

ARCHITECTURAL PORTFOLIO

SELECTED WORKS : B.Arch | MSc 2013 - 19

SHALAKA VIJAY WANI

UNDERGRAD: Lokmanya Tilak Institute of Architecture, Mumbai University - B.Arch

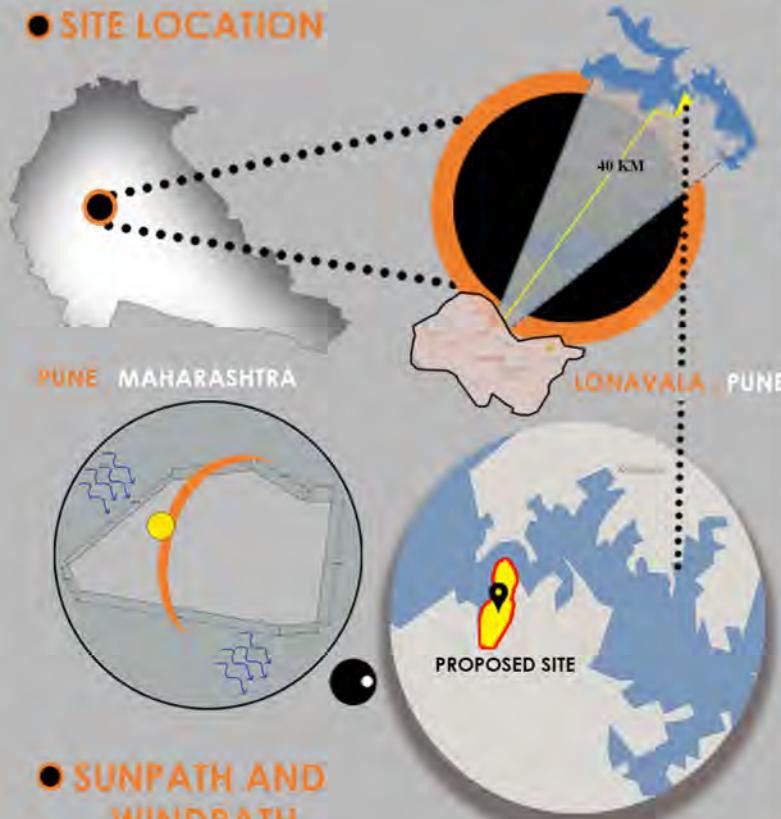
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DOCUMENTATION	SEM 09	URBAN DESIGN : BETTER YOUR NEIGHBOURHOOD, DEONAR ROAD. (https://issuu.com/mishkat.ahmed/docs/better_your_neighbourhood-report-01)	
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UNDERGRAD: Work Experience - SSA Architects, Mumbai.

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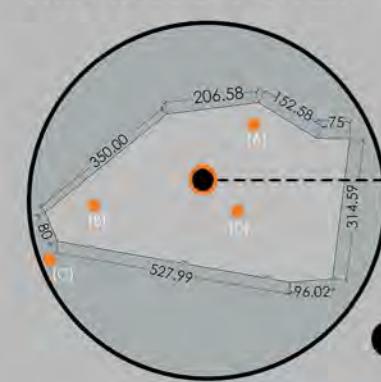
POSTGRAD: Oxford Brookes University, UK - MSc. Sustainable Building: Performance & Design

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● SUNPATH AND WINDPATH

AREA OF PLOT = 189665.93 SQ.M = 46.86 ACRES
30M FLOODLINE OFFSET - CLOSE TO WATERBODY



● SITE DIMENSIONS

- S**
1. Vast expanse of Land surrounded by natural boundary of a water body.
 2. Less of City Noise, Odour and Pollution.
 3. Away from the city and its issues of traffic, population density, etc.
 4. Minimal level difference on site.
 5. Surrounded by hills, which provides for increased privacy.
 6. Climate is very cool during monsoons. Views of Waterfalls can be spotted through the hills opposite to the site.
 7. Less number of trees, therefore excess cutting of trees can be prevented.

W
Isolated Site might create transportation issues sometimes. Accessibility to the site is only through road.

O
More options of accessing the site can be developed. More recreational spaces can be added with lots of green cover as the site is very close to nature. Architectural interventions can be merged with the water body to make it look more scenic.

T
Too much of infrastructural development in coming years might take away the site's calmness.

INTRODUCTION

TO DESIGN A EQUESTRIAN CENTRE SHOWCASING, PRESERVING AND PROMOTING THE HORSE CULTURE AND EQUESTRIAN SPORTS PLAYED WORLDWIDE, THEREBY GIVING A CHANCE TO PEOPLE FOR PURSUING CAREER IN EQUESTRIAN FIELD.

MAVAL, LONAVALA :

LOCATION : Near Reservoir Of Thokarwadi Dam, Maval.

ACCESSIBILITY :

1. From Mumbai to proposed Site = 90KM
2. From Pune to proposed Site = 60KM
3. From Lonavala to Site = 40KM

NEAREST RAILWAY STATIONS :

1. KAMSHET TOWARDS MUMBAI
2. KANHE TOWARDS PUNE

TREES FOUND : Palm, Bakul, Ashoka, Oak, Mango, Gulmohar, Neem

● SITE VIEWPOINTS



WHY IS A RURAL SITE BETTER WHEN COMPARED TO AN URBAN SITE?

RURAL CONTEXT

- Better connectivity from two cities.
- Accessibility is for more users from multiple cities around.
- Climate is relatively cool.
- Suitable climate for horses.
- Site is next to a water body.
- More scenic natural boundaries.
- Vast expanse of flat land.
- Less of Noise, Odour and Pollution.

URBAN CONTEXT

- Connectivity limited to one city.
- Good Accessibility but for the users of one city only.
- Climate is Humid in city.
- Climate is humid, hence not preferable.
- Water bodies are barely found in densely populated cities.
- Less scenic : Absence of Natural Boundaries.
- As more of land is already in use, there is less vacant land available in cities.
- More of Noise, Odour and Pollution.

HORSE RATIO

TOTAL HORSE ON SITE = 234
1 SYCE PER 2/4 HORSE
HENCE, 58 SYCE REQUIRED

1 RIDER PER 10/12 HORSES
HENCE, 20 RIDERS REQUIRED

TOTAL STAFF NEEDED - 78

FSI CALCULATION

SITE AREA = 189665.93 SQ.M = 46.86 ACRES
FSI = 0.2
TOTAL BUILT UP AREA = 36122 SQ.M
FSI ACHIEVED = 0.1905

ZONING LAYOUT



OVERLAYS

HORSE CIRCULATION



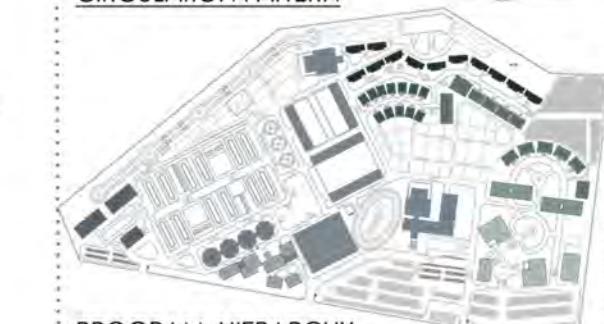
CIRCULATION PATTERN

HUMAN CIRCULATION



CIRCULATION PATTERN

STAFF ZONE



PROGRAM HIERARCHY

SERVICE ZONE



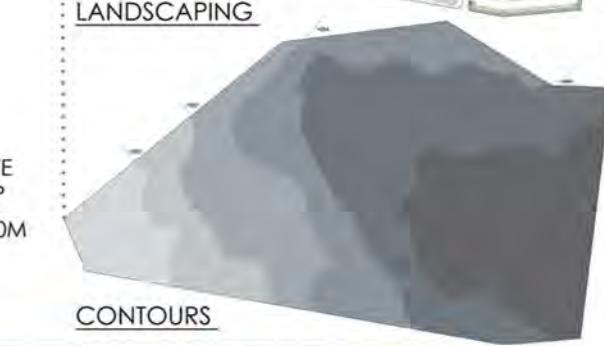
MASSING

STABLE ZONE



LANDSCAPING

COMPETITION ZONE



CONTOURS

GUEST VILLAS

TWIN ROOMS

GUEST QUARTERS

DORMITORY

RENTAL

ADMIN+RESTAURANT

PRIMARY MASSING

SECONDARY MASSING

ADMIN+RESTAURANT

EXISTING LANDSCAPE

DESIGNED LANDSCAPE

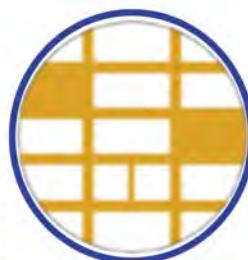
PADDOCKS

6 CONTOURS ON SITE

2M CONTOUR DROP

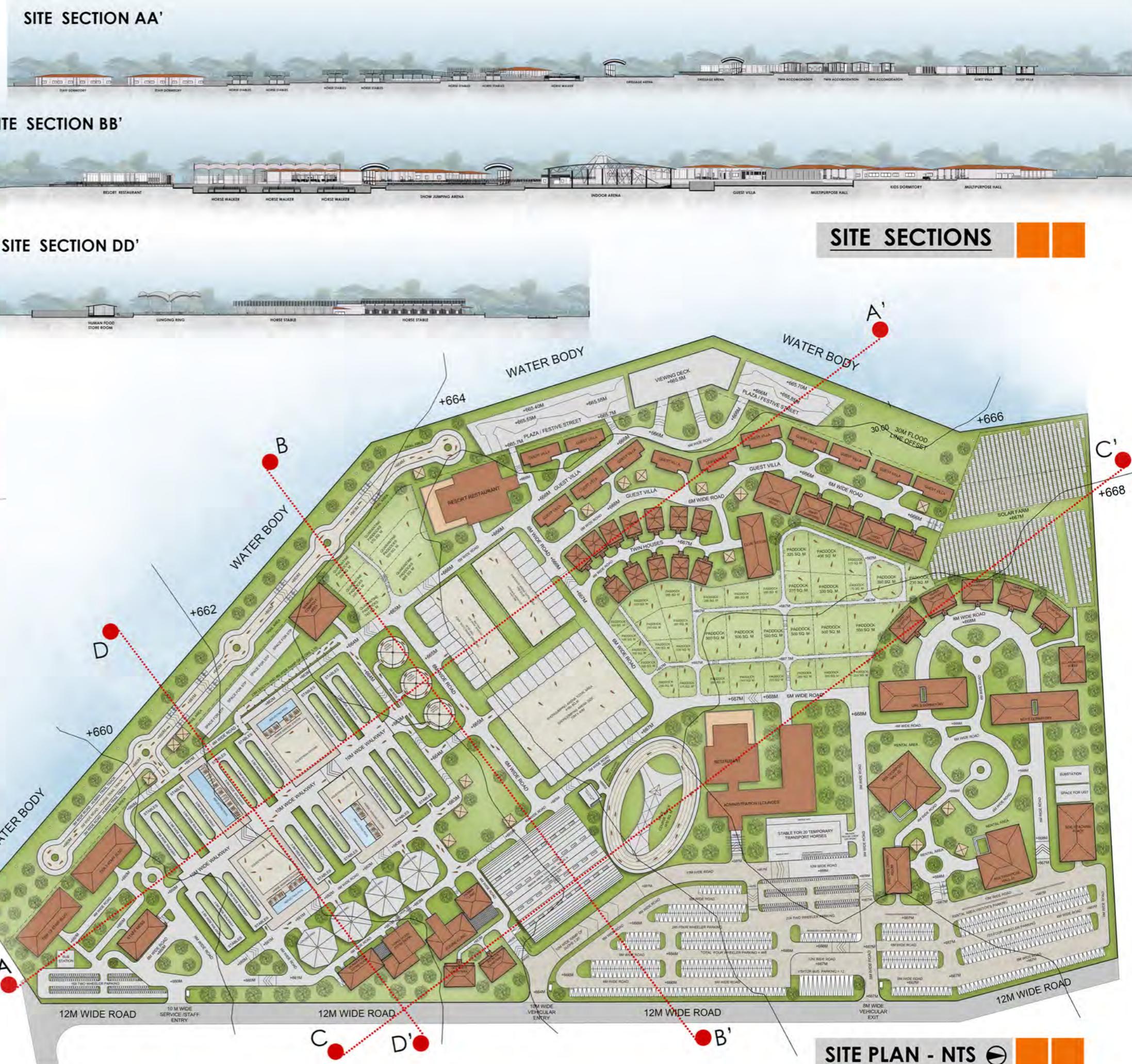
OVERALL SLOPE = 10M

CONCEPT & FOCUS



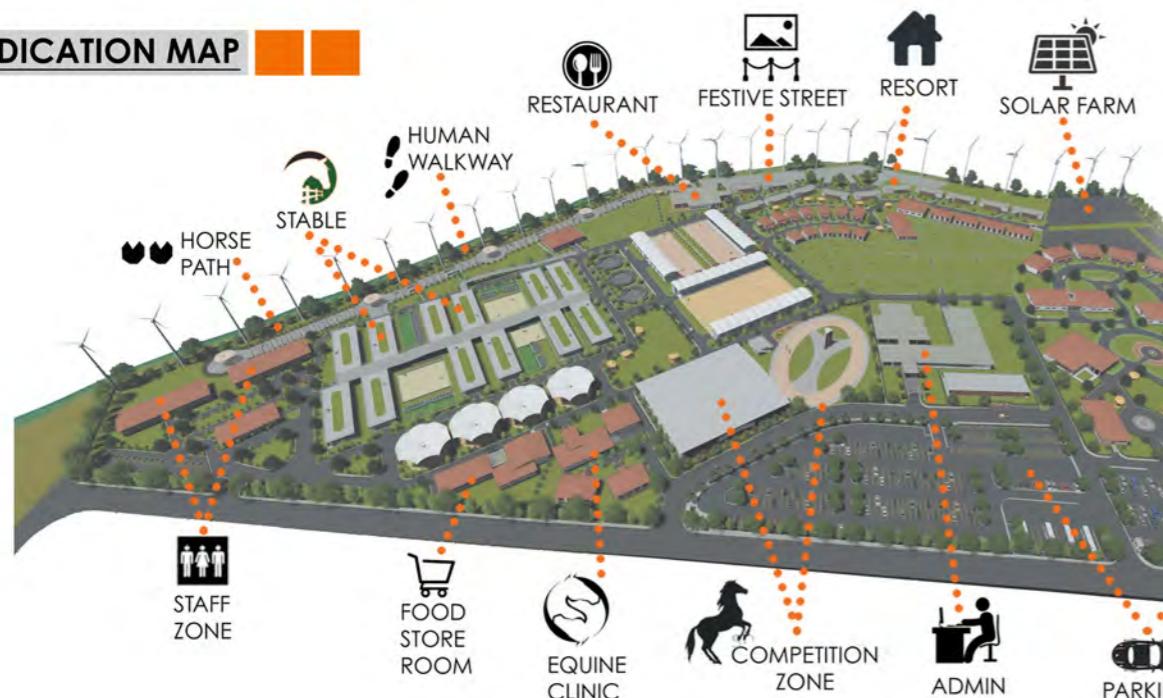
PROJECT PROGRAM

CONNECTING RECREATIONAL AND OPEN SPACES

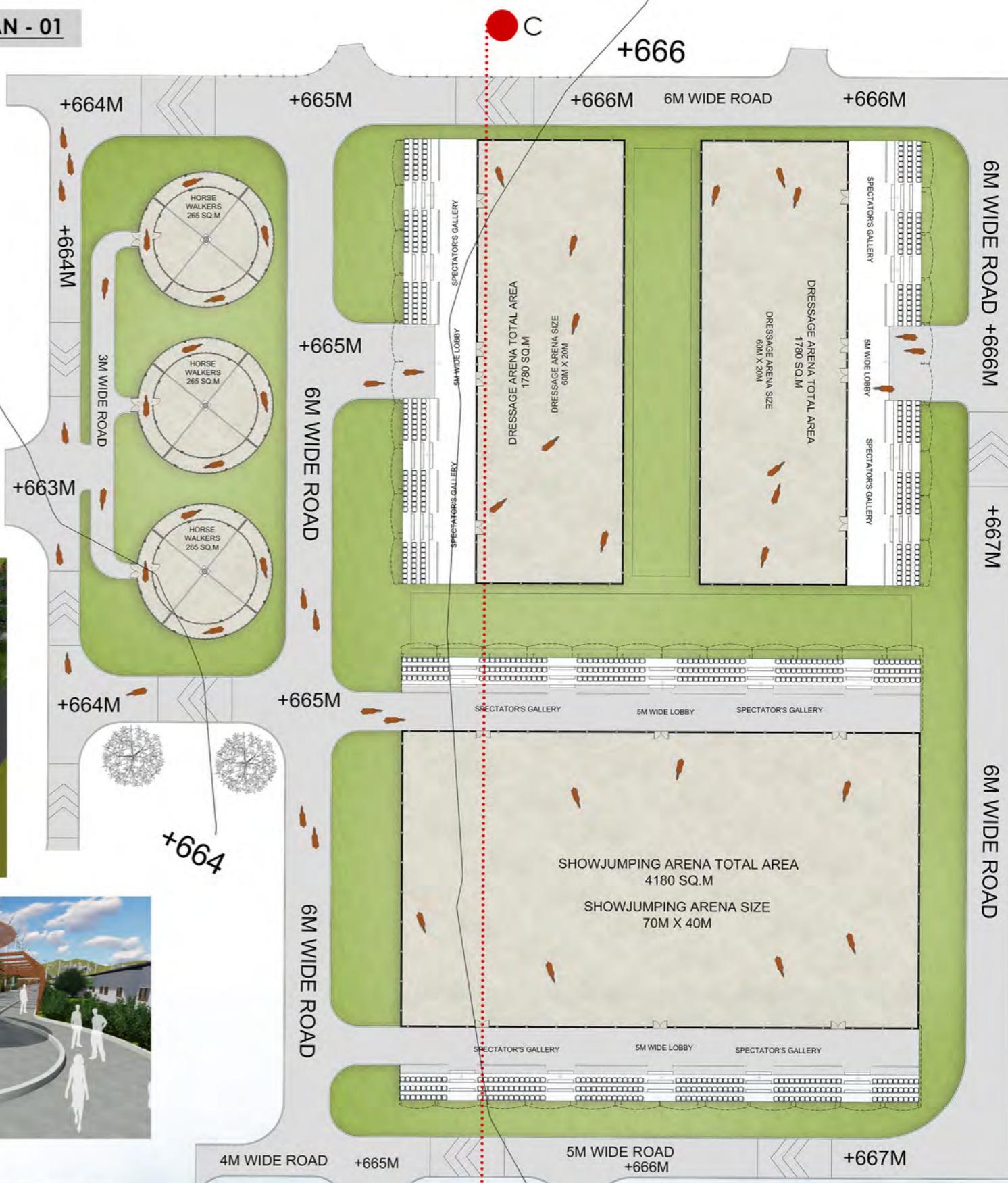


RETHINKING EQUESTRIANISM AT LONAVALA

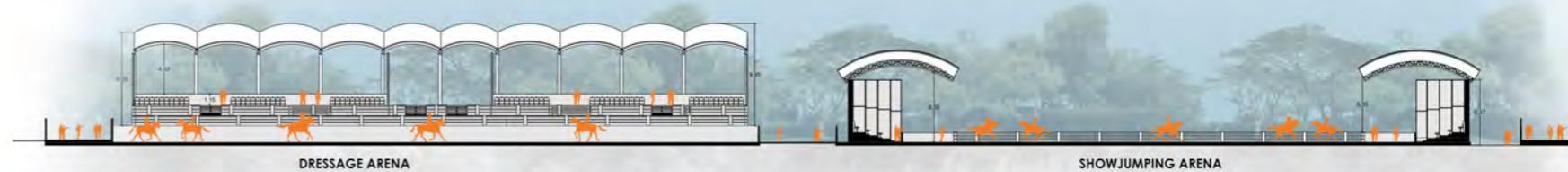
INDICATION MAP



CLUSTER PLAN - 01



CLUSTER SECTION - 01



SHOWJUMPING ARENA

GUEST VILLA

CLUSTER PLAN - 02



CLUSTER PLAN - 03



CLUSTER SECTION - 02



VIEW S

CLUSTER 03 - HORSE STABLES



CLUSTER SECTION - 03



ARCHITECTURAL THESIS - SEM 10

RETHINKING EQUESTRIANISM AT LONAVALA

SITE LOCATION

PUNE, MAHARASHTRA
PIMPRI, PUNE

SWOT

- NEW UPCOMING TRANSIT MODES REDUCE USAGE OF BUS STOP.
- UPCOMING METRO CAN ADD USER BASE . WILL ADD CONVENIENCE TO ACCESS.
- LESS OF LOCAL USERS. BUSES GO ONLY FOR INTERSTATE.
- SITE AT JUNCTION , EASILY CONNECTED TO NODES , EASY ACCESSIBILITY WITH APT LOCATION.

PROPOSED SITE

AREA OF PLOT = 34276 SQ.M = 8.4 ACRES

BUILT SPACE: 30%
UNBUILT SPACE: 70%

FIGURE GROUND

INSTITUTIONAL: 30%, COMMERCIAL: 40%, RESIDENTIAL: 30%

LAND USE MAPPING

RES. + COMM.: 75%, COMMERCIAL: 5%, RESIDENTIAL: 2%

BUILDING USE MAPPING

RESIDENTIAL: 18%, COMMERCIAL: 5%, OTHER: 3%

INTRODUCTION & CONCEPT

THIS PROJECT EXPLORES CITY TRANSPORTATION STRATEGY WITH A PROTOTYPE DESIGN FOR A BUS TERMINAL CONSIDERING RAPID URBAN GROWTH AND ITS IMPACT ON THE FUTURE.

OBJECTIVES :

- TO MAKE TRANSPORT INTERCHANGE EASIER FOR PASSENGERS WHICH IS A GROWING NEED FOR DEVELOPING CITIES THEREBY IMPROVING THE OVERALL TRANSPORTATION NETWORK.
- TO DEVELOP A TRANSPORT SYSTEM CONNECTING OTHER MAJOR CITIES
- TO PROVIDE AN ARCHITECTURAL SOLUTION TO INTEGRATE THE TERMINAL WITH A COMMERCIAL COMPLEX AS AN ALLIED ACTIVITY.

TOPOGRAPHY

- * FLAT LAND TOPOGRAPHY
- * DRY AND TROPICAL WET CLIMATE
- * MODERATE RAINFALL
- * AVG ANNUAL TEMP - 27 DEGREES
- * VARIATION IN TEMP - 6 TO 8 DEGREES

SUNPATH AND WINDPATH

SITE DIMENSIONS

ACCESSIBILITY

ROAD: Mumbai-Pune expressway, Old Mumbai-Pune highway, Pune-Nashik highway, Pune city to Pimpri-Chinchwad.
RAIL: distance from kasarwadi railway station (1.2km approx.)
AIR: Distance From Pune Airport - 16KM APPROX

ABOUT THE SITE

01 02 03 04 05

VEGETATION

GROUND: 55%, G + 3: 34%, G + 5: 6%, G + 8: 3%, G + 13: 1%

BUILDING HEIGHT MAPPING

VEGETATION: 55%, OPEN/BUILT SPACE: 34%, G + 3: 6%, G + 5: 3%, G + 8: 1%, G + 13: 1%

ROAD HIERARCHY

YASHWANT RAO CHAVAN ROAD, OLD MUMBAI - PUNE HIGHWAY

MEDIUM: 55%, FAST: 34%, SLOW: 6%, TERTIARY ROAD: 3%, SECONDARY ROAD: 1%, PRIMARY ROAD: 1%

TRAFFIC ANALYSIS

PUBLIC CONCENTRATION

THE URBAN BOUNDARY

SIMPLE MASS

THE SITE BEING TRIANGULAR AND AT THE JUNCTION WITH MAJOR NODES CONNECTED BOTH WAYS , IT WAS NECESSARY TO MAKE THE DESIGN STAND OUT , AS THERE IS VIEWPOINT FROM TWO SIDES. THE EARLIER FORM WAS VERY BASIC WITH FUNCTIONAL SPACES IDENTIFIED ONLY.

SEPERATION

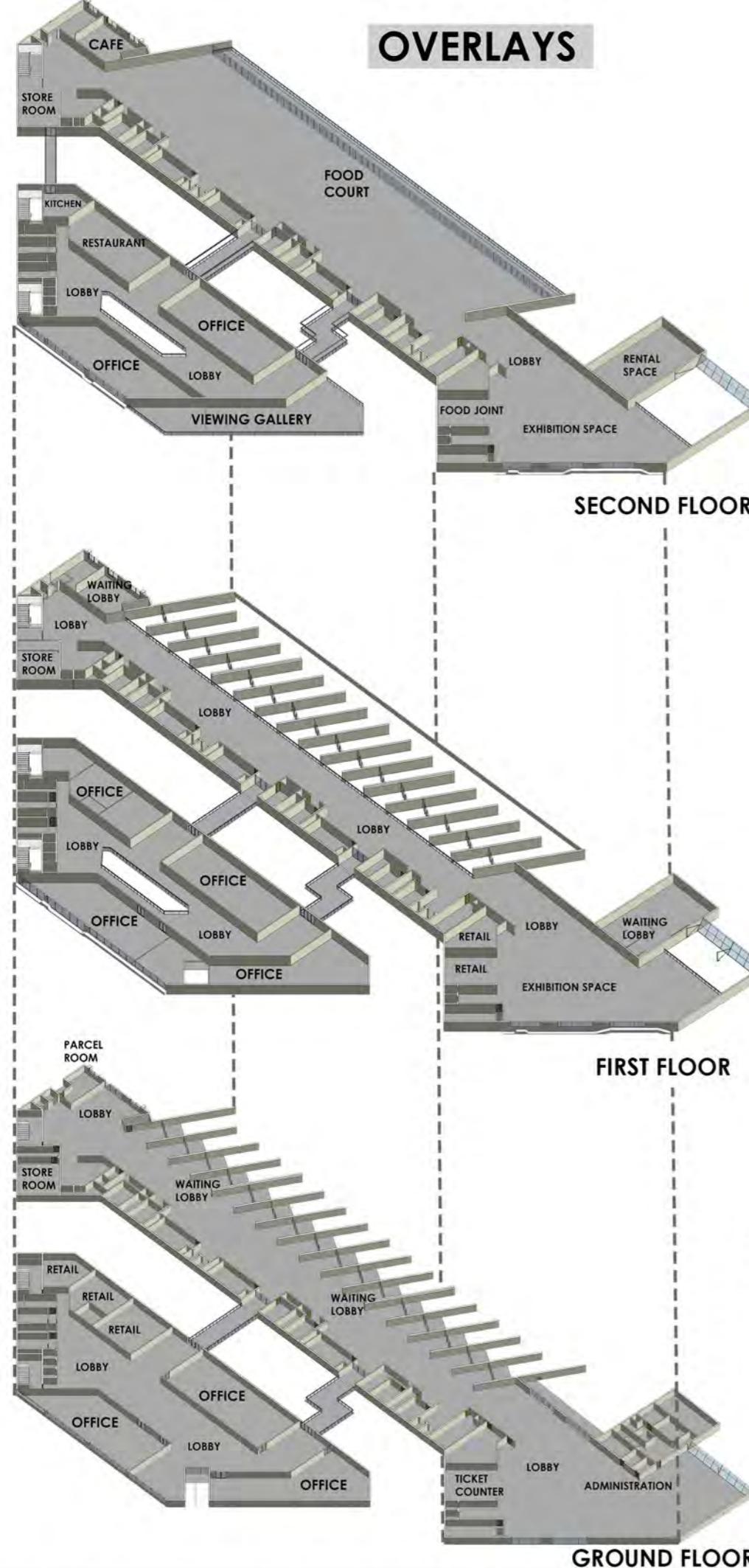
LATER ACCORDING TO PROGRAM , THE PURPOSE OF THE STRUCTURE WAS DIVIDED AS PER FUNCTIONAL USE - PUBLIC AND PRIVATE SPACE . THIS GAVE THE SITE A DIFFERENT FEEL MAKING IT EASIER TO APPROACH . ZONING AS PER PUBLIC , PRIVATE AND SEMI- PRIVATE SPACES MADE IT MORE USER FRIENDLY .

DYNAMIC SPLIT

SEGREGATING THESE ZONES INTO SEPERATE STRUCTURES CREATING A LINK IN THEM ROOTED TO NEW ELEMENTS IN THE DESIGN . OVERLOOKING BRIDGES , PADDY POOL , LANDSCAPE ZONES , SKYLIGHTS , VIEWING GALLERIES , PUBLIC PLAZA GAVE THE SITE ITS OWN MICROCLIMATE . INFORMAL SPACES WERE MADE INTERESTING AS THEY HAD HORIZONTAL AS WELL AS VERTICAL CONNECTIVITY . BUILDINGS ARE ORIENTED IN NORTH - SOUTH DIRECTION IN A WAY TO ATTRACT MAXIMUM WIND MOVEMENT INSIDE THE SITE . THE FINAL DESIGN IS COMBINATION OF INTERNAL PLANNED SPACES AND EXTERNAL ELEVATIONAL FEATURES WITH THE CONCEPT THUS RESOLVED .



OVERLAYS

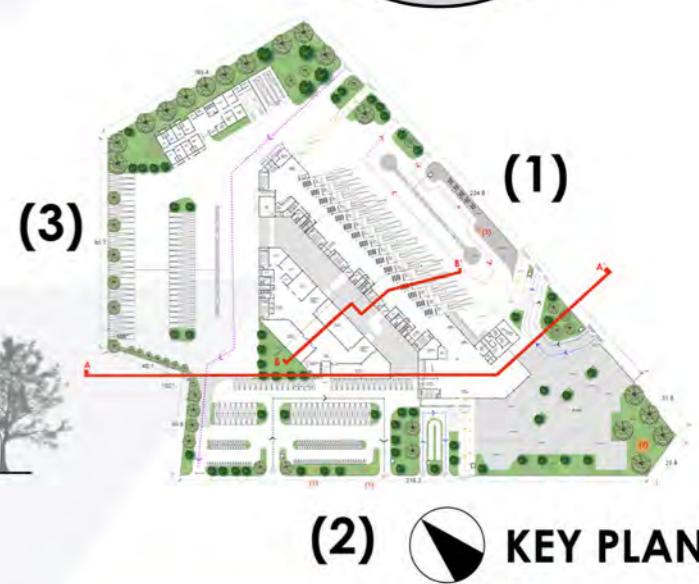
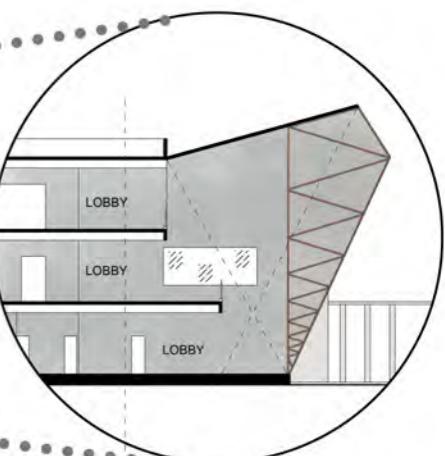
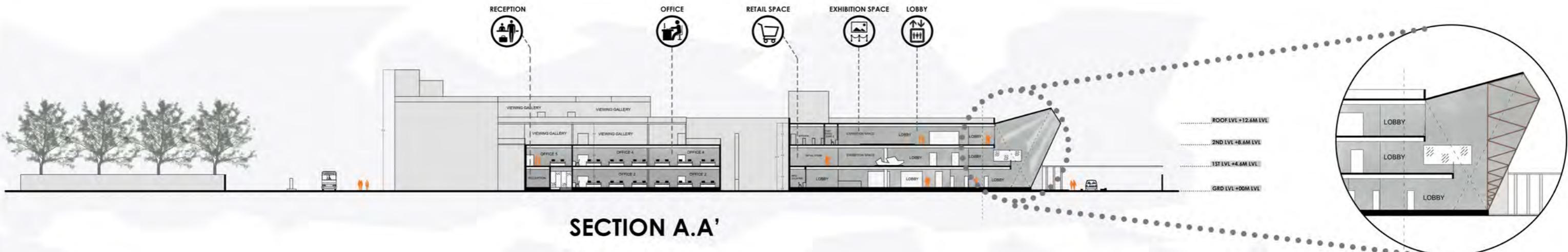


FIRST FLOOR PLAN



SECTION B.B'

BUS TERMINAL & COMMERCIAL COMPLEX, PIMPRI



SITE LOCATION

GOOD ACCESSIBILITY,
SURROUNDINGS APT
FOR HOUSING

NO PARKING , ILLEGAL
ENCROACHMENT ,
NO PROPER DRAINS

BECAUSE OF
ENCROACHMENT ,
OPPORTUNITY OF
REDEVELOPMENT IS SEEN

NO COMPOUND WALL ,
THREAT OF SECURITY
AND PROPERTY IS SEEN .

ABOUT THE SITE

PLOT AREA - 3.79 ACRES

PLOT SIZE - 192 X 80 M

SET BACK - 6 M WIDE

INTERNAL ROAD - 6 M WIDE

VASHI
PROPOSED SITE

SECTOR 19B , OPPOSITE AVALON
HEIGHTS SCHOOL , GROMA MARG ,
VASHI , NAVI MUMBAI .

A RECTANGULAR PLOT HAVING
AREA OF 15360 SQ. M

WOT

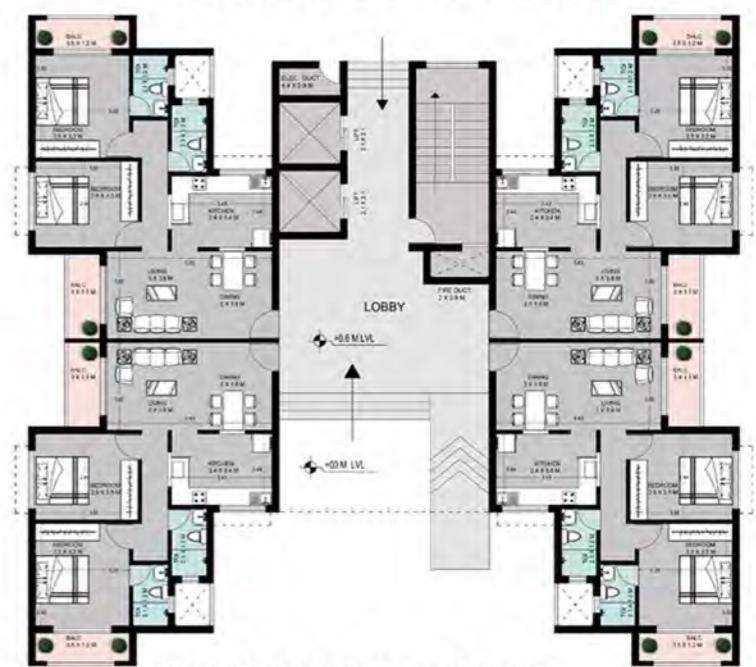
GROUND LEVEL : SITE PLAN



MODULE PLANS



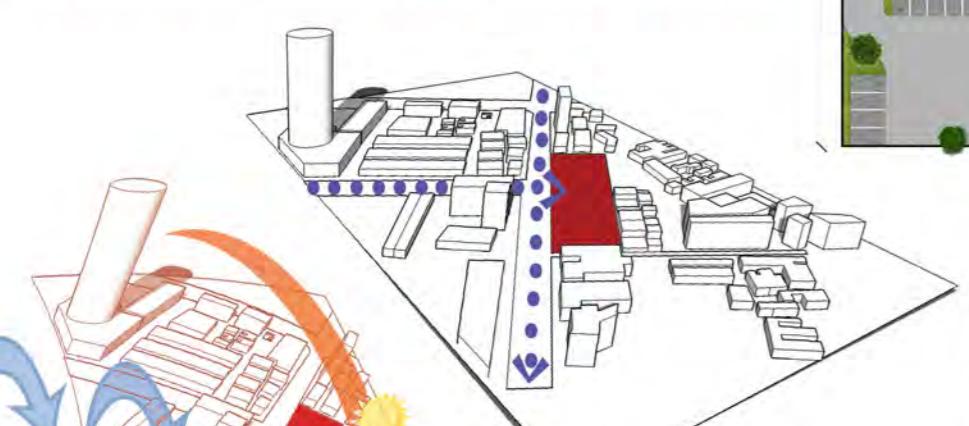
1 BHK MODULE PLAN



2BHK MODULE PLAN



FIGURE GROUND



ROAD LANE
CIRCULATION



SUNPATH & WINDPATH

AREA CALCULATION STATEMENT

TYPOLOGY	DESCRIPTION	PERCENT COMPOSITION	TOTAL AREA ON SITE	FLOOR CARPET AREA	BUILT UP AREA	BALCONY	NO. OF UNITS
A	3 BHK	20.00	2000 SQ. M	83.94 SQ. M	97.50 M	BALC 1 - 3X1.2 SQ M BALC 2 - 2X1.2 SQ M DRY BALC - 1X2.0 SQ M	24
B	2 BHK	30.00	3000 SQ. M	56.91 SQ. M	67.92 M	BALC 1 - 3X1.1 SQ M BALC 2 - 3.5X1.2 SQ M	40
C	1 BHK	50.00	5000 SQ. M	45.13 SQ. M	52.50 M	BALC 1 - 3.3X0.8 SQ M	96
TOTAL NUMBER OF UNITS = 160							
TOTAL NUMBER OF PARKING = 160							

AREA OF PLOT - 3.79 ACRES

FSI CALCULATION STATEMENT

TYPOLOGY	DESCRIPTION	TOTAL AREA ON SITE	BUILT UP AREA	NO. OF UNITS	AREA ACHIEVED
A	3 BHK	2000 SQ.M	97 SQ. M	24	97X24 = 2328
B	2 BHK	3000 SQ.M	67 SQ. M	40	67X40 = 2680
C	1 BHK	5000 SQ. M	52 SQ. M	96	52X96 = 4992
TOTAL FSI = 10000 SQ. M					
BALANCE = 0 SQ. M					

INTRODUCTION

THE HOUSING SCHEME WAS DESIGNED TO ACCOMODATE 160 UNITS OF THREE MODULES - 1BHK, 2BHK, 3BHK. THE IDEA IS TO CONNECT PEOPLE FROM DIFFERENT HIERARCHY THUS INCREASING THE INTERACTION AMONGST THEM BY PROVIDING THEM COMMON UTILITY AREAS TO ENHANCE THEIR CONNECTION.



3BHK MODULE PLAN

SECTION AA'



SECTION BB'



SOUTHWEST ELEVATION



SOUTHEAST ELEVATION



KEY SITE PLAN

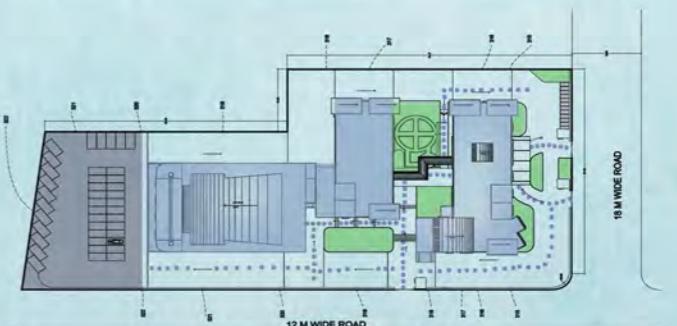


SITE PLAN



Renewable Energy Research Institute, Kharghar is designed to be a institutional building with respect to site's contextual aspects. As per Mumbai's building tradition, such institutes hold a strong influence on the city.

OVERLAYS AND ZONING

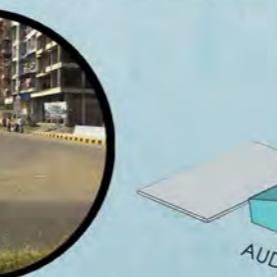


CIRCULATION SPACES
BUILT SPACES
LANDSCAPE AREAS
PARKING SPACE

THE URBAN BOUNDARY



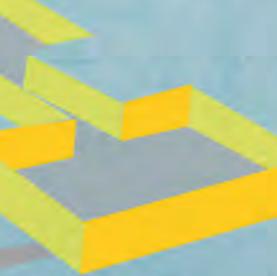
PROPOSED SITE



ACCESS TO SITE



PLACEMENT IN CONTEXT
TO THE SITE



HORIZONTAL LINKAGE WITH
VERTICAL CONNECTIVITY

DESIGN CONCEPT

THE DESIGN PROPOSAL IS AN ENVIRONMENTAL ENERGY RESEARCH INSTITUTE LOCATED IN HOT & HUMID CLIMATE IN THE CITY OF KHARGHAR . NAVI MUMBAI.

THE MAIN AIM FOR DESIGNING WAS TO CONSTRUCT LOW RISE BUILDINGS WITH COURTYARDS , SKYLIGHTS, ATRIUMS AND INTERACTION SPACES IN BETWEEN CREATING A 'SUSTAINABLE CAMPUS' THUS .

THE PROJECT CONDUCTS RESEARCH ON TECHNOLOGY NEEDED TO SUPPLY ENERGY EFFICIENTLY .

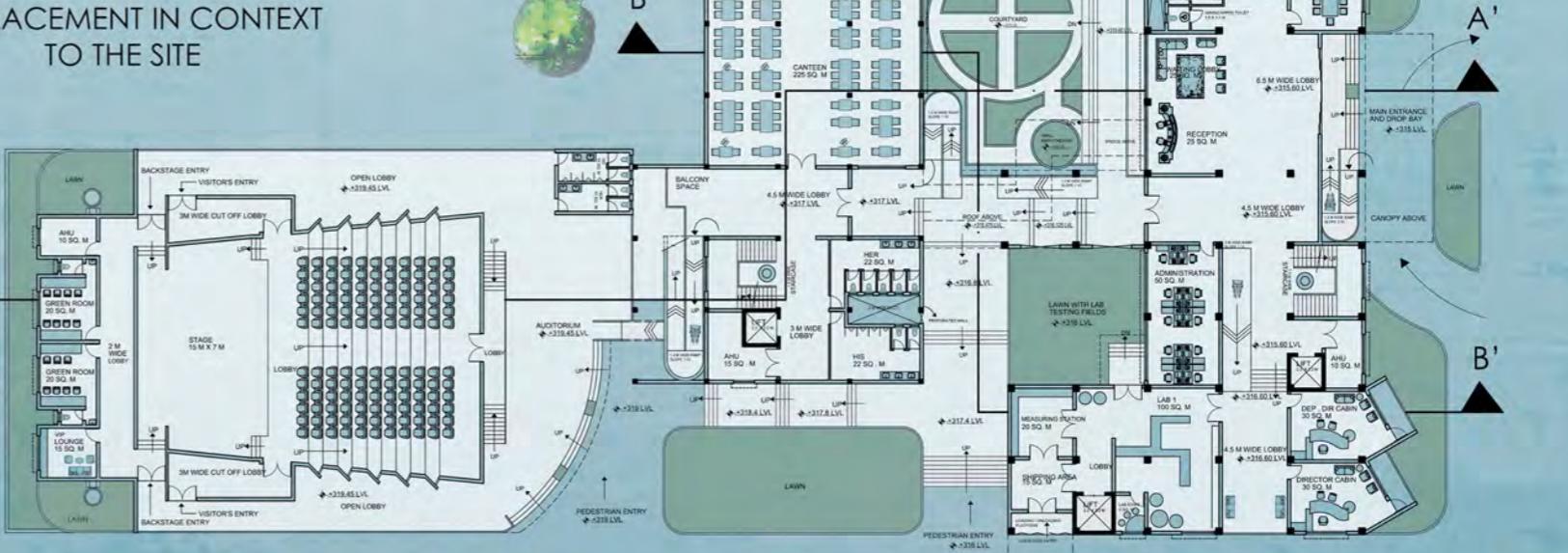
IT AIMS TO ACHIEVE ENERGY EFFICIENT DESIGN BY REDUCING USAGE OF ARTIFICIAL ENERGY AND MAXIMISING NATURAL AVAILABLE RESOURCES .

USE OF 'PHOTOVOLTAIC MODULES , SOLAR PANELS' / ORIENTING BUILDING TOWARDS WIND / DESIRABLE SHADOW AND COOLING IN COURTS ADDS ON TO ITS SUSTAINABILITY .

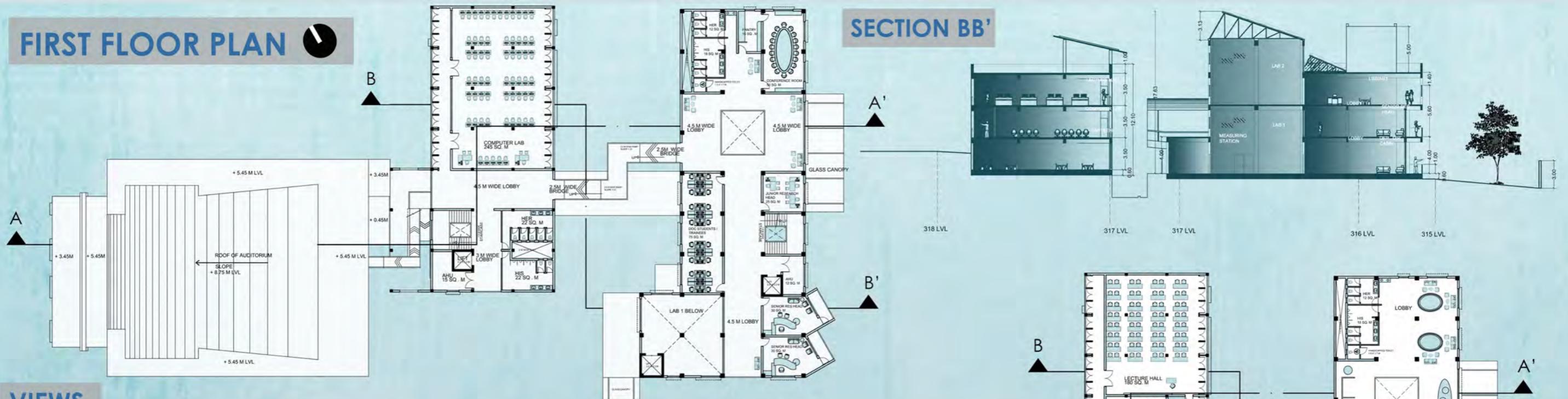
GROUND FLOOR PLAN



PUBLIC SPACE
SEMI PRIVATE
PRIVATE SPACE
MAIN ROAD NETWORK
INTERNAL ROADS



FIRST FLOOR PLAN



VIEWS

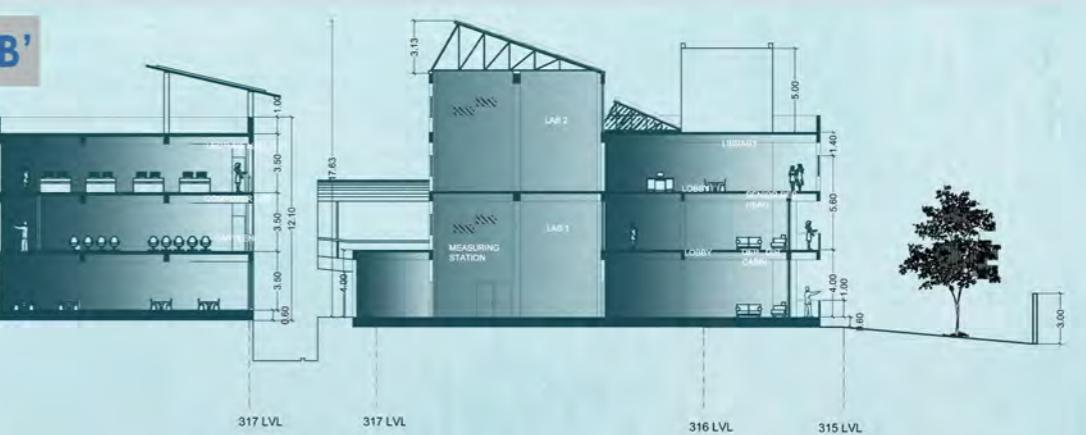


NORTHEAST ELEVATION

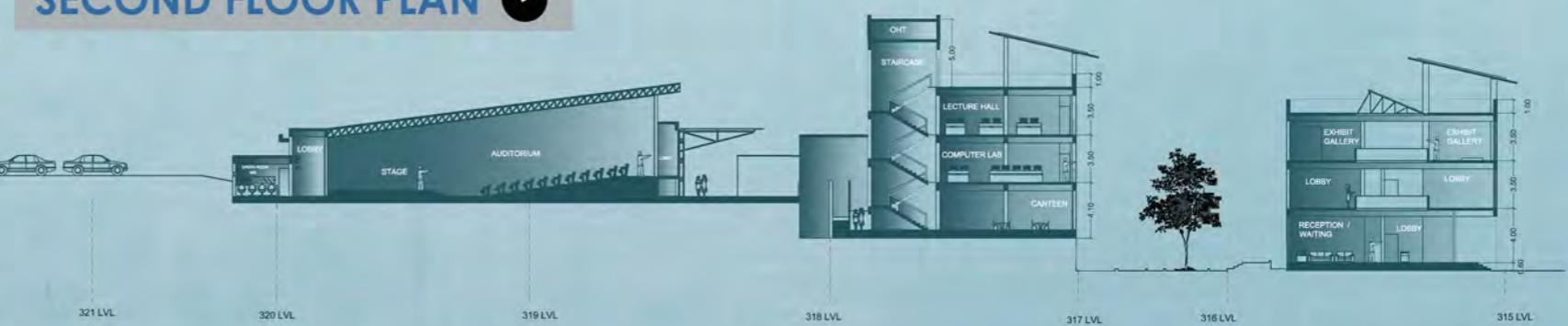


SOUTHWEST ELEVATION

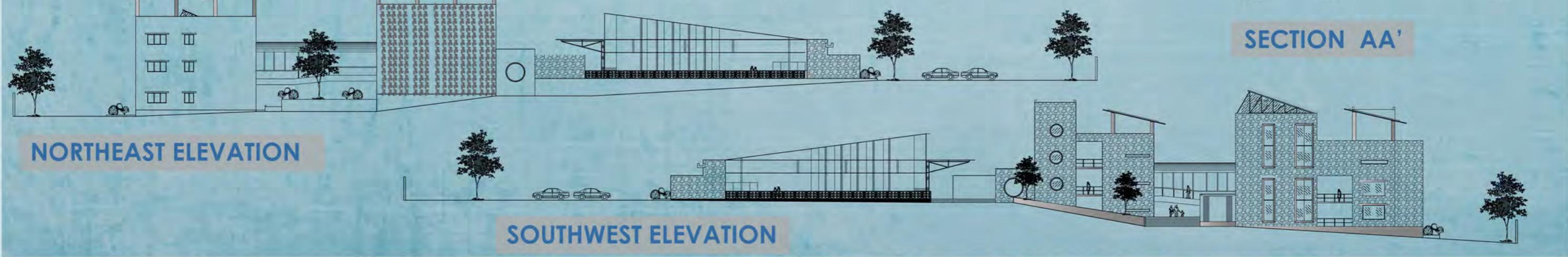
SECTION BB'



SECOND FLOOR PLAN

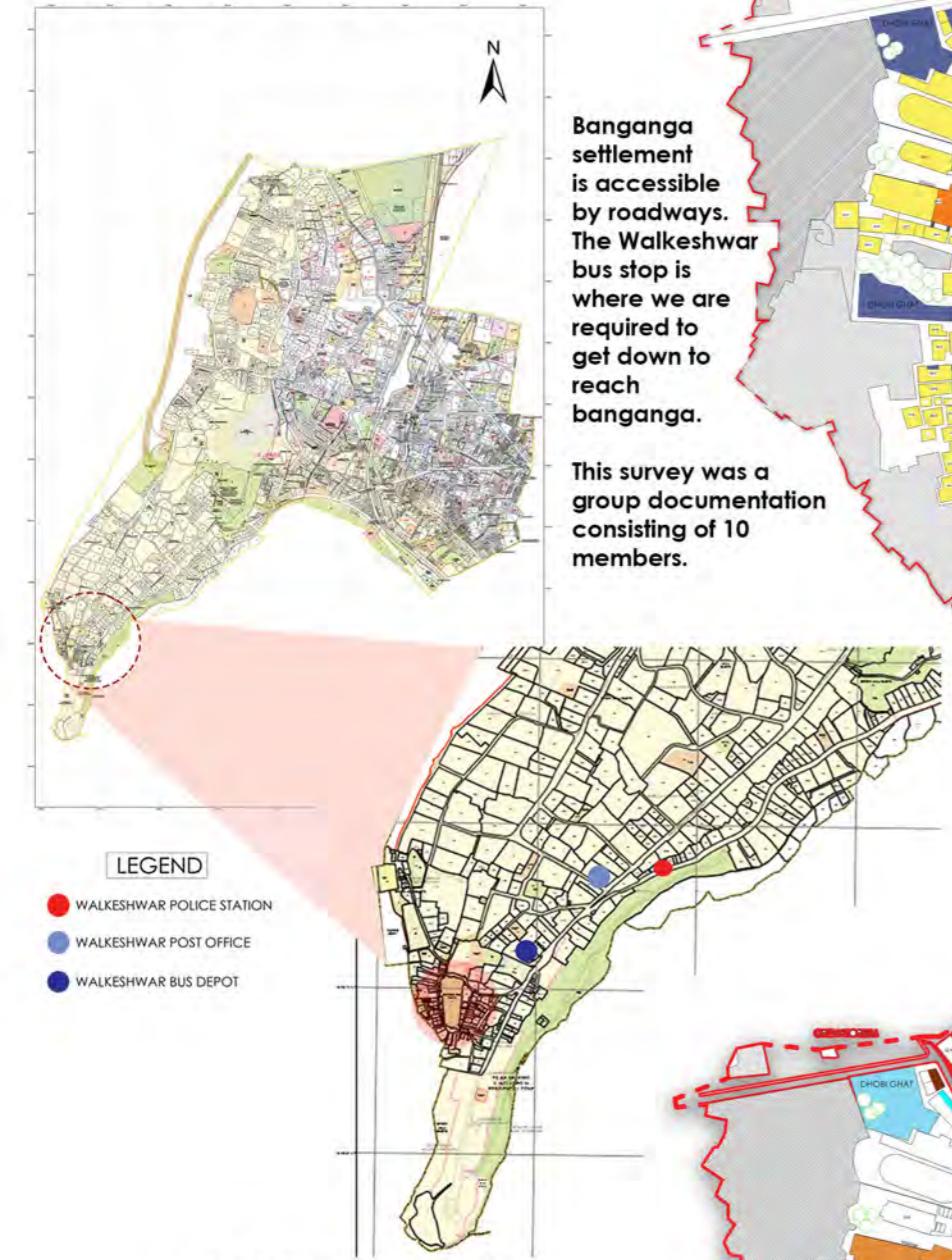


SECTION AA'



LOCATION PLAN

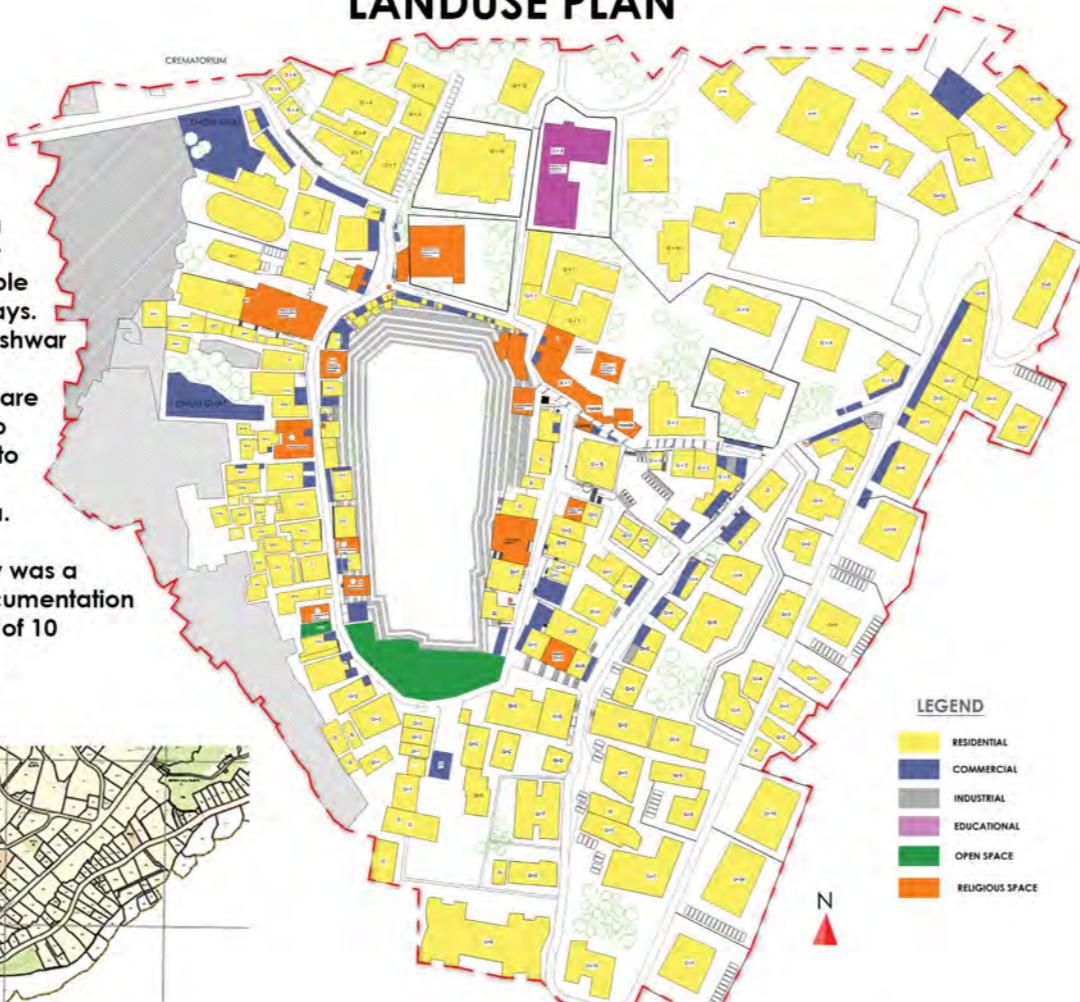
PLAN SHOWING 'D' WARD OF MUNICIPAL CORPORATION OF GREATER MUMBAI .



Banganga settlement is accessible by roadways. The Walkeshwar bus stop is where we are required to get down to reach banganga.

This survey was a group documentation consisting of 10 members.

LANDUSE PLAN



ROAD HIERARCHY

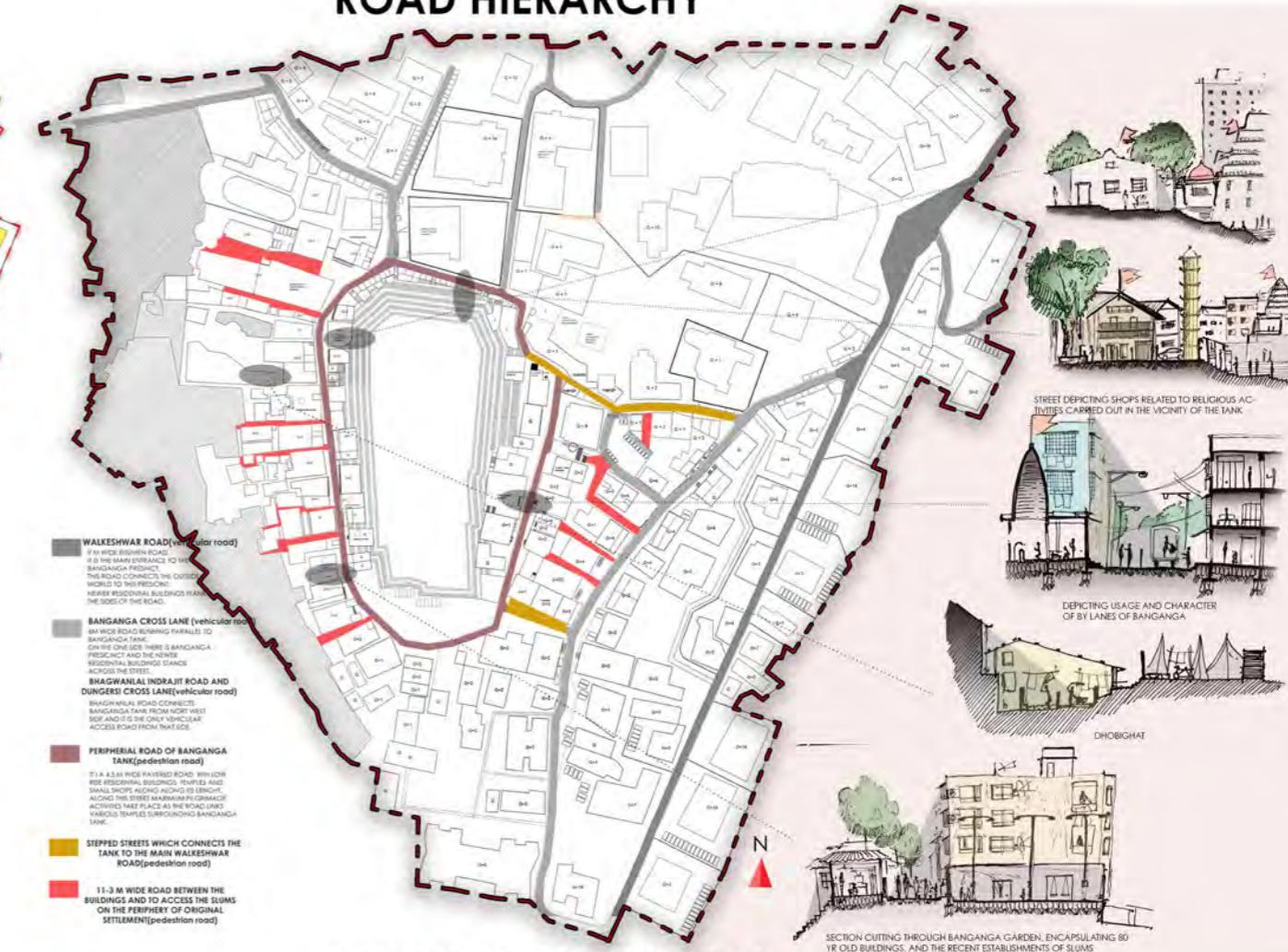
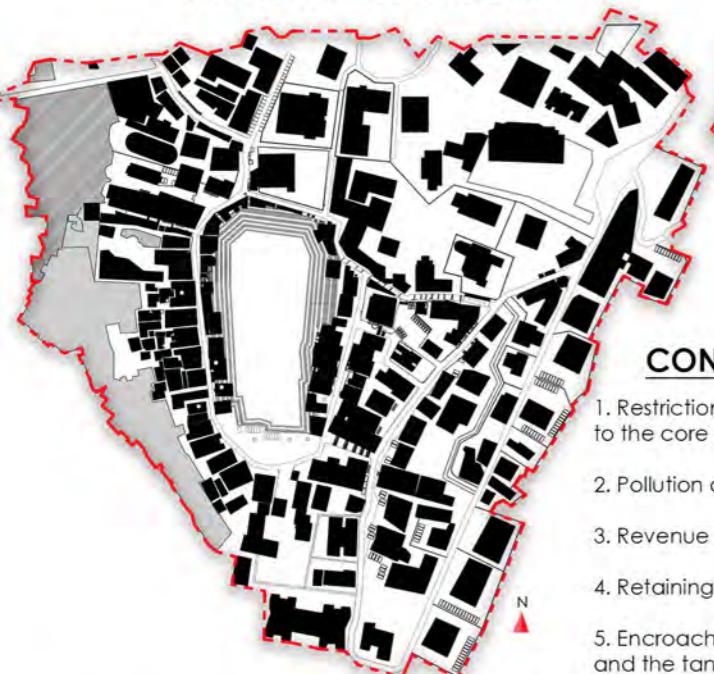


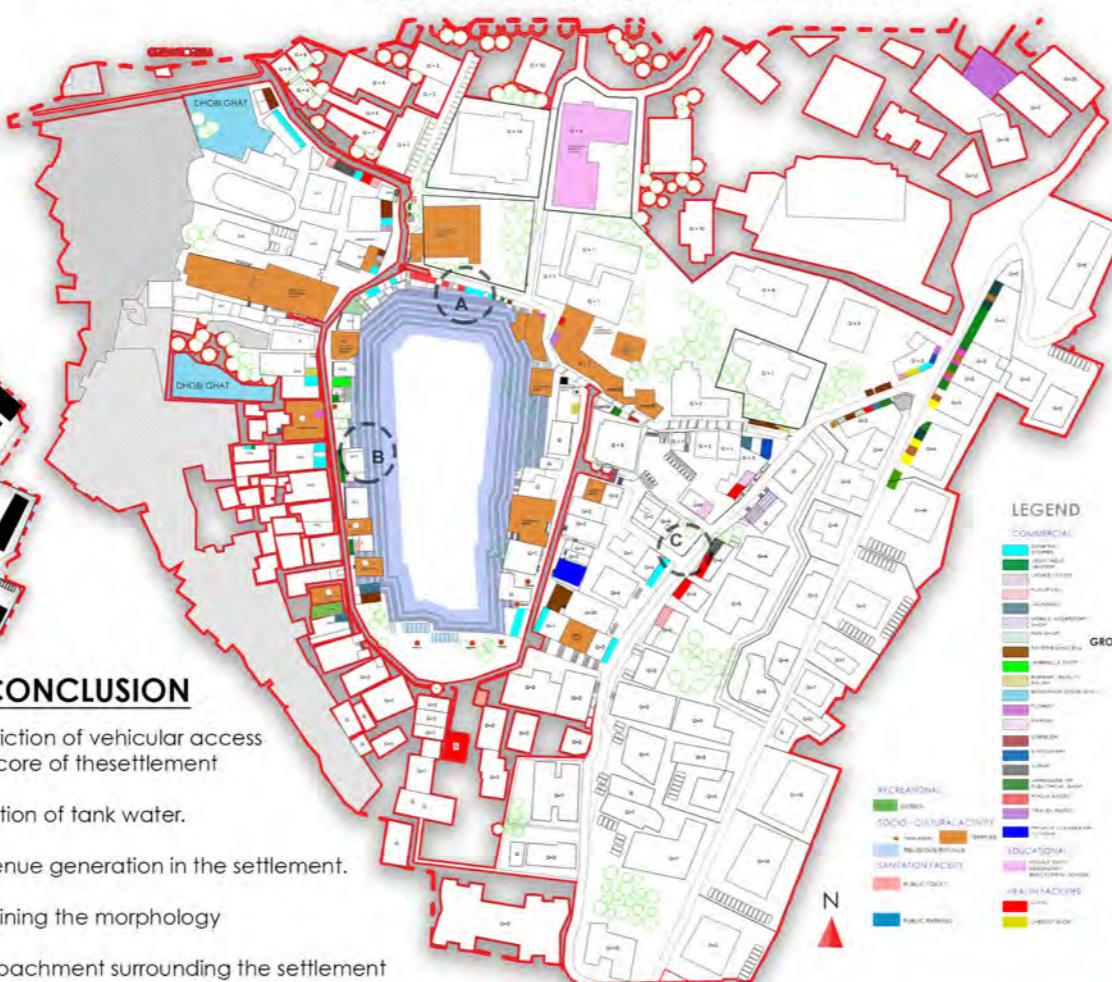
FIGURE GROUND



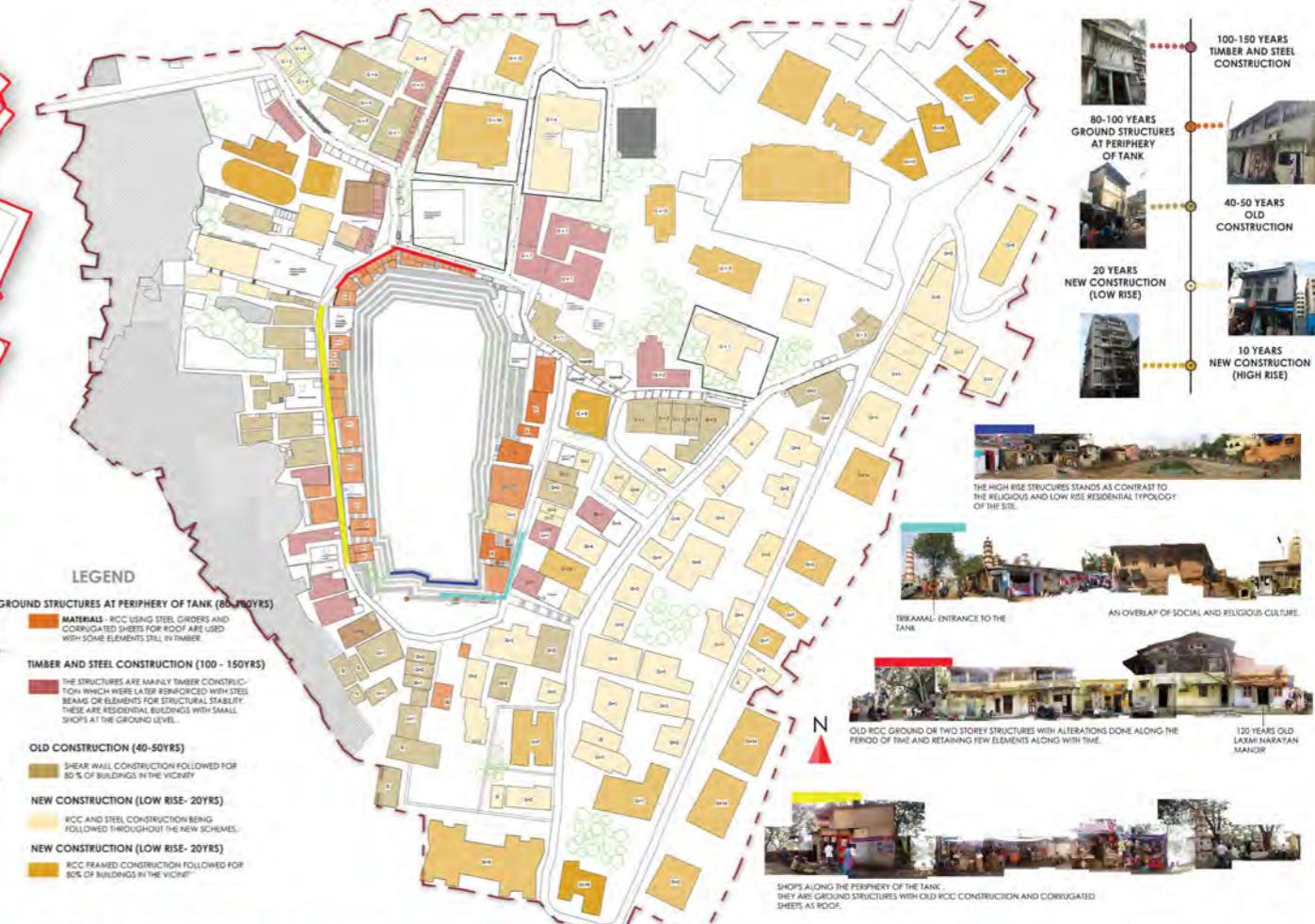
CONCLUSION

1. Restriction of vehicular access to the core of the settlement
2. Pollution of tank water.
3. Revenue generation in the settlement.
4. Retaining the morphology
5. Encroachment surrounding the settlement and the tank periphery

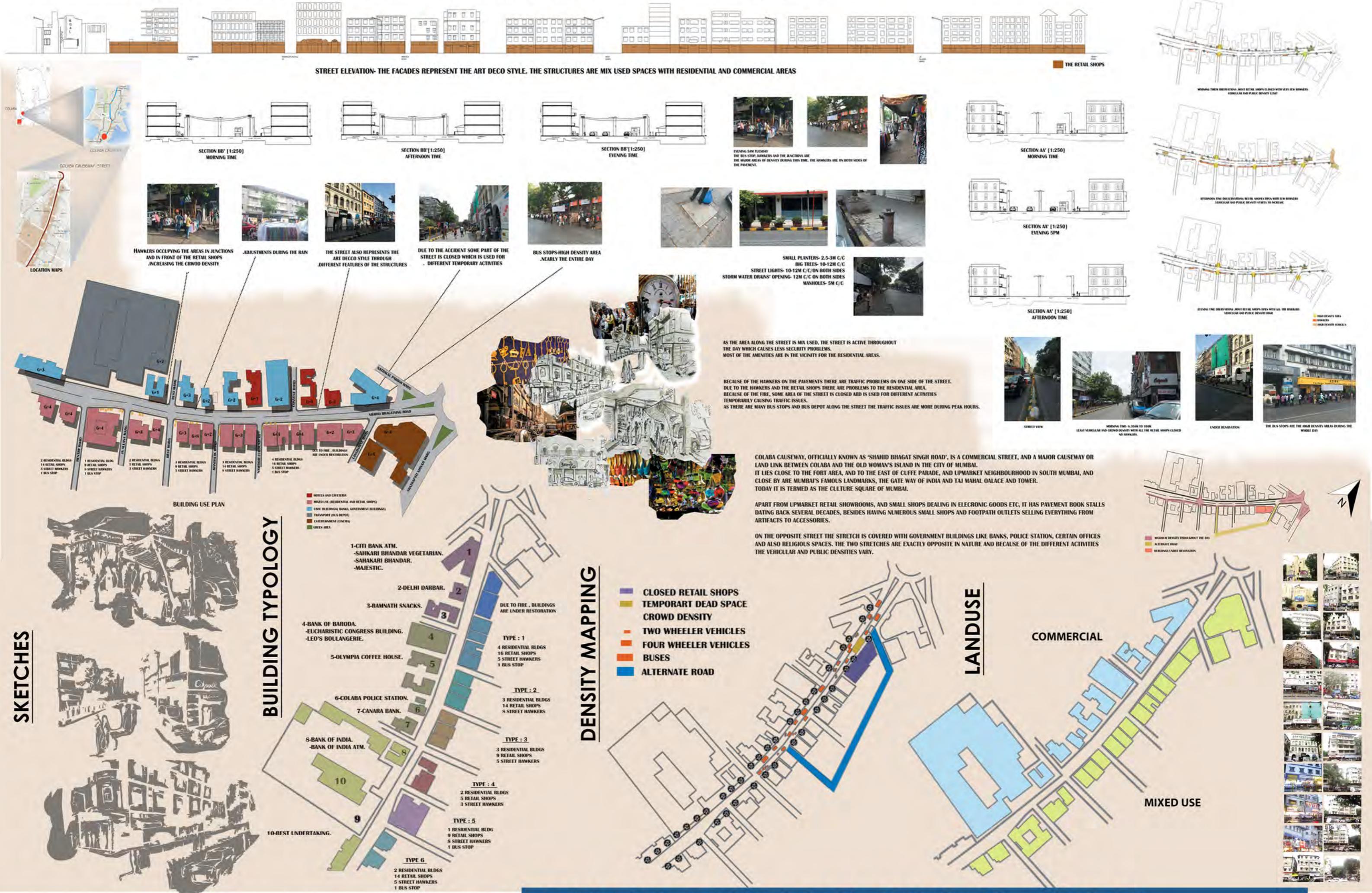
SOCIAL INFRASTRUCTURE



BUILDING TYPOLOGY



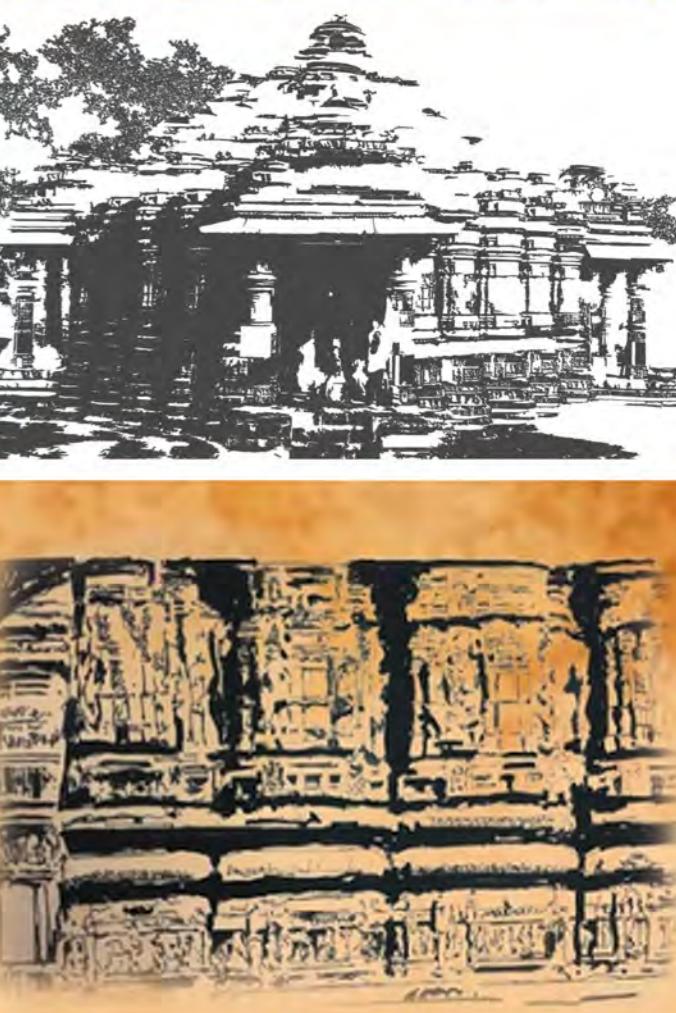
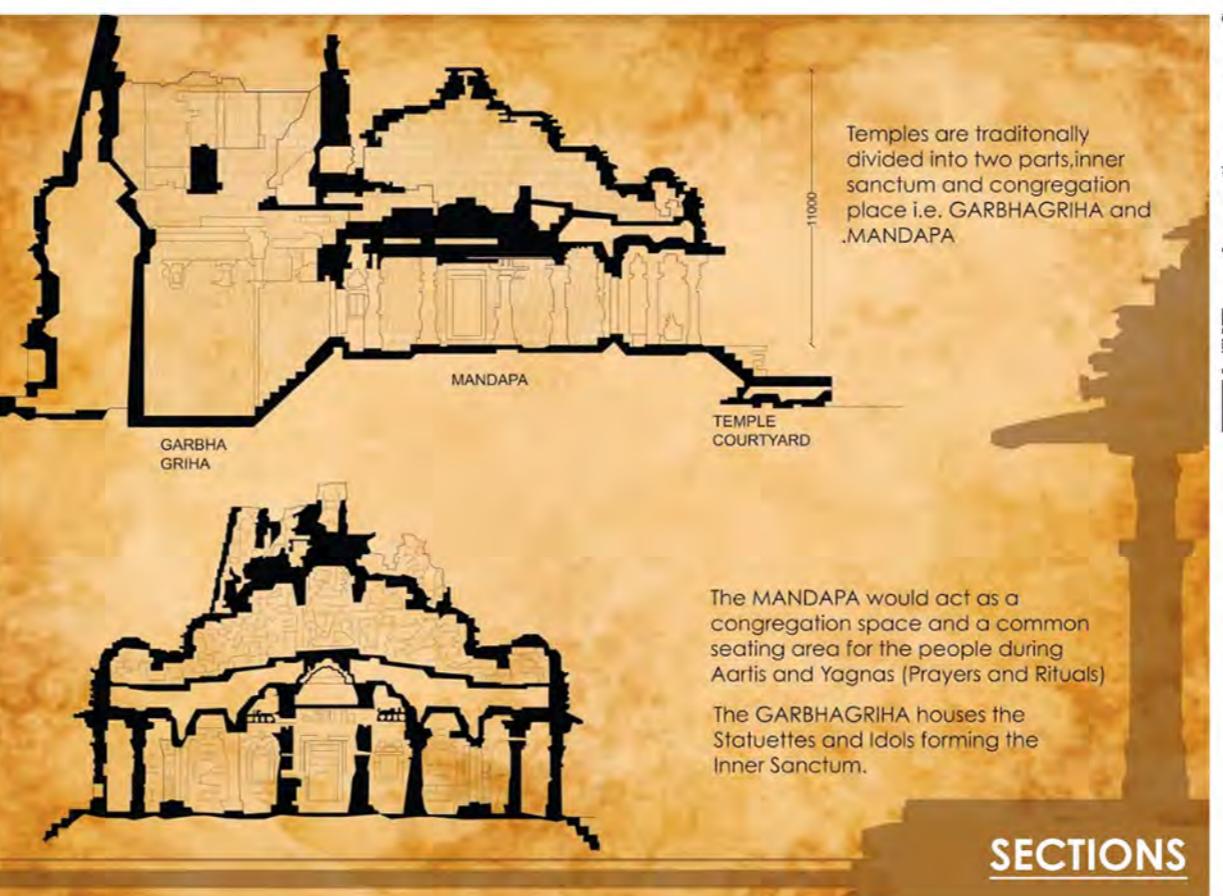
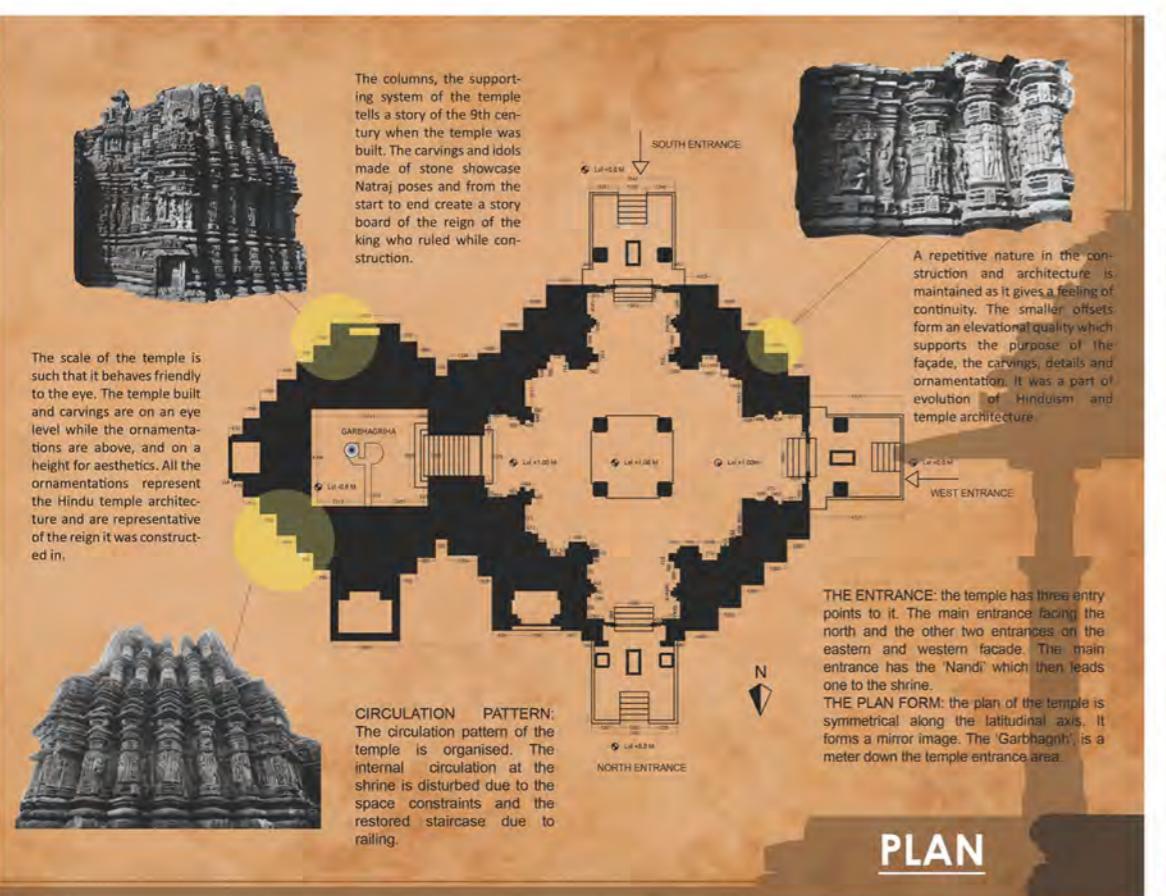
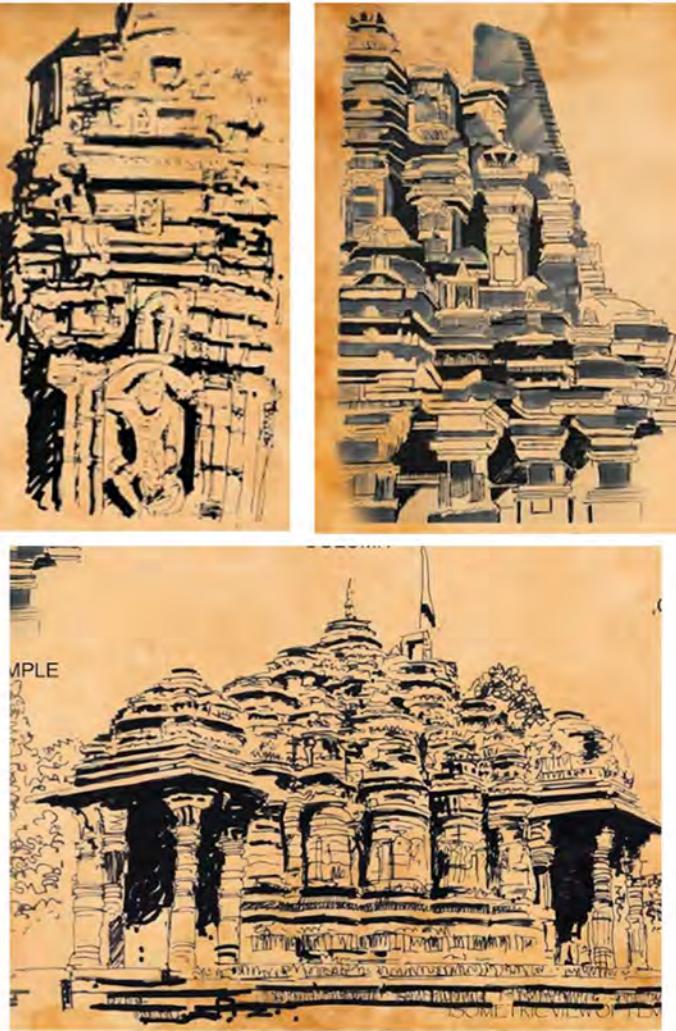
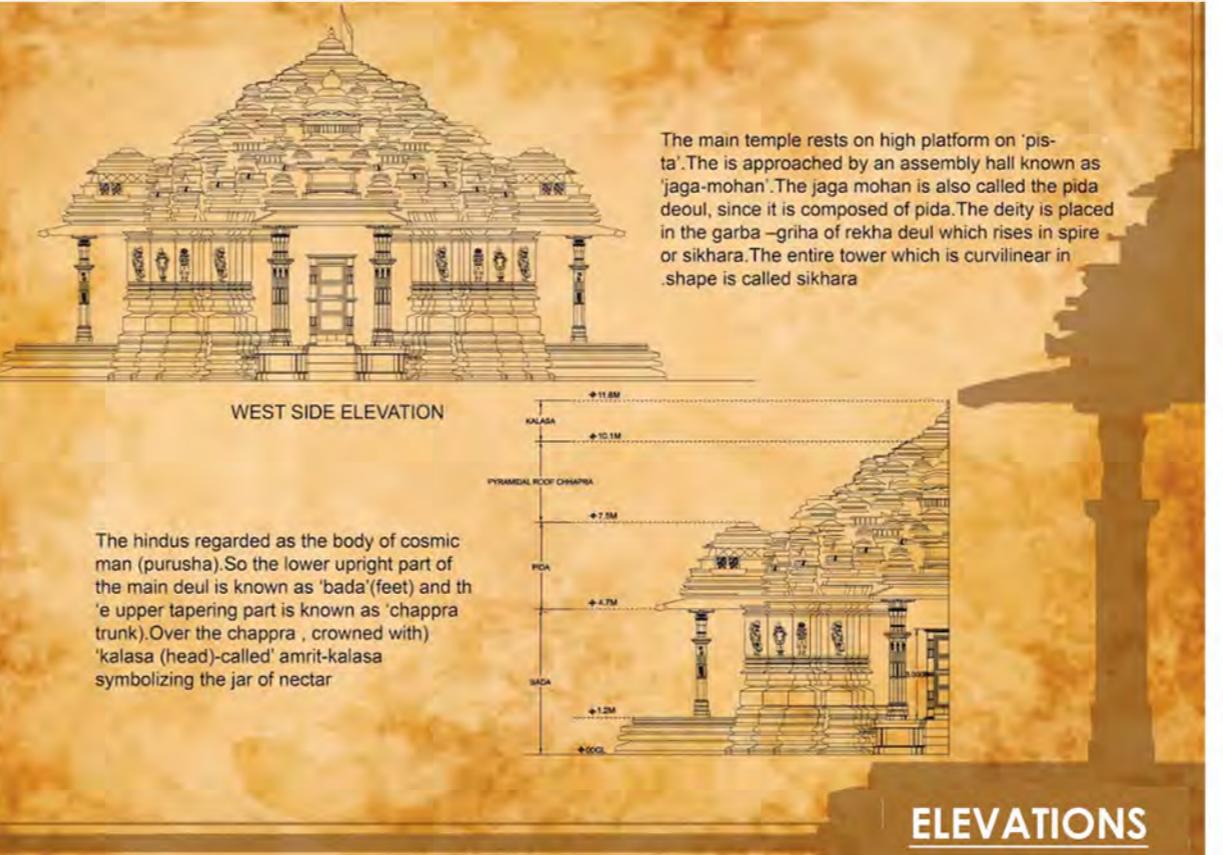
SKETCHES

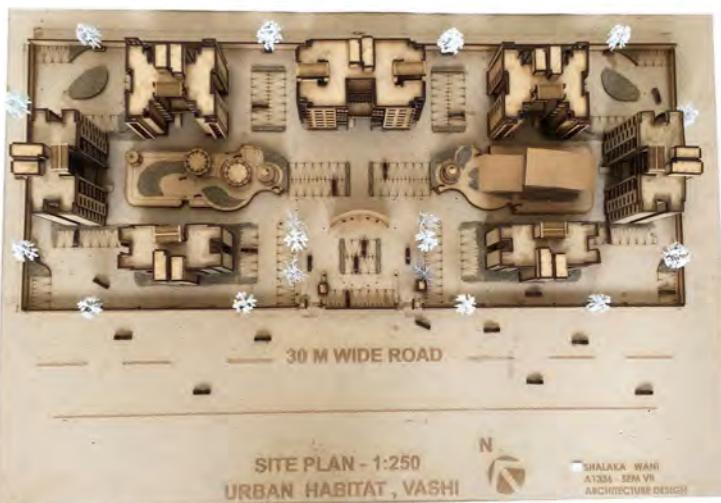


DOCUMENTATION : TOWN PLANNING

COLABA CAUSEWAY, MUMBAI - SEM 07

**THIS STUDY CONSISTED OF 10 MEMBERS THEREBY DOCUMENTING THE ANCIENT HERITAGE STRUCTURE :
SHIV MANDIR TEMPLE AT AMBERNATH, MUMBAI**



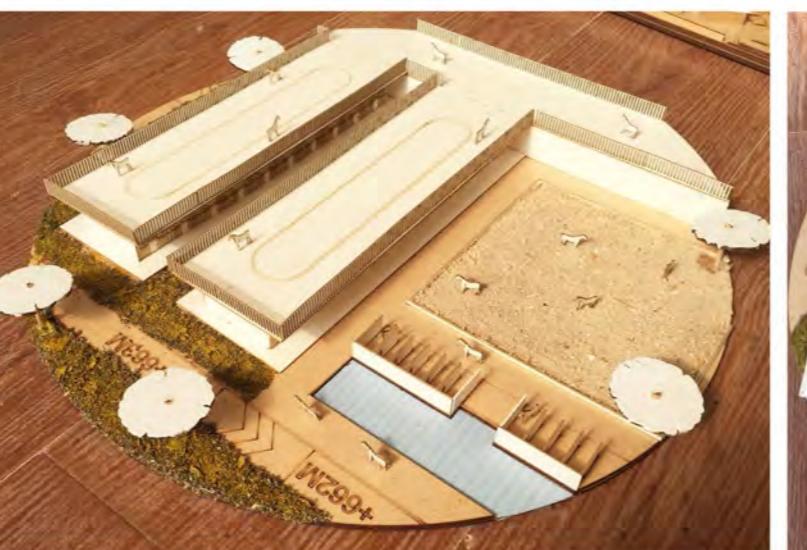


SEM 06 - RENEWABLE ENERGY RESEARCH INSTITUTE

SEM 07 - URBAN HABITAT, HOUSING AT VASHI



SEM 09 - BUS TERMINAL & COMMERCIAL COMPLEX, PIMPRI



SEM 10 : THESIS - RETHINKING EQUESTRIANISM AT LONAVALA

SEMESTERS : 06 - 10

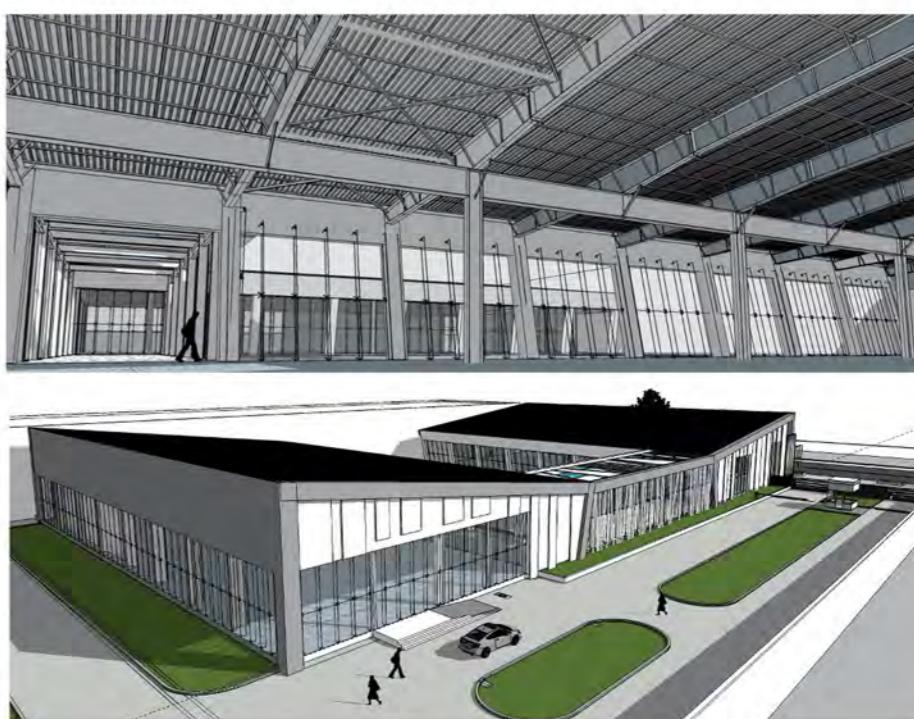
Internship work displaying few projects i worked for.



MASTERPLAN - KAKKAD ESTATE, GHATKOPAR



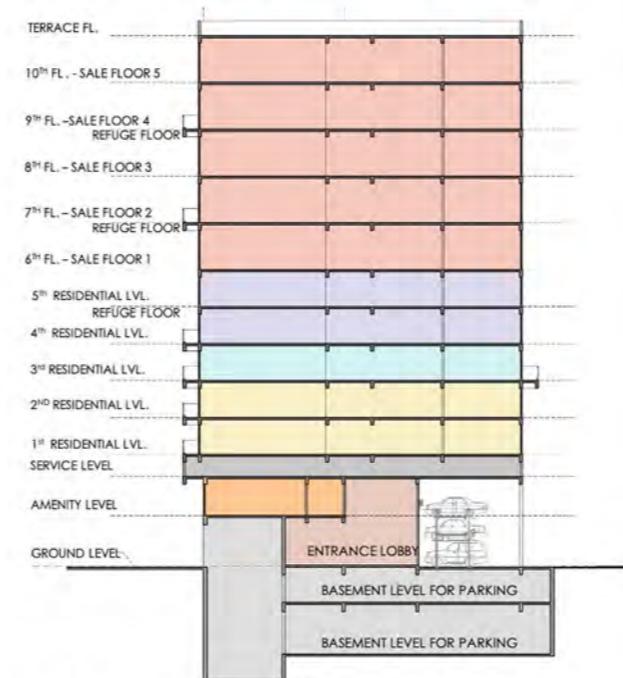
MASTERPLAN - LUXURY RESIDENCY, JUHU



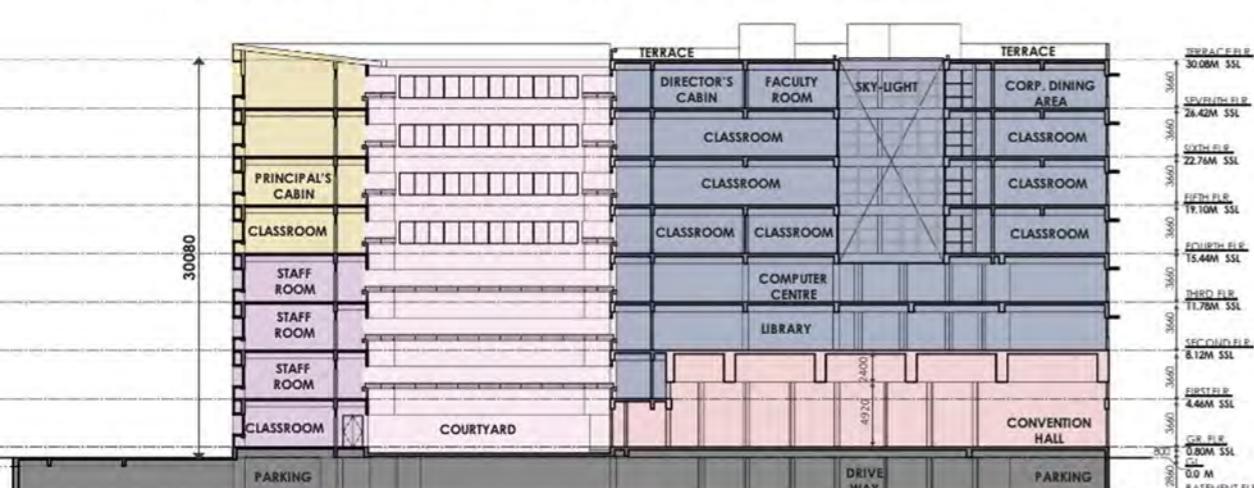
MASTERPLAN - IES VMDL CAMPUS, BANDRA



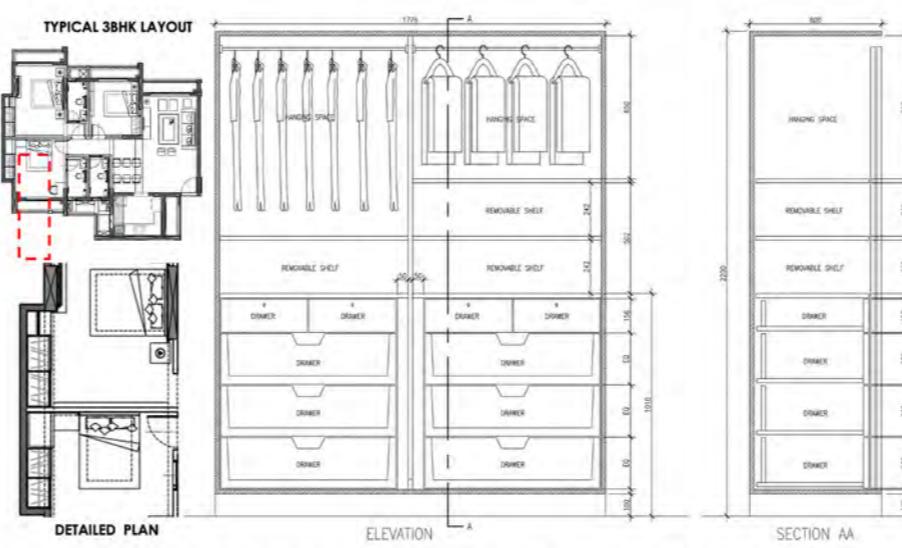
SITE VISITS - CRESCENT BAY,
LOWER PAREL



SECTION - LUXURY RESIDENCY, JUHU



SECTION - IES VMDL CAMPUS, BANDRA



WARDROBE DETAIL - ASHAR SAPPHIRE



SKETCHUP - HIGH RISE, UPPER WORLI

OSLO, NORWAY



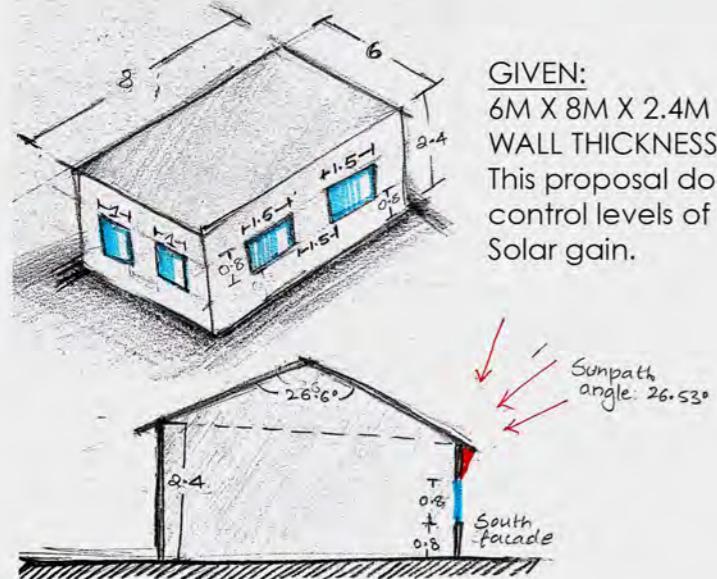
ABOUT

SIMULATION WAS CARRIED OUT WITH LIVE MODEL TESTING IN A HELIODON & A 3D MODEL OF PROPOSED DESIGN WAS SIMULATED IN DESIGN BUILDER FOR DAYLIGHTING ANALYSIS WITH RESPECT TO SHADING.

SITE PROPERTIES: SITE IS SURROUNDED BY COMMERCIAL BUILDINGS WITH HEIGHT OF ABOUT 20-30M ON NORTH & SEAFRONT ON SOUTH. WIND IS PREDOMINANTLY FROM SOUTH TO NORTH DIRECTION. IN ADDITION, OSLO FACES HIGHER TEMPERATURES FROM JUNE TO AUGUST (MORE THAN 20C IN SUMMER). HENCE FOR SHADING ANALYSIS, DESIGN IS TESTED FOR SIMULATED ENVIRONMENTS DURING THE MONTH OF MARCH, JULY AND NOVEMBER.

DESIGN PROCESS

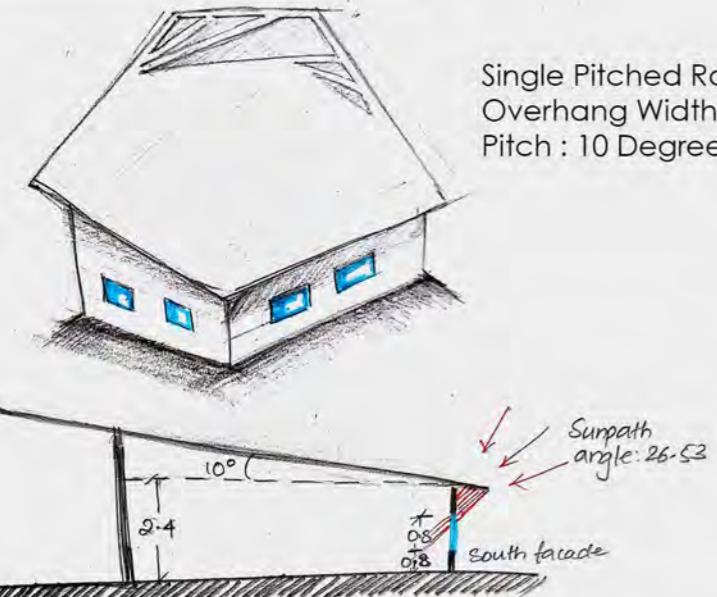
STEP 01



STEP 02

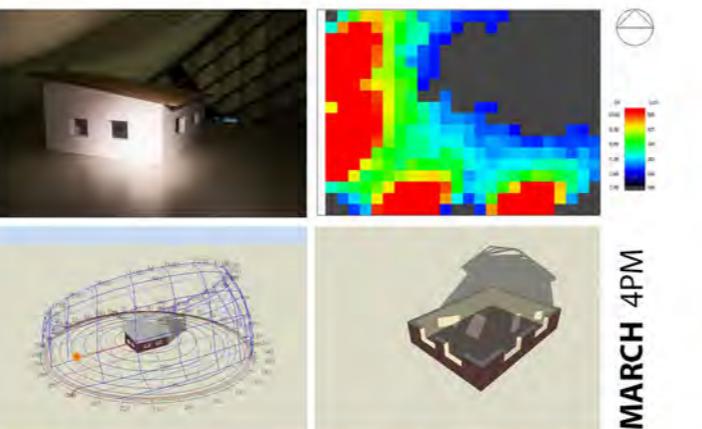
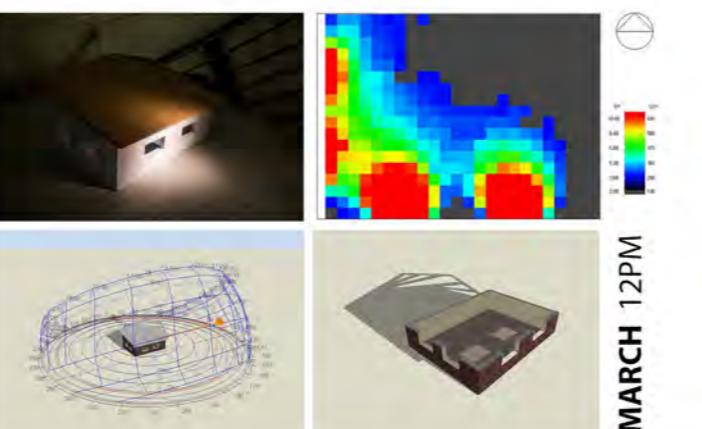
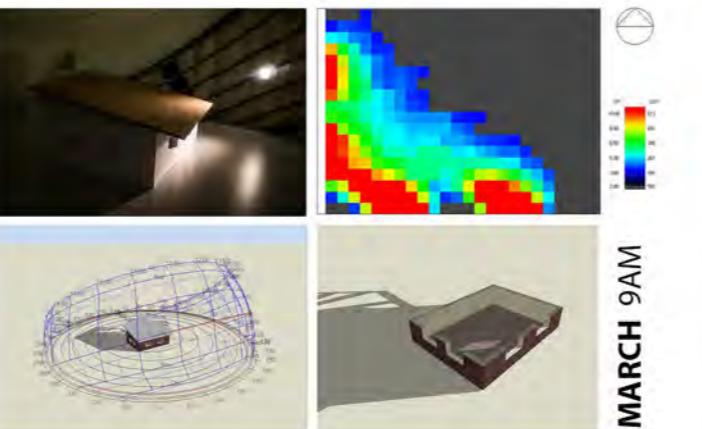


STEP 03



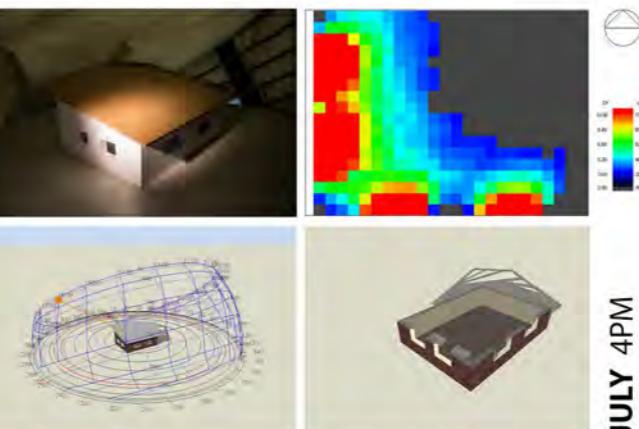
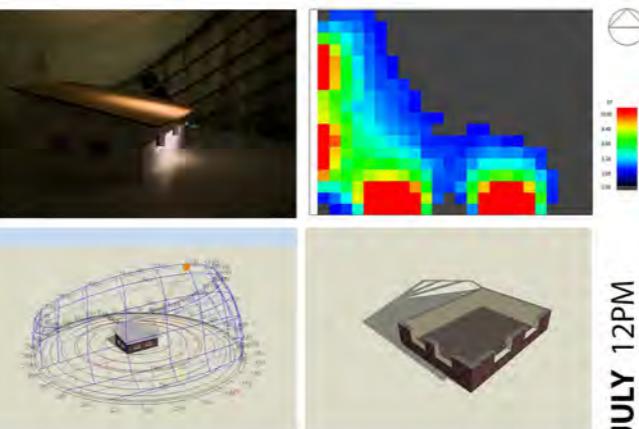
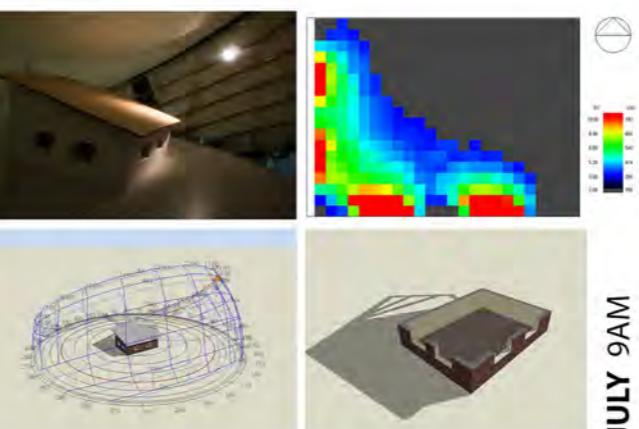
MARCH

- THE OVERHANG DOES NOT OBSTRUCT THE SOLAR GAIN DURING THE ONSET OF SPRING. WE OBSERVE MAXIMUM SOLAR GAIN DURING AFTERNOON ON WEST & SOUTH FACADES WHICH HELPS IN KEEPING THE INTERIORS WARM.
- LESS GLAZING IS OBSERVED IN THE MORNING & IT DOESN'T WORK 100% EFFICIENTLY GRADUALLY DURING THE DAY.
- DAYLIGHT IS MAXIMUM IN THE LATE AFTERNOON.



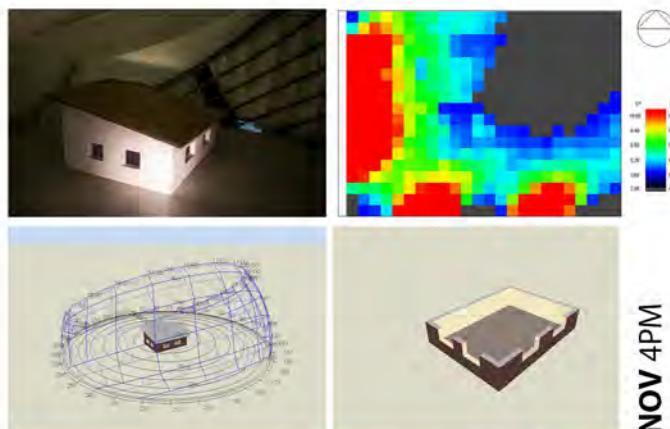
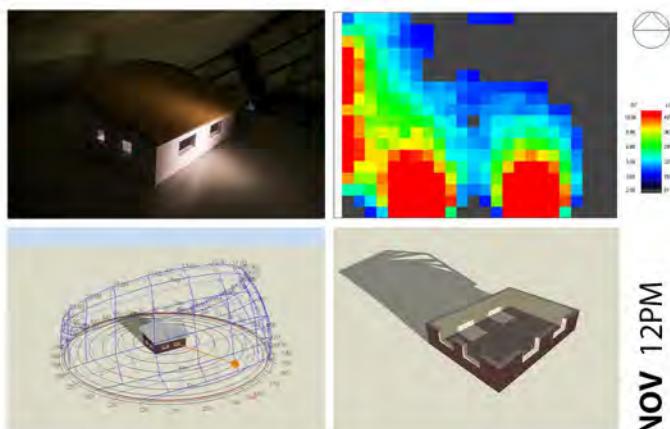
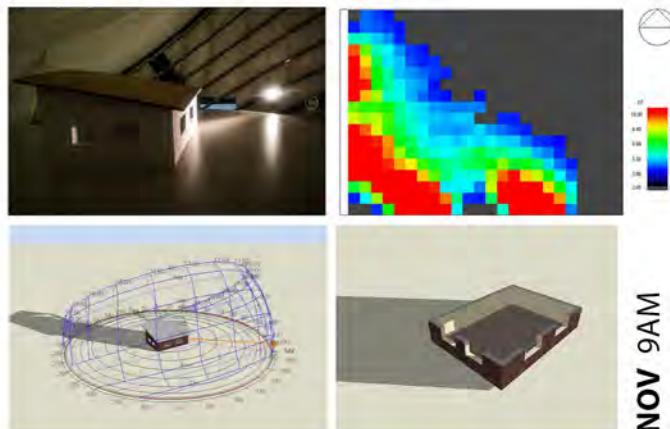
JULY

- BLOCK EFFECTIVELY TAKES LIGHT IN MORNING & WINDOWS ARE THUS WELL SHADED IN THE AFTERNOON. OVERHANGS SHADE THE WEST FAÇADE FROM THE HEAT DURING THE LATER AFTERNOON & TAKES IN LIGHT FROM THE SOUTH EFFECTIVELY REDUCING THE HEAT GAIN DURING SUMMERS.
- OVERHANG WIDTH CUTS OFF THE GLAZING INSIDE THE BLOCK.



NOVEMBER

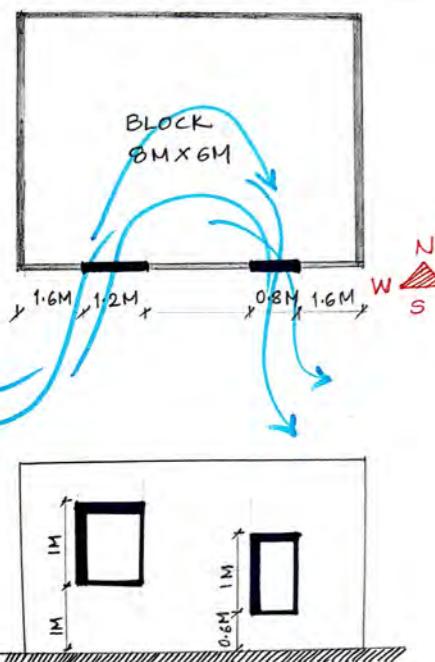
- EFFICIENT SOLAR GAIN DURING WINTERS, WE OBSERVE MAXIMUM SOLAR GAIN TAKING PLACE DURING LATE AFTERNOONS.
- GLAZING IS REDUCED BY THE OVERHANGS BUT IT COULD BE DEALT WITH MORE EFFICIENTLY.
- DAYLIGHTING IS EXCELLENT IN NOVEMBER THEREBY EFFICIENTLY LIGHTING UP THE BLOCK.



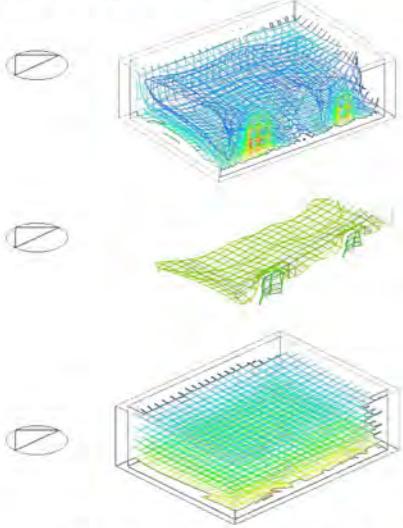
SHADING WORKSHOP

Team: Shalaka, Sonika, Shriya, Ana, Hannah

PLAN



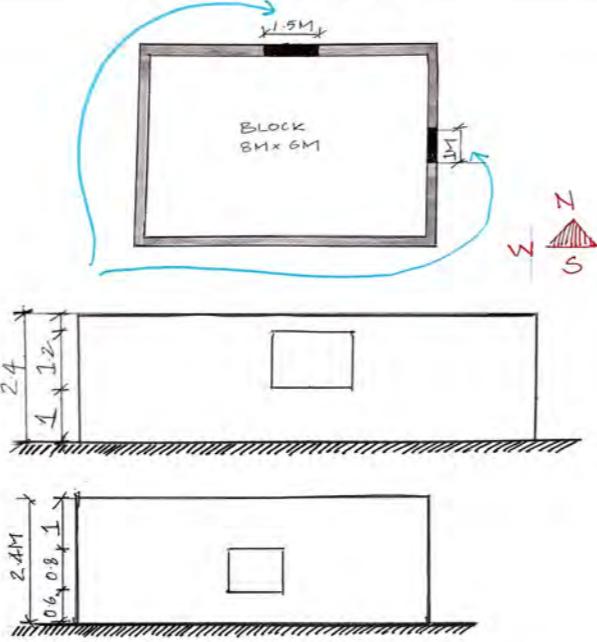
TOTAL TEST TIME: 1'8"



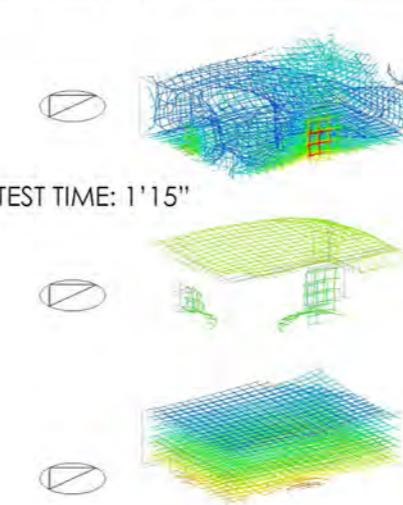
THE VENTILATION STRATEGY WASN'T AS EFFICIENT AS EXPECTED, RESULTING IN OPPOSITE SIDE OF THE ROOM TO BE LESS VENTILATED AS THE SMOKE WAS NOT GOING OUT ENTIRELY.

SIMULATION EFFECTS:
VELOCITY | 0.01->0.99 |
TEMPERATURE | 18.72->20.72 |
PRESSURE | 0.01->0.19 |

OPTION 02



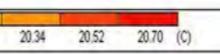
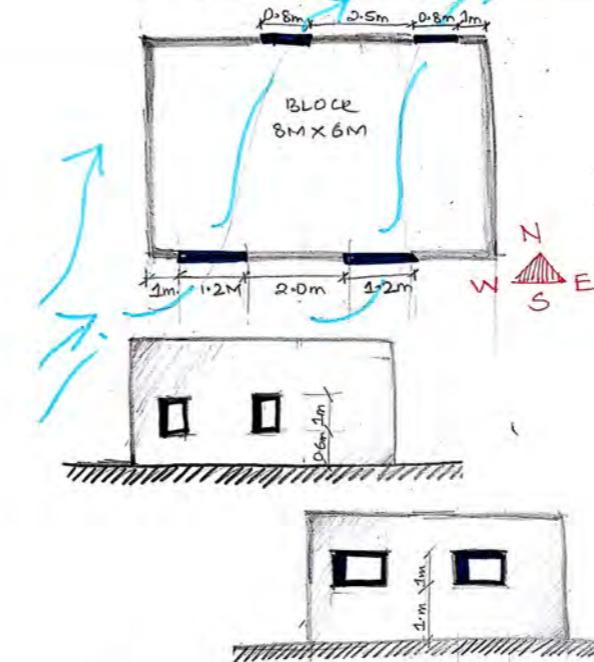
TOTAL TEST TIME: 1'15"



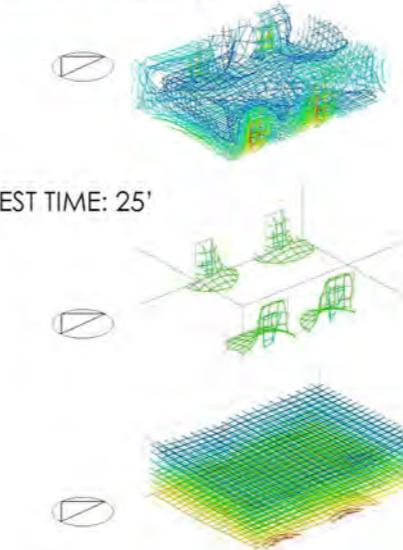
HAVING WINDOWS OPPOSITE TO WIND DIRECTION WAS SURPRISINGLY WORKING AS THE CURRENTS WOULD GO AROUND THE BUILDING AND STILL FORCE THE AIRFLOW TO GET THE SMOKE OUT. ALTHOUGH THIS WAS THE MOST INEFFICIENT VENTILATION STRATEGY.

SIMULATION EFFECTS:
VELOCITY | 0->0.11 |
TEMPERATURE | 18.72->20.72 |
PRESSURE | 0.01->0.03 |

OPTION 03



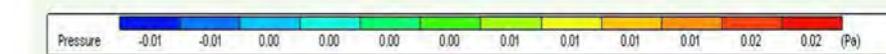
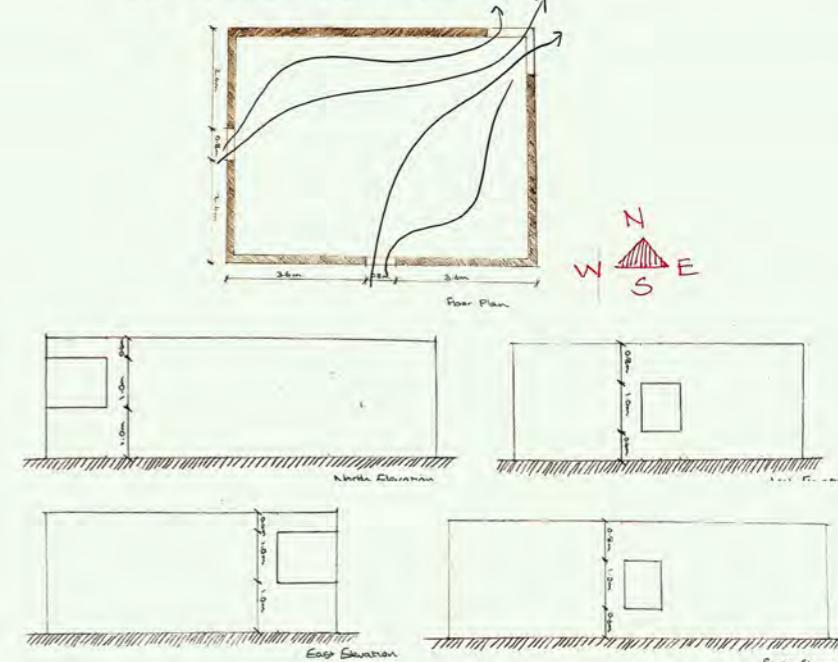
TOTAL TEST TIME: 25'



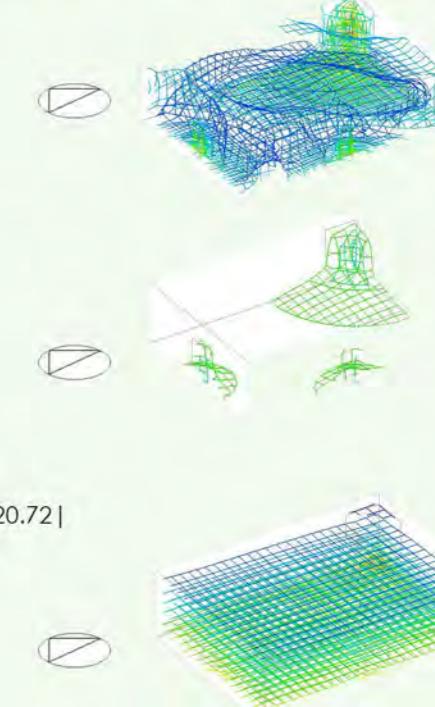
SECOND MOST EFFECTIVE OPTION DUE TO THE POSITIONING OF THE OPENINGS THAT FORCE CROSS-VENTILATION TO HAPPEN FROM ONE CORNER TO THE OTHER OF THE BUILDING

SIMULATION EFFECTS:
VELOCITY | 0->0.11 |
TEMPERATURE | 18.72->20.72 |
PRESSURE | 0.01->0.03 |

OPTION 04

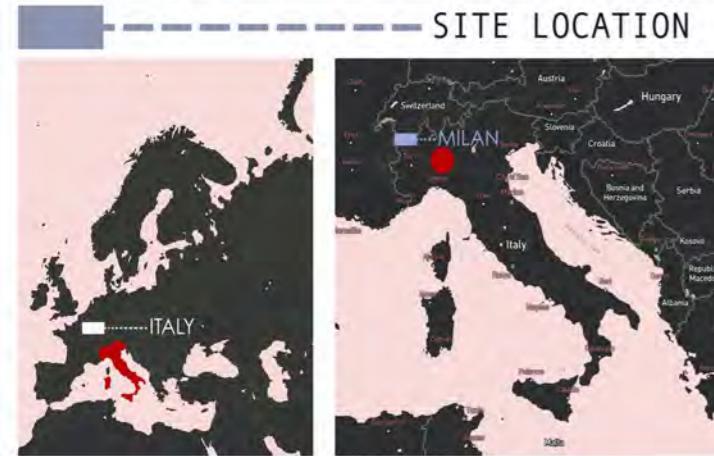


TOTAL TEST TIME: 18'



SIMULATION EFFECTS:
VELOCITY | 0->0.11 |
TEMPERATURE | 18.72->20.72 |
PRESSURE | 0.01->0.03 |

MARKED IN GREEN, THIS IS THE MOST EFFICIENT OPTION THAT WAS TESTED. THE BIGGER CORNERS OPENING FORCES THE AIRFLOW TO CIRCULATE FASTER THROUGH THE BUILDING.



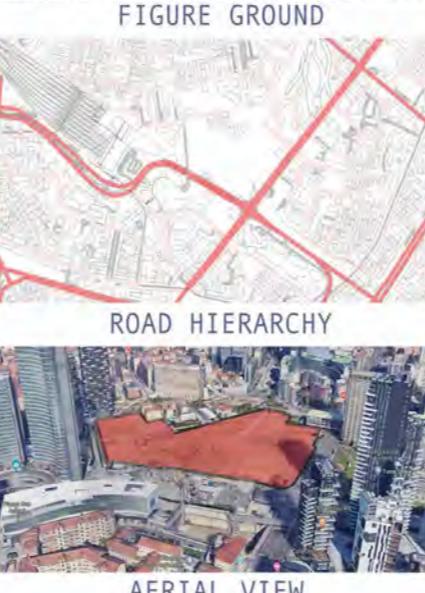
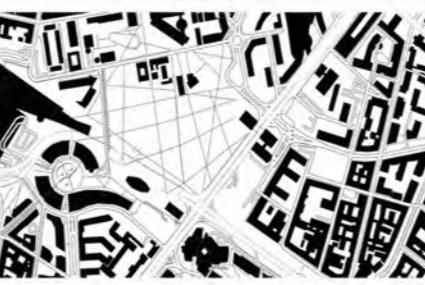
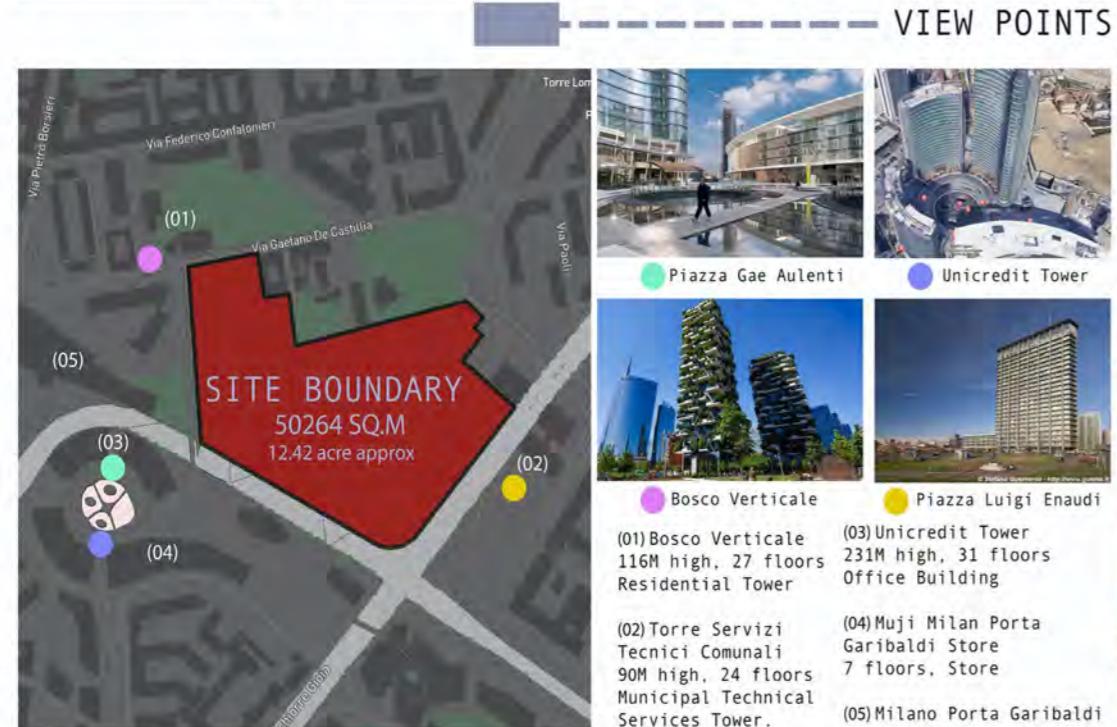
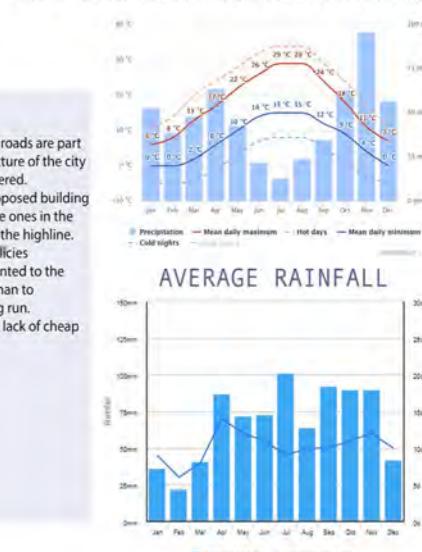
The centre is an Independent global hub for debate on sustainable urban living & its development. It is designed to improve research facilities & provide sufficient space to bring together various related scientific specialism. It aims to encourage growth of sustainable cities through partnership, research & expert collaboration. As building occupies prominent location, it has been designed as a "Pavilion in a Park".

LEGEND

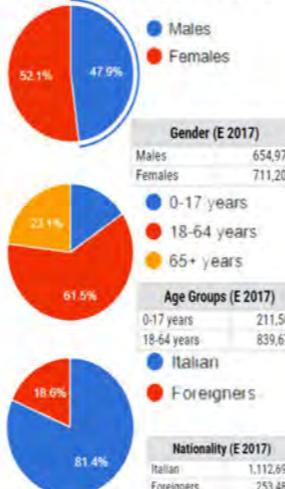
- Under ground line
- Traffic Direction
- Under Ground Station
- Bus and Coach Station
- Commercial Spaces
- Residential Spaces
- Temporary Accommodation
- Under Construction Site
- Community Centre
- Railway Station
- Green Spaces



Avg Temperature/Precipitation



DEMOGRAPHIC STUDY

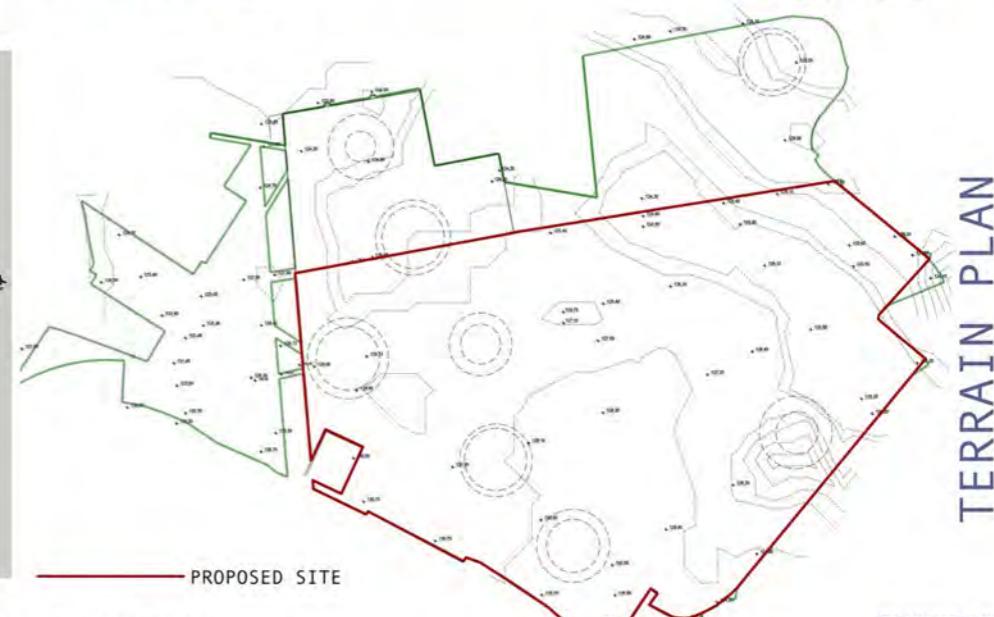
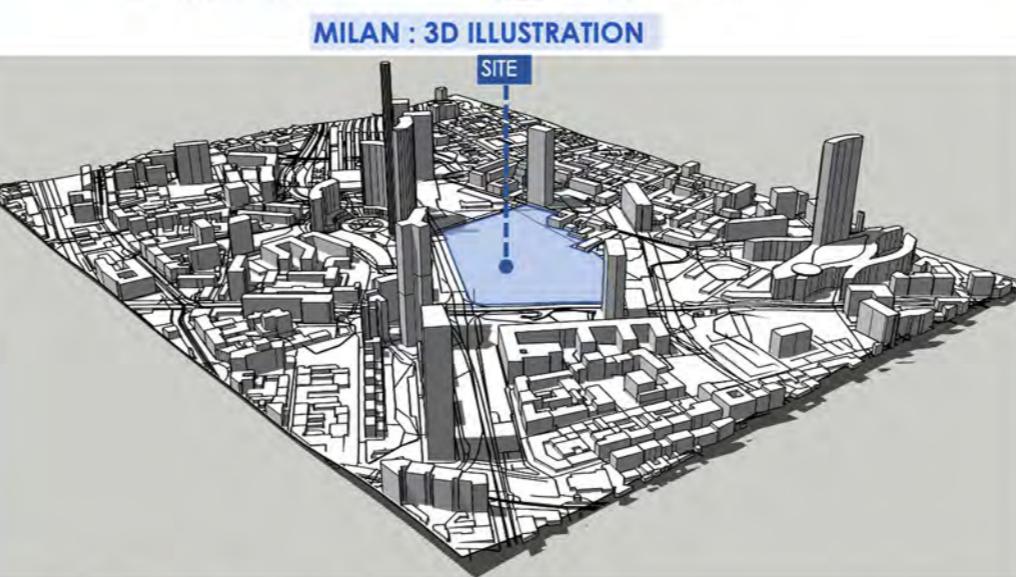


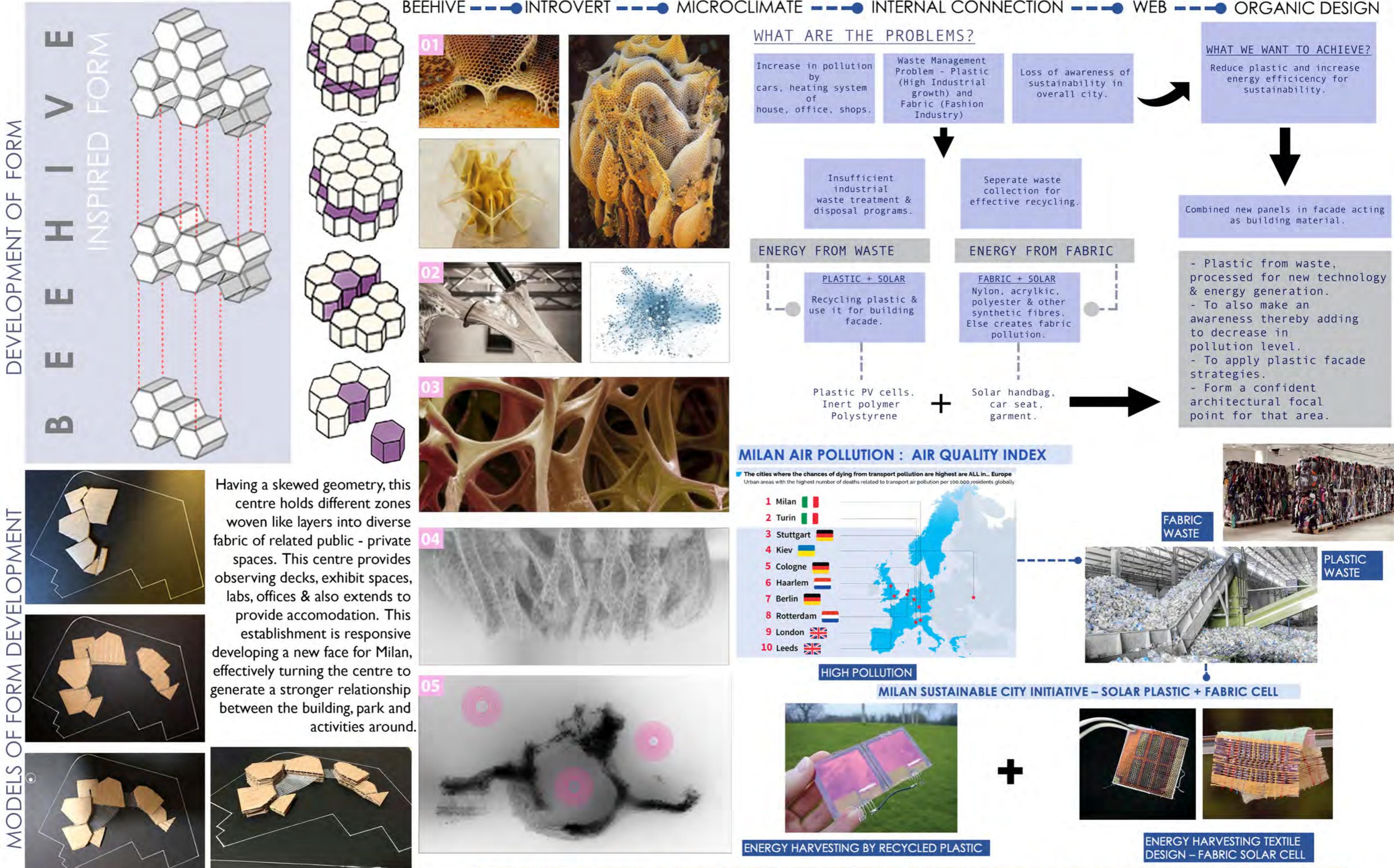
- (01) Close to several transportation links
- (02) Concrete actions to make eco-sustainable the city (Ecopass, Bike sharing, sub-way).
- (03) Site requires vigilance as there are more tourists around which means more danger.
- (04) Neighbourhood consists of residential, commercial & hospitality spaces.
- (05) High residential density in the neighbourhood.
- (06) The residential buildings need not be affected by the noise of construction & future use of the building.
- (07) Vast expanse of land with good plants.
- (08) Minimal level difference on site.

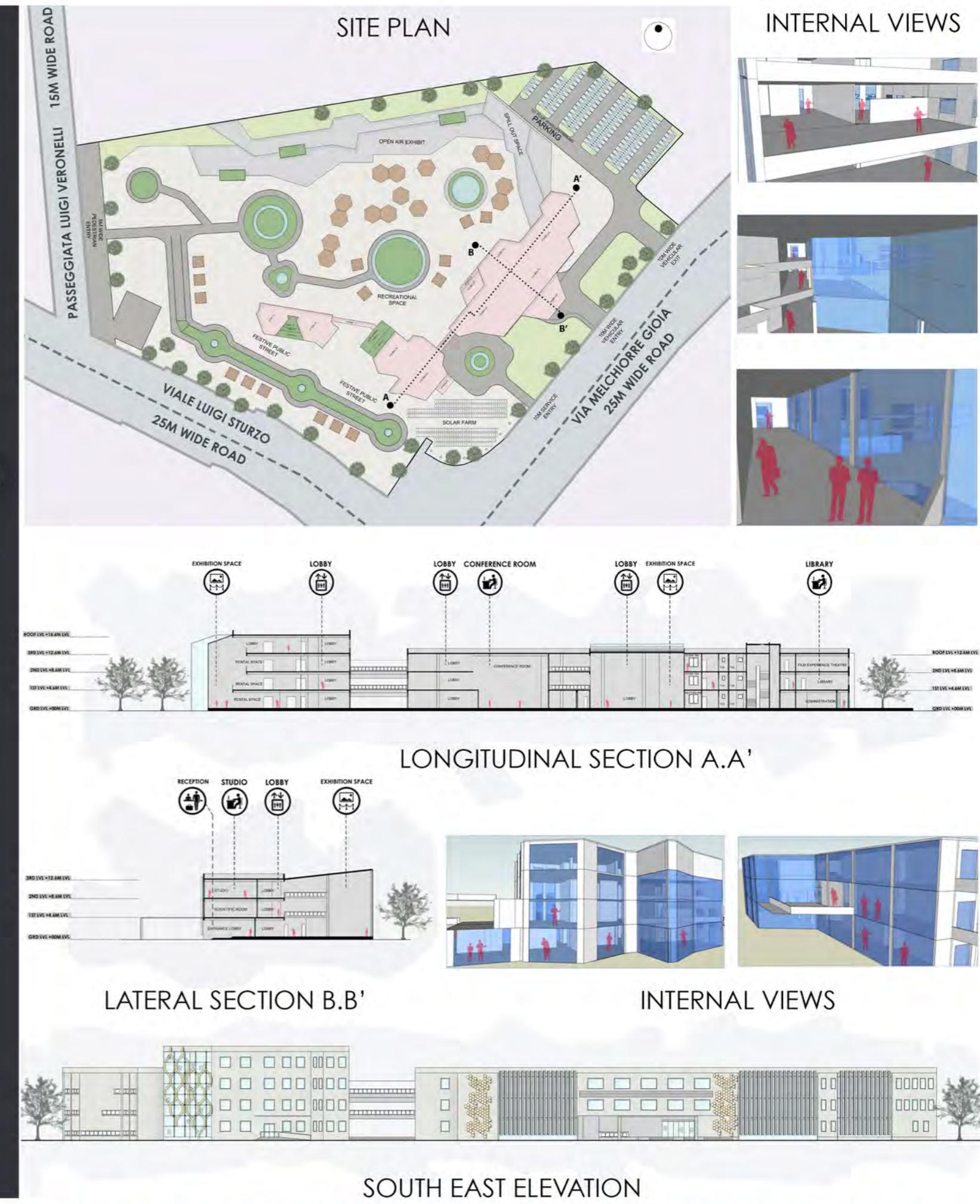
- (01) The site is in an expanding area under high development.
- (02) Sustainable concepts have been introduced in other surrounding buildings.
- (03) It is close to main station of Milan - thereby attracting more tourists from outside the city.
- (04) Development of planned environmental policies (Green rays, Extended Ecopass).
- (05) Development of alternative energy systems exploiting natural resources, mainly sun and geothermal energy.

- (01) The surrounding roads are part of the main infrastructure of the city so they cannot be altered.
- (02) Height of the proposed building should not exceed the ones in the area not to alter with the skyline.
- (03) Infrastructure policies sometimes more oriented to the immediate consent than to a planning in the long run.
- (04) Excessive costs & lack of cheap housing.

SWOT ANALYSIS





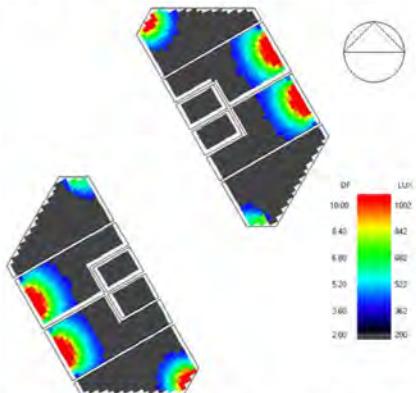


MILAN, ITALY - DESIGN BUILDER ANALYSIS

The design was simulated in Design Builder software to see how effective it is & thus the results were studied to improve the design further.

DAYLIGHTING & ILLUMINANCE

(01) BASE CASE : OLD CASE - CURRENT CLIMATE



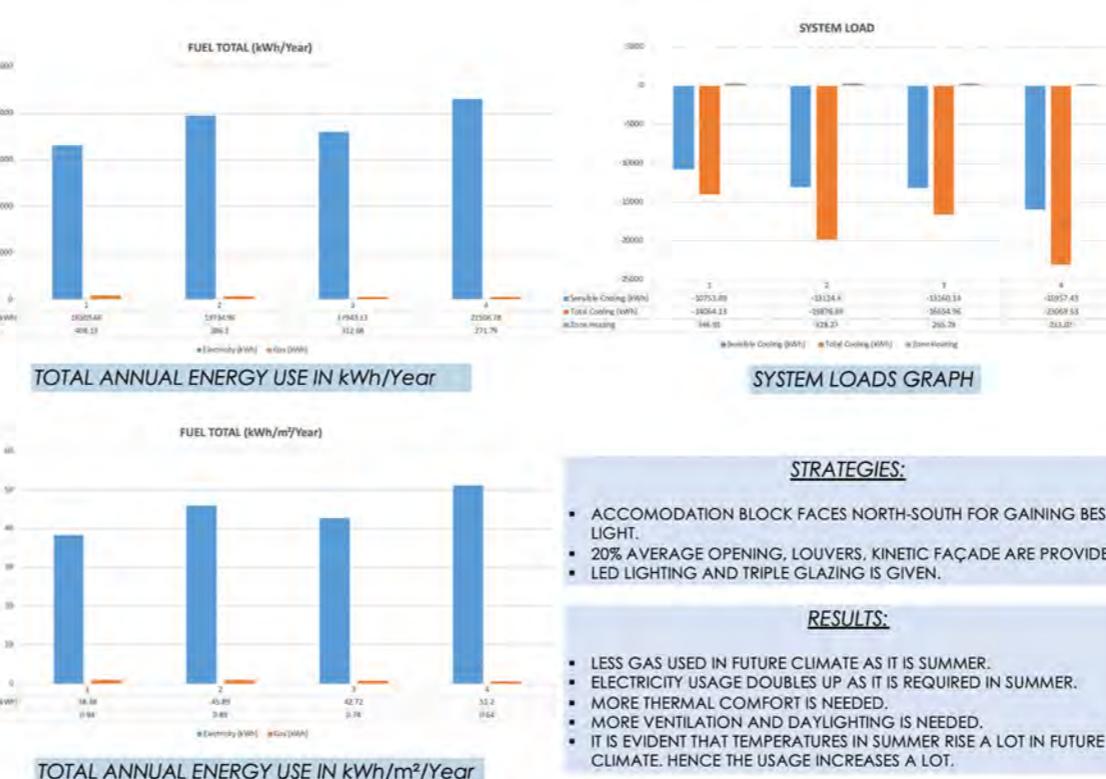
ACCOMODATION BLOCK

ANNUAL CONSUMPTION

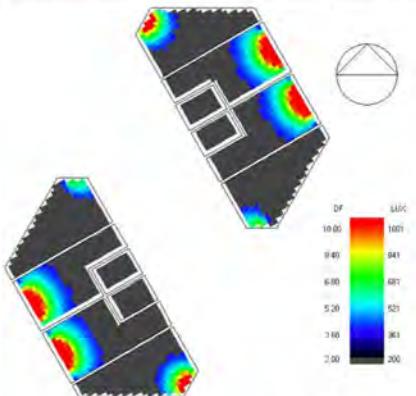


ACCOMODATION BLOCK

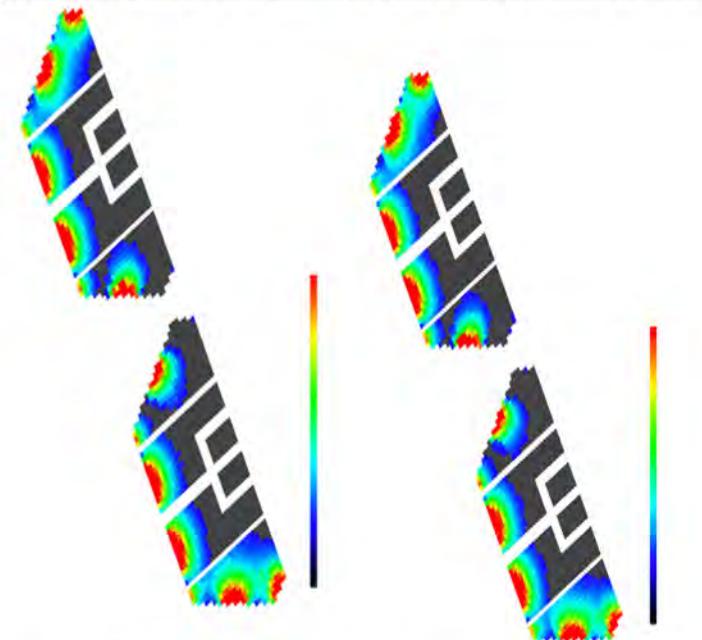
ALL SUMMER CONSUMPTION



(02) BASE CASE : OLD CASE - FUTURE CLIMATE



(03) IMPROVED CASE : NEW CASE - CURRENT CLIMATE



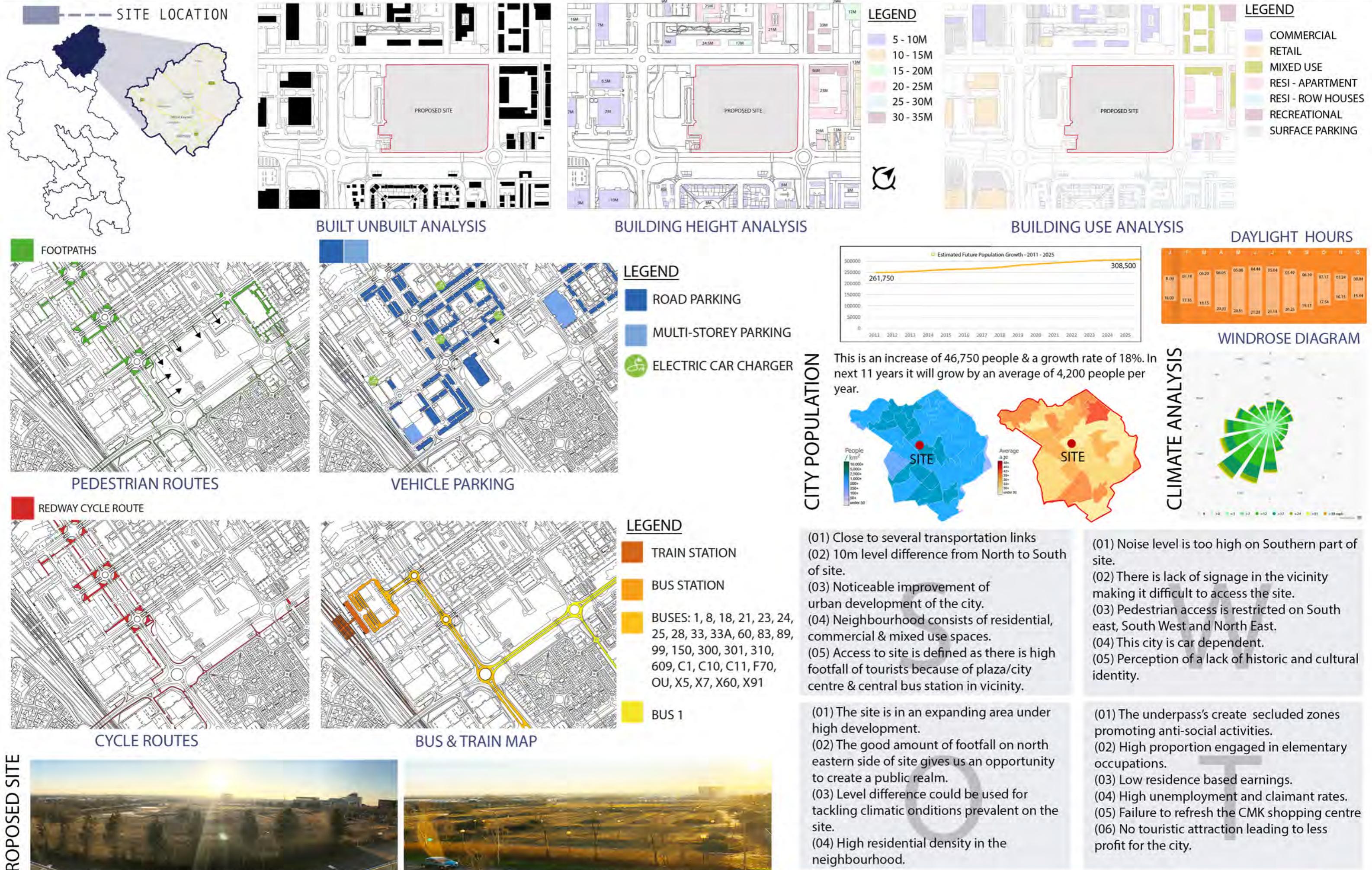
(04) IMPROVED CASE : NEW CASE - FUTURE CLIMATE

These plans are comparison of four cases respectively for daylighting illuminance.

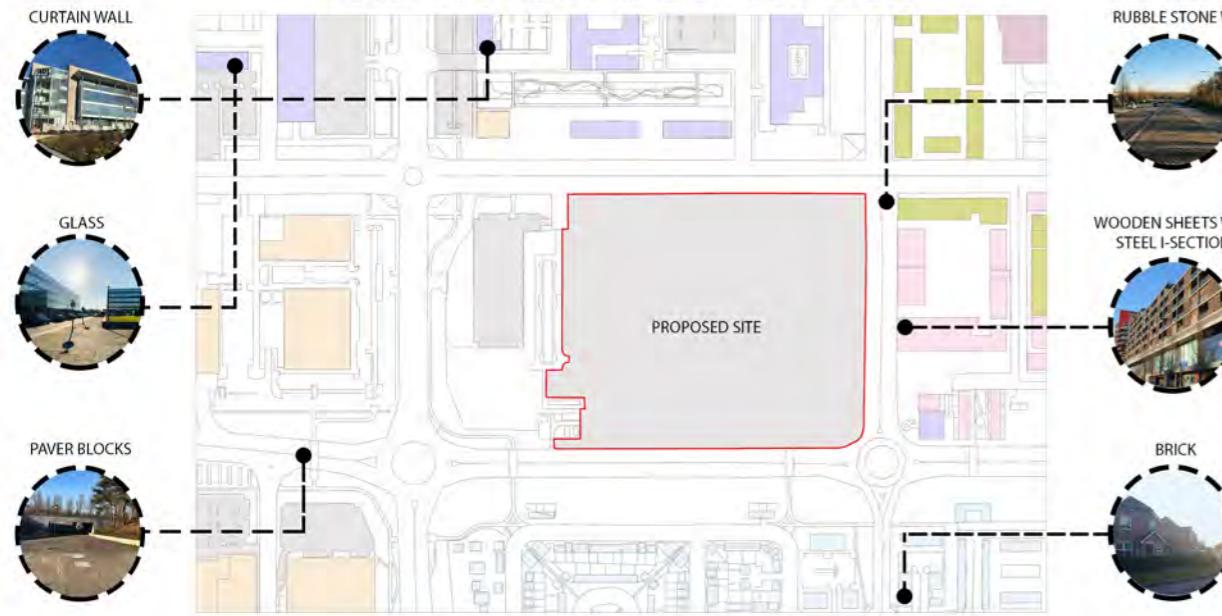
(01) Base Case - Current & Future Climate

(02) Improved Case - Current & Future Climate

DAYLIGHTING PLANS



BUILDING MATERIALITY ANALYSIS



PROGRAM

FINAL DESIGN

INTERNAL FACILITIES

ACCOMMODATION |

42,400 sqm

HALLS (6 BED) | 16,700 sqm
167x 100sqm UNITS | 1002 BEDS
DORMS (10 BED) | 10,000 sqm
100x 100sqm UNITS | 1000 BEDS
2 BED APARTMENT | 12,000 sqm
200x 60sqm UNITS | 400 BEDS
STUDIO APARTMENT | 3,700 sqm
100x 37sqm UNITS | 100 BEDS

MEDICAL CENTRE |

640 sqm

GP & PHARMACY | 240 sqm
MATERNITY CARE UNIT | 30 sqm
REHABILITATION UNIT | 370 sqm

EDUCATION CENTRE |

400 sqmPRAYER FACILITIES |
30 sqmCAFE | **210 sqm**
3x 70sqm UNITSCIRCULATION | **3,888 sqm**
STAIRWELLS | 72x 14sqm | 1008
CORRIDORS | 72x 40sqm | 288CTOTAL | **52,325 sqm**

TOTAL FLOOR AREA | 47,568 sqm
FLOR AND WALL AREA | x1.1

EXTERNAL FACILITIES

- ALLOTMENTS
- GYM
- MARKET STALLS
- SEATING
- 3 BASKETBALL COURTS

MATERIALITY

PAINTED FERROCK FAÇADE



GREEN ROOF



PROGRAM

FINAL DESIGN

FINAL DESIGN

GREEN ROOF

- Reduces absorption of heat.

RAINWATER HARVESTING.

- Reduces building water consumption.

SOLAR PANELS

- Provides electricity to the building.

CANOPIES

- Provide shading and wind breaking.

STILL WATER FEATURE

- Provides mild cooling of air.

LANDSCAPED LAND

- Facilitates future expansion.

MAIN PATH

- Improves access to and across site.

PLAYGROUND

- Provides activity spaces to attract residents and locals to the site.

SPRAY WATER FEATURE

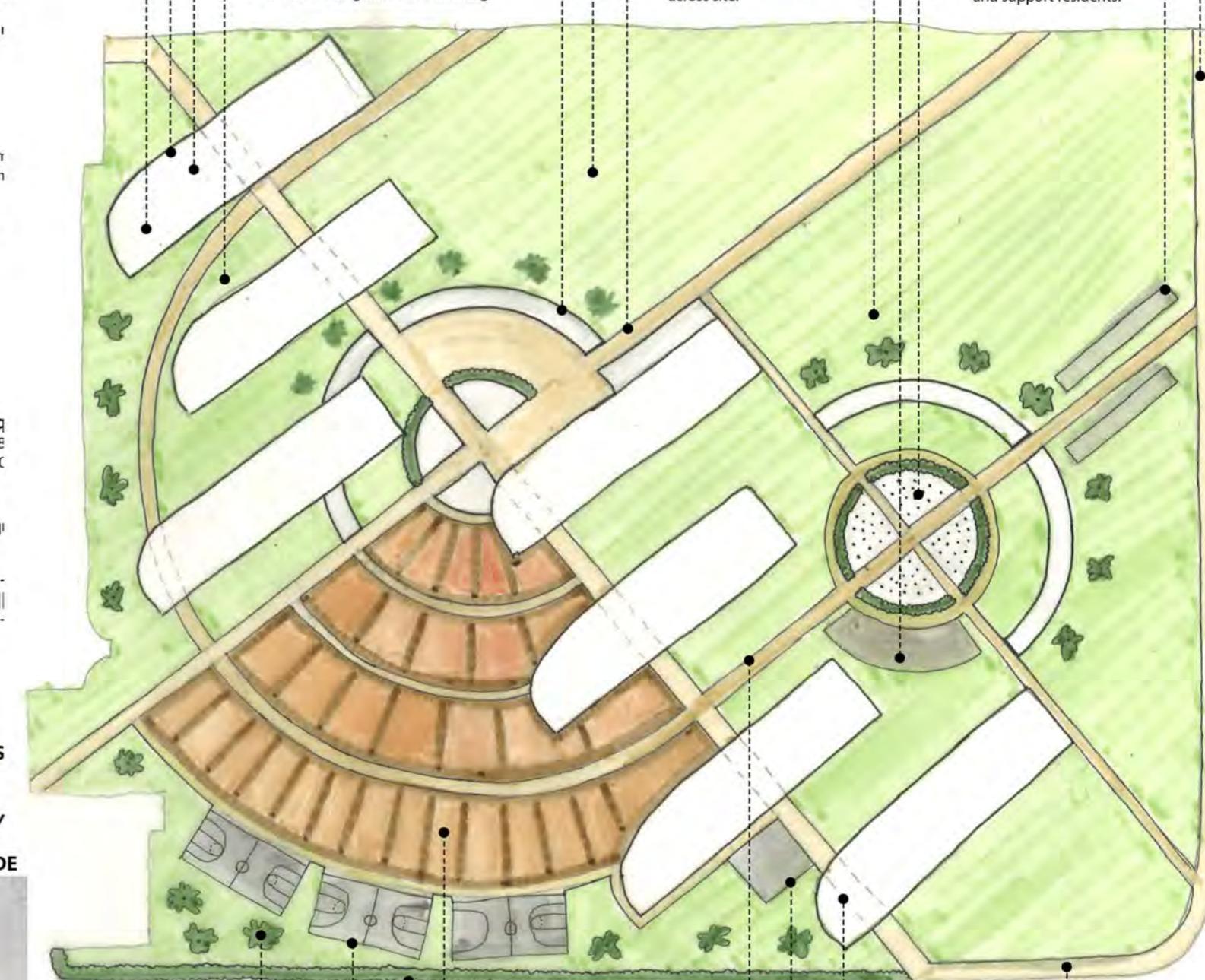
- Provides high cooling of air.

PAVEMENT

- Improved access to site.

MARKET

- Temporary structure provides locals to visit site and support residents.



TREES

- Provides shade.
- Absorbs noise and air pollution.
- Provides privacy.
- Provides wind breakage.

BASKETBALL COURTS

- Provides activity spaces to attract residents and locals to the site.

ALLOTMENTS

- Provides opportunity for residents to be self-sufficient.
- Reduces risk of flooding.

DISTANCE BETWEEN BUILDINGS

- Equal to or higher than height of buildings.

HEDGES

- Provides protection to basketball courts.
- Absorbs noise and air pollution.
- Provides privacy.

SIDE PATH

- Links site to existing underpass.

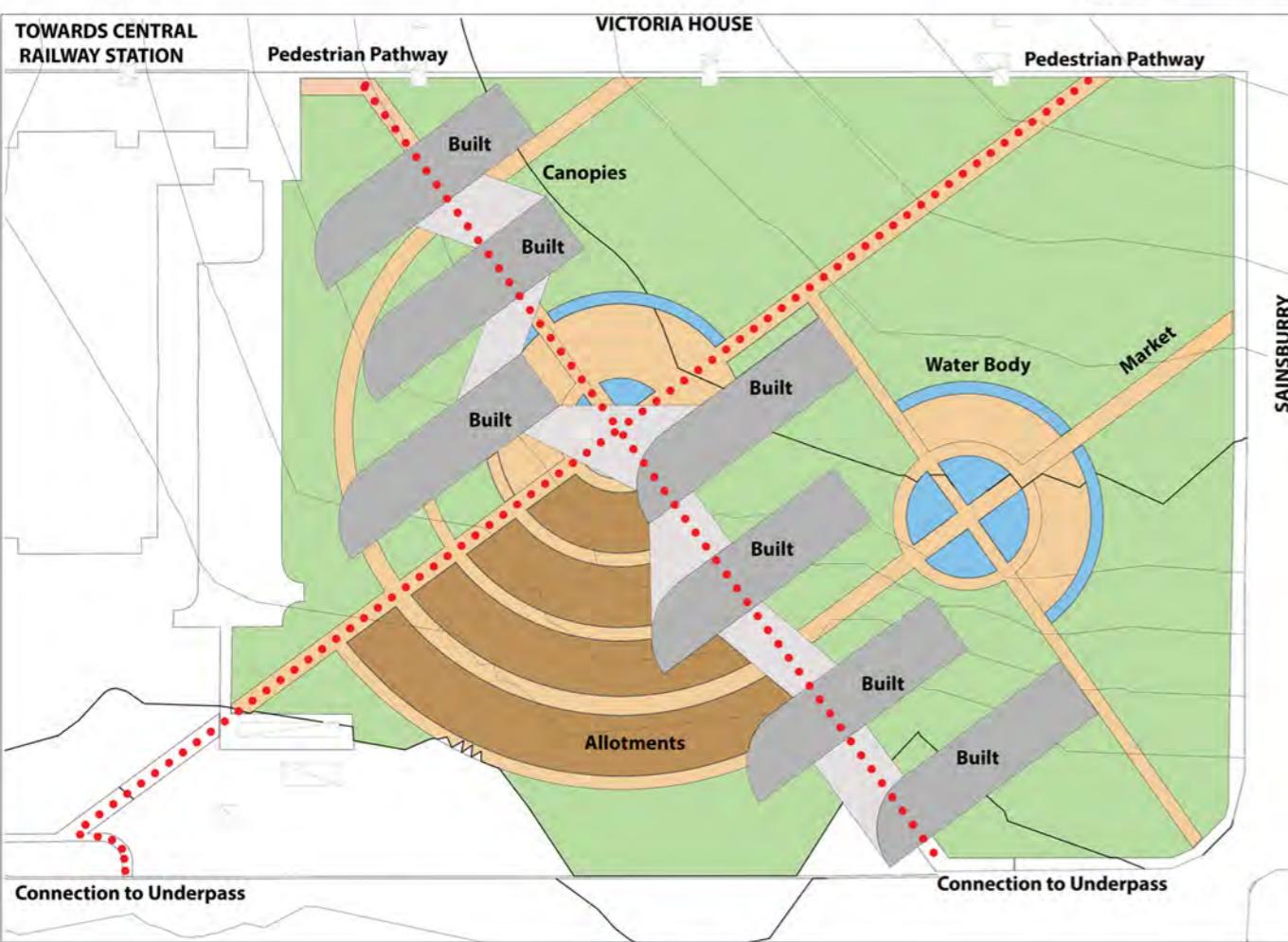
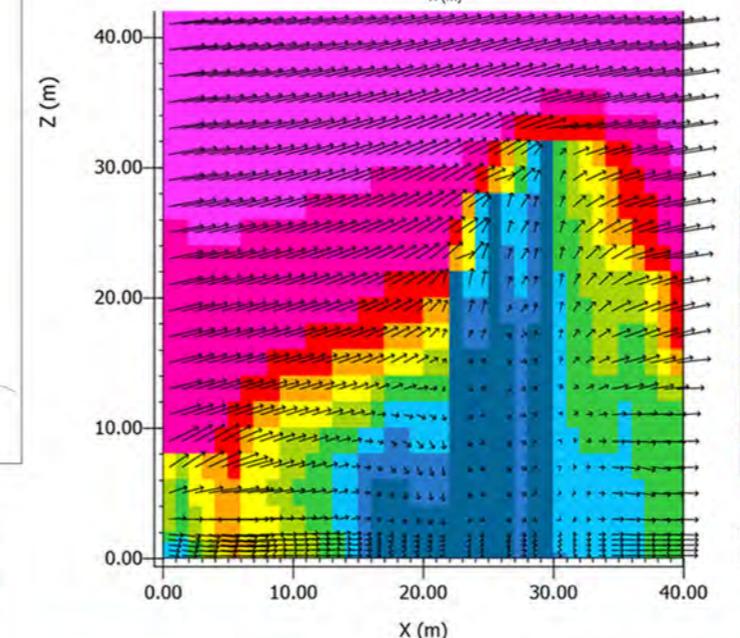
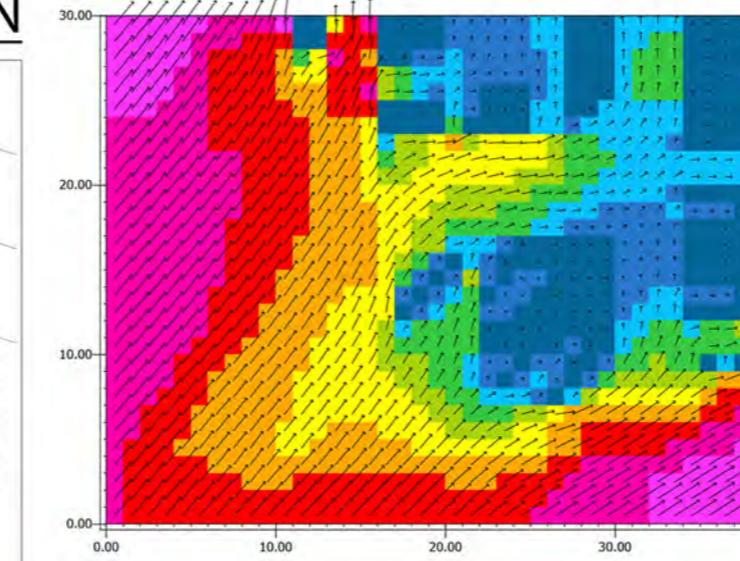
THROUGH PATH

- Improves access through site.
- Reflects character of Milton Keynes.

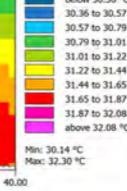
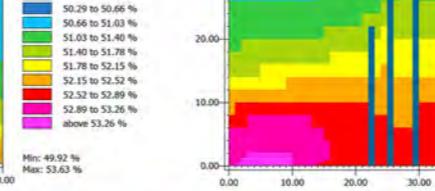
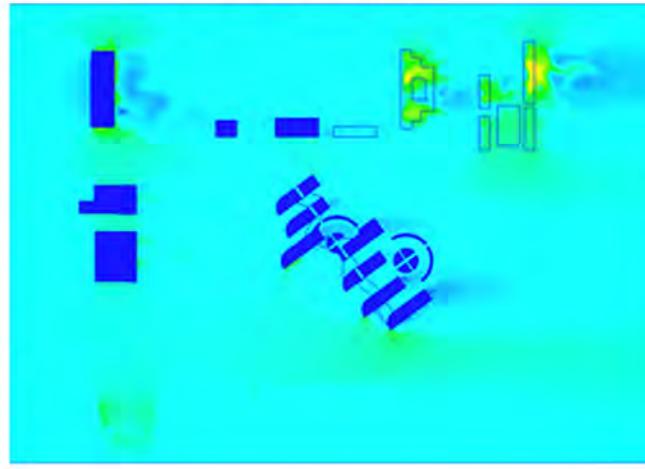
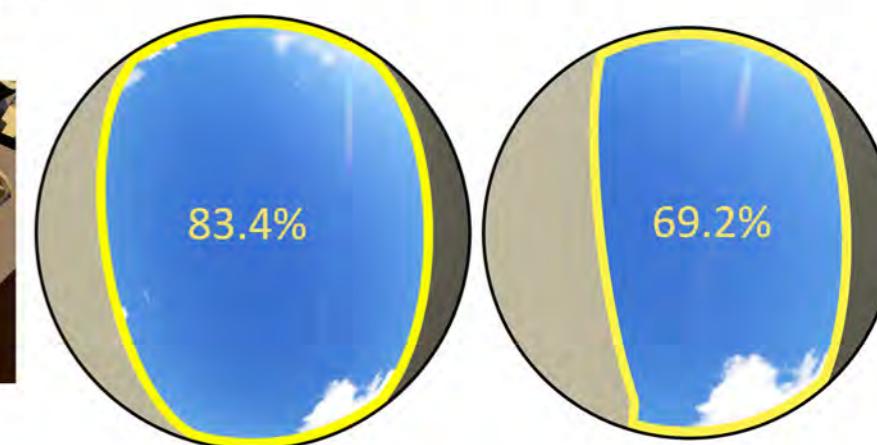
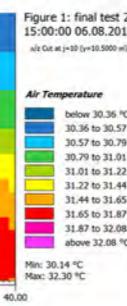
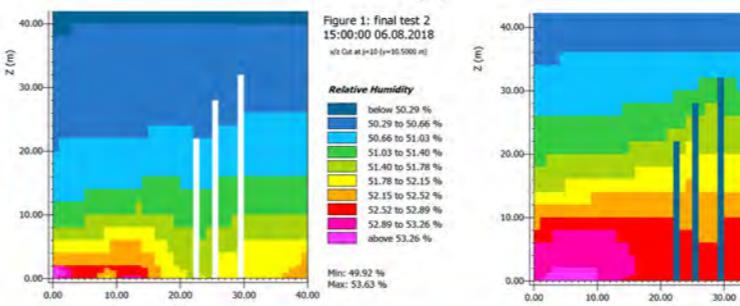
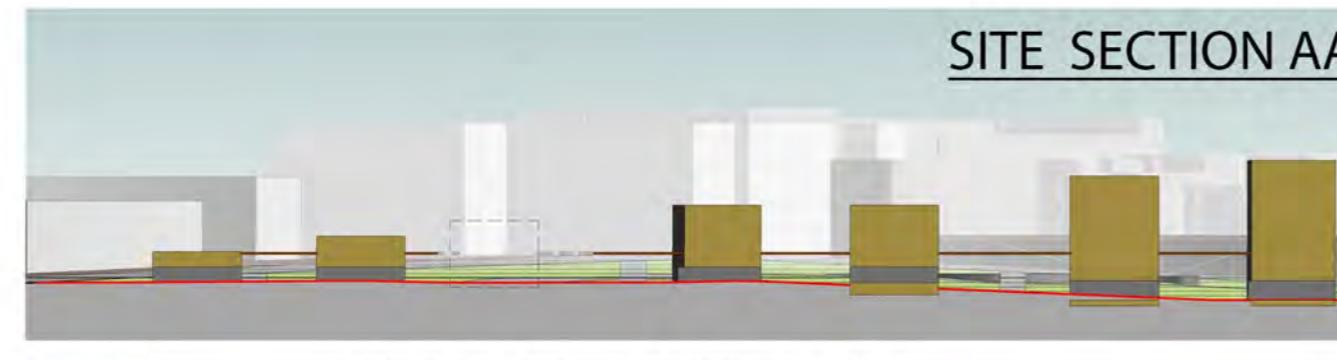
OUTDOOR GYM

- Provides activity spaces to attract residents and locals to the site.

ABOUT THE DESIGN

SITE PLANENVI MET

6 August 2018 27 Celsius 6 Mph

SKYVIEW FACTORSHADOW ANALYSIS

1-07-2018 12:00 pm



2-07-2018 17:00 pm



03-01-2019 12:00 pm



04-01-2018 15:00 pm

MATERIALITY

Cool Metal Canopies.

Mill-finish metal - Metal roofs with oven-cured, pre-painted organic coatings that incorporate new "cool pigment" technology offer high total solar reflectance and high infrared emittance. Emissivity as high as 90% can be achieved for painted and granular-coated roofing. Painted metal roofs retain 95% of their initial reflectance and emittance over time.



Littleleaf Linden

Height- 12-20 m
Canopy Size - 5 m

This variety is excellent in capturing CO₂ and effectively reducing smog.



Clematic Montana Grandiflora

Height up to 40ft (12m)



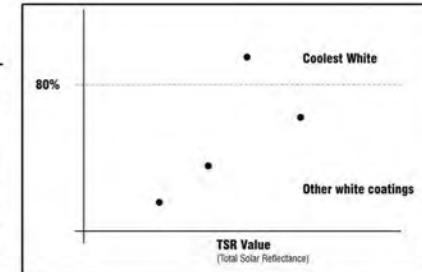
FERROCK- (Building Material)

Composition: Waste steel dust (which would normally be thrown out) and silica from ground up glass, which when poured and upon reaction with carbon dioxide creates iron carbonate which binds carbon dioxide from the atmosphere into the Ferrock. Roughly 95% of the Ferrock is made from recycled materials, Ferrock is both stronger and more flexible than normal Portland cement.

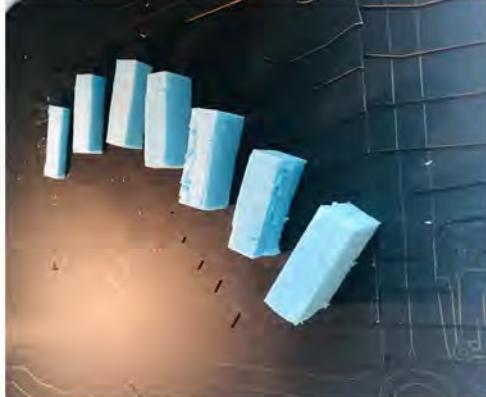
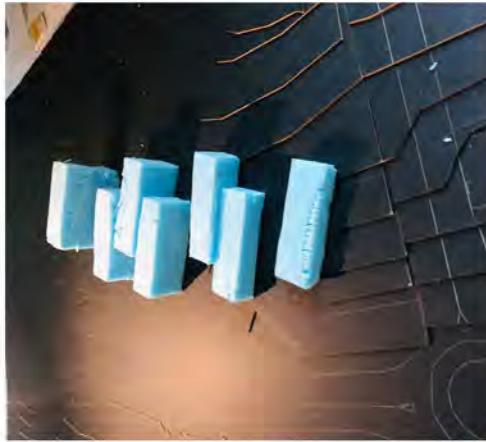
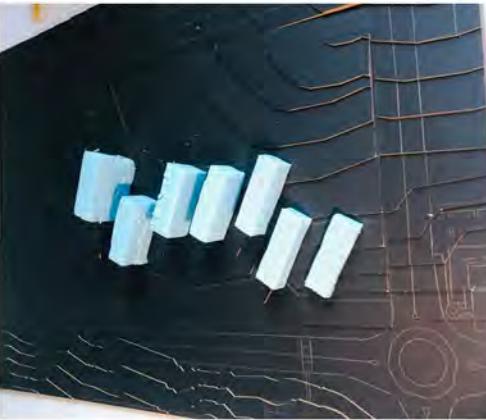


Exterior Coating

'The Coolest White', it is possible to reduce absorption and emission to 12% Partnership of UNStudio, a Dutch architectural firm, and Monopol Color, a Swiss paint specialist.



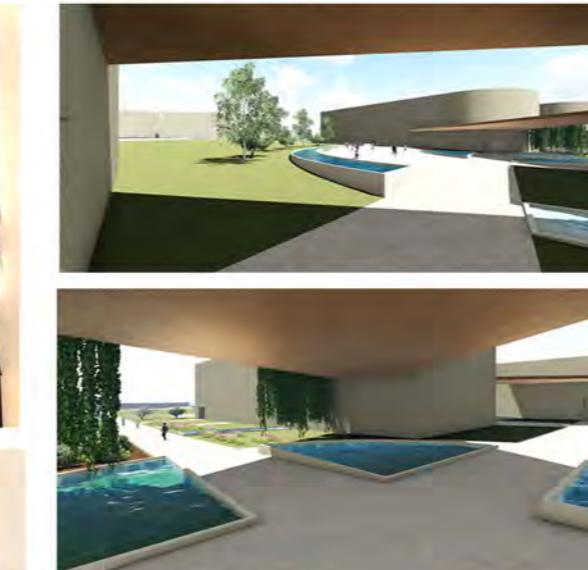
INITIAL DESIGN MODELS



FINAL DESIGN MODEL



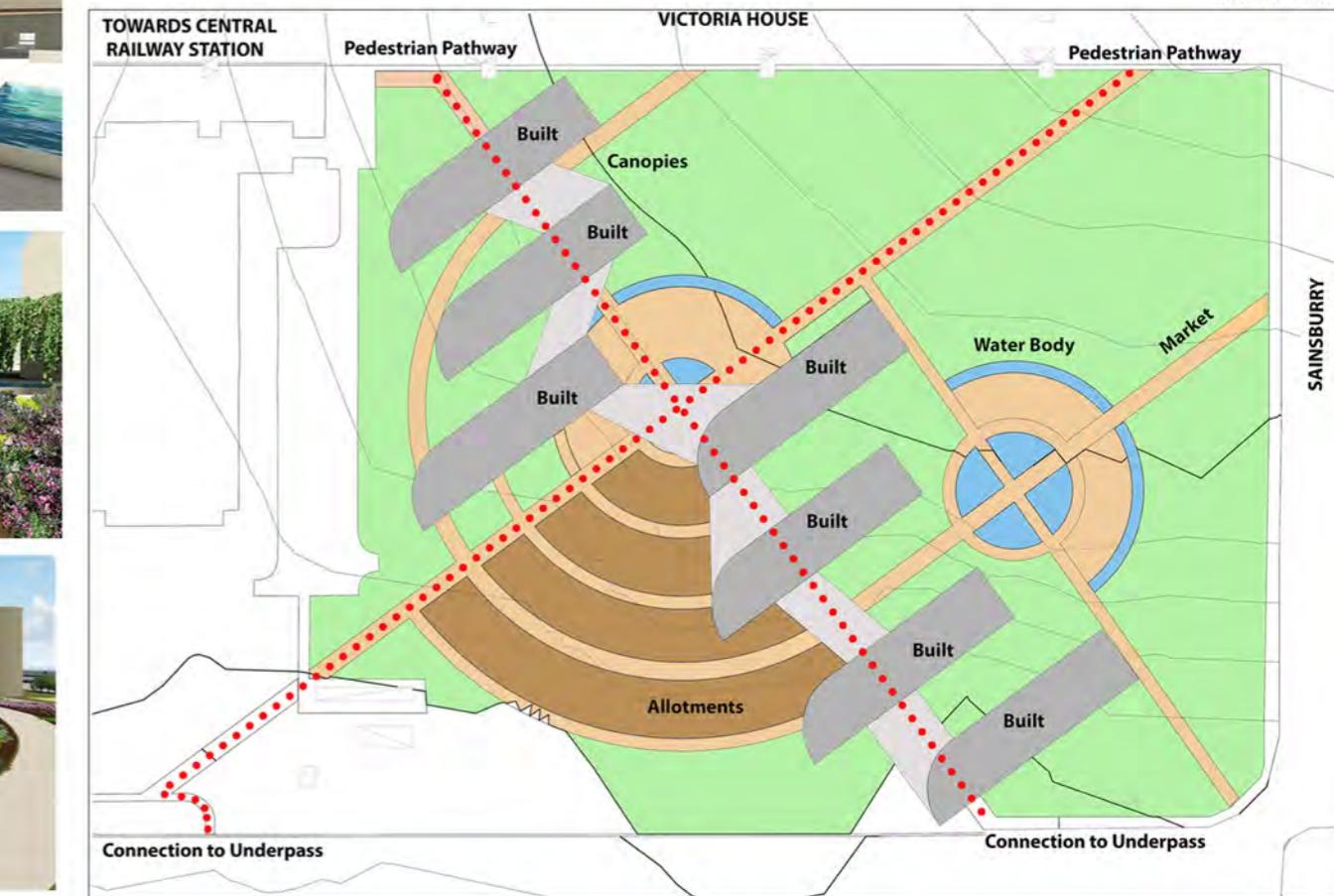
UNDERPASS



MARKET



KEY PLAN



SHALAKA WANI

+1-2065811016

shalaka.v.wani@gmail.com

THANKYOU