

WATER FRONT ENRICHMENT PLAZA

ATHESIS

Submitted in partial fulfillment of the requirements for the award of Bachelor of Architecture degree

By

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BONAFIDE CERTIFICATE

This is to certify that this Thesis Report is the bonafide work of Allen Anil Varghese(37210003) who carried out the Thesis entitled “Waterfront Enrichment Plaza” under our supervision from July 2021 to November 2021.

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I, **Allen Anil Varghese** hereby declare that the Thesis Report entitled “**WaterfrontEnrichment Plaza**” done by me under the guidance of **Ar.Sanghavi. V.V** (InternalGuide), **Ar.RameshKumar.A**(Internal Review Member) and **Ar.NandiniVanzara**(External Guide) Sathyabama Institute of Science and Technology is submitted inpartialfulfilmentoftherequirementsfortheawardofBachelorofArchitectureDegree.

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SIGNATUREOFTHECANDIDATE

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I convey my thanks to **Dr. Devyani Gangopadhyay**, Dean and Head of the Department, School of Building and Environment, Our Design Chair

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I wish to express my thanks to all Teaching and Non-teaching staff members of the **Department of Architecture** who were helpful in many ways for the completion of the Thesis.

Allen Anil Varghese

THESIS SYNOPSIS

'For the people and their benefits'

A mixed use typological structure proposed in Lakshadweep enriches the site and its neighborhood in response to people's emotion with a strong focus on quality and value by connecting the waterfront to the island, a proposal that provides not only a world class convention facility that is transformed universally but also supported by restaurants and retail spaces.

Key priority is focused on delivering the real needs of residents in Lakshadweep by considering the preservation of natural ecosystems as a prior.

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CHAPTER1

INTRODUCTION

1.1 STRUCTUREOVERVIEW

An organic structure that merge with the encircling mother earth and resembling the native culture of Minicoy, Lakshadweep, gives an enriching feel to the residents.

1.2 NEED OF THE PROJECT

Major crisis and shutdown was faced by the residents of Lakshadweep due to the pandemic issues that turned them helpless in relish needs.

Relish needs such as required,

- Nourishments
- Job
- Developments

Provision of an entire commercial block, where storage issues and lack in nourishments are not even worried of.

By providing the developed spaces for such businesses, open a wide job opportunity universally.

1.3 AIM

For the people and their benefits.

1.4 OBJECTIVE

A thorough research and understanding of the issues faced by the island due to worldwide Covid-19 pandemic, was done, which resulted into multiple challenges to tackle upon to satisfy the needs and enrich the entire island up to its fullest.

1.5 METHODOLOGY

Provision of an open free structure where people are welcomed to have their own leisure time and explore the beauty of island through the structure with its extraordinary waterfront activities.

CHAPTER2

LITERATURECASESTUDIES

2.1 Mecenatepolis



Site location -Hapjeong neighborhood

indowntownSeoul

Site area-2,94,613m²

Built up area -4,41,919 m²

Figure 2-1-Mecenatepolis aerial view

Table 2-1-Structure occupancy analysis of Mecenatepolis

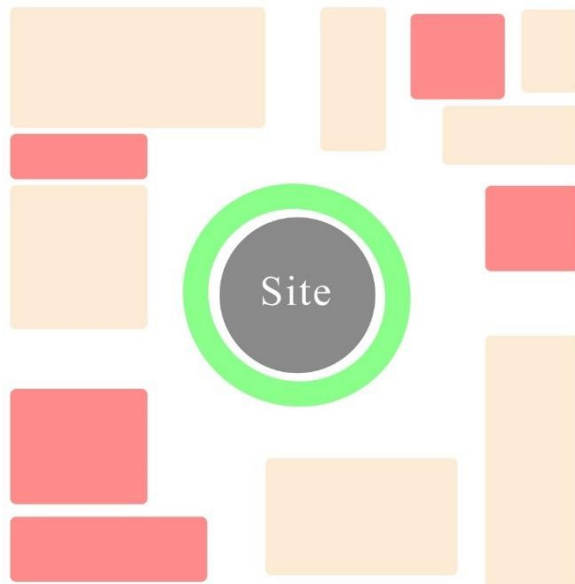
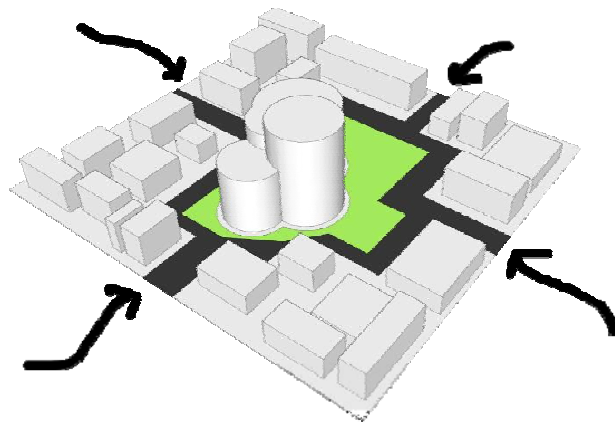


Figure 2-2-Neighborhood analysis of Mecenatepolis

Structure occupancy analysis	
Spaces	Usable percentage
Open/Public Space	40%
Retail shops	40%
Office space	8%
Multi-use halls	6%
Hospitality	6%
Neighborhood analysis	
Residential	40%
Commercial malls	37%
Offices	22%
Amusement park	1%

Relationship between site and building—

Active water feature and an abundance of open-air public space and restaurant seating areas, designed to draw people into the center.



Addition of an eye-catching multi-purpose hall, designed as an iconic lantern piece with beautiful wood paneling that sits adjacent to the cultural park and will host frequent events such as concerts and other special performances.

Figure 2-3-Access roads of Mecena polis

Play of height in the midst of residential to act as the prime spot for the neighborhood and city.

Proximity and spatial arrangement of spaces makes it easy to explore back and forth of the structure.

Central green landscaped area to outcome the city's essential traditional Chinese culture practiced in malls.



Figure 2-4-Height variation of Mecena polis



Figure2-5 -Facadeofthestructure

Terraced balconies, glass bridges, landscaped roof gardens, open-air spaces,mesmerizingwaterfeaturesandagrandcentralplazaallreinforcetheideaofafluidand choreographedcirculationsystem at thecore oftheretailcomplex.

Accesspoints -3Mainentrances -1from east,southandwest respectively

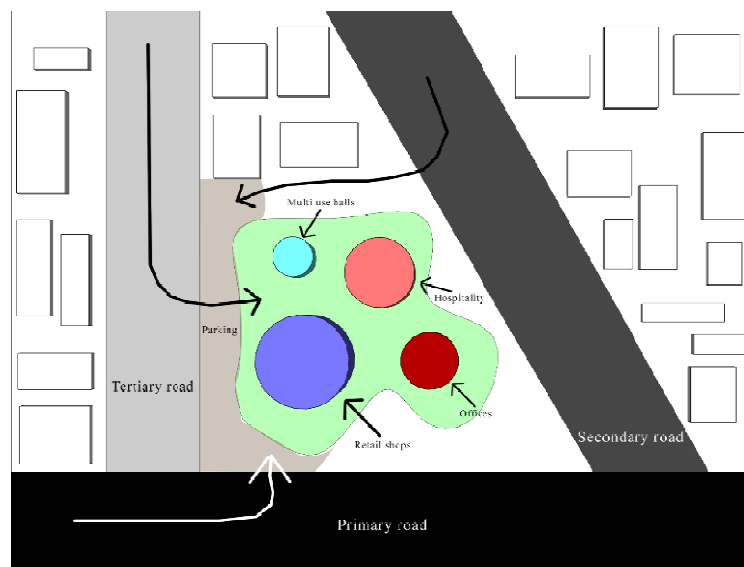


Figure2-6CirculationofMecenatpolis

The organic design of the complex evolved by reinforcing key connections through the site from the station to the surrounding neighborhoods, creating a fluid pedestrian experience within the retail, while making the best use of the location in this emerging neighborhood next to one of Seoul's busiest transportation hubs.



Figure 2-7-Arrangement of spaces

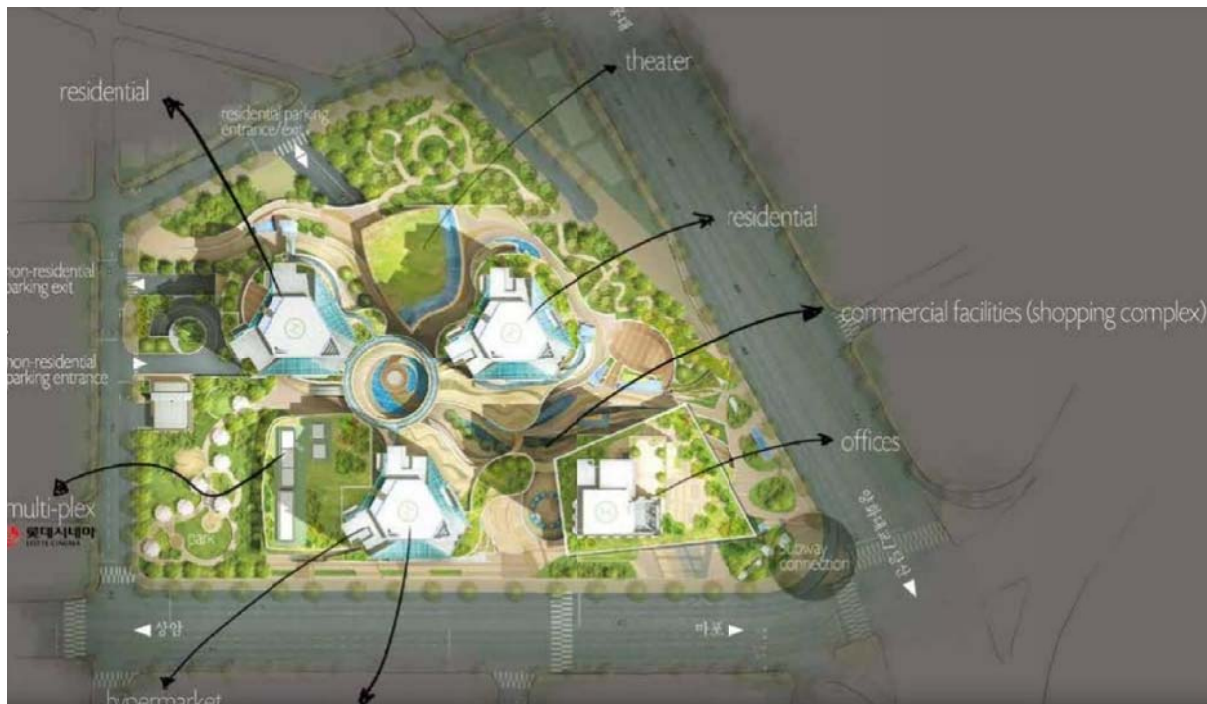


Figure 2-8-Site plan of Meccenatpolis

2.2 HuafaPlaza



Figure2-9 -HuafaPlazaairalview

Sitelocation-WaterfrontofHengqin
DistrictinZhuhai,China
Sitearea-62,800m2
Builtuparea-94,200m2

Table2-2-StructureoccupancyanalysisofHuafaPlaza

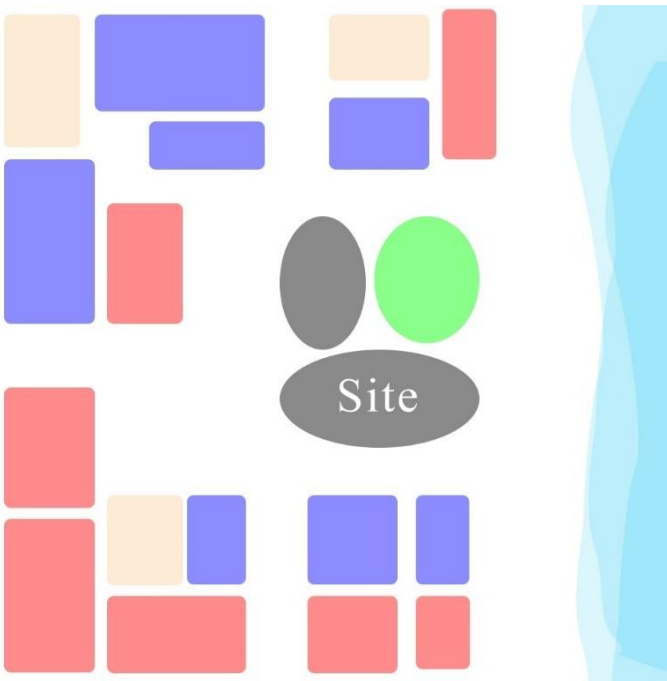
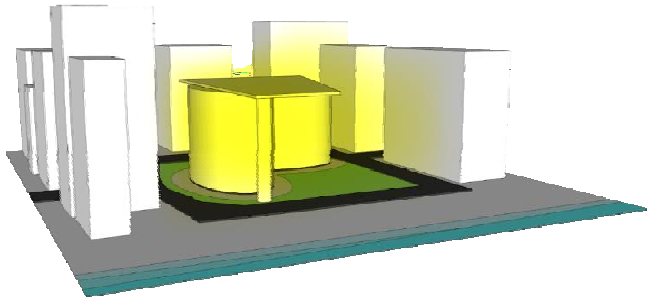


Figure2-10-NeighborhoodanalysisofHuafaPlaza

Structureoccupancyanalysis	
Spaces	Usablepercentage
Retailshops	40%
Openspaces	26%
FnBfacilities	20%
Officespace	8%
Boutiquehall	6%
Neighborhoodanalysis	
Offices	50%
Restaurants	20%
Stripcommercialcenters	15%
Residential	10%
Hotels	5%



Lit up with subtle illuminations between the office spaces that attracts the visual appearances and stand out within the crowd to make it packed up space.

Figure2-11-Huge cantilever structure stands out the entire structure

‘Structure facing the sea, thrives the momentum of inner emotions’

With this intention the design ideology and placement of landscape allure the public to completely let themselves loosen up and have a leisure time spent.

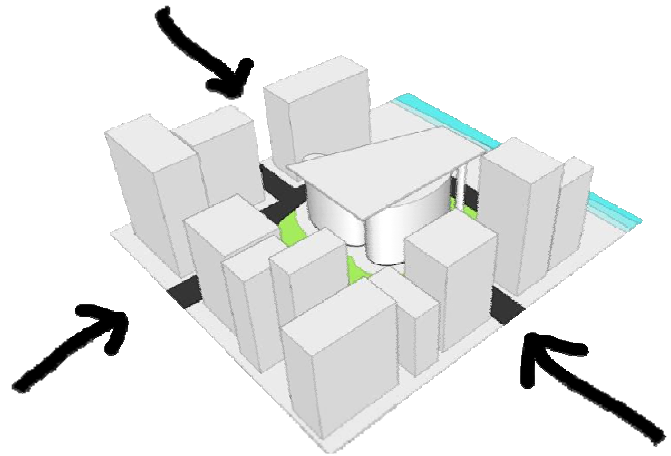


Figure2-12- Circulation from all 4 sides

Relationship between site and building–

Simple series of frames whose rhythm of fenestration reflects that of traditional Chinese windows creens.

Screens were designed to frame views to internal courtyard gardens; however, super scale with the frames looking outward to Macau across the waterway.



Figure2-14- Nightview



Figure2-13- Daytime

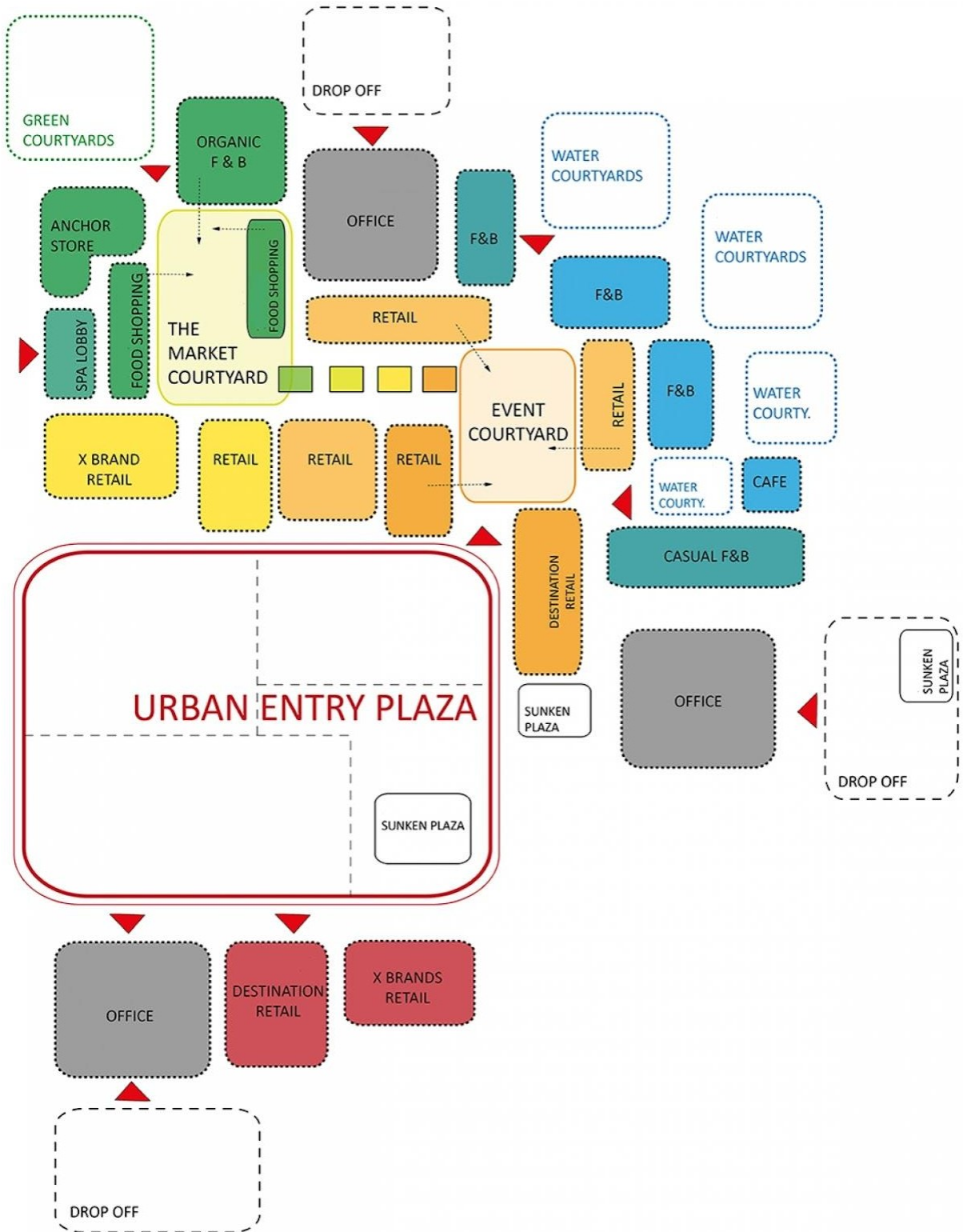


Figure2-15– Zoning layout

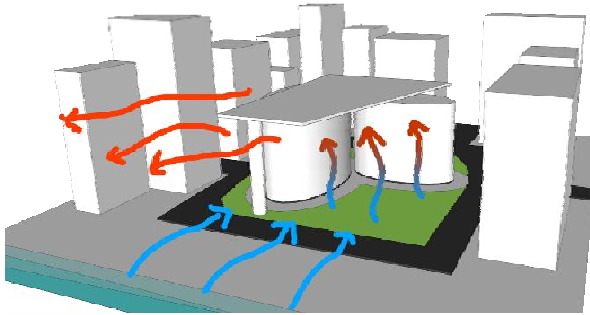


Figure 2-16 - Aesthetical architectonic element to channelize the wind flow

Addresses the waterfront location and the park along the shoreline.

So the creation of intimate ground level spaces and garden courtyards in lieu of a traditional mall.

At ground level, Affleck designed a series of garden courtyards and layered planted terraces which stagger along the esplanade to maximize the open views to the waterfront.

Large sculptural canopies provide covering for the terraces while creating a series of more intimate spaces at low level, acting as a buffer between the human scale of the landscaped courtyards and the urban scale of the surrounding towers.

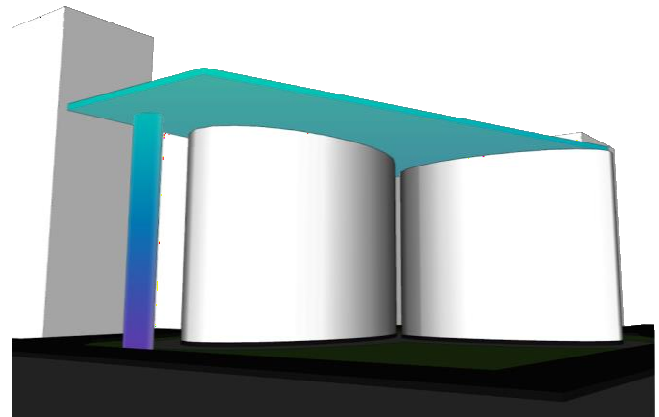


Figure 2-17- Cantilever structure

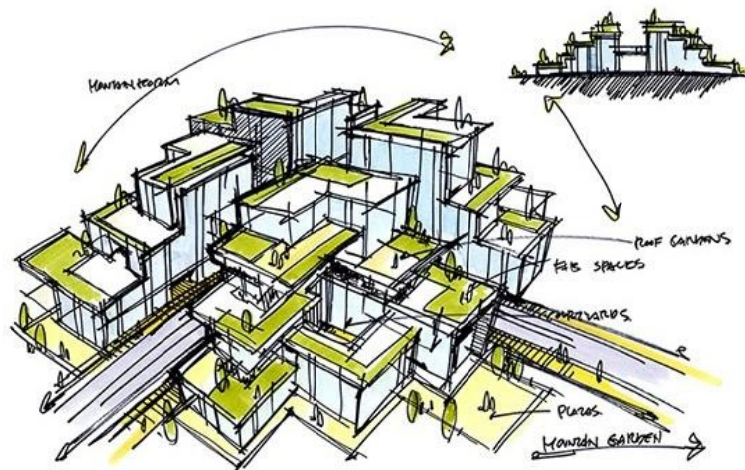


Figure 2-18- Sketch

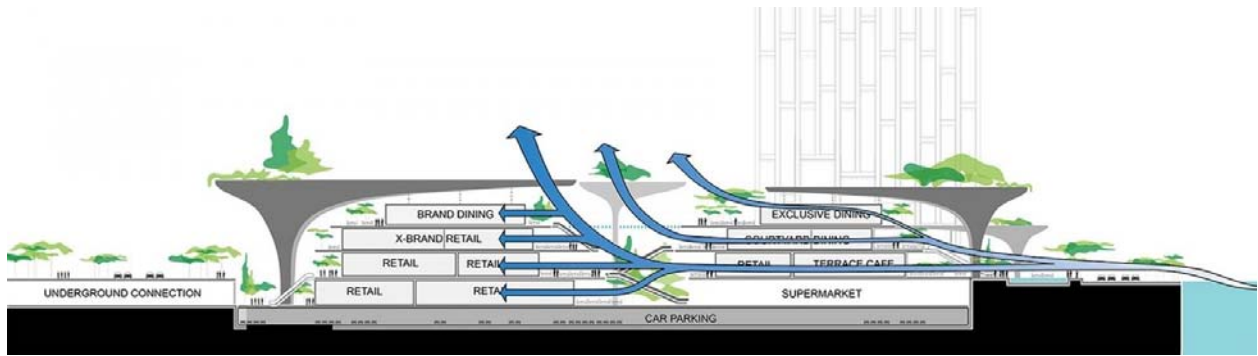


Figure2-19– Section

Visitors are guided through the cafe and retail, after which there is a separation between the floors where open basement consisting of retail and supermarket spaces.

Elevated amenity spaces are provided by raised terraces and roof gardens.

These terraces ensure that all occupants have access to the panoramic views across the Pearl River Delta to Macau, to the south, east, and north while also providing mountain views to the west.



Figure2-20– View

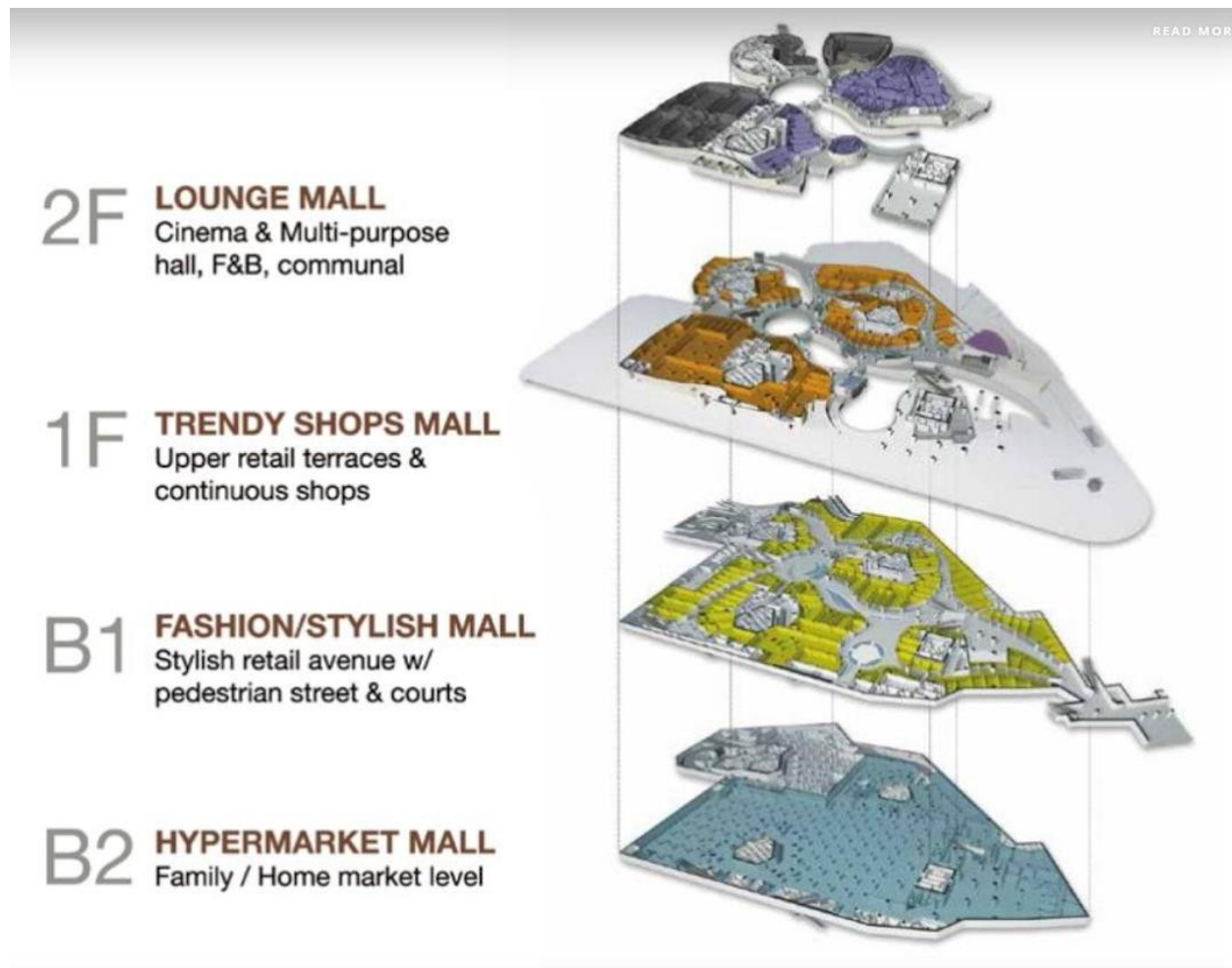


Figure2-21- Spaces

2.3 ClarkeQuay



Figure2-22-ClarkeQuay daytime



Figure2-23-ClarkeQuay nightview

Sitelocation-Singapore

Sitearea–33,000m2

Emotional aspect - Clarke Quay shows how conviviality can bring commercial success. That stems to an extent at least from the evolution of an architecture that makes something of its location.

Characterized by a series of colonnaded shop houses used as poor quality restaurants and trinket shops fronting onto crowded pavements.

Ideology of the redesign–

The challenge was to provide a new 'lease of life', not just by developing an attractive re-design of the streetscape

and waterfront, also to address the perennial climate problem and to find ways to mitigate against Singapore's ambient temperature and heavy rainfall without resorting to the traditional scenario of creating an internal air-conditioned mall.



Figure2-24-Before redevelopment



Figure2-25- Zoningof ClarkeQuay

ClarkeQuaywasplannedascommercialandconservationareawithazonalplotratioof2.8.

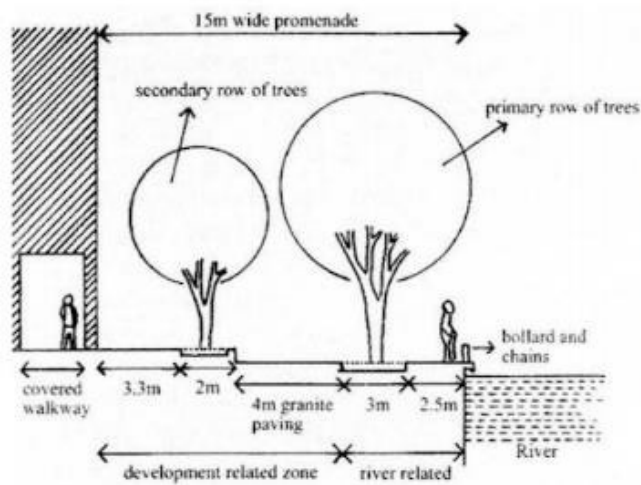


Figure2-26-Promenadefeaturedetail



Promenade design feature - A continuous promenade constructed to provide a seamless feel for relaxation.

It is around 3 km in each side of the river with a width between 10-15 meters providing a abundance of frescodining areas overlooking the river.

Project focus -

- Re-design the streetscape and waterfront

- Addressing the perennial climate issue and mitigate the Singapore ambient temperature and heavy rainfall without creating an internal air conditioning all.

Design features-

Along the river front, a series of “lily pad”, elevated dining platforms, were installed to maximize the waterfront experience while create a private zone for diners.

Custom-made umbrellas called “bluebells” illuminating at night were also installed at the “lily pads”.

Where these bluebell lights reflecting the reminiscent of traditional Chinese lanterns animating the river’s edge.



Figure 2-27-Lily pads at day and night

To deal with the humid and hot outdoor weather without air-conditioner, huge canopies were installed at all internal streets and courtyard cantilevering over the shop house roofs.



Figure 2-28-Architectural waterfront feature

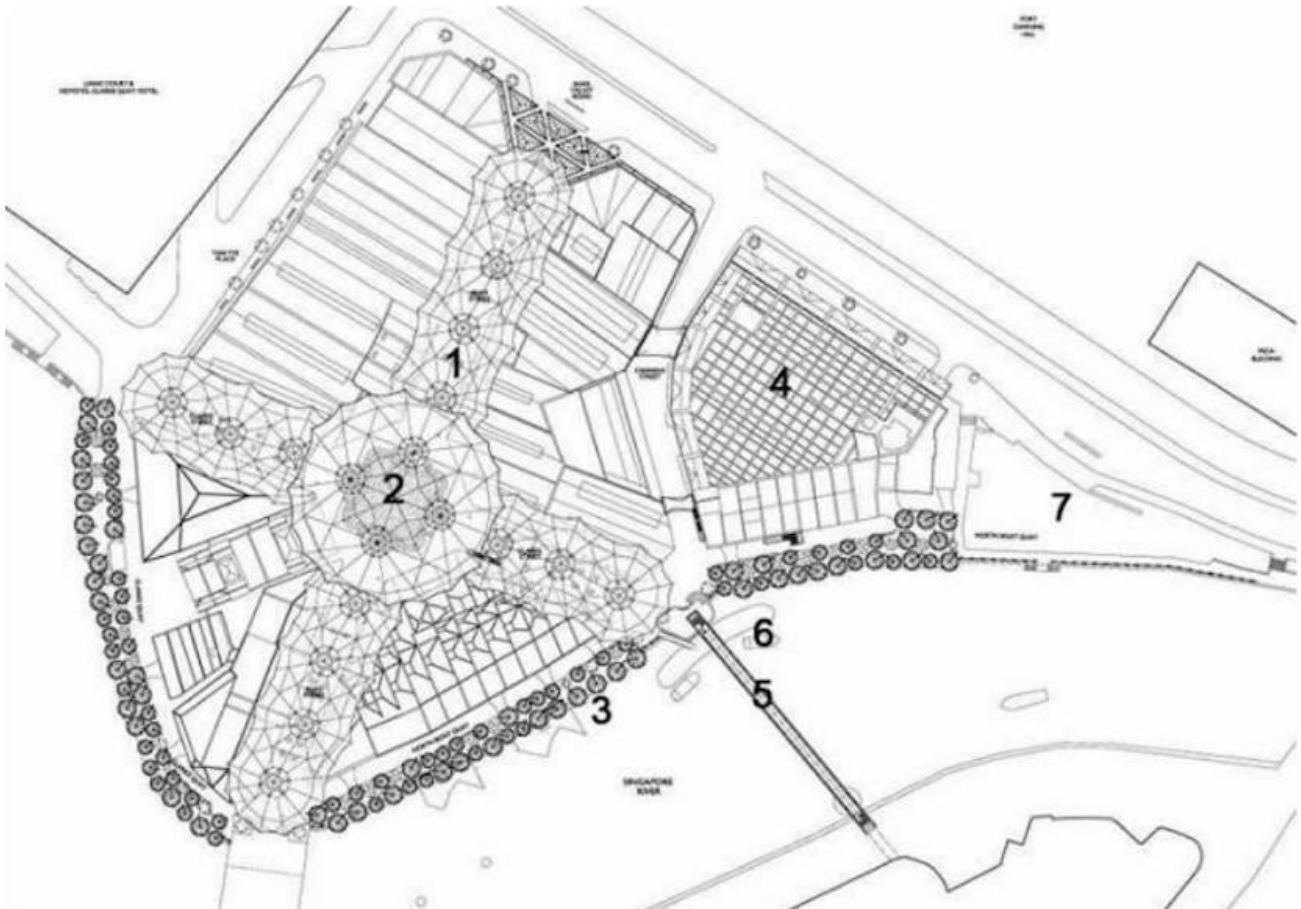


Figure2-29- Zoning

1. 'Angel' canopy
2. Central fountains square
3. 'Lily pad and bluebell' riverfront dining
4. Parking garage
5. Proposed pedestrian bridge
6. River transport dock
7. Gmax bungee ride

Trees were planted along the streets and a central fountain was installed in the courtyard which would help with cooling. The overall climate control system was said to be reduce the temperature at a gentle 28 degree C in the afternoon.

A series of “windowboxes” were also installed on the building facades. At night, with the illuminations installed inside, the “Angels” created a fancy night scene of the pedestrian streets through the reflections by the sidewalk windows.



Figure 2-32-Angels canopies



Figure 2-31-Transformation of space through years



Figure 2-30-Transformation of space through years

2.4 Huanglongwaterfrontbamboopavilion



Figure2-33-Huanglongwaterfrontbamboopavilion



Figure2-34-Huanglongwaterfrontbamboopavilionnightview

Site location -

ChinaSitearea-

120m²

Ideology -

Publicgathering
spacesandwiched in
betweenthe developedse
ctorand

historical 600 year
oldHulongBridge.

Although Liyusha
Parkhad sufficient
squarespaceandawate
rfrontlandscape,

It was unpopular
andnegativebecauseitlack
eda lush plant landscape
forenjoyingthe cooland

recreational space
forshelteringfromthesu
nandrain.

Neighborhoodactivities -

Villagerswentforfishingandtookactivitiesatthewaterfrontdescendingstepsinthepark.

Addition of a piece of shade, turned this place into a popular space for villagers
andtouristswho enjoythewater culture of HuanglongVillage.

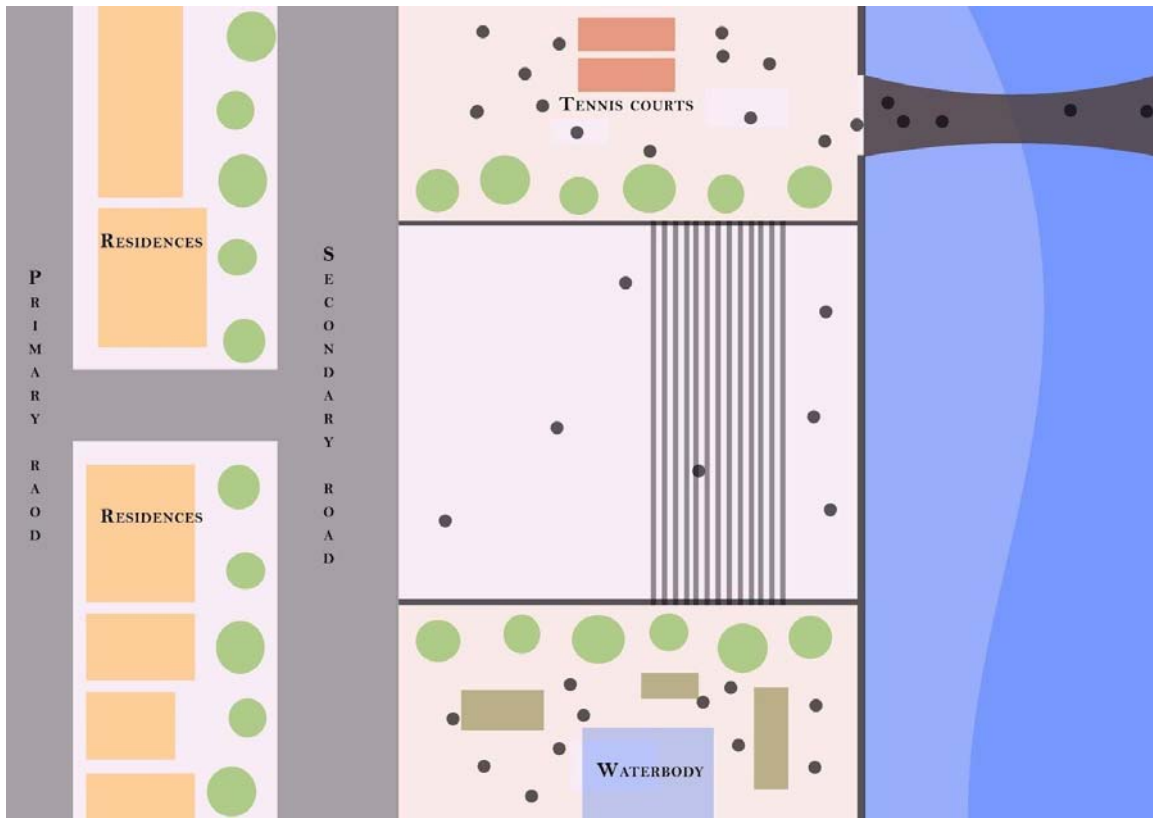


Figure2-35-Before redevelopment

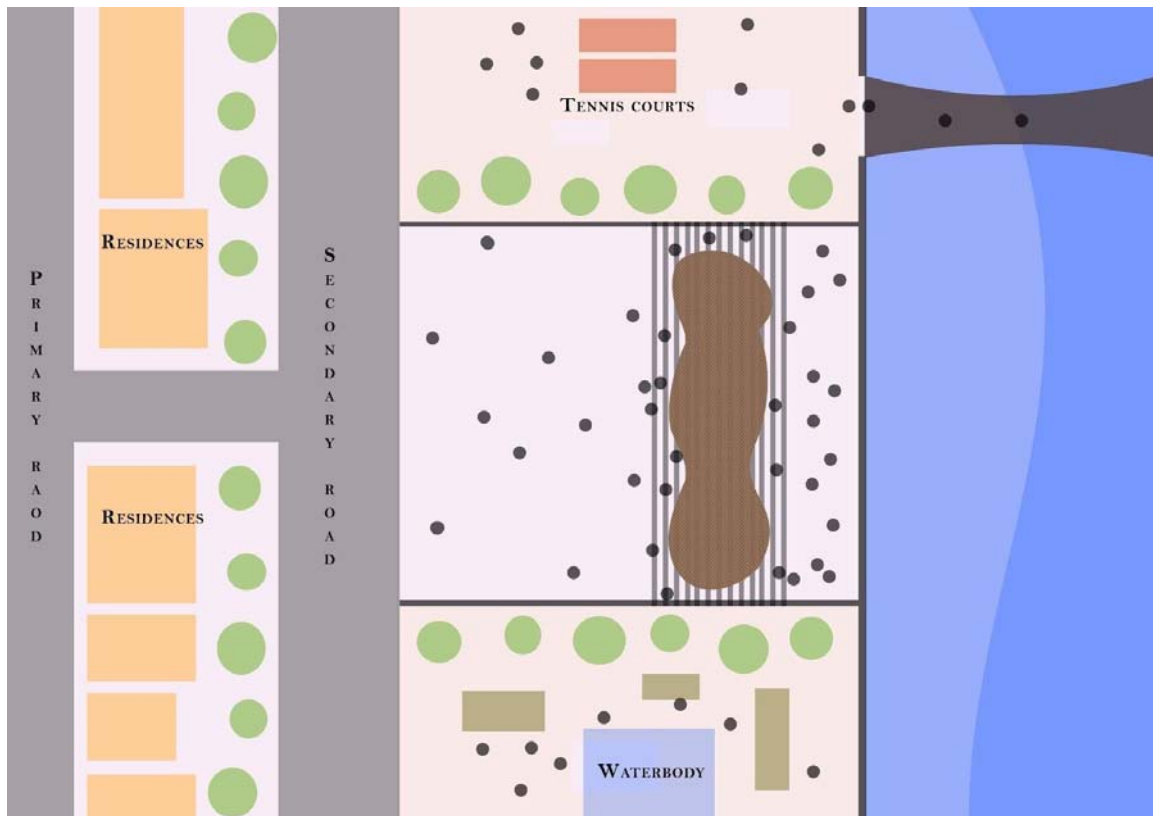


Figure2-36-After redevelopment



Design strategies-

The waterfront bamboo corridor adopts a double side cantilever method, utilizing the toughness of original bamboo to realize the integrated design of structure and facade.

Combined with the steps, it provides the maximum waterfront greyspace.

The Bamboo Pavilion is multi-functional, integrating recreational space, water theatre and wharf in one and activating the new look of Huanglong Village.

Various activities have been carried out, such as fishing, sightseeing, recreation, families' entertainment, fitness, and photography.

Figure 2-37-Bamboo pavillion

As a result, Liyusha Park has gathered more popularity and has held folk activities such as Winter Melon Culture.

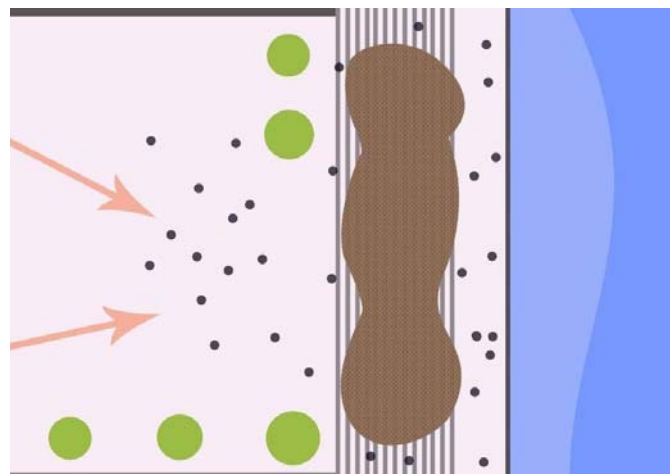


Figure 2-38-Public attraction point

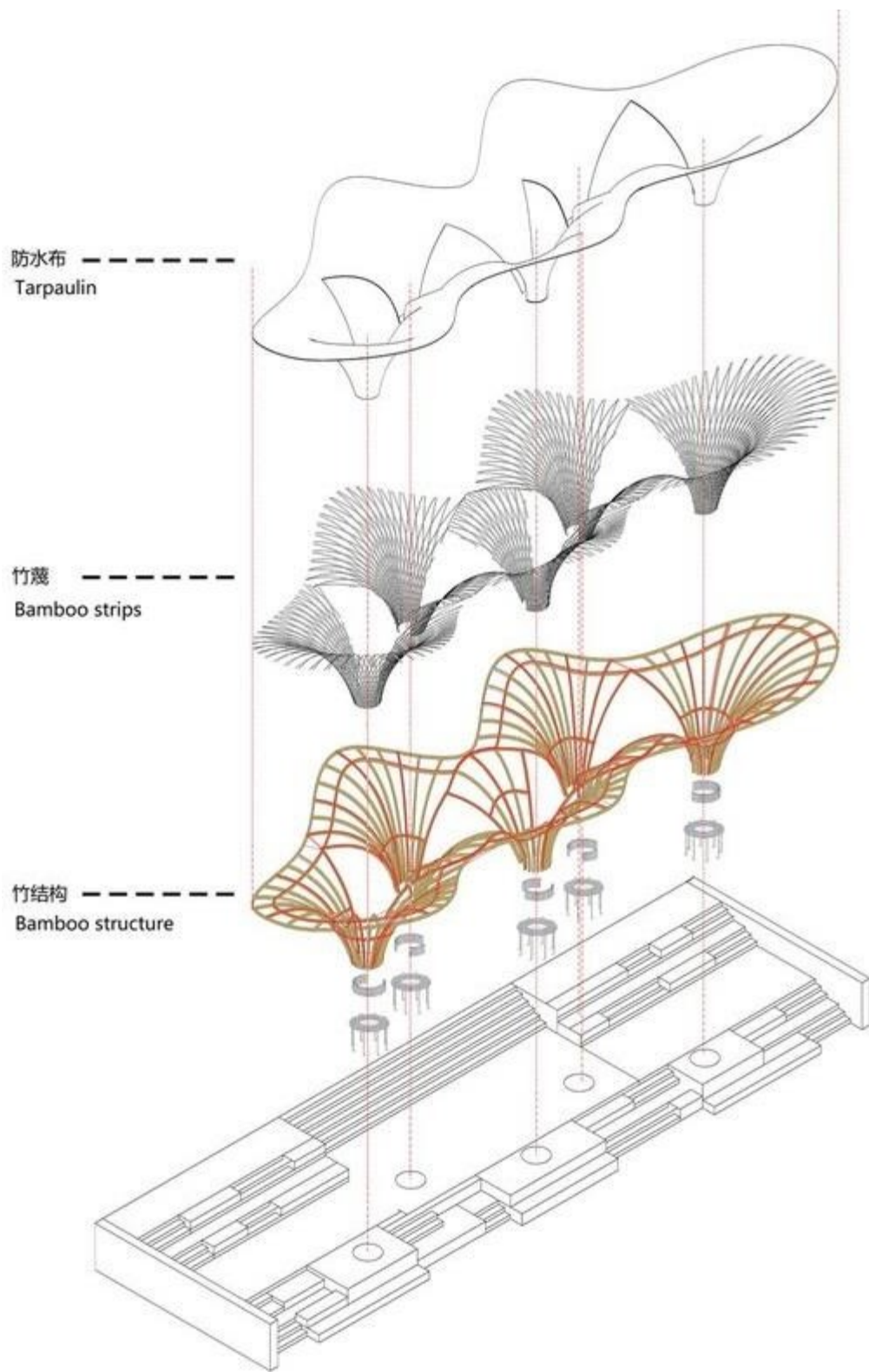


Figure2-39-Bamboestructuralintegration

Each bamboo has reached different curvatures after being baked, and traditional bamboo weaving techniques are applied to build the surface of “umbrellas”.

The combination of traditional materials and parametric technology activates the exploration and application of sustainable traditional materials.

The skin effect increases the stability and integrity of the overall umbrella-shaped structure, and a transparent waterproof film is laid on the top to shield the structure from rain.

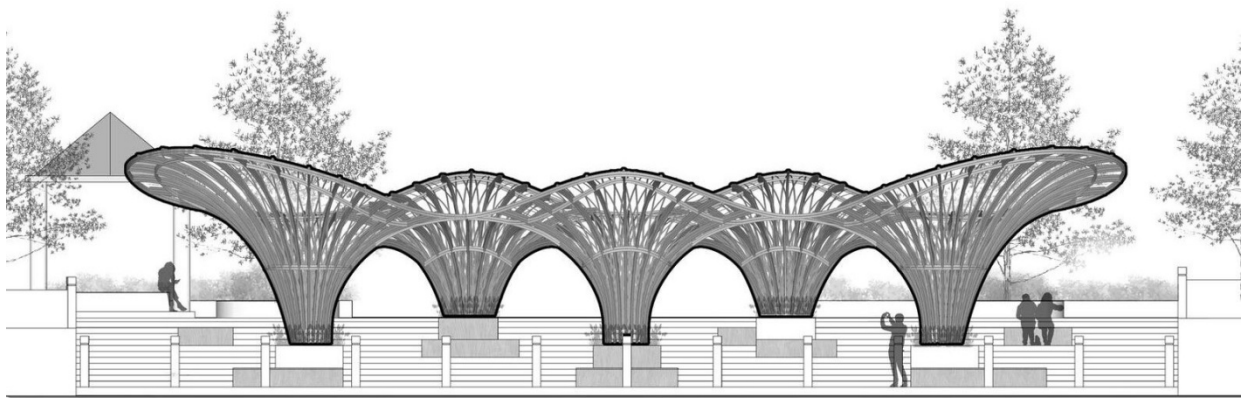


Figure2-40- Section1



Figure2-41- Section2

CHAPTER3

THESISPLATES

3.1 Reasonfor selectionoftopic

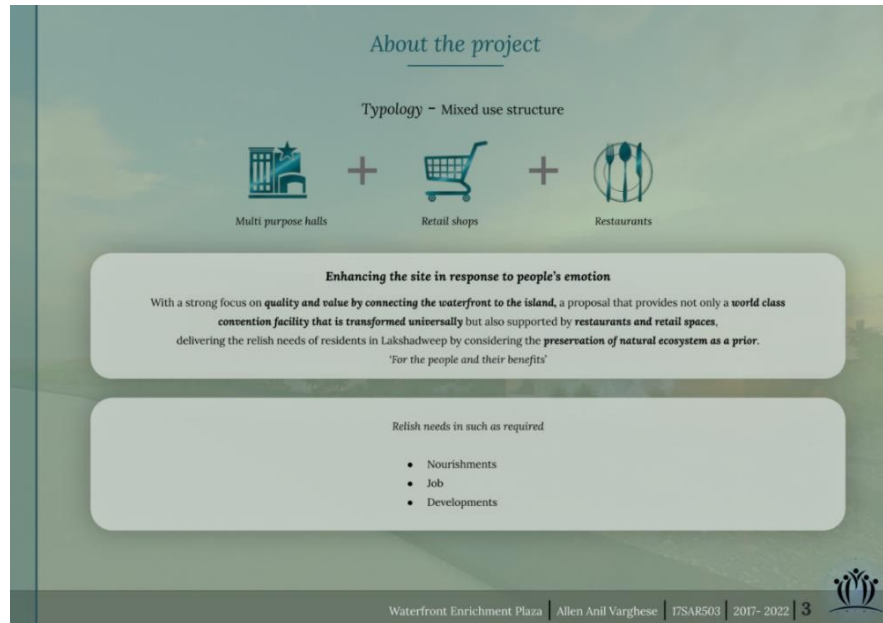


Plate3. 1- Abouttheproject

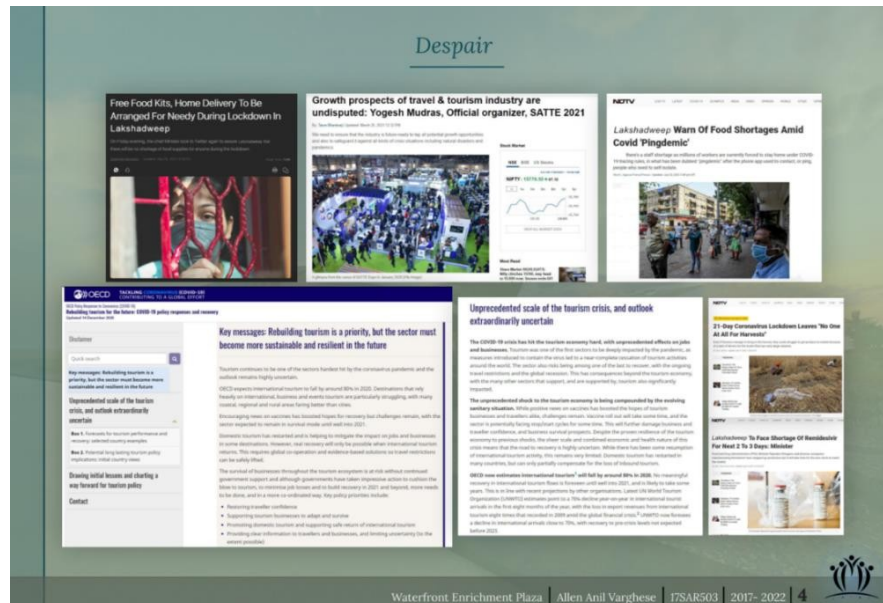


Plate3. 2 - Despair

3.2 Site study

3.2.1 About Lakshadweep

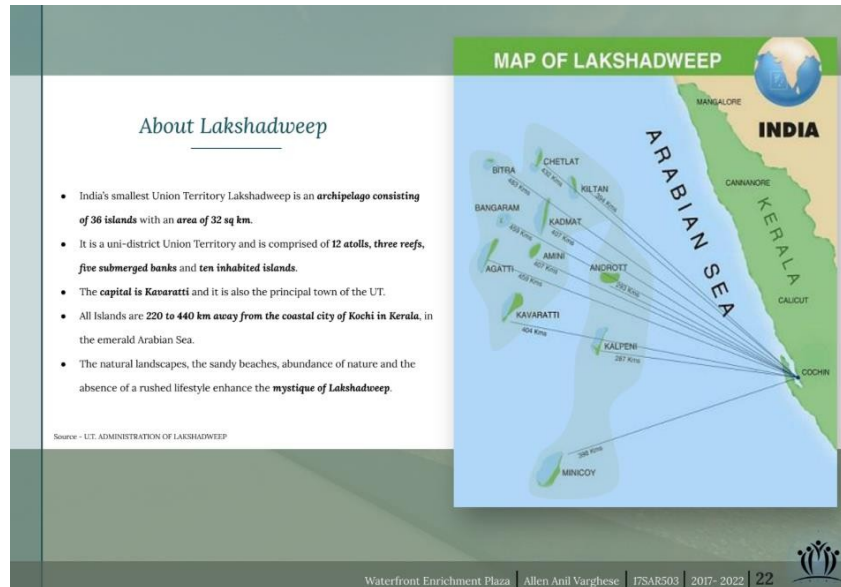


Plate3.3–AboutLakshadweep

3.2.2 Overview of Minicoy Island



Plate3.4– Overview of Minicoy

3.2.3 SiteNeighborhood



Plate3.5– SiteNeighborhood

3.2.4 Basicsitedetails

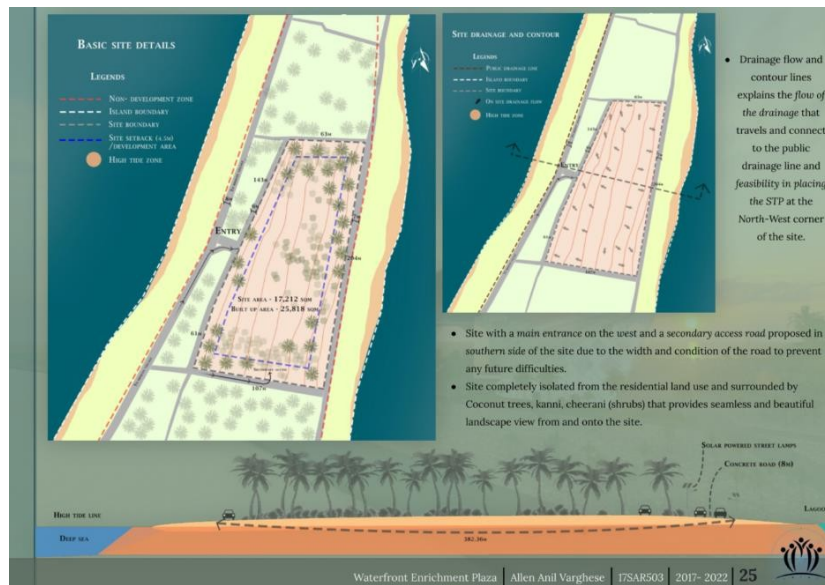


Plate3.6–Basicsitedetails

Basic site details previews the non-development zones, site boundary, setbacks. Also shows the drainage and contour details with the terrain of the site to provide a feasible location to situate STP.

3.2.5 Soilanalysis

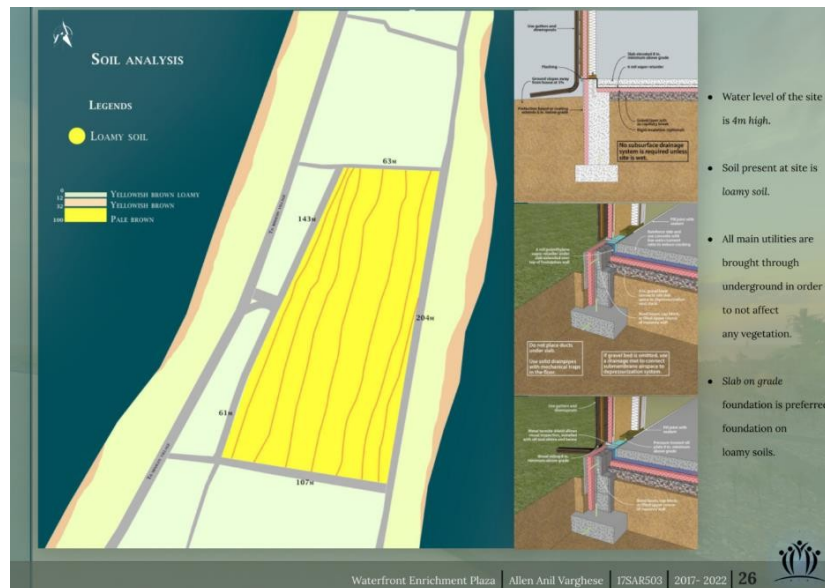


Plate3.7– Soilanalysis

3.2.6 Designstrategiesbasedonclimateanalysis

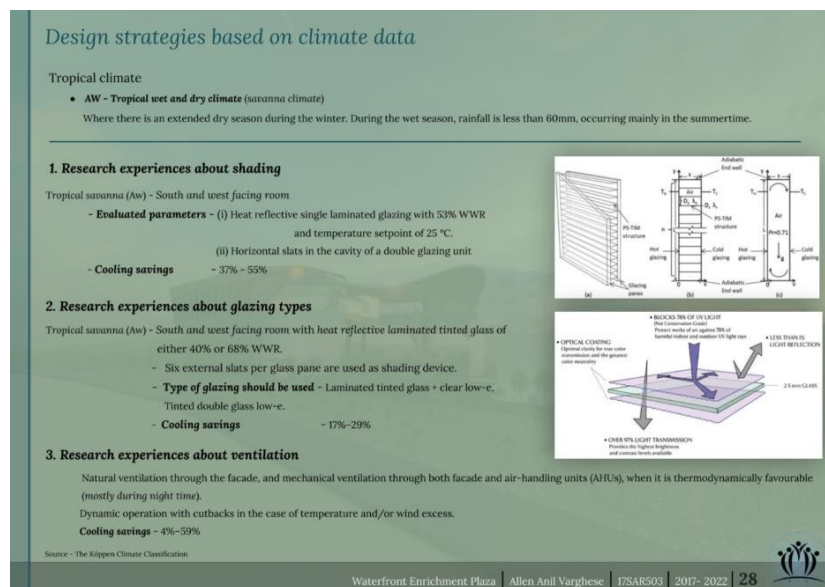


Plate3.8–Designstrategiesbasedonclimateanalysis

Suitable various design strategies to minimize the radiating heat waves into the structure by providing reflective glass panes, glazing, façade treatment and research about the ventilation overall the structure

3.3 Basic zoning ideology

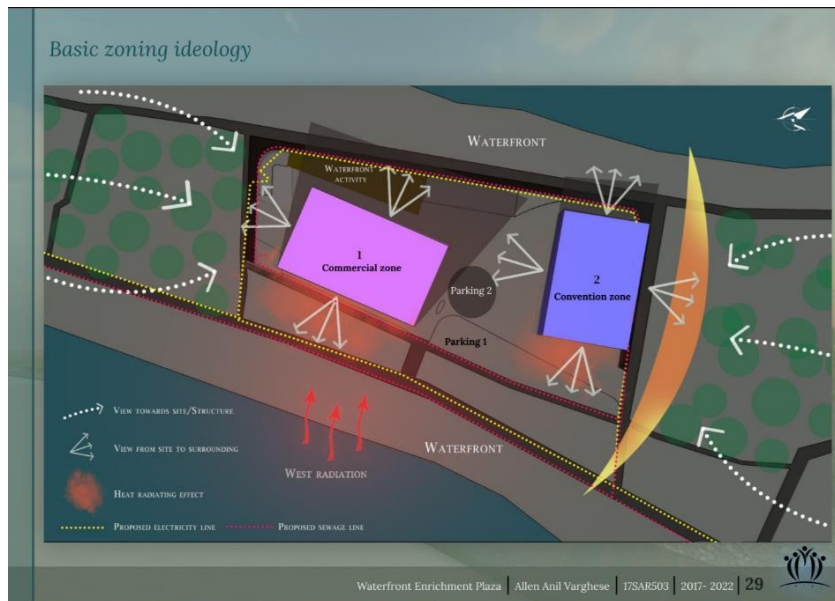


Plate3.9–Basiczoningideology

3.4 Zoning with sun radiation

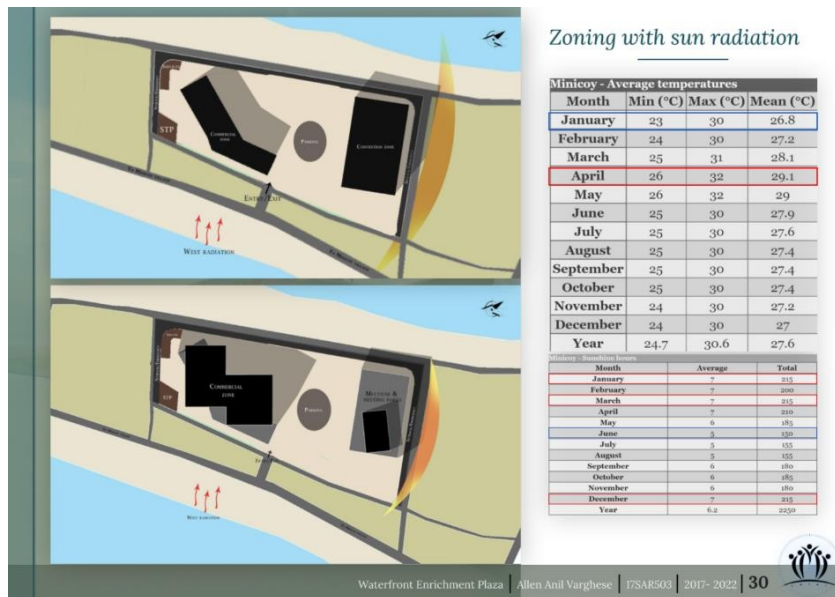


Plate3.10–Zoningwithsunradiation

Structure massing had been chamfered and shaped in such a way to provide maximum shade and pleasant ambience for the residences in Lakshadweep.

And given large facades towards western side to restrict the western radiating heat.

3.5 Zoning with wind maneuver

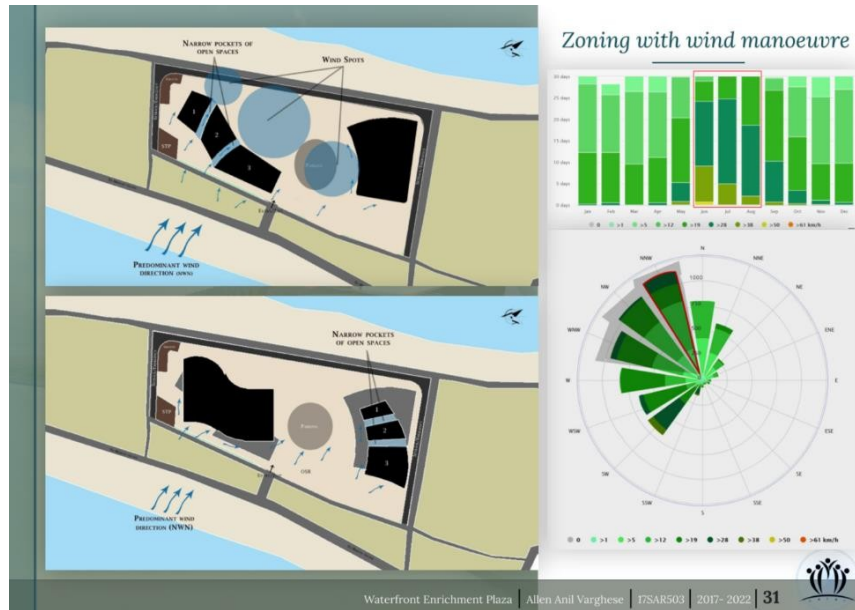


Plate 3.10– Zoning with wind maneuver

3.6 Design evolution

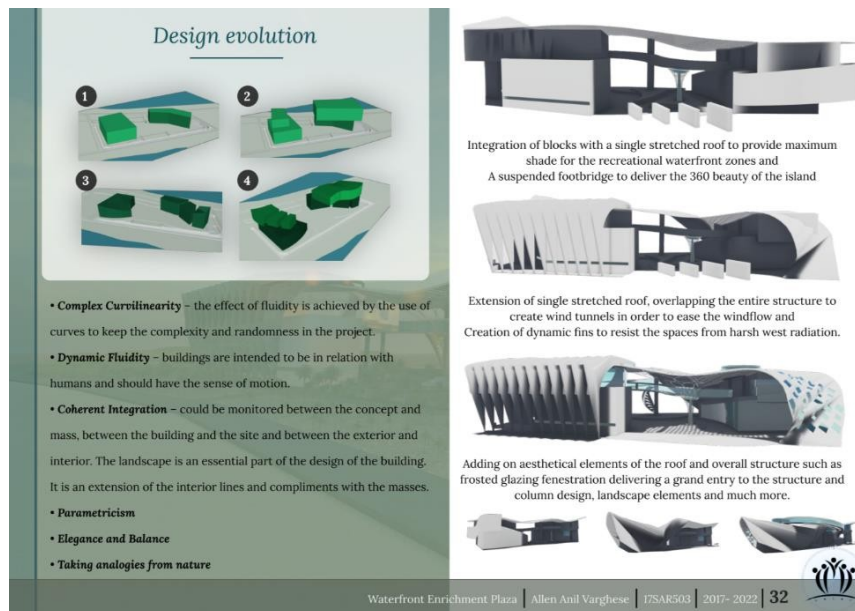


Plate 3.11– Design evolution

3.7 Essential details of the structure



Plate3.12-Essentialdetailsofthestructure

3.8 Waterfrontactivities

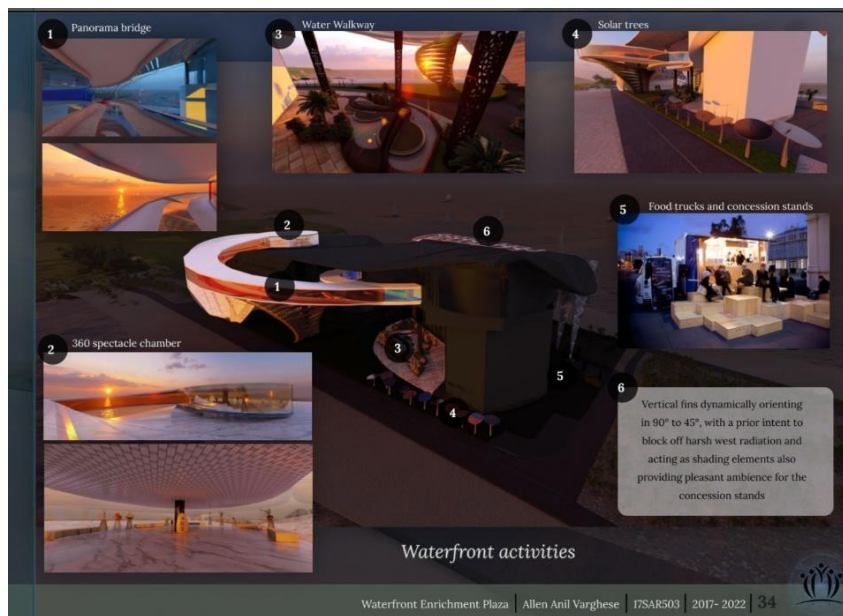


Plate3.13-Waterfrontactivities

3.9 Material and its structure

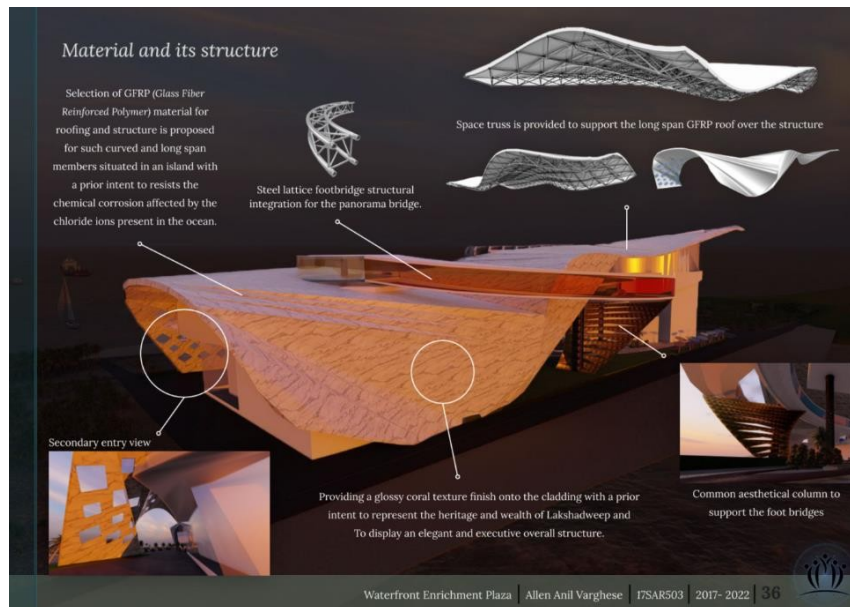


Plate3.14-Materialselectionandreason

3.10 Design and views through the dynamic fins

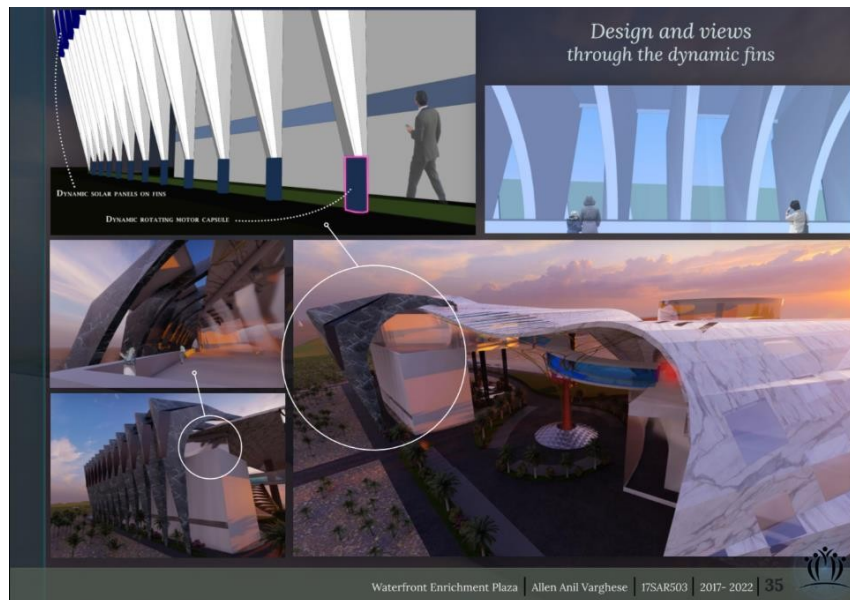


Plate3.15-Dynamicfinsstructure

3.11 Roofstructuredetails



Plate3.16 -Roofstructuredetails

3.12 Additionalstudies onstructure

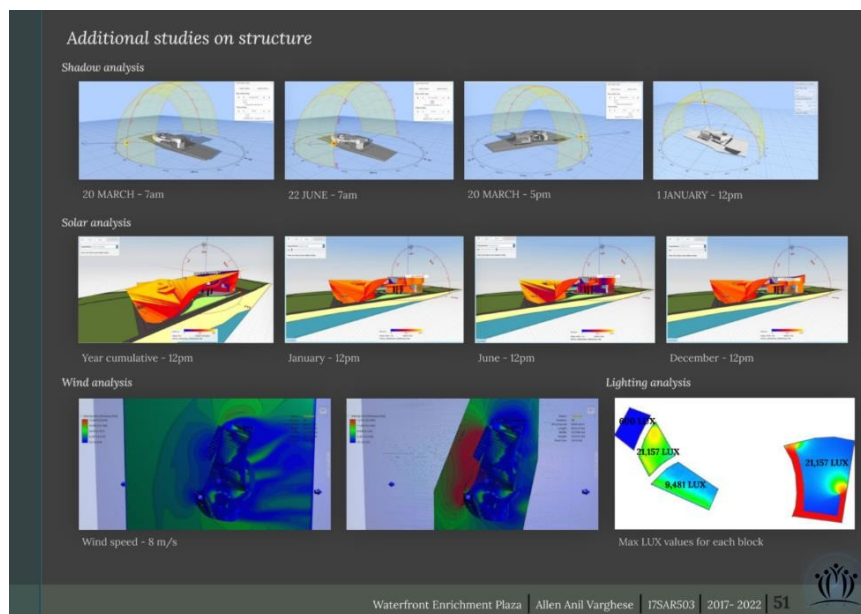


Plate3.17– Additionalstudiesonstructure

3.13 Masterplan



Plate3.18-Masterplan

3.14 Ground floorplan



Plate3.19 -Groundfloorplan

3.15 Ground floor plan section and details

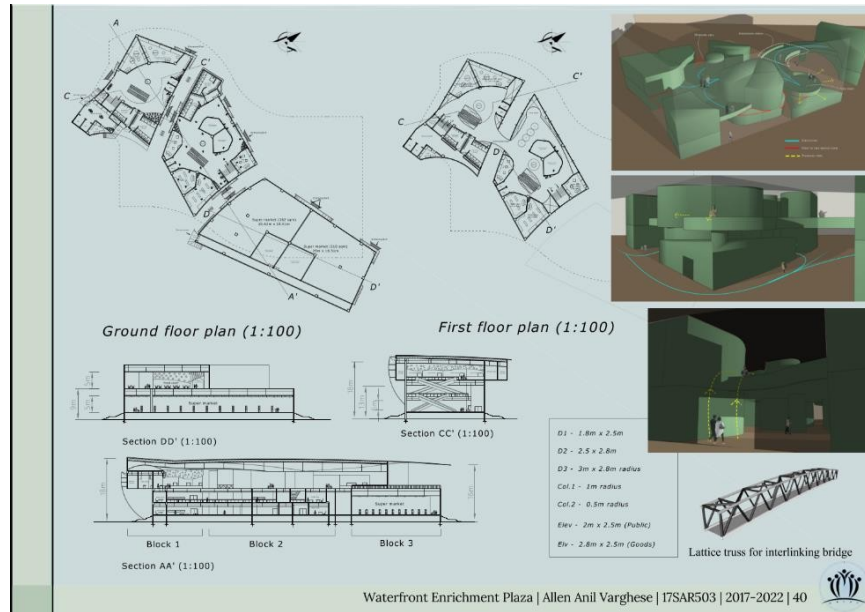


Plate3.20 -Ground floor plan section and details

3.16 Ground floor column layout

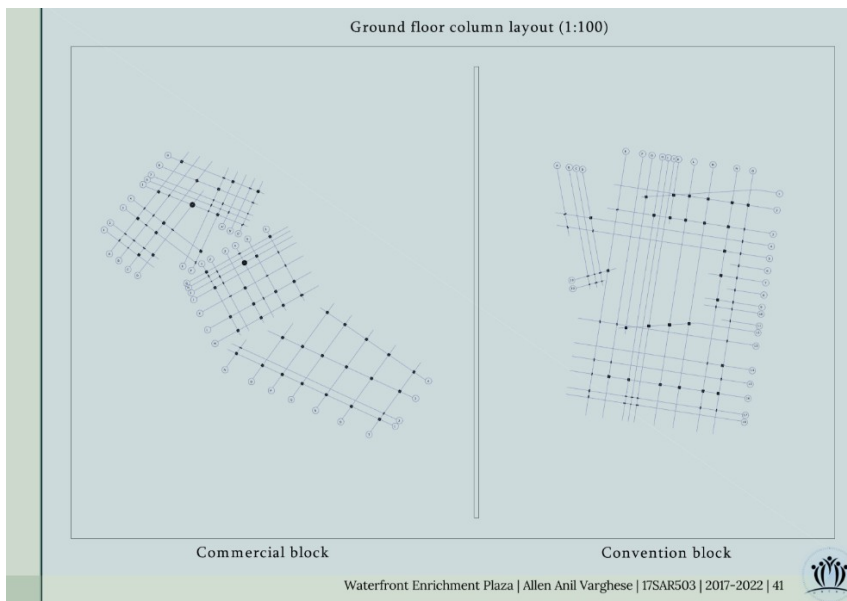


Plate3.21 -Ground floor column layout

3.17 Second floor plan

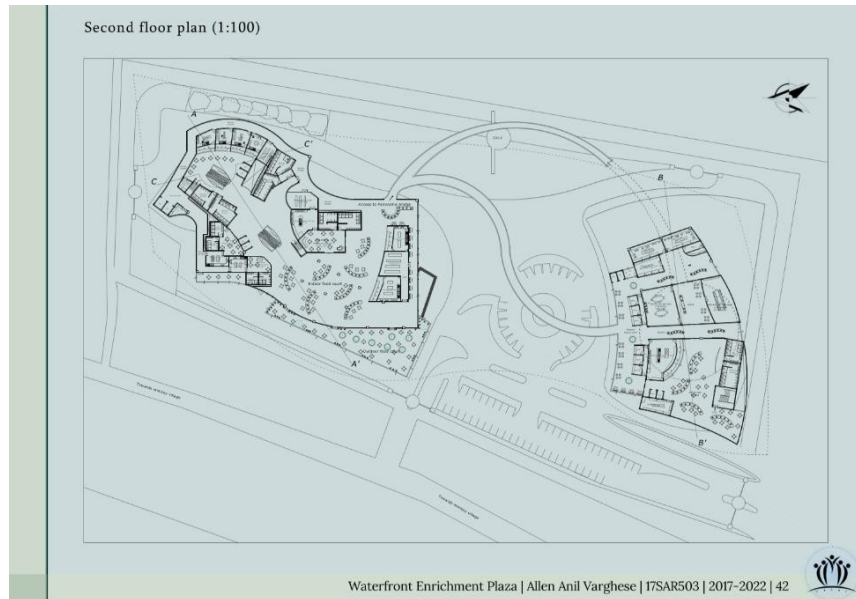


Plate3.22 -Second floor plan

3.18 Second floor section and details

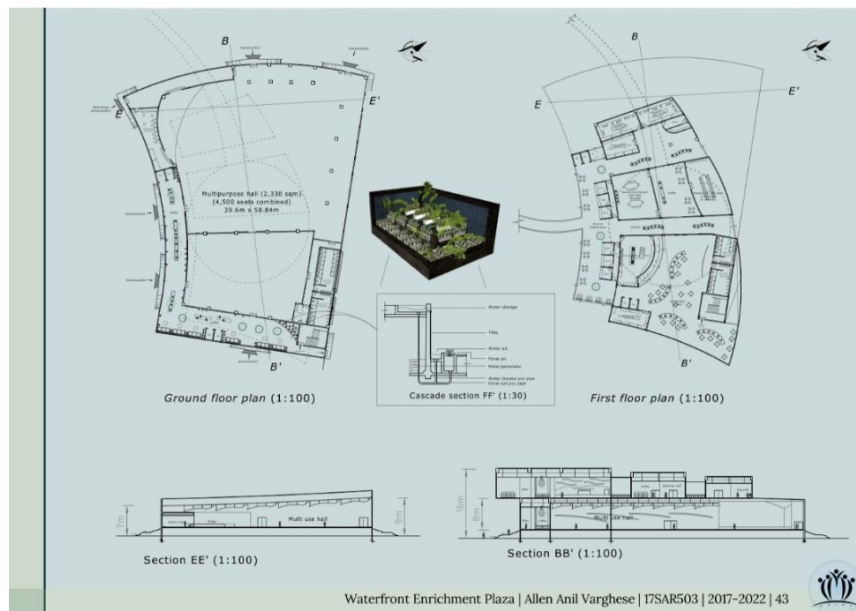


Plate3.23-Second floor section and details

3.19 Second floor column layout

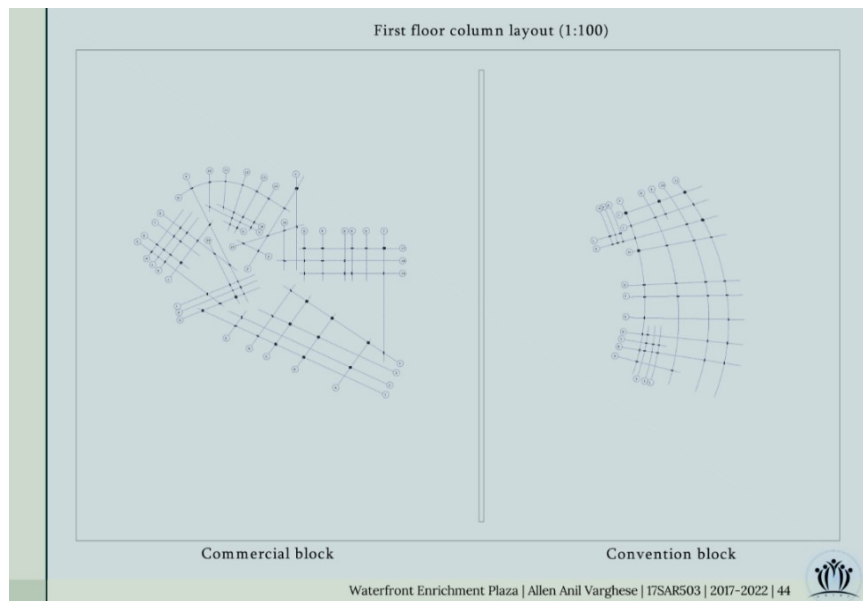


Plate3.24-Secondfloorcolumnlayout

3.20 *Detail1 –Landscapewaterwalkway*

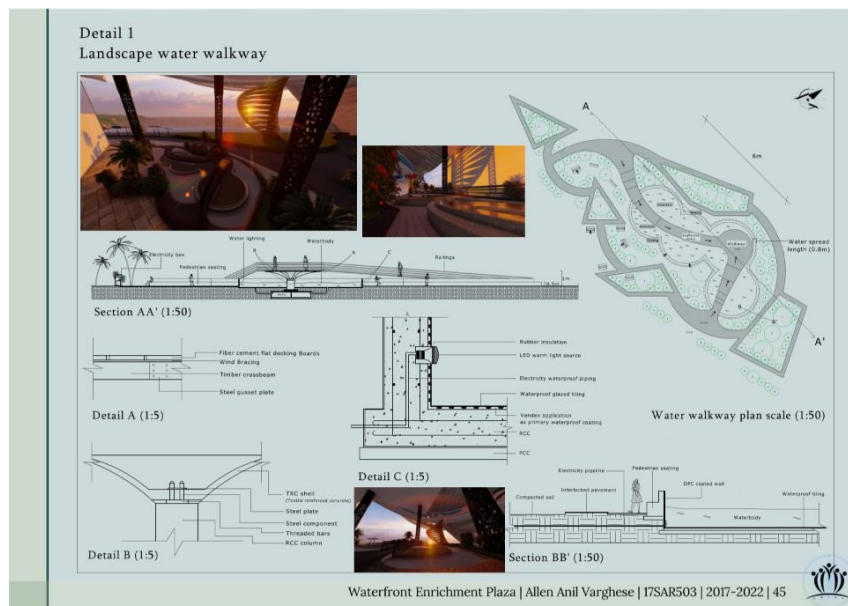


Plate 3.25 -Detail1

3.21 Detail2-Solartrees

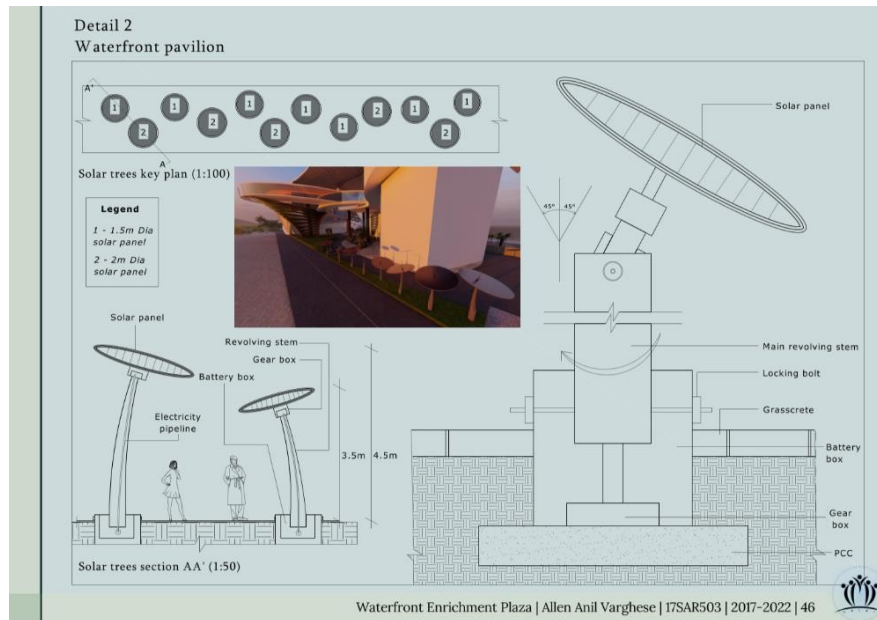


Plate3.26 -Detail2

3.22 Detail3-Servicecorridor

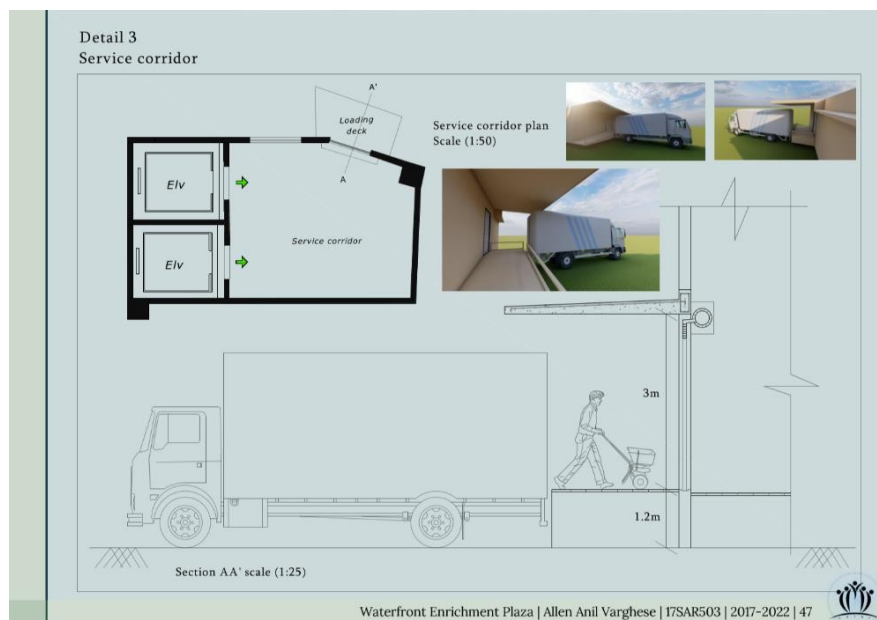


Plate3.27-Detail3

3.23 Detail4–Columnandfalseceiling

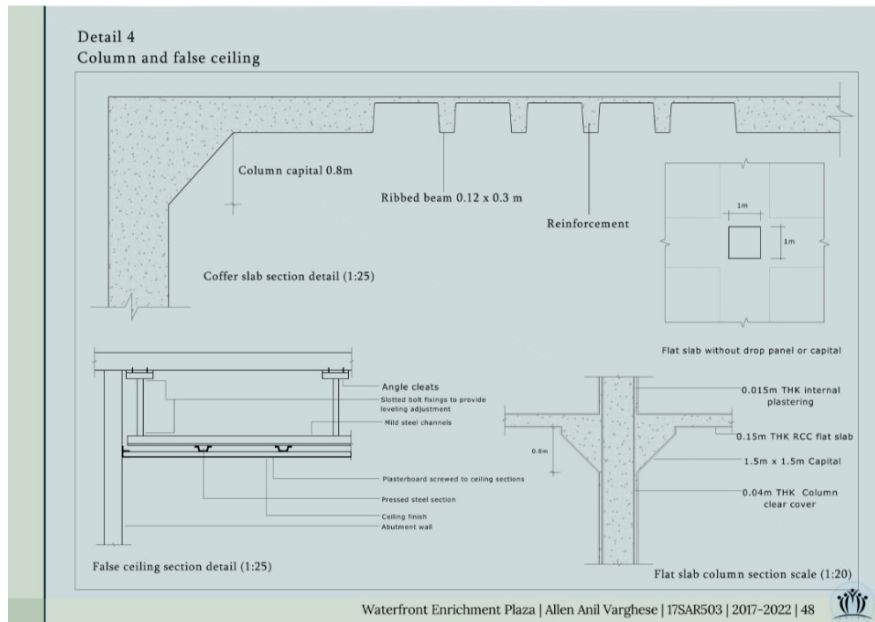


Plate3.28 -Detail4

3.24 Detail5–Structuraldetail andunderstandingofpanorama bridge

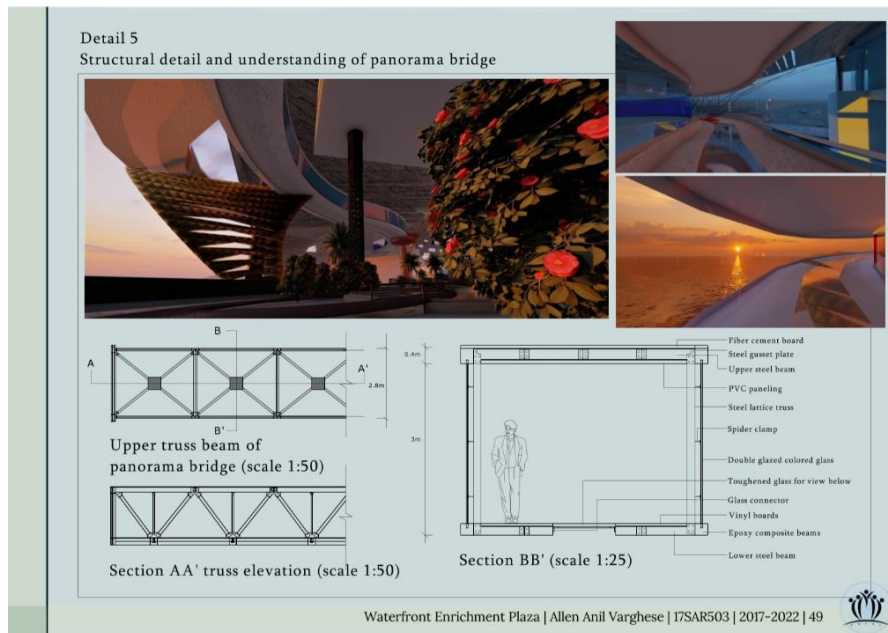


Plate3.29 -Detail5

3.25 Structural detail and understanding of 360 spectacle chamber

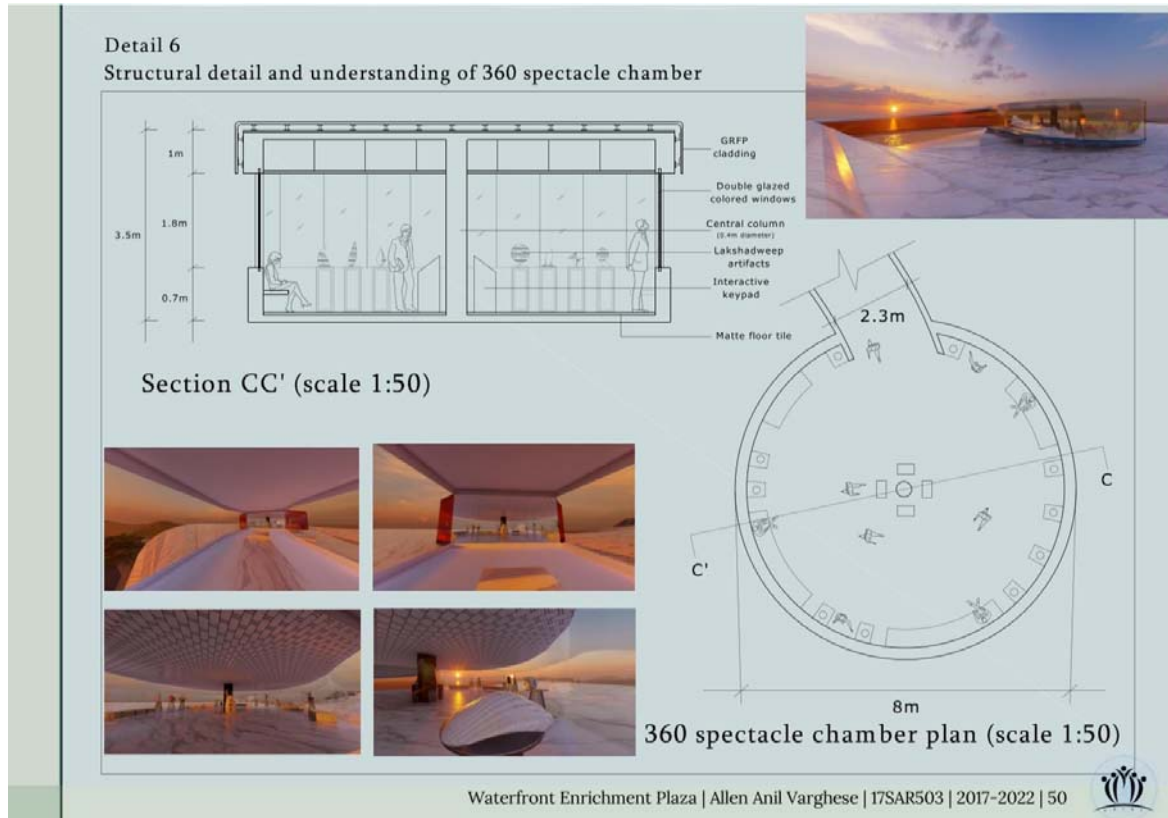


Plate3.30-Detail6

3.26 Renders





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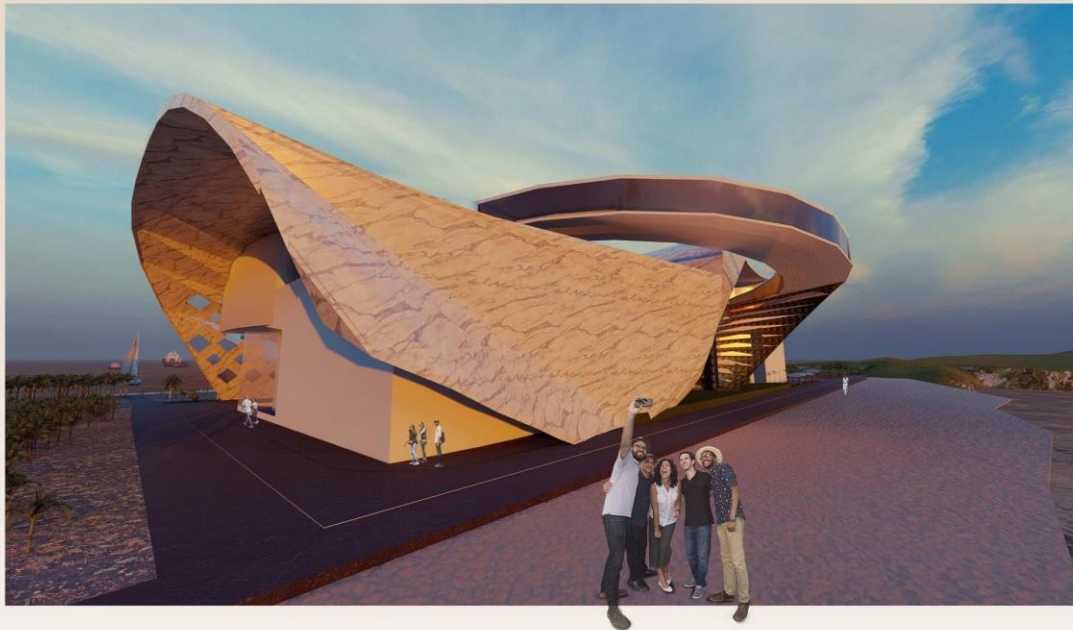
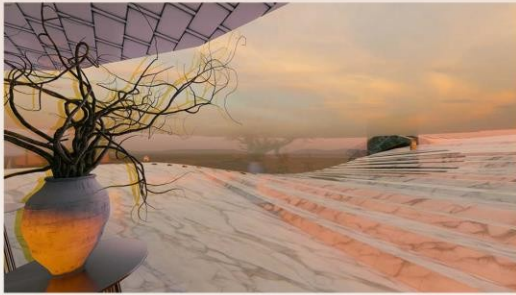
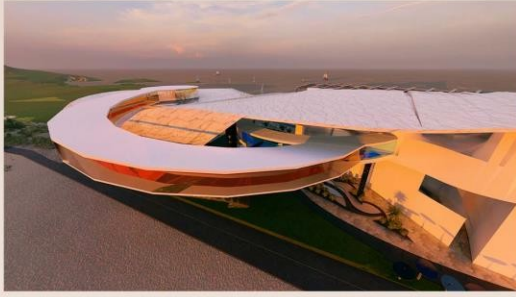
Waterfront
Enrichment Plaza



A L L E N A N I L V A R G H E S E



Waterfront
Enrichment Plaza





CHAPTER4

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