for Area levels are as follows:

- Preparation of master plan along with urban design strategies surrounding the core zone.
- Introducing hierarchy of roads & grade separation as well as maximize the pedestrian walkways & bi-cycles tracks.
- Proposing functional districts and creation of paths, landmarks etc.as per requirement.
- Upgrading the existing connectivity to residential areas and to metro along with creation of public activity

Figure 54: Design potential areas (Source: Author)

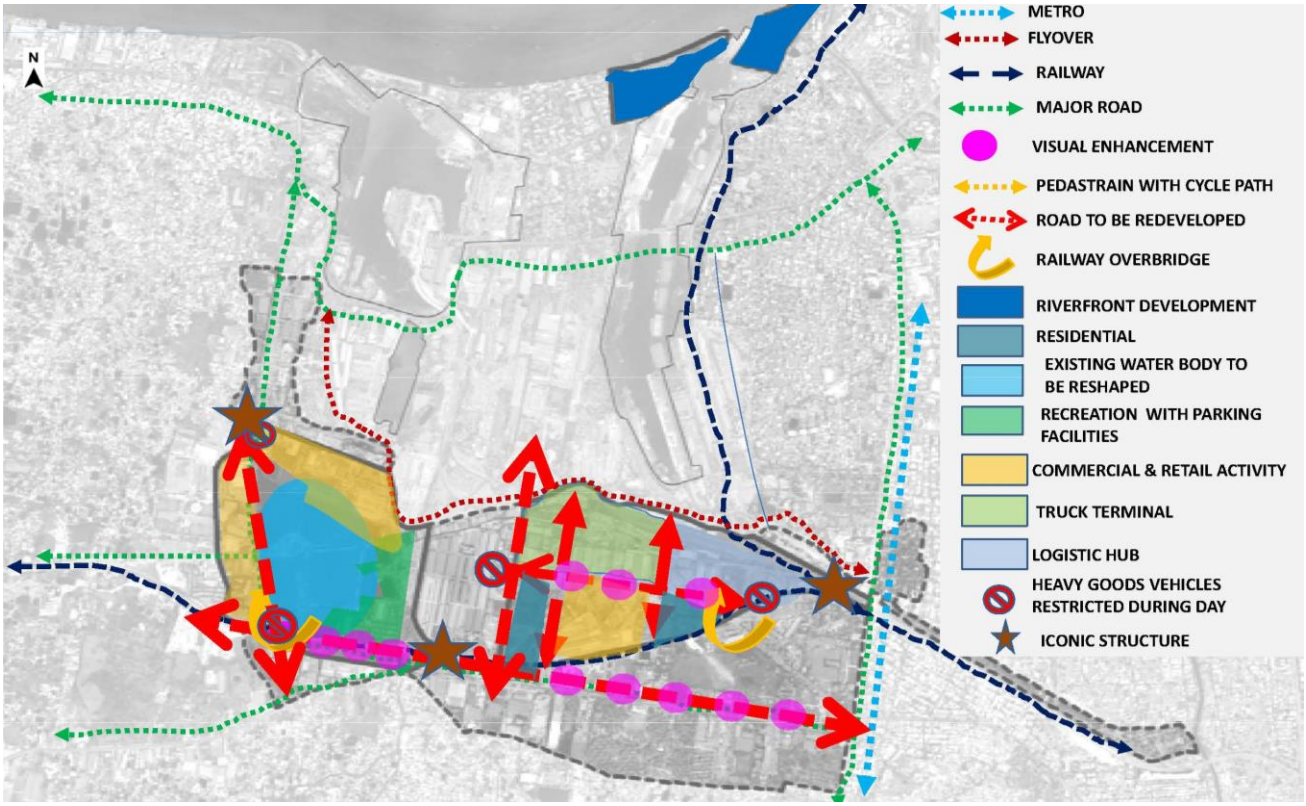


Figure 55: Proposals Area Level (Source: Author)

4.1.7 DESIGN GUIDELINES: AREA LEVEL

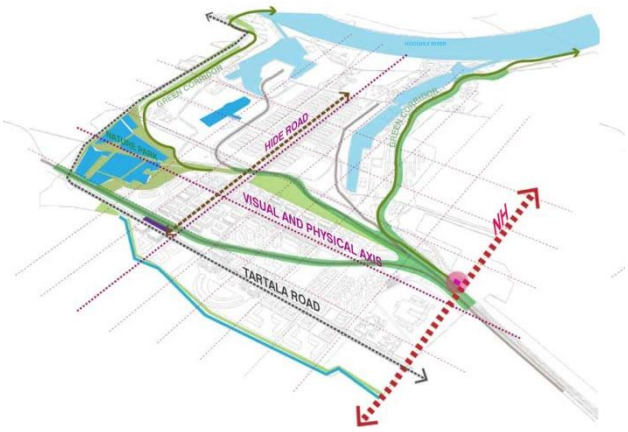
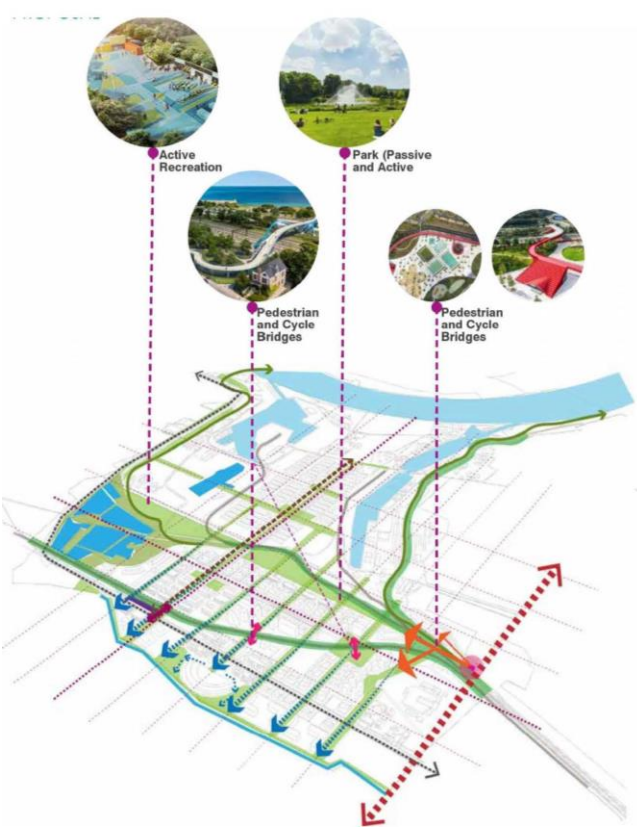


Figure 56: Proposals Visual Axis(Source: Author)

Figure 57: Proposals Vista(Source: Author)

ROUTE

- Regenerating more public activity zones in the industrial areas to make the place more vibrant
- To develop Taratala Road as grade separated, people friendly & comfortable to use.
- To design adequate support facilities like bus stops, parking, on road vendors, street furniture etc.
- To incorporate railway crossing to ease the traffic movement.



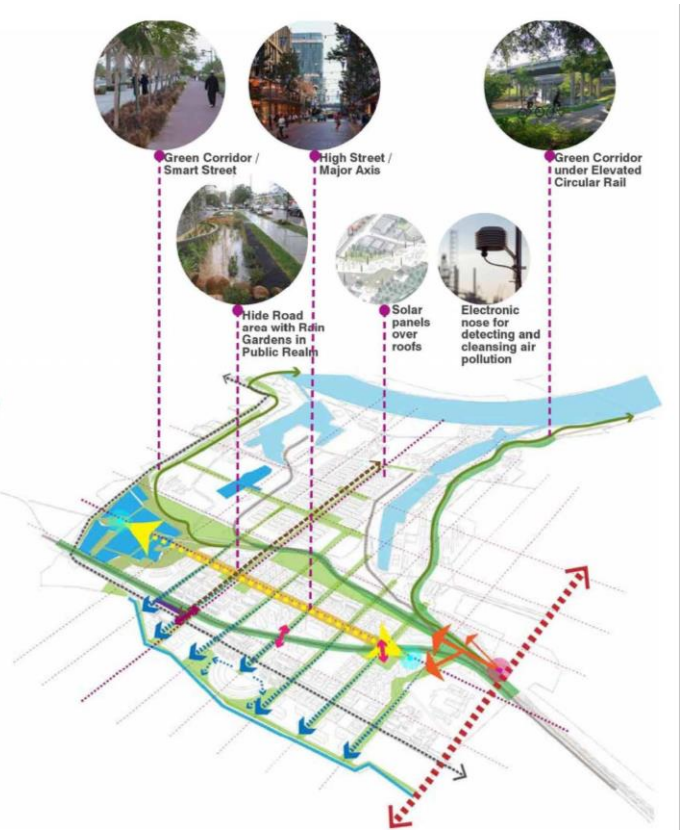


Figure 58: Connection & Open Spaces (Source: Author)

PATHWAYS

- To remove physical & visual barrier in the road with the Nature Park and other activities to provide the visual & physical connection with the streetscape. “Enrich the eyes on the street”.
- To upgrade the public transport to from site-1 to the nearby residential area and Taratala Metro.
- To restrict heavy vehicles movement during daytime

ACTIVITIES

- To redevelop the existing & introduce new commercial & retail activities around the nature park.

Figure 59: Activity Spaces (Source: Author)

Figure 60: Cycle Stand (Source: Author)

LANDMARK

- Existing Heritage structures to be renovated which will itself act as landmarks in marking location and providing a sense of place.
- Landmarks to be visually connected through straight roads.
- Gate Complex to be Provided

VISTA, SKYLINE

- To enhance the existing views & vistas and to create new views & vistas wherever possible.
- To maintain a uniform character for the buildings for a better streetscape.

4.2 ZONAL LEVEL STUDY

4.2.1 ZONE -1

4.2.1.1 DELINEATION

Railway line & water body acts as a strong southern edge. The road for industrial area is separating the northern part. In the western side the residential and industrial area acts as a boundary. The road for industrial zone acts as a boundary on the eastern edge.

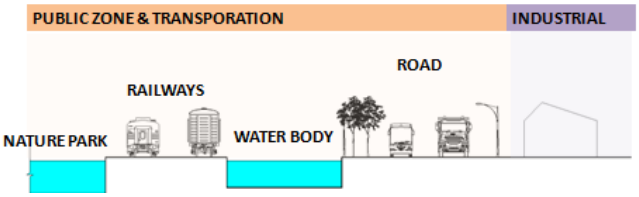


Figure 61: Section through Nature Park & Taratala Road (Source: Author)

Figure 62: Delineation Zone-I Plan (Source: Author)

4.2.1.2 SURVEY

ROUTE

OBSERVATION: No separation of vehicular & pedestrian movements.Inadequate Road width to fetch actual traffic load. Illegal Parking along roads.

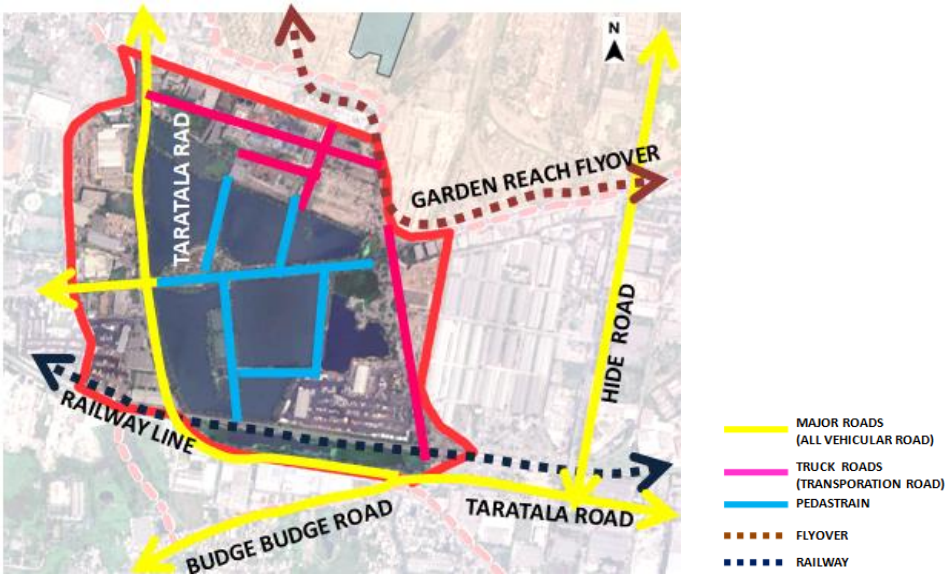


Figure 63: Route Zone-I Plan (Source: Author)

CONCLUSIONS

Classifications of roads are needed according to movement requirements. Adequate space for pedestrian & light vehicles is important. Adequate bus stop bay, parking area should be intervened whether required. A Railway over bridge needed between Coca-Cola Factory to Nature Park

PATHWAYS

OBSERBVATIONS: Absence of street lighting for carriageway and pavements.Pedestrian walkways & cycle routes missing.Zone-01comprises of modes:

- Rail
- Road: Bus network

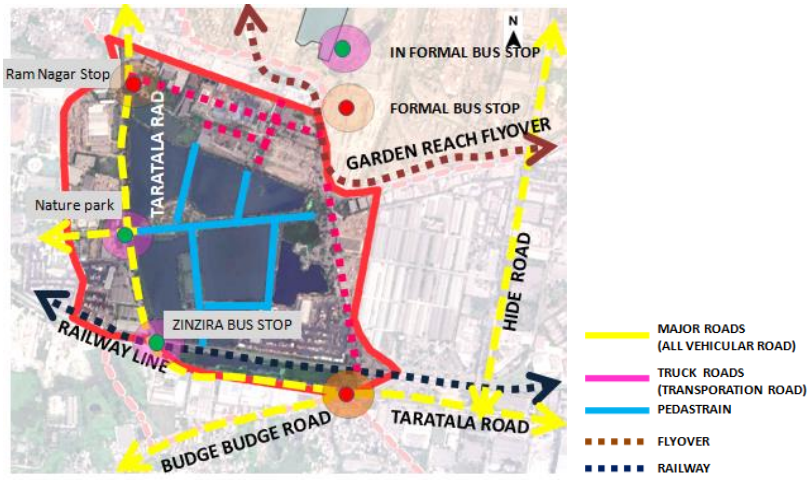


Figure 64: Pathways Zone-I Plan (Source: Author)

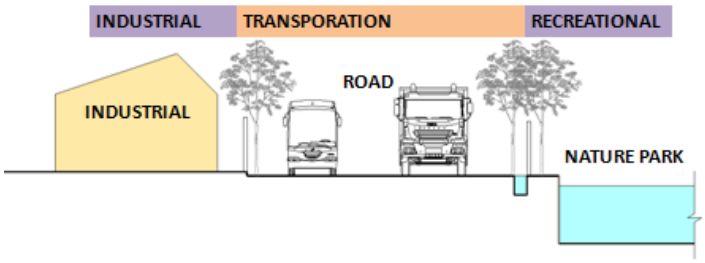


Figure 65: Section through Taratala Road & Nature Park (Source: Author)

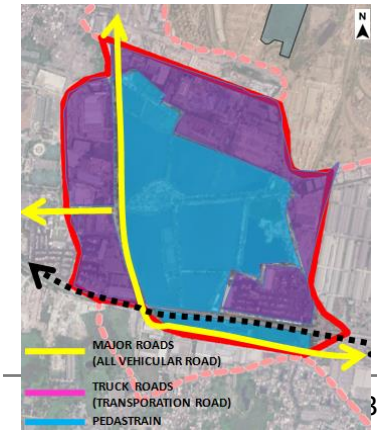
Figure 66: Railway Track Taratala Road (Source: Author)

CONCLUSIONS: Pedestrian walkways to be provided throughout. Proper connectivity needed to be upgraded between Ramnagar to Zinzira Bazaar. Connectivity in the Zone-01 needed to be upgraded to connect the ongoing metro & railways.

ACTIVITIES

OBSERVATION: Nature Park is a water Body (113.5 acres) with urban green area (22.25 acres) which acts as a tourist place, but it needed intervention.

CONCLUSIONS: Nature Park zone has potential to grow as a Recreation Place along with proper Transportation connection to it.



Utilization of the potential of land, buildings etc which are in dilapidated condition and unused for long period.

Figure 67: Activity Zone-I (Source: Author)

LANDMARK

OBSERVATION: Existing Water Body & Industry is itself a landmark.

CONCLUSIONS: Existing Landmarks should be more prominent to cater the area character & improve recognizabillity.
Proper Signage required identifying the place.

Figure 68: Nature Park Gate (Source: Author)

Figure 69: Coca Cola Factory (Source: Author)

VISTA, SKYLINE

OBSERVATION

- Absence of Proper skyline.
- Linear Roads itself creates vista.
- Hoardings block the views.

CONCLUSIONS

- Major roads are almost linear; vistas must be enhanced by the design measurements.
- In some areas contrast can be created in skyline to break the monotony.

Figure 70: Obstacles in Skyline (Source: Author)

Figure 71: Enhancement needed in Skyline (Source: Author)

4.2.1.3 PROPOSALS: ZONE-I

- Recreating Nature Park into a proper recreational space along with commercial & retail space so as to reinforce the physical connections between the adjoining residential areas.
- Introducing hierarchy of roads & grade separation as well as maximize the pedestrian walkways & bi-cycles tracks
- Upgrading the existing connectivity to residential areas and to metro along with creation of public activity
- Proposing functional districts and creation of paths, landmarks etc.as per requirement.
- Introducing proper parking to support the public facilities all around

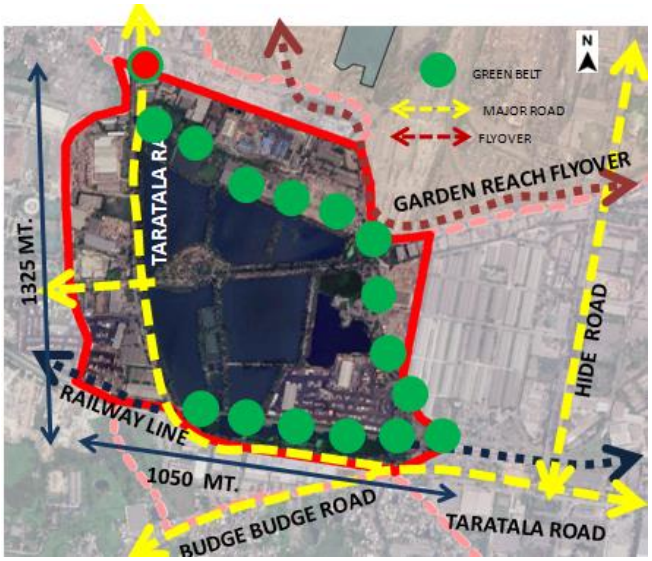


Figure 72: Proposal Plan, Zone-I (Source: Author)

4.2.1.4 IDENTIFICATION OF INTERVENTION SITE

- Based on the study done it is established that the selected sites have the most potential to be redeveloped.
- Site-1: starting from Zinzira Bazaar crossing to end of Nature Park.
- Site level study will be limited to site: a only, since this site has been identified as appropriate centrally located public recreational spaces to intervene & also KPT has its projected scheme to develop this area as a recreational place.
- Site level study will be done on the same parameters as done in area level.

Figure 73: Intervention Site (Source: Author)

4.2.2 ZONE -2

4.2.2.1 DELINEATION

Existing Railway line acts as a strong northern edge. The road for industrial area is separating the northern part. In the eastern side the residential and Majherhat Bridge acts as a boundary. The Hide road acts as a boundary on the western edge.

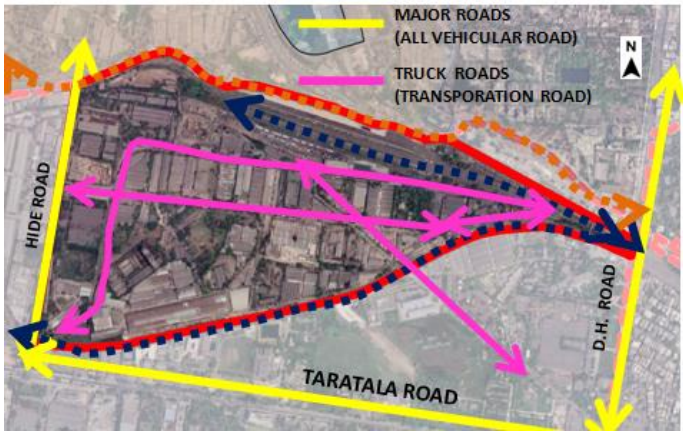


Figure 74: Zone-II, Delineation (Source: Author)

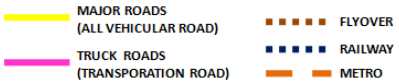
Figure 75: Transport Yard (Source: Author)

4.2.2.2 SURVEY

ROUTE

OBSERVATION: No separation of vehicular & pedestrian movements. Inadequate Road width to fetch actual traffic load.

CONCLUSIONS: Grade separation should be done for the roads, adequate space for pedestrian & HEAVY /light vehicles are important. Adequate bus stop bay, parking area should be intervened whether required. Strategically location to be designed for the Formal/informal vendors.



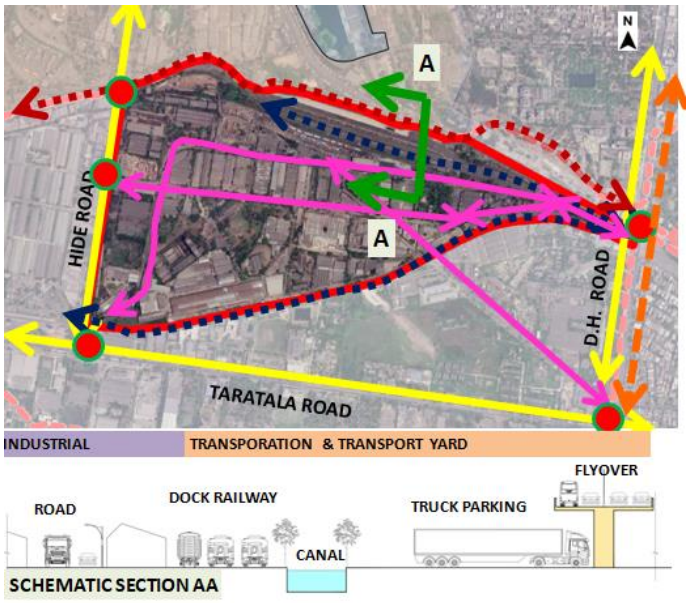


Figure 76: Zone-II, Route & Road Section (Source: Author)

PATHWAYS

OBSERBVATIONS: Pedestrian walkways & cycle routes missing.
CONCLUSIONS: Pedestrian walkways to be provided throughout. Proper connectivity needed to be upgraded between the Transport Yard & Majherhat. Connectivity in the Zone-02 needed to be upgraded to connect the ongoing metro & railways.

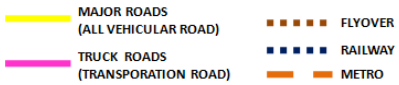


Figure 77: Zone-II, Pathways (Source: Author)

ACTIVITIES

OBSERVATION: Zone-02 is a industrial area with open Truck Parking and depilated Structures, but it needed intervention.

CONCLUSIONS: Zone -2 has potential to grow as a Transportation/Logistic Hub/Mixed use along with proper Transportation connection to it. Utilization of the potential of land, buildings etc which are in dilapidated condition and unused for long period.

Figure 78: Zone-II, Current Activities (Source: Author)

LANDMARK

OBSERVATION: Existing Factories & Industry is itself a landmark.

CONCLUSIONS: Existing Landmarks should be more prominent to cater the area character & improve recognizabillity. Proper Signage required identifying the place.

VISTA, SKYLINE

OBSERVATION: Absence of Proper skyline. Linear Roads itself creates vista.Existings Hoardings block the views.

CONCLUSIONS: Major roads are almost linear; vistas must be enhanced by the design measurements. In some areas contrast can be created in skyline to break the monotony.

Figure 79: Zone-II, Existing Skyline & Vistas (Source: Author)

4.2.2.3 PROPOSALS: ZONE-II

The Proposals are as follows:

- Revitalizing truck parking facility in this central area.
- Modifying road network system through grade separation for better accessibility, safety & comfort.
- Introducing dedicated pedestrian & Truck / LMV pathways to for better accessibility.
- Connecting adjoining residential area of the surrounding edges.
- Introducing proper parking to support the public facilities all around
- Rearranging the existing activities & introducing some for activities for the area.

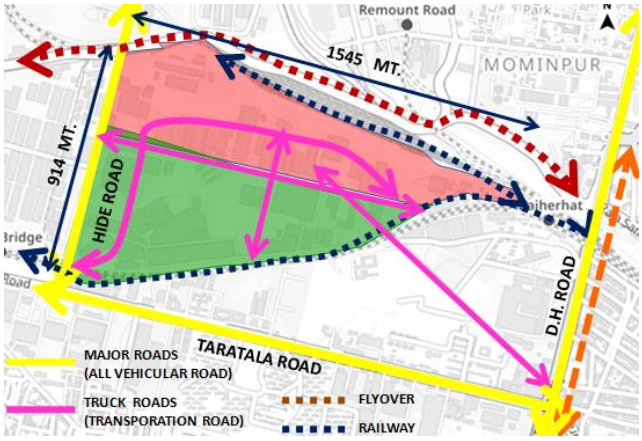


Figure 80: Zone-II, Design Proposals (Source: Author)

Figure 81: Zone-II, Conceptual Design Proposals (Source: Author & Google Images)

4.2.2.4 IDENTIFICATION OF THE INTERVENTION SITE

Site level study will be limited to site: 2 only, since this site has been identified as another centrally located potential spaces of dockland area. Site level study will be done on the same parameters as done in area level.

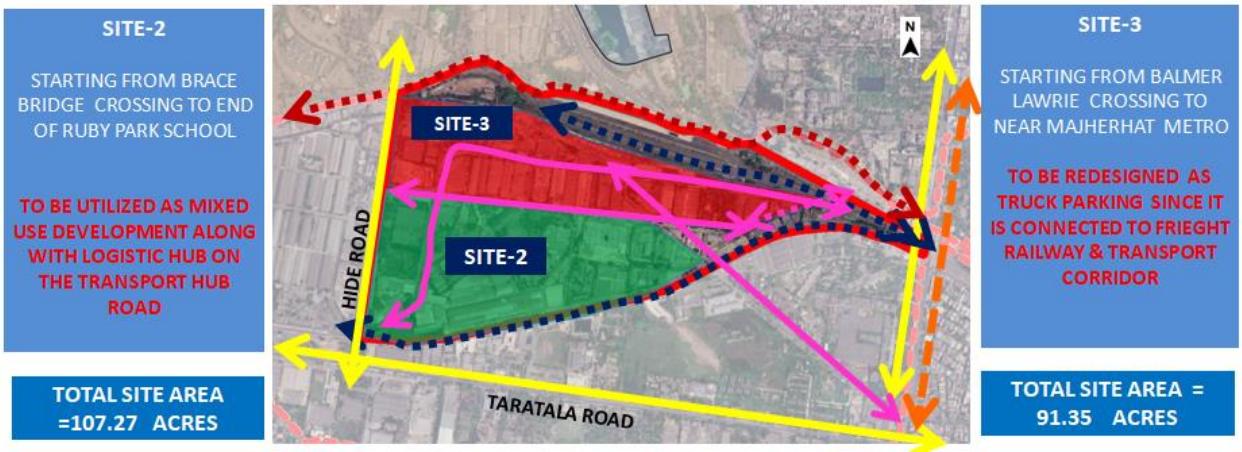


Figure 82: Zone-II, Intervention Area (Source: Author's Illustration)

4.3 SITE LEVEL STUDY

4.3.1 SITE-1

4.3.1.1 DELINEATION

Figure 83: Site-1, Delineation Area (Source: Author's Illustration)

4.3.1.2 DESCRIPTION

Figure 84: Site-1, Description of the Area (Source: Author's Illustration)

4.3.1.3 SURVEY: SITE-1

ROUTE

OBSERVATION: No separation of vehicular & pedestrian movements. Inadequate Road width to fetch actual traffic load. Unauthorized Parking, No Railway Crossing.

CONCLUSIONS: Classifications of roads are needed according to movement requirements. Adequate space for pedestrian & light vehicles is important. Adequate bus stop bay, parking area should be intervened whether required. A Railway over bridge needed between Coca-Cola Factory to Nature Park

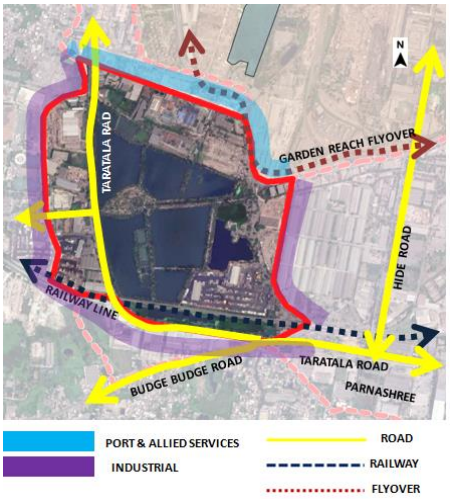


Figure 85: Route Map (Source: Author)

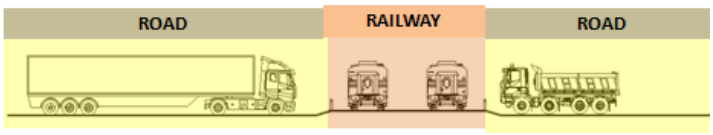
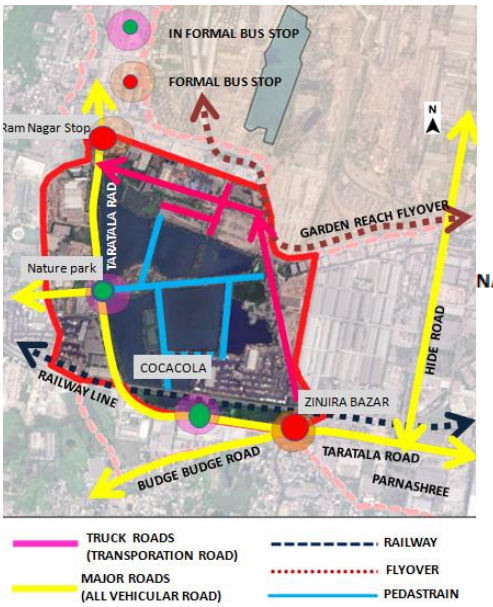


Figure 86: Section through Railway Track (Source: Author)

PATHWAYS

OBSERBVATIONS: Absence of street lighting for carriageway and pavements. Pedestrian walkways & cycle routes missing.

CONCLUSIONS: Pedestrian walkways to be provided throughout. Proper connectivity needed to be upgraded between Ramnagar to Zinzira Bazaar. Connectivity in the SITE-01 needed to be upgraded to connect the ongoing metro & railways.



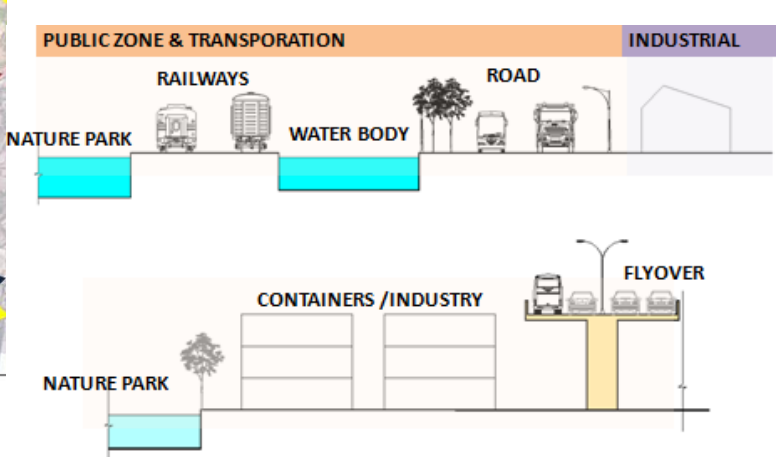


Figure 87: Pathway Plan Site-1 (Source: Author)

Figure 88: Section through Site-1 (Source: Author)

ACTIVITIES

OBSERVATION: Nature Park is a water Body (113.5 acres) with urban green area (22.25 acres) which acts as a tourist place, but it needed intervention.

Figure 89: container yards (Source: Author)

Figure 90: Industrial Area (Source: Author)

CONCLUSIONS: Nature Park zone has potential to grow as a Recreation Place along with proper Transportation connection to it. Utilization of the potential of land, buildings etc which are in dilapidated condition and unused for long period.

LANDMARK

OBSERVATION: Existing Water Body & Industry is itself a landmark.

CONCLUSIONS: Existing Landmarks should be more prominent to cater the area character & improve recognizabillity. Proper Signage required identifying the place.

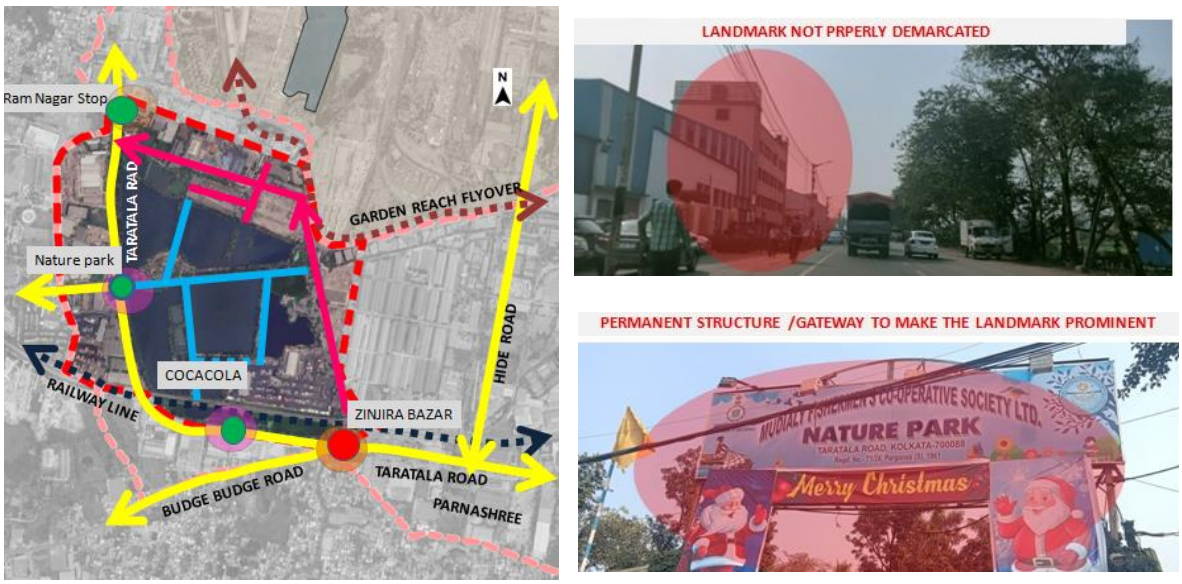


Figure 91: Landmarks at Site-1 (Source: Author)

VISTA, SKYLINE

OBSERVATION: Absence of Proper skyline. Linear Roads itself creates vista. Hoardings block the views.

CONCLUSIONS: Major roads are almost linear; vistas must be enhanced by the design measurements. In some areas contrast can be created in skyline to break the monotony.

Figure 92: Existing Vista (Source: Author)

4.3.1.4 DESIGN GUIDELINES: SITE-1

ROUTE

- Regenerating more public activity zones in the industrial areas to make the place more vibrant.
- To develop Taratala Road as grade separated, people friendly & comfortable to use.
- To incorporate adequate road facilities & street furniture's to enhance the comfort of the outdoor activities.
- To incorporate railway crossing to ease the traffic movement.

PATHWAYS

- To remove physical & visual barrier in the road with the nature park and other activities to provide the visual & physical connection with the streetscape. "Enrich the eyes on the street".
- To upgrade the public transport to from site-1 to the nearby residential area and Taratala Metro.

ACTIVITIES

- To redevelop the existing & introduce new commercial & retail activities around the nature park.

LANDMARK

- To enhance the existing views & vistas and to create new views & vistas wherever possible.

VISTA, SKYLINE

- To design the templates for the advertisement boards, bill boards etc.

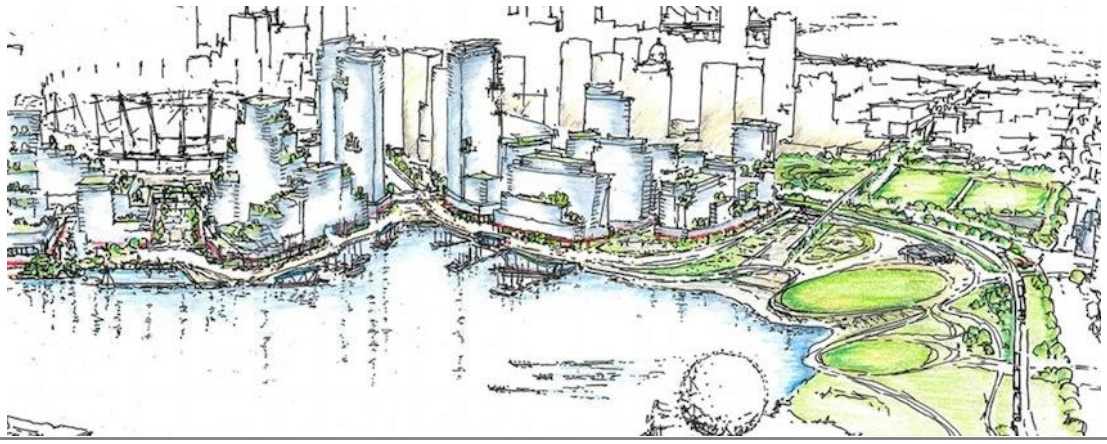


Figure 93: Conceptual View (Source: Author)

4.3.1.5 PROPOSALS

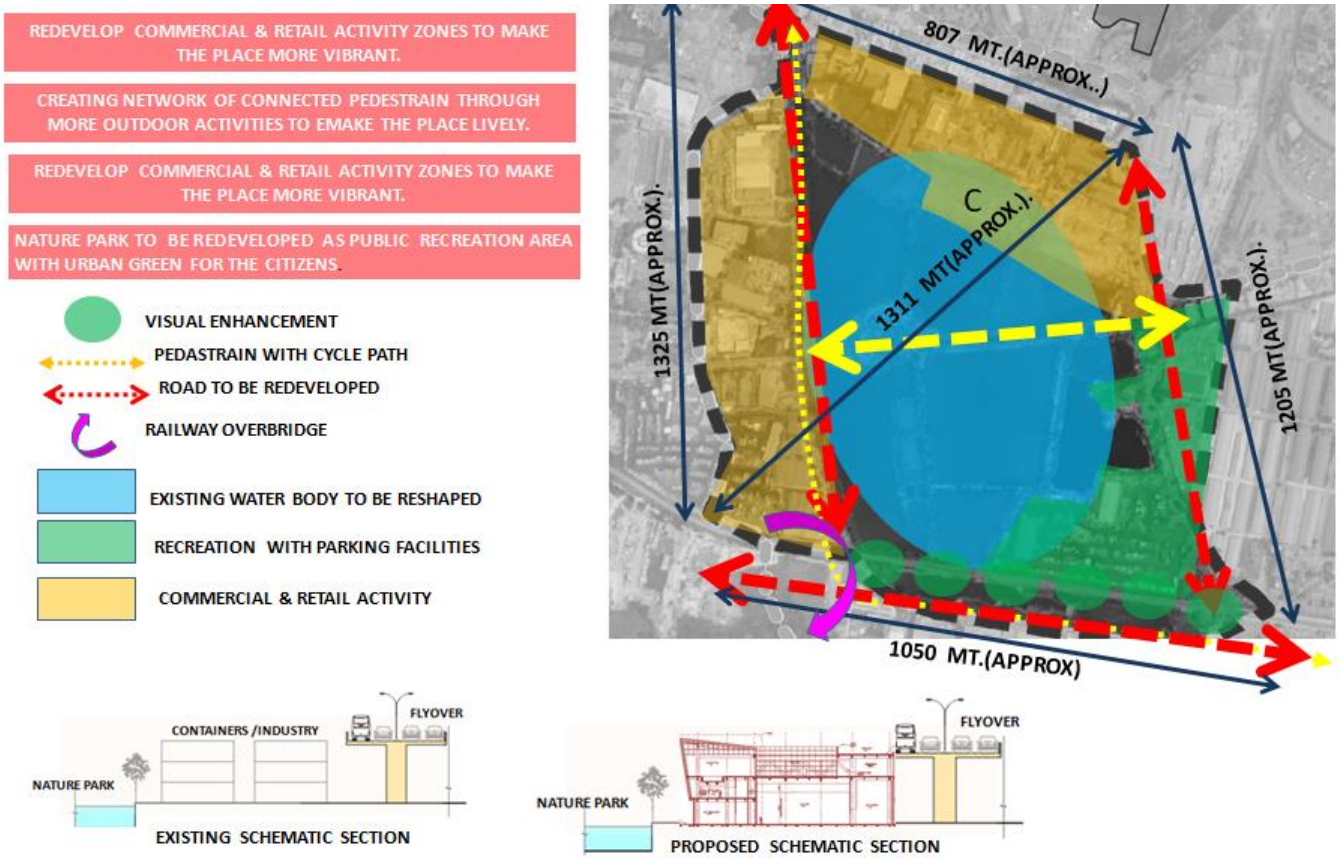


Figure 94: Design Proposals Plan (Source: Author)

4.3.2 SITE-2

4.3.2.1 DELINEATION & 4.3.2.2 DESCRIPTION

Based on the existing activity the area is identified for the intervention area.

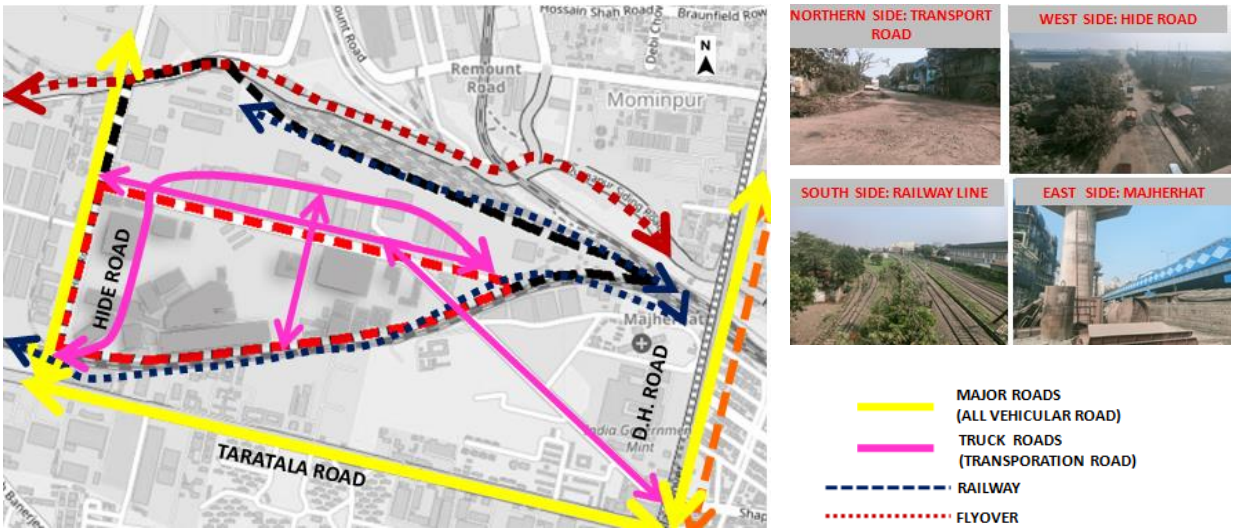


Figure 95: Delineation & Description of Site (Source: Author)

4.3.2.3 SURVEY

ROUTE

CONCLUSIONS: Grade separation should be done for the roads, adequate space for pedestrian & HEAVY /light vehicles are important. Adequate bus stop bay, parking area should be intervened whether required. Public Connectivity improvement needed from Site -02 to Majherhat & other Residential zones nearby.

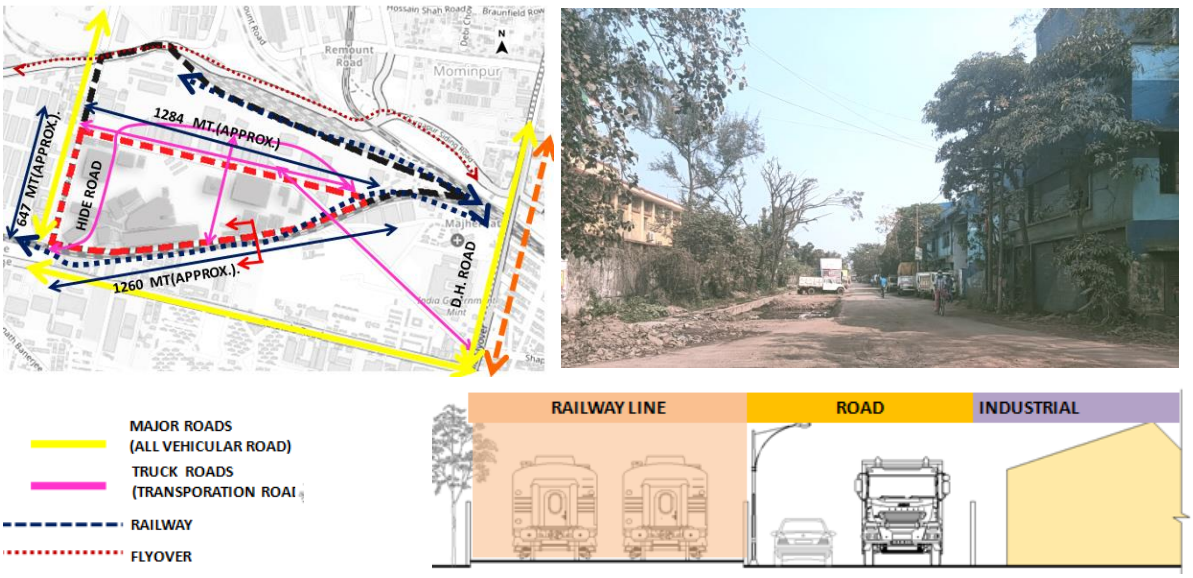


Figure 96: Route Plan & Schematic section of Site (Source: Author)

PATHWAYS

CONCLUSIONS: Pedestrian walkways to be provided throughout. Proper connectivity needed to be upgraded in Transport Road Connectivity in the SITE-02 needed to be upgraded to connect the ongoing metro & railways.

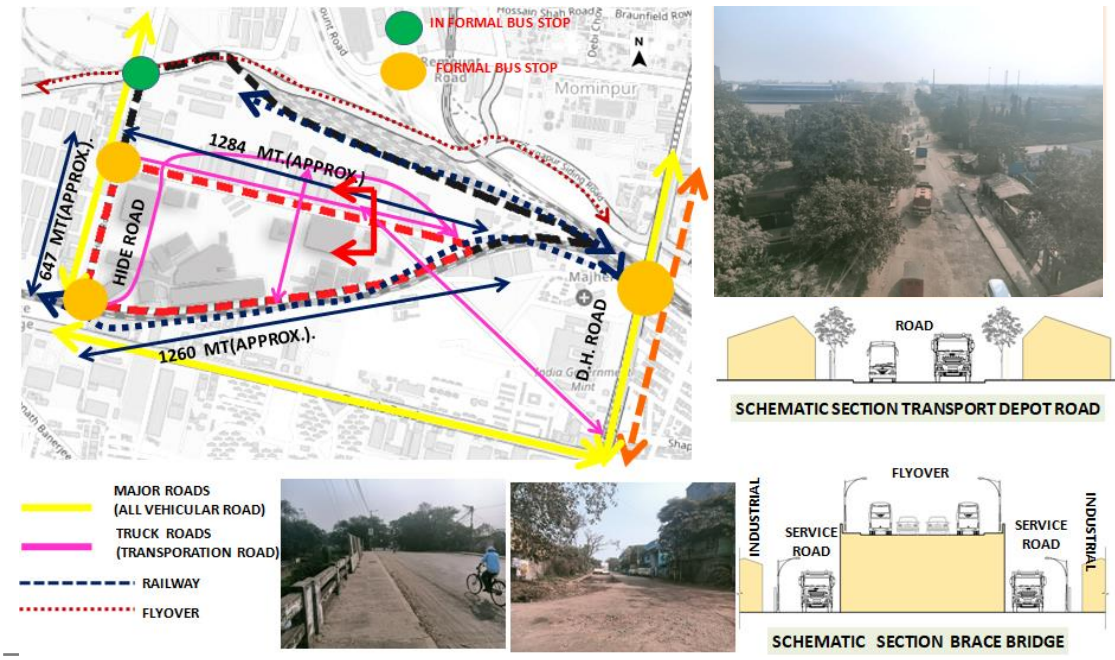


Figure 97: Pathway Plan & Schematic section of Site (Source: Author)

ACTIVITIES

CONCLUSIONS: This area has opportunities to be redeveloped for these abandoned Factories/warehouse & land. SITE -2 has potential to grow as a mixed use along with proper Transportation connection to it. Utilization of the potential of land, buildings etc which are in dilapidated condition and unused for long period.

Figure 98: Existing Institution & Industrial (Source: Author)

LANDMARK

CONCLUSIONS: Proper Signage required identifying the place. Some landmarks can be introduced to modify vista.

Figure 99: Existing Landmarks, Majherhat Station, Balmer Lawrie,Brace Bridge (Source: Author)

VISTA, SKYLINE

CONCLUSIONS

- Major roads are almost linear; vistas must be enhanced by the design measurements.
- In some areas contrast can be created in skyline to break the monotony.

Figure 100: Existing Vistas along Hide road (Source: Author)

4.3.2.4 DESIGN GUIDELINES: SITE-2

ROUTE

- Regenerating more public activity zones in the industrial areas to make the place more vibrant.
- To develop transport depo road as grade separated, people friendly & comfortable to use.
- To restrict heavy vehicles movement during daytime
- To design adequate support facilities like bus stops, parking, on road vendors, street furniture etc.

PATHWAYS

- To incorporate railway crossing to ease the traffic movement.
- To remove physical & visual barrier in the road to provide the visual & physical connection with the streetscape. “Enrich the eyes on the street”.
- To upgrade the public transport to from site-2 to the nearby residential area and Taratala metro.

ACTIVITIES

- To redevelop the existing & introduce new commercial & retail activities around the transport depot road to make the place lively.

LANDMARK

- To design the templates for the advertisement boards, bill boards etc.
- Provide gate for entry point

Figure 101: Conceptual Street views (Source: Author)

VISTA, SKYLINE

- To enhance the existing views & vistas and to create new views & vistas wherever possible

- To maintain a uniform character for the buildings for a better streetscape.

4.3.2.5 PROPOSALS

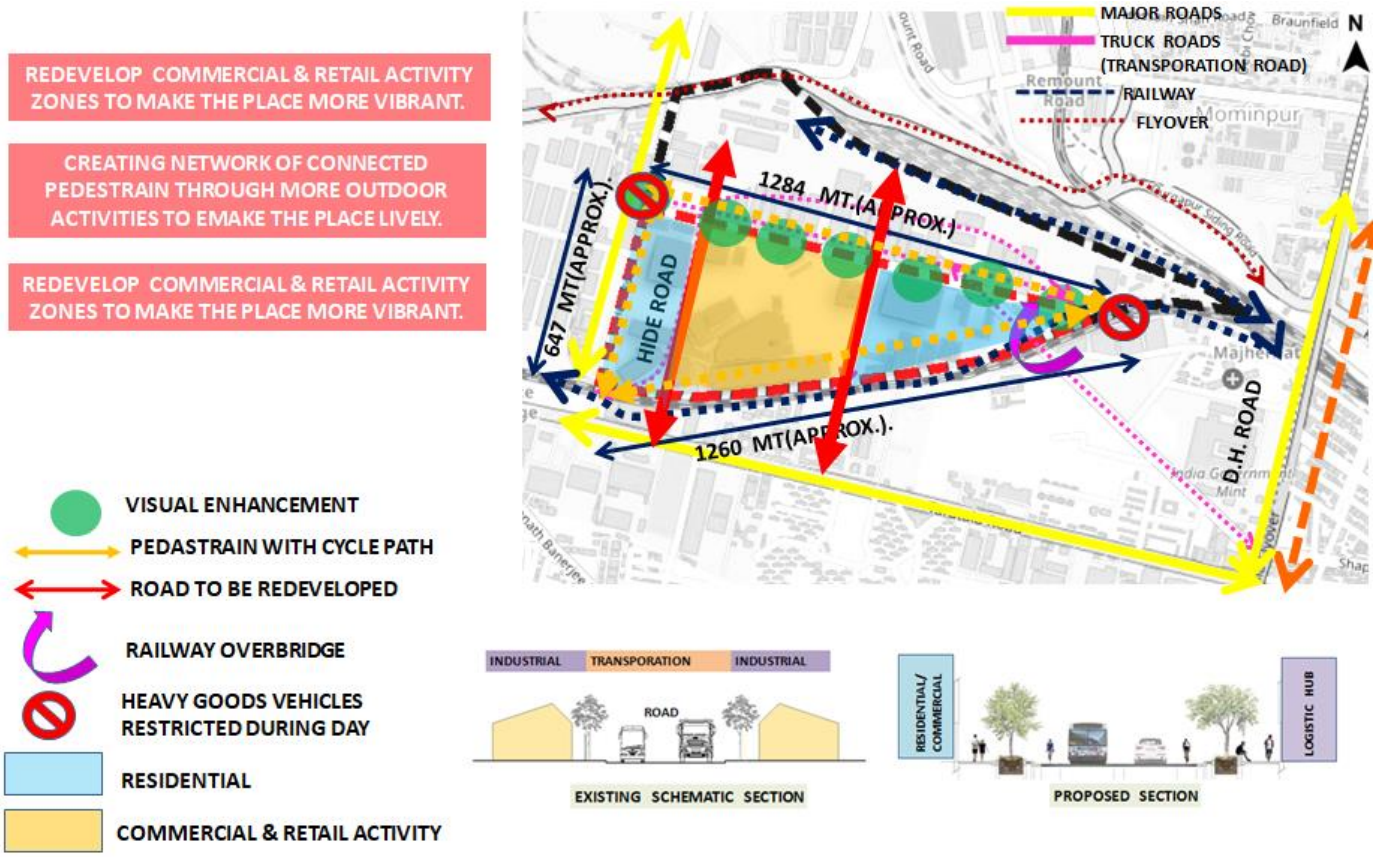
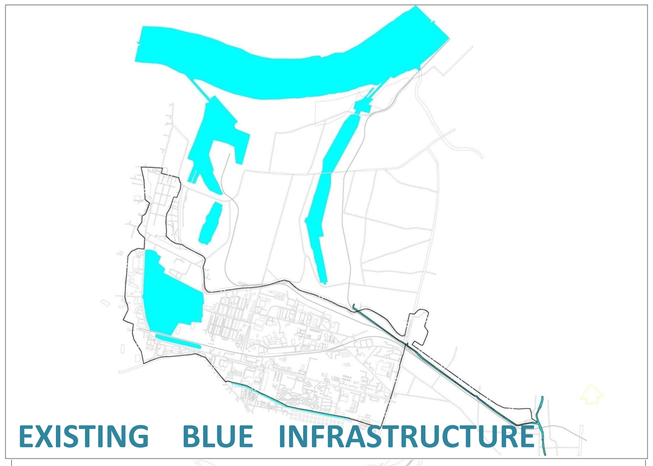
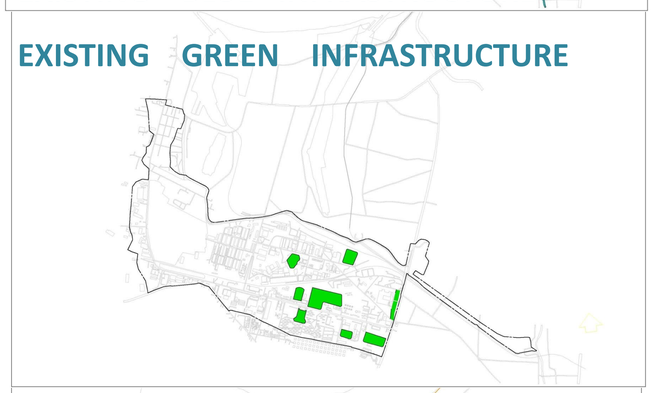


Figure 102: Design proposals (Source: Author)

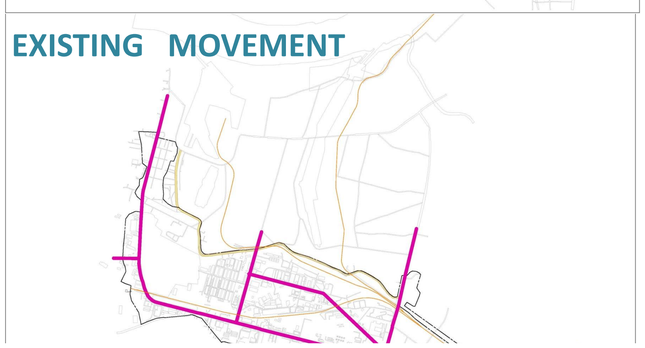
5.0 DESIGN IMPLEMENTATION



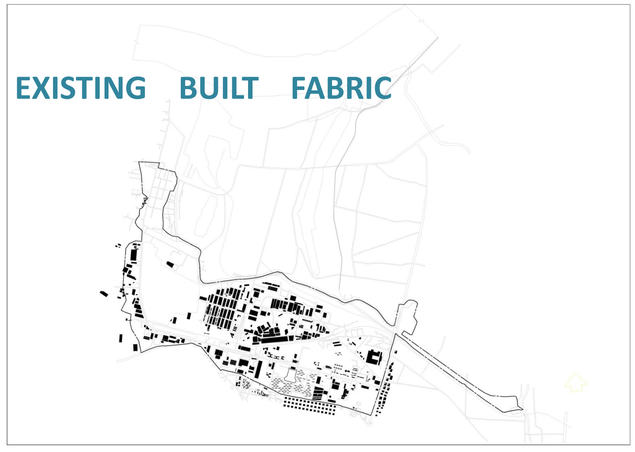
EXISTING BLUE INFRASTRUCTURE



EXISTING GREEN INFRASTRUCTURE



EXISTING MOVEMENT



EXISTING BUILT FABRIC

5.1 VISION &CONTEXT

VISION

REDEVELOPING AN AREA ADJOINING KIDDERPORE DOCK IN ORDER TO CREATE A COMMERCIAL & RECREATIONAL HUB ,TO IMPROVE THE OVERALL IMAGE OF THE AREA

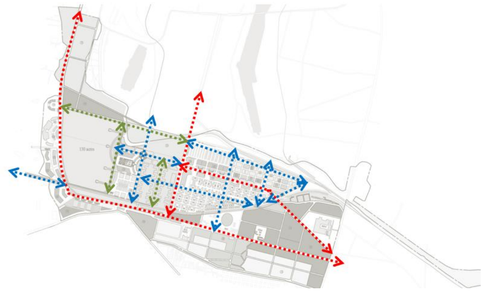
CONTEXT

- UNORGANIZED & UN-UTILIZED DOCK LAND AREA
- INDUSTRIAL ZONE
- ISOLATED FROM MAIN CITY
- LACK OF PROPER TRANSPORTATION FACILITY

PROPOSED STRATAGIES

MOVEMENT

ROAD HIERARCHY



MOVEMENTS

NODES

PROGRAM

ECOLOGY

LAND OWNERSHIP

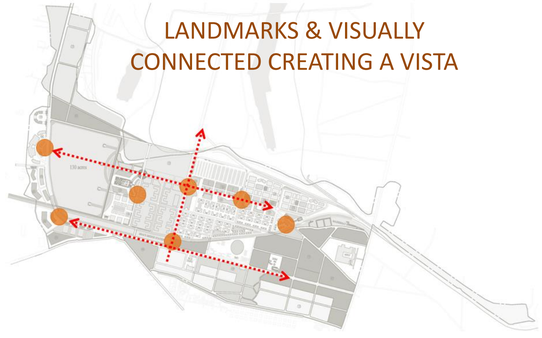
KOLKATA PORT TRUST LAND

ACTIVITIES

SPACE

LAND MARK & VISTA

LANDMARKS & VISUALLY CONNECTED CREATING A VISTA

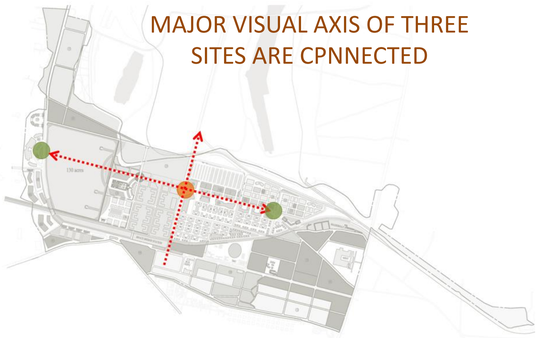


MAGNETS

MAJOR CITY LEVEL RECREATIONAL SPACES ARE CONNECTED WITH RETAIL & COMMERCIAL

PLACE MAKING

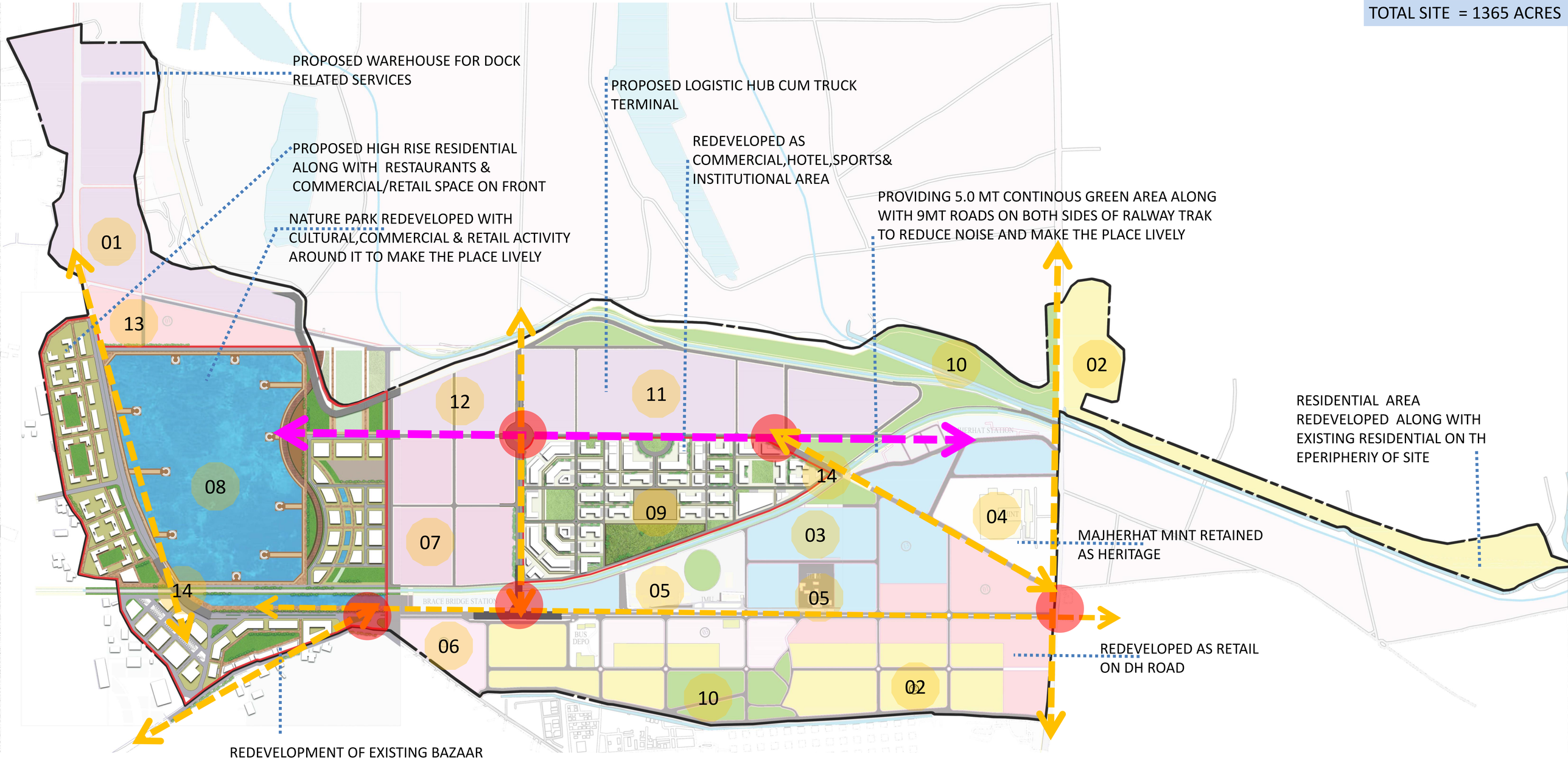
MAJOR VISUAL AXIS OF THREE SITES ARE CPNNECTED



5.0 DESIGN IMPLEMENTATION

MASTER PLAN

TOTAL SITE = 1365 ACRES



MAJOR PUBLIC NODE

VISUAL AXIS

STRENGTHING EXISTING LINKAGE

LEGENDS

1.WAREHOUSE
2.RESIDENTIAL
3.INSTITUTIONAL
4.HERITAGE-MINT
5.EXISTING RETAINED
6.MARKET/BAZAAR
7.RETAIL CUM OFFICE
8.SITE-1
9.SITE-2
10.GREEN AREA
11.LOGISTICS HUB CUM TRUCK TERMINAL
12.DOCK RELATED OFFICE
13.FUTURE EXPANSION
14.PROPOSED RAILWAY CROSSING

SCALE 1:21000

5.0 DESIGN IMPLEMENTATION

SITE -01

KEY PLAN

SCALE 1:5100

LEGENDS

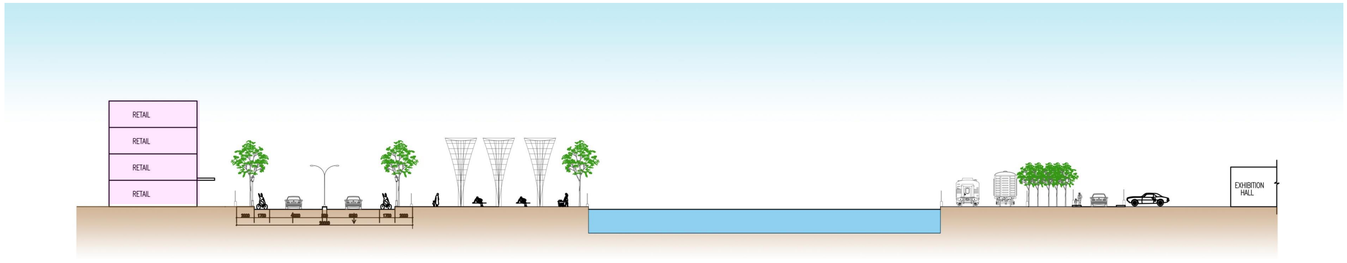
1.NATURE PARK(125 ACRES)
2.RETAILCUM COMMERCIAL
3.DOCK MUSEUM
4.INTERPRETATION CENTRE
5.CULTURAL CENTRE
6.EXHIBITION HALLS
7.PARKING
8.PLAYGROUND
9.IOCONIC STRUCTURE
10.WATERBODY
11.WALKWAY & SCLUPTURE
12.RETAIL
13.BAZAAR
14.WAREHOUSE
15.RESIDENTIAL
16.RESTAURANTS
17.PROPOSED RAILWAY OVERBRIDGE
18.PUBLIC UTILITY SERVICES
19.O.A.T

SECTION THROUGH RESTAURANT ZONE

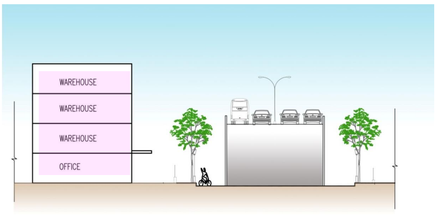
SECTION THROUGH NATURE PARK

5.0 DESIGN IMPLEMENTATION

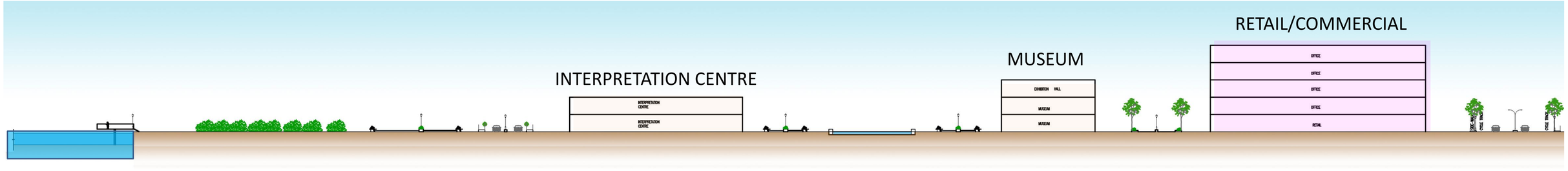
SITE -01



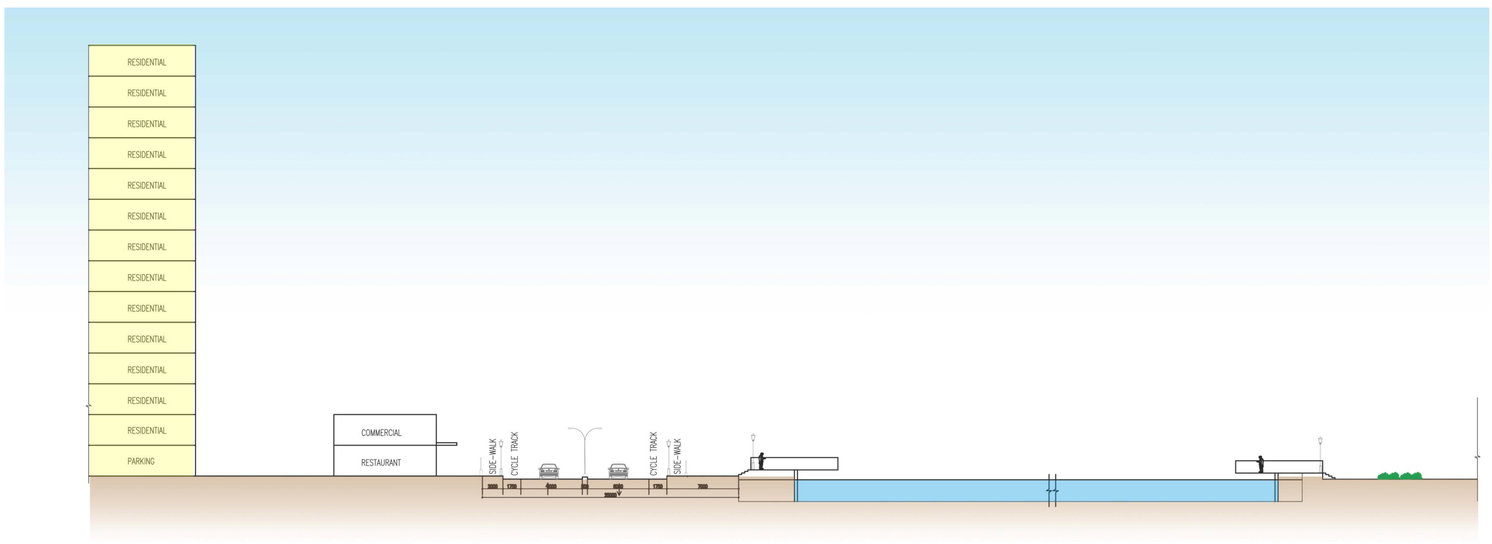
SECTION 1- RAILWAY TRACK AND REATIL ZONE



SECTION 2- PROPOSED RAILWAY OVERBRIGE



SECTION 3- WATERBODY TO RETAIL



SECTION 4- RESIDENTIAL TO NATURE PARK PERIPHERY

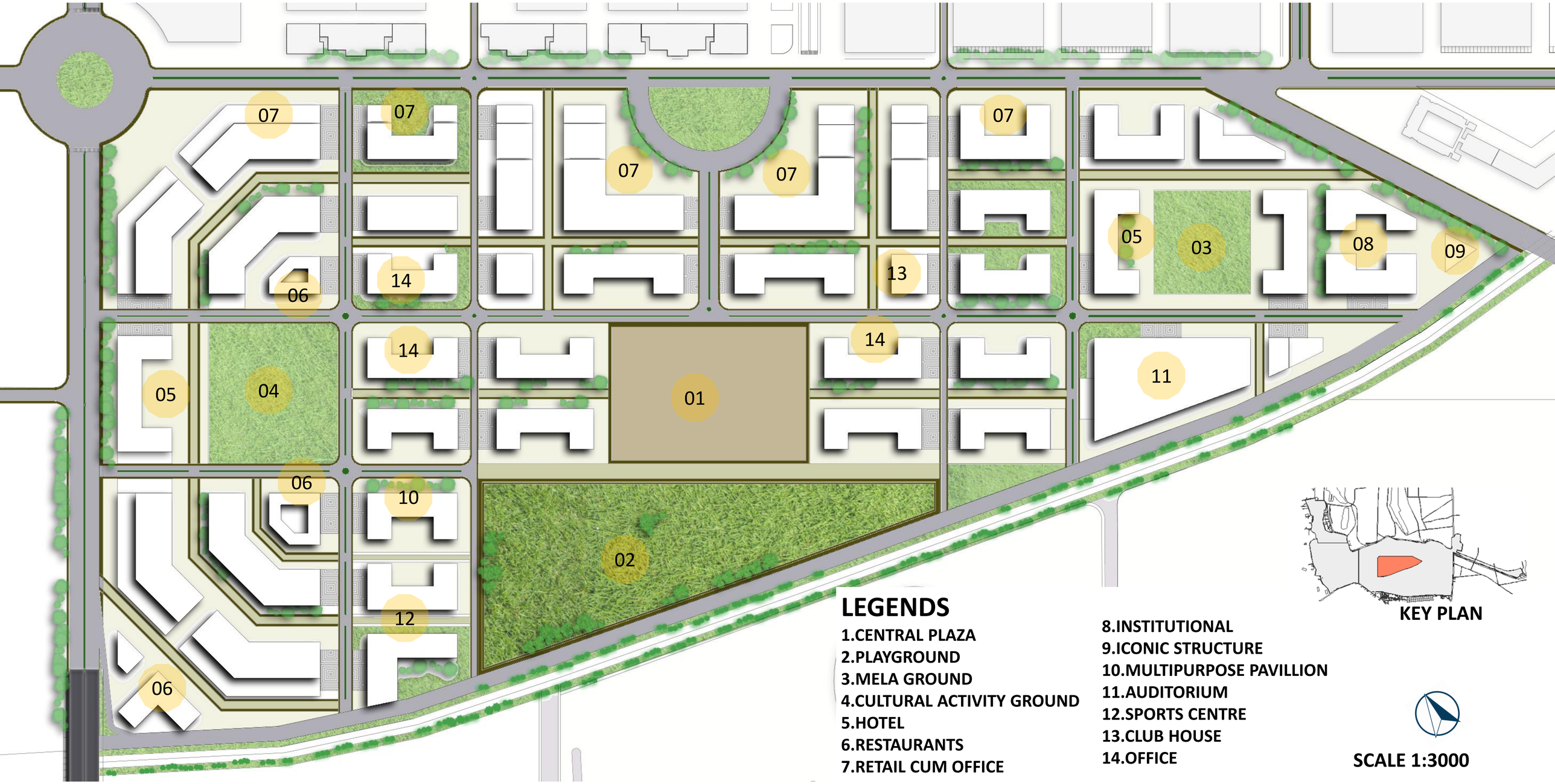
PROPOSED VIEW OF STREET ALONG RESTAURANTS/COMMERCIAL

5.0 DESIGN IMPLEMENTATION

SITE -01

5.0 DESIGN IMPLEMENTATION

SITE -02

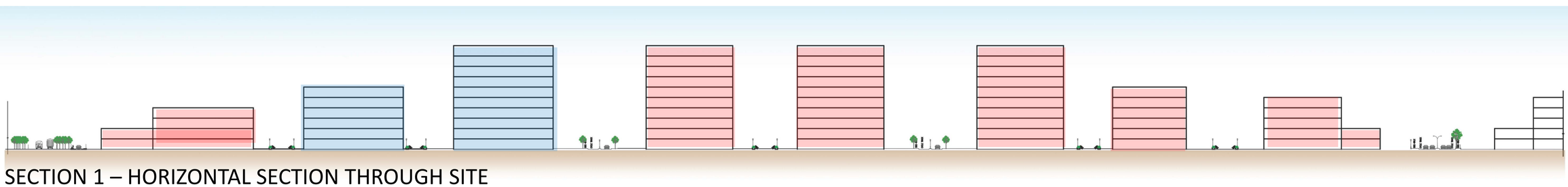


KEY PLAN

LEGENDS

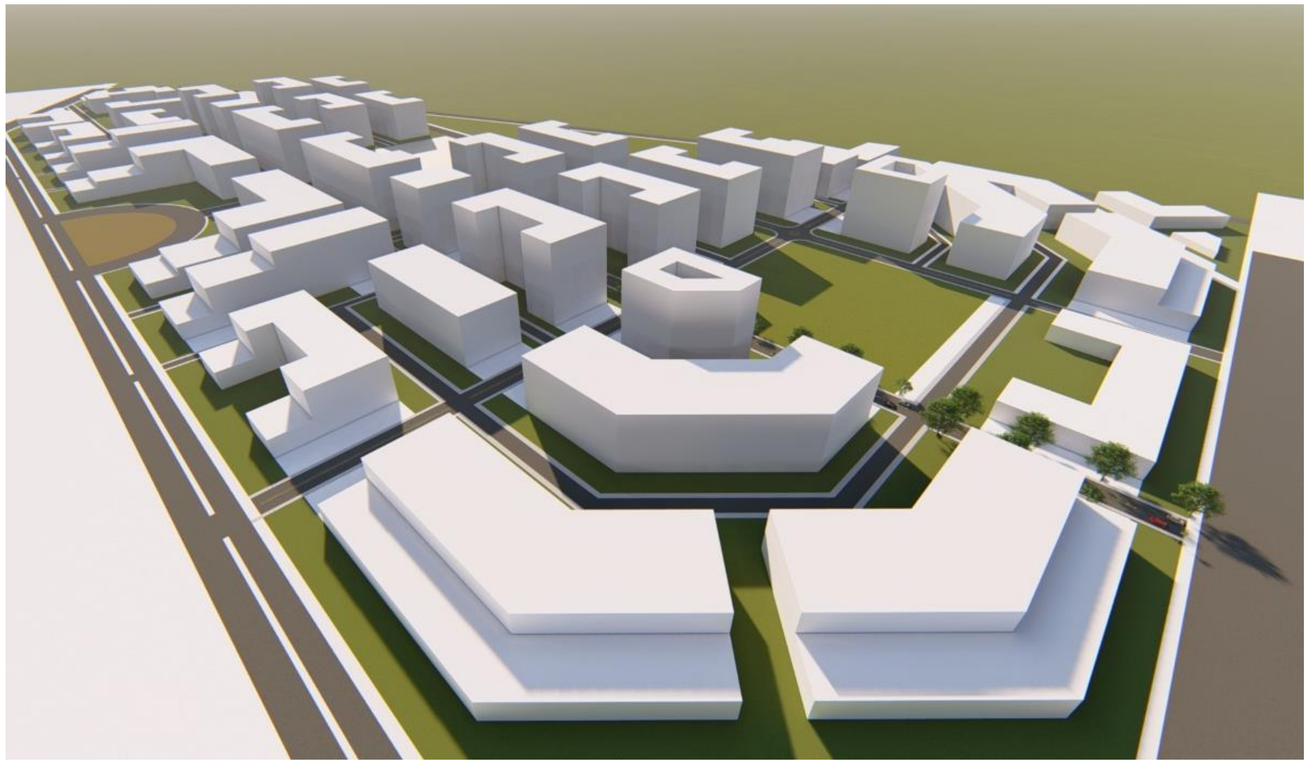
1.CENTRAL PLAZA
2.PLAYGROUND
3.MELA GROUND
4.CULTURAL ACTIVITY GROUND
5.HOTEL
6.RESTAURANTS
7.RETAIL CUM OFFICE
8.INSTITUTIONAL
9.ICONIC STRUCTURE
10.MULTIPURPOSE PAVILLION
11.AUDITORIUM
12.SPORTS CENTRE
13.CLUB HOUSE
14.OFFICE

SCALE 1:3000



SECTION 1 – HORIZONTAL SECTION THROUGH SITE

5.0 DESIGN IMPLEMENTATION



SITE -02 –VIEWS

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