

【 marigold and water 】

Facelifting layers of floral market and
Hooghly river

LOCATION: KOLKATA, WEST BENGAL

SIZE: 40,000 SQ.M.

DATE/DURATION: 10.01.2020/ 5 MONTHS

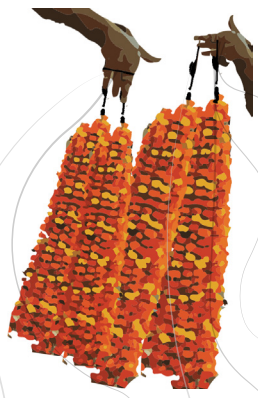
COURSE TITLE: ARCHITECTURAL THESIS

TYPE: ACADEMIC-INDIVIDUAL PROJECT

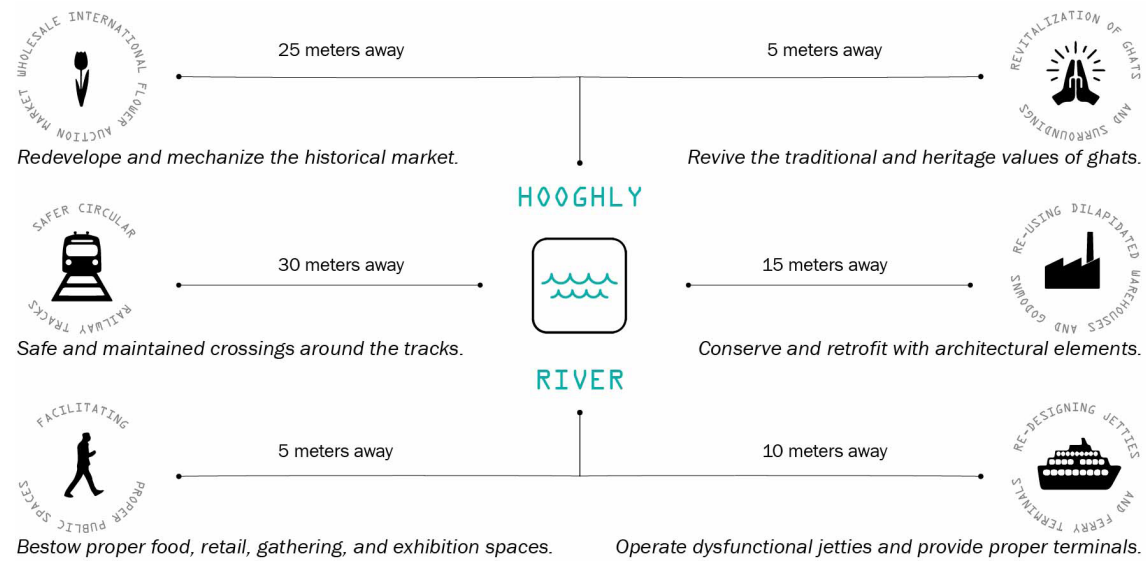
Kolkata was formerly known as the 'City of Joy,' but it has now devolved into a nearly uninhabitable 'Dying city.' A large population, crumbling infrastructure, inadequate maintenance, and a weak economy contributed to the city's negative image. Also, more lucrative commercial developments exhausted the recreational, cultural, and riverfront-edge locales.

Better circulation patterns and developed areas were analyzed to bring the lost essence of valuable but underutilized riverfront. Therefore, the goals were to reconnect the Hooghly river bank with the urban fabric, redevelop the heritage flower market and dilapidated structures, and revitalize the dead riverfront edge with public interventions.



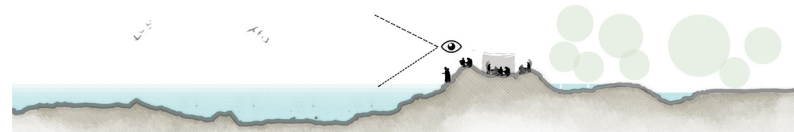


The program is an integration of following features:



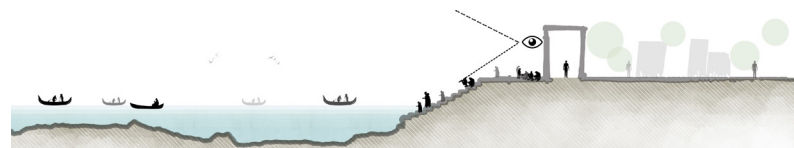
AFTER WAR.

BEFORE 1700's
 25% Water contamination
 9% Congestion
 89% Sustainability



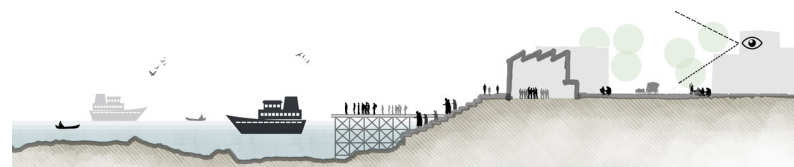
BUILD.

1800 ONWARDS
 33% Water contamination
 20% Congestion
 74% Sustainability



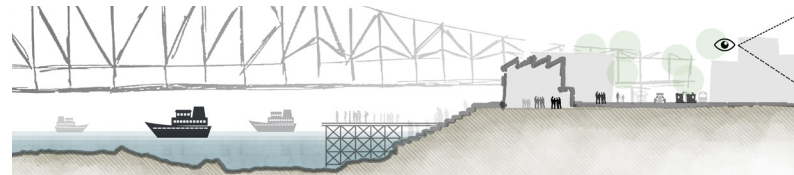
ECONOMY.

1900 ONWARDS
 59% Water contamination
 43% Congestion
 55% Sustainability



STEEL?

1950 ONWARDS
 87% Water contamination
 68% Congestion
 33% Sustainability



RUST!

AFTER 2000's
 121% Water contamination
 103% Congestion
 7% Sustainability



Evolution of Chotelal ghats and precincts from 1700's till present.

RE-CONNECT

RE-DEVELOPE

RE-VITALIZE

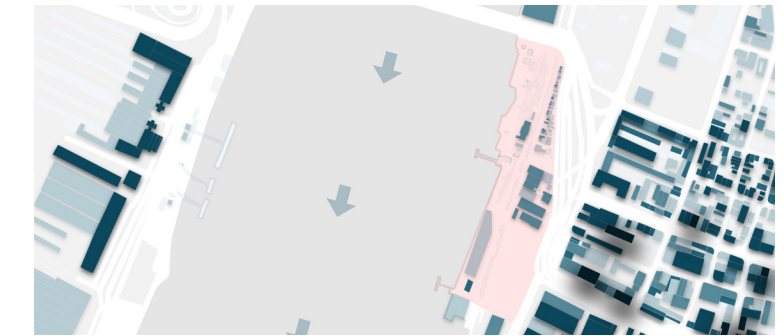
BUILT-UNBUILT MAPPING



65% BUILT-AREA 35% UNBUILT-AREA

Godowns • Shops • Warehouses Landscape • Dead spaces • Softscape

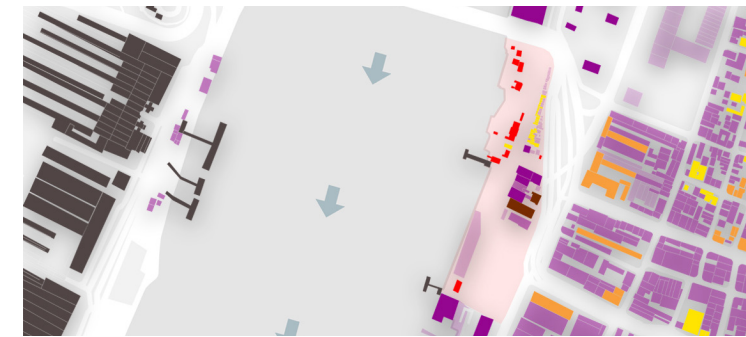
BUILDING HEIGHTS MAPPING



≤18 meters ≤15 meters ≤12 meters ≤09 meters ≤06 meters ≤03 meters

Heritage structures • New construction • Unauthorised temporary shelters

FORMAL ACTIVITY MAPPING



Residential • In-use warehouses and godowns • Public buildings • Mixed-use

Transportation • Dilapidated warehouses and godowns • Public services

INFORMAL ACTIVITY MAPPING



Flower market • Metro construction • Bathing and washing • Wrestling • Other markets

Transportation • Ferry ride • Sight-seeing • Bouque market • Informal vehicular parking

VEHICULAR MAPPING



Low congestion to very high congestion zones according to vehicular movement

Bottlenecks • Wrong side movement • Illegally parked vehicles

PEDESTRIAN MAPPING



Low congestion to very high congestion zones according to pedestrian movement

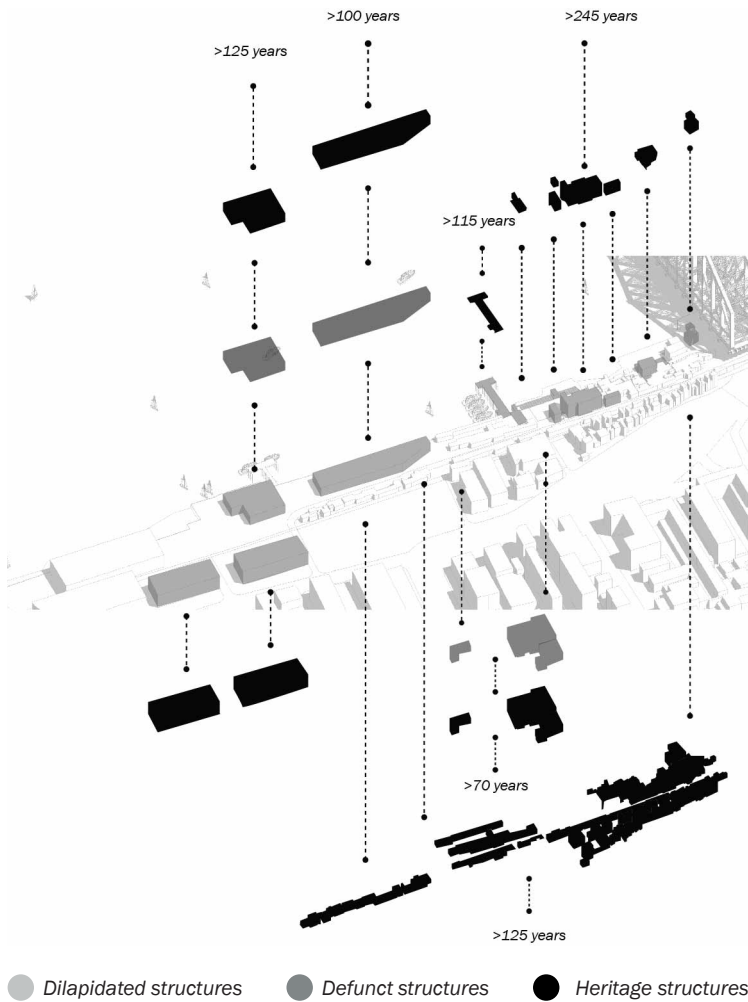
Dilapidated pathways • Unlawful pedestrian encroachments • Illegal road crossings

BUILT ENVIRONMENT



- 48% of Commercial squatter settlement
- 22% of Functional warehouses and godowns
- 15% of Non-functional warehouses and godowns
- 10% of Public buildings
- 3% of Residential buildings
- 2% of Public services

BUILT CONDITION



Issues



Excessive privatization than public centric usage.



Hazardous buildings on a high potential site.

Causes



Decayed spaces



Unauthorised shops



Overloaded storages

Opportunities



River as an open space



Dilapidated and defunct spaces



Temporary market structures

Challenges



Circular railway tracks

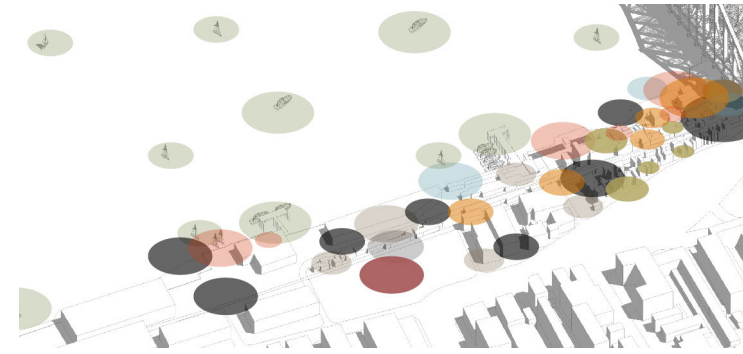


Dynamic flood plain



Built form

ACTIVITY



INFORMAL ACTIVITIES ON SITE		6 a.m to 8a.m	8 a.m to 10a.m	10a.m to 12p.m	12p.m to 2p.m	2p.m to 4p.m	4p.m to 6p.m	6p.m to 8p.m	8p.m to 10p.m
	Bathing in river	●	●	●	●	●	●	●	
	Washing in river	●	●	●	●	●	●	●	●
	Ritual prayers	●	●	●			●	●	
	Heritage tourism	●	●	●	●	●	●	●	●
	Boating						●		
	Site seeing	●			●	●	●	●	●
	Informal parking	●	●	●	●	●	●	●	●
	Circular railway track	●	●	●	●	●	●	●	●
	Metro construction	●	●	●	●	●	●	●	●
	Ferry rides	●	●	●	●	●	●	●	●
	Commuting	●	●	●	●	●	●	●	●
	Flower market	●	●	●	●	●	●	●	●
	Other markets				●	●	●	●	
	Goods loading/unloading	●	●				●	●	●
	Flowers unloading	●	●						
	Informal trucks' parking	●	●	●	●	●	●	●	●

Issues



Failures in public spaces and activities



Decline of 120-years old floral market

Causes



Encroached pathways



Repugnant odour



Overcrowded zones

Opportunities



Existing riverfront development



Pedestrian corridors



Heritage flower market

Challenges



Unsocial night-time activities



Private activities



Economic unsustainability

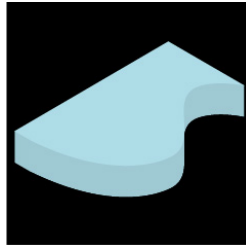
DESIGN DEVELOPMENT

PHASE 1: The riverfront edge

1.1 EDGES- WAVE

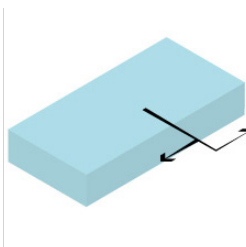
A fluidic-riverfront edge contextualizes the river with dynamic multidimensional interactions between water and edge.

Free-form



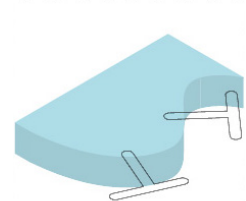
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Multidirectional



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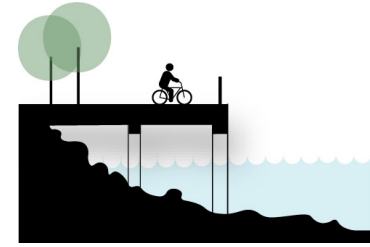
Jetty stands



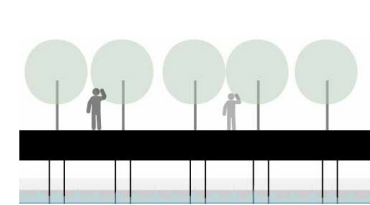
1.2 EDGES- ELEVATED

The elevated corridors lead to more accessibility to the visual axis and are physically accessible to social spaces throughout the edge.

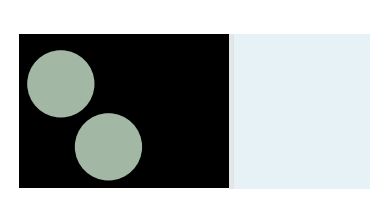
Section



Elevation



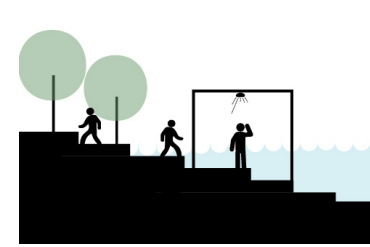
Plan



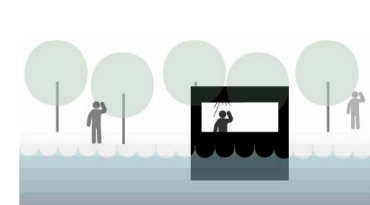
1.3 EDGES- STEPPED

An overcoming boundary between land and water creates more dramatic activity nodes and fewer physical activities on the edge.

Section



Elevation



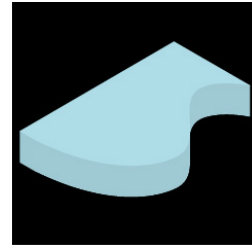
Plan



1.4 EDGES- CLOSED

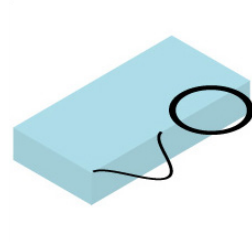
A higher multi-directional visual interaction, with dynamic experience through enclosed decks at the fluidic edges of the river.

Free-form



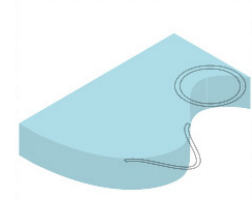
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Closed-loops



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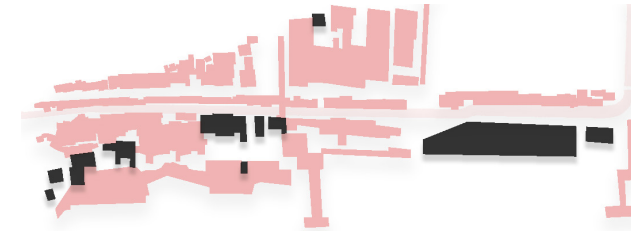
Viewing decks



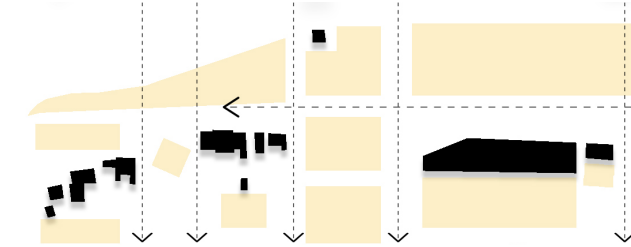
DESIGN DEVELOPMENT

PHASE 2: Site evaluation/planning

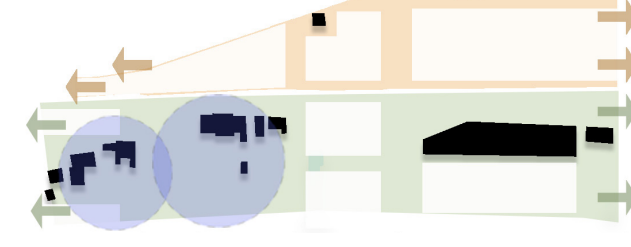
2.1 Eliminated **negative** buildings and conserved potential heritage buildings.



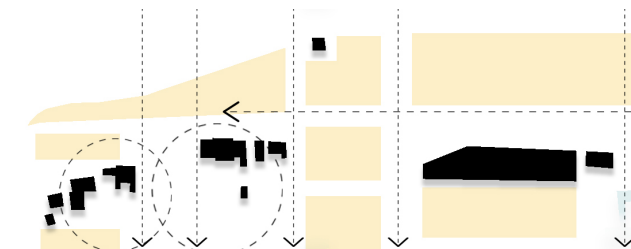
2.2 Added **new zones** with a better visual axis after **elimination**.



2.3 Parallely followed the laws for **riverfront**, **UA**, and **heritage zones**.



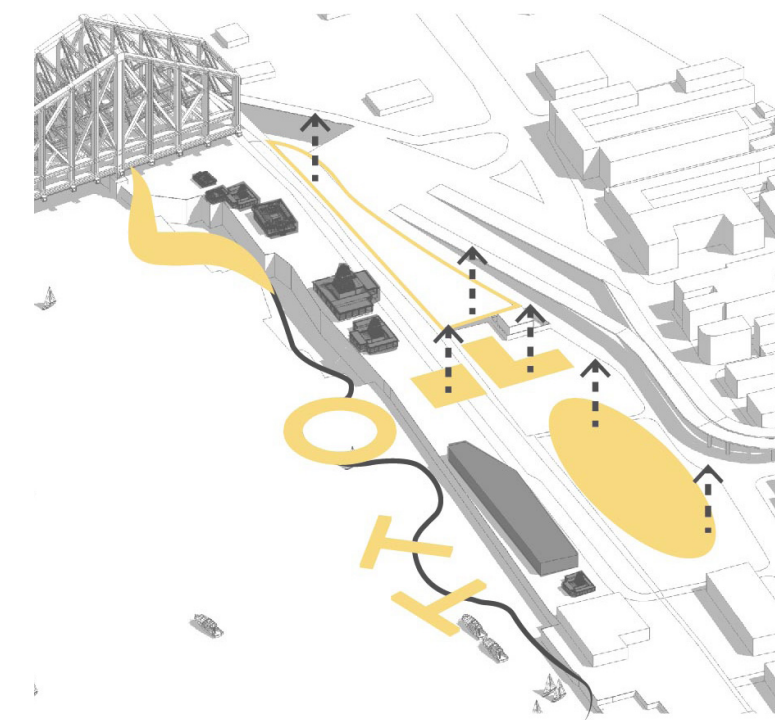
2.4 In the end, overlapped all the site evaluations and planned strategies.



PHASE 3: Massing

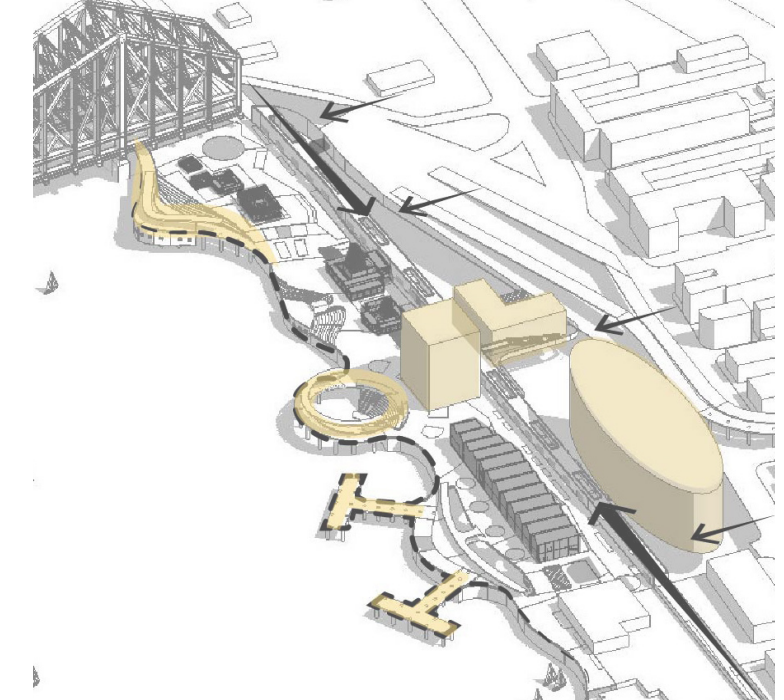
3.1 - Enhanced the riverfront edge and interventions for better movement.




















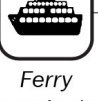









- Extruded built zones at different heights.

























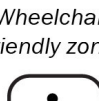






3.2 - Re-attached Kolkata with Hooghly river.

- Re-built and re-energized the lost essence of the site.

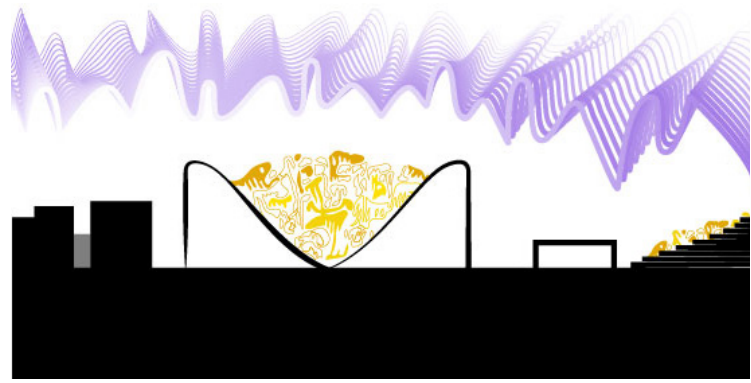


 Heritage tourism	 Visual-axis	 Hearing-impaired friendly zones
 Proper bathing areas	 Shaded street furnitures	 Wheelchair-friendly zones
 Spiritual spaces	 Proper bathing-areas	 Cultural activities
 Water shows	 Trees at regular intervals	 Shaded street furnitures
 Hearing-impaired friendly zones	 Heritage tourism	 Whitecane-friendly zones
 VIEWING TOWER		
 Heritage tourism	 Eateries	 Visual-axis
 Ferry terminals	 Visual-axis	 Shaded street furnitures
 Public services	 Bicycle-friendly zones	 Eateries
 FLOWER TRADE MUSEUM		
 Wheelchair-friendly zones	 Trees at regular intervals	 Heritage structure



 Shaded street furnitures	 Cultural activities	 Safe environment
 Foot-over bridge	 Visual axis	 Pedestrian corridors
 RESEARCH FACILITY CENTRE		
 Aromatic garden	 Energy-efficient technologies	 Visual-axis
 FLOWER TRADE CENTRE		
 Visual-axis	 Solid-waste management	 Heritage tourism
 Hearing-impaired friendly zones	 Wheelchair-friendly zones	 Trees at regular intervals
 Foot-over bridge	 Pedestrian corridors	 Visual-axis
 Proper bathing areas	 Visual-axis	 Wheelchair-friendly zones
 Shaded street furnitures	 Trees at regular intervals	 Bicycle-friendly zones
 Existing-riverfront development	 Sea-breezes	 Waste-water management

The Axonometric view of the riverfront edge is spatially arranged underneath the Howrah bridge.



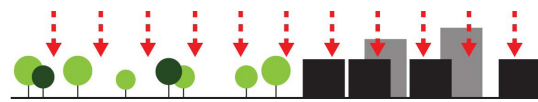
INTERNATIONAL FLOWER TRADE CENTRE AND RESEARCH FACILITY CENTRE

The Flower Trade Centre brought the traditional 120-years-old Mullick ghat flower market by refining it. Commercialization on a national and international scale, enhanced facilities and services, improved sales and production, and long-term sustainability were parts of it.

Moreover, a tiered fragrant farm with numerous types of flora was part of the Research Centre for floricultural research and development.

EVOLUTION:

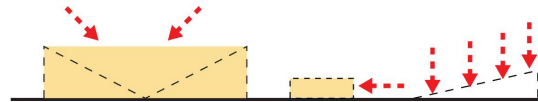
1) Relocation of Squatter settlement and vegetation.



2) Zoning areas and extrusion of spaces.



3) Designing and construction of structures.



4) Provision of horizontal and vertical circulations.

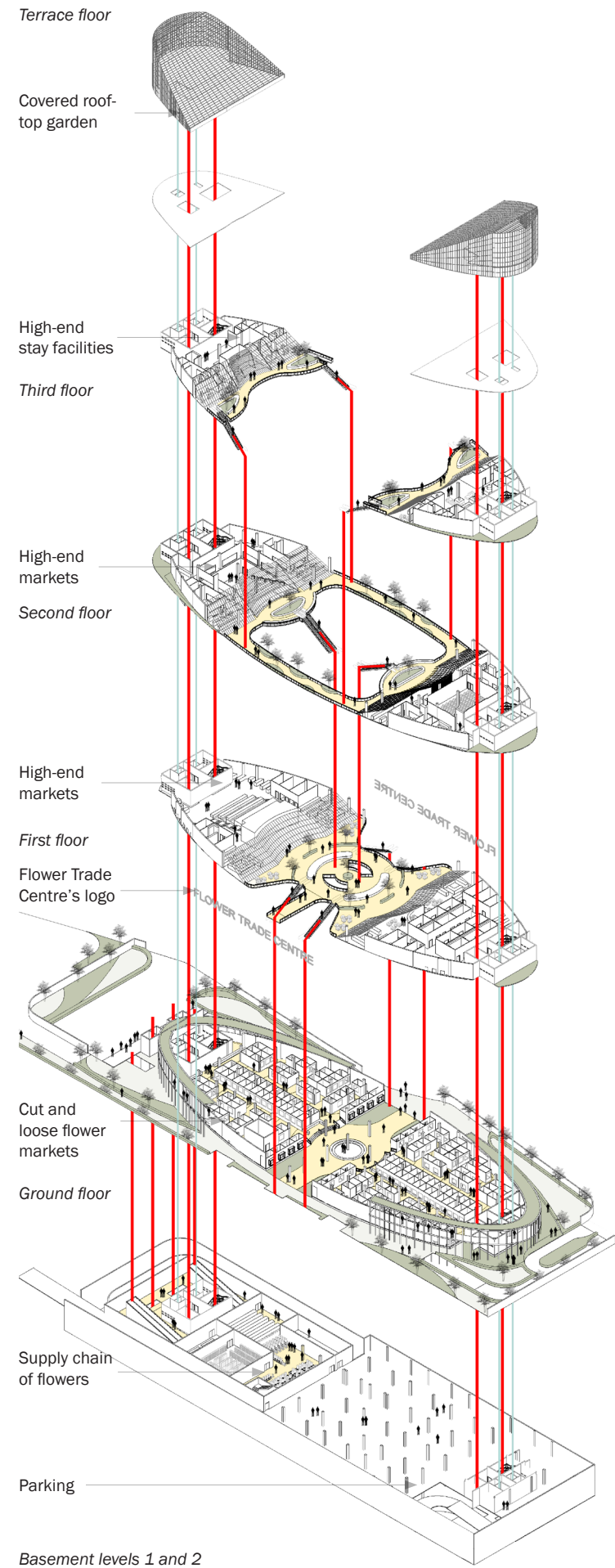


5) Re-utilization of vegetation around structures.



● Vertical circulation: Staircases, Escalators and Elevators.

CENTRE'S DISPLACED MODULE

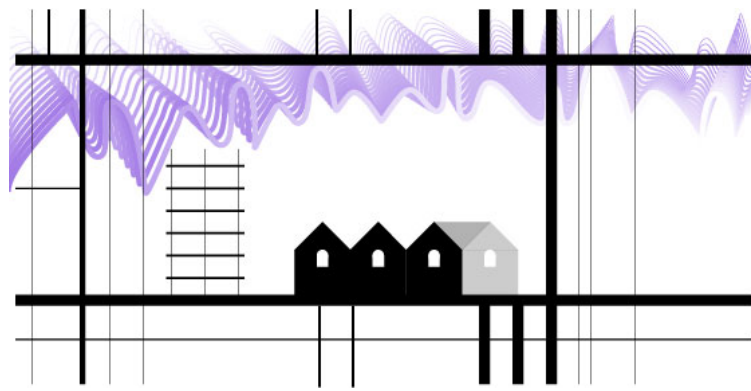


● Horizontal circulation: Corridors and passages.

● Service shafts



The Exterior view of Flower Trade Centre represents the integration of economic operations and public spaces.



**FLOWER TRADE MUSEUM
AND
VIEWING TOWER**

The Flower Trade Museum grew out of the rehabilitation of dilapidated structures, and their transformation was into an educational building dedicated to the Mullick Ghat flower market's history.

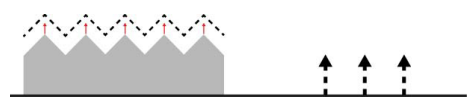
Furthermore, from various areas, the 30-meters-high Viewing Tower acted as an attraction zone on the site. It also had a beautiful city view and depicted its architectural fusion of the modern and Industrial revolution eras.

EVOLUTION:

1) Re-use of abandoned warehouses and relocation of Squatter settlement.



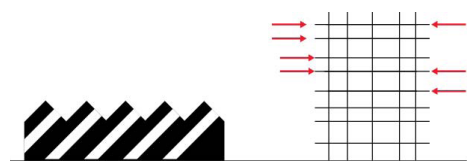
2) Removal of dilapidated structures and elements of warehouses from the zone.



3) Retrofit and construction development of the structure.



4) Addition of sloped glazing roofs and Industrial revolution techniques.



5) Re-utilization of vegetation around structures.



● Vertical circulation: Staircases, Escalators and Elevators.

● Horizontal circulation: Corridors and passages.

● Service shafts

MUSEUM'S DISPLACED MODULE

Roof level

Glazing cutouts

Pitched roofs

Elevated walkway

Display zone 1

Display zone 2

Flower Trade Museum's logo

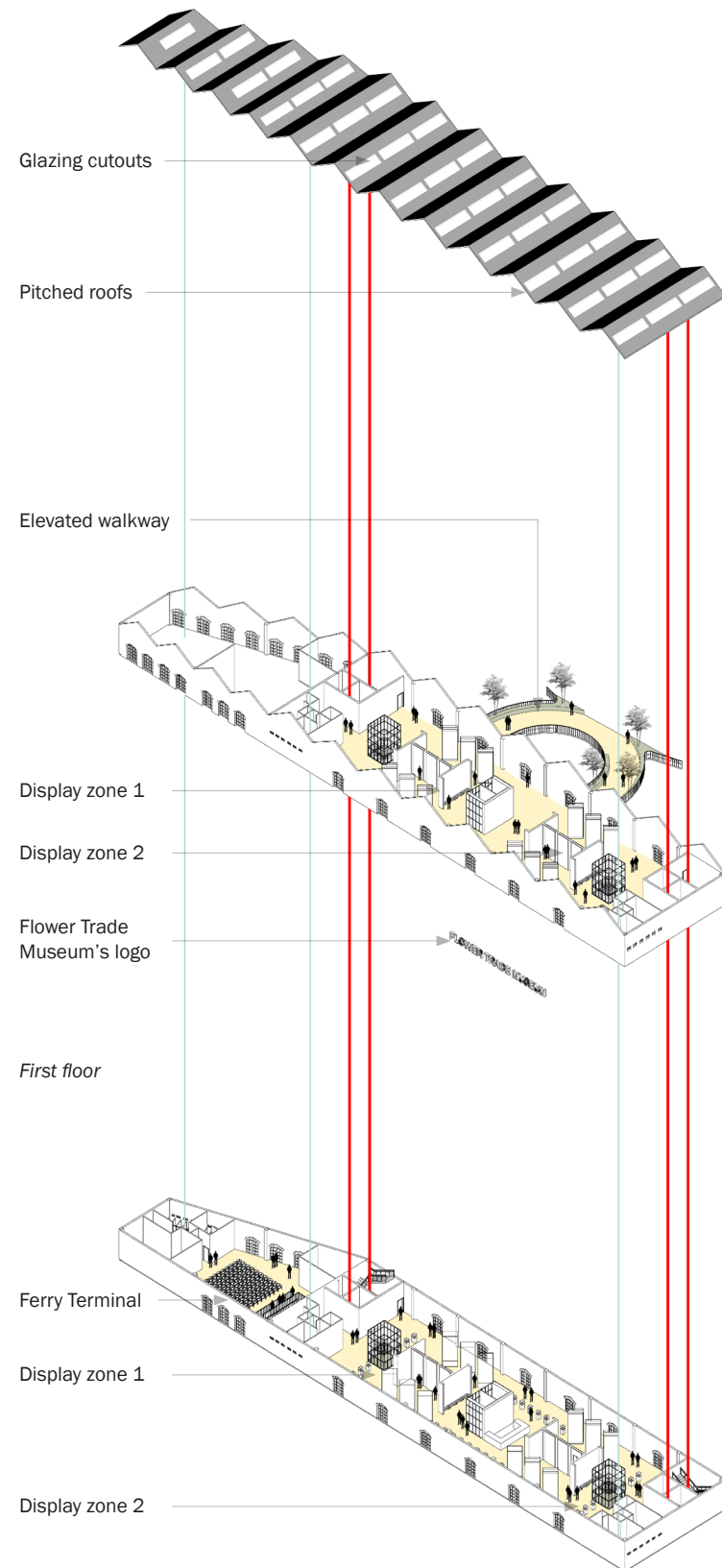
First floor

Ferry Terminal

Display zone 1

Display zone 2

Ground floor



The Elevated walkway was linked to the Flower Trade Museum while depicting active tourist attractions at various levels of the Viewing Tower.