

**HOME FOR THE HOMELESS
Adoption Home**

THESIS

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

By

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**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**



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DEPARTMENT OF ARCHITECTURE

BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **Eunice Miraclyn.H (3621022)** who carried out the project entitled "**Home for the Homeless – Adoption Home**" under our supervision from January 2021 to June 2021.

Internal Guide

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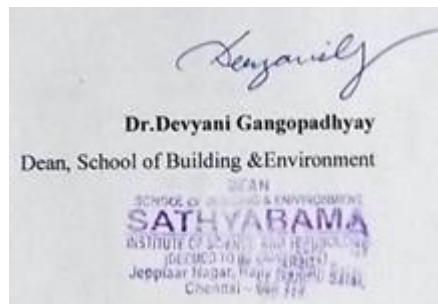
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Submitted for Viva voce Examination held on _____

Internal Examiner

External Examiner

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DECLARATION

I, **Eunice Miraclyn. H** hereby declare that the Project Report entitled
“Home for the

Homeless – Adoption Home” done by me under the
guidance of

Ar.Swetha (Internal guide), **Dr.Devyani Gangopadhay** (Internal Review
Member) and **Ar.....** (External Guide), at Sathyabama Institute of Science
and Technology is submitted in partial fulfilment of the requirements for the
award of Bachelor of Architecture Degree.

DATE:

PLACE: Chennai
CANDIDATE ACKNOWLEDGEMENT

SIGNATURE OF THE

First and foremost, I give praise, honour and glory to my Lord Jesus Christ
for His richest grace and mercy for the accomplishment of this thesis.

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

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I would like to express my sincere and deep sense of gratitude to my Project

Internal Guide **Ar. Swetha** , Internal Review members and External Guide **Ar. ******* their guidance, suggestions and constant encouragement which paved the way for the successful completion of my project work.

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ABSTRACT

According to statistics by an international children's charity, 4% (20 million) of India's children population are orphans, 95% of the old aged people live in private homes and nursing homes. Architects can create spaces that treat people psychologically by means of elements of architecture which makes them socially and spiritually healthy, treats them and brings them close to other people.

This thesis helps in understanding different emotions of different age grouped people and also demonstrates the relationship and connectivity between the elder people and kids through different spaces. An environment comprised of both built and open spaces has an impact over individual's mood, behaviour as well as their psychological and physical wellbeing. These spaces help in the expression of human emotions in a very simple manner. Combining various elements as a medium to develop interaction between the two typology and providing a good habitable space for them to live in is the aim of this thesis.

As this project is for the abandoned group it is done by NGO following Lauri baker's principles which helps in cost effectiveness, nature responsive modules and sustainable structures. The main objective of the thesis is to analyse the relationship between the two groups and to translate them into architectural spaces within the limited resources. Healing is one important factor to look into while designing spaces for both the user groups. Hidden concept of healing through interaction is achieved in every possible space is achieved in the overall design. Physical activities like farming and weaving are provided inside the site which also involves the residential

neighbourhood and which keeps them occupied throughout the day which also acts as a source of income.

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ABBREVIATIONS AND NOTATIONS

CARA – Central Adoption Resource Authority
 JJ – Juvenile Justice
 MBBL – Model Building Bylaws
 NGO’S – Non-Governmental Organizations
 NBC – National Building Code
 SOS- Save Our Ship

TSS – Time Savers Standards

English Symbols

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Greek symbols

° - Degree

% - Percentage

CHAPTER 1

1.INTRODUCTION

1.1 AIM

To design a habitable space for the orphaned children and the abandoned old people and to create linking spaces or connecting spaces that act as a healing space also. To provide an active environment with independence and privacy.

1.2 SCOPE

- Creating an environment for the homeless with a concept of home
- Breaking the age-old tradition of establishing separate homes for the elderly and orphans
- Creating a space for inter-dependency and mutual care and concern
- Being self-sufficient with the income generated through farming

1.3 OBJECTIVE

- To create connectivity between nature and self, through less formal space both sociopetal and sociofugal spaces to treat their emotions
- To provide an active environment with independence and privacy
- A platform that brings interaction between the residential neighbourhood and the inmates

1.4 NEED FOR THE PROJECT

- According to statistics by an international children's charity, 4% (20 million) of India's children population are orphans, 95% of the old aged people live in private homes and nursing homes. The statistics shows how abandoned population keeps increasing which leads to such new projects
- To create opportunity for the abandoned people and live independently -To promote interaction and communication between the two typologies

1.5 DESIGN INTENT

The intent of the thesis project is to create a habitable environment in which both the user groups are mutually benefited from each other

1.6 METHODOLOGY

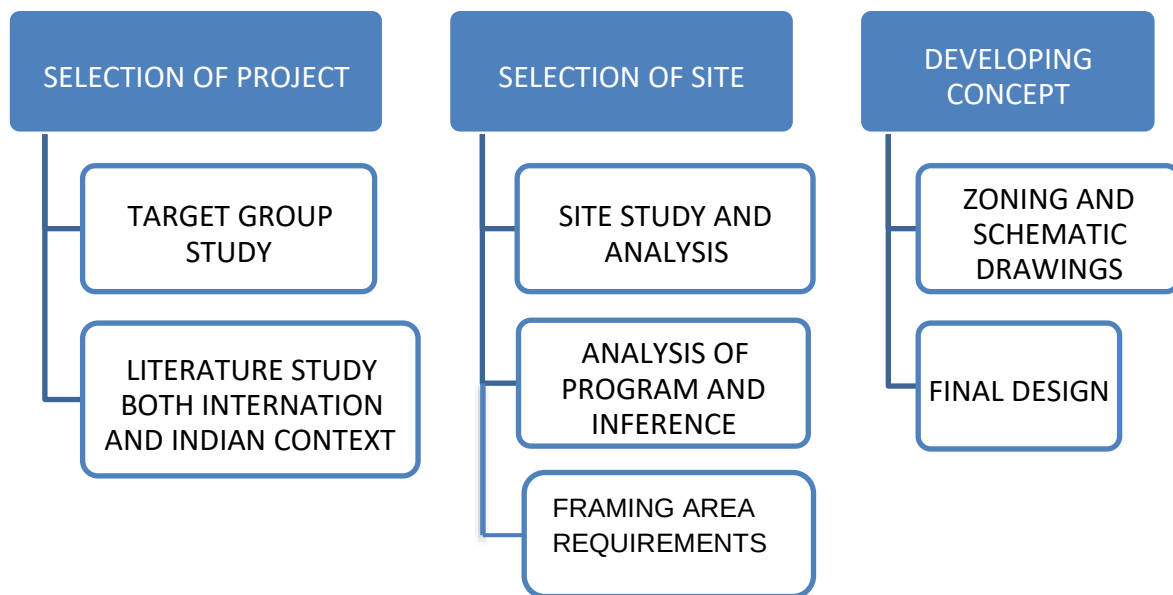


Table 1. 1 Methodology

CHAPTER 2

2.INITIAL DESIGN BRIEF

2.1 USER ANALYSIS

2.1.1 Children

Abandoned (through NGO)

New-born 0-6 years old

Kids 6-12 years old

Teenagers 13-19 years old

Kids with single parent (Semi orphans) Up to 19 years old

2.1.2 Old aged people & destitute

Destitute Men / Women - Individual - above 50 years old

Old couples who lost their children above 58 years old

Old people who are abandoned - above 58 years old

2.2 ELEMENTAL ANALYSIS

Comparison of elements

CHILDREN	ELDERLY
HEIGHT Because of the anthropometry they find themselves lost and scary in great heights. Proportion is also achieved by providing 	HEIGHT Mostly they prefer light to come inside their space. So, height of the wall is increased to bring in light. 

small height spaces.	
<i>LANDSCAPE</i> When the play elements are given with natural materials the play potential	<i>LANDSCAPE</i> These gardens have the potential to support constructive outcomes for

increases which is needed
both intellectually and physically.

LIGHT
physical, mental and social well-being by
engaging them with physical activity.

	
	LIGHT Exposure to bright light-15000lx had some medical advantages like protecting the has near-sightedness, and gaining high circadian stimulation and helps to vitamins D etc. Position of window is maintain sleep respectively. 
	COLOURS Colours can either increase concentration, creativity, intelligence etc or causes stress or anxiety. Teenagers [above 12 years]- go through identity crisis during this the feeling of home and bring in warmth age. To hide the that they tend to prefer and security.
	MATERIALS Kids use material in the environment according to their own purpose. Plain surfaces tend to bore them. Protruding elements keeps them occupied. Landscape like rock, plants, water are ideal materials for kids 

Table 2. 1 Comparison of elements

Exposure to both daylight and night light has medical advantages like providing child from near-sightedness, and helps to vitamins D etc. Position of window is maintain sleep respectively. average. Sill height is 0.75m

COLOURS

Old people prefer natural shades or white that replicates daylight. To avoid the sense of loneliness and fear soft pastels gives they the feeling of home and bring in warmth age. To hide the dark colours like black.

MATERIALS

Material is commonly used to denote change in levels. Due to the age most of their vision is poor. Soft and smooth textures can trip them easily. They prefer change in materials to different spaces for their identification.

CHAPTER 3

3.LITERATURE STUDY

3.1 INDIAN CONTEXT

3.1.1 Ayudham Society for Old aged and Infirm

A very good initiative to combine old aged people and orphans to have mutual understanding, learning and sharing. Spaces with plenty of open space for old aged to relax and kids to play. The main thing to notice is here that the old aged people living there render their service by teaching the kids who stay there. Inter relation of covered spaces, semi open spaces and open spaces is achieved in the design.



Figure 3. 1Ayudham societ building views

BUILDING DETAILS

Location: Khanpur, Delhi

Architect: Vinay.K Chadha & Pravesh Ghai

Year: 1993

Site area: 1 acre

Style: Group house in brick and concrete

Status: Completed



Figure 3. 2Interaction spaces

PROJECT INFERENCE

PROGRAM

Old age home with orphanage

DESIGN PROGRAM

Admin office, Meditation hall, Kitchen, Dining hall, Rooms, ST hall- Dine for children, Multipurpose hall, Toddler's area, Computer room, Lawn with stage, Physiotherapy room, Guest rooms, Library.

DESIGN INTENT

To provide a peaceful environment for the old people along with medical facility and learning space and stay for abandoned & E.W.S kids where they can be mutually benefited.

CIRCULATION

Both vertical and horizontal circulation is seen throughout the building. And there is connectivity between the old aged and kids also.

MATERIALS USED

Brick, Concrete, Steel



Figure 3. 3Spaces inside the society

3.1.2 Voluntariat home for the homeless children

Minimalist design, Scale of the building acts as a space which gives a homely feeling. Whereas a huge space gives a feeling of fear of getting lost. Material played an important in the design. This project aims in achieving low impact housing solutions to serve the homeless children. The whole construction was done with locally available materials and using traditional techniques.

15 children and 5 foster parents.



Figure

3. 4 Voluntariat home views

BUILDING DETAILS

Location: Pondicherry

Architect: Anupama kundoo

Year: 2011

Site area:450 sqm

Style: Low-cost mud kiln housing

Status: Completed

MODULES

Catenary shaped domes are used and then the whole structure is burnt to obtained as brick load bearing structure. The modules vary in size according to cluster programs with minimum 4 children and 1 foster parent.



Figure 3. 5 Site construction views

PROJECT INFERENCE

PROGRAM

Home for the homeless

DESIGN PROGRAM

Rooms for stay, Laundry space, Shower are, Toilets, Rock garden, Locker rooms, Play area.

DESIGN INTENT

Project aims to achieve low cost & low impact housing solutions for the homeless children

CIRCULATION

Only horizontal circulation is seen but interesting shapes of the building like domes and curved fenestration makes the circulation interesting too.

MATERIALS USED

Bicycle wheels, Glass bottles, Glass chai cups, Terracotta water pots, Mud bricks and mud mortar, Ceramic tiles.

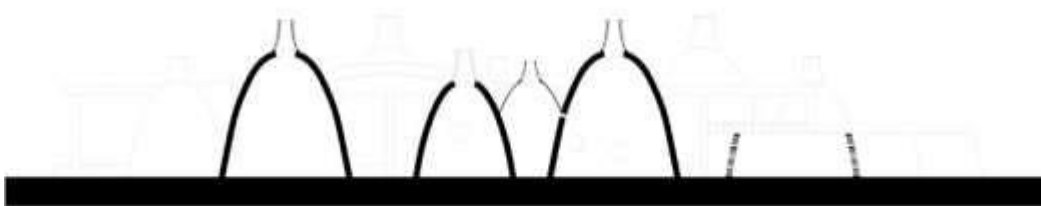
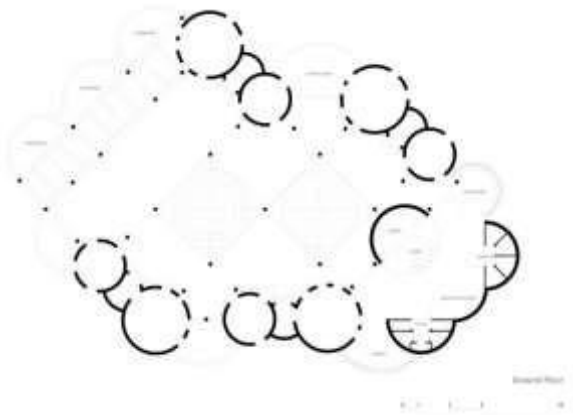
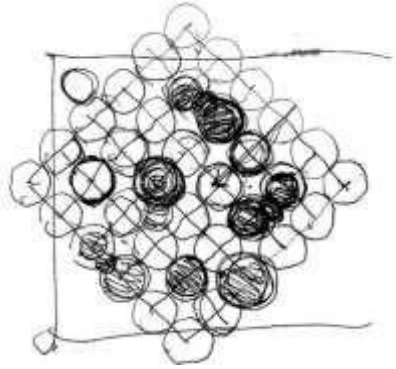


Figure 3. 6 Voluntariat home construction drawings

3.1.3 Tamaraikulam elder's village

This village is for the elders affected by Tsunami and abandoned old aged people in and around Tamilnadu and Kerala.

The old aged people inside the community does shared works like gardening, watering the plants, cooking etc Community for old aged abandoned people who lives with dignity on their own. Main essence is the landscape usage as lotus pond, organic farm etc. Concept of open, semi open, closed spaces makes the design more interesting. Activities provided helps in active ageing of the residents.



Figure 3. 7 Tamarai kulam village views

BUILDING DETAILS

Location: Cuddalore

Architects: - [NGO - HelpAge India]

Year: 2014

Site area: 5.46 acres

Built up area: 2300 sqm

Status: Completed

Site is located in such a way that it is away from the main city yet close to the neighbourhood and the products from farming can be sold out to the neighbourhood nearby.



Figure 3. 8 Tamarai kulam interaction spaces

PROJECT INFERENCE

PROGRAM

Old age community village

DESIGN PROGRAM

Lotus pond with walkway and seating's, Biogas plant, Dairy farm, Organic agricultural practice, Vegetable and herbal garden, Solid waste management, Cluster dwelling units, Nursing area, OAT, Common rooms, Recreational space, Medical area, kitchen/dining.

DESIGN INTENT

Is to provide a shelter for the abandoned old aged people who wants to live with own dignity with practice of active aging and supporting spaces.

CIRCULATION

Only horizontal circulation throughout the site.

MATERIALS USED

Concrete, Terracotta roof tiles.



Figure 3. 9 Activity area

3.1.4 Smiles senior citizen living

Smiles is built with a concept 'HOME AWAY FROM HOME' a life free from duties and responsibilities and away from the hustle-bustle main city to avoid pollution and it depicts a feeling of warmth and comfort.



Figure 3. 10 Smiles senior citizen living views

BUILDING DETAILS

Location: Hyderabad

Architect: AAB Associates

Year: 2012

Site area: 2633 sqm

Status: Completed



Figure 3. 11 Entrance and courtyard

PROJECT INFERENCE

PROGRAM

Old age home

DESIGN PROGRAM

Office, Lounge and library, Kitchen, Dining, Doctor's cabin, Gym, Staff rooms, Rooms for stay, Store, Toilet, Services block, Fish pond, Central courtyard.

DESIGN INTENT

Project aims to achieve the feeling of home with all the needed facilities and relaxing and religious spaces

CIRCULATION

Both vertical and horizontal circulation is seen in the building. Lifts are provided for easy vertical circulation.

MATERIALS USED

Concrete and steel



Figure 3. 12 Corridors and rooms

3.1.5 Comparative analysis

COMPARATIVE STUDY- LITERATURE STUDY INDIAN CONTEXT						
Case study aspect	Ayudham society for old and infirm	Snehalaya m - old age and orphanage	Thamaraikulam elder's village	Voluntariat home for homeless children	Smiles senior citizen living	Inference

Location & site proximity	Khanpur, Delhi Located in pollution free ecofriendly environment	Pondicherry & at the heart of the city	Cuddalore & away from the main city	Pondicherry & at the heart of the city	Hyderabad & 37 km away from the main city	Preferred site location is away from main city but with hospital in 5km radius
Program	Old age & orphanage	Orphanage and old age home	Elder's village	Orphanage	Old age home	
Site area	1 acre	Less than 500 sqm	5.46 acres	450 sqm	2633 sqm	
Style	Group housings in brick and concrete	Normal residential building	Community type housings with many interaction space	Low-cost mud kiln housing	Normal residential typology	Community type with many open interaction spaces
Architect	Vinay.K. Chadha & Pravesh Ghai	—	NGO - HelpAge India	Ar.Anupama kundoo	AAB Associates	
Year	1993	2014	2014	2011	2012	
	Simple planning with shared spaces and	No extra planning but reusing an old	Planning with many sustainable techniques	Catenary shaped modules with 4-5 persons	Simple and linear planning around the	Spaces with simple and effective planning and

Architectural planning	combined spaces for 2 user groups	individual house	and active ageing activities	in each module & totally 4 modules	central courtyard	having its own identity
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Climate	Extreme climate	Tropical	Tropical	Tropical	Arid	
Material used	Brick, concrete and steel	Concrete, bricks, steel, thatch	Concrete, brick terracotta roof tiles	Mud mortar and mud bricks, glass bottles, cycle wheels, ceramic tiles, terracotta pots, chai cups	RCC framed structure	Materials to be chosen according to climate, availability, sustainability etc
Design intent	Providing a peaceful environment with all facility and EWS kids and they can be mutually benefited	Providing a shelter and providing education for kids and food for old aged and kids	Shelter for old aged people with the concept of active ageing and supported space	Achieves in providing low cost & low impact housing	Achieves the feeling of home with all basic needs and relaxing and religious spaces	Neat and simple planning with an active environment and integrating vegetation
Vegetation	Proper planning of green spaces	Small belt of natural organic garden seen in the porch area	With good amount of green cover and farming area	Decent amount of green cover throughout the site	Sensory gardens, hobby gardens are provided to improve the user's physical and mental condition	Gardens to be provided according to the needs of the user like sensory, hobby gardens
	Both vertical and horizontal is	Both vertical and horizontal	Only horizontal circulation	Only horizontal circulation	Both vertical and horizontal	User friendly circulation with

Circulation	seen throughout the building with proper connectivity	for kids and old aged respectively	for easy access throughout the site		circulation with needed facility like lifts- free flow of circulation	less vertical circulation
Day lighting	Proper design of letting natural light inside the building not with too much glare	Less naturally lit spaces	Maximum use of natural lighting with courtyards	All spaces are naturally lit and each dome has oculus shaped opening	All the rooms get enough day lighting	Maximizing natural ventilation and minimizing artificial lighting
Colour theory	Colour theory is used in the walls for easy identification of spaces	No colour theory followed	No colour theory followed	No colour theory followed	Colour theory is used in the walls of the rooms	Common facade and colour theory to be used

Table 3. 1 Comparative study Indian context

3.2 INTERNATIONAL CONTEXT

3.2.1 Sakuragien – Aomori Nursing home

Elderly centre designed to bring in natural landscape and which includes snowy climate and tree farms in that area.

Radial type planning with common facilities like dining etc takes place in the centre of each finger.

Many double height corridors are provided inside with proper railing. Many elements in the building are designed so that interaction is achieved between the elders. There are individual balconies which slips into natural surrounding which allows the residents to enjoy the scenery.



Figure 3. Sakuragien home view

CURVES

Curves in walls, furniture and pathways are provided so that the elders don't get hurt and curves direct pathways and gives a pleasing appearance. Internal courtyards are also achieved in the design to bring in nature inside the building and to provide ventilation.

PROJECT INFERENCE

PROGRAM

Elderly Nursing Home

DESIGN PROGRAM

Rooms for stay, Common dining area, Kitchen, Courtyards (Indoor), Individual balconies for each wing.

DESIGN INTENT

Is to provide spaces which induces interaction between the users. And multiple of same spaces is done.

CIRCULATION

Horizontal circulation is prominent throughout the building which helps the elderly to access easily. It also makes the connectivity easier.

MATERIALS USED

Wood for flooring and roofing, Coatings,
Glass.



Figure 3. 13 Sakuragien interiors

PLANNING

Radial type planning with common amenities at the centre and rooms and dining area in the wings.



Figure 3. 14 Sakuragien planning

3.2.2 Noomdo orphanage

Noomdo lies 2 km outside the village mimicking the nearby residence with a small communal outdoor space at the centre and surrounded by rooms. Architecture in this building is sensitive to the needs and the privacy of the users and also maintaining the security for the kids and control for the staff.



Figure 3. 15 Noomdo orphanage building views



Figure 3. 16 Noomdo orphanage site view

Villages in a scattered pattern but each cluster has a common courtyard and shared spaces. The building is constructed by mimicking the nearby village. Groups of 10-12 houses with common courtyard and interaction spaces.

PROJECT INFERENCE

PROGRAM

Orphanage

DESIGN PROGRAM

5 Courtyard buildings, shaded open dining hall, Administration rooms, Workshop, Storage, Changing rooms.

DESIGN INTENT

Mimicking the nearby residential compounds and providing a stay quarters with shared spaces and a common communal open courtyard at the centre of each building.

CIRCULATION

Horizontal circulation is prominent throughout the building which helps the admin to take careful attention of the children.

MATERIALS USED

Locally sourced materials like clay bricks

Metal roofs

Steel space frames

Barrel vault ceilings



Figure 3. 17 Building spaces and vaulted roof

Cluster type planning which facilitates interaction and monitoring children will be easier Concept of double envelope roofs are seen to minimize heat and bring in more natural ventilation. Space frames and steel roofing's are mostly used.



Figure 3. 18 Noomdo orphanage planning

3.2.3 Residential care home

It's a passive building and its modular structure can be dismantled and set up in any other site. Mostly prefab materials were used. Sustainable initiatives are taken in this project.

Gardens paves way for social interaction. Designed with the characteristics of a proper home in mind.

Special attention has been given to natural ventilation inside the building with internal courtyards and use of glass.



Figure 3. 19 Residential care home views

BUILDING DETAILS

Location: Austria

Architects: Ar.Dietger Wissounig

Year: 2015

Site area: 6950 sqm

Style: Sustainable composite construction

Status: Completed

GREEN SPACES AND BUILT SPACES

Careful design is done by considering the care home in mind. Different sizes and character are given to each open space and one particular space for recreation is designed (wooden platform).

PROJECT INFERENCE

PROGRAM

Care Home

DESIGN PROGRAM

Rooms for stay, Kitchen, Dining area, Common living room, Courtyards, Zoned gardens, Tower gallery, Therapy area, Wooden platform for recreation, Nurse station, Secondary rooms, Central air handling unit, Solar thermal plant on roof.

DESIGN INTENT

To design a space like home with maximum natural lighting and ventilation and maximize interaction inside the buildings with courtyards, zoned gardens etc.

CIRCULATION

Maximum horizontal circulation is encouraged for easy connectivity and spaces are designed. Simple circulation is seen throughout.



Figure 3. 20 Internal courtyard and pathways

PLANNING

The two-storey building consist of 4 wings arranged around a semi-public- village square designed to host various events.



Figure 3. 21 Residential care home planning

3.2.4 SOS Childrens village

This building is built according to the extreme weather condition and water scarcity with 15 individual housings combined to form a community following all traditions. Designed with plenty of open spaces and well defined public and private spaces with the integration of natural vegetation and the kids would take care of the trees and plants.



Figure 3. 22 SOS djibouti views

BUILDING DETAILS

Location: Djibouti, East Africa

Architect: Urko Sanchez

Architects

Year: 2014

Site area: 2600 sq m

Style: Climate responsive community living

Status: Completed

MODULES and PLAY OF LIGHT & SHADOWS

All the houses have the same layout of one single living dining kitchen and separate sharing rooms but arranged in different ways. Main consideration was the ventilation and light and shadow in the building. Wind catchers were placed inside the building to adjust the rough climate of the area.



Figure 3. 23 Interaction spaces and roof view of SOS djibouti

PROJECT INFERENCE

PROGRAM

Orphanage

DESIGN PROGRAM

Shared courtyards, Common dining area, Shared kitchen, Shared living, Rooms for children, Play area, Courtyards, Wind catchers.

DESIGN INTENT

To build a safe environment for the children keeping in mind the climate and disadvantages of site.

CIRCULATION

Only horizontal circulation is seen throughout the site and it is easy for monitoring the children.

MATERIALS USED

Locally sourced materials, Hollow blocks, Steel reinforcement.



Figure 3. 24 SOS djibouti planning

3.2.5 Comparative study

COMPARATIVE STUDY - LITERATURE STUDY INTERNATIONAL CONTEXT					
Case study aspect	Sakuragien-Aomori nursing home	Noomdo orphanage	Residential care home	SOS Children's village	Inference

Location & site proximity	Japan & located in the main island	West Africa & located 2 km away from the city	Austria & in the main city	Djibouti & horn of Africa	Preferred site location is away from main city but with hospital in 5km radius
Program	Nursing home	Orphanage	Care home	Orphanage	
Site area	5700 sqm	4000 sqm	6950 sqm	2600 sqm	
Style	Contemporary	Modular courtyard building	Sustainable composite construction	Climate responsive community living	Community type with many open interaction spaces
Architect	Waiwai Architects	Francis kere	Ar.Dietger Wissounig	Urko Sanchez Architects	
Year	2020	2016	2015	2014	
Architectural planning	Radial type planning	Mimicking the nearby village (sustainable way)	4-Winged arrangement of blocks with common courtyards	Individual housings combined to form a community	Simple planning of space with proper accessibility and ventilation

Climate	Snowy climate	Tropical	Continental climate	Subtropical desert	
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Material used	wood, coating and glass	clay bricks, metal roof, steel space frame	Wood, glass, precast concrete walls & slab	Hollow blocks, steel reinforcement	Locally available materials for them to adapt easily
Design intent	Shared spaces with separate rooms and this type are repeated	Creating a stay area and communal courtyard to increase interaction between kids	Designing a space like home by merging inside outside by natural ventilation & lighting	To provide a safe environment for kids keeping in mind the harsh climate	Neat and simple planning with an active environment and integrating vegetation
Vegetation	No vegetation	No planned vegetation only few existing vegetation on site	Proper design of green spaces that calm the users	Courtyard spaces with natural vegetation but in micro level	Proper green cover throughout the site
Circulation	Mostly horizontal circulation	Horizontal circulation throughout site	Both horizontal and vertical circulation	Only horizontal circulation	User friendly circulation with less vertical circulation

Day lighting	Naturally lit spaces	Natural lighting is prominent	Maximum use of natural lighting with courtyards and glass windows	All spaces are naturally lit	Maximizing natural ventilation and minimizing artificial lighting
Colour theory	Colour theory is used in the walls for easy identification of spaces	No colour theory followed	Colour of raw materials that does not have any effect on user	No colour theory followed	Simplicity is best choice for old aged by following colour theory

Table 3. 2 Comparative study international context

CHAPTER 4

4.AREA ANALYSIS

4.1 Area requirements

ALL STANDARDS REFERED FROM TSS, NBC **Area statement**

Table 4. 1 Area statement

AREA STATEMENT		
	In sqm	
SITE AREA	35,000	8.6 acres
Built up area	8298.2	
Circulation area	2654.4	30% of built up
TOTAL BUILT UP AREA	10952.6	2.91 acre
GROUND COVERAGE 45% OF SITE AREA	15750	3.89 acres
FARM AREA	4596	1.13 acres
FSI 2.0		

Number of users

Table 4. 2Number of users

Total users: 1000 Ppl	Design types of housing
Old age 250 ppl	Family units for kids
Children :250 ppl	Cluster units
Others: 200 ppl	Sharing rooms for old aged

Area for landscaping

Table 4. 3Area for landscaping

LANDSCAPE	Area in sqm
Farming	4046
Herbal garden	200
Reflexology pathways	50
Meditation/yoga	100
Play area / ground	200
Total	4596

Overall area

Table 4. 4Overall area

MAIN PROGRAM	Area in sqm
Parking	4050
Administration block	454.5
Housing	1314.4
Kitchen	62
Guest house	486
Admin accommodation	18
Medical Building /assisted living	139.5
Recreational/religious space	623
Organic farm shop	
Learning space	1334.8

Individual area statement

Table 4. 5 Individual area statement

SPACE	AREA PER	NO OF USERS	NO OF ROOMS	TOTAL
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	PERSON in sqm			AREA in sqm
PARKING				4050
Watchman room		2	1	9
Rest room		10	4	16
Parking - Car	15 sqm / car		200	3000
Parking -Bike	3sqm/bike		300	900
Parking van	25sqm/van		5	125
Total				4050
ADMINISTRATION				454.5
Lobby /waiting area	1.25	100	1	125
Lounge	1.25	100	1	125

Reception		1	1	14
Adoption home office		5	1	20
Waiting area	1.25	50	1	62.5
Admin office		3	1	20
Record room			2	28
Utility room			2	28
Meeting room	1	10	2	20
Toilet			3	12
Total				454.5
HOUSING				
Family unit for kids		10+1	8	1314.4
For 1 cottage				
Common living	2.3	11	1	25.3
Rooms [beds]	2.3	10	5	115
Foster room	2.3	1	1	12
Toilets			3	12
For 1 unit			1	164.3
For 8 cottages			8	1314.4
Cluster unit		4+1	48	2496
Living	2.3	5	1	12
Kitchenet/Dining	0.12/1.8	5	1	10
Wash area	0.8	5	1	5
Rooms [Beds]	3	5	1	15
Toilet			2	10

For 1 unit			1	52
For 48 Units				2496
Sharing rooms		2*104	13/8 each	1370
lobby	1	35	3	105
Kitchenet/Dining	0.12/1.8	35	3	210
Rooms [8 Beds]	2.3	8	13	240
Toilet			26	130
For 1 building				685
For 2 buildings				1370
GUEST ACCOMODATION				486
Lobby	1	45	1	45
Rooms	2.3	3	15	300
Common dining	1.8	45	1	81
Toilets			15	60
Total				486
ADMIN ACCOMODATION				18
Rooms	1	2	3	6
Toilet			3	12
Total				18
KITCHEN			2	62
Cooking area	0.5	10	2	10
Washing area	0.5	10	2	10
Waste disposal area			1	5
Storage			1	6
Total area				31
MEDICAL BUILDING				139.5
Lounge	0.65	10	1	6.5
Doctor's cabin	2	2	1	4
Pharmacy	1	10	1	10
Physiotherapy centre	3	10	1	30
Check-up rooms	2.3	5	1	11.5

Nursing area for assisted living	3.5	15	1	52.5
Store			1	15
Waste disposal			1	10
Toilet			3	12
Total				139.5
LEARNING SPACE				1334.8
Classrooms	1.8	72	8	1036.8
Lab	1.8	65	2	234
Toilets		1 for 25	16	64
Total				1334.8
RECREATIONAL AND RELIGIOUS SPACES				623
Organic farm shop		30	1	100
Multipurpose hall	0.65	200	2	260
Meditation space	1	100	1	100
Indoor games	1	100	1	100
Library	0.63	100	1	63
Total				623

4.2 Standard analysis

4.2.1 TNCDRBR -2019

(i)	When it is intended to serve upto 8 dwellings or up to 600 square metres of commercial building and the length of the passage does not exceed 80 metres.	3.6 metres
(ii)	When it is intended to serve upto 12 dwellings or upto 2,400 square metres of commercial building and the length of the passage does not exceed 100 metres.	4.8 metres
(iii)	When it is intended to serve not more than 16 dwellings or up to 3000 square metres of commercial building and the length of passage does not exceed 120 metres.	6 metres
(iv)	When it is intended to serve not more than 20 dwellings or up to 6000 square metres of commercial building and the length of passage does not exceed 120 metres.	7.2 metres
(v)	When it is intended to serve more than 20 dwellings or more than 6000 square metres of commercial building.	9 metres

Explanation 1.— (i) Road width means the road space as defined in Rule 2(103). The qualifying road width for permitting non High Rise buildings with more than 12 m height upto 18.30m shall be available atleast for a prescribed length of 250m in the case of CMA and other Municipal Corporations and 100m for the other areas along the length of the road abutting the site and the stretch from a junction can be straight or a curve or zigzag or combination of the above.

(ii) In the event of the road width being less than the qualifying width in certain portions then the **total length of such portions shall not be more than 10% of the prescribed length.** In such cases the average road width for the prescribed length shall be equal or above the qualifying width.

(iii) In the event of the sub-division for qualifying road not being incorporated in the Field Measurement Block sketch, in such cases road width certificate shall be obtained from the concerned Executive Authority.

(iv) In the event of variation of site extent and dimension of the site between Patta and document the least extent of the site to be considered along with site dimension corresponding to the least extent.

Explanation 2.— (i) In the event of more than one block on Non High Rise Building in a site, **then the distance between one block for building upto 12m in height shall be 3.0m and for buildings more than 12m height up to 18.30m in height shall be 6.0m.**

(ii) In the event of more than one block with varying height in a site, the setback of each block shall be regulated in accordance with the height of the building.

(vi) The minimum road width, FSI, set back etc. for Non High Rise buildings upto 18.30m height and exceeding 16 dwelling units and exceeding 300 square metres of commercial building shall be regulated according to the table below:

Sl No	Description	Continuous Building Areas	Other areas
1	2	3	4
A	Minimum road width		9.0 m
B	Maximum Height		18.30 m
C	Maximum FSI		2.0
D	Minimum Set back	Where Street Alignment/new road is prescribed, it shall be from that street alignment/ new road line. In the case of others, it shall be from the property boundary.	
E	Front set back	Abutting road width	FSR
		From 9.0m. upto 18m.	3.0m
		More than 18m. upto 30.5m	4.5m
		More than 30.5m	6.0m
F	Side Set back / Rear Set back	Height of the building	SSB / RSB
		Upto 7m	1.0m
		More than 7m upto 12m	1.5m
		More than 12m upto 16.0m	2.5m
		More than 16m upto 18.30m	3.0m

(v) Passage

Description	Passage width
A. Non High Rise buildings upto 12m height	
If the site does not directly abut a public road but gains access through a private passage or through a part of the plot which can be treated as a passage from a public road of minimum width as prescribed above, the minimum width of such passage shall be as follows:	
When it is intended to serve upto 8 dwellings	a) CBA / EWS areas - 1 m b) Other areas - 3 m
B. Non High Rise buildings exceeding 12.0m in height upto 18.30m height or exceeding 16 dwelling units	
If the site does not directly abut a public road but gains access through a private exclusive passage or through a part of the plot which can be treated as a passage from a public road of minimum width as prescribed above, the minimum width of such passage shall be as follows:	

Planning parameters for non-high rise with more than 16 dwellings

42. Corridor / Verandah Width.— The minimum width of corridor or verandah within buildings shall be as given below.

Sl. No.	Building use or type	Minimum width of corridor or verandah
(i)	Residential buildings	1.0 m
(ii)	Assembly buildings such as Auditoriums, Kalyanamandapams, cinema theatres, Religious buildings, temples, mosques or churches and other buildings of public assembly	2.0 m
(iii)	Institutional buildings	
a)	Government offices	2.0 m
b)	Hospitals	2.4 m
c)	Educational Buildings such as schools, colleges, Research Institutions	2.0 m
d)	Commercial buildings such as private offices, Nursing Homes, etc.	2.0 m
e)	All other buildings including hotels	1.5m

Corridor and verandah width

(iii) **Buildings to be designed for Non-Ambulant Disabled People:**

Schools for differently abled and other buildings such as Residential building, Educational building, Institutional building, Assembly building, Business building, Mercantile building, Industrial building, Storage building, Hazardous building, Mixed Land use buildings, Wholesale Establishment and along with Botanical Gardens, Religious Buildings, Elderly People Clubs, Village Halls, Day Centers, Junior Training Centers, Post Offices, Banks, Dispensaries, Railway Stations, Shops, Super Markets, and Departmental Stores.

Note:

Large wheel chair criteria shall be applicable on ground floor of the following building: post offices, banks, dispensaries, railway station, shops, supermarkets, and departmental stores.

(iii) **Buildings to be designed for Non-Ambulant People (using small wheel chairs)**

Public lavatories in Tourist Sports, Clubs, Motels, Professional and Scientific Institution, Museum, Art Galleries, Public Libraries, Laboratories, Universities, College for further Education, Teachers Training Colleges, Technical College, Exhibition Halls Dentist Surgeons, Administrative Department of the Hospitals, Service Stations, Car Parking.

Buildings Airports Terminals, Bus Terminals, Factories.

Employing differently-abled for sedentary works, Large Offices, with plinth area above 1400 sq.mt., Tax Offices, Passport Offices, Pension Offices, and Labour Offices, Cafes, Banqueting Rooms and Snack Bars (For capacity above 100 diners).

(i) **Site development:**

Level of the roads, access paths and parking areas shall be described in the plan along with specification of the materials.

Access Path / Walk Way

Access path from plot entry and surface parking to building entrance shall be minimum of 1800 mm wide having even surface without any steps. Slope, if any, shall not have gradient greater than 3%. Selection of floor material shall be made suitably to attract or to guide visually impaired persons (limited to coloured floor material whose colour and brightness is conspicuously different from that of the surrounding floor material or the material that emits different sound to guide visually impaired persons) hereinafter referred to as "guiding floor material".

Finishes shall have a non-slip surface with a texture traversable by a wheel chair. Kerbs wherever provided should blend to a common level.

(c) **Parking:**

For parking of vehicles of differently-abled people, the following provisions shall apply:

(i) **Surface parking for two car spaces shall be provided near entrance for the physically differently-abled persons with maximum travel distance of 30m from building entrance.**

(ii) **The width of parking bay shall be minimum 3.6 meter.**

(iii) The information stating that the space is reserved for wheel chair users shall be conspicuously displayed.

(iv) 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.

(d) **Building requirements**

The specified facilities in buildings for persons shall be as follows:

(i) **Approach to plinth level:**

Every building should have at least one entrance accessible to the differently abled and shall be indicated by proper signage. This entrance shall be approached through a ramp together with the stepped entry.

(ii) **Ramped Approach:**

Ramp shall be finished with non-slip material to enter the building. Minimum width of ramp shall be 1800mm with maximum gradient 1:12. Length of ramp shall not exceed 9.0 meter having 800mm high hand rail on both sides extending 300mm beyond top and bottom of the ramp. Maximum gap from the adjacent wall to the hand rail shall be 50mm.

(iii) **Stepped Approach:**

For stepped approach size of tread shall not be less than 300mm and maximum rise shall be 150mm. Provision of 80mm high hand rail on both sides of the stepped approach similar to the ramped approach.

(iv) **Exit/Entrance Door:**

Minimum & clear opening of the entrance door shall be 900mm and it shall not be provided with a step that obstructs the passage of a wheel chair user. Threshold shall not be raised more than 12mm.

(v) **Entrance Landing**

Entrance landing shall be provided adjacent to ramp with the minimum dimension 1800mm x 2000mm. The entrance landing that adjoins the top end of a slope shall be provided with floor materials to attract the attention of visually impaired persons (limited to coloured floor material whose colour and brightness is conspicuously different from that of the surrounding floor material or the material that emits different sound to guide visually impaired persons). Finishes shall have a non-slip surface with a texture traversable by a wheel chair. Kerbs wherever provided should blend to a common level.

(vi) **Corridor connecting the entrance/ exit for the differently abled:**

The corridor connecting the entrance / exit for differently abled 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 device that emits sound to guide visually impaired persons.
- (b) **The minimum width shall be 1500mm.**
- (c) **In case there is a difference of level, slope ways shall be provided with a slope of 1:12.**
- (d) **Handrails shall be provided for ramps/slope ways.**

(vii) **Stair-ways:**

One of the stair-ways - near the entrance / exit for the differently abled shall have the following provisions:

- (a) **The minimum width shall be 1350 mm.**
- (b) **Height of the riser shall not be more than 150 mm and width of the tread 300mm.**
- (c) **The steps shall not have abrupt (square) nosing.**
- (d) **Maximum number of risers on a flight shall be limited to 12.**
- (e) **Handrails shall be provided on both sides and shall extend 300 mm on the top and bottom of each flight of steps.**

(ix) **Toilets:**

One special W.C. in a set of toilets shall be provided for the use of differently abled with essential provision of washbasin near the entrance for the differently abled.

- (a) **The minimum size shall be 1500 mm x 1750 mm.**
- (b) **Minimum clear opening of the door shall be 900mm and the door shall swing out.**
- (c) **Suitable arrangement of vertical/horizontal handrails with 30mm clearance from wall shall be made in the toilet.**
- (d) **The W.C. seat shall be 500mm from the floor.**

(x) **Proper signage:**

- (a) **Appropriate identification of specific facilities within a building for the differently abled persons should be done with proper signals.**
- (b) Visually impaired persons make use of other senses such as hearing and touch to compensate for the lack of vision, whereas visual signals benefit those with hearing disabilities. Signs should be designed and located so that they are easily legible by using suitable letter size (not less than 20 mm high).

Provisions for differently abled, elders & child

- 64. Fire Safety.**— (1) In general, all buildings in their design and construction shall be such as to contribute to and ensure individually and collectively the safety of life from fire, smoke, fumes and also panic arising from these or similar other causes. In large buildings a fire may not itself provide adequate warning to occupants; automatic fire detecting and alarming facilities shall be provided where necessary to warn occupants or the existence of fire, so that they can escape.
- (2) Fire protecting and extinguishing system shall conform to accepted standards and shall be installed in accordance with good practice as recommended in the National Building Code of India (amended from time to time).
- (3) the requirements for fire protection shall include high rise buildings which are of 18.30m. and above in height and public buildings, commercial complexes or malls, cinema theatre kalyana mandapam, community hall, all categories of industries and warehouses, commercial buildings where explosives, fire crackers and other similar inflammable materials are handled or traded.

Fire safety

(1) **Residential**

(A) Corporation or Municipal Areas		(B) Panchayat Areas	
Dwelling Unit with	Number of Parking Spaces	Dwelling Unit with	Number of Parking Spaces
Floor area upto 25 sq.m	Nil	Floor area upto 50 sq.m	Nil
Floor area above 25 sq.m and upto 50 sq.m	1 Two Wheeler space	Floor area above 50 sq.m and upto 75 sq.m	1 Two Wheeler space
Floor area above 50 sq.m and upto 75 sq.m	1 car space for every 2 dwelling units and 1 Two Wheeler space for every dwelling unit	Floor area above 75 sq.m and upto 100 sq.m	1 car space for every 2 dwelling units and 1 Two Wheeler space for every dwelling unit
Floor area above 75 sq.m	1 car space for every 75 sq.m	Floor area above 100 sq.m	1 car space for every 100 sq.m
Visitors Parking: In addition to the parking spaces specified above, parking spaces for visitors shall be provided to the extent of 10% of the number stipulated above rounded to the nearest whole number where number of dwelling units exceeds six.			
Note: 1. In cases where the number of car parking spaces required in an ordinary residential building does not exceed 3 in number, separate driveway or aisle is not necessary. 2. In cases of flatted residential development where the number of car spaces required for a dwelling unit does not exceed 2 in number separate aisle is not necessary for the second car space required for that dwelling unit.			

Parking

4.2.2 Time saver standards

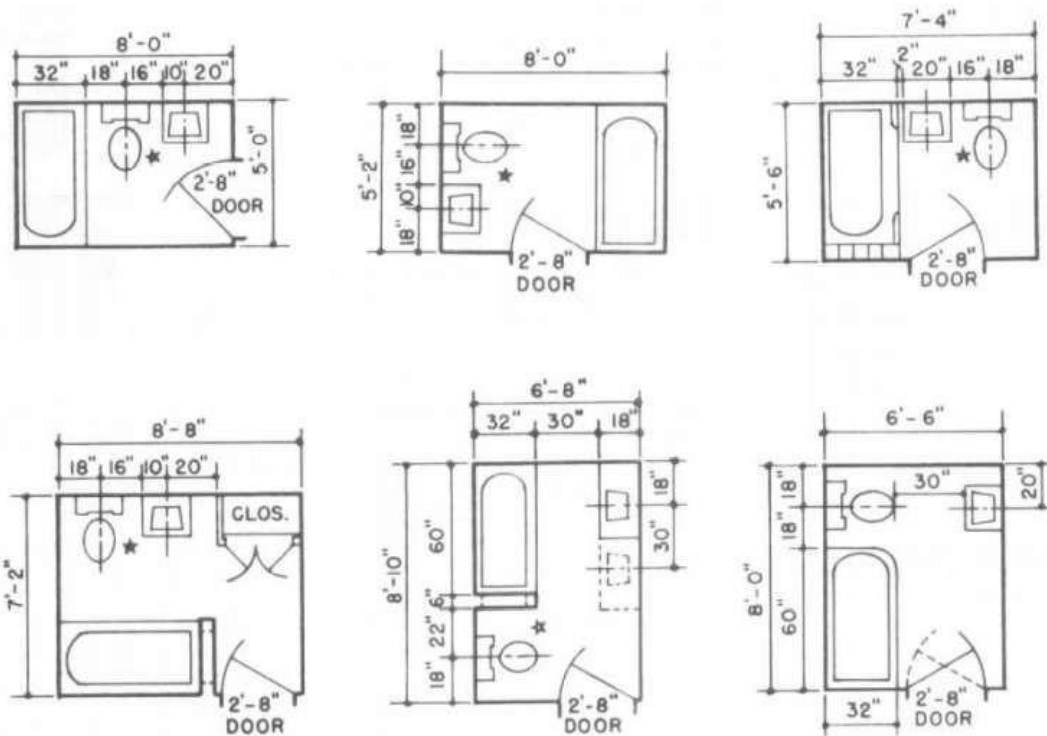
4.2.2.1 Housing for the elderly

TABLE 1 Room Areas for Various Types of Housing Accommodations

No. of persons	No. of rooms	Types of rooms	Room area, sq ft					Total area
			Bedroom (B)	Living room (L)	Dining (D)	Kitchen (K)	Bath	
1	4	B,L,D,K	100	80-90	40	50	50	320-330
1	3	B,L,D,K	100-120	120-160		50	35-50	305-380
1	2	B,L,D,K	180		90		50	320
1	2	B-L-D-K		175-200		45-50	35-40	255-290
2	3	B,L,D-K	130-140	150	75-90		40-50	355-430
2	3	B,L-D,K	125-130	155-190		50	40-50	370-420

Data in this table have been compiled from various state regulations and recommendations.

Room areas for various housing



6 Bathrooms with tubs.

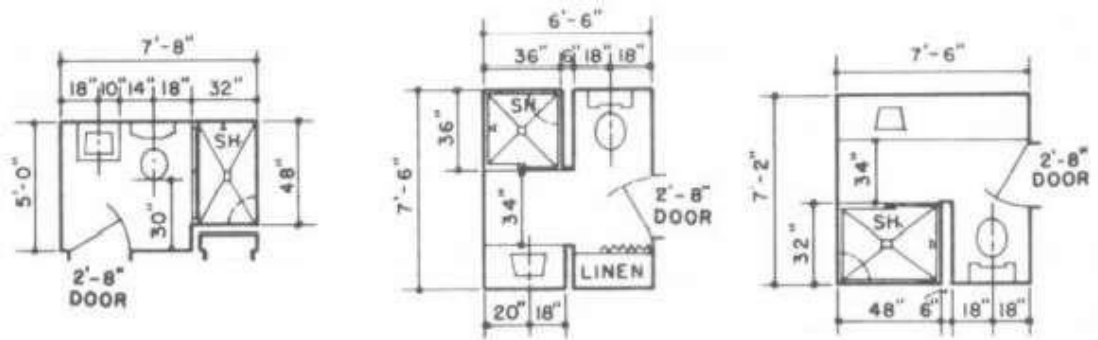


Fig. 7 Bathrooms with showers.

Bathroom with tubs & Bathroom with shower

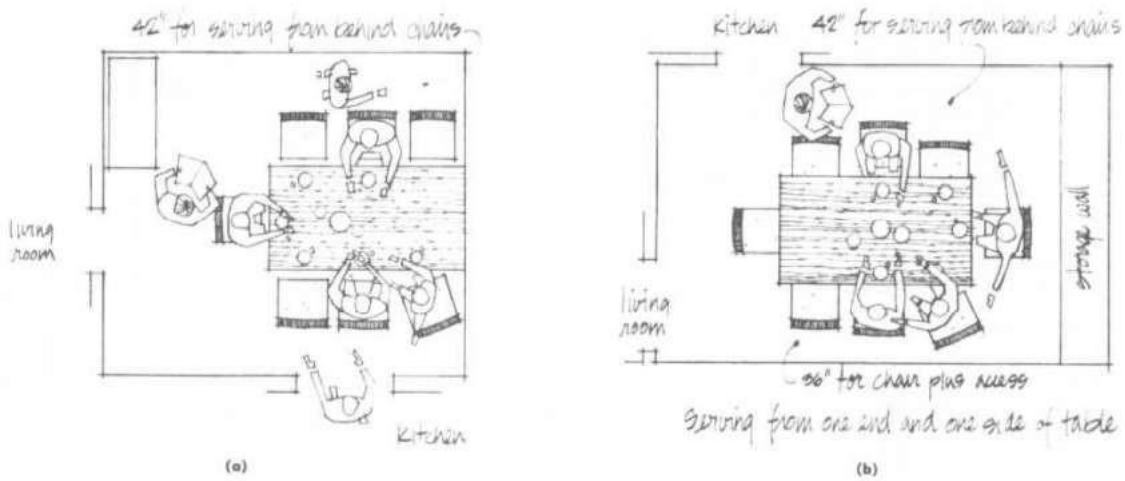
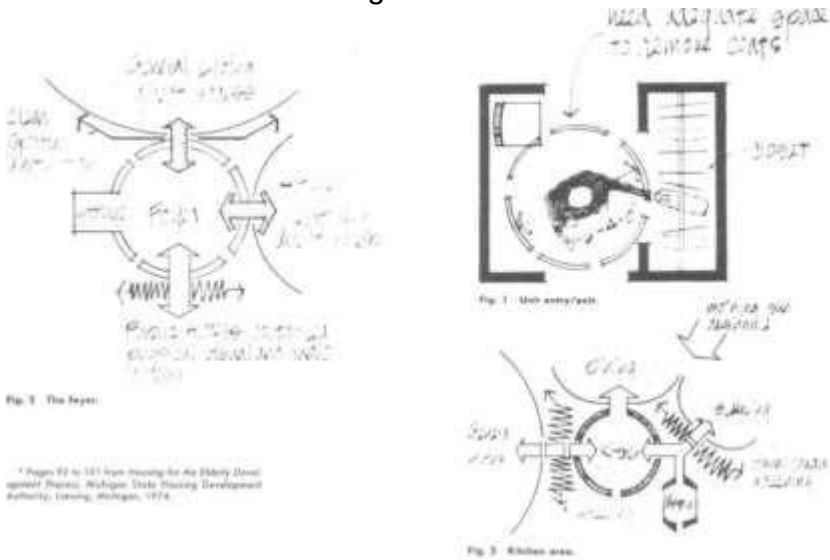
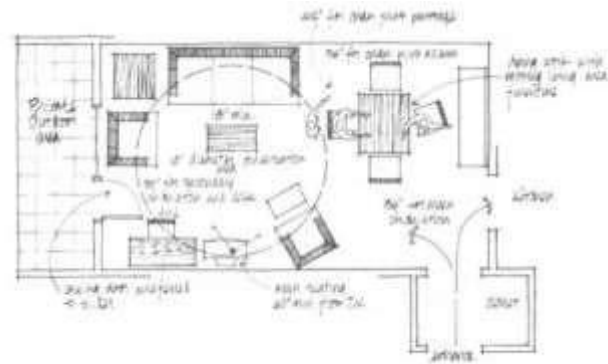
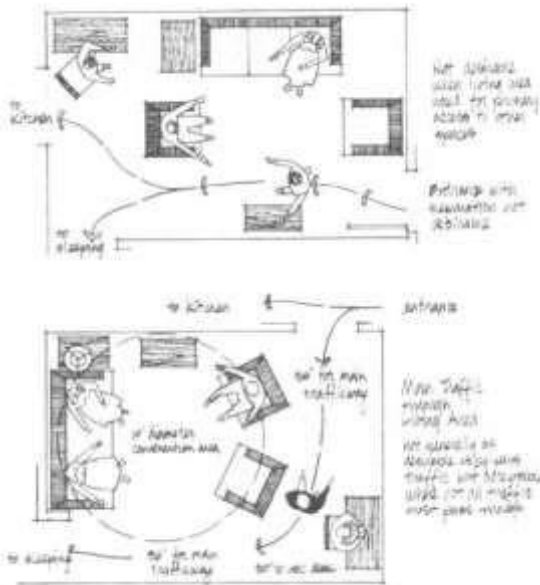


Fig. 9 Minimum clearances for dining areas: (a) one end of table against wall; (b) serving from one end and one side of table

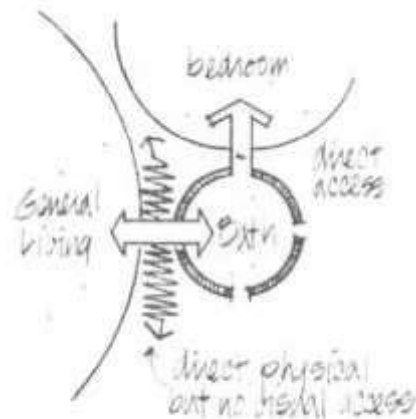
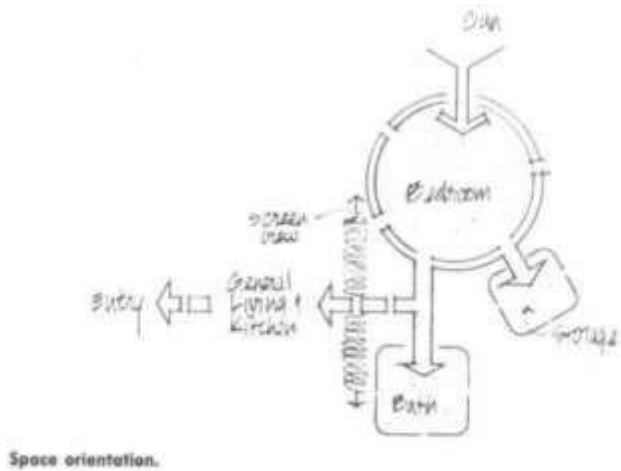
Minimum clearance for dining area



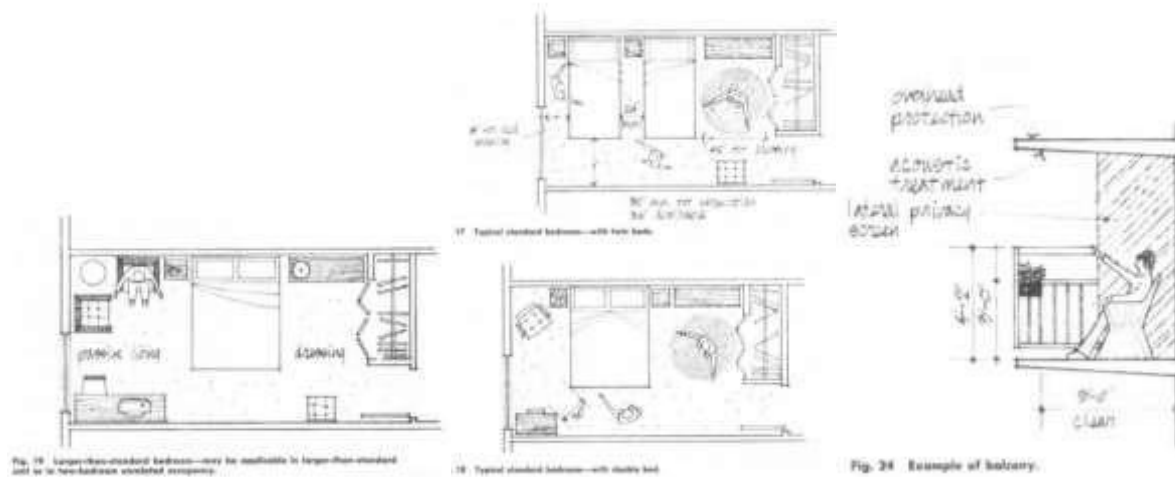
Circulation from entrance



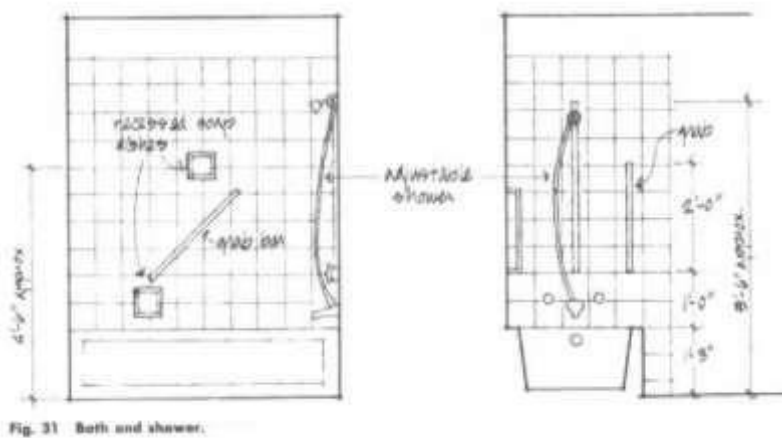
Minimum clearance for living area



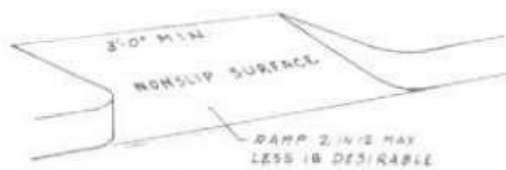
Space orientation and Accessibility of bathroom



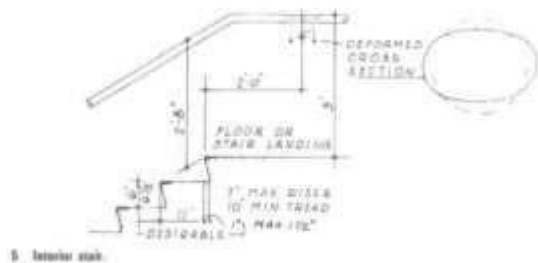
Bedroom with double bed and balcony



Bath and shower elevation



Housing for the handicap & Ramp ratio



Indoor staircase

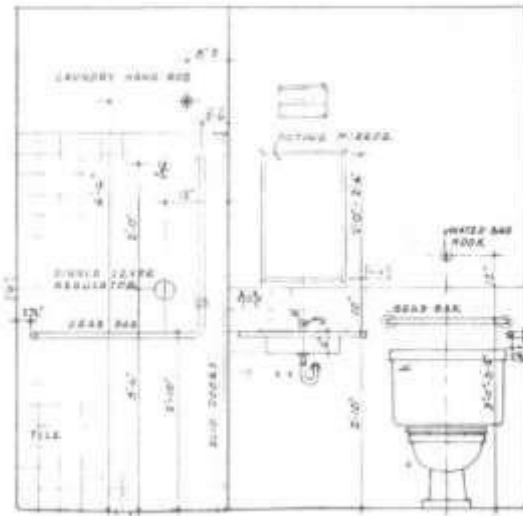


Fig. 34 Bathroom-shower allocation. A grab bar above the toilet assists person making a frontal approach. Shower regulator with temperature control is recommended.

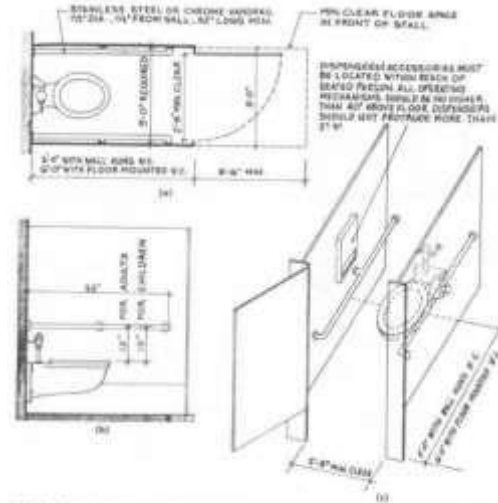


Fig. 42 Toilet stall. (a) Plan. (b) Elevation. (c) Section. Source: "An Illustrated Handbook of the Handicapped Section of the North Carolina State Building Code," Raleigh, 1971.

Toilet and bathroom stall

4.2.2.2 Housing for senior citizen

GENERAL CONSIDERATIONS AND RECOMMENDATIONS

Need	Design recommendations
1. Location	a. Accessible to public transportation. b. Centrally located—near transit but with element of privacy from other public facilities, if possible (e.g., museum, public, schools). c. Level ground is desirable.
2. Site	a. One level is desirable—desirable for more than two floors.
3. Layout	a. Window views while seated and physical ease of access to program activities. b. Layout of staff buildings.
4. Heating and ventilation	a. Mechanical heating and ventilation throughout. b. Separate thermostat control for selected program areas.
5. Utilities	a. Adequate wiring for electric kitchen appliances, kils, power machines, audio visual equipment, etc. b. Water-high electric resistance in all rooms and permanent outlets as required for power tools, projection equipment, etc. c. No loose floor wiring. d. Intercommunication system for music, announcements, etc. e. Fire alarm.
6. Lighting	a. Unobstructed line of sight. b. Additional lighting in well areas for depth perception.
7. Acoustic	a. Sound control and structural ratings throughout—special provisions where required. b. Investigate problems of hearing aids in large areas. Individual head phones where microphone is used.
8. Equipment	a. Record tape machines, film projection and control equipment, radios, pipes, etc.
9. Safety	a. No projecting parts. b. All flooring slip-proof. c. Elimination of step lifts. d. Single circulation between program areas in order to avoid collision. e. Doors wide enough for wheelchairs. f. Handrails along hallways.
10. Color	a. Color identification throughout, specifically exits, fire equipment, etc. b. Light, bright interior colors.
11. Storage	a. Avoidance of institutional character. b. Storage for each area (see program design recommendations.)

SPACE CONSIDERATIONS

Space	Recommended area/person	Recommended minimum area
1. Entry/Reception	15 sq. ft./person	150 sq. ft.
2. Coat-room storage	one fixed seat — a garment	30 sq. ft.
3. Guest lounge & library	35 sq. ft./person plus built-in book case	
4. Waiting lounge	35 sq. ft./person	
5. Kitchen and storage	7 sq. ft./person for seated staff use	
6. Meeting room and/or classroom	15 sq. ft. for dining and table set-up *See footnote	
7. Arts and Crafts	25 sq. ft./person	
8. Visual working	40 sq. ft./person	600 sq. ft.
9. Painting, ceramics and handicraft	25 sq. ft./person	250 sq. ft.
10. Photography Dark Room	80 sq. ft.	80 sq. ft.
11. Arts and Crafts storage	—	80 sq. ft.
12. Administration & Staff Office	—	
a. Director and other offices	—	120 sq. ft.
b. Staff and/or general office	30 sq. ft./person/ft ²	150 sq. ft.
c. Private Consultation	30 sq. ft./person	600 sq. ft.
d. Staff Rest room	25 sq. ft./person	150 sq. ft.
13. First Aid Room	—	100 sq. ft.
14. Storage (General)	—	100 sq. ft.
15. Toilets	—	(See footnote or Hart Building Code)
16. Outdoor Recreation Areas	Varies with site and climate	
17. Parking	allow 250 sq. ft./car for parking	

* Notes: Size of kitchen would depend on the agency program in respect to serving of meals, snacks, parties, etc.

General considerations

LOUNGES AND AUDITORIUM

Need	Means and equipment	Design recommendations
1. Quiet Lounge		
Activities		
Reading	a. Comfortable chairs	a. Self-contained lounge area
Writing	b. Tables, desks	b. Fireplace
Relaxing	c. Books, newspapers,	c. Storage space for
Need	Means and equipment	Design recommendations
Quiet games	magazines	1. Games (Chess, checkers, dominoes, cards)
Meetings	d. Games and cards e. Folding chairs, tables	2. Extra folding chairs & tables 3. Books, magazines, newspapers
2. Noisy Lounge		
Activities		
Cards	a. Chairs and tables	a. Self-contained lounge area
Active games	b. Extra folding chairs and tables	b. Storage space for
Conversation		1. Games (Cards, cues, billiard balls, etc.)
Parties (small)	c. Pool table	2. Folding tables and chairs
Meetings	d. Piano	3. Record player
3. Auditorium		
Activities		
Parties	a. Chairs—folding and nonfolding	a. Area for theater; nonpermanent type seating
Dancing		b. Stage
Movies	b. Tables—folding and nonfolding	c. Easy access to stage
Stage Productions		d. Back-stage dressing room
Concerts	c. Audio-visual equipment	e. Storage for
	d. Piano	1. Folding chairs and tables
Speakers and Panels	e. Other musical instruments	2. Costumes
Large meetings		3. Decorations
Carnivals; bazaars	f. Music stands	4. Musical instruments
Community Service Projects	g. Public address system	5. Music stands
Seated dinners for entire membership	h. Decoration	6. Audio-visual equipment (Storage area may be under stage or adjacent to room)
	i. Wall exhibits	f. Near kitchen and/or dining room
		g. Near toilets
		h. Wiring for audio-visual equipment must avoid loose floor extension
		i. Wall display space and cabinets
		j. Folding doors

DINING AND REFRESHMENT FACILITIES

Need	Means and equipment	Design recommendations
1. Food Preparation and Service	a. Cooking and baking equipment b. Refrigeration c. Washing equipment for: 1. Dishes, cutlery 2. Pots and pans 3. Kitchen and dining room cleaning d. Cabinets for: 1. Dishes, pots, cutlery 2. In-use food supplies and staples e. Counters for: 1. Food preparation 2. Food Service 3. Return of trays, used dishes f. Garbage disposal equipment g. Coffee urns h. Bulk food supplies	a. Electrical dishwasher, electric stoves, electric refrigerator b. Easy access cabinets—not more than 63 inches high, nor lower than 27 inches for food, dishes, pots, pans, etc. c. Exhaust system d. Counter space for several serving stations e. Counter space for tray returns f. Sinks for washing food and cooking utensils and vegetable preparation g. Counter space for preparation of food—ample for several kitchen workers h. Bulk Storage: 1. Adjacent to kitchen for bulk purchased stock 2. Direct outside access for deliveries i. Area for garbage pails, cleaning equipment, garbage disposal, slop sink for mops j. Floor drain wash basin
2. Dining and Snack Service	a. Serving counter and steam tables b. Tray-cutlery-napkin stand	a. Dining area (Cafeteria-style—avoids service of total membership at one time) b. Location—adjacent to large lounge

Need	Means and equipment	Design recommendations
	c. Drinking fountain d. Cashier's table and chair e. Dietician's desk-file f. Program material for groups g. Serving carts—for service other than in cafeteria	- or auditorium for seated service of entire membership or other special events c. Counter for sliding trays d. Aisle space to and from counter e. Storage space for trays, cutlery, napkins f. Storage closet for program equipment (Dining room may be used outside of dining hours by special interest groups) g. Storage for serving carts
3. "Portable Home Food Service"*	a. Trays, steam carts b. Car, station wagon, truck	a. Storage for equipment b. Direct access of vehicle to kitchen

* "Portable Home Food Service" is an auxiliary service to home-bound older people, now being offered by some centers, which brings one hot meal and often an additional meal per day into the home of older people in need of such service. It is also alluded to as "Meals on Wheels."

4.2.2.3 Youth hostel & Typical toilet layout

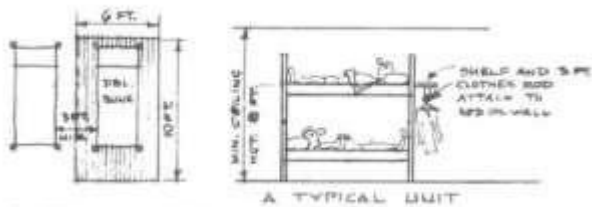


Fig. 3. Minimum area per double bank, 50 sq ft.

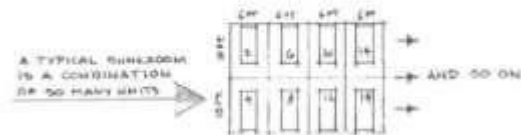


Fig. 9. A typical work team is a combination of many units.

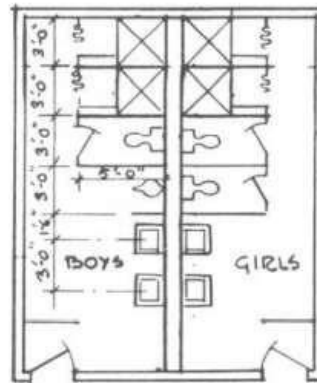


Fig. 10 Typical toilet layout. Note back-to-back placement of plumbing fixtures for economy; common plumbing wall for ease of plumbing access; washroom area separate from toilet area for better usage; water closets in separate compartment for privacy; screen at entrance door to shield interior.

Bunk bed and toilets



Fig. 10. Arch-based bridge design II.



Fig. 14: Test fixture design 4

Hostel design layout

4.2.2.4 Hospitals

HOSPITALS Pharmacy



Legend

1. Pneumatic tube station
2. Desk
3. Typewriter, electric, nonmovable carriage
4. Chair
5. Files, intermediate height
6. Files, swinging panel, strip insert type
7. File, revolving on two levels
8. Table, movable, 2 feet by 3 feet
9. Waste receptacle
10. Photocopier
11. File, 2-drawer
12. Utility pole
13. Telephone
14. Shelving, adjustable, 12 inches
15. Safe
16. Refrigerator, with freezer
17. Counter, with file drawer, bins
18. Shelving, adjustable, 7 inches
19. Counter, dispensing
20. Two-shelf unit above counter
21. Chumbwater, open both sides
22. Cabinet, with sink, drain board
23. Cabinet, wall-mounted
24. Bins, on top of hood
25. Hood, laminar airflow, vertical or horizontal
26. Counter, with open adjustable shelving beneath
27. Cart, storage
28. Carts, utility
29. Desk, small
30. Bookcase, wall-mounted
31. File cabinet, 5-drawer
32. File, visible index type
33. Counter, with adjustable shelving beneath
34. Shelving, wall-mounted, 8 inches
35. Shelving, adjustable, rail-mounted

Fig. 1 Pharmacy department in a 100-bed hospital. From *Planning for Hospital Pharmacies*, DREW Pub. No. 1963/77-6032, U.S. Department of Health, Education, and Welfare, Washington, D.C., 1977.

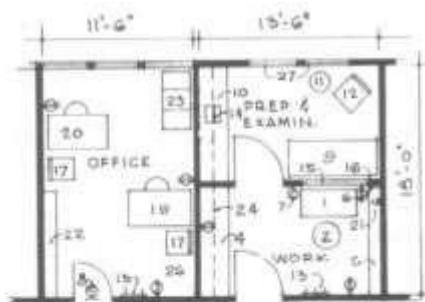


Fig. 1 Minimum 200 beds.

Equipment list

1. Electromyograph, console type
2. Shelf
3. Steel cabinet with shelving and door
4. Work bench, cabinet below
5. Shelf
6. Photocopying panel (if used)
7. Clock with swing second hand above glass panel
8. Clock outlet
9. Adjustable hospital bed
10. Sink in counter, cabinets below
11. Secondary waste receptacle
12. Chair for patient preparation
13. Hook strip
14. Mirror above sink
15. Drain window
16. Two holes through wall, 3 in., 20 in.
17. Front door
18. Armchair
19. General office-type desk and chair
20. Typewriter desk and chair
21. Executive-type desk and chair
22. Two-pole switch for light in patient's room
23. Filing compartments for ECG recordings
24. File cabinets, legal size
25. Cabinet above for electrodes, etc.
26. Work table
27. Duplex outlets

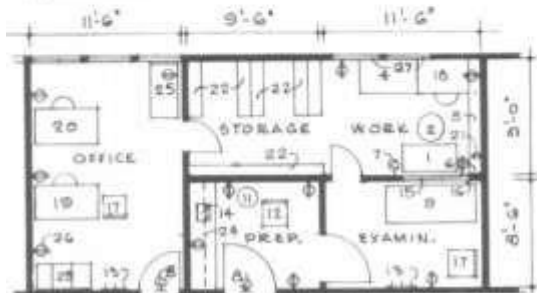
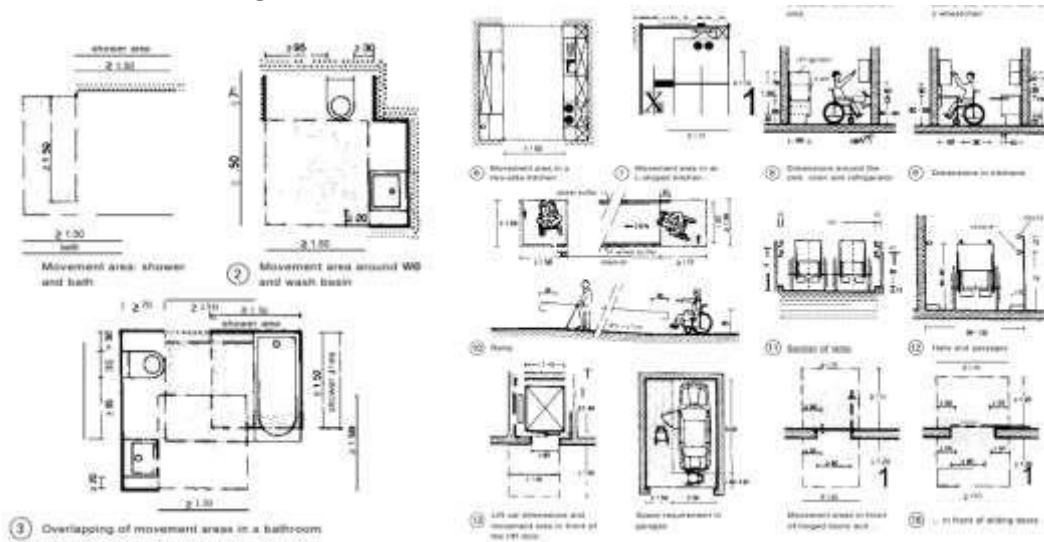


Fig. 2 Recommended suite with separate preparation and consulting rooms.

Pharmacy and physical therapy

4.3 NEUFERT – ARCHITECTS DATA

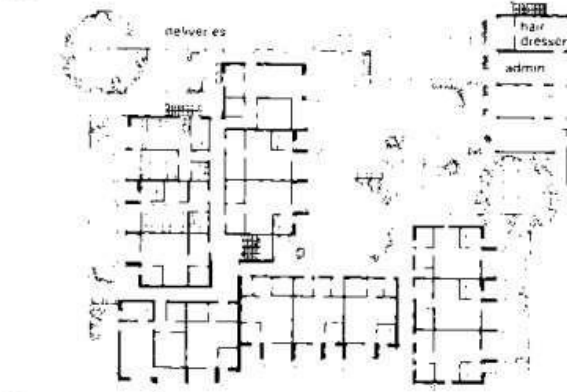
4.3.2 Barrier free living



Space requirement for parking and bathroom



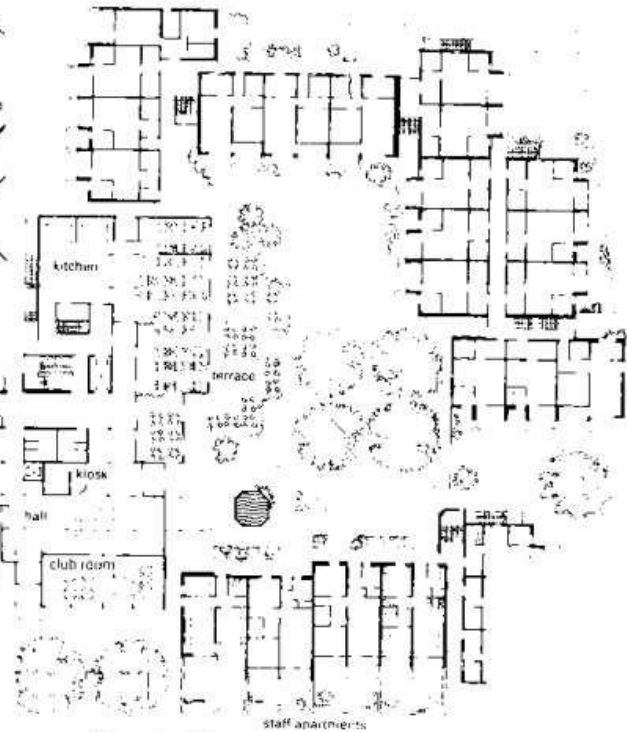
⑤ Part of a pilot project



⑥ Ground floor, old people's home and nursing home

should be considered. The ability to control temperature and sunlight penetration, particularly in bedrooms and sitting rooms, is important to residents. Hot pipes and heaters must be protected: the maximum acceptable surface temperature is around 43°C.

Hot water systems must be designed to resist infection such as that causing Legionnaire's disease.

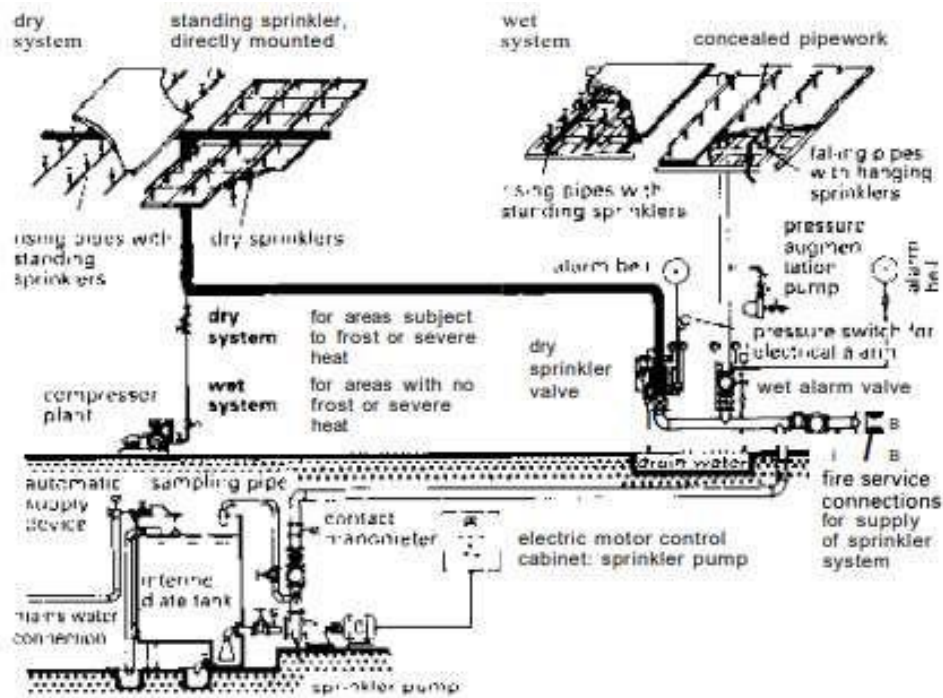


Architect: K.H. Muth

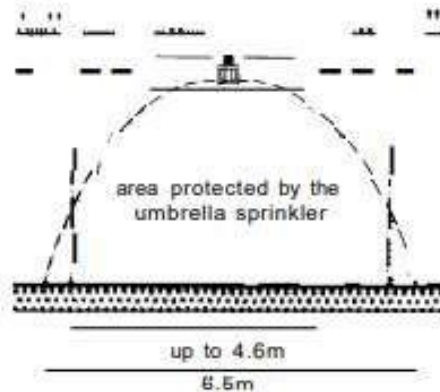
Old people home and nursing home

CHAPTER 5

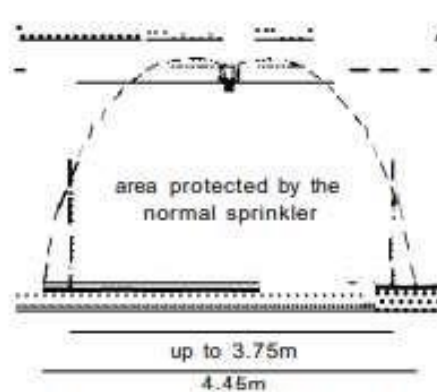
4.3.1 Gardening and Rainwater harvesting



① General arrangement of a sprinkler system



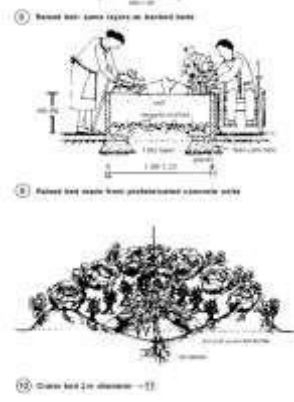
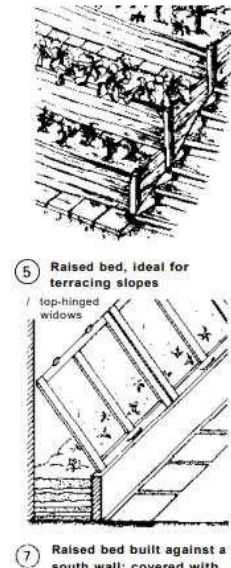
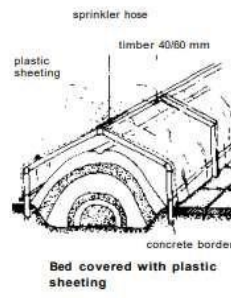
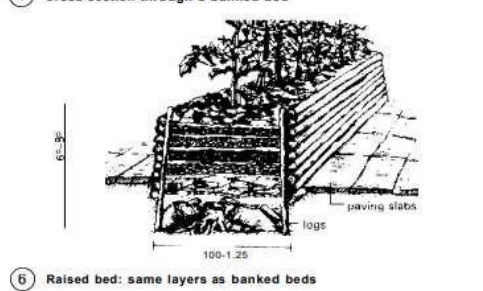
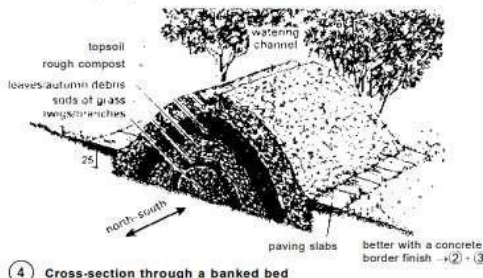
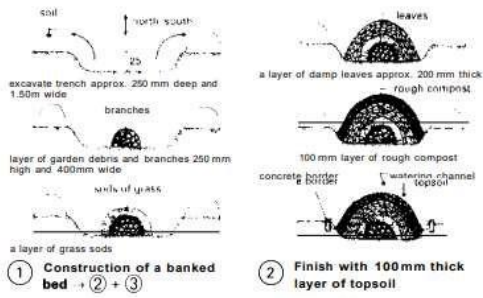
② Spray characteristics of an umbrella sprinkler



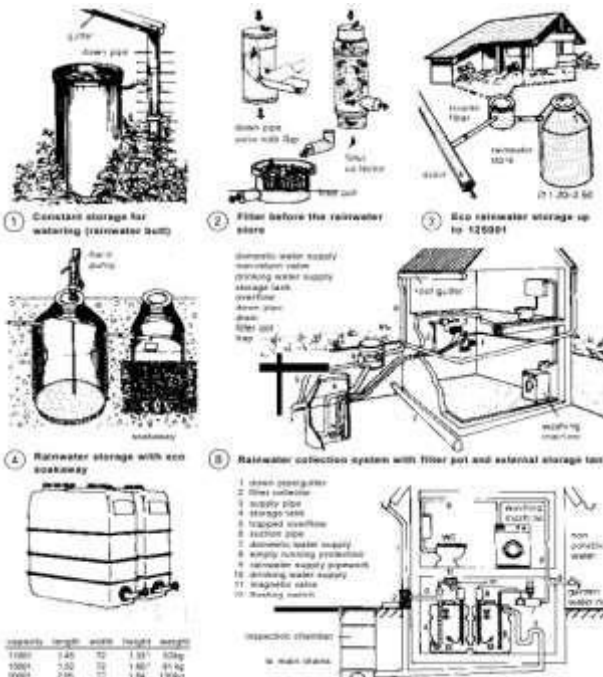
③ Spray characteristics of a normal sprinkler

Fire protection

BANKED



Banked and raised garden



Rain water harvesting for gardening

5.SITE ANALYSIS

5.1 Contextual analysis



Figure 5. 1 Contextual analysis

5.2 Site analysis

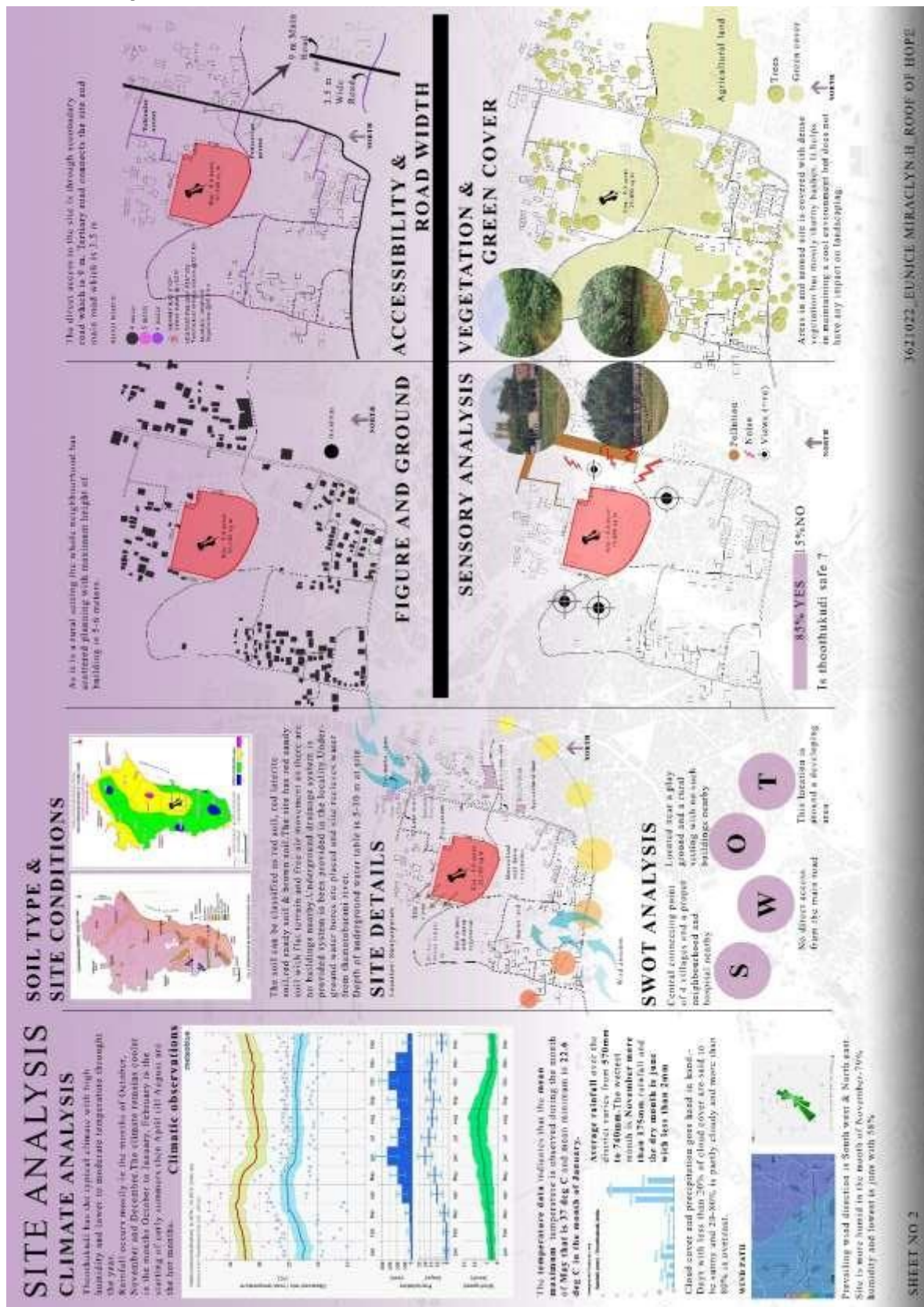


Figure 5. 2 Site analysis

CHAPTER 6

6.DESIGN AND PLANNING

6.1 Concept planning

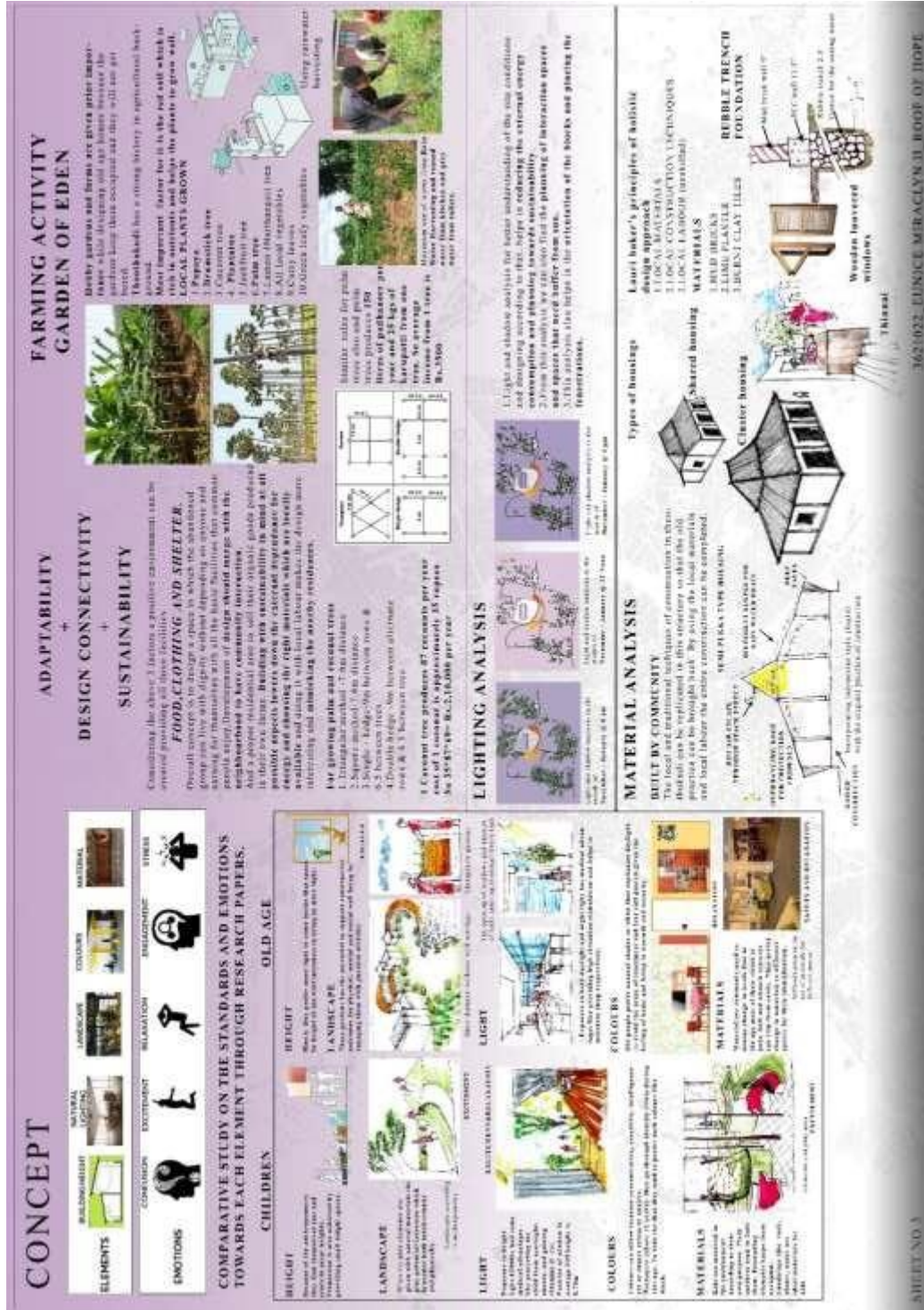


Figure 6. 1 Concept planning

6.2 Material planning

MATERIALS, PLANNING & CONCEPT

The principles of Iauri baker are studied in detail and all elements, materials and construction techniques are according to his principles. The whole design can be achieved by low cost materials but at the same time can be sustainable.

With the use of Iauribakers techniques and sustainability factor the following materials are used in the design. Another most important factor considered while selecting the materials is the availability of materials near the site location and workability of labour.

Materials (according to work)
 Locally - Rat trap bond → less material
 → Filtration
 → Effective
 Third - stone, plumb → according to the requirement
 → Material available
 Roof - filter, able to break, strong bond
 → Filtration of rainwater
 → Material available
 Plaster - Stone lime plaster → stronger
 → Effective
 → Long span
 Columns - Spliced with volume
 (the wall built in one piece & disassemble design)

ARCHITECTURAL PRINCIPLES

- COST EFFECTIVENESS
- USE OF LOCALLY AVAILABLE MATERIALS
- RESPECT FOR NATURE
- AVOIDANCE OF ENERGY INTENSIVE MATERIALS
- ELIMINATION OF REDUNDANT DETAILS
- WASTAGE MINIMIZATION
- SPIRITUAL PLANNING

MORE INNOVATIVE METHODS HE ADOPTED.....

- DIFFERENT BONDING TECHNIQUES FOR BRICKS
- PERFORATED BRICK WALLS &
- USE OF DISCARDED BOTTLES, INSET IN WALL
- USE OF BRICKS INSPITE OF LINTELS
- CURVED WALLS
- BUBBLE MASONRY

THESE METHODS AND TECHNIQUES LED TO CHARACTERISTIC ELEMENTS OF BAKER'S STYLE

- JALIS
- TRADITIONAL ROOFS
- STEPPED ARCHES
- OVERHANGING EAVES
- SKYLIGHTS
- BUILT IN FURNITURES

HIS POPULAR CONSTRUCTION TECHNIQUES

- USE OF RAT TRAP BOND
- FELLER SLABS
- ARCHES
- TERRACOTTA ROOFING
- FRAMELESS DOORS AND WINDOWS






SPATIAL PLANNING

Houses in and around the site are arranged with common walls and common courtyards which mostly act as interaction spaces. So its better to have a single building with common courtyards rather than having separate cottages.





UNDERGROUND RAIN WATER HARVESTING TANKS



ROOF CATCHMENT CAPACITY = 999mm X 5000 sqm = 49,95,000.
 Filtration or buffer tank - 10-15,000 ltr
 dia of 1 tank is 10m
 depth is 10 m.
 volume is approx 785000lts
 we will need 4 tanks

DRONE PORT

Concept inspired from Ar.Norman Foster which can accommodate upto 200 people in a single port is replicated for alternative program activities.

161022_TUNITE MIRACLYN II, ROOF OF HOPE






Examples of Iauri bakers works





SHEET NO 6

Figure 6. 2 Material planning

6.4 Site plan



Figure 6. 3 Site plan

6.5 Orientation and planning



Figure 6. 4 Orientation and planning

6.6 Admin and medical block

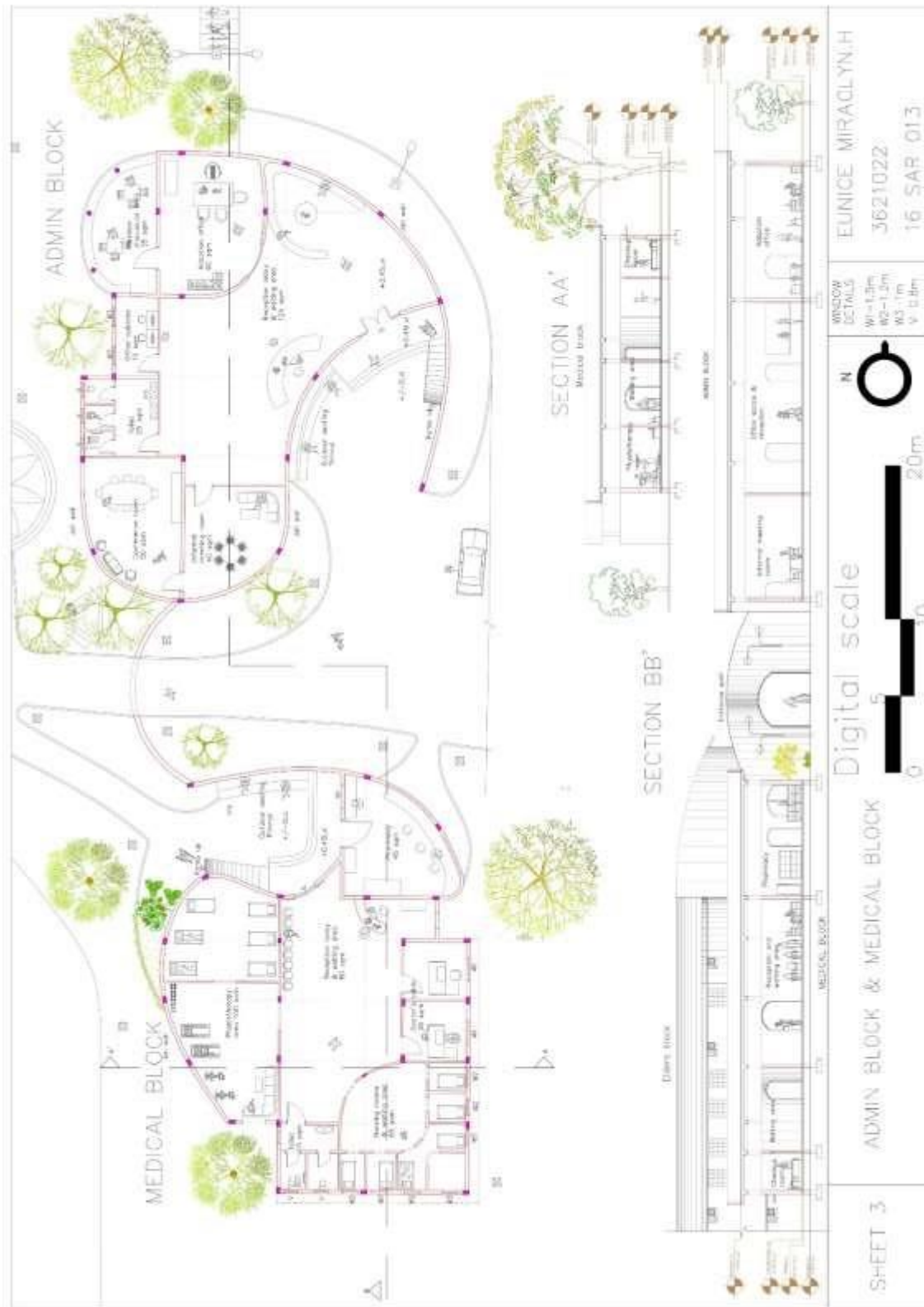


Figure 6. 5 Admin and medical block

6.7 Kids mess and kitchen

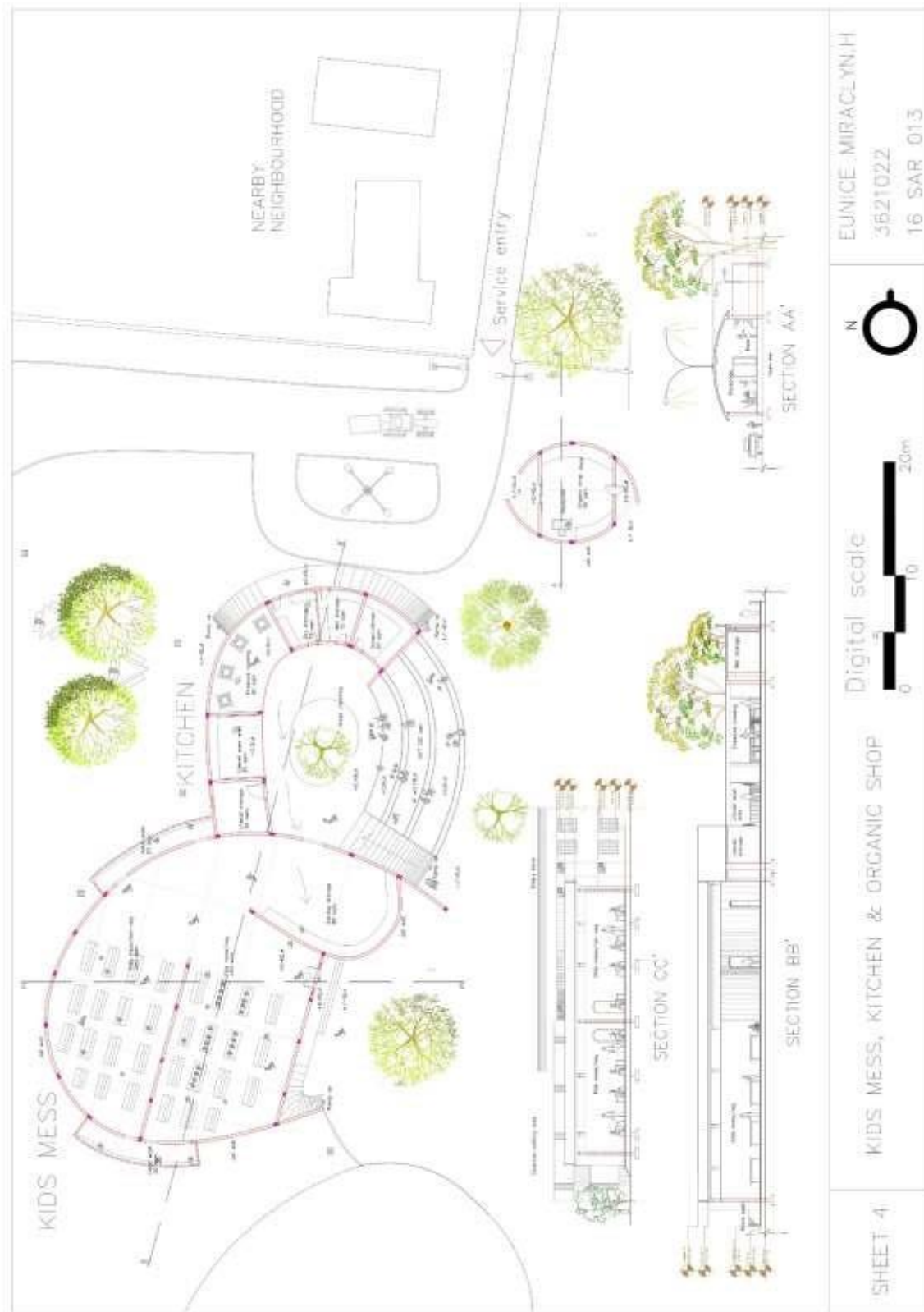


Figure 6. 6 Kids mess, kitchen and open-air theatre

6.8 Kids block and study pavilion ground floor

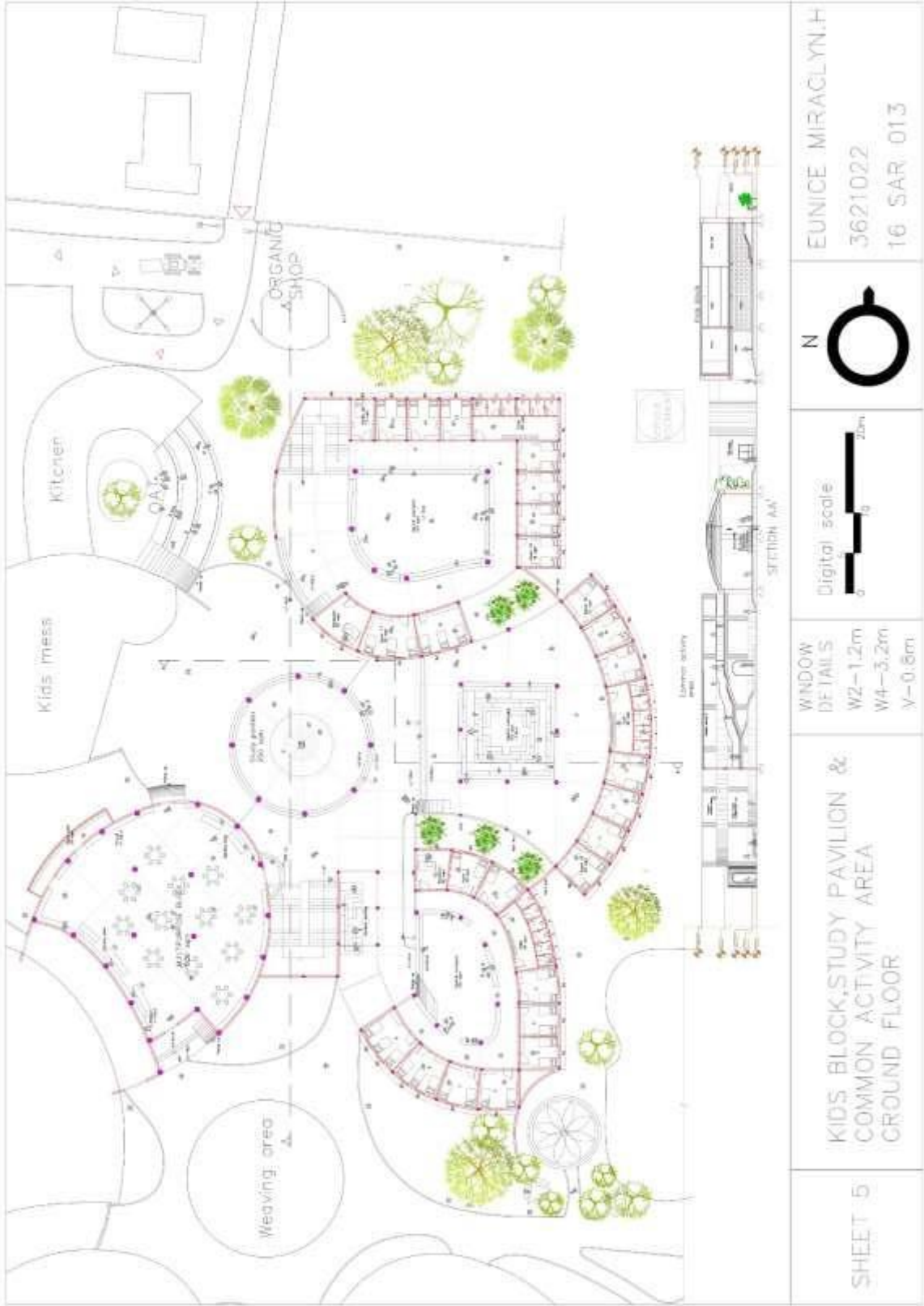


Figure 6. 7 Kids block, common block and study pavilion ground floor

6.9 Kids block and study pavilion first floor

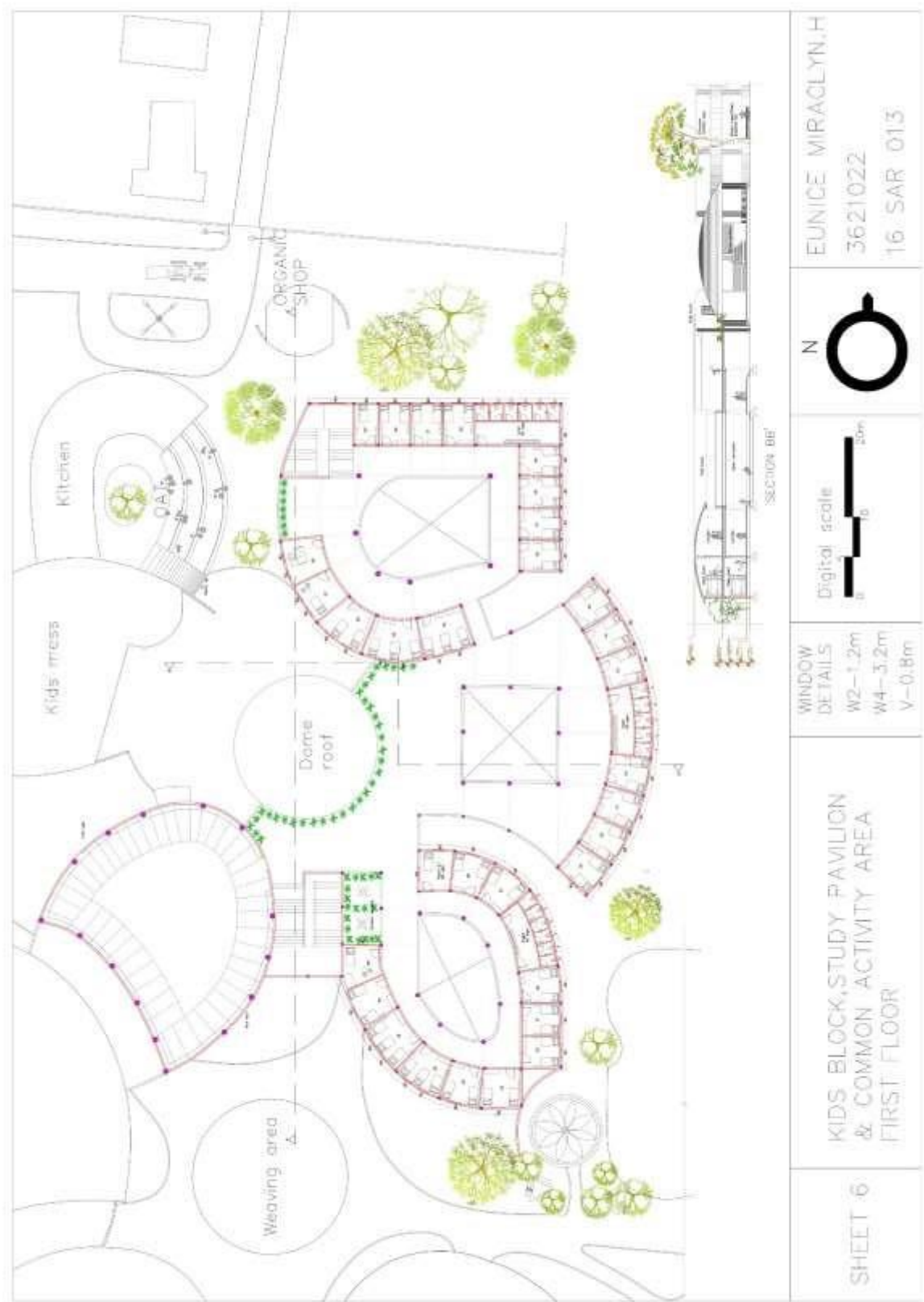


Figure 6. 8 Kids block, common block first floor

6.10 Elders block and weaving area ground floor



Figure 6. 9 Elder's block and weaving area ground floor

6.11 Elders block first floor

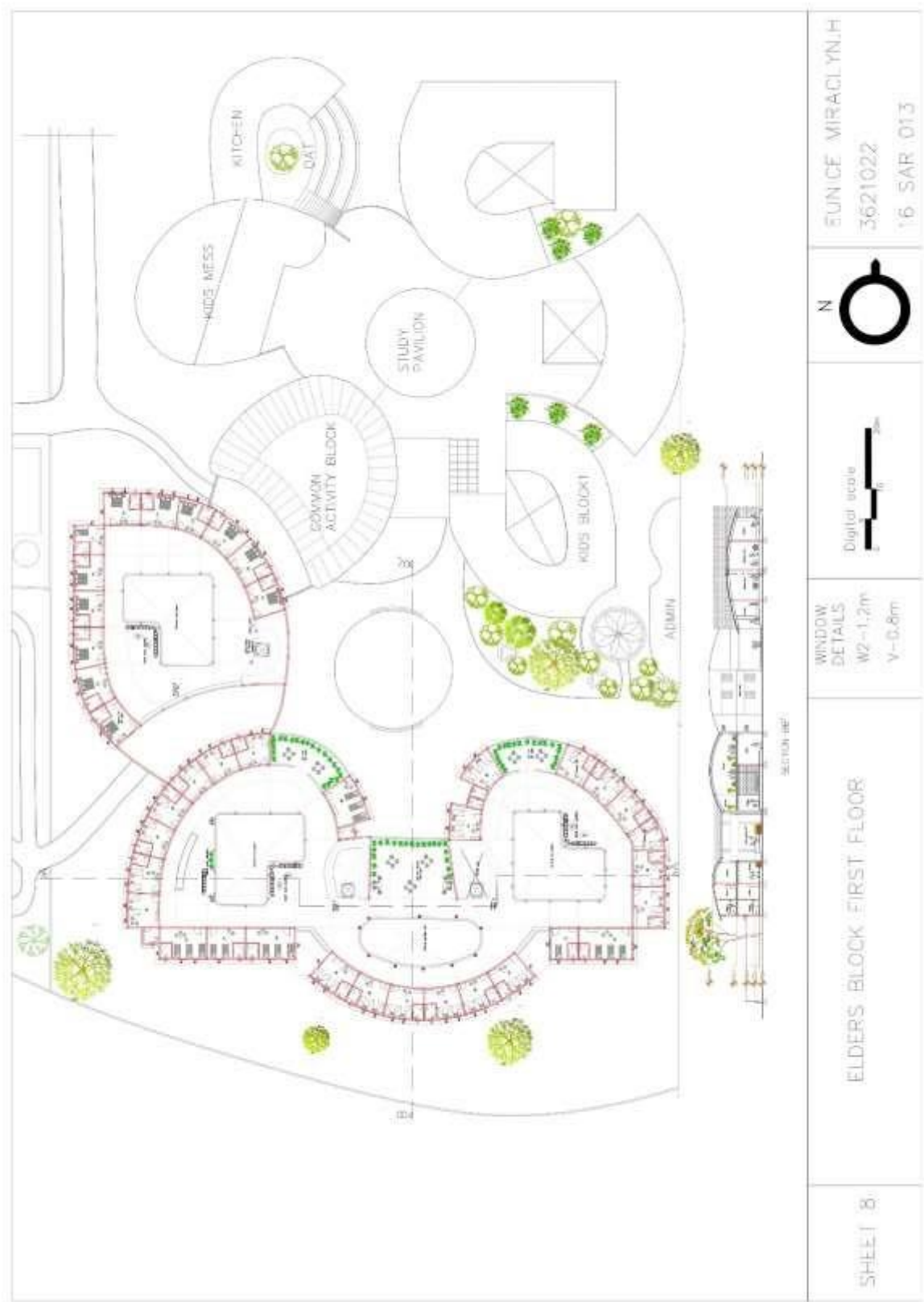


Figure 6. 10 Elders block first floor

6.12 Farm and Common park with reflexology pathway



Figure 6. 11 Farm and OSR / Reflexology pathway

6.13 Overall site services



Figure 6. 12 Overall site services

CHAPTER 7

7.CONCLUSION

This design helps in creating an environment which combines various elements and activities inside the site to develop interaction between the two-user group and providing a habitable space for them. Healing and comfort were the main factors considered while designing. Providing not just a home to live in but also a farm and weaving area which allows them to pass on the traditional practice to the next generation and also to earn for a living and keeping them occupied throughout the day was the main aim. One more important factor is engaging the user group with nature and possibly combining all spaces with nature throughout the design was the main challenge.

CHAPTER 8

8.BIBLIOGRAPHY

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