

SCHOOL FOR DEAF AND DUMB AND PHYSICALLY CHALLENGED STUDENTS

A THESIS

Submitted in partial fulfillment of the requirements for the award of
Bachelor of Architecture degree

By

JEGANATHAN

(39210028)



DEPARTMENT OF ARCHITECTURE

SCHOOL OF BUILDING AND ENVIRONMENT

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY) Accredited
With Grade "A" by NAAC

**JEPPIAAR NAGAR, RAJIV GANDHI
SALAI, CHENNAI - 600 119**

MAY 2024



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

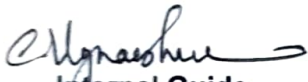
Accredited "A++" Grade by NAAC | 12B Status by UGC | Approved by AICTE

www.sathyabama.ac.in

DEPARTMENT OF ARCHITECTURE

BONAFIDE CERTIFICATE

This is to certify that Thesis Report is the bonafide work of **JEGANATHAN.P (39210028)** who carried out the Thesis entitled **"school for deaf and dumb and physically challenged students"** under our supervision from December 2023 to May 2024.


Internal Guide
Ar. Vignaeshwar


Internal Review Member
Dr. Arulmalar Ramaraj


External Guide
Ar. Ramji



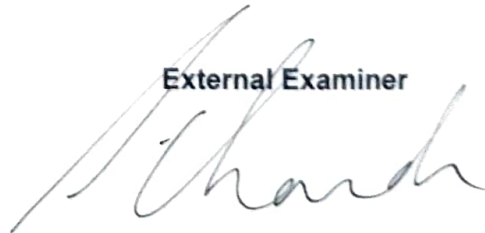
Dean and Head of the Department

Dr. DEVYANI GANGOPADHYAY

Submitted for Viva voce Examination held on


Internal Examiner

External Examiner




DECLARATION

I, **JEGANATHAN.P** hereby declare that the Thesis Report entitled "school for deaf and dumb and physically challenged students" done by me under the guidance of **Ar. Vignaeshwar** (Internal Guide), **Dr. Arulmalar Ramaraj** (Internal Review Member) and **Ar. Ramji** (External Guide) Sathyabama Institute of Science and Technology is submitted in partial fulfillment of the requirements for the award of Bachelor of Architecture Degree.

DATE: 24 . 05 . 2024

PLACE: Chennai

P. Jeganathan.

SIGNATURE OF THE CANDIDATE

ACKNOWLEDGEMENT

I am pleased to acknowledge my sincere thanks to Board of Management of **Sathyabama Institute of Science and Technology** for their kind encouragement in doing this Thesis and for completing it successfully. I am grateful to them.

I convey my thanks to **Dr. Devyani Gangopadhyay**, Dean and Head of the Department, School of Building and Environment, Our Design Chair **Ar. Sarath C. Kanth**, Thesis Coordinator **Ar. Mohana Gopiraj** for providing me necessary support and details at the right time during the progressive reviews.

I would like to express my sincere and deep sense of gratitude to my Thesis Internal guide **Ar. Vignaeshwar**, Internal Review member **Dr. Arulmalar Ramaraj** and External Guide **Ar. Ramji** their guidance, suggestions and constant encouragement which paved the way for the successful completion of my thesis work.

I wish to express my thanks to all Teaching and Non-teaching staff members of the **Department of Architecture**, all my family members and also juniors Dinesh and Anushree helpful in many ways for completion of the Thesis.

JEGANATHAN.P

THESIS SYNOPSIS

One of the major problems facing the physically disabled child attempting to complete his formal education centers around architectural barriers which prevent access to both conventional and special education facilities. Most contemporary experts in the field of special education recommend that the physically disabled child be afforded as much opportunity for independent behavior as possible. This is not only desirable in terms of the development of an adequate self-concept, but has certain obvious economic advantages as well in terms of reduction in number of staff and effective utilization of personnel. There is some disagreement among experts in this field in terms of the most effective means of accomplishing this goal which appears occasionally in this monograph and in actual practice as well. The source of disagreement among experts in the field rests largely upon the degree to which special facilities should be provided.

TABLE OF CONTENT

DECLARATION.....	iii
THESIS SYNOPSIS	v
TABLE OF CONTENT.....	vi
LIST OF FIGURES.....	vii
LIST OF PLATES.....	vii
CHAPTER 1: INTRODUCTION.....	8
1.1 INTRODUCTION	8
1.2 NEED OF THE PROJECT	9
1.3 AIM AND OBJECTIVE	10
CHAPTER 2: LITERATURE CASE STUDIES	11
2.1 DEYANG SCHOOL.....	11
2.2 AMAR JYOTI EDUCATION CENTRE	14
2.3 MUSEUM OF POSSIBILITIES	16
CHAPTER 3: STANDARDS	20
CHAPTER 4: LIVE CASE STUDY	22
CHAPTER 5: SITE STUDY.....	24
CHAPTER 6: DESIGN PROCESS.....	31
CHAPTER 7: REFERENCE.....	37

LIST OF FIGURES

Figure 1 plan of the school.....	11
Figure 2 sectional elevation of the building	12
Figure 3 ideology behind the design	12
Figure 4 floor plan.....	13
Figure 5 courtyard space.....	13
Figure 6 floor plan.....	14
Figure 7 pictures of the building	15
Figure 8 Image of the building	16
Figure 9 design idea	17
Figure 10 key plan of the building.	18
Figure 11 difference between adl &iadl	18
Figure 12 design process	19
Figure 13 parking standards.....	26
Figure 14 outdoor space gardening standards	27
Figure 15 corridor standards	28
Figure 16 door standards	29

LIST OF PLATES

Plate 1 standards for barrier free environment.....	20
Plate 2 standards for barrier free environment.....	21
Plate 3 live case study data collection.....	22
Plate 4 live case study data collection.....	23
Plate 5 Site study sheet.....	24
Plate 6 site plan	31
Plate 7 ground floor plan of academic and hostel block.....	32
Plate 8 first floor plan	33
Plate 9 second floor plan	34
Plate 10 floor plans of academic block.....	35
Plate 11 floor plans of hostel block	36

CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

One of the major problems facing the physically disabled child attempting to complete his formal education centers around architectural barriers which prevent access to both conventional and special education facilities. Most contemporary experts in the field of special education recommend that the physically disabled child be afforded as much opportunity for independent behavior as possible. This is not only desirable in terms of the development of an adequate self-concept, but has certain obvious economic advantages as well in terms of reduction in number of staff and effective utilization of personnel. There is some disagreement among experts in this field in terms of the most effective means of accomplishing this goal which appears occasionally in this monograph and in actual practice as well. The source of disagreement among experts in the field rests largely upon the degree to which special facilities should be provided. Existing buildings may be modified or new structures may be planned to provide a higher degree of independence than is found in contemporary structures. Some of these modifications or plans may be executed with minimum expenditure, and at the same time, will promote maximum degree of independence. Some are likely to be quite expensive and could be justified only with a large number of physically disabled persons making use of such facilities who cannot function without them. It has been argued at points throughout this monograph and in other publications from Human Resources Center, that modifications to physical plant should be kept to a minimum. This argument is based upon the fact that once the individual leaves the special facility (an implied desirable goal) he will have to, learn to function in a world that is not modified. It is recognized that some modification may be necessary as an intermediate step in adjustment to a conventional and perhaps poorly designed world for the physically disabled person, but proposed modifications should consider the fact that sooner or later the individual will have to operate effectively, productively, and independently without such aids. Certainly, architectural plans for public and private buildings should not be developed without planning for the physically disabled. Frequently such planning makes the structure more accessible for physically normal persons with temporary disabilities, and the aged, and may generally ease movement throughout the facility (e. g. movement of heavy equipment on dollies). On the contrary, public forums and in professional and lay journals that architectural planning should consider the needs of the physically disabled person (especially those confined to wheelchairs) and that such plans need not be either inefficient or unattractive. The argument is that physically disabled persons must learn to be able to function effectively in the conventional world not that the conventional world should remain inefficiently designed forever. Other experts in the field have suggested that there is no compelling reason for accepting limitations in the design of facilities. In many cases they have recommended what are essentially minor modifications which help the disabled person to function more effectively. Many of these have not been incorporated in the design of Human Resources School because the staff felt that the gains to be realized through the use of such modifications would not offset the possible development of dependence on such artificial aids.

1.2 NEED OF THE PROJECT

Disability is not a curse. With dedication and hard work and perseverance disabled people can achieve the desired goal. This has been demonstrated by sources of handicapped persons who have excelled in different walks of life. During the past century great studies have been made in the education, training, rehabilitation and employment of the disabled in the country. They are taking advantage of the scientific, educational and technological developments. A barrier is any obstruction, hurdle or obstacle that might hinder or control movement. These barriers make the area inaccessible to many a public. They might not necessarily be disabled persons but the elderly, pregnant women and people suffering from temporary disabilities. If these barriers are in public buildings, they pose all the more difficulties. On the face of it, it is only persons with disabilities for whom barriers become major obstacles. However, it is necessary to realize that every person, at some stage of life, face barriers. A small child, an elderly person, a pregnant lady, the temporarily disabled, all are vulnerable to barriers. Therefore, to list out people affected by barriers:

- Wheelchair users
- Children with limited walking/movement abilities
- Children with visual impairment or low vision
- Children with hearing impairment
- Children with temporary disabilities

Barriers make an environment unsafe and cause a high level of difficulty to the user. But more importantly, barriers cause space to be out of reach, denying people the opportunity of participation in various spheres of life. This ranges from education, economic, social, and cultural and may be other activities. This loss of opportunity is not only a loss for the person concerned but also society's loss, which misses out on their contribution. Simply put, a barrier causes exclusion and its removal is necessary for ensuring inclusion and participation of all in society. A disability may be physical, cognitive, mental, sensory, emotional, and developmental or some combination of these. Disabilities is an umbrella term, covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by 13 an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations. Thus, disability is a complex phenomenon, reflecting an interaction between features of a person's body and features of the society in which he or she lives.

1.3 AIM AND OBJECTIVE

To understand the difficulties faced by handicapped people and to create a place which gives them a barrier free environment through this topic.

- To design such an institute which helps them to stand in parallel to the ordinary people.
- To create a way disabled people by this type of institute so that they can present their skills, intelligence in front of the world by providing vocational training to them. As it is observed that people that people with disabilities are found equally or exceptionally intelligent.

The objectives behind this thesis project and program are to undertake an in-depth study of the subject and thus identification of special sensory training to be given to the “special children” for their concept development and simultaneously it’s manifestation in terms of the environment of the building. To develop solutions for an environment that supports independent functioning of individuals or persons with multiple disabilities.

SCOPE AND LIMITATIONS

The architectural design would be done with regard to construction details in which drawings illustrating the concerned details.

The major scope of my study would be through primary survey which includes case-studies and interaction with the challenged children and their training professionals.

The prime limitation is the lack of availability of relevant data as less work has been done in this field of architecture.

The rooms in each building are oriented towards the atrium that following the relationship of 'Rooms'- 'atrium'- 'courtyard' to create multi-level interactions between private and public spaces, which not only respect the pupils' mental needs but also their activity routines.

The ideas of sloped roofs and square windows are originally from children's drawings, which refers to their imaginations of homes that expressing the warmth's and belonging from their hearts.

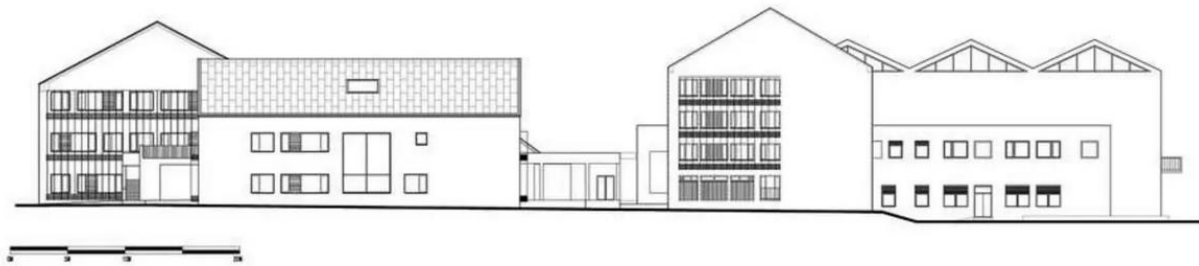


Figure 2 sectional elevation of the building

The atriums, courtyards, as well as the different-sized windows provide various opportunities for those special children to explore the world from different heights, inspiring them enhance the interactions with each other and discover the surrounding world together, which helps developing intelligence better. Architecture is becoming the tool of education.

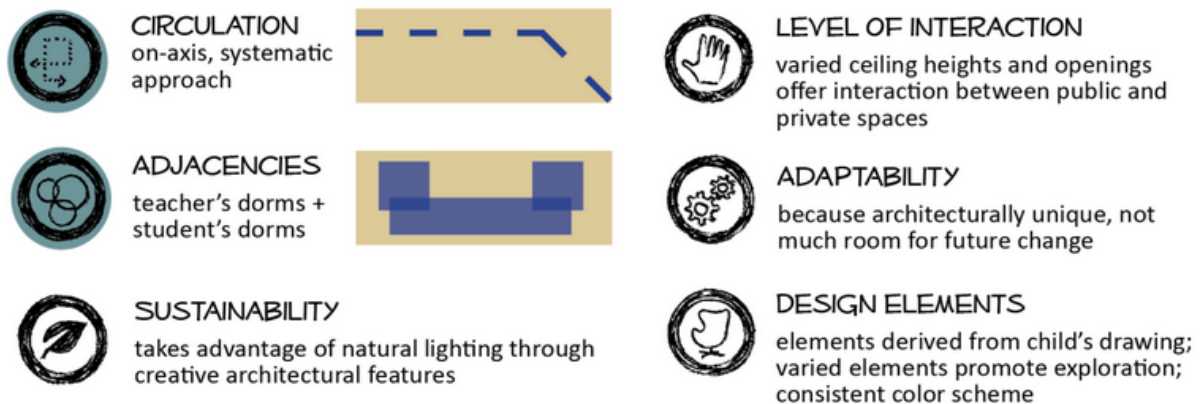


Figure 3 ideology behind the design

CHAPTER 2: LITERATURE CASE STUDIES

2.1 DEYANG SCHOOL

Deyang School for Deaf & Intellectually Disabled Children is a charitable educational institution, recruiting children with talking and hearing disabilities or mentally retarded pupils. The school includes teaching, sports and accommodation facilities.

'Home' is as the prototype of the design, expressing the special concerns for the children on campus. By dividing the campus into small-scaled sloped-roof different-sized buildings around a central courtyard, they form a miniature village.

Architects : China Southwest Architectural
DesignResearch Institute Corp. Ltd
Location : Deyang, Sichuan, China
Architect in Charge : Liu Yi
Design Team : Tang Minghao, Yang Jing, Huang Wei,
Tang Rongping, Zou Min, Hu Dajian,
Yao Yuan
Area : 7998.0 sqm
Project Year : 2012

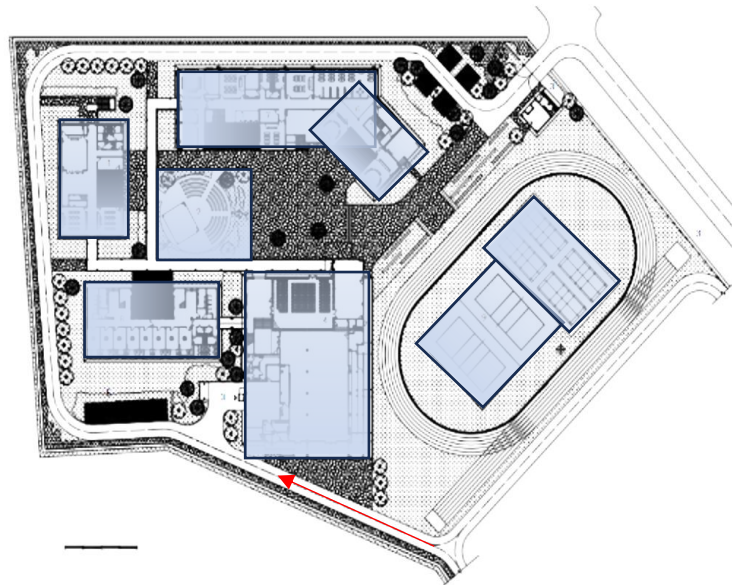


Figure 1 plan of the school



Figure 4 floor plan



Courtyard

Figure 5 courtyard space

Floor plan

1. Huang You's ordinary classroom (class of 10 students)
2. Baiji comes to the hall
3. Shigen Ordinary Classroom (10-person class)
4. Parts Office
5. Class room (10 students)
6. Over the atrium First floor plan
7. Content opening classroom (company of 10 people)

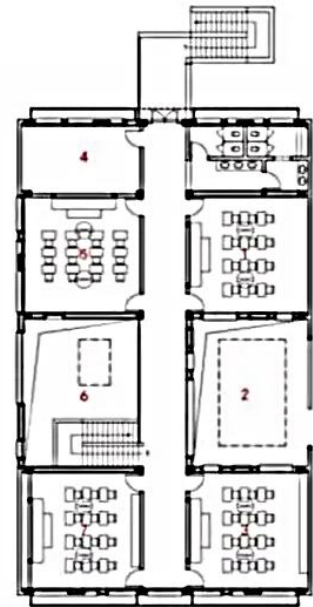


Figure 6 floor plan

2.2 AMAR JYOTI EDUCATION CENTRE

INTRODUCTION

Amar Jyoti Research and Rehabilitation center has two buildings:

1. School for inclusive and integrated education.
2. Administrative and hospital block.

Other parts of the building are –

1. Auditorium
2. Vocational training

OBJECTIVE OF THE CENTRE:

Amar Jyoti is voluntary organization rendering rehabilitate services through integrated education, medical care, vocational training and self-employment.

Amar Jyoti aims at providing physical and occupational therapies to the disabled people so that it helps them to come out from those disabilities.

It aims to offer comprehensive rehabilitative to empower and mainstream persons with disabilities. Through vocational training Amar Jyoti empowers persons with disability to be economically independent.

CONCEPT AND DESIGNING;

- The concept of designing is to create a barrier free environment all around the campus.
- Courtyard planning is done in the school building. But it is kept covered and it is beautifully landscaped.
- The school building is kept away from rest of the buildings so that medical and administration section do not dampen the cheering environment of the school.

Vertical movement is prominent in both the building blocks.

- Building has got longitudinal planning. Exterior ramps in front of the building is an important accessibility feature.

SALIENT FEATURES; -

- The hospital building is four stories'; the administrative office is in basement.
- The entrance to the building is through 1.58M wide ramp on ground floor.
- There is no direct entrance to the basement. The corridors of the basement are dark.
- No proper natural lighting is there in the building.
- Lack of waiting area for patient. wide doors have been provided in the rooms for the ease of handicaps.
- They have provided different classes for different disability like they have separate classes for deaf and dumb children, visually impaired or low vision children.
- Provision of separate classes for those who were not able to take education in their younger age.



Admin Block



Occupational section



Physiotherapy

Figure 7 pictures of the building

2.3 MUSEUM OF POSSIBILITIES

Set in the Tamil Nadu state Commissionerate for the differently abled, the museum of possibilities is a space designed to showcase universal accessibility standards in built space. Designed according to the live – work – play module, the museum displays adopted tools and appliances required in each module – the entire space is designed to be an interactive experiential space where visitors can pick up and try using the appliances.

In addition to serving as a space for advocating universally accessible spaces, the museum doubles up as a space for vendors and manufacturers to identify prospective products for large scale manufacturing.

Designed collaboratively with people with disabilities – the museum strives to stand as a prototype for universally accessible spaces in the city.

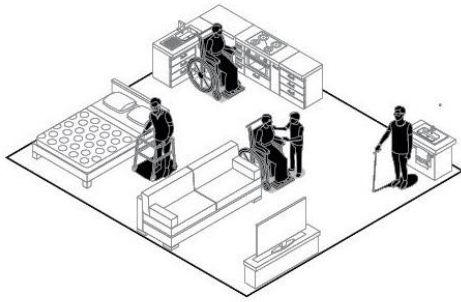


Figure 8 Image of the building

Located in: [State Commissionerate for the Differently Abled](#)

[Address](#): 5 Kamarajar Road, State Commissionerate for Differently Abled, Lady Willingdon Campus, Marina Beach Road, behind Avvaiyar Statue, Triplicane, Chennai, Tamil Nadu 600005.

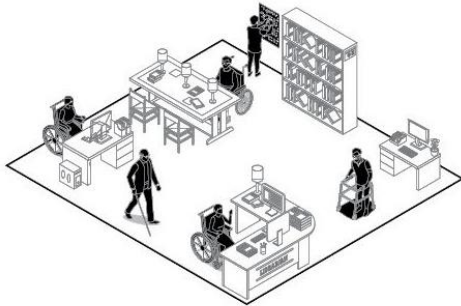
DESIGN IDEA AND PROGRAM



Live

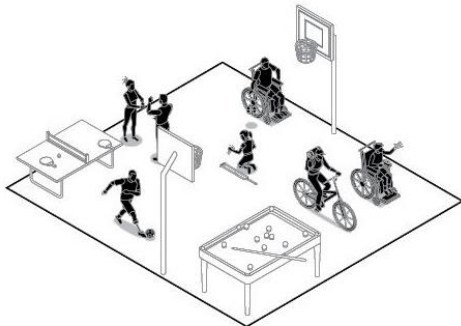
The living module is accommodated in an area of 35 sq.m.

Domains covered in this module: Living room, Kitchen, Bedroom, Bathroom



Work

Domains covered in this module: Working cabinet, Reading room



Play

Domains covered in this module: Music room, Play room

Figure 9 design idea

The design idea is splitted into three parts.

Live space.

Work space.

Play space.

Live space is divided into two categories.

ADL -activities of daily living

IADL -instrumental activities of daily living.



Figure 10 key plan of the building.

Requirements

ADLs: Activities of daily living



IADLs: Instrumental activities of daily living



Figure 11 difference between adl & iadl

DESIGN OPTIONS

Spatial division

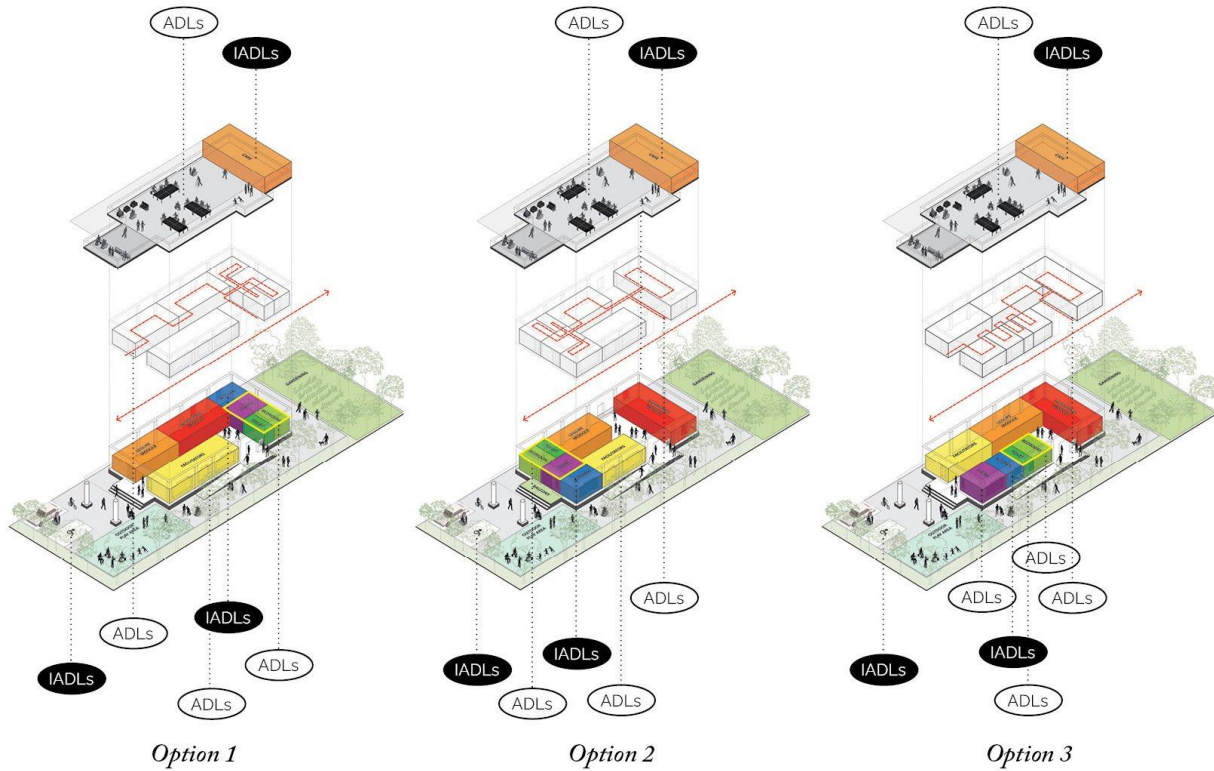


Figure 12 design process

The design team did three types of special zoning.

They are trying to design a space for persons with disabilities much easier to access.

Finally, the output is the excellent design.

CHAPTER 3: STANDARDS

STANDARDS

The entry to exit from schools can be uneven and unimproved. In rural areas, there are often cow catchers (cattle traps, see Photo 4) at the main gate to schools posing a barrier to children with disabilities using mobility aids. Children with visual impairments also face difficulties and many get disoriented on uneven and unimproved approaches to schools, as they lack the auditory cues and the tactile information of footpaths to access facilities.

STANDARDS FOR RAMP

There are often also collapsible gate channels in the approach to school buildings, which can be a trip hazard, especially for children with impaired mobility.

STANDARDS FOR STAIRS

- The steps should have an unobstructed width of at least 1200mm.
- The landing should be 1200mm deep, and the stairs should be free of any obstruction.
- Steps must be uniform and not be more than 100mm in height.
- Tread (step depth) should be uniform and less than 300mm.
- Risers should have contrast colour strips that are minimum 50mm wide, extending the full width of the steps.
- There should be tactile warning pavers 300mm x 300mm at the start and end of the stairs and at the end of all stairs and at landings (see Figure 9 and 10).
- Stairs should be adequately and uniformly lit, with a minimum of 100-150 lux.

STANDARDS FOR CORRIDOR

Corridor have an unobstructed width of 1200-1800mm, and are well-lit throughout. There should be a thick strip of fluorescent light on the ceiling, which is adequately lit, and the floor should be free of any obstruction, particularly navigate their way around.

- Doors/thresholds and level differences of more than 10mm are not acceptable.
- Objects (such as furniture, closets/closets, benches and decorative features) do not protrude more than 200mm from the wall in corridors.

STANDARDS FOR RAMP

Ramps are not obstructed by vehicles and ramp cutters are not used.

- Ramps are used in the main rooms of access and entry, which would benefit everyone, including persons with disabilities, the elderly, and those with reduced mobility.
- Concrete, metal finish, anti-slip tiles are good to use for ramps. If there are grooves on the ramp surface, the depth of each groove should not exceed 3mm.

STANDARDS FOR RAMP

A 1000mm wide step bridge plate is used on earth ramps to facilitate access of children with disabilities.

- Earth ramps for collapsible and other types of gates are embedded in the ground or levelled with slopes on both sides of the ramp to allow easier passage of wheelchairs or other mobility aids.

STANDARDS FOR RAMP

Ramps are not obstructed by vehicles and ramp cutters are not used.

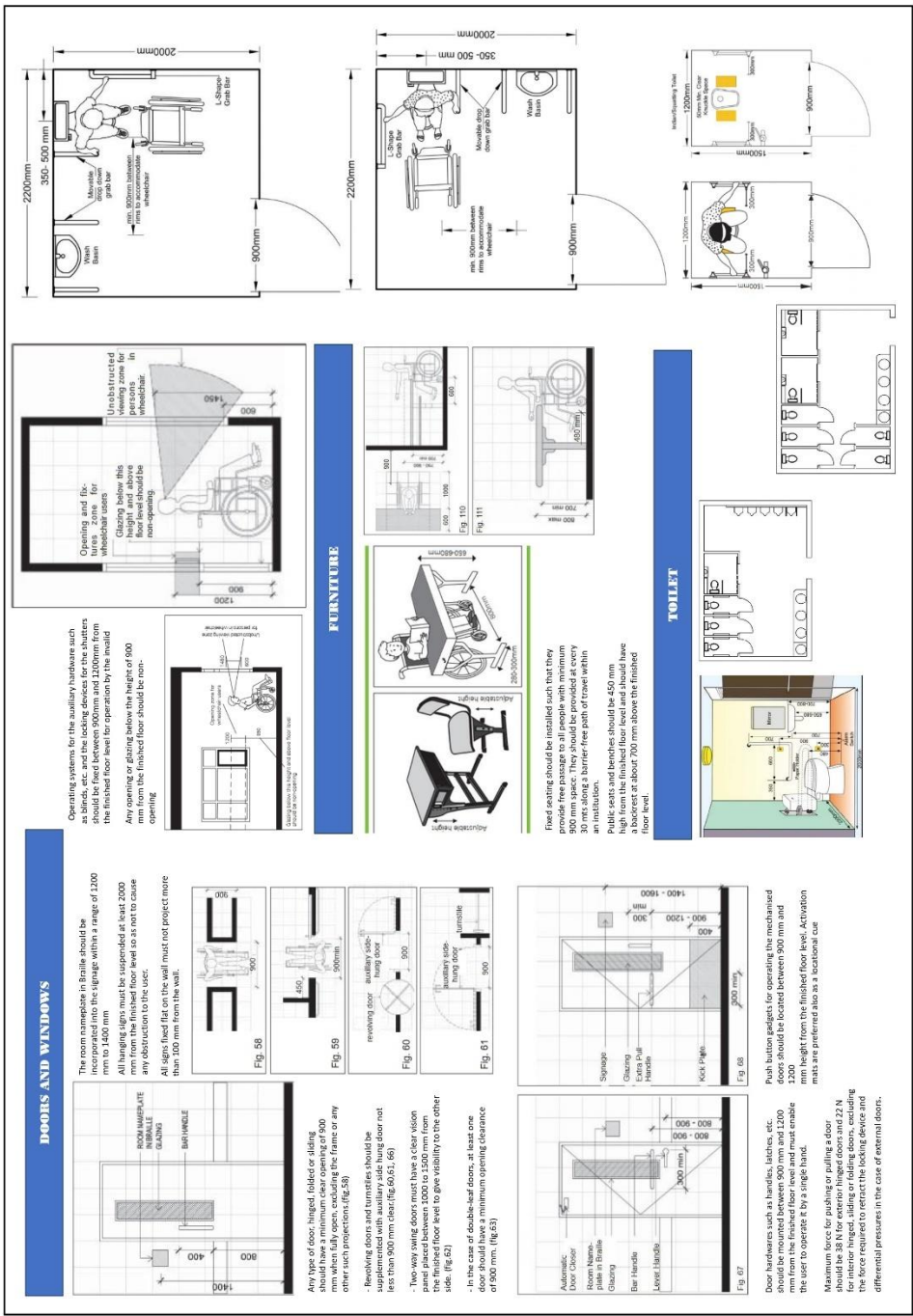
- Ramps are used in the main rooms of access and entry, which would benefit everyone, including persons with disabilities, the elderly, and those with reduced mobility.
- Concrete, metal finish, anti-slip tiles are good to use for ramps. If there are grooves on the ramp surface, the depth of each groove should not exceed 3mm.

STANDARDS FOR RAMP

Ramps are not obstructed by vehicles and ramp cutters are not used.

- Ramps are used in the main rooms of access and entry, which would benefit everyone, including persons with disabilities, the elderly, and those with reduced mobility.
- Concrete, metal finish, anti-slip tiles are good to use for ramps. If there are grooves on the ramp surface, the depth of each groove should not exceed 3mm.

Plate 1 standards for barrier free environment



CHAPTER 4: LIVE CASE STUDY

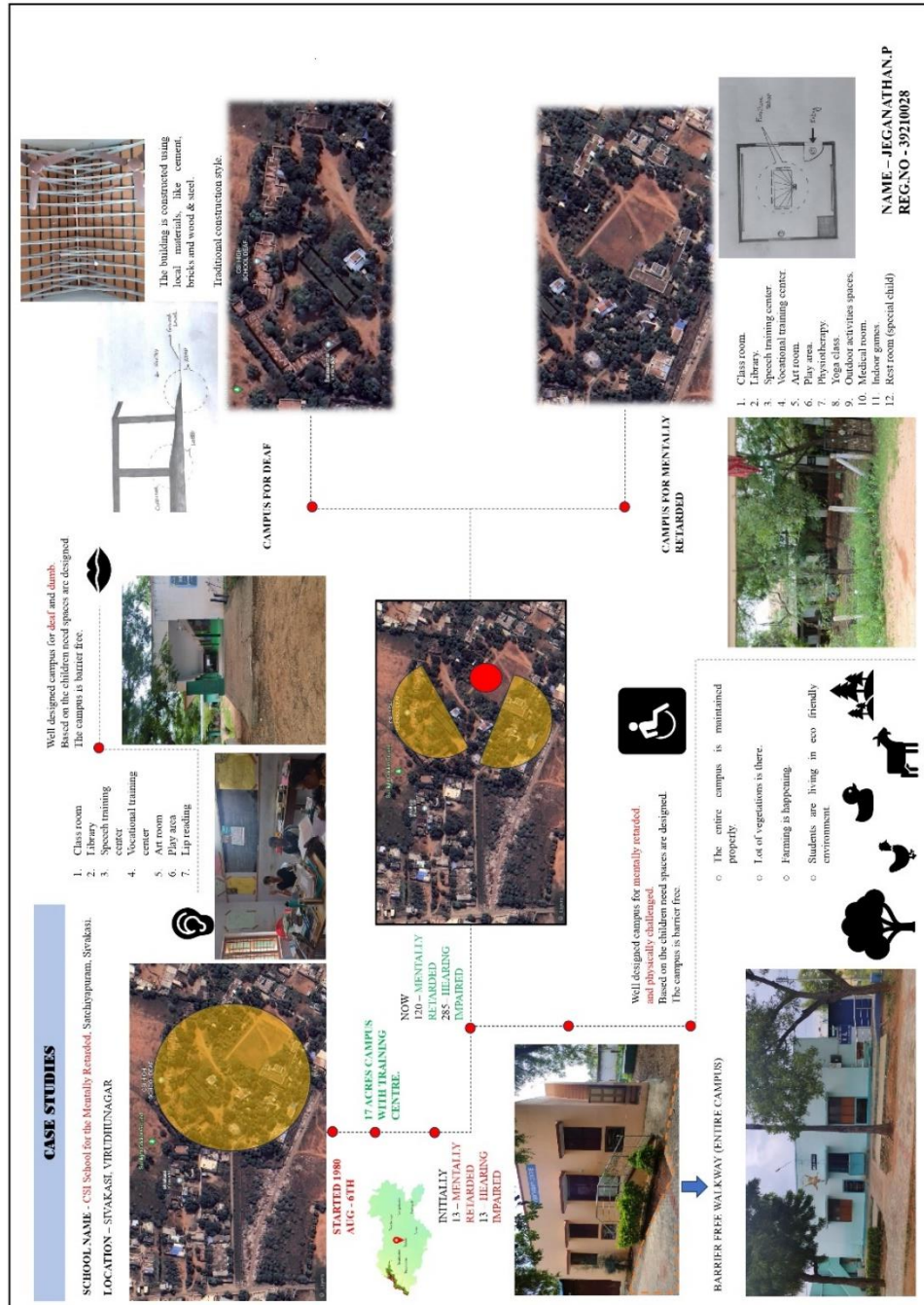


Plate 3 live case study data collection



Plate 4 live case study data collection

CHAPTER 5: SITE STUDY

SITE STUDY

Virudhunagar District is located in the southern part of Tamil Nadu, in India occupies an area of 4243 km² shown in Figure 1. It is bounded by Madurai district and Sivaganga district on the north, Ramanathapuram district on the east, Tirunelveli and Tiruvelveli district to the south, Kodaikanal to the west. And Theni district to the northwest. It lies between 99°12' and 99°47' North latitude and 77°09' and 78°26' East longitude with the population of 19,43,309 (2011).



LOCATION - Virudhunagar, Virudhunagar district.

Tamil Nadu, India.



Virudhunagar — special school for deaf.
Sivakasi — special school for deaf, and mentally retarded.
Aruppukottai — school for special school teacher training.

Sapthagiri special school for deaf – Virudhunagar
K.K.S.K Raveendran special school for blind and movement – Virudhunagar.



Virudhunagar district is bordered by Western Ghats to the south, by the Tamil Nadu District of Tirunelveli to the West. Valley hill area is observed in Walrap block. A major part of the district constitutes a plain terrain with a gentle slope toward East and Southeast, except for the hilly terrain in the west.

The prominent geomorphic units identified in the district through interpretation of Satellite imagery are,

1. Shallow pediments,
2. Barada,
3. Pediment,
4. Shallow & deepburied Pediments
5. Structural Hills.

Soils in the area have been classified into 11. Deep red loam, 12. Black soil, 13. Red sandy soil. The majority of the study area is covered by black soil. Fungus red soils are found in green and black. Brown red soils occur in hilly areas. Brown red soils occur in the depressions adjacent to hilly areas, in the western and central part of district. Alluvial soils occur along the river courses. Red sandy soil is found all around the Sattur, Kariyapatti, Aruppukottai and Thiruchuli blocks.



The district enjoys a subtropical climate. The period from April to June is generally hot and dry. The weather is pleasant during the period from November to January. Usually mornings are more humid than afternoons.

2

SCHOOL FOR DEAF AND DUMB AND PHYSICALLY CHALLENGED STUDENTS

JEGANATHAN .P
39210028
2019-2024



THREE IS SIZED -
VEGETATION IN
THE SITE.

TRASH COLLECTION UNIT

GRASS

EXISTING COMPOUND WALL

PRIVATE INDUSTRY

RESIDENTIAL BUILDINGS

GOVERNMENT OLD CARE

TRANSFORMER

STREET LAMP FACILITY

BUS STOP FACILITY

GROUND LEVEL

ROAD LEVEL

SLOPE

HH - 44 CHENNAI -
KASUYANPALLE

VACANT GREEN LAND

RESIDENTIAL BUILDINGS

GOVERNMENT GATEWAY

GRASS

CONCEPT AND DESIGN CONSIDERATIONS

I. Outside the building

a) Parking area

Cars are the only practical method of transport for some disabled people, whether they drive themselves or ride with someone else; therefore it is vital to provide accessible parking with unhindered access to building entrances.

The car park space for disabled people should be conveniently located and clearly signed. They must have additional transfer space to allow people with reduced mobility to get into and out of their cars with the minimum of difficulty.

Any parking control equipment should be positioned so that it can be operated conveniently by disabled people, some of whom will be in wheelchairs.

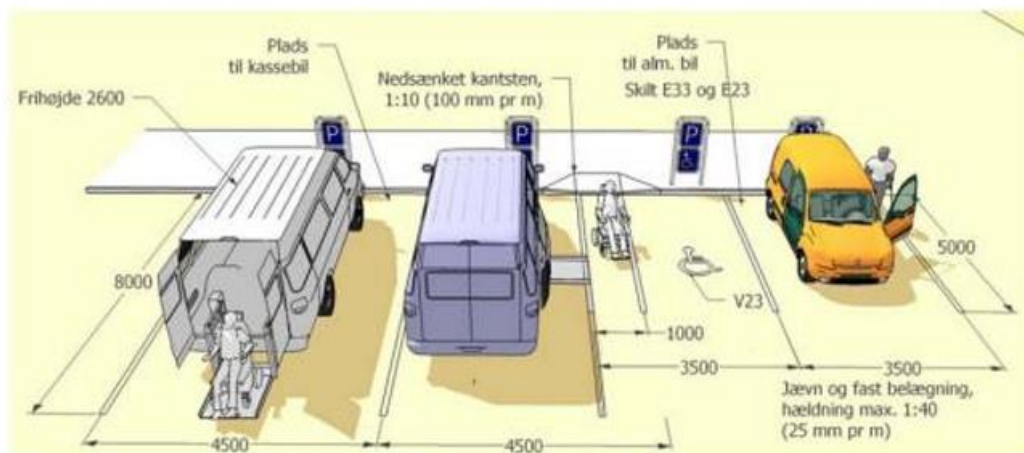


Figure 1: Ideal car park for wheelchair access (Denmark)

Figure 13 parking standards

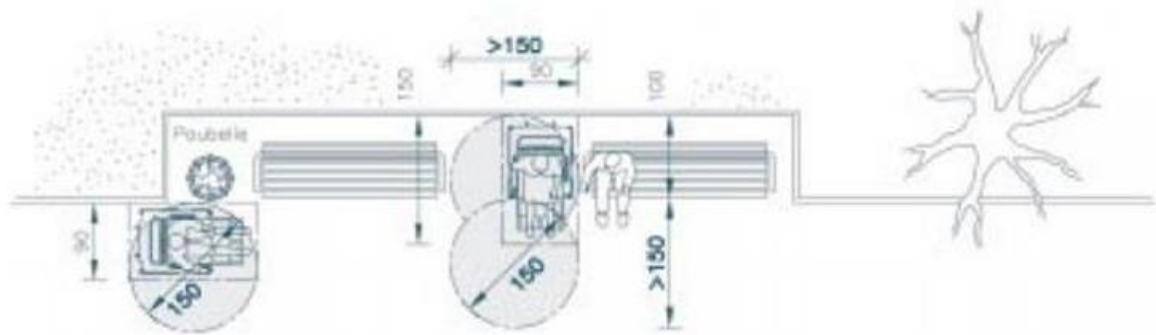


Figure 2: Banges and wheelchair space in a green area

For a disabled access to the green area, a space near the banges can be made with a minimum of 1,50m. Two people can sit closed to each other.

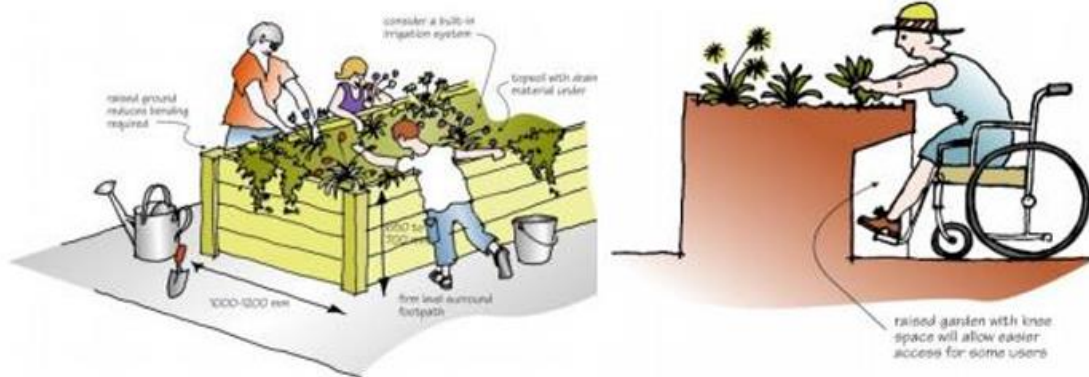


Figure 3: Raised garden beds and overhanging beds

Figure 14 outdoor space gardening standards

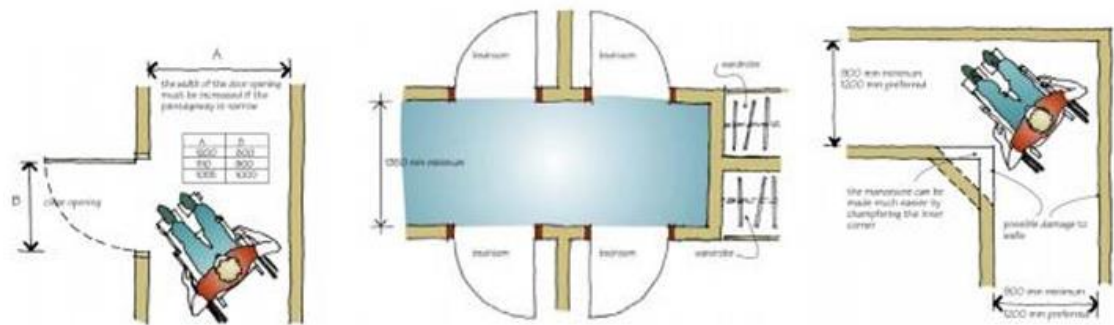


Figure 10: Doors and corridors 2

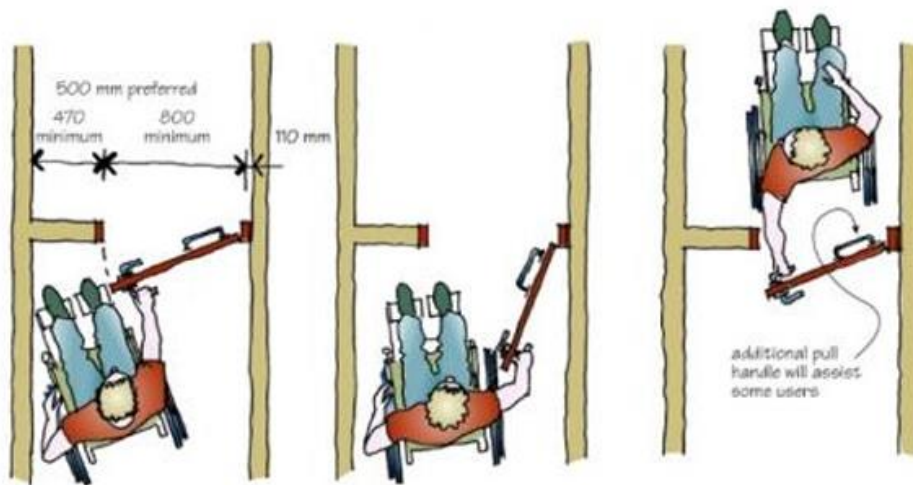


Figure 9: Doors and corridors

The dimensions of an offset hinged door that allows room for a wheelchair user to move beside and through

On the figure 9, the minimum wide of a corridor is 0,90m which permit to someone walking to cross or pass over someone in a wheelchair BUT it is not enough for two people crossing in a wheelchair with a standard size of 75 cm. For more comfort, the wide of the corridors can be 1,40m.

It is necessary to make some turning diameter of 1,50m in front of the doors, ends of corridors etc...

Figure 15 corridor standards

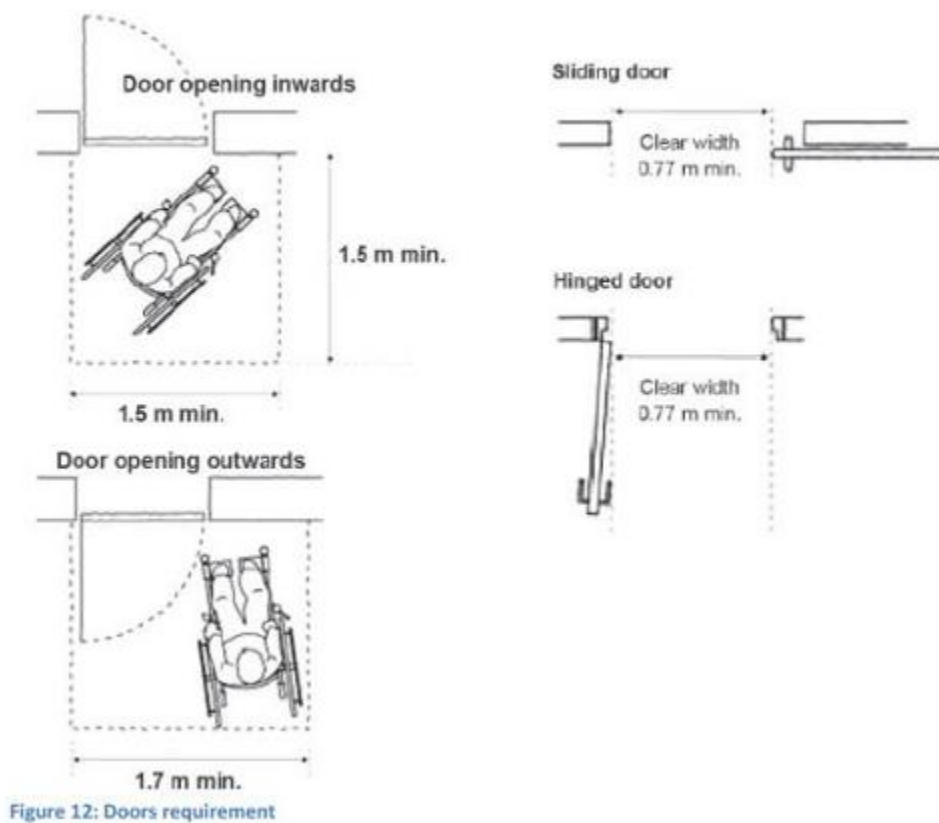


Figure 16 door standards

Doors should generally open into the room to which they give access. However, in smaller rooms it may be better to fit the door so that it opens outwards. This maximises the useable space in the room and ensures that if a person were to collapse against the door, their body would not prevent someone opening the door and entering to assist them.

Access and circulation:

Convenient travel routes and distances make life easier for people with disabilities, especially for those with mobility aids, sensory and learning disabilities and autism. The exact requirements will depend on the school's particular arrangements and who will be coming to the school. Children may arrive on foot, by bicycle or buggy and may be using wheelchairs or other mobility aids. Some will use public or private transport. Designers will need to find out the potential number of vehicles and process of handover to the school. In a special school particularly there may be several vehicles arriving to drop children off at the same time.

Arrival and departure take time and resources, which calls for careful operational planning (and must ensure health and safety). Transferring children in wheelchairs from the rear or side of vehicle is a slow process, which takes place in all weathers. The approach from gate to entrance doors should have:

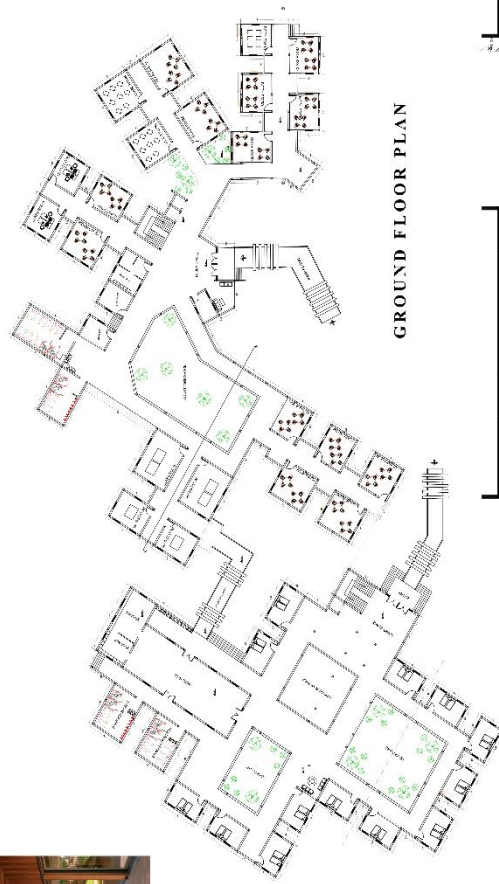
- Vehicular circulation that allows for public and private transport, including set-down and drop-off without congestion (for example, one way or roundabout traffic flow), and makes provision for emergency access and maintenance.
 - Designated safe pedestrian routes some people have less awareness of the risks of traffic (or cannot see/hear vehicles) and this should be taken into account when the site is planned. • Easily accessible, level or ramped slip-resistant and well-drained surfaces along the route, without trip hazards and with an accessible stepped route nearby to give a choice
 - Suitable car parking, with accessible parking bays near the entrance (subject to local planning)
 - Good quality external lighting for routes, clear legible signage, visual contrast and sensory way finding to help independence.
-
- use mobility aids, frames, wheelchairs, shuffle along the floor, use a handrail for support, or have member of staff to walk beside them
 - use varied way finding techniques, such as signs, symbols, color, sound, tactile cues and objects of reference to help them negotiate their environment • be supported by a sighted guide or learn to use sticks or tactile routes.

CHAPTER 6: DESIGN PROCESS

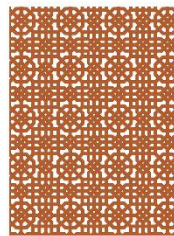


Plate 6 site plan

Architecturally, courtyards add a design element that creates a sense of openness and connection to nature. The connectors between the interior and exterior spaces a multifunctional extension of living space ideal for entertaining, gardening, yoga, and stargazing, right in the middle of a lecture hall.

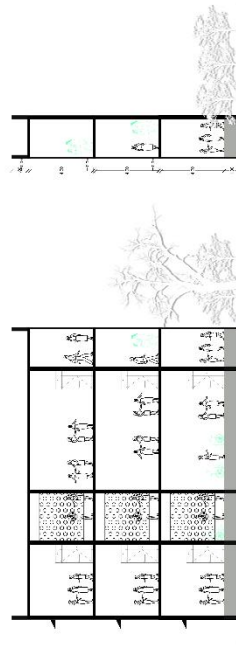


GROUND FLOOR PLAN



The term for a perforated stone or lattice screen, usually with an ornamental pattern constructed through the use of calligraphy, geometry or natural patterns.

Jali is largely used to cast down the direct sunlight and to cool down the air through the perforation by allowing the momentum of wind particles allowing it to expand and cool in the process.



SECTION B-B

JEGANATHAN .P
39210028
2019-2024
SCALE 1:250

7 SCHOOL FOR DEAF AND DUMB AND PHYSICALLY CHALLENGED STUDENTS

Plate 7 ground floor plan of academic and hostel block

Plate 8 first floor plan

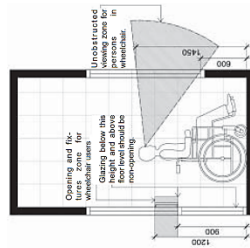
THE HEIGHT OF THE TABLES SHOULD BE BETWEEN 750 MM AND 900 MM.

THE MINIMUM DEPTH UNDER A TABLE SHOULD BE AT LEAST 600 MM SUCH THAT A WHEELCHAIR MAY FIT IN FROM UNDER ALL SIDES.

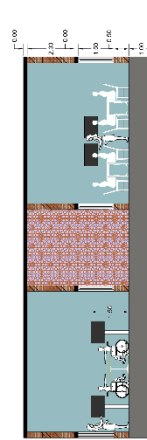
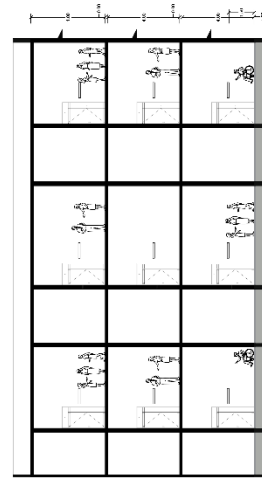
A WINDOW SHOULD HAVE HANDLES/CONTROLS AT A HEIGHT THAT PERMITS USE FROM WHEELCHAIRS.

A WINDOW SHOULD HAVE AN UNOBSTRUCTED VIEWING ZONE FOR WHEELCHAIR USERS.

CURTAIN OR VENETIAN BLIND CONTROLS/ROPES SHOULD BE ACCESSIBLE FOR WHEELCHAIR USERS.



FIRST FLOOR PLAN



JEGANATHAN .P
39210028
2019-2024
SCALE 1:250

SECTION AA

8 SCHOOL FOR DEAF AND DUMB AND PHYSICALLY CHALLENGED STUDENTS

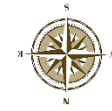
Plate 9 second floor plan



9 **SCHOOL FOR DEAF AND DUMB AND
PHYSICALLY CHALLENGED STUDENTS**

JEGANATHAN .P
39210028
2019-2024
SCALE 1:250

ACADEMIC BLOCK FLOOR PLAN



SECOND FLOOR PLAN



FIRST FLOOR PLAN



GROUND FLOOR PLAN



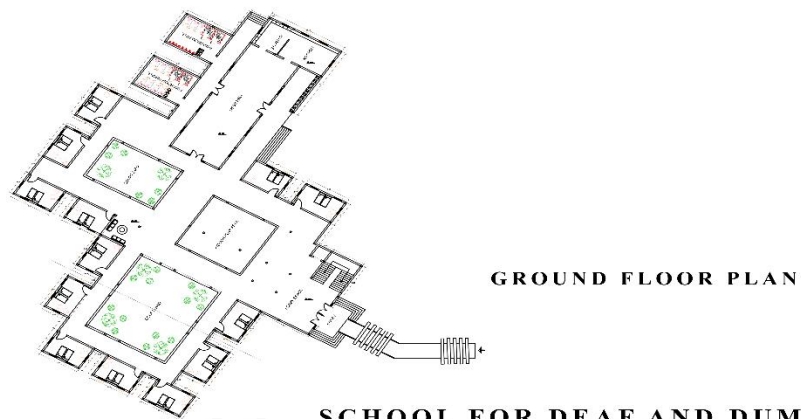
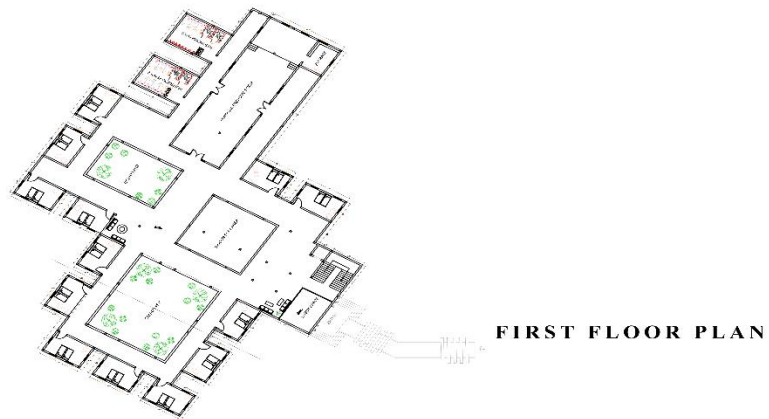
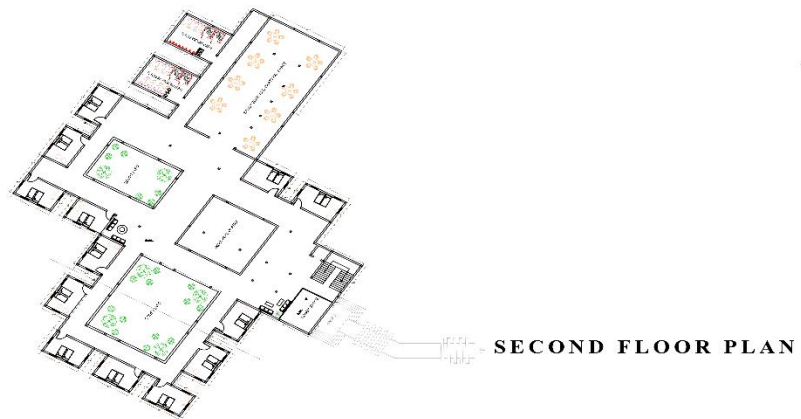
10

**SCHOOL FOR DEAF AND DUMB AND
PHYSICALLY CHALLENGED STUDENTS**

JEGANATHAN .P
39210028
2019-2024
SCALE 1:250

Plate 10 floor plans of academic block

HOSTEL BLOCK FLOOR PLAN



JEGANATHAN .P
39210028
2019-2024
SCALE 1:250

11

**SCHOOL FOR DEAF AND DUMB AND
PHYSICALLY CHALLENGED STUDENTS**

Plate 11 floor plans of hostel block

CHAPTER 7: REFERENCE

1. Code of practice for "Access for the Disabled to Buildings" - British Standard Institution BS 5810: 1979.
Top
2. Cod of practice for design of housing for the convenience of the disabled people BS 5619:1978. 2. Cod of practice for design of housing for the convenience of the disabled people BS 5619:1978.
3. Designing for the disabled by Selwyn Goldsmith, A RIBA of London: 2nd Edition, revised ad expanded in 1967. 4. Designing a public convenience for the disabled. S Goldsmith, PJR Nichois, B Rostance, J Angel, L Angel.
5. Planning for the disabled, Interim report of Norwich Survey of Wheel Chair users- S. Goldsmith
6. London for the disabled, F Bruce, Lockhart, Ward Lock, London.
7. Access to Public Buildings for the disabled. Ministry of Public Buildings and works, Ministry of Health. H M S O, London.
8. Barrier Free Environments, Edited by Michael J Bednar, University of Virginia.
9. Architectural Barriers for the Handicapped. A survey of the law in the United States, R Dantona, B Tessler, Rehabilitation Literature N S C C A Chicago.
10. American Standard Specification for making buildings and facilities accessible to and usable by the physically handicapped. American Standard Association, New York, 1961.
11. Design of buildings to permit their use by the physically handicapped, TJ Nugent, New Building Research, USA.
12. The American Institute of Architects, Architectural Graphic Standards - Ramsey/Sleeper.
13. Time save standards for Site Planning Joseph De Chiara & Lee E Koppelman.
14. Time save standards for residential development Joseph De Chiara.
15. Australian standard Code of Prattice for Design Rules for Access by the Disabled as 1428-1977 Published by Standards Association of Australia.
16. Indian Standard Recommendations for Buildings and Facilities for the Physically Handicapped IS: 4963-1968, 1988.
17. Rehabilitation Centre for Physically Handicapped Children - ML Buttan. (B Arch Thesis, SPA, New Delhi).
18. Rehabilitation Centre for Physically Handicapped-Lucknow - Mona Swaroop. (B Arch Thesis SPA, New Delhi).

19. Needs of the handicapped in buildings International Organization for Standardization
20. Design for Accessibility by Robert James Sorensen.
21. Creating a safe and accessible city, Yokohama City Guidelines for Improving Barrier - Free Access in the Urban Environment (The city of Yokohama, Japan)
22. Promotion of Non-handicapping Physical Environments for Disabled persons Guidelines, United Nations.
23. Norms and Space Standards for Physically Disabled People. Housing and Development - Board Singapore.
24. Building Design for Handicapped and aged persons by council on Tall Buildings and Urban Habitate.
25. "Transportation for the Handicapped - The Politics of full Accessibility" - Traffic Quarterly, April, 1982. Fielding J Gordon.
26. Disability: Challenges Vs Responses. Ali Baquer & Anjali Sharma.