ARCHITECTURE THESIS REPORT 2019-2020

INSTITUTE FOR VISUALLY IMPAIRED DWARKA, NEW DELHI

A Thesis Submitted
in Partial Fulfillment of the
Requirements
for the Degree of

BACHELOR OF ARCHITECTURE

in
ARCHITECTURE

by

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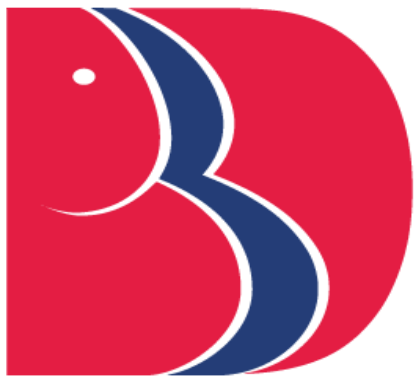
(Enrollment No.- 1140101032)

Under the Supervision of
Ar. AANSHUL. SINGH

to the
School of Architecture



BBD UNIVERSITY

May, 2020

ACKNOWLEDGEMENT

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Also I would also like to thank my friends YASHASHWI SHARMA & HAMZA my juniors MIRZA MAZHER HUSSAIN , MOHIT, RAHUL,KESHAV, SHRISTI, APPORVA and REHAN for their keen support and enthusiastic approach in assisting. There has been strong support from my fellow mates. Lastly I would like to thank my parents and family member for always encouraging me morally.

……

HIMANSHU CHAUBEY

(Signatures of the candidate)

CERTIFICATE

I hereby recommend that the thesis , entitled **"INSTITUTE FOR VISUALLY IMPAIRED",** prepared by **Mr. HIMANSHU CHAUBEY** under the supervision of my thesis guide , is the bonafide work of the student and can be accepted as fulfilment for the award of **BACHELOR'S DEGREE** in (ARCHITECTURE, BCM /ID) SCHOOL OF ARCHITECTURE BBDU, LUCKNOW.

……
Ar. AANSHUL. SINGH
(Signatures of the Supervisor)

…….
PROF. MOHIT AGARWAL
(DEAN)
SCHOOL OF ARCHITECTIRE

Recommendation:

ACCEPTED
NOT ACCEPTED

……..
EXAMNINAR-1

……..
EXAMNINAR-1

BABU BANARASI DAS UNIVERSITY, LUCKNOW

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6. Thesis Preparation Guide was referred to for preparing the thesis.	YES	NO
7. Specifications regarding thesis format have been closely followed.	YES	NO
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9. The thesis has been prepared without resorting to plagiarism.	YES	NO
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B.ARCH THESIS 2019-2020

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…… Signature of External Examiner :- 2

…… Signature of Head of Department

…… Signature of Dean of School

INSTITUTE FOR VISUALLY IMPAIRED DWARKA, NEW DELHI

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WHAT IS VISUAL IMPAIRMENT:

Visual impairment, also known as **vision impairment** or **vision loss**, is a decreased ability to see to a degree that causes problems not fixable by usual means, such as glasses. Some also include those who have a decreased ability to see because they do not have access to glasses or contact lenses. Visual impairment is often defined as a best corrected visual activity of worse than either 20/40 or 20/60. The term **blindness** is used for complete or nearly complete vision loss. Visual impairment may cause people difficulties with normal daily activities such as driving, reading, socializing, and walking.

The World Health Organization (WHO) estimates that 80% of visual impairment is either preventable or curable with treatment. This includes cataracts, the infections river blindness and trachoma, glaucoma, diabetic retinopathy, uncorrected refractive errors, and some cases of childhood blindness . Many people with significant visual impairment benefit from vision rehabilitation , changes in their environment, and assistive devices.

As of 2015 there were 940 million people with some degree of vision loss.246 million had low vision and 39 million were blind. The majority of people with poor vision are in the developing world and are over the age of 50 years. Rates of visual impairment have decreased since the 1990s. Visual impairments have considerable economic costs both directly due to the cost of treatment and indirectly due to decreased ability to work.

For India or other developing countries, it is essential to maintain the legal definition of blindness at the level of visual acuity of 6/60 (20/200 Snellen) or less and field of vision of 20 degree or less

CLASSIFICATION OF VISUAL IMPAIRMENT:

The World Health Organization uses the following classifications of visual impairment. When the vision in the better eye with best possible glasses correction is:

- 20/30 to 20/60 : considered mild vision loss, or near-normal vision
- 20/70 to 20/160 : considered moderate visual impairment, or moderate low vision
- 20/200 to 20/400 : considered severe visual impairment, or severe low vision
- 20/500 to 20/1,000 : considered profound visual impairment, or profound low vision
- More than 20/1,000 : considered near-total visual impairment, or near total blindness
- No light perception : considered total visual impairment, or total blindness

VISUAL IMPAIRMENTS and ARCHITECTURE:

Visual impairment to a larger degree affect mobility of person in accessing and using the built and unbuilt environment. Architecture is the activity of designing , constructing buildings and other physical structures , primarily to provide socially purposeful shelter. There is the need therefore for the architecture to accommodate such person in their design. Measures against the difficulties of disabled in accessing the built and unbuilt.

These measures has led to evolution of architectural concept and intervention such as universal design , barrier free design and physical accessibility among others. These are aimed at facilitating easy movement of such person in built and unbuilt environment. These concepts are necessary as buildings and its surroundings are crucial in the provision of social services such as education (schools) and health (hospital

ABOUT VISUALLY IMPAIRED INSTITUTE:

India is the home to the maximum number of visually impaired persons. According to World Health Organization, of the 37 million persons who are blind, 15 million are from India.

Residential institute for visually impaired is the most comprehensive model managed under guiding principles of NAB Department of Education INDIA. It promote rights and dignity of persons with visual impairments , the Institute produces trained manpower for providing quality education, vocational training and rehabilitation services to the visually impaired persons. It also undertakes research and developmental activities ensuring emergence of disability inclusive policies, programs and practices. Its R&D activities have contributed a number of useful tools and enabling technologies for equal participation by the visually impaired persons in different walks of life.

Institute avails grant-in-aid from the State Department of Social Welfare or such other department. It avails and mobilizes public support as donations, endowments, sponsorship of meals or special events.

WHAT DOES AN INSTITUTE INCLUDES:

It provides basic array of services:

- Instructional services including classroom, educational materials and equipment, office and storage, teachers, aides and other specialists.
- Food services including fully equipped kitchen, dining room, cooks, and other personnel.
- Residential services including furnished rooms, linen, laundry, house-parents, and other personnel.
- Extracurricular and recreational services, both on the campus and the community.
- Health-care services including clinic and medical staff.
- Maintenance and administrative services.
- Training centers for employment generation.

The entire campus of the institute is designed, equipped and staffed specifically to meet the needs of the visually impaired children. In addition to the classroom teachers, there may be other specialists in physical education, orientation & mobility , activities of daily living, music, craft teaching, occupational therapy, career counselling, vocational counselling, social work and psychology. The educational materials, educational and mobility devices and specialized equipment are accessible to all the students throughout the campus.

ARCHITECTURAL BARRIER IN IMPAIRED INSTITUTE:

Those physical attributes of building and facilities which by their presence , absence or design present unsafe condition or deter access and free mobility for the physically handicapped in and around buildings and facilities.

Faber recognizes the fact that these architectural barriers put further strain on physical state of such persons , like presence of poorly designed stairs can cause a visually impaired person to trip and fall down moreover he not only talks about physical barrier inside the building but also barrier around the building as it affects access to the built zone.

These include parts of the building , landscaping , walkways or parking areas. Also include high curb and lack of curb cuts or ramps , gravel walkways , narrow sidewalks , extreme variation in grade of walkways , debris which interferes with passages , narrow doorways and heavy doorways requiring excessive force to open.

AIM AND OBJECTIVE:

Visual impairment to a larger degree affects mobility of a person in accessing and using built and unbuilt environment. There is the need therefore for architecture to accommodate such person into its design. Concerns about difficulties disabled persons face in accessing the built and unbuilt has led to evolution of architectural concepts and interventions such as universal design , inclusive design , barrier free design and physical accessibility among others.

These are aimed at facilitating the easy movement of such persons in built and unbuilt environment. Thee concepts are necessary as building and its surroundings are crucial in provision of social services such as EDUCATION and HOSPITALS.

It will be ensured that only those children whose needs can not be met in common schools be enrolled in special institute. Once they acquire communication skills and study skills, they will be integrated in common schools.

NEED:

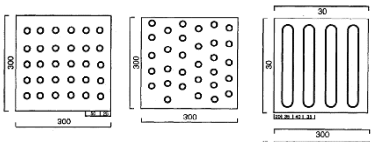
"Inclusion," "full inclusion" and "inclusive education" are terms which recently have been narrowly defined by some (primarily educators of students with severe disabilities) to espouse the philosophy that ALL students with disabilities, regardless of the nature or the severity of their disability, receive their TOTAL education within the regular education environment.

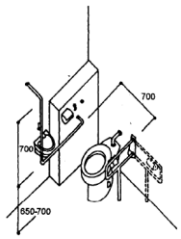
Students with visual impairments have unique educational needs which are most effectively met using a team approach of professionals, parents and students. In order to meet their unique needs, students must have specialized services, books and materials in appropriate media (including braille), as well as specialized equipment and technology to assure equal access to the core and specialized curricula, and to enable them to most effectively compete with their peers in school and ultimately in society.

There must be a full range of program options and support services so that the Individualized Education Program (IEP) team can select the most appropriate placement in the least restrictive environment for each individual student with a visual impairment.

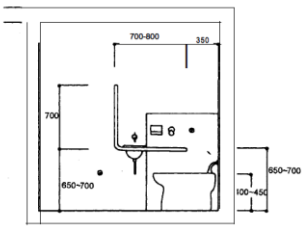
There must be adequate personnel preparation programs to train staff to provide specialized services which address the unique academic and non-academic curriculum needs of students with visual impairments. There must also be ongoing specialized personnel development opportunities for all staff working with these students as well as specialized parent education.

DESIGN BRIEF:





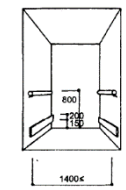
Handrail (Inside stall)



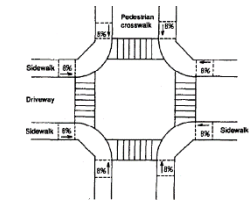
Side elevation of toilet stall

1. PREVENTIVE MEASURES:

- Lack of curb cut and ramps.
- Narrow sidewalks.
- Extreme variation in grade of walkways.
- Narrow doorways.
- Un-uniformed , circular and steep staircases.
- Haphazard building layout.
- Use of extra slippery or gravel or debris walkways.

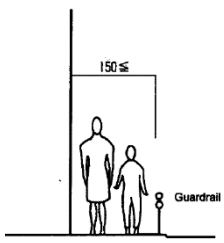


Cross section of corridor



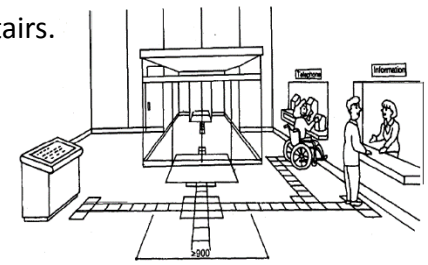
Sidewalk grading (at intersection)

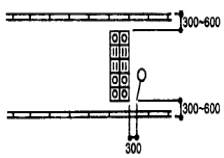
- Free standing columns or any physical barrier in walkways and sharp edges.
- Frequent change in layout of furniture.
- Dimmed lighting , glare , reflections and shadows.
- Noise sources from mask sound intended for directional cues.
- Dead end walkways.



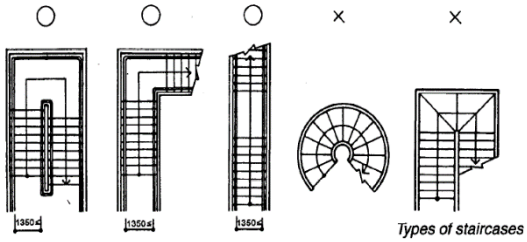
2. DESIGN CONSIDERATIONS:

- Short access route with ramps and easily accessible stairs.
- Use of contrast color scheme for door and walls.
- LEGIBLE- easy to understand design of building.
- Straight and continuous walkways.
- Detectable warning surfaces.
- Daylight , flush light and fluorescent light as per purpose.
- Spot and task lighting.
- Flushed columns into walls or round columns and edges.
- Smell , touch and sense assistance in design.
- Tactile signage.
- Handrails on both side of stairs and ramps.
- Acoustic assistance in building.
- Barrier free corridors and walkways.



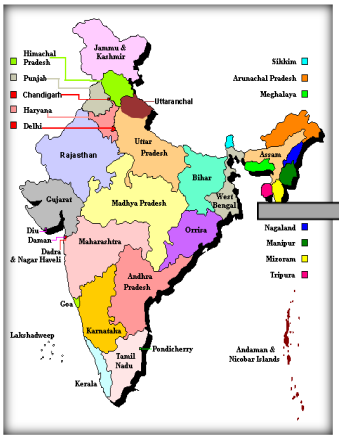


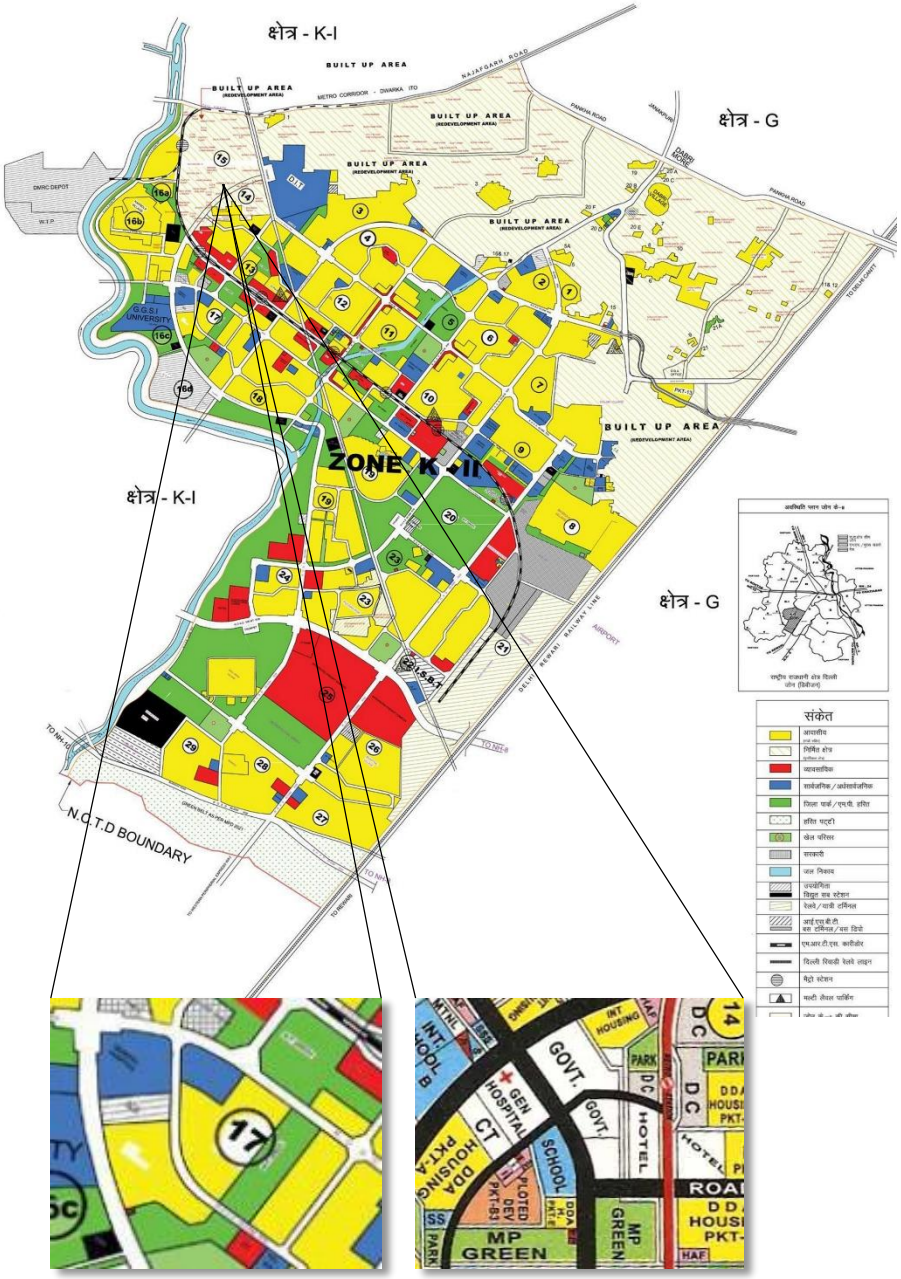
Example of guiding blocks for persons with impaired vision installed at bus stop



Types of staircases

SITE STUDY: (SEC 17,DWARKA,NEW DELHI)





INTRODUCTION:

Dwarka is a fast-growing neighborhood of New Delhi (district of South West Delhi) in India. It is one of the most sought-after residential areas in the city. It is one of Asia's largest residential neighborhoods and is also referred to as a sub-city.

It is a well planned neighborhood with robust infrastructure and several urban amenities. The neighborhood offers many parks as well as recreational and cultural attractions for its residents.

SITE LOCATION:

The site for proposed Institute is located in Kakrola, Sector17, Dwarka, New Delhi.

ELEVATION(above sea lvl): 15m (49 ft)

LATITUDE: 22.2394400° N

LONGITUDE: 68.9677800° E

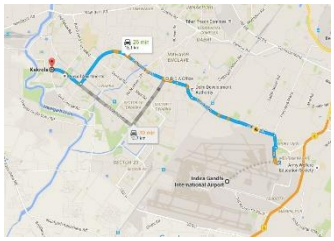
ACCESS TO SITE

1. OUTSTATION:

(a) BY FLIGHT-

Nearest Airport is **INDRA GANDHI INTERNATIONAL AIRPORT** at 13km (approx.) from site well connected to major cities like Mumbai , Bangalore , Chennai , Lucknow , Hyderabad , Kolkata etc.

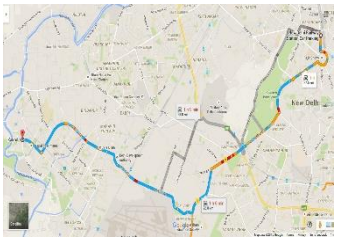
METRO STATION



IGT , DELHI

(b) BY TRAIN (MASS TRANSIT)-

- Nearest Railway Station is **PALAM RAILWAY STATION** at 8.5km (approx.) from site well connected to major cities like Mumbai , Bangalore , Chennai , Lucknow , Hyderabad , Kolkata etc. via Trains
- **NEW DELHI RAILWAY STATION** is 22km (approx.) from site.



KASHMERE GATE

NDLS

(c) BY BUS (MASS TRANSIT)-

Nearest ISBT is KASHMEREGATE ISBT at 26km (approx.) from site well connected to major cities like Chandigarh, Ahemdabad , Jaipur , Lucknow , Nagpur etc. via Bus.

2. LOCAL:

(a) PARA TRANSIT-

includes Taxis and Auto , connects Railway Station , ISBT and Airport to site.

(b) RAPID TRANSIT-

Includes Metro , Subway , Underground etc .
Nearest Metro Station is **DWARKA SEC-14 DMRC** about 9km from site.

SITE SURROUNDINGS:

PUBLIC PARK(14)

I.P.B. OFFICE (1)

SITE FOR HOSPITAL(2)

N.L.U. (4)

ROAD(5)

POLICE CHOWKI (9)

GGSIPU CAMPUS (10)

WATER T. PLANT (6)

DDA MIG FLATS (8)

MERTO STATION-SEC 14(11)

POLICE QUARTERS(7)

DDA APTs(3)

TEMPLE (13)

S.W.O.T. ANALYSIS:

STRENGTH:

- Plain land(low gradient) and inclined towards municipality sewer line.
- Easily accessible from all mode of transportation.
- Surrounded by road from all three sides(including service road 6 m wide in front).
- Abundant natural resources like wind, daylight etc.
- Facilities like sewer , water supply , security , treated water etc are easily available.
- Peaceful environment surrounded by prime institution like NLU etc.

WEAKNESS:

- In Earthquake Zone 4.
- Site at intersection of two important road , may cause traffic congestion in future and dangerous for differently abled children.
- 700 mm below the road lvl.

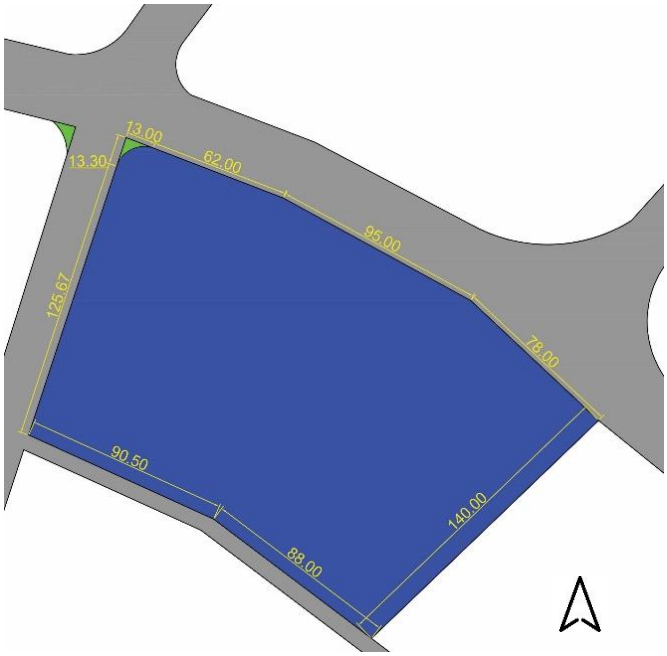
OPPURTUNITY:

- Chances to develop future prime institution for visually impaired children.
- Use of favorable condition like wind, daylight etc for productive environment for children and power generation.
- Environment friendly and low polluted areas would attract productive growth among children.

THREAT:

- Highly earthquake prone area subjective to severe damage.
- High groundwater table leads to increase in dampness of soil to building in future.
- Unavailability of local market place near the site usually at night.

SITE DIMENSION:



SITE AREA: 9.3 ACRE (37906 sq. m)

GROUND COVERAGE: 50%
GROUND COVERAGE: 18953 sq m
FAR: 120
MAX. HEIGHT: 18 m
MAX. PERMISSIBLE BUILT UP AREA: 45487.20 sq m

STANDARDS AND BYE LAWS:

Table 13.3: Planning Norms and Standards for Education Facilities

Sl.No.	Category	Population / unit (approx.)	Plot Area
1.	Primary School	10,000	0.2 - 0.4 ha
2.	Sr. Secondary School	10,000	0.6 - 0.8 ha
3.	School for Mentally challenged	10.0 lakh	0.2 ha
4.	School for Physically challenged	10.0 lakh	0.2 ha

Table 13.4: Development Controls for Education Facilities

Sl. No.	Category	Maximum			Other Controls
		Gr. Cov.	FAR	Height	
1	Play School, Coaching Centre, Computer-Training Institute, physical Education Centre etc.	N.A.	N.A.	N.A.	1. Practice of providing dedicated Nursery School plots in the layout plan discontinued as same is permissible in Mixed use. Parking standard @ 1.33 ECS / 100 sq m of floor area.
2	Nursery School	33.33%	100	15m	2. In case of schools for
3	Primary school	30%	120	18m	mentally / physically
4	Sr. Secondary School	35%	150	18m	challenged, 20% of max. FAR can be utilized for residential use of essential staff and student accommodation.
5	School for Mentally challenged	50%	120	18m	Parking standard: Primary School / Middle School @ 1.33 ECS / 100 sq m of floor area. -Sr. Sec. School @ 2.00 ECS / 100 sqm of floor area. The areas earmarked for parking if misused, liable to be municipalized / taken over.
6	School for Physically challenged	50%	120	18m	3. Other controls related to basements etc. are given in the Development Code chapter.

Sl. No.	Catetory	Maximum			Other Controls
		Ground Coverage	FAR	Height	
1	Vocational Training Centre (ITI / Polytechnic / Vocational / Training Institute / Management Institute / Teacher Training Institutes etc.) / Research and Development centre.	35%	150	37 m	1. Upto 15% of max. FAR can be utilized for residential use of essential staff and student accommodation. 2. Parking standard @ 1.33 ECS / 100sqm of floor area. The areas earmarked for parking if misused liable to be municipalized / taken over by the authority. 3. Other controls related to basements etc. are given in the Development Code chapter.
2	General College				
3	Professional College (Technical)				
4	University Campus including International Education Centre (IEC) - Large campus (10 ha and above) will be divided into following four parts:				1. Parking standard @ 1.33 ECS / 100 sq m of floor area. 2. Other controls related to basements etc. are given in the Development Code chapter. 3. Landscape plan to be prepared.
	a) Academic including Administration (45% of total land area)	30%	120	37 m	
	b) Residential (25% of total land area)	1. Regulations for group housing shall apply. 2. The land shall be reserved for facilities as per residential norms.			
	c) Sports and Cultural activities (15%)	10%	15	26 m	
	d) Parks and Landscape (15%)	N. A.			

Notes:
Pre-Primary Schools / Nursery Schools / Montessary Schools / Creche, Play Schools, are permissible in residential use premises as per Mixed use policy.

Other Controls:
1. In case of new schools, the front boundary wall shall be recessed by 6 m to accommodate visitors parking within setback area.
2. Upto 10% variation in plot size is permitted. Differential norms will be applicable to Special Area, Regularized Unauthorized Colonies, Urban Villages and Resettlement Colonies.
3. Playground shall be developed on pool basis in different areas at neighborhood level.

Table 13.5: Planning Norms and Standards for Education Facilities (Higher Education)

Sl. No.	Category	Pop./unit (approx.)	Plot Area
1	Vocational Training Centre(ITI / Polytechnic / Vocational Training Institute / Management Institute / Teacher Training Institute etc.), Research and Development centre	5.0 lakh	0.4 ha
2	General College	5.0 lakh	As per UGC norms
3	Professional College (Technical)	5.0 lakh	As per the AICTE norms.
4	University Campus including International Education Centre (IEC) - Large campus (10 ha and above) will be divided into following four parts: a) Academic including Administration (45% of total land area). b) Residential (25% of total land area). c) Sports and Cultural activities (15% of total land area). d) Parks and Landscape (15% of total land area).	4 sites in urban extension.	Upto 20.0 ha

Upto 10% variation in plot size is permitted.

SITE CONSTRAINTS:

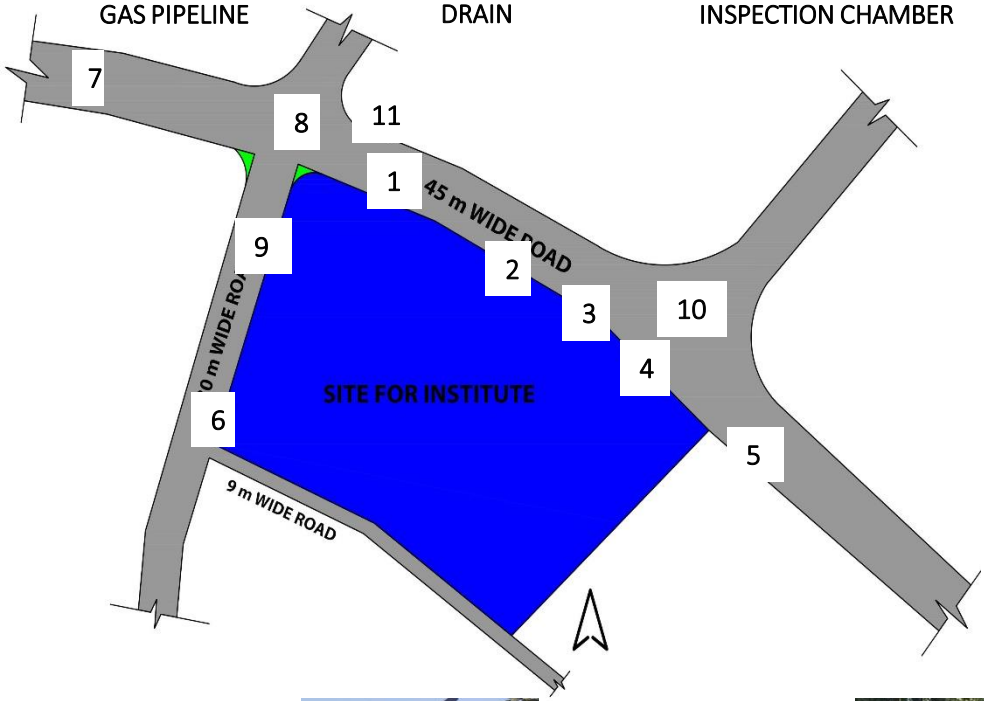
TOPOGRAPHY	• The site mostly flat no rocks or nature terrains present and 700mm below the road level.
SOIL TYPE	• Alluvial soil (clay + 40 to 60 % sand) , Bearing capacity 160 KN/m².
VEGETATION	• Trees are present near the site but on the site wild bushes, tropical thorn only, no trees.
WATER SUPPLY	• Water will be supplied from the command tank-5 in sector 17, Dwarka(capacity 20000 kl).
SLOPE	• Site is mainly flat with 7 deg slope along SW to NE direction.
TRAFFIC	• The roads adjoining being wide enough, there is not much traffic at present.
ELECTRICITY	• High tension wires pass through the front road. Transformer is also present.
GAS PIPELINE	• Gas pipe line runs on all the three adjacent roads.
STREET LIGHT	• street light poles are present at the middle of the road.

1 GAS PIPELINE

2 DRAIN

3 INSPECTION CHAMBER

4 SERVICE ROAD



5 DIVIDER AND ELE. POLE

6 H.T. WIRES

7 TRANSFORMER

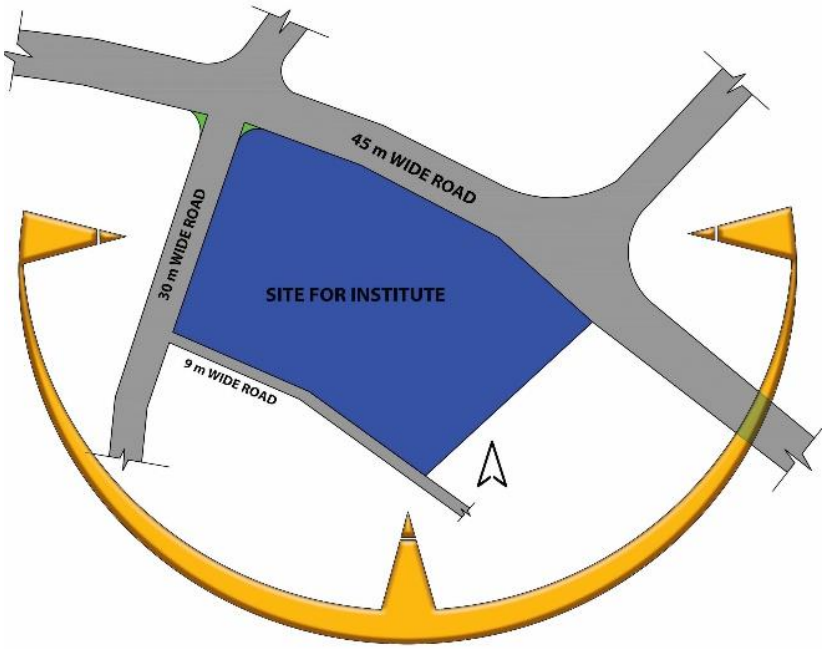
8 STREET LIGHT

9 U.G. CABLES

10 SPEED LMT.

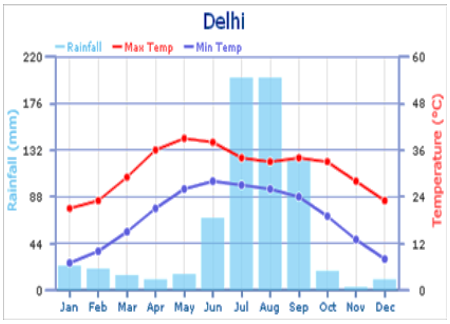
11 POLICE UNIT

SITE SUN PATH:



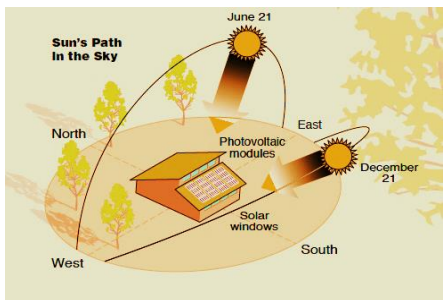
CLIMATE:

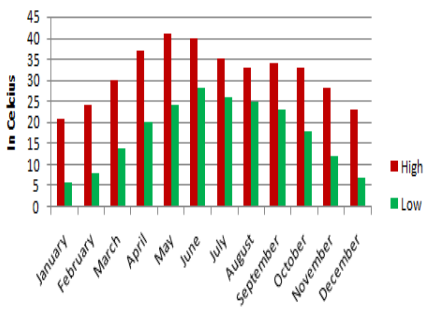
LATITUDE: 28º 40'N
LONGITUDE: 77º 21'E
ZONE: TROPIC OF CANCER
CLIMATE: COMPOSITE
RELATIVE HUMIDITY: 20-25%(dry)
55-95%(wet)
PRECIPITATION TYPE: RAINFALL
PREVAILING WIND: SE TO NW



DESIGN CONSIDERATION IN COMPOSITE CLIMATE

OBJECTIVES	PHYSICAL MANIFESTATION
1)Resist heat gain in summer and Resist heat loss in winter	
• Decrease exposed surface area	Orientation and shape of building. Use of trees as wind barriers
• Increase thermal resistance	Roof insulation and wall insulation
• Increase buffer spaces	Air locks/ Balconies
• Decrease air exchange rate	Weather stripping
• Increase shading	Walls, glass surfaces protected by overhangs, fins and trees
• Increase surface reflectivity	Pale colour, glazed china mosaic tiles, etc.
2)Promote heat loss in summer/ monsoon	
• Increase air exchange rate	Courtyards/ wind towers/ arrangement of openings
• Increase humidity levels	Trees and water ponds for cooling effect
• Decrease humidity in monsoon	Dehumidifiers/ desiccant cooling





	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Delhi	Winter	Winter	Summer	Summer	Summer	Monsoon	Monsoon	Monsoon	Monsoon	Winter	Winter	Winter

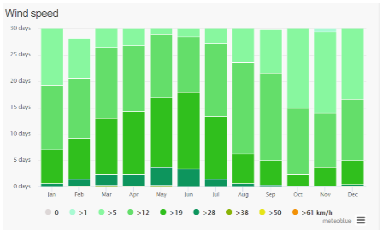
RAINFALL:

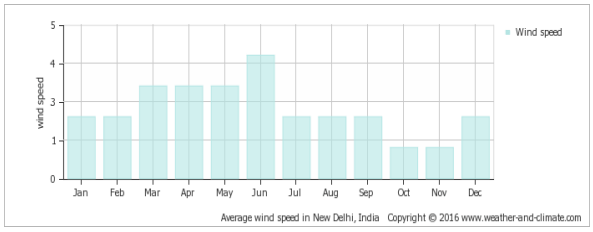
The maximum rainfall in Delhi is 211mm in JULY and minimum is 1mm in November. The normal annual rainfall in the district is 611.8 mm. About 81% of the annual rainfall is received during the monsoon months of July, August and September.

WIND:

WIND DIRECTION:
MONSOON WINDS - SE TO NW (JULY-SEPT)
COLD & DRY WINDS - NE TO SW (OCT-FEB)
HOT AND DRY WIND(LOO) - FROM WEST (MAR-JUN

WIND VELOCITY:
AVERAGE SPEED : 6.875(kts)
On Average, The Most Wind Is Seen In June.
On Average, The Least Wind Is Seen In November





VEGETATION: (As per Composite Climate)

DECIDIOUS TREE	SCIENTIFIC NAME	HEIGHT
ORCHID	BAUHINIA VARIEGATA	15 m
ASHOKA	SARACA ASOKA	15 m
BISMARK PALM	BISMARK NOBILIS	25 m
PEEPAL	FICUS RELIGIOSA	30 m
INDIANA CORK	MILLINGTONIA HORTENSIS	24 m
PUTRANJIVA	PUTRANJIVA ROXANBHUGHI I	25 m
BABUL	VACHELLLIA NILOTICA	5-20 m
BAEL	AEGELE MARMELOS	Not Defined
LEBBECK	ALBIZIA LEBBECK	18-30 m

SMALL DECIDIOUS TREE	SCIENTIFIC NAME	HEIGHT
GOLDEN SHOWER TREE	CASSIA FISTULA	10-20 m

The composite zone covers central part of India including cities like Delhi , cities of Uttar Pradesh , Madhya Pradesh etc.

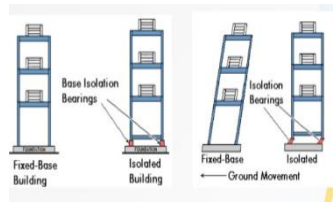
Most common type of vegetation in composite climate is **“Deciduous” .**
These type of trees are less dense than evergreen trees and shed their leaves in particular season of a year.

Their average height is 20-25m. Generally require less water and can bear harsh sun in summers too.

SHRUBS	SCIENTIFIC NAME	HEIGHT
CHAFF FLOWER	ACRYANTHES ASPERA	-
POPPY	ARGEMONE MEXICANA	-
KAIR	CAPPARIS DECIDUA	5 m
CROWN FLOWER	CALOTROPIS GIGANTEA	4 m

EARTHQUAKE DESIGN CONSIDERATION:

EARTHQUAKE ZONE OF SITE: Zone 4 (MM VIII)

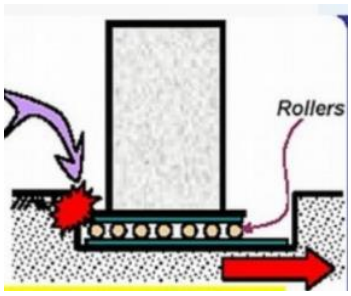


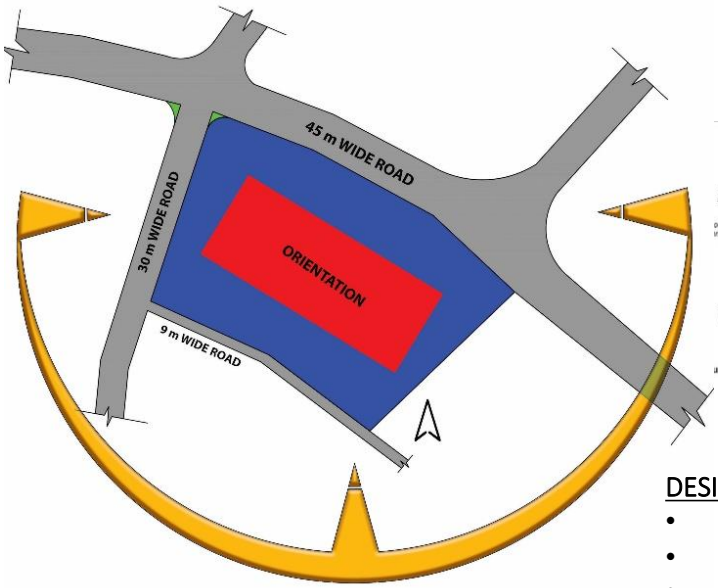
ELEMENT	FUNCTION
Shear Walls	Resist high Gravity load and Lateral load generated during seismic movement.
Bracing	Strengthen the structure diagonally.
Dampers	Diffuses the energy into other form.
Rollers	Increases the flexibility.
Isolators	Flexibility(takes much of movement during earthquake and maintains stable state for building).
Bands	Binds all the elements together.
Shape	Square and Rectangular perform better than L , H , U , + shape buildings.
Material	Ductile(Aluminium & Steel) performs better than Brittle(Brick , Stone & strengthened concrete).

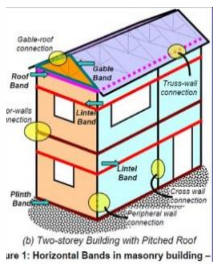
PREFERABLE BUILDING ORIENTATION:

One Rincon Hill, San Francisco

- MAX TEMPERATURE: 45 °C (114 °F)
- MIN TEMPERATURE: 12–13 °C (54–55 °F)
- AVG TEMPERATURE: 32 °C
- Orientation of building in Composite climate is generally in SOUTH-WEST and NORTH-EAST direction.
- Less radiation in summers which results in lesser heat gain and reduces overall air conditioning cost.
- Maximum natural daylight and ventilation.







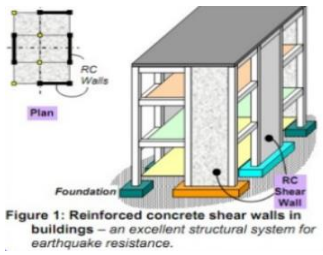
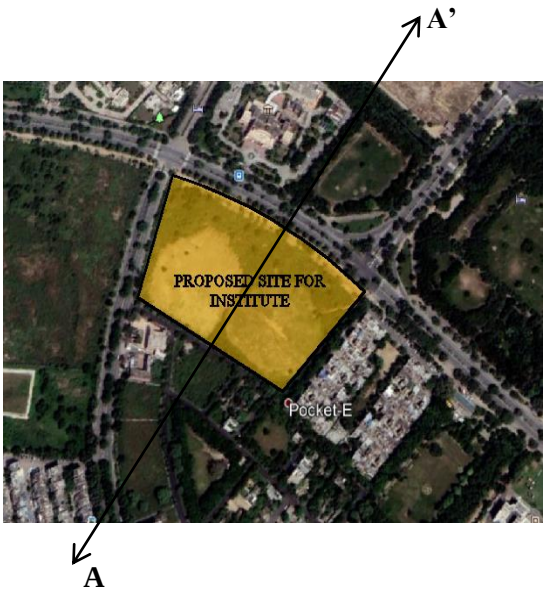


Figure 1: Reinforced concrete shear walls in buildings – *an excellent structural system for earthquake resistance.*

DESIGN CONSIDERATION AS PER ORIENTATION:

- Louvers on south side to avoid summer sun.
- Vertical louvers on west.
- Plantation on SW axis

SITE SECTIONS:



The hierarchy of road system adopted in Dwarka sub-city are as under-

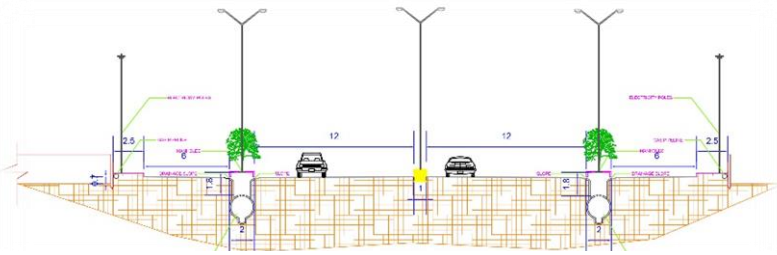
i. Express way - 100 mts R/w.

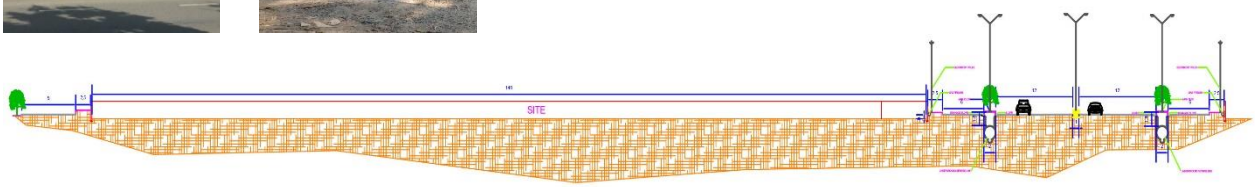
ii. Primary roads - 60 mts R/w

iii. Primary Collector- 45 mts R/w

iv. Secondary Collector – 30 mts

v. Local Streets - 20 mts and 12 mts.





SITE SECTION AA'

CASE STUDY :

INTRODUCTION: NAB , DELHI

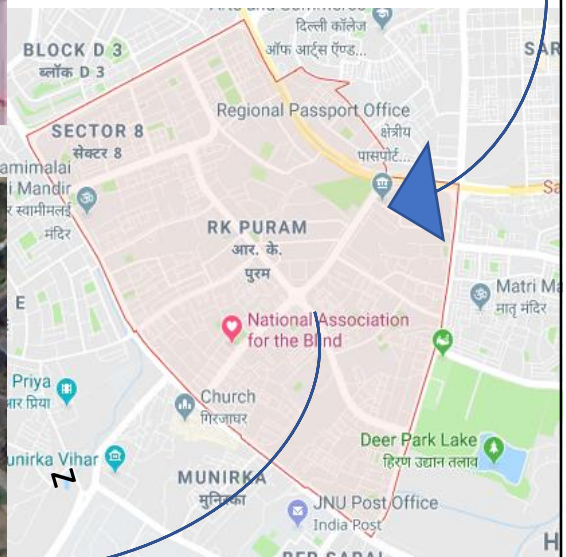
NAB is a non-profit organization which is working perseveringly since 1979 for visually impaired persons. it is registered under SOCIETIES REGISTRATION ACT XXI of 1860-registration no. S/10184. The organization lays special emphasis on education and skill development.

It aims to send each and every visually challenged child into mainstream school. It highly advocates the concept of INTEGRATED EDUCATION for social fulfillment. It also dreams to embed computer education and assistive technology into the lives of every visually impaired bringing them closer to the world. It ardently focuses on qualitative education and skill development.

The Organization conducts the following programs for training :-

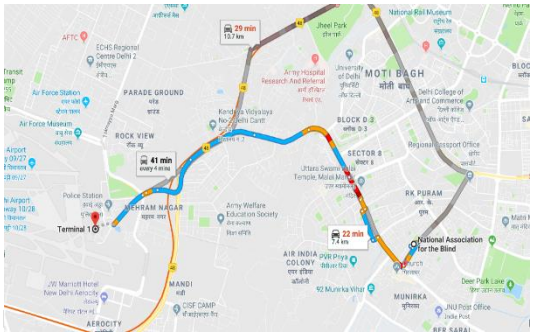
1) Preparatory school
2) Centre for multi Handicapped Blind Children
3) Dormitories, Kitchen and Dinning
4) Computer Training Centre
5) Workshops
6) Employment and Placement services.

NAB Delhi has now capacity to cater 500 blind student at time with capacity of 150 boarding student at a time.

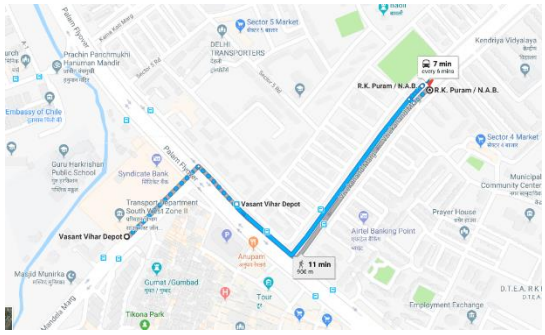


ACCESS TO NAB:

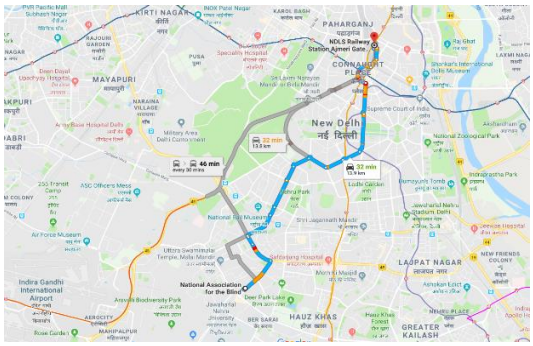
LOCATION :	Sector 5 , R K Puram , New Delhi
SURROUNDING :	Housing Apartments and R K Puram Central Park
ROAD:	9 m Road all sides of campus adjoined to 45 m wide main road – VIVEKANAN MARG
BUS STOP :	Vasant Vihar Depot – 950 m
ISBT :	KASHMERE GATE ISBT – 24.4 km
METRO STATION :	Hauz Khas Metro Station – 4.8 km
AIRPORT :	Terminal 3 , IGI – 12.7 km Terminal 1D , IGI – 7.4 km
RAILWAY STATION :	NDLS Railway Station – 13.9 km



1D TERMINAL



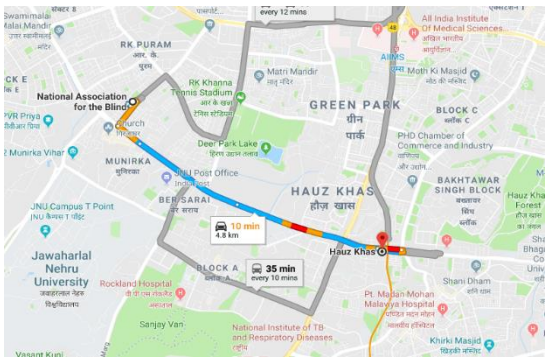
VASANT VIHAR DEPOT



NDLS RAILWAY STATION

PROJECT OVERVIEW:

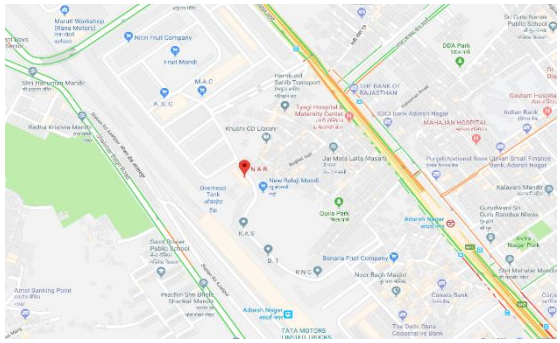
CLIENT :	NATIONAL ASSOCIATION FOR BLIND
SITE AREA :	3456 sq m
ORIENTATION:	EAST to WEST(major axis)
CLIMATE:	Composite
TOPOGRAPHY :	Flat Land
GROUND COVERAGE:	30% , 1053 sq m
BUILT UP AREA :	2912.5 sq m
CIRCULATION AREA:	20% of Built Up Area
ALLOWABLE FAR:	1.2
ACHIEVED FAR:	0.84



HAUZ KHAS METRO

ZONING:

BUILT :	30%
UNBUILT:	70%
BLOCKS:	SOUTH EAST – ADMIN AND ACADEMIC NORTH WEST – ACADEMIC AND HOSTEL
OPEN AREA:	OAT and Playground
PARKING :	SURFACE PARKING



LOCATION

SPACE	NAB , DELHI	STANDARDS
site area	3456 sq m	-
Covered area	1053 sq m	30%
Classroom	7 m X 6 m	3.5 sq m/student
Toilet	7.5 m X 5 m	1/50 student
Staff	15	-
Ramp width	1.5 m	1.8 m
Corridor width	1.6 m	1.5 - 2.0 m
Staircase width	1.5 m	1.2 - 1.5m
Staff room	NA	-
Computer room	200 sq m(with audio library)	5.5 sq m/student
Activity room	58.8 sq m	-
library	200 sq m(with computer lab)	0.35-0.55 sq m/student
Music room	20 sq m	-
parking Width-	2.5 m	-
Handicapped walk way-	1.5 m	1.5 – 2.0 m
Ramp Gradient	1:12	1:10-1:12
handrail height	900 mm	900 mm(min)
Step riser	150 mm	100 mm
Step tread	300 mm	300 mm
Door Width	1.05 – 2 m	0.9 m

DESIGN CONCEPT:

Most people who are blind have some residual vision and can perceive some level of light. in general, people who are blind or have low vision require two to three times the amount of light required by the sighted population.
it is important to have brighter lighting at entrances to a building to enable people's eyes to adjust from the change in moving from bright daylight outdoors to artificial lighting indoors.
The design is basically inclined on this basis of maximum daylight through courtyard planning.
Radial planning enables equal distribution of resource to every room.

SPACE	NAB , DELHI	STANDARDS
Printing Press	40 sq m	As per study
Studio	9 sq m	As per study
Audio Library	18 sq m	1.8 sq m/person
Training Cell	35 sq m	3.3 sq m/person

LAYOUT DESCRIPTION:

Many people who are blind or have low vision rely on their memory to navigate around a building. Keeping design logical and simple can make independent navigation easier.

People who have low vision can orient themselves more easily and move about a building with more assurance if a right-angled design system has been used. Diagonal or curved elements should be avoided wherever possible.

People who have low vision may feel less secure the further they are away from "landmarks" such as walls and furniture. Large open areas can be made more manageable by using partitioning and furniture to establish clear pathways and rectangular areas.

Creating tactile pathways also help people to maintain direction.

Important function areas such as staircases, lavatories and waiting areas should be placed as centrally as possible.

MATERIALS AND TEXTURE:

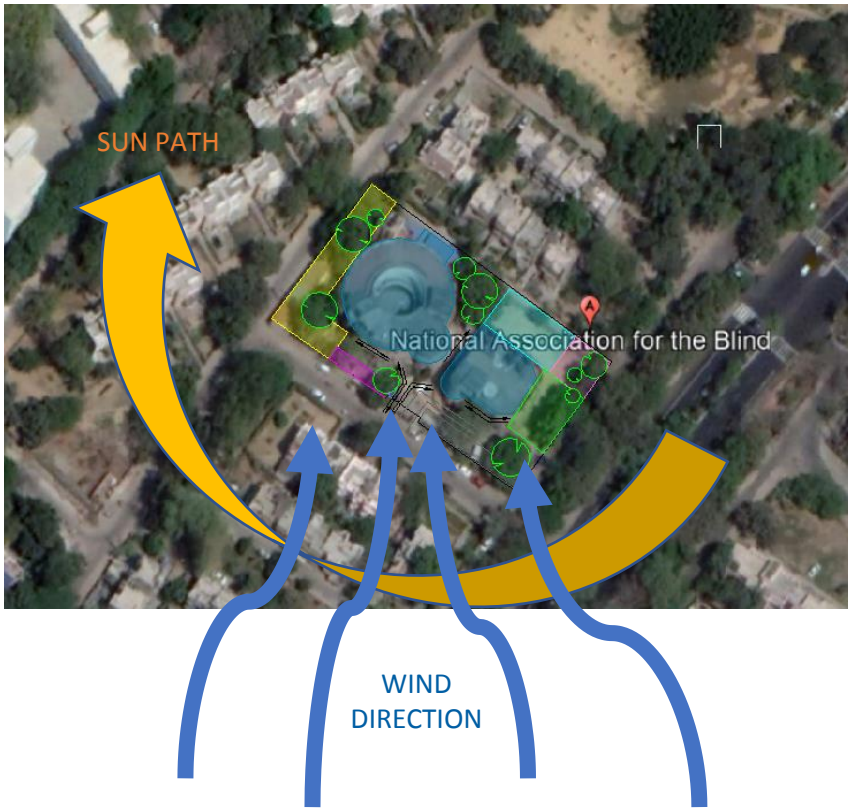
To assist the visually impaired people to identify their locations, different areas should have different floor covering materials with different texture, colour and tactile pattern.

Use of different tactile and characteristics of floor covering can act as a guide path for specific passageway in a large space.

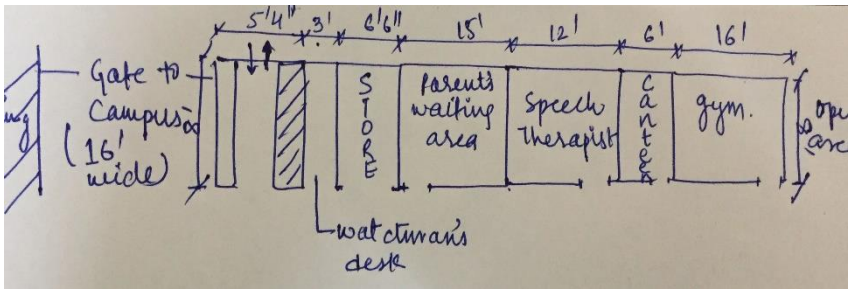
WALL FINISH: Similar to floor finish, high gloss wall finish should be avoided since the reflected light caused by the surface will distort the environment recognizing by the poor sighted people.

TACTILE SIGNS: As tactile signs are ‘read’ by hands, their position should be at the level around 1.4m to 1.7m where is touchable by hands.
For more effective touching sense, the tactile sign should be embossed rather than engraved.

SITE AREA:

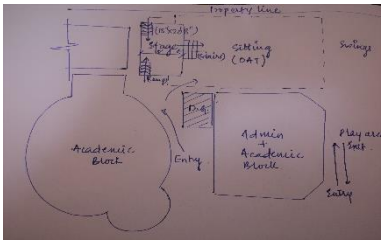


- QUARTERS
- BLOCK
- SECURITY ROOM
- UTILITY AREA
- OAT
- PARKING
- PLAYAREA



SECURITY AREA DETAIL

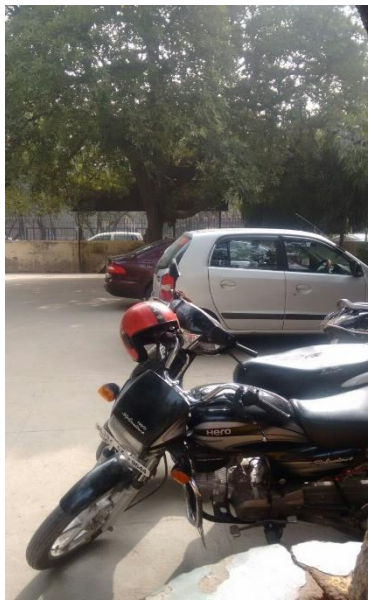
OAT SITTING



OAT DETAIL

FRONT PORTICO

FRONT FASCADE



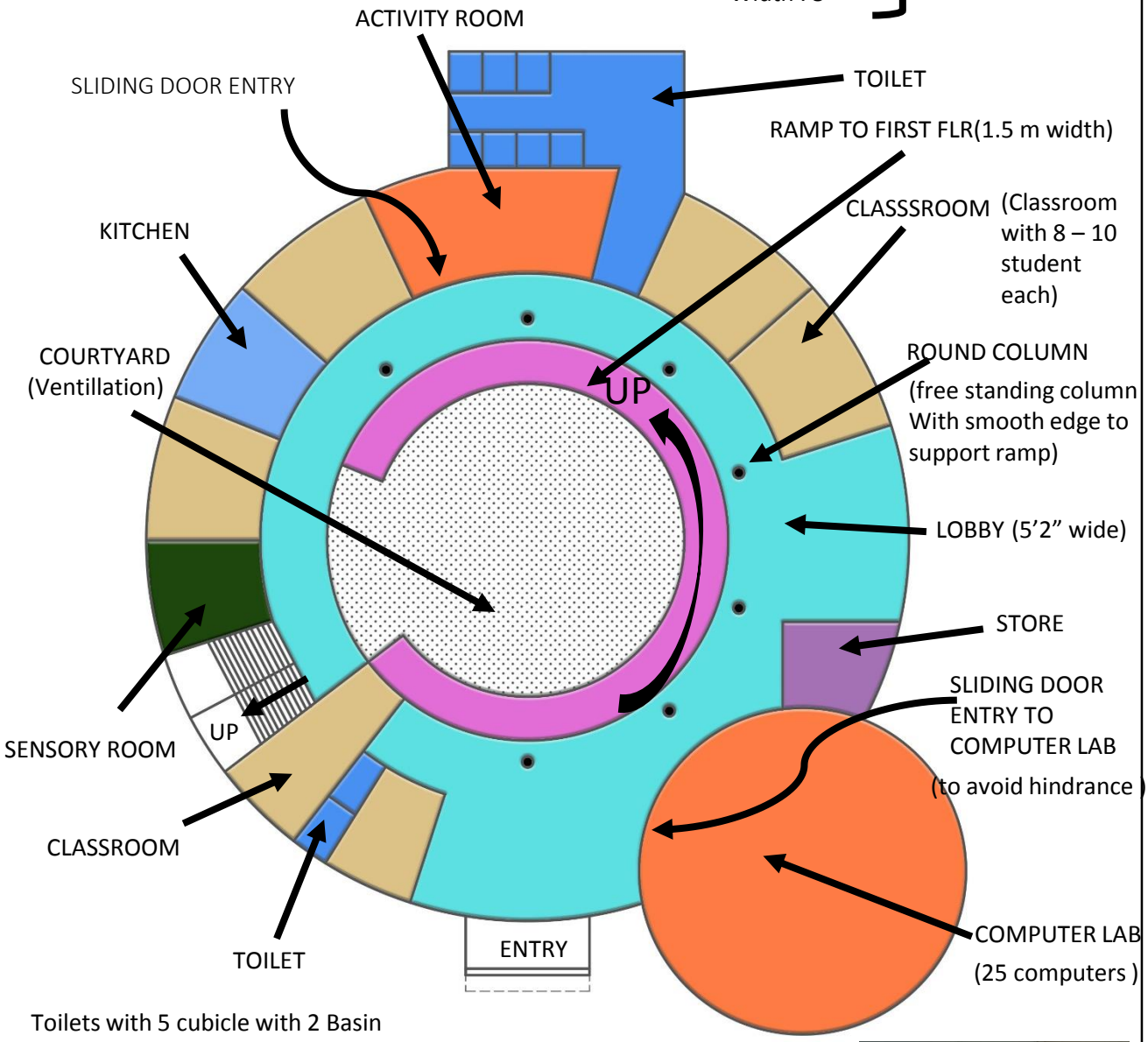
PARKING

SWINGS

ACADEMIC BLOCK:

1. GROUND FLOOR:

Tread : 1’
Riser : 6”
Width : 5’
} Indoor Stairs



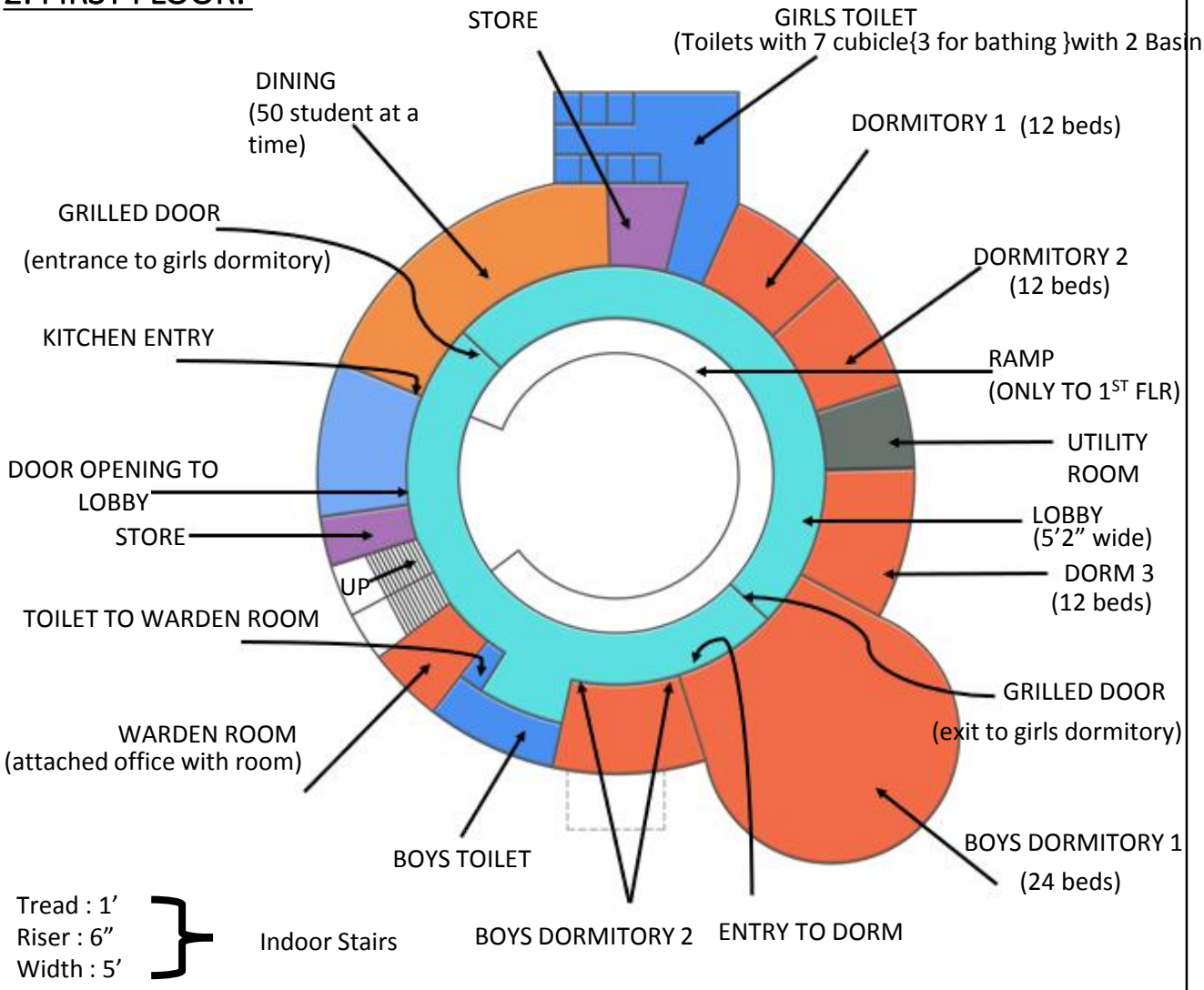
Toilets with 5 cubicle with 2 Basin

Classroom with attached washroom for PREP student

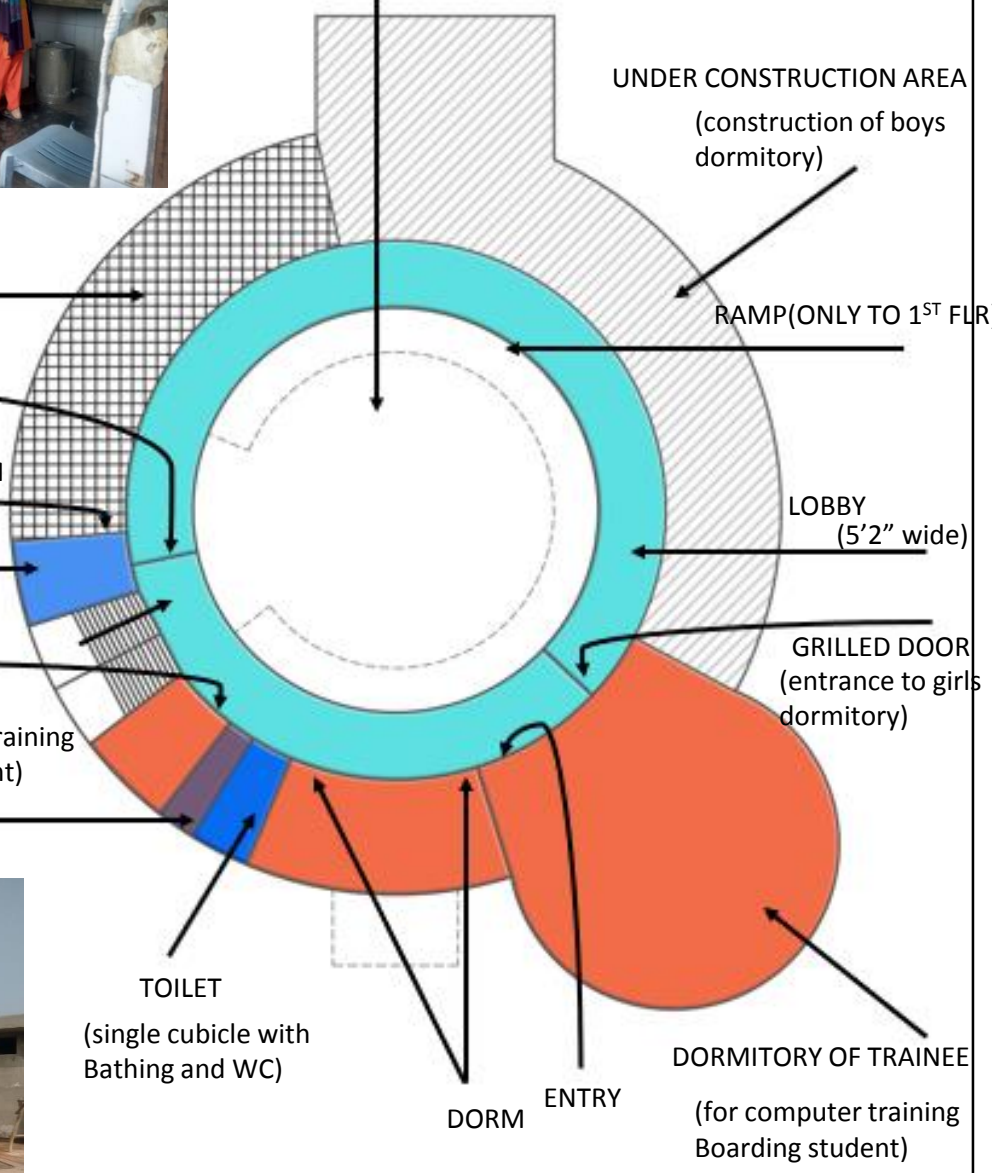
Sensory room for sensory adaptive training

ENTRANCE through
portico - 10’ X 6’
Riser : 6”
Tread : 1’-6”

2. FIRST FLOOR:



3. SECOND FLOOR:



FEATURES OF BUILDING :

APPROACH ROUTE AND ENTRANCE:

- Short route to drop off space and campus with guiding tile arrangement.
- Entrance is marked with tactile tile.
- Steps and Ramp with handrails on both side and riser of 4” to 6”.
- Contrast color of entrance door with sliding feature.

PARKING and TRANSPORTATION:

- Parking only for staff.
- Transportation of student through 2 traveler bus available in premises.
- Parking capacity of 5 cars at a time and 15 two wheeler vehicle.

STEPS AND RAMP:

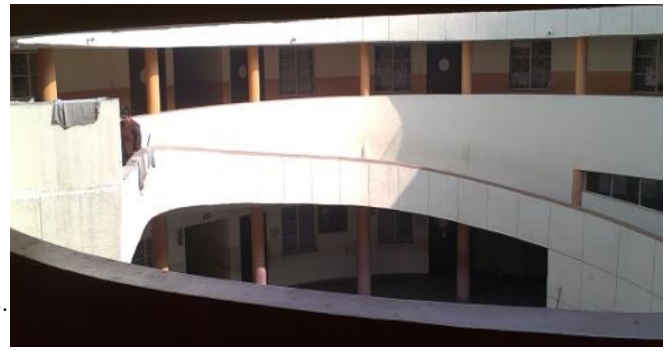
- riser - 6”; tread - 12” & width – 1.5 m
- slope gradient - 1:12 & width – 1.5 m
- uniform dimension.
- Handrails on both side .

SIGNAGE and INSTRUCTIONS:

- **TOUCH:** tactile tiling , fluorescent color codes , BRAILLE sign board etc.
- **SMELL:** training to adapt smell of food , places like toilet , hazards like fire etc.
- **SOUND:** Guiding details provided and trained in drill form as per audio instructions.

MEDICAL EMERGENCY:

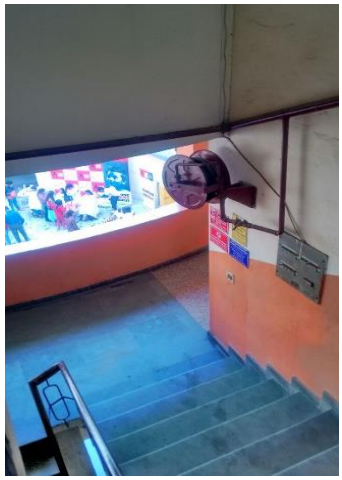
- Infirmary in campus.
- Medical Alliance with CGHS hospital.



ASSISTANCE:

- Physiotherapy Room.
- Speaking skill room for improving speaking skills.
- Special Physical Education training.

MOVEMENT:



- Radial and Linear circulation.
- Long corridor (1.6m) wide with rooms on a side.
- Few Round Columns in the circulation to support ramp.
- Vertical circulation taken care by ramp and staircase (1.5m wide) at the end of the blocks and courtyard.

TOILETS:

- equipped with both indian and western fixtures.
- 6' wide approaching lobby with handrails on either side.
- Toilets in hostel have bathing as well as WC.
- Tactile and non Slippery Tiles.

SECURITY:

- Watchman on main entrance to campus.
- under CCTV surveillance (24X 7).
- Armed guards in the campus.

SPECIAL FEATURES:

- Simple circulation and layout simplifies movements of the visually handicapped from one place to another.
- Textured slopes to warn the blind in front of all entrances.
- trees planted close to each other along the edges in the play ground giving a directional quality , and no scattered inside as a safety precaution.
- Training block is rightly segregated from the building as lots of noise comes out of it which result in disturbance of regular classes.
- Braille printing press and audio library.
- smart classes with audio tapes to understand topics.
- studio for recording of audio tapes.

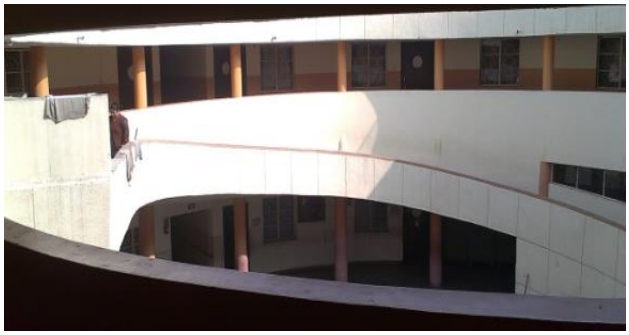
DOOR:

- **CLEARANCE**: ENTRANCE DOOR = 1.8 m
  CLASSROOM DOOR= 1.05 m
- Sliding Door on entrance and labs.
- Single Panelled Door in classroom.

SERVICES:

- WATER SUPPLY: 9 tanks of 1000 L capacity each
- SEWAGE: connected to sewage line of SDMC
- FIRE: Installed HOSE REELS in campus.
- ELECTRICITY: Electrical Room beneath the stairs.
- POWER BACKUP: DG installed in campus.
- SOLAR CELLS: for water heating.

INFERENCES



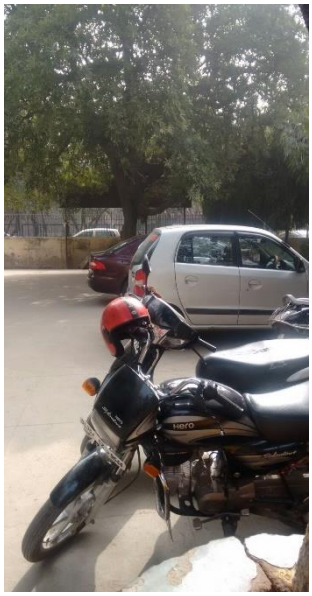
1. LANDSCAPING AND VEGETATION:
   No soft landscaping is done in the campus.
   haphazard landscaping.
   use of deciduous trees like amaltus tree , asoka etc.

.

2. WALKWAYS AND CORRIDOR:
   walkways are not wide enough.
   no segregation between pedestrian and vehicular.
   haphazard parking(lack of parking space).

3. NATURAL RESOURES AND THEIR USAGE:
   use of daylight.
   use of solar energy(on small scale)

4. ACCOMODATION:
   condition of dormitories are not up to the mark.
   hygiene issues.
   kitchen is managed.
   dinning area is properly regulated.



5. MOVEMENT:
   Ramped approach is appreciable.
   Stairs are wide enough with handrails on both side.

6. SECURITY:
   The place is highly secured.
   closely observed under CCTV coverage.

7. PLAYAREA:
   Not sufficient space for play area.

8. PHYSICAL STATE OF BUILDING:
   The elevation of the building is heavy
   Concrete rough elevation.

9. AREA (AS PER STANDARD)
   Rough standards are followed for easy
   being of students.

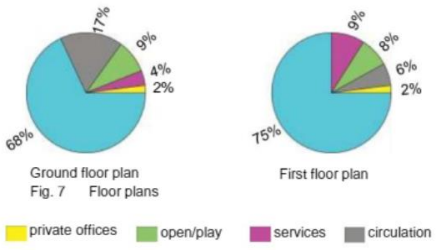


Fig. 7 Floor plans

10. CONNECTIVITY:
    the connectivity is easy and efficient.

11. ACCESS:
    easily accessible with varying mode of
    transportation available.

CASE STUDY 2:

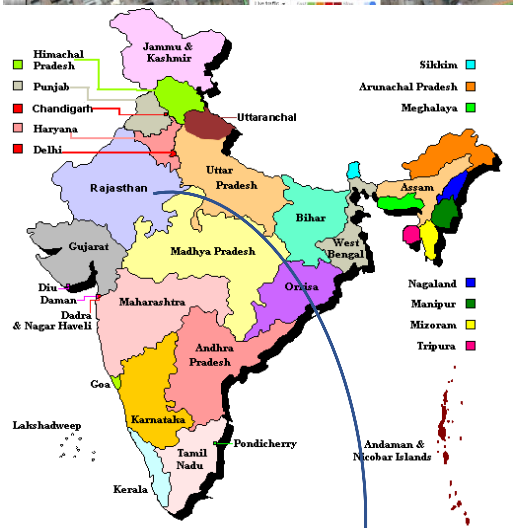
INTRODUCTION:DISHA: A Resource center for multiple disabilities

This school for multiple disabilities children located on a tight urban site incorporate training center for teachers and helpers while providing for requirements of the special child.

The Three Story Building has priorities access to define space for the educational environment. It also answers ENVIRONMENT and ENERGY at low costs.

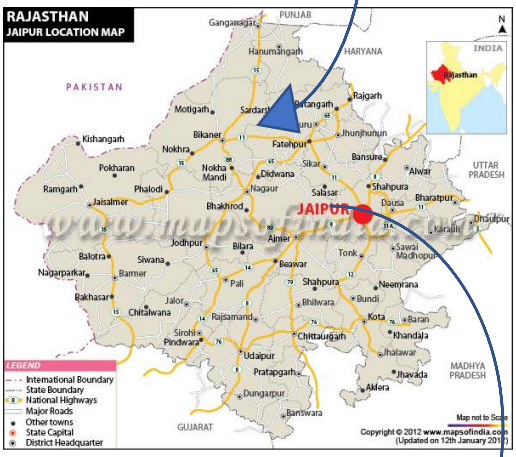
The Organization conducts the following programs for training :-

1) Preparatory school
2) Centre for multi Handicapped and Blind Children
3) Training Centres for infant and grown ups.
4) Workshops
5) Employment and Placement services.



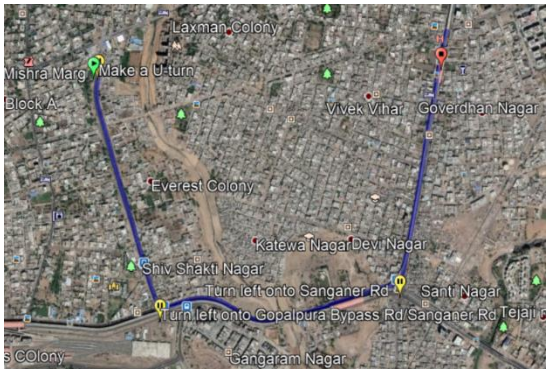
DISHA has now capacity to cater 500 special students at time with
capacity of 45 students getting DIPLOMA and B.ED in teaching
differently abled at a time.

It is a wonderful example of fusion of all spheres of challenges with
Nature.

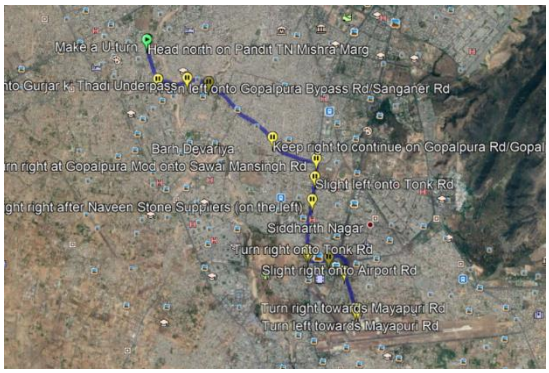


ACCESS TO DISHA:

LOCATION : Disha Path , Nirman Nagar-C , Jaipur , Rajasthan
SURROUNDING : Commercial Complex and Siddheshwar Temple
ROAD: 45 m wide Road in front – PANDIT TN MISHRA MARG
BUS STOP : RSRTC Deluxe Depot – 7.1 km
ISBT : SINDHI CAMP ISBT – 7.6 km
METRO STATION : Vivek Nagar Khas Metro Station – 4.8 km
AIRPORT : Jaipur INT. Airport – 10.8 km
RAILWAY STATION : Jaipur Junction– 5.7 km



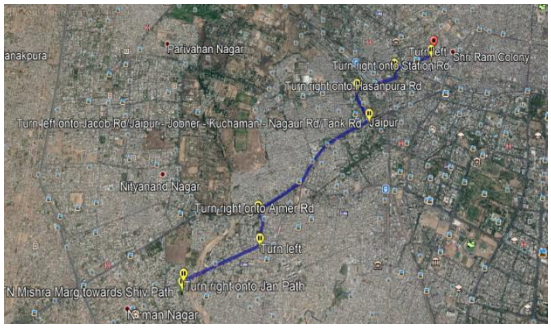
VIVEK NAGAR KHAS METRO STATION



JAIPUR INT. AIRPORT

PROJECT OVERVIEW:

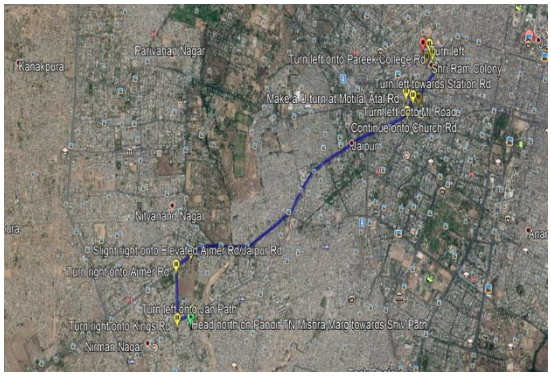
CLIENT : BLIND RELIEF ASSOCIATION , DELHI
ARCHITECT: Ashok B Lall
ORIENTATION: NE to SW(major axis)
CLIMATE: HOT & DRY
TOPOGRAPHY : Flat Land
SITE AREA: 0.27 ACRE , 1092 sq m
GRADES: Kindergarten to grade 10th
DATE OF COMPLETION: NOV , 2014



RSRTC DELUXE DEPOT

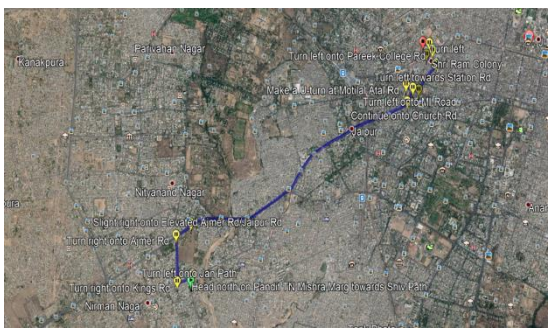
ZONING:

BUILT : 60%
UNBUILT: 40%
No . Of BLOCKS: 1
OPEN AREA: Lawn and Playground
PARKING : SURFACE PARKING(offcampus)



JAIPUR JUNCTION

LOCATION



JAIPUR JUNCTION

AREA CHART:

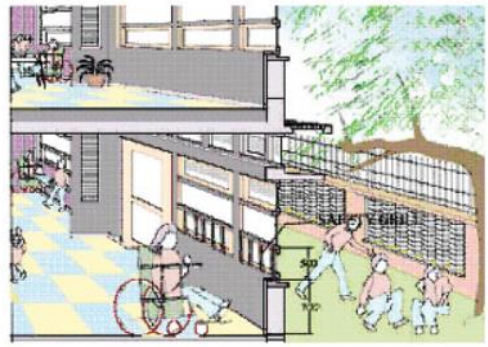
SPACE	DISHA , JAIPUR	STANDARDS
site area	1092 sq m	-
Covered area	655.2 sq m	60%
Classroom	3.5 m X 3 m	3.5 sq m/student
Toilet	7.5 m X 5 m	1/50 student
Staff	15	-
Ramp width	1.65 m	1.8 m
Corridor width	1.7 m	1.5 - 2.0 m
Staircase width	1.5 m	1.2 - 1.5m
Staff room	4 m X 5 m(4 no.)	80-85 sq m
Computer room	150 sq m(with audio library)	5.5 sq m/student
Activity room	62 sq m	-
library	80 sq m(with computer lab)	0.35-0.55 sq m/student
Music room	20 sq m	-
parking Width-	2.5 m	-
Handicapped walk way-	1.5 m	1.5 – 2.0 m
Ramp Gradient	1:12	1:10-1:12
handrail height	900 mm	900 mm(min)
Step riser	100 mm	100 mm
Step tread	300 mm	300 mm
Door Width	1.2 – 2 m	0.9 m

DESIGN CONCEPT:

An economical building whose rational planning is provided by the universal access ramp and all the needs of the special child.
The building is very interactive with the central atrium linked to all corridors and ramps with places to stand and sit in between to observe the activities all around.
Central court - going all weather safe and comfortable attractive space.
The building design provides lively environment sense of community under the shelter of a roof, and a sense of independence and flexibility for the use of individual activity

SPACE	DISHA, JAIPUR	STANDARDS
Audiometry Room	15 sq m	As per study
Sensory Room	20 sq m	As per study
Physio Room(+ gym)	80 sq m	>4 sq m/person
Training Cells	35 sq m	3.3 sq m/person

LAYOUT DESCRIPTION:



Gently sloped ramps circum-ambulate around central court and the building rises in comfortable stages with places for pause and rest along the way.

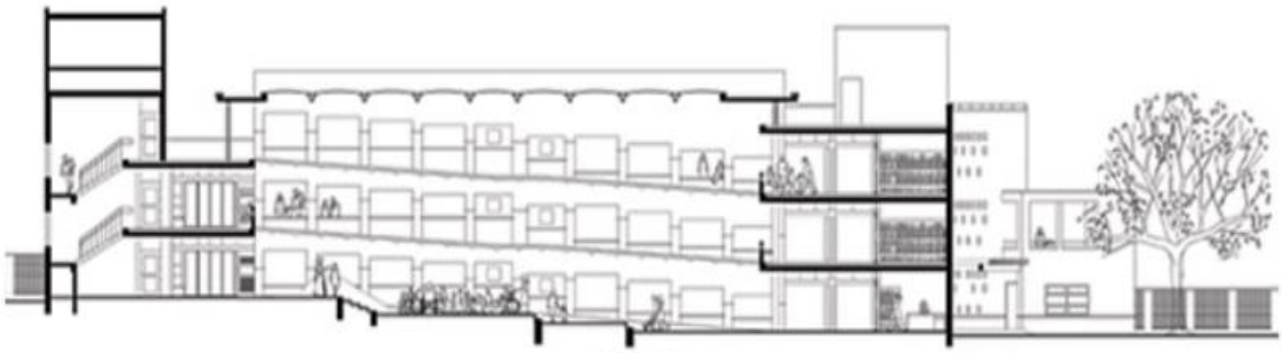
All workroom have glare free natural light from a window system designed for even distribution of daylight. The air-cooling system is integrated with structural system through vertical ducts coming down from rooftop coolers. The building envelope is designed to keep the interior cool in summers , warm in summers and well ventilated in monsoon.

The play of light , color , texture to touch and feel and fragrance are integrated into building fabric.

A strong presence of trees , creepers , flowering plants to reflect the cycle of seasons

All ground floor rooms have outdoor extension under the shades of tree and rooms on upper floor are shaded by pergola.

SECTION S3



SECTION S1

MATERIALS AND TEXTURE:

To assist the differently disabled people to identify their locations, continuous system of lobbies are adopted and dead ends are avoided.

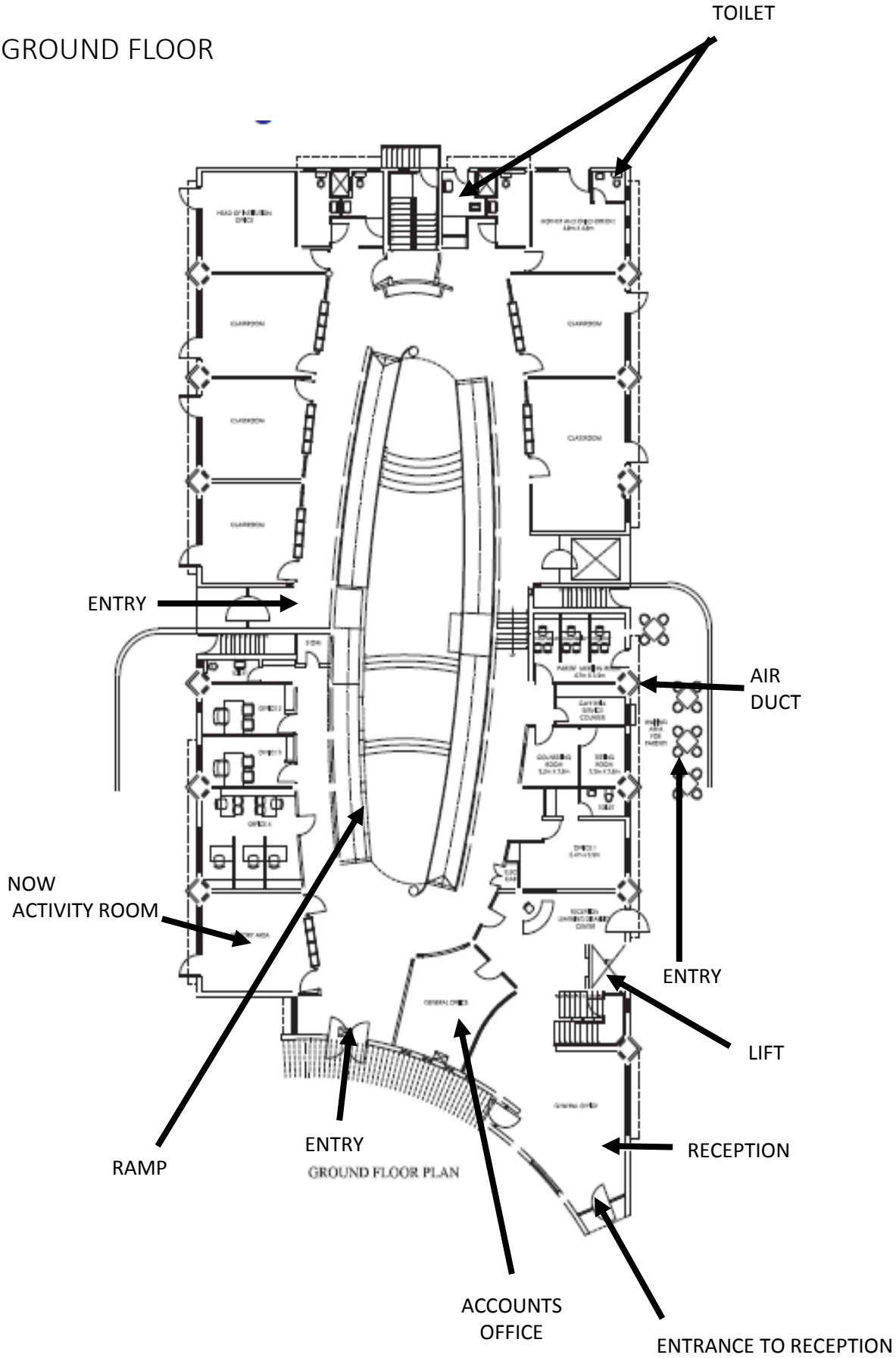
Use of different tactile wall tile and characteristics of floor covering can act as a guide path for specific passageway in a large space.

WALL FINISH and TACTILE SIGN: Similar to floor finish, high gloss wall finish should be avoided. Moreover wall tile for students to recognize distinguished area.

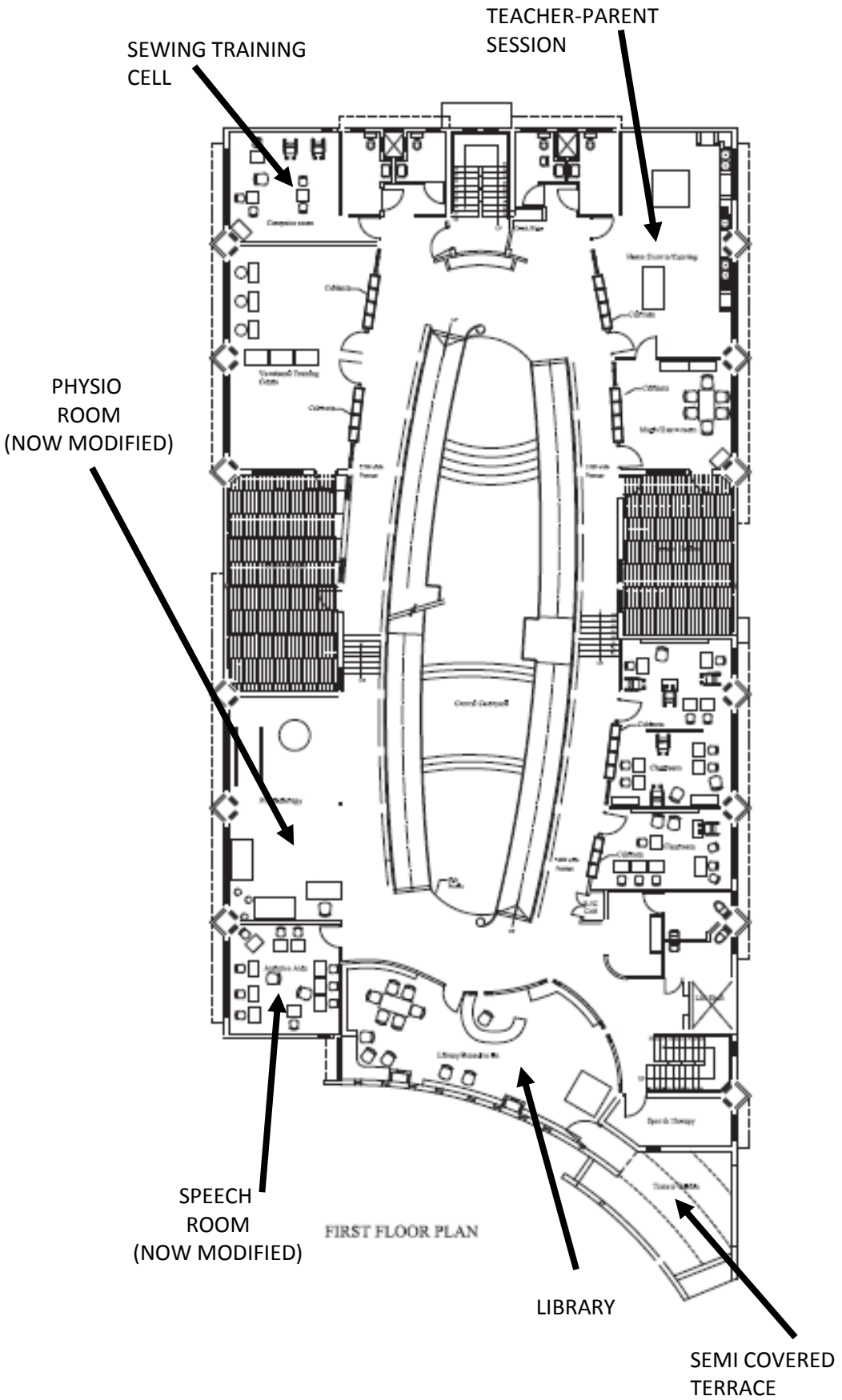
AUDIO-VISUAL SIGNS: AUDIO SIGNS for drills and VISUAL SIGNS for effective guidance along the campus under any circumstances.
For more effective touching sense, the tactile sign should be embossed rather than engraved.

ACADEMIC BLOCK:

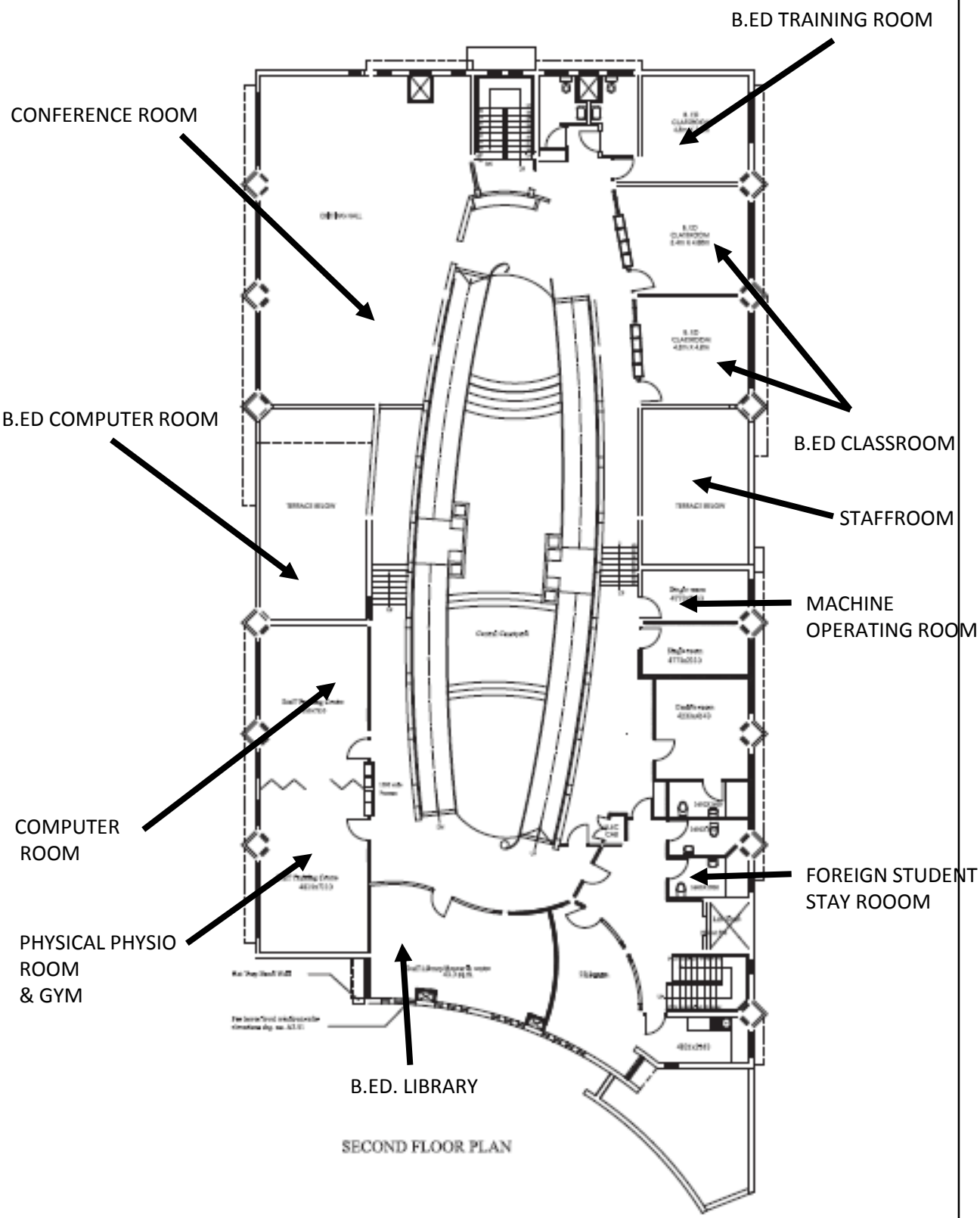
1. GROUND FLOOR



2. FIRST FLOOR:



3. SECOND FLOOR:



SITE AREA:

PASSAGE & PLAYAREA

BUILDINGBLOCK

SECURITY ROOM

SWING AREA

PEDESTRIAN WALKWAYS

LAWN

WIND: NW TO SE

SWING AREA

WINDOWS IN FASCADE

DG ROOM

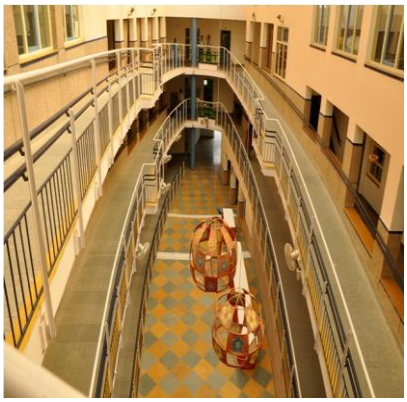
FRONT FASCADE

REAR SIDE PLAYAREA

FRONT LAWN

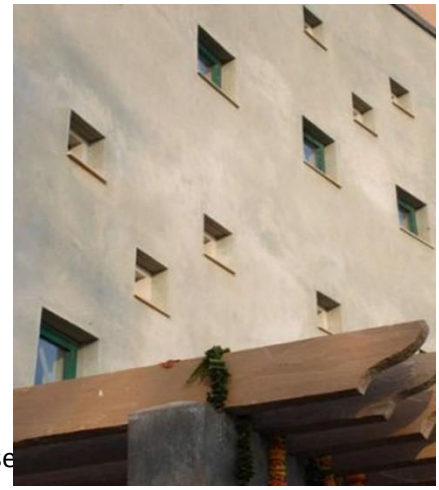
REAR FASCADE

PLANTATION GARDEN



CENTRAL ATRIUM

FEATURES OF BUILDING :



APPROACH ROUTE AND ENTRANCE:

- Entrance is marked with tactile tile.
- Steps and Ramp with handrails on both side and riser of 4".
- Entrance door with sliding feature.

PARKING and TRANSPORTATION:

- parking only for staff(outside the campus).
- Transportation of student through traveler bus available in premise

STEPS AND RAMP:

- riser - 4"; tread - 12" & width – 1.5 m
- slope gradient - 1:12 & width – 1.5 m
- uniform dimension.
- Handrails on both side.
- Subsequent broad flight after series of 4 steps in courtyard.

SIGNAGE and INSTRUCTIONS:

- **TOUCH:** tactile tiling , fluorescent color codes etc.
- **SMELL:** training to adapt smell of food , places like toilet , hazards like fire etc.
- **SOUND:** Guiding details provided and trained in drill form as per audio instructions.

MEDICAL EMERGENCY:

- Infirmary in campus.
- Medical Alliance with AYUSH hospital.

TRAINING CELL:

- training for handling machine , stitching , art & Craft , crookery and jewellery making.
- either self employed by institution or placed in company.

.

STORAGE:

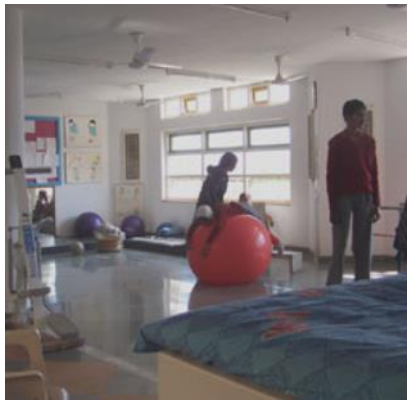
- 2 Basements for storage of goods.
- Entrance to basement from either side of block(prohibited for children).

WINDOW:

- Grilled windows for safety.

CLASSROOM:

- daylight from either side of room.
- special furniture for special kids.
- attached washroom with prep classes.
- 8-10 students in each class.



MOVEMENT:

- Radial and Linear circulation.
- Long corridor (1.7m) wide with rooms on a side.
- Columns flushed into the room.
- Vertical circulation taken care by ramp and staircase (1.5m wide) at the end of the blocks and courtyard.

TOILETS:

- special toilet seats with handrails and basins.
- tactile and non-slippery tiles in toilet
- single WC in each washroom.

SECURITY:

- Watchman on main entrance to campus.
- under CCTV surveillance (24X 7).
- Armed guards in the campus.

WATER BOOTHS

- **HEIGHT**: 900 mm flushed into the walls.

SERVICES:

- WATER SUPPLY: Underground tanks for water storage with approx. 6000 l capacity.
- SEWAGE: connected to sewage line of JMC.
- FIRE: Installed HOSE REELS & Fire Sprinklers in campus.
- ELECTRICITY: Electrical Room beneath the stairs.
- POWER BACKUP: DG installed in basement.
- SOLAR CELLS: for water heating on terrace.

SPECIAL FEATURES:

- Stress less vertical movement with practical fusion of ramp and stairs .
- Electrical room beneath the stairs.
- trees planted close to each other along the edges in the play ground giving a directional quality , and not scattered inside as a safety precaution.
- Training cells are managed by professionals with training sessions.
- Research centers , advisor room ,audio library & recreational room(including Doll Room).
- smart classes with audio tapes to understand topics.
- studio for recording of audio tapes.

DOOR:

- **CLEARANCE**: ENTRANCE DOOR = 1.8 m
  CLASSROOM DOOR= 1.05 m
- Sliding Door on entrance and labs.
- Single Panelled Door in classroom.

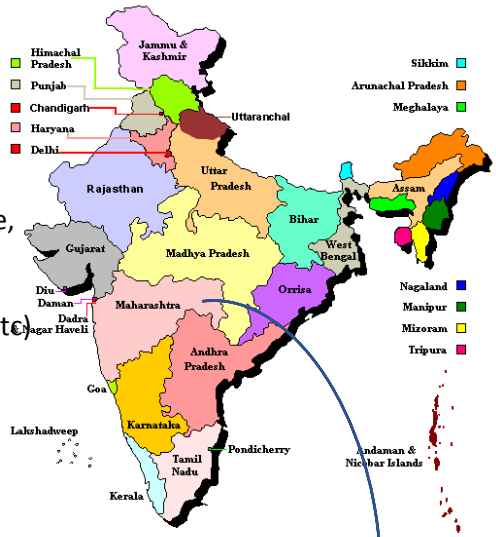
CASE STUDY 3:

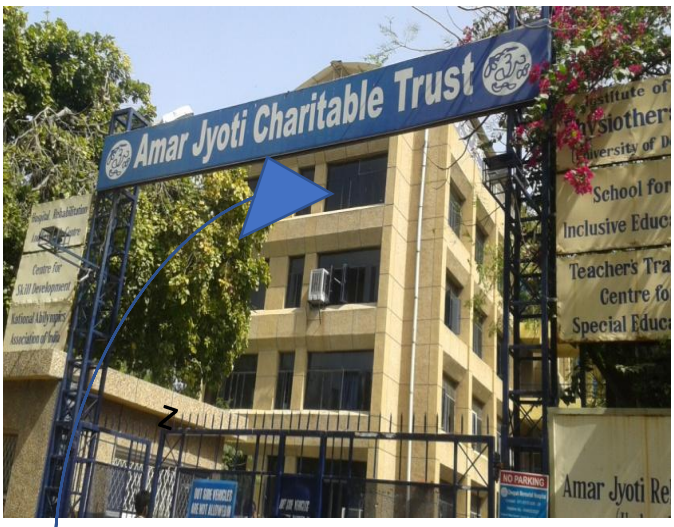
INTRODUCTION:AMARJYOTI- A CHARITABLE TRUST

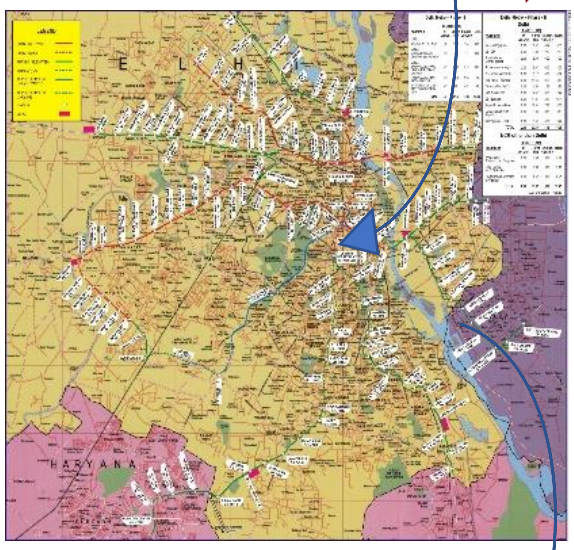
In 1982, Amar Jyoti Charitable Trust started a school with a pioneering concept of educating children with and without disability in equal number from nursery to class VIII. Starting with an integrated group of 30 children under a tree, the school now has about 450 children in Delhi. Amar Jyoti is a voluntary organization rendering rehabilitative services to persons with disabilities through a holistic approach of inclusive education, medical care, vocational training, child guidance and self-employment.

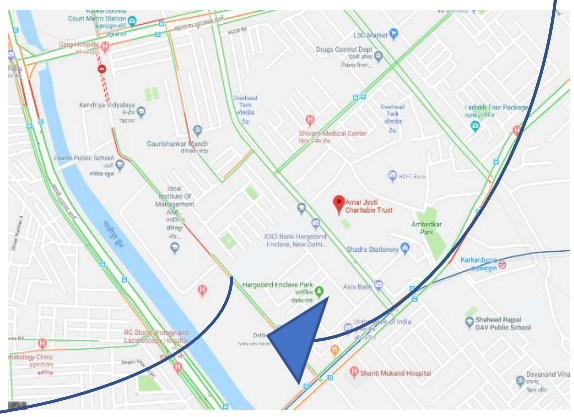
The activities at the school include:

- Curriculum as per CBSE and NIOS.
- Co – scholastics and cultural activities (participation in integrated sports, Abilympics etc)
- Disability – specific preparation (Braille and sign language, barrier – free environment, disability aides etc)
- Skill development (arts and craft, cutting and tailoring,
- culture, pottery, artificial jewellery making, computers etc)
- Preparatory classes for inclusion of developmentally
- delayed children, hearing and visually impaired as
- well as those with multiple disability
- Well stocked modern resource rooms









ACCESS TO AMARJYOTI:

LOCATION : Road no. 72 , Vikas Marg , KARKARDUMA , Delhi

SURROUNDING : karkarduma park and Commercial Complex

ROAD: 30 m wide Road in front – MAHRISHI VALMIKI MARG

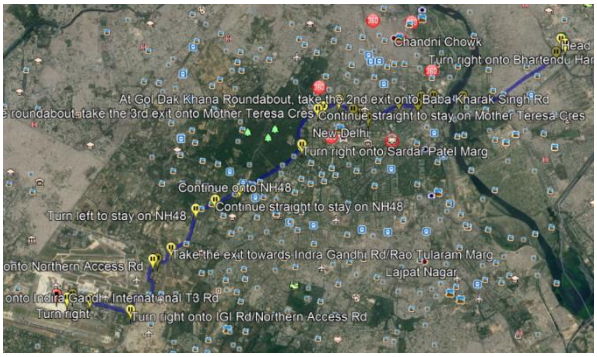
BUS STOP : HASANPUR Bus Depot – 2.8 km

ISBT : Anand Vihar ISBT – 1.8 km

METRO STATION : Karkarduma Metro Station – 550 m

AIRPORT : IGI T3 – 28.4 km
IGI 1D – 23.8 km

RAILWAY STATION : Anand Vihar Terminal– 1.8 km
NDLS – 9.6 km



IGI , T3

KARKARDUMA METRO STATION

PROJECT OVERVIEW:

CLIENT : AMAR JYOTI , DELHI

ARCHITECT: Ar. Kamal

ORIENTATION: NE to SW(major axis)

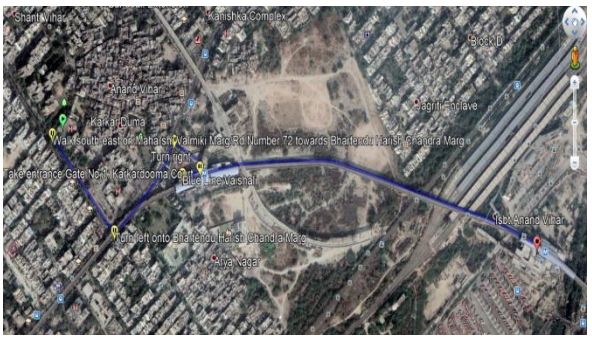
CLIMATE: Composite

TOPOGRAPHY : Flat Land

SITE AREA: 1.51 acres, 6110.7 sq m

GROUND COVERAGE: 1951.92 m

BUILT UP AREA: 3798.96 sq m



ANVT ISBT

ZONING:

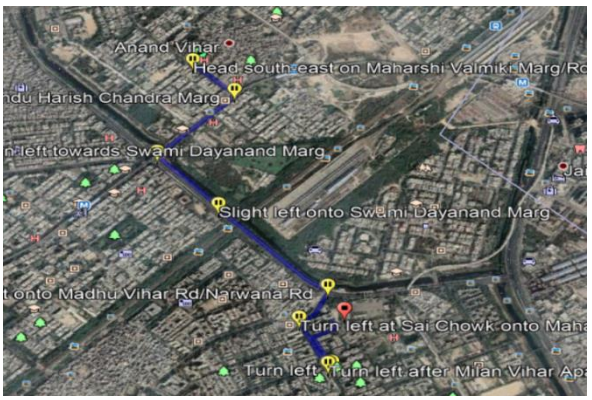
BUILT : 30%

UNBUILT: 70%

No . Of BLOCKS: 9

OPEN AREA: Basketball court , Playground & OAT

PARKING : SURFACE PARKING

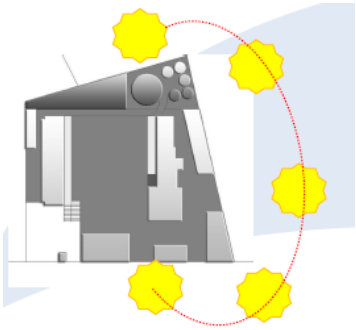


HASANPUR DEPOT

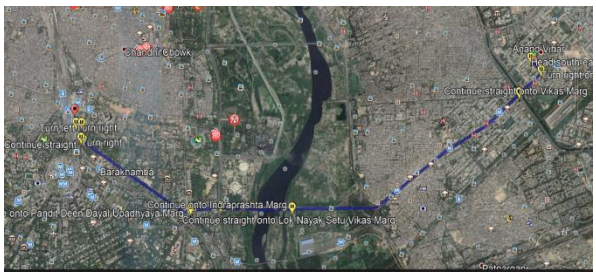
CLIMATE:

CLIMATE:COMPOSITE

WIND: NE-SW



SUNPATH



NDLS JUNCTION

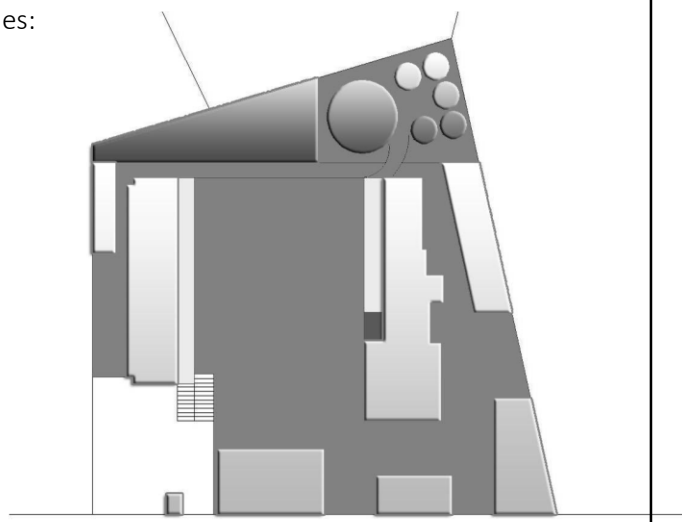
AREA CHART:

SPACE	AMARJYOTI	STANDARDS
site area	6011 sq m	-
Covered area	1951 sq m	60%
Classroom	4.5 m X 3 m	3.5 sq m/student
Toilet	7.5 m X 5 m	1/50 student
Staff	21	-
Ramp width	1.2 m	1.8 m
Corridor width	1.8 m	1.5 - 2.0 m
Staircase width	1.5 m	1.2 - 1.5m
Staff room	4 m X 5 m(4 no.)	80-85 sq m
Computer room	7 X 5 sq m(with audio library)	5.5 sq m/student
Activity room	30 sq m	-
library	50 sq m(with computer lab)	0.35-0.55 sq m/student
Music room	12 sq m	-
parking Width-	2.5 m	-
Handicapped walk way-	1.6 m	1.5 – 2.0 m
Ramp Gradient	1:10	1:10-1:12
handrail height	900 mm	900 mm(min)
Step riser	100 mm	100 mm
Step tread	300 mm	300 mm
Door Width	1.2 – 2 m	0.9 m

SITE PLANNING:

The building has an arrangement of spaces in blocks with different regular forms. These blocks enclose the area of basket ball ground. The site includes:

1- physiotherapy and medical centre
2- school for physically challenged.
3- Stage for events.
4- jewelry unit
5- workshop
6- classes
7- kinder-garten
8- semi-covered amphitheatre
9- orthotic and prosthetic workshop
10- canteen
11- semi-covered parking
12- open basket ball court
13- open area
14- road



CIRCULATION:

- Linear circulation.
- Courtyard planning with 4’1” wide single loaded corridors.
- Vertical approach to the different floors via ramps and stairs as well. 4’ wide each. At the centre of the blocks.
- Kinder-garten is surrounded by an old tree and the tree branch surrounded by music room.
- Parking and vehicular movement is not restricted to the entrance.
- Basement work shop

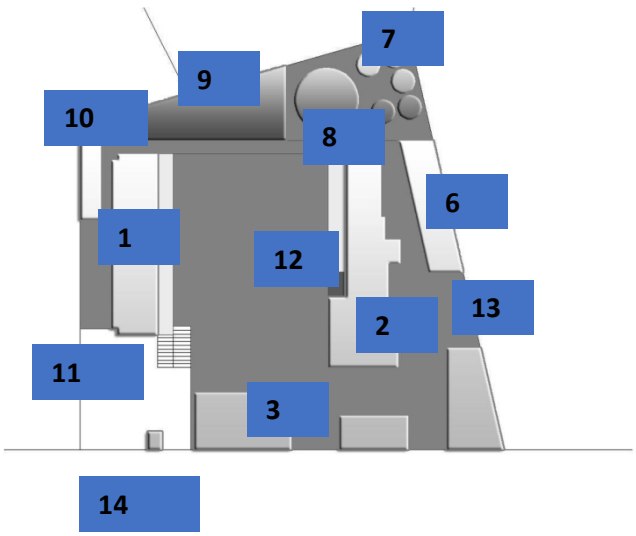
SURROUNDING:

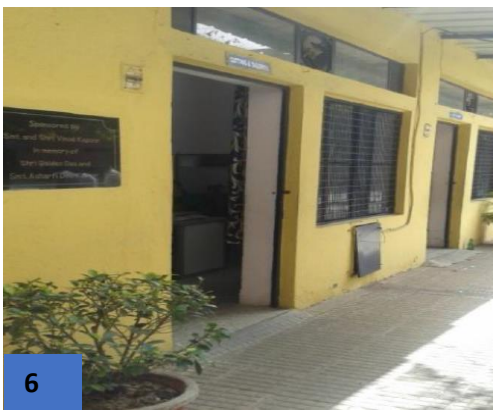
- The site is surrounded by commercial buildings, residential buildings and the parks as well.
- Metro station from the school is 500m away.

TEXTURE:

- To assist the differently disabled people to identify their locations, continuous system of lobbies are adopted and dead ends are avoided.

- Use of different tactile wall tile and characteristics of floor covering can act as a guide path for specific passageway in a large space.

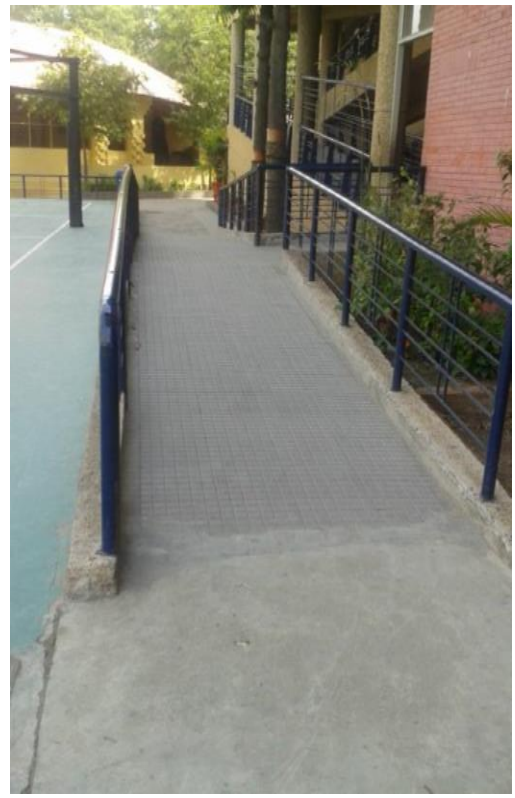




ACADEMIC BLOCK:

CLASSES STAFF ROOM CIRCULATION
STAIR CASE STAIR CASE TOILET

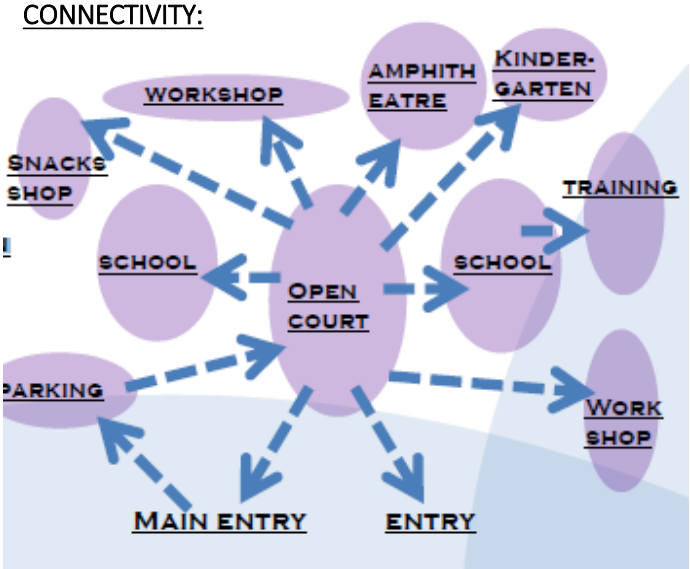
COMP. LAB ACTIVITY BAKERY & FOOD
RAMP TOILET COURTYARD



CLASSES RAMP COURTYARD
STORE ROOM TOILET STAIR CASE

FEATURES OF BUILDING :

CONNECTIVITY:



EXTERNAL CIRCULATION:

- Campus has two entry and exit. From main road.
- Main entry to school campus is from north side of the site as shown

MEDICAL EMERGENCY:

- Infirmary in campus.
- Medical Alliance with SHIVAM Medical Centre.

PARKING and TRANSPORTATION:

- parking only for staff(in campus).
- Transportation of student through traveler bus available in premises.

LIGHT AND VENTILATION:

- some the corridors are singly loaded to get maximum indirect light and air.
- natural lightning through courtyard.
- All the classrooms and training rooms are provided with windows with glass openings for better lighting.

TRAINING CELL:

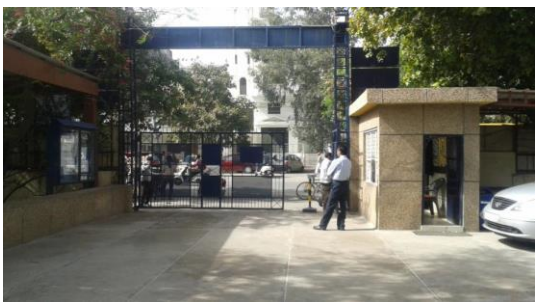
- training for bakery , stitching , art & Craft , pottery and jewellery making.
- training for students in academic block.
- Separate workshop area for only training pupil.

CLASSROOM:

- daylight from either side of room.
- special furniture for special kids.
- attached washroom with prep classes.
- 8-10 students in each class.

ASSISTANCE:

- Physiotherapy Room.
- Speaking skill room for improving speaking skills.
- Prosthetic and Orthotic Workshop.
- Medical treatment Room.



MOVEMENT:

- Linear circulation.
- Long corridor (1.6m) wide with rooms on both side.
- Max Columns flushed into the walls.
- Vertical circulation taken care by ramp and staircase (1.2m wide) at the end of the blocks and courtyard.

TOILETS:

- special toilet seats with handrails and basins(hyt = 0.65m).
- tactile and non-slippery tiles in toilet
- 1 special WC in every washroom.

SECURITY:

- Watchman on main entrance to campus.
- under CCTV surveillance (24X 7).
- Armed guards in the campus.

SPECIAL FEATURES:

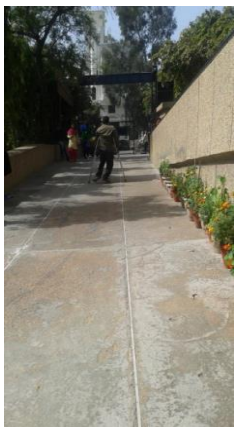
- Stress less vertical movement with practical ramps and low height riser stairs.
- Electrical room beneath the stairs and electrical substation in outer periphery of campus.
- trees planted close to each other along the edges in the play ground giving a directional quality.
- Training cells are managed by professionals with training sessions.
- Research centers , speech room ,audio library & recreational room(like activity and playarea).
- smart classes with audio tapes to understand topics.
- studio for recording of audio tapes.

DOOR:

- **CLEARANCE**: ENTRANCE DOOR = 1.2 m
- CLASSROOM DOOR= 1.05 m
- Double panelled Door on entrance and labs.
- Single Panelled Door in classroom.

WATER BOOTHS

- **HEIGHT**: 900 mm
- flushed into the walls.



SERVICES:

WATER SUPPLY: Underground tanks for water storage with approx. 5000 l capacity & Overhead tank of capacity 1500 l.
SEWAGE: connected to sewage Ghazipur drain line at 500 m away
FIRE: Installed water hydrants & Fire Sprinklers in campus.
ELECTRICITY: Electrical Room beneath the stairs.
POWER BACKUP: DG installed in basement.
SOLAR CELLS: for water heating on terrace.

INFERENCES


1. LANDSCAPING AND VEGETATION:
   - soft landscaping is done in front of the campus. managed Play area.

2. WALKWAYS AND CORRIDOR:
   - walkways are wide on ramp's opening than usual.
   - staff vehicular entry into the campus.
   - parking(lack of parking space) in campus.

3. NATURAL RESOURES AND THEIR USAGE:
   - use of daylight.
   - use of solar energy(on small scale)

4. ACCOMODATION:
   - No accommodation available

5. MOVEMENT:
   - Ramped approach is appreciable.
   - Stairs are wide enough with handrails on both side.

6. SECURITY:
   - The place is highly secured.
   - closely observed under CCTV coverage.

7. PLAYAREA:
   - multiple play area in form of sand play area, basketball court , lawn etc.

8. PHYSICAL STATE OF BUILDING:
   - The elevation of the building is beautifully Carved giving a rough texture look to the building easily recognised as a public institution.

9. AREA (AS PER STANDARD)
   - standards are followed for easy being of students.

10. CONNECTIVITY:
    - the connectivity is easy and efficiently connecting all spheres of block.

11. ACCESS:
    - easily accessible with varying mode of transportation available.

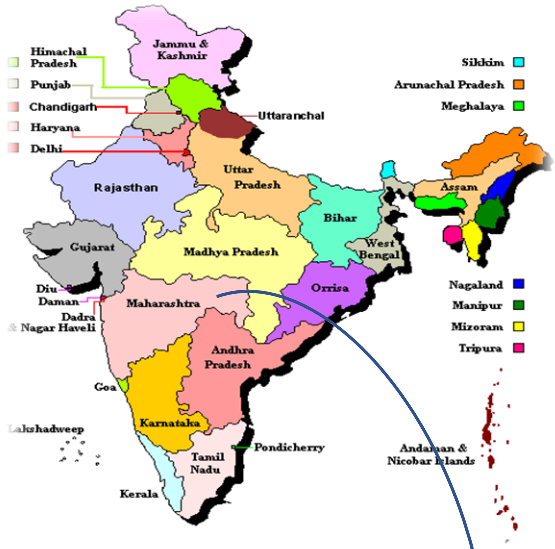
LITERATURE STUDY:

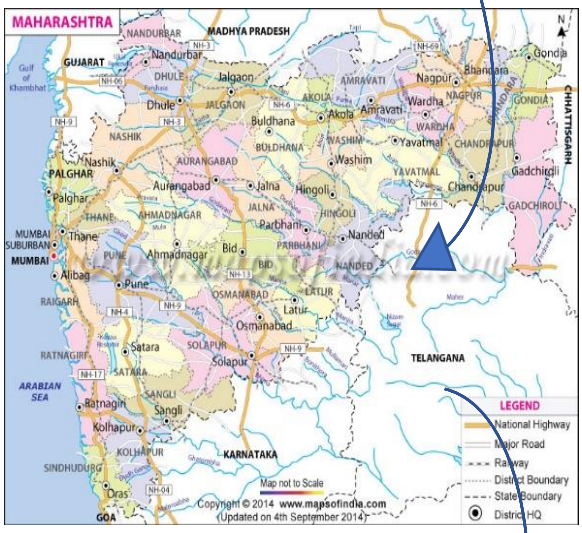
INTRODUCTION: NAB , MUMBAI

NAB is a non-profit organization which is working perseveringly since 1952 for visually impaired persons. it is registered under SOCIETIES REGISTRATION ACT XXI of 1860-registration no. S/10184. The organization lays special emphasis on education and skill development.

NAB has a network of 23 states and 65district level branches that enables it to reach the large number of visually challenged people. The Association has international focus to safeguard the interest of blind and low vision person.

NAB , Mumbai is active member under UNICEF and UNESCAP. Also an active member of ASIAN BLIND UNION & WORLD BLIND UNION.





ACCESSIBILITY:

The site is easily accessible by road . It faces Worli Sea face oh **KHAN ABDUL GAFTAR KHAN Road.**
METRO STATION - Worli Metro Station – 0.8 Km
RAILWAY STATION - Lokmanya Tilak Terminal - 15.6 km
LOCAL RAILWAY STATION - Dadar Railway Station.
BUS STOP - Worli Bus Depot – 1 Km
AIRPORT - Chatrapati Sivaji Int. Airport – 14 km

PROJECT OVERVIEW:

CLIENT : NATIONAL ASSOCIATION FOR BLIND
SITE AREA : 3240 sq m
ORIENTATION: NORTH EAST to SOUTH WEST(major axis)
CLIMATE: Humid
TOPOGRAPHY : Slightly Sloping
GROUND COVERAGE: 1242 sq m
BUILT UP AREA : 3671.2 sq m
CIRCULATION AREA: 183 sq m
FAR: 1.1
ARCHITECT: I. M. Kadri
RENOVATION: Kapadia Associates

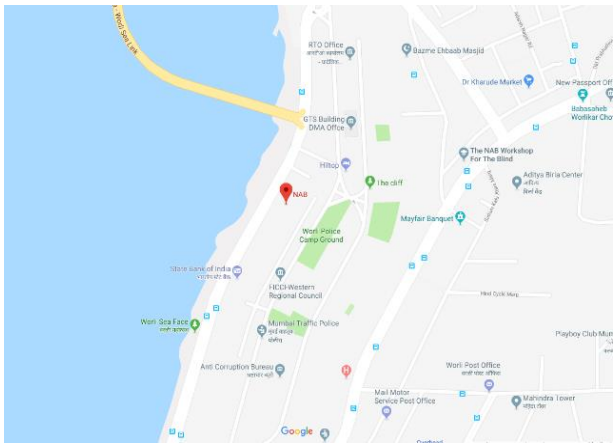
ZONING:

BUILT : 38%
UNBUILT: 62%
BLOCKS: SOUTH EAST – ADMIN AND ACADEMIC
NORTH WEST – ACADEMIC AND HOSTEL
OPEN AREA: OAT and Playground
PARKING : SURFACE PARKING

WALKWAYS:

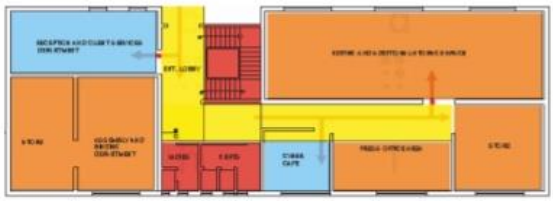
- Parking for vehicle is provided all around the built form.
- No segregation between pedestrian and vehicular walkways.

CIRCULATION:



SERVICES
PUBLIC AREAS
PRIVATE AREAS
CIRCULATION

Ground Floor Plan- Wing A



Ground floor plan- Wing B

PLANNING STRATEGIES:

The institution is a prime body training visually impaired all around the world.
The building includes-

- Classroom
- Workshop Room
- Braille printing press
- Audio library
- Braille library
- Listening booth
- Banquet hall
- Multipurpose hall
- Studio

SERVICES:

- WATER SUPPLY: installation of overhead tank and underground Tank(supply from BOMBAY municipal corporation).

- DRAINAGE: Drain line of KHAR DANDA(by BMC).
- FIRE FIGHTING : Use of fire hydrants at distance of 9m along with regular sprinklers
- ELECRTRICITY : electrical substation at outer periphery of the site.

- PARKING : Surface Parking.

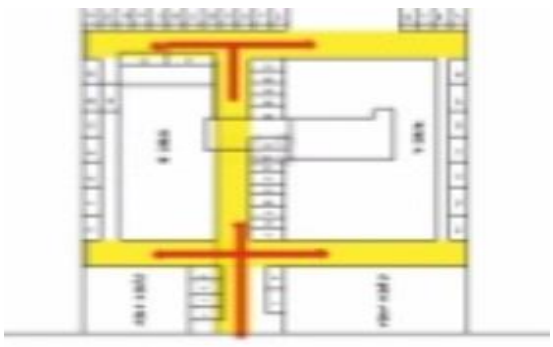
First Floor Plan- Wing A

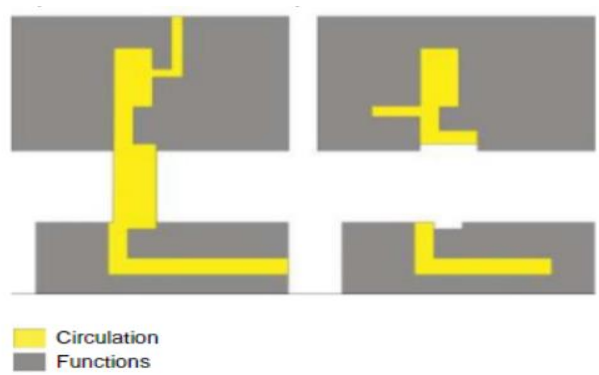
SERVICES
PUBLIC AREAS
PRIVATE AREAS
CIRCULATION

First Floor Plan- Wing B

INFERENCES

- Important areas like studio are not easily accessible.
- No special wall finish.
- Design is efficient and simple.
- No color contrast.
- Not enough spaces for braille's paper.
- No handrails along the staircases.
- No indicator or beeper at the entrance or near the lift.
- Access is linear without obstruction.
- Braille printing press in basement.
- Aerial way connecting both the wings.
- Arrangement of room is linear.
- Braille signal installed for guiding.





STANDARD STUDY:

INTRODUCTION

Barrier free environment is one which enables people with disabilities to move about safely and freely and to use the facilities within . The built environment , the goal of barrier free design is to provide an environment that supports the independent functioning of individuals so that they can get to, and participate without assistance, in every day activities such as procurement of goods and services, community living, employment and leisure. The fundamental principles which have been followed in developing standards for various facilities to meet disabled people's standards for safety, convenience and usability. Barrier free design standards should satisfy anyone who is hampered in his mobility or functioning (as compared with a nondisabled person) as a result of obstacles put in his way by the design of a building, the choice of hardware and equipment and the arrangement of outside space.

Building types to which the recommendations may be applied for are residential buildings other than domestic buildings, commercial buildings, industrial buildings, health care institutions, educational establishments, community and religious agricultural and transport facilities. The guide lines have also indicated the minimum access provisions required in various types of buildings.

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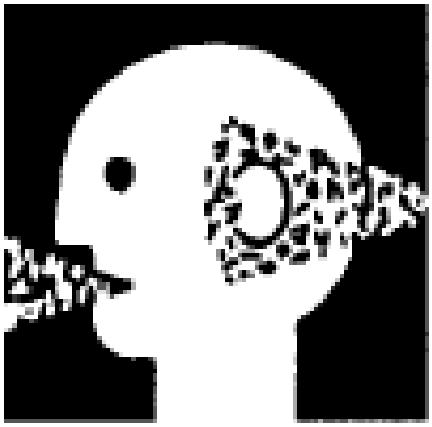
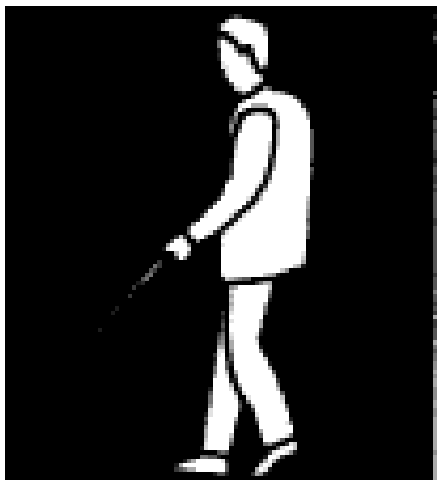
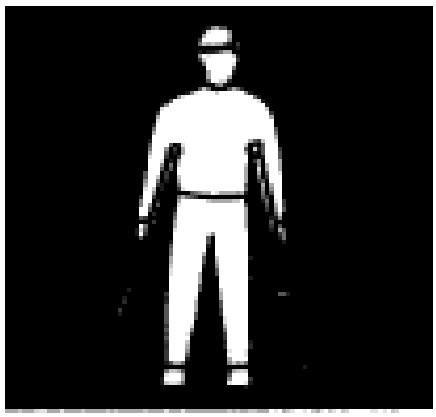




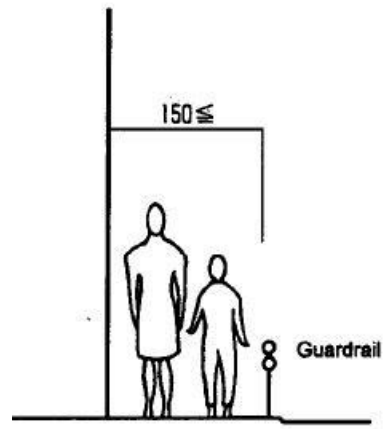


TYPES OF DISABILITIES:

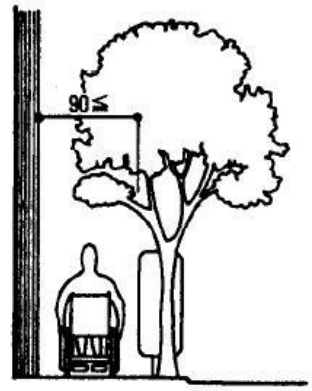
1. Non-Ambulatory : Impairments that, regardless of cause or manifestation, for all practical purposes , confine individuals to wheel & chairs.
2. Semi-Ambulatory : Impairments that cause individuals to walk with difficulty or insecurity. Individual using braces or crutches, amputees, arthritics, spastics &those with pulmonary & cardiac ills may be semi-ambulatory.
3. Sight : Total blindness or impairments affecting sight to the extent that the individual
functioning in public areas is insecure or exposed to danger.
4. Hearing : Deafness or hearing handicaps that might make an individual insecure in public areas because he is unable to communicate or hear warning signals.

SPECIAL DESIGN CONCEPTS FOR DISABLED:

WALKWAYS



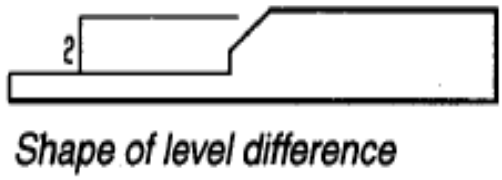
- It is vitally important that the kerbs run parallel to the street, up to the point where the walk is inclined.
- Walks should be smooth, hard level surface suitable for walking and wheeling. Irregular surfaces as cobble stones coarsely exposed aggregate concrete, bricks etc. often cause bumpy rides.
- The minimum walk way width would be 1200 mm and for moderate two way traffic it should be 1650 mm - 1800 mm.
- Longitudinal walk gradient should be 3 to 5% (30 mm - 50 mm in 1 meter)
- When walks exceed 60 Meter in length it is desirable to provide rest area adjacent to the walk at convenient intervals with space for bench seats.
- For comfort the seat should be between 350 mm - 425 mm high but not over 450 mm.
- Texture change in walk ways adjacent to seating will be desirable for blind persons.
- Avoid grates and manholes in walks.
- If grates cannot be avoided then bearing bar should be perpendicular to the travel path and no opening between bearing bars greater than 12 mm in width.



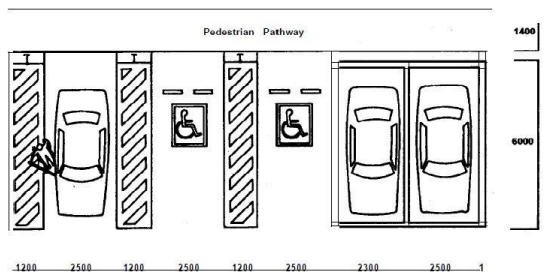
Difference in level

PARKING

- Surface parking for two care spaces shall be provided near entrance for the physically handicapped persons with maximum travel distance of 30 M from building entrance.
- The width of parking bay shall be minimum 3.60 Meter.
- The information stating that the space is reserved for wheel chair users shall be conspicuously displayed.
- Guiding floor materials shall be provided or a device which guides visually Impaired persons with audible signals or other devices which serves the same purpose shall be provided.
- Parking should mainly be at 60 deg. – 90 deg. Angle.



Shape of level difference

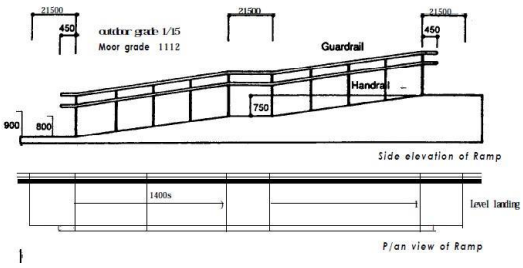


Parking

RAMP

- Ramp shall be finished with non slip material to enter the building.
- Minimum width or ramp shall be 1800 mm. with maximum gradient 1:12, length of ramp shall not exceed 9.0 M having double handrail at a might of 800 and 900 mm on both sides extending 300 mm. beyond top and bottom of the ramp.
- Minimum gap from the adjacent wall to the hand rail shall be 50 mm.

APPROACH TO PLINTH LEVEL

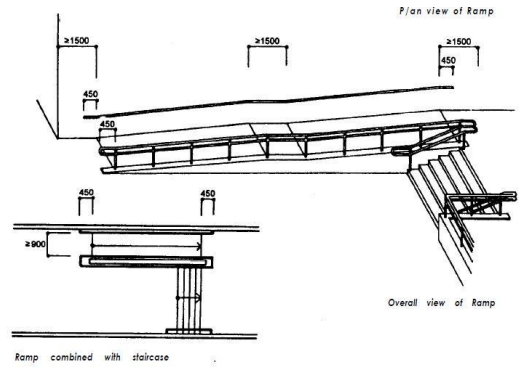


CORRIDORS

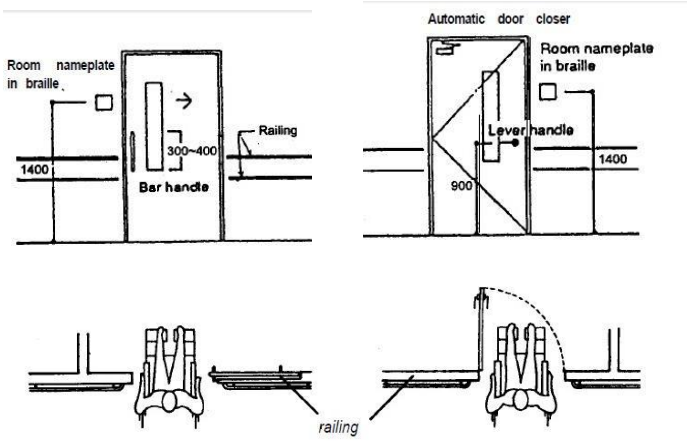
connecting the entrance/exit for handicapped leading directly outdoors to a place where information concerning the overall use of the specified building can be provided to visually impaired persons either by a person or by signs, shall be provided as follows:

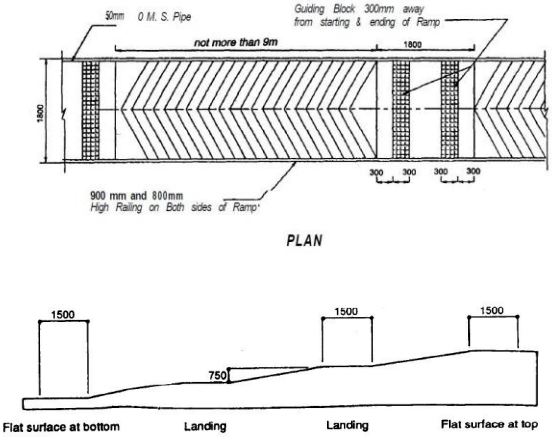
a) 'Guiding floor materials' shall be provided or devices that emit sound to guide visually impaired persons.

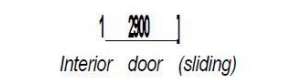
b) The minimum width shall be 1800 mm. c)In case there is a difference of level slope ways shall be provided with a slope of 1:12. d)Hand rails shall be provided for ramps/slope ways.



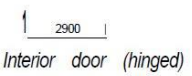
DOORWAYS AND ENTRANCE LANDING:



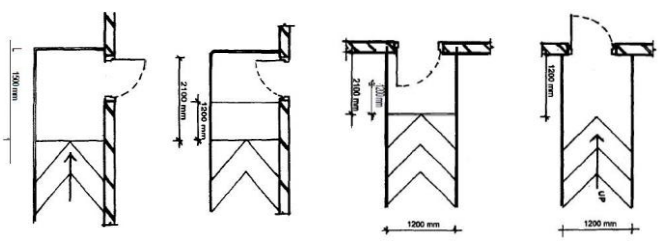


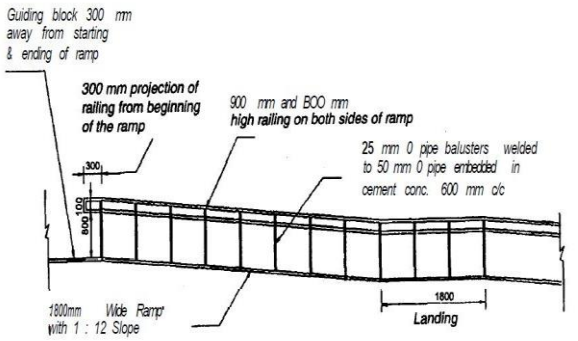


Interior door (sliding)



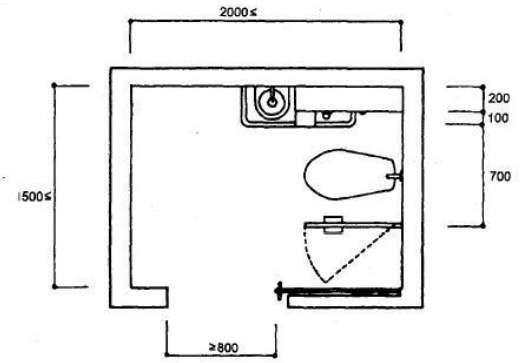
Interior door (hinged)





WINDOWS

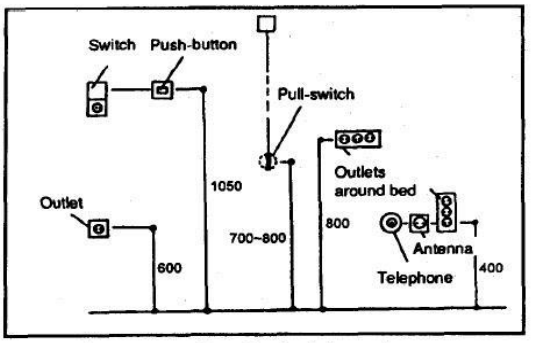
- A window should have handles/controls at a height that permits use from wheelchairs.
- A window should have an unobstructed viewing zone for wheelchair users.
- Curtain or Venetian blind controls/ropes should be accessible for wheelchair users.



Plan view of toilet stall

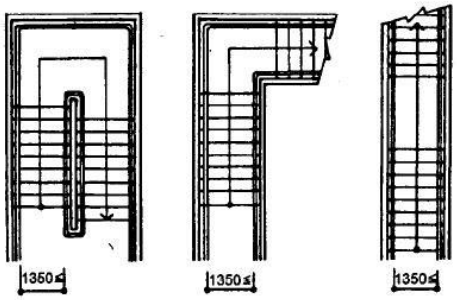
CONTROL

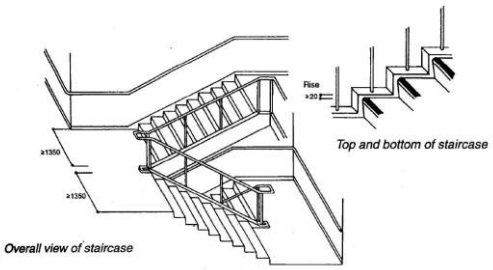
- For locking and opening controls for window and doors should not be more than 1400mm from the finished floor usable by one hand.
- Switches for electric light and power as well as door handles and other fixtures and fittings should be between 900 mm - 1200 mm from finished floor.
- Power point for general purpose should be fixed between 400-500 mm from the finished floor.



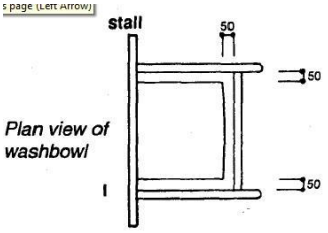
Electric switch and outlet heights

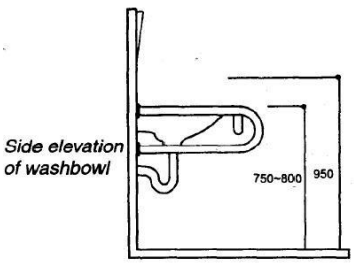
STAIRCASE

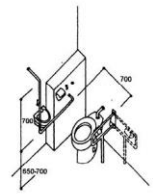


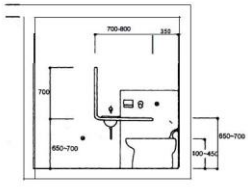


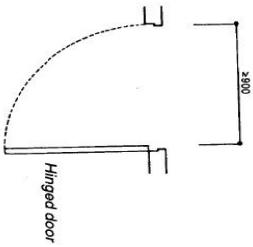
TOILETS





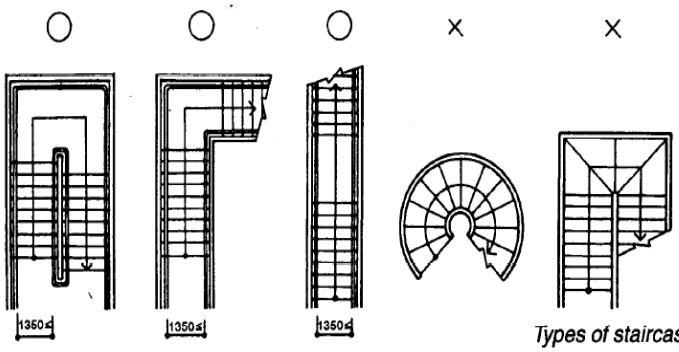






STAIRS

- Low riser and blunt edges for steps.
- Uniform dimension alog the building.
- Handrails on both side.



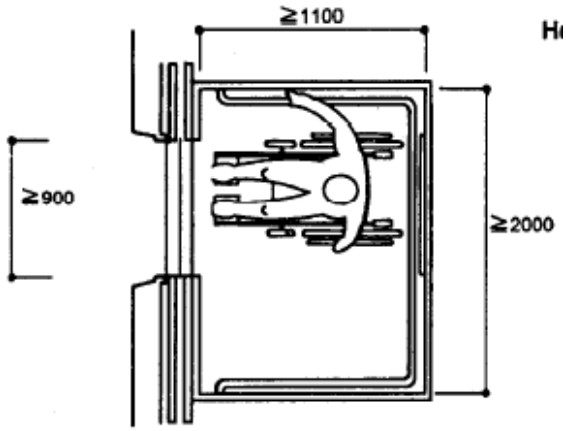
Types of staircases

LIFT

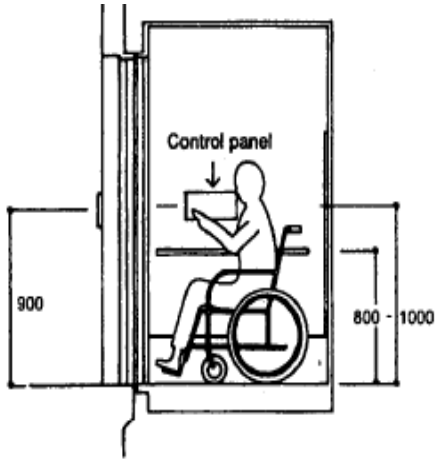
Wherever lift is required as per bye-laws, provision of a least one lift shall be made for the wheel chair user wit the following cage dimensions of lift recommended fo passenger lift of 13 persons capacity by **Bureau of India Standards.**

Clear internal depth : llOOmm.
Clear internal width : 2000 mm.
Entrance door width : 900 mm.

- hand rail not less than 600 mm. long at 80C 1000 mm. above floor level shall be fixe adjacent to the control panel.
- The lift lobby shall be of an inside measurement of 1800 x 1800 mm. or more.
- The time of an automatically closing door should or minimum 5 seconds and the closing speed should not exceed 0.25 M/ Sec.
- The interior of the cage shall be provided with a device that audibly indicates the floor the cage has reached and indicates that the door of the cage for entrance/exit is either open or closed.



Space Inside elevator



Height of control panel and standard dimensions

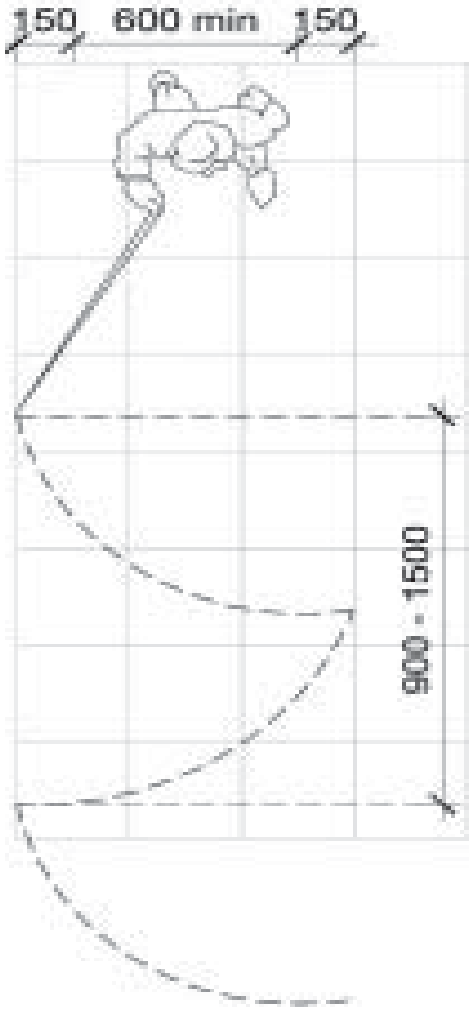
FIRE SAFETY

- A water storage tank of minimum 20 000 litres capacity, which may be used for other construction purposes also.
- For the external stairs for exit requirements, the width and treads have been increased to 1 250 mm and 250 mm respectively.
- Under the requirements for institutional buildings the clear width of all required exits which serve as egress from hospital or infirmary section has been increased from 1.5 m to 2 m. Also, provision of patient-lift has been included.
- Openings in walls or floors which are necessary to be provided to allow passages of all building services like cables, electrical wirings, telephone cables, plumbing pipes, etc, shall be protected by enclosure in the form of ducts/shafts having a fire resistance not less than 2 h.
- Drums filled with water of 2 000 litres capacity with two fire buckets on each floor.
- The minimum capacity of smoke exhaust equipment has been increased to 12 air changes per hour.

LIGHTNING

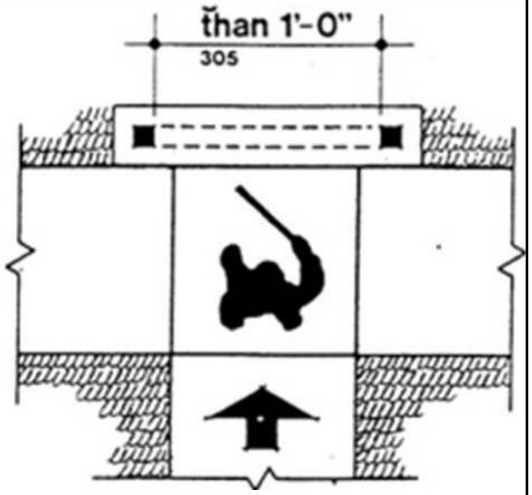
offices, administration rooms:

offices with workstations near windows	300
offices	500
open-plan offices	
– high reflection	750
– moderate reflection	1000
technical drawing	750
conference rooms	300
reception rooms	100
rooms for public use	200
data processing	500



general rooms:

circulation zones in storage buildings	50
storerooms	50
storerooms with access requirements	100
storerooms with reading requirements	200
gangways in storage racking systems	20
operating platforms	200
dispatch areas	200
canteens	200
break rooms	100
gymnasiums	300
changing rooms	100
washrooms	100
toilet areas	100
first-aid areas	500
machinery rooms	100
power supply installations	100
postrooms	500
telephone exchanges	300

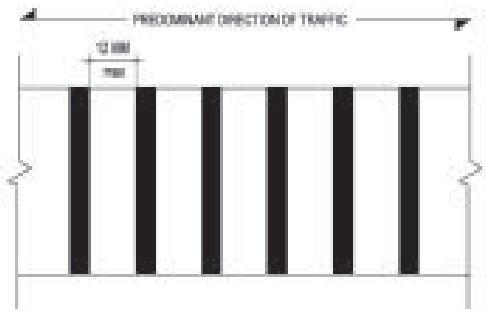


circulation zones in buildings:

for persons	50
for vehicles	100
stairs	100
loading ramps	100

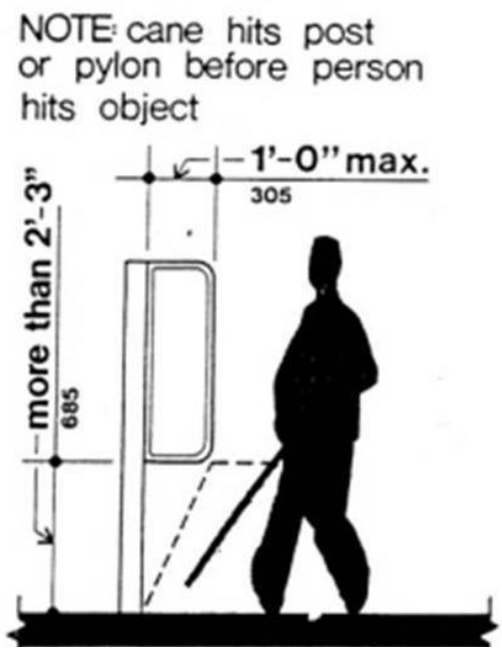
WHITE CANE RANGE

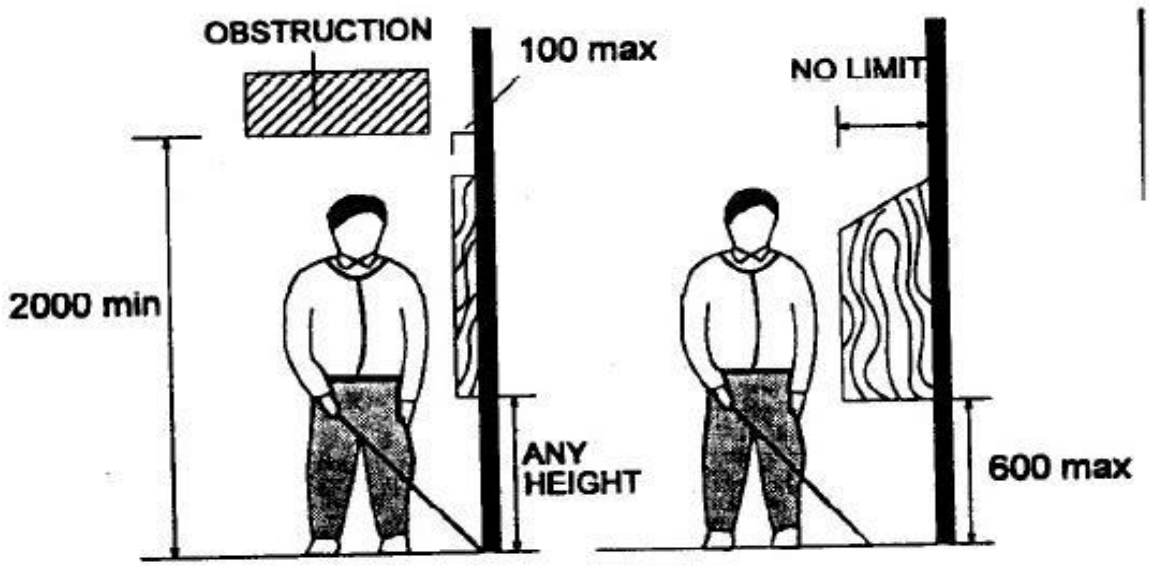
- Any obstacle above 750 mm cannot be detected by the white cane. If there are projections above this height then the projections have to be reflected at the floor level in terms of level or textural differences.
- Gratings -If gratings are located in walking surfaces, then they shall have spaces no greater than 12 mm wide in one direction.
- If gratings have elongated openings, then they shall be placed so that the long dimension is perpendicular to the dominant direction of travel. 12mm max Spacing



SIGNAGE

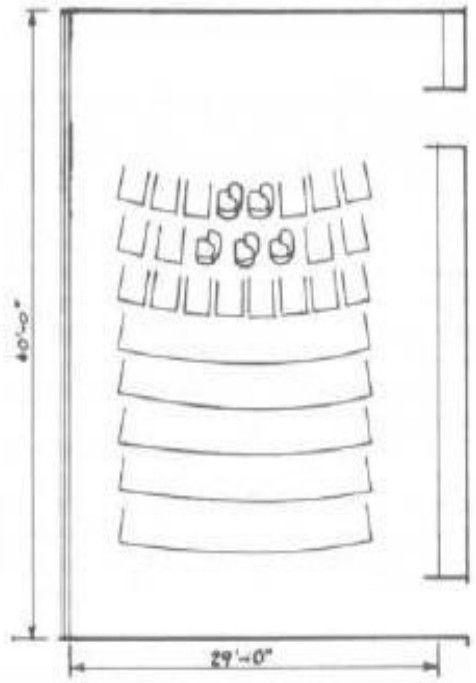
- The main purpose of signs should be to provide a clear designation of places, warnings and routing information. A person in a wheel chair is less than 1200 mm high.
- A person who is partially sighted needs contrasting texture along side walkways and audible signs for dangerous areas,. Signs should be useful to everyone, easily seen from eye level, readable by moving the fingers and well lighted for night time identification.
- Signs shall indicate the direction and name of the accessible facility and incorporate the symbol of access.
- The size, type and layout of lettering on signs shall be clear and legible.





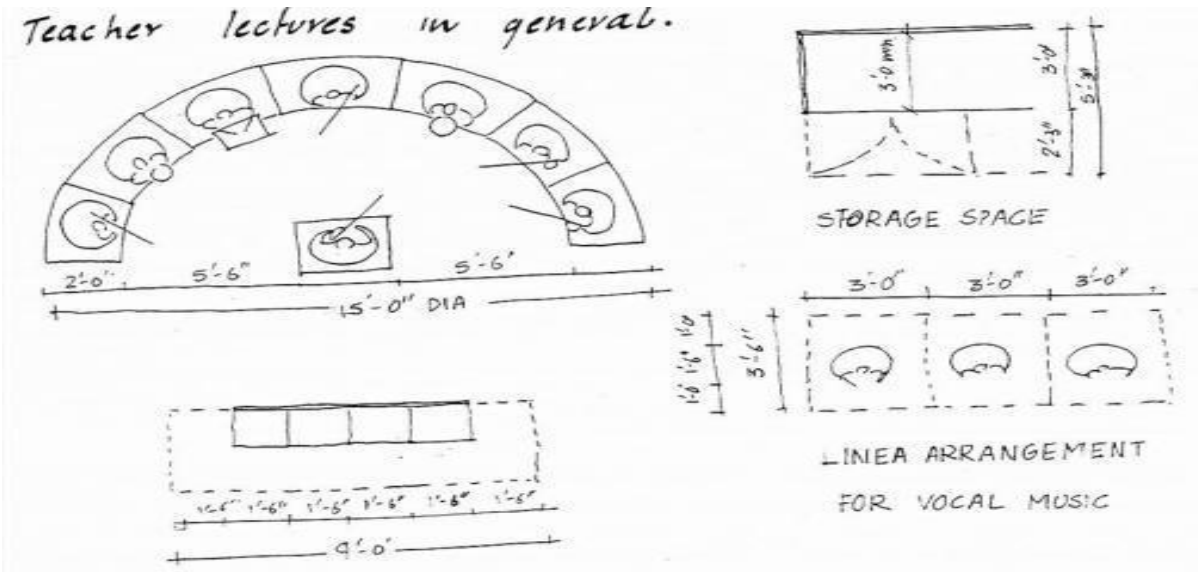
CLASSROOM

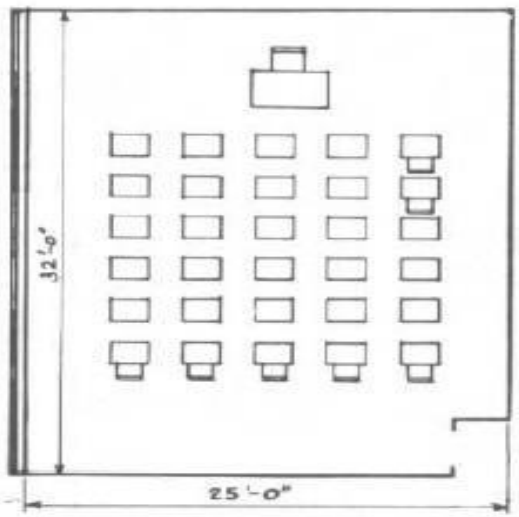
- Minimum size of class should be 24’ x 26’
- The classroom should have as quiet a location as possible, away from noisy outdoor areas. Ease of access to specialized facilities outside the academic unit should be ensured

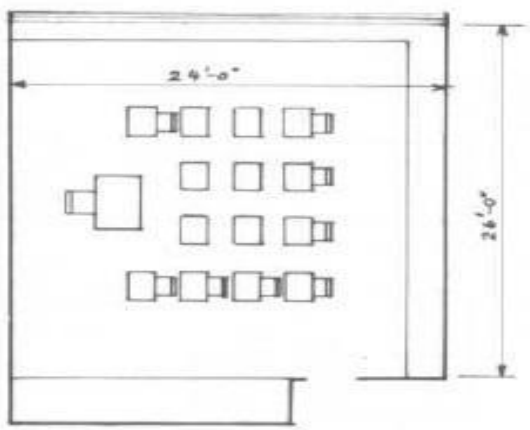


HOSTEL ROOM

- The distance between 2 beds should not be less than 1500mm.
- The minimum door clear opening should not be less than 900mm.
- The bed height should not exceed 450-500mm







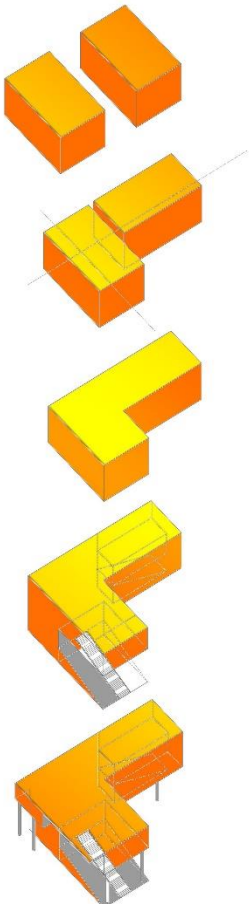
CONCEPT EVOLUTION:

BUILDING BLOCK

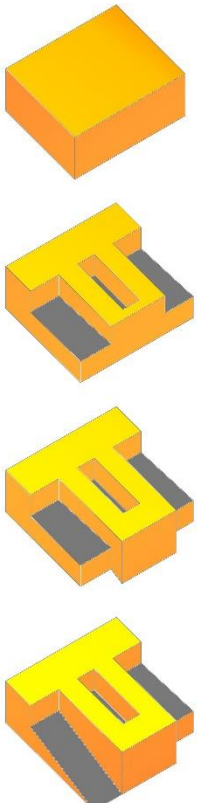
- The blocks evolved from simple geometric pattern. The evolution is in three subsequent major stages for different blocks. The evolution of blocks primarily dependent on symmetry and accessibility of impaired.
- The planning concept has been evolved from CLOSED CLUSTER MODEL keeping in mind of the fact of compact planning strategies and atleast a side open externally with common entrance and exit.

STACKING

- The stacking is largely done horizontally keeping the structure is more symmetrical and compact.
- the horizontal stacking is done by arranging all the sectors arranged in best possible way for easy accessibility and less travel distance.
- the stacking is done avoiding acute angle formation , dead end and maximum daylight.
- the vertical expansion is less yet effecient enough for impaired and easily accessible.



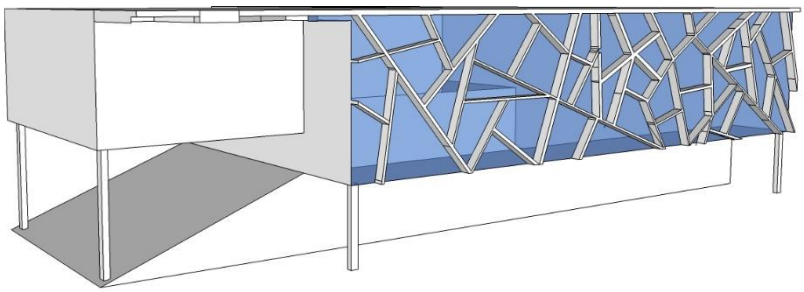
RECREATIONAL
&
TRAINING BLOCK



RESIDENTIAL BLOCK

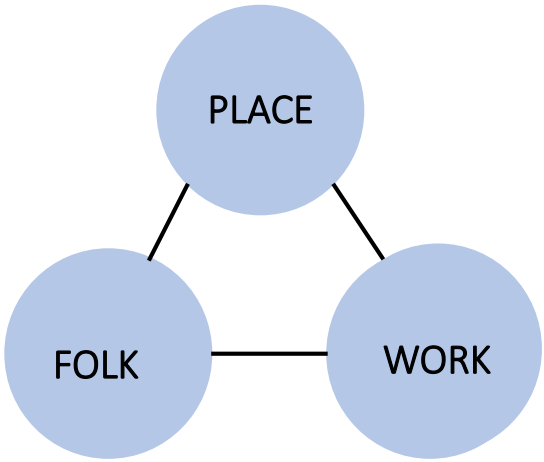
FASCADE

- For maximum sunlight the fascade is treated with multi glazed glass. For composite climate the vertical and horizontal louvers are used in a fashion like “MAGAYON MAGIAN” which means beautiful as sunlight.
- The louvers are in form of sun rays falling over an object and dispersed.



SITE EVOLUTION:

- The site is typically developed on concept presented by SIR PATRICK GEDDES of "PLACE-WORK-FOLK" called as GEDDESIAN TRIAD.
- Deriving an explanation by comparing three major elements of his concept with three section of my built Up area.
- PLACE is compared with Residential Area of the built
- FOLK is compared with Recreational Area of built.
- WORK is compared with Academic and Administration Area of the built.

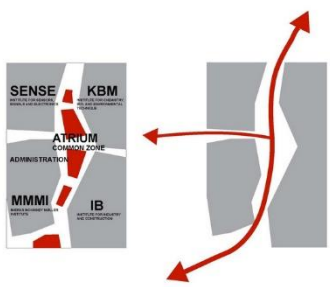


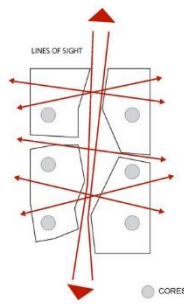
- The site is developed keeping in mind that site is segregated into three major zones called ACADEMIC ,ADMINISTRATION & RESIDENTAIL similarly to concept of TRIAD of integrating growth of three major section of society in a town.
- Each part is segregated yet arranged within range of 500m.

SITE PLANN AND SECTION

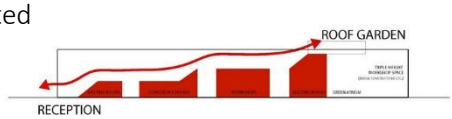
NETWORK IDEATION:

- The network is evolved from FLUIDITY keeping in mind about the certain requirement of no DEAD END along the walkways . Just like a stream of water flowing in multiple direction , the road network along the site is developed
- Each road is connected to entrance and exit of the site.





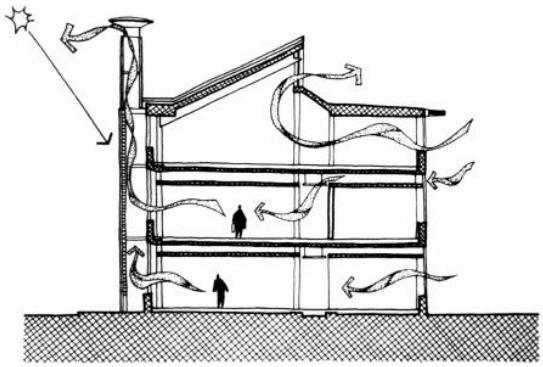
- .
- Pedestrian and vehicular ways are segregated for better efficiency and standardized format.



SUSTAINABLE APPROACH:

- A Sustainable approach has been adopted to improve the efficiency and healthy working and living space . The building has been advanced as an energy efficient building block.

- the general sustainable techniques adopted has been mentioned below-

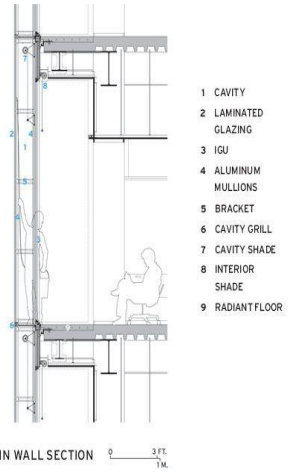


(i) PASSIVE COOLING:-

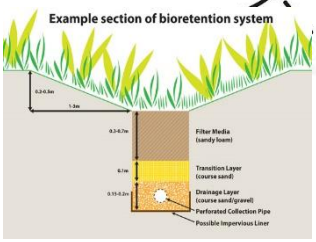
- Use of air ducts integrated with structure of the building.

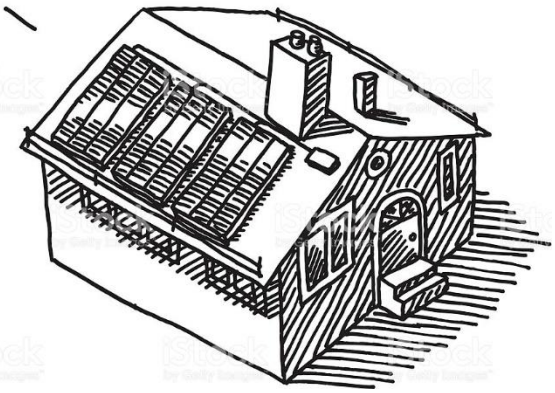
(ii) STACK EFFECT:-

- Distribution and placement of openings for better and efficient exchange of inside and outside temperature.



CURTAIN WALL SECTION





(iii) INSULATED BUILDING ENVELOPE:-

- Use of insulation on outer periphery.

(iv) SURFAE WATER BIOFILTERATION:-

- Bio filtration Techniques for parks and green area.

(v) NATURAL RESOURCES:-

- Use of Rainwater , Sunlight and Wind for better efficiency.

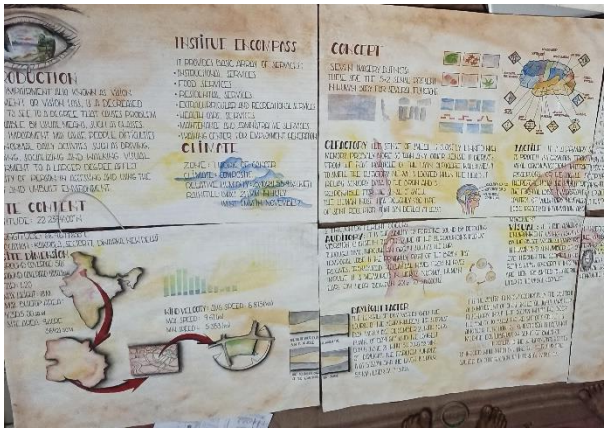
(vi) SMART BUILDING:-

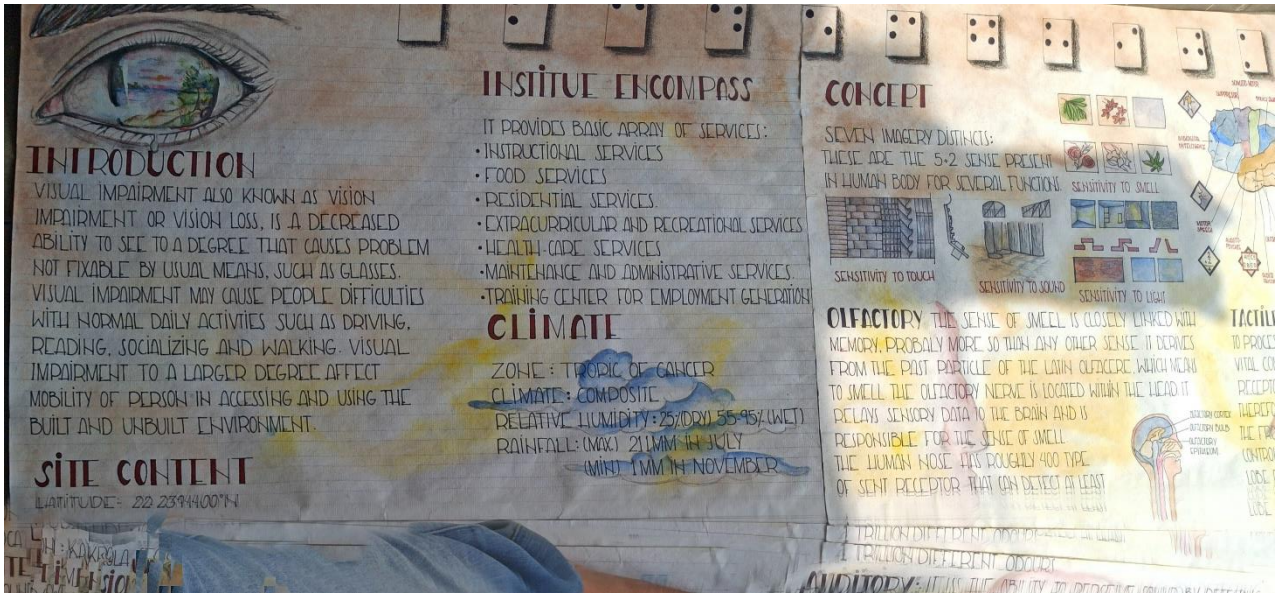
- Monitored and Digitalized Control System

(vii) VERTICAL GARDENING:-

- Internal temperature is maintained through vertical gardening along the wall of structure

PRESENTATION (SHEETS):-





AREA ANALYSIS:

ADMINISTRATION AREA		
SECTION	NO.	AREA
OFFICE	1	100
CONFERENCE ROOM	1	150
WAITING AREA	1	105
RECEPTION	1	75
COUNSELLING ROOM	1	75
SPEECH THERAPIST ROOM	1	35
TOTAL		540

TEACHING AREA		
SECTION	NO.	AREA
CLASSROOM	14	490
STAFFROOM	2	150
TOILETS	6	54
ACTIVITY LAB	1	200
COMPUTER LAB	1	120
SCIENCE LAB	1	45
MULTIPURPOSE HALL	1	400
INFERMERY	1	30
STORE ROOM	2	36
GREEN ROOM	1	65
PHYSIOTHERAPIST ROOM & GYM	1	75
TOTAL		1665

CENTRAL LIBRARY		
SECTION	NO.	AREA
READING ROOM	1	215
PRINTING PRESS	1	150
AUDIO RECORDING ROOM	1	20
AUDIO LISTENING ROOM	1	20
SPEECH COUNSELLING ROOM	1	60
EDITING ROOM	1	20
TOTAL		485

RECREATIONAL AREA		
SECTION	NO.	AREA
MUSIC ROOM	1	45
DANCE ROOM	1	45
DRAMA CLASS	1	50
PERSONALITY DEV. ROOM	1	35
TOTAL		175

TRAINING CENTER		
SECTION	NO.	AREA
WORKSHOP AREA	5	240
STORAGE	3	36
CANTEEN	1	72
KITCHEN	1	30
MANAGEMENT ROOM	1	20
TOTAL		398

SECURITY		
SECTION	NO.	AREA
GUARD ROOM	4	72
CCTV ROOM	4	48
TOTAL		120

HOSTEL		
SECTION	NO.	AREA
COMMON AREA	2	264
PARENT'S MEETING ROOM	2	35
WAITING AREA	2	360
WARDEN OFFICE	2	42
KITCHEN	1	132
DINNING	1	200
DORMITORIES	2	908
INFERMERY	2	70
WARDEN'S ROOM	2	84
TOTAL		2095

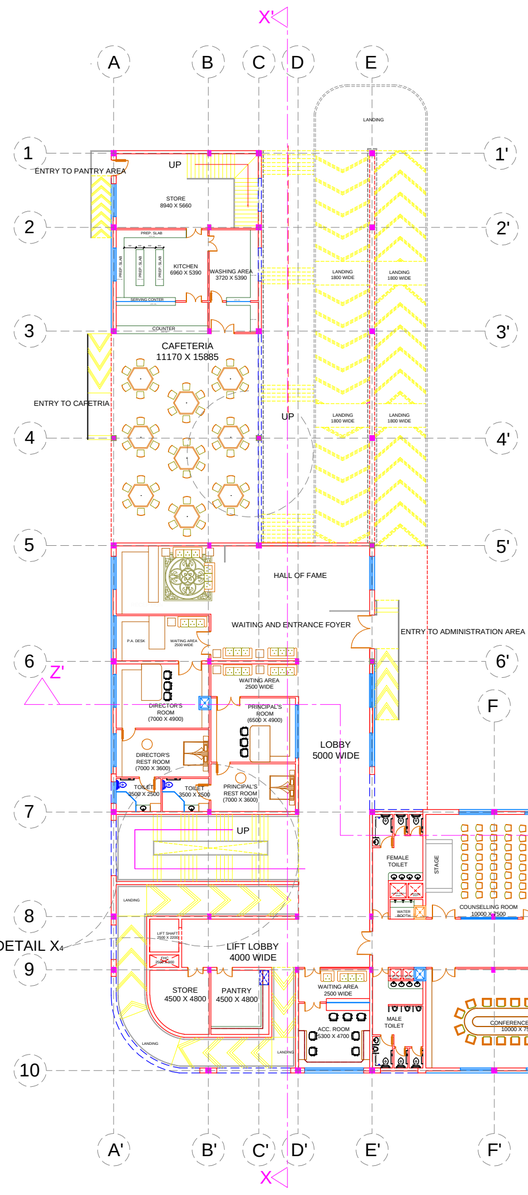
OUTDOOR LABS		
SECTION	NO.	AREA
OLFACTORY STIMULATION LAB	1	250
TOTAL		250

INDOOR GAMES	1	80
JUDO TRAINING ROOM	1	180
TOTAL		760

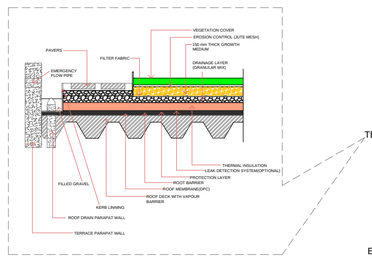
FINAL AREA	
ADMINISTRATION AREA	540
TEACHING AREA	1665
CENTRAL LIBRARY	485
RECREATIONAL AREA	175
TRAINING CENTER	398
SPORTS AREA	500
HOSTEL	2095
SECURITY	120
OUTDOOR LABS	250
TOTAL	6228

INSTITUTE FOR VISUALLY IMPAIRED:

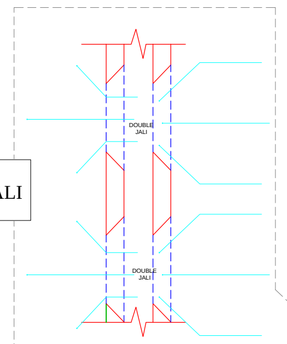
1. ACADEMIC BLOCK :



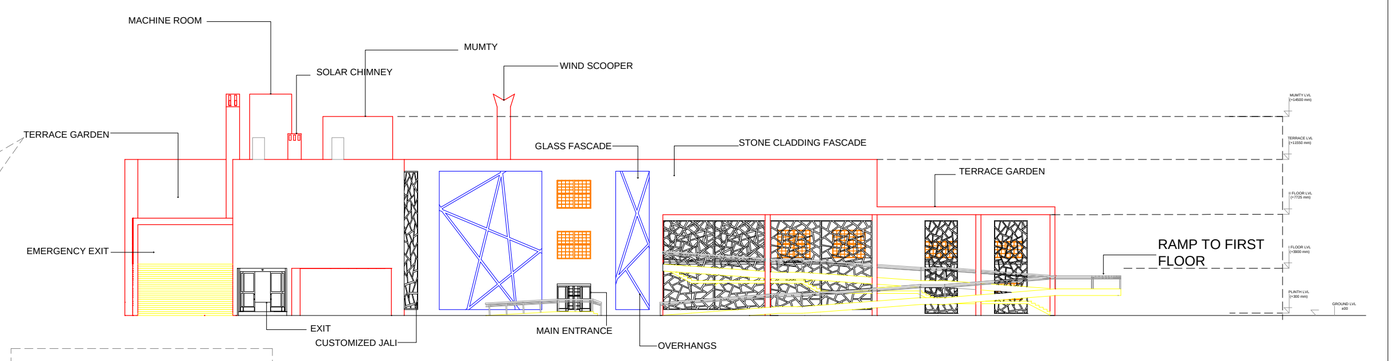
GROUND FLOOR (ACADEMIC BLOCK)



DETAIL OF TERRACE GARDEN SLAB

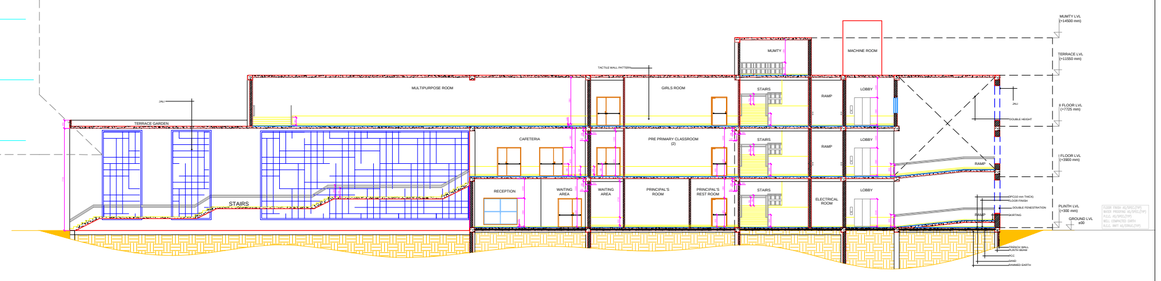


DETAIL OF DOUBLE JALI



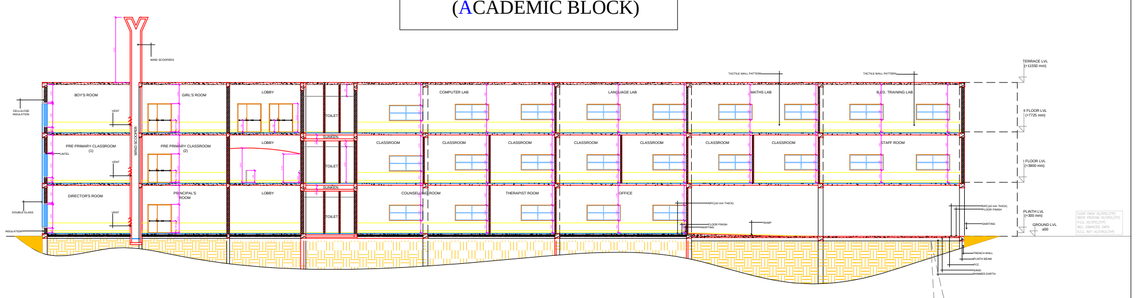
TYPICAL FRONT ELEVATION

(ACADEMIC & TRAINING BLOCK)



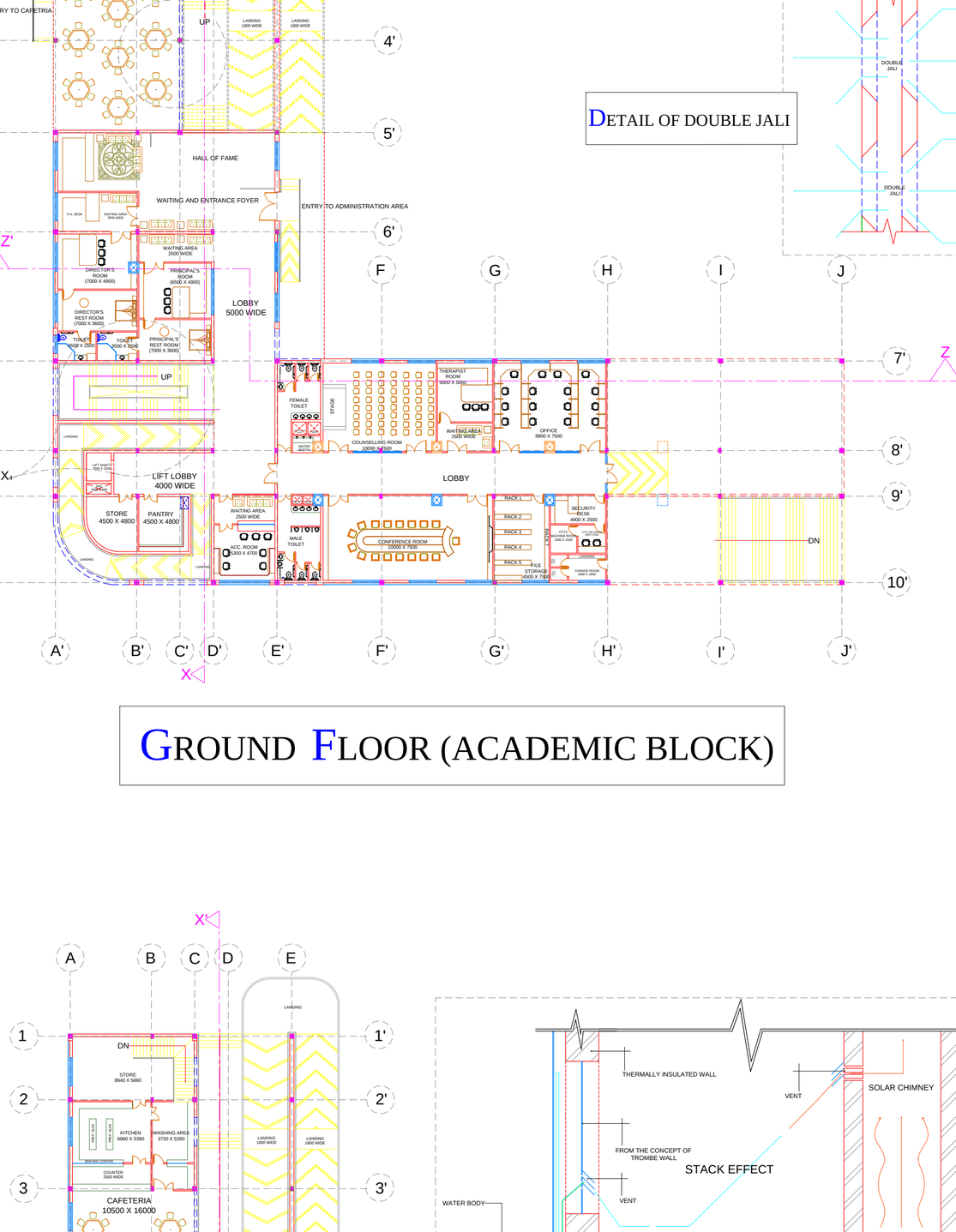
SECTION @ XX'

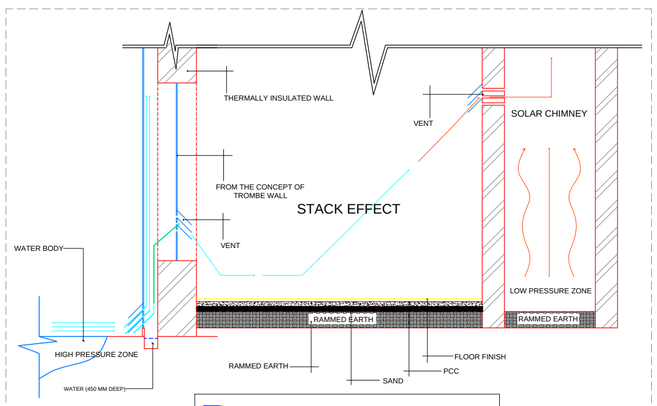
(ACADEMIC BLOCK)



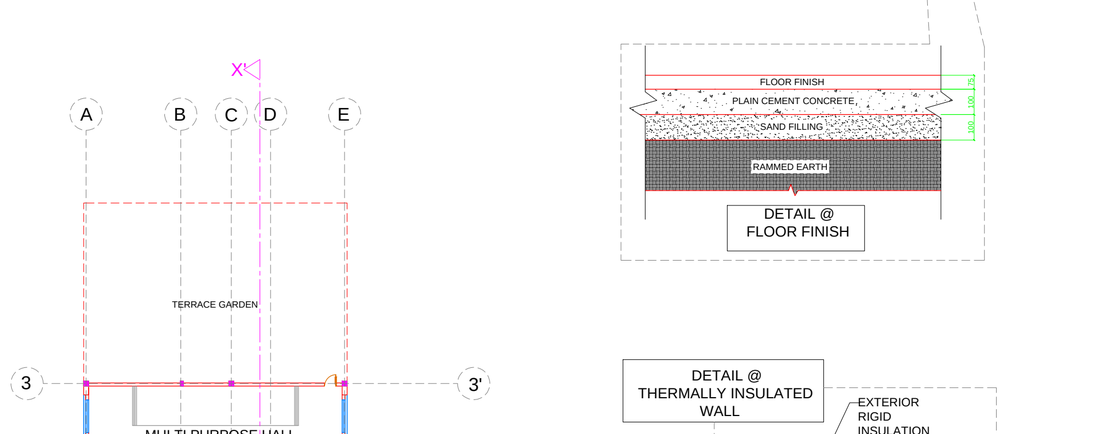
SECTION @ ZZ'

(ACADEMIC BLOCK)

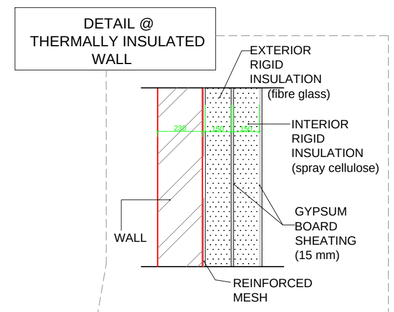




DETAIL @ USE OF SOLAR CHIMNEY



DETAIL @ FLOOR FINISH



FIRST FLOOR (ACADEMIC BLOCK)

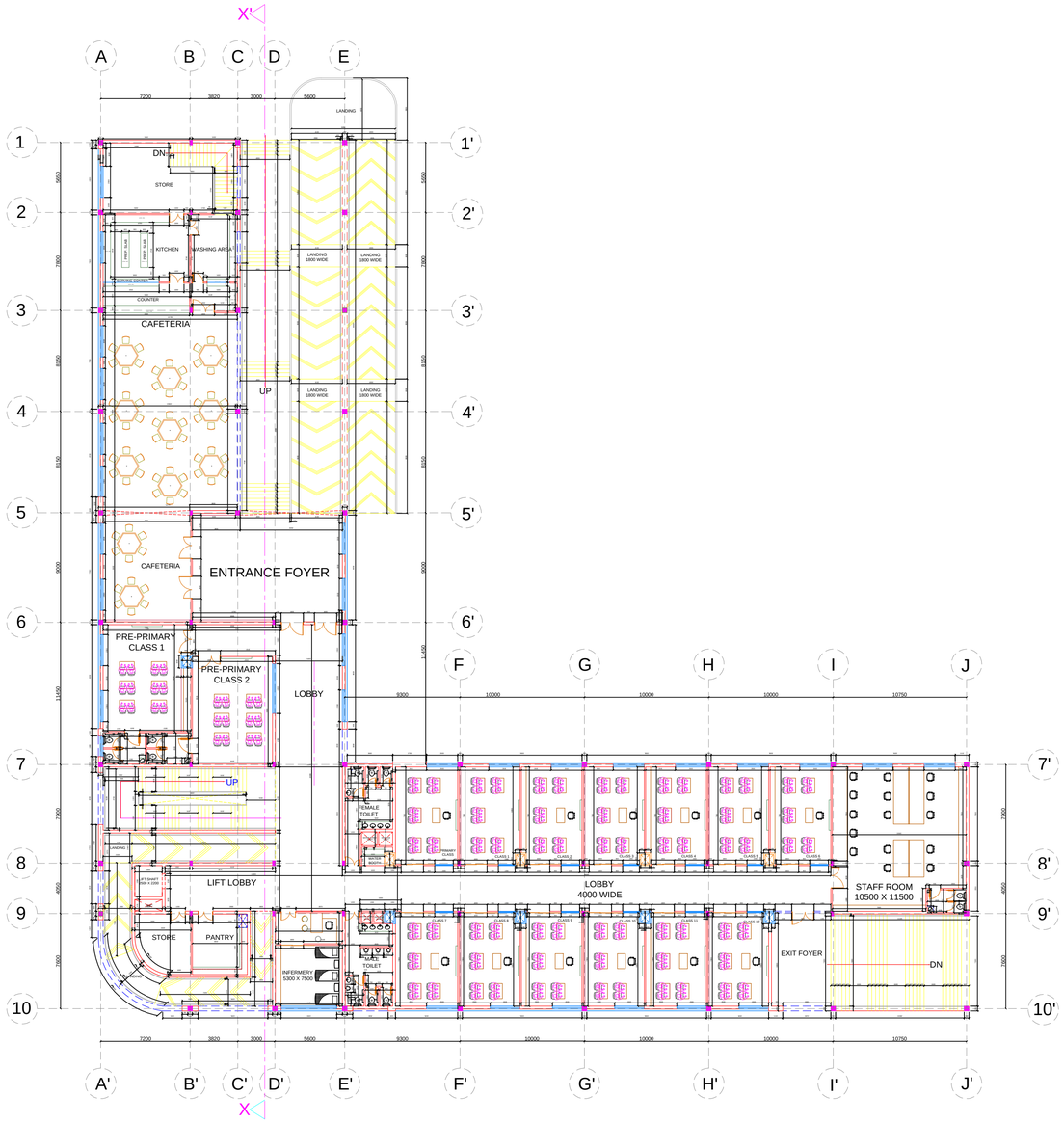
SECOND FLOOR (ACADEMIC BLOCK)

ACADEMIC BLOCK

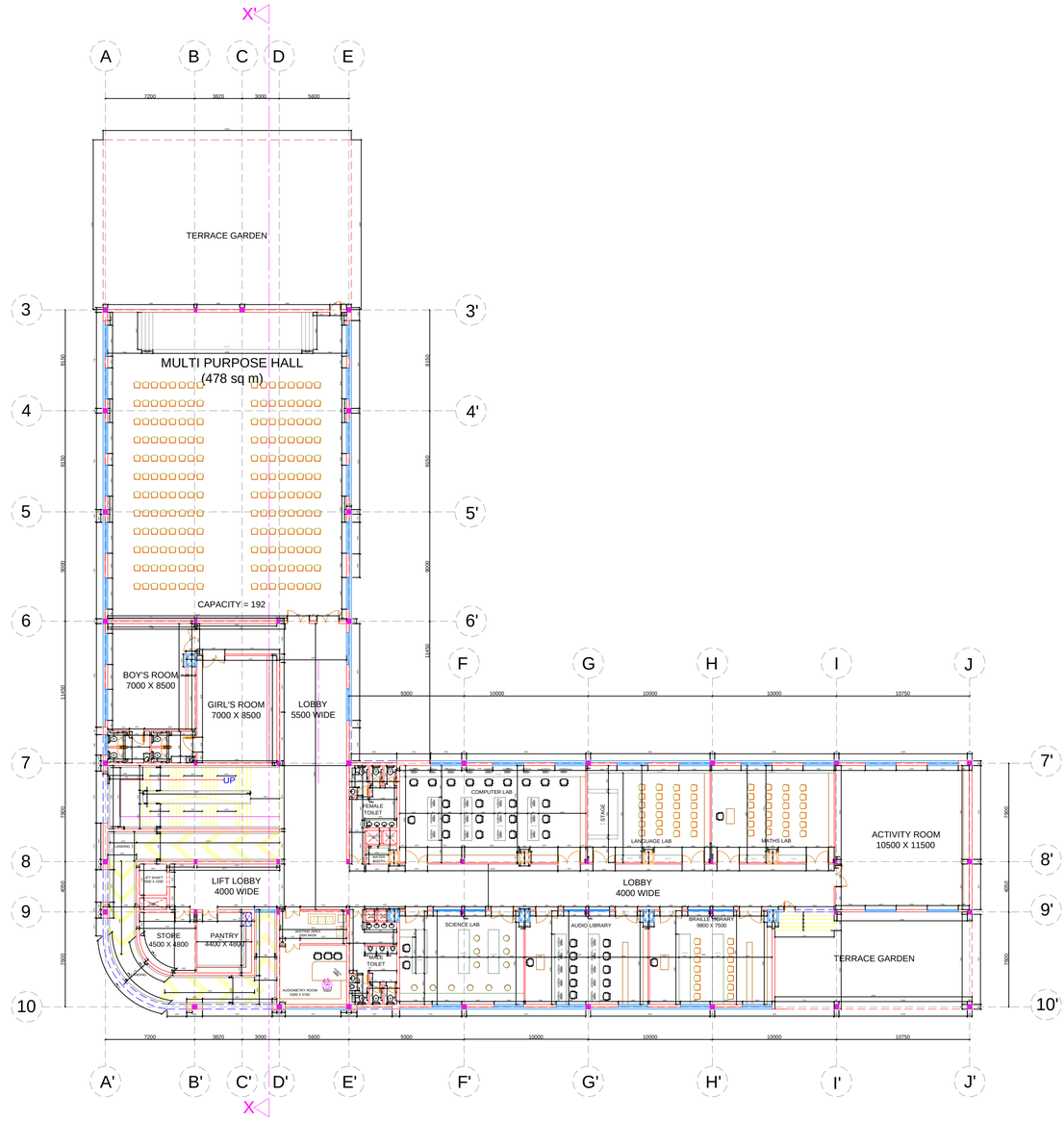
SCALE : 1:200

GUIDED BY:
AR. AANSHUL SINGH

SUBMITTED BY:
HIMANSHU CHAUBEY
1140101032
B.B.D.U LKO.
2019-2020



FIRST FLOOR (ACADEMIC BLOCK)



SECOND FLOOR (ACADEMIC BLOCK)

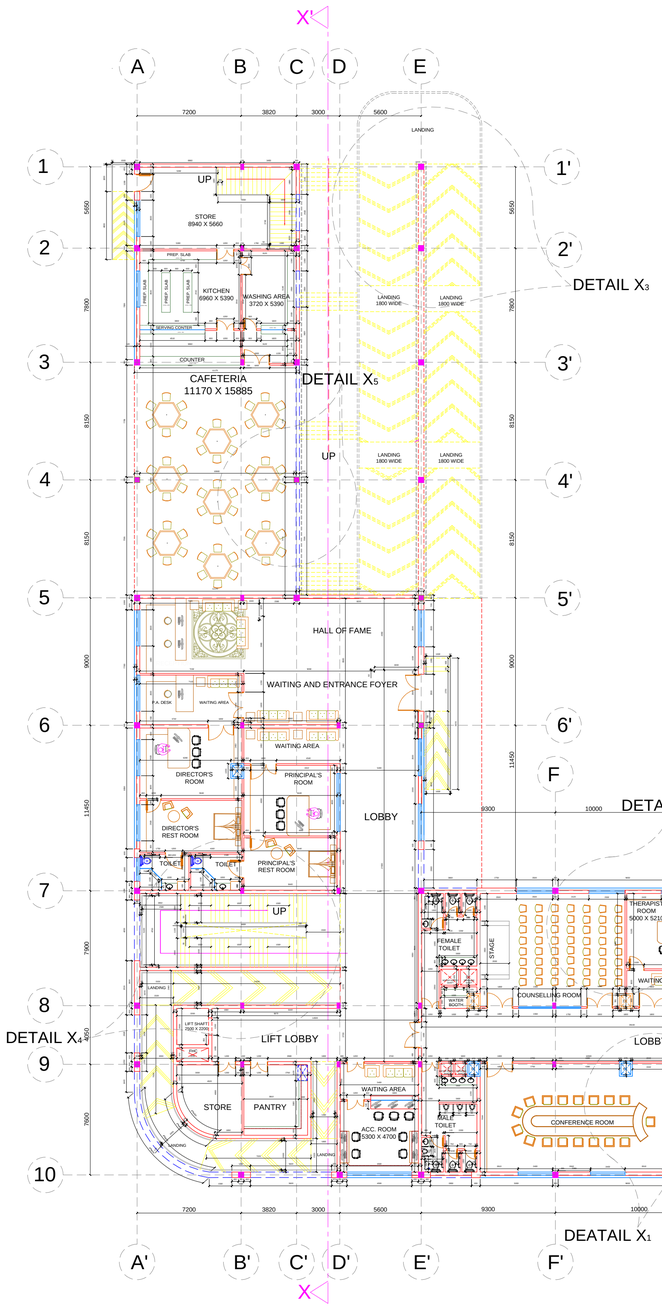
FLOOR PLAN (SCALE : 1:200)

GUIDED BY :
AR. AANSHUL SINGH

HIMANSHU CHAUBEY
B.B.D.U LKO.

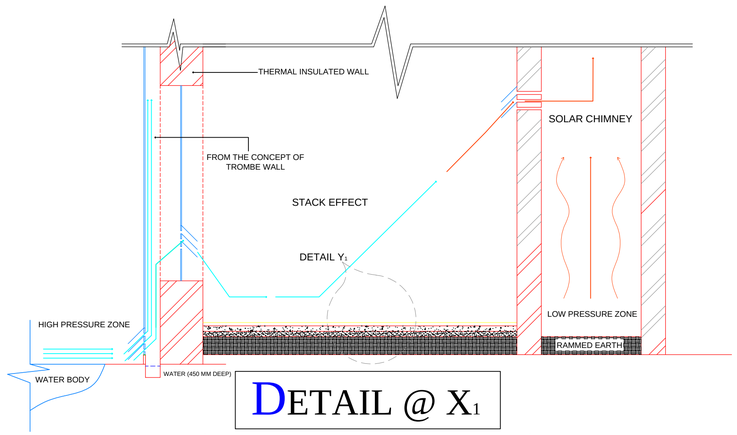
B.Arch(AR)
5th Year
2019 -2020
Xth SEMESTER

INSTITUTE FOR VISUALLY IMPAIRED:

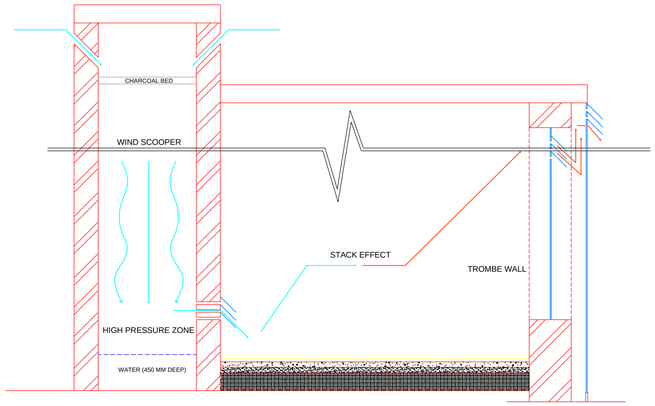


GROUND FLOOR (ACADEMIC BLOCK)

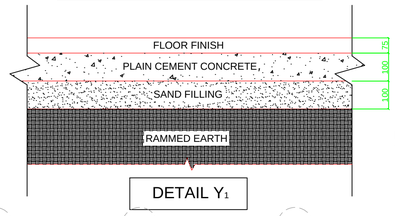
1. PASSIVE COOLING FOR COMPOSITE CLIMATE :

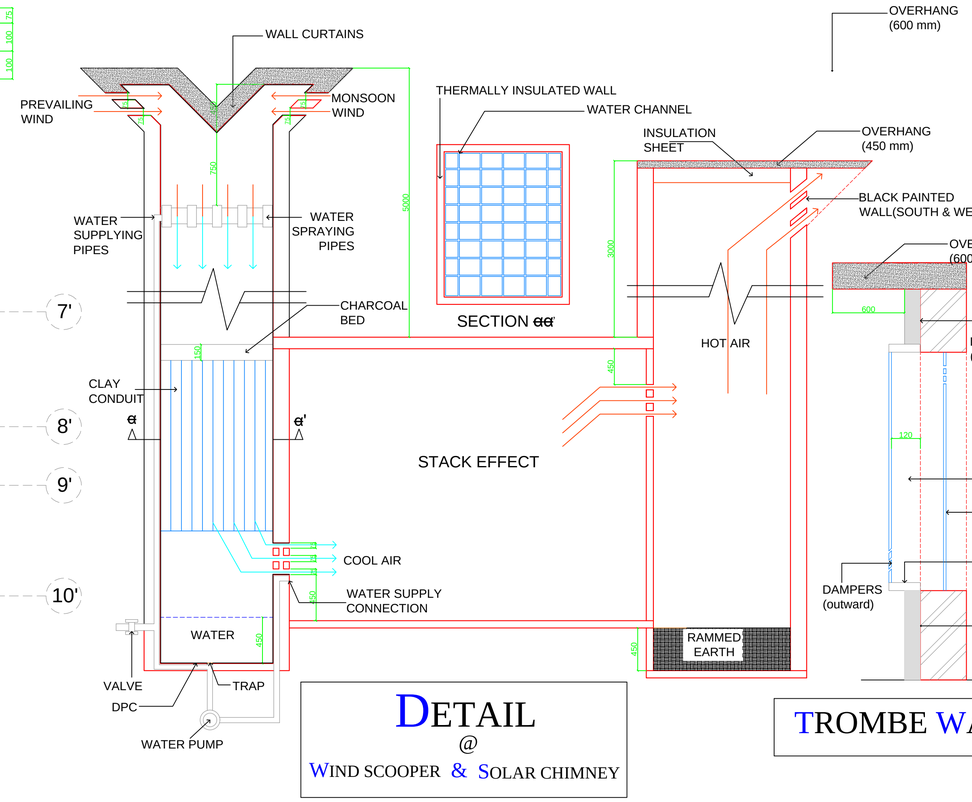


DETAIL @ X_1



DETAIL @ X_2





DETAIL @ WIND SCOOPER & SOLAR CHIMNEY

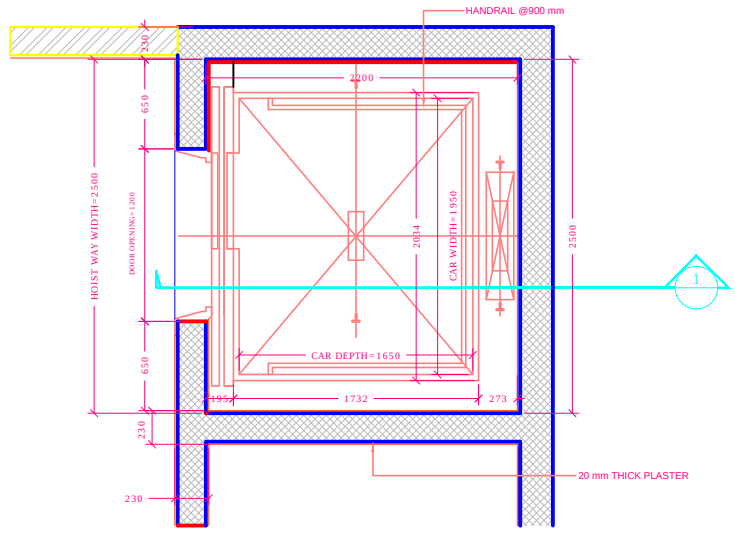
TROMBE WALL

FLOOR PLAN & DETAILS

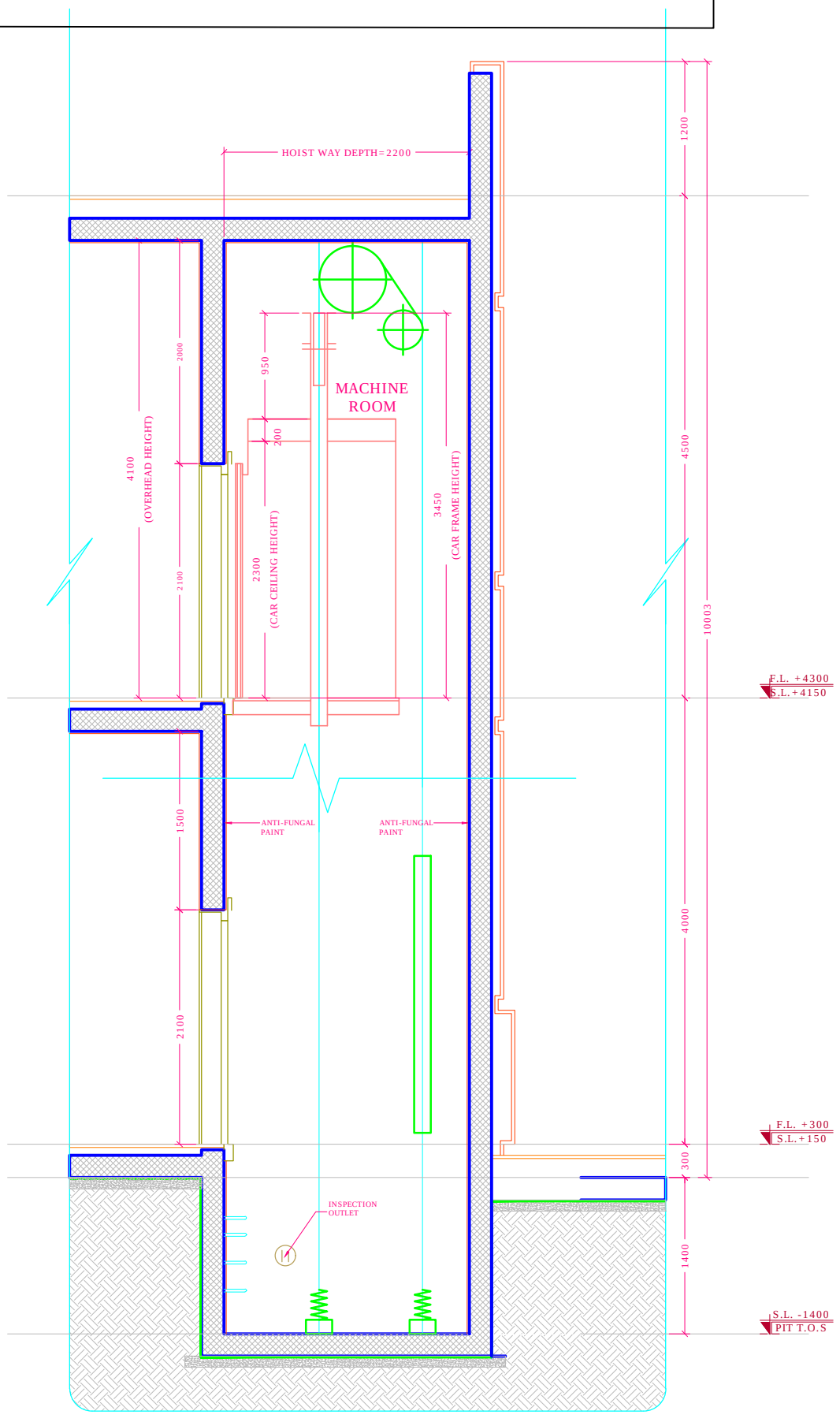
GUIDED BY :
AR. AANSHUL SINGH

HIMANSHU CHAUBEY
B.B.D.U LKO.

B.Arch(AR)
5th Year
2019 -2020
Xth SEMESTER

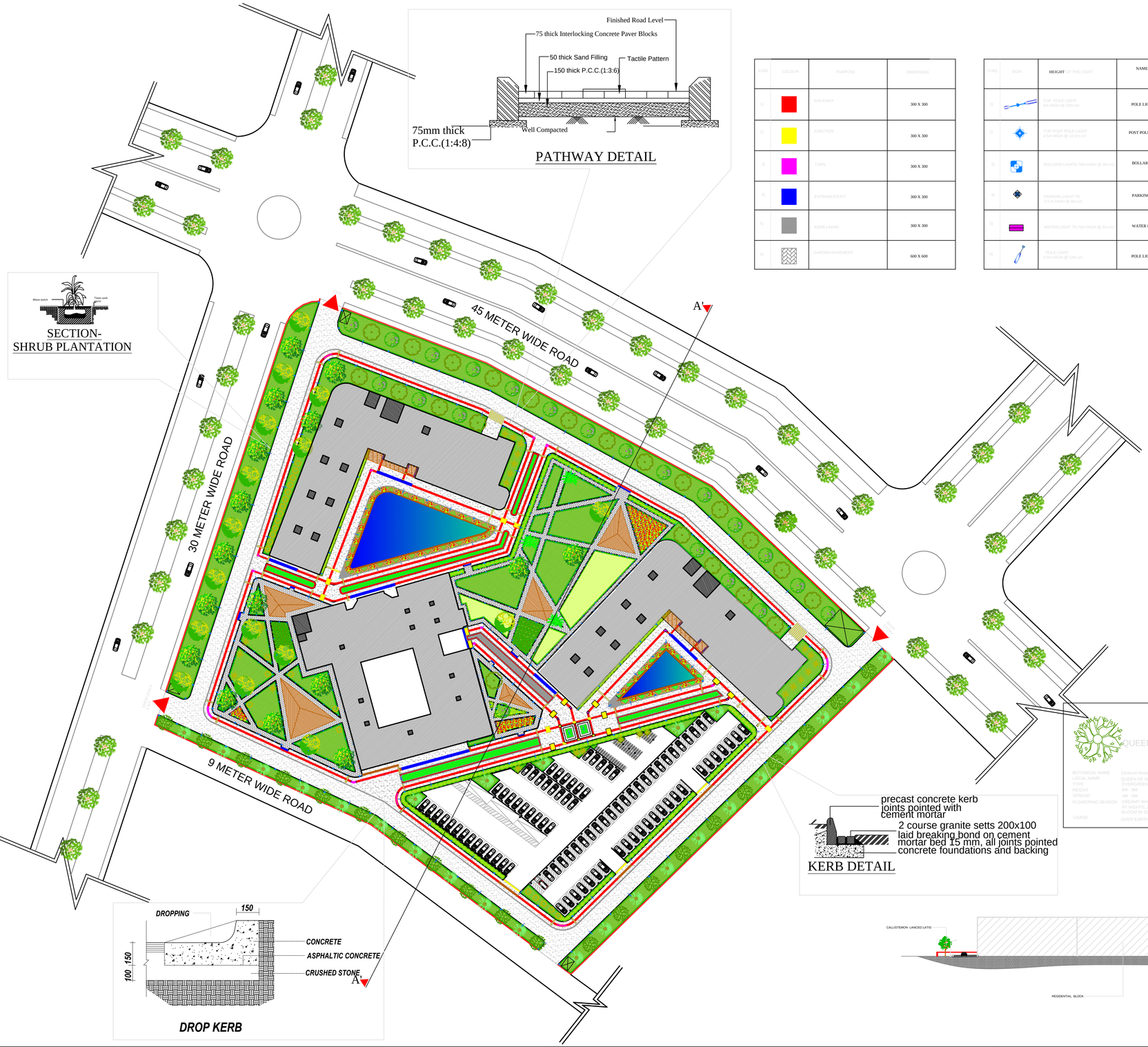


TYPICAL ELEVATOR PLAN



SECTION 11'

ELEVATOR	GUIDED BY : AR. AANSHUL SINGH	HIMANSHU CHAUBEY B.B.D.U LKO.	B.Arch(AR) 5th Year 2019 -2020 Xth SEMESTER



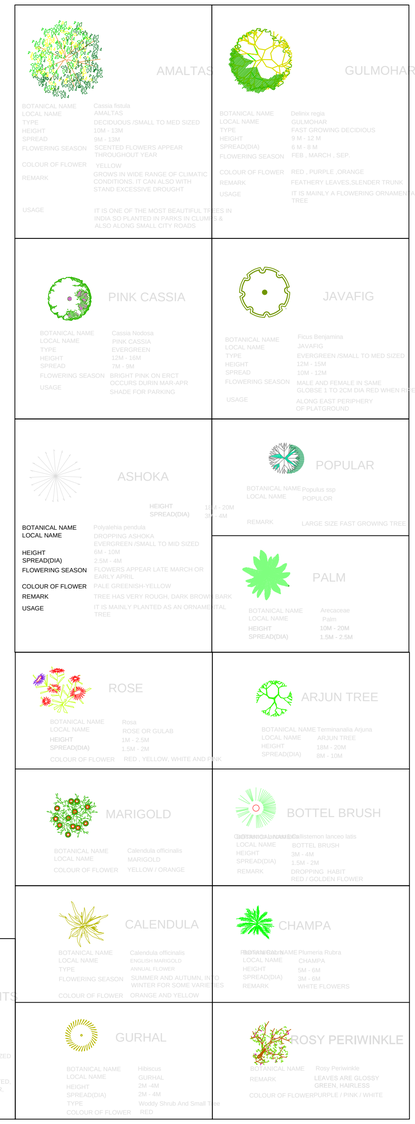
PATHWAY DETAIL

SECTION-
SHRUB PLANTATION

S.NO.	COLOUR	PURPOSE	DIMENSION
1)		WALKWAY	300 X 300
2)		JUNCTION	300 X 300
3)		TURN	300 X 300
4)		ENTRANCE/EXIT	300 X 300
5)		KERB LINING	300 X 300
6)		GARDEN PAVEMENT	600 X 600

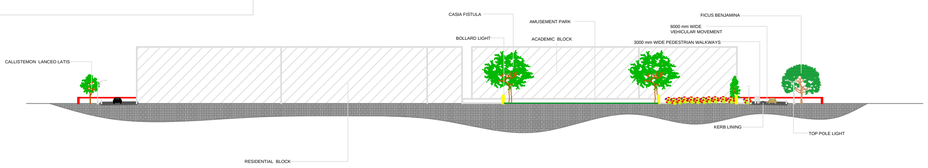
S.NO.	SIGN	HEIGHT OF THE LIGHT	NAME
1)		TOP POLE LIGHT 9m HIGH @ 20m c/c	POLE LIGHT
2)		TOP POST POLE LIGHT 1.5m HIGH @ 10.5m c/c	POST POLE LIGHT
3)		BOLLARD LIGHTS 75m HIGH @ 3m c/c	BOLLARD LIGHT
4)		PARKING LIGHTS TO 1.5 m HIGH @ 6m c/c	PARKING LIGHT
5)		WATER LIGHT TO 75m HIGH @ 3m c/c	WATER LIGHT
6)		POLE LIGHT 9.5m HIGH @ 12m c/c	POLE LIGHT

LEGEND



DROP KERB

KERB DETAIL



SITE SECTION AA'

ALL DIMENSIONS ARE IN MM

VISUALLY IMPAIRED INSTITUTE

SITE PLAN

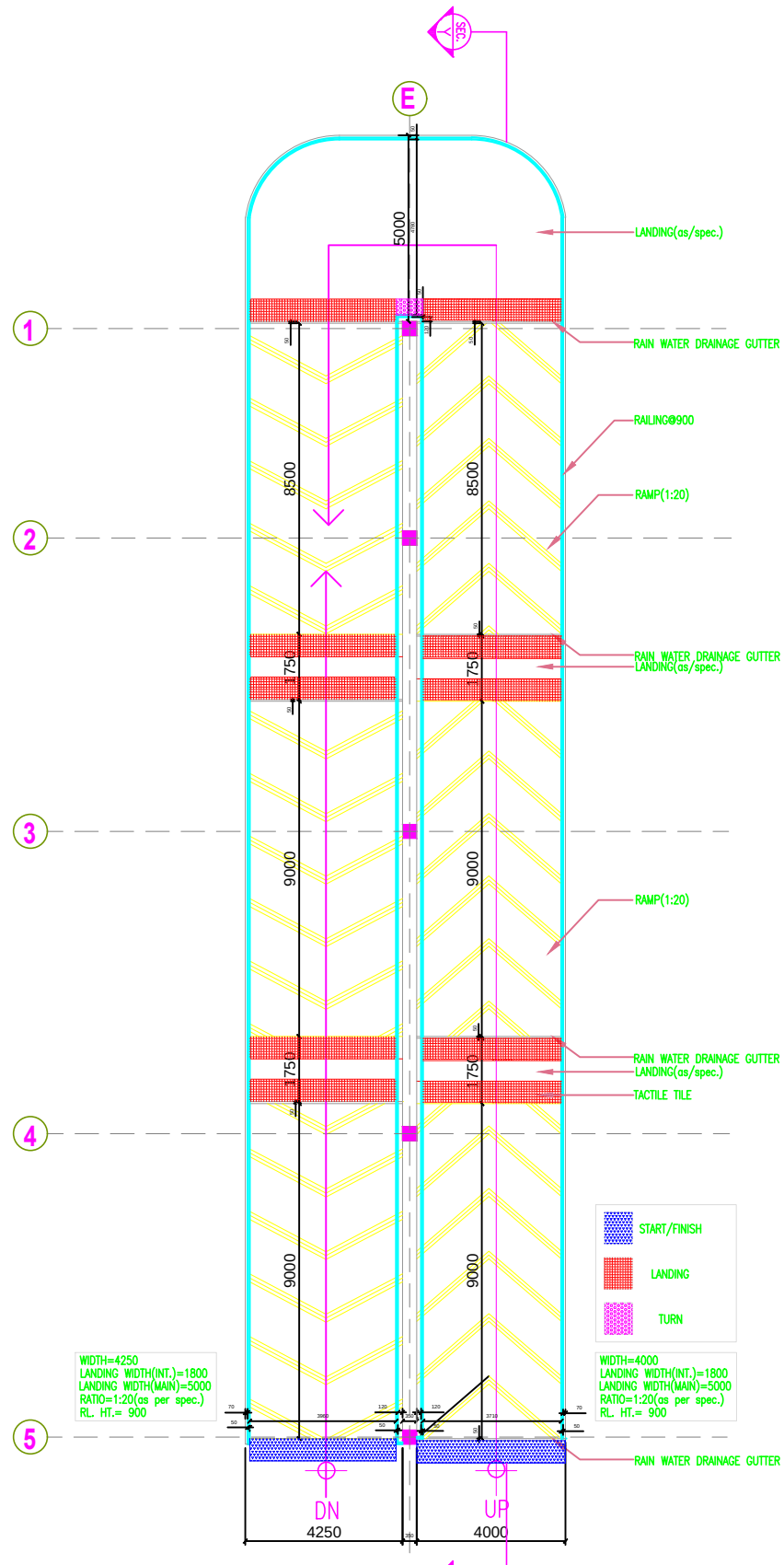
Thesis by -

HIMANSHU CHAUBEY
B.B.D.U LKO.

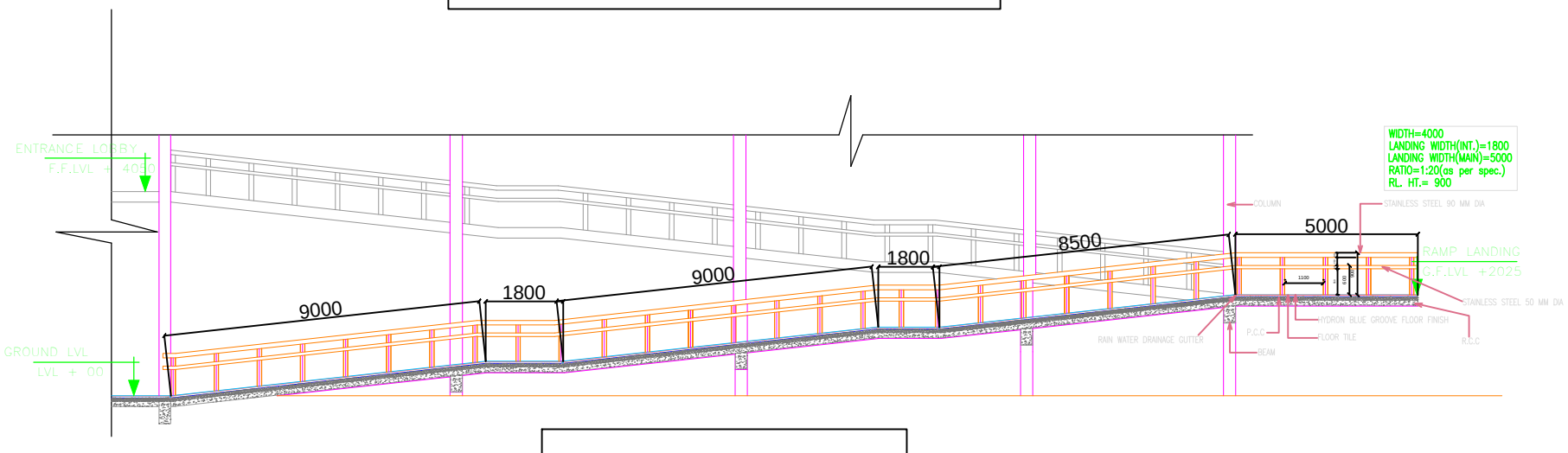
B.Arch(AR)
5th Year
2019 - 2020
Xth SEMESTER

N

Scale :-
1:500



TYPICAL RAMP PLAN

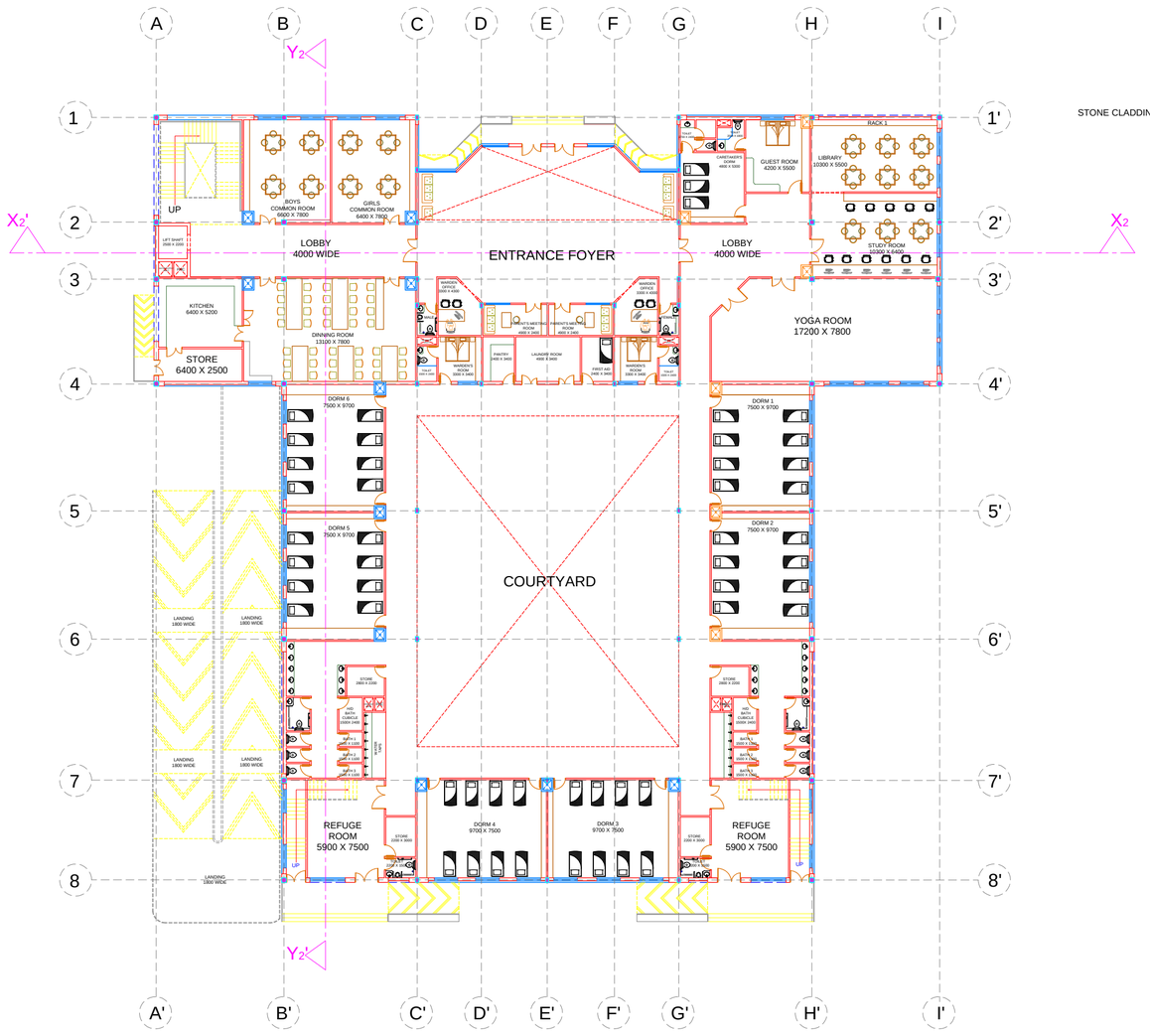


SECTION YY'

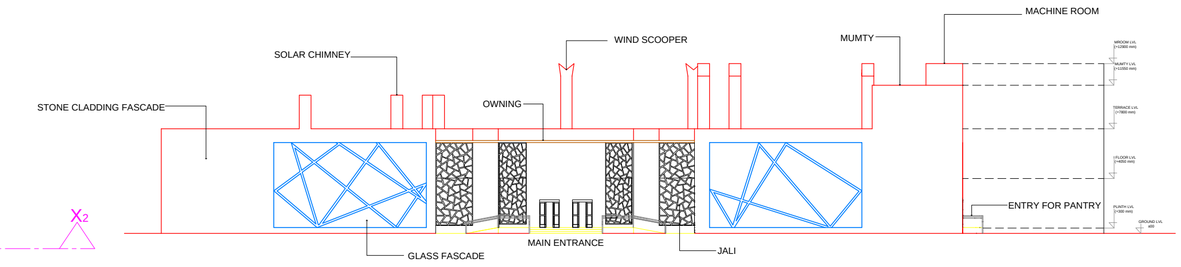
RAMP	GUIDED BY : AR. AANSHUL SINGH	HIMANSHU CHAUBEY B.B.D.U LKO.	B.Arch(AR) 5th Year 2019 -2020 Xth SEMESTER	

INSTITUTE FOR VISUALLY IMPAIRED:

2. RESIDENTIAL BLOCK:

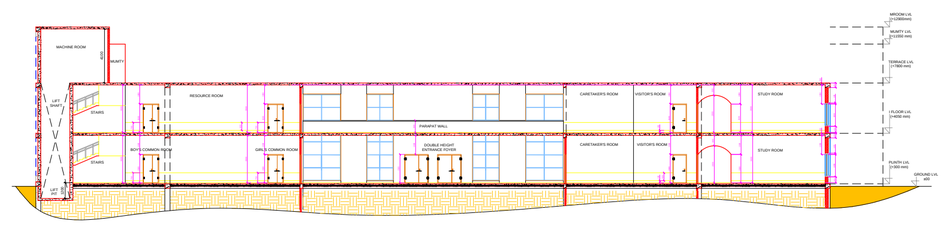


GROUND FLOOR (RESIDENTIAL BLOCK)



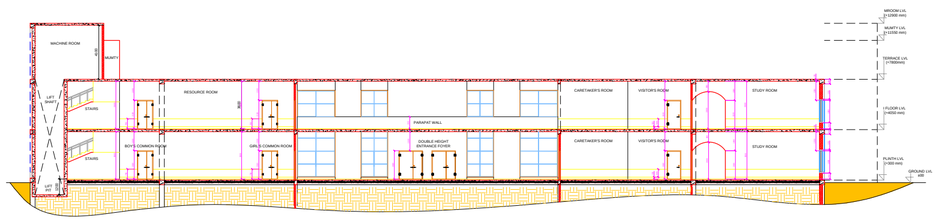
TYPICAL FRONT ELEVATION

(RESIDENTIAL BLOCK)



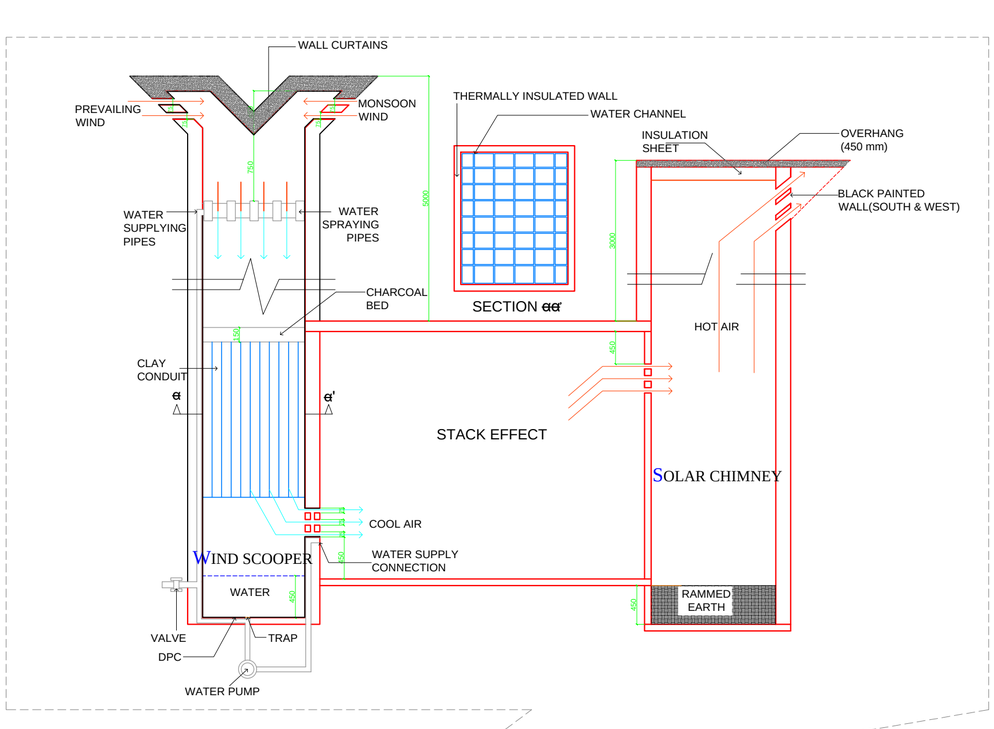
SECTION @ X_2X_2'

(RESIDENTIAL BLOCK)



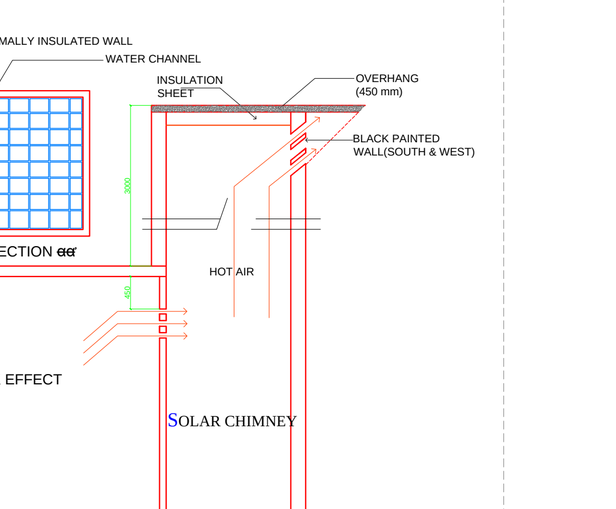
SECTION @ X_2X_2'

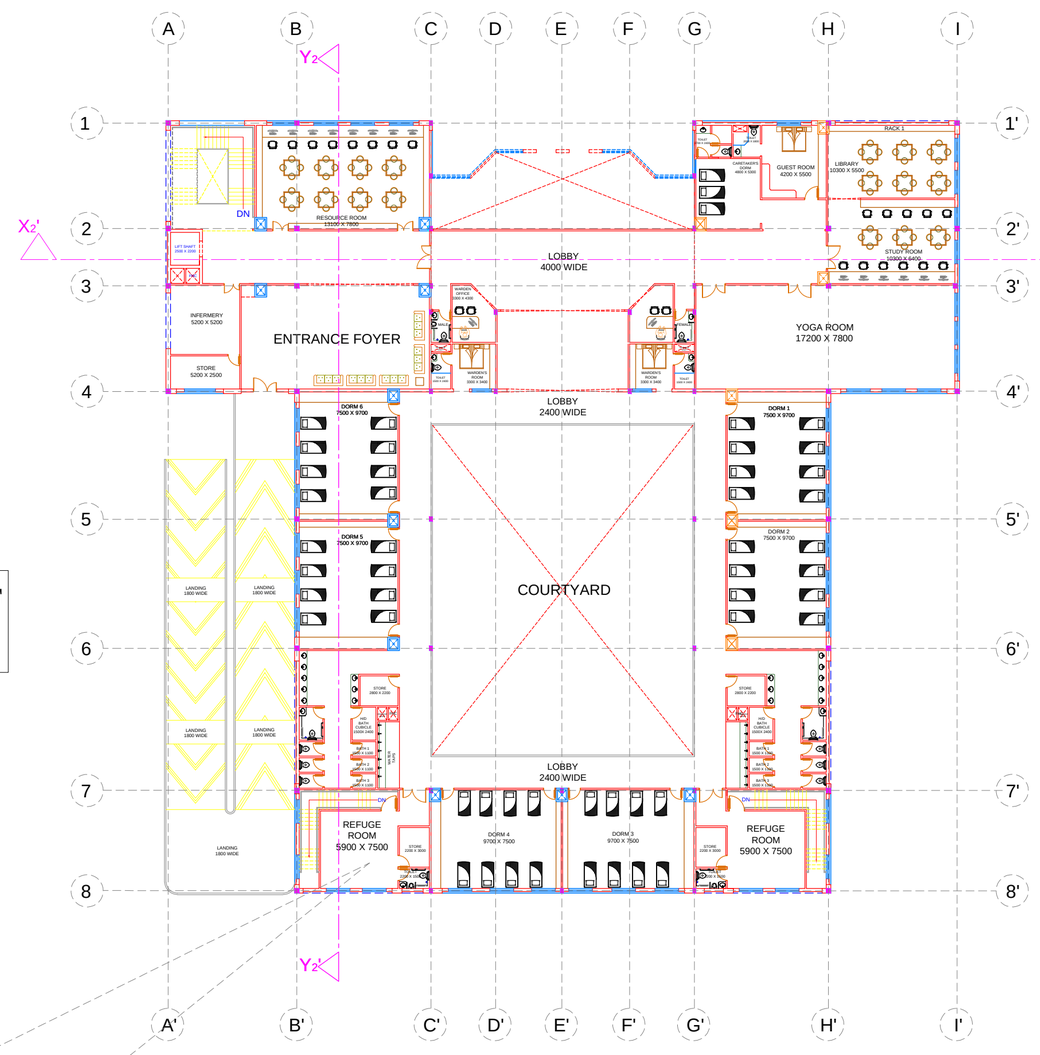
(RESIDENTIAL BLOCK)



PASSIVE COOLING TECHNIQUE

DETAIL @ USE OF WIND SCOOPER





FIRST FLOOR (RESIDENTIAL BLOCK)

RESIDENTIAL BLOCK

SCALE : 1:200

GUIDED BY:
AR. AANSHUL SINGH

SUBMITTED BY:
HIMANSHU CHAUBEY
1140101032
B.B.D.U LKO.
2019-2020

PROJECT BRIEF:

PROPOSED PROJECT= INSTITUTE FOR DISABLED

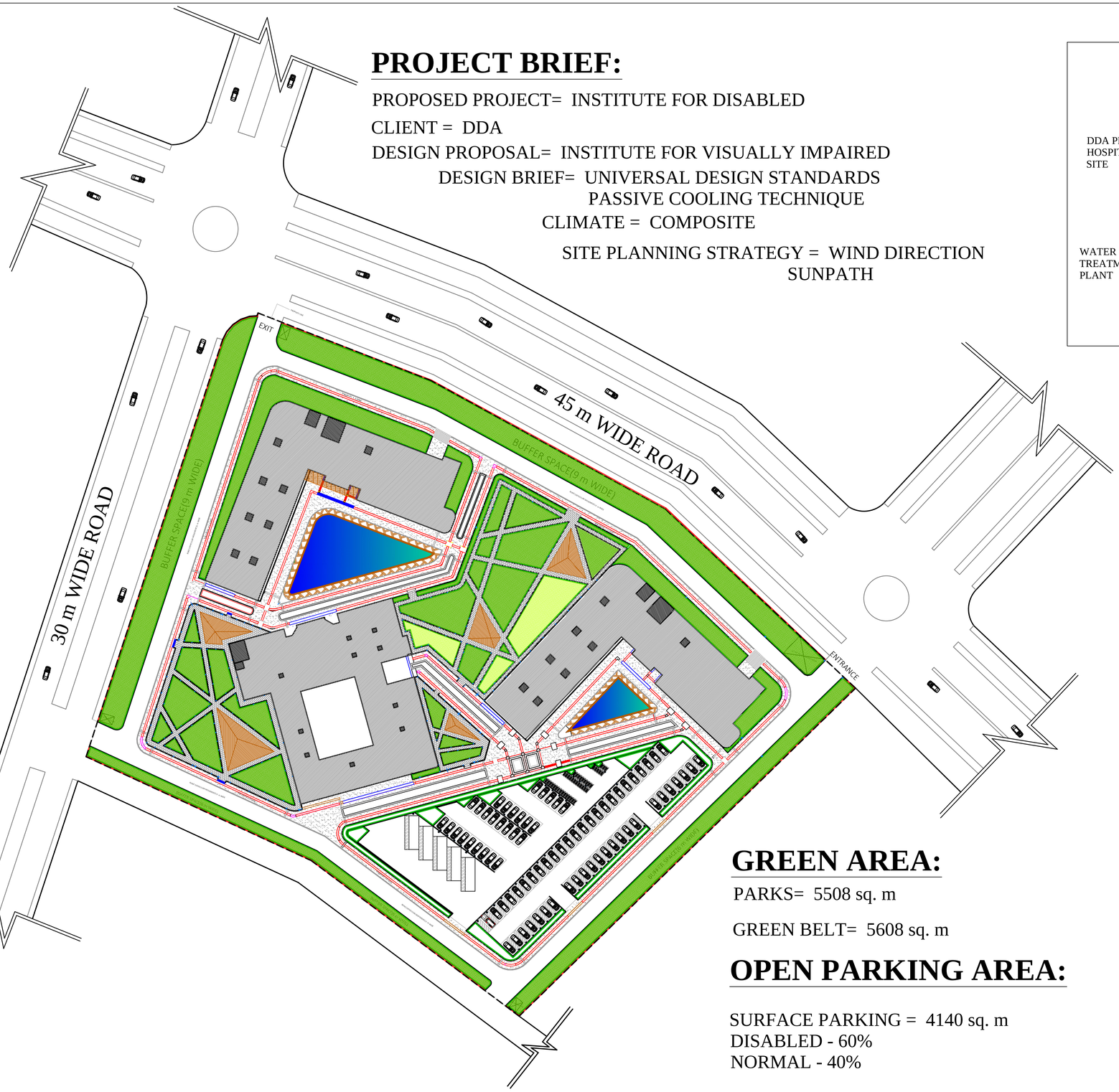
CLIENT = DDA

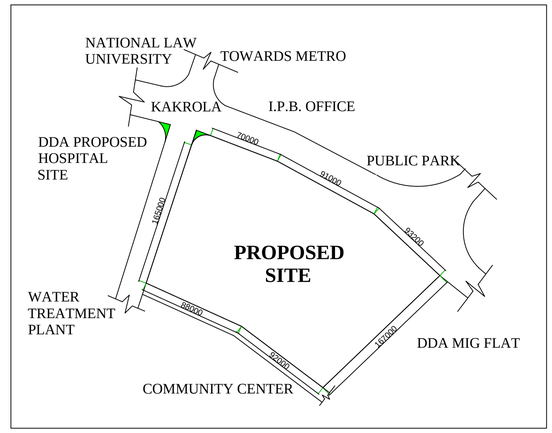
DESIGN PROPOSAL= INSTITUTE FOR VISUALLY IMPAIRED

DESIGN BRIEF= UNIVERSAL DESIGN STANDARDS
PASSIVE COOLING TECHNIQUE

CLIMATE = COMPOSITE

SITE PLANNING STRATEGY = WIND DIRECTION
SUNPATH





KEY PLAN

GREEN AREA:

PARKS= 5508 sq. m

GREEN BELT= 5608 sq. m

OPEN PARKING AREA:

SURFACE PARKING = 4140 sq. m
DISABLED - 60%
NORMAL - 40%

AREA CALCULATION:

PLOT AREA = 37906 sq. m

FAR = 1.2

GROUND COVERAGE= 50%
18953 sq. m

ACHEIVED GROUND COVERAGE= 18%
6998 sq m

BUILT UP AREA= 45487.2 sq. m
ACHEIVED BUILT UP AREA= 16596 sq. m

ECS = 1.33 / 100 sq. m
2.00 / 100 sq. m

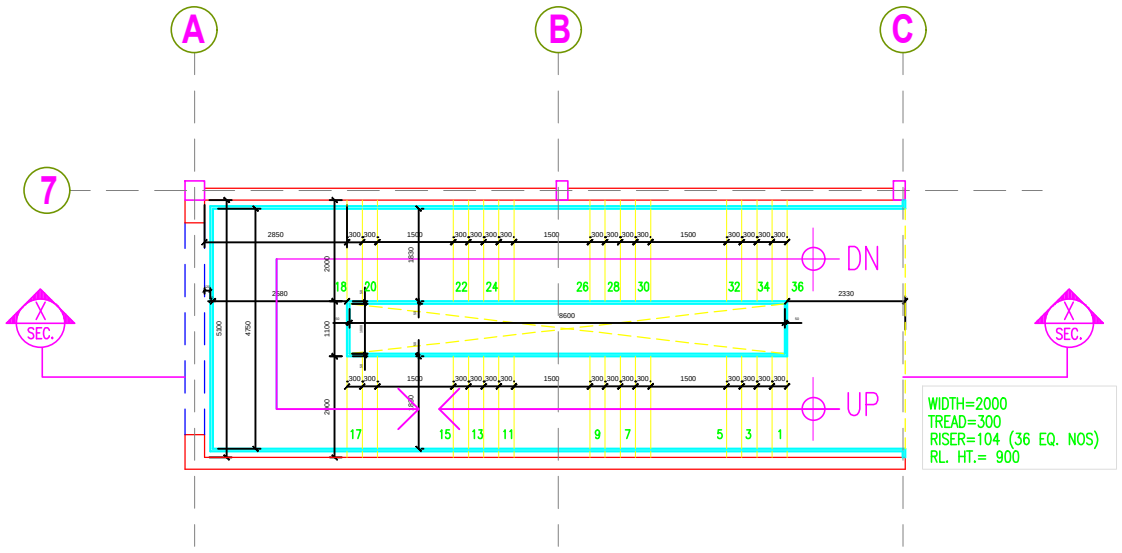
CALCULATED ECS:

TRAINING BLOCK
6165 sq. m = 82 car space

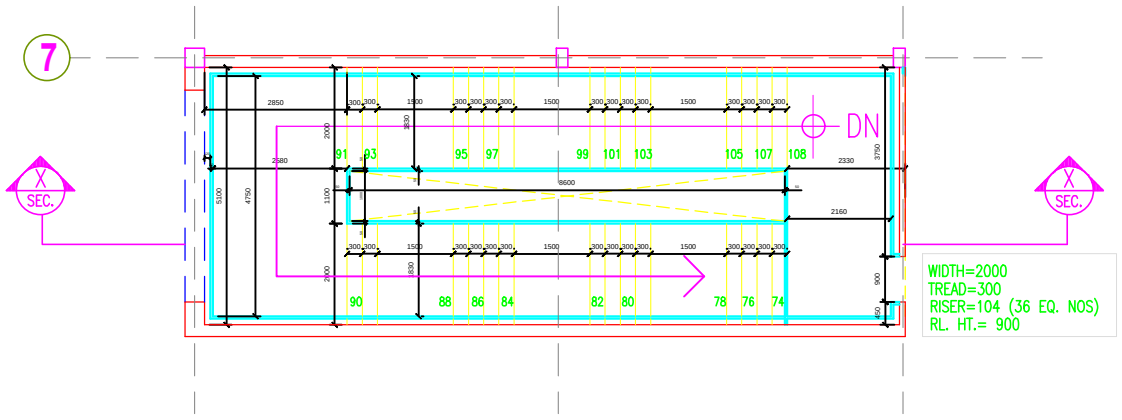
ADMIN BLOCK
2400 sq. m = 48 car space

ALL DIMENSIONS ARE IN MM

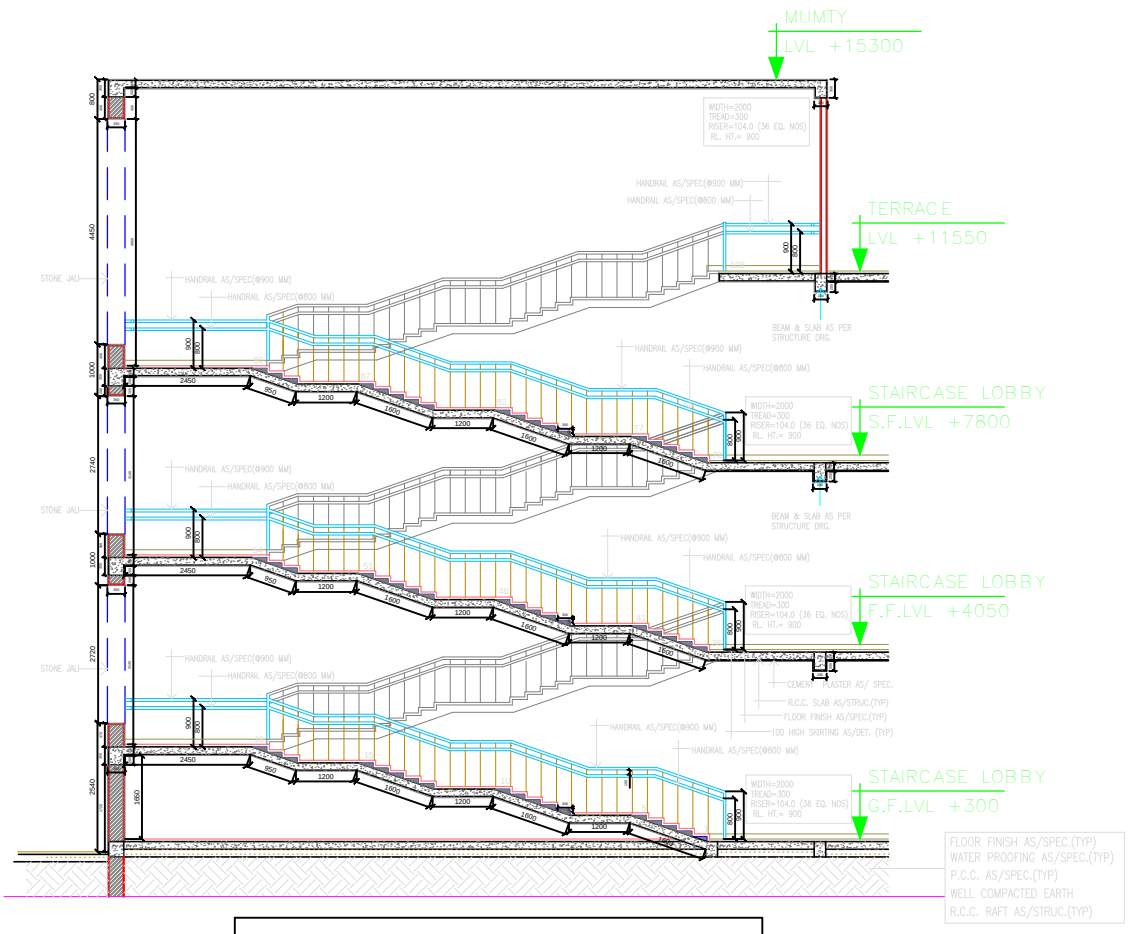
VISUALLY IMPAIRED INSTITUTE	SITE PLAN(1:500)	**Thesis by** - HIMANSHU CHAUBEY B.B.D.U LKO.	B.Arch(AR) 5th Year 2019 - 2020 Xth SEMESTER	N

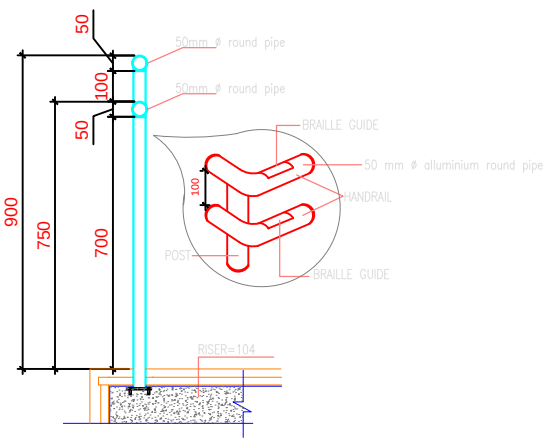


TYPICAL STAIRCASE PLAN



TERRACE STAIRCASE PLAN



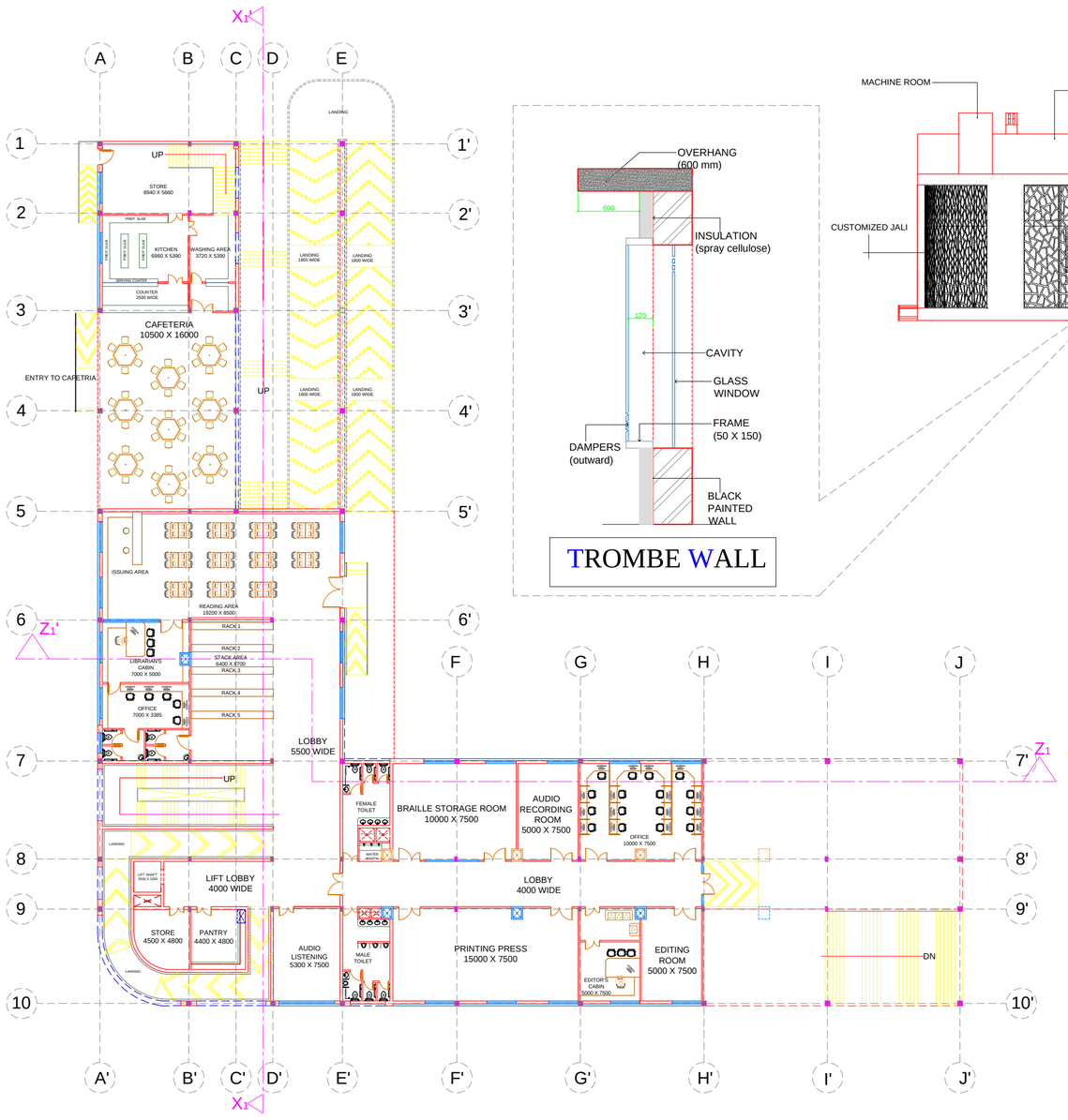


SECTION XX'

STAIRCASE	GUIDED BY : AR. AANSHUL SINGH	HIMANSHU CHAUBEY B.B.D.U LKO.	B.Arch(AR) 5th Year 2019 -2020 Xth SEMESTER	

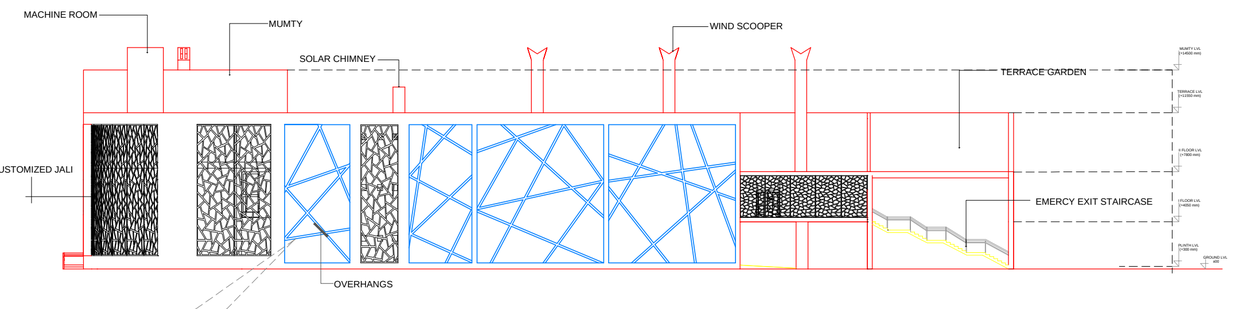
INSTITUTE FOR VISUALLY IMPAIRED:

2. TRAINING BLOCK:



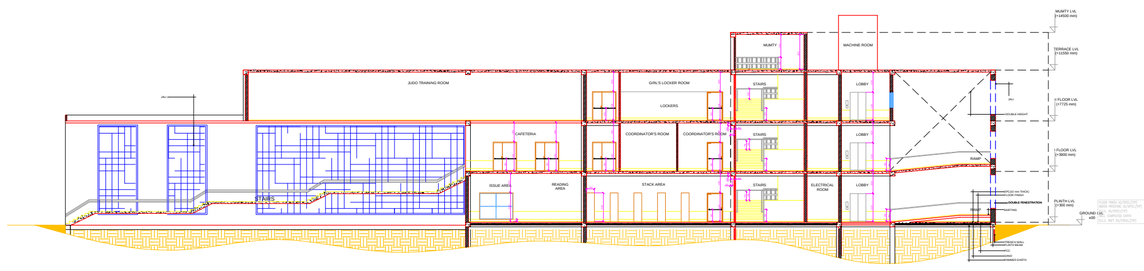
GROUND FLOOR (ACADEMIC BLOCK)

TROMBE WALL



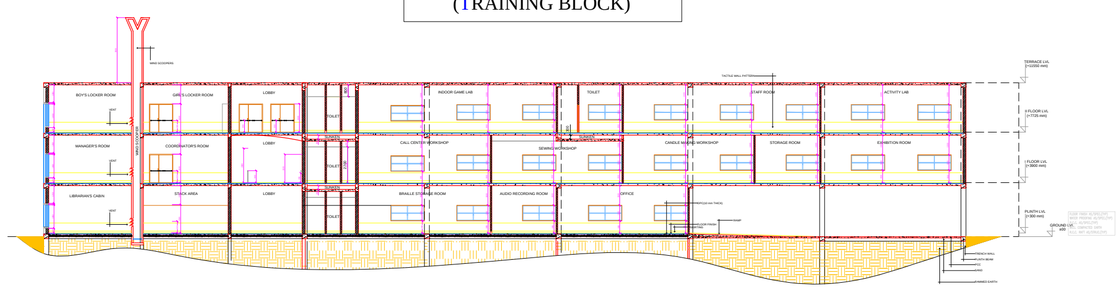
TYPICAL REAR ELEVATION

(ACADEMIC & TRAINING BLOCK)



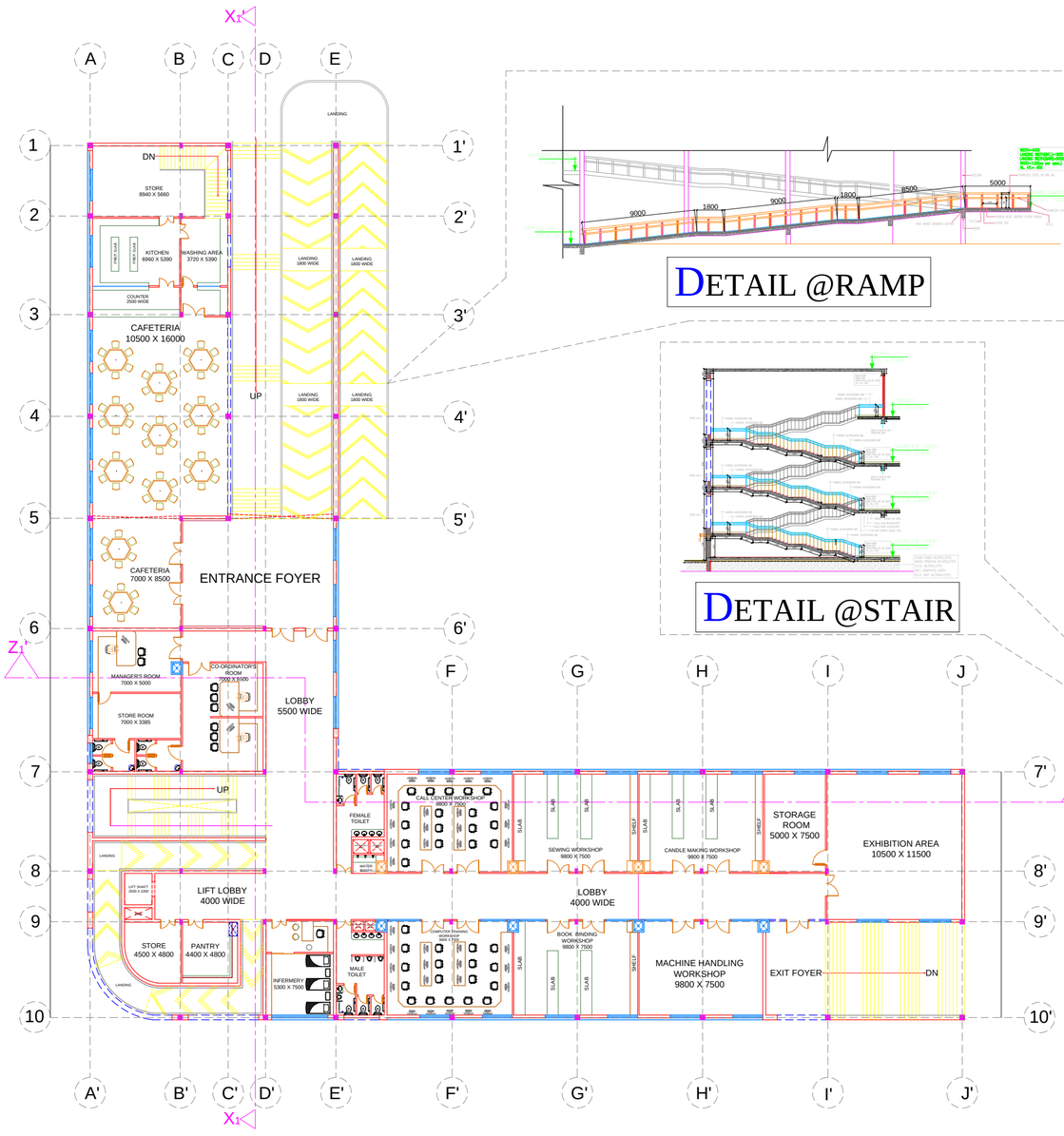
SECTION @ X_1X_1'

(TRAINING BLOCK)



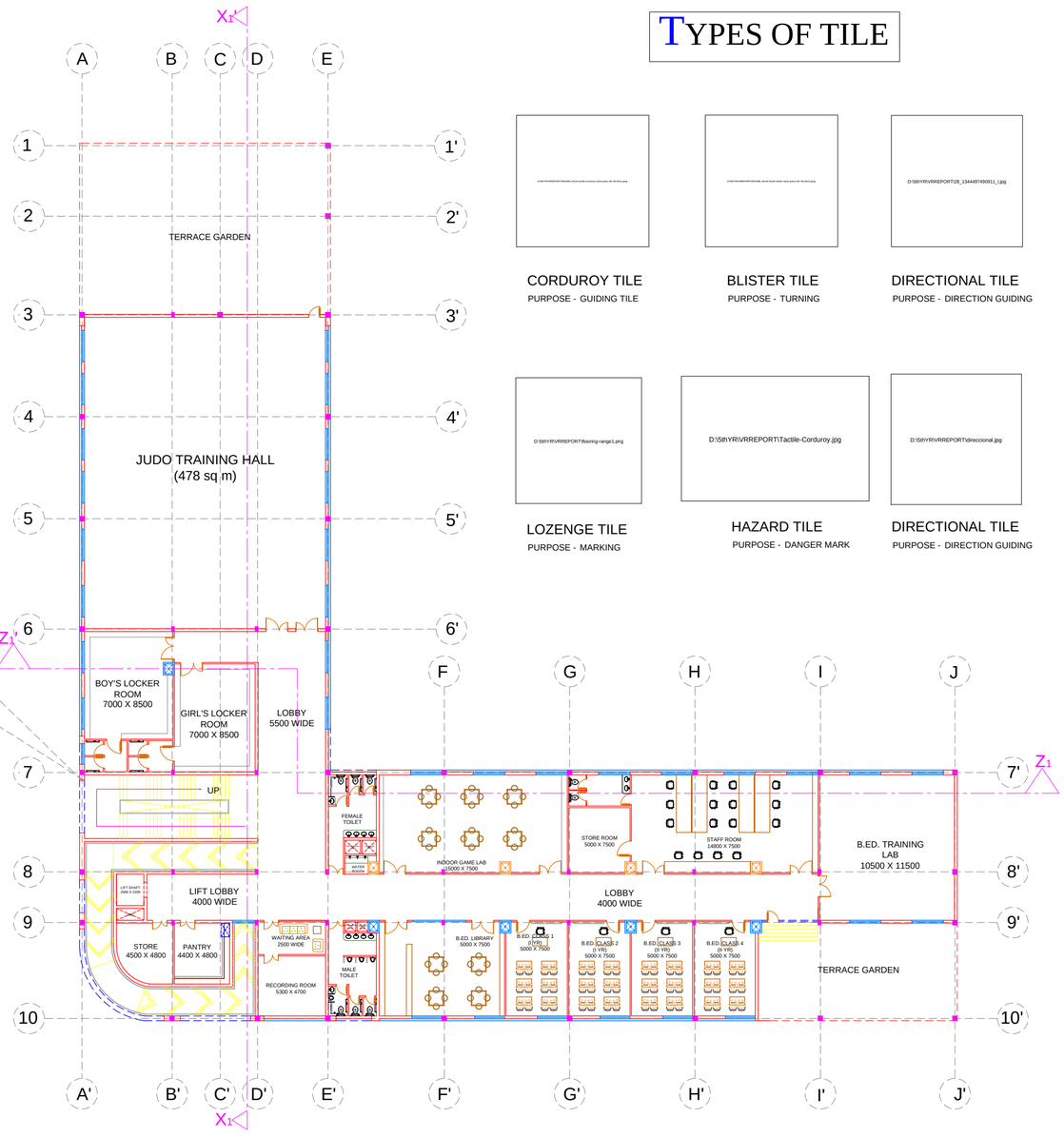
SECTION @ Z_1Z_1'

(TRAINING BLOCK)



DETAIL @RAMP

DETAIL @STAIR



TYPES OF TILE

CORDUROY TILE

PURPOSE - GUIDING TILE

BLISTER TILE

PURPOSE - TURNING

DIRECTIONAL TILE

PURPOSE - DIRECTION GUIDING

LOZENGE TILE

PURPOSE - MARKING

HAZARD TILE

PURPOSE - DANGER MARK

DIRECTIONAL TILE

PURPOSE - DIRECTION GUIDING

FIRST FLOOR (TRAINING BLOCK)

SECOND FLOOR (TRAINING BLOCK)

TRAINING BLOCK

SCALE : 1:200

GUIDED BY:
AR. AANSHUL SINGH

SUBMITTED BY:
HIMANSHU CHAUBEY
1140101032
B.B.D.U LKO.
2019-2020