GOEL, SWATI
2008-18

ANN ARBOR,
MICHIGAN

swgoel@umich.edu
917-302-8024




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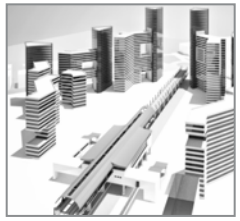

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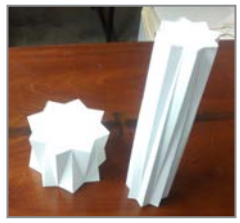

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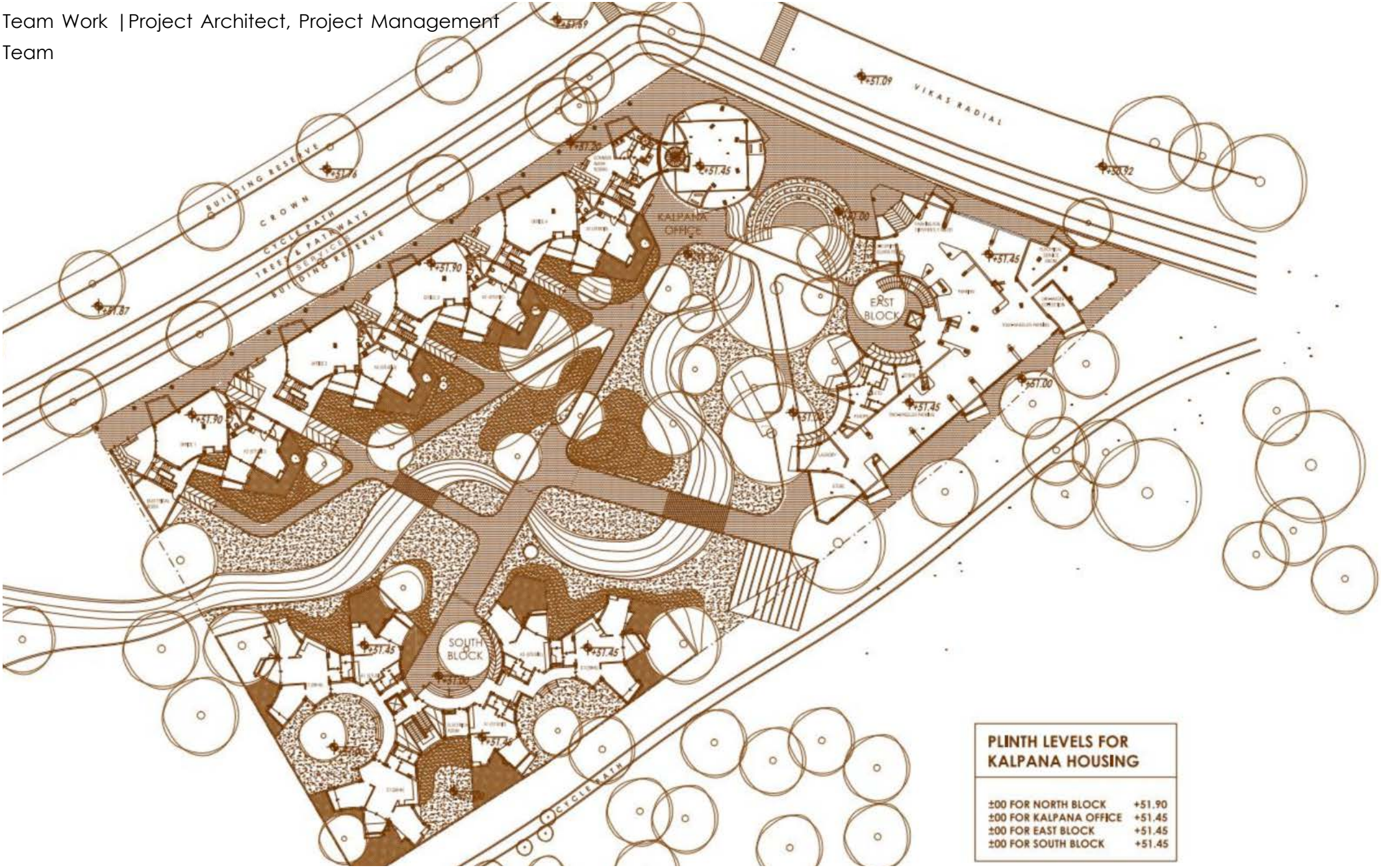
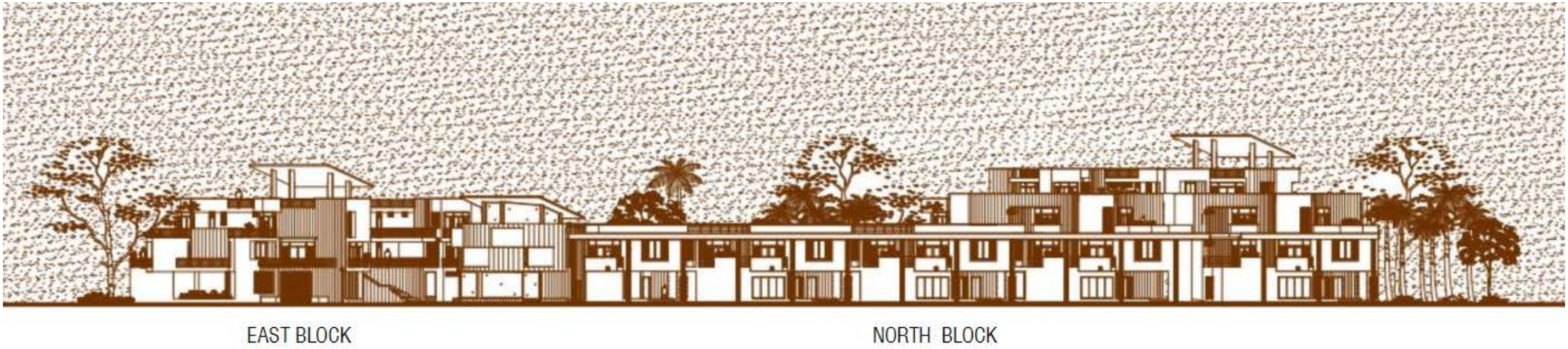
MULTI HOUSING PROJECT, AUROVILLE

UNDER CONSTRUCTION

Team Work |Project Architect, Project Management Team



Sectional Elevation



North Elevation

Design Model

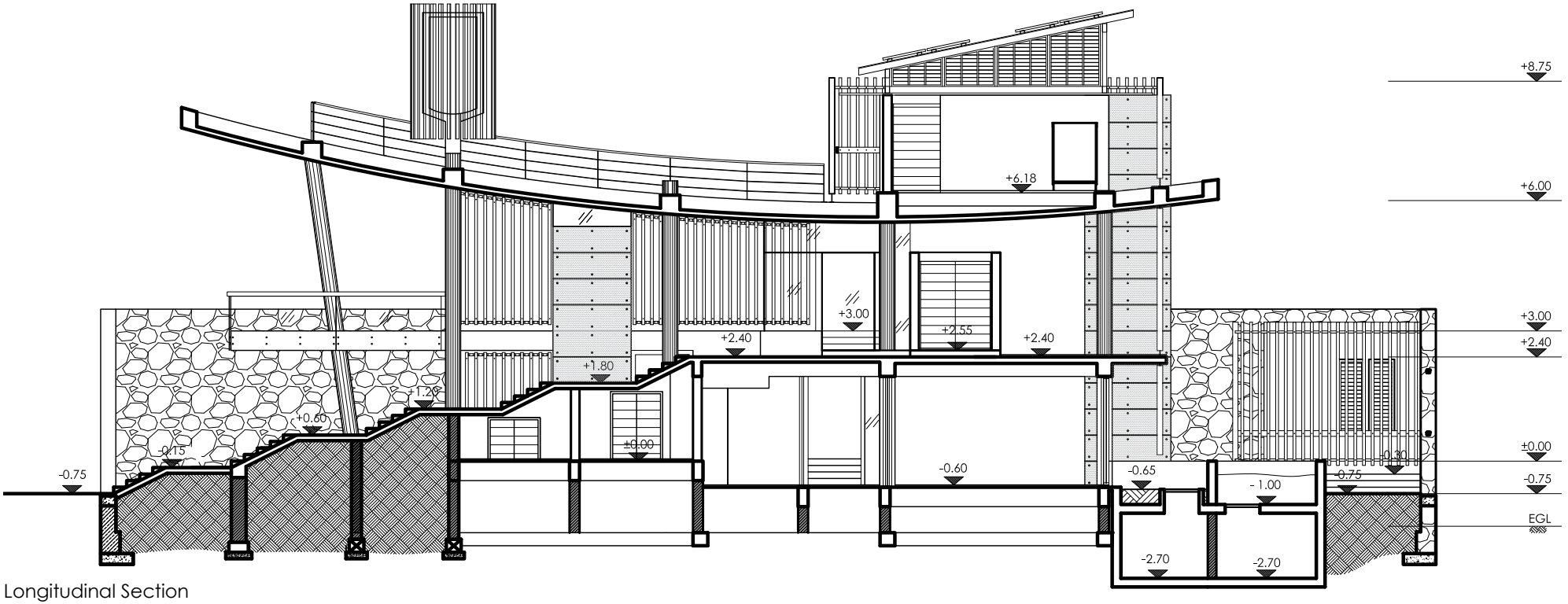
Construction images

RESIDENCE DESIGN, CHENNAI

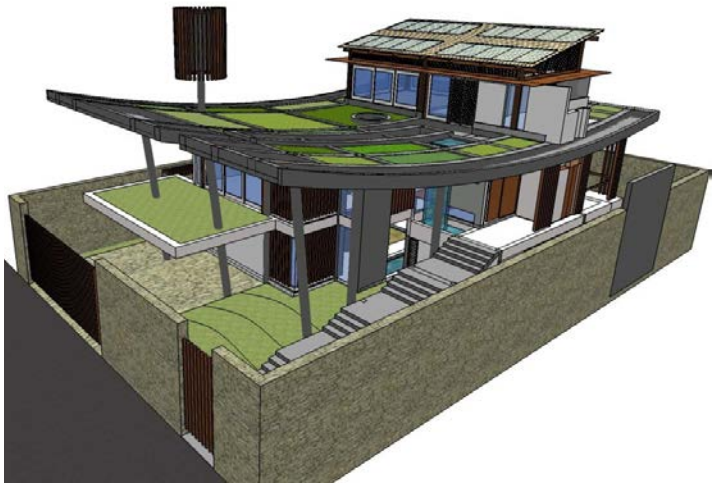
UNDER CONSTRUCTION

Team Work |Design and Execution

Residence designed in the form of a pavilion with curved roof in concrete. The client wanted natural ventilation and limit use of air conditioners, hence a green building design strategy was adopted in the design form.



Longitudinal Section



View from the road

Opaque solid walls have been minimized for privacy

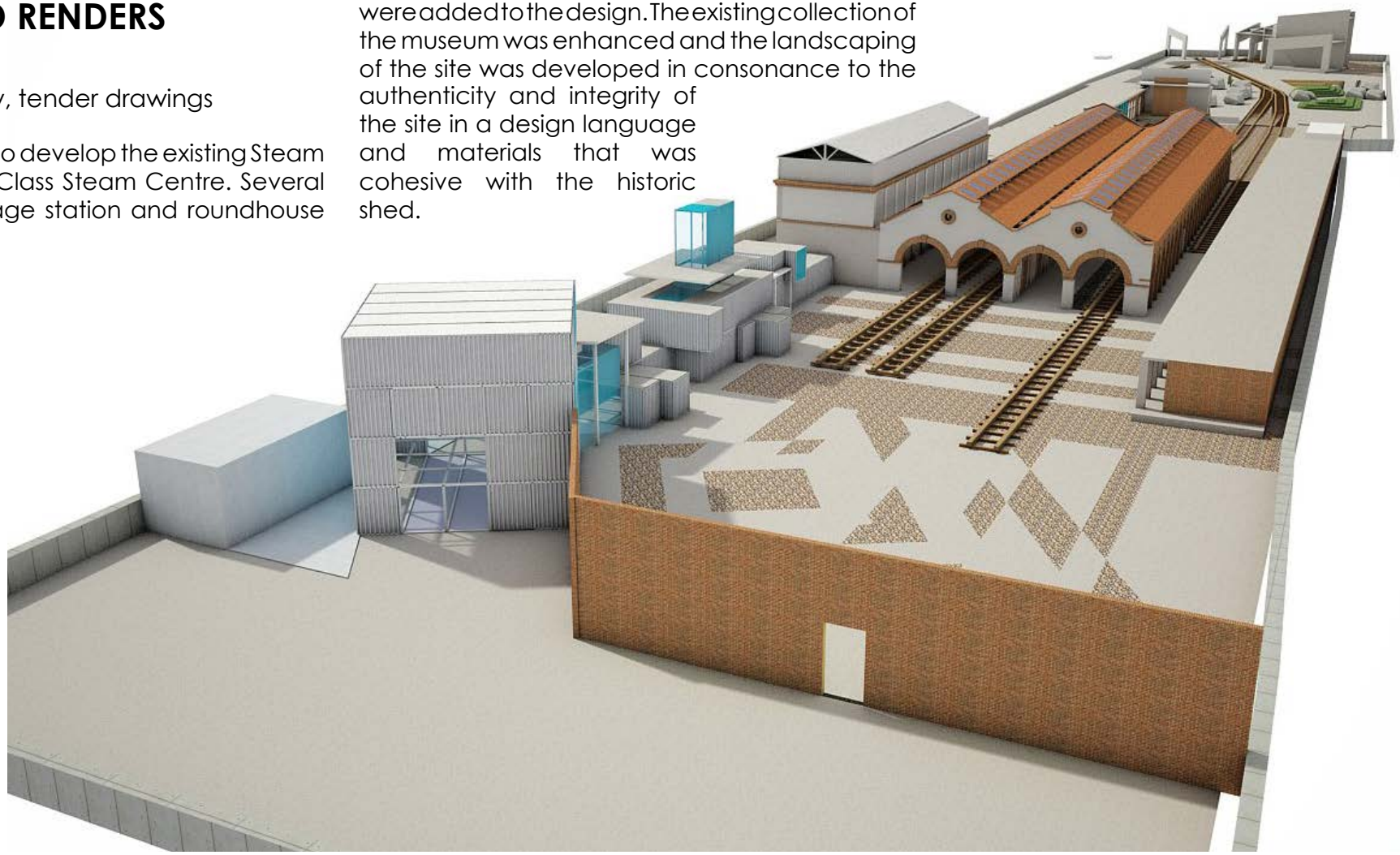
Wooden fenestrations provide visual barrier to an open plan

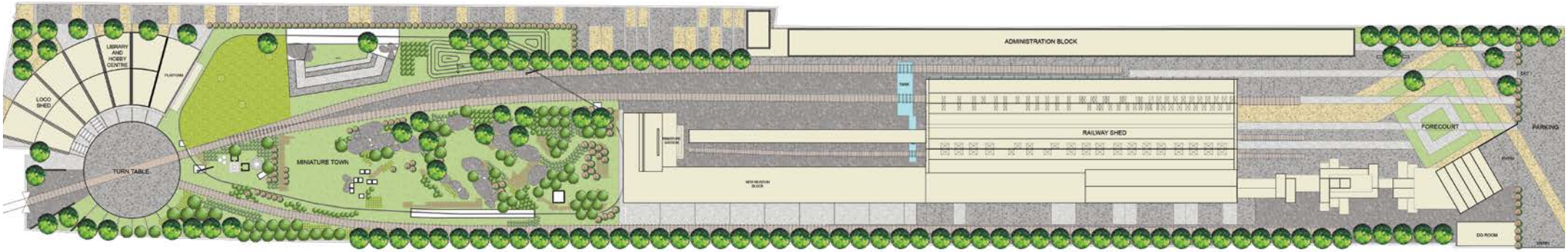
MUSEUM DESIGN AND RENDERS

TENDER DRAWINGS

Team Work | Competition entry, tender drawings

The objective of the project was to develop the existing Steam Locomotive Shed into a World Class Steam Centre. Several exhibit galleries, toy train, heritage station and roundhouse were added to the design. The existing collection of the museum was enhanced and the landscaping of the site was developed in consonance to the authenticity and integrity of the site in a design language and materials that was cohesive with the historic shed.





Master Plan for Rewari Steam Centre

FURNITURE DETAILING AND EXECUTION

COMPLETED

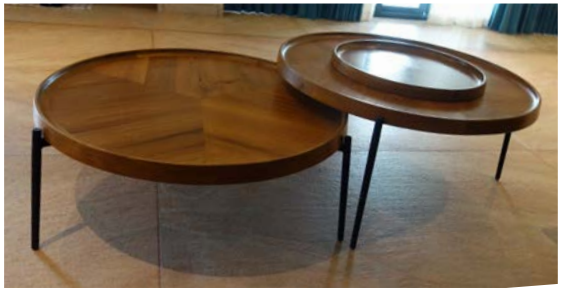
Team Work | Furniture Execution

Detailing and execution of 42 furniture items. Designs were detailed, drafted, executed and insatlled on site.

Woods Used: Teak wood, Walnut wood, Burl veneer, Teak veneer, Birch ply, Plywood

Metal: Brass, Mild Steel sections, Stainless Steel Sections, Copper

Finishes: Duco metal Paint, melamine, sealer, Leather die, Leather, Lacquer



FURNITURE DESIGN AND EXECUTION

COMPLETED

Team Work | Furniture Design and Execution

Materials: Teak wood, Rose wood, Satin wood, Brass

Template to finished product

Dining Chairs

Couch with cane backrest

Bar stools with buttons

Production Images

RESTORATION OF HOTEL, PONDICHERRY

COMPLETED

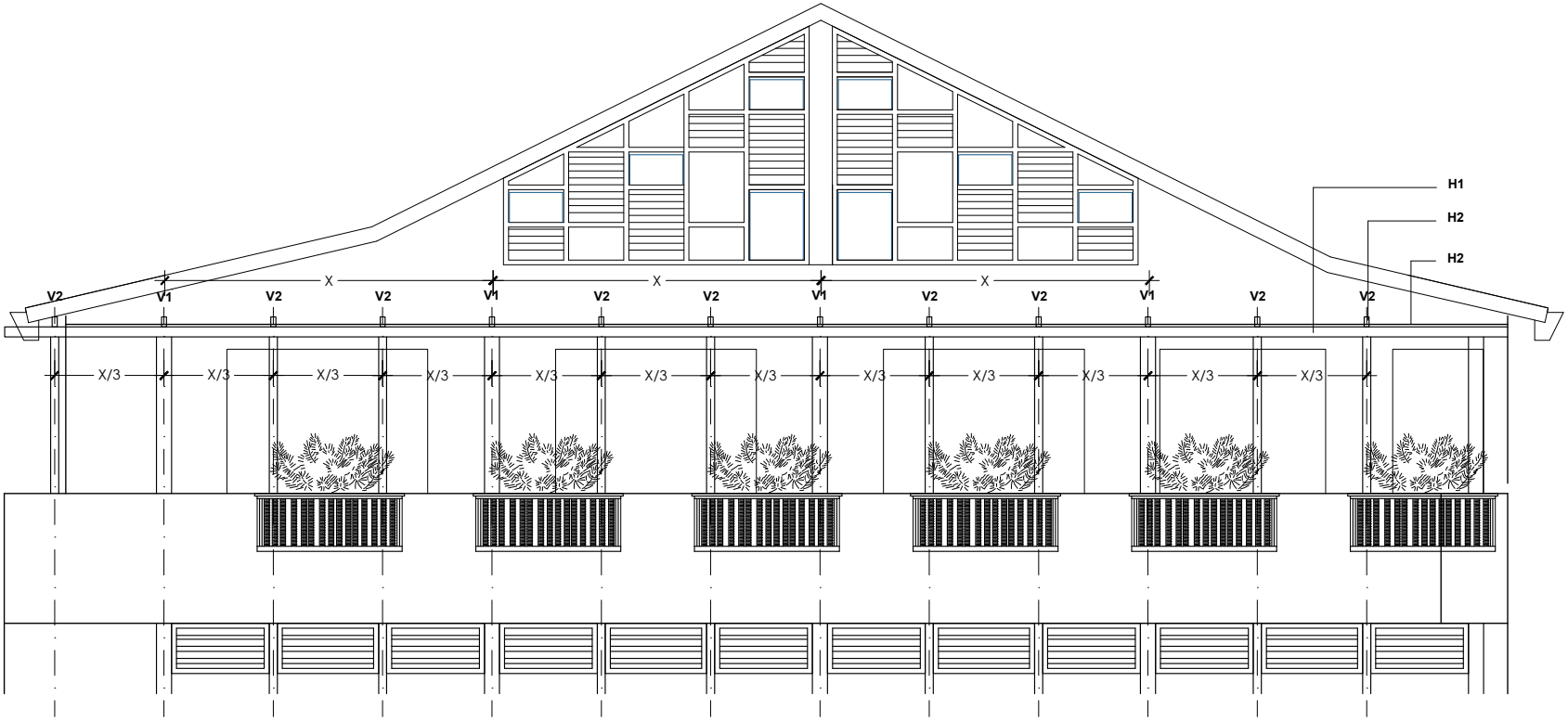
Team Work | Interior Design and Execution

This project involved redesigning the existing hotel to a new theme, by reviving the spaces and creating new rooms for guests.

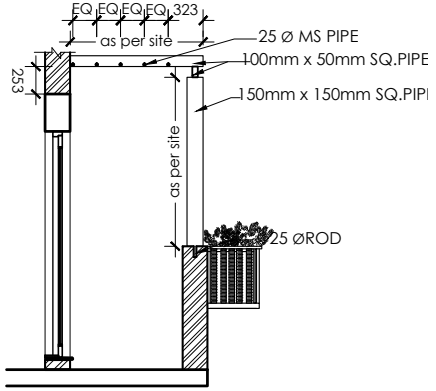
The front elevation was revisited and a penthouse module was added to the roof by introducing a sloping roof.

Before

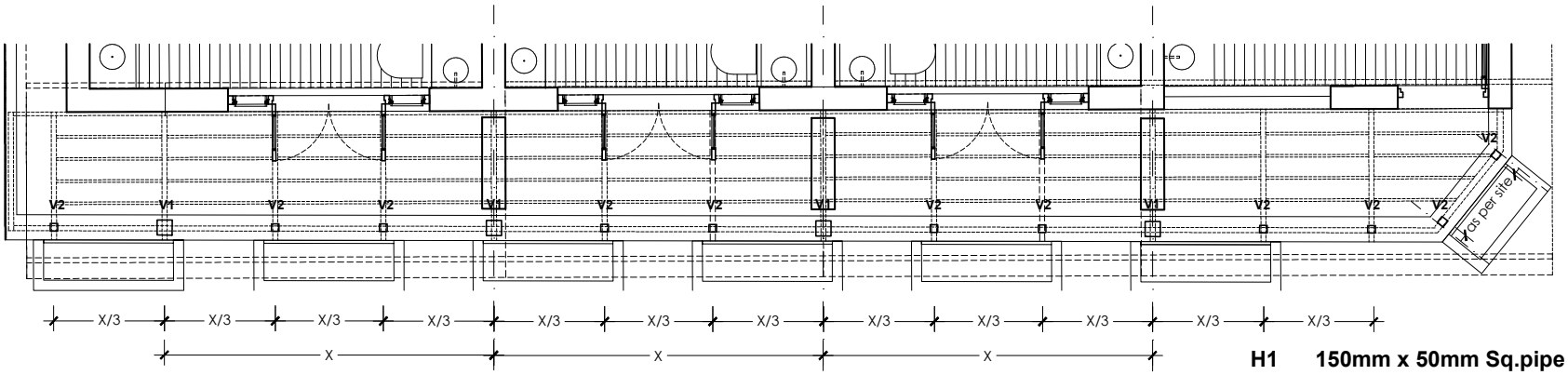
After



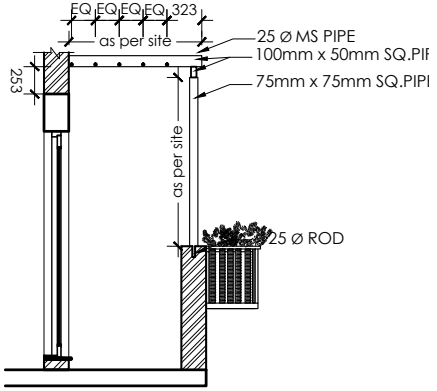
WEST ELEVATION



SECTION AA



PLAN



SECTION BB

V1	**150mm x 150mm Sq.pipe**	**H1**	**150mm x 50mm Sq.pipe**
V2	**75mm x 75mm Sq.pipe**	**H2**	**150mm x 50mm Sq.pipe**
		H3	**25 ∅ MS.pipe**

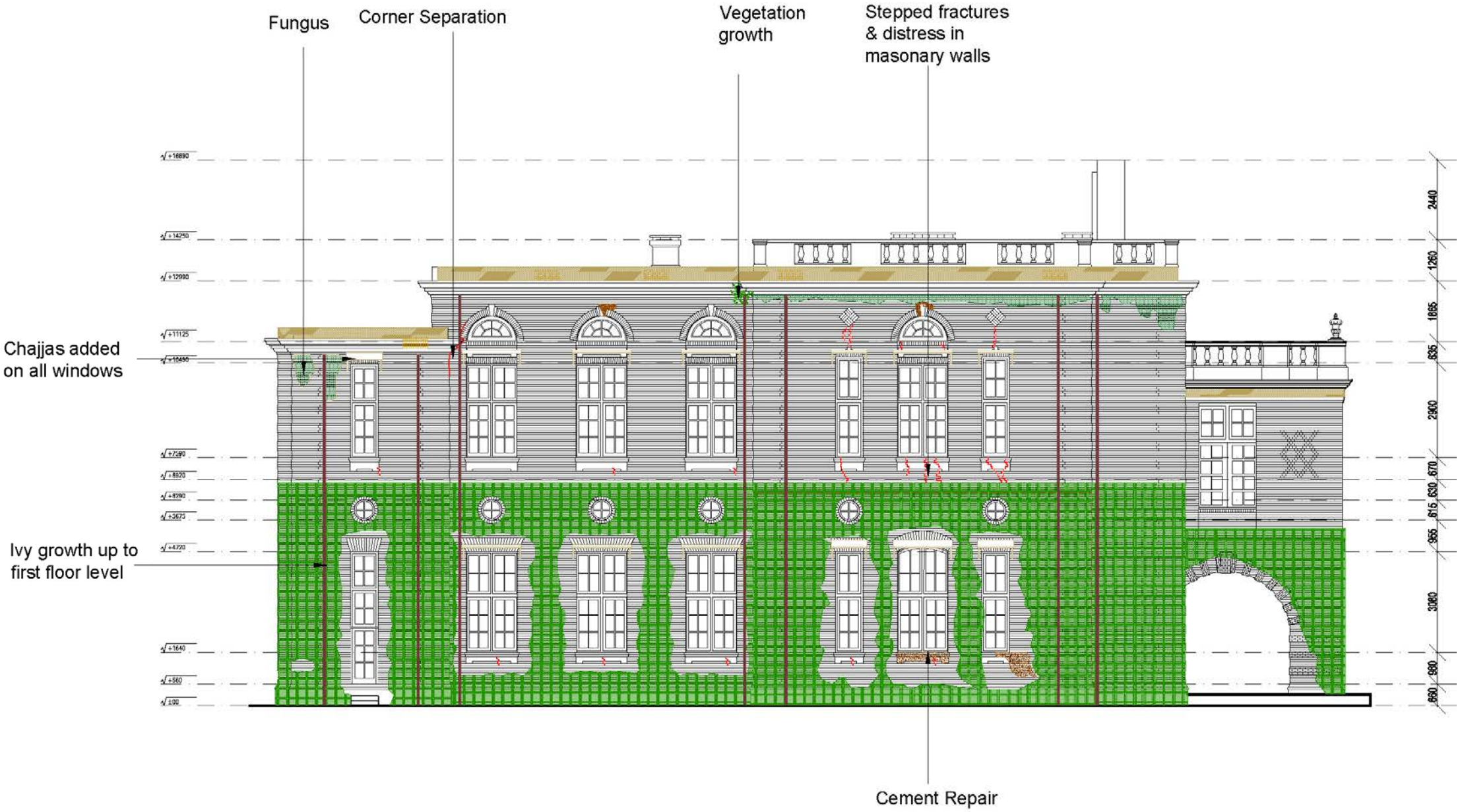
CONDITION MAPPING FOR RESTORATION, DOON SCHOOL

COMPLETED

Team Work | Site documentation and supervision

An in-depth study of the structural issues in the Main building was conducted. Based on the results, a restoration proposal was submitted to prolong the life of the building.

The Ivy was removed from all the facades and the structure was reinforced using helifix technology, cracks were repaired, foundations were strengthened and plinth protection was done based on the assessment report prepared.


Fungus
Corner Separation
Vegetation growth
Stepped fractures & distress in masonary walls
Chajjas added on all windows
Ivy growth up to first floor level
Cement Repair

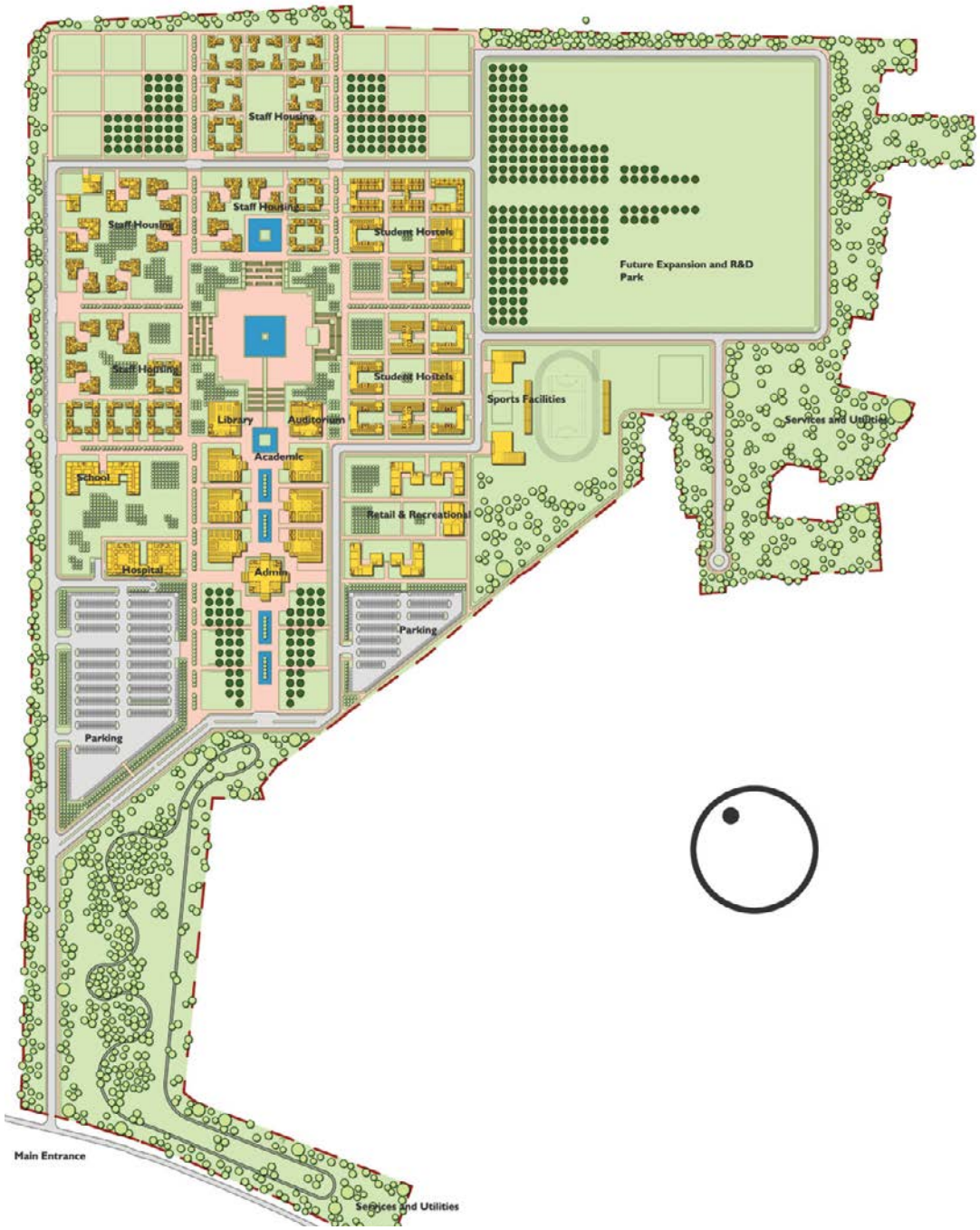
DESIGN AND RENDERINGS

Worked on design competitions with a Delhi, India based firm led by Uttiya Bhattacharya in summer of 2013. Both the competitions were University campus designs.

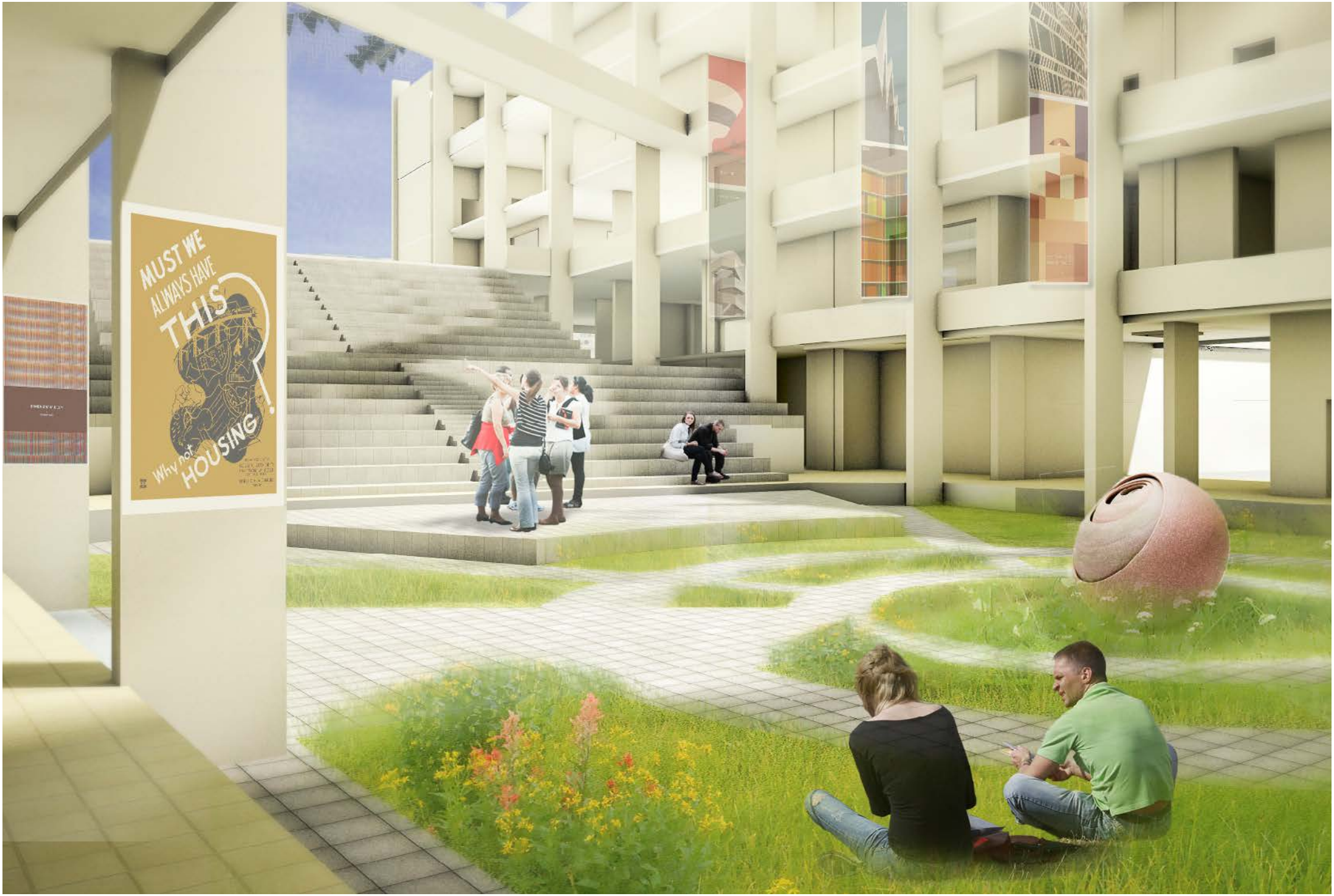
1. Central University Bihar
2. National Institute of Animal Biotechnology, Hyderabad

Worked as part of a team on conceptualization, design and presentation drawings.

Central University Bihar(Competition entry)
Proposed Master Plan



NIAB HYDERABAD (Competition entry)
Proposed Master Plan


MUST WE
ALWAYS HAVE
THIS
Why not
HOUSING

CONDITION MAPPING OF CHINSURAH, KOLKATA

COMPLETED

Team Work | Overlay Mapping and Graphic design

This project involved overlay mapping and graphic design for the historic town of Chinsurah in Kolkata. This project was funded by the Embassy of the kingdom of the Netherlands. The aim of this multi-disciplinary project is to identify and document the shared cultural heritage and develop a digital database for the shared cultural heritage of the erstwhile Dutch colony of Chinsurah in West Bengal, India. A one of its kind project in India, this project attempts to bridge the gap between architecture and social sciences by adopting the Digital Humanities approach.

Overlay Mapping of the historic town on Chinsurah through an interactive map
dutchinchinsurah.com

ACADEMIC WORKS

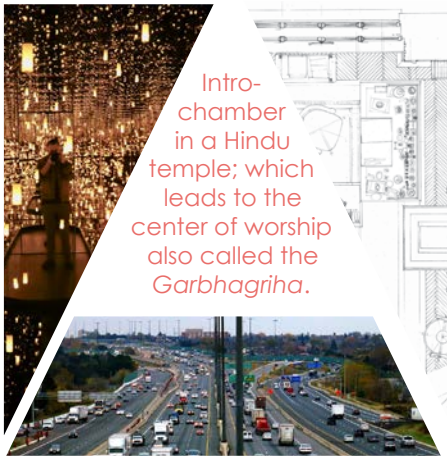
CAPSTONE- THE 'ANTE-CHAMBER'

The capstone research began with my interest in 'the role of built environment on mental health'.

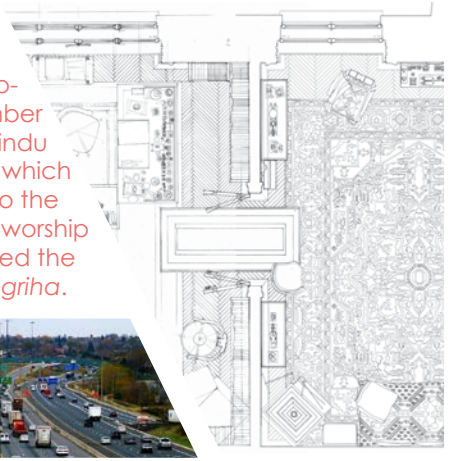
The intent is to design a space for relaxation and introspection for people in need to de-stress. The project explores the relation between transition spaces and stress.

The Ante-chamber expands the experience of an airlock space to create an experimental transition space to reduce stress attached to a hospital among patents and visitors.

The Ante-chamber, takes the need for a reflection room to an open semi-public space. It can be located in any institutional building, but a hospital was chosen because it is a site of action.

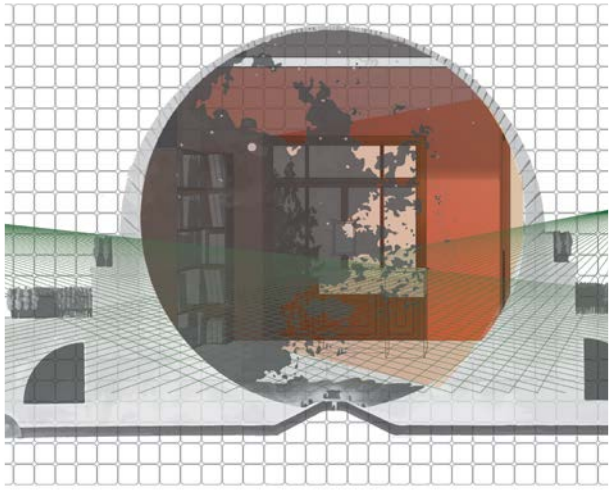


Intro-chamber in a Hindu temple; which leads to the center of worship also called the *Garbhagriha*.

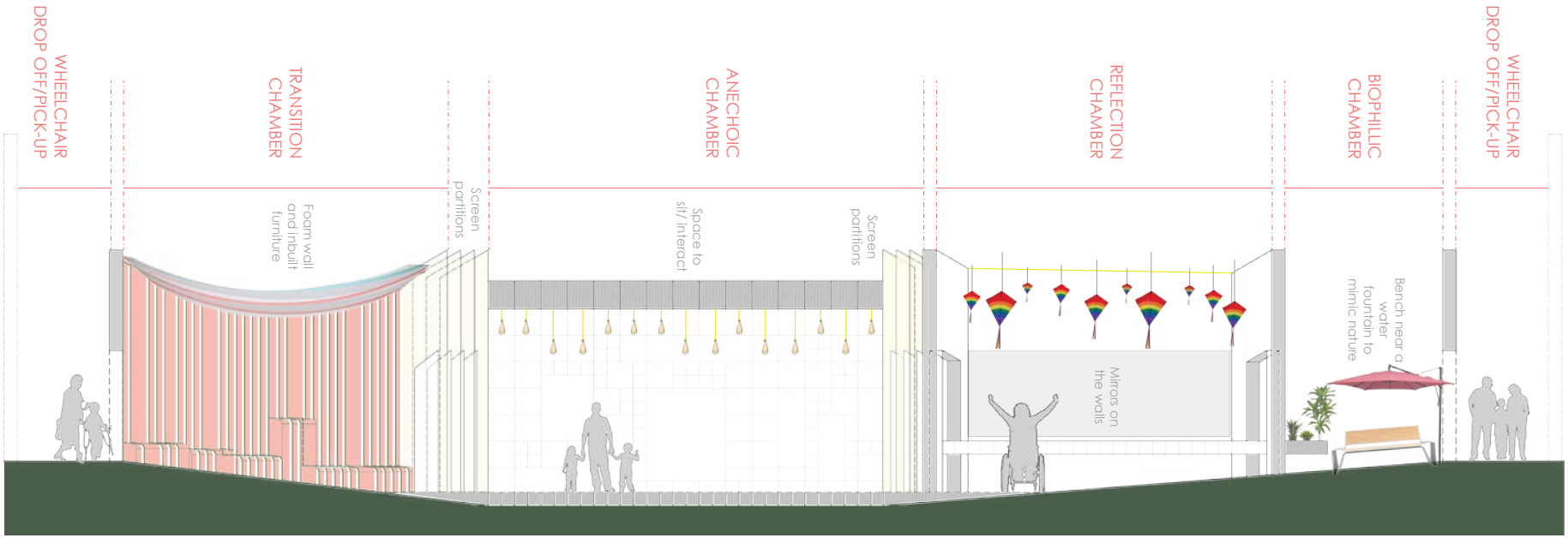


An initiative to relieve the stresses attached to a hospital and day to day activities.

Numerous studies show how stress affects our thoughts and daily lives. One of its major conclusion was to "**Engage the senses**".

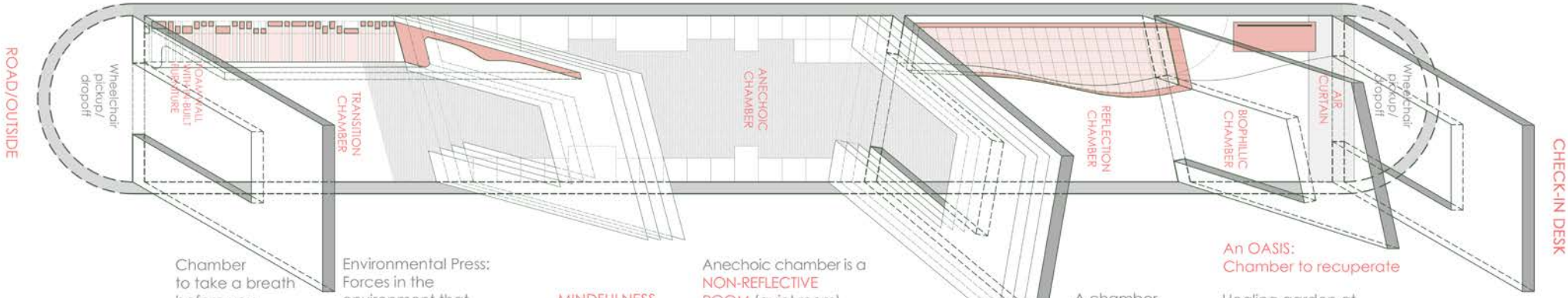


The Antechamber; an experimental transition space to de-stress in an institutional environment.



Threshold spaces are transitional spaces that form a spatial preface to functional space.

Extending the existing airlock space at CS Mott Children's Hospital in Ann Arbor to reduce stress and anxiety.



Entry/ Exit for visitors and patients in non-emergency situations

Chamber to take a breath before you transition.

A space that reaches out and senses bodies as they move.

Environmental Press: Forces in the environment that together with individual need, evoke a response

UNWIND THE STRESS AND ANXIETY

MINDFULNESS is the quality or state of being conscious or aware of something

Anechoic chamber is a NON-REFLECTIVE ROOM (quiet room) that completely absorbs reflections of sounds

The texture of the spaces is important for experience

A chamber with mirrors (infinite space) for projection of stress and anxiety

An OASIS: Chamber to recuperate

Healing garden at Frankel Cardiovascular Centre is an indoor garden with fountains and other biophillic features for de-stressing.

Entry/ Exit for visitors and patients in non-emergency situations.

ANTE-CHAMBER DEFAULT SPACE INTRO-CHAMBER THRESHOLD SPACE

Entering and leaving a space are key moments in experiencing spaces.

UABB BIENNALE IN SHENZHEN

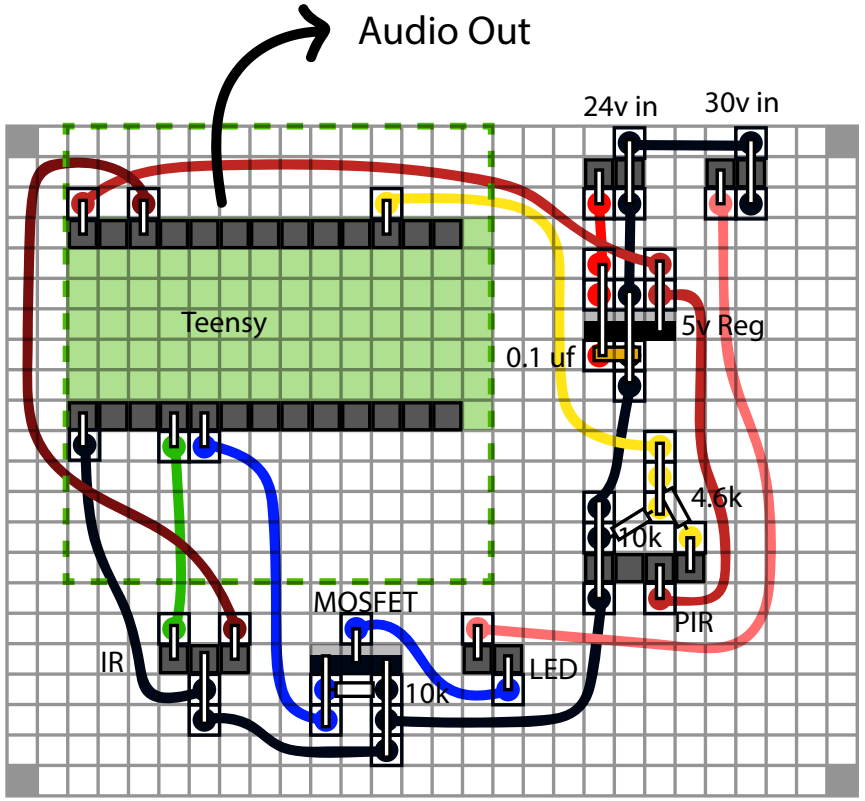
The UABB Biennale'17 was hosted in Shenzhen, China in December. The Design and Health cohort got the opportunity to work on the remodeling of *House 17* as our studio project with Prof. Robert Adams.

The house was an abandoned 1 bedroom in the urban village of Nantou, which was cleaned and refurbished. It was made universally accessible with the addition of a ramp.

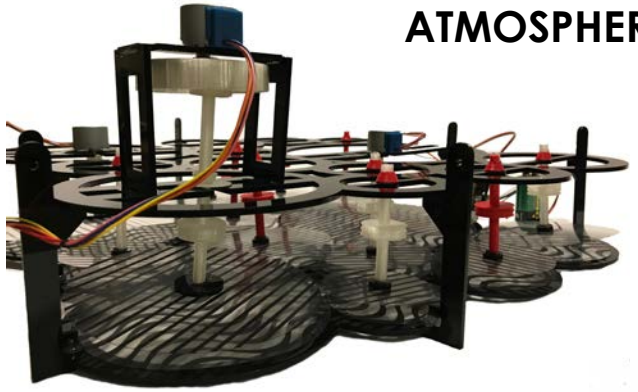
My role involved working on the arduino assembly of the Chinese lanterns that were used as place markers in the village, to point to the remodelled House 17.

The lanterns were installed with motion enabled sound and light feature that allowed for differently abled to find their way to the House 17.

GND
30v
24v
5v
3.3v
IR receiver
PIR
LED
Solder



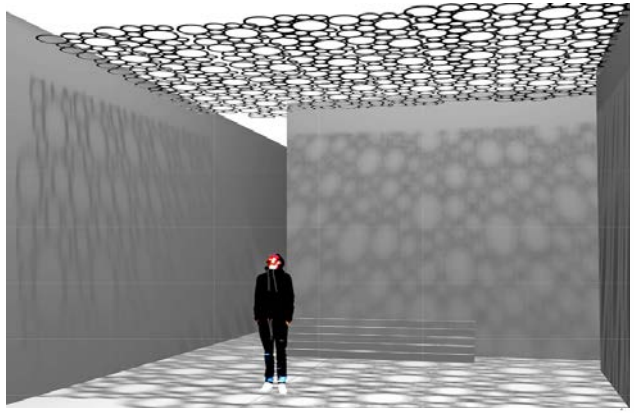
ATMOSPHERICS: ARDUINO ASSEMBLY

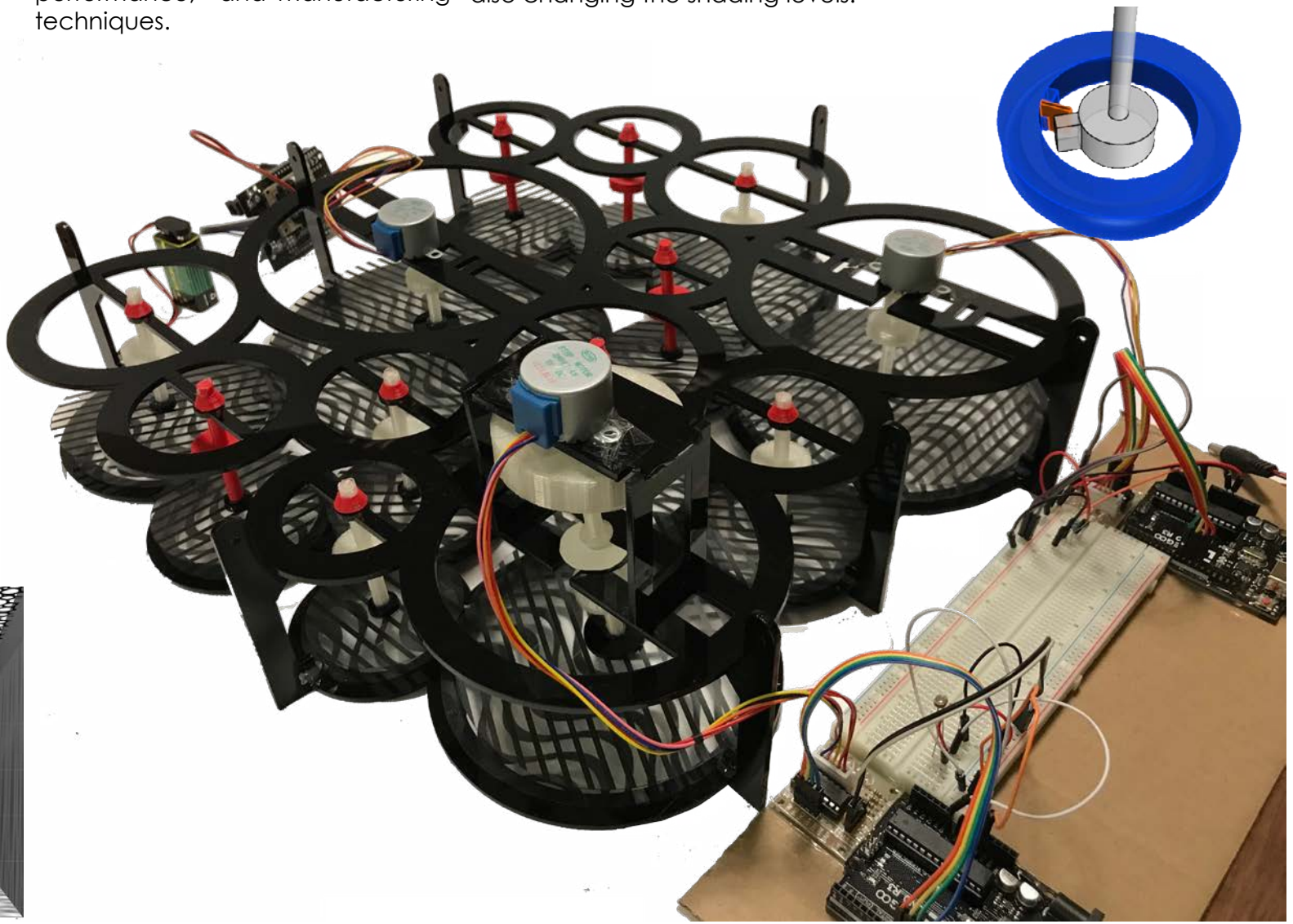


The final project involved using the learnings from the experiments and using arduinos to design an assembly responsive to the atmospheric conditions.

Through the semester we conducted various experiments with paper, wooden veneers and bimetals to test material properties, behavior, performance, and manufacturing techniques.

The project explored the concept of *'moire patterns'* to create light and shadow effect in courtyards using photo sensors. These sensors used light intensity to rotate the custom designed gear system to rotate the two surfaces, hence forming patterns while also changing the shading levels.





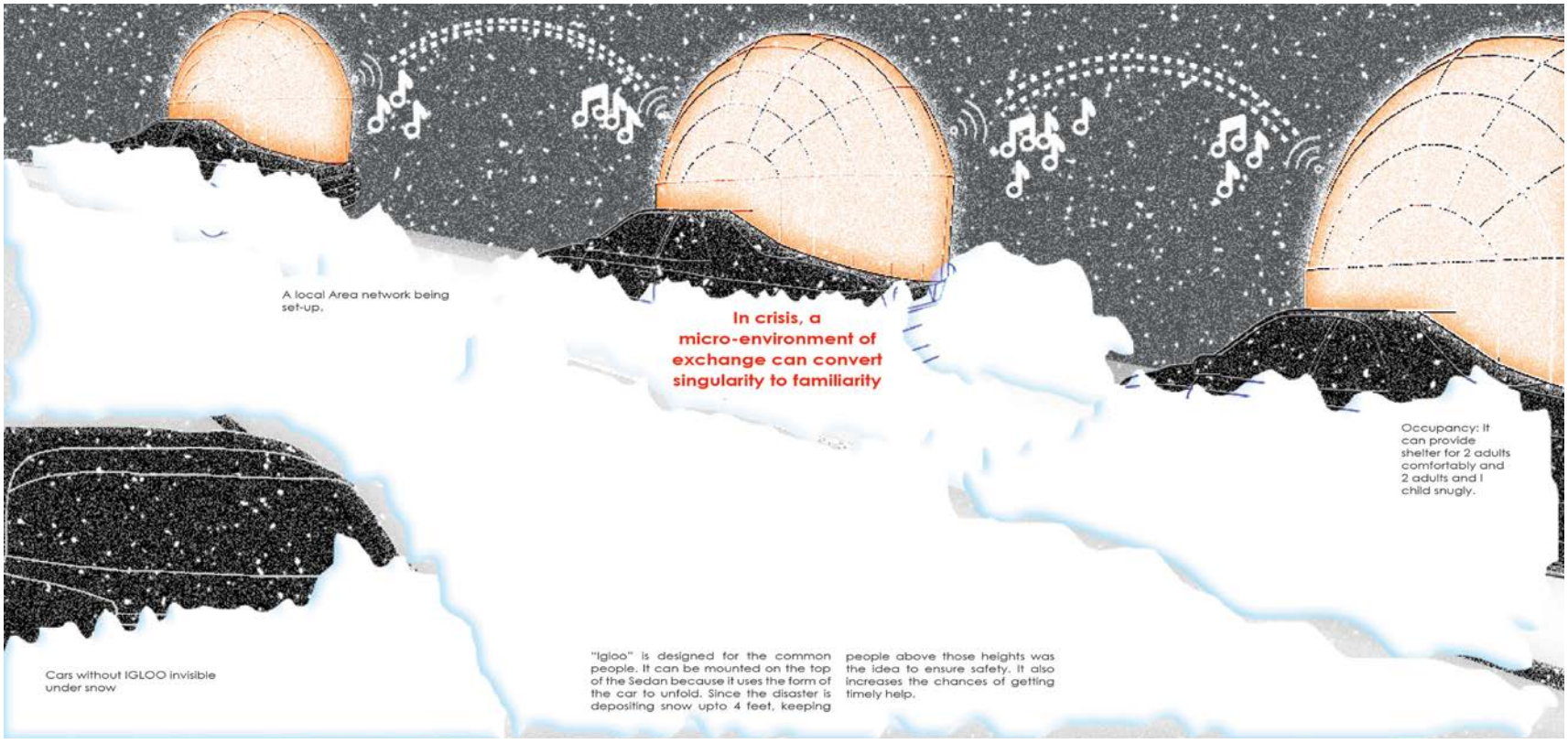
THE 'IGLOO' : A CAMPER'S DELIGHT

Design entry for competition Shelter48.

The brief was to design a shelter for a natural disaster.

We designed IGLOO, a foldable tent which allowed people to find refuge on the top of their cars during a blizzard. The design was able to provide immediate shelter to people travelling long distances till help arrived.

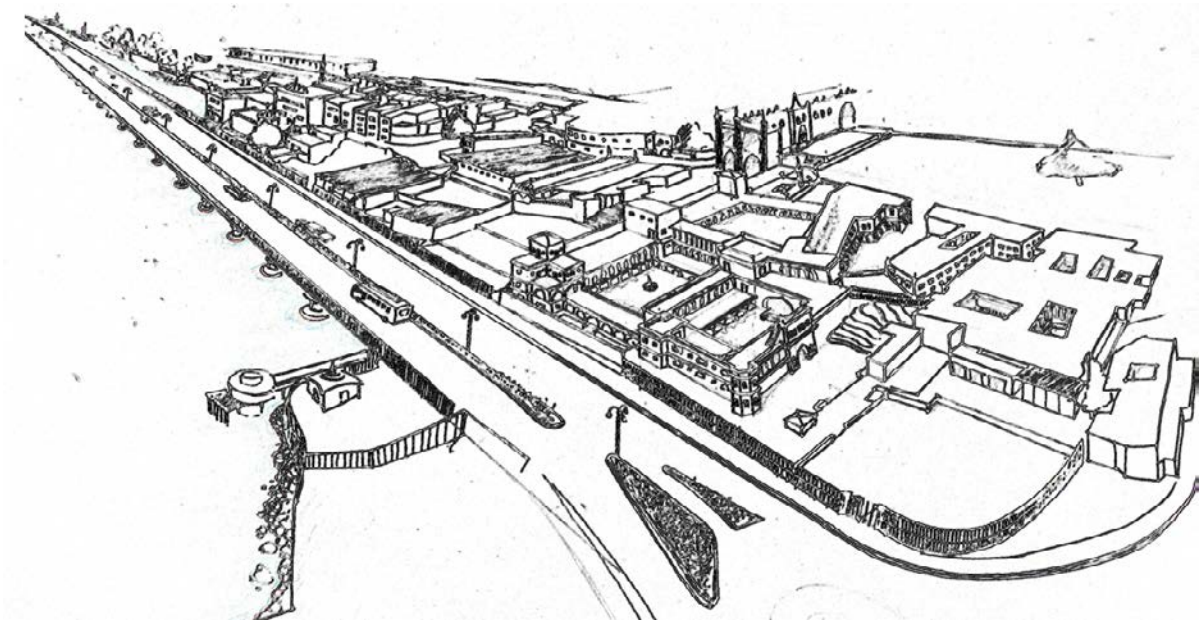
It can be installed above any regular Sedan and can be seen from a distance.

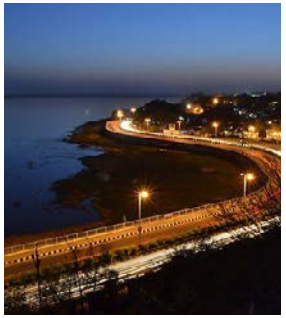


Blizzards are severe snow storms common in United States. Having never encountered a blizzard before, the team felt the need to design for people caught off-guard. Blizzards cause white-outs accompanied by strong winds and 4 feet of snow in 6 hours. It can last for prolonged hours bringing cities to a complete standstill.

The concept started with design of a vehicle to transport stranded people in a self-powered inflated device. But People on roads have nowhere to go when struck with a sudden storm of snow. Transportation, electricity and telecommunication may all get compromised, we decided to design for people stranded in cars.

Therefore, we propose "THE IGLOO": a camper's delight. A multiuse tent that can be pitched on a roof of a normal Sedan. The form is like a spiral and bright colors are proposed to enhance visibility in white-outs. Easy escape using zippers once help arrives.





GAUHAR MAHAL, VIP ROAD AND THE WATERFRONT, BHOPAL

SETTLEMENT STUDY 2010-11

Team Work

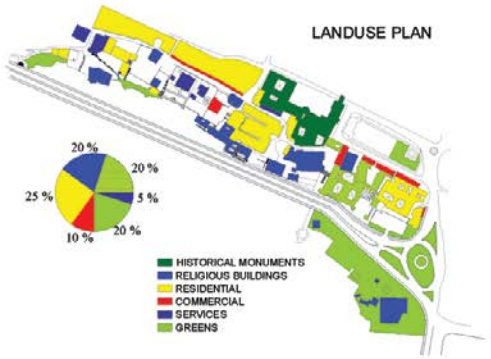
OLD CITY OF BHOPAL

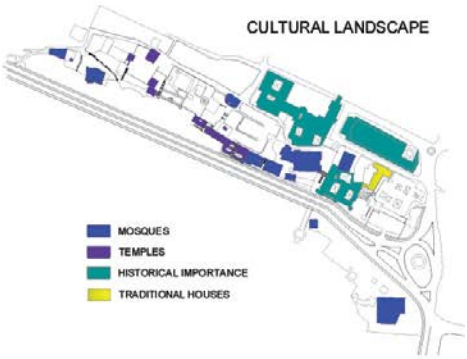
The face of the Old city of Bhopal; Gauhar Mahal , Iqbal Maidan and Sadar Manzil are few of the oldest structures along the edge of the Upper lake, one of the largest man-made lakes in India. In a recent addition, a road has been built across this part of the Upper lake known as the VIP road.

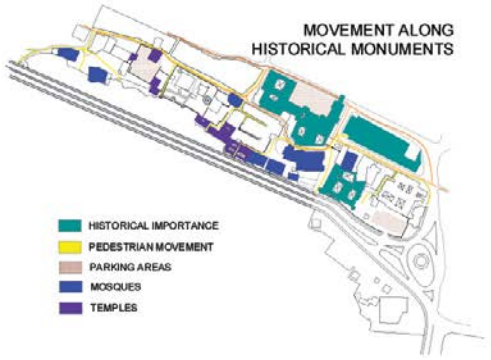
We studied the sociocultural fabric of the area by mapping the land use, movement

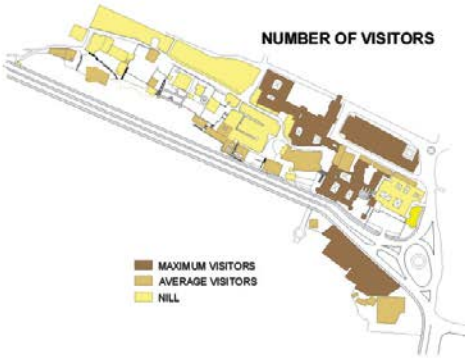
patterns, cultural heritage and the historic significance of the buildings in order to arrive at a conclusion.

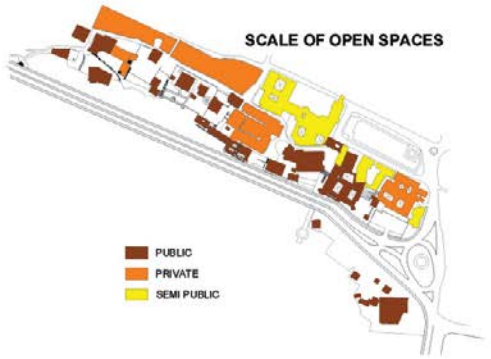
View of Upper lake from Gauhar Mahal roof; VIP lake along the study area; Ghats leading to the lake were people bathe and wash clothes; Swamp creation due to pollution; View of lake from one of the entry gates.

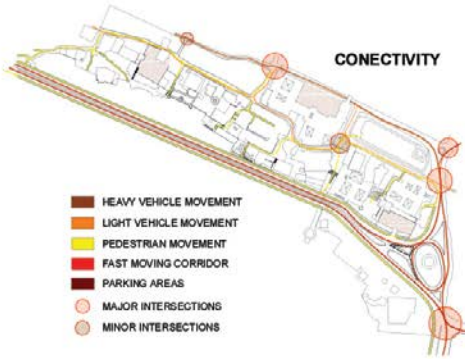


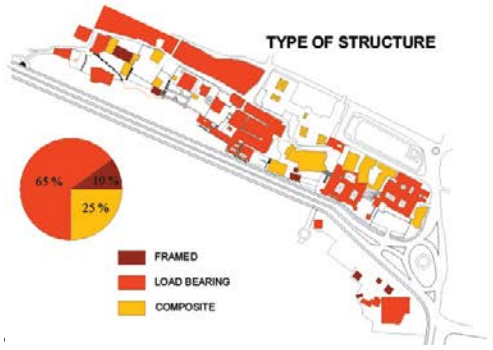


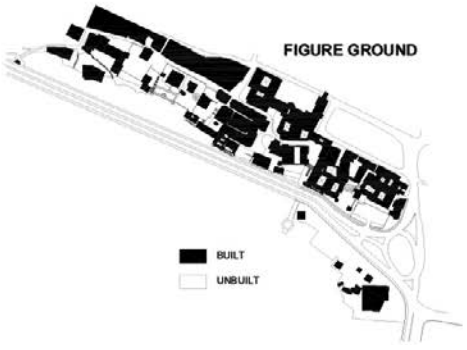












FINDINGS & PROPOSALS

The monuments were load bearing and need conservation to be restored to its former glory.

- Tourism should be promoted in this area which will add to the income of the low socioeconomic strata of the society that this area houses by conducting heritage walks should be conducted to educate the tourists.
- VIP road has led to the development of a swamp because of isolating an edge of Upper lake and timely cleaning is mandatory.
- Bottlenecks were created at road junctions leading to traffic congestion.
- Lack of pedestrian walkways and crossings.
- Organized growth of the fringe and local markets to preserve the integrity of the area.

It seemed like the Old Bhopal city has been left to die. If the heritage is to be conserved for future generations, immediate steps are required towards conservation.

“CELEBRATING FEMININITY” : A MUSEUM AND MEMORIAL FOR WOMEN

UNDERGRADUATE THESIS
2012-13

INTENT

Fear can bring the best and the worst in a person. A certain brutal act of sexual assault towards a woman in my home town made me question my safety and existence. Just when the thought had overpowered me to the extent of haunting, I decided to address my fears through design.

Talking about crimes against women is still a stigma in India, let alone designing a museum and a memorial to celebrate Femininity. This topic addresses the trauma caused to all the victims of assault who live their life in the shadows.

The existence of protest grounds in our city was put to question and if public spaces are really for the public or not?

‘Buildings are not simply expressive sculptures, they make visible our personal and our collective aspirations as a society. Great architecture can give us hope; great architecture can HEAL’

Michael Murphy

Site plan

India Gate as a celebrated monument

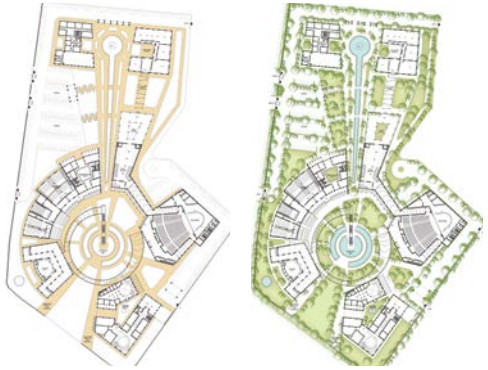


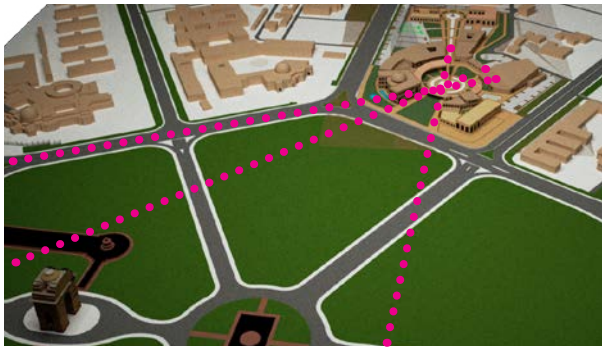
Figure ground, greens and movement patterns on site show the relationship between the built and the unbuilt. The pedestrian friendly design links to the context creating a public space for the visitors.

Residences, Galleries and Auditorium,
Administration, Learning centre,
Museum of permanent exhibits

URBAN RESPONSE

The design takes inspirations from the context. The site has been chosen along the hexagon of India Gate, one of the most celebrated monuments in India. It is a public plaza that represents New Delhi and represents freedom.

The facade treatment adheres to the the construction laws and design principles for the area.



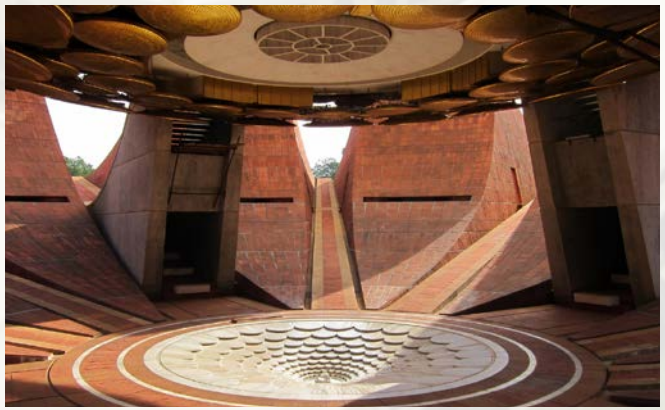
DESIGN DIRECTIVES

The design is a juxtaposition of the past, present and future and takes you on a journey towards closure.

It is the architecture that is '**built to heal**'. Victims, family, friends and visitors can visit this monument of contemplation to grieve, because acceptance leads to eventual forgiveness.

Horizontal Sundial at Jantar Mantar, Delhi.
The Design of the galleries takes inspiration from museums like Virasat-e -Khalsa. Art can be expressed in multiple forms. The need to give it the correct stage was addressed by design of flexible and dynamic exhibition spaces.

The space undergoes many changes due to light and shadow cast by the sundial and the surface adjoining it, **symbolic of change.**



Feminine spaces were created by playing with the design form and incorporating elements like water into the harsh geometry, encompassing a complex yet warming experience.
Tree arcades add to the line of sight and draw focus towards elements of importance

AREA PROGRAMMING

The design comprises of three components; **Museum** which represents the past; **Memorial** represents the present and the **Learning Centre** is representative of the future.

THE MUSEUM houses different kinds of galleries which provide flexibility to artists;

THE MEMORIAL takes inspiration from a horizontal sundial which acts as the marker of time;

THE LEARNING CENTRE contributes to instil the sense of empowerment and confidence in women by training them to become self reliant and fight against their own fears.

The design represents a **mother's womb**, the most celebrated aspect of femininity.

The **sundial**, becoming redundant after the sunlight hours reminds us of the unwanted presence of women in the public spaces hence, making them vulnerable to crimes.

[Left and Above] Meditation spaces in Matri Mandir In Auroville

Inspired from the context and the dynamic nature of women, water bodies tie the design together, contributing towards the final outcome. There are freestanding concrete walls for expression and peaceful protests, with the India Gate in the background.

RE-DENSIFICATION ALONG THE TRANSIT CORRIDOR OF PUSA ROAD, DELHI

URBAN DESIGN 2012-13
Team Work

TRANSIT ORIENTED DEVELOPMENT

Began with the study of transit patterns in the **City of New York**.

The expanse of the Subway, Rapid Transit, buses, taxis, pedestrian routes and the ease of accessibility increases the usage of Public Transport for commute. The Subway connects all the boroughs and stops are located at major locations usually within walkable distances.

The network is vast and connects the city which eases daily commute to work hence lowering the pressure on the roads. The bus routes are elaborate and timed. Bicycle and pedestrian tracks are well defined. Taxis are readily available at all times. Pedestrian crossings are at the junctions which allows for law and order.

Studying the city of New York gave an insight into working models which can be applied to regularize the traffic situations in Indian cities.

Site plan

Road network

Figure Ground

Green cover

Building height density

STRENGTHS
Good intra connectivity, Transit oriented development, access to Lake, Business District centre

WEAKNESSES
Lack of Pedestrian connections, Uneven Distribution of Land-use, Dark and dingy areas, lack of drop-offs/waiting areas, Inadequate parking facilities

OPPORTUNITY
Lake and greens around it, Plot housing, Natural Slope on site

THREATS
RSSB, a local spiritual group leads to traffic congestion, owns prime land and cannot be relocated; Dilapidated structures in the Business District centre

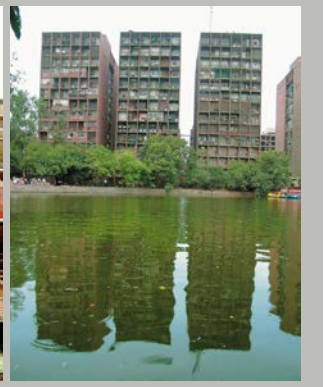
DESIGN PROBLEM

We mapped the existing land-use and typology, connections, built mass, greens etc. to solve the traffic congestion in the area.

CONTEXT

'Pusa Road' is one of the oldest roads in Delhi and with the advent of MRTS and the Master Plan of 2021, growth along the fringe has increased manifolds.

The metro station exits are along the road with improper pedestrian connection. One side of the road has the Central District Centre which attracts a lot of people and the other side, is the existing plotted development of Rajendra Nagar, Delhi.



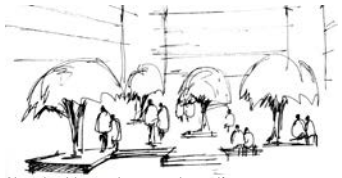
The existing housing condition in this area, was single plotted which meant only Ground+3 storeys existed. The district centre was in a dilapidated condition and unable to cater to the current footfall. According to the Delhi master plan for 2021, the FAR and the built-up were increased to 150%.

Hence it was proposed to redesign the chosen area completely, based on the new bye-laws accommodating for all the existing facilities to improvise the standard of living.

Public plaza for offices

Organized retail for hawkers

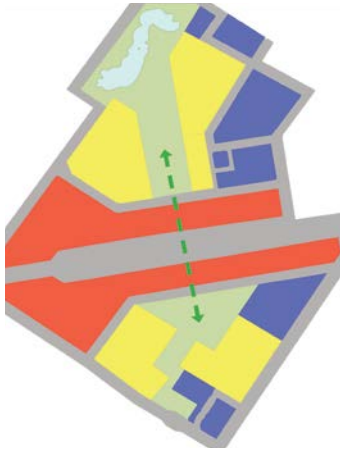
Consolidated greens for rejuvenation



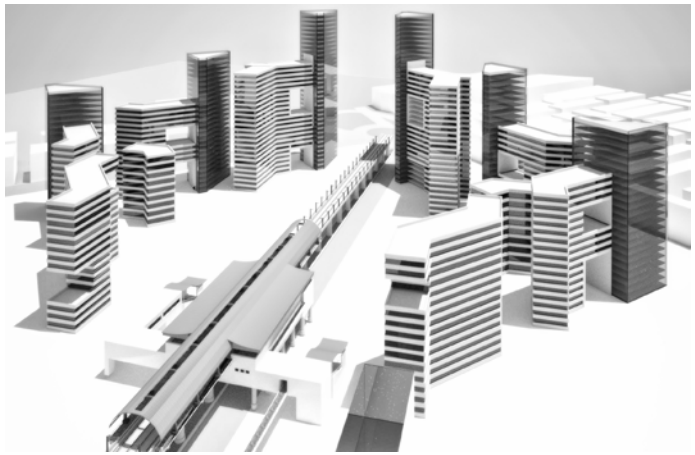
Shaded benches and seating

Pedestrian pathway along the metro

Proposed pedestrian and green belt address the issues previously faced by the occupants and daily visitors

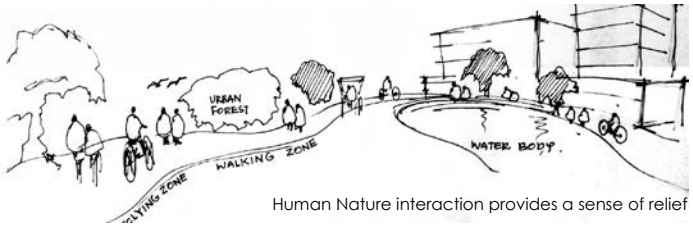


Existing v/s Proposed Landuse mapping shows the difference between mixed and planned development



View of the Proposed Business District Centre

Surface parking as a tool, also provides lung space for service areas



Human Nature interaction provides a sense of relief

PROPOSAL

We began with redesigning the land-use pattern based on site surveys conducted. The commercial and official buildings were located along the Road. A pedestrian link has been created from the metro station which connects to the Central green space proposed. The lack of lung spaces and spaces to interact was addressed by creating commercial plazas and interaction spaces.

Since the site is divided by the road, a green crossing was proposed which binds the two sides of the site, also binding the pedestrian movement and giving space to the local hawkers for organized retail.

This lung space comprises of dedicated greens for the housing, bicycle tracks and the existing lake. This green crossing also connects to the commercial plazas and gardens which act as spaces for interaction and rejuvenation. An underground pedestrian crossing has been proposed cutting across the road which doubles as an O.A.T. and allows for faster connection between the two sides of the site.

Site Area	56 Ha
Residential	2.3 Ha
Mixed use	2.3 Ha
Commercial	12.9 Ha
Institutional	5.5 Ha
Parking+ roads	14.9 Ha
Green	6.9 Ha

PICCOLO GREENS HOUSING AT KARKARDOOMA, DELHI

HOUSING PROJECT 2011-12
Team Work

SITE

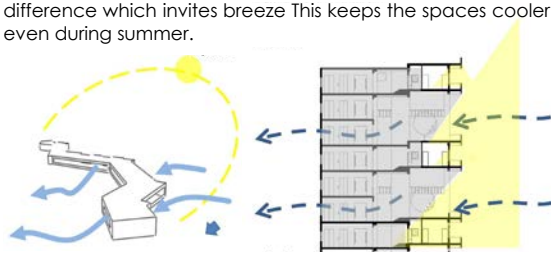
Delhi metro led to an increase in development along the adjacent plots. The site was located in a busy neighborhood of Delhi where the metro track cuts through the center of the plot cutting it unequally.

Proposal was made to design an inclusive housing where the Lower, middle and high income groups can thrive together.

Site plan

Placing the core outside of the linear form helps in providing support to the building by acting like a sheer wall and protecting against wind loads

Microclimate is created in these spaces due to pressure difference which invites breeze This keeps the spaces cooler even during summer.



The orientation of the dwelling changes when we place them around the core in this manner.

But by rotating the units at the same location, we can achieve an optimum orientation

Unit plans; Climatic response to design for Delhi weather; Rotation of blocks to arrive at the final form

DESIGN SOLUTION

Four 25 storey towers were designed with a singly loaded corridor to accommodate the required numbers. The LIG apartments were restricted to Ground+4 with separate circulation followed by MIG and HIG on upper floors. The blocks were linear and follow the 8.1m X 8.1m structural grid.

Greens were maximized and designed based on the hierarchy of age groups. Vehicular access was limited to the periphery of the site going into the basement for parking. Pedestrian tracks, Cycling tracks, universally accessible greens and apartments, commercial space, utility store, sculpture courts, community center and health center were the other amenities provided.

The singly loaded corridor, the N-S alignment and the angular arrangement of the apartments maximizes light and ventilation inside the houses. A service floor has been proposed at the 5th floor which caters to the daily needs of the occupants.

Site section

HOUSING UNITS IN DETAIL

Form and the interior spaces

1BHK APARTMENT

2BHK ARARTMENT

2BHK ARARTMENT

3BHK APARTMENT

2BHK ARARTMENT

4BHK APARTMENT

LIG APARTMENTS