DAKSHANA VALLEY

KADUS, PUNE, MAHARASHTRA, INDIA

MASTER PLAN
(2020-35)

NAMING RIGHTS FOR BUILDINGS & INFRASTRUCTURE AT DAKSHANA VALLEY

NAMING RIGHTS FOR BUILDINGS AT DAKSHANA

Acquired Naming Rights

Naming Rights Granted at Dakshana Valley

Donor	Project Name	Purpose	Construction Cost	Donor's Contribution	Completion
Indira Foundation	Tara Ben J. Mehta Girls Hostel	Girls Hostel	$873,585	$436,792	2019
Indira Foundation	R. G Manudhne Excellence Hall	Lecture Hall	$294,667	$147,333	2021
Bablie & Brij Sood	Prem Nath and Kaushalaya Devi Sood Hall	Lecture Hall	$309,160	$154,580	2027
Indira Foundation	Indira Manudhane Innovation Hall	Lecture Hall	$309,160	$154,580	2027
Indira Foundation	Jasubhai Mehta Collaboration Hall	Lecture Hall	$309,160	$154,580	2029
Indira Foundation	Taraben J. Mehta Determination Hall	Lecture Hall	$309,160	$154,580	2029
Indira Foundation	R.G. Manudhane Perseverence Hall	Lecture Hall	$309,160	$154,580	2031
Indira Foundation	R.G. Manudhane Continuous Learning Hall	Lecture Hall	$309,160	$154,580	2031
United Overseas Bank	UOB My Digital Space	Computer Lab	$136,000	$45,000	2022
Sanjeev Shah	Induben R. Shah Hall	Computer Lab	$136,000	$40,000	2017
Bablie & Brij Sood	Walaitiram And Padmavati Sood Dining Hall	Dining Hall	$3,854,933	$1,927,467	2027-31*
Sriram Jaganmohan	Vijayalakshmi Jaganmohan Clinic	Clinic & Tuck Shop	$355,871	$177,936	2027
Anonymous on request	To be decided	Academic Street	$77,000	$38,500	2029
Jagadish Thakkar & Friends	Maharshi Vyas Marg	Roadway	$54,000	$27,000	2028
Tower Research Capital	To be decided	Library	$610,000	$305,000	2027
Grand Total			$8,247,016	$4,072,508	

We at Dakshana Foundation follows a naming right donation model where a donor can contribute 50% of total cost of any building and we appreciate the donation in the form of a signage and few words about the person to whom donor wants to dedicate it to.

We are thankful to our generous donors for their contributions.

Honorific Names Granted

Building Name	Location	Purpose	Construction Cost	Completion
Charles T. Munger Hall	JNV Bengaluru Urban, Bengaluru	Lecture Halls	$493,000	2,016
Sergio Marchionne Block	Dakshana Valley, Pune	Dakshana HQ	$427,000	2,017
Grand Total			**920,000**	

*To be constructed in 2 phases.

NAMING RIGHTS FOR BUILDINGS AT DAKSHANA

Available Naming Rights for Proposed Buildings

Naming Rights Available at Dakshana Valley (Buildings)			
Building	**Cost**	**Naming Rights**	**Completion Estimate**
Arrival and Pavilion Block	$1,226,000	$613,000	2029
Open Air Amphitheatre	$1,014,000	$507,000	2029
Hostel No. 1	$1,440,000	$720,000	2027
Hostel No. 2	$1,440,000	$720,000	2027
Hostel No. 3	$1,440,000	$720,000	2027
Hostel No. 4	$1,440,000	$720,000	2030
Hostel No. 5	$1,440,000	$720,000	2030
Hostel No. 6	$1,440,000	$720,000	2032
Hostel No. 7	$1,440,000	$720,000	2032
Hostel No. 8	$1,440,000	$720,000	2034
Hostel No. 9	$1,440,000	$720,000	2034
Lecture Hall No. 8	$310,000	$155,000	2028
Staff Apartment Bldg. 1	$552,000	$276,000	2027
Staff Apartment Bldg. 2	$552,000	$276,000	2027
Staff Apartment Bldg. 3	$552,000	$276,000	2030
Staff Apartment Bldg. 4	$552,000	$276,000	2032
Faculty Apartment Bldg. 1	$175,000	$87,500	2028
Faculty Apartment Bldg. 2	$175,000	$87,500	2028
Faculty Apartment Bldg. 3	$175,000	$87,500	2028
Faculty Apartment Bldg. 4	$175,000	$87,500	2028
Faculty Apartment Bldg. 5	$175,000	$87,500	2028
Faculty Apartment Bldg. 6	$350,000	$175,000	2028
Grand Total	**$18,943,000**	**$9,471,500**	

Available Naming Rights for Proposed Infrastructure

Naming Rights Available at Dakshana Valley (Infrastructure)			
Projects	**Cost**	**Naming Rights**	**Completion Estimate**
Indoor sports Arena	$160,000	$80,000	2028
Lake 1	$64,000	$32,000	2022
Lake 2	$360,000	$180,000	2028
Lake 4	$550,000	$275,000	2027
Main Road	$352,000	$176,000	2028
Sec. Road	$180,000	$90,000	2028
Loop Road 2	$72,000	$36,000	2028
Grand Total	**$1,738,000**	**$869,000**	

Dakshana Valley Capacity Expansion Plan 2022-2035		
Expansion Phase	**Year Of Intake**	**Capacity**
Phase 1	2022	588
Phase 2	2027	1020
Phase 3	2029	1572
Phase 4	2031	2124
Phase 5	2033	2676

We seek funds to expand Dakshana Valley to accommodate 2700 Scholars

LECTURE HALL

DONOR'S NAME : INDIRA FOUNDATION

R.G. MANUDHANE EXCELLENCE HALL

LECTURE HALL

DONOR'S NAME : INDIRA FOUNDATION

R.G. MANUDHANE EXCELLENCE HALL

R.G. MANUDHANE EXCELLENCE HALL

LECTURE HALL

DONOR'S NAME : SOOD FAMILY

PREM NATH AND KAUSHALAYA DEVI SOOD HALL

LECTURE HALL

DONOR'S NAME : INDIRA FOUNDATION

INDIRA MANUDHANE INNOVATION HALL

LECTURE HALL

DONOR'S NAME : INDIRA FOUNDATION

JASUBHAI MEHTA COLLABORATION HALL

LECTURE HALL

DONOR'S NAME : INDIRA FOUNDATION

TARABEN J. MEHTA DETERMINATION HALL

LECTURE HALL

DONOR'S NAME : INDIRA FOUNDATION

R.G. MANUDHANE PERSEVERENCE HALL

LECTURE HALL

DONOR'S NAME : INDIRA FOUNDATION

R.G. MANUDHANE CONTINUOUS LEARNING HALL

HOSTEL

DONOR'S NAME : INDIRA FOUNDATION

TARABEN J. MEHTA GIRLS HOSTEL

COMPUTER LAB

DONOR'S NAME : Mr. Sanjiv Shah

The Induben Ramji Shah Hall

*Currently used as a lecture Hall which
is planned to be refurbished into a computer Lab

COMPUTER LAB

DONOR'S NAME : UNITED OVERSEAS BANK

UOB MY DIGITAL SPACE


HEAD QUARTERS BLOCK
SERGIO MARCHIONNE BLOCK
SERGIO MARCHIONNE BLOCK
Honorific naming right

KITCHEN AND DINING BLOCK

DONOR'S NAME : SOOD FAMILY

WALAITIRAM AND PADMAVATI SOOD DINING HALL

KITCHEN AND DINING BLOCK

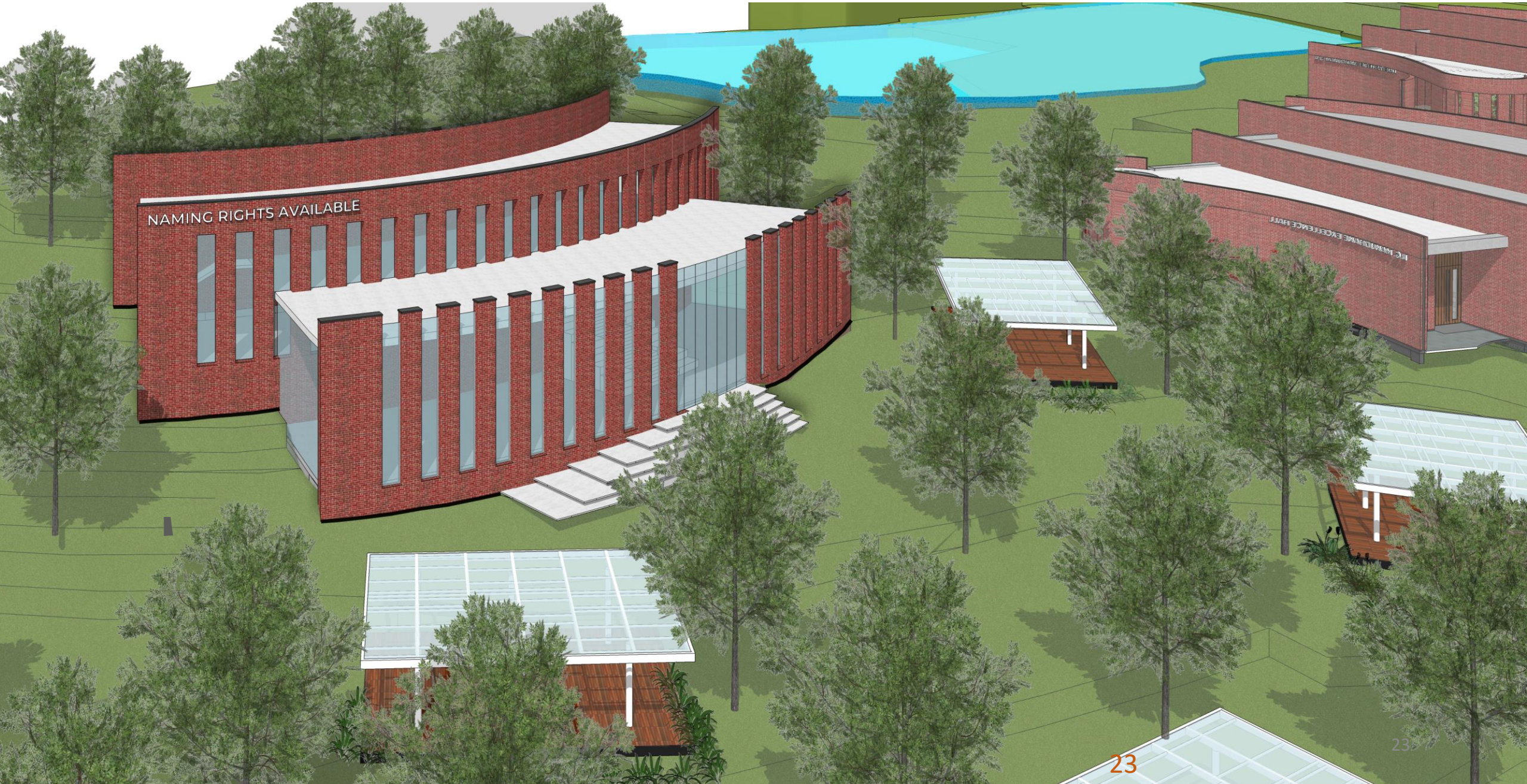
DONOR'S NAME : SOOD FAMILY

WALAITI RAM AND PADMAVATI SOOD DINING HALL

LEGACY PAVILION - NAMING RIGHTS AVAILABLE

AMPHITHEATRE – NAMING RIGHTS AVAILABLE

LIBRARY BLOCK - NAMING RIGHTS AVAILABLE



HOSTEL BLOCKS- NAMING RIGHTS AVAILABLE (9 BLOCKS)

- *Positioning the Donor's name on top of Roof.*
- *Visible from various high points in valley.*

Reference Image

HOSTEL BLOCKS- NAMING RIGHTS AVAILABLE (9 BLOCKS)

- *Highlighting the Donor's Name over a Blank Canvas.*
- *Visually Distinct as placed over a blank wall.*
- *Easy to Identification as placed close to human eye level.*

HOSTEL BLOCKS- NAMING RIGHTS AVAILABLE (9 BLOCKS)

- *Providing segregated space for each hostels' Donor's name.*
- *Integrated in landscape.*
- *Easy identification as placed at an eye level of passerby.*

HOSTEL VIEW

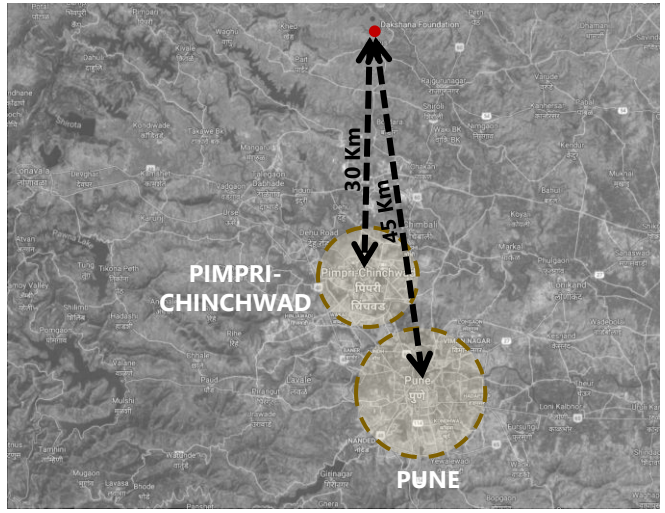
LAKE DEVELOPMENT – NAMING RIGHTS AVAILABLE

COMPREHENSIVE PLAN FOR DAKSHANA VALLEY

SITE CONTEXT | LOCATION

Inference:

- The Site is located in the outskirts of Major Cities **like Pune and Pimpri-Chinchwad.**
- The Site is situated in a valley in **Khed** surrounded by hills in all sides.
- It is in close proximity to water bodies such as the **Kadus Dam and Bhima River**
- The Site is situated in one of the valley in **Sayagaon** which has a **slope more than 100m** from the ridge of the surrounding hills.
- It has unobstructed views towards the ridges on the northern, eastern and western side, while the prominent ones being the southern side towards the **Kadus Dam.**

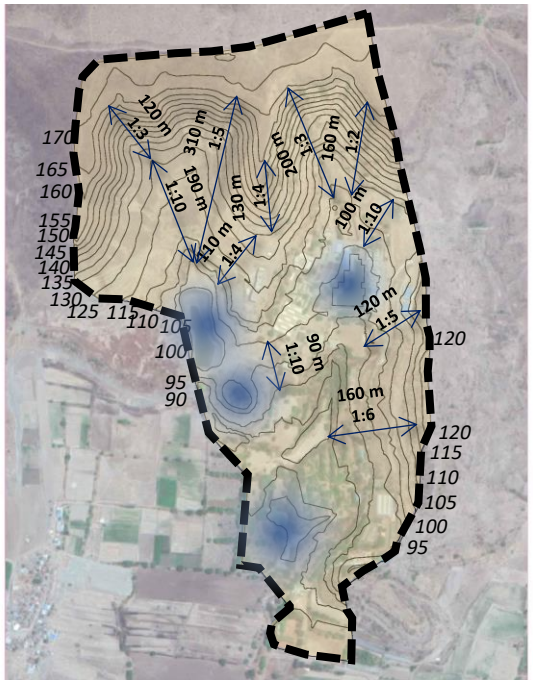


Site
Ridge Lines
River

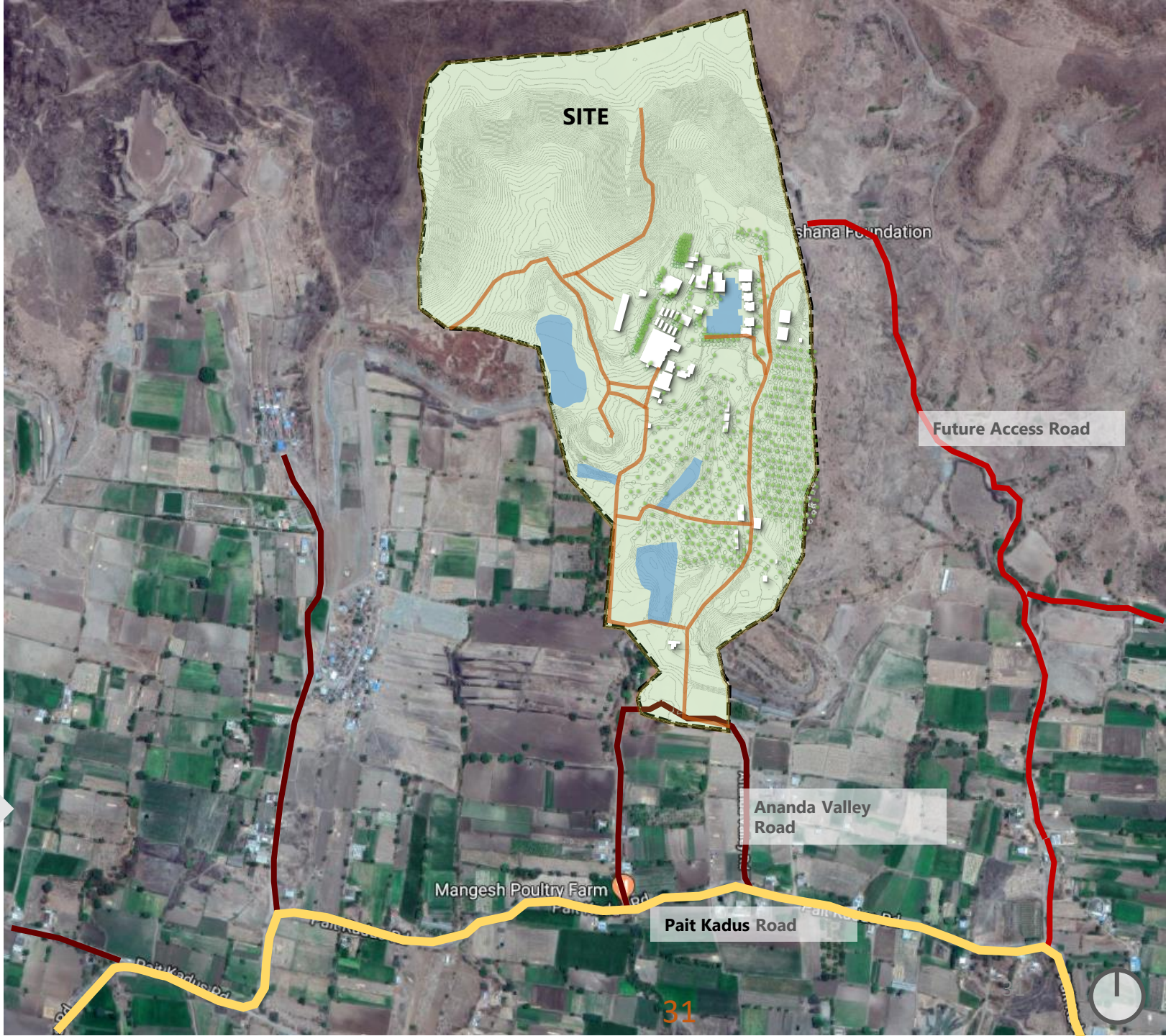
SITE CONTEXT | SITE SURROUNDING

Inference:

- **Site Area :** 109 Acres (4,41,107 sqm.)
- **Access :** The Site is accessible from the south by an internal road (6m) (Ananda valley Road) connected to Pait-Kadus Main Road. The site consists of existing internal '*Kuchha*' roads which connects all the buildings on site.
- **Terrain :** Site sloping from North to South
- **Site Surroundings :** The Site is surrounded by hills on the northern and eastern side and mostly by agricultural lands on all other sides.



Slope Analysis with low points on site

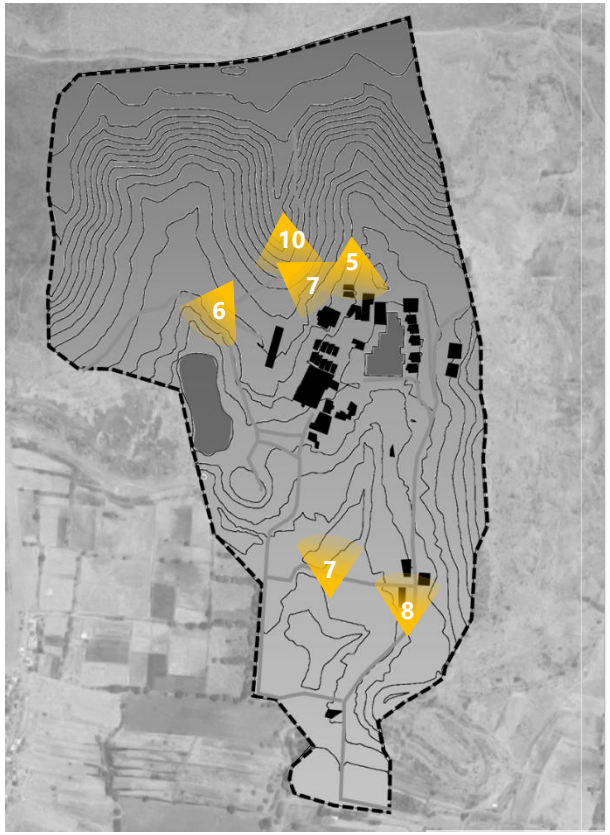


SITE CONTEXT | SITE IMAGES

VIEW 05

VIEW 06

VIEW 07



KEY PLAN

VIEW 08

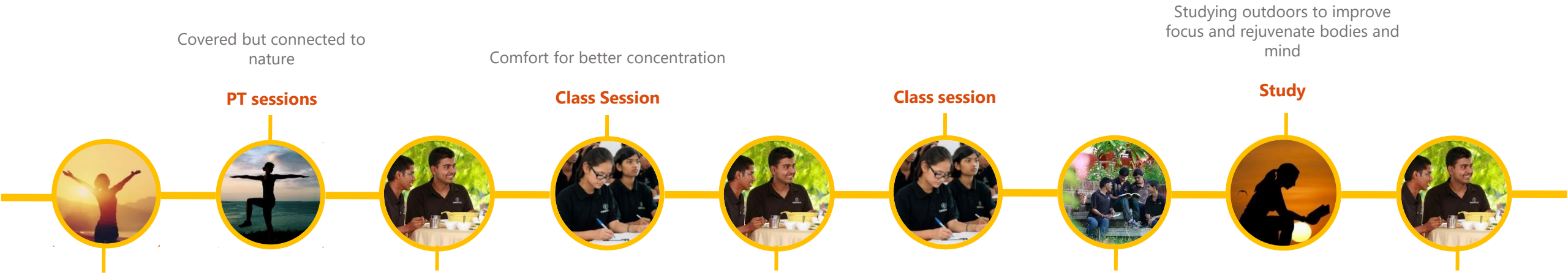
VIEW 09

VIEW 10

Inference

- View 5: Maintaining the essence of campus planning by providing courts and informal interaction spaces
- View 6 & 7: Preserving existing water bodies to help creating comfortable environments
- View 8: Trying to maintain the long winding site access that breaks away from regular cityscapes

SITE CONTEXT | DAILY CYCLE – 24HRS X 7DAYS



Wake up

Feel at home environment, Possibility of chance interactions

Covered but connected to nature

PT sessions

Breakfast

Quick start, Intense community management

Comfort for better concentration

Class Session

Lunch

A chance to admire their natural heritage

Class session

Discussion

Catalogue of Informal spaces of interaction – A pocket for logic

Studying outdoors to improve focus and rejuvenate bodies and mind

Study

Dinner

DESIGN PHILOSOPHY

The design **responds to Client Brief, Climate & Context** by pushing the boundaries of conventional benchmarks for sustainability & cost…placing the **user at the center** of the design process.

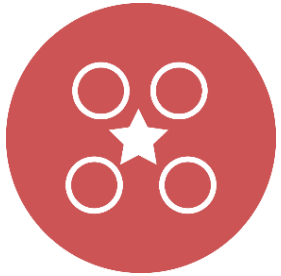
SUSTAINABILITY

- Views : Unobstructed and Maximized Views towards valley
- Microclimate : 5-7°C Reduction in Perceptible Temperature
- Energy Efficiency : 72% reduction in EPI ~25 kWh/sq.m./yr. targeted through passive design strategies
- Ecology : Preservation of 109 acres Biodiversity, Natural Water Channels/Reservoirs and Terrain
- Net Zero Campus : Net Zero Energy | Net zero Water | Net Zero Waste

OPTIMISATION

- Topography : Minimizing Cut and Fill
- Infrastructure : Service Tunnels integrated with Road/Pathway planning to respect the existing site terrain

UNIQUENESS



- Legacy : Inscription of every Scholar's imprint onto the wall design of the Legacy pavilion
- Studying (Outdoors) : Integration of Outdoor studying spaces in the Landscape
- Studying (Indoor) : Year-round naturally lit and ventilated Machans for studying / informal teaching
- Materials : Local Materials, Art and Craft integrated in Design

LIVABILITY

- Layout Design : >90% Daylight (Zero Glare) | >90% Cross Ventilation | 50% Reduction in Heat Gain | Acoustic comfort
- Fitnesss : 82 X 45 M Football Field & Cricket Ground | Indoor Sports – 1 Basketball and 4 badminton courts | 300 m Running Track | 3 x 400 m and 800 m jogging trails | 2 basketball & 6 badminton courts | Yoga Decks
- Recreation & Events : 3000 capacity Amphitheatre | 1392 capacity Dining / Multipurpose halls

SUSTAINABILITY

- **Views** : Unobstructed and Maximized Views towards valley
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SUSTAINABILITY | VIEWS

Unobstructed and Maximized Views towards valley

1. View to valley: Strategically placing blocks on terrain areas results in greater visibility

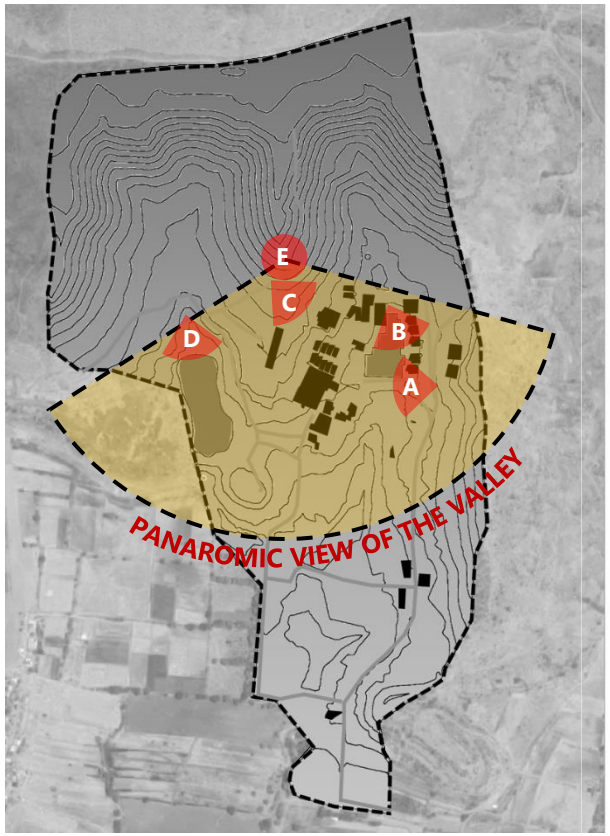
2. Panoramic View: Designing the campus to capture the clear panoramic views of the valley

View A : Preserving the existing vistas and avenues

View B : Taking advantage of the existing lakes for enhanced internal views

View C : Strategic placement of the blocks considering the existing development for visibility

View D : Taking advantage of the existing lakes for enhanced internal views



Key Plan

View E : Designing the campus to capture the clear panoramic views of valley

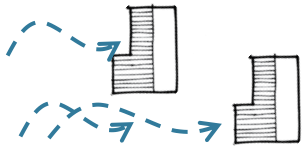
SUSTAINABILITY | MICROCLIMATE

5-7°C Reduction in Perceptible Temperature

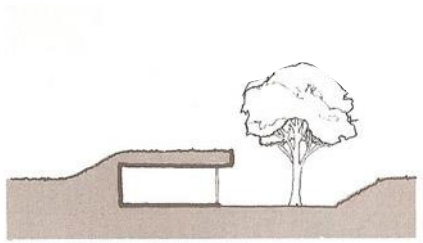
Pune has a predominantly **Warm-Humid climate.**
(varying from hot-dry to warm-humid periods during the year)

There is also a **distinct warm-humid season during the months of May-September.**
Tend to remain below 30^0 C for most of the year – 8 months.

Thermal comfort can be achieved by passive strategies for 85% of the year

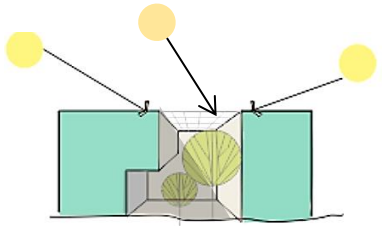


- **Wind Movement:**
  Aligning the buildings along E-W with no obstruction to increase wind movement and maintain the comfort level outdoors, also to facilitate cross ventilation indoors

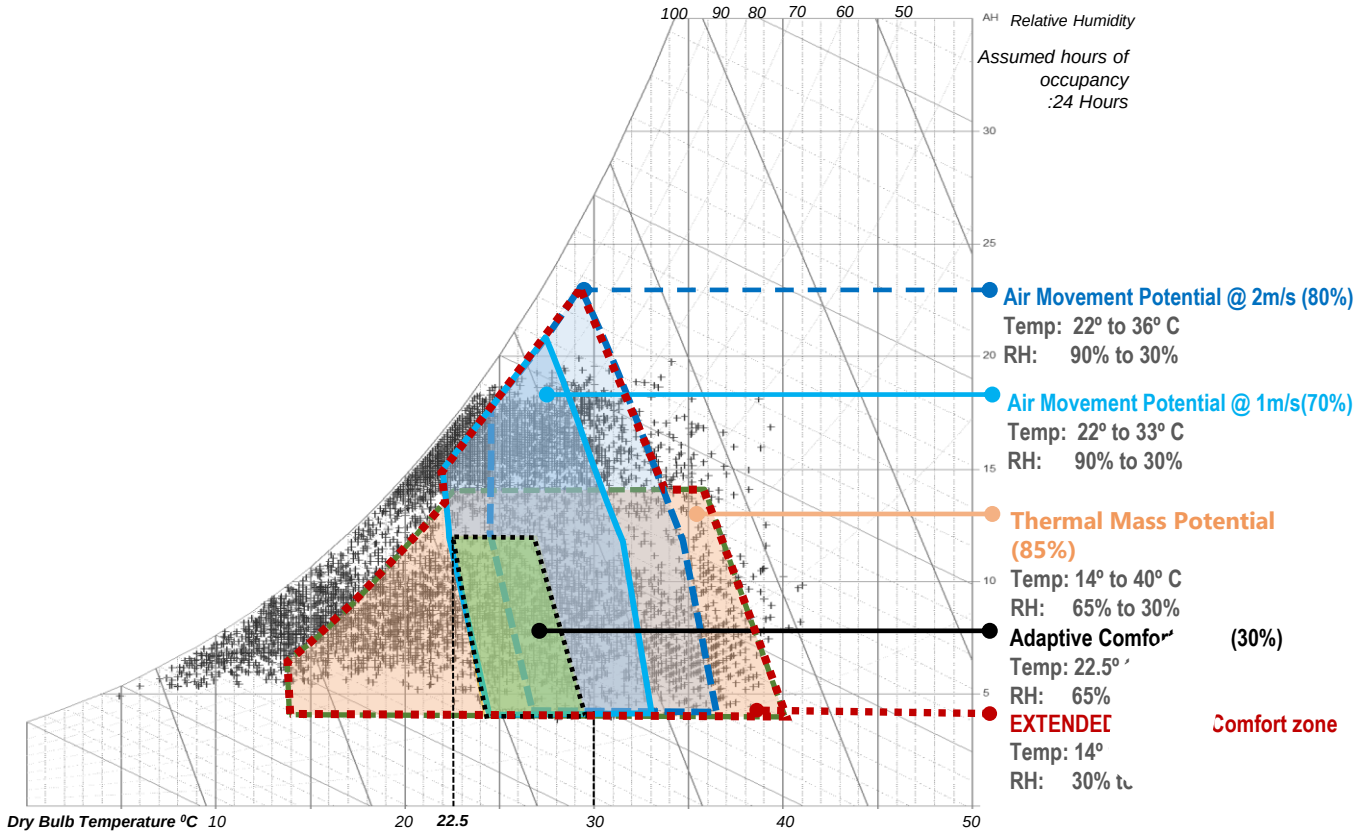


- **Thermal Banking:**
  Increasing the thermal mass potential of the envelope by simple earth berm techniques to keep the indoor temperature low

- **Vegetation:** Preserving the natural vegetation to provide comfort environment outdoors and indoors during hot summer period, planning the vegetation to facilitate wind movement and provide shading.



- **Solar Shading:** Planning & designing the buildings with respect to sun angles which can optimise the amount of solar heat gain and visible light that is admitted into a building



Inference :

- Non-Air Conditioned Spaces: Thermal comfort may be achieved for up to **85%** of the annual occupancy period by thermal mass strategy
- Open Space orientation : High Humidity in most part of the year. Streets/ openings should be oriented to allow prevailing winds during the warm & humid months
- Air-Conditioned Areas: Heat loads may be significantly reduced by employing passive strategies
- Thermal Mass and Solar Shading: The structure could be kept cool during the hotter summer months by utilizing Thermal mass and Solar Shading techniques

72% Lesser energy than certified green building benchmarks through passive design and microclimate creation

BASE PERCENTAGE OF 100 %

PERCENTAGE OF REDUCTION

BEE
Baseline EPI

BUREAU OF ENERGY EFFICIENCY

EPI: Energy Performance Index on primary energy consumption (unit: kWh/sq.m/yr)

35 %

39 %

41 %

55 %

72 %

dakshana

BASELINE EPI	LALIT SURI INSTITUTE, FARIDABAD	VIDYASHILP ACADEMY, BANGALORE	BRITISH SCHOOL NEW DELHI	IILM GREATER NOIDA	DAKSHANA VALLEY SCHOOL
90 kWh/sq.m/yr	58 kWh/sq.m/yr	55 kWh/sq.m/yr	53 kWh/sq.m/yr	40 kWh/sq.m/yr	25 kWh/sq.m/yr

Minimum Intervention

Existing built-up area

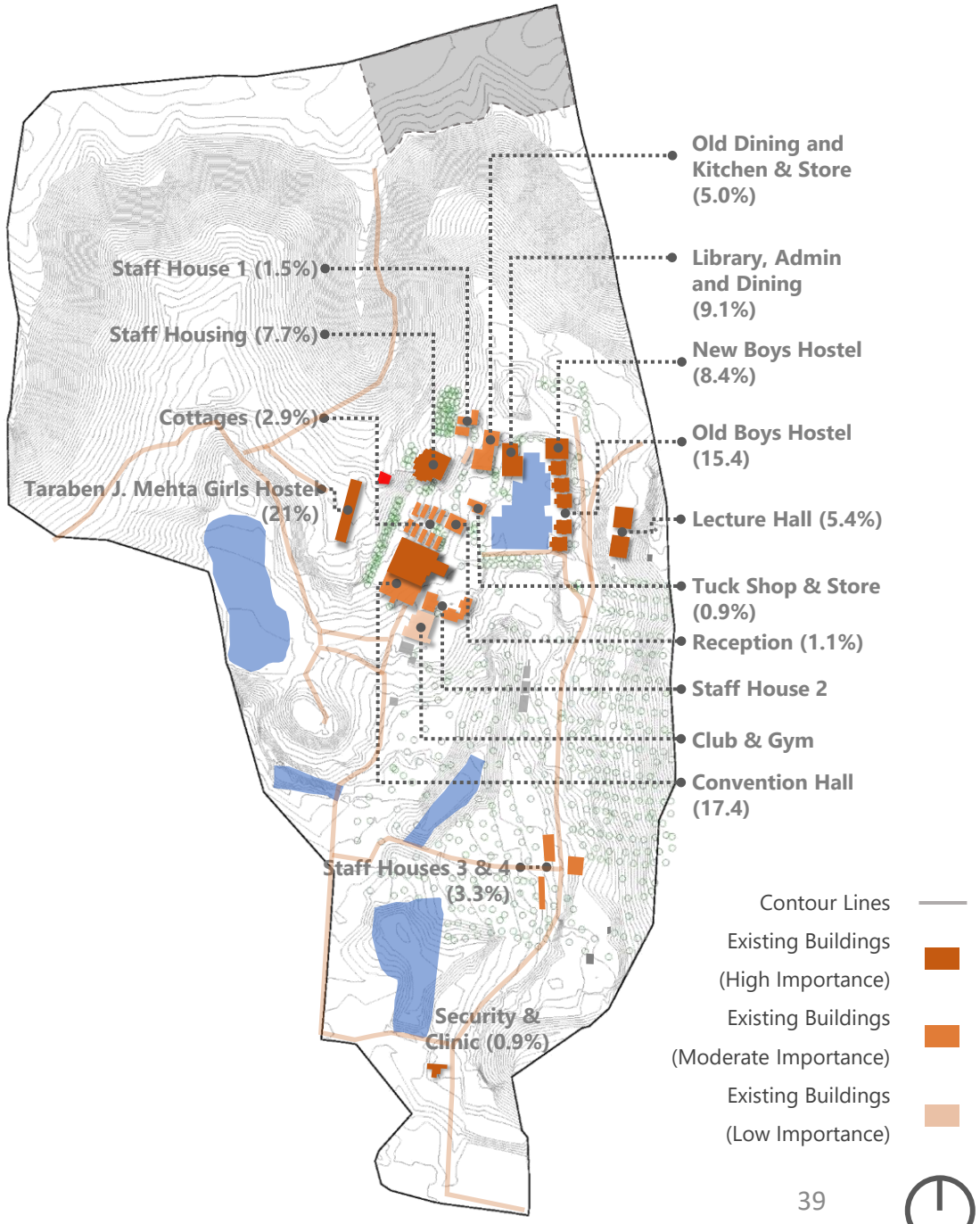
16,079 sqm. (1,73,073 sqft.)

Built-up to be demolished

Multipurpose Hall (half)	1,090 sqm.	8.3%
Club & Gym	0 sqm.	0%
Staff House 2	0 sqm.	0%
Reception	148 sqm.	1.1%
Tuck Shop & Store	110 sqm.	0.9%
Old Dining Hall	340 sqm.	2.5%
Kitchen & Store	293 sqm.	2.3%
Cottages	352 sqm.	2.6%
Staff House 1	190 sqm.	1.5%
Staff House 3 & 4	406 sqm.	3.1%
Total	2,929 sqm.	22.3%

Note : Buildings already worn-out (Club & Gym etc.) are not included in area calculations

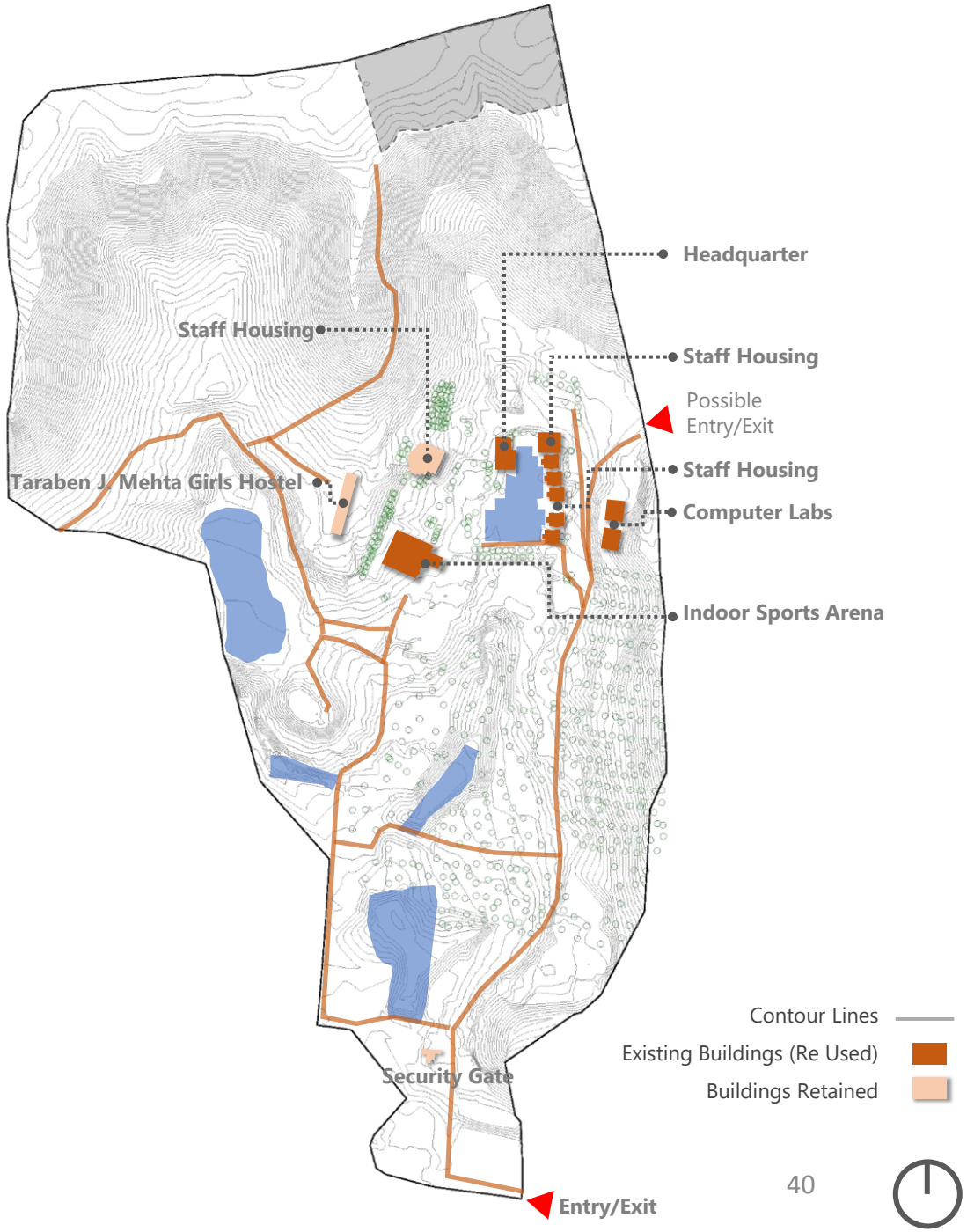
Planning to retain 77.7 % of the existing built-up



Refurbished Buildings

Built-up to be refurbished/retained

OLD USE	NEW USE	AREA	
Lecture Hall	Computer Labs	676 sqm.	5.1%
Old Boys Hostel	Faculty Housing	1924 sqm.	14.6%
New Boys Hostel	Faculty Housing	1055 sqm.	7.8%
Admin, Library and Dining	Headquarter	1135 sqm.	8.6%
Staff Housing	Staff Housing	959 sqm.	7.4%
Security Gate	Security Gate	114 sqm.	0.9%
Multipurpose Hall (half)	Indoor Sports Arena	1,090 sqm.	8.3%
Taraben J. Mehta Girls Hostel	Taraben J. Mehta Girls Hostel	3,345 sqm.	25.3%
Total		10,298 sqm.	77.7%



Preservation of 109 acres Biodiversity & Natural Water Channels/Reservoirs

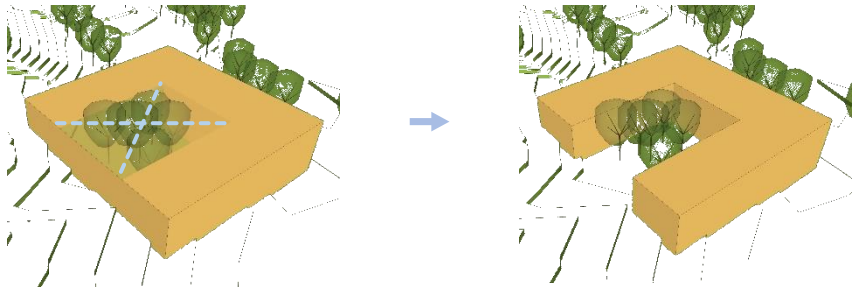
1. **Conserving** maximum of **Vegetation** on site

2. **Minimizing on cutting down** of trees

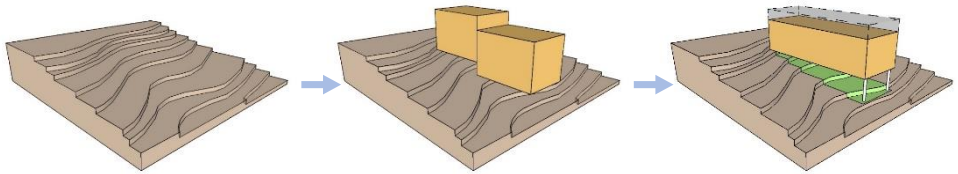
3. Built mass to be designed to benefit from **existing green areas**

4. Conserving the existing man-made and **seasonal water bodies** on site

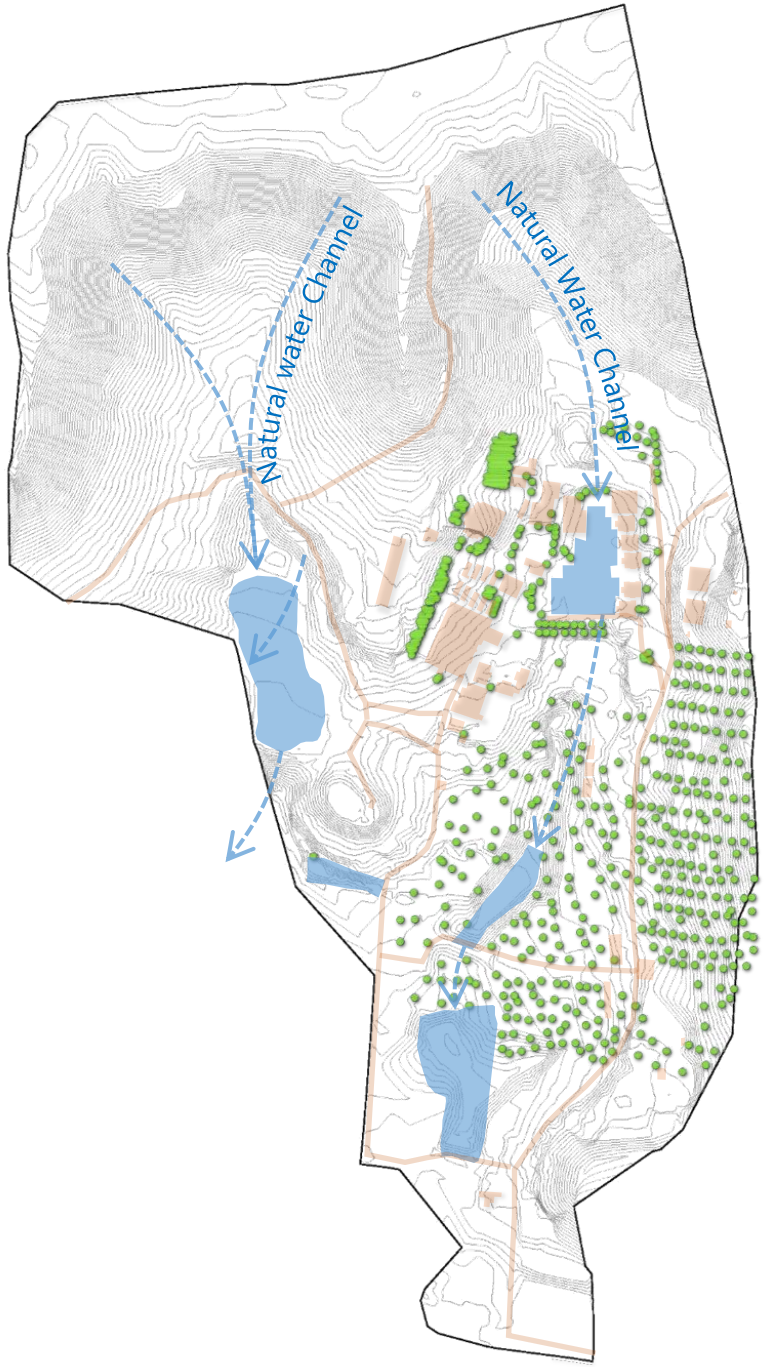
5. Respecting the **natural slope of rainwater** flow



Flora: Preserving the existing vegetation on site and designing around the vegetation to reduce tree cutting

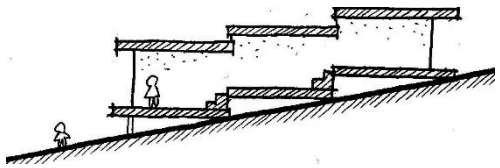


Terrain: Utilizing the terrain to naturally form activity areas below the building | Built volume optimization



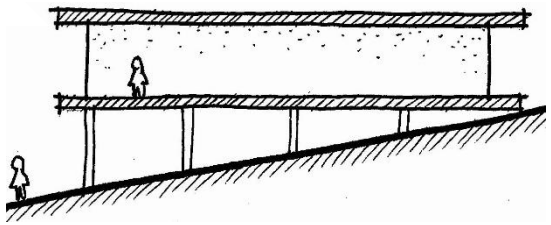
SUSTAINABILITY | TOPOGRAPHY

Preservation of Terrain



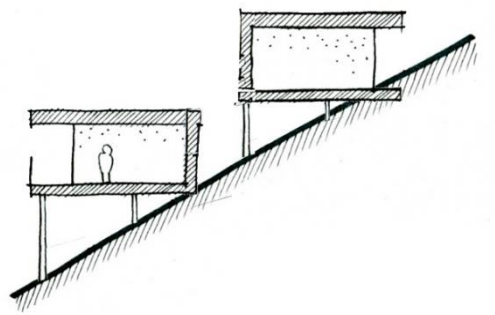
Gentle Slope (1:6 - 1:10)

Large building footprint like **classrooms** could be arranged on such gentle gradient to minimize excess cut and fill.



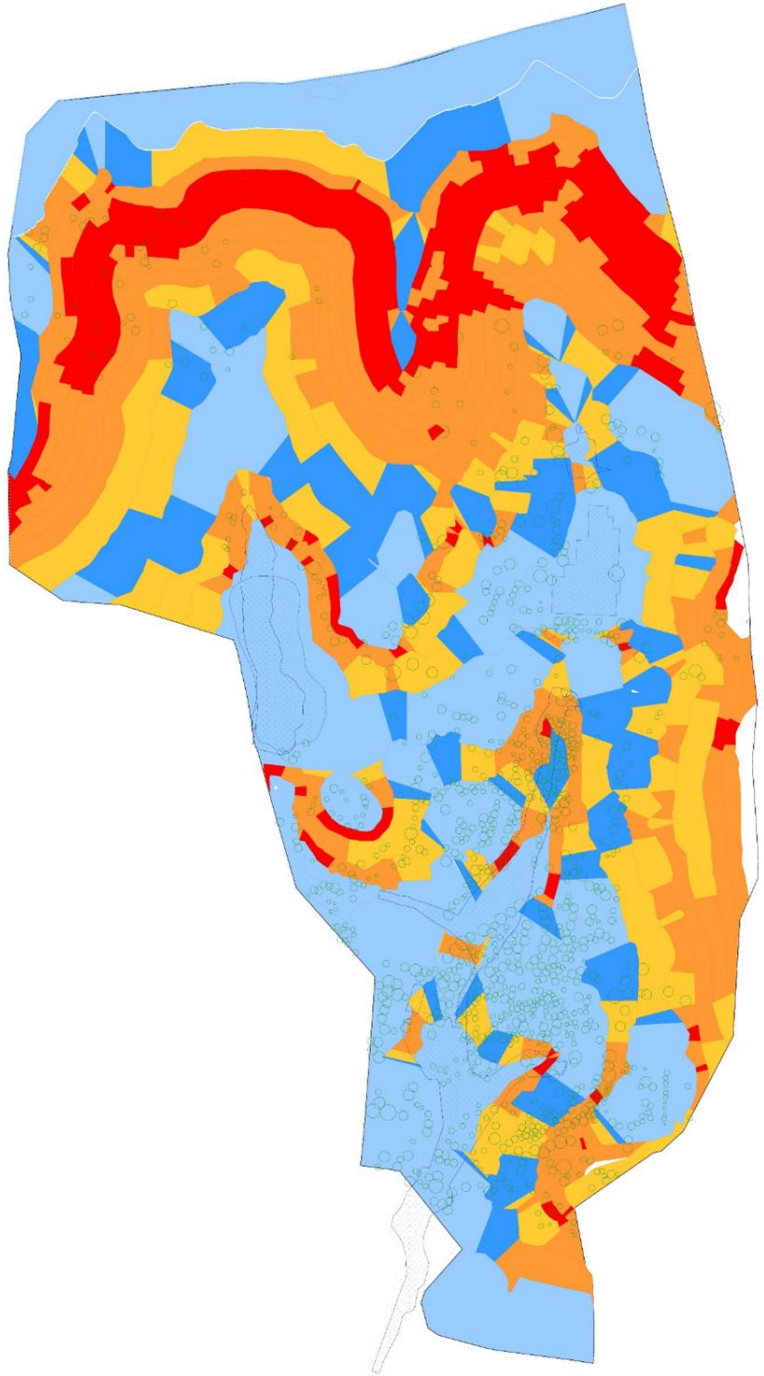
Moderate Slope (1:4 - 1:6)

Building spaces such as **dining halls** and **large gathering** buildings could be placed to get covered under space for other activities.



Steep slope (1:2 - 1:6)

Smaller modules such as **hostel blocks** could be arranged on steeper slopes to avoid disrupting natural terrain and for better visibility.



Preservation of 109 acres Biodiversity, Natural Water Channels/Reservoirs and Terrain

1. Retaining the existing buildings that are structurally stable to minimize demolition on site

2. Conserving Trees and Vegetation on Site

3. Conserving the Water Bodies and respecting the natural rainwater drainage

Saving existing man-made and seasonal water bodies on site and Integrating buildings with natural slope of rainwater flow

4. Being conscious of the Site Terrain

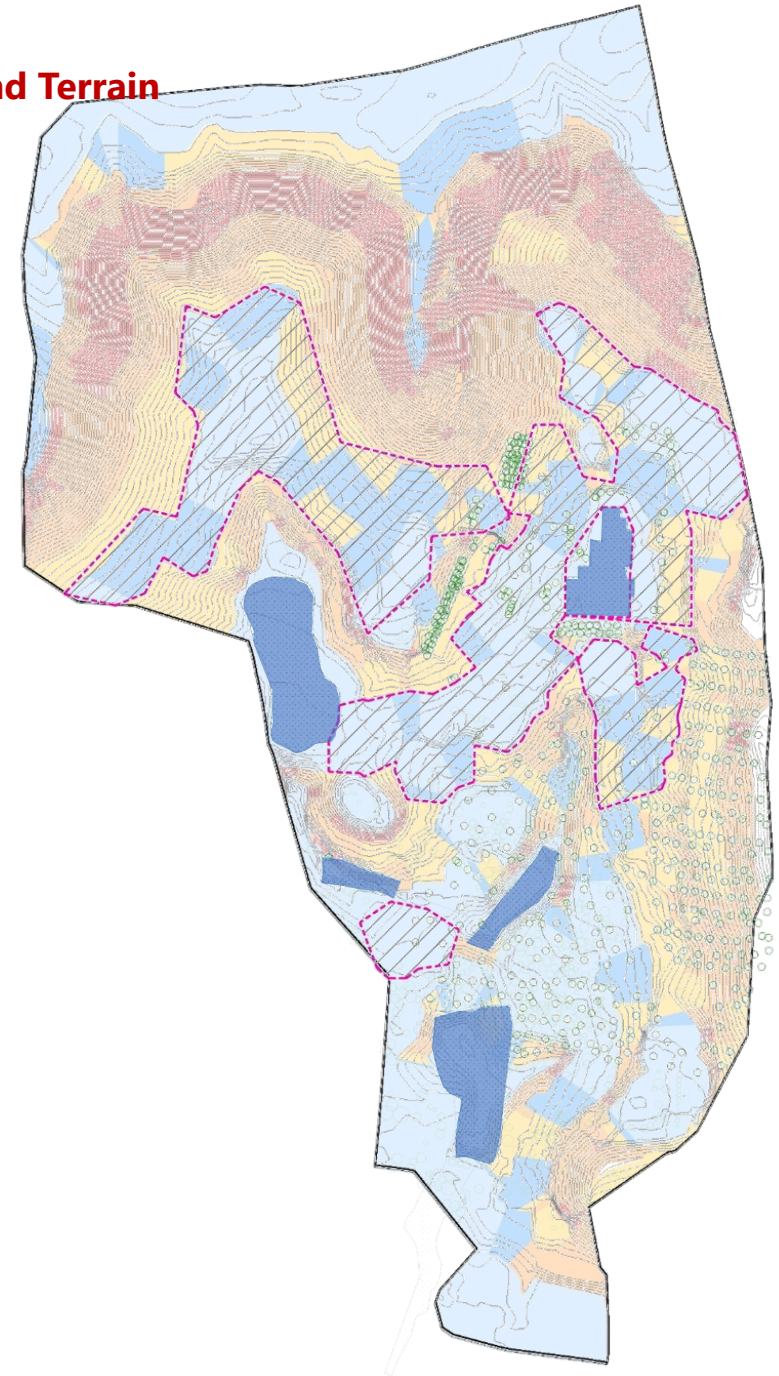
Minimize cut and fill

Site Area
109 Acres (4,41,107 sqm.)

Permissible Built-up area
FSI @ 1.0= **109 Acres** (4,41,107 sqm.)

Buildable zone area
As per zoning = **24 Acres** (97,350 sqm.)

Total Occupancy Load (as per NBC)
No. of People = 2933
Occupancy Load = 15 sqm. per person
Total Occupancy Load = **11 Acres.** (44,000 sqm. approx.)



Buildable Zone

Arrival Pavilion

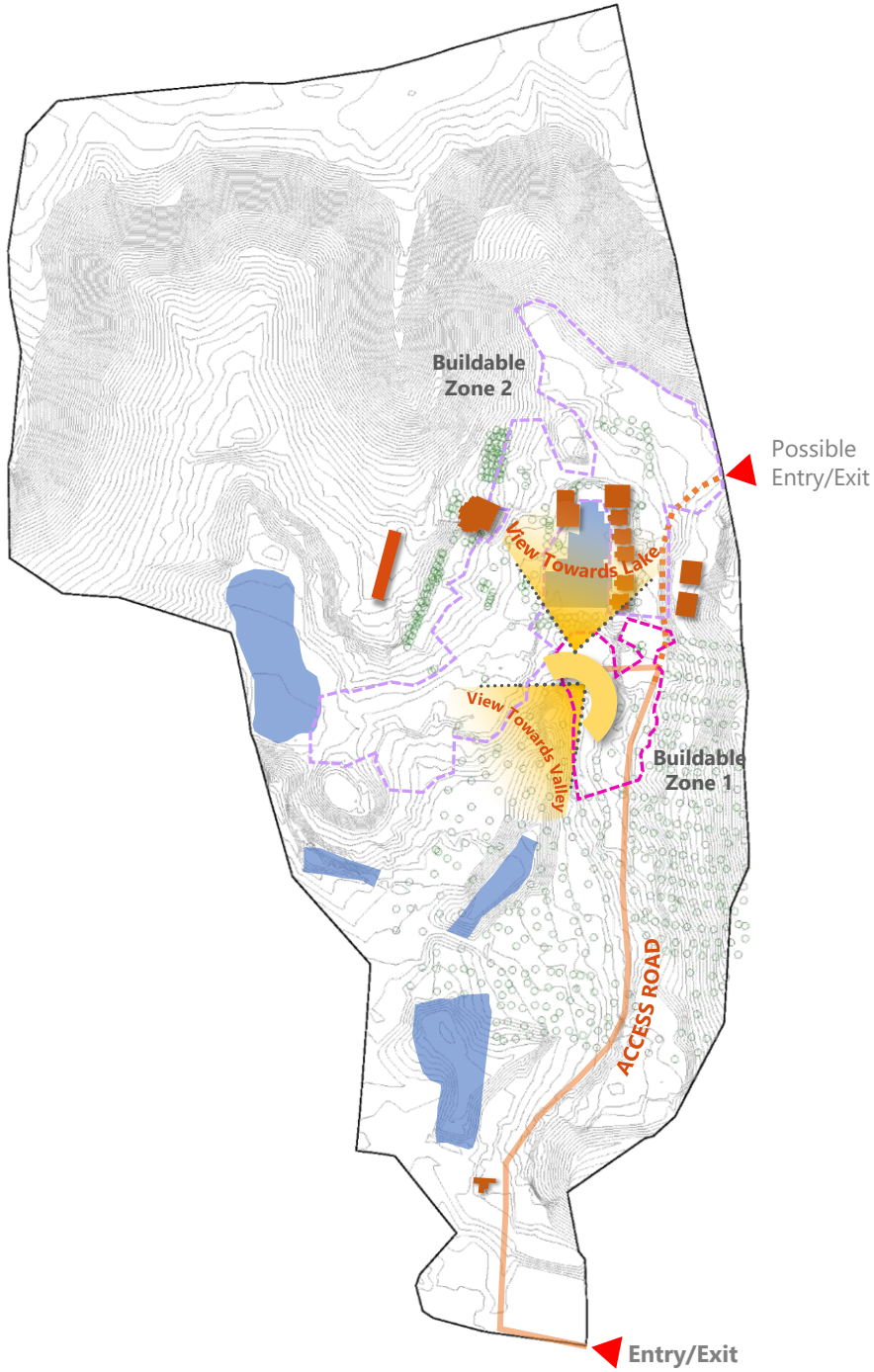
1. Arrival pavilion built to serve as an **entry point to the campus** for students and families.

2. The Arrival Pavilion Block is placed in the **buildable zone** next to the valley for views of the Valley and the Lake where the **curve shape** of the building that follows the **existing terrain** gives access to **view** towards greenery and appreciate the valley.

3. Easy access from both point of entrees.

Parameters of the design :

- ✓ Arrival pavilion designed for accommodating 2700 total scholars and their family throughout a day on registration day
- ✓ Registration desk & Reception kiosk
- ✓ Administration office
- ✓ Seated waiting space
- ✓ Toilets

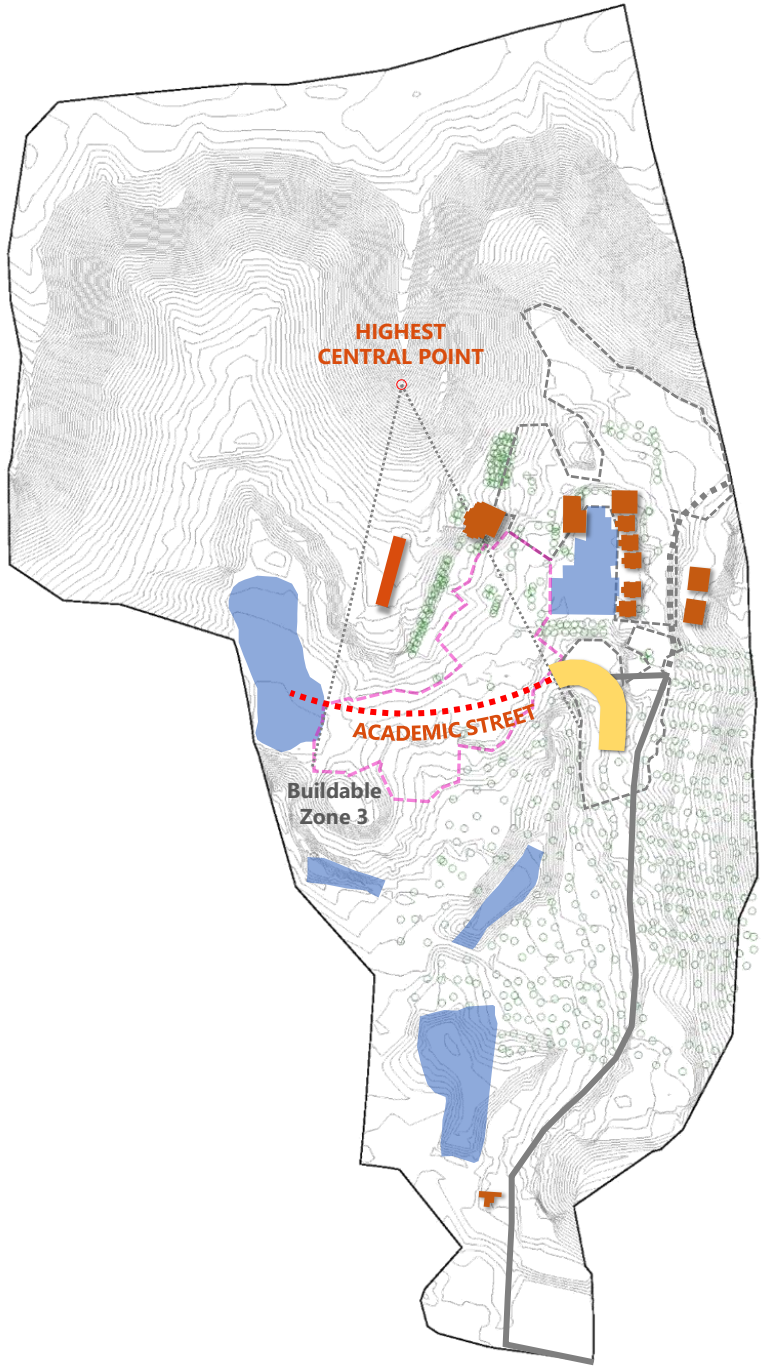


Academic Street

1. A street of a formal discourse the serves as a key element to hold classrooms.

2. Deriving an **Axis** from the highest central point on the site, that **starts from the Pavilion Block and terminating at the lake** to form the main Academic Street

3. Utilizing the **Flattest Buildable Zone** on the site to respect the existing contours

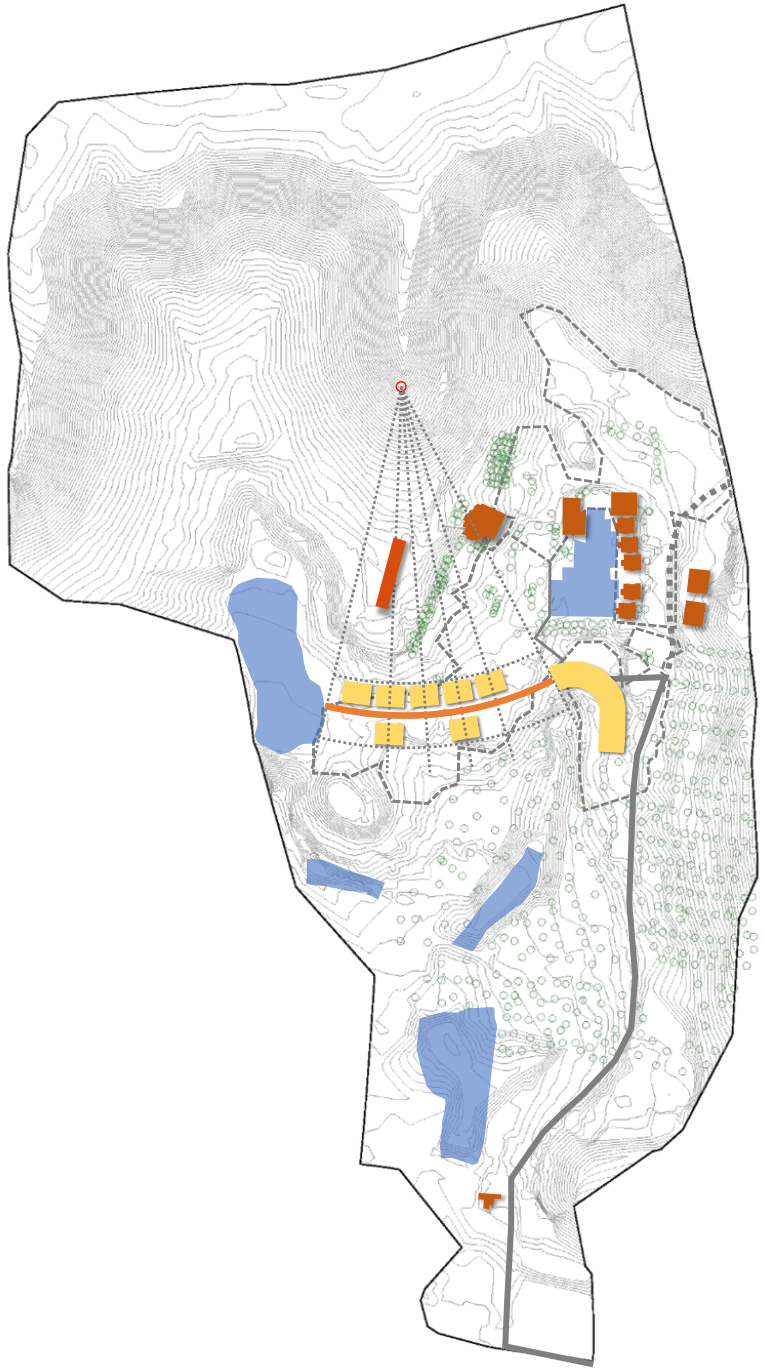


Academic Street

1. Following the main axis, **Classrooms** are placed along the Academic Street

Parameters of the design:

- ✓ Classrooms (7 nos. of 200 capacity each in 2 shifts)
- ✓ Tiered seating
- ✓ Crowd management
- ✓ Breakout spaces
- ✓ Discussion areas
- ✓ Toilet blocks shared between 2 classrooms
- ✓ Requires cross ventilation and ample daylight with zero glare
- ✓ Avoid using ceiling fans to reduce noise
- ✓ Acoustical buffer

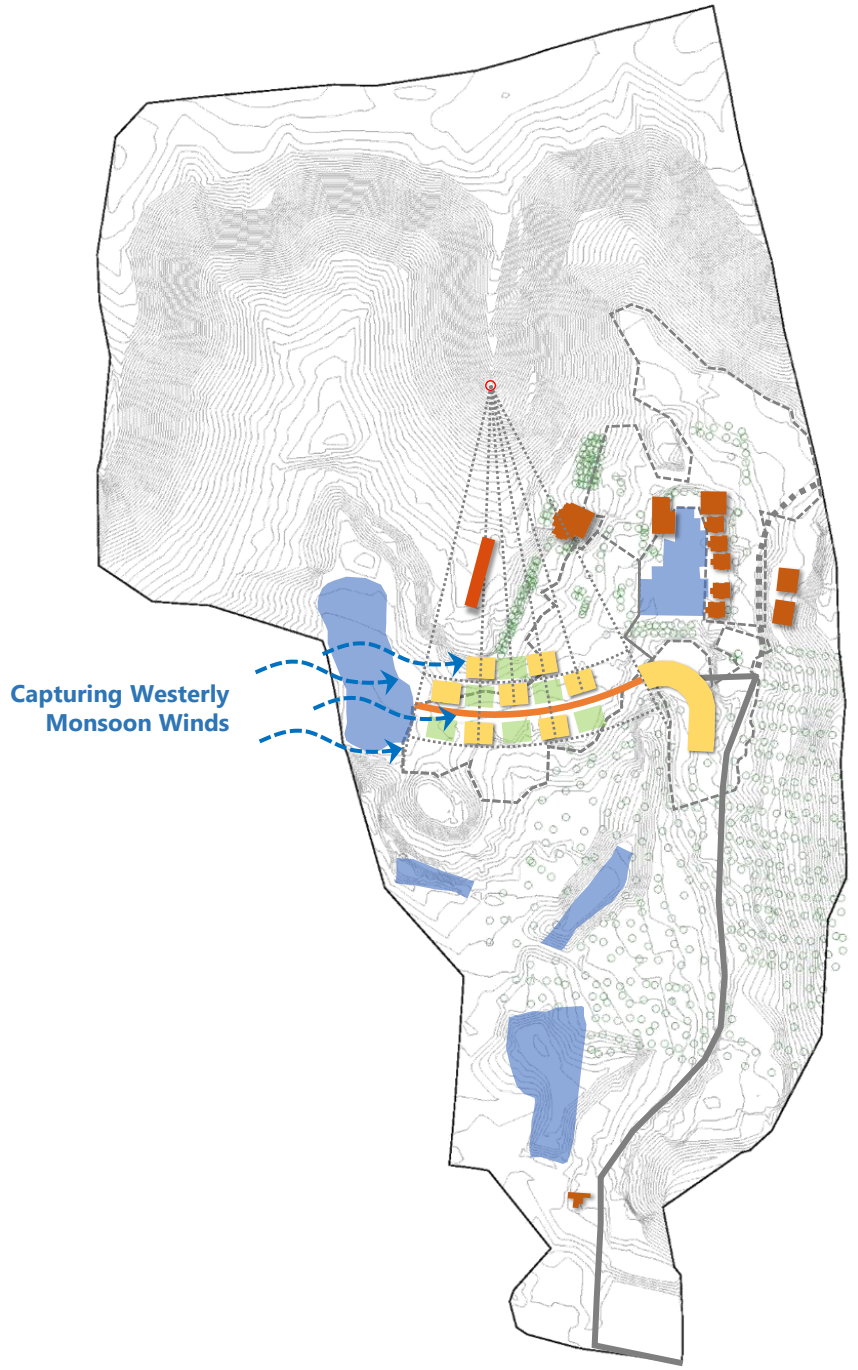


Classrooms

1. Classrooms are **split** to manage large crowd and bifurcate them to small groups by **avoiding overcrowding in the main street**

2. Optimizing the Classrooms for **cross ventilation and Natural Light by providing courts**

3. Informal Discussion areas after or before classes could happen in such courts



Dining Hall

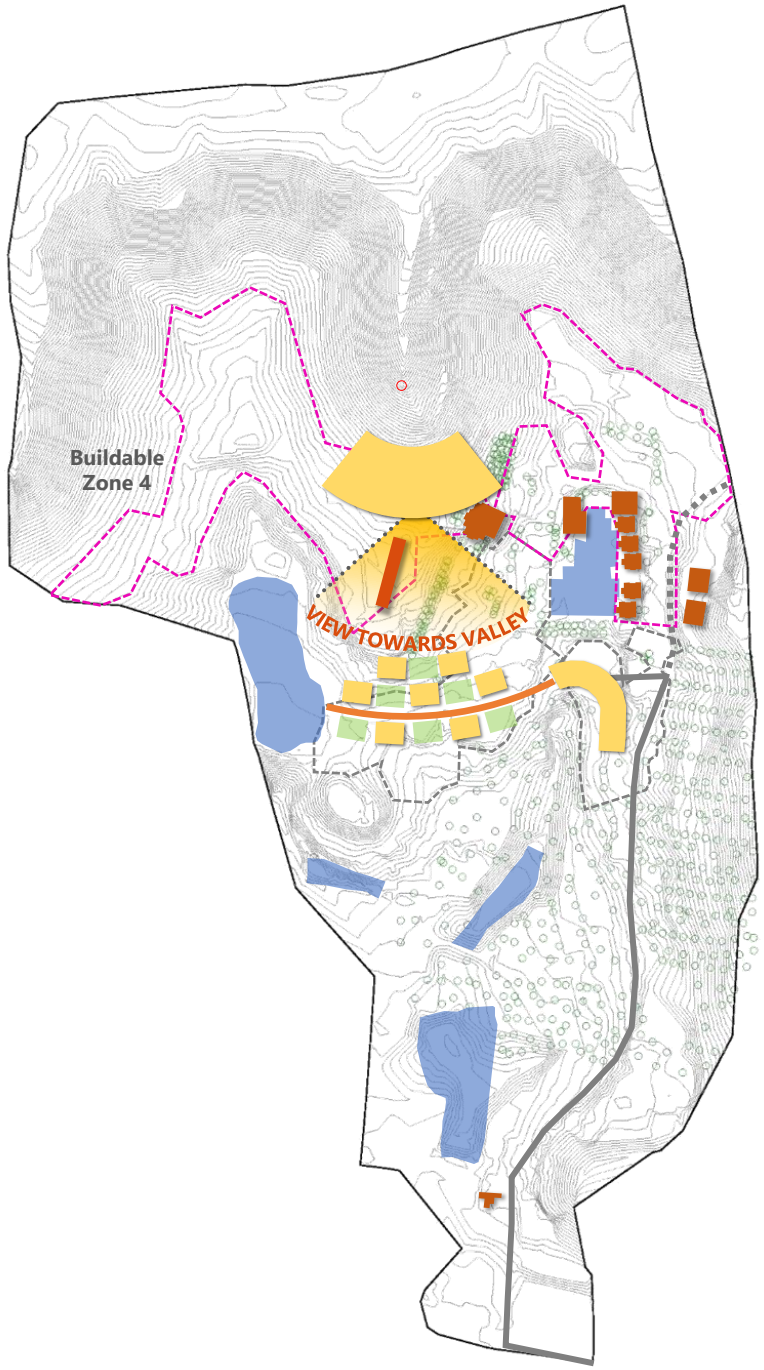
1. Dining being a central function needs to be located in the **center of the site**

2. Dining Block as a Barrier between **the two buildable zones** suitable for Boys and Girls Hostels

3. The **shape of the building** to capture the clear panoramic view of the site

Parameters of the design:

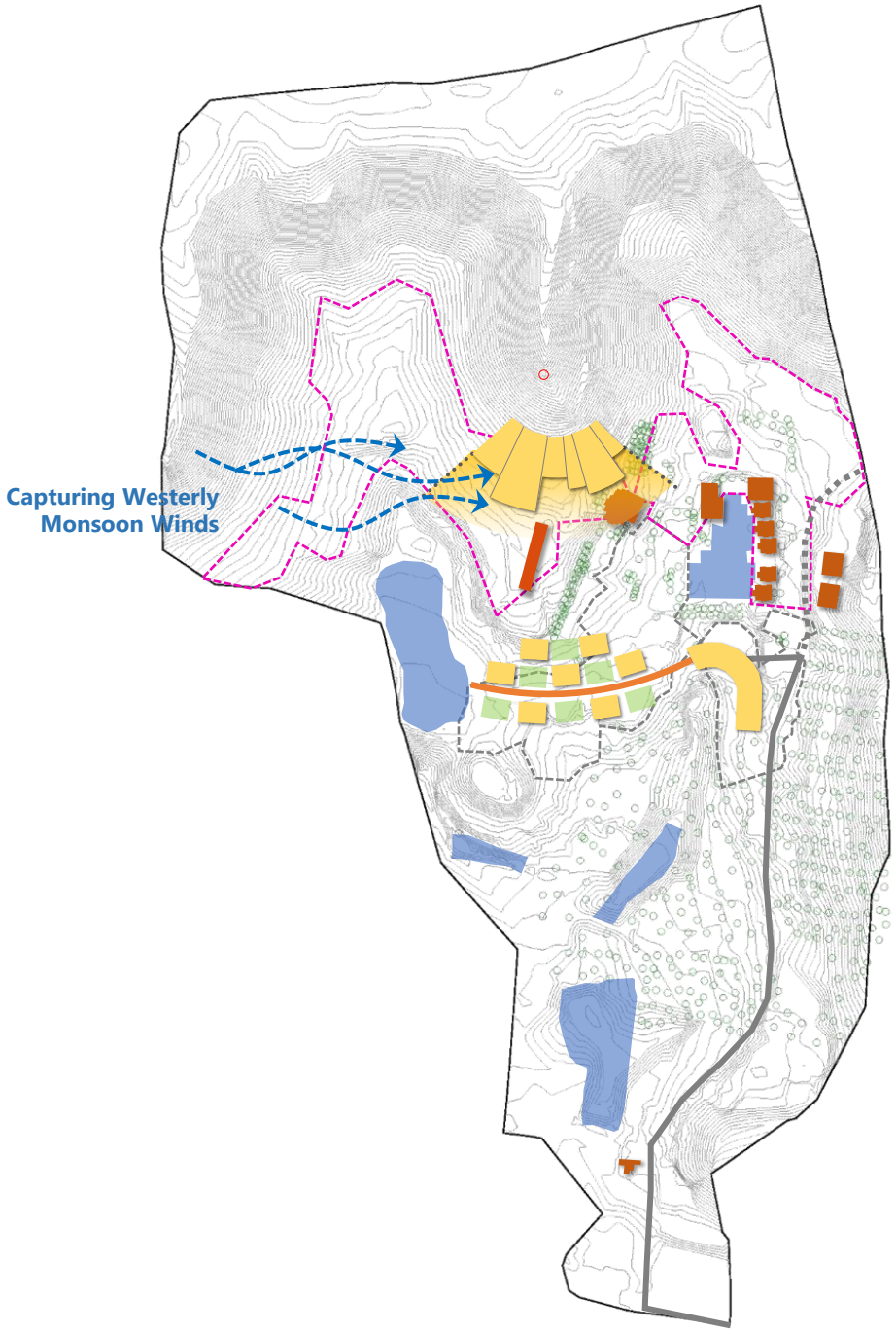
- ✓ Dining hall of capacity 2933 in 2 shifts (3 meals a day)
- ✓ Centrally located
- ✓ Storage facilities
- ✓ Easy Kitchen access
- ✓ Separate serving corridors
- ✓ Crowd management
- ✓ Easy access
- ✓ Requires cross ventilation and daylight
- ✓ Waste management



Dining Hall

1. Dining bay sizes reduced to cater **daylight and cross ventilation** also providing covered spaces underneath for other activities like yoga and PT

2. Clear view towards the valley to all the bays



Hostel Blocks

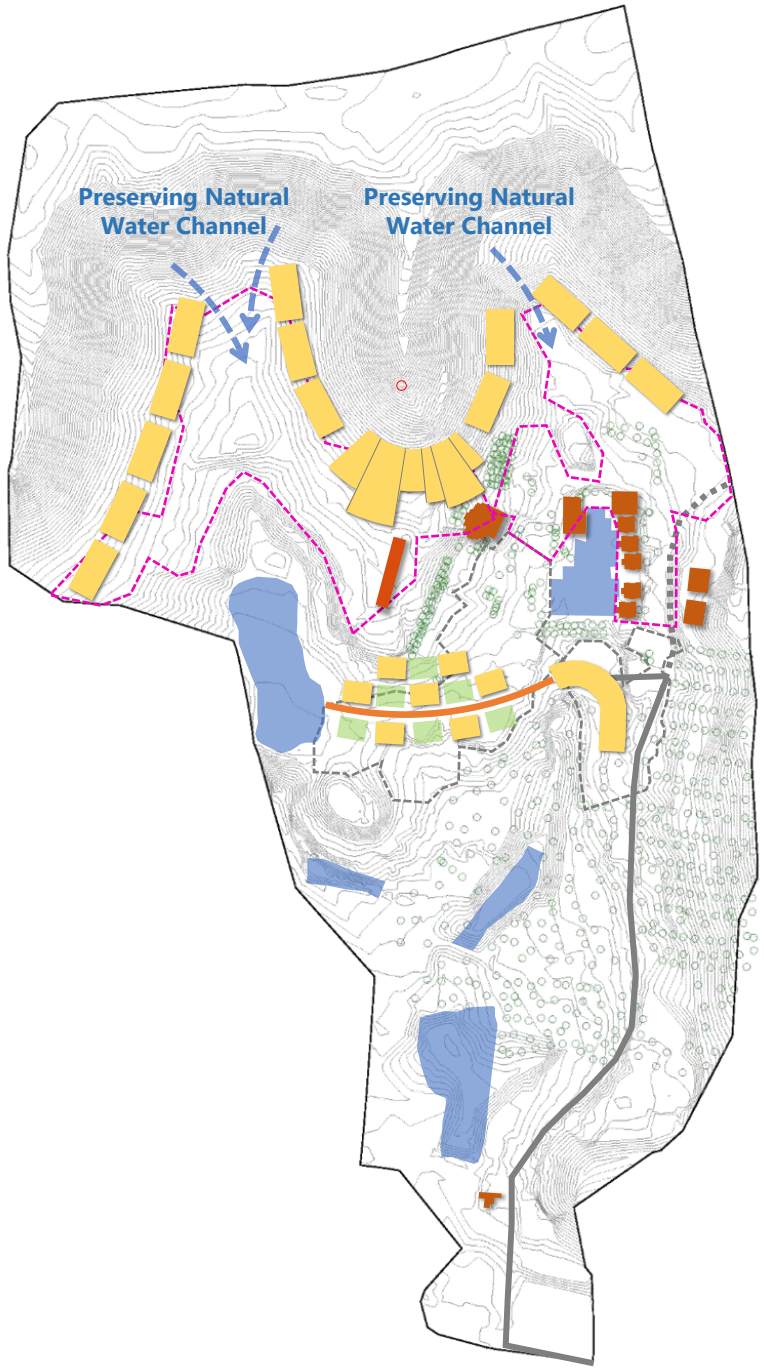
1. Hostel Blocks placed in the **separate buildable zones** on each side of the hill and close proximity to dining

2. Buildings aligned to the contours to **minimize Cut and Fill**

3. Maintain **rainwater** drainage corridors

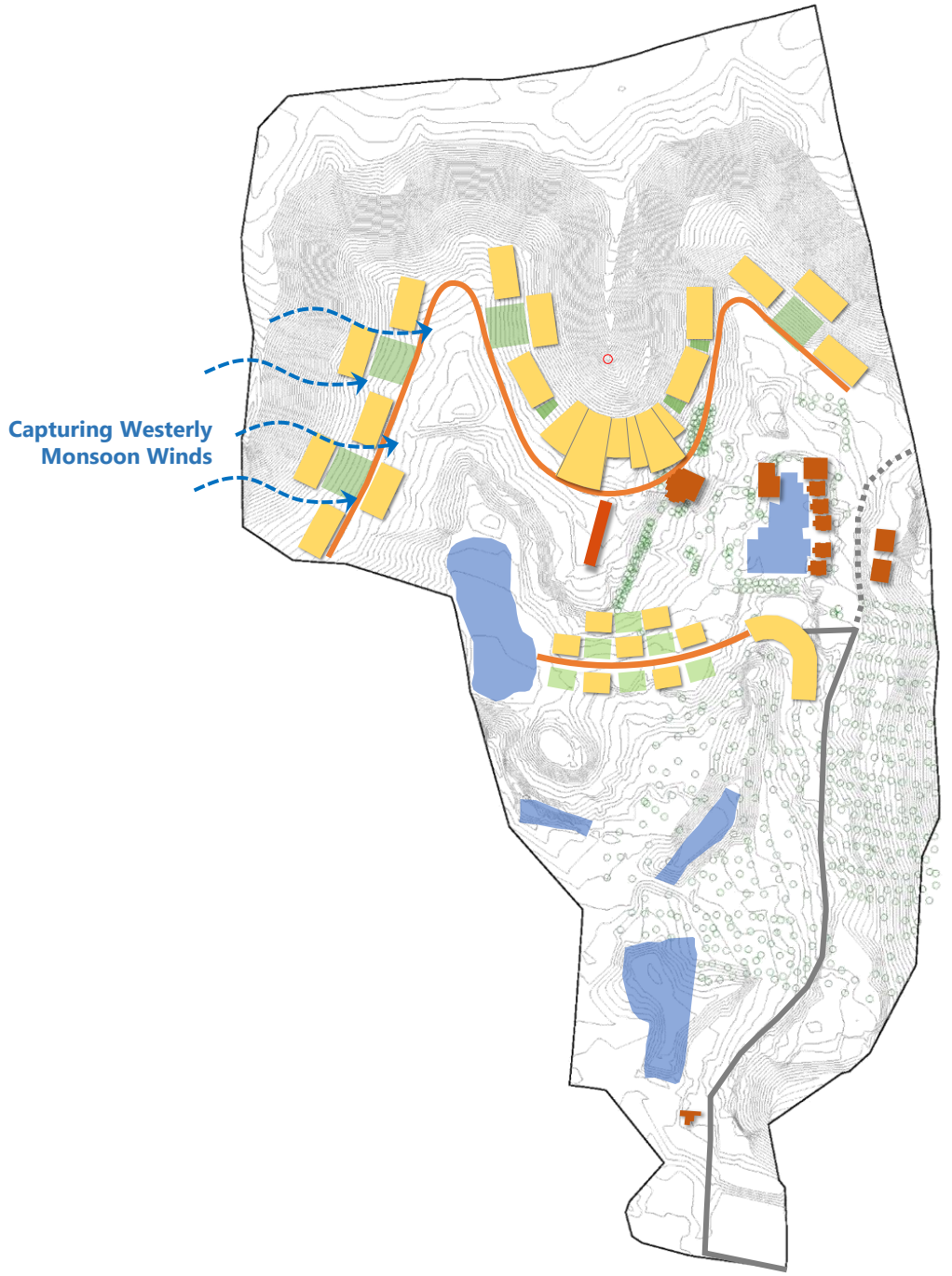
Parameters of the design:

- ✓ Hostel room shared between 6 students with bunk beds and attached toilets for 2712 students in total (1620 boys and 1092 girls)*
- ✓ Clubbed studying spaces inside the room
- ✓ Storage for their shoes, bags, dining utensils and luggage
- ✓ Internal break out spaces such as courtyards
- ✓ Requires cross ventilation



Hostel Courtyards

1. Courts and Green Spaces are created by staggering the blocks for informal/**chance interactions** and discussions also providing **dedicated spaces for studying**



MASTERPLAN – OLD PROGRAM

Program

1. Security Cabin + Existing medical facility
2. Entrance Pavilion
   - Reception
   - Offices
   - Parking
3. Open air amphitheater
4. Classrooms for 200 students
5. Computer Labs for 400 systems
6. Faculty/Admin Staff Housing
7. Staff rooms & Staff offices
8. Library – to be confirmed in Phase-3**
9. Staff Housing
10. Dining Hall for 1300 students
11. Girls Hostel
12. Boys Hostel
13. Service Staff Housing
14. Solar farming (1.8 acres) – Area to be confirmed by MEP
15. Warehouse
16. Indoor Sports
17. Playground
18. CEO Residence**
19. Taraben J. Mehta Girls Hostel: 192 pax + 95pax computer lab + 4000sqft study space

**Tentative locations

MASTERPLAN

Program

1. Security Cabin
2. Entrance Pavilion
   - Reception
   - Offices
   - Parking
3. Open air amphitheater
4. Lecture Hall for 200 students
5. Computer Labs for 300 systems
6. Faculty/Admin Staff Housing
7. Headquarter
8. Library – to be confirmed in Phase-3*
9. Staff Housing
10. Dining Hall for 1500 students
11. Girls Hostel
12. Boys Hostel
13. Service Staff Housing
14. Solar farming
15. Warehouse
16. Indoor Sports Arena
17. CEO Residence*
18. Taraben J. Mehta Girls Hostel: 192 pax + 95pax computer lab + 4000sqft study space
19. Substation
20. Sewage Treatment Plant*
21. Water Treatment Plant
22. Overhead Water Tanks

Note:
*Tentative locations

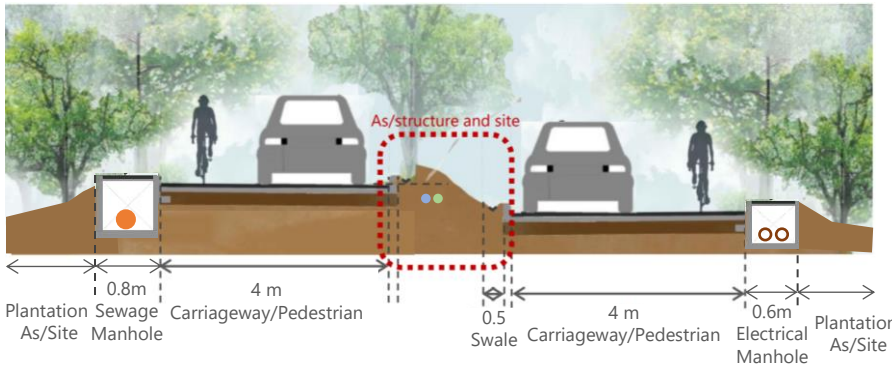
OPTIMISATION

- **Topography** : Minimizing Cut and Fill
- **Infrastructure** : Service Tunnels integrated with Road/Pathway planning to respect the existing site terrain

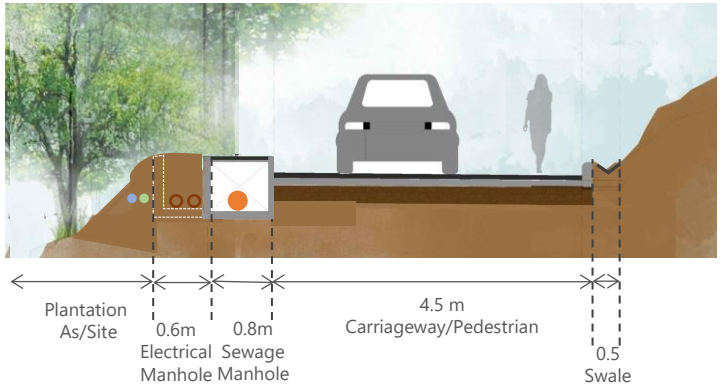
OPTIMISATION | INFRASTRUCTURE

Service Tunnels integrated with Road/Pathway planning to respect the existing site terrain

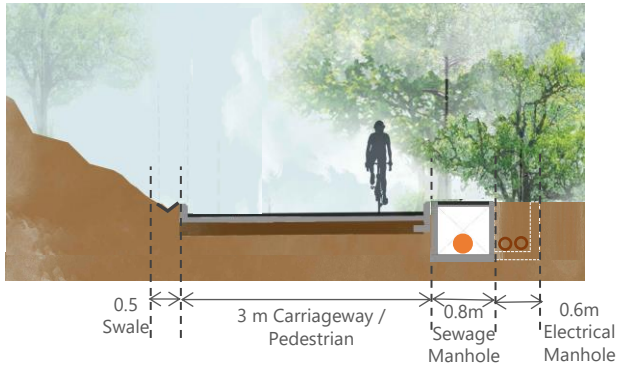
TYPE 1 – Vehicular Two way- Staggered



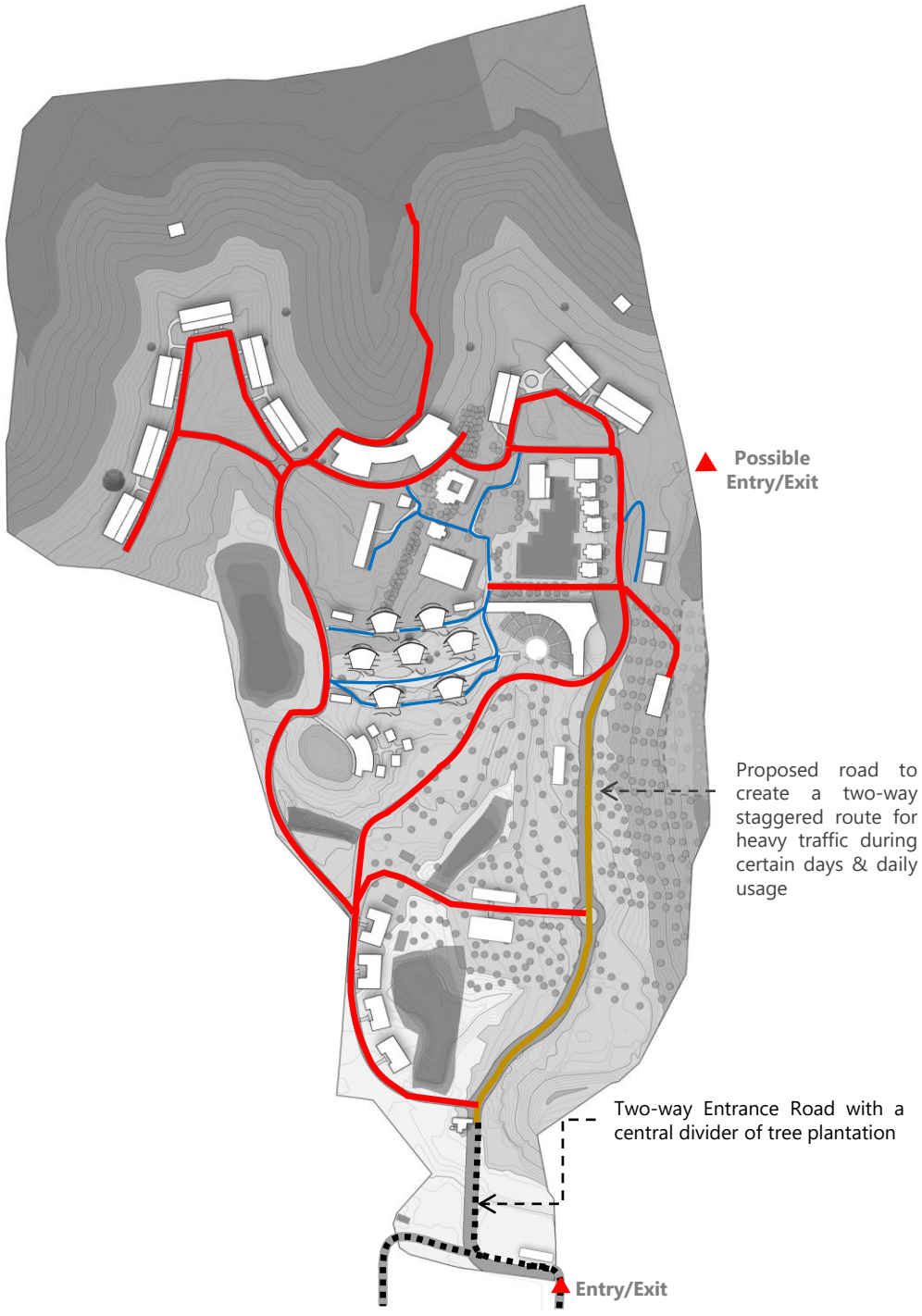
TYPE 2 – Vehicular ONE-WAY



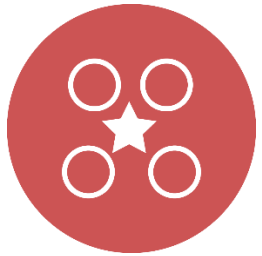
TYPE 3 – Pedestrian/ e-mobility)



- Sewage Pipe
- Hume Pipe
- DWS Pipe
- FWS Pipe



UNIQUENESS



- Legacy : Inscription of every Scholar's imprint onto the wall design of the Legacy pavilion
- Studying (Outdoors) : Integration of Outdoor studying spaces in the Landscape
- Studying (Indoor) : Year-round naturally lit and ventilated Machans for studying / informal teaching
- Materials : Local Materials, Art and Craft integrated in Design

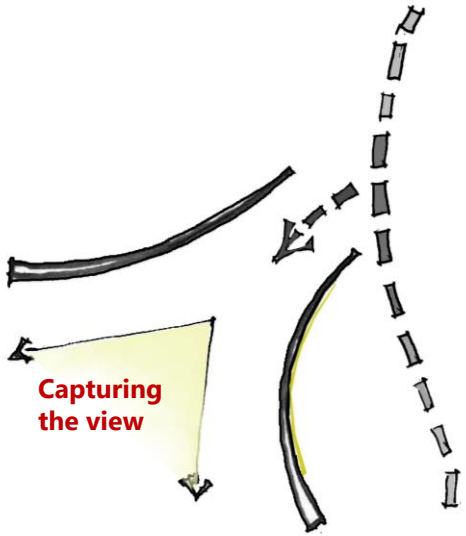
Inscription of every Scholar's imprint onto the wall design of the Legacy pavilion

1. Element of surprise: A grand entrance in the front further opens up towards a view giving an element of surprise to the students and families which portrays the **character and heritage of the campus.**

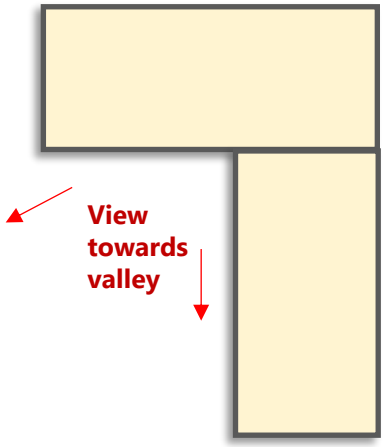
2. Management: Design to control the movement of **large crowds** on days like registration of students.

Built Volume required (as per NBC/Codes)	
Total Built Up Area (including gathering space, Administration)	1,680 sqm. (18,080sq. ft.)
Gathering space required for registration on one day for 4500 moving population (1300 x 3.5 students with families) @1.8 sqm	1,080 sqm (600 pax at a time)
Amphitheatre (for 2,800 population) @ 0.99 sqm	2,584 sqm

Reference images for Arrival pavilion

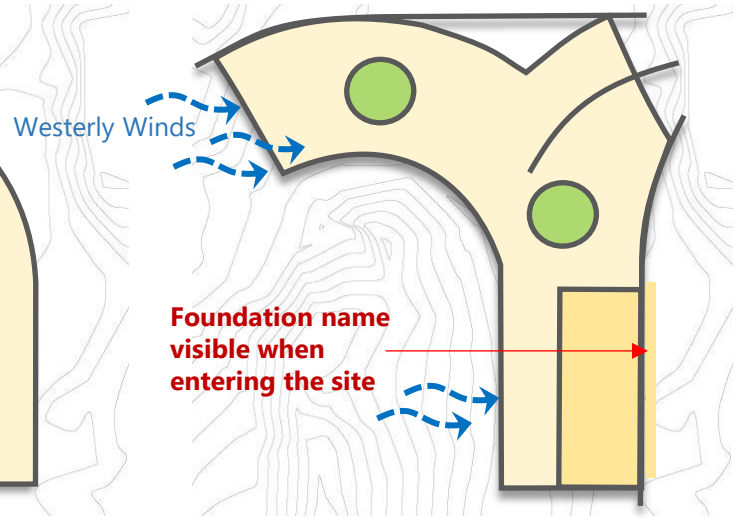


Element of surprise

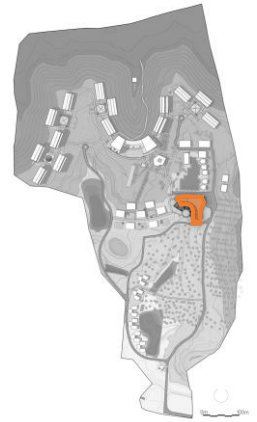


Form with respect to views

Form with respect to contours



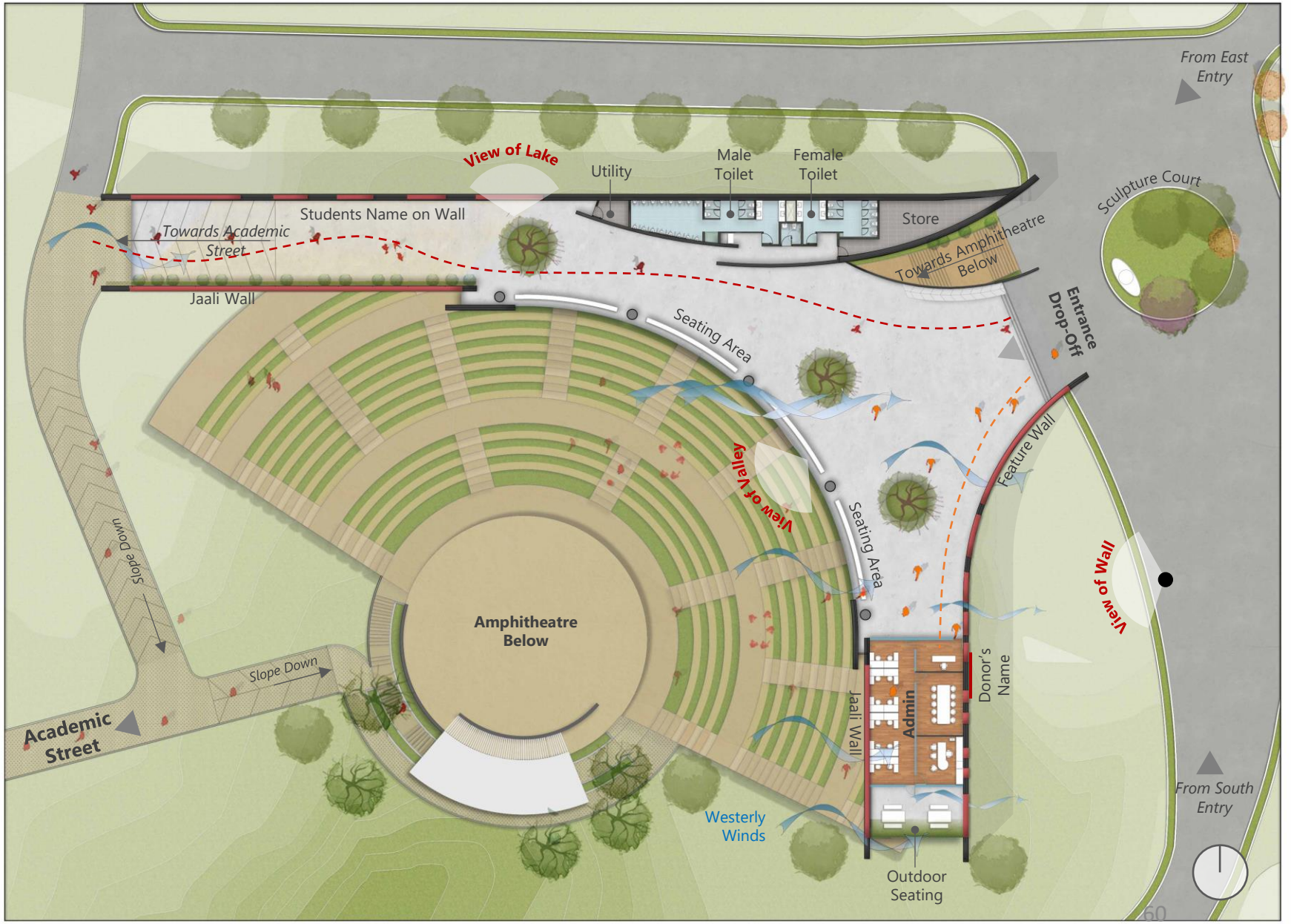
Space segregation and alignment towards wind



UNIQUE | LEGACY PAVILION

Inscription of every Scholar's imprint onto the wall design of the Legacy pavilion

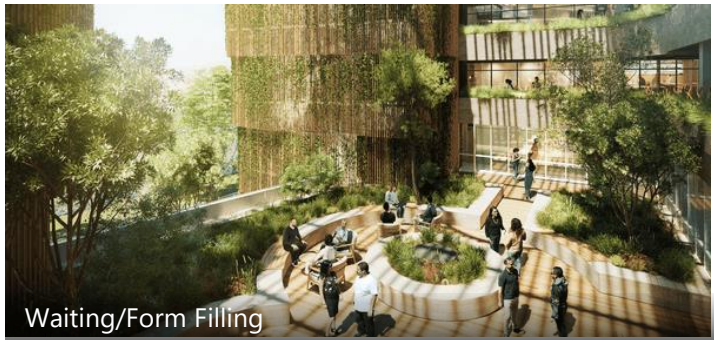
REFERENCE IMAGES

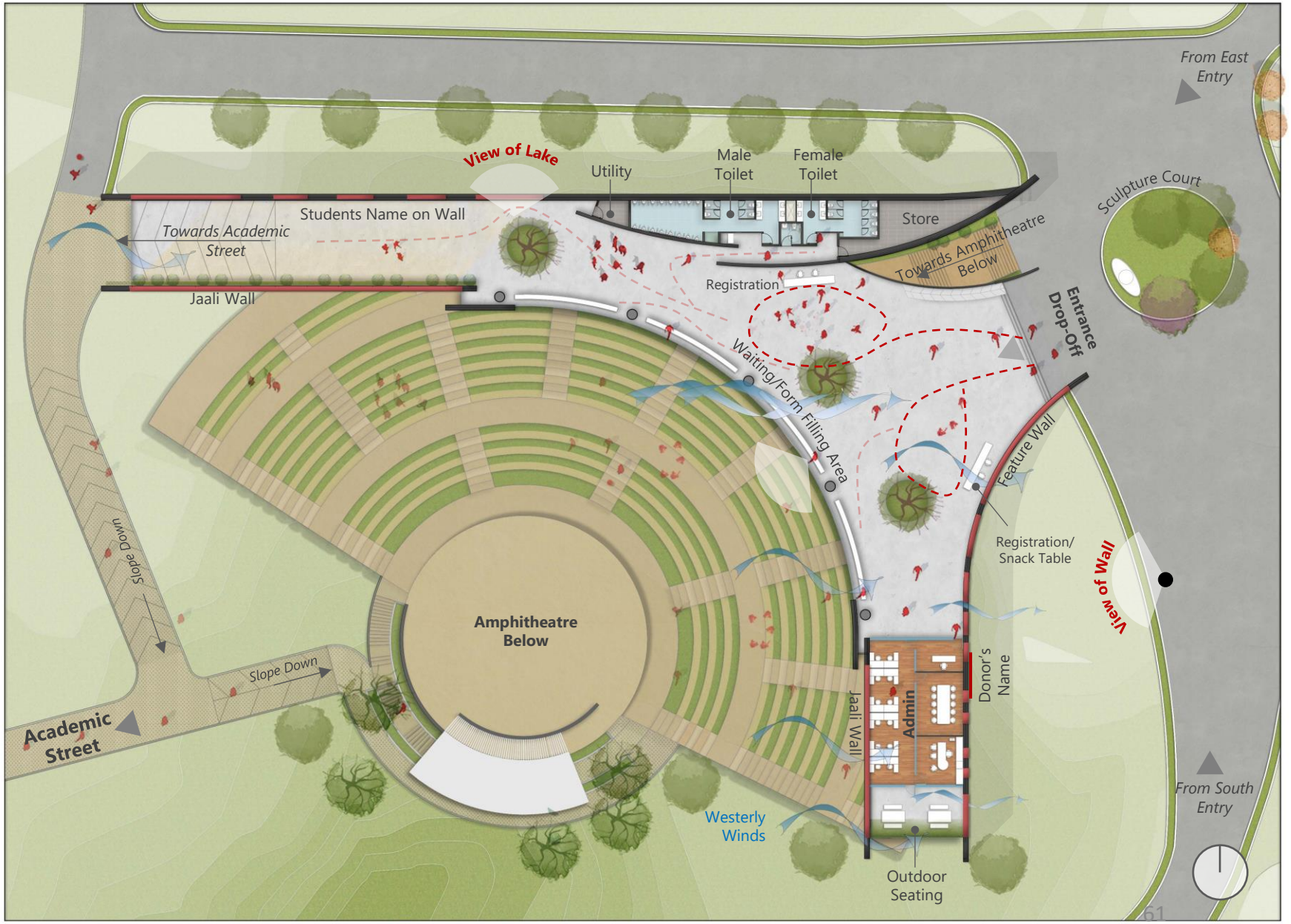


ENTRY LEVEL PLAN

60 - - - Student circulation - - - - Staff Circulation

Place of Student Registration & First Impression of the Institute





REFERENCE IMAGES

ENTRY LEVEL PLAN

Visitor circulation

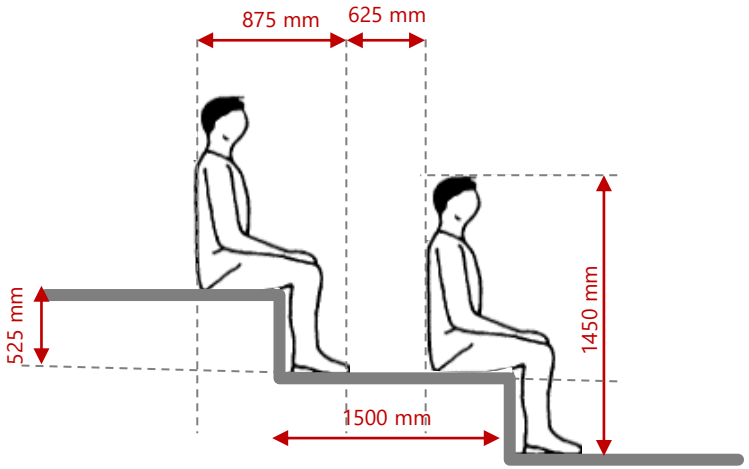
LEGACY PAVILION - ARRIVAL EXPERIENCE

UNIQUE | EVENTS

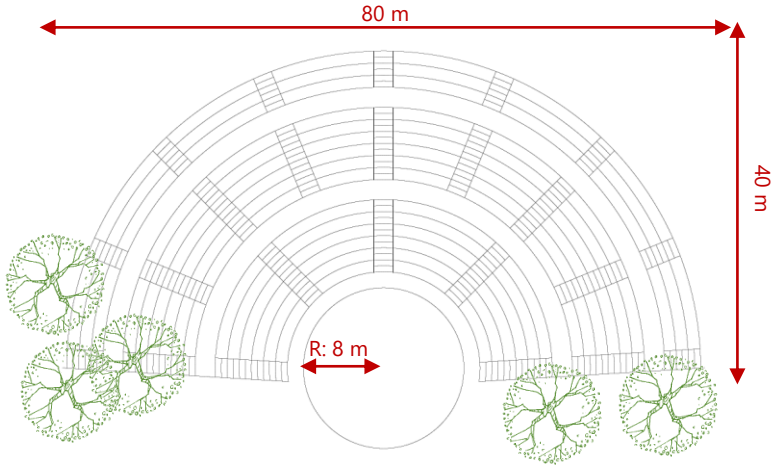
Open air theatre : A grand amphitheater is required as per client's brief that holds a capacity of **3000 population** for gathering **1-2 times** a year for convocations, assembly and various other functions.

Design Criteria	Dimension
Maximum distance for audience from the front of the open stage (with spoken voice)	65.62ft (20 m)
Minimum width of seat without arms	1.5ft (0.45 m)
Minimum unobstructed aisle width	3.6ft (1 m)
Horizontal Distance on bench per person	1.5ft (0.45)
Clearance between each row	2.5ft (0.76 m)

Reference Images



Typical Section of Amphitheatre seating



Plan (2600 pax)

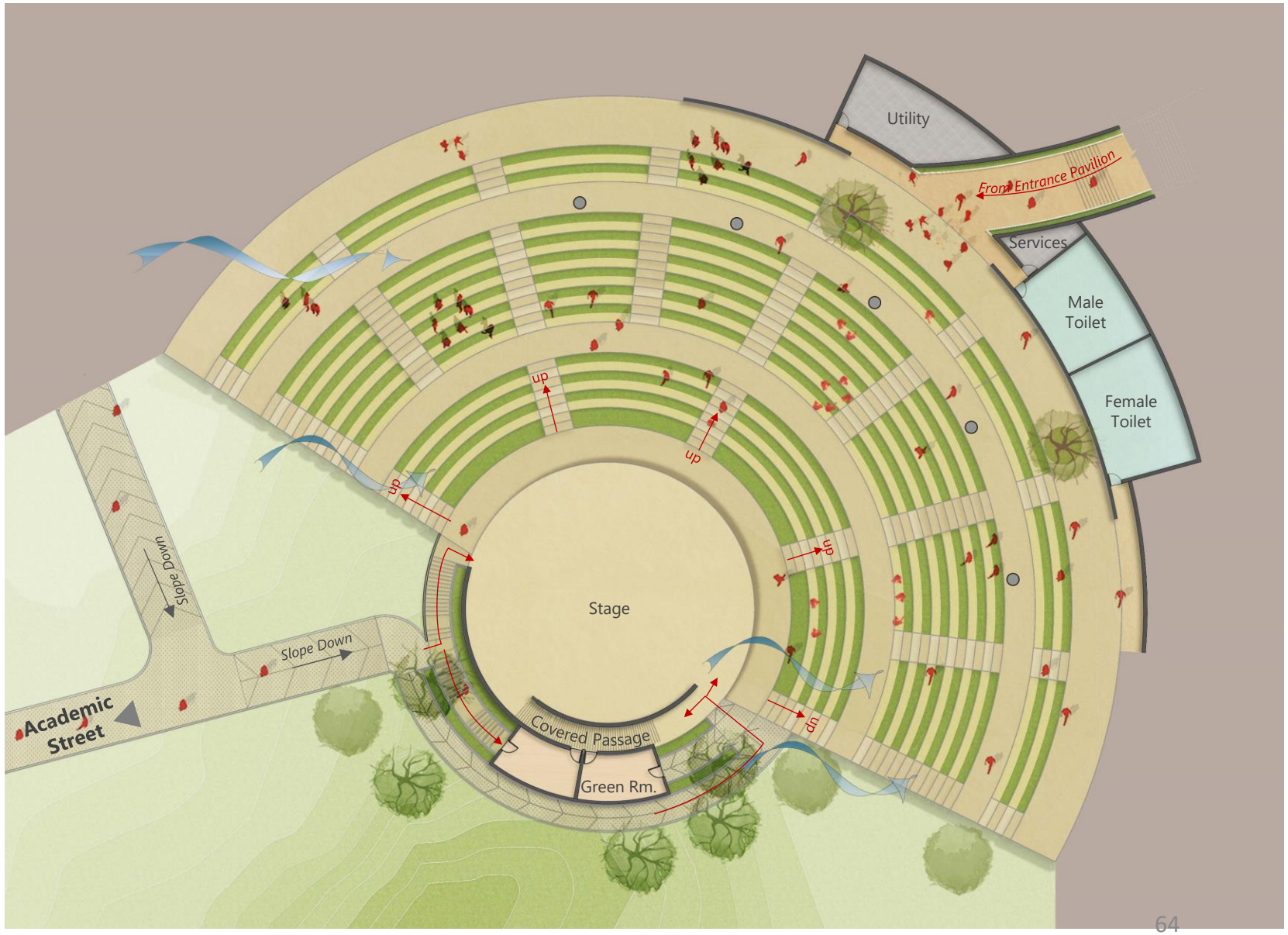
UNIQUE | EVENTS

Functional Landscape to address to Social, Cultural & Recreational needs

Learning - Individual Studying Spaces | Group Discussions

Recreation – Interaction Spaces | Social & Cultural activities | Meditation

Events – National Day | Annual Day



AMPHITHEATRE PLAN

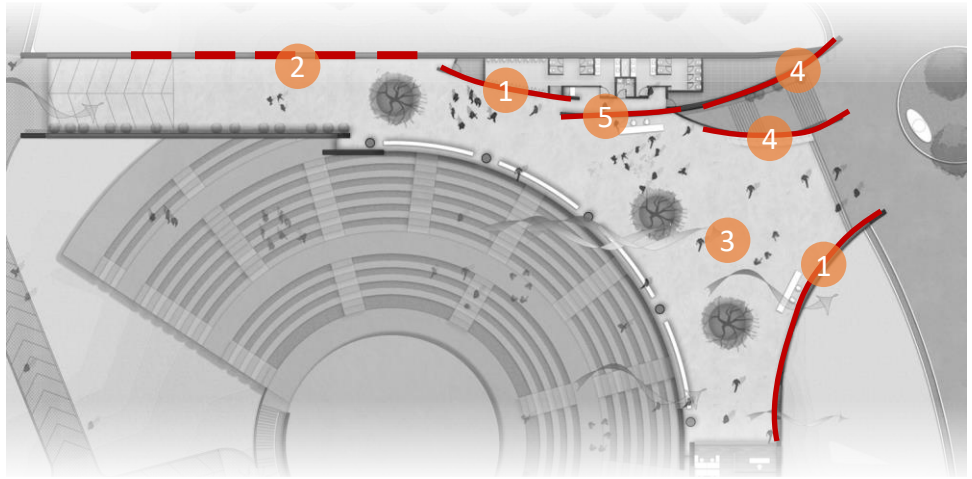
UNIQUE | EVENTS

Amphitheater View

UNIQUE | LEGACY PAVILION – ART & CULTURE

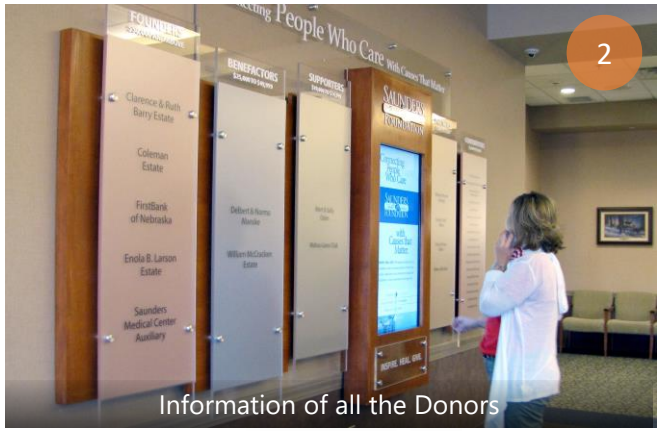
History of the Institute | Display of Present Architecture & Infrastructure | Donor's Introductions
Inscription of every Scholar's imprint onto the wall design of the Legacy pavilion

"SHOWCASING THE TRANSFORMATION OF VALLEY"



Showcasing History of Valley

Foundation Philosophies



Information of all the Donors

Model Display of Valley

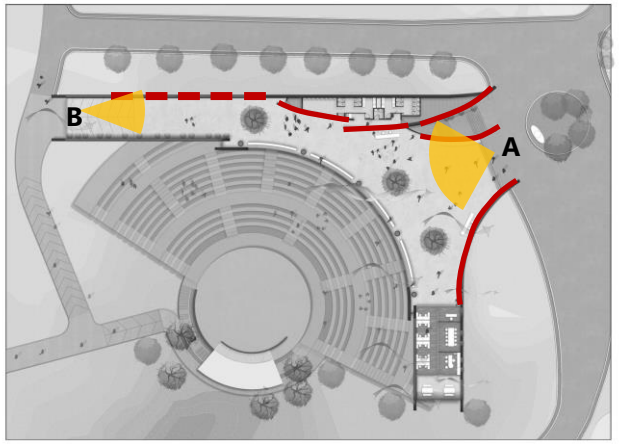
Top Scholars Display | Names Etched on Wall

Pictures of People of Dakshana Valley

"SHOWCASING THE FOUNDATION IN VALLEY"

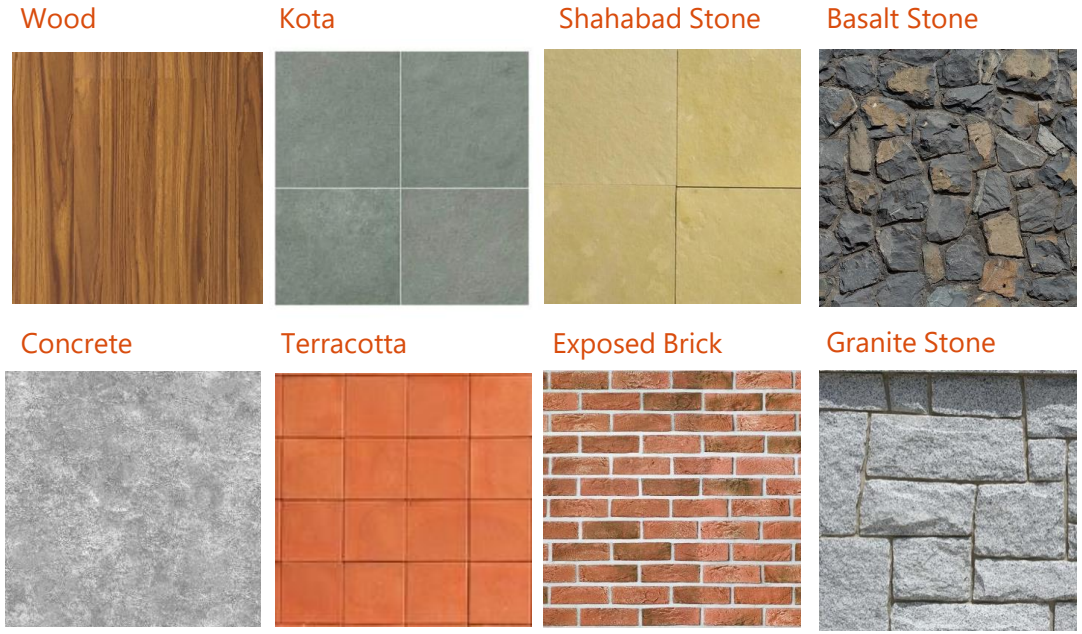
UNIQUE | LEGACY PAVILION – ART & CULTURE

History of the Institute | Display of Present Architecture & Infrastructure | Donor's Introductions
Inscription of every Scholar's imprint onto the wall design of the Legacy pavilion



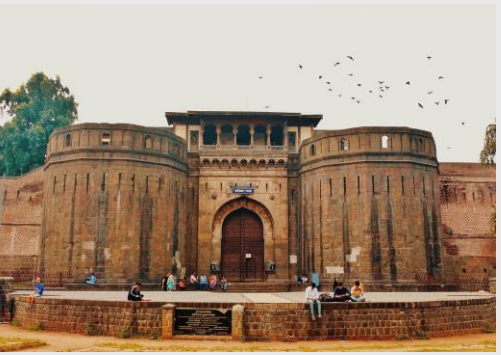
UNIQUE | LEGACY PAVILION – CRAFT & DESIGN

Local/Natural Materials & Craft integrated in Design



Natural materials greatly influence the atmosphere it emanates and integrate with its surroundings.

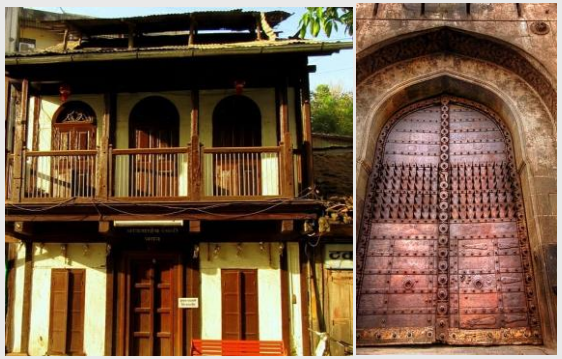
"MATERIALS INSPIRED FROM LOCAL ARCHITECTURE AND LAND"



*Grand Entrance of **Shaniwarwada Fort** - **Form & Material Derivation***

*Courtyard Wadas of Pune – Use of **terracotta and stone.***

*Abundant availability of **Basalt Stone on Site***



*'Dindi Darwaja of wadas' – Huge **wooden doors** and smaller entries of Pune*

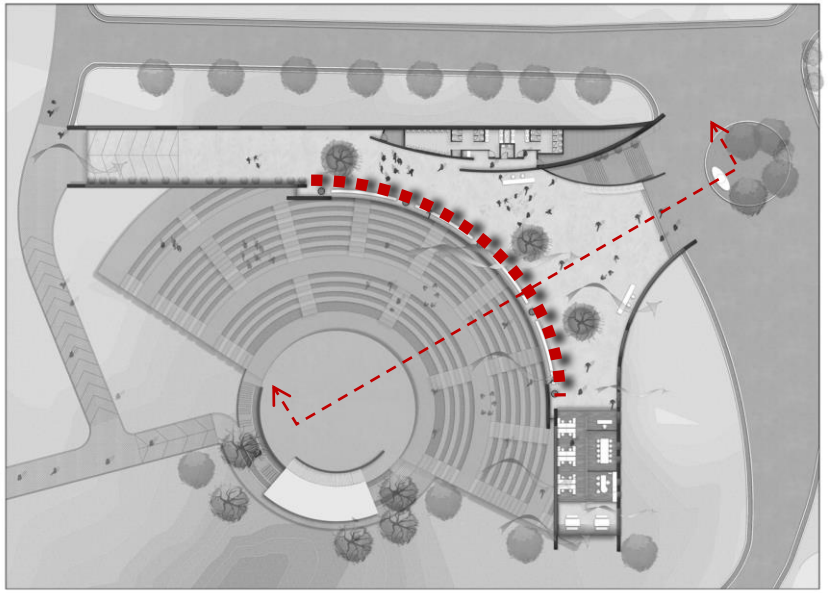
*Locally produced **Brick** giving out an Institutional Vibe.*

UNIQUE | LEGACY PAVILION | ELEMENT OF SURPRISE

Waiting area with a panoramic view of the valley

Seating design to accentuate the form of the building

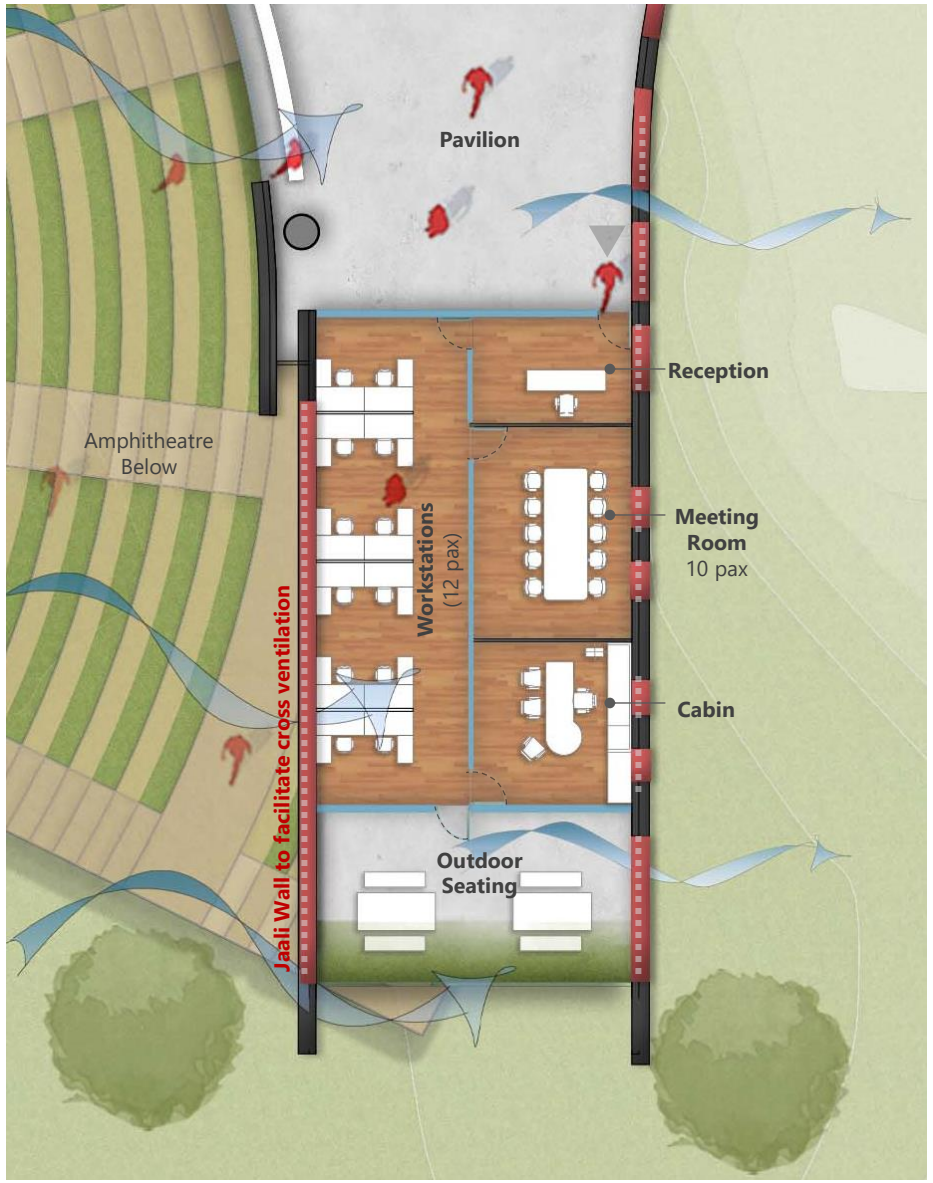
SCHEMATIC SECTION



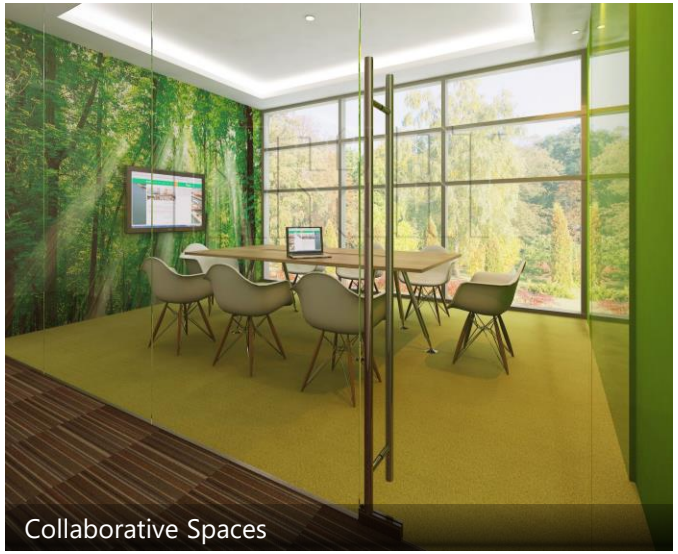
KEY PLAN

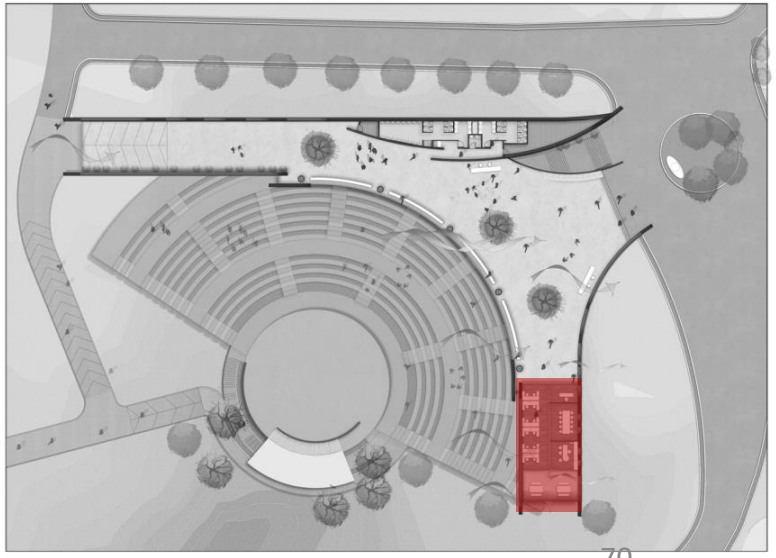
UNIQUE | LEGACY PAVILION | ADMINISTRATION

Panoramic View of the valley | Naturally Ventilated



ADMIN FLOOR PLAN





KEY PLAN

70

COST ESTIMATE | LEGACY PAVILION

Units	Total Unit area (sq.ft.)	Total Area (sq.ft.)	Category	Rate/sq.ft. (INR)	Estimate (INR)
1	22,500	22,500	Architecture	958	21,555,000
			MEP	685	15,412,500
			Structure	1,585	35,662,500
				3,228	**72,630,000**
			Add-on (taxes @18%, consultancy @ 3% and contractor @4% fees) @ 25%		18,157,500
			Total		**90,787,500**
			Furniture		7,87,500
			Signage		5,62,500
			Equipment		1,125,000
			Grand Total		**91,912,500**
			Rate per sqft.		**4,085**

Notes:

1. *Combination of Granite and Kota stone considered for flooring.*
2. *50% internal walls to be painted.*
3. *China mosaic tiles considered for terrace finishing*
4. *VRF air conditioning system considered for admin area.*
5. *Fire extinguishers considered in fire fighting systems.*
6. *Exposed concrete in combination with exposed brickwork considered for façade and roof finish.*

Total Estimated Cost INR : 91,912,500
Total Estimated Cost USD: 1,225,500

COST ESTIMATE | AMPHITHEATRE

Units	Total Unit area (sq.ft.)	Total Area (sq.ft.)	Category	Rate/sq.ft. (INR)	Estimate (INR)
1	33,635	33,635	Architecture	359	12,074,965
			MEP	295	9,922,325
			Structure	1,084	36,460,340
				1,738	**58,457,630**
			Add-on (taxes @18%, consultancy @ 3% and contractor @4% fees) @ 25%		14,614,408
			Total		**73,072,038**
			Furniture		100,905
			Signage		840,875
			Equipment		2,018,100
			Grand Total		**76,031,918**
			Rate per sqft.		**2,261**

Notes:

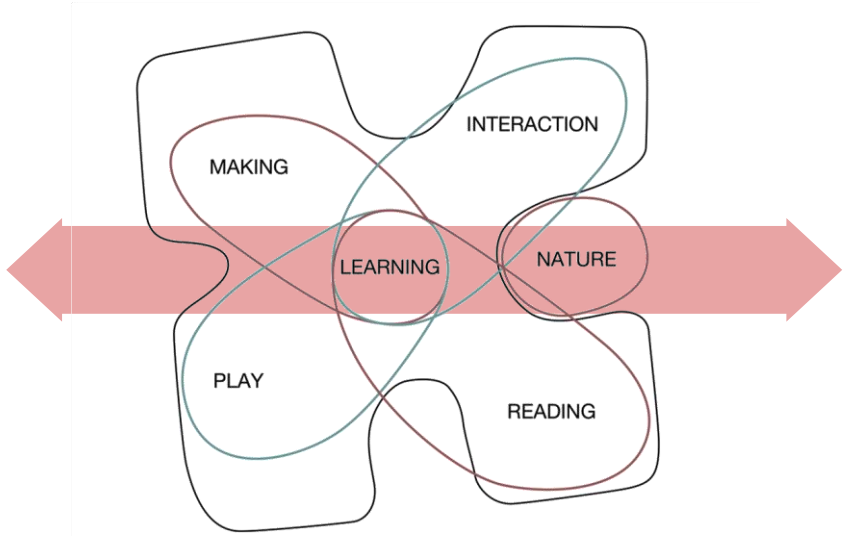
1. *Combination of Kota stone (75% @ Rs.250/sqft) and grass (25% @ Rs.30/sqft)*
2. *Internal and External painting considered for green room*
3. *Wiring, conduits and fixtures included (@ Rs.20/sq.ft.) in Electrical estimate.*
4. *Grade slab, toe wall and storm water drainage trenches (370 Rmt. considered at Rs. 15000/Rmt.) are considered for structural costing.*

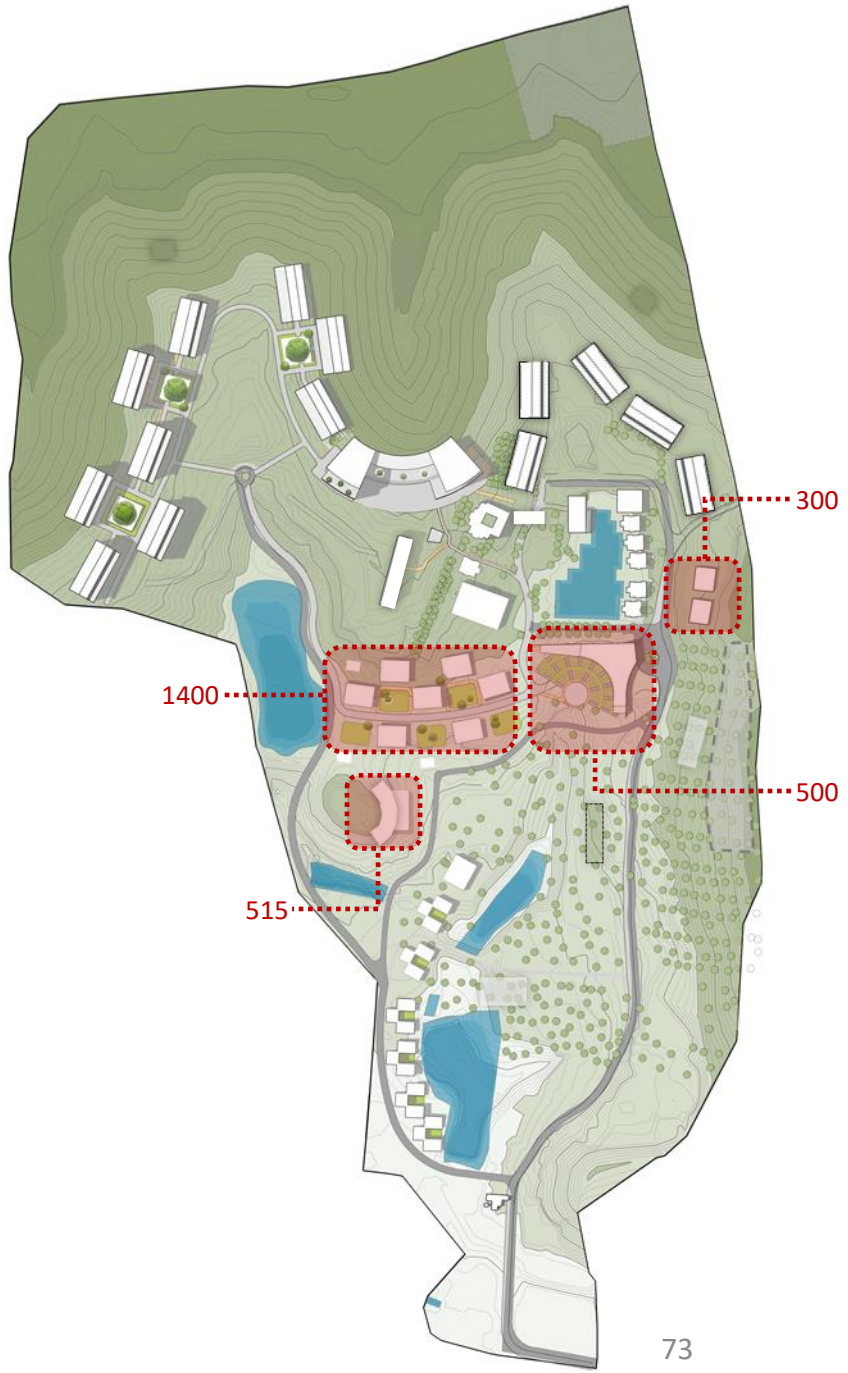
Total Estimated Cost INR : 76,031,918
Total Estimated Cost USD: 1,013,759

UNIQUE | SELF STUDY SPACES

Naturally Ventilated Reading Areas

SELF STUDY CAPACITY MATRIX	
Student capacity in the Campus	**2712**
Classroom	
Classroom Capacity	200
Number of Classrooms	7
Total capacity in Classroom (one-time)	**1400**
Computer Lab	
Computer lab capacity	150
Number of computer labs	2
Total capacity in Computer labs	**300**
Remaining students in the campus (to be provided space for self-study)	*1012*
Pavilion Building (covered spaces)	**515**
Library *	**500**

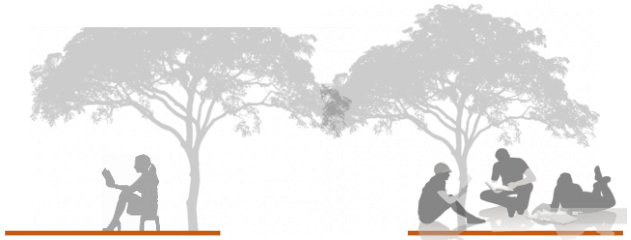




UNIQUE | STUDYING OUTDOORS

Integration of Outdoor studying spaces in the Landscape

Walking
Discussions



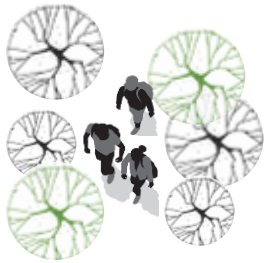
Self Studying Spaces
For **an individual**

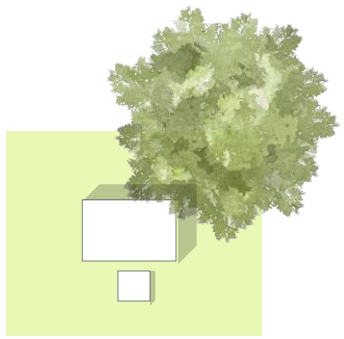
Discussion spaces
For **2 to 4** Scholars

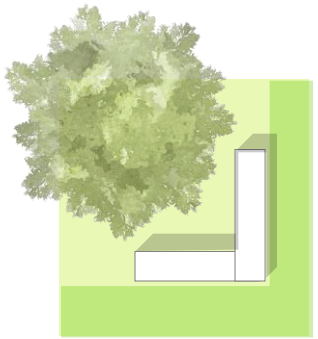
Group Discussion spaces
For **2 to 8** Scholars

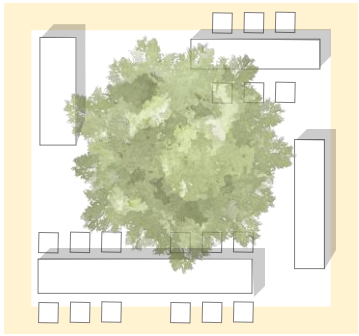
Informal Teaching Sessions
For **5 to 20** Scholars

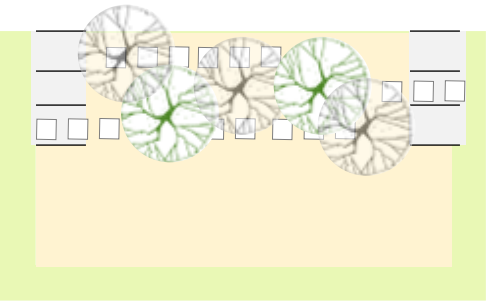
Outdoor Performance spaces
For **20 to 35** Scholars











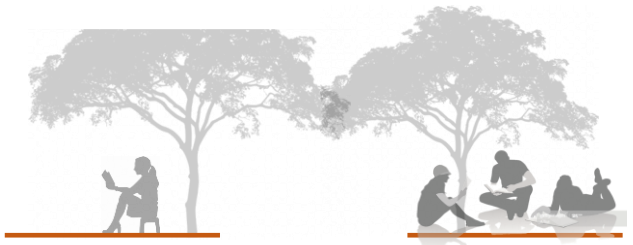
74

UNIQUE | STUDYING OUTDOORS

Integration of Outdoor studying spaces in the Landscape

"Creating Outdoor study spaces to increase motivation & concentration, also reducing stress levels in Scholars."

Walking Discussions



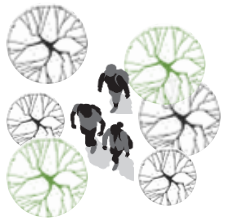
Self Studying Spaces For **an individual**

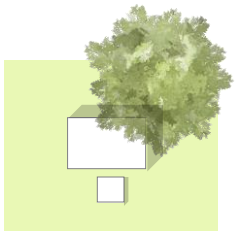
Discussion spaces For **2 to 4** Scholars

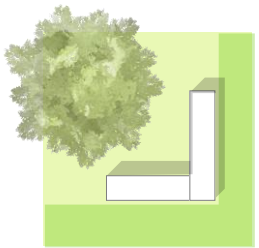
Group Discussion spaces For **2 to 8** Scholars

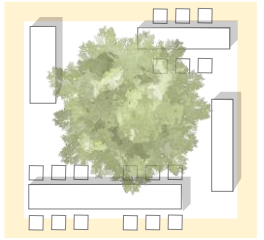
Informal Teaching Sessions For **5 to 20** Scholars

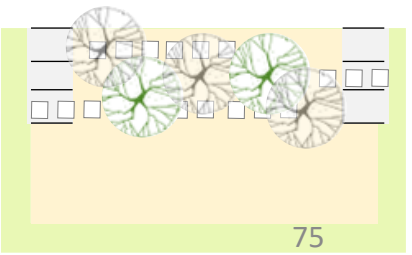
Outdoor Performance spaces For **20 to 35** Scholars











UNIQUE | KNOWLEDGE CENTRE

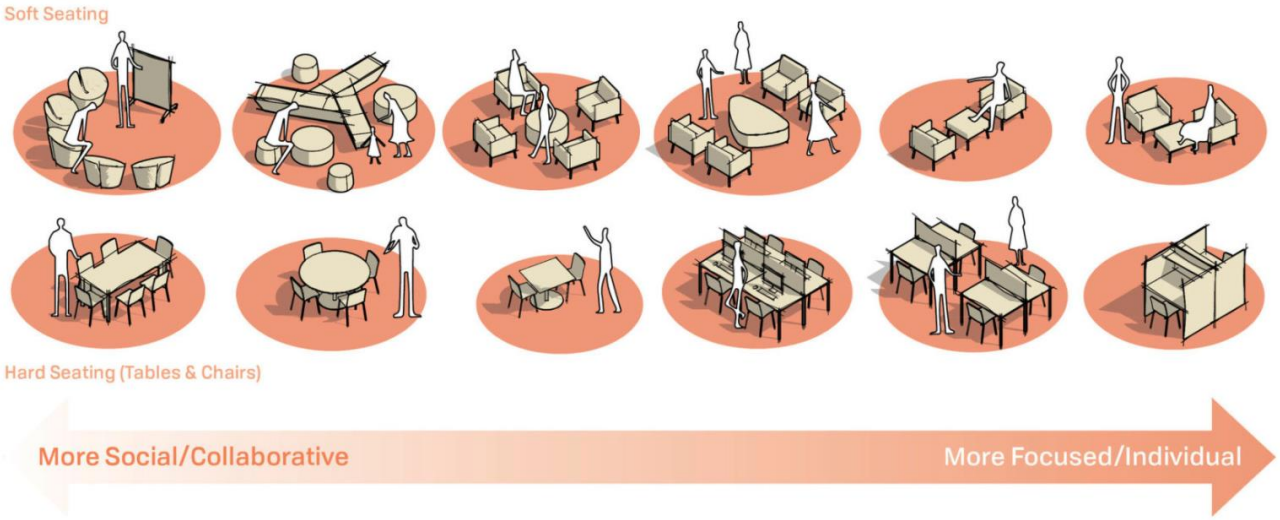
A journey within and outside the building to simulate the road map for realizing the dream of every scholar

1. Design to Focus: Modern library inspired from traditional studying spaces that focuses on people while **celebrating the exchange of knowledge**.

2. Feature Building: Featuring a **transparent and open ground floor**, the new repository of knowledge creates a strong connection with the valley, becoming a mediator between the scholar and self study zones.

Built Volume required (as per client)	
Total Built Up Area	740 sqm (8,000 sqft)
Main Building	250 pax
Outdoor Seating	250 pax

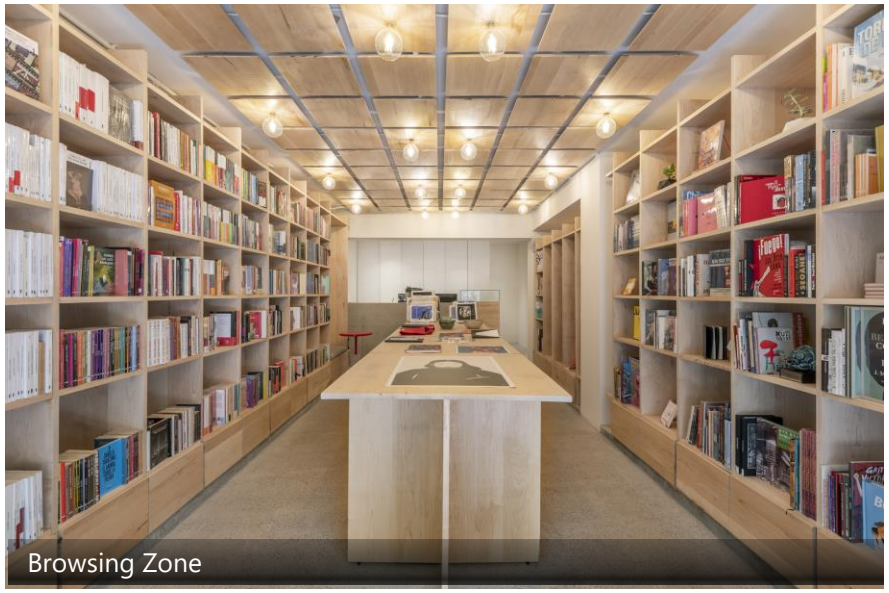
Reference images for Knowledge Centre



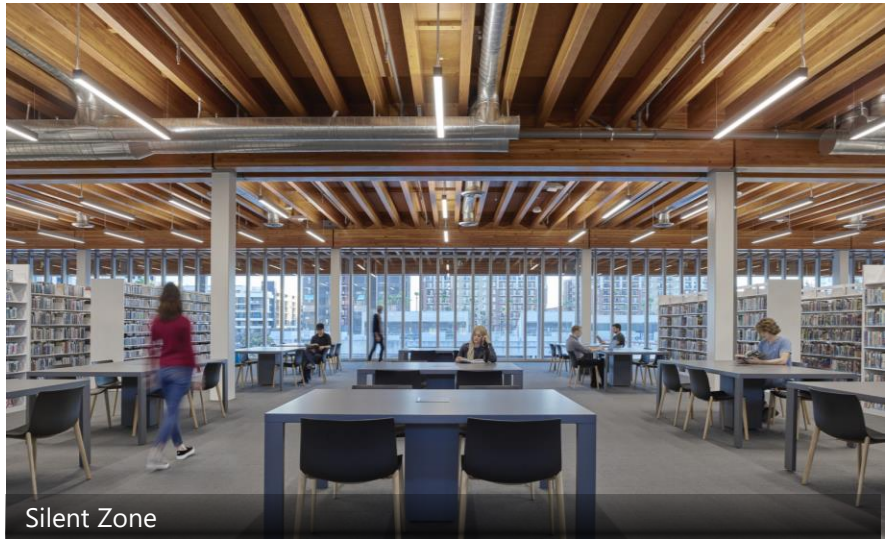
UNIQUE | LIBRARY INTERIORS

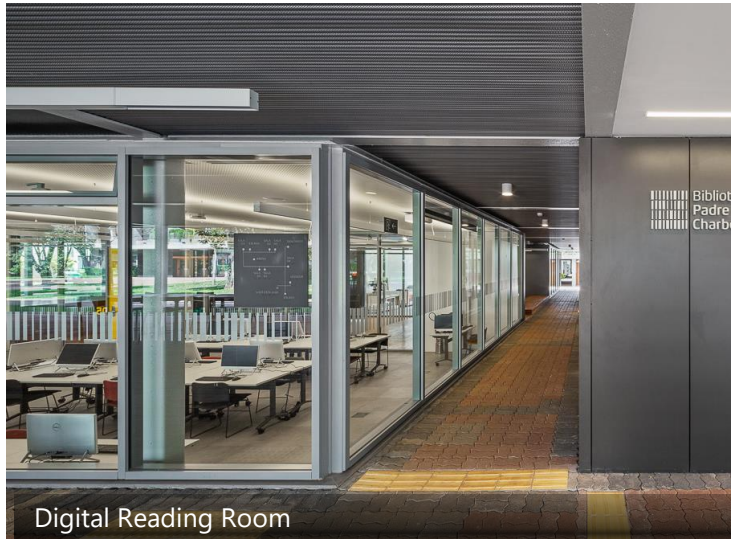
Unique Reading zones to enhance focus, productivity and encouragement

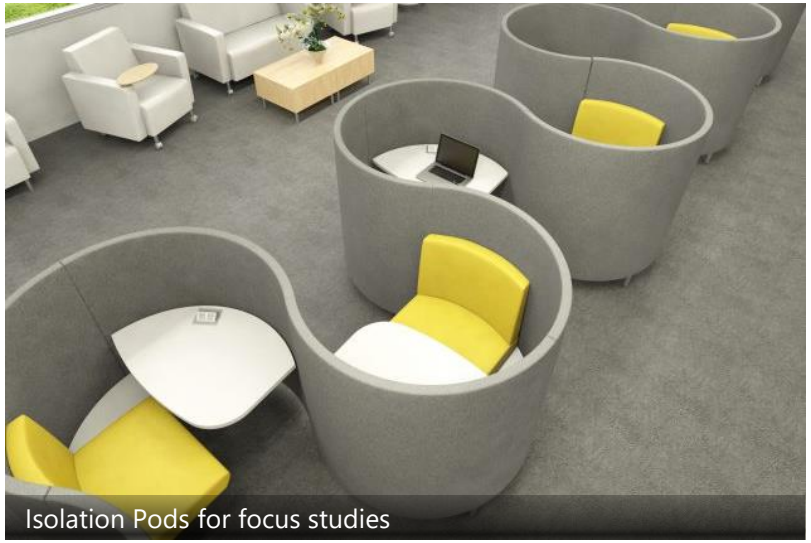

Collaborative Reading Space


Browsing Zone


Reading space integrated in circulation areas


Silent Zone

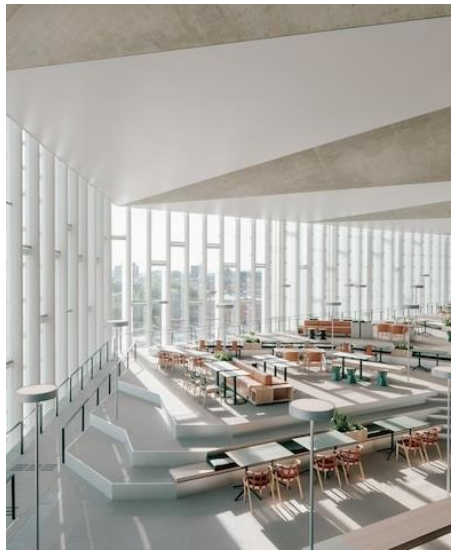

Digital Reading Room


Isolation Pods for focus studies

UNIQUE | LIBRARY EXTERIOR

Façade design to respond the context

Library Building- Ground Floor



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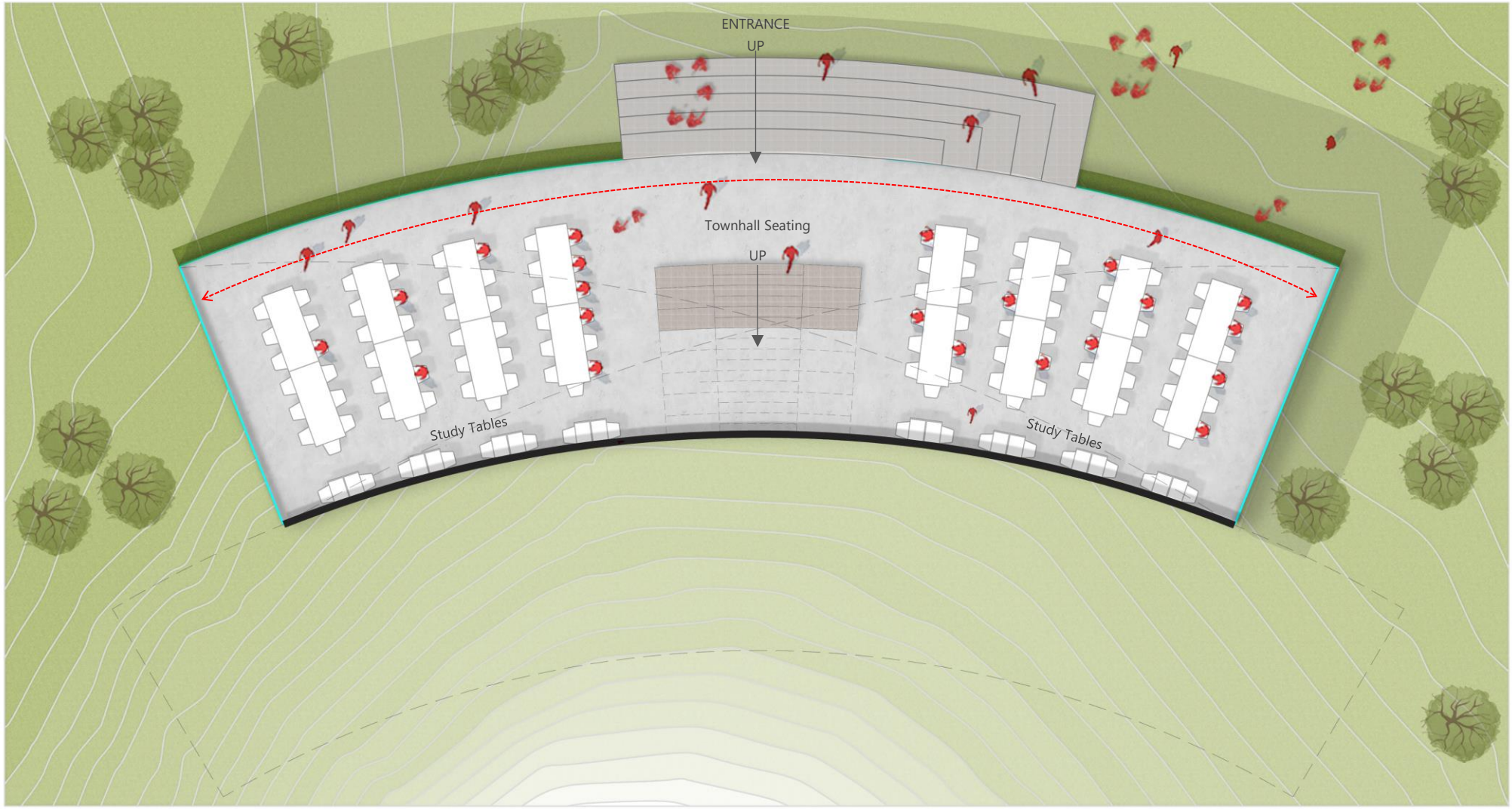
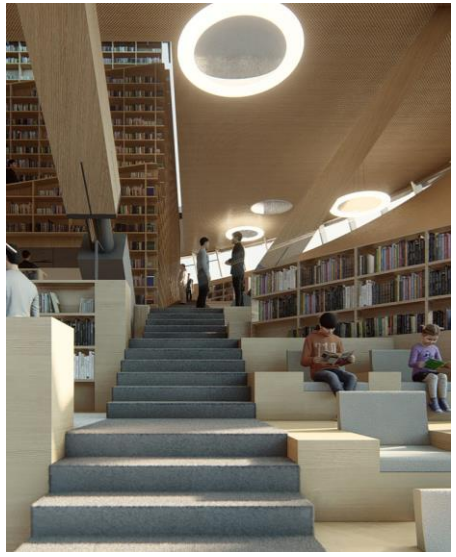
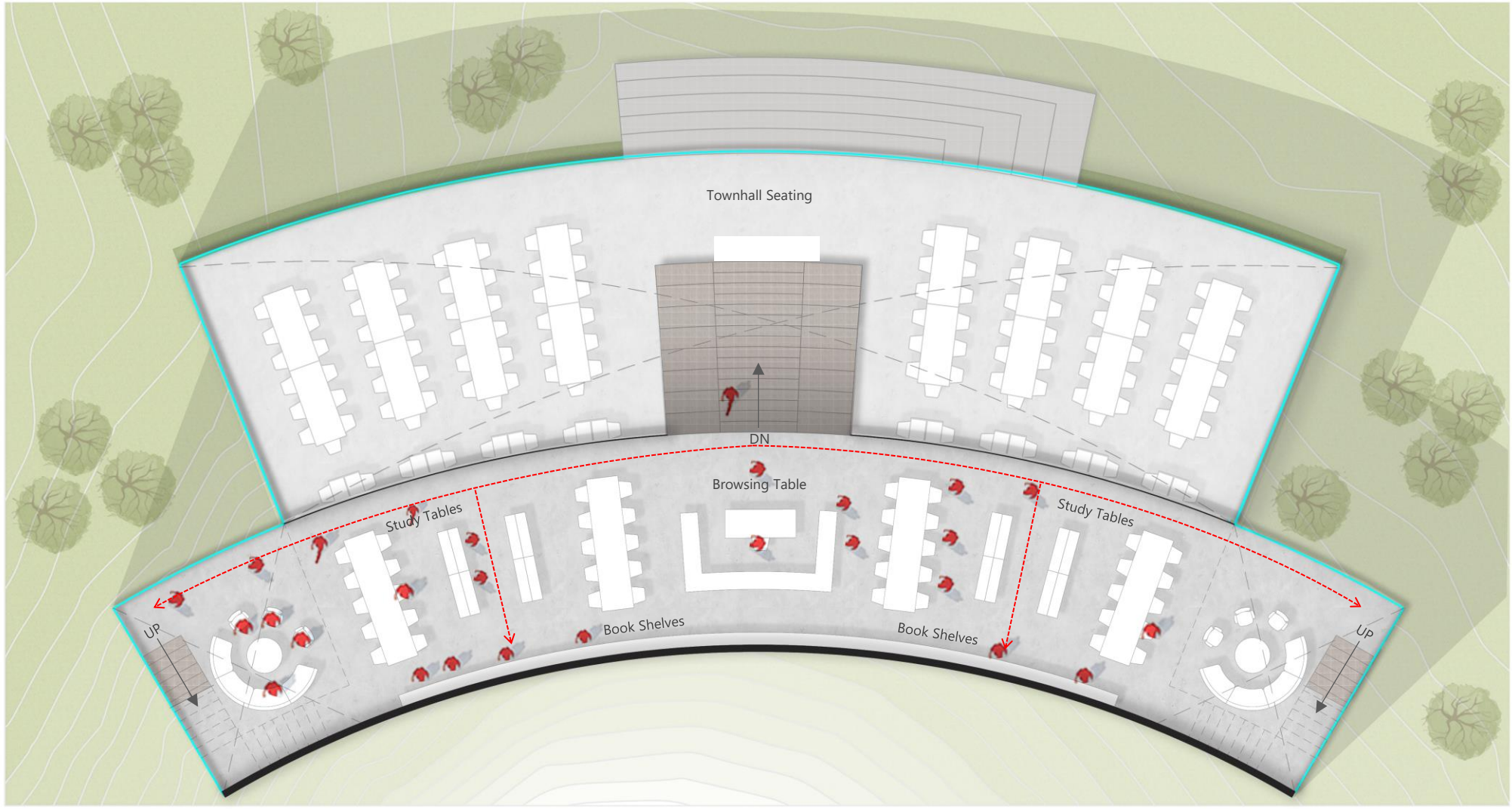


Total Capacity : 148 Pax

Library Building- First Floor



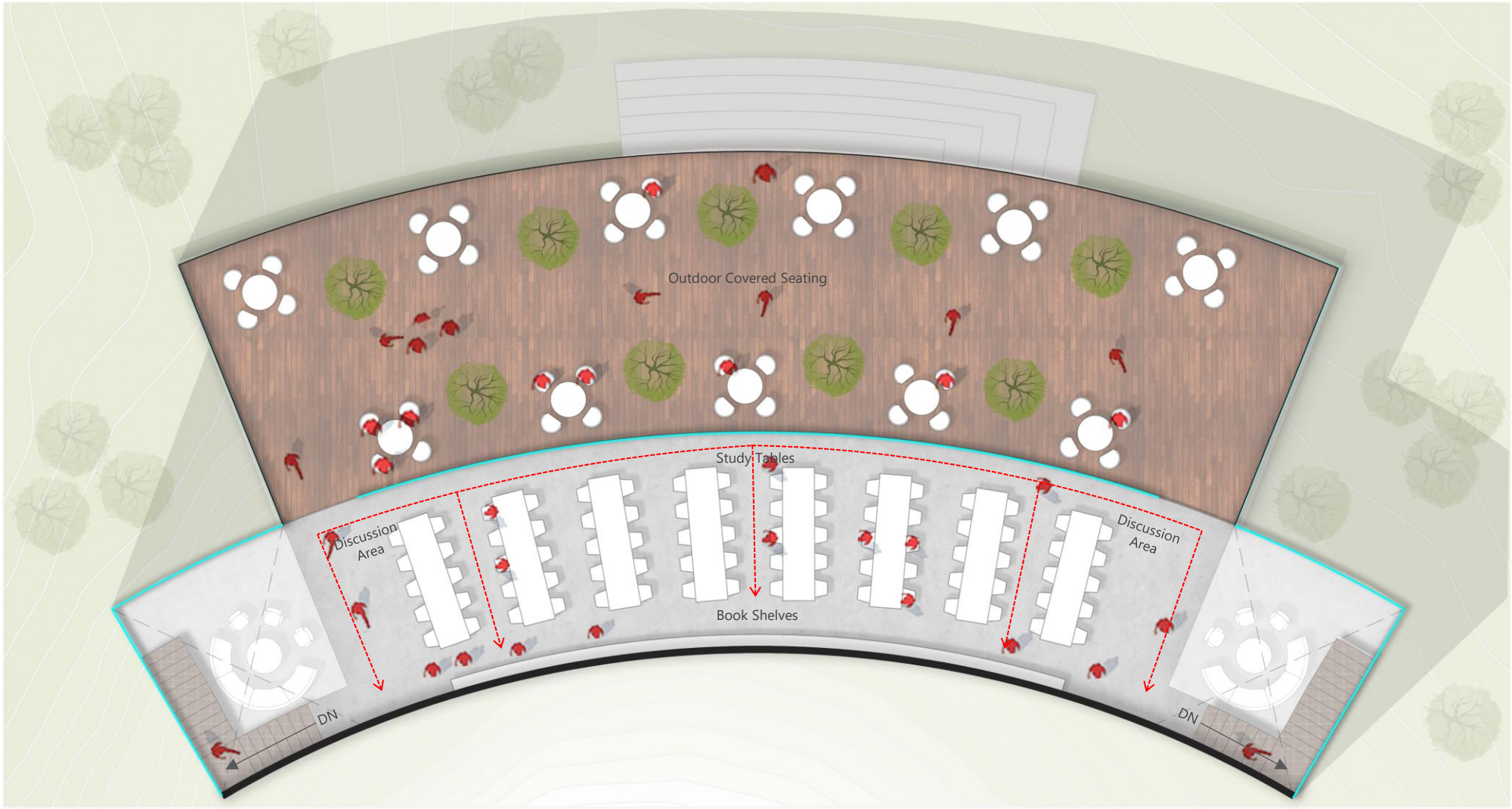
Reference images



Total Capacity : 54 Pax

Library Building- Second Floor

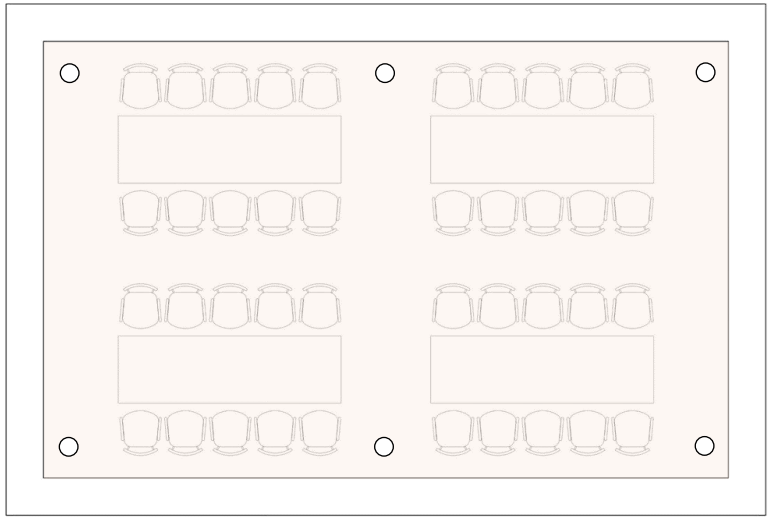
Reference images



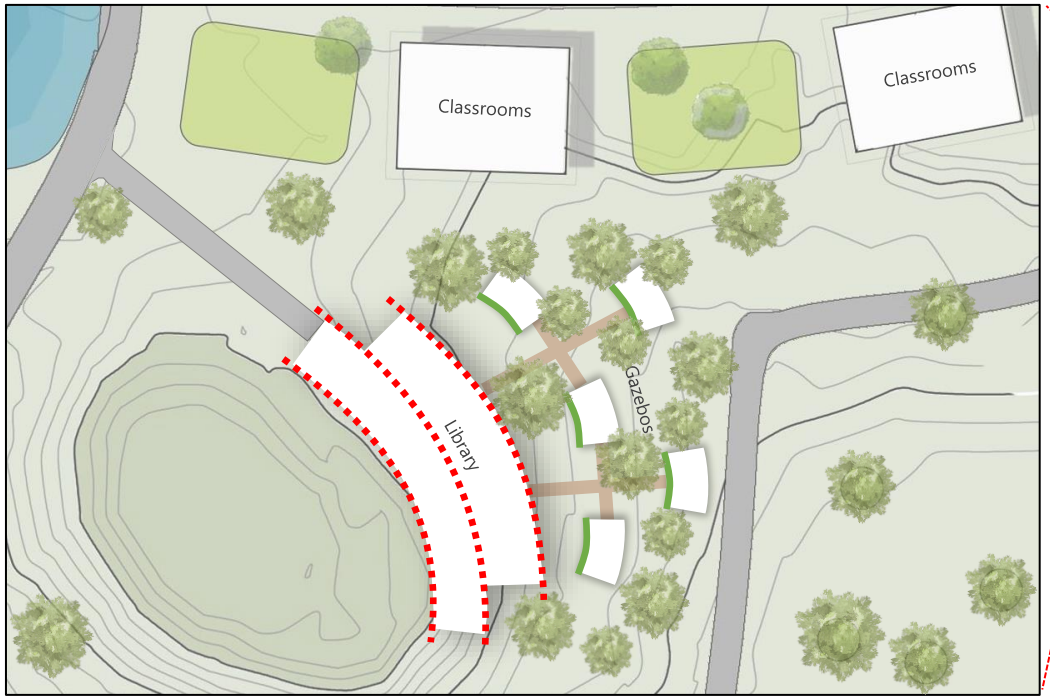
Total Capacity : 124 Pax

Library Building – Outdoor Seating

Reference images

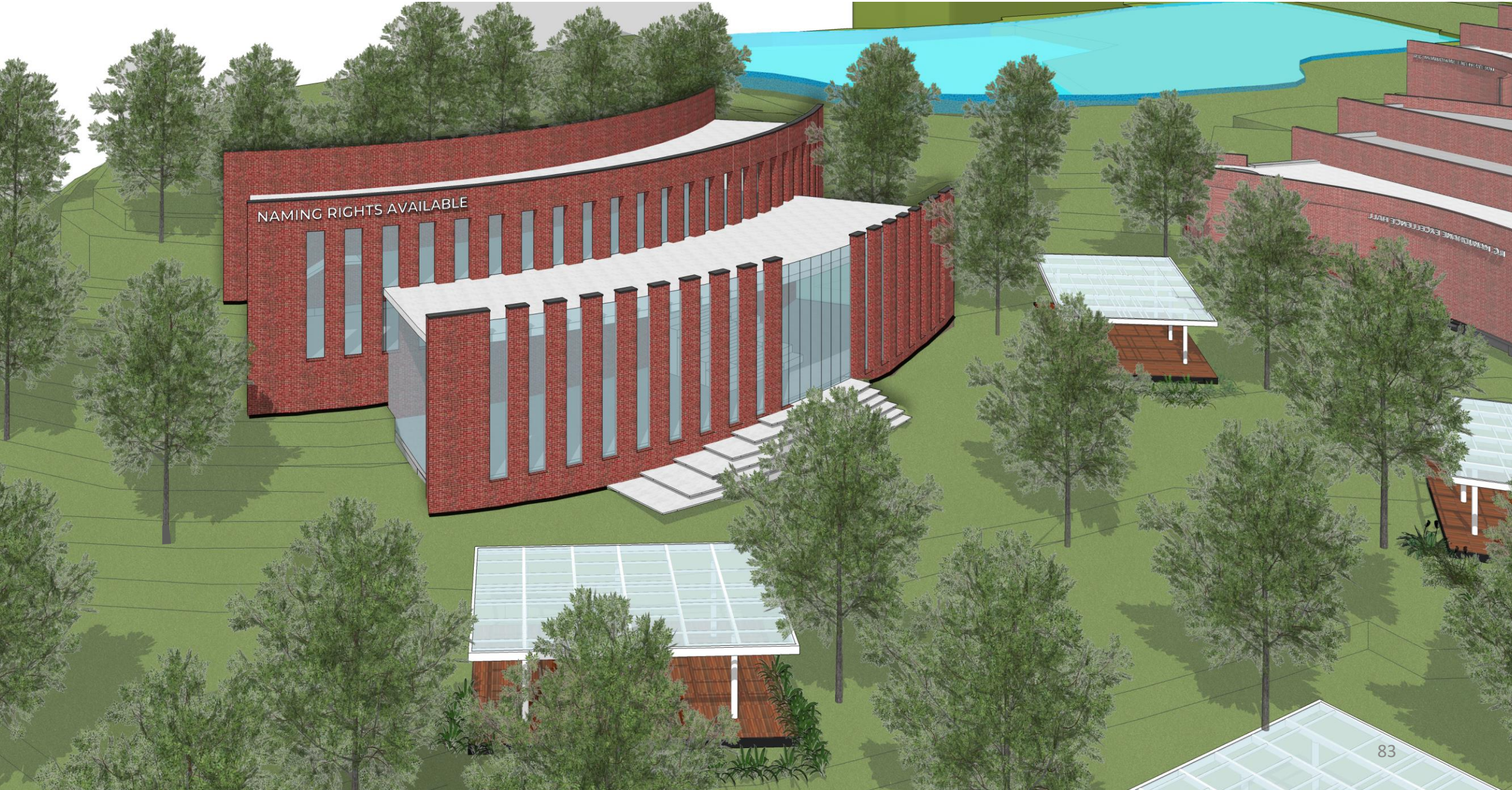


TYPICAL GAZEBO PLAN



MASTERPLAN

UNIQUE | KNOWLEDGE CENTRE



LIVABILITY

- **Layout Design** : >90% Daylight (Zero Glare) | >90% Cross Ventilation | 50% Reduction in Heat Gain |Acoustic comfort
- **Fitness** : 3 x 400 m and 800 m jogging trails | 2 basketball & 6 badminton courts | Yoga Decks
- **Recreation & Events** : 3000 capacity Amphitheatre | 1500 capacity Dining / Multipurpose halls
- **Landscape** : Sensitivity to seasonal variation

>90% Daylight (Zero Glare) | >90% Cross Ventilation | 50% Reduction in Heat Gain |Acoustic comfort

1. Zero Glare classroom: The classrooms are designed with high window sills to cut off glare and facilitate cross ventilation through out the day.

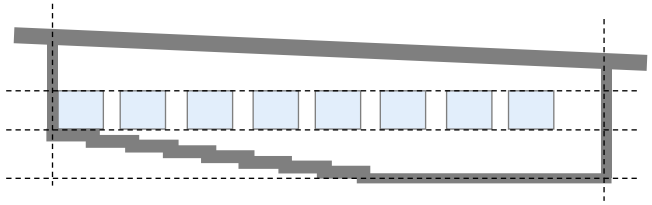
2. Tiered and Angular seating:

For better visibility to all the students

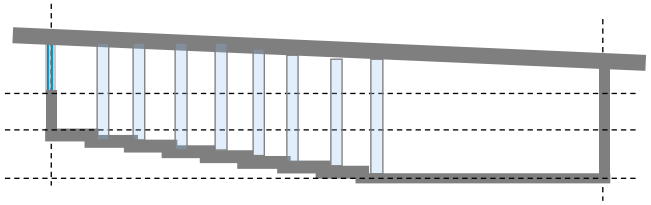
Built Volume required (as per NBC/Codes)

Total Built Up Area (based on **200 per class** Population @3 sqm per person)	3,285 sqm. (35,350 sq. ft.)
No. of new modules required (Running in 2 Shifts)	7 (24 X 18 m)

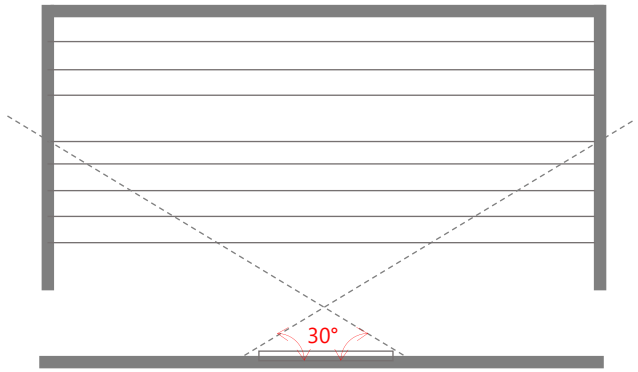
Reference images for Classroom windows



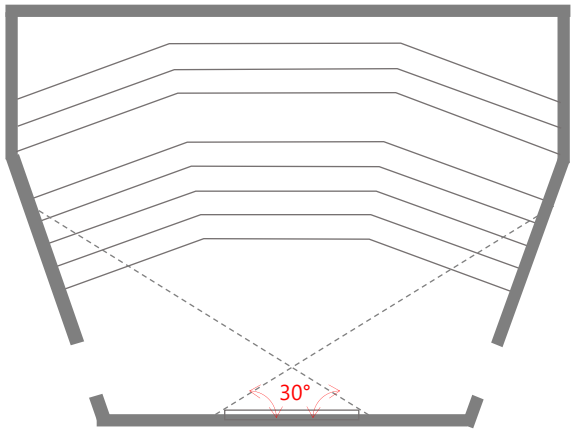
Tiered seating with window sill @ 1.44 m as per existing, problem of glare and zero ventilation



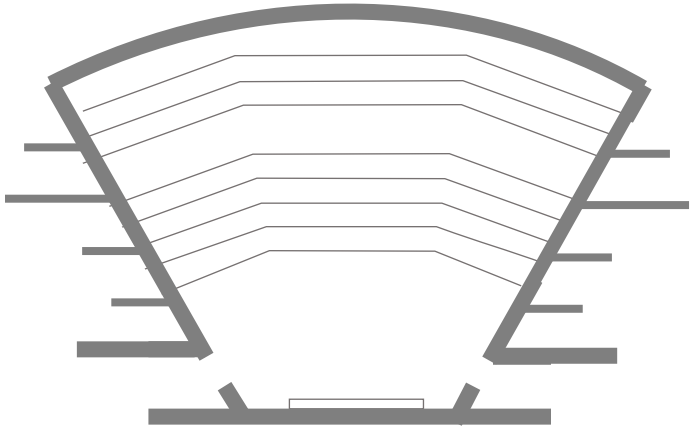
Strip windows along with Fins for Zero glare and cross ventilation



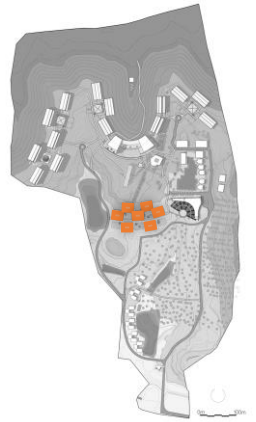
Difficulty viewing the board in linear arrangement



Arrangement of seats with respect to visibility angles

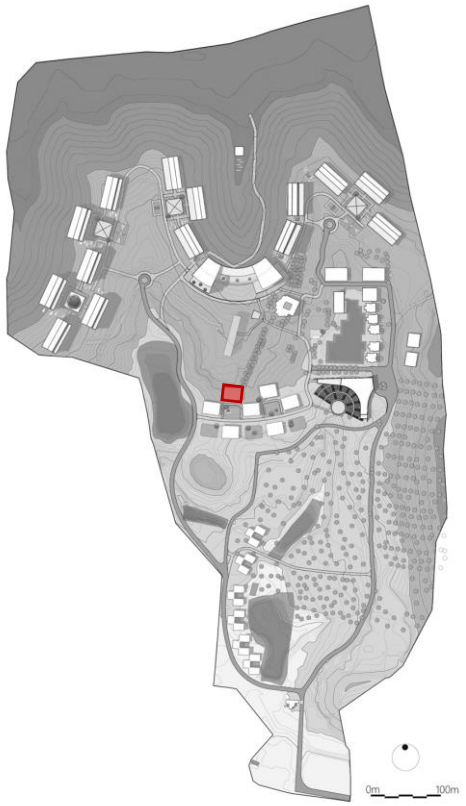


Reduce overcrowding and noise travel by introducing buffer space near entrance

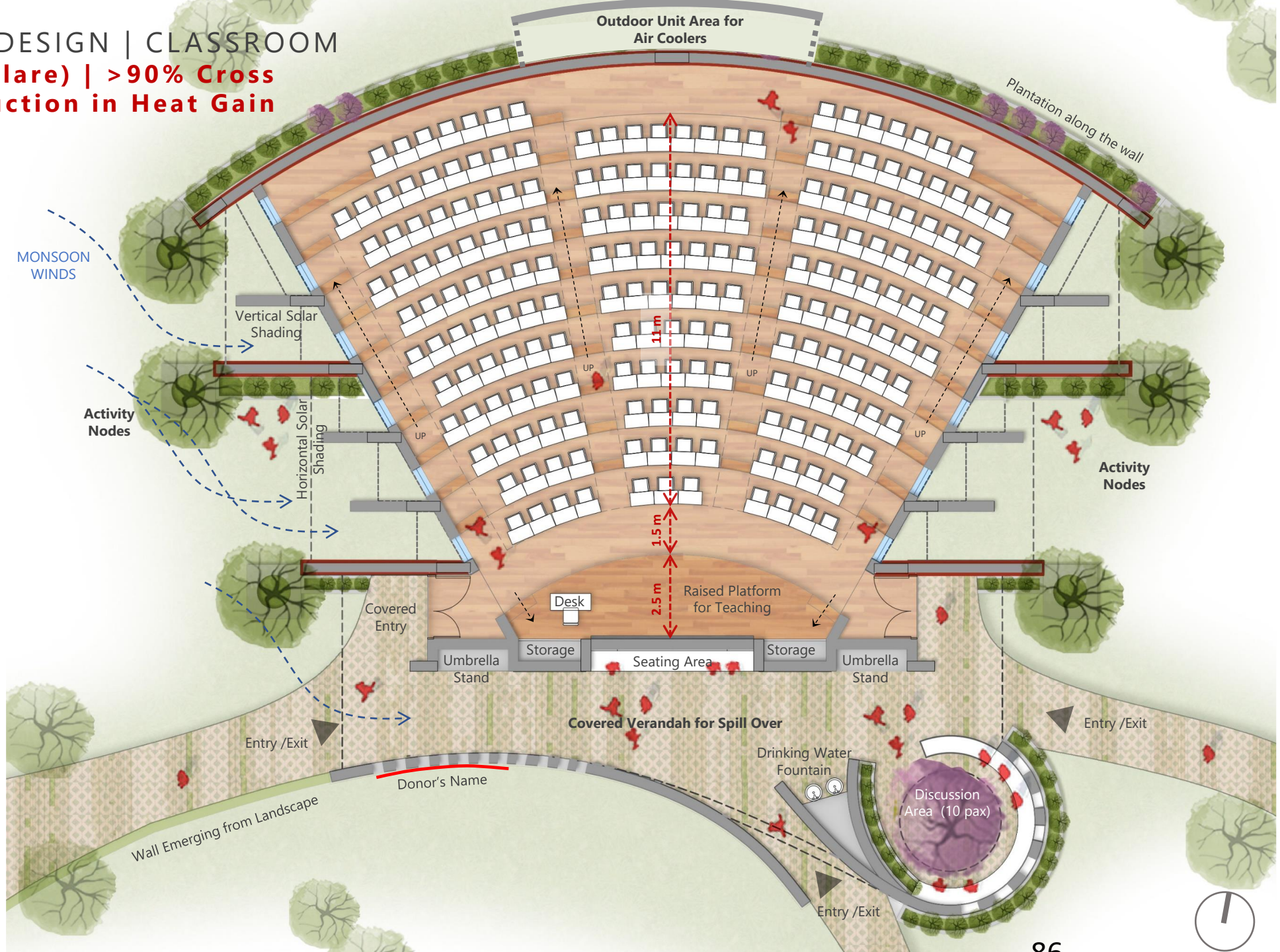


LIVABILITY | LAYOUT DESIGN | CLASSROOM

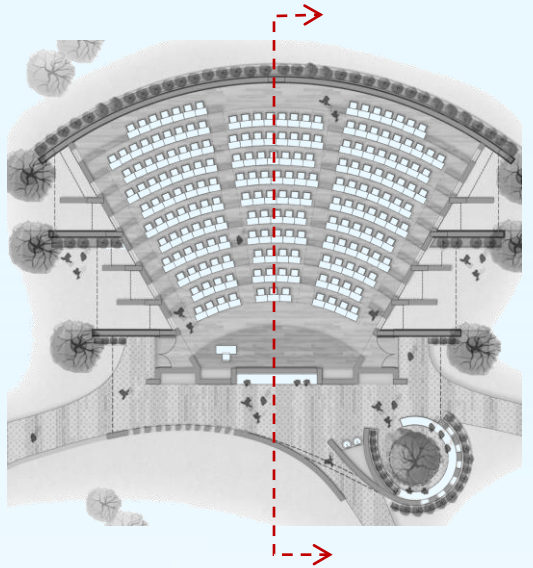
>90% Daylight (Zero Glare) | >90% Cross Ventilation | 50% Reduction in Heat Gain |Acoustic comfort

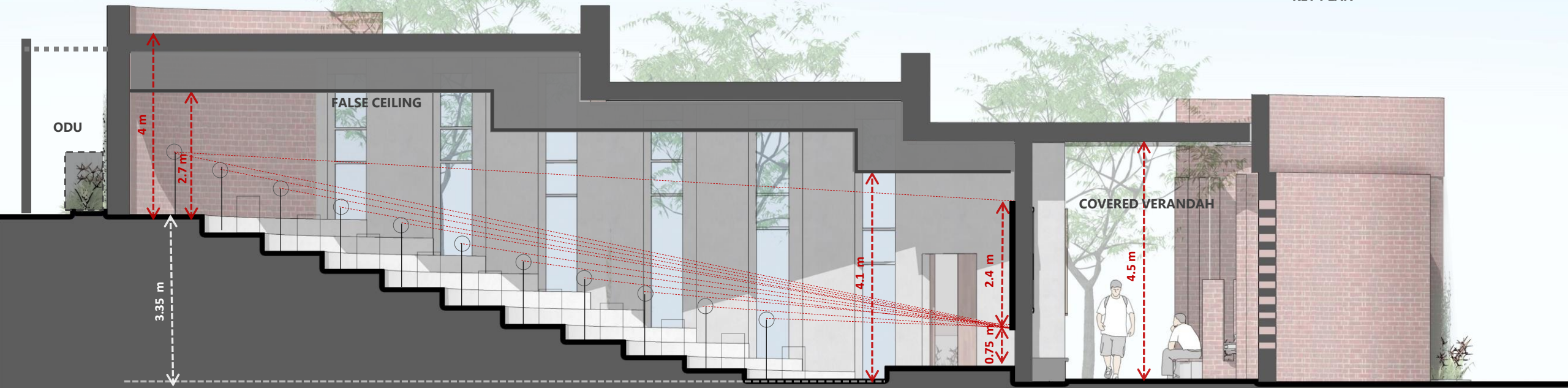


LOCATION PLAN



LIVABILITY | LAYOUT DESIGN | CLASSROOM

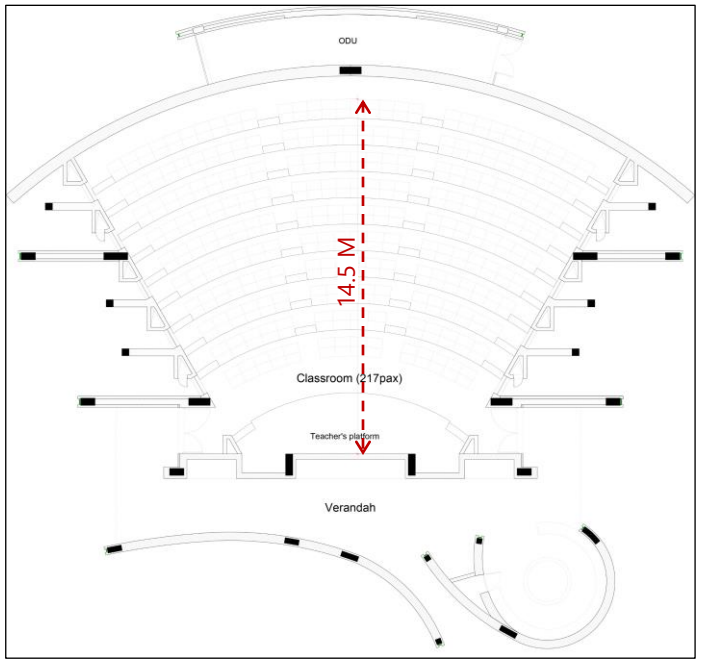




LIVABILITY | CLASSROOM | Revised

>90% Daylight (Zero Glare) | >90% Cross Ventilation | 50% Reduction in Heat Gain |Acoustic comfort

AREA: 4,700 SQFT



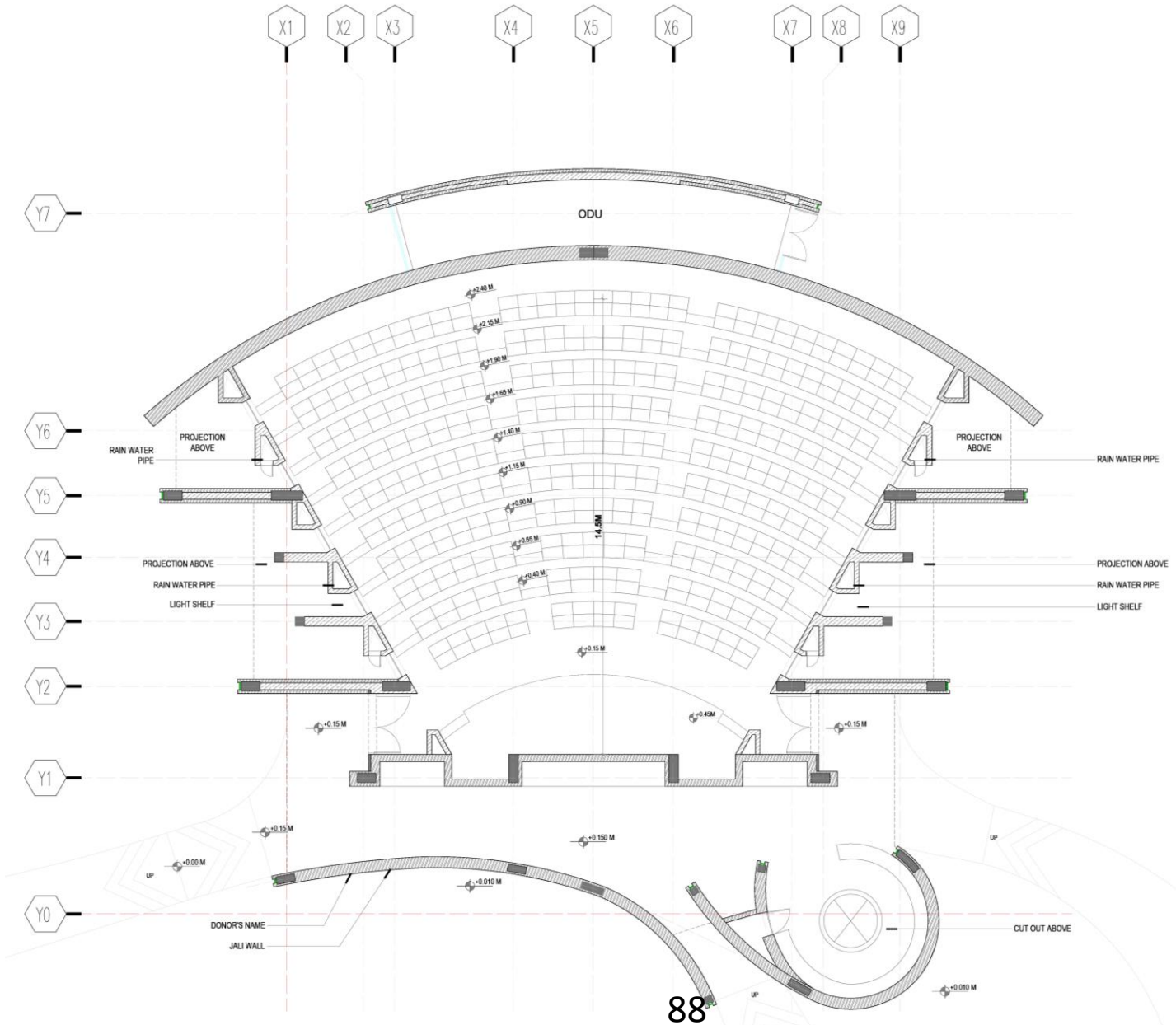
REVISED SEATING

Capacity – 217 pax

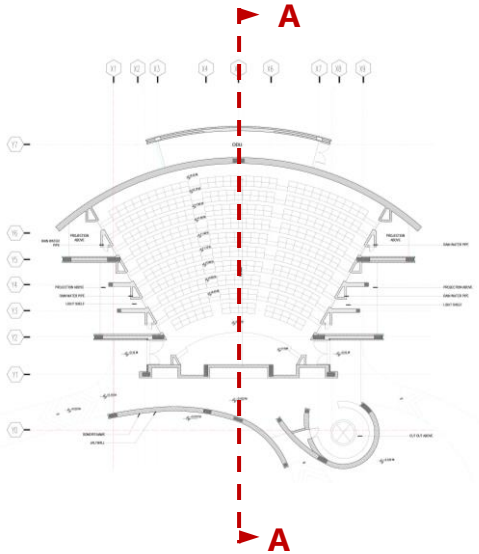
Built-up area – 4700 sqft.

Specifications:

1. Number of rows - **10**
2. Average width of table for one student – **650mm**
3. Vision distance for last row – **14.77m**



Section AA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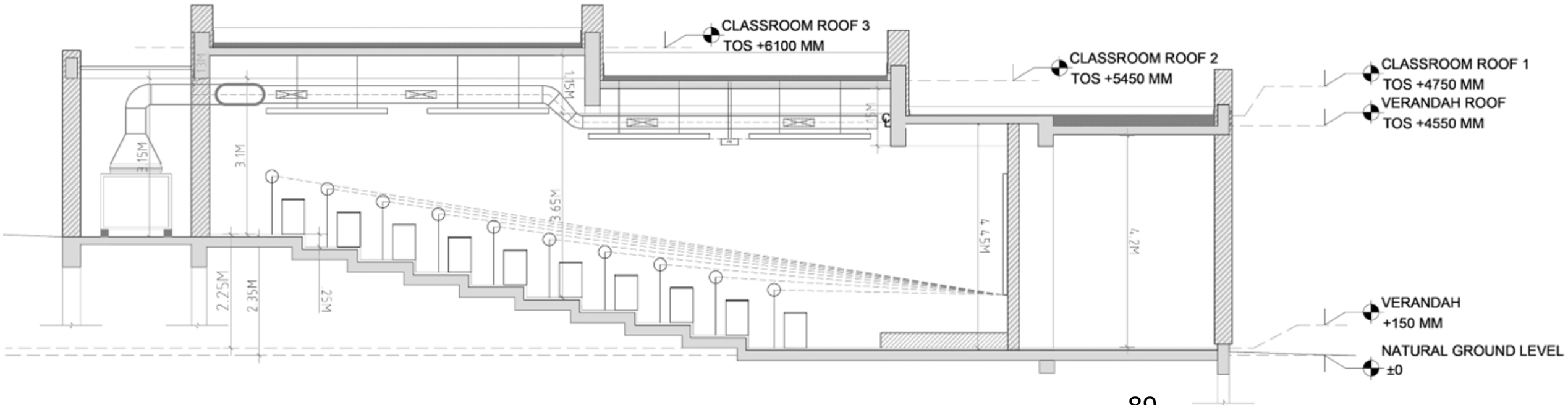
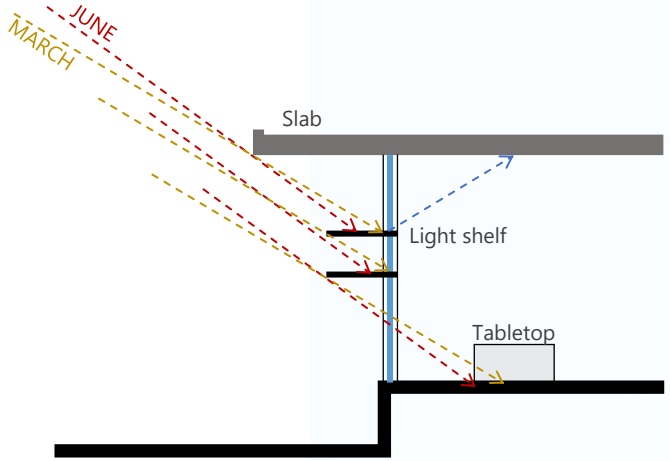
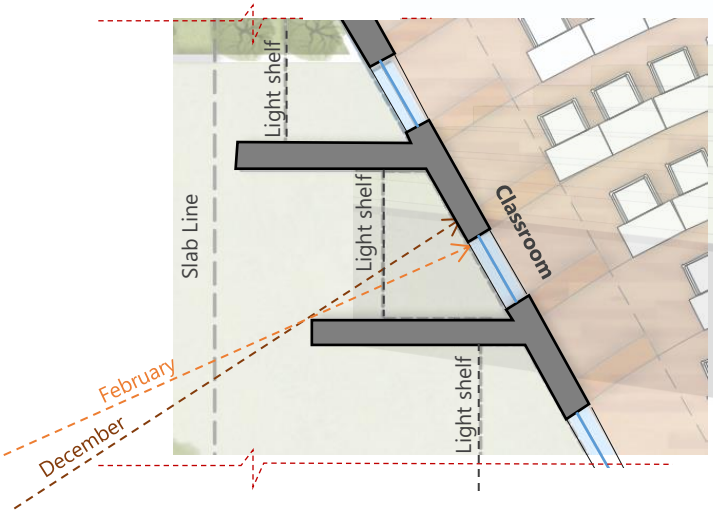

CLASSROOM ROOF 3
TOS +6100 MM
CLASSROOM ROOF 2
TOS +5450 MM
CLASSROOM ROOF 1
TOS +4750 MM
VERANDAH ROOF
TOS +4550 MM
VERANDAH
+150 MM
NATURAL GROUND LEVEL
±0
3.15M
3.1M
1.15M
3.69M
4.75M
4.2M
2.25M
2.35M
2.5M

LIVABILITY | LAYOUT DESIGN | CLASSROOM

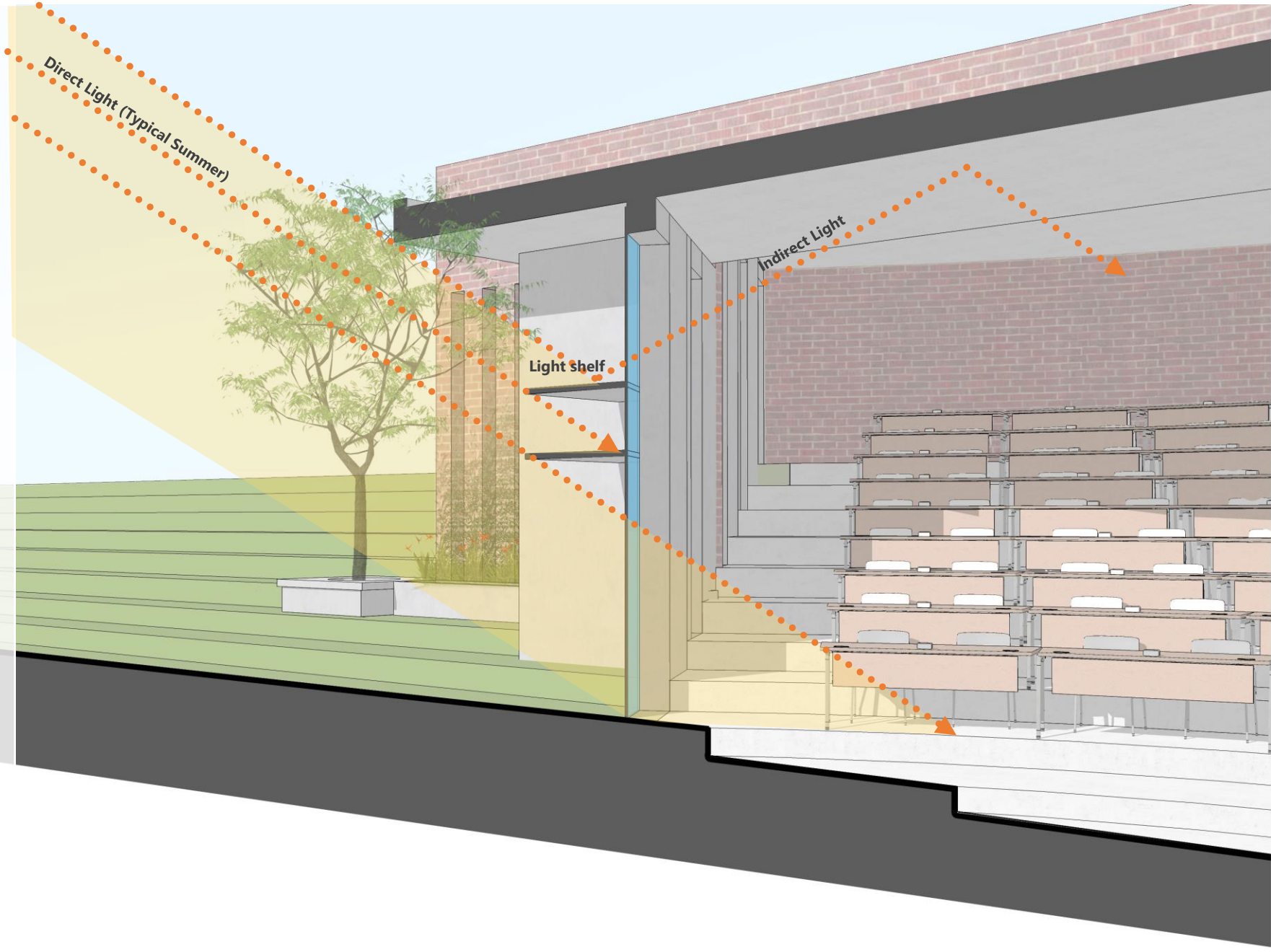
>90% Daylight (Zero Glare)



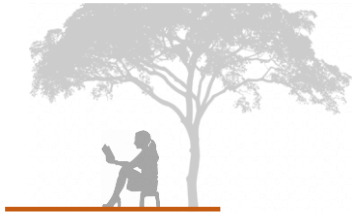
Detail – Section showing Horizontal Shading Elements to cut off harsh sun from **high summer sun (26 – 36 ° Altitude Angle)**



Detail – Plan showing Vertical Shading Elements to cut off harsh sun from **low winter sun**

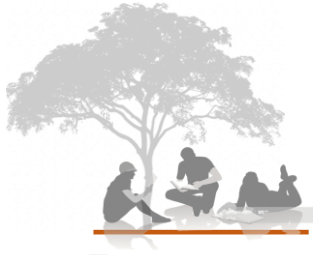


Activity Nodes in Landscape



Self Studying Spaces

For **an individual**



Discussion spaces

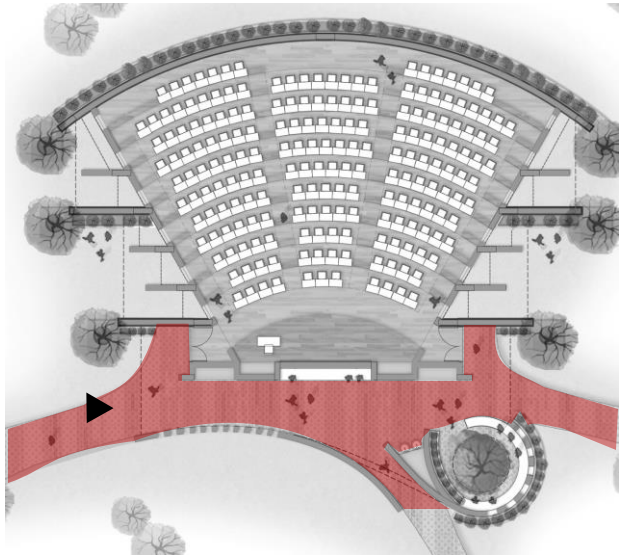
For **Larger Group** of Scholars

CLASSROOM VIEW

Covered verandah as spill over

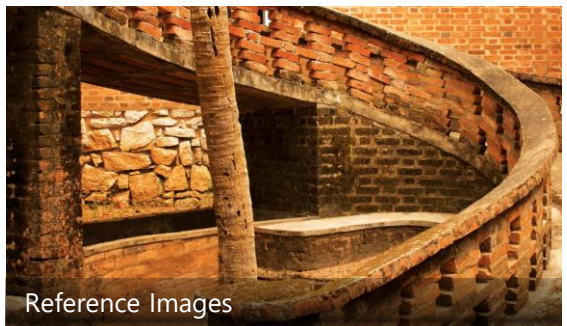
VIEW OF VERANDAH

Reference Images of Jaali Wall for Verandah



KEY PLAN

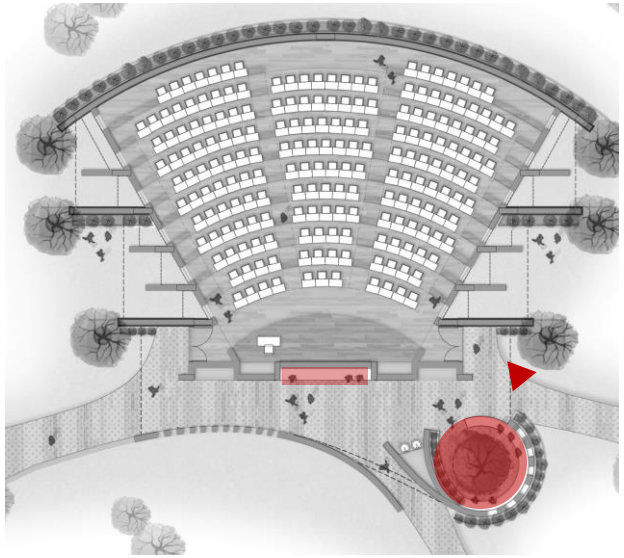
Focused Discussion Areas



Reference Images

VIEW OF DISCUSSION COVE

INSPIRED FROM TRADITIONAL CHAUPALS

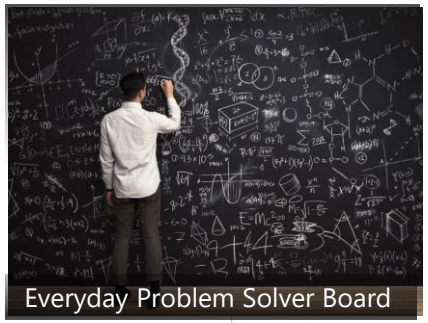


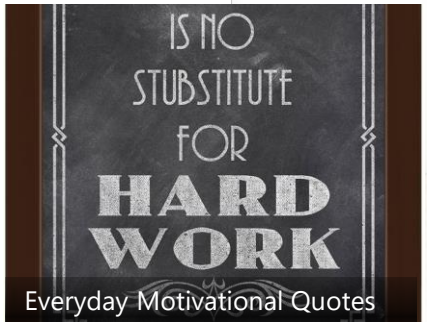
KEY PLAN

Information Zone

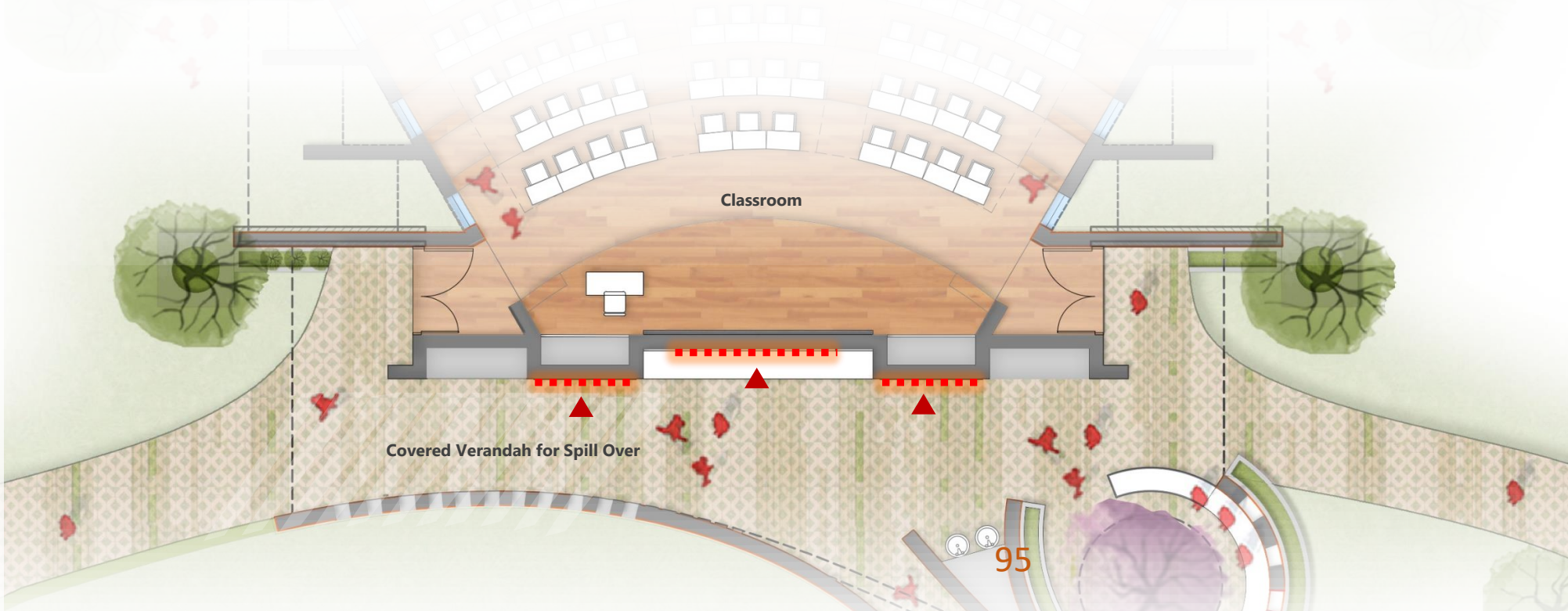

Educational Information

Spotlight Boards

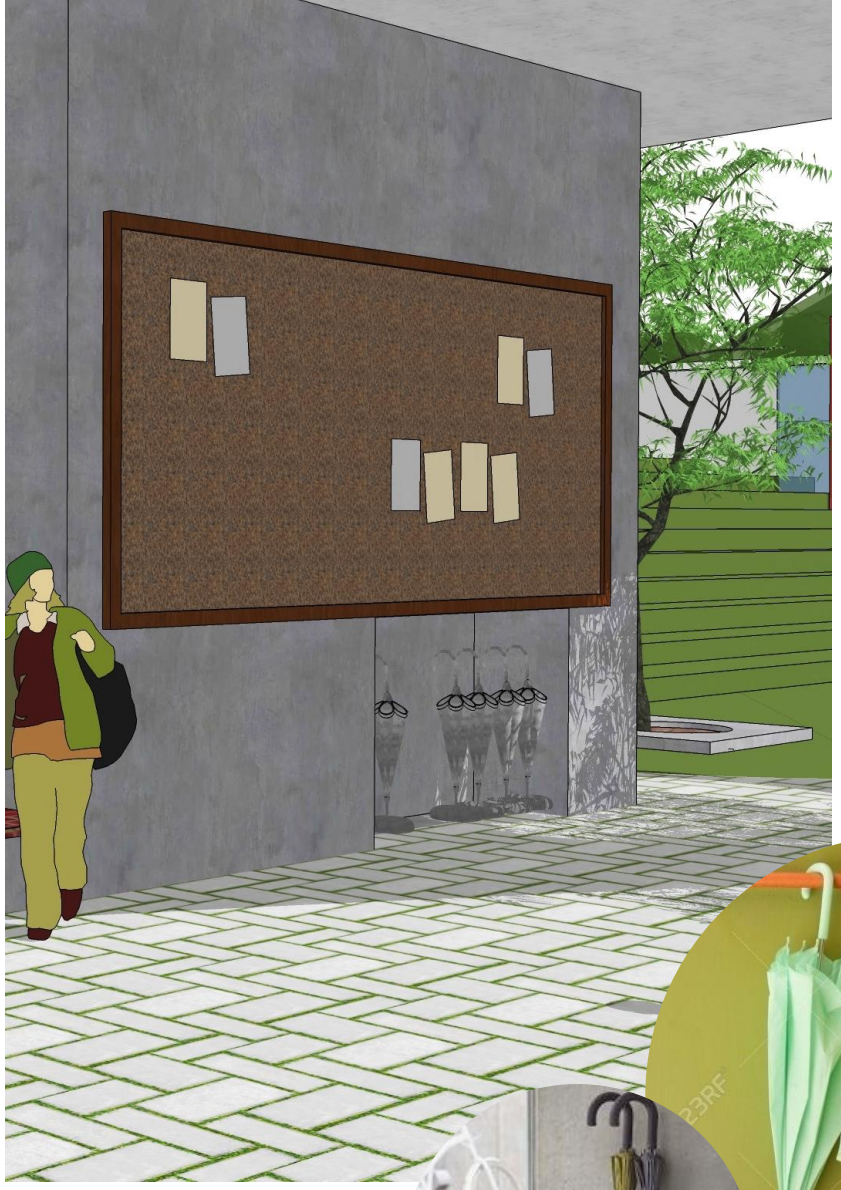

Everyday Problem Solver Board



Everyday Motivational Quotes

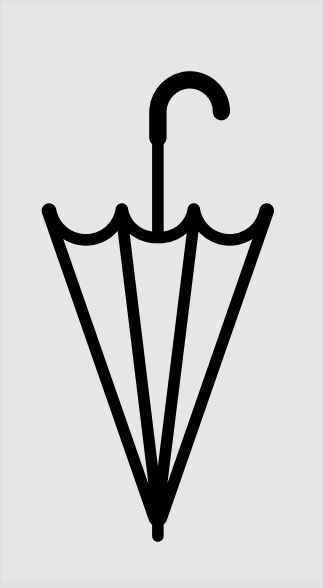


Umbrella stand and Water Fountain



WAYFINDING SIGNAGE

Sanitizer Area



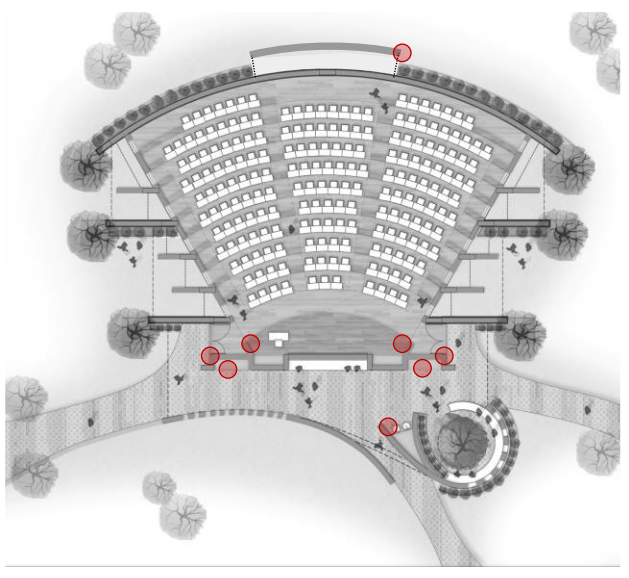
Umbrella Stand

Other Icons inside Classroom

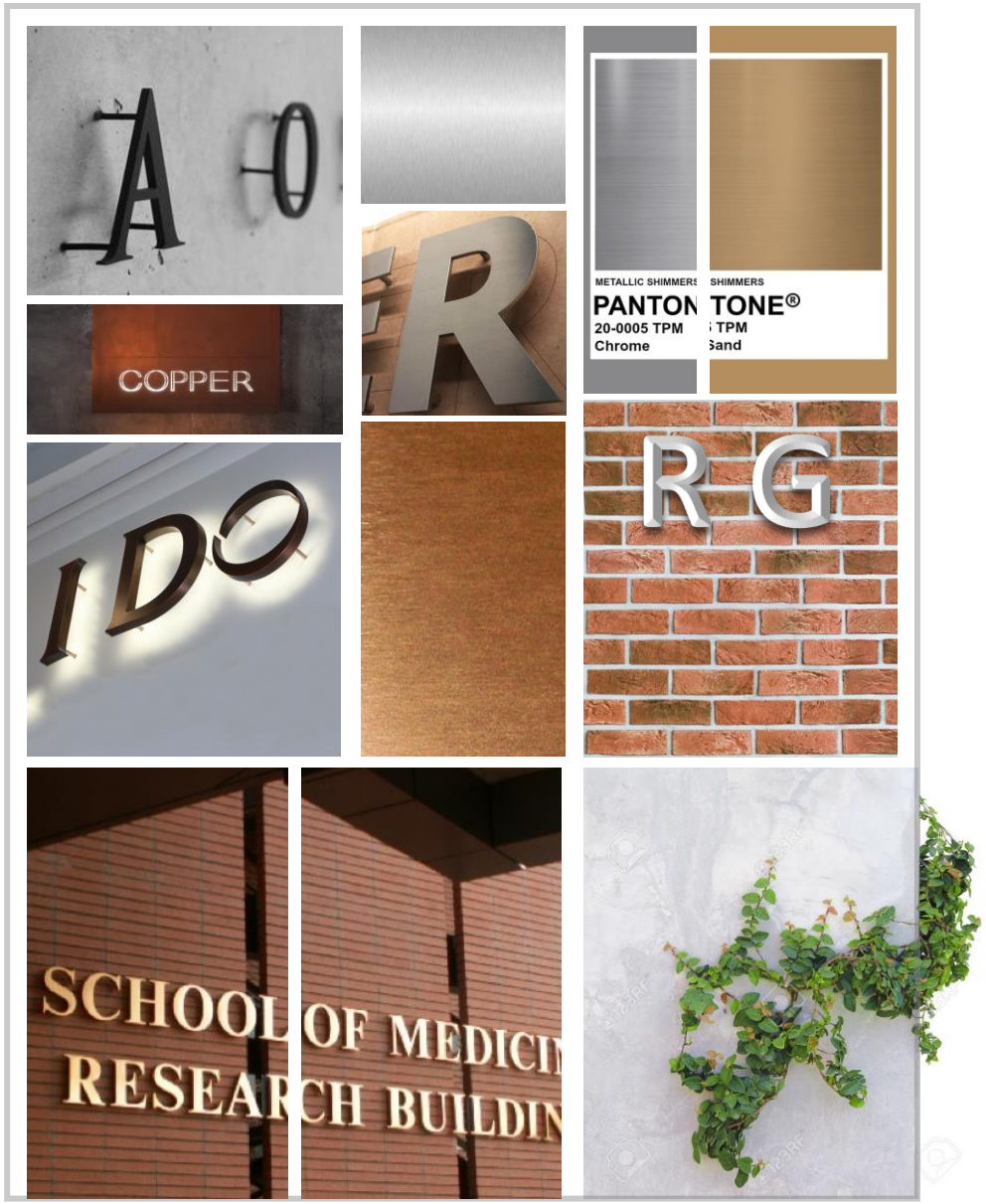
Service Area/ODU

Drinking Water

Dustbin



IMPRESSION OF DONOR'S NAME



DONOR'S NAME & PLAQUE

R.G. MANUDHANE EXCELLENCE HALL *(Montserrat font)*

Note: Size, color and material to be finalized post mockup/samples on site

Signage Proposed in Montserrat font

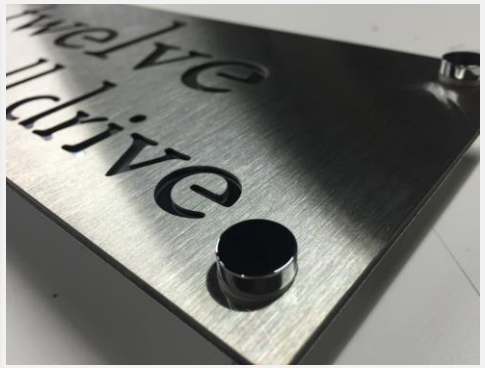
plaque Proposed

THE R.G. MANUDHANE EXCELLENCE HALL

Dedicated to the memory of

Ramnarayan G. Manudhane
1921 - 2012

who inspired and exemplified the relentless pursuit of excellence



Option 1: Cut in SS Plate

Option 2: Engraved in SS Plate

Reference on Brick

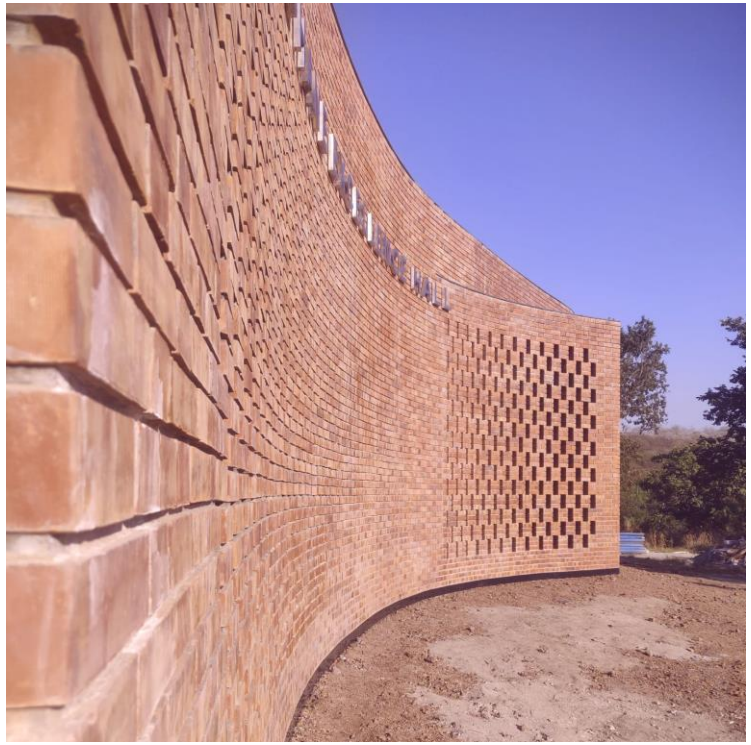
Reference by Client

R.G. MANUDHANE EXCELLENCE HALL

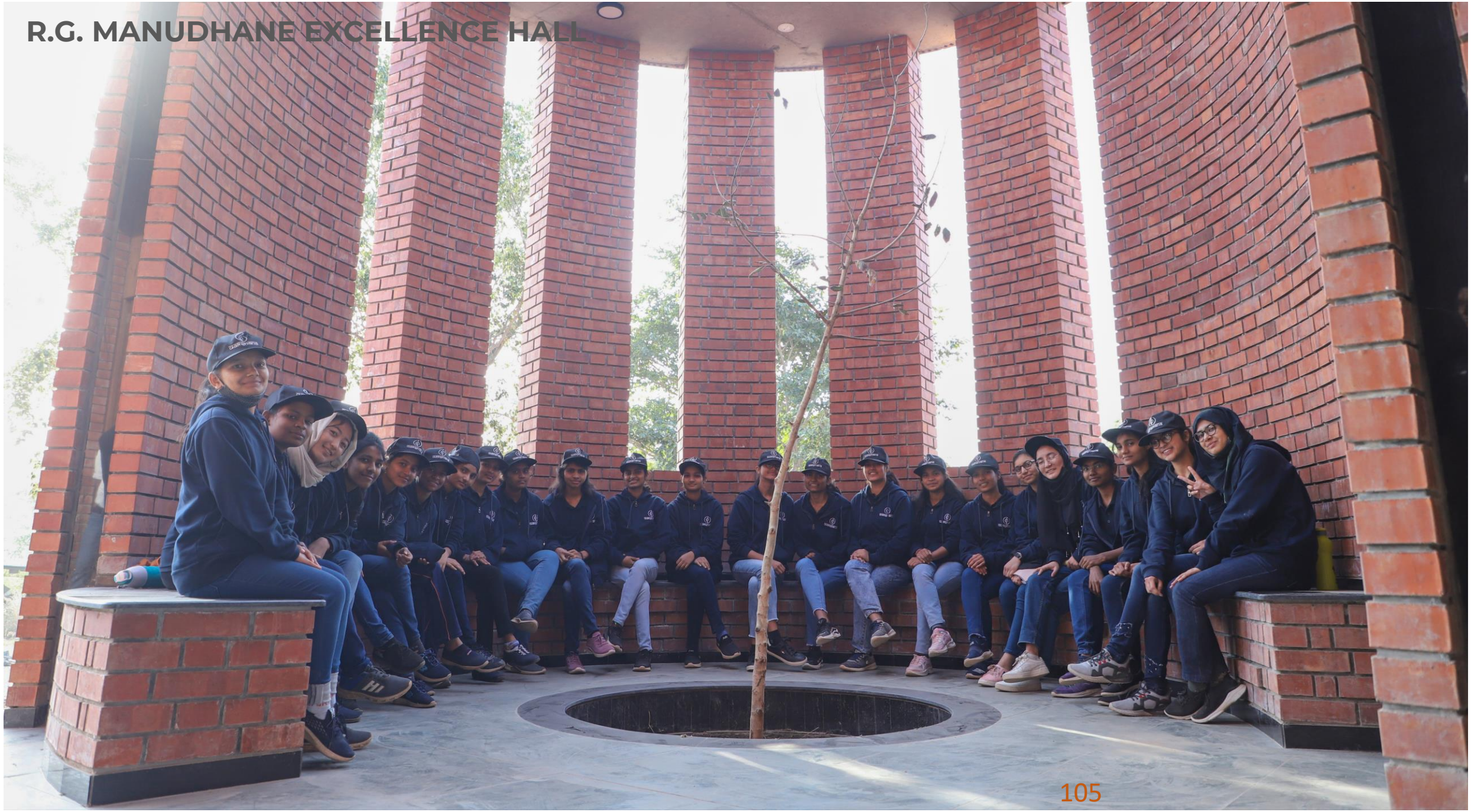
R.G. MANUDHANE EXCELLENCE HALL

R.G. MANUDHANE EXCELLENCE HALL

R.G. MANUDHANE EXCELLENCE HALL



R.G. MANUDHANE EXCELLENCE HALL



COST ESTIMATE

Units	Total Unit area (sq.ft.)	Total Area (sq.ft.)	Category	Rate/sq.ft. (INR)	Estimate (INR)
1	5,000	5,000	Architecture	1,120	5,600,000
			MEP	350	1,750,000
			Structure	1,560	7,800,000
				3,030	**15,150,000**
			Add-on (taxes @18%, consultancy @ 3% and contractor @4% fees) @ 25%		3,787,500
			Total		**18,937,500**
			Furniture		2,500,000
			Signage		250,000
			Equipment		1,500,000
			Grand Total		**23,187,500**
			Rate per sqft.		**4,638**

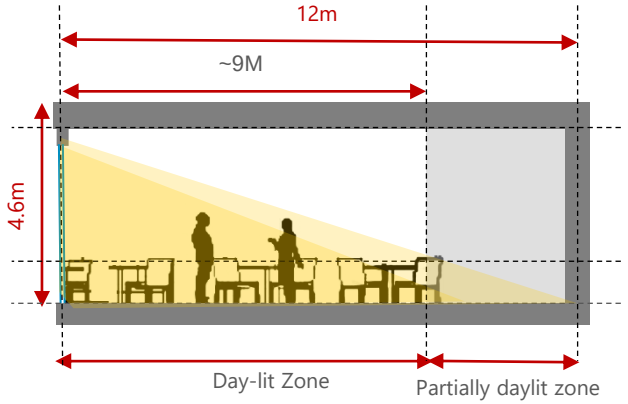
Notes:

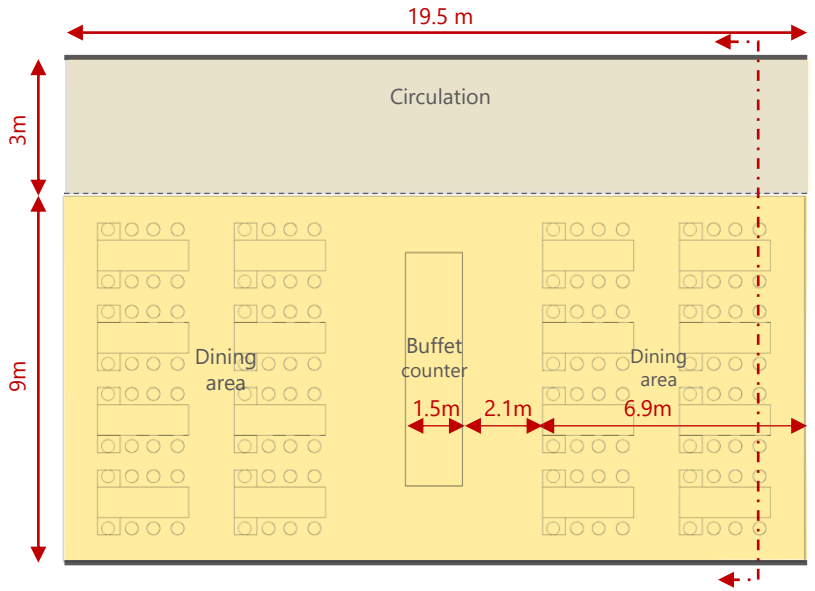
1. *Combination of Granite and Kota stone considered for flooring.*
2. *Façade work includes the exposed bricks, mortar and labour.*
3. *Air washer system with heat and sound insulation in ducts is considered for ventilation.*
4. *Fire extinguishers considered in fire fighting systems.*
5. *L-angle (50*50*4) for exposed brickwork considered in structural metal work.*
6. *Students seating, Teacher's pedestal, door and cabinets considered in furniture.*
7. *All AV equipments and Green board considered in equipment.*

Total Estimated Cost INR : 25,671,225
Total Estimated Cost USD: 342,283

>90% Daylight (Zero Glare) | >90% Cross Ventilation | 50% Reduction in Heat Gain

1. Optimal Daylight : 13m depth based on optimal daylight penetration inside the dining hall including 4m circulation space for students.

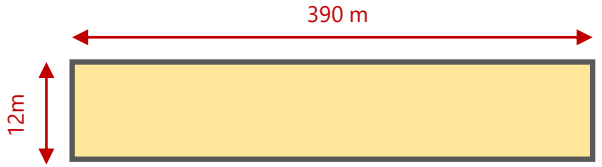




Module of Dining

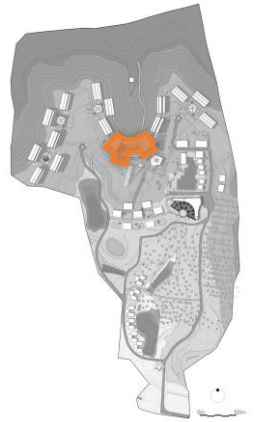
Built Volume required (as per NBC/Codes)

Total Built Up Area (based on 1,300 Population @3.5 sqm per person including kitchen)	4,505 sqm. (48,500 sq. ft.)
No. of modules required for dining (for 1300 population)	10 (12 X 19.5 m)



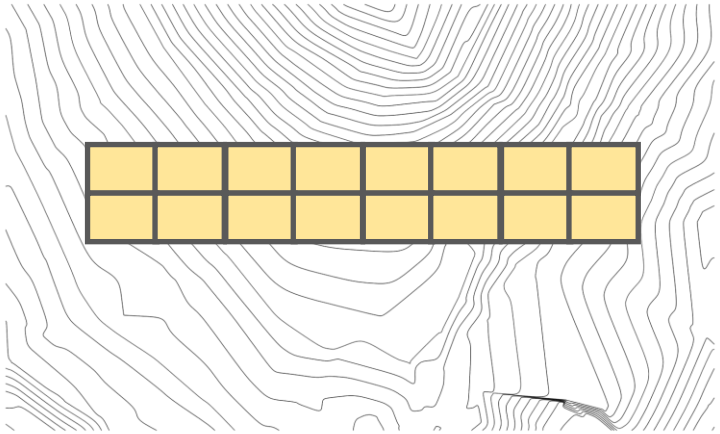
7,800 sq. m . (83,960 sq. ft.) Floor Plate Area for dining hall @390m Length

Reference images

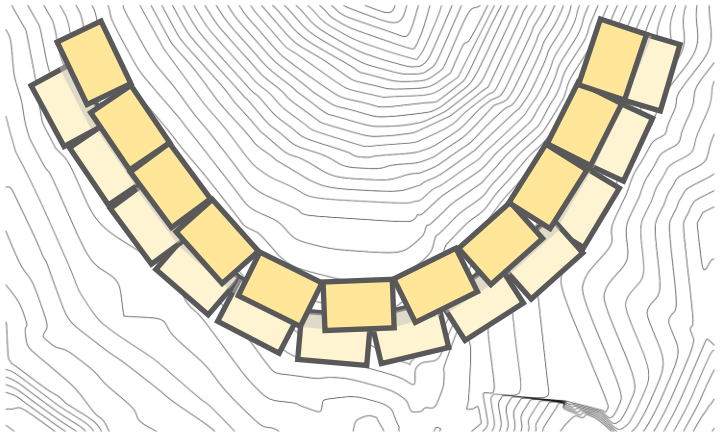


>90% Daylight (Zero Glare) | >90% Cross Ventilation | 50% Reduction in Heat Gain

2. Built Volume on site with respect to view and contours divided in 2 levels to reduce the corridor length



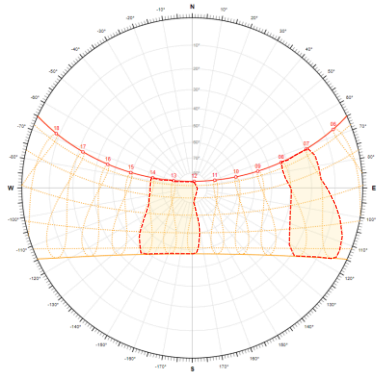
Modules placed on site, no relation to the existing contour



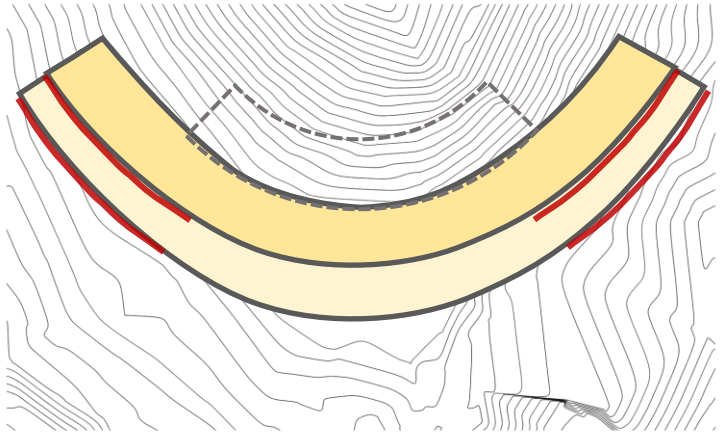
Orienting the modules as per contours

3. Orientation with respect to sun path:

Since the dining space is being used for a brief time in early morning & afternoon it is preferred to orient the longer side of the buildings towards south which helps in minimal Shading and in creating shaded Recreational Courts & Walkways.



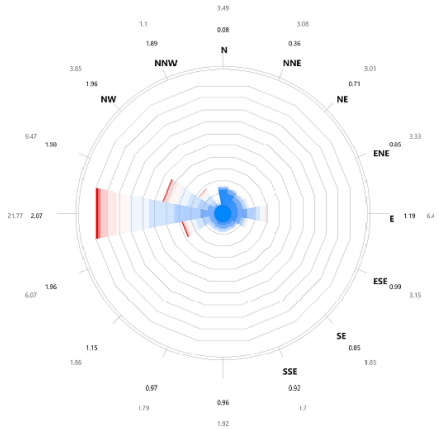
Occupied Hours:
7am-8am
12pm-2pm
8pm-9pm

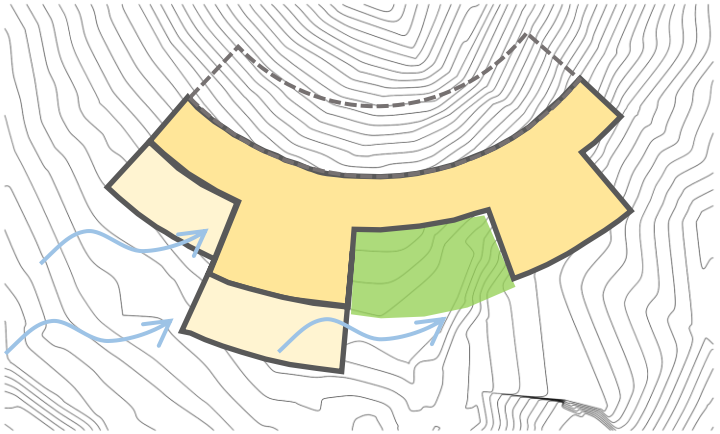


Minimizing large Surfaces exposed to East-West low sun angles

4. Orientation with respect to Wind Direction:

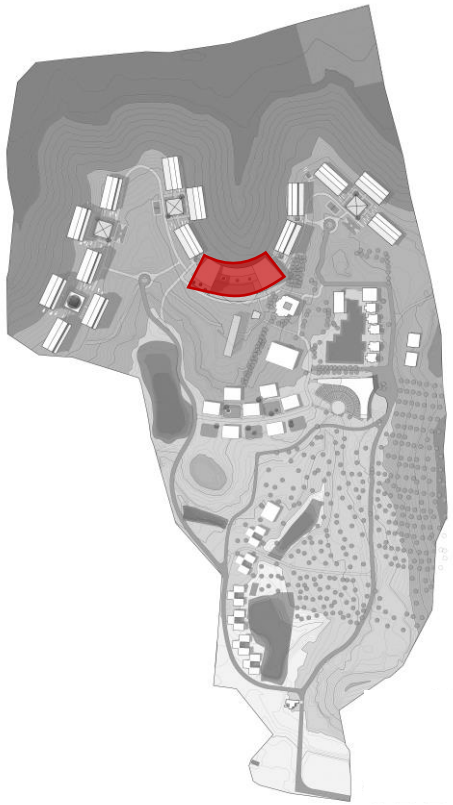
High relative humidity for most part of the year. Need for increasing Air-movement, large openings to be provided on East and West facade to capture to westerly winds and facilitate cross ventilation

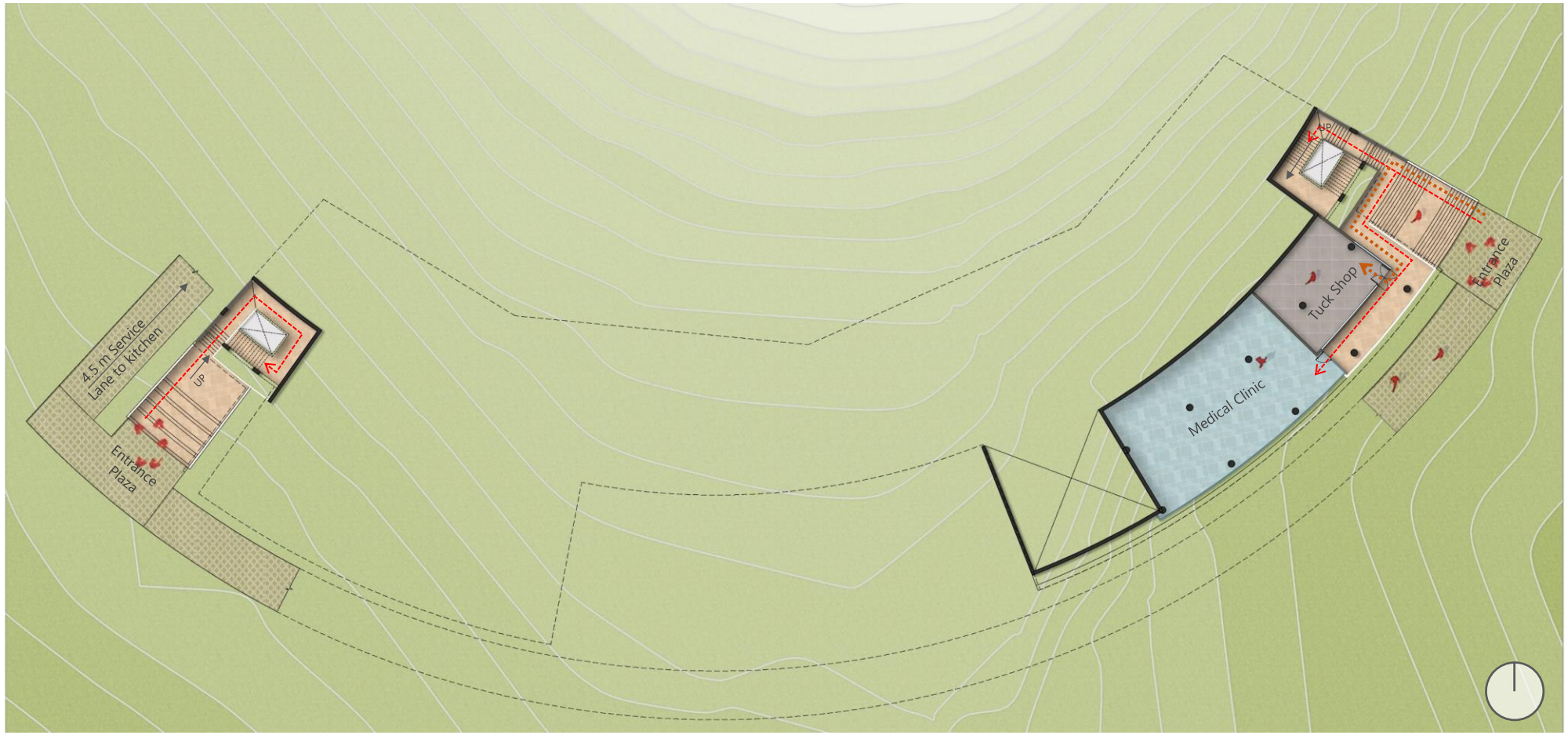




Maximizing cross ventilation indoors

>90% Daylight (Zero Glare) | >90% Cross Ventilation | 50% Reduction in Heat Gain





GROUND FLOOR PLAN

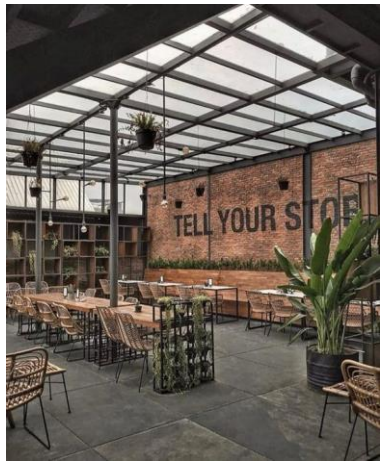
Legend

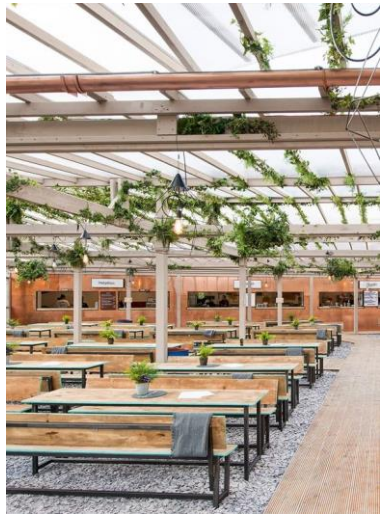
Service Circulation

Students' circulation

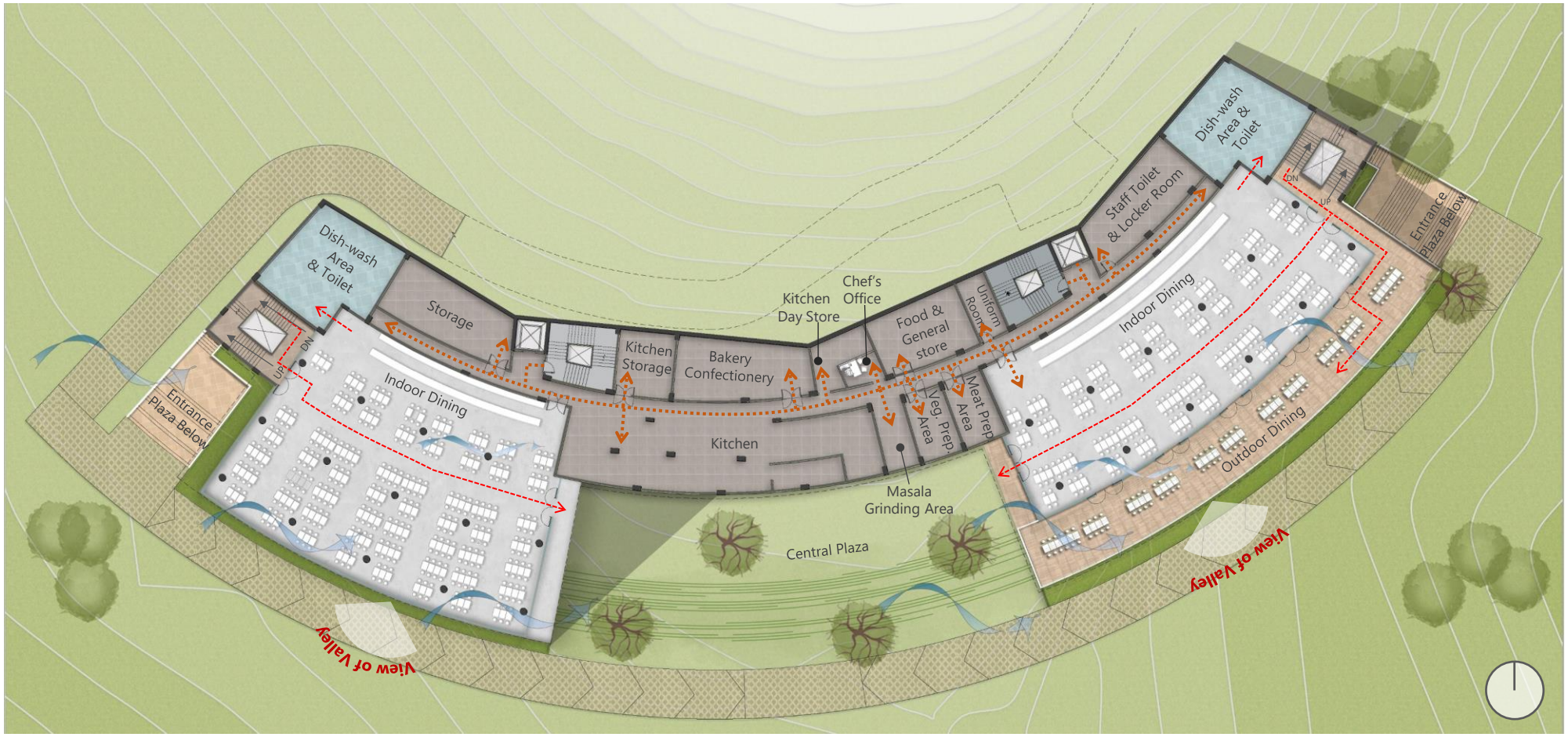
LIVABILITY | LAYOUT DESIGN | DINING HALL

>90% Daylight (Zero Glare) | >90% Cross Ventilation | 50% Reduction in Heat Gain





Reference images for Landscape inclusion



FIRST FLOOR PLAN

Total Capacity : 746 Pax

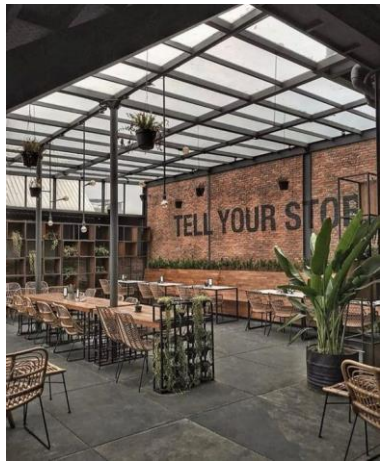
Legend

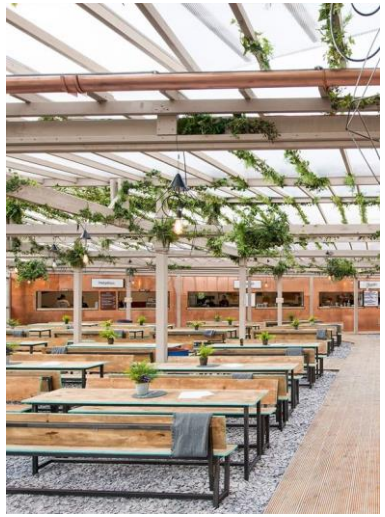
Service Circulation

Students' circulation

LIVABILITY | LAYOUT DESIGN | DINING HALL

>90% Daylight (Zero Glare) | >90% Cross Ventilation | 50% Reduction in Heat Gain





Reference images for Landscape inclusion

SECOND FLOOR PLAN

Total Capacity : 752 Pax

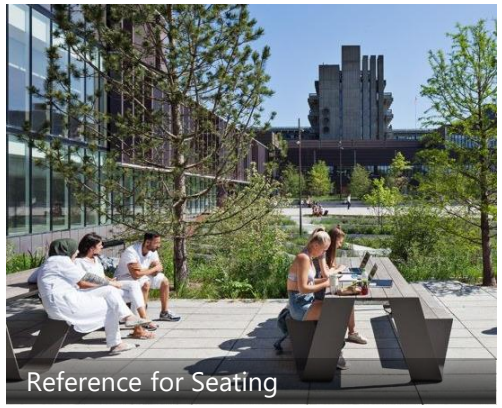
Legend

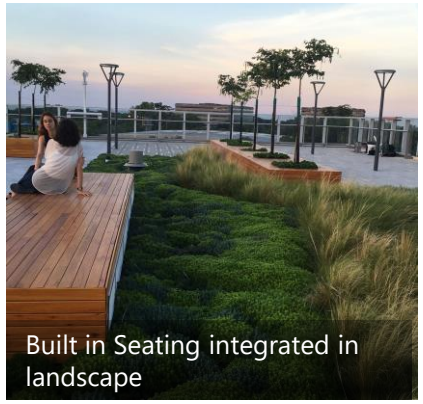
Service Circulation

Students' circulation

Terraces & Plazas as Social Engagement Zone

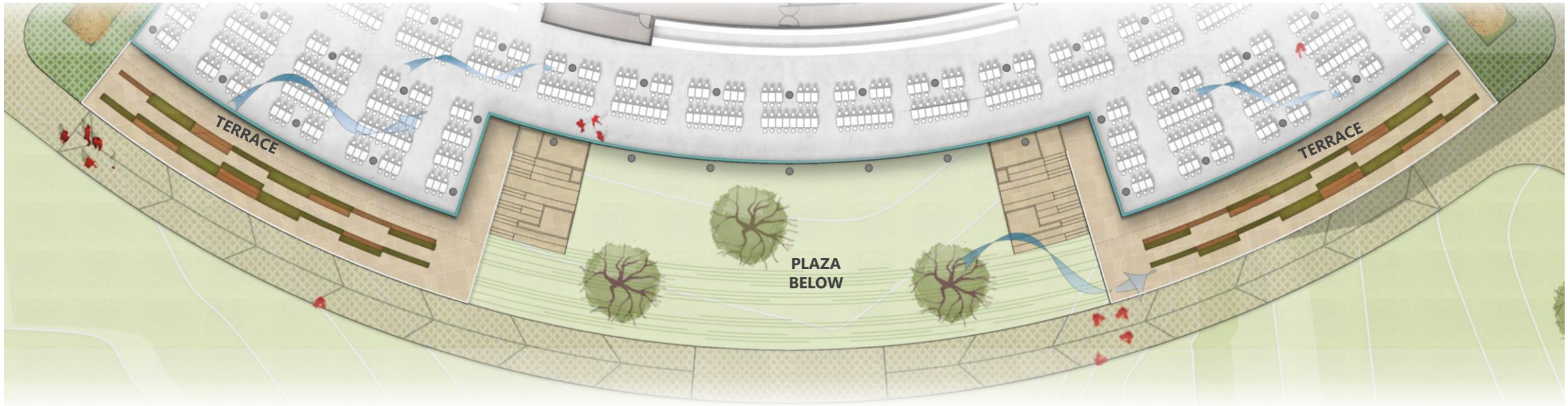

Landscape Reference


Reference for Seating


Built in Seating integrated in landscape

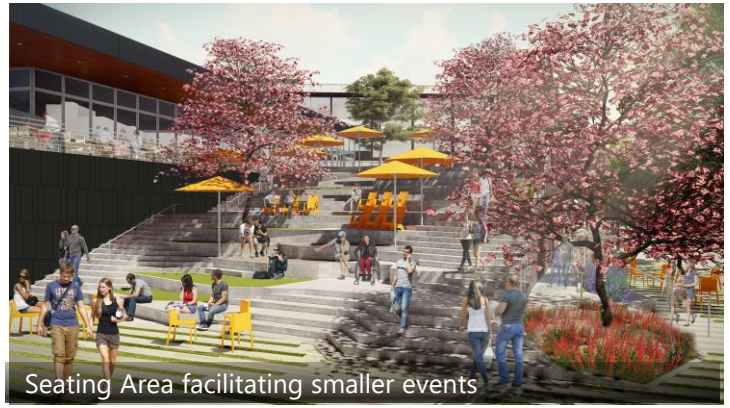

Group Discussion Areas

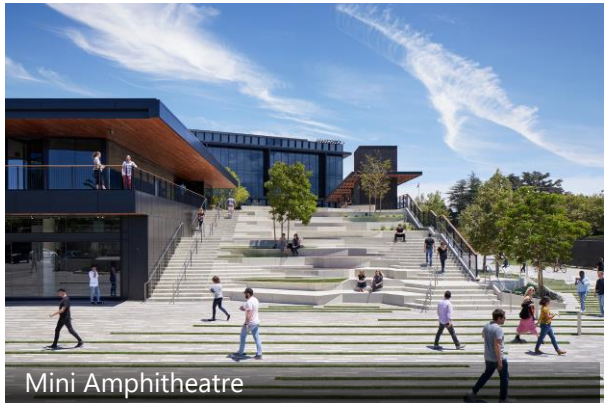

Faculty-Student Interaction Zone

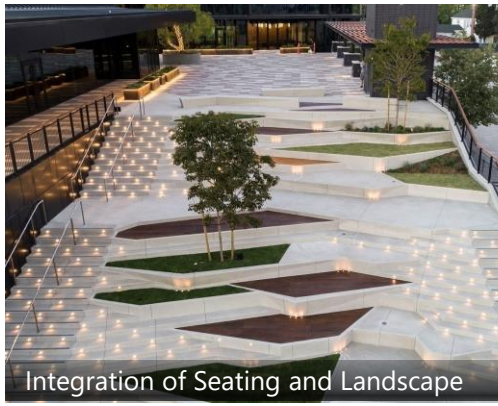


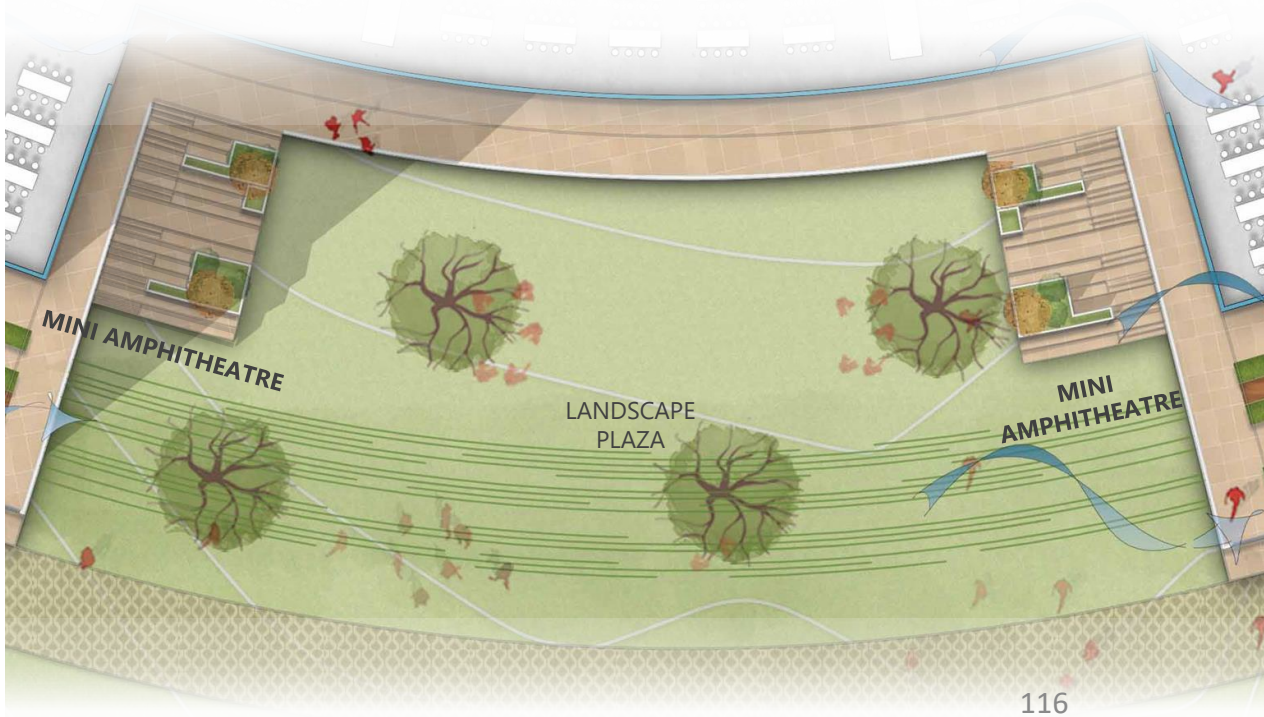
VERTICAL CIRCULATION AS INTERACTION SPACES


Social Zones integrated with Circulation spaces

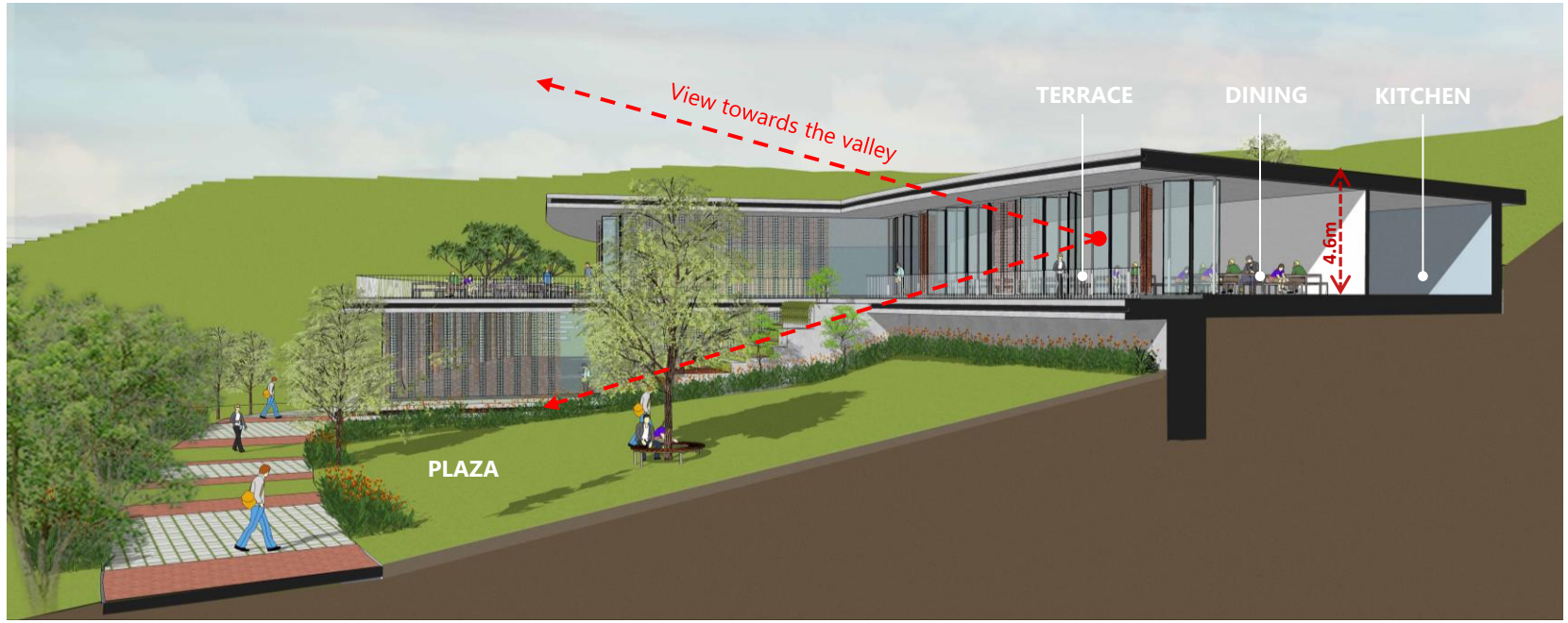

Seating Area facilitating smaller events


Mini Amphitheatre

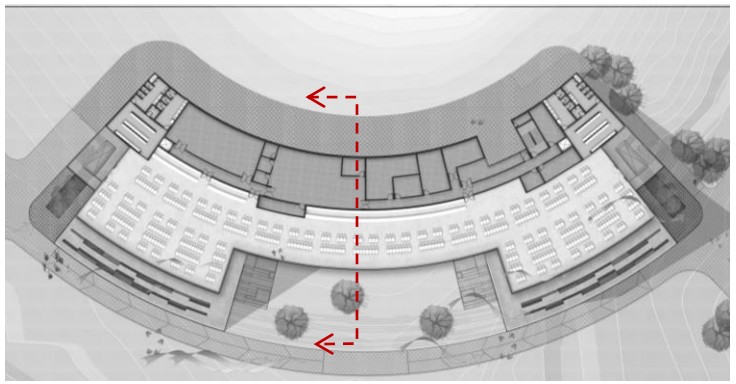

Integration of Seating and Landscape



Central Plaza



SCHEMATIC SECTION



LIVABILITY | DINING HALL | SIGNAGE INTENT

Outdoor Terrace

DINING HALL VIEW

COST ESTIMATE

Units	Total Unit area (sq.ft.)	Total Area (sq.ft.)	Category	Rate/sq.ft. (INR)	Estimate (INR)
1	60,000	60,000	Architecture	840	50,400,000
			MEP	825	49,500,000
			Structure	1,335	80,100,000
				3,000	**180,000,000**
			Add-on (taxes @18%, consultancy @ 3% and contractor @4% fees) @ 25%		45,000,000
			Total		**225,000,000**
			Furniture		9,000,000
			Signage		1,500,000
			Equipment		53,620,000
			Grand Total		**289,120,000**
			Rate per sqft.		**4,819**

Notes:

1. *Combination of Granite and Kota stone considered for flooring.*
2. *Façade work includes Glass and Jaali (MS/terracotta).*
3. *False ceiling only for kitchen area considered.*
4. *Added Rs. 50 for Light fixtures and Rs. 40 for Bathroom fixtures.*
5. *Fire extinguishers considered in fire fighting systems.*
6. *Considered Rs. 5000/student for furniture for 1425 people (whole dining capacity).*
7. *The cost of Phase-1 construction is on 60% of total area of building. This proportion is subject to change in detail level planning.*

Total Estimated Cost INR : 289,120,000

Total Estimated Cost USD: 3,854,933

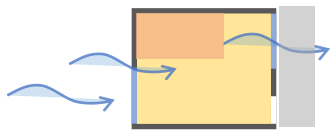
>90% Daylight (Zero Glare) | >90% Cross Ventilation | 50% Reduction in Heat Gain

1. Orienting the built mass with respect to wind direction: Due to high relative humidity openings are oriented towards E-W which facilitates in cross ventilation

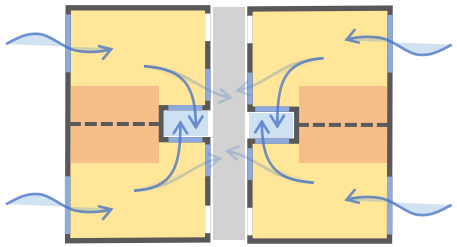
2. Arranging the units with respect to circulation: Shaded courts and corridors

Built Volume required (as per NBC/Codes)

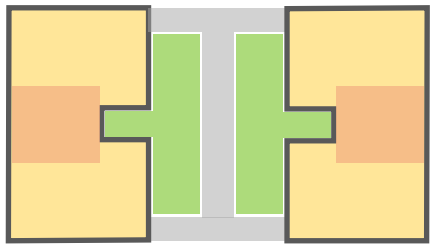
Total Built Up Area (based on 2,600 Population @10 sqm per person)	26,040 sqm. (2,80,296 sq. ft.)
No. of units required (for 2600 population)	650 (16 units per floor)



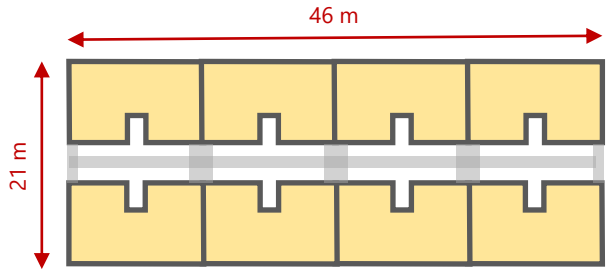
Single Unit



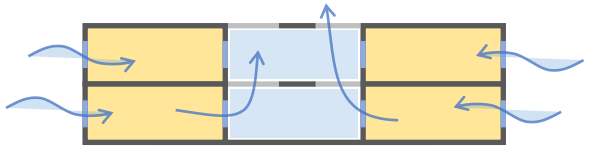
Cluster of 4 units (1 bay module)



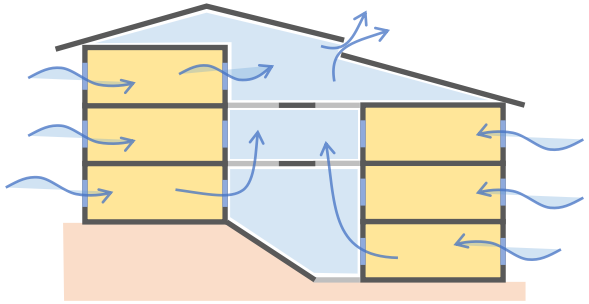
Courts for buffer space



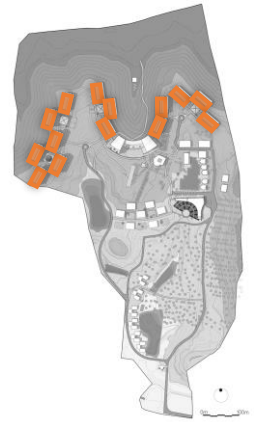
16 units (64 pax) per floor plate



Section



Section with respect to terrain

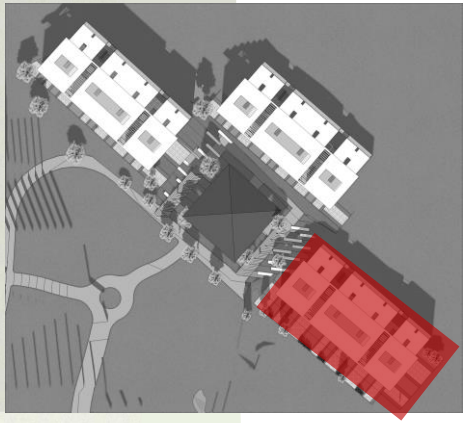


LIVABILITY | LAYOUT DESIGN | HOSTEL CLUSTER PLAN

>90% Daylight (Zero Glare) | >90% Cross Ventilation | 50% Reduction in Heat Gain

GROUND FLOOR PLAN

Hostel rooms : 15 Nos. (180 Pax) + Warden/Faculty room)

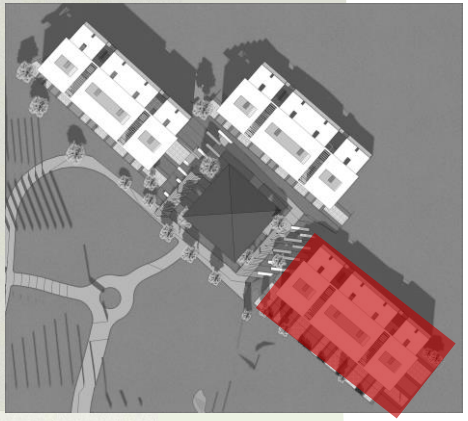


KEY PLAN

LIVABILITY | LAYOUT DESIGN | HOSTEL CLUSTER PLAN

>90% Daylight (Zero Glare) | >90% Cross Ventilation | 50% Reduction in Heat Gain

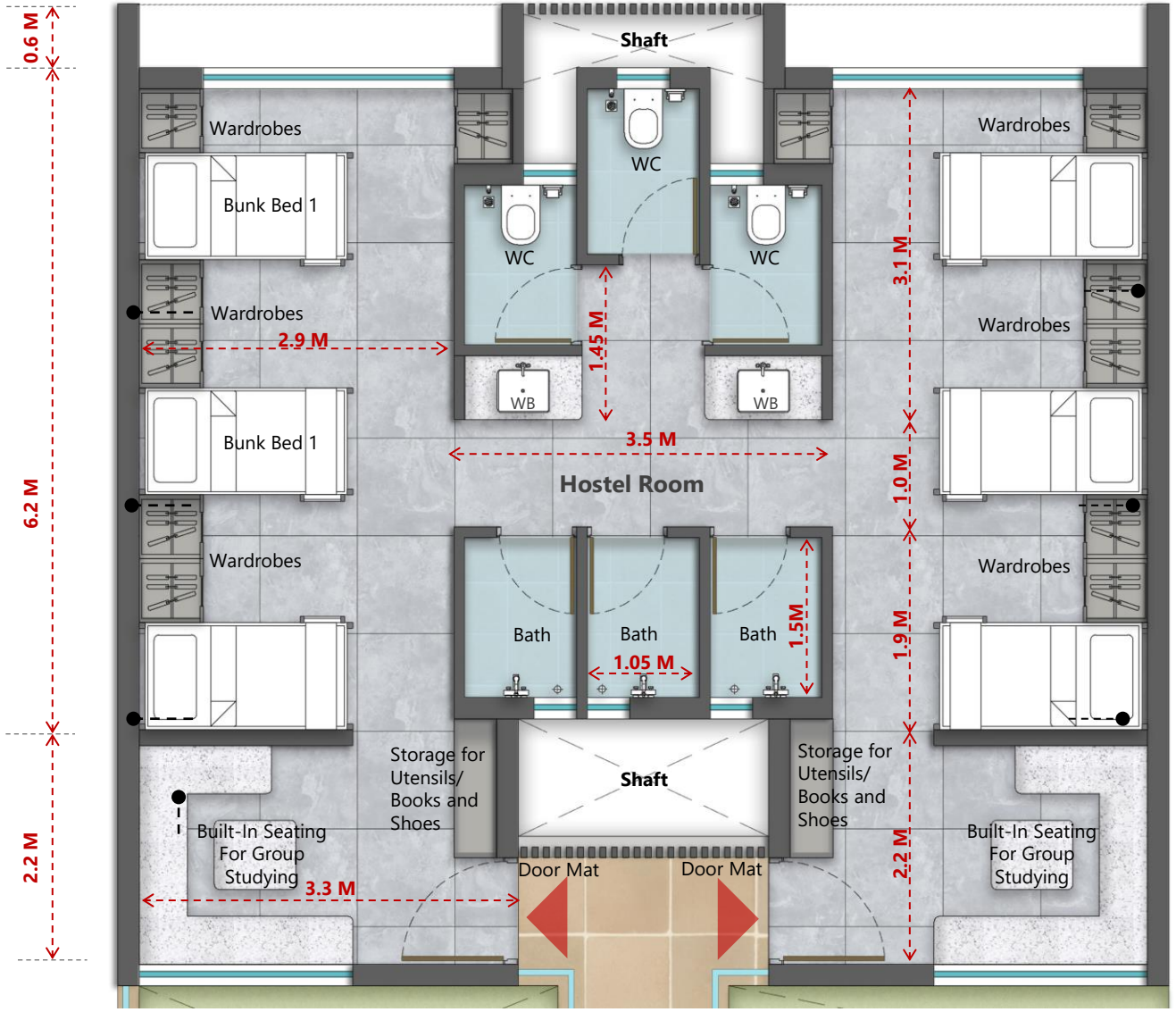
TYPICAL FLOOR PLAN



KEY PLAN

LIVABILITY | LAYOUT DESIGN | HOSTEL UNIT

>90% Daylight (Zero Glare) | >90% Cross Ventilation | 50% Reduction in Heat Gain

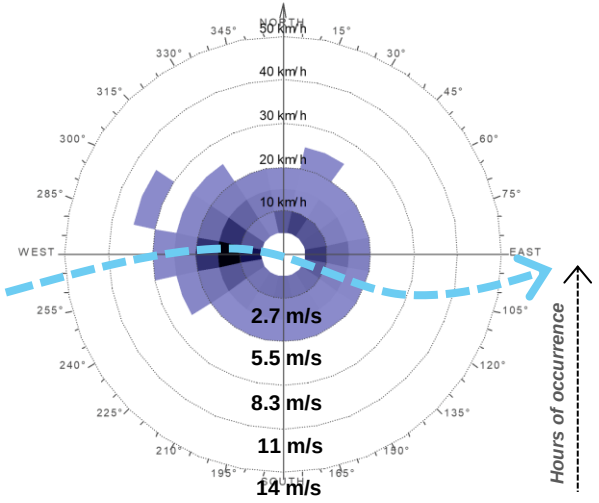


UNIT PLAN – 12 PAX

REFERENCE IMAGES

LIVABILITY | LAYOUT DESIGN | HOSTEL

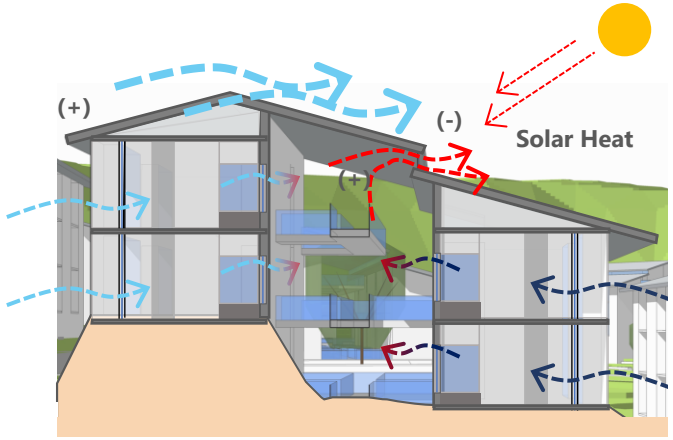
>90% Cross Ventilation | 50% Reduction in Heat Gain



Annual Wind Chart:

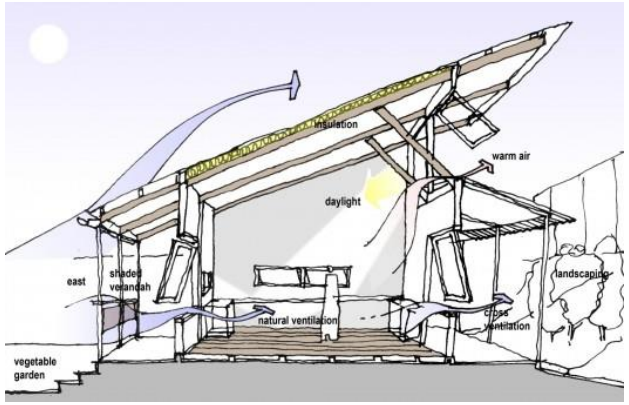
Desirable wind direction: West

Western winds can be utilized for achieving physiological comfort during periods of high humidity



Typical Section of Hostel showing the Bernoulli Effect-

temperature changes inside a building can exhaust air out of higher placed openings through convection currents.



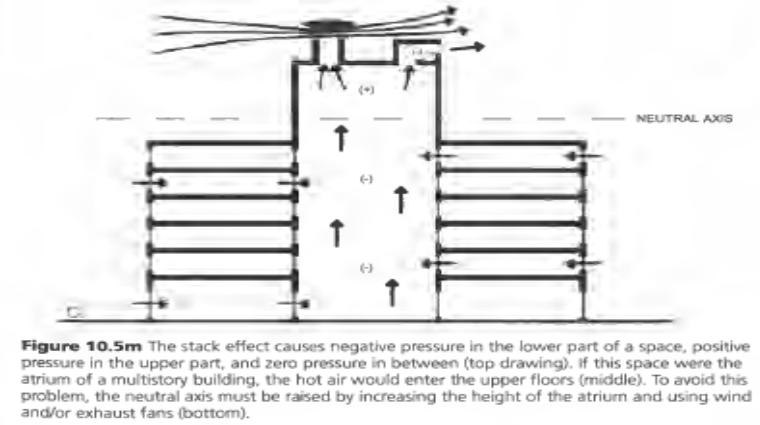


Figure 10.5m The stack effect causes negative pressure in the lower part of a space, positive pressure in the upper part, and zero pressure in between (top drawing). If this space were the atrium of a multistory building, the hot air would enter the upper floors (middle). To avoid this problem, the neutral axis must be raised by increasing the height of the atrium and using wind and/or exhaust fans (bottom).

Convective Cooling:

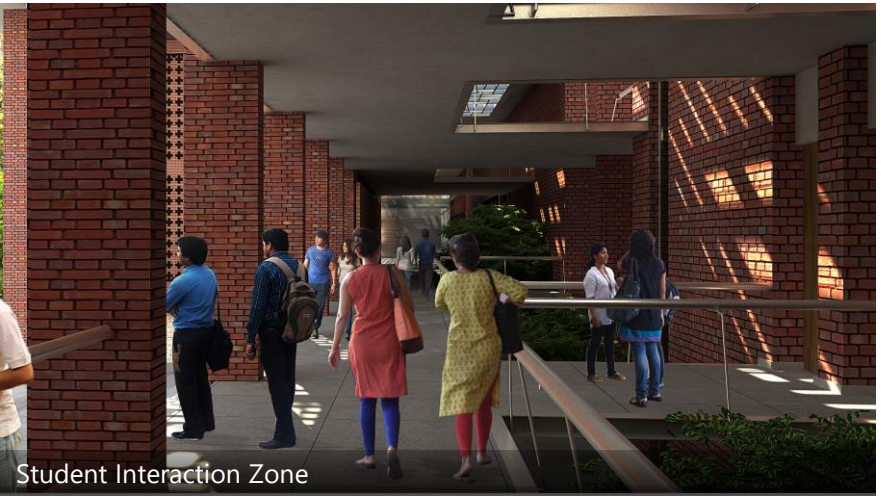
Differences in the density of warmer and cooler air creates the differences in pressure that moves the air.

Uses the principles that hot air rises – the "stack effect"

http://www.arch.ttu.edu/courses/2013/fall/5334/Students/Rebarchik/05/Default.htm

Students' Corridor & Private Balconies - Chance Interactions | Social Engagement zone

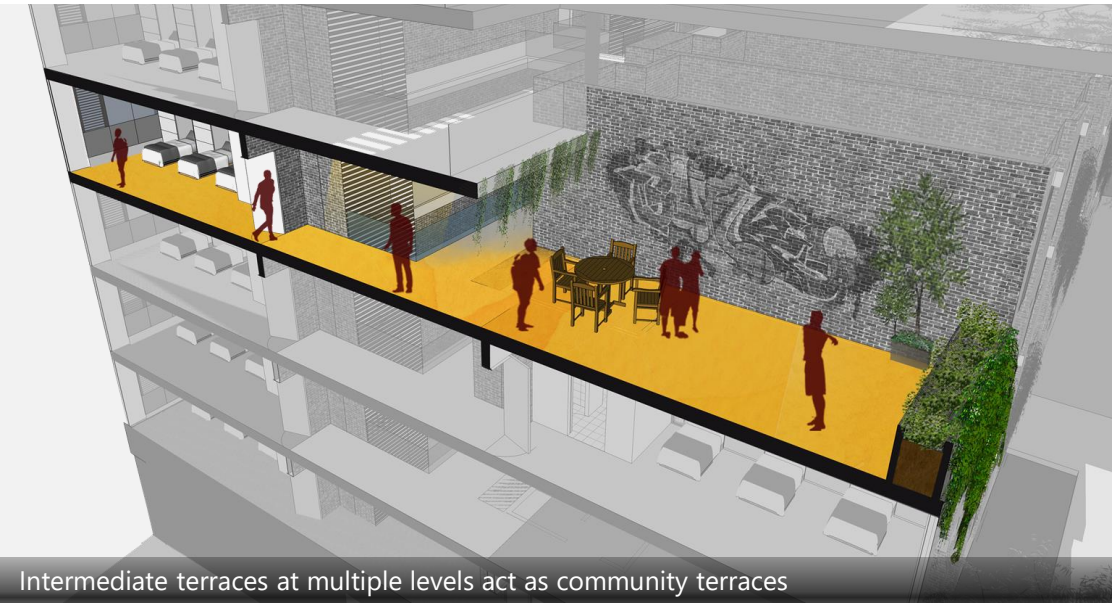

Reference image of Corridor


Student Interaction Zone

REFERENCE IMAGES

SCHEMATIC SECTION

Multiple Level Community Terraces



Intermediate terraces at multiple levels act as community terraces

REFERENCE IMAGES

TYPICAL FLOOR PLAN & SECTION SHOWCASING THE TERRACES

Studying Space at Terrace

REFERENCE IMAGES

TOP FLOOR PLAN & SECTION SHOWCASING THE TERRACE

Utility spaces integrated in Design

Garbage Bins integrated into design

Current Affairs – Notice Board Area

Modular Design Facilitates to reuse the same space as utility areas.

LOCATION PLAN

LIVABILITY | HOSTEL | SIGNAGE

Signage Option - 1

- *Highlighting the Donor's Name over a Blank Canvas.*
- *Visually Distinct as placed over a blank wall.*
- *Easy to Identification as placed close to human eye level.*

LIVABILITY | HOSTEL | SIGNAGE

Signage Option - 2

- *Positioning the Donor's name on top of Roof.*
- *Visible from various high points in valley.*

LIVABILITY | HOSTEL | SIGNAGE

Signage Option - 3

- *Providing segregated space for each hostels' Donor's name.*
- *Integrated in landscape.*
- *Easy identification as placed at an eye level of passerby.*

HOSTEL VIEW

COST ESTIMATE

Units	Total Unit area (sq.ft.)	Total Area (sq.ft.)	Category	Rate/sq.ft. (INR)	Estimate (INR)
1	28,688	28,688	Architecture	921	26,421,648
			MEP	630	18,073,440
			Structure	1,250	35,860,000
				2,801	**80,355,088**
			Add-on (taxes @18%, consultancy @ 3% and contractor @4% fees) @ 25%		20,088,772
			Total		**100,443,860**
			Furniture		4,514,000
			Signage		460,000
			Equipment		2,398,133
			Grand Total		**107,815,993**
			Rate per sqft.		**3,758**

Notes:

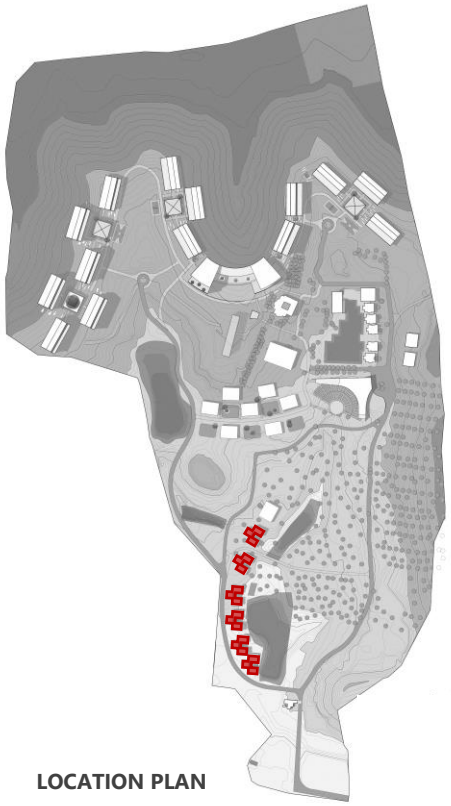
1. *Combination of Ceramic tiles and Kota stone considered for flooring.*
2. *1/4 of the total external wall area considered for Façade work which includes exposed bricks and terracotta jaalis.*
3. *Added Rs. 50 for Light fixtures and Rs. 40 for Bathroom fixtures.*
4. *Air washer system is considered for ventilation.*
5. *Fire extinguishers considered in fire fighting systems.*
6. *Furniture considerations - Bunk bed @ Rs. 11,000 + Storage Unit @ Rs. 12000*

Total Estimated Cost INR : 107,816,000
Total Estimated Cost USD: 1,438,000

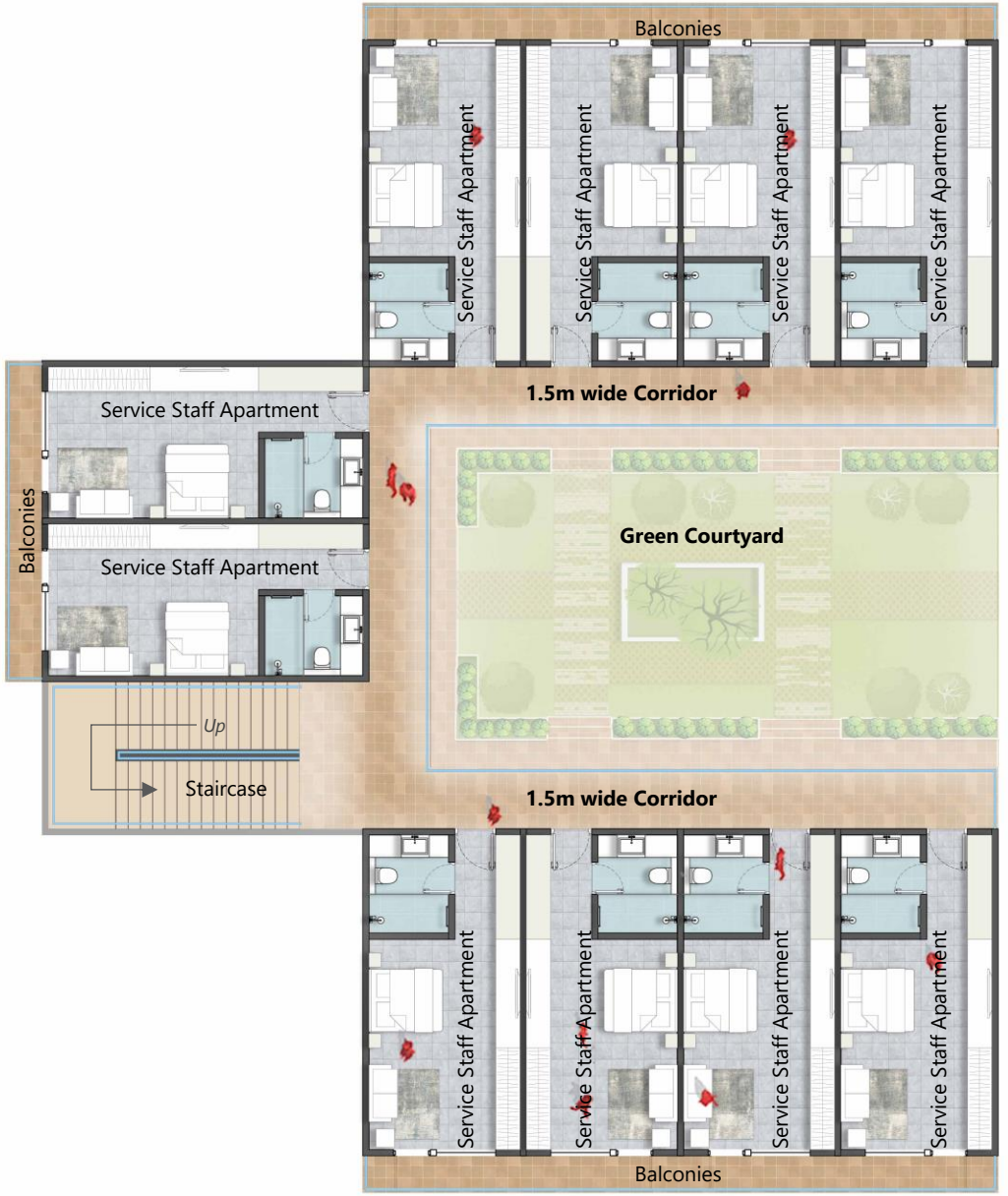
276 scholar + 1BHK for Warden

LIVABILITY | LAYOUT DESIGN | SERVICE STAFF APARTMENTS

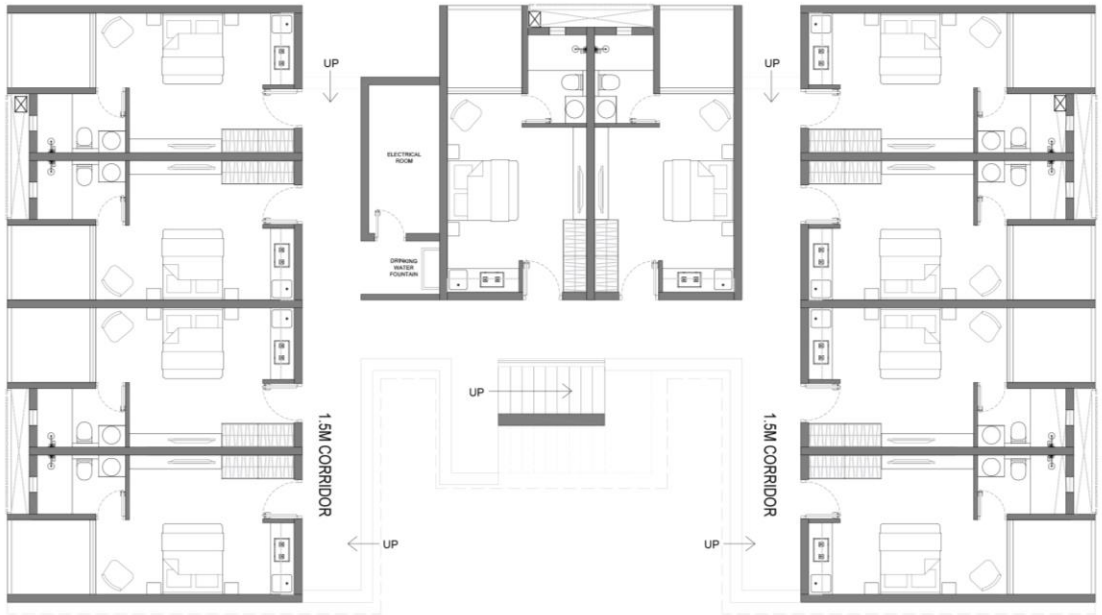
>90% Daylight (Zero Glare) | >90% Cross Ventilation | 50% Reduction in Heat Gain



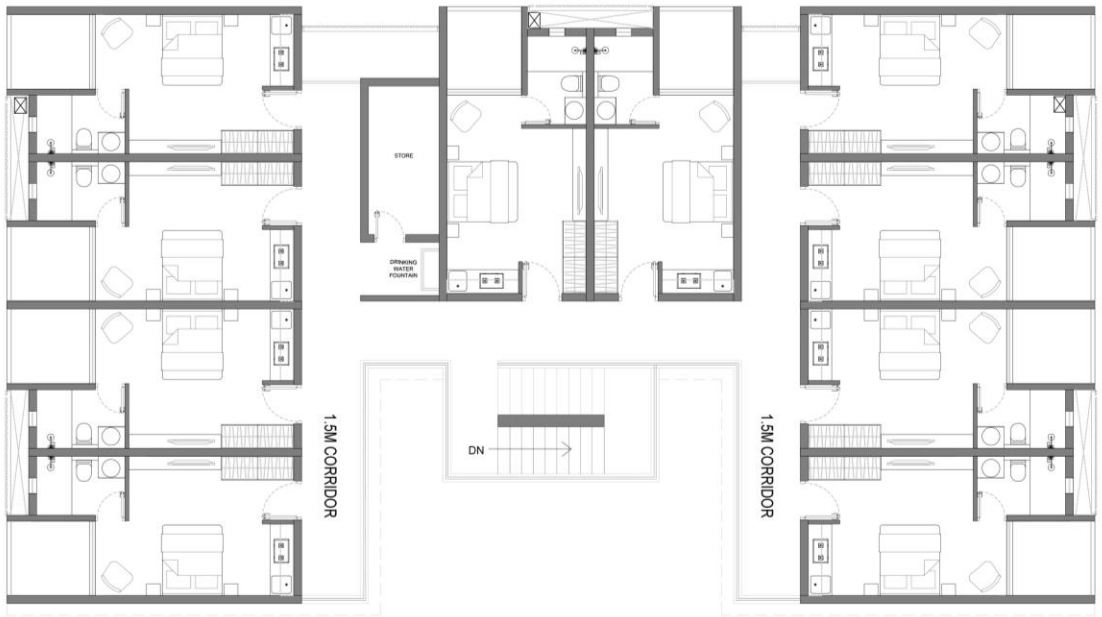
LOCATION PLAN



Type 1 – Floor Plans



Ground Floor



Typical Floor

Type 2 – Floor Plans

Ground Floor

Typical Floor

COST ESTIMATE

Units	Total Unit area (sq.ft.)	Total Area (sq.ft.)	Category	Rate/sq.ft. (INR)	Estimate (INR)
1	14,070	14,070	Architecture	610	8,582,700
			MEP	520	7,316,400
			Structure	1,160	16,321,200
				2,290	**32,220,300**
			Add-on (taxes @18%, consultancy @ 3% and contractor @4% fees) @ 25%		8,055,075
			Total		**40,275,375**
			Furniture		
			Signage		310,000
			Equipment		775,000
			Grand Total		**41,360,375**
			Rate per sqft.		**2,940**

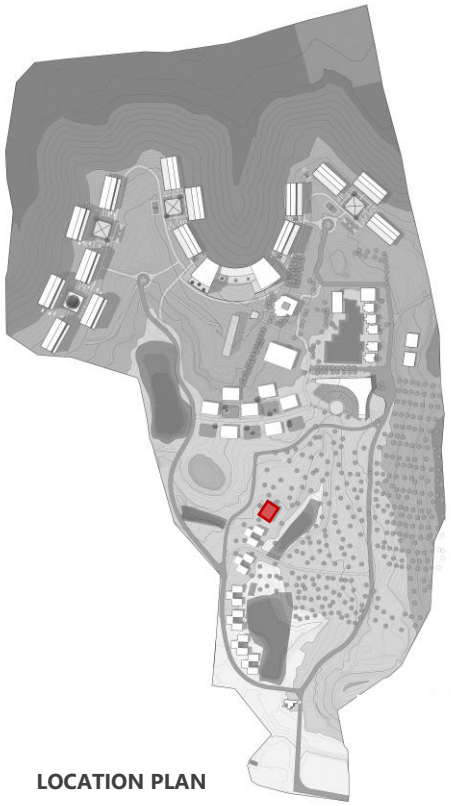
Notes:

1. *Combination of Ceramic tiles and Kota stone considered for flooring.*
2. *Added Rs. 50 for Light fixtures and Rs. 40 for Bathroom fixtures.*
3. *One to one split unit considered for ventilation.*
4. *Fire extinguishers considered in fire fighting systems.*

Total Estimated Cost INR : 41,360,000
Total Estimated Cost USD: 552,000

LIVABILITY |UTILITY | WAREHOUSE

Area : 5000 sqft



LOCATION PLAN

Reference images for green wall over storage and indoors sports building

COST ESTIMATE

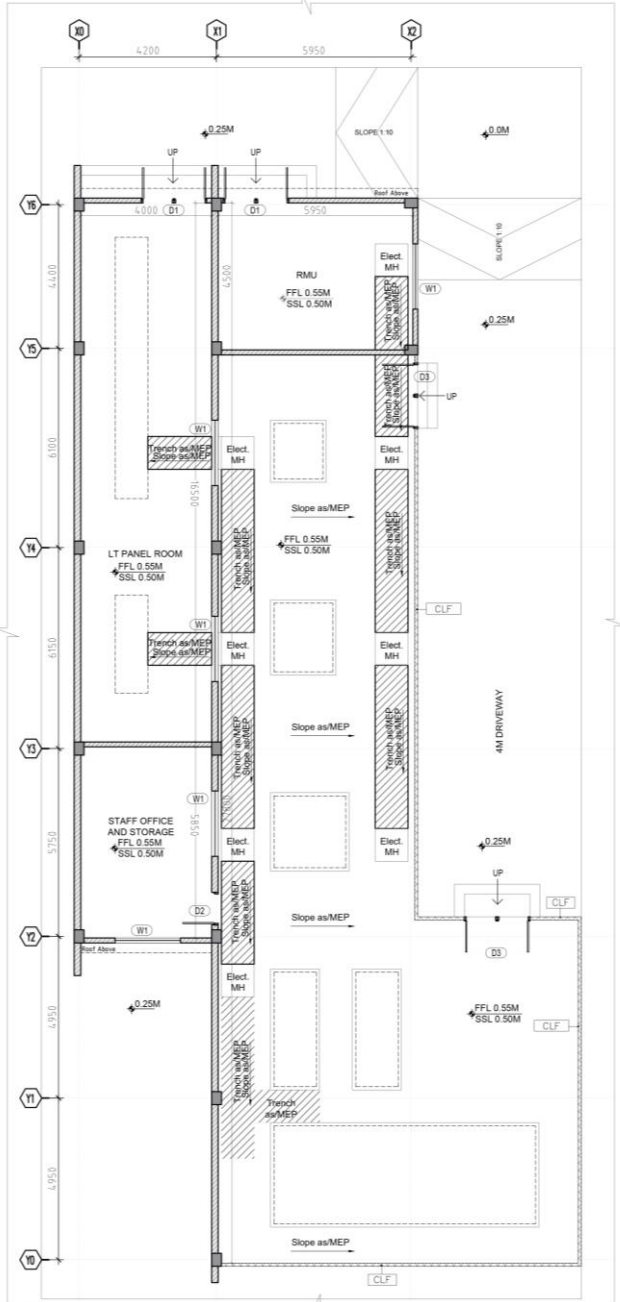
Phase 2 units	Total Unit area (sq.ft.)	Total Area (sq.ft.)	Category	Rate/sq.ft. (INR)	Estimate (INR)
1	5,000	5,000	Architecture	470	23,50,000
			MEP	710	35,50,000
			Structure	1,430	71,50,000
				2,610	**1,30,50,000**
			Add-on (taxes @18%, consultancy @ 3% and contractor @4% fees) @ 25%		23,49,000
			Total		**1,63,12,500**
			Furniture		
			Signage		
			Equipment		
			Grand Total		**1,63,12,500**
			Rate per sqft.		**3,263**

Notes:

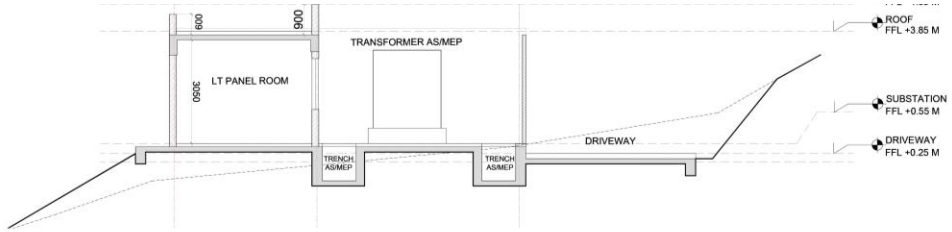
1. *Kota stone considered for flooring.*
2. *Added Rs. 50 for Light fixtures.*
3. *Fire extinguishers considered in fire fighting systems.*
4. *Large span structural framework considered.*

Total Estimated Cost INR : 16,300,000
Total Estimated Cost USD: 217,000

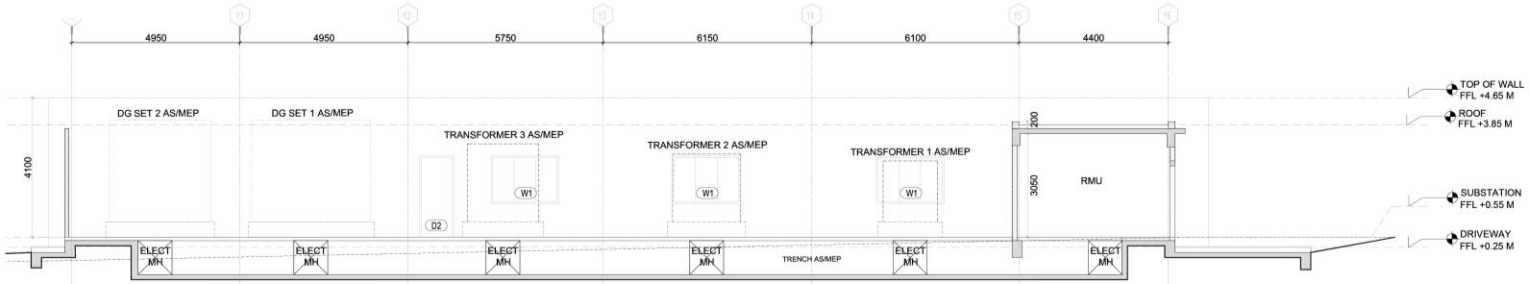
LIVABILITY | UTILITY | SUBSTATION



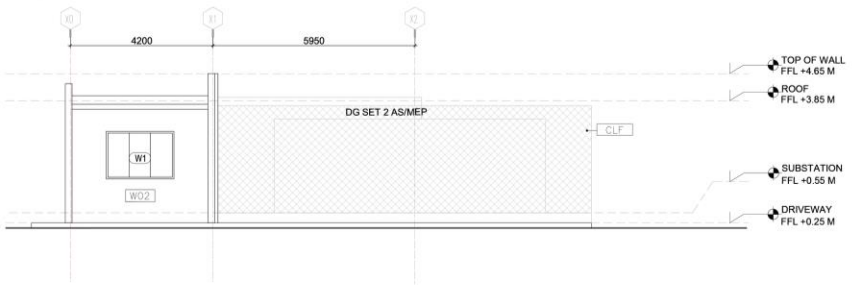
Ground Floor Plan



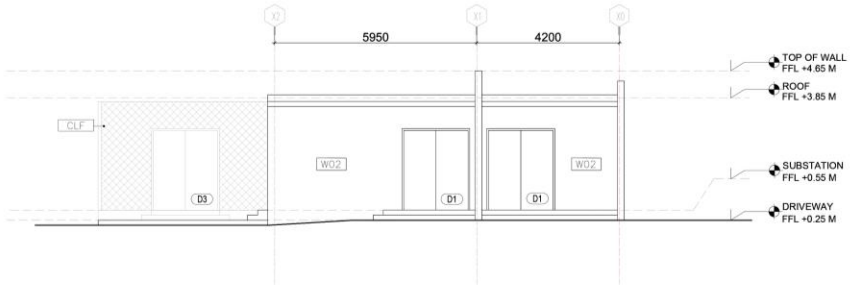
Section A



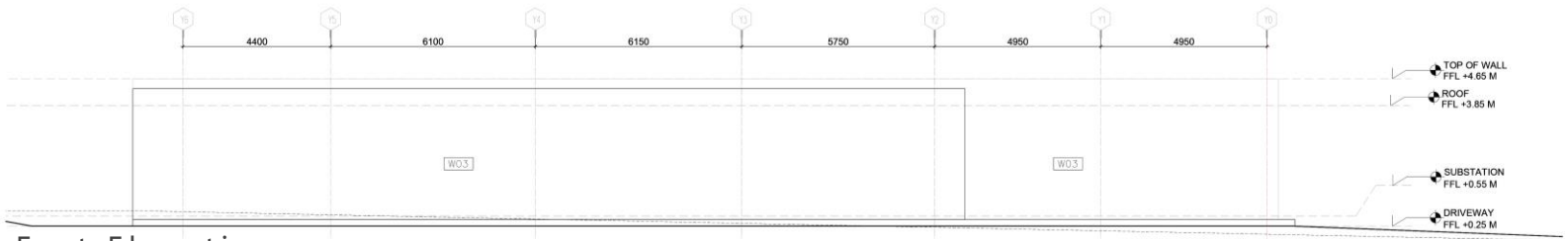
Section B



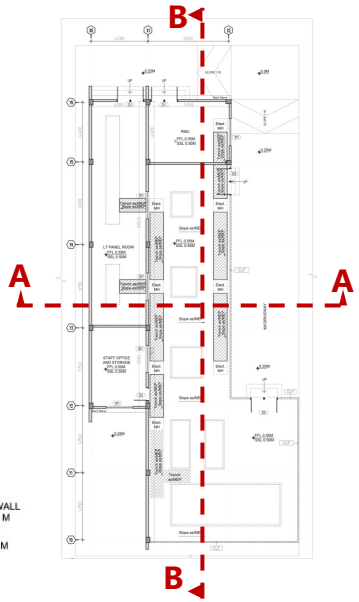
North Elevation



South Elevation

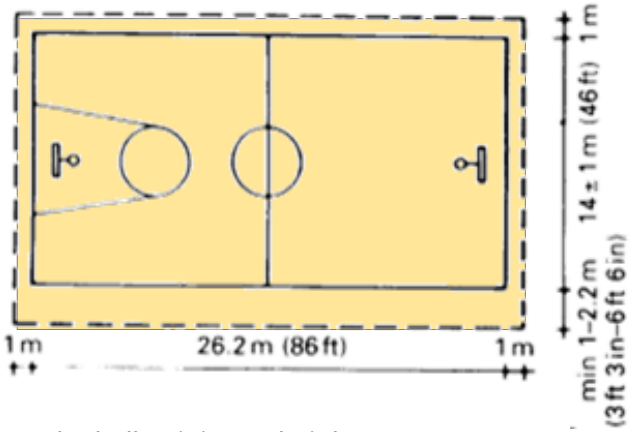


East Elevation

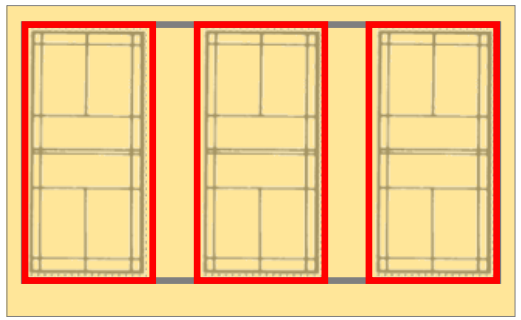


LIVABILITY | FITNESS AMENITIES

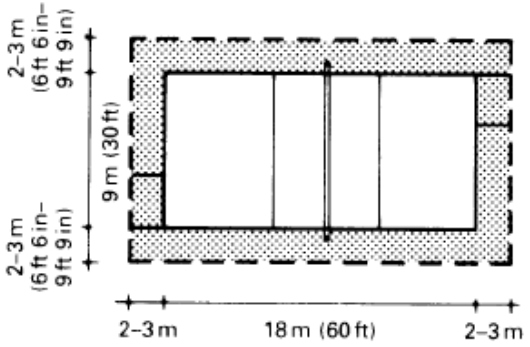
- ✓ As per client, outdoor sports facility is included in the master planning.
- ✓ **2 Basketball courts | 6 Badminton Courts**
- ✓ **3 x 400 m jogging trail and 800 m jogging trail**
- ✓ **Courts** provided near **machans** one in each valley so that the **storing facility** for respective sports could be arranged below the machans
- ✓ **Cricket Pitch** overlapped with **Football ground and 300 m running track**



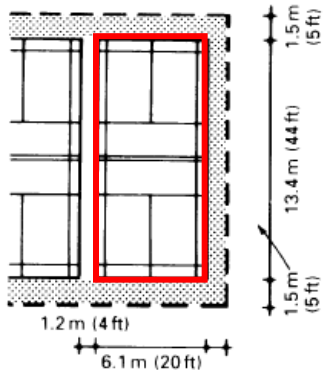
Basketball: Minimum height 7 m



3 badminton courts fit in 1 basketball court



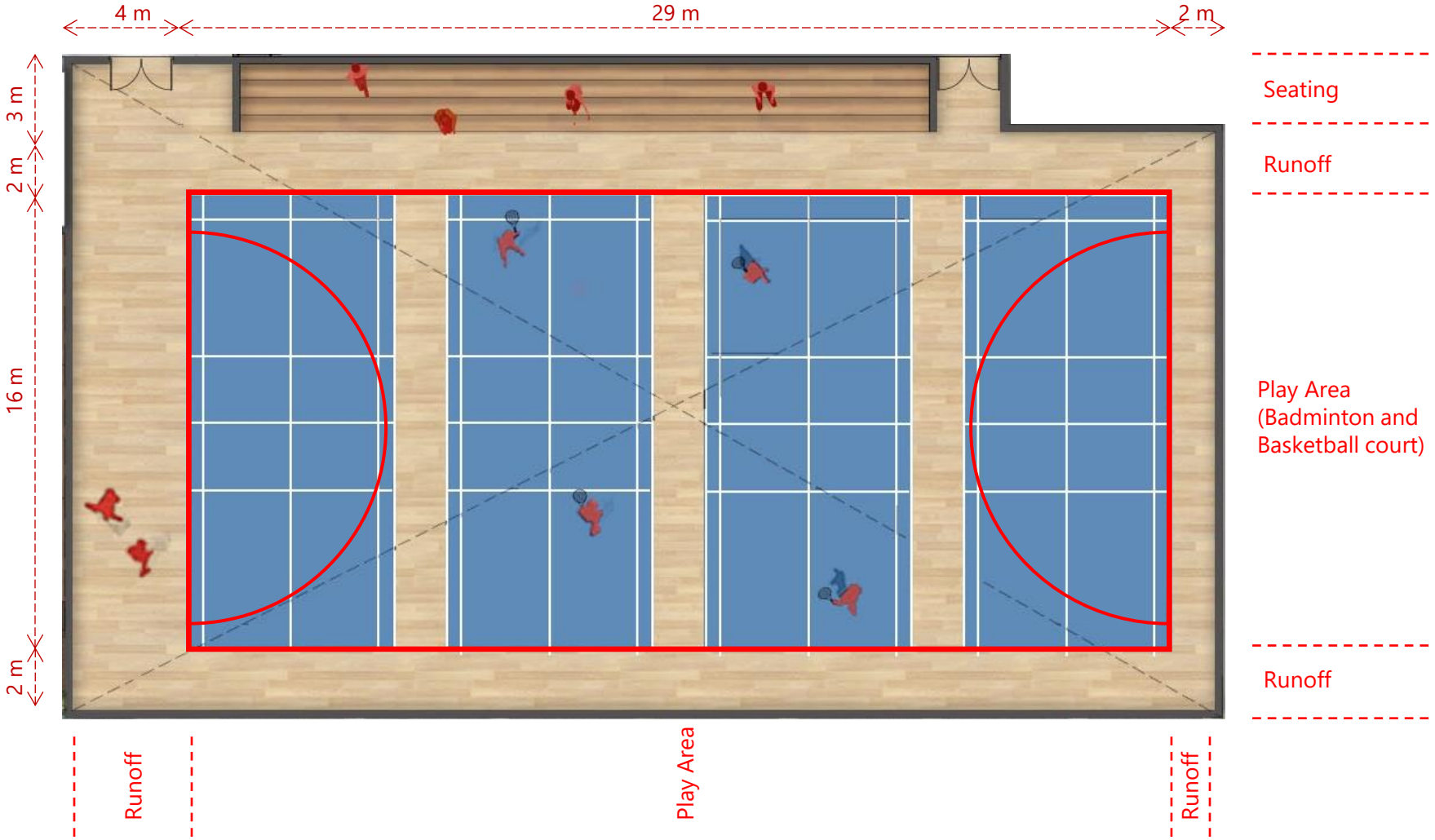
Volleyball

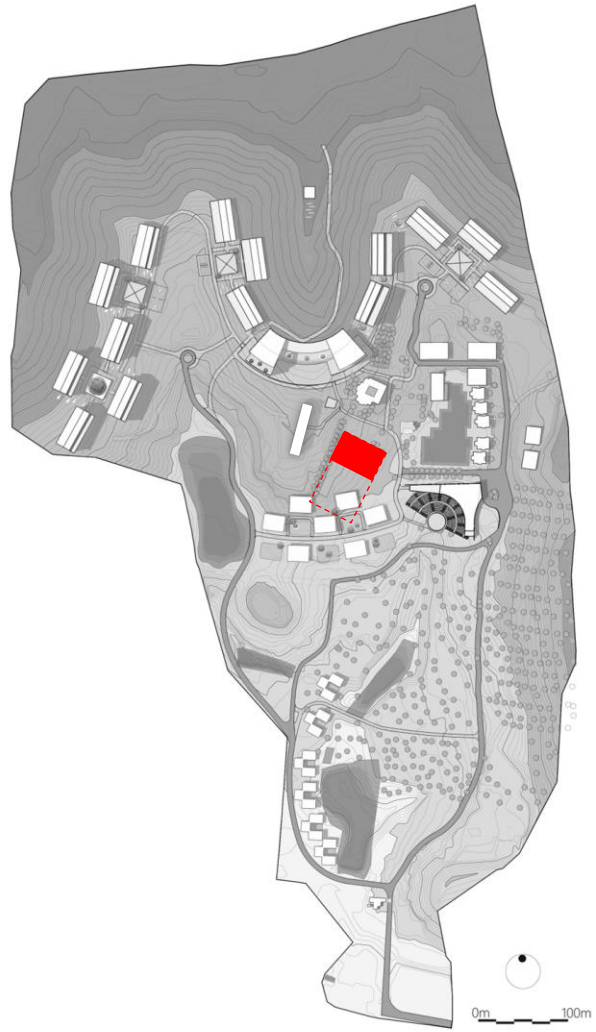


Badminton: Minimum height 7.6 m

LIVABILITY | FITNESS AMENITIES

Proposed Size – 35m x 23m





Proposed Location for Indoor Sports Facility

Badminton Courts : 6.5 m X 13.5 m

Basketball Court : 29 m X 16 m

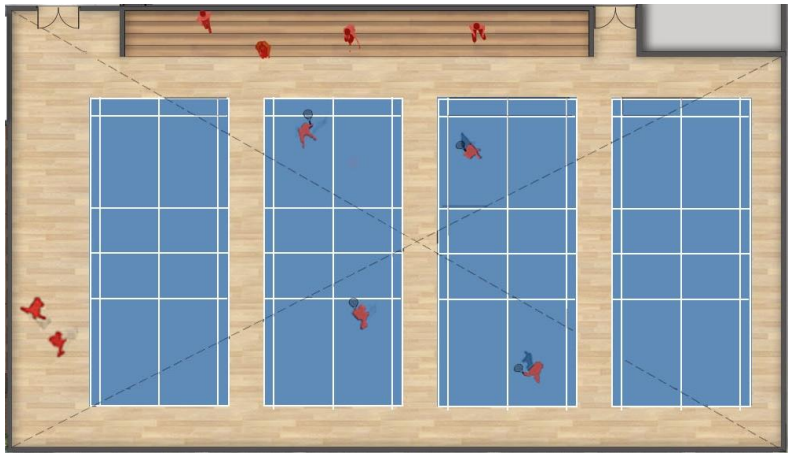
The proposed indoor sports area will take approximately 40 % of the existing floor area in the building (marked in red in the master plan).

COST ESTIMATE

Units	Total Unit area (sq.ft.)	Total Area (sq.ft.)	Category	Rate/sq.ft. (INR)	Estimate (INR)
1	9,000	9,000	Architecture	405	3,645,000
			MEP	720	6,480,000
			Structure	800	7,200,000
				1,925	**17,325,000**
			Add-on (taxes @18%, consultancy @ 3% and contractor @4% fees) @ 25%		4,331,250
			Total		**21,656,250**
			Furniture		1,200,000
			Signage		500,000
			Equipments		2,200,000
			Grand Total		**25,556,250**
			Rate per sqft.		**2,840**

Notes:

1. *Kota considered for flooring.*
2. *2m glass panels along the longer walls on top.*
3. *Assumed – existing light fixtures to be retained.*
4. *Roof to be changed only after evaluation.*
5. *Optional external painting considered in the estimate.*



Total Estimated Cost INR : 25,556,000
Total Estimated Cost USD: 340,000

REFURBISHMENT UNITS

LIVABILITY | COMPUTER LAB

Design Scheme 1

Area : 3,635 sqft.

Design Notes: Removal of steps

1. Even flooring and easy movement for all.
2. Increase in number of seats.
3. Ease of trunking.

Capacity – 200pax

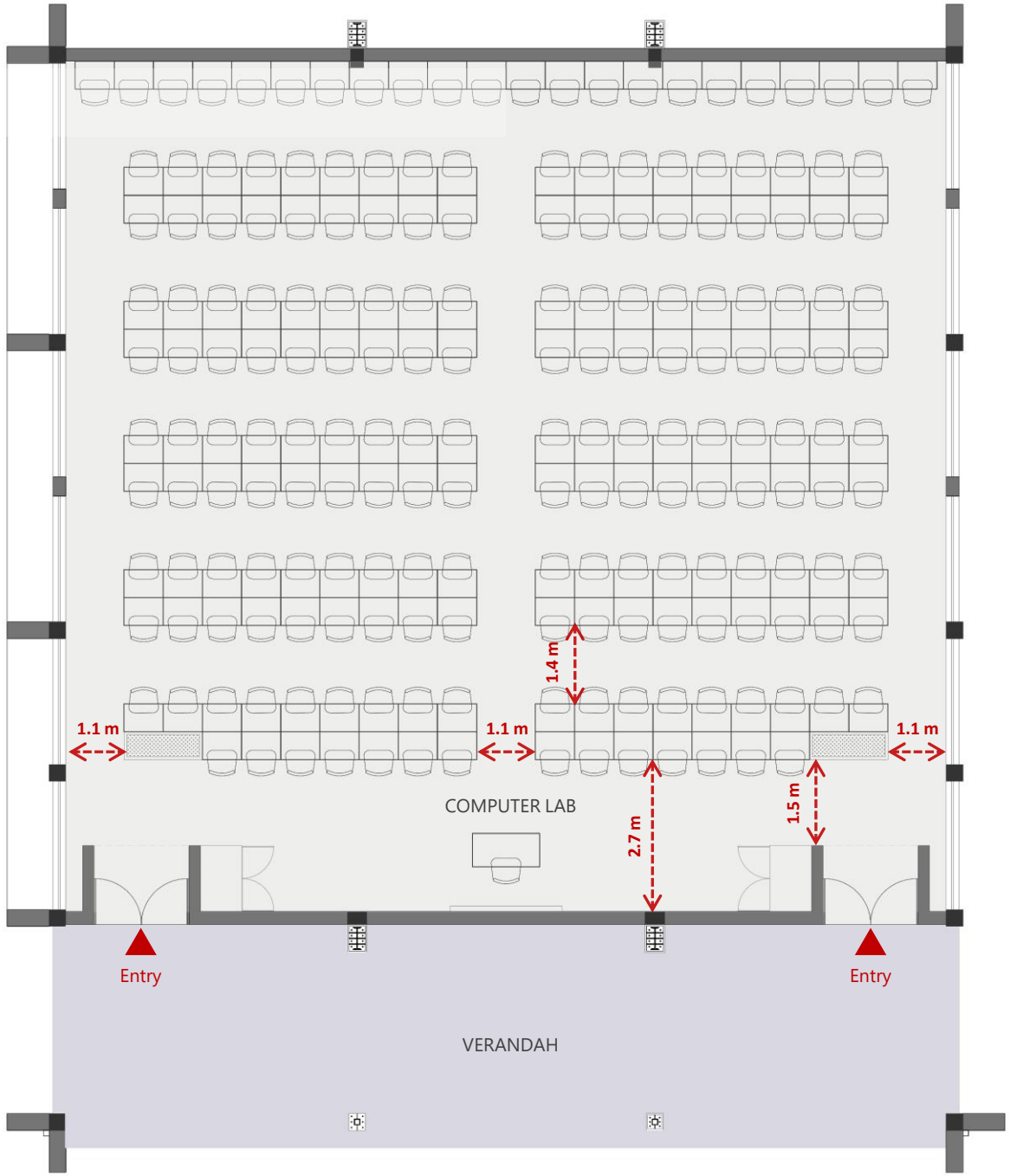
Table size – 700mm x 500mm

Chair size – 550mm x 450mm

Teacher's desk – 1500mm x 600mm

Storage Unit size – 1100mm x 750mm

White board size – 2400mm x 1200mm



Reference Images for Furniture

LIVABILITY | COMPUTER LAB

Design Scheme 2

Area : 3,635 sqft.

Design Notes: Retaining the tiered seating

1. Ease of visibility towards the white board.
2. Cost cutting on flooring and demolition.

Capacity – 164pax

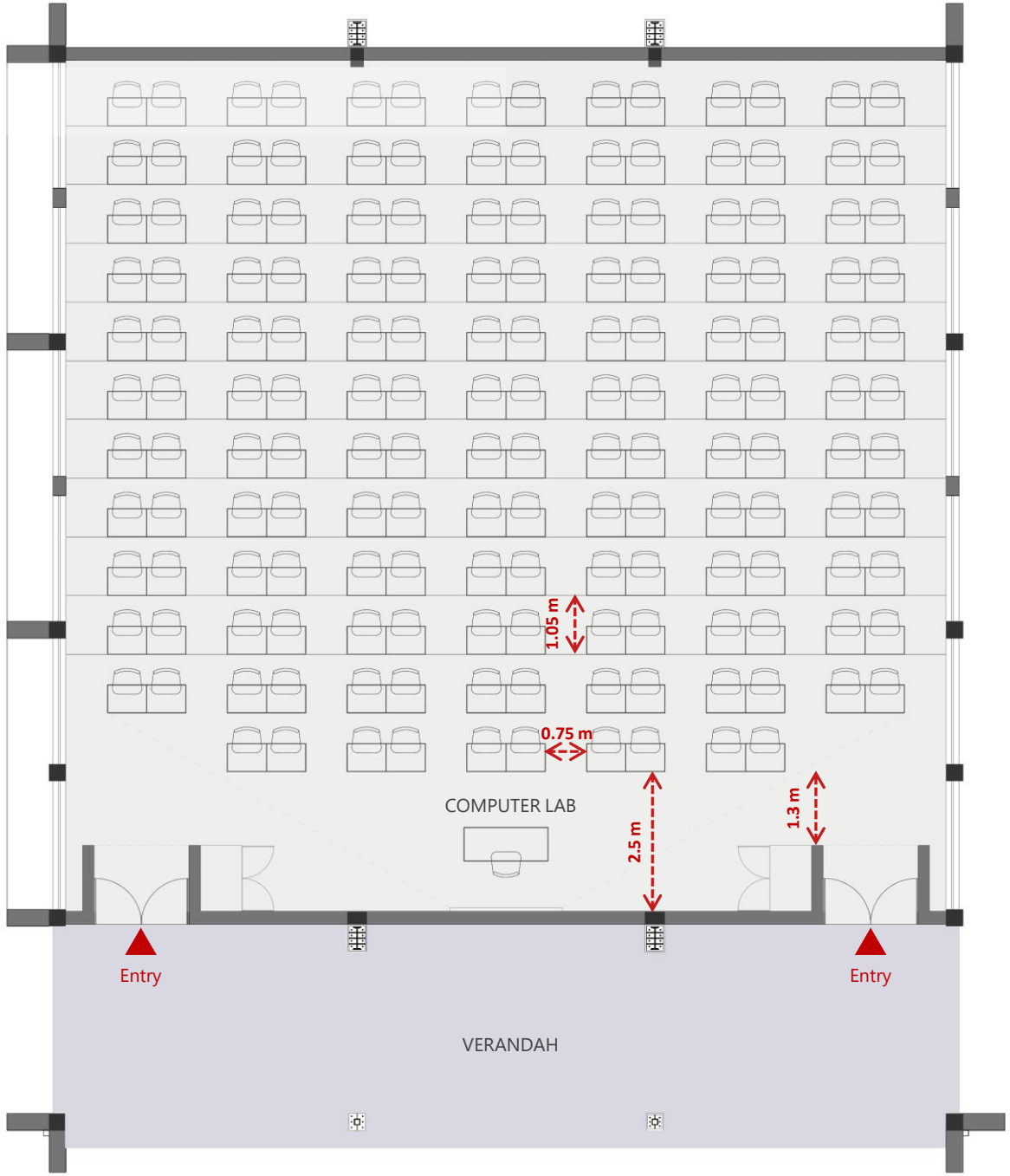
Table size – 700mm x 500mm

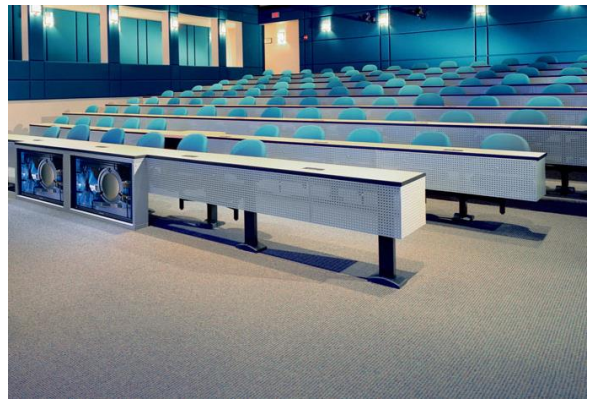
Chair size – 550mm x 450mm

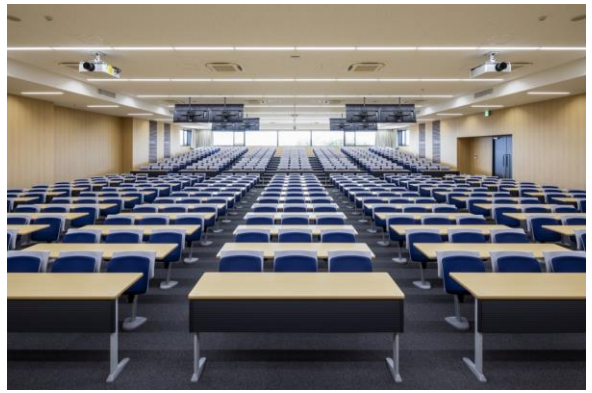
Teacher's desk – 1500mm x 600mm

Storage Unit size – 1100mm x 750mm

White board size – 2400mm x 1200mm







Reference Images for Furniture

LIVABILITY | COMPUTER LAB

Façade Option 2

MASTERPLAN PHASING| EXISTING

Population

Population	Total		Phase-1		Phase-2		Phase-3		Phase-4		Phase-5		Phase-6	
	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing
Students	2124	588		588	444	588	540	1092	360	1632	360	1992	360	2352
Faculty / Admin Staff	59	35		35	18	35	11	53	10	64	10	74	10	84
Service Staff	83	44		44	31	44	13	75	13	88	13	101	13	114
Total Population	**2933**		**667**		**1160**		**1784**		**2167**		**2550**		**2933**	

Building Blocks

Blocks	Total		Phase-1		Phase-2		Phase-3		Phase-4		Phase-5		Phase-6	
Students	2000	600			500		400		400		400		400	
	Proposed	Existing	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish
Classrooms @200 students	7	2[a]	1		2	2[a]	1		1		1		1	
Hostels	14	8			5		3		2		2		2	
Dining Hall	1				0.6		0.4							
Arrival Pavilion/Admin	1						1							
CEO Residence	1				1									
Faculty Offices		1				1								
Faculty Housing						6[b]								
Service staff Housing	6				3		3							
Open Amphitheatre	1						1							
Library	1						1							
Warehouse	1						1							
Indoor sports arena (Multipurpose hall)		1						1						
Medical Clinic		1[c]			1									
Tuck Shop		1[c]			1									
Water Reservoir			1				1							

Total Population : 2,933 people

Note : (a) Existing Classrooms to be converted into Computer labs

(b) Boys Hostels converted to faculty housing in Phase 2

(c) Existing Clinic and Tuck Shops to be de-functionalized/demolished.

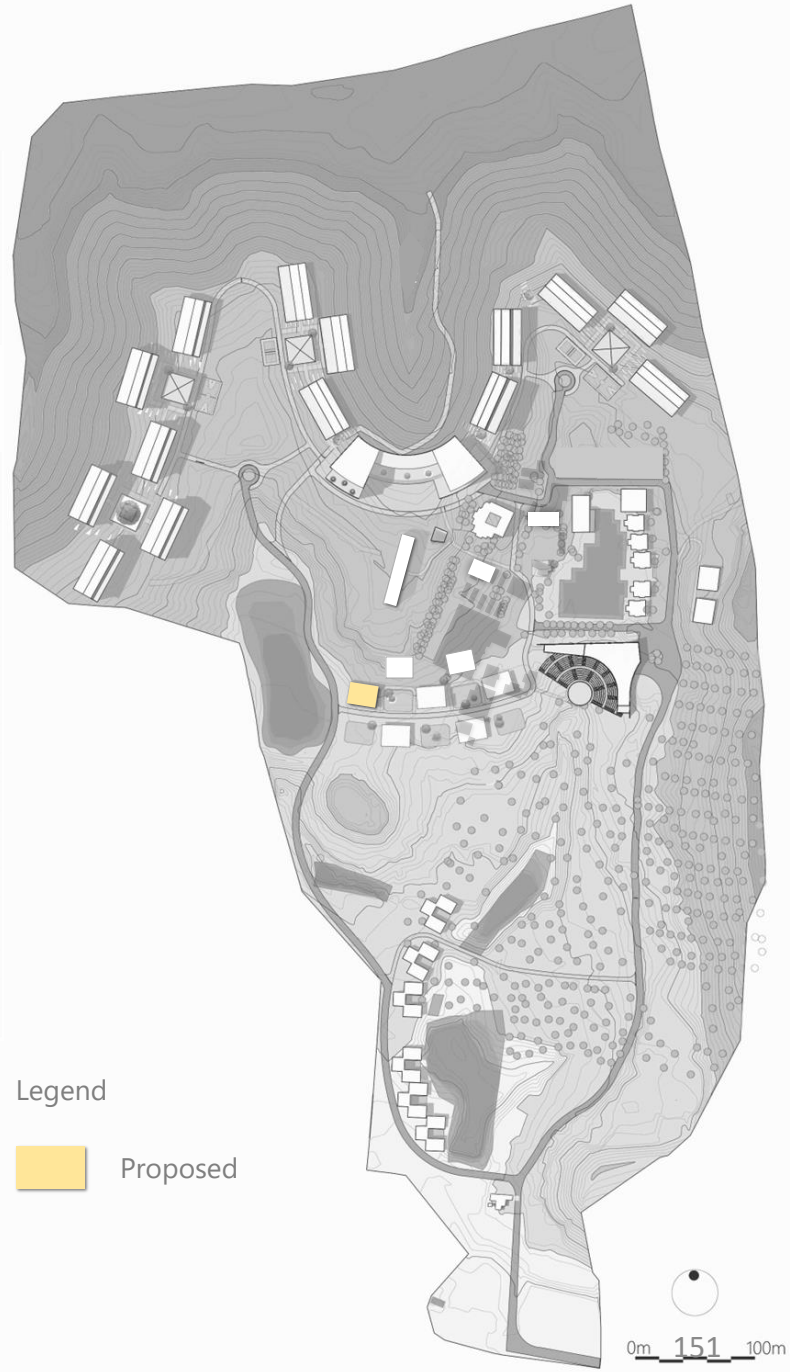
MASTERPLAN PHASING| PHASE -1

Population

Population	Total		Phase-1		Phase-2		Phase-3		Phase-4		Phase-5		Phase-6	
	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing
Students	2124	588		588	444	588	540	1092	360	1632	360	1992	360	2352
Faculty / Admin Staff	59	35		35	18	35	11	53	10	64	10	74	10	84
Service Staff	83	44		44	31	44	13	75	13	88	13	101	13	114
Total Population	**2933**		**667**		**1160**		**1784**		**2167**		**2550**		**2933**	

Building Blocks

Blocks	Total		Phase-1		Phase-2		Phase-3		Phase-4		Phase-5		Phase-6	
Students	2000	600			500		400		400		400		400	
	Proposed	Existing	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish
Classrooms @200 students	7	2[a]	1		2	2[a]	1		1		1		1	
Hostels	14	8			5		3		2		2		2	
Dining Hall	1				0.6		0.4							
Arrival Pavilion/Admin	1						1							
CEO Residence	1				1									
Faculty Offices		1				1								
Faculty Housing						6[b]								
Service staff Housing	6				3		3							
Open Amphitheatre	1						1							
Library	1						1							
Warehouse	1						1							
Indoor sports arena (Multipurpose hall)		1						1						
Medical Clinic		1[c]			1									
Tuck Shop		1[c]			1									
Water Reservoir			1				1							



Note : (a) Existing Classrooms to be converted into Computer labs

(b) Boys Hostels converted to faculty housing in Phase 2

(c) Existing Clinic and Tuck Shops to be de-functionalized/demolished.

MASTERPLAN PHASING| PHASE-2

Population

Population	Total		Phase-1		Phase-2		Phase-3		Phase-4		Phase-5		Phase-6	
	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing
Students	2124	588		588	444	588	540	1092	360	1632	360	1992	360	2352
Faculty / Admin Staff	59	35		35	18	35	11	53	10	64	10	74	10	84
Service Staff	83	44		44	31	44	13	75	13	88	13	101	13	114
Total Population	**2933**		667		**1160**		1784		2167		2550		2933	

Building Blocks

Blocks	Total		Phase-1		Phase-2		Phase-3		Phase-4		Phase-5		Phase-6	
Students	2000	600			500		400		400		400		400	
	Proposed	Existing	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish
Classrooms @200 students	7	2[a]	1		2	2[a]	1		1		1		1	
Hostels	14	8			5		3		2		2		2	
Dining Hall	1				0.6		0.4							
Arrival Pavilion/Admin	1						1							
CEO Residence	1				1									
Faculty Offices		1				1								
Faculty Housing						6[b]								
Service staff Housing	6				3		3							
Open Amphitheatre	1						1							
Library	1						1							
Warehouse	1						1							
Indoor sports arena (Multipurpose hall)		1						1						
Medical Clinic		1[c]			1									
Tuck Shop		1[c]			1									
Water Reservoir			1				1							

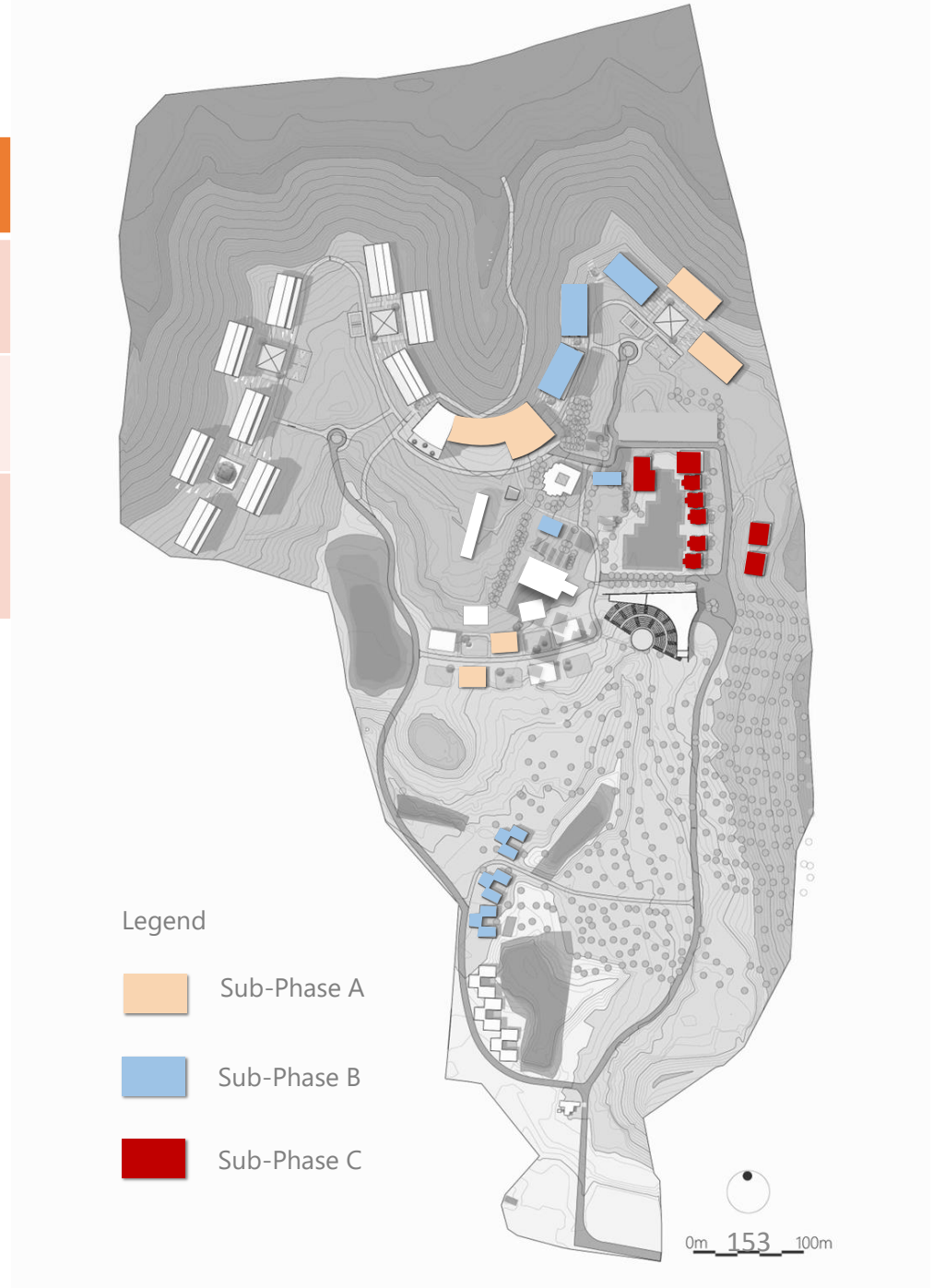
Note : (a) Existing Classrooms to be converted into Computer labs

(b) Boys Hostels converted to faculty housing in Phase 2

(c) Existing Clinic and Tuck Shops to be de-functionalized/demolished.

CONSTRUCTION TIMELINE – PHASE 2

Phase	Sub-Phase	Buildings	Start Date	End Date
Phase-2	A	Classroom – 2 nos. Dining Hall – Half Hostel – 2 nos.	October 2022	Dec 2024
	B	Hostel – 1 nos. Service Staff Housing – 1 nos. CEO Residence – 1 no.	Jan 2023	Dec 2024
	C	Refurbishment Units: Faculty Housing (Existing Boys' Hostel) Headquarters Computer Labs (Existing Classroom)	june 2023	Dec 2024



MASTERPLAN PHASING| PHASE-3

Population

Population	Total		Phase-1		Phase-2		Phase-3		Phase-4		Phase-5		Phase-6	
	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing
Students	2124	588		588	444	588	540	1092	360	1632	360	1992	360	2352
Faculty / Admin Staff	59	35		35	18	35	11	53	10	64	10	74	10	84
Service Staff	83	44		44	31	44	13	75	13	88	13	101	13	114
Total Population	**2933**		667		1160		**1784**		2167		2550		2933	

Building Blocks

Blocks	Total		Phase-1		Phase-2		Phase-3		Phase-4		Phase-5		Phase-6	
Students	2000	600			500		400		400		400		400	
	Proposed	Existing	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish
Classrooms @200 students	7	2[a]	1		2	2[a]	1		1		1		1	
Hostels	14	8			5		3		2		2		2	
Dining Hall	1				0.6		0.4							
Arrival Pavilion/Admin	1						1							
CEO Residence	1				1									
Faculty Offices		1				1								
Faculty Housing						6[b]								
Service staff Housing	6				3		3							
Open Amphitheatre	1						1							
Library	1						1							
Warehouse	1						1							
Indoor sports arena (Multipurpose hall)		1						1						
Medical Clinic		1[c]			1									
Tuck Shop		1[c]			1									
Water Reservoir			1				1							

Note : (a) Existing Classrooms to be converted into Computer labs

(b) Boys Hostels converted to faculty housing in Phase 2

(c) Existing Clinic and Tuck Shops to be de-functionalized/demolished.

MASTERPLAN PHASING| PHASE-4

Population

Population	Total		Phase-1		Phase-2		Phase-3		Phase-4		Phase-5		Phase-6	
	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing
Students	2124	588		588	444	588	540	1092	360	1632	360	1992	360	2352
Faculty / Admin Staff	59	35		35	18	35	11	53	10	64	10	74	10	84
Service Staff	83	44		44	31	44	13	75	13	88	13	101	13	114
Total Population	**2933**		667		1160		1784		**2167**		2550		2933	

Building Blocks

Blocks	Total		Phase-1		Phase-2		Phase-3		Phase-4		Phase-5		Phase-6	
Students	2000	600			500		400		400		400		400	
	Proposed	Existing	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish
Classrooms @200 students	7	2[a]	1		2	2[a]	1		1		1		1	
Hostels	14	8			5		3		2		2		2	
Dining Hall	1				0.6		0.4							
Arrival Pavilion/Admin	1						1							
CEO Residence	1				1									
Faculty Offices		1				1								
Faculty Housing						6[b]								
Service staff Housing	6				3		3							
Open Amphitheatre	1						1							
Library	1						1							
Warehouse	1						1							
Indoor sports arena (Multipurpose hall)		1						1						
Medical Clinic		1[c]			1									
Tuck Shop		1[c]			1									
Water Reservoir			1				1							

Note : (a) Existing Classrooms to be converted into Computer labs

(b) Boys Hostels converted to faculty housing in Phase 2

(c) Existing Clinic and Tuck Shops to be de-functionalized/demolished.

MASTERPLAN PHASING| PHASE-5

Population

Population	Total		Phase-1		Phase-2		Phase-3		Phase-4		Phase-5		Phase-6	
	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing
Students	2124	588		588	444	588	540	1092	360	1632	360	1992	360	2352
Faculty / Admin Staff	59	35		35	18	35	11	53	10	64	10	74	10	84
Service Staff	83	44		44	31	44	13	75	13	88	13	101	13	114
Total Population	**2933**		667		1160		1784		2167		**2550**		2933	

Building Blocks

Blocks	Total		Phase-1		Phase-2		Phase-3		Phase-4		Phase-5		Phase-6	
Students	2000	600			500		400		400		400		400	
	Proposed	Existing	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish
Classrooms @200 students	7	2[(a)]	1		2	2[(a)]	1		1		1		1	
Hostels	14	8			5		3		2		2		2	
Dining Hall	1				0.6		0.4							
Arrival Pavilion/Admin	1						1							
CEO Residence	1				1									
Faculty Offices		1				1								
Faculty Housing						6[(b)]								
Service staff Housing	6				3		3							
Open Amphitheatre	1						1							
Library	1						1							
Warehouse	1						1							
Indoor sports arena (Multipurpose hall)		1						1						
Medical Clinic		1[(c)]			1									
Tuck Shop		1[(c)]			1									
Water Reservoir			1				1							

Note : (a) Existing Classrooms to be converted into Computer labs

(b) Boys Hostels converted to faculty housing in Phase 2

(c) Existing Clinic and Tuck Shops to be de-functionalized/demolished.

MASTERPLAN PHASING| PHASE-6

Population

Population	Total		Phase-1		Phase-2		Phase-3		Phase-4		Phase-5		Phase-6	
	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing
Students	2124	588		588	444	588	540	1092	360	1632	360	1992	360	2352
Faculty / Admin Staff	59	35		35	18	35	11	53	10	64	10	74	10	84
Service Staff	83	44		44	31	44	13	75	13	88	13	101	13	114
Total Population	**2933**		**667**		**1160**		**1784**		**2167**		**2550**		**2933**	

Building Blocks

Blocks	Total		Phase-1		Phase-2		Phase-3		Phase-4		Phase-5		Phase-6	
Students	2000	600			500		400		400		400		400	
	Proposed	Existing	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish	Proposed	Refurbish
Classrooms @200 students	7	2[a]	1		2	2[a]	1		1		1		1	
Hostels	14	8			5		3		2		2		2	
Dining Hall	1				0.6		0.4							
Arrival Pavilion/Admin	1						1							
CEO Residence	1				1									
Faculty Offices		1				1								
Faculty Housing						6[b]								
Service staff Housing	6				3		3							
Open Amphitheatre	1						1							
Library	1						1							
Warehouse	1						1							
Indoor sports arena (Multipurpose hall)		1						1						
Medical Clinic		1[c]			1									
Tuck Shop		1[c]			1									
Water Reservoir			1				1							

Note : (a) Existing Classrooms to be converted into Computer labs

(b) Boys Hostels converted to faculty housing in Phase 2

(c) Existing Clinic and Tuck Shops to be de-functionalized/demolished.

PHASE-2 AREA STATEMENT – CONSTRUCTION

Sr no.	Area	Nos.	Floors	Capacity per module	Area (sq.ft.)	Remarks
New Construction						
1	Class room	2	G+1	200	10,100	Running in 2 shifts
2	Dining + Kitchen	0.6	G+1	1,425	36,000	Dining will be run in double shift for students - total population of valley being ~2821. Client to confirm on Faculty /staff seating nos.
3	Hostels	3	G+2	276	86,065	276 students (6 sharing X 46 rms) + 2 Faculty in 1BHK + 1 Laundromat
4	Staff Housing Block	2	G+2	30	25,834	
5	CEO Residence	1	G		2,000	
6	Medical Clinic	1	G	18	2000	15 bed capacity
7	Tuck Shop	1	G		1,000	
Refurbishment						
1	Headquarter - Admin & Staff Rooms, Library	1	G+2	79	12,212	
2	Faculty Housing (Old Boys Hostel to be refurbished)	5	G+1	4	20,707	4 nos. -2bhk per block , 5 members maximum in each family
3	Faculty Housing (New Boys Hostel to be refurbished)	1	G+2	12	11,360	12 nos. - 1bhk per block, 2 members maximum in each family
4	Computer Labs	2	G	200	7,272	Old classrooms to be refurbished
TOTAL					**214,550**	

Total New Construction: **163,000 sq. ft.**

Refurbishments : **51,550 sq. ft.**

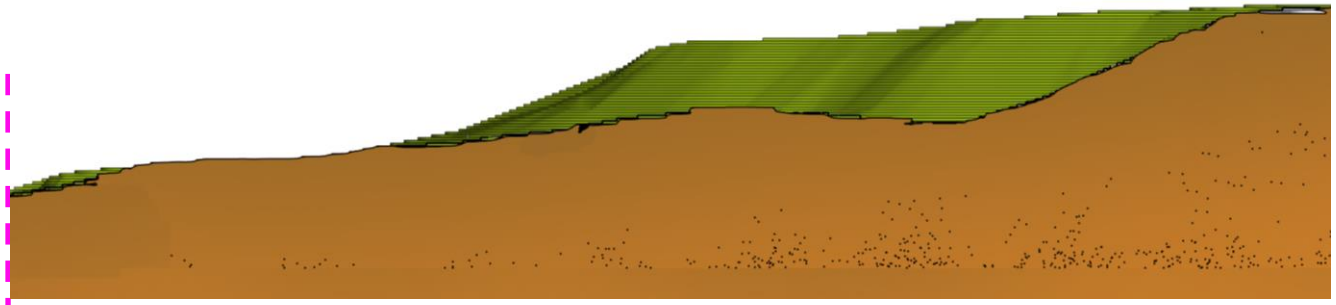
Note:
*Pavilion Block and Amphitheatre are not included in area.

LANDSCAPING

INFERENCES

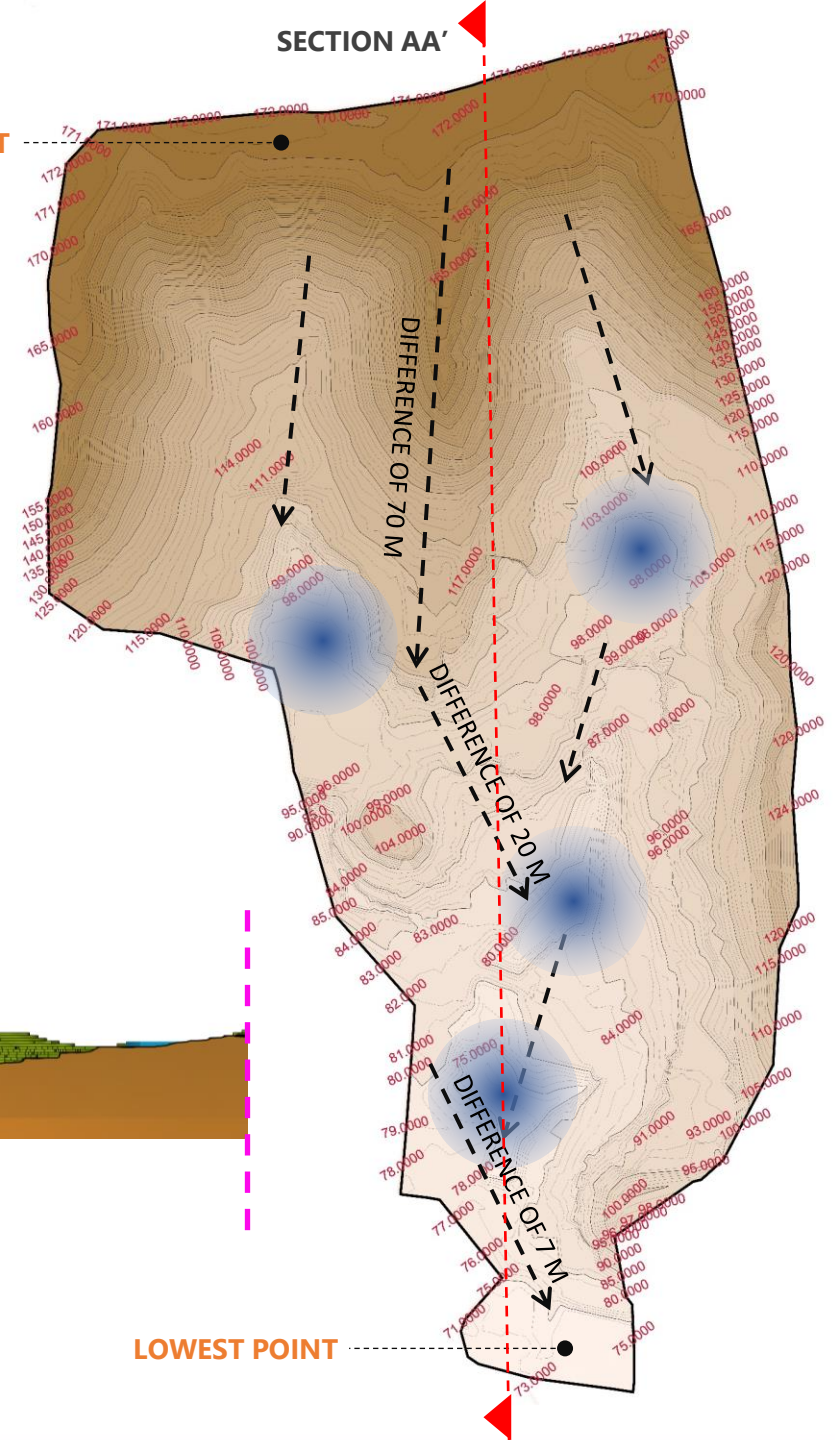
1. **Sloping from North to south ,** the slope becomes gradual as we move towards the south

2. The southern part of the site give many opportunities for water catchment as many local low points are visible.



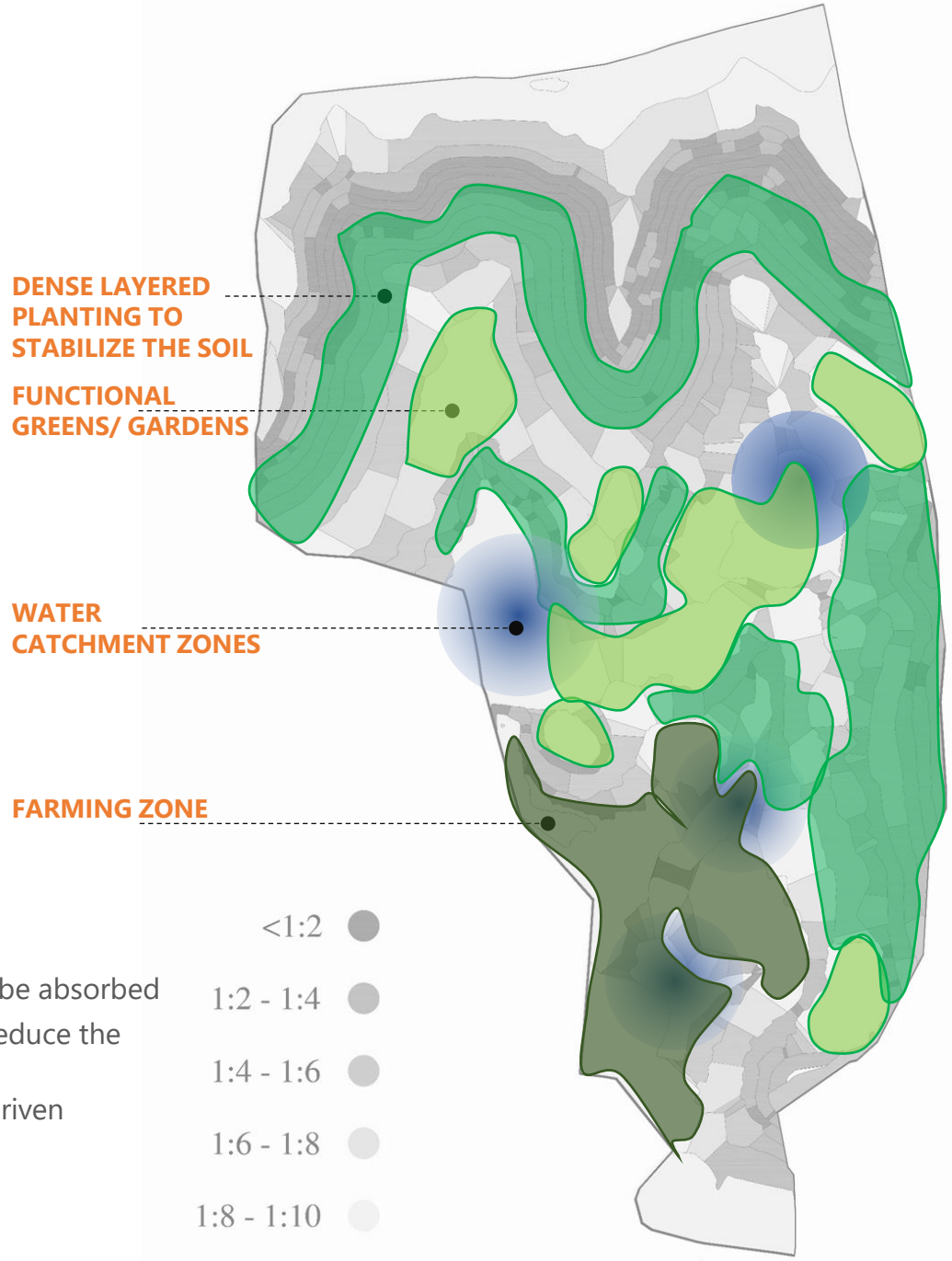
SECTION AA'

SECTION AA' PART 2



INFERENCES

1. **Slope stabilization strategies using the planting to be applied to hold the soil in the uplands.**
2. **The zones in slope less than 1:6 can be used as functional purposes**
3. **The lowest zone on site can be used for Orchards and Urban farming as the will have accumulation of most fertile soils**
4. **The lake edges to be planted with aquatic/ sub emergent species that can sustain even when the water is less . The character of the water bodies to be dynamic throughout the year.**



LEGEND

- **Functional Green zones** so the water coming from the valleys can be absorbed
- **Layered planting** with dense lower and middle story planting to reduce the speed of the gushing water coming from higher region
- **Urban farming zone** as the soil would be very fertile after being driven from the valleys to the plains

SITE APPRISAL |EXISTING VEGETATION ANALYSIS

SUMMERS

MONSOONS

Inference

In summers, the land has no / very little vegetation on the hills. The entire landscape is dry and prone to erosion.

In monsoons , the entire site turns lush and green

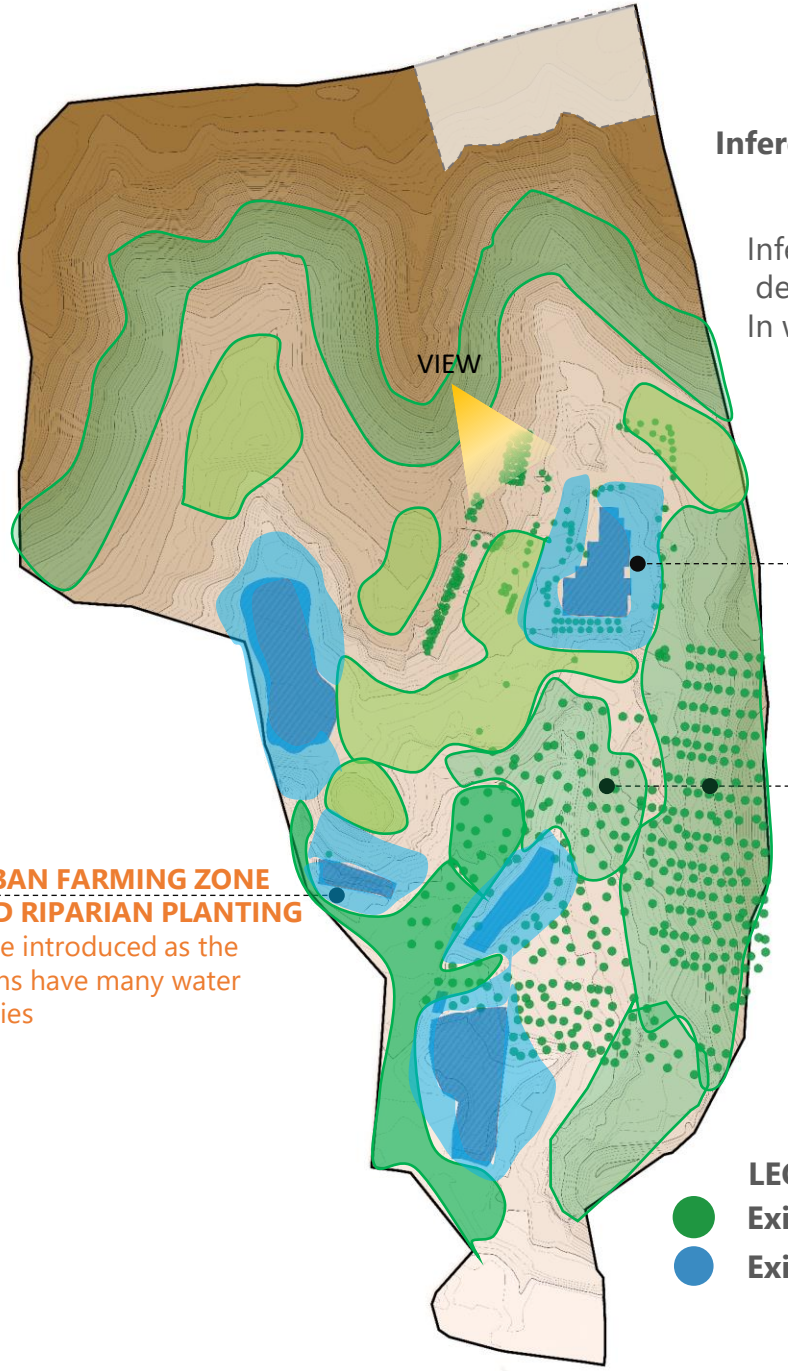
Gulmohur

Ashoka

Acacia nilotica, Acacia catechu

Pongamia pinnata

Forest consists dense planting of many species primarily Eucalyptus, Neem Acacias , Ficus



Inference : The existing

Inference
dense planting in valleys
In winters the

RIPARIAN PLANTING
to be introduced to create sustainable ecosystem

EXISTING FOREST TO BE RETAINED
& BARREN PATCHES TO BE INCLUDED WITHIN THE FOREST BY DENSIFYING THEM.

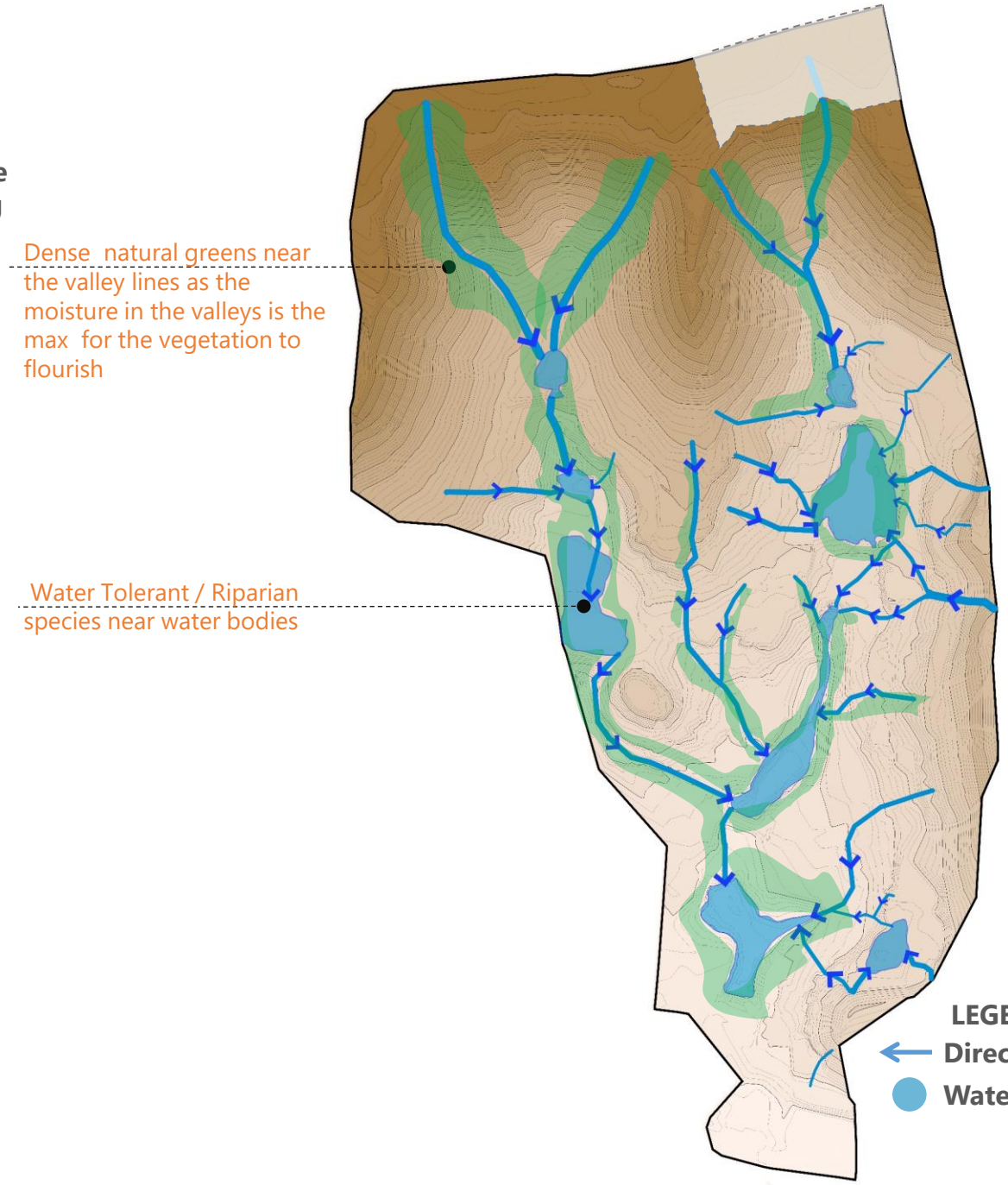
URBAN FARMING ZONE AND RIPARIAN PLANTING
to be introduced as the plains have many water bodies

LEGEND
Existing trees
Existing water bodies

INFERENCES

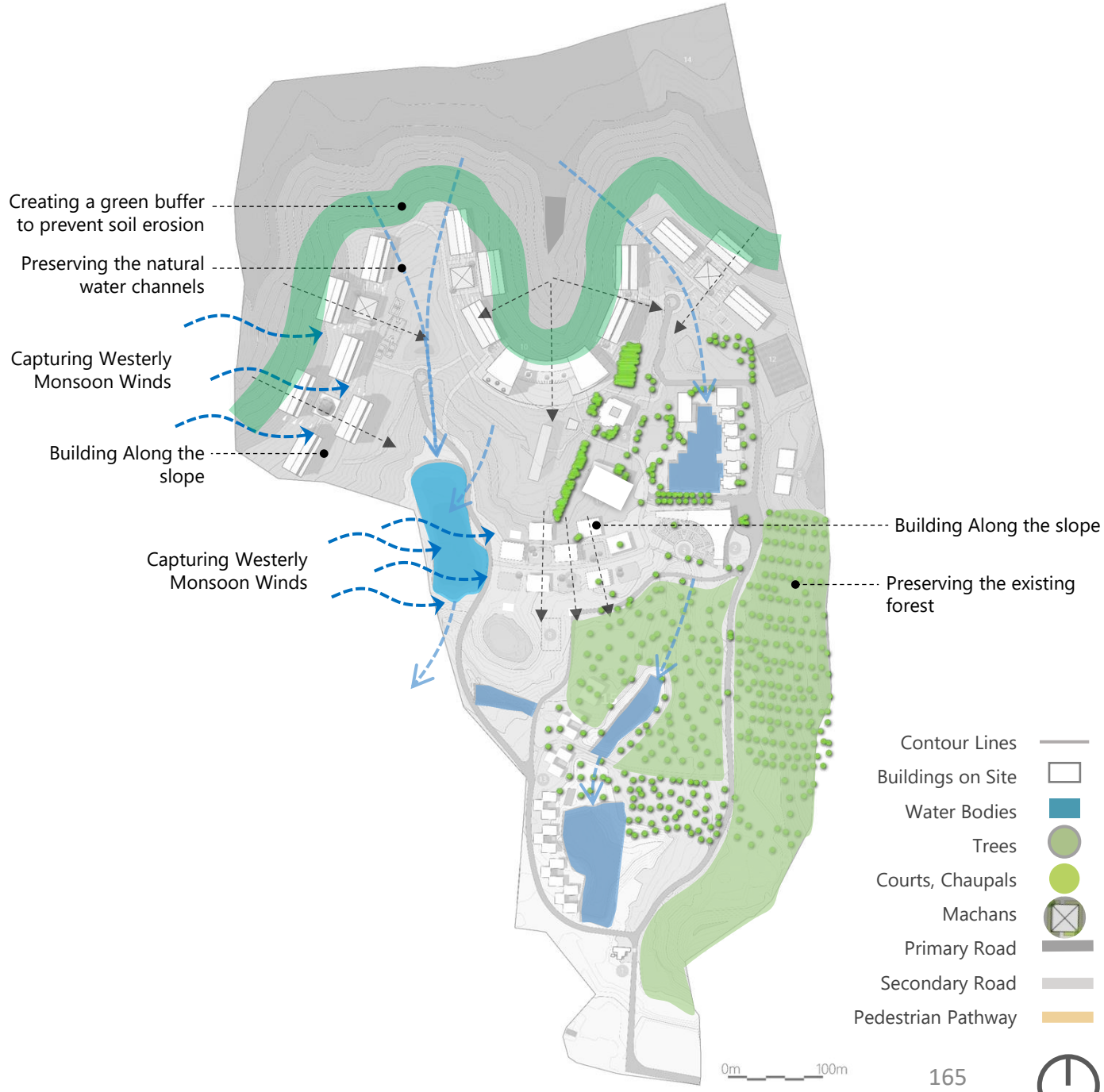
1. **The site offers an opportunity to channelize and connect the various local catchment zones and create a water harvesting system for lean periods**

2. **The water collected can be used for irrigation in the orchards and the urban farming round the year.**



INFERENCES

1. **The building blocks area placed respecting the site topography and vegetation footprint.**
2. **The Courtyard planning provides an opportunity to create interactive landscape spaces for the classrooms, hostels and dinning area.**
3. **Proximity of the lake to the classrooms allows the lake to be enabled as an integrated learning zone**
4. **The planning of the architectural blocks preserves the natural drainage systems and gives an opportunity to channelize and connect the water catchment zones through bio-swales**
5. **The placement of courtyards and open spaces allows one to be visually connected to the expansive landscape beyond the site boundaries as well**
6. **The existing vegetation have been preserved which creates an opportunity to create forest trails, nature walks and to educate about the existing ecology**



OVERALL STRATEGY

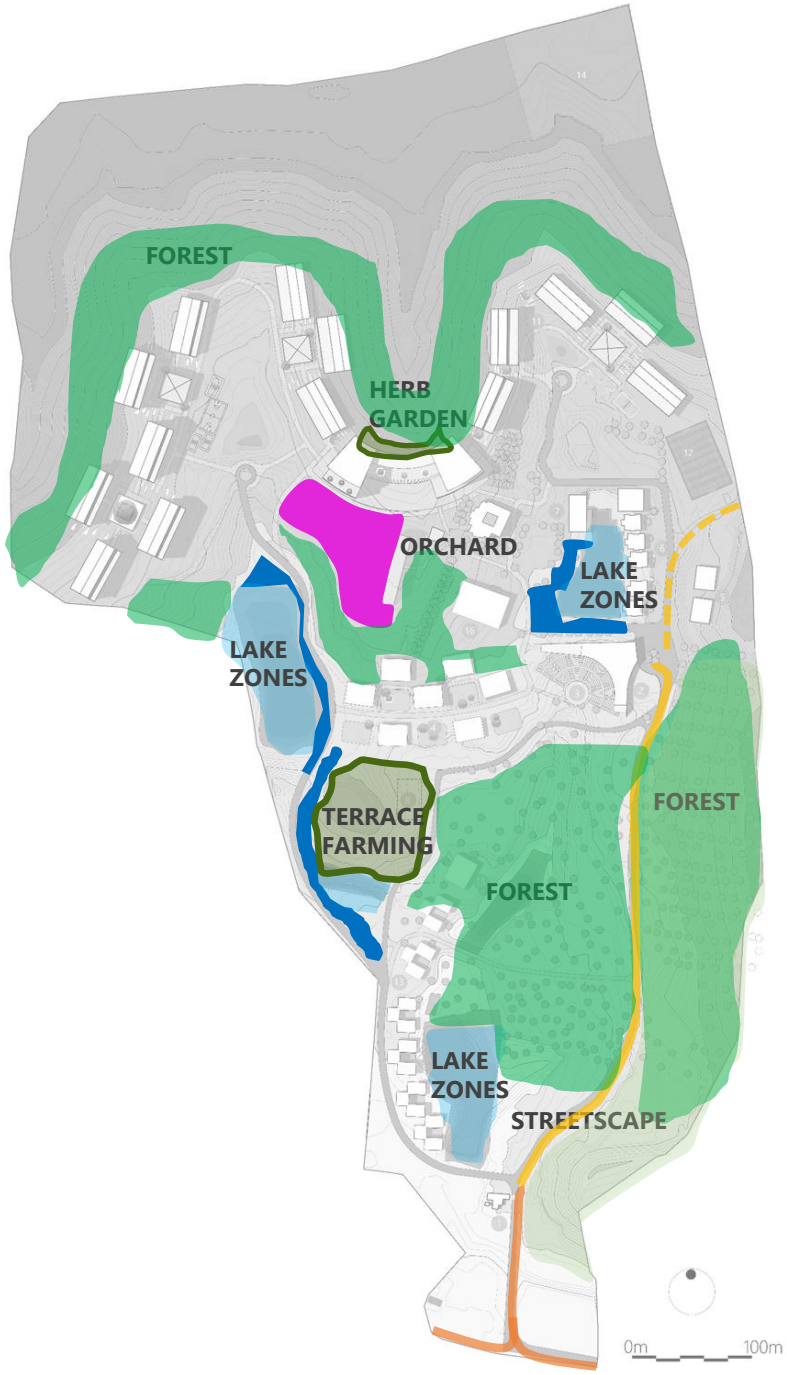
- The seasonal water bodies are channelized and connected to the larger water bodies.
- Retention zones are proposed as rain gardens to allow the percolation in ground and recharge water tables
- Peripheral bio swales capture the gushing storm water thereby reducing the flash flooding

LEGEND

- Perennial Waterbody
- Seasonal Waterbody
- PHASE 1 Construction
- PHASE 1 Construction
- PHASE 3 Construction
- REFURBISHED
- 2M Wide .5M Deep Bio swale (Type A)
- 2M Wide 1 M Deep Ditch (Type B)
- 2M Wide .5 M Bio swale(Type C)
- Culvert
- Direction of flow

LANDSCAPE ZONING

1. STREETSCAPE – circulation
2. WATER WAYS – drainage strategy
3. LAKE ZONES – catchment areas
4. FOREST ZONES
5. TERRACE FARMING & HERB GARDEN
6. ORCHARD
7. BUILDING COURTS



MASTERPLAN

Program

1. Security Cabin + Existing medical facility
2. Entrance Pavilion
   - Reception
   - Offices
   - Parking
3. Open air amphitheater
4. Classrooms for 200 students
5. Computer Labs for 400 systems
6. Faculty/Admin Staff Housing
7. Library, Staff rooms & Staff offices
8. Library
9. Indoor Games, Shops, Infirmary
10. Dining Hall for 1300 students
11. Girls Hostel
12. Boys Hostel
13. Service Staff Housing*
14. Solar farming (1.8 acres) – Location to be optimized
15. Warehouse
16. Indoor Sports
17. Orchards
18. Herb Garden
19. Urban farming terrace
20. Nature Trail along the lake
21. Boardwalk along the lake

LANDSCAPE MASTERPLAN | STREETSCAPE

INTEGRATING SERVICES & DRAINAGE

- **Arrival Road** Entry zone to the site needs to be highlighted to create an arrival experience. Two-way road with median, feature planting and three storey planting along the both side.

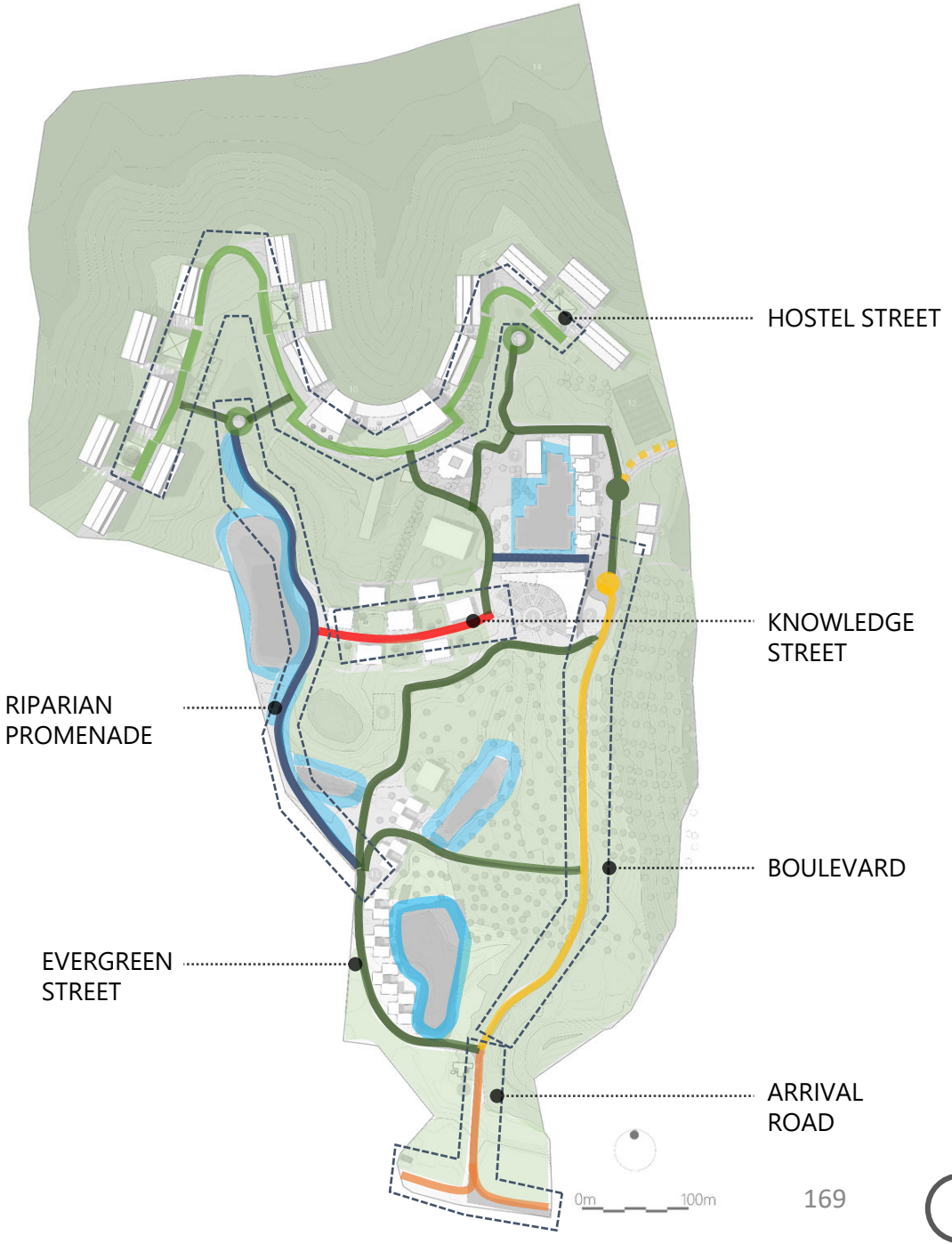
- **Boulevard** Main road connecting the arrival and the academic zone. To be highlighted with seasonal variation creating a dynamic streetscape character which changes colours and texture all along year. 6m wide carriageway along with 1.5m of pathway

- **Knowledge Street** Fully pedestrianised street connecting the classrooms to be primarily be used by the students and the faculty members. 5m wide with evergreen trees along both side to provide shade in the hot summers

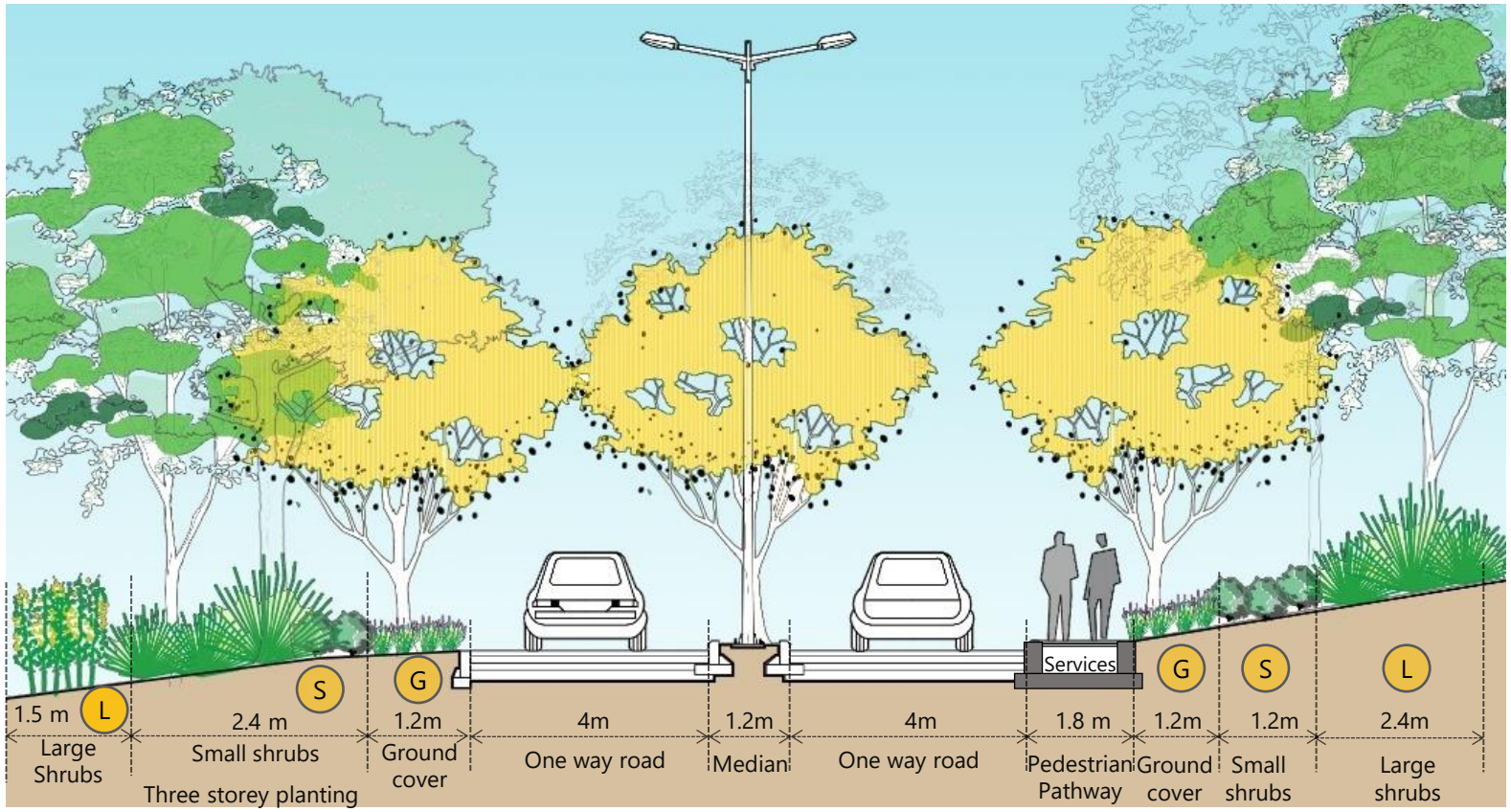
- **Riparian promenade** 6m wide road running along the lake and existing water channels. The existing water channels to be preserved and converted to bioswales which runs along the Lake street and connects the lakes

- **Hostel Street** 5m wide pedestrian street connecting the hostel blocks provided with seating at regular intervals. Planned as evergreen avenues for shade along with feature planting in front of hostel blocks and junctions

- **Evergreen Streets** 6m wide vehicular road along with 1.5m of pedestrian pathway connecting the staff housing planted with evergreen trees to provide shade throughout the hot summers

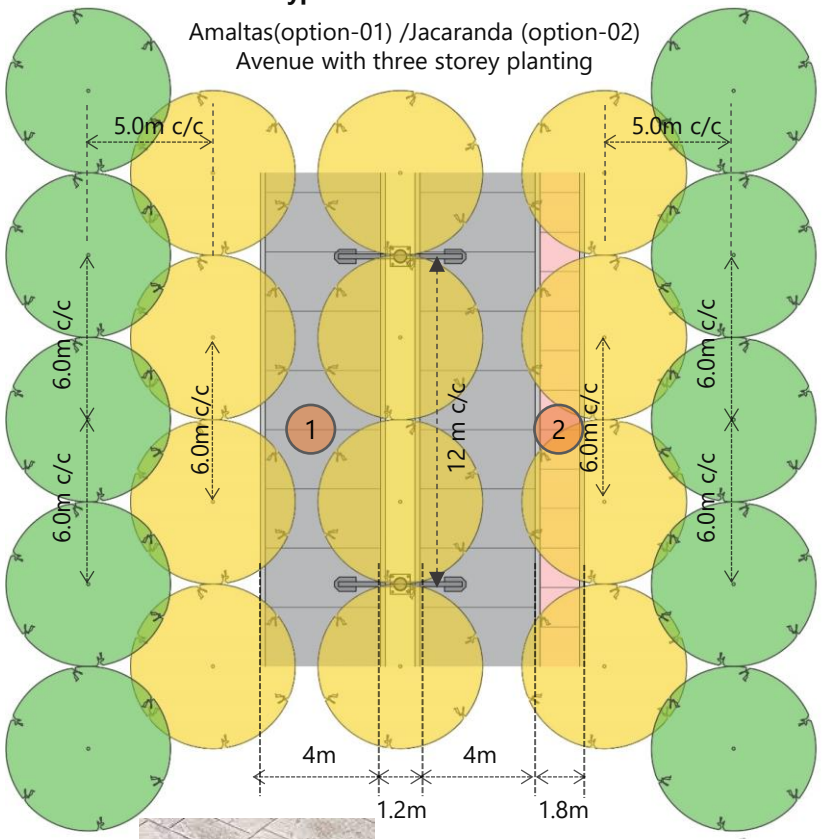


LANDSCAPE MASTERPLAN | ARRIVAL ROAD 275M LONG APPROX.



Typical Arrival Road Plan

Amaltas(option-01) /Jacaranda (option-02)
Avenue with three storey planting



Alternanthera green
G

Wedelia trilobata
G

Dianella tasmanica variegata
S

Dracaena deremensis warneckei
S

Angelonia grandiflora
L

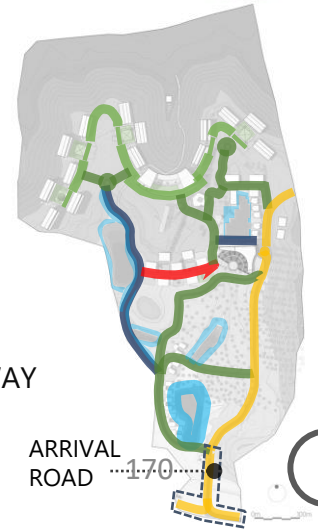
Alpinia zurumbet variegata
L

Stamped concrete

1
ROAD

Concrete pavers

2
PATHWAY



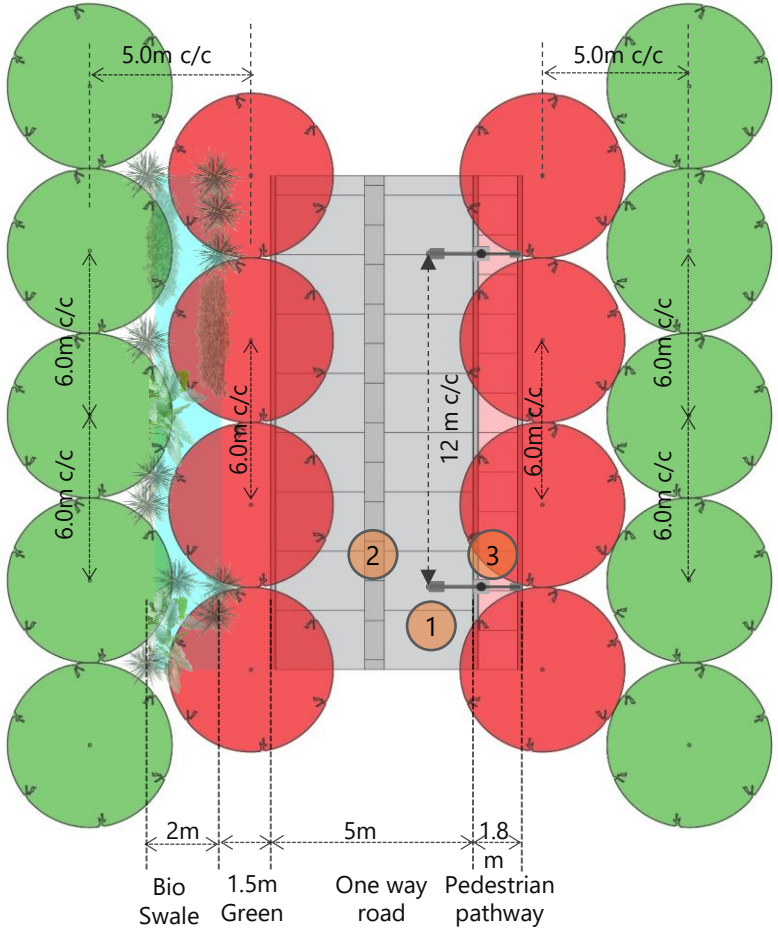
“The Amaltas Drive”

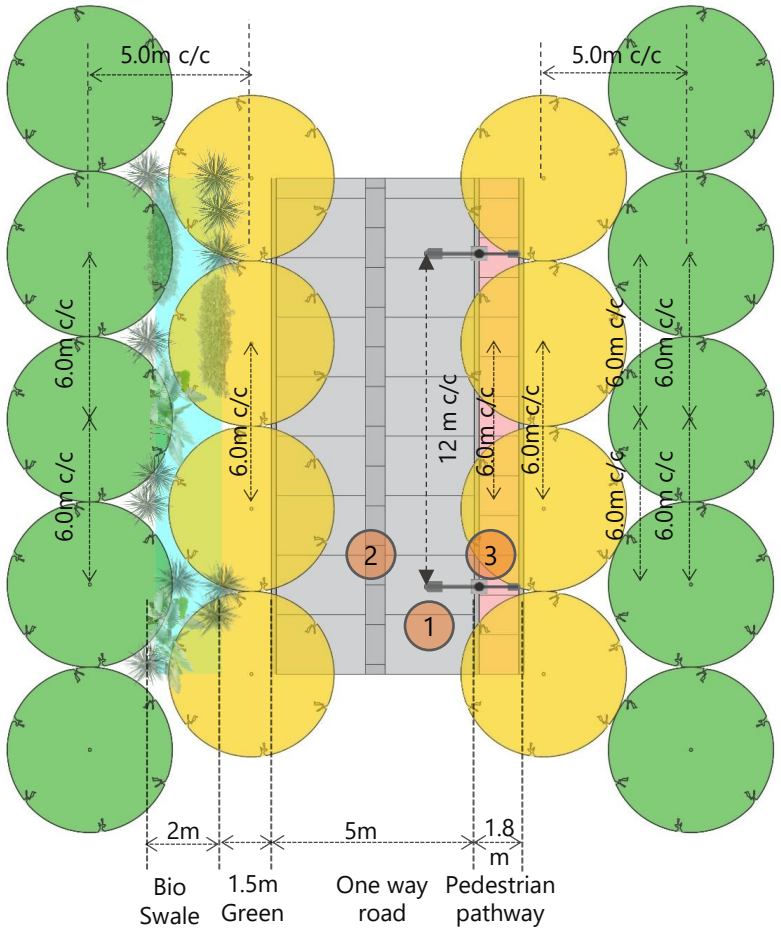
Celebrate Pune’s Unique History, Culture And Flora Along the wide Approach road

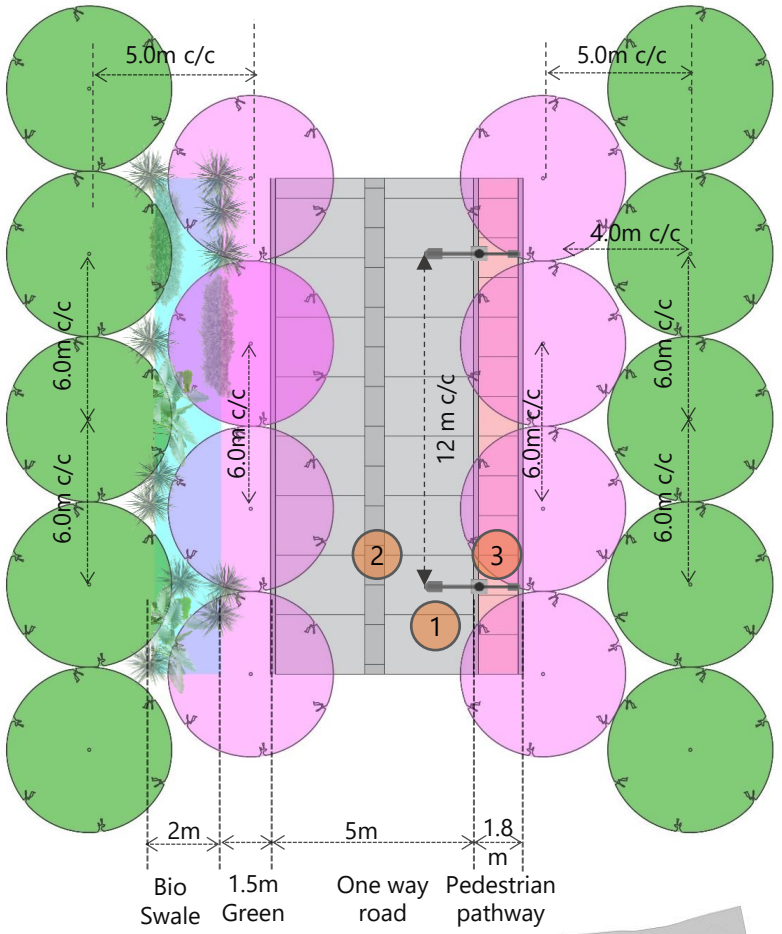
“The Jacaranda Blossom”

Celebrate Pune’s Unique History, Culture And Flora Along the wide Approach road

LANDSCAPE MASTERPLAN | BOULEVARD





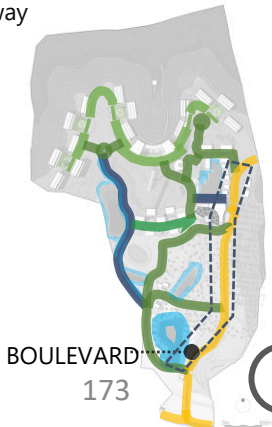


Delonix regia-
Gulmohur

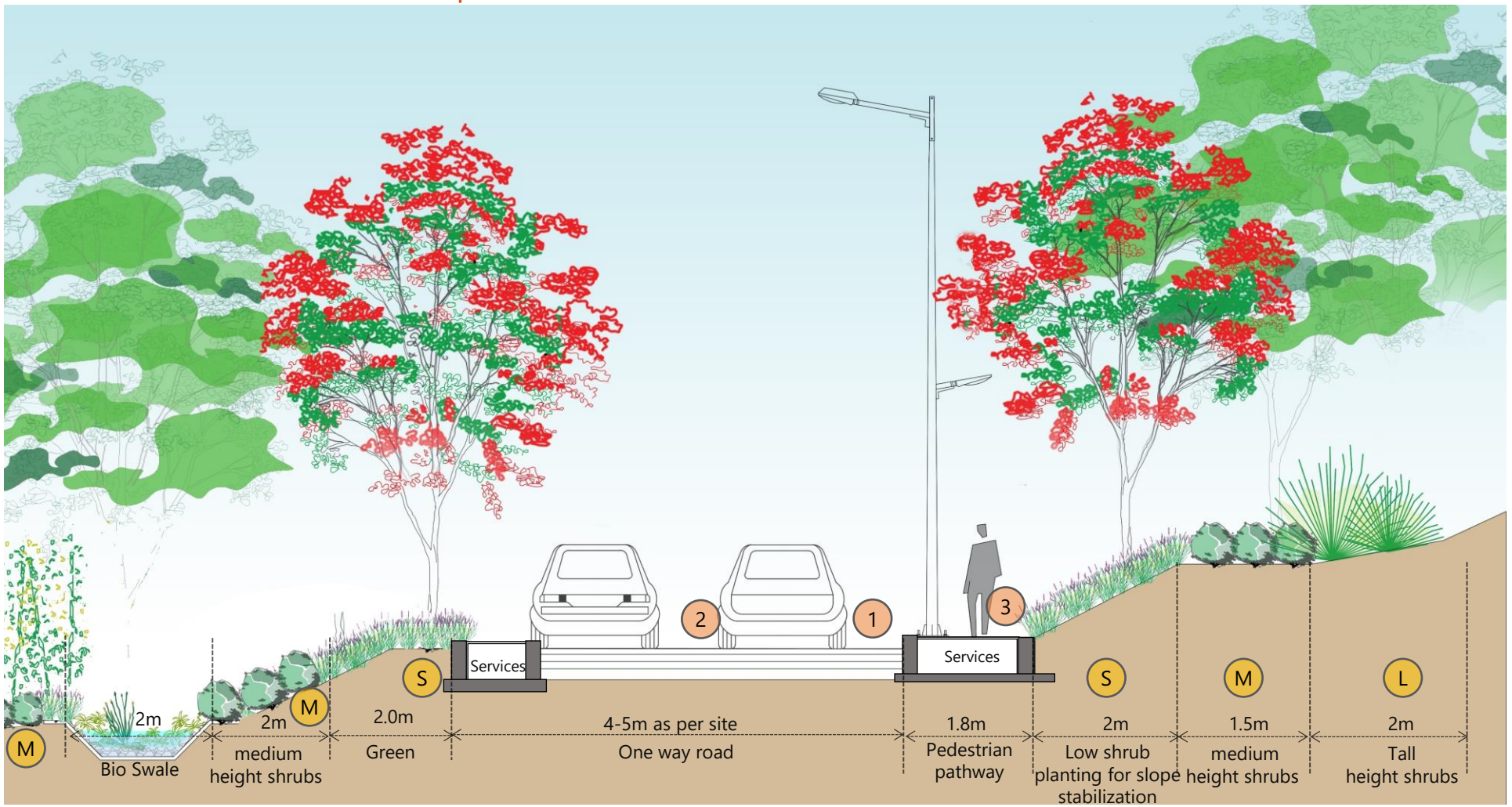
Boulevard Feature Tree
The boulevard is divided in 3 parts and every part to have seasonal avenue tree to keep the boulevard blooming throughout the year

Peltophorum pterocarpum
Peela gulmohar

Bauhinia purpurea
Kachnar



LANDSCAPE MASTERPLAN | BOULEVARD



1 ROAD

Stamped concrete (Ashlar slate Pattern)

2 IN BETWEEN ROAD

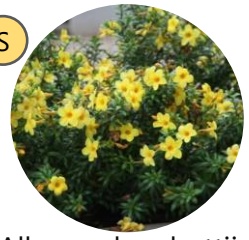
Black Cobbles

3 PATHWAY

Concrete pavers

S 

Nephrolepis biserrata aurea

S 

Allamanda schottii compacta

M 

Cymbopogon floxosus

M 

Alpinia purpurata

M 

Canna x generalis

L 

Tecoma gaudichaudi

L 

Callistemon hybrid dwarf pink

Functional bio swales acting as places of play and interaction with changing character in each zone

LANDSCAPE MASTERPLAN | KNOWLEDGE STREET

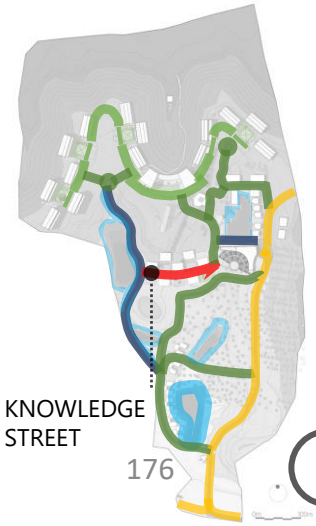
Reference image

To make the knowledge street pedestrian friendly it is designed in cobbles/pavers.

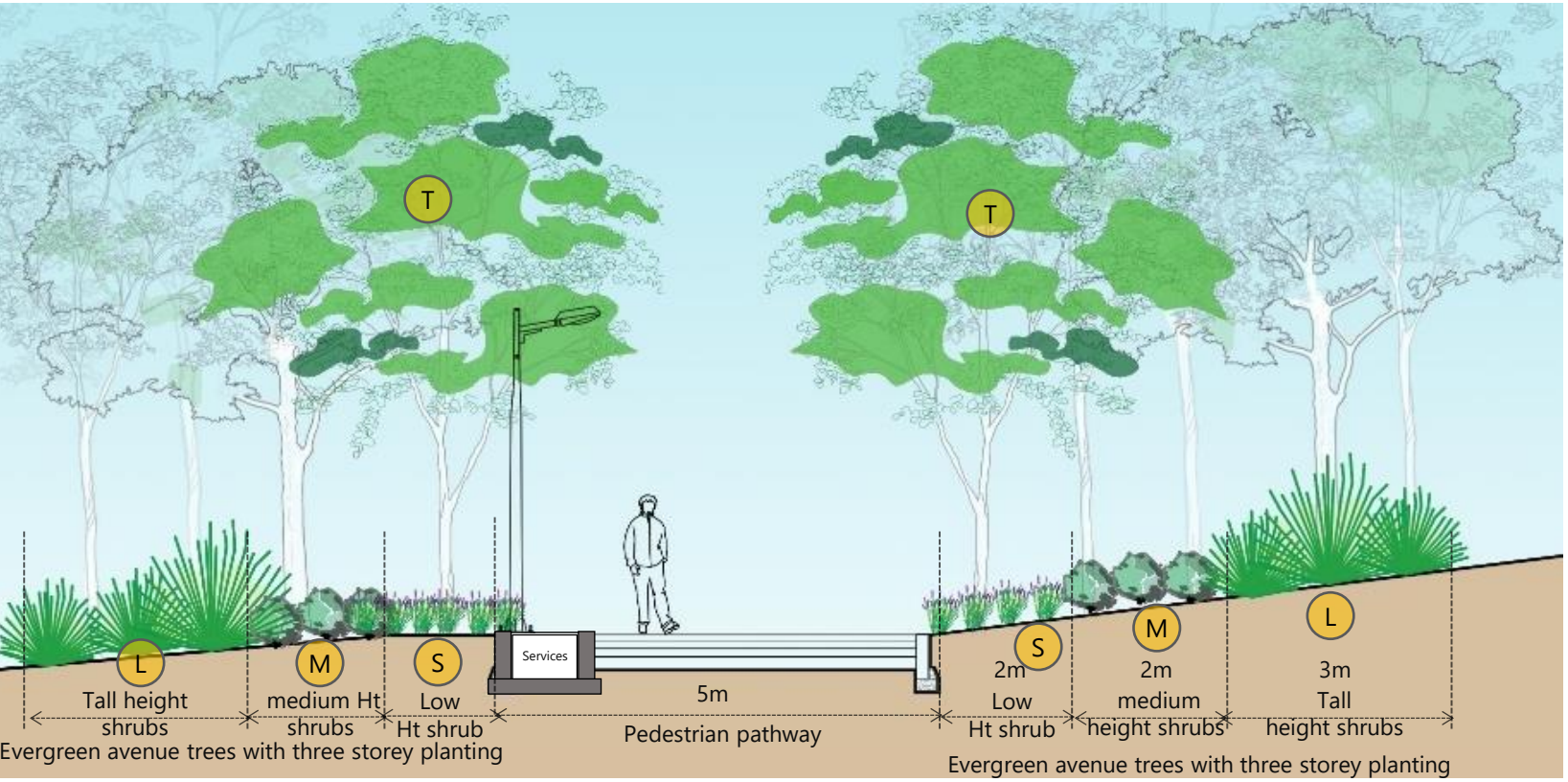
Stone cobbles

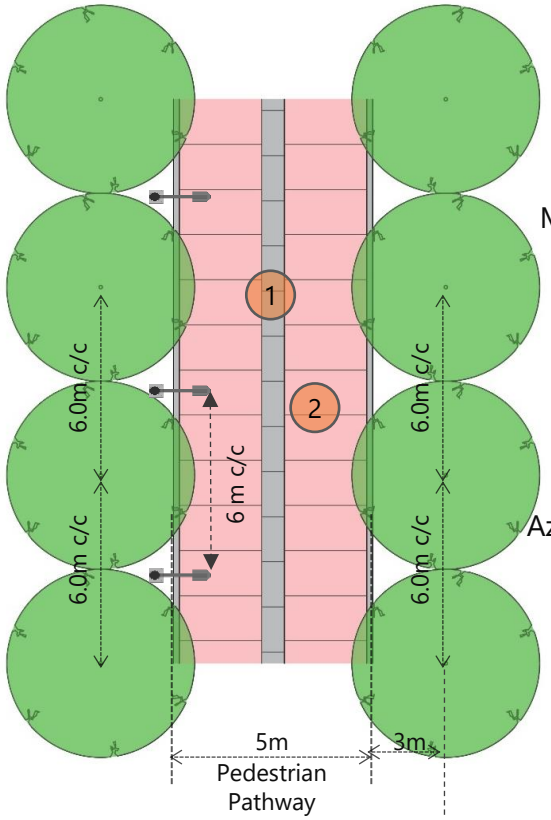
Pavers

Plan



LANDSCAPE MASTERPLAN | KNOWLEDGE STREET





Typical Academic Lane Plan

Large evergreen trees to create a shaded canopy and make the lane user-friendly.

T

Magnifera indica- Mango

T

Azadirachta indica-Neem

T

Neolamarckia cadamba-Kadamb

Chlorphytum cosmos vittatum

S

Dracaena deremensis warneckei

S

Angelonia grandiflora

M

Clivia miniate - Bush lily

M

Tabernaemontana coronaria

L

Callistemon hybrid dwarf pink

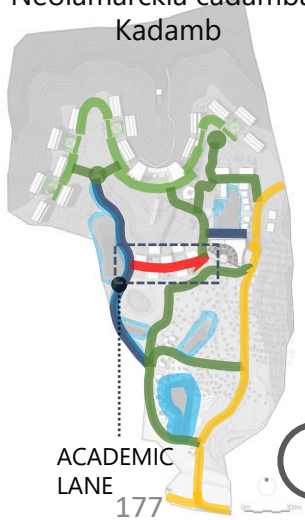
L

Stone cobbles

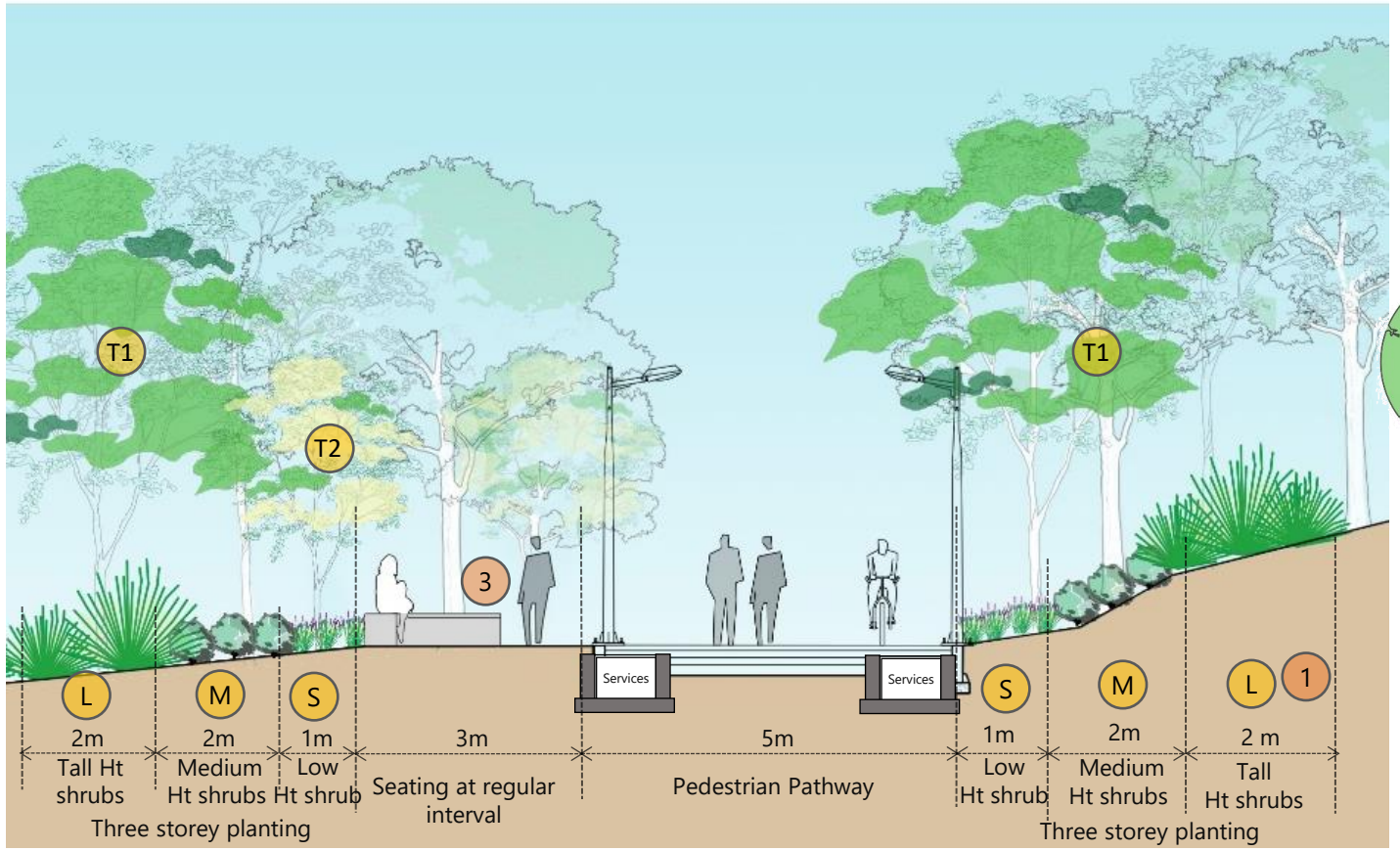
1

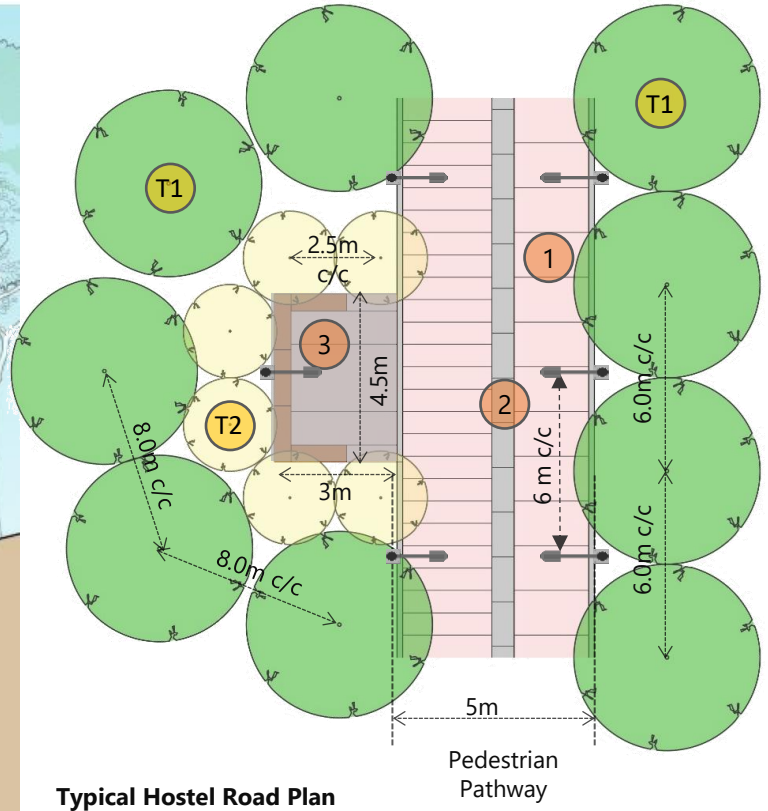
Red Pavers

2



LANDSCAPE MASTERPLAN | HOSTEL STREET





Typical Hostel Road Plan

Large trees with seating spaces having medium height trees and shrubs behind. Road used mainly for pedestrian and cycling.

1 Red Pavers

2 Black Cobbles

3 Grey Granite

T1 Mitragyna parviflora -Kaim

T2 Plumeria alba- Safed Champa

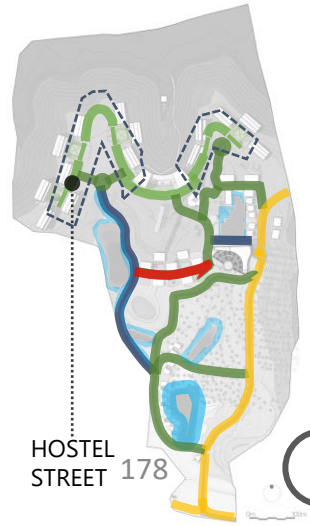
S Dianella tasmanica variegata

M Jasminum sambac

M Clivia miniate - Bush lily

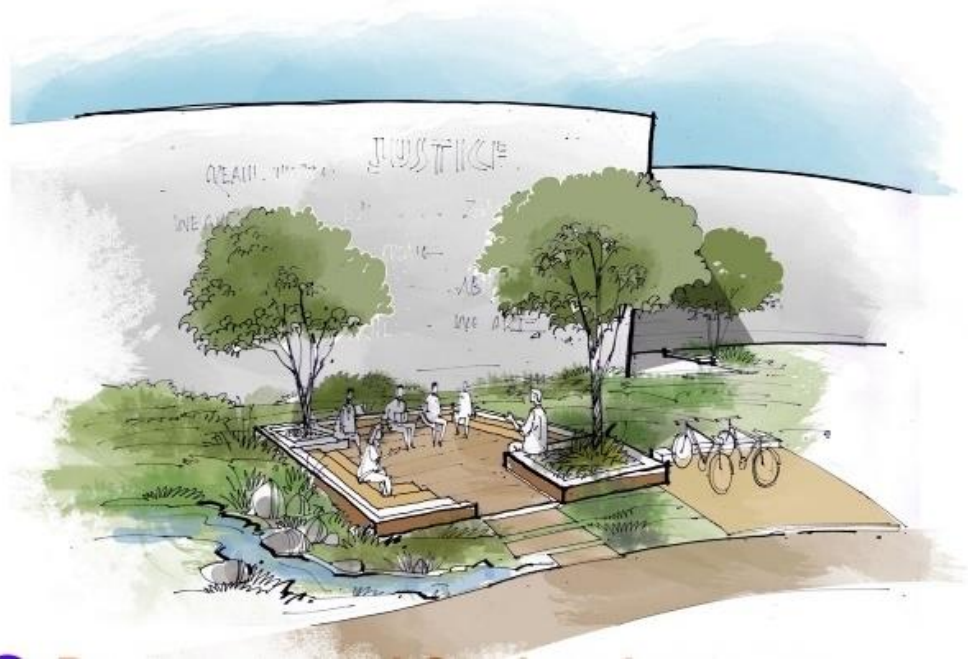
L Ixora chinensis -Ixora red

L Tecoma gaudichaudi - Tecoma



LANDSCAPE MASTERPLAN | HOSTEL STREET

References

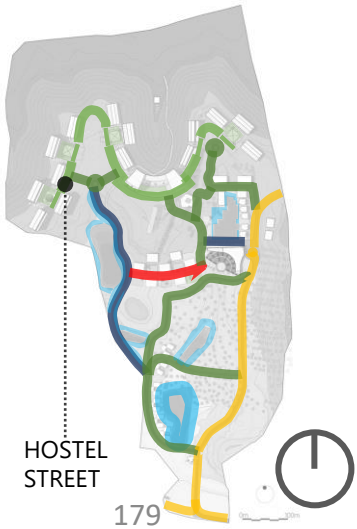


Pause points- along the hostel street

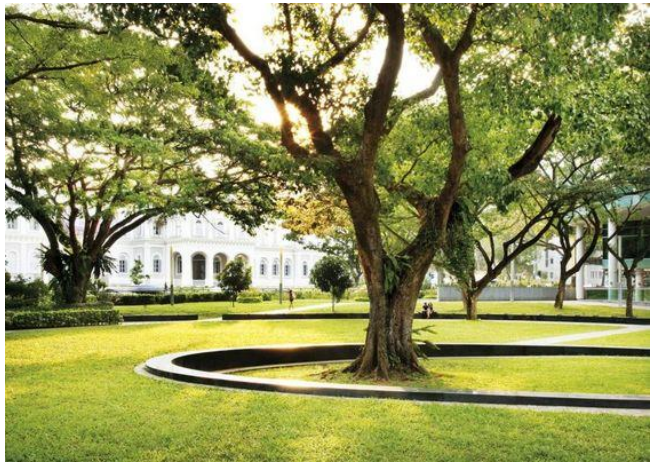
Stone cobbles

Pavers

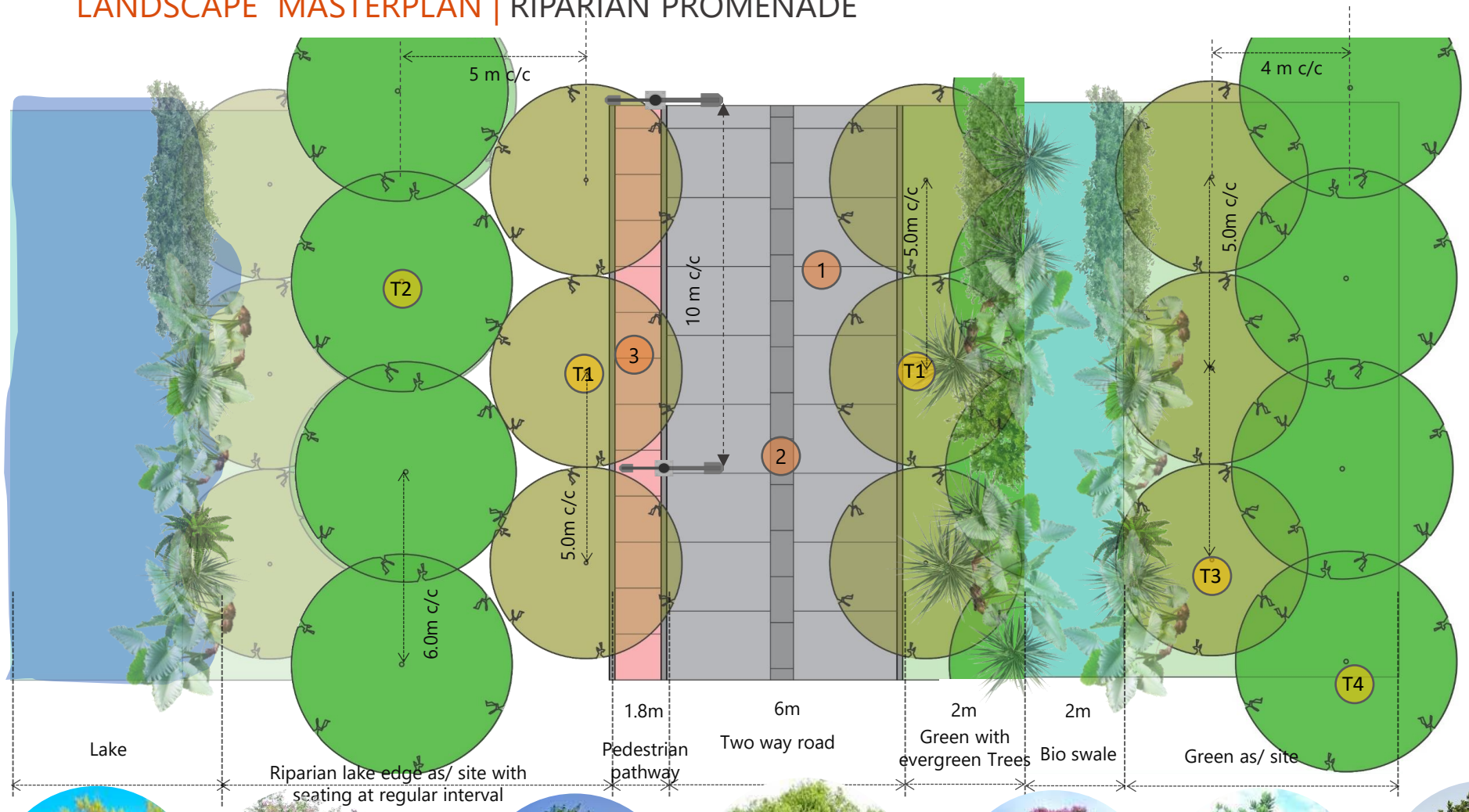
References



LANDSCAPE MASTERPLAN | PAUSE POINTS ALONG HOSTEL STREET



LANDSCAPE MASTERPLAN | RIPARIAN PROMENADE



1 ROAD

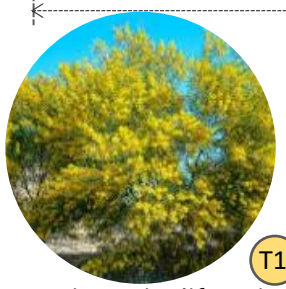
Stamped concrete

2 ROAD PATTERN

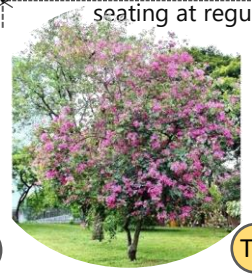
Black Cobbles

3 PATHWAY

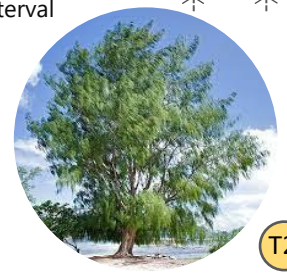
Grit finish



T1 Acacia auriculiformis- Australian Babul



T1 Bauhinia purpurea -Kachnar



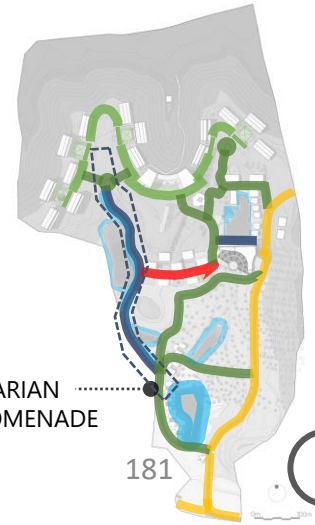
T2 Casuarina equisetifolia Suru

T2 salix tetrasperma- valunj

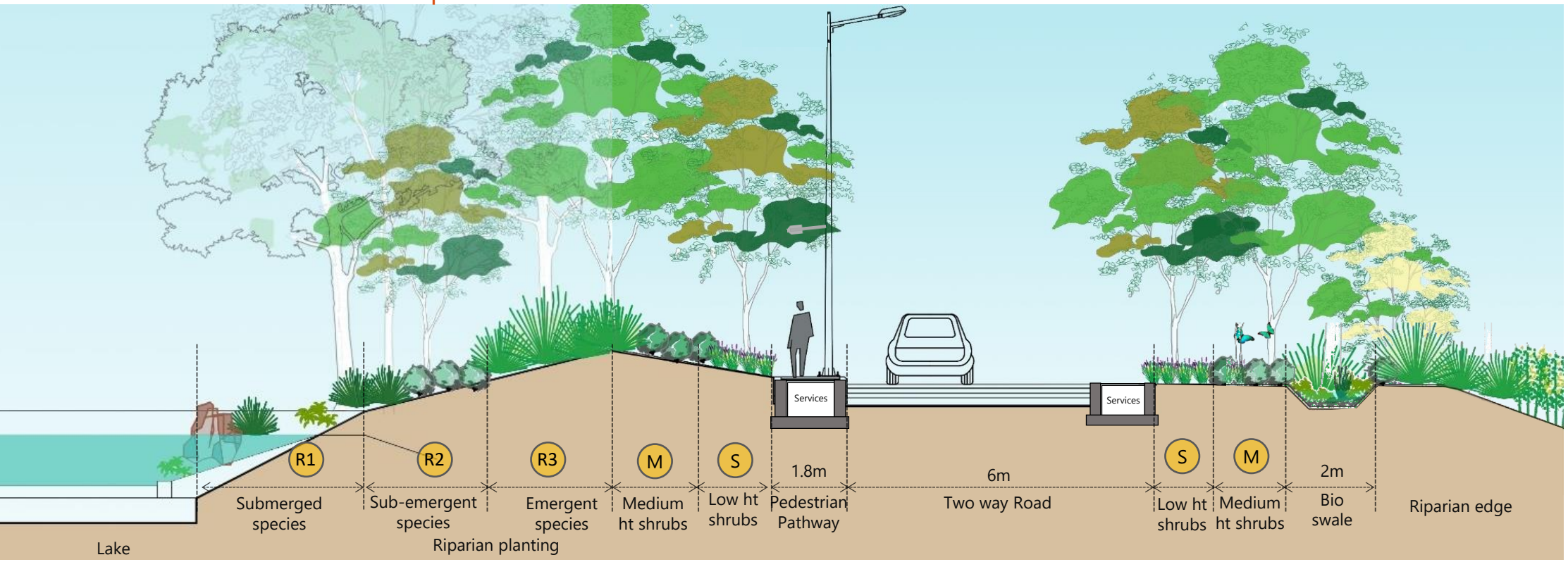
T3 Lagerstromia thorelii -Dhayti

T3 Barringtonia asiatica Tiwar

T4 Neolamarckia cadamba-kadam



LANDSCAPE MASTERPLAN | RIPARIAN PROMENADE



Nymphaea nouch ali

R1

Nymphaea alba

R1

Zantedeschia_ aethiopica

R1

Saggitaria latifolia

R2

Pontederia cordata

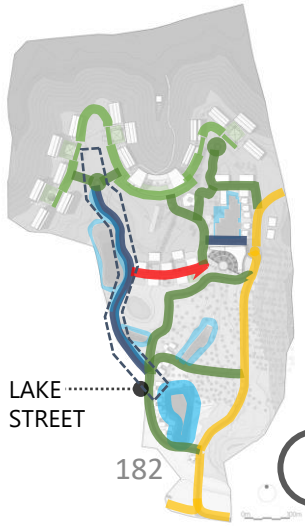
R2

Aristida adscensionis

R3

Canna flacida

R3



Riparian edge planting is introduced along the **bio- swale** which improves the water quality and increases bio-diversity.

LAKE | Aquatic Plant palette


Colocasia R3


Water Lilies / Lotus R1


Iris Plant R1


Arrow Arum R1


Chara R1


cyprus papurus R2


Cyperus Alternifolius R1


Thalia dealbata R3


Canna R3


Crepping Jenny Pond Plants R1


Forget me not Water plant R2


Joe Pye Weed R3


Yellow Water Snowflake R1


Sweet-Flag R2


Lavender Monkey Flower R2

LANDSCAPE MASTERPLAN | RIPARIAN PROMENADE

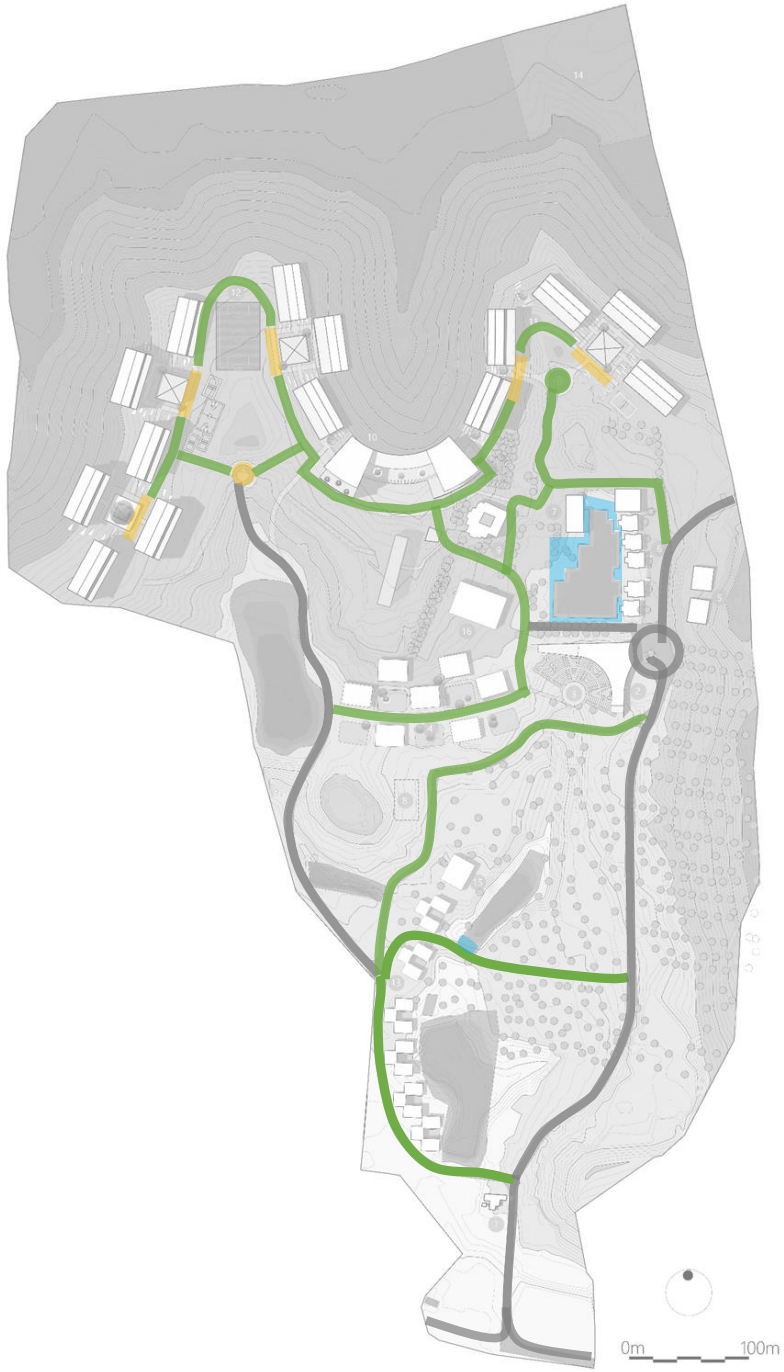
PLANTING STRATEGY | EVERGREEN AVENUES

NEOLAMARCKIA CADAMBA
(Kadam)

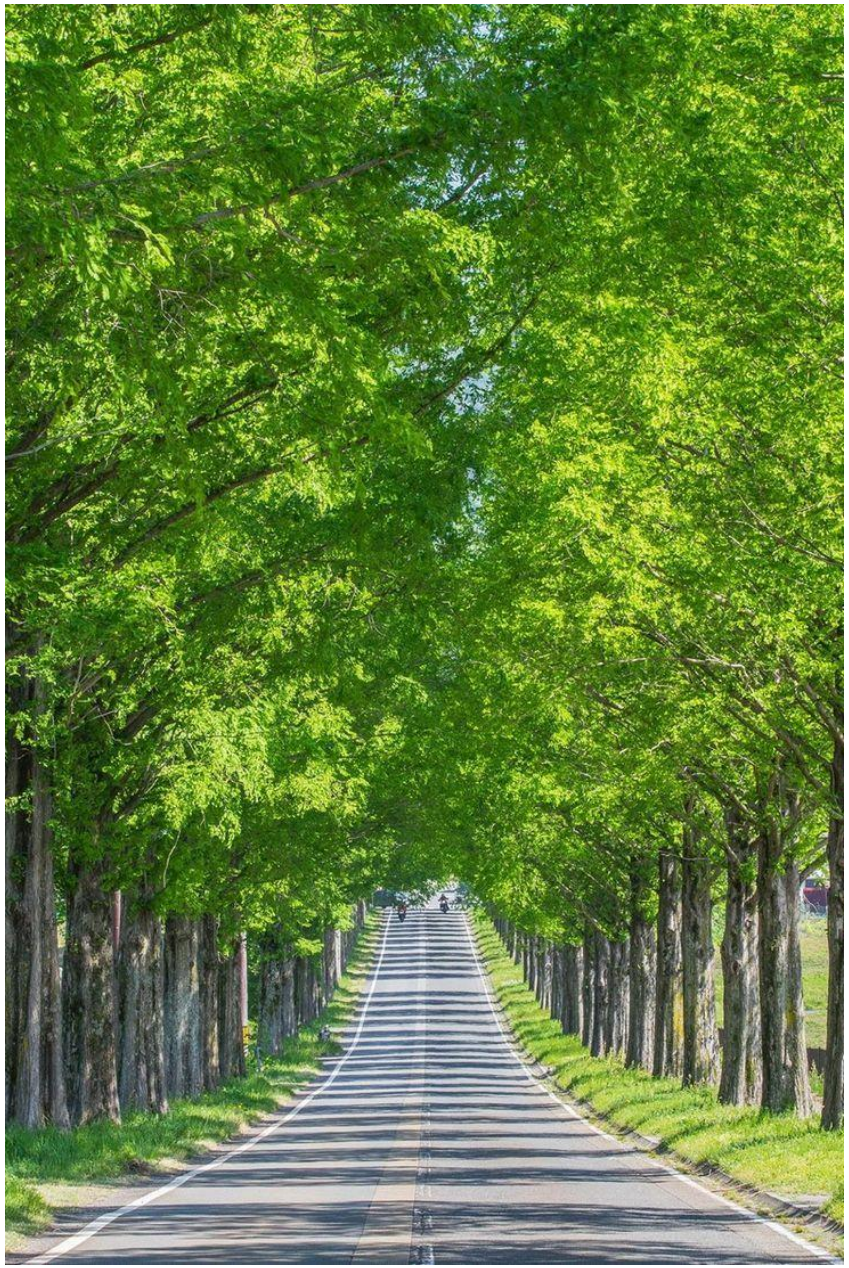
ALBIZZIA LEBBECK
(Sirish)

CALOPHYLLUM INOPHYLLUM
(Undi)

AZADIRACHTA INDICA
(Neem)



PLANTING STRATEGY | EVERGREEN AVENUES



References

References

Eucalyptus trees are an ecological liability

Many states have started phasing out of Eucalyptus trees. The site has many eucalyptus trees which should be removed.

DEMERITS OF EUCLAYPTUS TREE

Species	Water consumed (litres/yr)
Acacia auriculiformis	1231.50
Albizzia lebbek	1283.90
Dalbergia sissoo	1534.05
Eucalyptus hybrid	2526.35
Pongamia pinnata	459.15
Syzigium cuminii	1190.25

Water consumption
A eucalyptus tree consumes 90 litres of water a day
During summers and times of drought, its roots can go down up to 30ft

Effect on Kolar
Eucalyptus is being grown on more than 30,000 hectares in Kolar
Compared to 177m mean depth of groundwater, eucalyptus plantations have increased depth to 260m
Borewell yield within 1km of plantation reduced by more than 35 per cent in five years

What the study says:
"It may not be wise to continue eucalyptus plantations in these districts in the larger interest of protecting the groundwater resources. It may be even necessary to ban its cultivation by law."

Previous legal action:
On February 27, 2014: Madras High Court (Madurai) Bench orders the Tamil Nadu Forest Department to **take action to "annihilate" eucalyptus plantations** along the Western Ghats

February 2011: Karnataka **Forest Department bans plantation of eucalyptus in Western Ghats and surrounding districts**
https://www.thehindu.com/news/cities/bangalore/changes-in-law-needed-to-ban-eucalyptus-plantations/article7440926.ece

Under the transplantation policy, 80% of the trees being felled for an approved project will be mandatory for translocation. A list of exotic species like **VILAYATI KIKAR, SUBABUL AND EUCALYPTUS will be given to contractors to exclude them from the transplant list. "These species will be cut down and 80% of the remaining trees will be transplanted,"**

https://timesofindia.indiatimes.com/city/delhi/delhi-ridge-under-siege-as-green-alien-invades/articleshow/60715205.cms

https://www.hindustantimes.com/delhi-news/delhi-draft-policy-caps-felling-of-local-tree-species-for-projects/story-dvOgMeGe7xaSAnibpEQXGK.html

LANDSCAPE MASTERPLAN | FOREST ZONE

Forest Vision

- Re-Densifying the existing forest-using Miyawaki technique as it is faster and economical
- Restoring native green cover on ecologically degraded patches of barren hills
- Densely planting the lower and middle storey to prevent topsoil erosion, which will facilitate the further planting

LANDSCAPE MASTERPLAN | FOREST ZONE

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By using Miyawaki Technique we can create a forest of 300 plants in place of 6 car parking

Reference for Forest 1 (areas with gradual slopes)

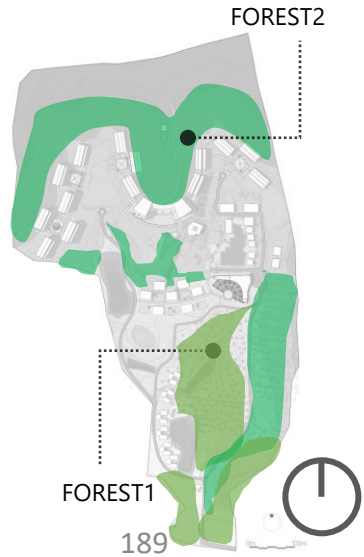
MIYAWAKI TECHNIQUE OF CREATING FOREST

120800 SQM FOREST

(1) Seedlings are planted densely, 3 trees/m², and randomly (not in line), mixing as many native trees of potential natural vegetation as possible.

(2) Approximately 3 years after planting, natural selection among the seedlings allows the most adapted ones to develop quickly.

(3) By 15-20 years after planting, the early model of a dense mature forest will be established



LANDSCAPE MASTERPLAN | FOREST ZONE TREE LIST

अ.क्र.	वृक्षांचे स्थानिक नाव	वृक्षांचे शास्त्रीय नाव
१)	खैर	*Acacia catechu/Acacia sundra*
२)	हिवर	*Acacia leucophloea*
३)	बाभूळ	*Acacia nilotica*
४)	हळदू	*Adina cordofolia*
५)	बेल	*Aegle marmelos*
६)	शिरीष काळा	*Albizzia amara*
७)	शिरीष	*Albizzia lebbeck*
८)	किनई	*Albizzia procera*
९)	सातवीण	*Alstonia scholaris*
१०)	रोहितक	*Amoora rohitaka/ Aphanamixis polystachia*
११)	रामफळ	*Annona reticulata*
१२)	महाधावडा	*Anogeissus acuminata*
१३)	धावडा	*Anogeissus latifolia*
१४)	फणस	*Arthocarpus heterophyllus*
१५)	कडूलिंब	*Azadirachta indica*
१६)	गोरखचिंच	*Adonsonia digitata*
१७)	देवसायर	*Bambox insigne*
१८)	नेवार	*Barringtonia acutanguia*
१९)	रक्तकांचन	*Bauhinia purpurea*
२०)	आपटा	*Bauhinia racemosa*
२१)	सेमला कांचन	*Bauhinia semla*
२२)	पिवळा कांचन	*Bauhinia tomentosa*
२३)	कांचन	*Bauhinia variegata*
२४)	काटे सावर	*Bombax ceiba*
२५)	चारोळी	*Buchanania cochinchinensis*
२६)	पळस	*Butea monosperma*
२७)	उंडी	*Calophyllum inophyllum*
२८)	कुम्भा	*Careya arborea*
२९)	वहावा	*Cassia fistula*
३०)	हिरवा सायर	*Ceiba pentandra*
३१)	सोनसावर	*Cochlospermum religiosum*
३२)	भोकर	*Cordia dichotoma*
३३)	दहीवण	*Cordia macleodii*
३४)	बुरगुंड	*Cordia wallichii*
३५)	वायवर्ण	*Crataeva nurvala / Adansonii*
३६)	नारळ	*Cocus nucifera*
३७)	वाडगा/कलाबश	*Ciescemia cujete*
३८)	फणशी	*Dalbergia lanceolaria*
३९)	सिसम	*Dalbergia latifolia*
४०)	सिसू	*Dalbergia sissoo*
४१)	करमळ (मोठा)	*Dillenia ceiba/ Indica*
४२)	टेमरू	*Diospyros malabarica*
४३)	पुत्रंजीवा	*Drypetes roxburghii*
४४)	टेंभूर्णी	*Dyospyros embriopteris*
४५)	रूद्राक्ष	*Elaeocarpus sphaericus*
४६)	रानपांगारा	*Erythrina stricta*
४७)	बुच पांगारा	*Erythrina suberose*
४८)	पांगारा	*Erythrina variegata*
४९)	पायपर	*Ficus amplissima*
५०)	पायर	*Ficus arnottiana*
५१)	खरोटी	*Ficus asperimma*
५२)	वड	*Ficus bengalensis*
५३)	रबर	*Ficus elastica*

LANDSCAPE MASTERPLAN | FOREST ZONE TREE LIST

५४)	उंबर	*Ficus glomerata*
५५)	उंबर काळा	*Ficus hispida*
५६)	नांदुक	*Ficus microcarpa*
५७)	पिंपळ	*Ficus religiosa*
५८)	पिंपरण	*Ficus tsiela*
५९)	कृष्णवड	*Ficus krishnae*
६०)	शिवण	*Gmelina arborea*
६१)	फालसा	*Grewia asiatica*
६२)	धामण	*Grewia tiliaefolia*
६३)	वारस पिवळा	*Heterophragma adenophyllum*
६४)	अंजन	*Hardwckia binata*
६५)	पांढरा कुडा	*Holarhhena antidysenterica*
६६)	वावळ	*Holoptelia integrifolia*
६७)	मोहगणी/खाया	*Khaya grandis*
६८)	तामण	*Lagerstromia reginea/ Speciosa*
६९)	मोई	*Lannia coromandalica*
७०)	नाणा	*Largestroemia microcarpa*
७१)	कवठ	*Limonia aciddissima*
७२)	मोह	*Madhuka longifolia*
७३)	आंबा	*Mangifera indica*
७४)	खिरणी	*Manilkara hexandra*
७५)	बकान नीम	*Melia azedarach*
७६)	महानीम/लिंबारा	*Melia dubia*
७७)	चेरी	*Mutingia calabura*
७८)	अंजनी	*Memecylon umbellatum*
७९)	नागकेशर	*Mesua ferrea*
८०)	पिवळा चाफा	*Michelia champaka*
८१)	बकूळ	*Mimusops elengi*
८२)	कळम	*Mitragyna parvitlora*

८३)	बारतोंडी	*Morinda pubescens*
८४)	कुंती / कामिनी	*Murraya paniculata*
८५)	कदंब	*Neolamarckia cadamba/Anthocephalms*
८६)	पारिजातक	*Nyctanthes arbor-tristis*
८७)	पारजांभूळ	*Olea dioica*
८८)	टेटू	*Oroxylam indicum*
८९)	तिवस/काळा पळस	*Ougeinia oogeinensis*
९०)	कनकचंपा	*Ochna obtusata*
९१)	चेंडूफळी	*Parkia biglandulosa*
९२)	आवळा	*Phyllanthus emblica/ Emblica officinalis*
९३)	करंज	*Pongamia pinnata*
९४)	शमी	*Prosopis cineraria*
९५)	बीजा/बिबळा	*Pterocarpus marsupium*
९६)	मुचकूंद	*Pterospermum acerifolium*
९७)	पॉप्युलर	*Populus spp*
९८)	रक्तचंदन/तांबडाचंदन	*Pterocarpus santalinus*
९९)	वाळूंज	*Salix tetrasperma*
१००)	चंदन	*Santalum album*
१०१)	रिठा	*Sapindus laurifolius*
१०२)	सिताअशोक	*Saraca indica*
१०३)	कुसुंब	*Schleichera oleosa*
१०४)	मोरवा	*Schrebera sweitenioides*
१०५)	बिब्बा	*Semecarpus anacardium*
१०६)	वानवृक्ष	*Solanum erianthum*
१०७)	अंबाडा	*Spondias pinnata/Mingifera wild*
१०८)	जंगली बदाम	*Sterculia foetida*
१०९)	कहांडळ	*Sterculia urens*
११०)	पाडळ	*Stereospermum chelenoides*
१११)	जांभूळ	*Syzygium cumini*

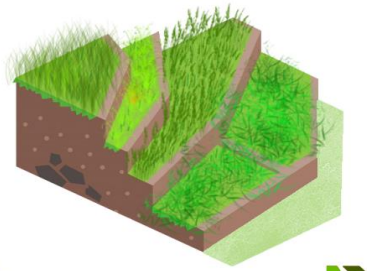
११२)	चिंच	*Tamarindus indica*
११३)	साग	*Tectona grandis*
११४)	अर्जून	*Terminalia arjuna*
११५)	बेहडा	*Terminalia bellirica*
११६)	आईन	*Terminalia elliptica*
११७)	किं जळ	*Terminalia paniculata*
११८)	हिरडा	*Terminalia chebula*
११९)	सावडा	*Terminalia alata*
१२०)	रानभेंडी	*Thespesia populnea*
१२१)	काळा कूडा	*Wrightia tinctoria*
१२२)	बोर	*Zizyphus mauritiana*

LANDSCAPE MASTERPLAN | TERRACE FARMING

"5300 SQM DEDICATED TERRACE FARMING"

SEGREGATION AT SOURCE

COMPOSTING AT SITE



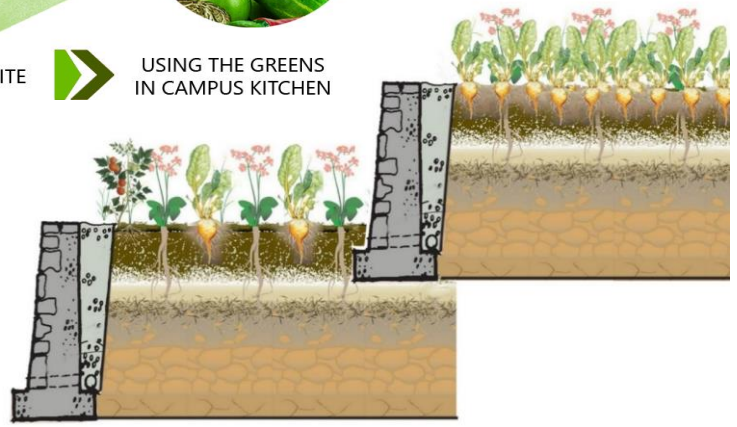
TERRACE FARMING ON SITE

USING THE GREENS IN CAMPUS KITCHEN

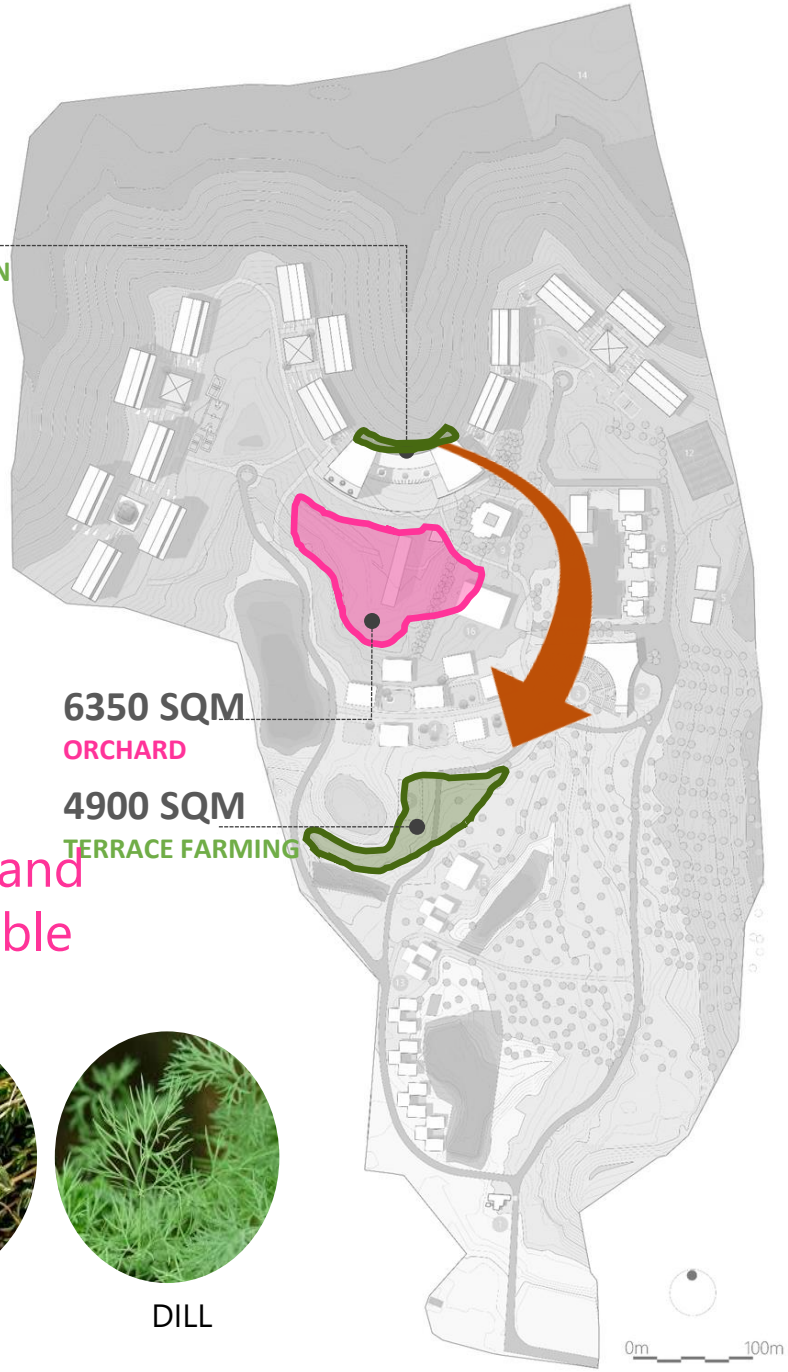
150-200MM SOIL

250-300MM DEAD PLANTS, LEAVES AND GRASS CLIPPINGS

300-350 MM KITCHEN WASTE



Reference for terrace farming



Creating a circular economy and making the site self sustainable

KITCHEN HERBS

MINT

CORIANDER

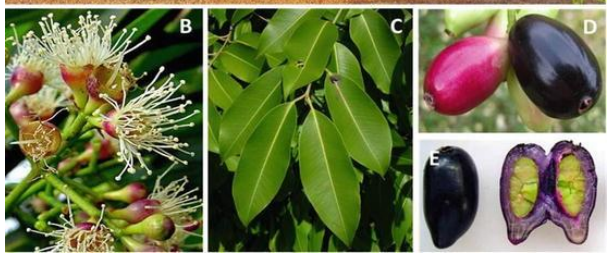
THYME

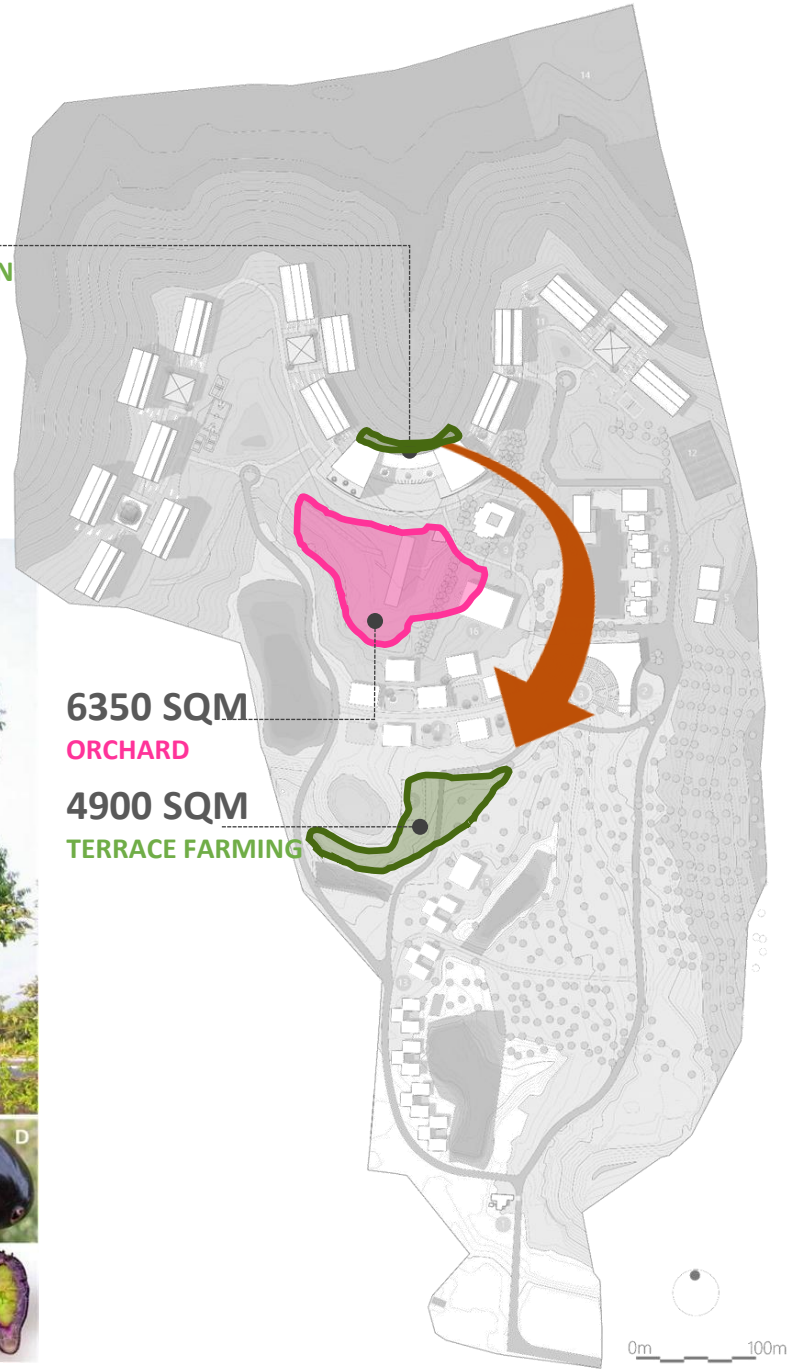
DILL

LANDSCAPE MASTERPLAN | ORCHARD

FRUITS TREES IN ORCHARD

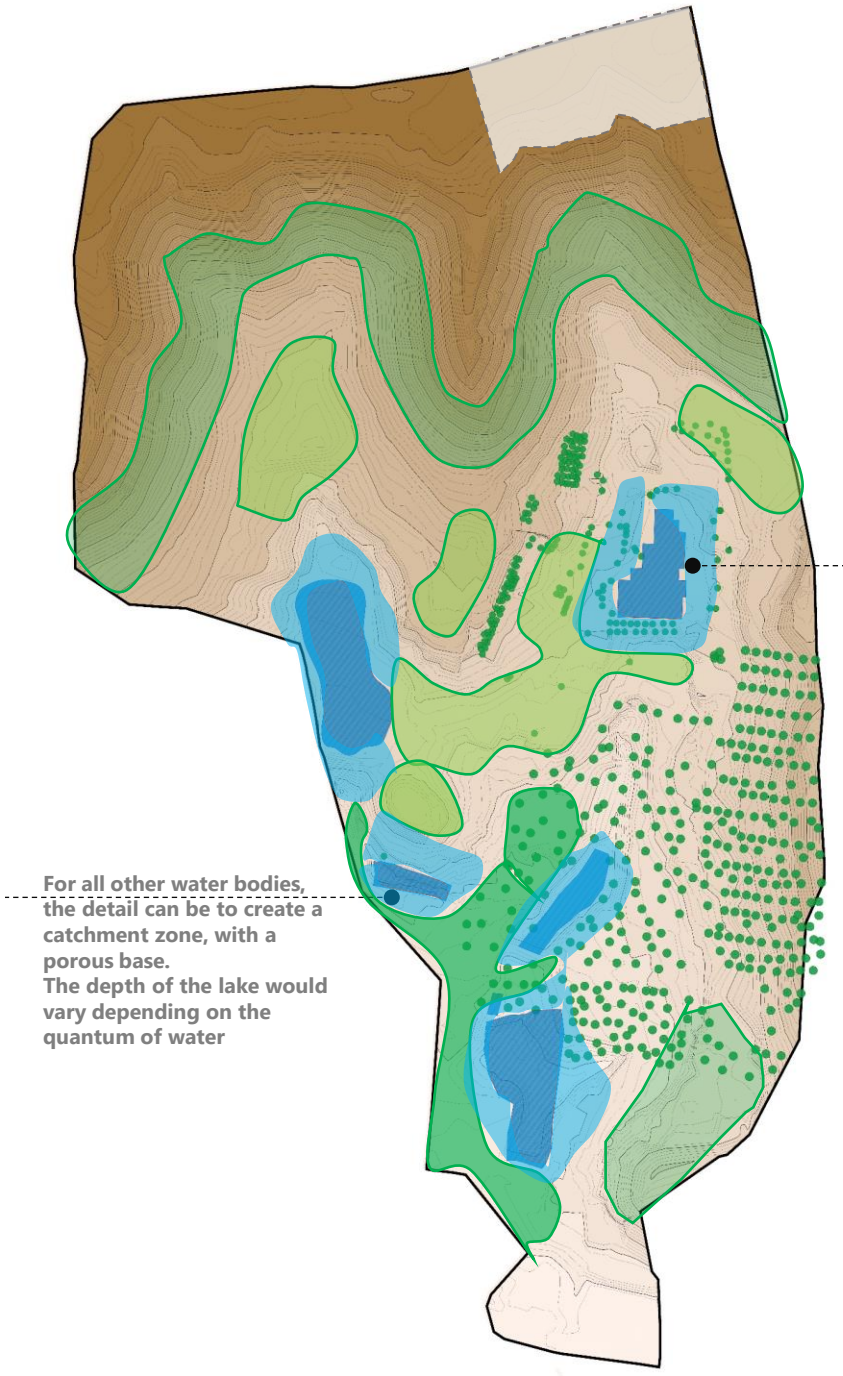
- Mangnifera indica- Alphonso Mangoes
- Musa × paradisiaca- Plaintains
- Emblica officinalis -Indian gooseberry
- Ficus carica-Purandar fig
- Ziziphus mauritiana-Ber
- Syzygium cumini L.- Jamun
- Carica papaya-Papaya



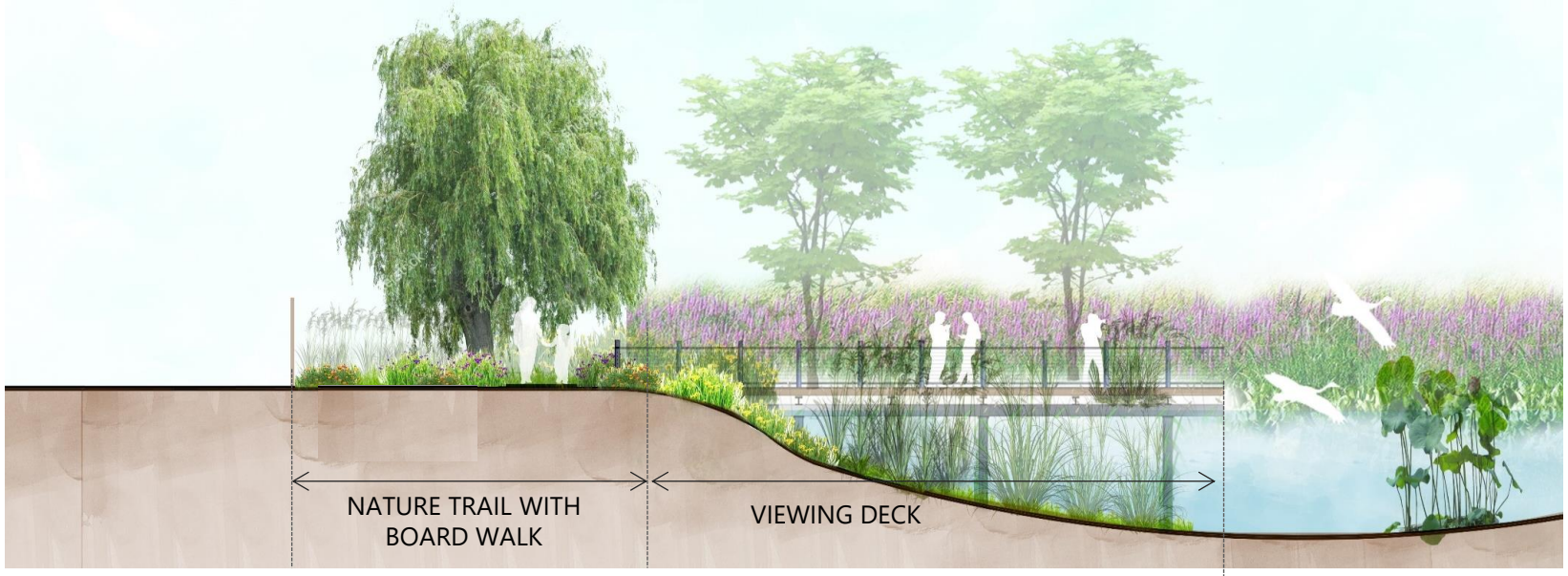


LANDSCAPE MASTERPLAN | LAKE DESIGN

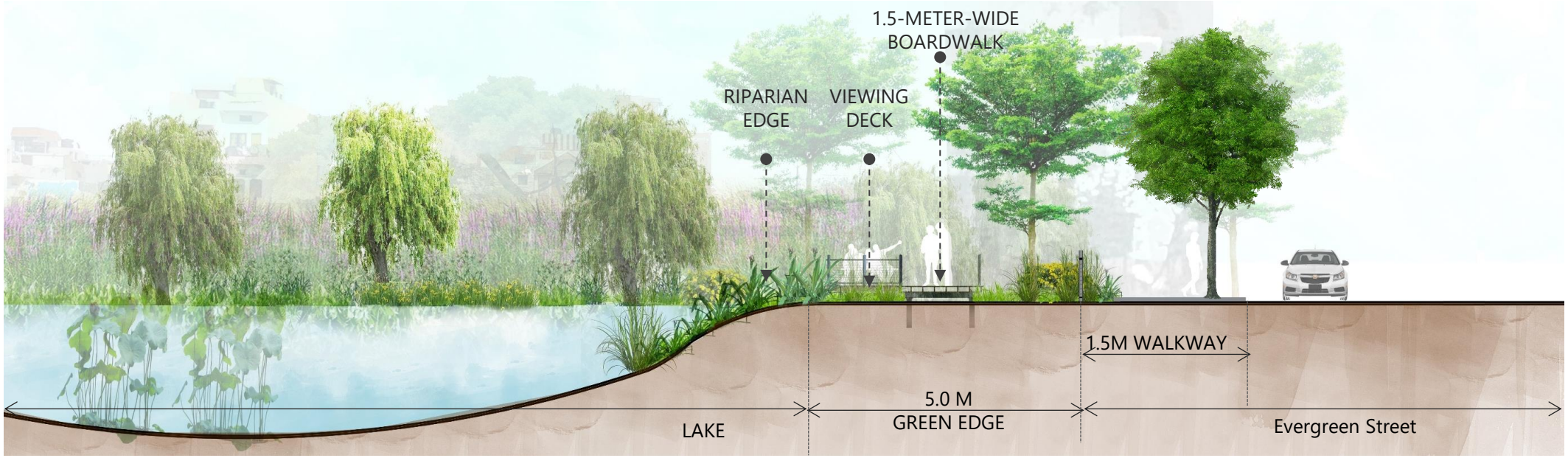
lake



LANDSCAPE MASTERPLAN | LAKE SECTIONS

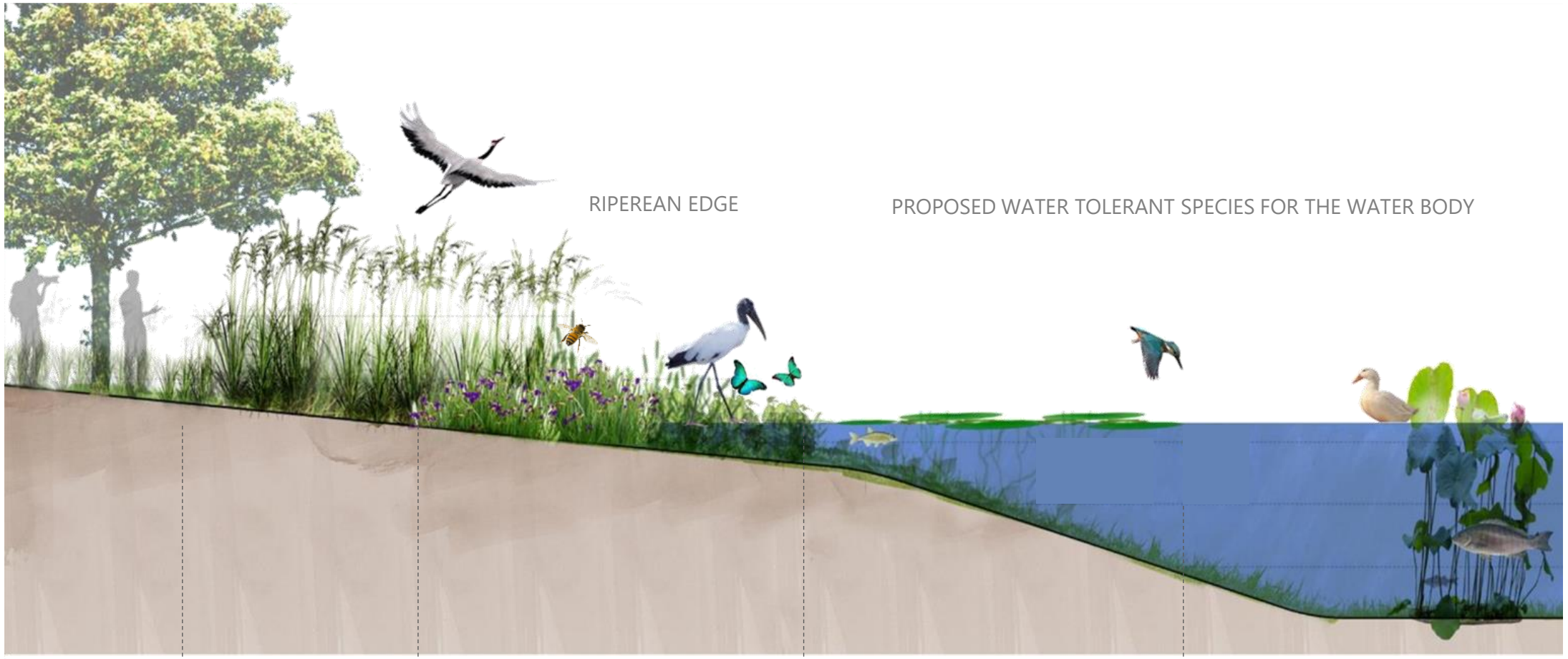


SECTION 1 NATRURE TRAIL



SECTION 2 LAKE BOARDWALK

LANDSCAPE MASTERPLAN | RIPARIAN EDGE




Neolamarckia cadamba


Aristida adscensionis


Canna flacida


Pontederia cordata

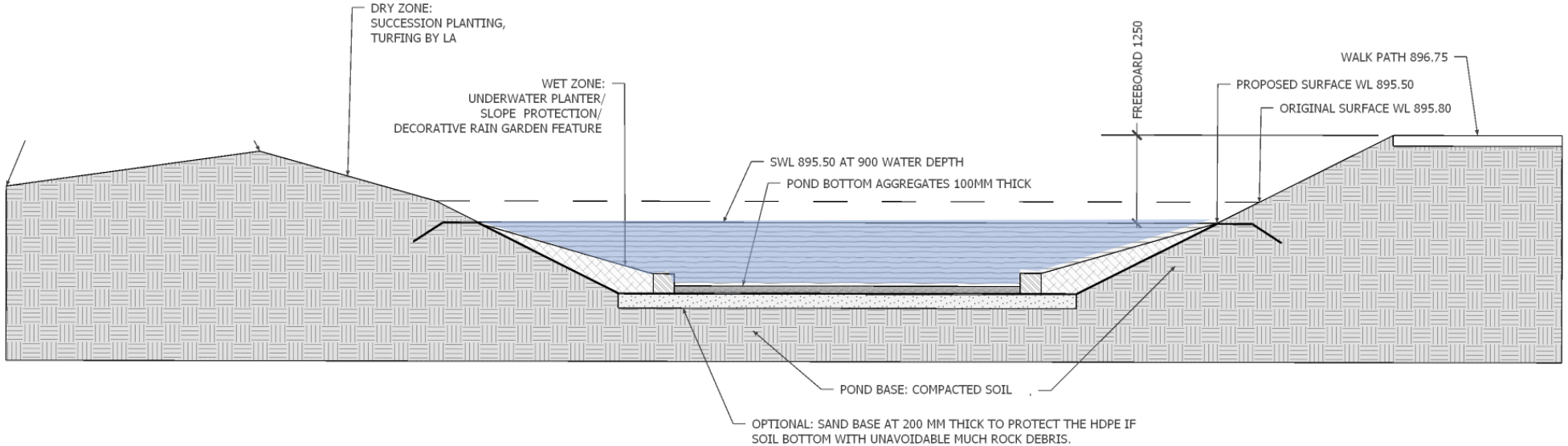

Saggitaria latifolia

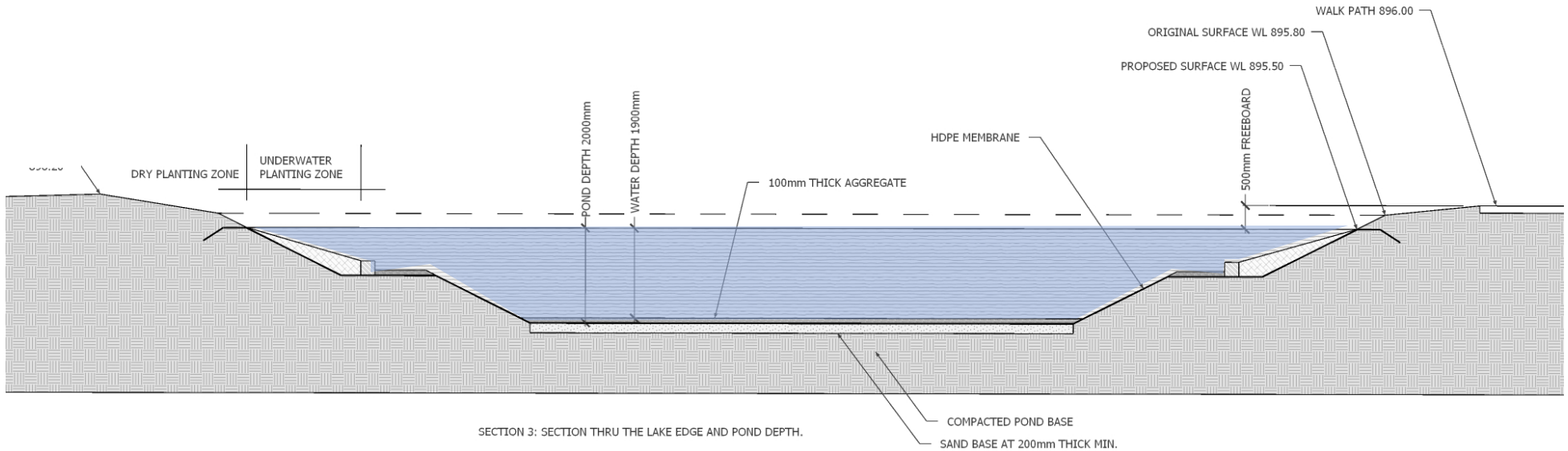

Zantedeschia_aethiopica


Nymphaea alba


Nymphaea nouchali

LANDSCAPE MASTERPLAN | LAKE DETAIL





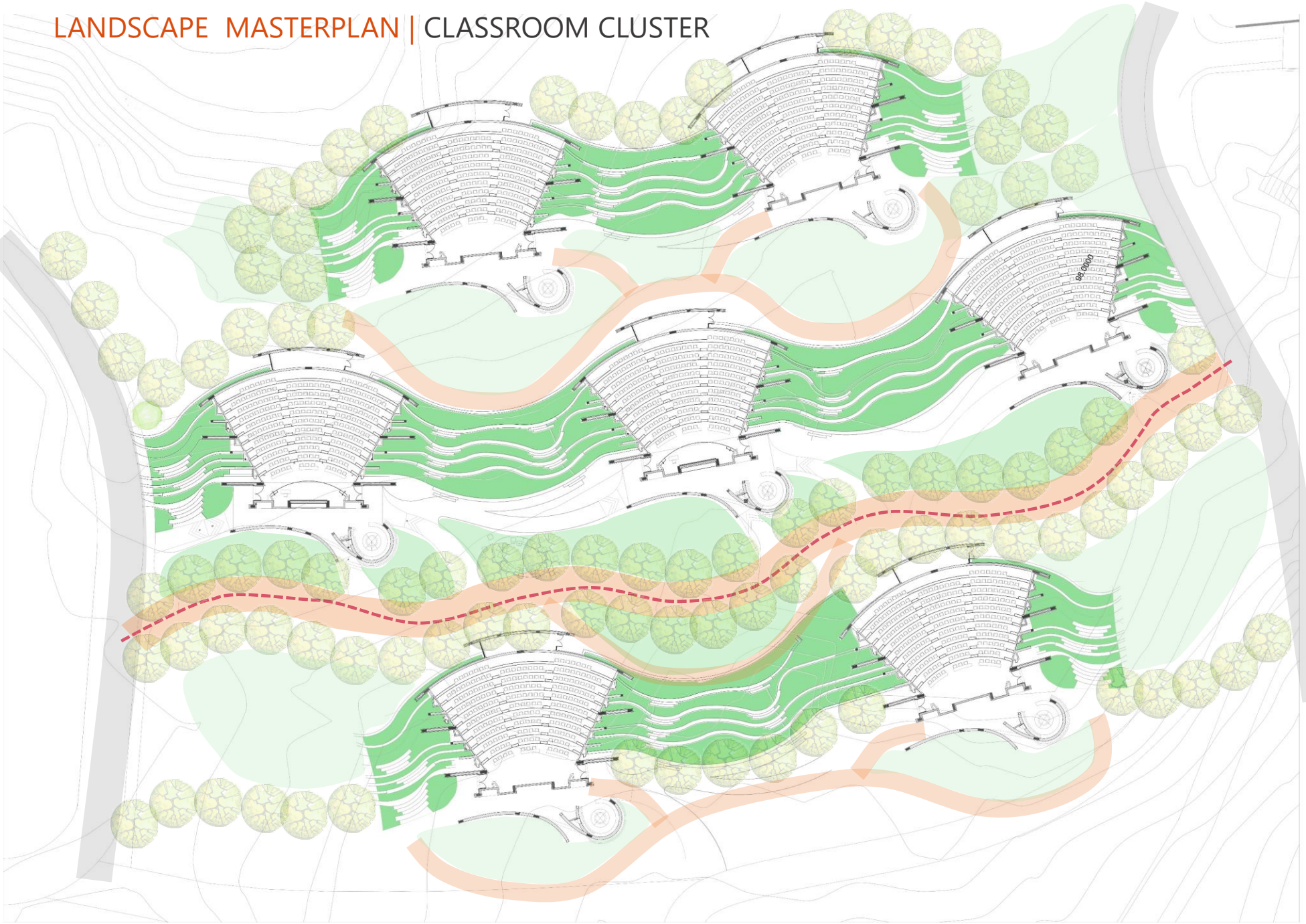
SECTION 3: SECTION THRU THE LAKE EDGE AND POND DEPTH.

LANDSCAPE MASTERPLAN | LAKE EDGE

LANDSCAPE MASTERPLAN | LAKE VIEW

LANDSCAPE MASTERPLAN | LAKE VIEW

LANDSCAPE MASTERPLAN | CLASSROOM CLUSTER



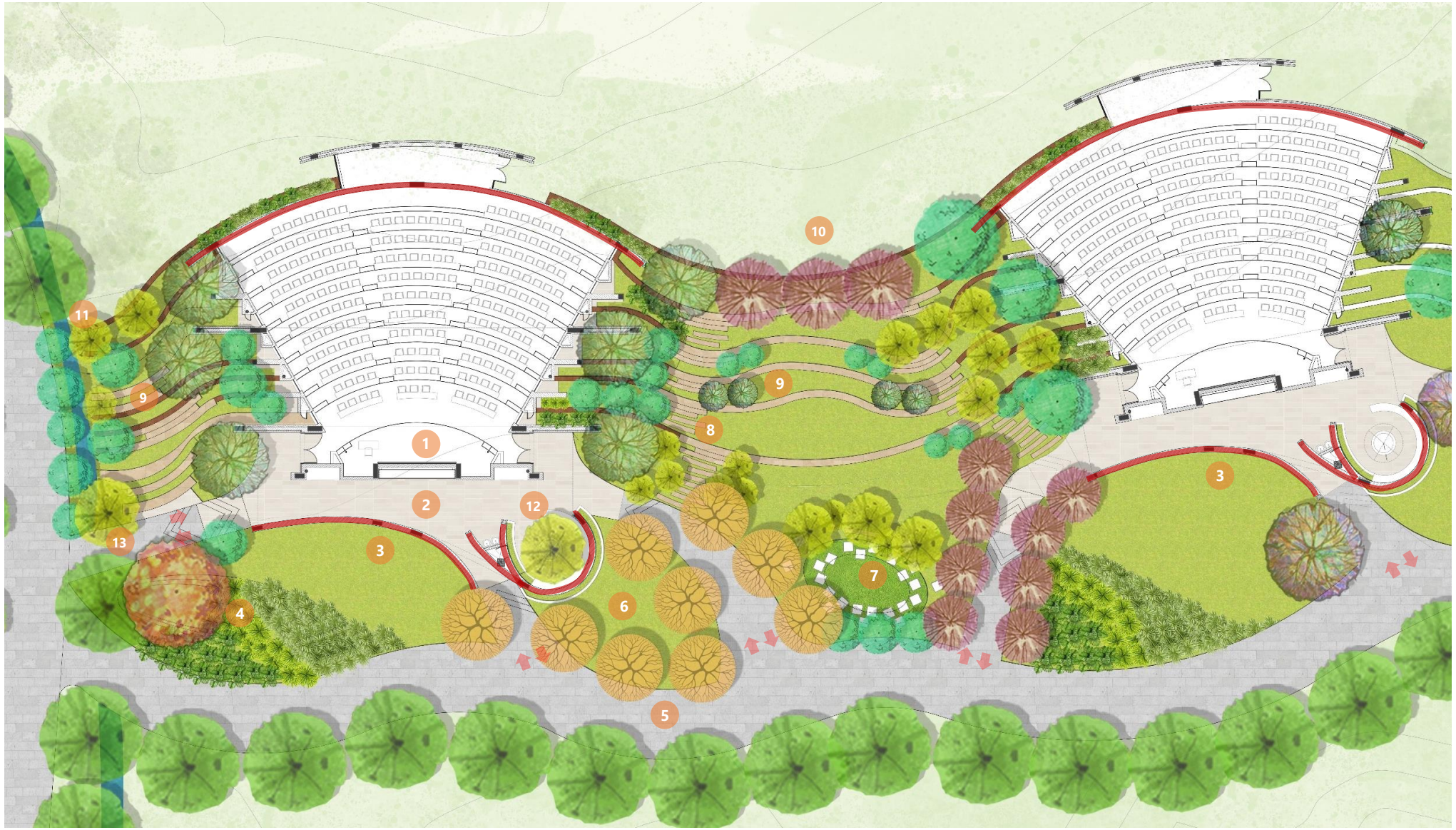
Respecting existing Topography

Creating Outdoor classrooms

Creating seating and interactive courts

Creating evergreen avenues

LANDSCAPE MASTERPLAN | CLASSROOM

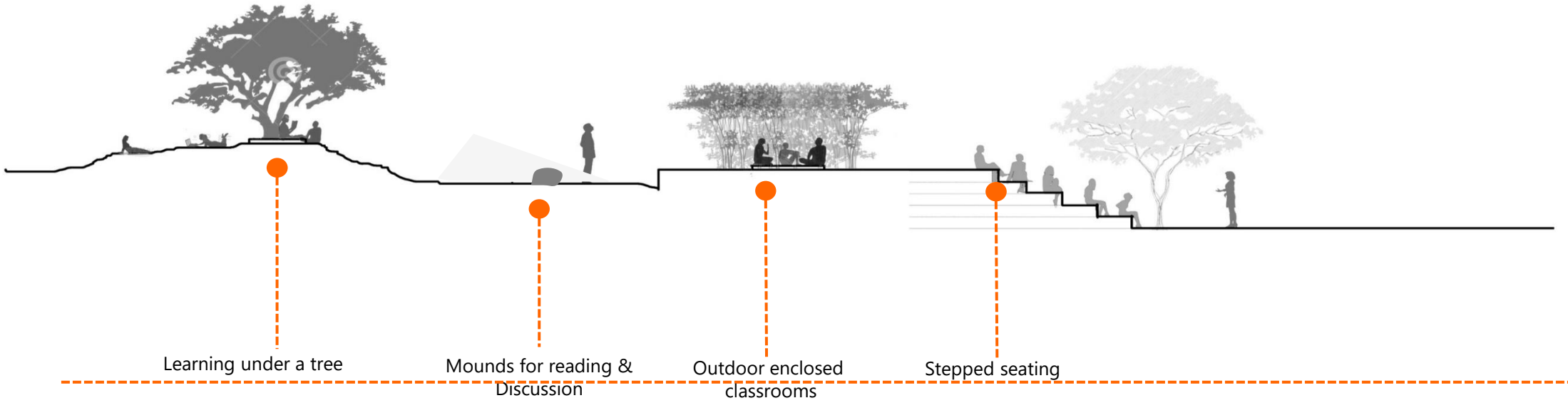


Legend

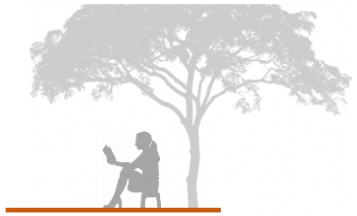
1. Classroom
2. Shaded Walkway
3. Doner Wall
4. Feature Planting
5. Knowledge Street
6. Gulmohar Court
7. Seating Bowl
8. Steps
9. Seating steps
10. Feature Tree buffer
11. Bio Swale
12. Group discussion area
13. Culvert below for Bioswale

Key Plan

LANDSCAPE MASTERPLAN | CLASSROOMS

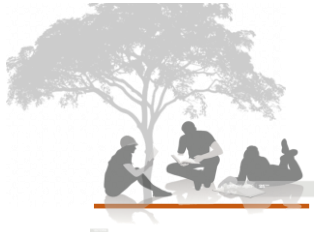


LANDSCAPE MASTERPLAN | CLASSROOMS STEP SEATING



Self Studying Spaces

For **an individual**



Discussion spaces

For **Larger Group** of Scholars

The level difference to be negotiated by creating steps and seating