THESIS REPORT ON

“NAMITI(CENTER FOR COMMUNITY DEVELOPMENT)’’

INDUSTRIAL AREA PHASE – 1 NEW DELHI

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF:

BACHELOR OF ARCHITECTURE

BY

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THESIS GUIDE

PROF.MOHIT AGGARWAL

AR.SHALINI DIWAKER

SESSION

2021-22

TO THE

SCHOOL OF ARCHITECTURE AND PLANNING

BABU BANARASI DAS UNIVERSITY

LUCKNOW.

Acknowledgment

I acknowledge my sincere thanks to my guide **Prof.Mohit Aggarwal & Ar.Shalini Diwaker** who guided me through active participation in discussions and gave his kind cooperation throughout the process.

My sincere thanks to our Thesis coordinators **Mr. Ar. Anshul Singh & Mr. Shailesh Singh** for his cooperation and understanding at every stage of the study, which gave my study a new direction and made it more meaningful.

I am thankful to our Dean, Prof. Ar. Mohit Aggarwal, for his cooperation and invaluable support.

I am also thankful to the persons concerned to my studies for their cooperation and devoting their valuable time for discussing with me..

Above all, thanks to my friends for their sincere help throughout, without which this report would not have been in its present shape. Last but not the least I thank my Parents for their forever support and blessings.

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CERTIFICATE

I hereby recommend that the thesis entitled "Namiti(Center For Community Development)" Industrial Area Phase – 1 New Delhi" under the supervision, is the bonafide work of the students and can be accepted as partial fulfillment of the requirement for the degree of Bachelor's degree in architecture, school of Architecture and Planning, BBDU, Lucknow.

Prof. Mohit Kumar Agarwal
Dean of Department

Prof. Sangeeta Sharma
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Recommendation Accepted

Not Accepted

External Examiner

External Examiner

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Certificate of thesis submission for evaluation

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4. **Degree for which the thesis is submitted: B.Arch.**
5. **Faculty of University to which the thesis is submitted:** **Yes / No**
6. **Thesis preparation guide was referred to for preparing the thesis.** **Yes / No**
7. **Specification regarding thesis format have been closely followed.** **Yes / No**
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INTRODUCTION & PROPOSITION

- Area of research
- Thesis Proposition
- Project proposal
- Project vision

SITE SELESCTION & STUDY

- Site location context
- Land use analysis
- Site drawing &
- Development control
- Context photos
- Site photos

RESEARCH (Literature study)

- Library research
- Problem identification
- Public Spaces
- Challenges and issues
- Cases example of
  - JETHAVAN, MAHARSHTRA, INDIA
  - CENTRO DE ACÇÃO SOCIAL POR MÚSICA,Paraisópolis, São Paulo, Brazil (Urban Community Centre)

CASE STUDIES (Learning from examples)

- Primary study

SHARNAM, PONDICHERRY, INDIA
ALLIANCE FRANCIASE, DELHI

- Standards & Analysis

CONCEPT EVOLUTION

AREA CHART

FINAL ESIGN PROPOSALS

- Drawings of all the spaces provided,
- Landscaping proposal
- Security and surveillance proposal

BIBLIOGRAPHY

INTRODUCTION

The **CENTRE for COMMUNITY DEVELOPMENT** aims to assume the **role** of **a social agency**, by **means** of **Architectural interventions**.

The intend of the project is as follows:

- To built an environment for **community engagement** and hence **strengthening community ties**.
- To create a **hub for the community**, over which the members feel a sense of ownership.
- To create or strike a **balance** between the **environment and the community**, to create a new space that is suited as per their needs.

HISTORY & BACKGROUND

The United Nations defines *community development* broadly as **"a process where community members come together to take collective action and generate solutions to common problems."** and
The International Association for Community Development defines it **as both a practice based profession and an academic discipline**.
Community development in **INDIA** was initiated by **Government of India** through **Community Development Programme (CDP) in 1952.**
The **focus** of CDP was on **rural communities**. But, professionally trained social workers concentrated their practice in urban areas.
Thus, although the focus of community organization was rural, the major thrust of Social Work gave an urban character which gave a balance in service for the program

NEED OF THE TOPIC

India is one of the fastest developing nations.
However, the country still faces many challenges.
UNEMPLOYMENT IS A MAJOR CONCERN that needs to be addressed, as it may turn into various other unwanted social problems among youth.
But with **the right skills, education and environment**, the author believes that these challenges can be overcome.
The community faces,
Youth delinquency
High unemployment rates
Often unsanitary living conditions
Lack of education
[a step towards addressing these problems is providing the **right platform** and **injecting** the **right program**]
Architecture today is defined in so many ways.
However, architecture as believed by the author, in all its form, must help give meaning to every individual and everyday lives.

AIM & OBJECTIVES

- It is imperative that good architecture and design should be accessible to all.
- To ground the project in reality, thoughts has also been given to how this project may be actually realised and development model will be proposed accordingly.
- There exists many undeserved communities which often, do not have access to basic services and infrastructure.
- For architecture to be meaningful in such a context, affecting social change is author's one of the objectives.

SCOPE

- This thesis will be an attempt to understand how 'social architecture', as it has come to be known, can affect social change.
- It attempts to understand how, with the right environment, architecture may act as a social agency to help uplift under-served communities.
- The hypothesis of this thesis project is that an architectural intervention Of this nature, can indeed bring about social change.

TENTATIVE REQUIREMENTS

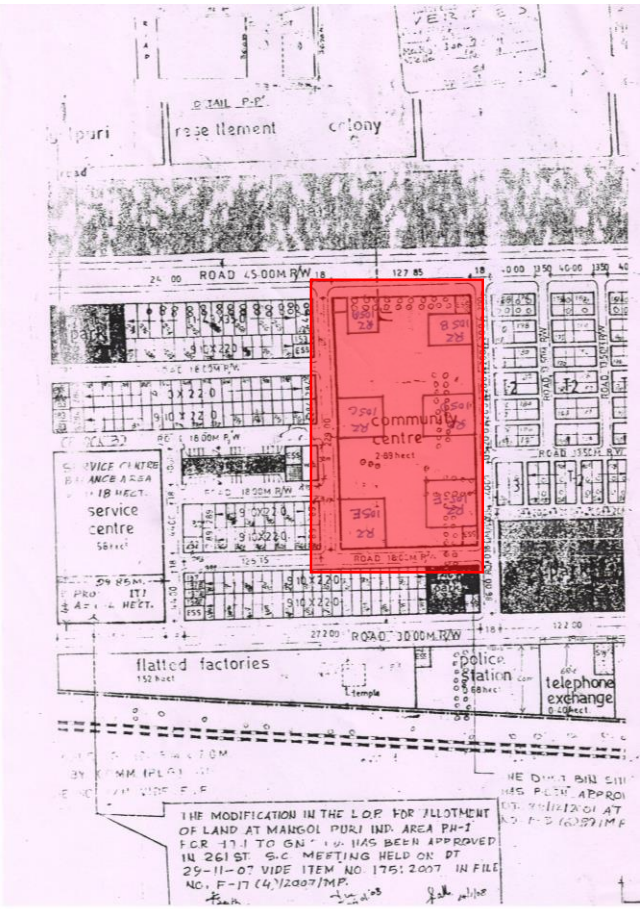
The main programmatic components of the project are:

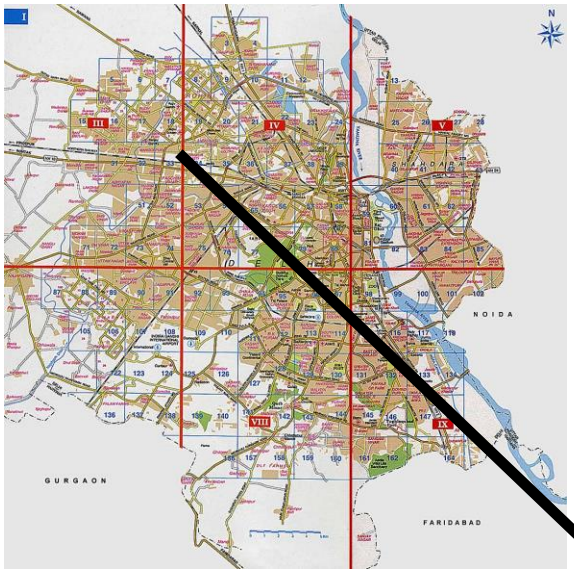
Skill Building and Education Centre
Child Day-care
Public library
Sports and Recreation Facilities
Co-working space
Administration
OAT
Meditation center

SITE SELECTION

DELHI DEVELOPMEMT AUTHORITY approved site for community centre

A 2.8 hectare land in ROHINI MANGOLPURI, DELHI





Source :DDA website(Google maps)

SITE ANALYSIS

FLORA

Overall, the vegetation of Delhi belongs to the category, "Northern Tropical Thorn Forest Type" and the most common trees that are found here are Nilotica, Leucophlea, catechu, modesta, butea monosperma, commonly known as dhak, salvadora persica, cassia fistula etc.

INTRODUCTION

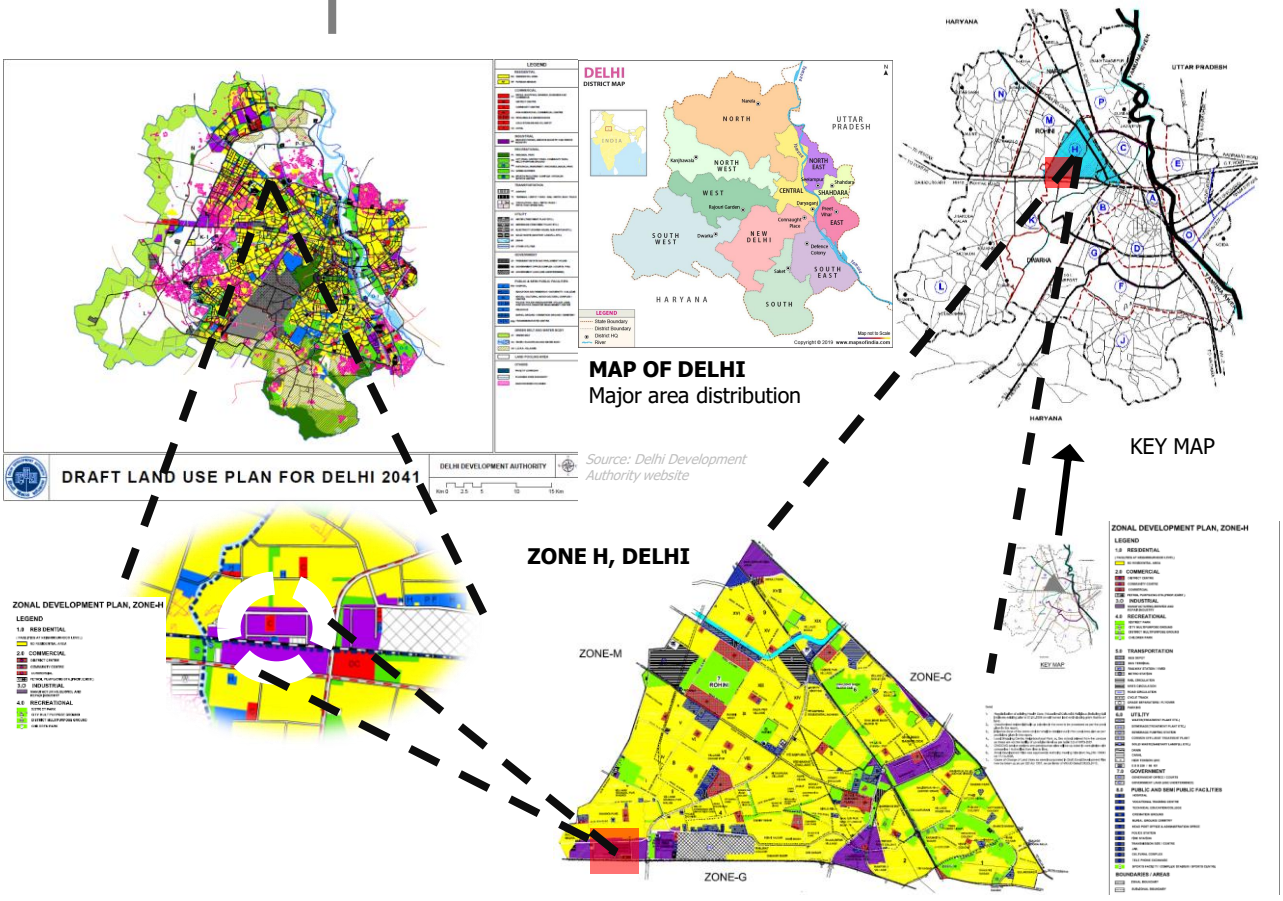
The centre for community development in Mangolpuri industrial area phase I, Delhi aims of an architectural intervention, it aims to bring about social change in community.

The hypothesis of this thesis project is that an architectural intervention of this nature, can indeed bring about social change.

A community centre serves as a bridge between communities. Having this aim of creating a space for every age group where they can spend time and feel connected with the community, also getting the basic facilities which are still not present in their community.

The DDA (Delhi Development Authority) has developed 11 district centres and 44 community centres across the city. Although most of the community centres were designed in the 80s and 90s. Since then, there has been a shift in the vehicular and pedestrian loads due to an increase in population and densification. The existing community centres on the other hand, have not been upgraded accordlying to the current needs.

MASTER PLAN , DELHI 2041



MAP OF DELHI
Major area distribution

Source: Delhi Development Authority website

KEY MAP

ZONE H, DELHI

In recent decades, increasing urbanization has resulted in the accelerated growth of slums in India. In Delhi, where the slum population has ballooned to over two million, the government continues to undertake a process of resettling slum dwellers to colonies on the outskirts of the city. This is where Mangolpuri Industrial Area Phase 1 & 2 came into picture.

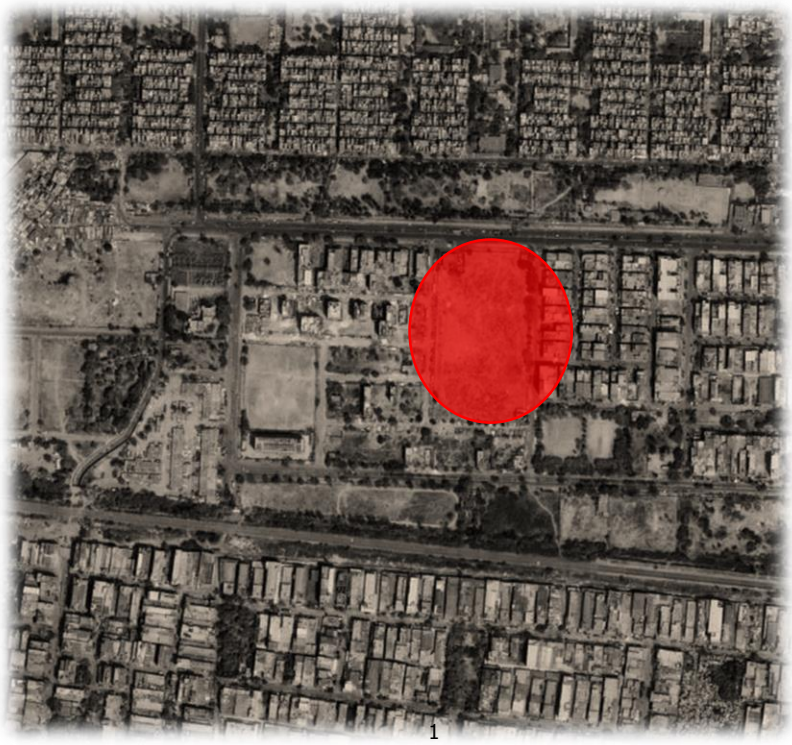
TOTAL SITE AREA
28,500 Square meter
(7 Acres)

LATITUDE & LONGITUDE
28°41'12.9"N 77°05'09.6"E

45M road running on the **North front**.
15 M roads running on the **East, West** and **South** side of the site.

SITE ANALYSIS

Site is located in,
MANGOL PURI INDUSTRIAL AREA, PHASE I, DELHI
[An Approved and Proposed Community Centre by DDA]



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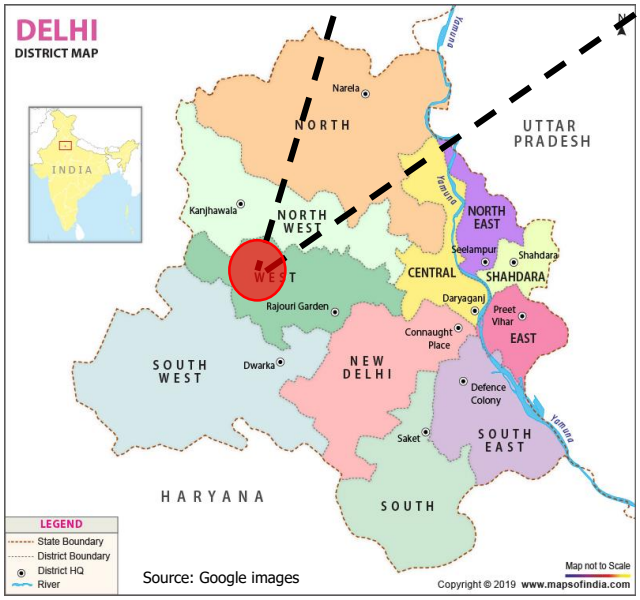
Source: Google maps



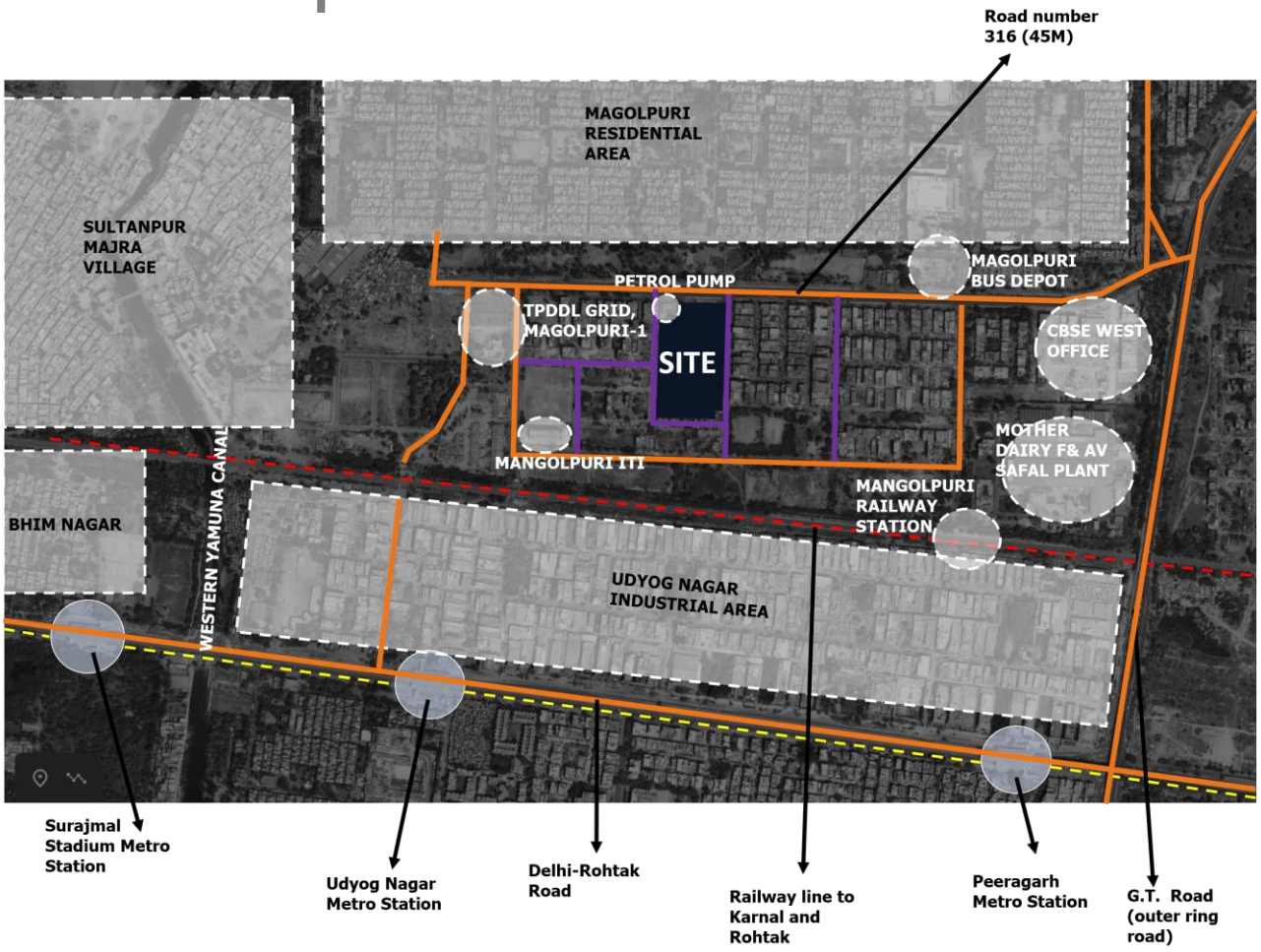
Source: Google images

SITE IMAGES

Source: Author

SITE ANALYSIS

LANDMARK & ACCESSIBILITY



SITE PRECICNT

- METRO STATION
- PRIMARY ROAD
- SECONDARY ROAD
- METRO LINE
- RAILWAY LINE
- NEIGHBOURHOOD
- LANDMARKS
- SITE

CONNECTIVITY

Nearest metro station are Udyog Nagar & Peeragrah

DTC buses run along road no. 316 every two min

Shared autos run along the primary roads.

E-rickshaw is one major and preferred transport

LANDMARK & ACCESSIBILITY

Image one shows the 45 meter road running on the north front of the site.

Image two shows the existing vegetation growth on the site from the south front.

Image three shows the overall vegetation growth on the site.

Image three shows the surrounding of the site, since it is located in an industrial area there are small residential industries running in the neighbourhood.

Image four shows a junk shop attached to the east wall of the site at present.

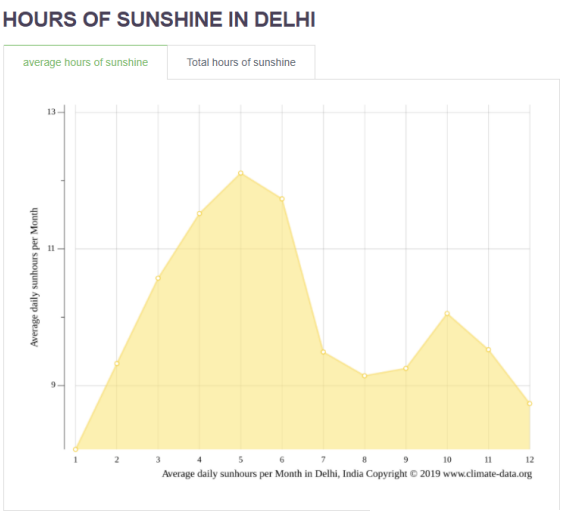
Image six shows the Indian oil petrol pump on the north-west corner of the site.

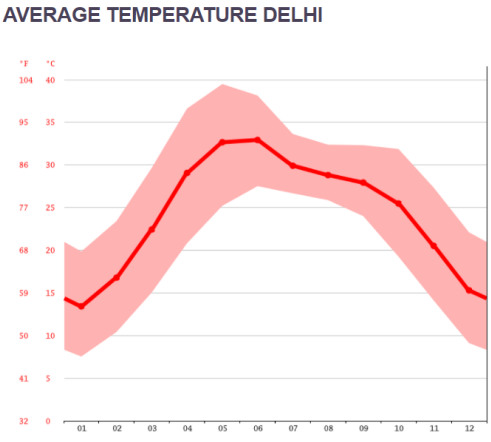
CLIMATE ANALYSIS

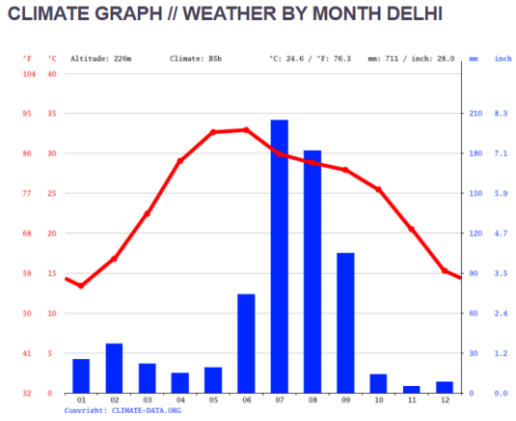
The **climate of Delhi** is a composite climate with high variation between summer and winter temperatures and precipitation.

Overview of seasonal distribution

Spring: February, March; warm days, cool nights, pleasant; low to moderate humidity; moderate precipitation
Summer: April, May; hot to very hot; very low to moderate humidity; low precipitation
Monsoon (Rainy): June, July, August, September; hot, pleasant during rains; high to very high humidity; heavy precipitation
Autumn: October, November; warm days, cool nights, pleasant; low humidity; low precipitation
Winter: December, January; cool days, cold nights; moderate humidity; medium precipitation.
The temperature here averages 24.6 °C | 76.3 °F. The annual rainfall is 711 mm | 28.0 inch.







Source: en.climate-data.org

CASE STUDY

SHARNAM, PONDICHERRY, INDIA

(Centre For Rural Development)

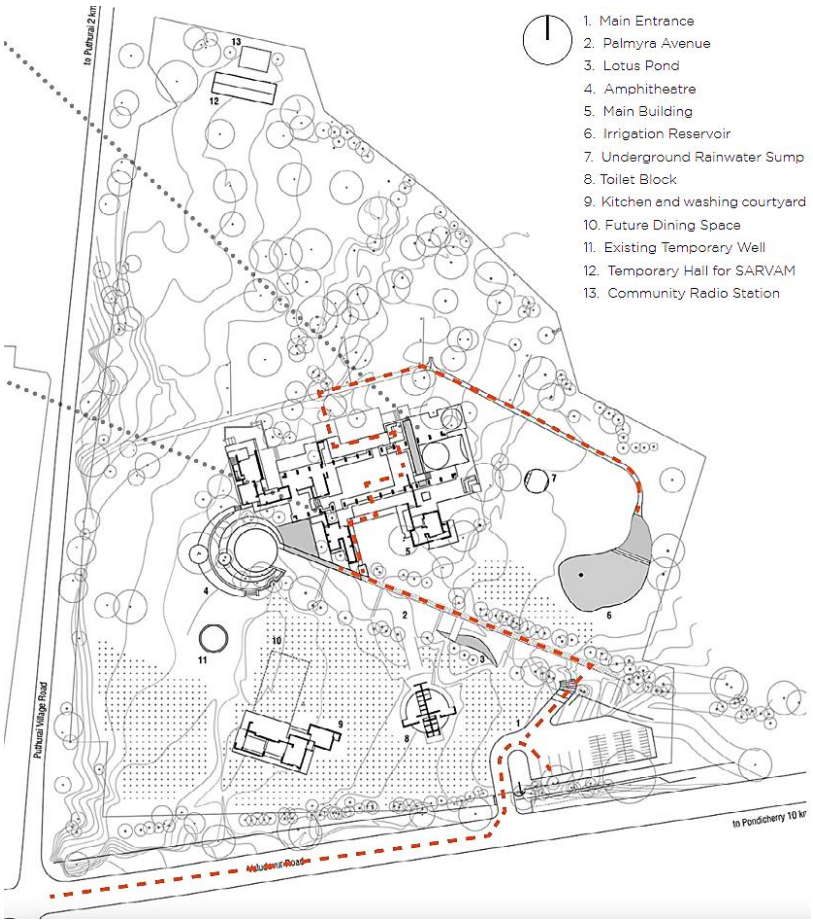
Why was the project chosen as case example?

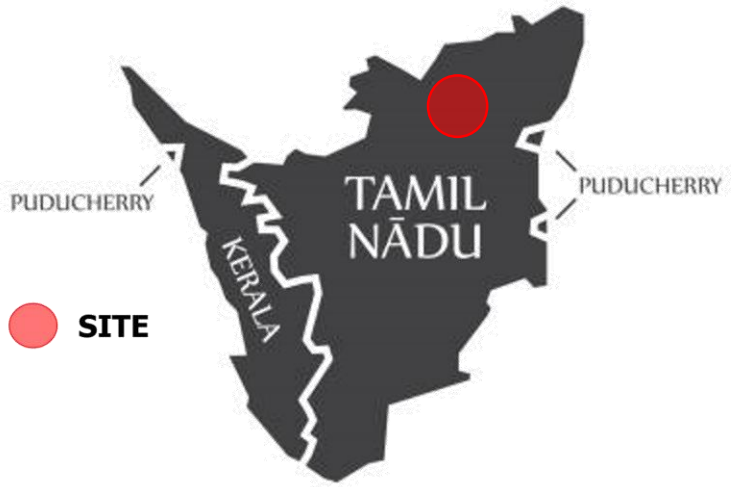
The project is an impeccable paradigm of sustainable architecture.

It resonates with the thesis project proposition and aptly conveys the vision on the design of Community development Centre for upliftment.

ARCHITECT

JATEEN LAD





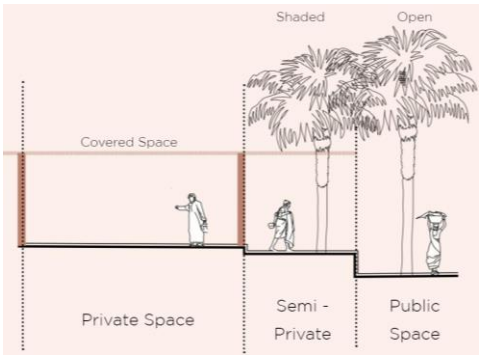
MAP OF TAMIL NADU

CASE STUDY

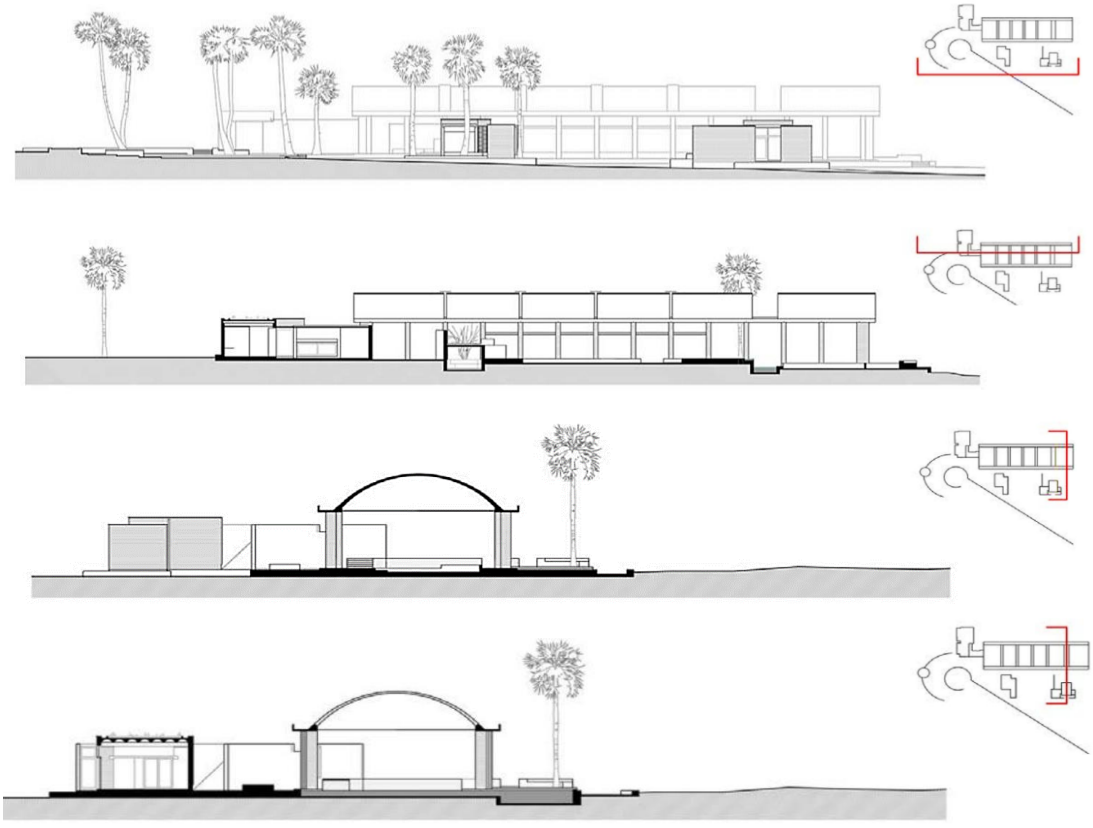
SHARNAM, PONDICHERRY, INDIA

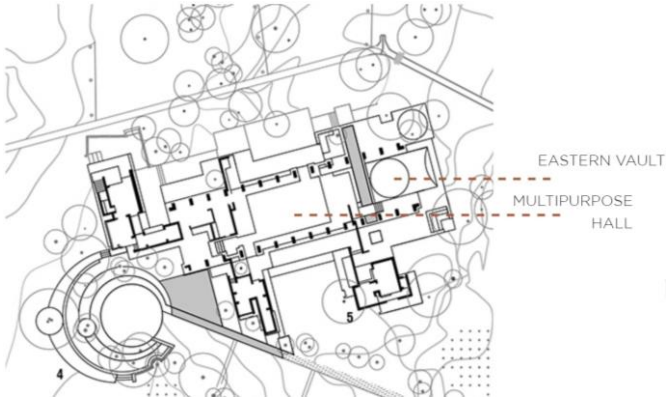
(Centre For Rural Development)

SPACES DEFINED



SECTIONS





PLAN OF MAIN BUILDING

AREA

Site Area	20200 m^2 (4.5 acres)
Gross Floor Area	1728 + 769 (landscaped area, amphitheatre, terracing and roof gardens)
Building Height	Superstructure : 6.55 - 7.15 Office and Kitchen : 4.30

The building covers 12% of site area and after construction of exhibition halls and seminar halls for SARVAM, it will cover 30% of site area.

Through this approach Sharanam has aimed to demonstrate how architecture working from the bottom-up can help foster sustainable social and economic development

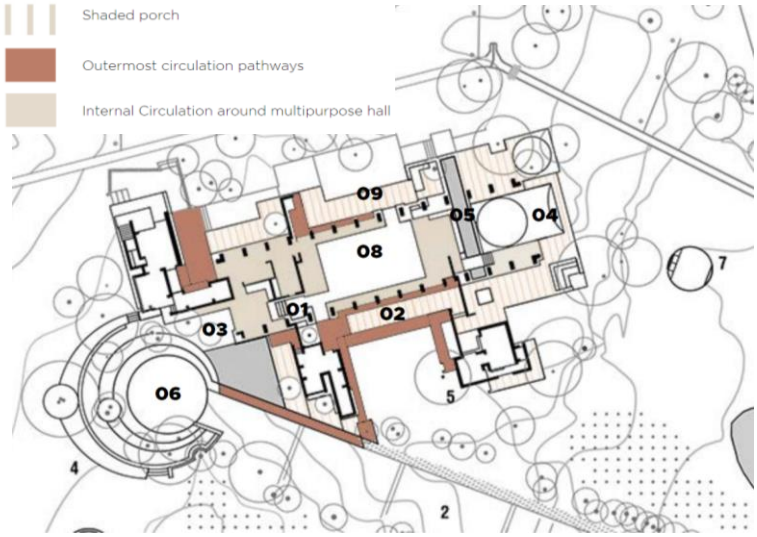
CASE STUDY

SHARNAM, PONDICHERRY, INDIA

(Centre For Rural Development)

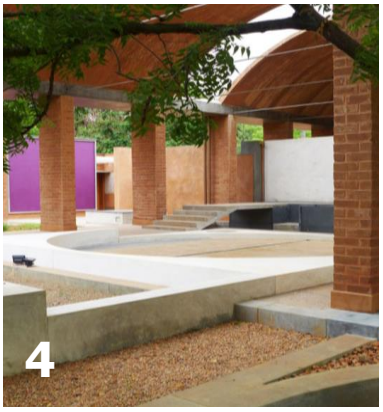
PROJECT PICTURE AND VIEWS

PLAN

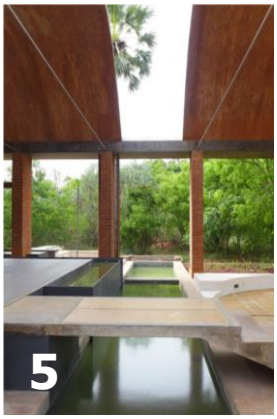


Large vaulted structure built by earth construction techniques.

Concentrated efforts at soil healing through plantation of new indigenous flowering tree nurtured by organic methods.

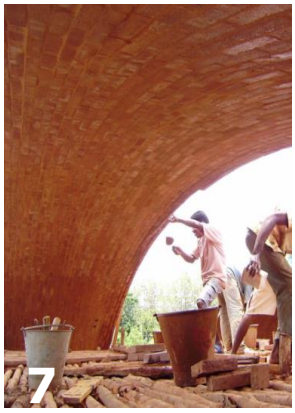


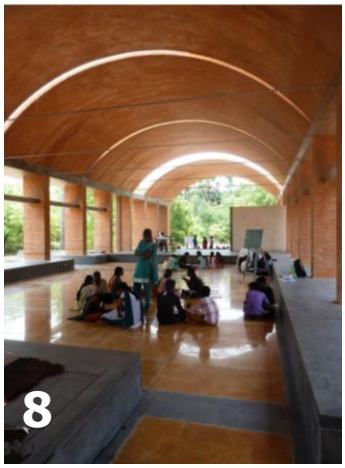
In response to the hot and humid climate, the open array of piers funnel coastal breezes into the building ensuring thermal comfort without air-conditioning or fans.



Shaded spill-out spaces and green verandas connect to office buildings

Not a single tree has been cut, the entire building has been designed around existing trees.



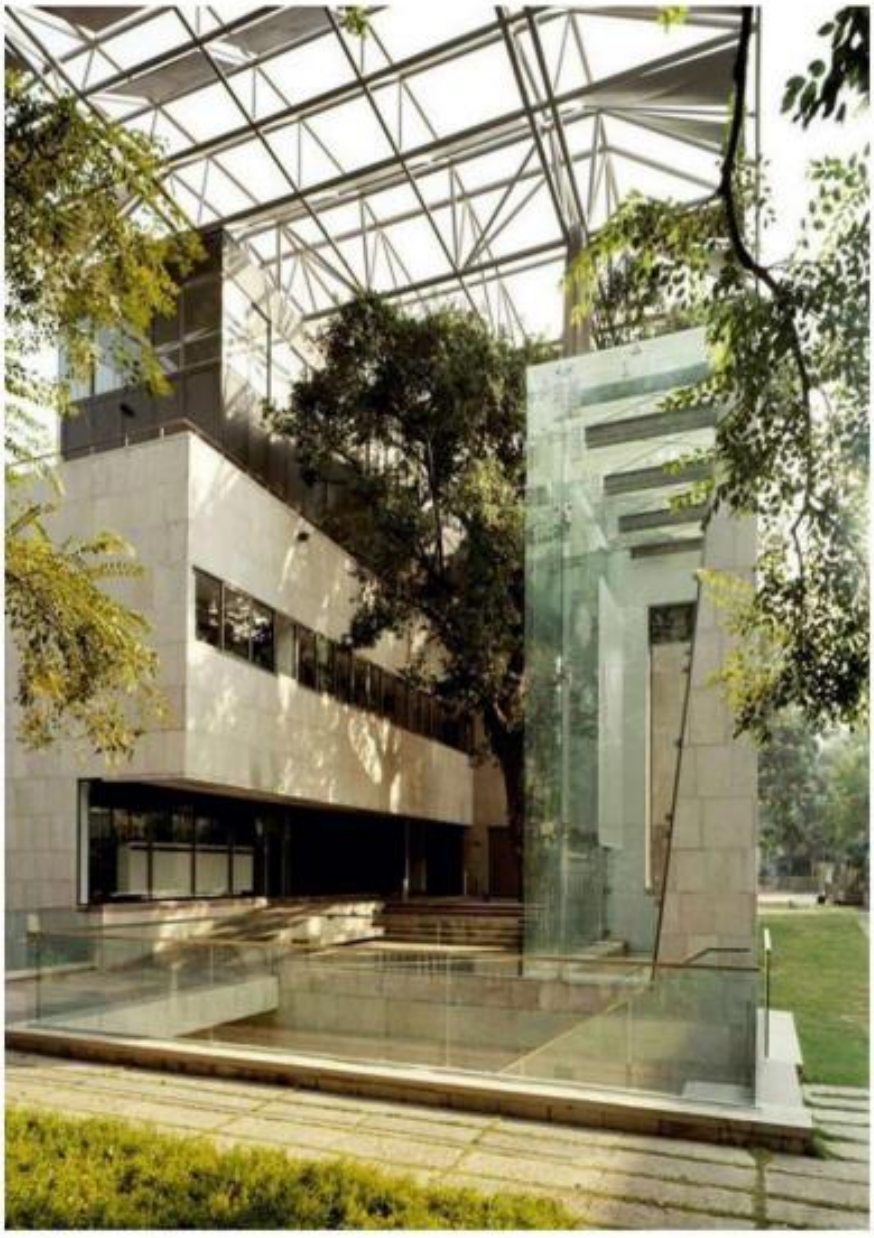


The project provided employment and on site training, providing an amplified peaceful place for the village nearby.

CASE STUDY

ALLIANCE FRANCAISE, NEW DELHI

(French Cultural Centre)



LOCATION
Lodhi Estate , Delhi

ARCHITECT
Stepher Paumier & ABRD

SITE AREA
2850 SQ.MT

Year:
2001 – 2004

Programme:
Art Gallery
Auditorium(112 seater)
Library
Classrooms(12 no.)
Offices
Conference Room
Cafe'

NO.OF FLOOR :
5 (1 Below, 4 Above)

INTRODUCTION

Build as a cultural for the French Embassy in India, the building looks to represent both the French as well as the modern India identity.

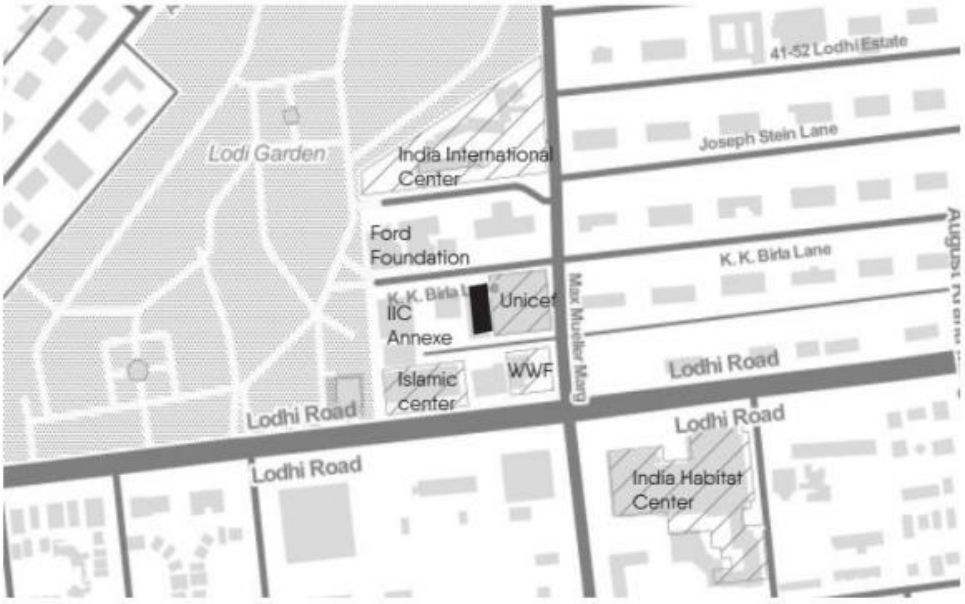
Today, it functions as one of the most successful cultural centers in the city with a special emphasis on serving as a learning center and an exhibition space. Unlike other cultural spaces, it is able to attract young energetic audiences and thus becomes an apt model to be studies.

CASE STUDY

ALLIANCE FRANCAISE, NEW DELHI

(French Cultural Centre)

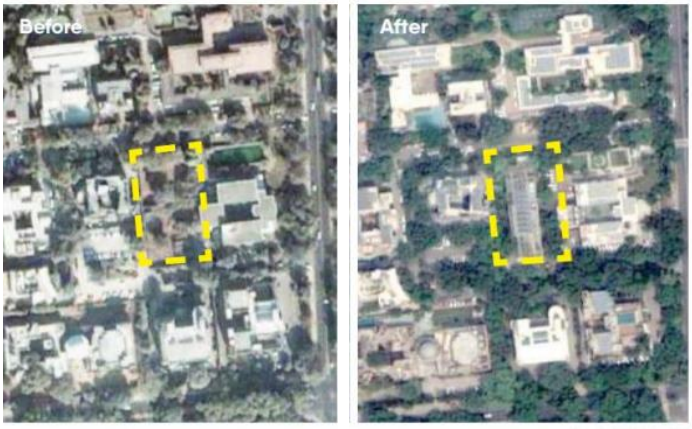
LOCATION & CONTEXT



The location played a key role in dictating the design of the building. Placed in the middle of the Lodhi Institutional Area- which had seen the works of J.A. Stein in the form of WWE India, UNICEF building, IHC and IIC – there was a very strong visual and distinct architectural presence.

Besides the built character, the proximity to the lush and historic Lodhi Gardens was another key driver of the design.

Lastly, the site had two huge peepal trees present on it. In an effort to save them , he form was devised around them.



Even though performing space and gallery is a common feature of buildings all around, **the center is still able to stand out due to its learning center. This becomes the crowd puller** and thus, a more popular location to hosts events as well.

CASE STUDY

ALLIANCE FRANCAISE, NEW DELHI

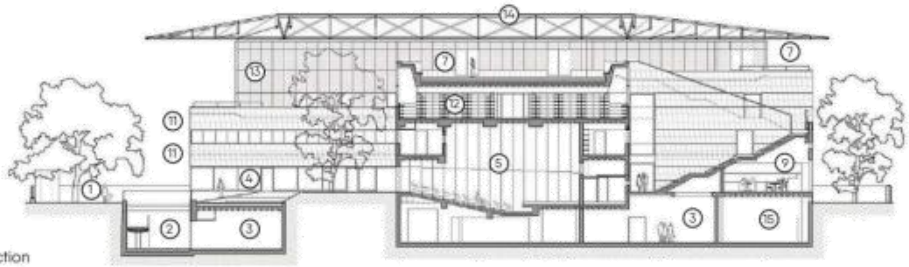
(French Cultural Centre)

PROGRAMME ARRANGEMENT

Horizontal & Vertical Zoning

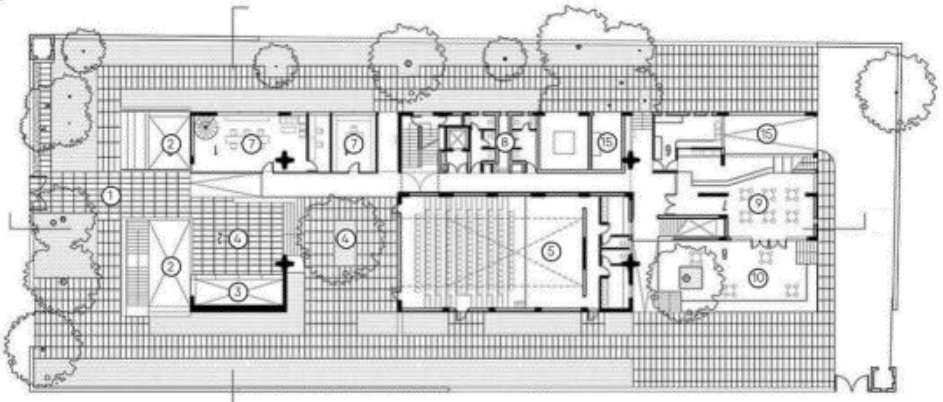
Legend

1. Entrance Court
2. Sunken gallery forecourt
3. Art Gallery
4. Plaza
5. Auditorium
6. Reception
7. Offices
8. Washrooms
9. Cafe' (Indoor)
10. Cafe' (Outdoor)
11. Classrooms
12. Library
13. Conference room
14. Solar panels pergola
15. Services

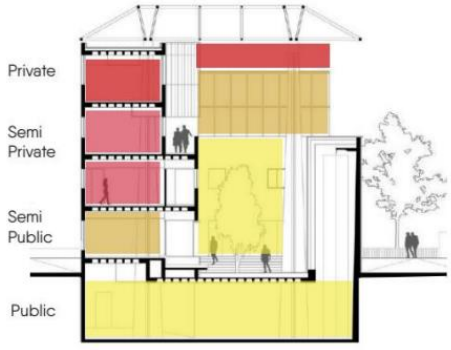


Section

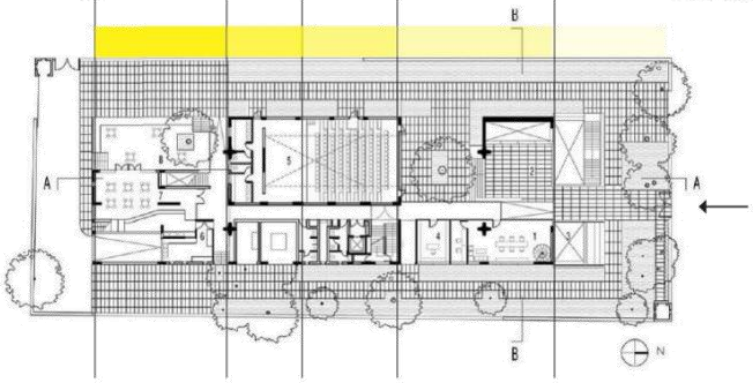
Figure 3.7



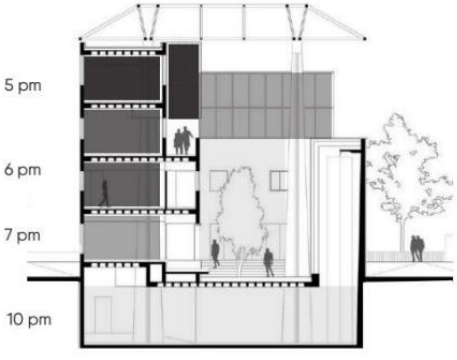
Plan : Ground Floor



Public-ness of the building



Thresholds experienced



Liveliness of the building

INFERENCES

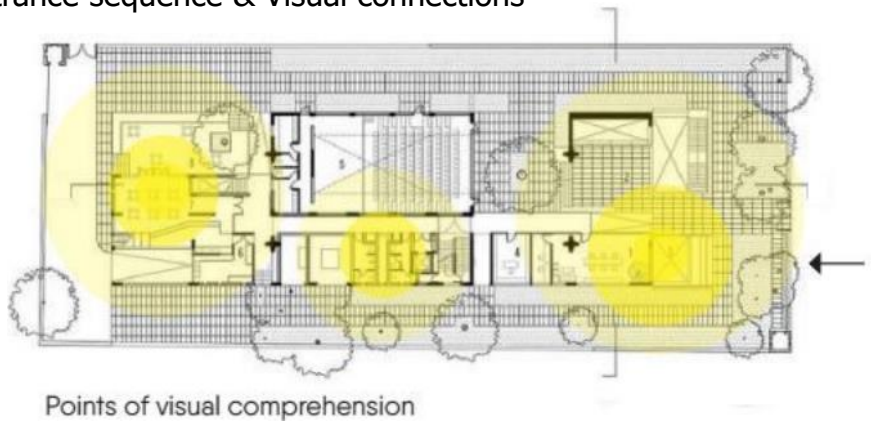
The building operates in layers - both vertically as well as horizontally. The more public features - such as the gallery and auditorium are placed at the lower levels - right at front. The cafe' - another popular crowd gatherer - is designed to have its own ecosystem - making the experience unique even while entering from the back The more private functions such as the classrooms, offices and the terraces for them are located higher - in order to gain visual surveillance over public activity as well as reduced noise levels for working.

ALLIANCE FRANCAISE, NEW DELHI

(French Cultural Centre)

USER EXPERIENCE

Entrance sequence & Visual connections



Points of visual comprehension

INFERENCES

i. **Play of levels :** The sunken courts make the entrance corridor serve like a bridge. This unexpected change in levels comes as a surprise amongst the visitors who have only viewed it as a flat site from outside.

ii. **Play of volumes :** The open corridor, sheltered by the mass on top (3m), breaks the open air volume (15m) of the courtyard. This sudden contrast adds to the entrance experience

iii. **Visual corridors:** The open passages lead the eye to the imaginative horizon - making it easy to comprehend many components all one glance. The visual corridors are thus shaped by elements far apart (tree, column, canopy) instead of adjacent walls.

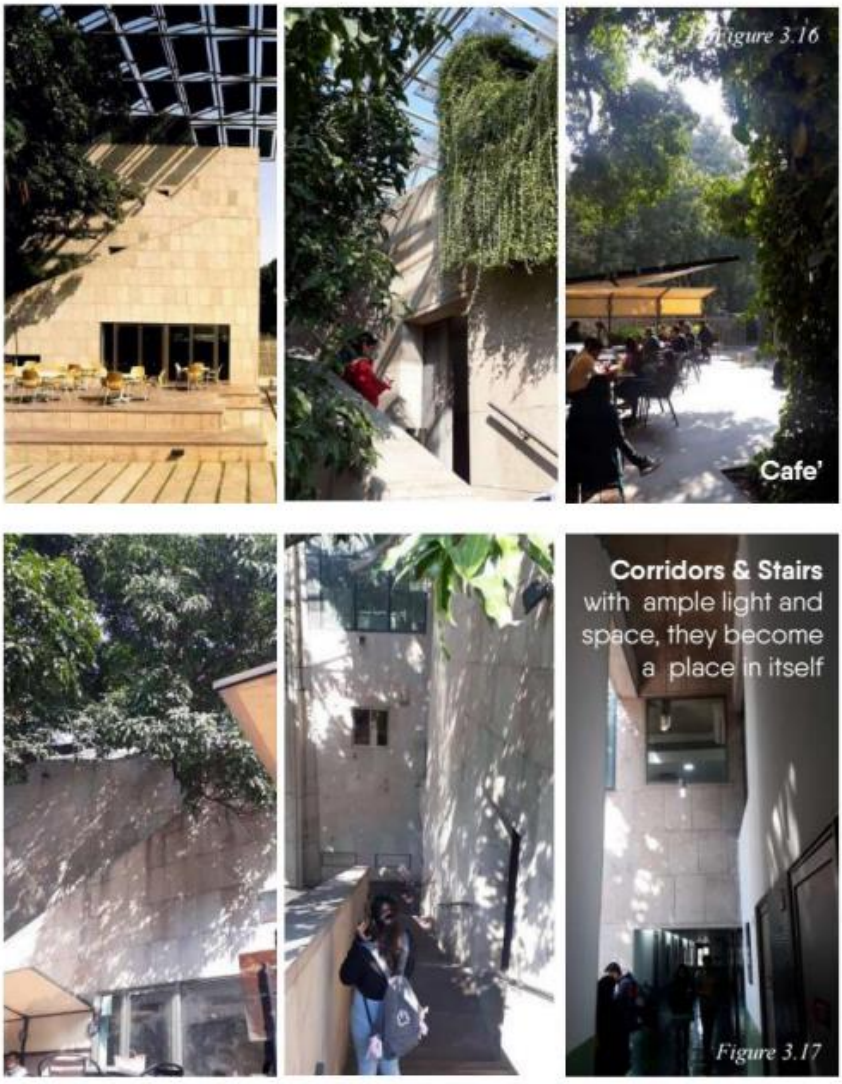
CASE STUDY

ALLIANCE FRANCAISE, NEW DELHI

(French Cultural Centre)

USER EXPERIENCE

Entrance sequence & Visual connections



Inside Out : The built and the unbuilt interlock like fingers making multiple courts & spillout spaces

INFERENCES

Oriented north south, the building gets a lot of sunshine - which activates its multiple courts.

The auditorium is located in between two courts. Designed to preserve the big trees present on site, the mass divides the courts which have distinct characters. Cafe' spill out - informal . Auditorium forecourt - formal yet interactive.

The open corridors allows the connection to be maintained at various levels: blending the interior with the exteriors

CASE STUDY

ALLIANCE FRANCAISE, NEW DELHI

(French Cultural Centre)

SPATIAL CHARACTER

Layouts & Design of components

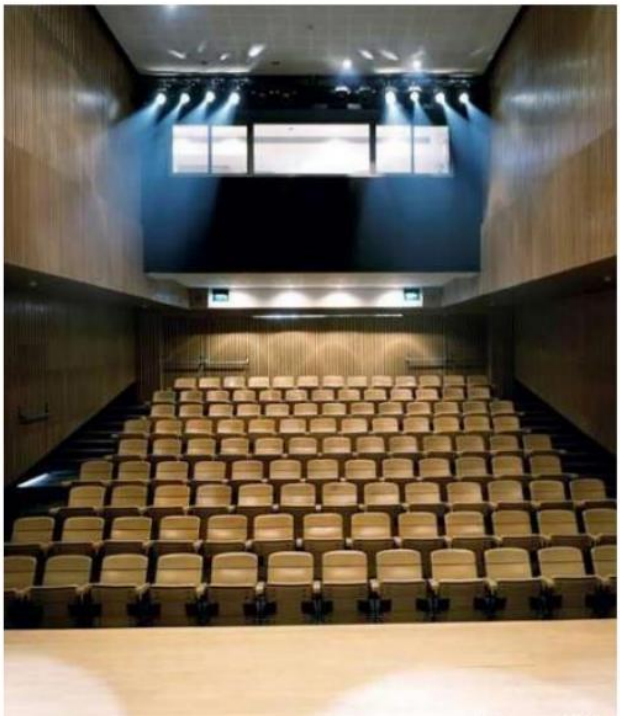


Figure 3.19

AUDITORIUM

With a capacity of 100 seats, the theatre plays hosts to talks, screenings, lectures etc. The wooden interiors and the narrow geometry makes it appear warm, cozy and unintimidating

ART GALLERY

Located underground, the gallery is supplemented with its own court for post event gathering. the deep space remains cool and provides the controlled lighting environment for the exhibitions.

Figure 3.20

CAFÉ

Open to everybody, the cafe' makes the space approachable and lively. The secluded courtyard and entrance makes it a distinct semi-public space much more comfortable individually.

ALLIANCE FRANCAISE, NEW DELHI

(French Cultural Centre)

ARCHITECTURAL EXPRESIION

Structure, Materiality And Sustainability

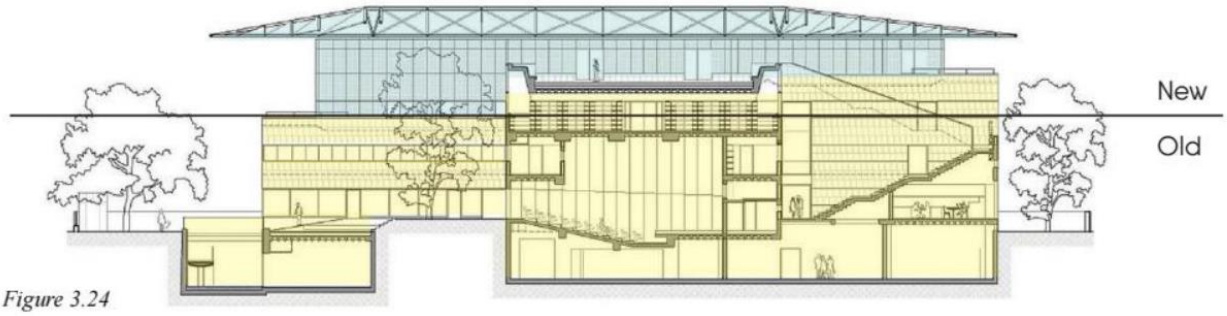
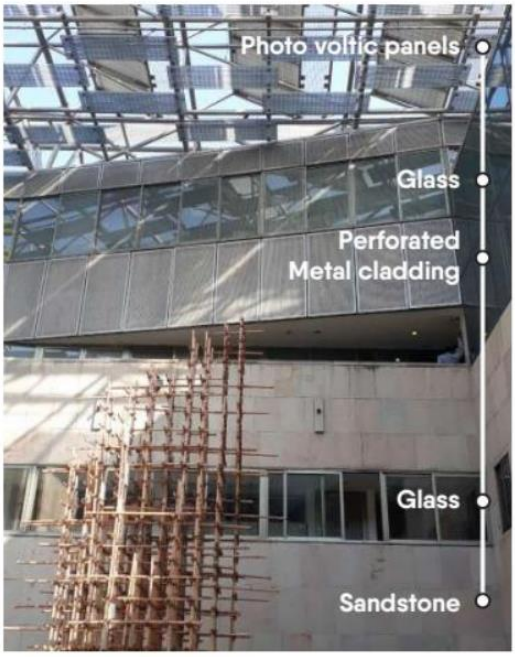
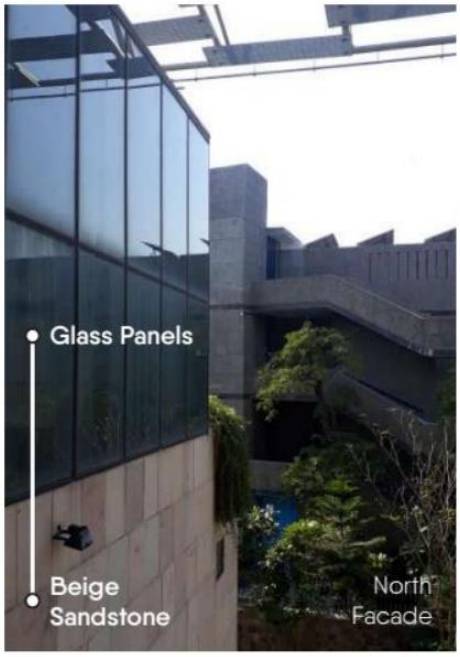


Figure 3.24





INFERENCES

The **bottom 2** levels are made in **beige sandstone** and help the building blend with the historic neighbors and appear warm.

The **above 2 levels** are made in **steel and glass** and marks a modern identity of its own, amongst the low skyline around.

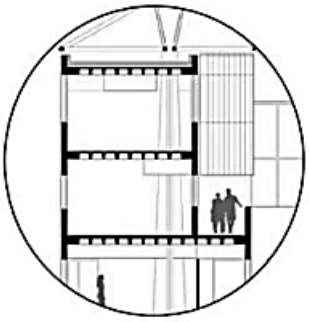
Topped by roof gardens and creepers, the nature helps blend the two materials. It helps make the building appear humble.

ALLIANCE FRANCAISE, NEW DELHI

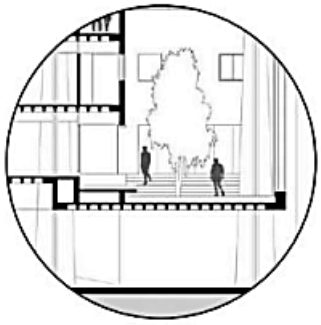
(French Cultural Centre)

ARCHITECTURAL EXPRESIION

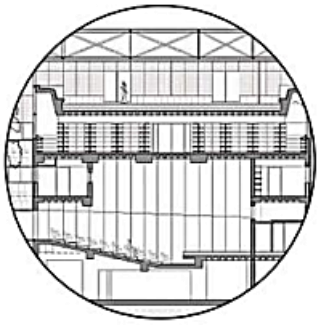
Structure, Materiality And Sustainability



Waffle slabs for classrooms
A single tapering column provides the support



The waffle structure also allows for large column free space underneath



The waffle system allows the stacking of the library on top of the auditorium

Figure 3.26

Figure 3.27

INFERENCES

Waffle slabs form the primary structure of the building. It allowed the creation of column free spaces.

The structure also allowed the vertical stacking of large spans both the auditorium and the library on top of each other.

Tapering columns originating from the basement provide the structural support for the pergola on top.

Formed by steel trusses, the pergola has PV Panels attached on top - making it an aesthetically pleasing addition to the building

LITERATURE STUDY

CENTRO DE ACÇÃO SOCIAL POR MÚSICA,

Paraisópolis, São Paulo, Brazil
(Urban Community Centre)

LOCATION

LOCATION
SAO PAULO, BRAZIL

ARCHITECT
URBAN THINK TANK

SITE AREA – 18,500 SQ.MT
G.C – 900 SQ.MT
TOTAL BUILT-UP AREA – 3,650 SQ MT.
NO.OF FLOOR – G+3

BEFORE

AFTER

Paraisópolis is located in southwest São Paulo, adjacent to Morumbi, one of the wealthiest neighborhoods in the city. Despite challenging topography and recurrent, dangerous mudslides in periods of heavy rainfall, approximately 80,000 people now live on the territory in a dense, informal settlement covering less than one square kilometer.

SITE
Despite its central urban location, the marginalized area of Grotão within Paraisópolis is effectively separated from the formal city.

ACCESS
The site is accessed by two vehicular roads that are off-shoots of the main road. However, only one of these roads, the lower level road, connects directly to the site. The site is accessible for pedestrians from all four sides.

SITE PLAN

VIEW

LITERATURE STUDY

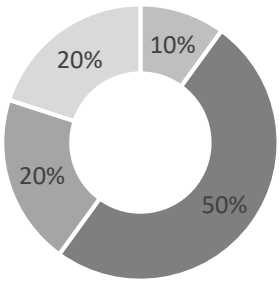
CENTRO DE ACÇÃO SOCIAL POR MÚSICA,

Paraisópolis, São Paulo, Brazil
(Urban Community Centre)

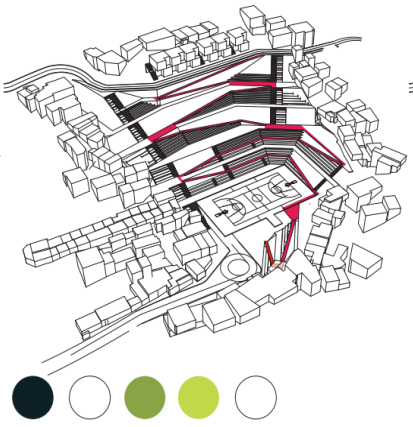
- ETHICAL STANDARDS AND SOCIAL EQUITY
- ENVIRONMENTAL QUALITY AND RESOURCE EFFICIENCY
- CONTEXTUAL AND AESTHETIC IMPACT
- ECONOMIC PERFORMANCE AND COMPATIBILITY
- INNOVATION AND TRANSFERABILITY

AREA

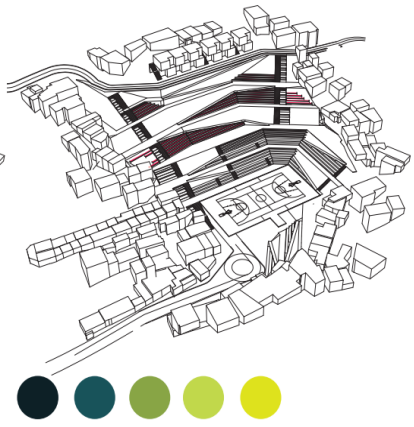
RETAIL CULTURAL
LEARNING CENTER COMMUNITY



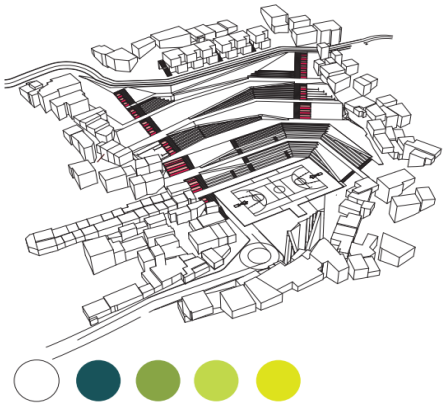
Terraces



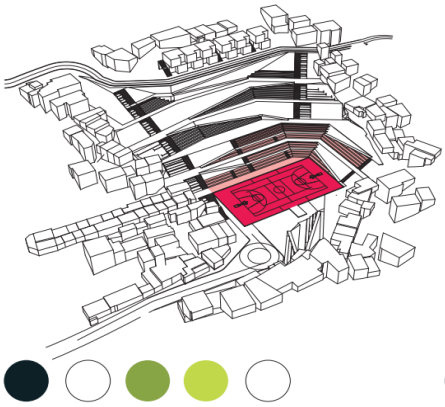
Public ramp system



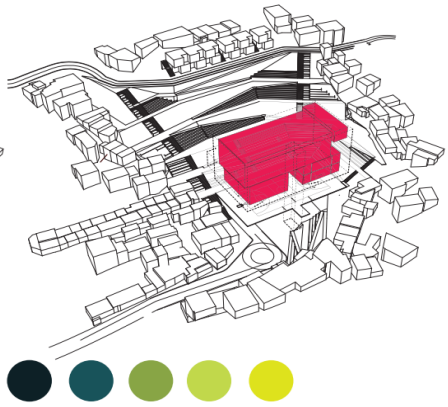
Urban Agriculture



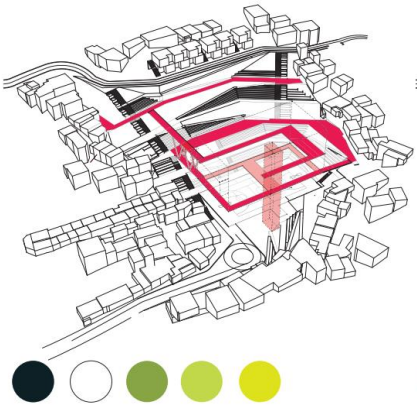
Wetlands



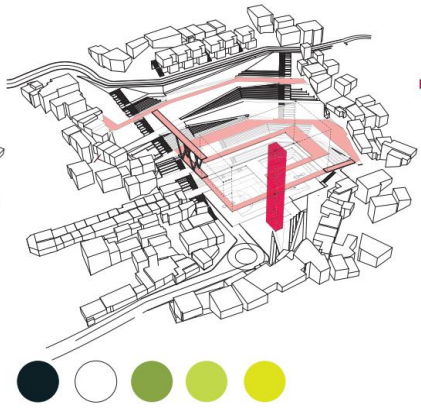
Field, Performance Area



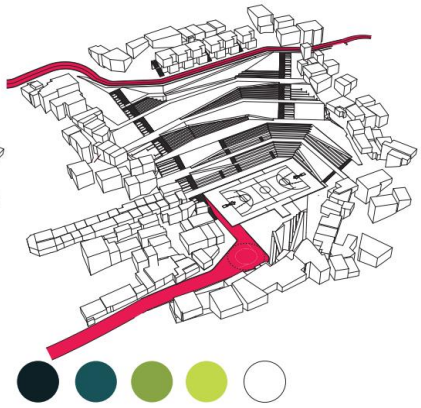
Music School



Integration/Connections



Public Elevator



Site Access

LITERATURE STUDY

CENTRO DE ACÇÃO SOCIAL POR MÚSICA,

Paraisópolis, São Paulo, Brazil
(Urban Community Centre)

The project proposes that architects eschew their conventional role in traditional hierarchies to serve as an enabling connection between the opposing forces of top-down planning and bottom-up initiatives.

FORM AND LAYOUT

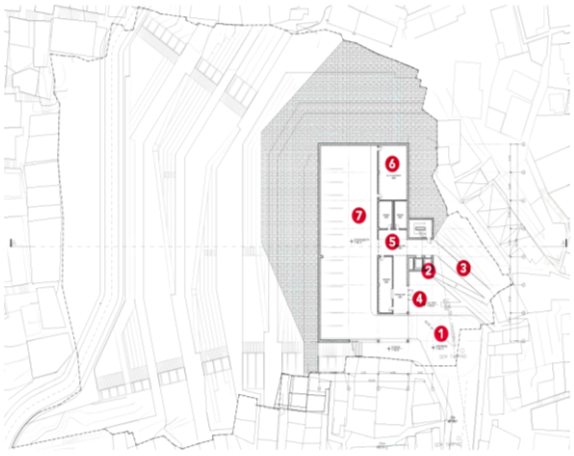
The center is built over fours four floors with vehicular at the lowermost level. The nature of the program decreases in it's public-ness' as you go from the lower to the upper levels.

INTENT

The project fundamentally transforms this void into a productive zone and dynamic public space through social design - a process of analyzing the local effects of rapid growth and improving marginalized settlements through social infrastructure. The intervention opens the edges of the void to re-establish connections within the isolated urban fabric and to introduce social programs where they were once categorically neglected. Localized moments of this program, which includes sports facilities, urban agricultural, public space, transportation infrastructure, replacement housing, and the Fábrica de Música, are simultaneously connected to all boundaries of the area by the landscape of activated terraces.

Level 000

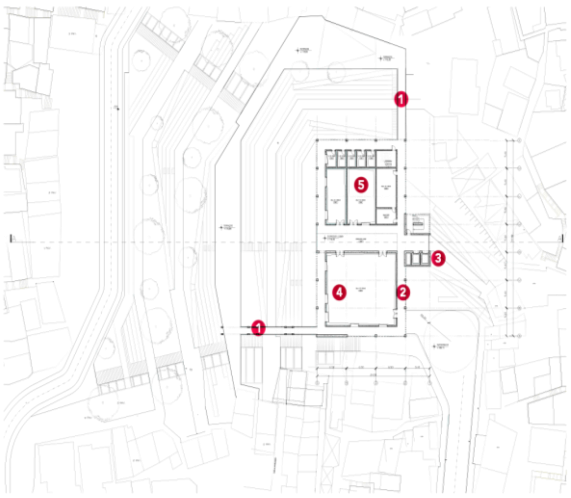
1. Bus stop and turnaround
2. Public elevator; Access to all levels of the site
3. Handicap accessible public ramp
4. Building Entrance
5. Lobby
6. Mechanical and Water Tank
7. Parking



Plan - Level 000 - 1:200

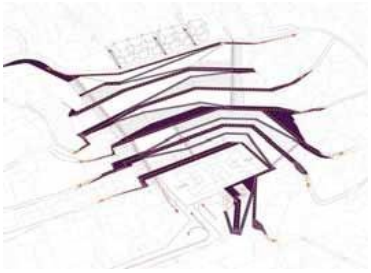
Level 100

1. Playing Field
2. Public elevator; Access to all levels of the site
3. Bus Stop and turnaround
4. Handicap accessible public ramp
5. New terrace system
6. Urban agriculture
7. Terrace/Play space
8. Seating for outdoor public events and sports
9. Terrace connections to existing pathways; Re-integration of fragmented context
10. Wetlands
11. Auxiliary Community Center



Plan - Level 200/300 - 1:200

Agriculture Diagram



Terrace Circulation

Extended Terrace into Fabrica de Música

Terrace Integration
The terrace system ties into existing pathways in the favela to re-integrate the context through the empty void.

Terrace Integration
The terrace system continues into the Fabrica de Música through a series of bridges, tying the building to the landscape. This circulation network is also connected to the public elevator and stair system within the music school.

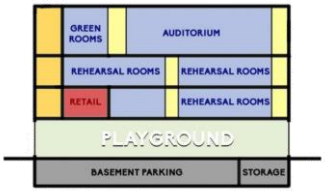
Ramp
A handicap accessible public ramp provides access throughout the entire site and weaves the landscape into and through the Fabrica de Música.

Extended Terrace
The bridges on the 200 level form an extended terrace space that continues into the building. The music school is simultaneously building and landscape.

LITERATURE STUDY

CENTRO DE ACÇÃO SOCIAL POR MÚSICA,

Paraisópolis, São Paulo, Brazil
(Urban Community Centre)



Vertical zoning

Landscape and Building Systems

New Terraced Landscape

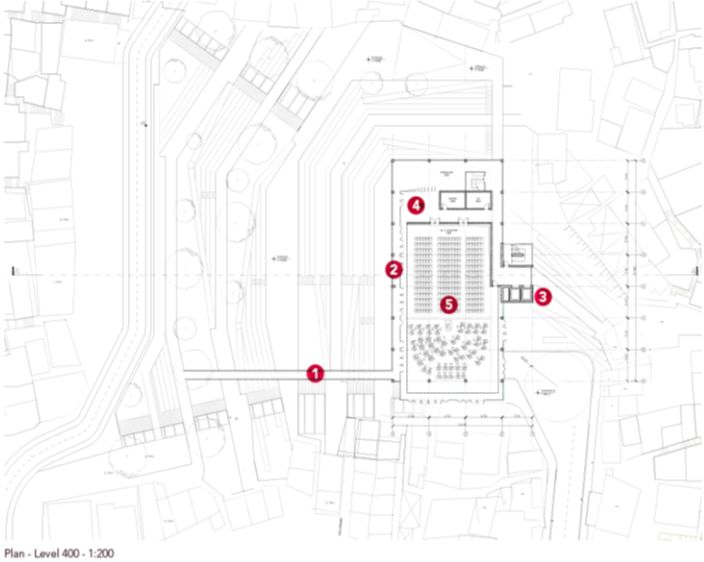
Level 200 / 300

1. Public bridges through landscape and building
2. Public corridor
3. Public Elevator
4. Rehearsal Hall
5. Practice Rooms

Plan - Level 100 - 1:200

Level 400

1. Public bridges through landscape and building
2. Public corridor
3. Public Elevator
4. Lobby
5. Performance Hall



Plan - Level 400 - 1:200

LITERATURE STUDY

JETAVAN SPIRITUAL CENTER,

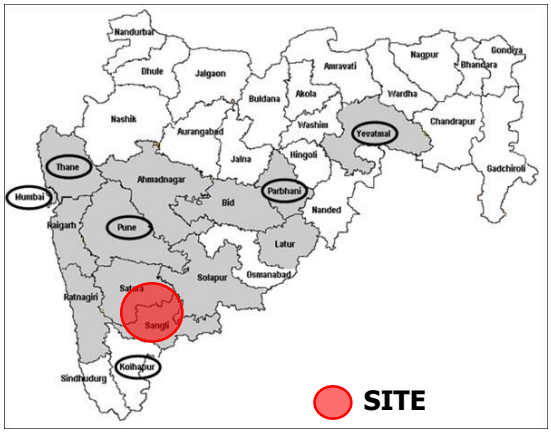
MAHARASHTRA, INDIA

The Jetavan Centre, designed by **Sameep Padora and Associates** in rural Maharashtra, is built for the spiritual & skill development of the local Buddhist community. The half-acre plot had over 40 trees, which were all preserved after construction.

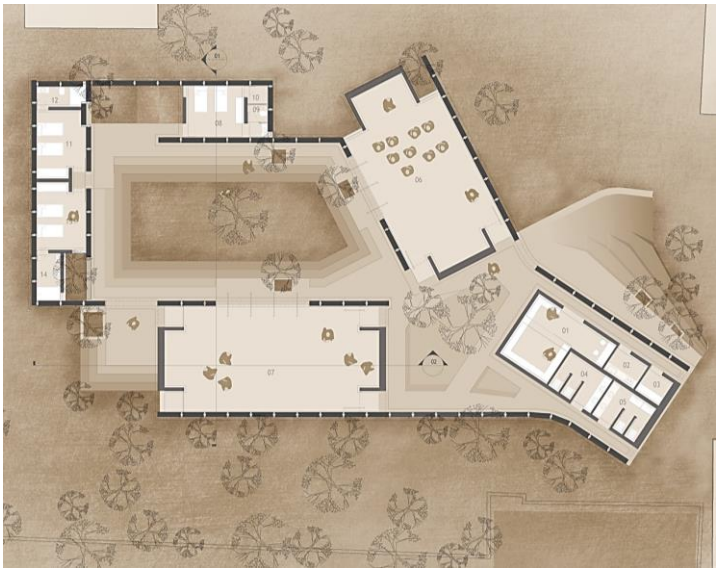
The institute was programmed as a spiritual & skill development center for the native Dalit Baudh Ambedkar Buddhist community. The mandate of Jetavana is to provide a spiritual anchor for their practice of Buddhist thought through meditation and yoga while also imparting training and skill development for members of the community.

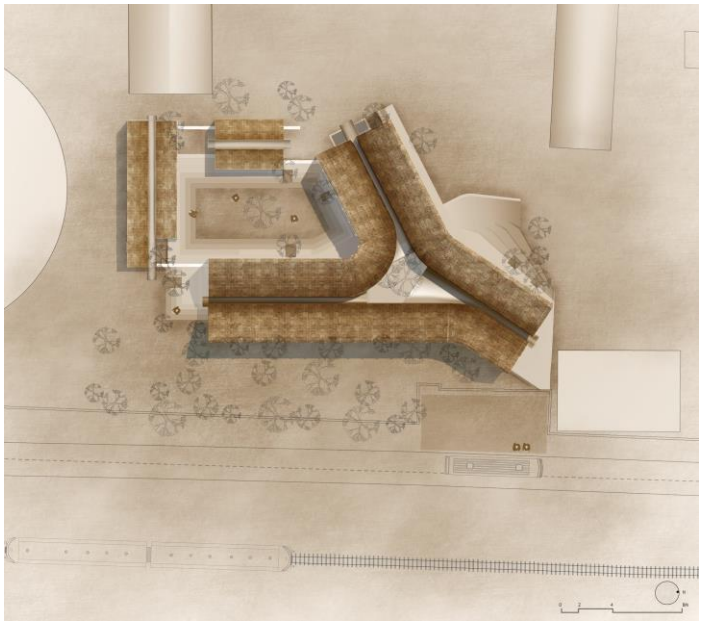
LOCATION:

384H+RRJ, Sakharwadi, Maharashtra
18.0571° N, 74.3295° E



MAP OF MAHARSHTRA



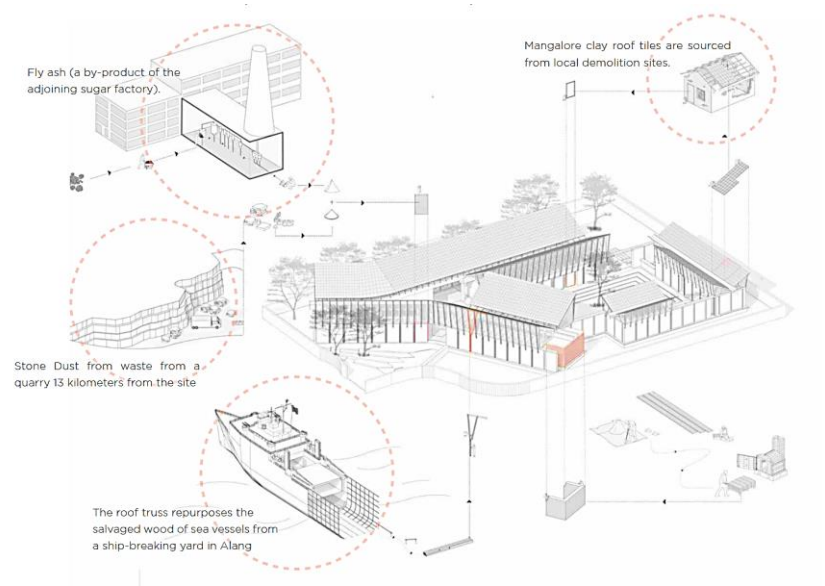


01. Administrative Office : 25 m²
02. Pantry : 5 m²
03. Storeroom : 4 m²
04. Restrooms(M) : 10 m²
05. Restrooms(F) : 10 m²
06. Prayer Hall : 90 m²
07. Workshop Block : 105 m²
08. Guest Room : 16.5 m²
09. Guest Bathroom : 4 m²
10. Guest meditation : 4 m²
11. Guest Room : 16.5 m²
12. Guest Bathroom : 4 m²
13. Guest Room : 16.5 m²
14. Guest Bathroom : 4 m

LITERATURE STUDY

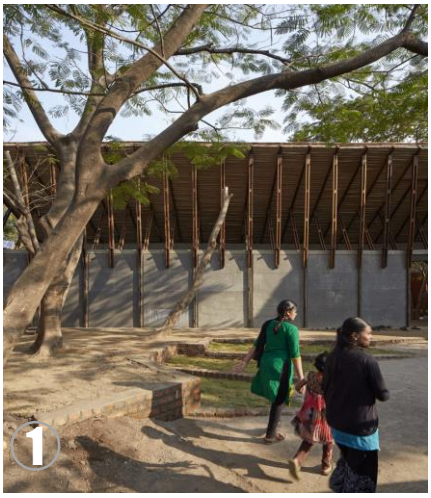
JETAVAN SPIRITUAL CENTER,

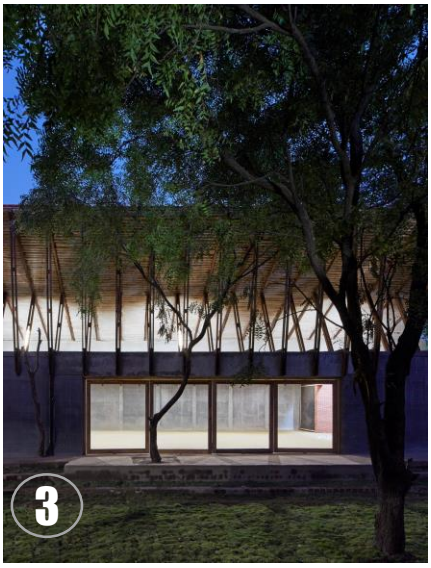
MAHARASHTRA, INDIA



With the mandate of not harming a single tree on site the sizable program was split up into 6 buildings each situated in gaps between the heavy planting. Through the design process two courtyards emerged as links suturing these buildings into a common identity.

Further by inverting the roof profile with a central valley in the middle and rising edges, the interior spaces were visually connected with the foliage outside. The interior spaces hence are also a function of the outside setting, with a lightness that belies the heavy programs on site. The separation of the roof from the walls while providing much-needed cross ventilation also scales the building towards the courtyard.





Repurposed wood from old shipping vessels act as a roof structure, with the understructure made of mud rolls, which are also great insulation. The roof itself is finished with clay roof tiles, remnants from older demolished buildings. The flooring is a traditional mud and dung floor done by members of the local community, which is known to have antiseptic properties.

The repetitive rhythm of the wooden structure, used to bring focus to a deity statue, references the stone ribbed interior of the Buddhist cave architecture.

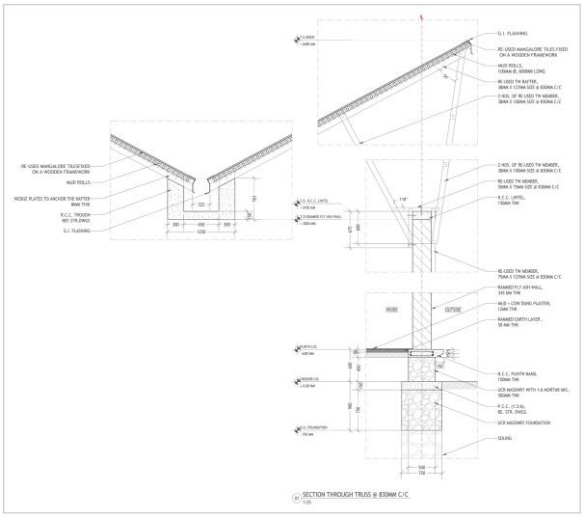
LITERATURE STUDY

JETAVAN SPIRITUAL CENTER,

MAHARASHTRA, INDIA

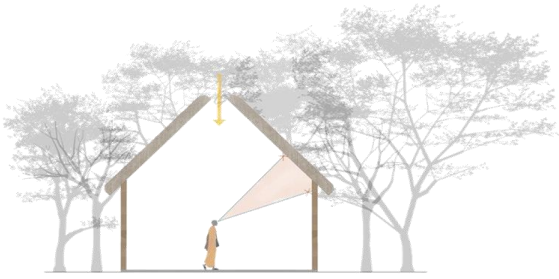
The load-bearing rammed walls are a composite of basalt stone dust (waste from a quarry 13 kilometers from the site) and fly ash (a by-product of the adjoining sugar factory). The roof truss repurposes the salvaged wood of sea vessels from a ship-breaking yard in Alang, and the Mangalore clay roof tiles are sourced from local demolition sites.

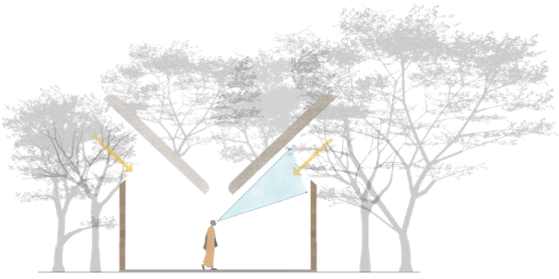
MATERIALS USED

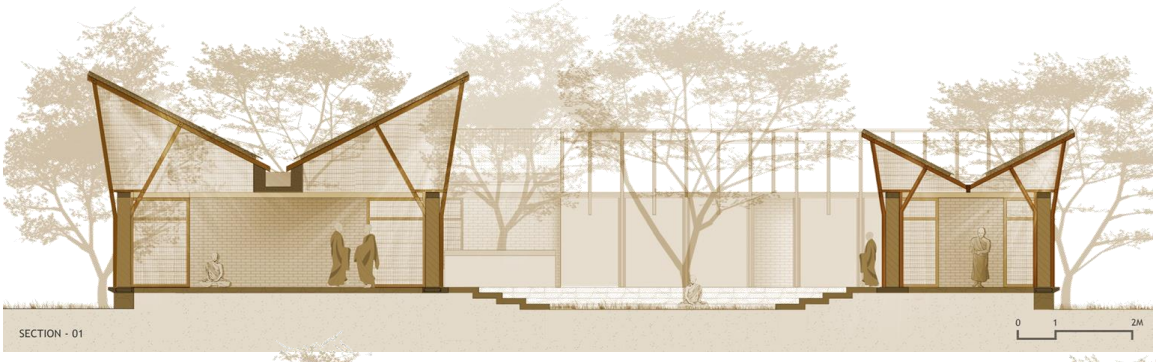


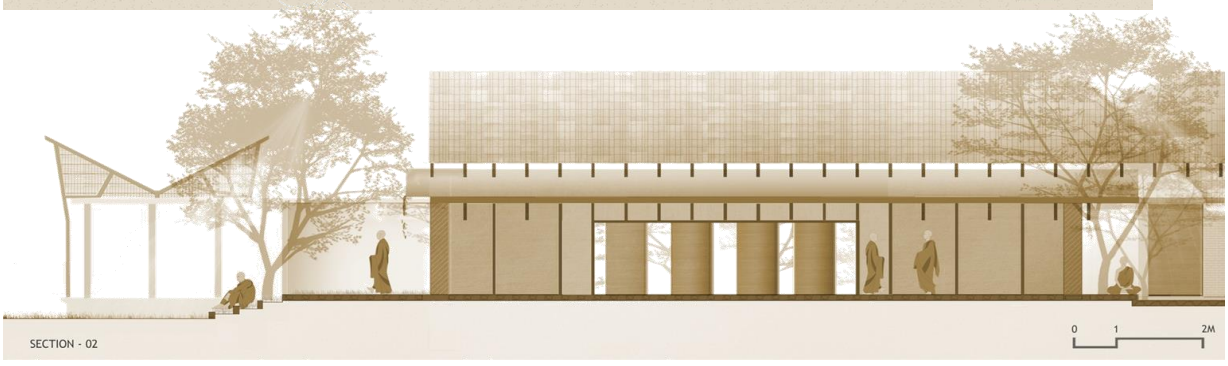
DETAIL OF ROOF

SECTIONS









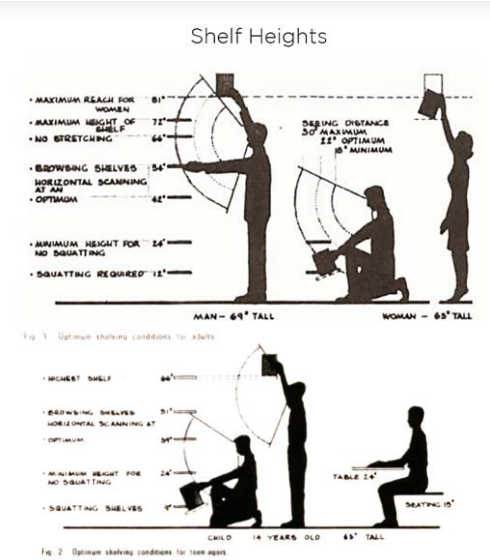
STANDARDS

SCHOOL

DESCRIPTION TENANT OCCUPIABLE AREAS	QTY.	SF EACH	SPACE REQ'D.	SUM ACTUAL SF	TENANT USABLE FACTOR	TENANT USF
Staff and Parent Areas				1,140		
Public Area						
Vestibule	1	60	60			
Reception	1	100	100			
Staff Area						
Director's Office	1	150	150			
Assistant's Workstation	1	80	80			
Sick Bay	1	80	80			
Staff Lounge/Work	1	200	200			
Parent/Staff Conference	2	100	200			
Adult Toilet	2	60	120			
Central Storage	1	150	150			
Service Areas				560		
Laundry	1	100	100			
Warming/Central Kitchen	1	300	300			
Janitor's Closet	1	80	80			
Telephone Closet	1	80	80			
Common Spaces				1,000		
Multiple Purpose Space	1	800	800			
Play Yard Storage	1	200	200			
Classrooms				7,200		
Infant Classroom (8)	1	900	900			
Younger Toddler Classroom (12)	2	1,060	2,120			
Younger Toddler Restroom	2	40	80			
Older Toddler Classroom (14)	1	1,060	1,060			
Older Toddler Restroom	1	40	40			
Preschool Classroom (20)	1	1,440	1,440			
Preschool Restroom	1	60	60			
After School Classroom (20)	1	1,440	1,440			
After School Restroom	1	60	60			
Outside Areas						
Staff Parking	18	300	5,400			
Parent Drop Off/Parking	10	300	3,000			
Entrance Porch	1	400	400			
Play Yard Porches	4	400	1,600			
Play Yards	4	1,500	6,000			
Tenant Suite			9,900	9,900	1.17	11,612
Subtotal Tenant Usable Areas						11,612

DAYCARE CENTER

Activity	Space in sq ft (min., opt.)	Storage	Display	Other
General area		Carts, closed shelves for music equipment	2 centrally located shelves 4 ft long. 15-20 in apart; bulletin board	Planter, hot plate and refrigerator lor in additional storage, below: tables (can be Tables from other areas it easily movable)
Black alcove	50, 75 24-30 w 11" deep,	Shelving: 15 ft x 10 ft Supplementary shelving in movable cabinets to be added through school year		
Manipulative toy area	100-150	2 or 3 two-shelf open cabinets; singing shelves for puzzles, cabinet for toys not in use	Open and sloping shelves (see) Storage, left)	Table for 4-5 children; should be quiet area
Reading and listening	(Combined with manipulative toy area	Closed case for keeping books at children's reach	32 ft long open shelving for 20-25 books shewing front covers; shelf and bulletin	Table or low shelf for tape recorder, accommodating up to 6 children.
Doll and housekeeping area	100-150 Possibly increased to be or decreased progressively	Drawers and open shelving for dress up clothes; dolls; open shelves and peg board in cooking area		Full-length mirror 2 telephones, sink that be shared with table and chairs in cooking area
Art area	100-150	Open shelves for news print and construction paper: shelves accessible only to teacher for paints, scissors	Sufficient to hang six 18"-24" paintings	Easels, sinks (one for children-may be shared with housekeeping area one for teachers; table 18" high with area of 15 x 14 space to paintings to dry
Tutoring booths	45-50 each			Enclosed for privacy: if only one teacher is available, partitions should be glass
cubicles	60 -90	For pupils' clothes and other belongings: 4 ft (h) x 1 ft x 1 ft		
Toilets	40-50			
Additional storage	30-100	Refrigerator, hot plate		May serve as teacher's utility area
Total	675-1015			



CLINIC

Clinic Spaces	WBDG standards QTY.	SF each	Space req.	Jain Malkin (WxL=Area)	Metric Handbook
			Entry Lobby		
Waiting	1	120	120	12 x 14 = 168	
Reception/Registration	1	60	60		
Payee window	1	60	60		
Total Space			240	168	300
			General Patient Care		
Physician office/Consult	1	120	120	12 x 12 = 144	12.4 x 12.8 = 159
Exam room	3	108	324	8 x 12 = 288	14 x 13 = 182
Nurse work area	1	40	40	8 x 10 = 80	80
Patient toilets	1	60	60	2 @ 7 x 8 = 112	2 @ 50 = 100
Clean/Supply room	1	60	60		11.8 x 13.8 = 163
Medication storage	1	20	20		
Soiled utility room	1	60	60		9.5 x 13.8 = 131
Storage				6 x 6 = 36	50
Total space			684	700	865
			Medical Records		
Medical records files	1	60	60		
Total space			60		
			Staff Support Spaces		
Staff toilet (Male)	1	60	60		50
Staff toilet (Female)	1	60	60		50
Staff break room	1	60	60	8 x 10 = 80	7.5 x 9.8 = 73.5
Kitchen/Pantry					7.2 x 2 = 14.4
House keeping	1	36	36		
Business office				12 x 14 = 168	200
Total space			216		387.9
Circulation space	34%		640	20 % = 244	20 % = 310.6
Total Floor Area			1840	1464	1863.5

VARIOUS NATIONAL STANDARDS ON READING AREA, BOOK SPACE AND STAFF AREA.

Country	Reading Area	Book Space	Staff Area
Indian Standards Institution	2.33 m^2 per Reader	150 volumes/m^2	Librarian and Dy. Librarian - 30m^2. Asstt. Librarian and Secretary to Librarian- 9m^2.
University Grants Committee (UK)	2.3 m^2 per seat	**Open Access** Books 213 vols/m^2 Bound journals 106/m^2 **Closed Access** Books 248 vols/m^2 Bound journals 122 vols/m^2	Librarian-22 m^2 Dy. Librarian 13.5 m^2 Asstt. Librarian and secretary to Librarian 9m^2
American Library Association	Undergraduate 25 sq. ft. Graduate 30 sq. ft Teacher 40 sq. ft.	160 vols/m^2	120 sq. ft. (11.3m^2) per person
Canadian Lib. Assoc.	Undergraduate 25 sq. ft. (2.33 m^2)	**Open Acess** 10 vols/sq. ft.	a) 125 sq. ft. per staff member in processing Dept.

Table 19.1 Space allowances per population

Population served	*Allowance per 1000 of population*
10 000 to 20 000	42m^2 (450 sq ft)
20 000 to 35 000	39 m^2 (420 sq ft)
35 000 to 65 000	35 m^2 (375 sq ft)
65 000 to 100 000	31 m^2 (335 sq ft)
over 100 000	28 m^2 (300 sq ft)

IFLA Space standards based on population. The highlighted region shows data applicable for the project.
Figure 5.9 (Source : IFLA Standards)

$$\frac{\text{No. of books}}{110} + (\text{seats} \times 3.7) + (\text{circulation} \div 430)$$

The imperial equivalent of this would be:

$$\frac{\text{No. of books}}{10} + (\text{seats} \times 40) + (\text{circulation} \div 40).$$

VSC Formula : An attempt of creating a universal, scientific formula for library sizing.
Figure 5.10 (Source : American Public Library Building - Wheeler & Githens)

Table 19.2 Adult lending facilities

Population served	*Open-shelf accomodation*		*Floor area at 15 m^2 per 1000 volumes (minimum 100 m^2)*
	Volumes per 1000 population	*Total capacity*	
3000	1333	4000	100 m^2 (1076 sq ft)
5000	800	4000	100 m^2 (1076 sq ft)
10 000	600	6000	100 m^2 (1076 sq ft)
20 000	600	12 000	180 m^2 (1938 sq ft)
40 000	600	24 000	360 m^2 (3875 sq ft)
60 000	600	36 000	540 m^2 (5813 sq ft)
80 000	550	44 000	660 m^2 (7104 sq ft)
100 000	500	50 000	750 m^2 (8073 sq ft)

Floor space/sizing of the library
Preliminary space standards for allocating the overall library spaces
Figure 5.11 (Source : IFLA Standards)

Library Spaces	WBDG standards QTY.	SF each	Space req.	Time Savers'	Neufert's	NBC
Entry vestibule	1	80	80			
Exhibits	1	100	100			
Checkout	2	80	160			
Reference Desk	1	80	80			
Reference computer terminals	4	20	80			
Car catalogue	3	12	36			
Total space			536	700		
				Reader Space		
Lounge seating	10	20	200			161
Table seating	20	16	320			
Carrels	10	30	300			
Research computer terminals	8	20	160			
Microfiche cabinets	6	12	72			
Microfiche readers	2	20	40			
Total space			1092	500 (16 seats)		
				Shelving Space		
Periodicals	4	12	48			
Reference stacks	10	12	120			
Collection stacks	100	12	1200			
AV Media collection	6	12	72			
Total space			1,440	1,000		
				Staff Workspace		
Librarian's office	1	120	120			323
Librarian's assistant	2	80	160			194
Workroom	1	200	200			21.5
Storeroom	1	300	300			
House keeping	1	80	80			
Duplication centre	1	80	80			
AV workroom	1	200	200			21.5
Total space			1,140	300		432
For population range - 2,500 to 4,999			4,496	2,500		1,153

*Variation in areas is due to inclusion of AV media collection and support spaces.

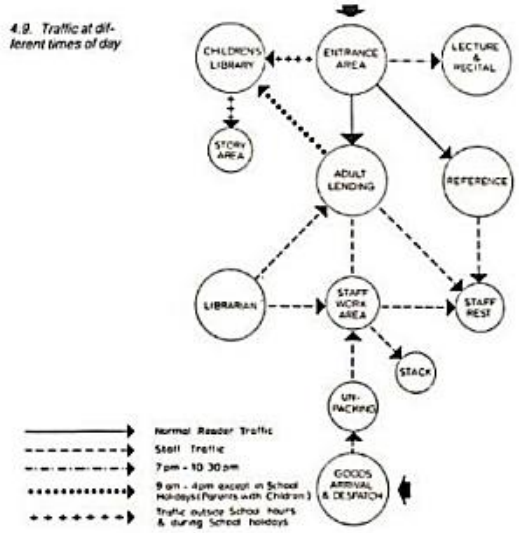


Figure 5.15 : Relationship diagram between different zones of a library and their usage. (source : Edwards, 2009)

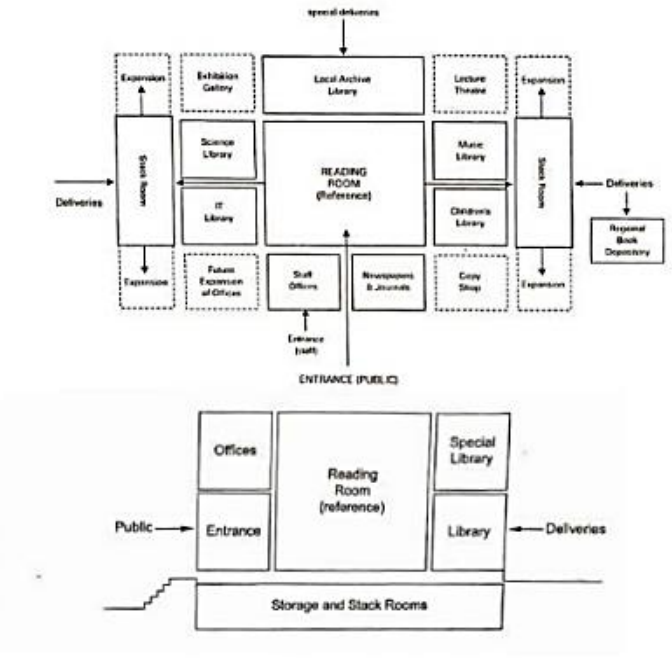


Figure 5.16 : Diagramatic layout of a public library (source : Edwards, 2009)

Range spacing	Square feet with minimum cross aisles	Square feet with generous cross aisles	Square feet with adequate cross aisles combined with carrels
5 ft 0 in.	8.25	9.00	8.4375
4 ft 6 in.	7.425	8.10	7.60
4 ft 3 in.	7.0125	7.65	7.225
4 ft 0 in.	6.60	7.20	6.75

Book Stack Aisles

Typical use of Stock	Main aisle		Subsidiary cross aisle	
	Min.	Max	Min.	Max.
Closed-access storage	3 ft	4 ft 6 in.	2 ft 6 in.	3 ft 6 in.
Limited-access stock	3 ft	4 ft 6 in.	3 ft	3 ft 6 in.
Heavily used open-access stack	4 ft	5 ft	3 ft	4 ft
Heavily used open-access stack for large collection and ranges 30 ft or more long	4 ft 6 in.	6 ft	3 ft 3 in.	4 ft 6 in.

Book Stack Aisles

Typical use of Stock	Aisle width, in.		Range lengths	
	Min.	Max	Min.	Max.
Closed-access storage stack	24	30	30	60
Limited-access, little used stack for over 1,000,000 volumes	26	31	30	42
Heavily used open-access stack for over 1,000,000 volumes	31	36	24	36
Very heavily used open-access stack with less than 1,000,000 volumes	33	40	15	30
Newspaper stack with 18 in. deep shelves	36	45	15	30
Reference and current-periodical room stacks	36	60	12	21
Current-periodical display stacks	42	60	12	21

Area for seating arrangement

Bay Size	Open	Double or triple - staggered	Small closed	Large Closed
18 ft	4	4	4	3
19 1/2 ft	4	4	4	3
21 ft	5	4	4	4
22 1/2 ft	5	5	5	4
24 ft	6	5	5	4
25 1/2 ft	6	5	5	5
27 ft	6	6	6	5

Clear Ceiling Heights

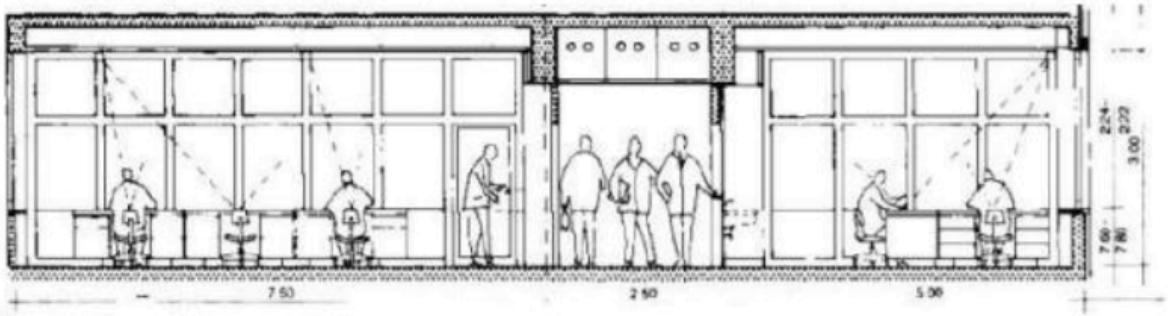
Area	Suggested Maximum	Suggested functional maximum
Book stacks	7 ft 6 in.	8 ft 6 in.
Stacks with lights at right angle to ranges	8 ft 4 in.	8 ft 9 in.
Stacks with light on range tops functioning by ceiling reflection	9 ft 0 in.	9 ft 6 in.
Reading areas under 100 sq. ft	7 ft 6 in.	8 ft 6 in.
Individual seating in large areas	8 ft 4 in.	9 ft 6 in.
Large reading rooms over 100 ft long broken by screens or bookcases	9 ft 6 in.	10 ft 6 in.
Auditoriums up to 1,500 sq. ft	9 ft 6 in.	10 ft 6 in.
Entrance or main level with over 20,000 sq. ft	9 ft 6 in.	10 ft 6 in.
Floor with mezzanine	15 ft 6 in.	18 ft 6 in.

STANDARDS
CO WORKING SPACE

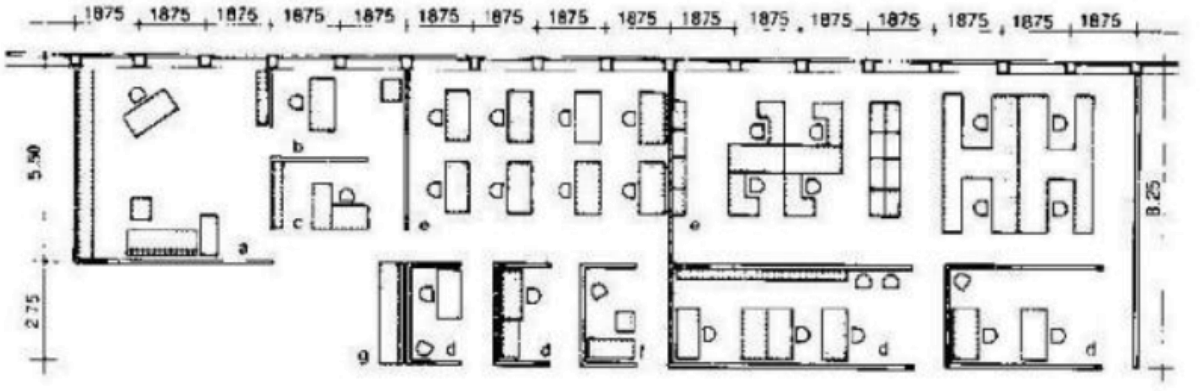
Collaborative working or co-working are office models catering to flexible mode of working. Working on an appointment basis, these are designed as common spaces - which can be rented out as in when needed - on an individual user basis.

It is a space designed like a living room - encouraging dialogue and conversation aswell as comfortable working space.

It regularly hosts events and gathering in an attempt to built a community of patrons.



(4) Section through office space



OPEN PLAN OFFICE LAYOUT STANDARDS (SOURCE :NEUFERT)

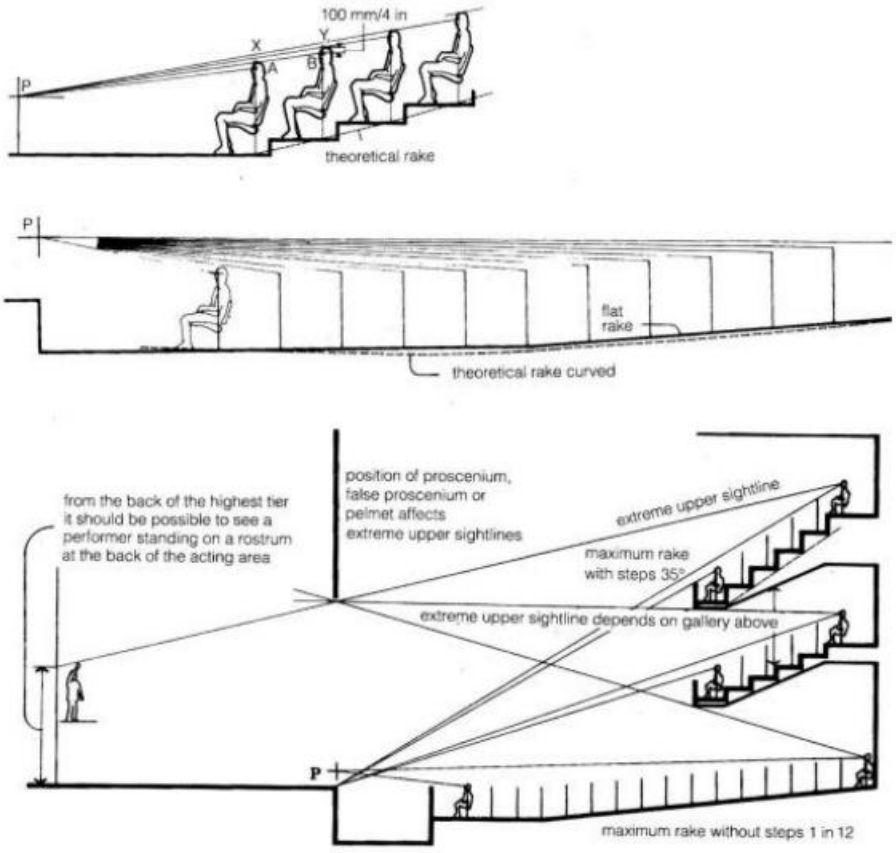


Figure 5.33 : Seating angle is not uniform. It is determined by the viewing angle of the audience members. (Source : Neufert)

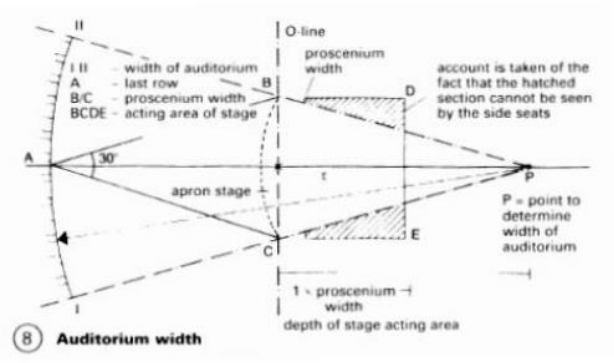


Figure 5.34 : The viewing angle determines the auditorium width and wings division on the stage. (Source : Neufert)

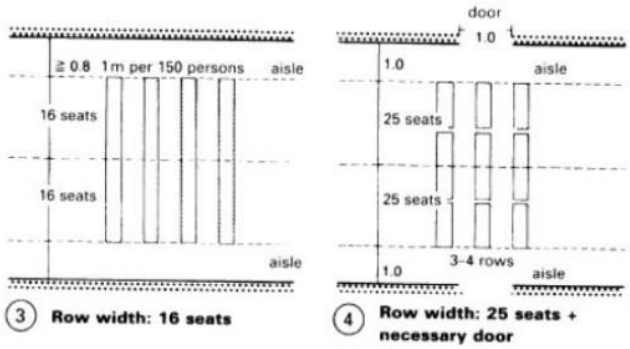


Figure 5.35 : Row width and aisle dimensions (Source : Neufert)

NAMTI

CENTRE FOR COMMUNITY DEVELOPMENT, DELHI

INTRODUCTION

CENTRE FOR COMMUNITY DEVELOPMENT IN MANGOLPURI INDUSTRIAL AREA PHASE I, DELHI AIMS FOR AN ARCHITECTURAL INTERVENTION, TO BRING ABOUT SOCIAL CHANGE IN COMMUNITY.

A COMMUNITY CENTRE SERVING AS A BRIDGE BETWEEN COMMUNITIES.

MANGOLPURI PHASE I AREA 0.85 km^2

POPULATION (2020) 13,833

POPULATION DENSITY 16317 people / km^2

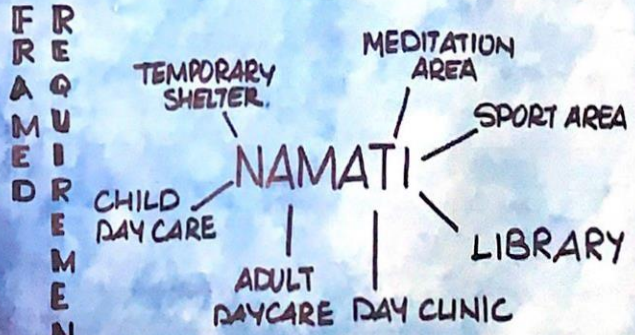
MALE POPULATION 7382

FEMALE POPULATION 6461

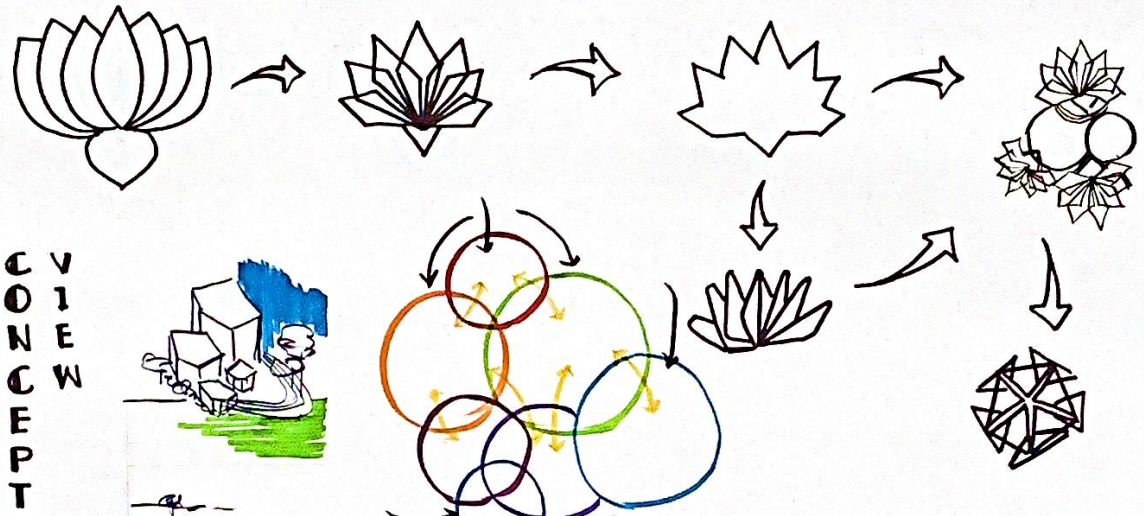
CONCEPT OUTL

NAMTI COMES FROM SANSKRIT MEANS "TO SHAPE SOMETHING INTO A CURVE." ALSO USED IN BUDDHISM.
THE CONCEPT OF LOTUS COMES IN PICTURE WITH THE NAME ITSELF, AS IT GROWS IN DEEP MUD BUT EVENTUALLY REACHES THE LIGHT, THE SAME FUNDAMENTAL IDEA IS IMPLIMENTED DURING DESIGNING THIS SPACE WHERE THE USER EXPERIECES SENSE OF SELF - REGENE RATION AND IN LIGHT.
ARCHITECTURALLY SEEING, WHEN CONVERTED INTO GEOMETRIC VECTOR IT FORMS TRIANGLE, ONE OF THE STRONGEST SHAPE.

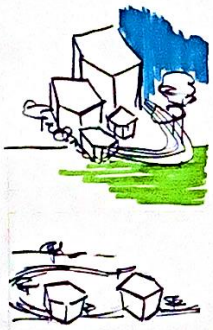
FRAMED REQUIREMENT

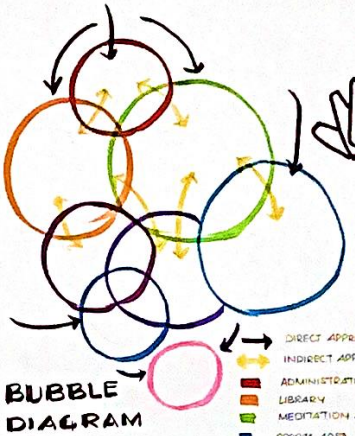


FORM EVOLUTION



CONCEPTUAL VIEW

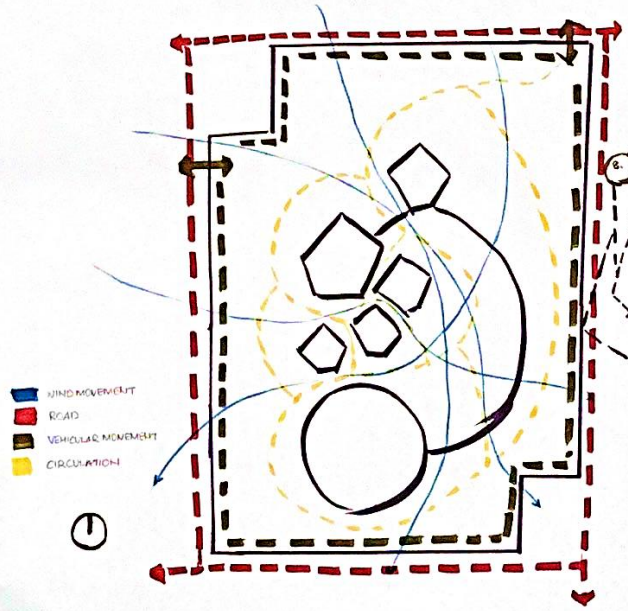




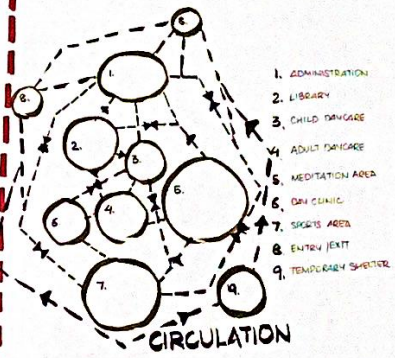
BUBBLE DIAGRAM

- DIRECT APPROCH
- INDIRECT APPROCH
- ADMINISTRATION
- LIBRARY
- MEDITATION AREA
- SPORTS AREA
- ADULT DAYCARE
- CHILD DAYCARE
- CLINIC
- TEMPORARY SHELTER

STACKING AND ZONING



- MAIN MOVEMENT
- ROAD
- VEHICULAR MOVEMENT
- CIRCULATION



1. ADMINISTRATION
2. LIBRARY
3. CHILD DAYCARE
4. ADULT DAYCARE
5. MEDITATION AREA
6. DAY CLINIC
7. SPORTS AREA
8. ENTRY/EXIT
9. TEMPORARY SHELTER

CIRCULATION

FAR 120

GROUND COVERAGE 35%

ADMINISTRATION
2000m²

LIBRARY
3000m²

CHILD DAYCARE
2000m²

ADULT DAYCARE
2000m²

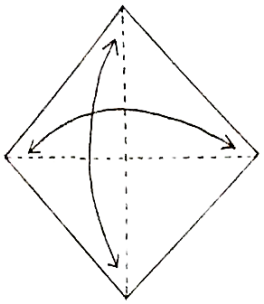
DAY CLINIC
1000m²

SPORTS
2500m²

MEDITATION
2500m²

TEMPORARY SHELTER
4000m²

①



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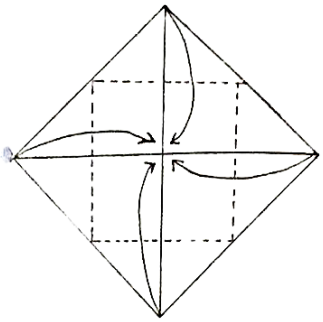

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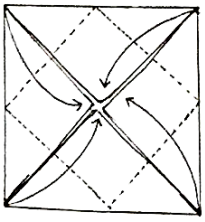

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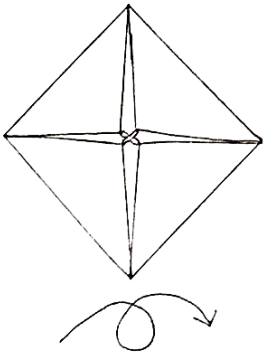

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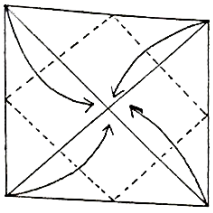

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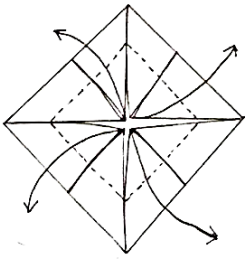

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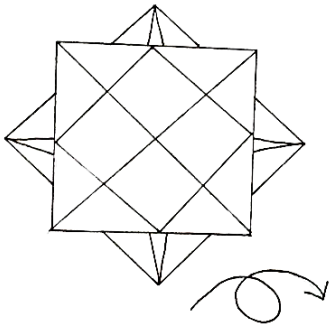

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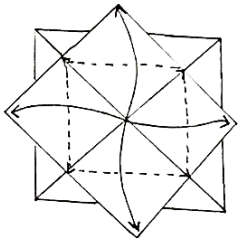

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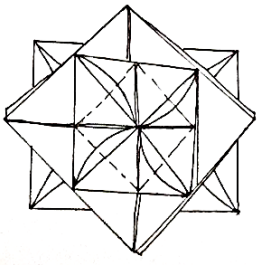

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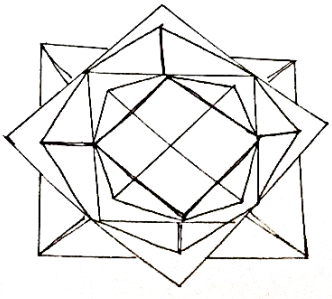
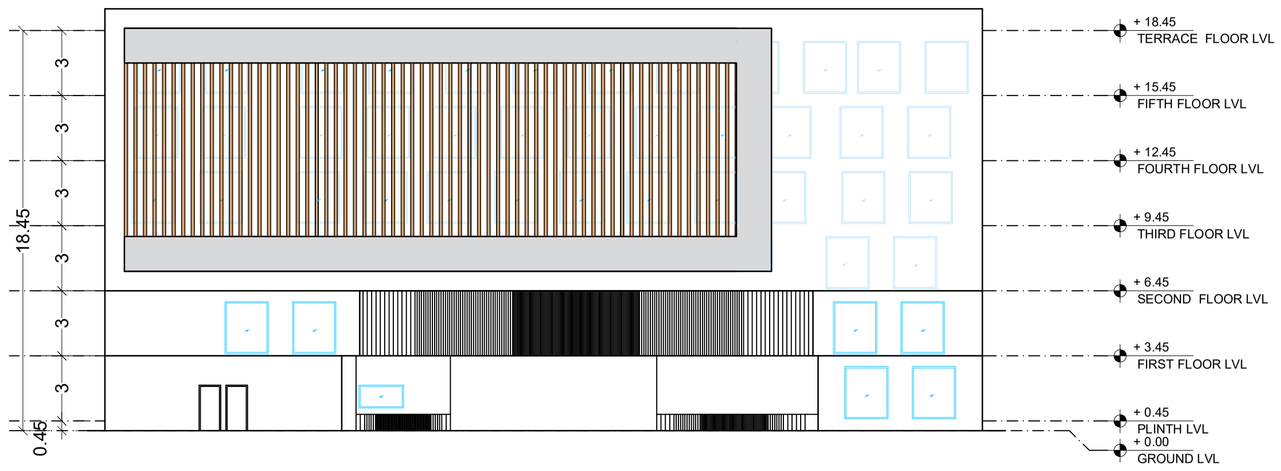


AREA STATEMENT

LIBRARY BLOCK	STANDARD (NBC)	UNIT NO.	AREA (sqm)
Stack room	2 books / person		2x200000= 400000
No. of books 2 per person, 2 x 200000 = 400000 Books		2	
No. of books stored in open shelves 10sqm area per 1000 books	10 sqm		
No. of shelves required		10 x 400	4000
Area required to collect	2.5 sqm		
Total seating and reading area required		2.5 x 400	1000
TOTAL			5000
READING SPACE			
Group study room (study carrels)	3.25 sqm	200	650
Quite Reading Room/ Study room	45 sqm	20	900
TOTAL			1550
MULTIMEDIA LIBRARY			
Virtual resource (Public access computer station)	4	25	100
Public access catalogue station	3	25	100
TOTAL			200
TEEN'S LIBRARY	1500	1	1500
CHILDREN'S LIBRARY			
Reading / Performance area (40 kids)	85	2	170
Workshop/Classroom (15 kids per class)	35	4	140
Creche/Daycare	25	4	100
Kids library	1200	1	1200
TOTAL			3110
LEARNING CENTRE			
TEACHING/TRAINING CENTRE			
Seminar room (2 sqm/person)	30	2	120
Conference room (2 sqm/person)	30	2	120
Large classrooms (40 kids)	80	10	800
Small classrooms (20 kids)	40	20	800
Multipurpose hall (lecture/workshop) (100 kids x 2 sqm/kid)	200	2	400
Equipment room	30	6	180
Group study hall	150	2	300
Group study room	15	5	75
TOTAL			2795
ADMINISTRATION			
Librarian's room	30 sqm	1	30
Deputy librarian's room	30 sqm	1	30
Technical staff room	5sqm/person	5	25
Administrative staff room	5sqm/person	10	50
Committee room	2 sqm/person	1	30
Display space at entrance (lounge)	3.7 sqm	300	1110
pop-up event space (muiltipurpose hall)	300 sqm	1	300
Store room	30 sqm	2	60
Canteen	600 sqm	1	600
Staff Toilet			
TOTAL			2235
CO-WORKING CENTRE			
Workstation	3.7	600	2220
Conference Hall	50	10	500
Meeting rooms	25	10	250
CAFÉ	250	2	500
ADMIN and STAFF AREAS			
Staff office	14	25	350
Reception desk and lounge	50	4	200
Server rooms	600	1	600
Toilets			
TOTAL			4620
PUBLIC AMENITIES			
Meditation centre (500 x 1.5 sqm per person)	750	1	750
Open air theater	600	1	600
TOTAL			1350
PARKING	2 CAR / 92.3 sqm	324	5000
TOTAL			26460
F.A.R			FAR 1.2
GROUND COVERAGE			10548
MAXIMUM HEIGHT			26
MAXIMUM BUILT -UP			36000
ACHIEVED BUILT- UP			26335

AREA STATEMENT

TOILET REQUIREMENT	WC	URINAL	WASH BASIN	WATER FOUNTAIN
LEARNING CENTER				
Male	5	4	8	2
Female	4			
CO WORKING				
Male	16	12	24	6
Female	8			
LIBRARY BLOCK				
Male	14	10	2	5
Female	6			
STAFF OFFICE				
Male	2	1	2	
Female	2			
CAFÉ				
Male	3	4	4	2
Female	2			
TOTAL	62	31	40	15
TOTAL AREA			600	


18.45
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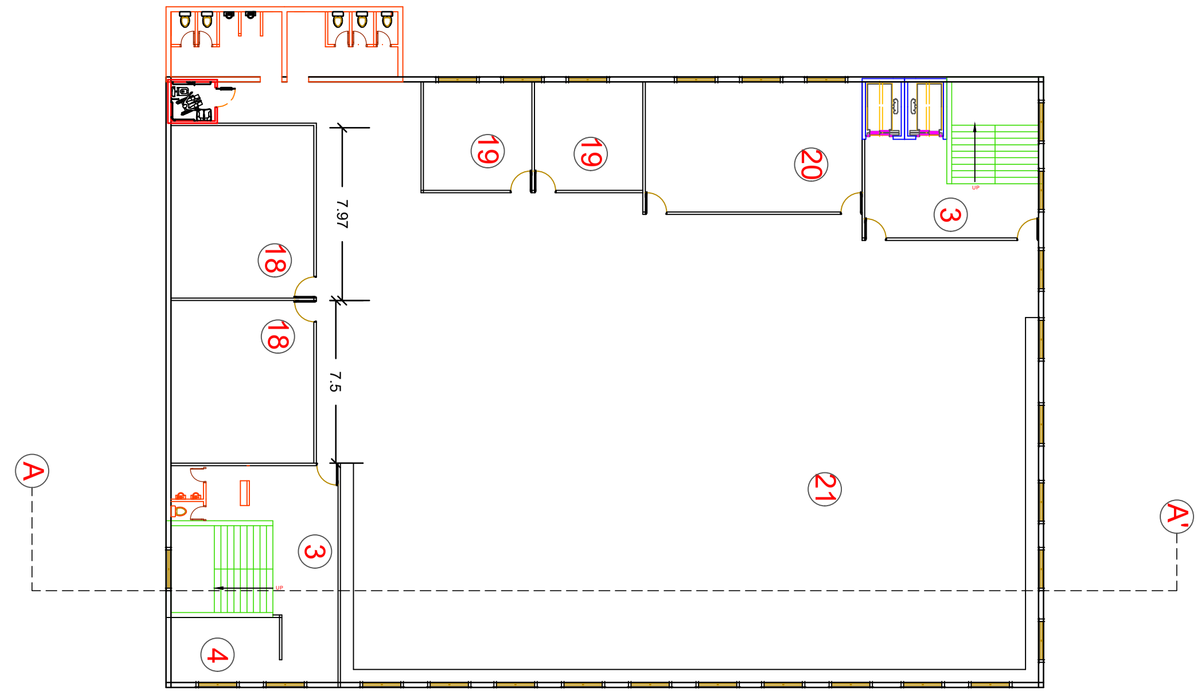
3
3
3
3
3
0.45
+ 18.45
TERRACE FLOOR LVL
+ 15.45
FIFTH FLOOR LVL
+ 12.45
FOURTH FLOOR LVL
+ 9.45
THIRD FLOOR LVL
+ 6.45
SECOND FLOOR LVL
+ 3.45
FIRST FLOOR LVL
+ 0.45
PLINTH LVL
+ 0.00
GROUND LVL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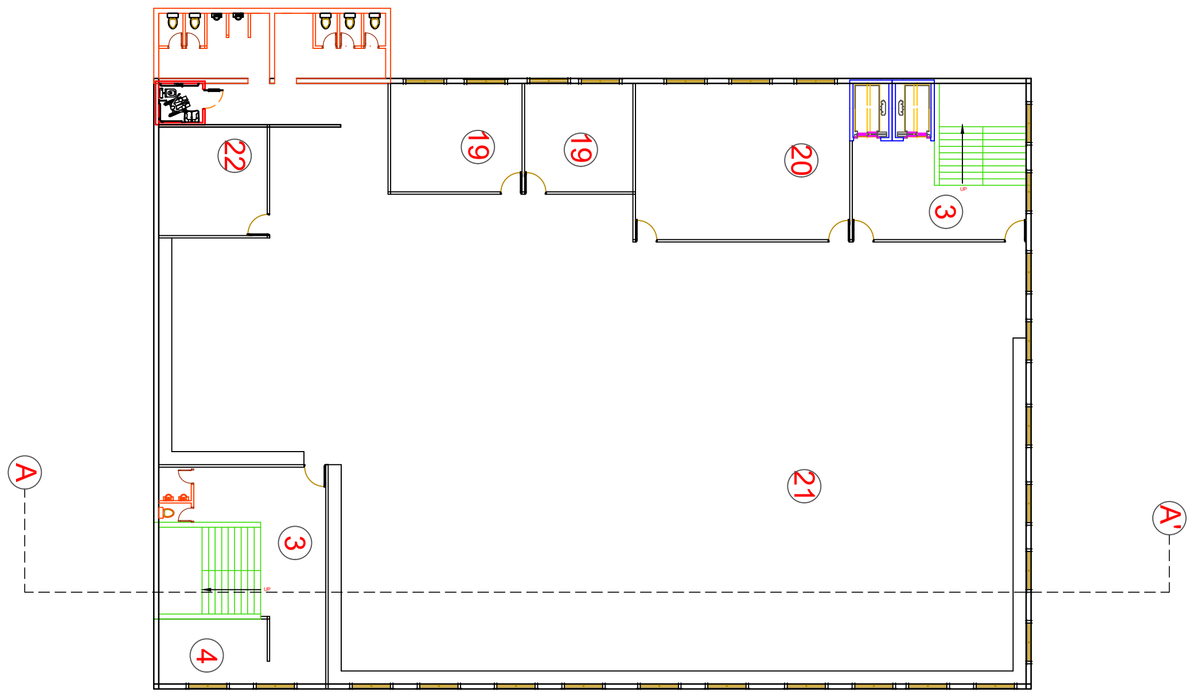
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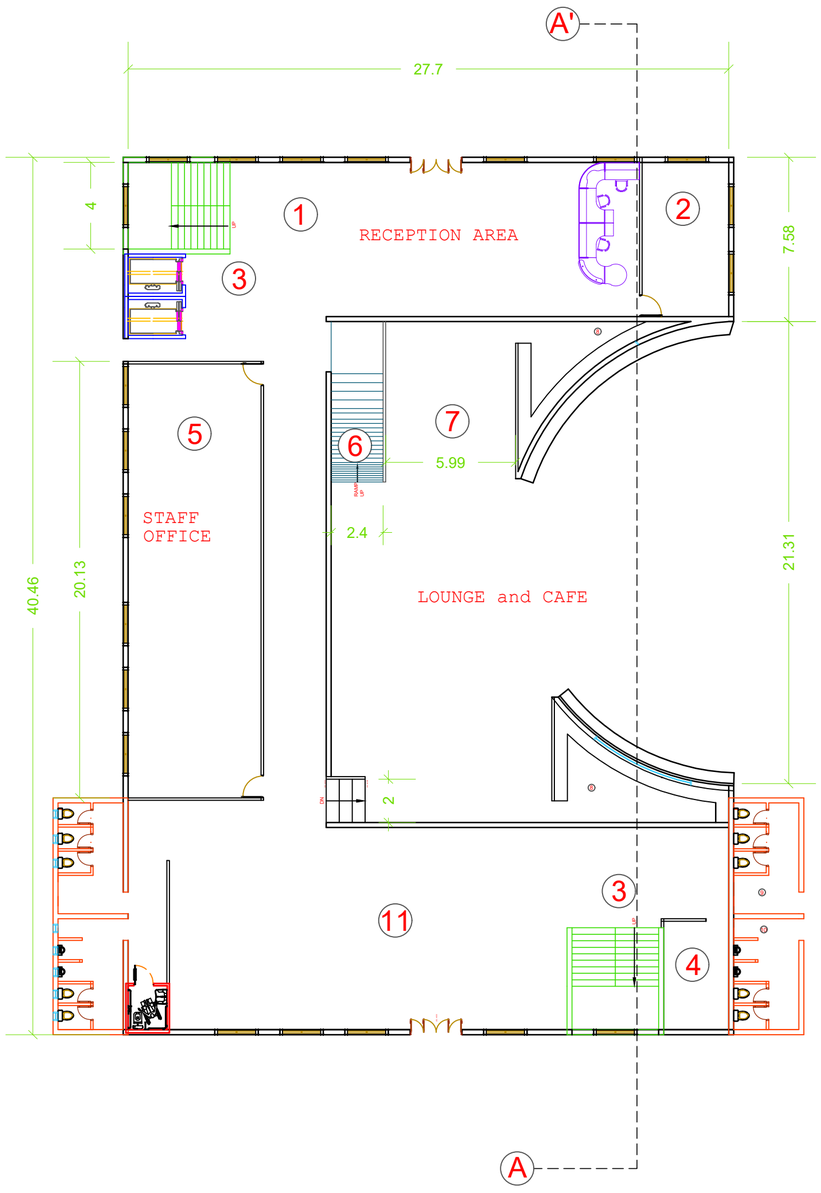
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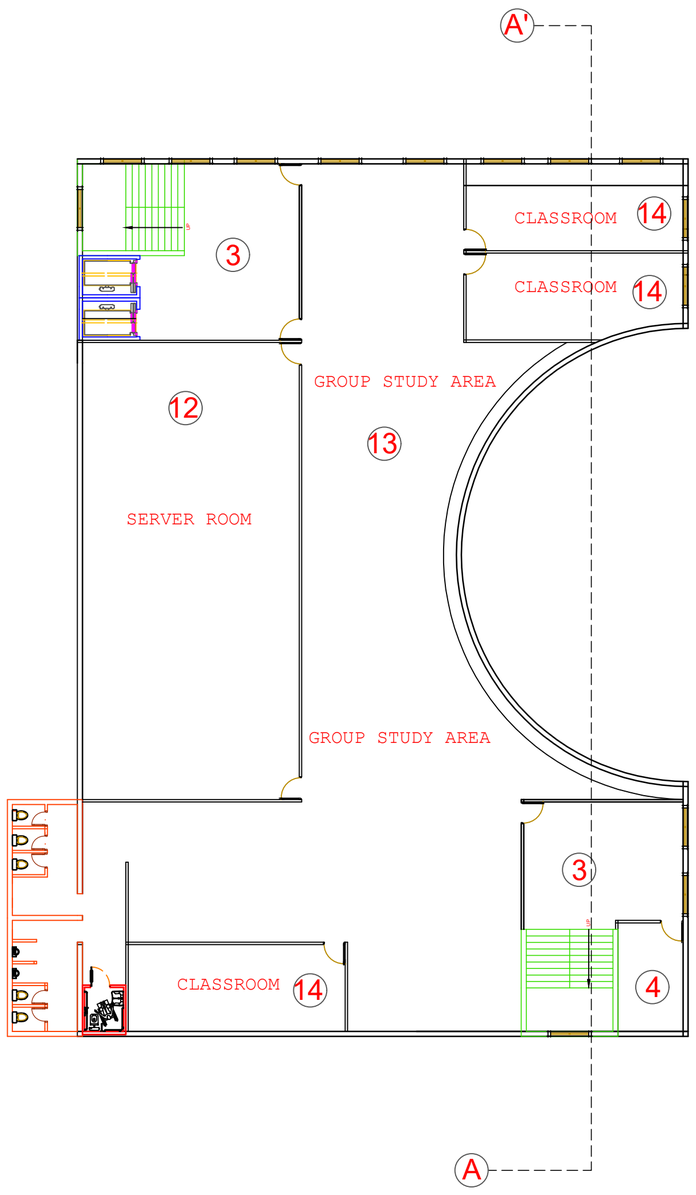
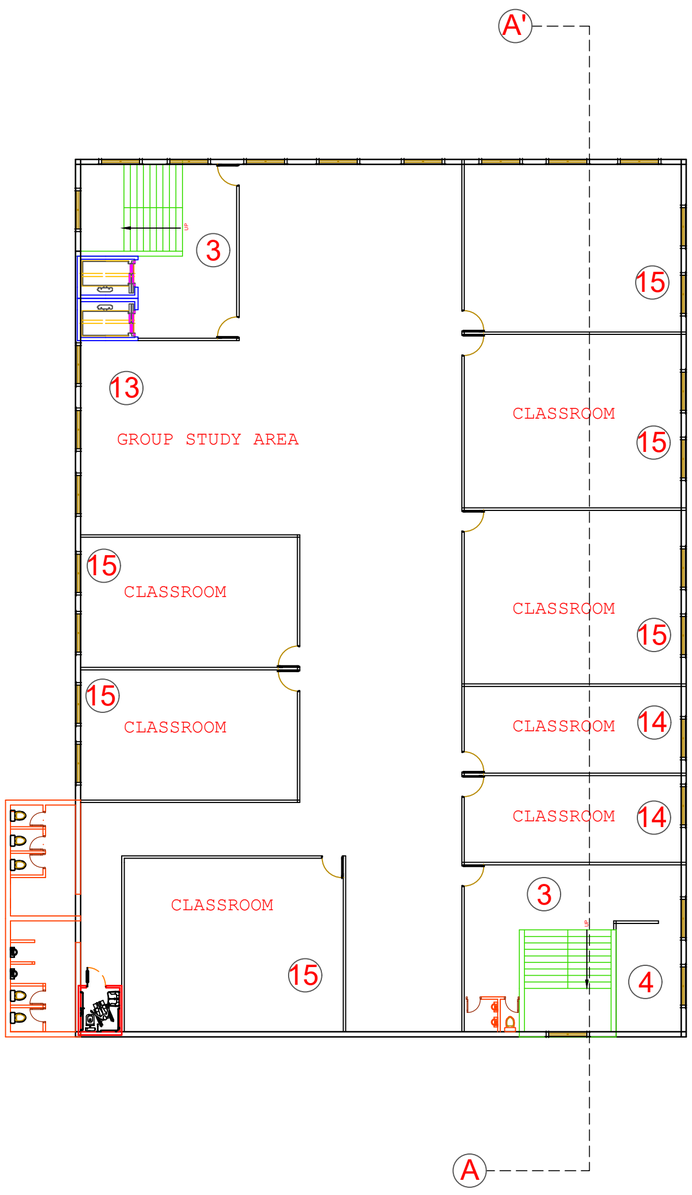
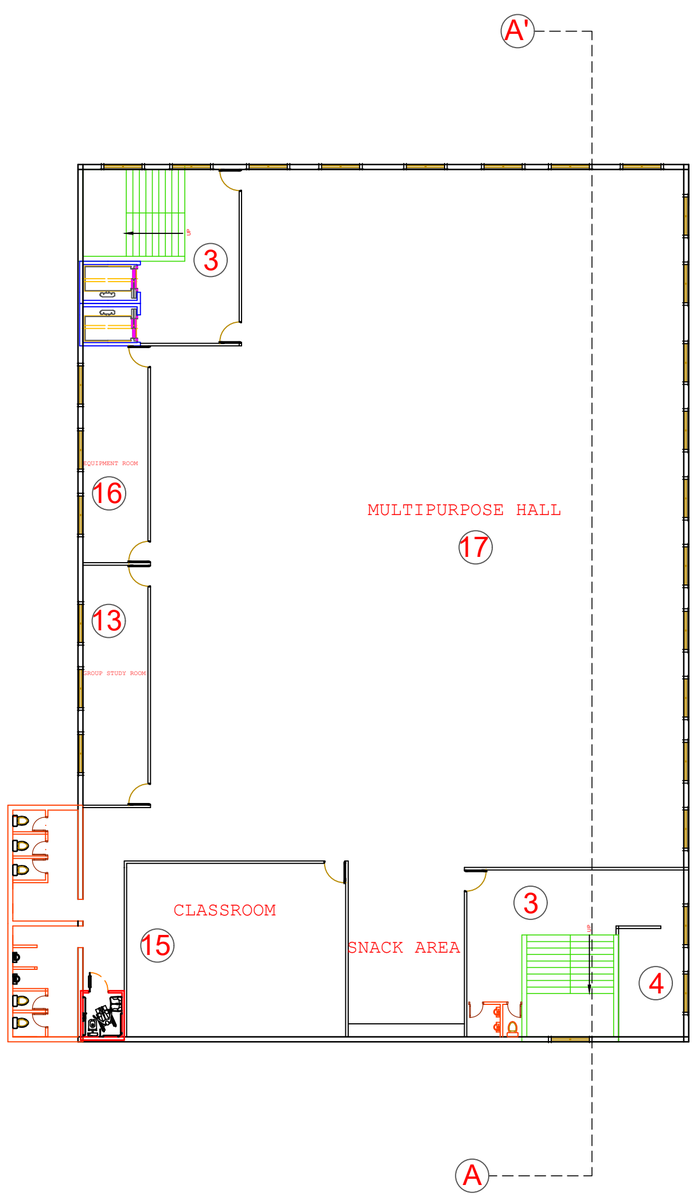
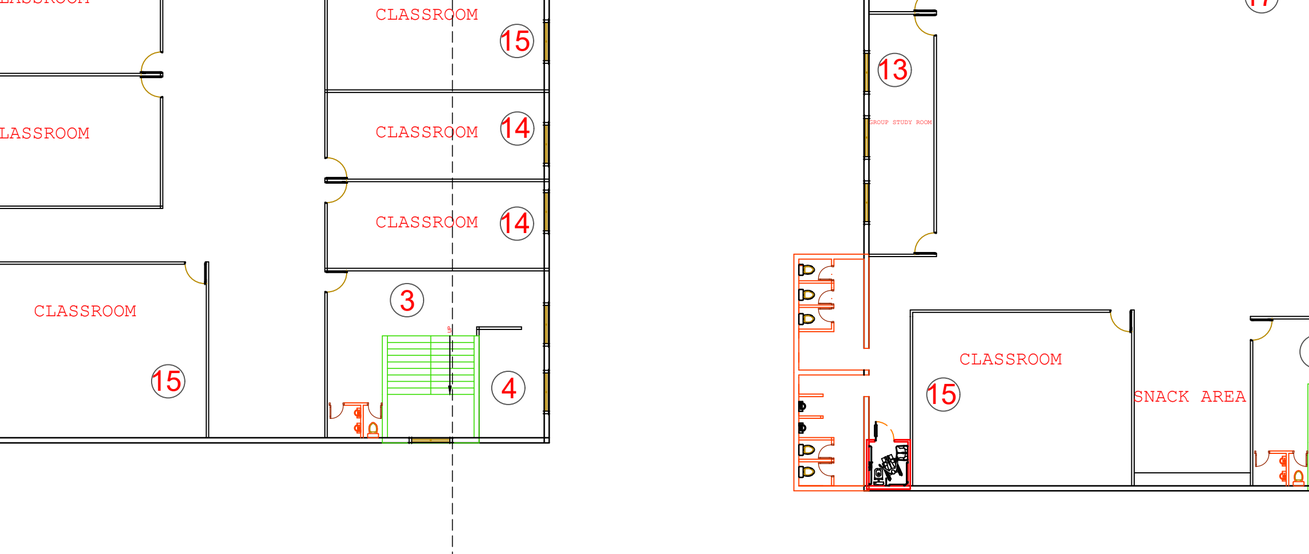
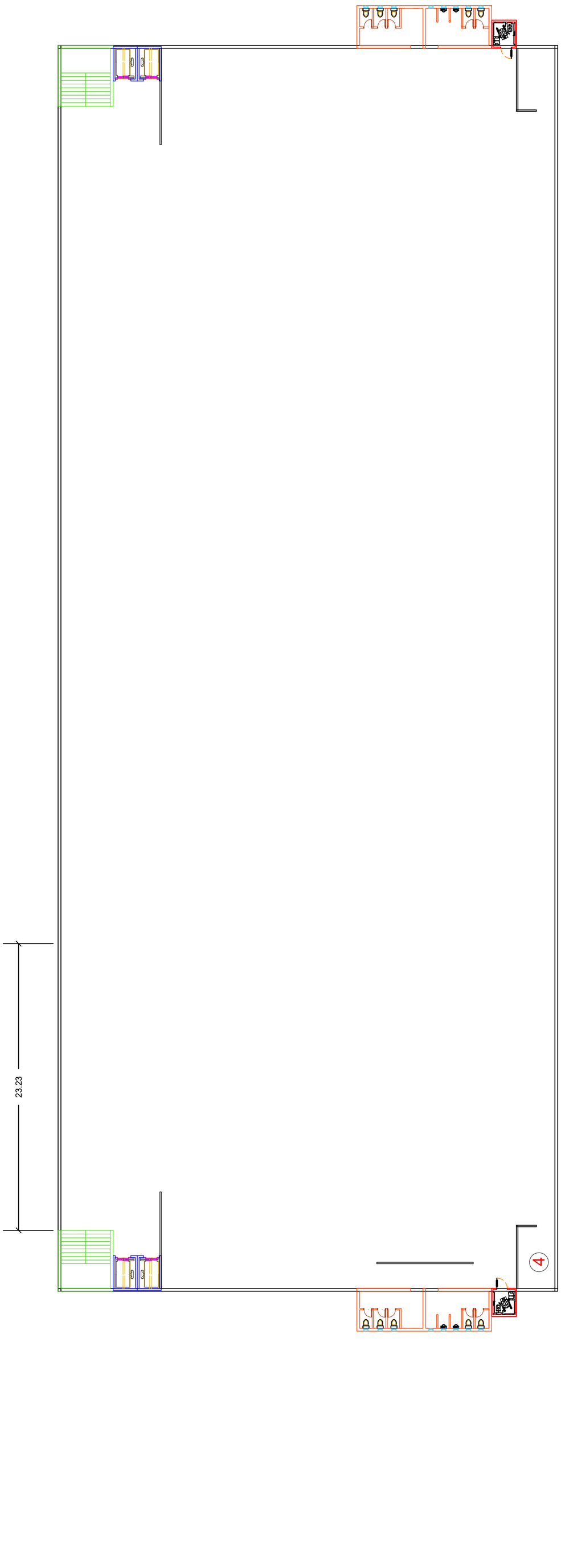
1
RECEPTION AREA
2
7.58
3
5
STAFF
OFFICE
6
7
5.99
2.4
LOUNGE and CAFE
40.46
20.13
21.31
A
11
3
4

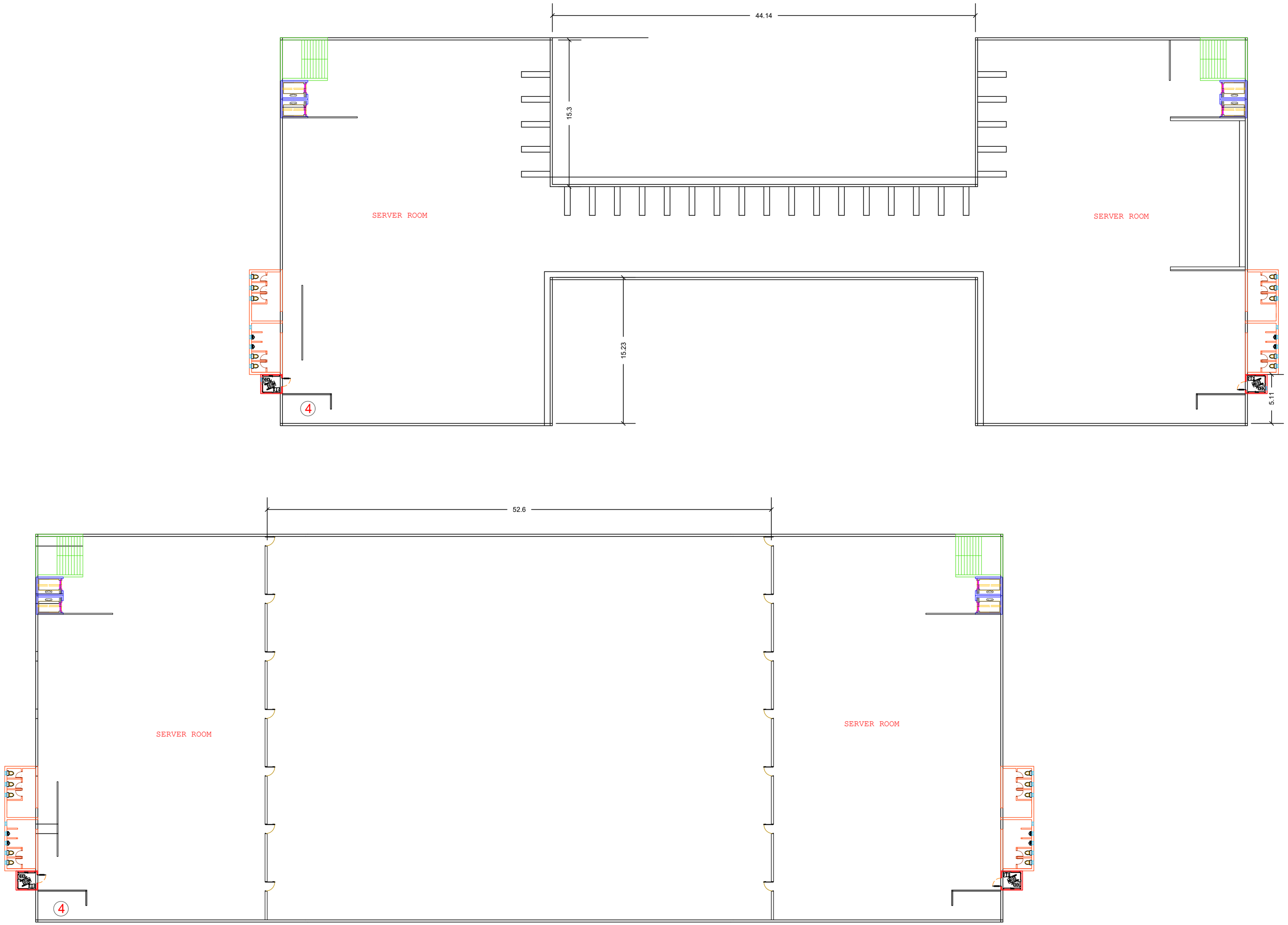

A'
3
CLASSROOM
14
CLASSROOM
14
GROUP STUDY AREA
12
13
SERVER ROOM
GROUP STUDY AREA
3
CLASSROOM
14
4
A

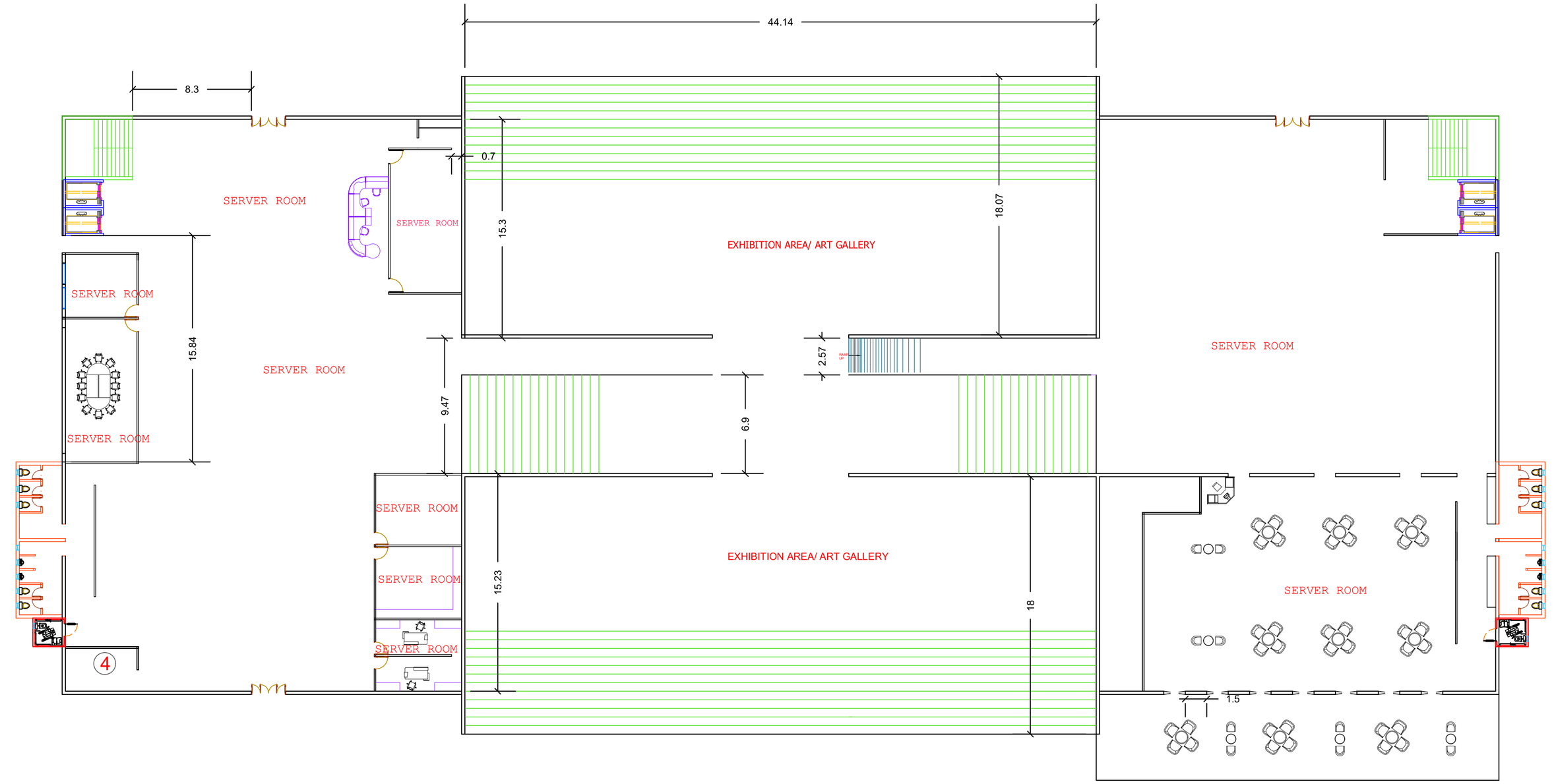

A'
3
15
13
GROUP STUDY AREA
CLASSROOM
15
15
CLASSROOM
CLASSROOM
15
CLASSROOM
14
CLASSROOM
14
CLASSROOM
3
15
4
A

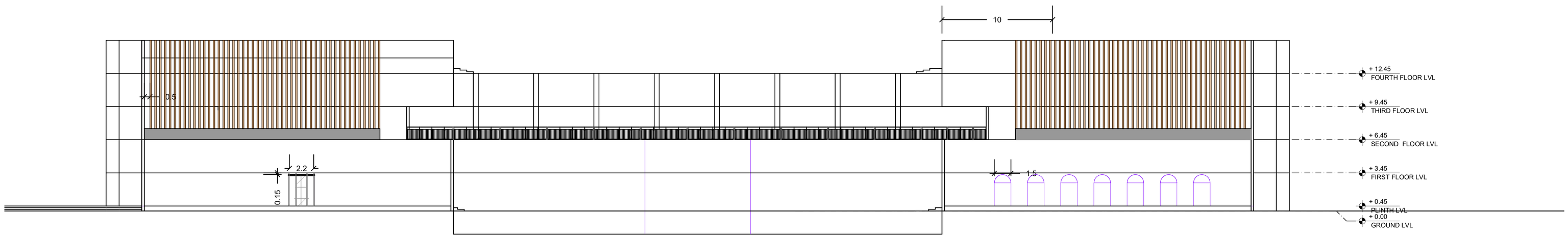

A'
3
EQUIPMENT ROOM
16
MULTIPURPOSE HALL
17
13
GROUP STUDY ROOM
CLASSROOM
15
SNACK AREA
3
4
A


MUMTY
3
3
3
3
3
3
18.45
0.45
MULTI PURPOSE HALL
MULTI PURPOSE HALL
CLASSROOM
CLASSROOM
CLASSROOM
CLASSROOM
CLASSROOM
CLASSROOM
CLASSROOM
RECEPTUM AREA
LOUNGE and CAFE
+ 18.45
TERRACE FLOOR LVL
+ 15.45
FIFTH FLOOR LVL
+ 12.45
FOURTH FLOOR LVL
+ 9.45
THIRD FLOOR LVL
+ 6.45
SECOND FLOOR LVL
+ 3.45
FIRST FLOOR LVL
+ 0.45
PLINTH LVL
+ 0.00
GROUND LVL


23.23
4


44.14
15.3
SERVER ROOM
SERVER ROOM
15.23
5.11
52.6
SERVER ROOM
SERVER ROOM
4
4


44.14
8.3
0.7
SERVER ROOM
SERVER ROOM
15.3
EXHIBITION AREA/ ART GALLERY
18.07
SERVER ROOM
SERVER ROOM
15.84
SERVER ROOM
SERVER ROOM
2.57
9.47
6.9
SERVER ROOM
SERVER ROOM
15.23
EXHIBITION AREA/ ART GALLERY
18
SERVER ROOM
SERVER ROOM
1.5
4


10
0.5
2.2
0.15
1.5
+ 12.45
FOURTH FLOOR LVL
+ 9.45
THIRD FLOOR LVL
+ 6.45
SECOND FLOOR LVL
+ 3.45
FIRST FLOOR LVL
+ 0.45
PLINTH LVL
+ 0.00
GROUND LVL

45.64

102.08

10

30.5

36

10.06

292.5

EXHIBITION AREA/ ART GALLERY

EXHIBITION AREA/ ART GALLERY

10.82

5

2.5

13

15.59

19

123