

# **PROBIN NIBASH**

Panchghori, Sylhet

By

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A thesis submitted to the Department of Architecture  
in a partial fulfillment of the requirement for the degree of  
Bachelor of Architecture

Department of Architecture  
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It is hereby declared that.

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3. It does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
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## Approval

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## **Abstract**

'Probin Nibash,' situated in Donokandi, Sylhet Sadar Upazila, is ideal due to its peaceful location away from city noise. The care home aims to create a sense of community for the elderly, promoting their wellbeing. The design includes natural openings and easy circulation for accessibility and comfort of differently abled residents. It also opens a way of economic growth for the locals who can work in this complex to serve the elderly people here. This will encourage social interaction of the elderly people with the youngsters, which will help with their loneliness and sometimes mentalhealth too.

**Keywords:** Old age home; Well-being, Community; Interaction; Accessibility; Healthcare; Courtyards; Natural environment.

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## **List of Acronyms**

WHO	World Health Organization
PWD	Public Works Department
BKSP	Bnagladesh Krira Shiksha Pratishtan

# **Chapter 1: Introduction**

## **1.1 Introduction to the Project**

The overall improvement of people's basic needs has increased their lifespan. People still need extra care after crossing middle age when they start to lose their metabolisms. In Bangladesh, people over 60 are considered as "Senior citizens." Unfortunately, in modern times for different reasons like the increasing rate of nuclear families, generation gaps, misunderstandings, etc. affect the senior citizens and because of these, they end up being homeless.

In Bangladesh, though a few non-government organizations are currently working for the elderly citizen's well-being, the necessary facilities like shelter, food, and healthcare they are providing are not up to the mark. Most importantly, the lack of basic needs and company creates a huge gap between their regular life and life in a care home, which results in isolation and depression in most of the older people.

Ministry of Social Welfare and PWD has thought of these people and proposed a center for them (100 people) at Sylhet which will ensure their basic needs such as residential and healthcare facilities besides nourishment of their mental health by offering different workshops and recreational services where they will get to communicate with others too.

## **1.2 Aim and Objectives of the Project**

This project aims to provide a safe shelter for the elderly people in society who have lost their families and are homeless. The objective of this project is to create a community of senior citizens which would create a feeling of belongingness in them besides fulfilling their special needs. Additionally, it will establish an engagement of the elderly people with young volunteers who can help them in different types of recreational activities and workshops, so that they can again feel valued and productive.

### **1.3 Project Rationale**

Everyone wants to be taken care of and live their life with their family. Unfortunately, so many elderly citizens of our country are being cut off from their families due to the increasing number of nuclear families and becoming homeless, whereas these people need extra care at this age. For them, PWD's "Probin Nibash" is a platform where they can get the care and facilities they need. In addition, with the help of different workshops here, they will get something to do, feel valued again, and can have a better life in a place that will give them a feel of home.

### **1.4 Project Brief**

**Project name:** Probin Nibash, An old home for 100 senior citizens

**Client:** Ministry of Social Welfare, PWD

**Location:** Pachghori, Sylhet

**Site area:** 2.03 acres

**Built area:** 80,030 sq. ft.

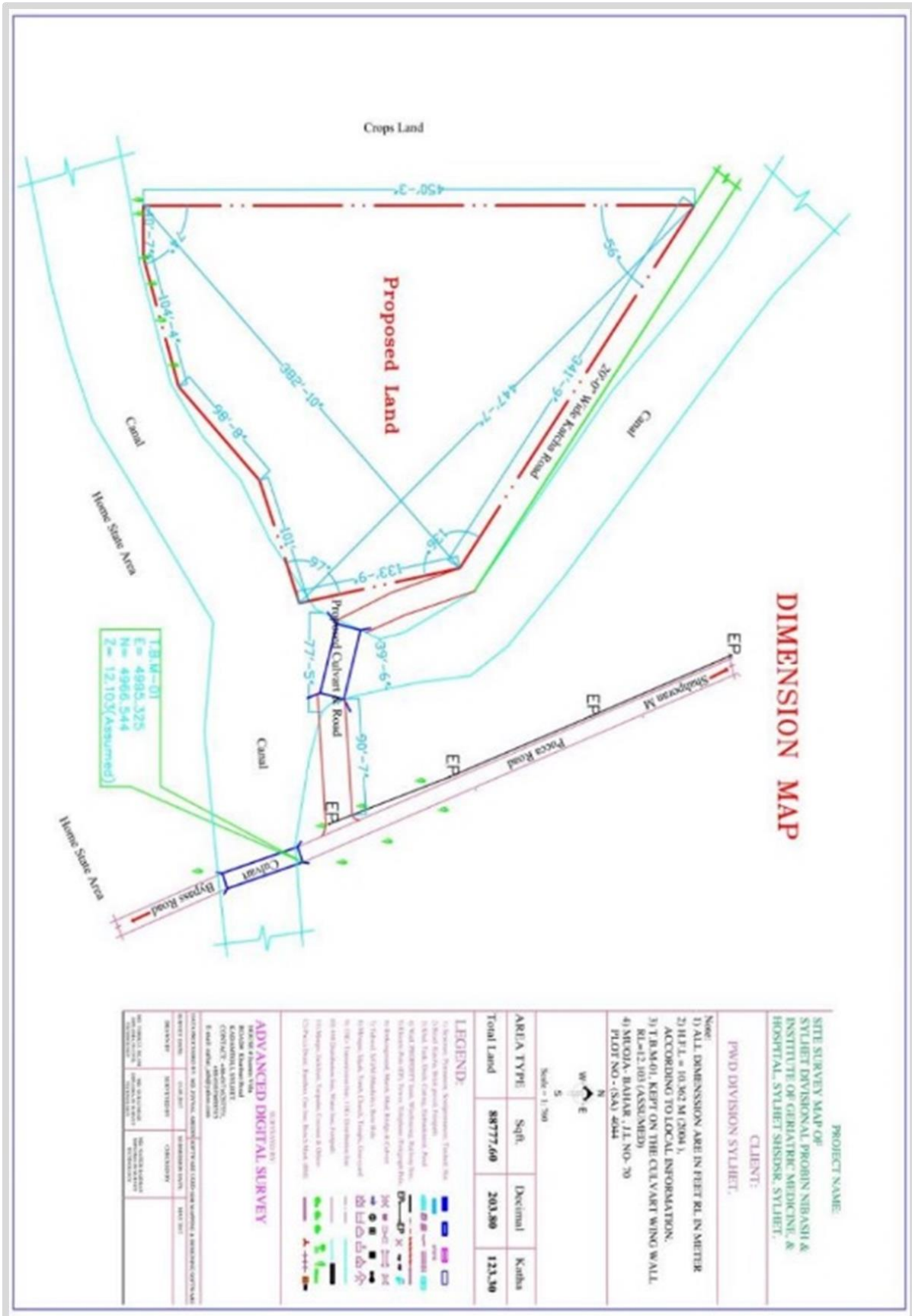


Figure 1.4.1: Proposed Site



**Given Program:**

<b>Program name</b>	<b>Area (sq. ft.)</b>
Administrative	3500
Residential facilities (for 100 people)	47730
Healthcare facilities	10200
Staff accommodation.	6500
Fitness rooms	1500
Auditorium	2500
Library	800
Cafeteria	2500
Indoor games room	500
Prayer hall	300
Training services of vocational workshops	2500
Parking	1500
<b>Total:</b>	<b>80,030</b>

## **Chapter 2: Literature Review**

The development, acceptance, and comparability of the phrase "care home" both globally and in Bangladesh are examined in this section of the paper. The present services and absence of prevailing facilities in the existing nursing homes have been recognized and highlighted after careful examination of aged people's various mental, psychological, and physical changes and their specialized requirements. The characteristics of care facilities have been further broken down, which has helped identify and categorize the important issues that will be covered in the next senior housing.

### **2.1 Elderly population and condition of their care in Bangladesh**

Bangladesh is one of the twenty nations with the greatest proportion of old people worldwide. According to the Bangladesh Bureau of Statistics, the number of senior citizens in our country is currently 12.5 million, and by 2050, that number is expected to reach 40 million (Jahangir, A., 2020). Compared to the rapidly growing elderly population, the country has a very small number of care services. Probin Hitoishi Shangha in Agargaon, Shubarta Trust in Shamoli and Savar, and Old Rehabilitation Center in Gazipur are just a few of the renowned rehabilitation facilities in Bangladesh (Ahsan, 2016). Additionally, there are six government-run nursing homes located throughout the nation. However, the services being offered have some shortcomings that prevent them from meeting the needs of the public (Md. Ismail, Tahmina, Md. Taj, 2006). Considering physical, social, psychological, and monetary factors as key indicators to examine the character of life in older individuals, Sultana (2013) identified several issues facing the elderly, including isolation from the outside world, a lack of financial resources owing to social security, a sense of productivity, and, finally, unhappiness with the standard of the food and medical care.

Following these complications, services that would make it easy for seniors to continue

working, such as training programs, transportation options, specialized therapy, and healthcare benefits, etc., are still to be included in the current care homes that would help fill the gap (Amanullah, 2016).

## **2.2 Definition of care home globally and in Bangladesh**

Global population aging is happening quickly. Most of the over-60 population is predicted to nearly double between 2015 and 2020, according to WHO (2017). As a result, the number of seniors will quadruple by 2025 and reach 2 billion by 2050 (Bishak et al.2014). Young (2015) states how the idea of senior housing first emerged in the United States in the 19th century. As the consequences of the Industrial Revolution expanded over the world during this period, older, slower, and less productive generations were replaced by younger, more active, and more productive ones. Additionally, these elderly people lacked both material and emotional support, which put them in a vulnerable position (ibid). As a result, in the 19th century almshouses—residential facilities that offered services for the homeless and the elderly—were sponsored by government taxes—and were sent to elderly who needed accommodation, protection, and assistance. Since then, the concept of senior housing—, a facility created to help older individuals who are unable to live with their family members or are in distress—has been in existence (Andersson 2011).

On the other hand, Bangladesh's notion of care homes was influenced by the country's shifting social and economic systems. Before the fast urbanization, most people lived in extended families with access to food, housing, and other amenities. The breakdown of nuclear families has resulted in elderly individuals being disregarded for a variety of reasons, with poverty being one of the main ones. Both free and paid care facilities started to emerge after the government established pension old age allowances for those with uncertain finances in 1998. The number of genuine nursing homes around the nation is still small, though, as the concept of an aging

home is still relatively new to our culture.

### **2.3 Elderly person and their physical and psychological needs**

In the human life cycle, old age is one of the sensitive times. At this point, people's physical and mental abilities begin to progressively deteriorate (Bangladesh Journal of Bioethics,2016), A person's ability to function is slowed and their health is jeopardized as they become older due to unforeseen problems and diseases. Some of these, for instance, include the deterioration of taste, taste buds, skin issues, and a variety of other sensory abnormalities that might result in wounds and infections. A large portion of this group is also inclined toward inactivity due to a lack of designated areas or amenities, which hurts their health and leaves them vulnerable to several cardiovascular and pulmonary conditions (Jamie, David, Dean, James, Neil, and Hans, 2016)

In addition to physical changes, elderly adults are also vulnerable to psychological decline, with unemployment and isolation from the changing nuclear family structure being the main contributors. The World Health Organization reports that 1 in 6 older persons encounter abuse from elders and 7% of the older population is indirectly affected by unipolar depression, which is a key factor in older individuals withdrawing from society and their loved ones. To overcome these problems, participating in a variety of mobility activities and exercises is crucial for ensuring good aging and lifespan as well as the ability to adapt to diseases and improve physical and psychological fitness (Booth et al. 2000; Lee et al. 2012).

### **2.4 Design considerations of care homes for elderly persons**

Around 15 million people in this population live with resentment, loneliness, and anxiety because of various factors. Additionally, unsatisfactory aspects of the services and a lack of basic care from the attendant both play a significant part in this. Numerous studies have shown

that the residents of care homes can benefit significantly from the role of the staff and the environment there. Elderly people find joy in spending time and space with caretakers because they feel at home and like they belong. While food and medical care are important, the staff's performance and attitude toward the residents are more important in bringing them happiness (Devika and Hemamala, 2018).

One of the prevalent health issues, affecting 50% of seniors over the age of 85 and one-fourth of those over 75, is impaired mobility (Islam, S., Rahman, A., Mahmood, A. K., Mamun, A. and Khondoker, M. F. 2019). Aging is frequently accompanied by the loss of mobility, making even simple movements like walking, or climbing stairs difficult. Older folks feel less comfortable moving around and prefer to curl up in an enclosed place because of the appearance of such unfavorable conditions. As a result, this population places a high value on locations that are well-designed, accessible, and have a straightforward layout that is not only simple to maintain but also handy for everyone, even those who are exceptionally abled, to move around in.

The therapeutic qualities of nature can improve people's well-being, health, and general well-being (Wrublowky, 2018). The elderly is so encouraged to engage with the outside world and are further pushed into activity and remaining busy by being able to freely interact with nature and observe it with their own eyes. Most of these old age homes have poor designs with little or no provisions for universal accessibility and a lack of the fusion of natural attributes, which needs to be brought to light even though some existing centers have provisions for residential, medical, and other basic services.

To sum up, many older people report feeling happy and safe when they have a daily connection with someone who will show them affection and be there for them when they need it. In addition to the requirements, it's crucial to include in houses a landscape with ample access in

all areas so that senior people may interact amicably with various indoor and outdoor activities, aiding in their natural rejuvenation, and keeping them occupied. Given the small number of old homes in our nation, developing a path for networking between the older society and younger society over a shared recreational activity, like taking up a hobby, etc. can lead to new insights, strong bonds, and respect by allowing each group to share time and personal learnings. Thus, these things taken together should help seniors stay well, prevent loneliness, and age with delight.

## Chapter 3: Site Appraisal

### 3.1 Site surroundings

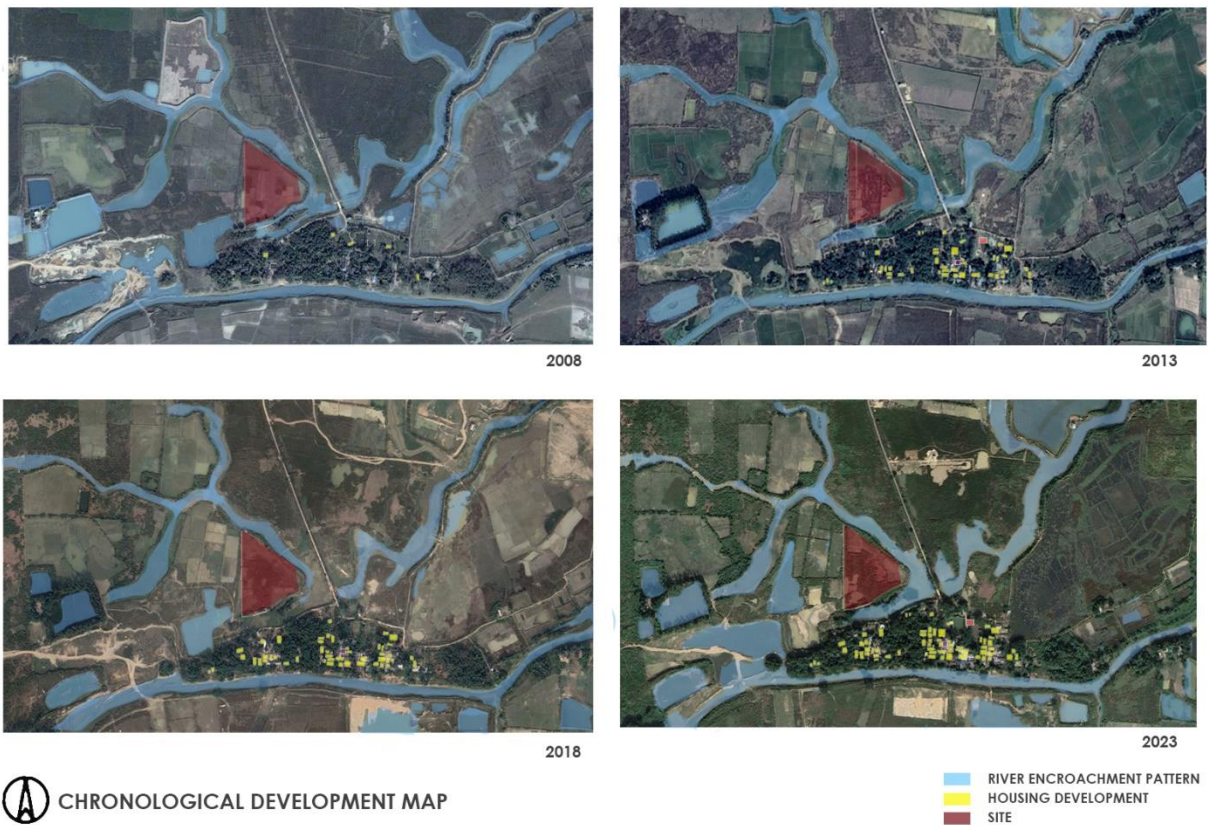
The location is surrounded by notable landmarks such as Hazrat Shah Paran Madrasa and Mazar on the north side, Panchghori home state property on the south side, agricultural land on the west, and a running canal as well as the Donokandi access road on the east side.



Fig 3.1.1 Site location (Source: Google Earth)

### 3.2 Chronological Development of the Site

Due to the site's flat terrain, most of it had been flooded between the years of 2001 and 2008 while looking back. The area of land that had been flooded had a close relationship to the canal that ran next to it. Consequentially, throughout the course of the previous few periods, the land had gradually filled in and taken on its current shape. The nearby Panchghori village residents utilized the area primarily as a source of their income by planting and harvesting crops, despite the absence of any prior signs of an infrastructure. This area, which is naturally covered in vegetation, has the potential to bring back an old water body and merge it with an existing canal in the future, converting the area into a peaceful care facility.



*Fig 3.2.1 Chronological development map*  
*Source: Google Earth; Edited by: Author*

### 3.3 Geographical Characteristics of the Site

Located 3km from the main town, the site is in a developing area, near a small village, mostly surrounded by farming fields and little vegetation present. The site faces Panchgori low-rise settlements surrounded by dense vegetation and a narrow channel to the east, which witnesses a cold breeze from the southeast towards the site. However, the small number of trees on the west side increases the potential for heat gain in that direction. The north side of the site, on the other hand, serves a clean and unobstructed view of the access road, farmland, and canal. Even though the site is level and somewhat elevated, there is always the possibility of getting engulfed in rain. As a result, these conditions, if carefully considered, might have a significant influence on the design process.





*Fig 3.3.1 Vegetation map (Source: Author)*

### **3.4 Land-use Pattern of the Surroundings**

The site is situated in a serene area with beautiful views of the surrounding natural landscape and a soothing water body running next to it. In contrast, during heavy rainfall in the monsoon period, there is also a risk of the land submerging. There are typically low-rise residential structures all around the site and a few religious establishments nearby. Within 1.5 km away there are a few notable landmarks nearby, including the Sylhet Cantonment, Hazrat Shah Paran Mazar and Madrasa, and BKSP Cricket Ground. Also, there are a few other visible religious and educational structures that might be connected to include a public space within the center.



1 Shahparan Health complex



2 Nazimgarh Garden Resort



3 Shahparan Mazar



4 BKSP Sylhet



5 Sylhet Agricultural University



6 Panchghori Jame Mosque

Fig 3.4.1 Landmarks surrounding site (Source: Google Earth)

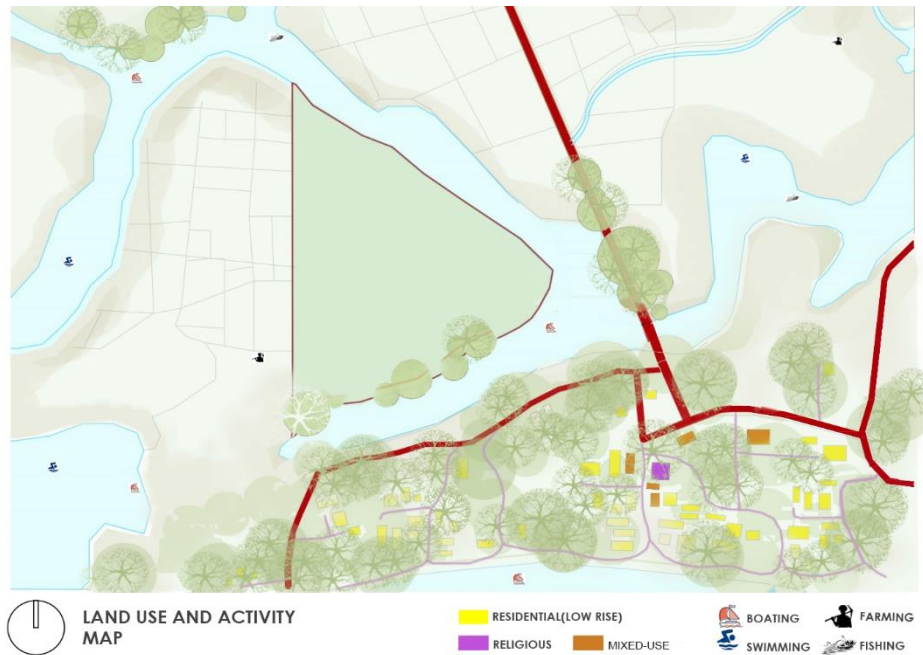


Fig 3.4.2 Land use and activity map (Source: Author)

### 3.5 Accessibility and Connectivity

The site is accessible by a network of side roads that connect to the main Sylhet highway which eventually leads to the town center. With the proposed road directly adjacent to the site with a highway, the site would provide easy access to the main town center approximately 3 km from the site. However, basic amenities are located significantly away posing a threat to the location. Also, since the area is a bit isolated from the city, the area is a bit unsound at night.



Fig 3.5.1 Accessibility and public-private realm map (Source: Author)

### 3.6 Climatic Conditions

Sylhet's climate is tropical monsoon with mostly hot and humid summers and mildly cold winters. In Sylhet, the rainfall is the heaviest in most months of the year. The average annual temperature in Sylhet is 24.8°C, where precipitation mainly occurs with an average of 3876 mm between May and September. The highest temperature, 31.6°C on average, is experienced from August through October, and the lowest temperature, 12.9°C on average, is experienced in January. According to the average rainfall graph, rainfall occurs for over six months out of the year, hence there is a high likelihood that the site will experience flooding. Accordingly, considerations to be made during design development may involve elevating the site as well as incorporating a water body around various water activities to collect water during any heavy rainfall.

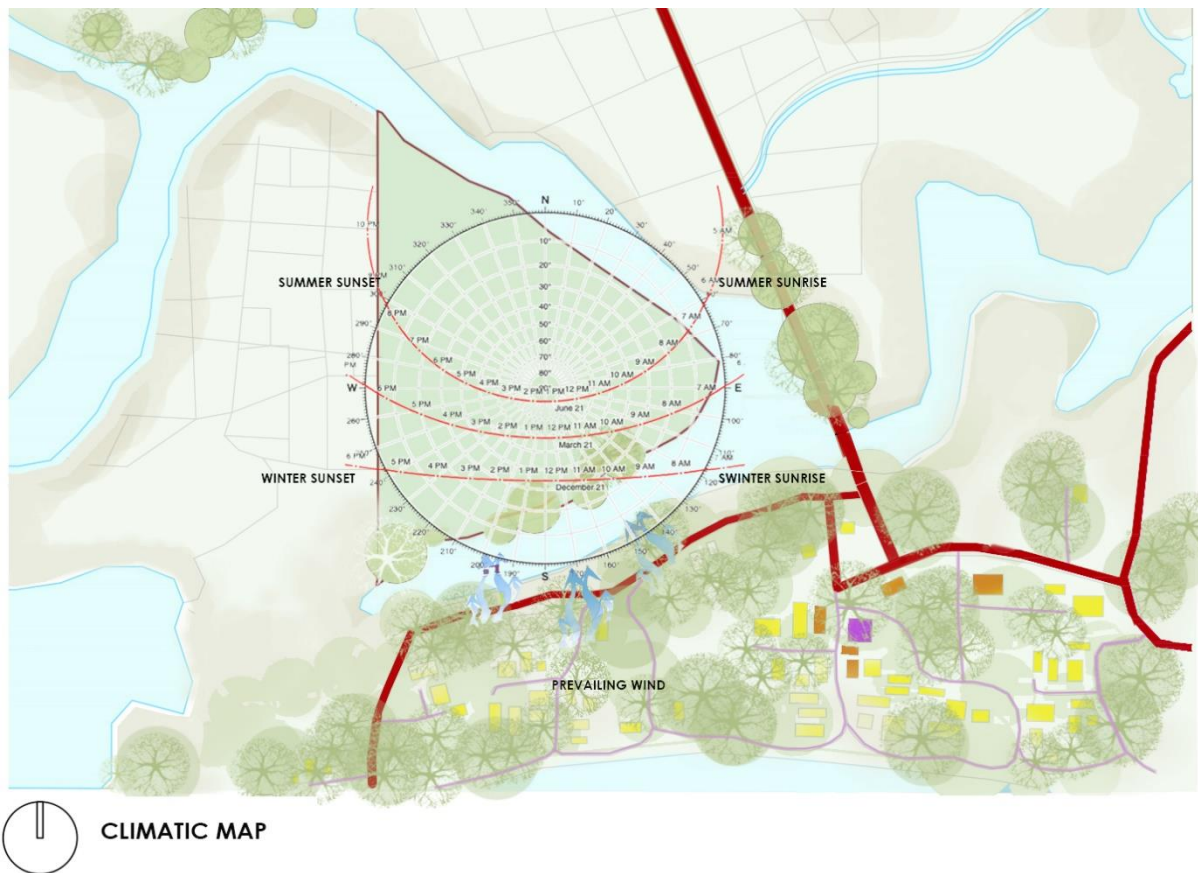
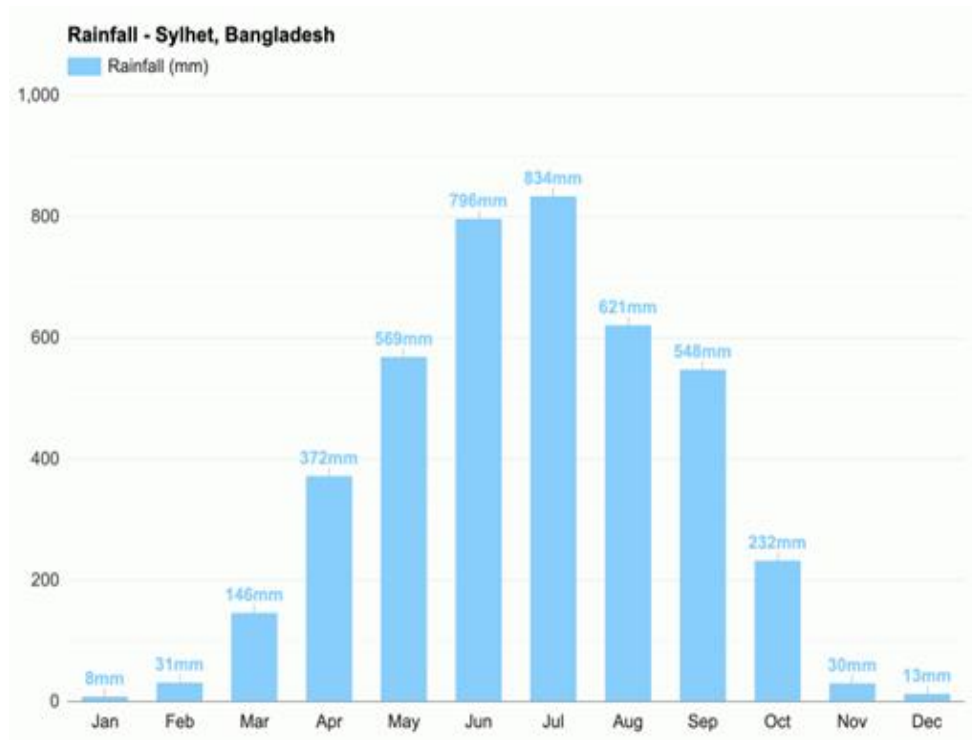


Fig 3.6.1 Climatic map (Source: Author)



*Fig 3.6.2 Graph of average rainfall in Sylhet, Bangladesh*

*(Source: <https://www.weatheratlas.com/en/bangladesh/sylhet-climate>)*

### **3.7 Socio-cultural and Economic Contexts**

The location, which is close to notable crop fields and a canal, has been identified as a production, harvesting, and fishing region for the neighboring cultivators. The Panchghori homestate property is visible to the south and has been predominantly inhabited by low-income Sylhet inhabitants whose livelihood is reliant on the nearby canal and croplands. In addition, 90% of the youth in the villages also attend nearby madrasas and schools. Considering an additional source of income from helping the elderly, the building of a nursing home in this area may be advantageous for the residents under the given circumstances. Thus, there is a chance that the younger and older generations in the neighborhood might collaborate on a variety of projects where the elderly can mentor the minority and the youth can learn more.

### 3.8 Images of Existing Site Condition



*Fig 3.8.1: View of road (Donokandi road) and the culvert)*

*Source: Authors capture*



*Fig 3.8.2: View of the site from road (Donokandi road)*

*Source: Authors capture*



*Fig 3.8.3: View of the canal in dry season (winter)*

*Source: Authors capture*



*Fig 3.8.4: View of the canal in dry season (winter)*

*Source: Authors capture*



*Fig 3.8.5: View of Panchghori jama mosque and its pond (winter)*

*Source: Authors capture*



*Fig 3.8.6: low rise households of pachghori village*

*Source: Authors capture*



## Chapter 4: Case Study Appraisal

### 4.1 Nursing and Retirement Home, Leoben, Austria

Project name: Nursing and Retirement Home

Location: Leoben. Austrian

Designed by: Architect Dietger Wissounig Architekten

#### 4.1.1 Environment and Micro-Climate

The project's location is in a quiet Austrian town that is ideal for such a home that is liked by seniors. The nursing facility is in a rural area, away from the intrusive city life, and is surrounded by more greenery. Leoben town is 543 meters above sea level, therefore even during the driest months of the year, it has heavy rainfall. Since outdoor activities would be considerably more difficult on a regular basis in a chilly town, indoor activities, and meeting spaces have been given higher priority in this idea.

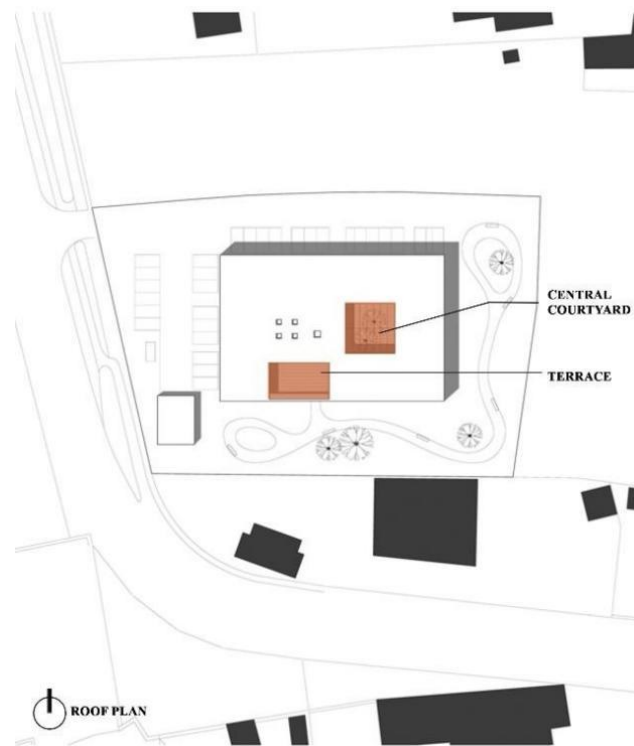


*Fig 4.1.1.1 Site location and surroundings*

*Source.(<https://www.archdaily.com/775831/nursing-and-retirement-home-dietger-wissounig-architekten/56283e77e58ece127a000341-nursing-and-retirement-home-dietger-wissounig-architekten-photo>)*

### 4.1.2 Forms and Functions

The three-story building has a simple rectangular shape with amusing hollows within, open courtyard areas, and terraces, all of which are used to meticulously connect all floors aesthetically and physically. This connection makes it easier for residents to interact with one another and for personnel to monitor their activities.



*Fig 4.1.2.1 Roof plan; Source: arch daily and retraced by Author.*

These three stories' functional arrangements are equally uncomplicated as their formal ones. The public and semi-public areas are all located on the ground floor, while the private areas are located on the second and third floors. In addition to helping individuals understand their surroundings more clearly, clear zoning is also beneficial in terms of accessibility.

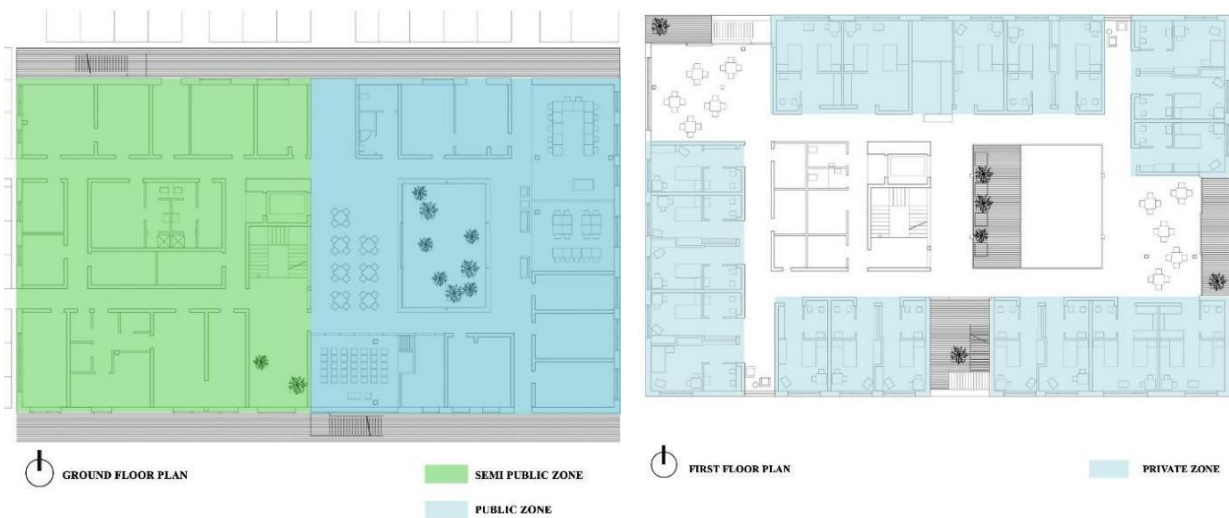


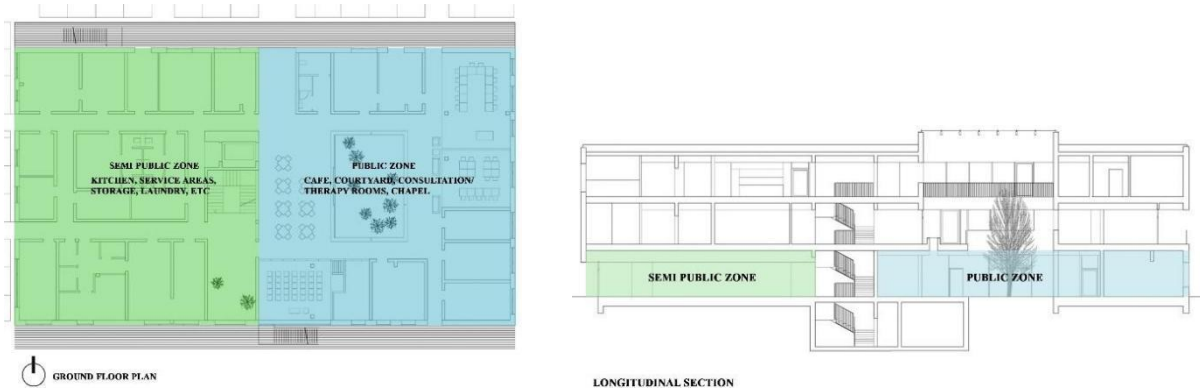
Fig 4.1.2.2 Public and semipublic zoning; Source: arch daily and retraced by Author.



Fig 4.1.2.3 Semi-private zoning; Source: arch daily and retraced by Author.

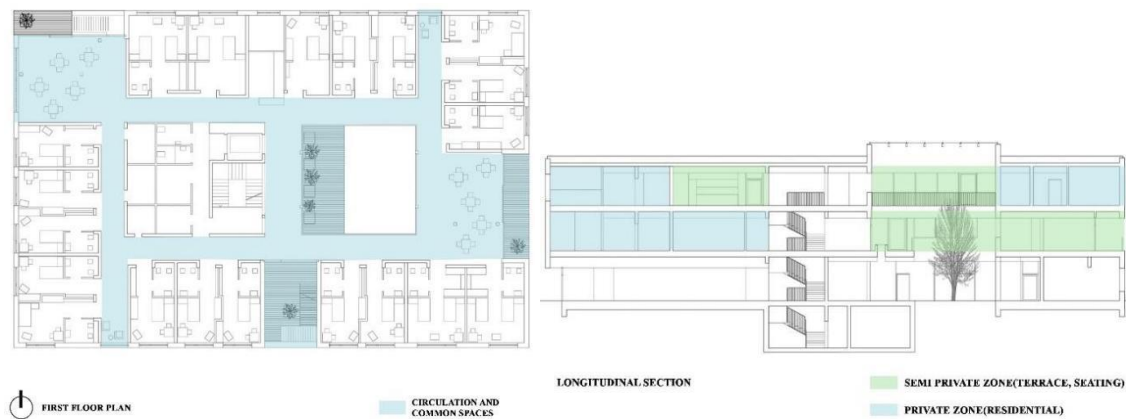
### 4.1.3 Horizontal and Vertical Circulation

The ground floor serves a variety of purposes, including a café next to the open courtyard, kitchen, and service areas, administrative, storage and side rooms, laundry, treatment rooms, consulting rooms, lecture rooms, as well as a chapel, in accordance with the zoning division mentioned above.



*Fig 4.1.3.1 Zoning through horizontal and vertical circulation; Source: arch daily and retraced by Author.*

On the first floor, there are two dementia-specific living zones, each of which has twelve beds, specialized dining areas, and balconies. A separate unique patio is located on the south side of the building in addition to the connecting balconies, serving as a gathering place for residents and guests.



*Fig 4.1.3.2 Zoning through horizontal and vertical circulation*

*Source: arch daily and retraced by Author.*

A ward with 25 elderly residents is located on the third and top floors and serves the same purposes as the first floor. Additionally, there is a substantially large terrace to the south that is 150 square meters in size. A circulation channel both inside the building and outside toward the gardens is provided by the two balconies that connect at right angles on the two top stories. Consequently, a visible link between the internal and outdoor areas is established. (Wissounig, 2015)

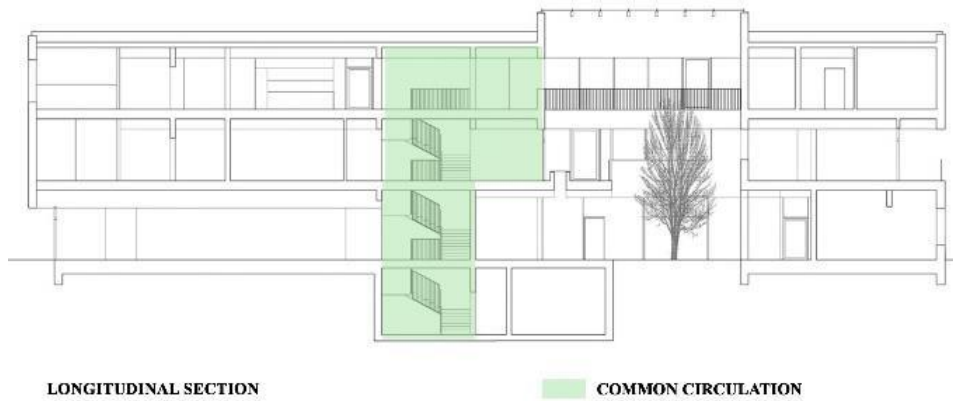


Fig 4.1.3.3 Zoning through horizontal and vertical circulation; Source: arch daily and retraced by Author.

#### 4.1.4 Site planning and Landscape Detailing

To focus on the inhabitants' need for mobility, a network of walkways has been installed around the property, which is encircled by a landscape of mature trees. Additionally, seating areas have been incorporated into the pathways so that people may relax or simply enjoy the scenery.



Fig 4.1.4.1 Walkways and seating spaces around site

Source. (<https://www.archdaily.com/775831/nursing-and-retirement-home-dietger-wissounig-architekten/56283f0be58ece127a000344-nursing-and-retirement-home-dietger-wissounig-architekten-photo>)

#### 4.1.5 Parking details and Standards

The ground floor of this project leaves a lesser footprint on the site than the remaining two stories, which have larger footprints overall. In addition to producing a variety of changes to

the facades, the extension of the second and third floors on the north and south sides also produced outdoor covered areas for surface parking and emergency stairways. There are 28 parking spaces available on the property, 13 of which are covered.



*Fig 4.1.5.1 Parking facilities zoning; Source: arch daily and retraced by Author.*



*Fig 4.1.5.2 Surface parking facilities in site; Source: arch daily*

#### 4.1.6 Structural Details

The entire structure has three levels and is made of strong concrete and hardwood components with frames. The smooth and varied façade is enhanced by the blending of raw larch pieces amid the wooden structure and strong plastered structural materials. The interior has a bright but refined appearance thanks to the use of timber accents and light-colored surfaces. Ashwood paneling and a large screen give the chapel a melancholy lighting effect, giving the impression that it is both serious and contemplative within.



*Fig 4.1.6.1 Façade compositional elements*

*Source. ([https://www.archdaily.com/775831/nursing-and-retirement-home-dietger-wissounig-architekten/56283f47e58ece127a000345-nursing-and-retirement-home-dietger-wissounig-architekten-photo?next\\_project=no](https://www.archdaily.com/775831/nursing-and-retirement-home-dietger-wissounig-architekten/56283f47e58ece127a000345-nursing-and-retirement-home-dietger-wissounig-architekten-photo?next_project=no))*

#### 4.1.7 Design Detailing

The building's natural ventilation and lighting have received particular attention. Additionally, apertures have been strategically placed in the rooms, hallways, conservatories, and on a few designated terraces to enhance the clear views of the surroundings. Therefore, these aids prevent any potential dark areas from needing artificial lighting, which ensures the natural process of senior people's well-being.



*Fig 4.1.7.1 Unobstructed apertures in rooms  
Source. (Arch daily)*



*Fig 4.1.7.2 Deliberate opening bringing natural light inside.  
Source. (Arch daily)*



## 4.2 Solund Urban Nursing Home, Copenhagen, Denmark

Project name: Solund Urban Nursing Home

Location: Copenhagen, Denmark

designed by: C.F. Moller Architects and Tredje Natur

### 4.2.1 Environment and Micro-climate

The project is situated in a lively urban place in Copenhagen. Due to the water resources in the area and the flow of southern air, the summer and winter months are somewhat chilly. The construction is positioned such that, after considering the surrounding environment and site contexts, the lake serves as the care facility's backyard, and there are planned pocket parks scattered across the area that offer beautiful natural views. The senior home's front, on the other hand, faces Norrebro's bustling streets, which encourages city dwellers to interact with the house and its occupants. Hagen, with Sortedam Lake located on the south side and bustling Norrebro Street on the north.

### 4.2.2 Form and Function

The building's shape is based on a clean rectangle, which will be divided into positive and negative areas to create spacious courtyards, and a lakeside park, which is expected to turn the area into a significant center of urban activity. The complex would also have leisure amenities like cafés, workshops, and other small businesses that may provide a way for seniors to make money. The main component of this unusual project is the integration of care homes, youth housing, a rehabilitation facility, and a daycare facility, which are all connected by landscape and recreational activities.

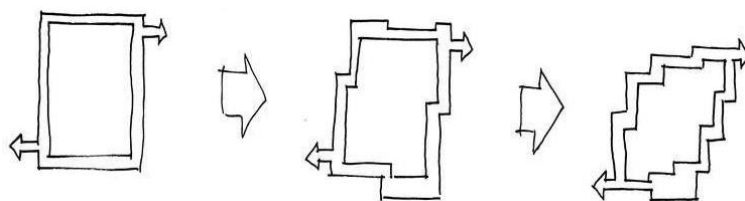


Fig 4.2.2.1 Sketch of form generation

(Source: <https://www.skyfish.com/p/cfmollerarchitects/1407215/36286721?predicate=label&direction=desc>)

### 4.2.3 Horizontal and vertical circulation

The common area that Solund and the visitors enjoy will be surrounded by a circle of interior roadways that are tightly connected to each of the ground-floor amenities. In keeping with Norrebro's vibrant urban backdrop, public services including hair salons, internet cafes, and other micro-stores are intended to be located on the north side. Similarly, the rehabilitation center is positioned so that it faces the peaceful courtyards, and the cafés and multipurpose space are ideally suited to the south, where most people can enjoy views of the lake.



*Fig 4.2.3.1 Public amenities on the north, beside hectic urban streets*

Source:<https://www.skyfish.com/p/cfmollerarchitects/1407215/36286720?predicate=label&direction=desc>



*Fig 4.2.3.2 Café, lake park and multipurpose events on the south lake front*

Source:<https://www.skyfish.com/p/cfmollerarchitects/1407215/36286700?predicate=label&direction=desc>



*Fig 4.2.3.3 Rehabilitation facilities within courtyard*

*(Source: <https://www.skyfish.com/p/cfmollerarchitects/1407215/36286699?predicate=label&direction=desc>)*

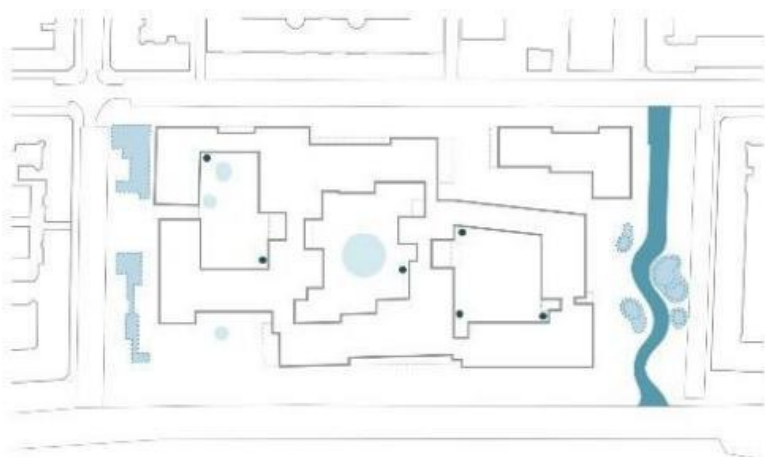
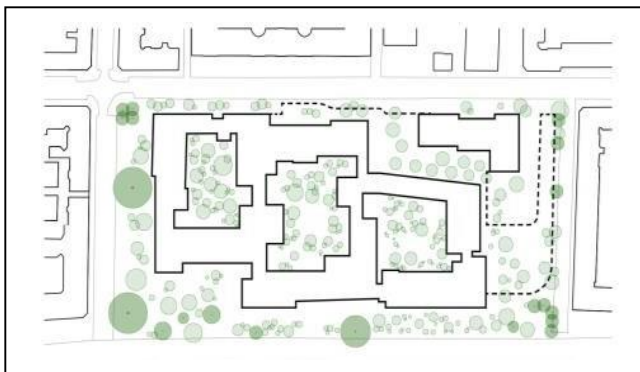
#### **4.2.4 Site Planning and Landscape Detailing**

On the northern side, pockets of green outdoor space would be incorporated into the landscape, acting as gathering places for city dwellers. Additionally, three courtyards that represent semi-public areas of the care facility have been developed. They include climate-resilient components including stormwater management and sustainable urban drainage. With its beautiful green courtyards, it not only promotes interaction between the young and elderly but also assists them in participating in a variety of joint activities and workshops. As a result, the environment encourages seniors to get out and participate in society rather than remain secluded within.



Fig 4.2.4.1 Landscape spaces

(Source: <https://www.skyfish.com/p/cfmollerarchitects/1407215/36286702?predicate=label&direction=desc>)



- Rainwater corridor to lake
- Rainwater ponds
- Rainwater pools
- Rainwater harvesting tanks

#### 4.2.5 Structural Details

The entire building is planned to be built with brick-clad facades, mimicking the materials used in the adjacent infrastructure and establishing harmony with all the other Norrebro Street buildings. The entire facility would be focused on preserving a healthy interior environment, assuring the inhabitants' nutrition through natural ventilation and lighting, with a view of the city nearby. Additionally, the complex's terrace, which receives the southern sun, has been made use of by combining a thick green pergola with urban green farming and finishing it off with distinctive brick arches that serve as a shelter for the garden.



*Fig 4.2.5.1 Terrace lounge*

*(Source: <https://www.skyfish.com/p/cfmollerarchitects/1407216/36286732?predicate=label&direction=desc>)*

#### 4.2.6 Design Detailing

The senior housing and youth dormitories that cater to young people with autism are Solund's main initiatives. A central courtyard shared by both housing complexes called "Generation's Square" connects them. To create a sense of home and to ensure that connections among people remain fluid, it is important to arrange several home groups in a cluster around a shared kitchen and living room. Additionally, the senior apartments are to be given higher priority by being

positioned on the ground level with their own private yards, while the juvenile residences are housed in a different structure. This demonstrates that older people who have trouble moving may move easily without worrying about any form of vertical obstruction.



*Fig 4.2.6.1 Shared kitchen living rooms*

(Source: <https://www.skyfish.com/p/cfmollerarchitects/1407216/36286729?predicate=label&direction=desc>)

## 4.3 Nursing and Retiree Home, Alava, Spain

Project name: The Nursing and Retiree Home

Location: in a rural village of Alava, was

Designed by: Firma d.o.o.

### 4.3.1 Environment and Microclimate

Most of the year, the climate of Alava is relatively warm and muggy with periodic periods of rain. As a result, the building has been orientated toward the south while taking the climate into account. It is made sure that the building has a dominating natural ventilation and cooling process through the division of areas in the form and cross ventilation.

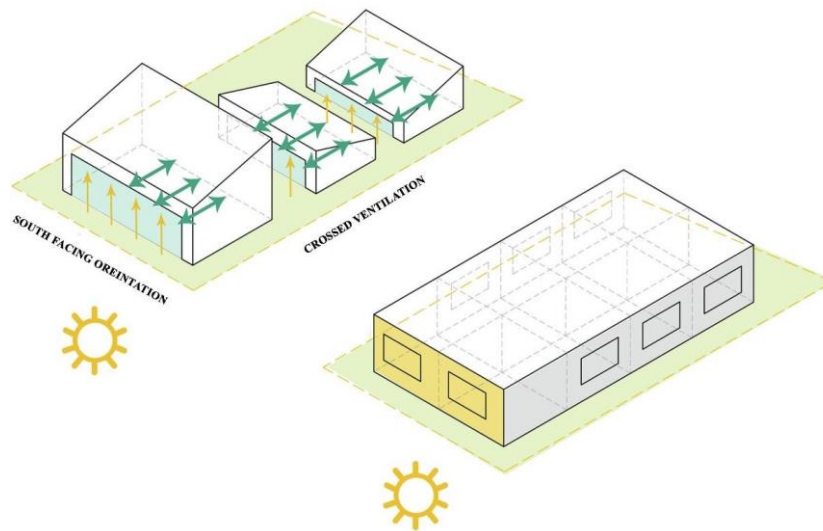


Fig 4.3.1.1 Considerations in building form based on environment and local climate.

Source. (<https://www.archdaily.com/185030/nursing-retiree-home-firma-d-o-o/s2-3>)

### 4.3.2 Form and Function

The idea behind this project is to visualize the care facilities as four pavilions connected by open gardens and communal outdoor areas, giving the impression of a rural neighborhood. The building is spread out over the whole land and is a low-rise construction with up to two floors, keeping with the idea of low density in the area. The elderly may easily reach the functions because they are few and strategically arranged near together. Common eating places, kitchen

and service areas, common rooms, separate dwellings with linked restrooms, and intermediate breakout spaces leading to large and vigorous courtyards and open spaces are all included as functions.



Fig 4.3.2.1 low rise pavilions within proximity and connection with the outer greens  
 Source. (<https://www.archdaily.com/185030/nursing-retiree-home-firma-d-o-o/nrh-02>)

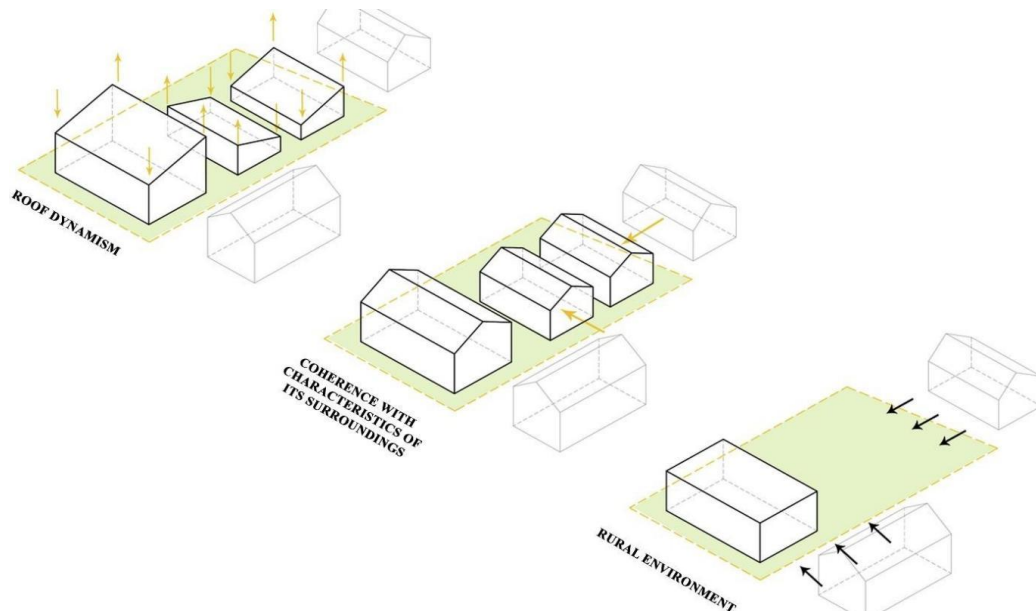


Fig 4.3.2.2 Concept of form generation  
 Source. (<https://www.archdaily.com/185030/nursing-retiree-home-firma-d-o-o/s3-2>)

### 4.3.3 Horizontal and Vertical Circulation

The first of the four pavilions contains the main public and communal areas and has two floors. The remaining three volumes, on the other hand, are one story high and contain both single and double rooms as well as adjacent bathrooms, accommodating up to 25 senior residents and their basic needs. The structure's distribution largely across one story protects the elderly population's comfort in mobility and spares them the hassle of traveling with any vertical



method of transportation. Additionally, the constant circulation channel that is created distinct from glass aids in guiding the residents without any difficulty.



*Fig 4.3.3.1 Zoning analysis*  
 Source: Arch daily and retraced by author



*Fig 4.3.3.2 Zoning analysis*  
 Source: Arch daily and retraced by author

#### 4.3.4 Site Planning and Landscape Detailing

In addition to satisfying all program criteria, the landscape has received a lot of attention since it is situated in a rural area of Alava where most of the neighboring buildings are low-rise and are ensconced in natural greenery. This historic house was built to look like a traditional neighborhood settlement and is surrounded by a large amount of garden to preserve this harmonious relationship.

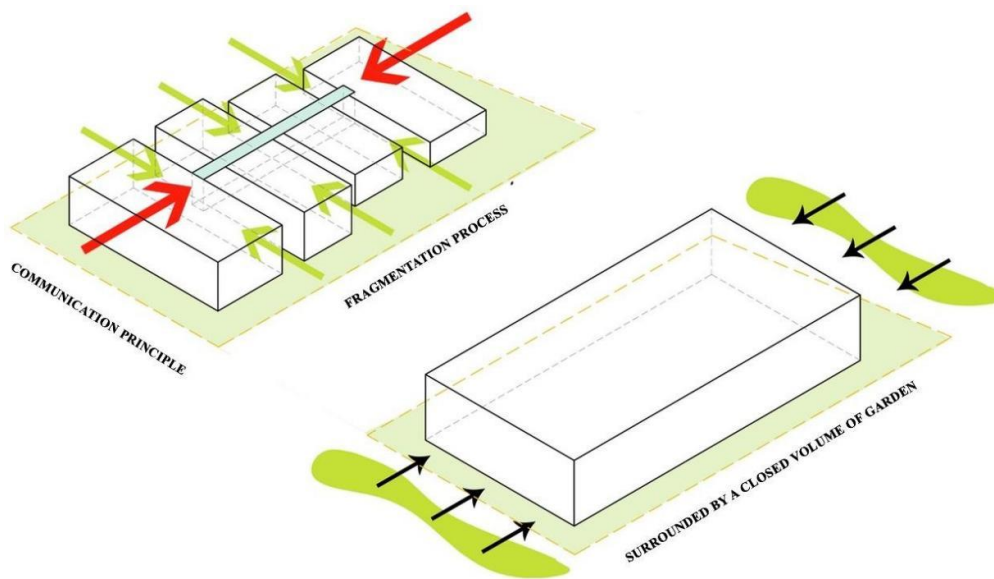


Fig 4.3.4.1 Concept of landscape incorporation into the old home

Source. (<https://www.archdaily.com/185030/nursing-retiree-home-firma-d-o-o/s1-3>)

#### 4.3.5 Structural Details

During its construction, a straightforward method was used to consider the structural concerns which are the low-cost requirements. Due to the project's financial limitations, prefabricated steel structure and façade panels will be used, along with additional exterior finish materials such as glass with metal, wood, and white mortar, to assist lowering construction costs overall.

#### 4.3.6 Design Detailing

The use of a glass corridor to connect the whole structure is one of the project's key features.

As the primary means of contact between inner and external areas and with the surrounding landscape, this criterion aims to help dissolve the barrier between them. Glass not only enhances connections but also the visual and spatial quality of the rooms, making it more exciting to pass through the hallways. Additionally, the four pavilions are all thoughtfully oriented toward the south, which naturally insulates the interior spaces and communal areas. Furthermore, it reduces energy loss and organically ventilates the whole building without the need for artificial cooling or lighting. All the pavilions are thus positioned perpendicular to the street leading to the site's east side.



Fig 4.3.6.1 Glass corridors merging the interior to the exterior spaces.

Source. (<https://www.archdaily.com/185030/nursing-retiree-home-firma-d-o-o/nrh-04>)

## **Chapter 5: Program Appraisal**

### **5.1 Program rationale**

This care home will become a permanent space for the living of the elderly people here. Some of them might not have shared their room with others throughout their lifetime and don't want to be forced to share their room here either. By thinking of them there will be options for shared and single rooms too. Though there will be different options for the residential rooms, the other facilities like training and healthcare centers will be for the use of everyone. Additionally, these facilities such as the healthcare facility, will welcome a limited number of outsiders too.

### **5.2 Types of Facilities**

Based on the given programs and analyzing the standards the major facilities of old care homes can be classified into five parts. They are:

- A. Administration facilities
- B. Training facilities
- C. Recreational facilities
- D. Healthcare facilities
- E. Residential facilities
- F. Staff accommodation
- G. Parking facilities

### 5.3 Proposed Program standards

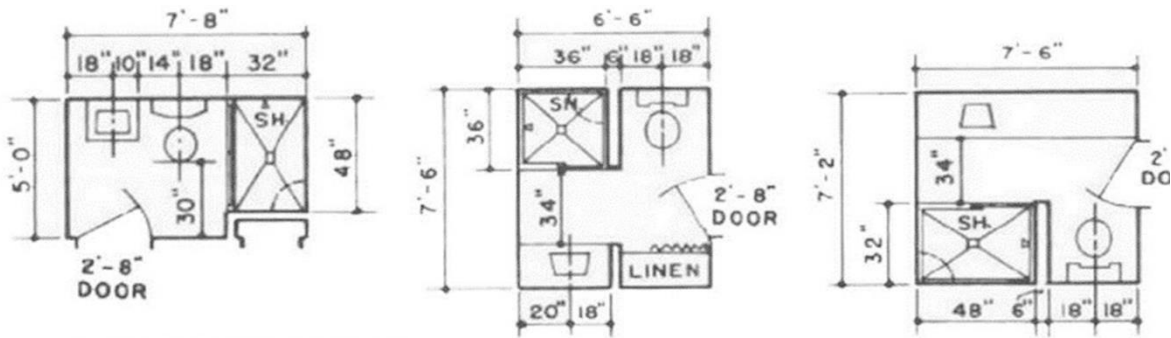


FIG. BATHROOM WITH SHOWERS

Figure 5.3.1: toilet layouts; source: Time savers standards

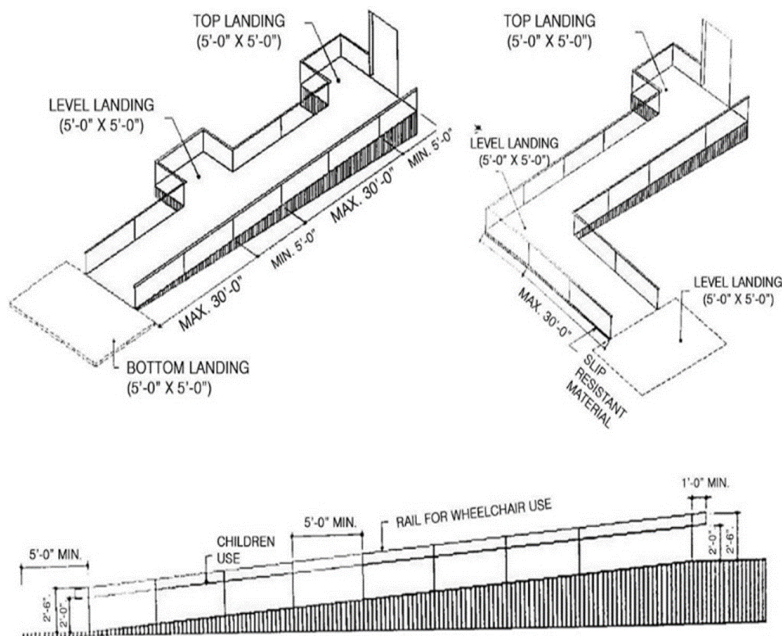


Figure 5.3.2: Ramp layout & measurements; source: Time savers standards

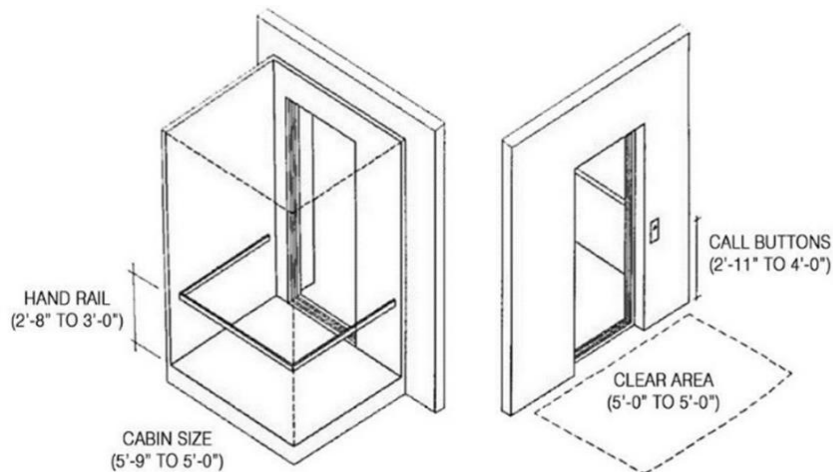


Figure 5.3.3: Railing measurements; source: Time savers standards

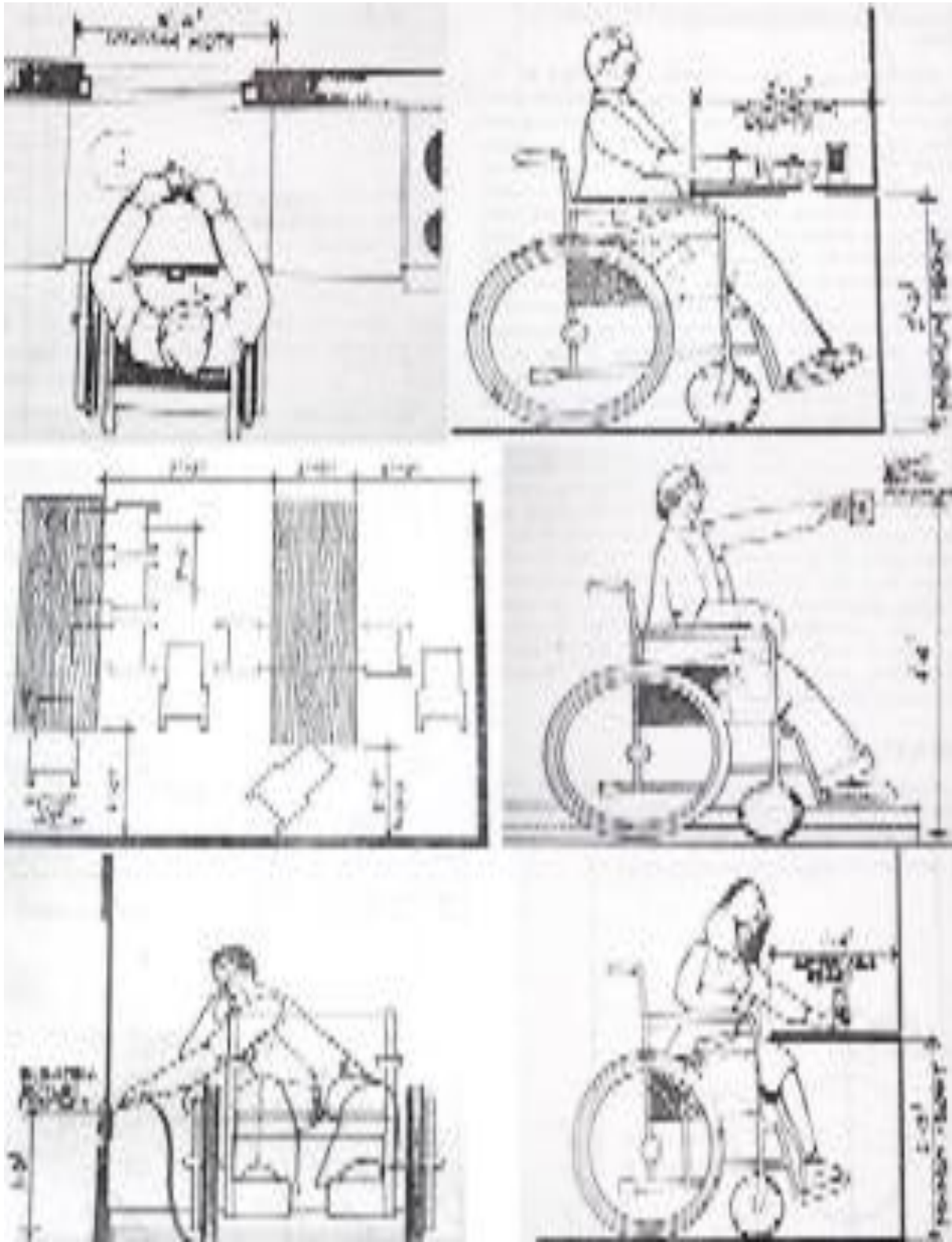


Figure 5.3.4: Activities with wheel chare measurements;  
 source: Time savers standards

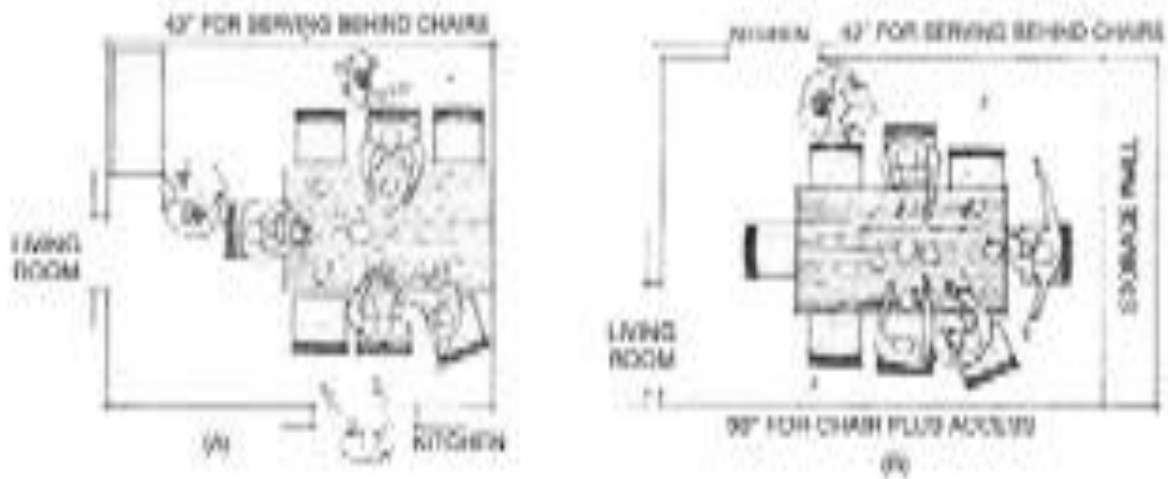


FIG. MIN. CLEARANCE FOR DINING AREA (A) ONE END OF TABLE AGAINST WALL (B) FROM ONE END & ONE SIDE OF TABLE

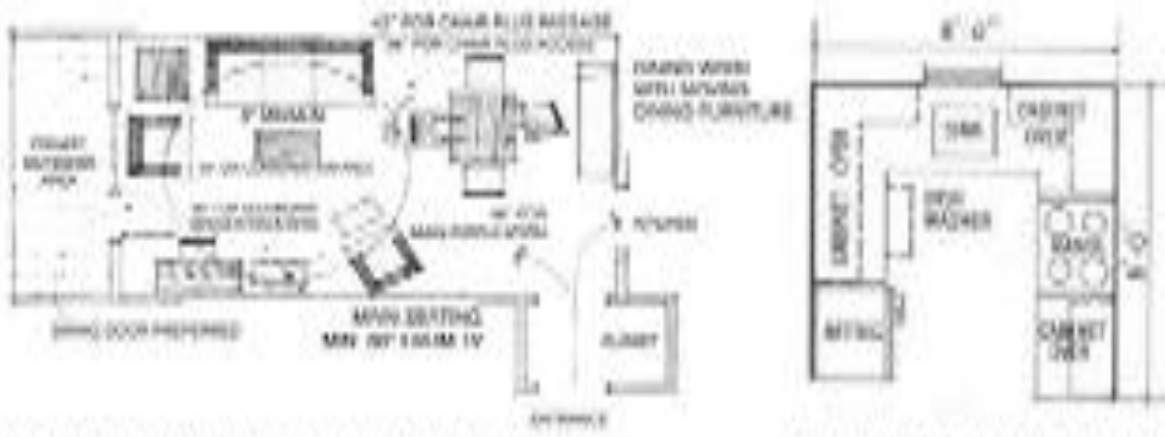


FIG. MIN. CLEARANCES, CIRCULATION & CONVERSATION & CONVERSATION AREA FOR LIVING AREA

FIG. U-SHAPED KITCHEN CABINETS

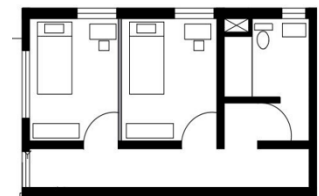
Figure 5.3.5: Kitchen and dining layouts.  
source: Time savers standards



Shared bedroom layout



Single bedroom layout



Adjustable bedroom layout

Figure 5.3.6: Different type of bedroom layout.  
source: Time savers standards

## 5.4 Proposed Program Requirements

	Functional space	Number of units	Number of users	Area per unit (sq. ft.)	Total area (sq. ft.)
<b>A. Administrative facilities</b>					
1	Lobby/reception	1		15	250
2	Waiting lounge	1	25	10	250
3	Accounts department	1	4	60	240
4	Toilet (male)	1	5		200
5	Toilet (female)	1	5		200
6	Directors' office with toilet	1	1		300
7	Managers office with toilet	1	1		270
8	Meeting/Conference room	1	20	25	500
9	Control and security office	1	3	50	150
				Subtotal	2340
				30% Circulation	702
				<b>TOTAL</b>	<b>3042</b>

<b>B. Training facilities</b>					
1	Vocational and workshop rooms	3	25	40	1000
2	Fitness rooms	1	25	30	750
3	Common room for the volunteers of the workshop	1	15	20	300
4	Staff room	1	6	25	150
5	Toilet	1	6		400
				Subtotal	2600
				30% Circulation	780
				<b>TOTAL</b>	<b>3380</b>



C. Recreational facilities					
1	Cafeteria/Dining Hall	1	150	15	2250
2	Kitchen and storage	1			480
3	Toilet (male)	1	5		200
4	Toilet (female)	1	5		200
5	Library	1	40	25	1000
6	Prayer hall	1	60	40	800
7	Ablution area(male)	1	5		150
8	Ablution area(female)	1	5		150
9	Indoor games room	1	40	20	700
10	Auditorium/Multipurpose Hall	1	150	15	2250
11	Convenience store	1	30	20	600
Subtotal					8730
30% Circulation					2634
TOTAL					11414

D. Healthcare facilities					
1	Lobby/reception	1		15	250
2	Waiting lounge	1	20	15	300
3	Pharmacy	1	30	20	220
4	Doctor/Medical officers' room	1	5	50	420
5	Consulting chambers/cabins	2	50	50	1050
6	Therapy rooms	4	50	50	1000
7	General storage room	1		15	120
8	Medicine storage room	1	50	15	120
9	Nurse/staff lounge	1	50	15	250
10	Toilet (male)	1	5		200
11	Toilet (female)	1	5		200
Subtotal					7850
30% Circulation					2350
TOTAL					10205

E. Residential facilities					
1	Bedroom	5 5	100	150	15000
2	Toilet (attached)	5 5	100	65	6500
3	Attendants/Nurses bedroom	2 5	50	72	3600
4	Attendants/Nurses toilets	7	50	25	1250
5	Living and dining room	1	100	200	20000
6	Kitchen	1	50	100	5000
				Subtotal	51350
				30% Circulation	15405
				<b>TOTAL</b>	<b>66755</b>

F. Staff accommodation facilities					
1	Staff bedroom(male)				200
2	Staff toilet(male)	5	25		200
3	Staff bedroom(female)				750
4	Staff toilet (female)	5	25		125
5	Common dining room	1	50	12	600
6	Kitchen	1	5	50	250
7	Storage	1			200
8	Laundry	1	4	75	300
				Subtotal	4370
				30% Circulation	1311
				<b>TOTAL</b>	<b>5681</b>

G. Parking facilities					
1	Surface parking		10	128	1280
2	Ambulance		3	180	540
3	Guard room with toilet	1	3		150
				Subtotal	1970
				30% circulation	591
				<b>TOTAL</b>	<b>2561</b>

<b>Total Built area</b>	<b>103038</b>
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## 5.5 Proposed Program Requirements

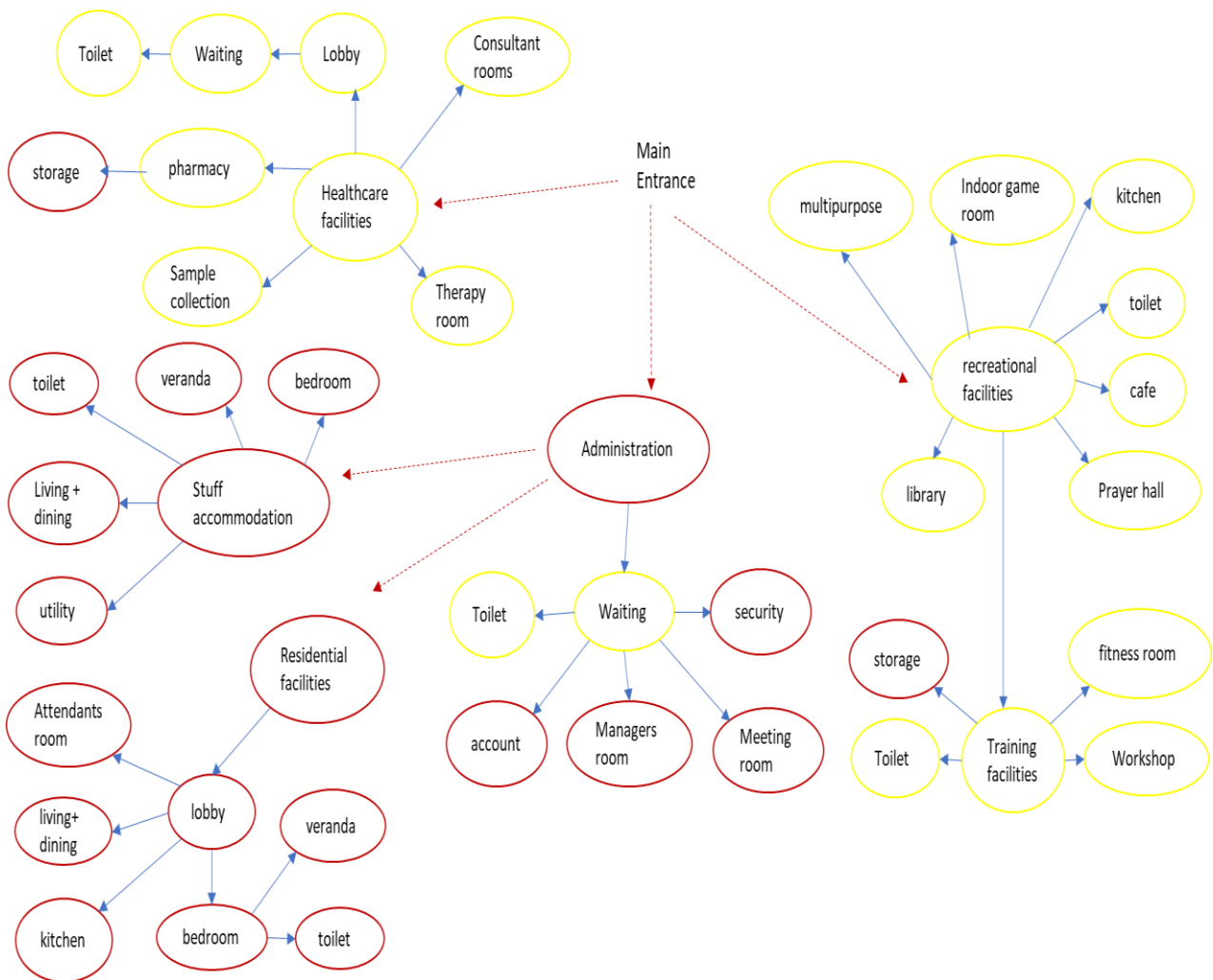
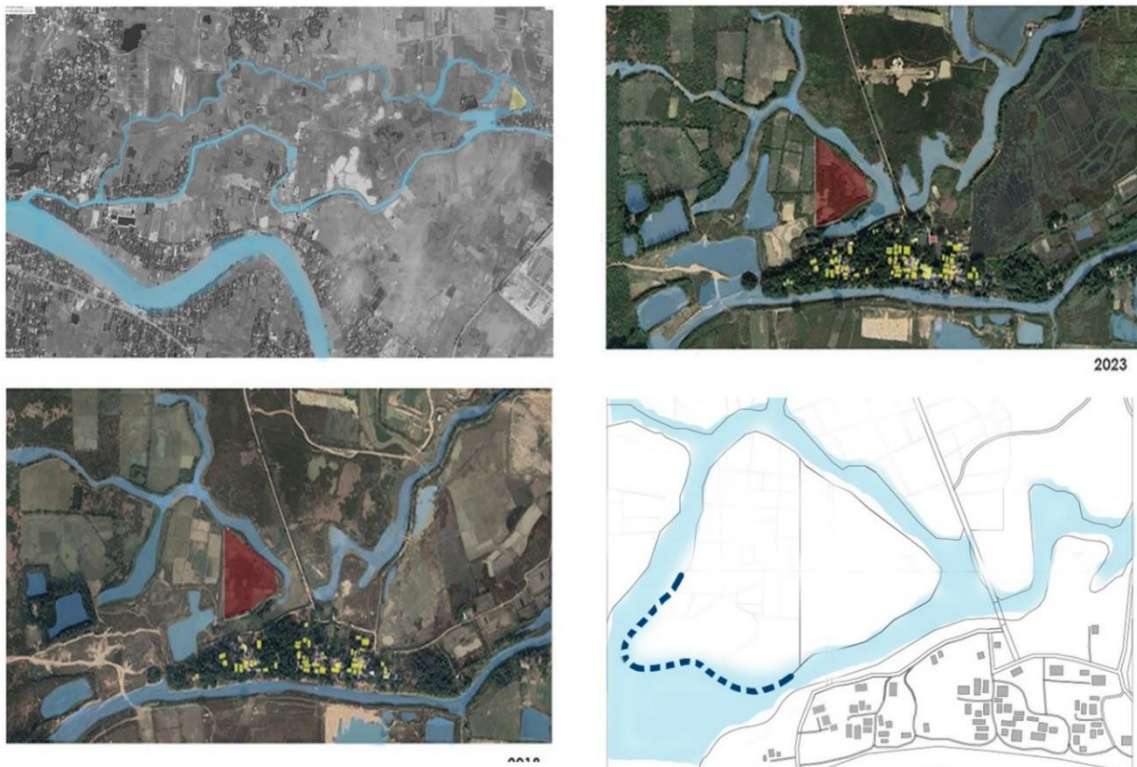


Fig. 5.4.1: Functional relationship diagram; Source: Author

## Chapter 6: Design decisions

### 6.1 Reviving the River connection.

As the site is surrounded by a water body which is basically a sub-brunch of the river Shurma and because of rapid growth of this area it has lost its connection with the river. So, one of the major decisions is to revive the river connection. It will also help with the threat of flood in this area. The first diagram shows the river shurma and the connection with the site in 2001 and how it has lost connection till the year 2023. The 4<sup>th</sup> diagram is the proposed condition after reviving the connection.



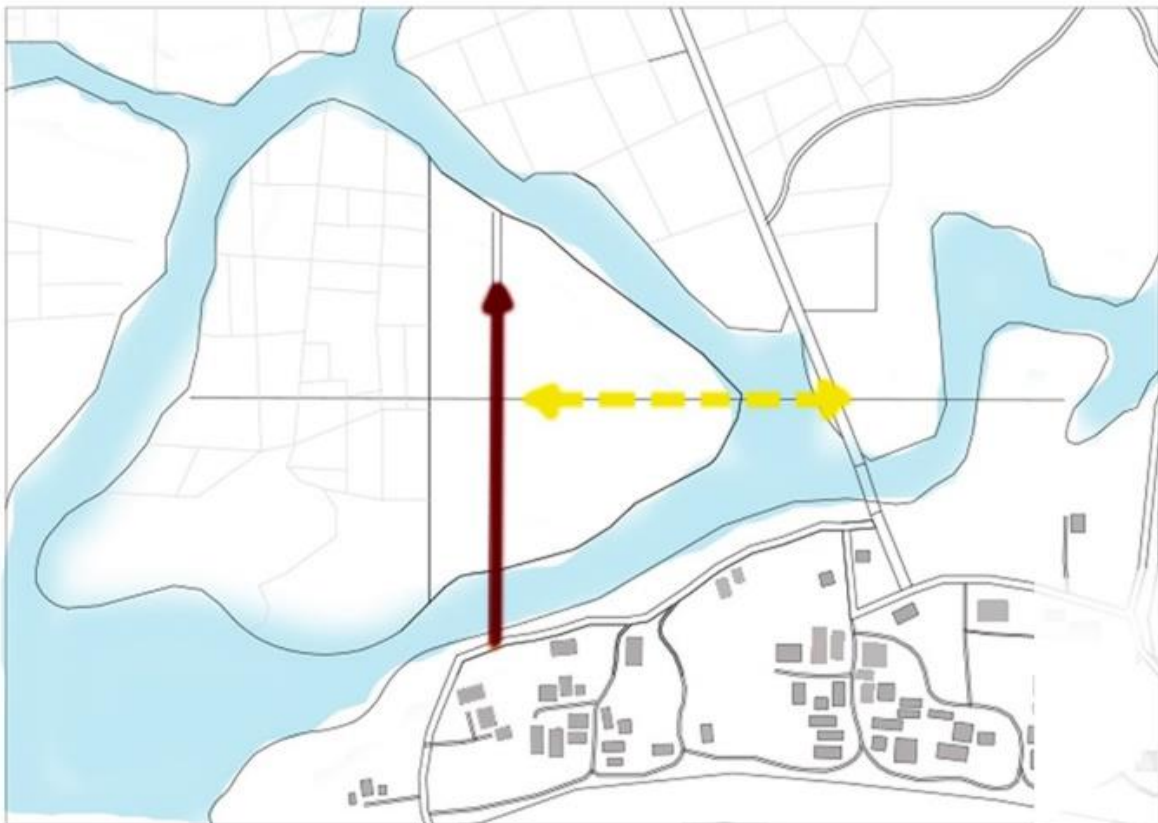
*Fig. 6.1.1: Reviving the river connection; Source: google earth and Author.*

### 6.2 Path Generation

As the site is an island and doesn't have any access, the proposed access road is decided from the nearest neighborhood according to create interaction and serve both communities. Additionally, the bazar mosque and vehicular movement points are also considered while generating this path connection. It also demands a visual connection in a certain axis.



*Fig. 6.2.1: Proposed access road connection; Source: Author*



*Fig. 6.2.2: Visual connection throughout the site in an axis; Source: Author*

### 6.3 Concept Generation

The concept of this project is a combination of two design considerations. Which are: better accessibility for elderly users as well as encouraging social interaction. Another goal is to create intimate green spaces and incorporate the canal to encourage elderly residents to connect with nature.

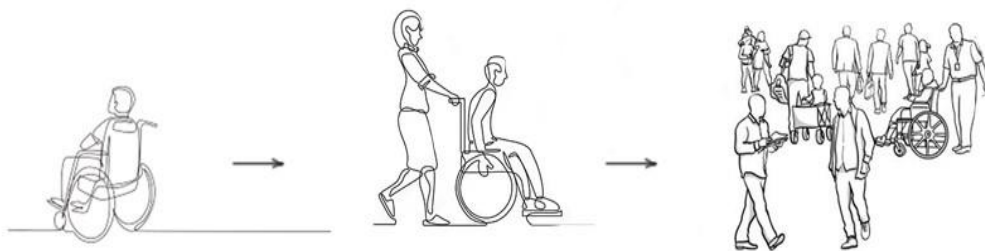


Fig. 6.3.1  
Source: Author

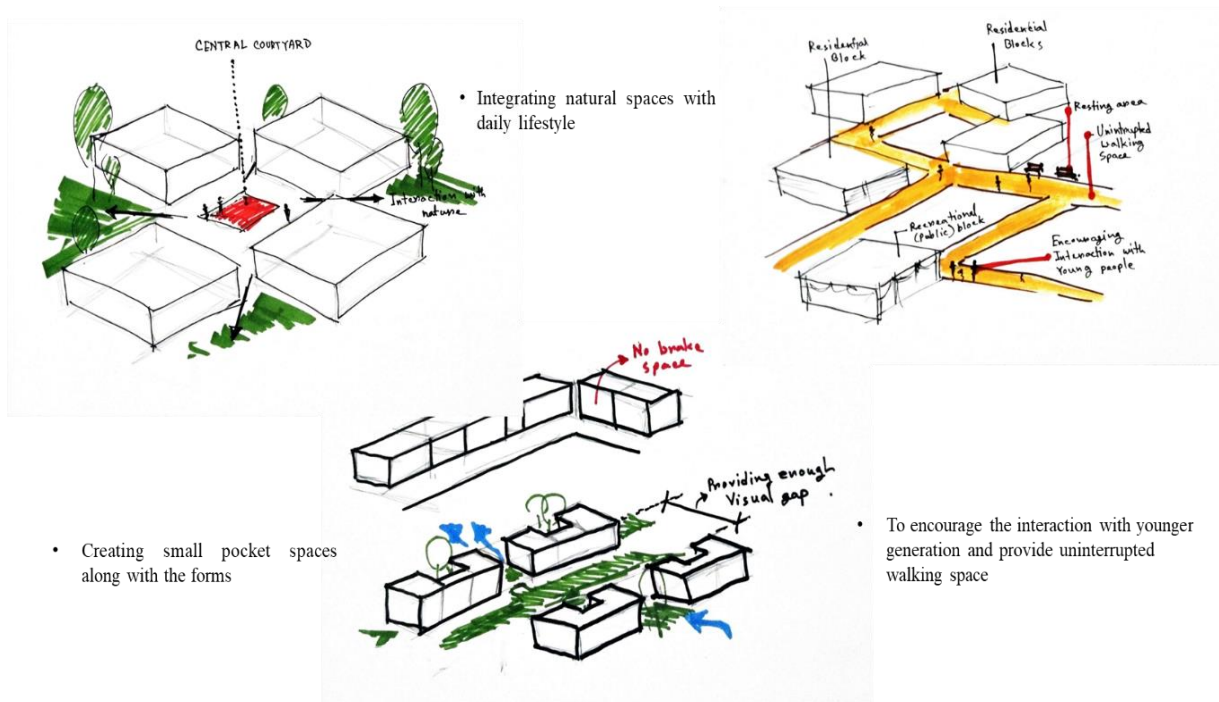


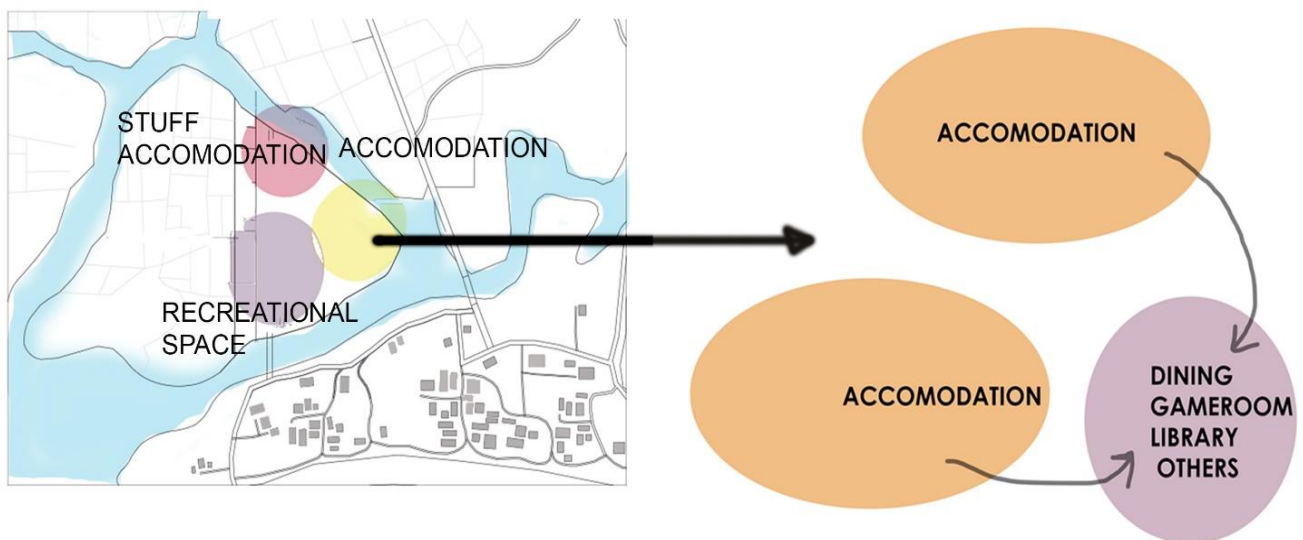
Fig. 6.3.2: Concept: Source: Author

## 6.4 Schematic analysis and zoning

As the proposed access road is from the nearest neighborhood and the program analysis also offers programs which will serve the villagers too, the zoning is done into three major parts, which are: recreational space, residential space and staff accommodation space.

Among these three zones the recreational one is the nearest to the access road for serving villagers as well as the elderly people of the complex. Then comes the residential zoning which is at the most prime location of the site and very close to the waterbody to create vista and interaction with nature. Lastly the staff accommodation is on the very north side which is considered as a service block of the complex.

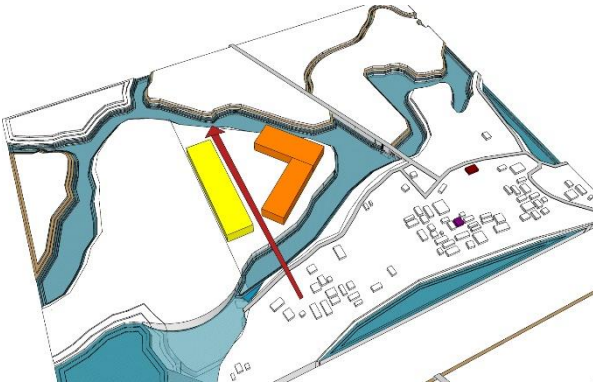
After the macro scale zoning micro scale of the shared functions are considered to be somewhere between the residential spaces and far from the public gathering space.



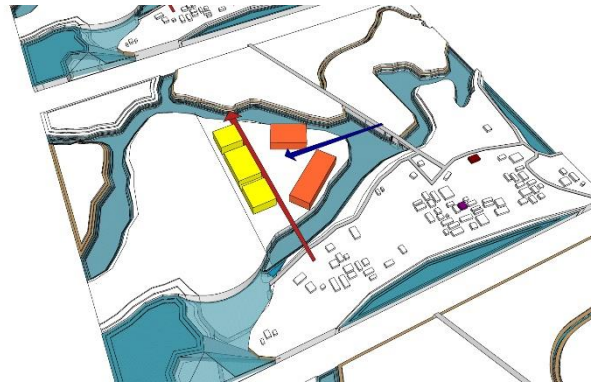
*Fig. 6.4.1: Schematic Plan; Source: Author*

## 6.5 Form Generation

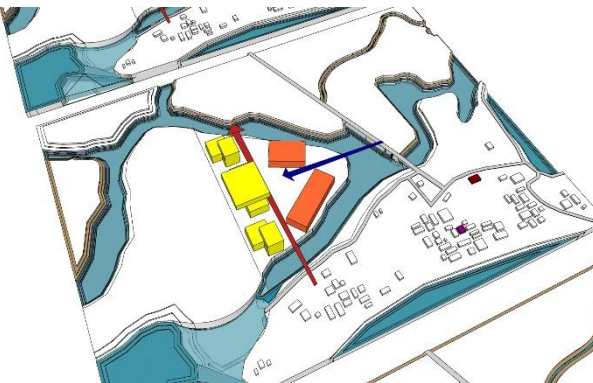
After the zoning and schematic analysis two forms are taken one as public block and the other one as the residential block and aligned according to the site's context. Gradually the forms are interlocked and broke in different phases till the final form of the complex is generated.



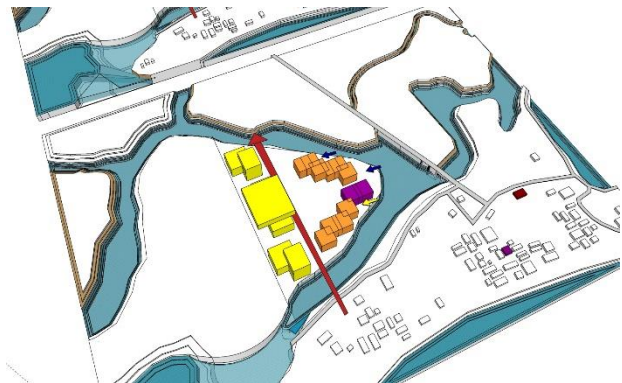
Phase 1: two forms are aligned with the sites Context



Phase 2: the public block and the residential brock is broken into three and two parts to open up a vista.



Phase 3: Each block is interlocked, and height variations are created.



Phase 4: the residential blocks are also broken and interlocked to create pocket spaces.

*Fig. 6.5.1: Form generation; Source: Author*



# Chapter 7: Design Suggestions

## 7.1 Plans

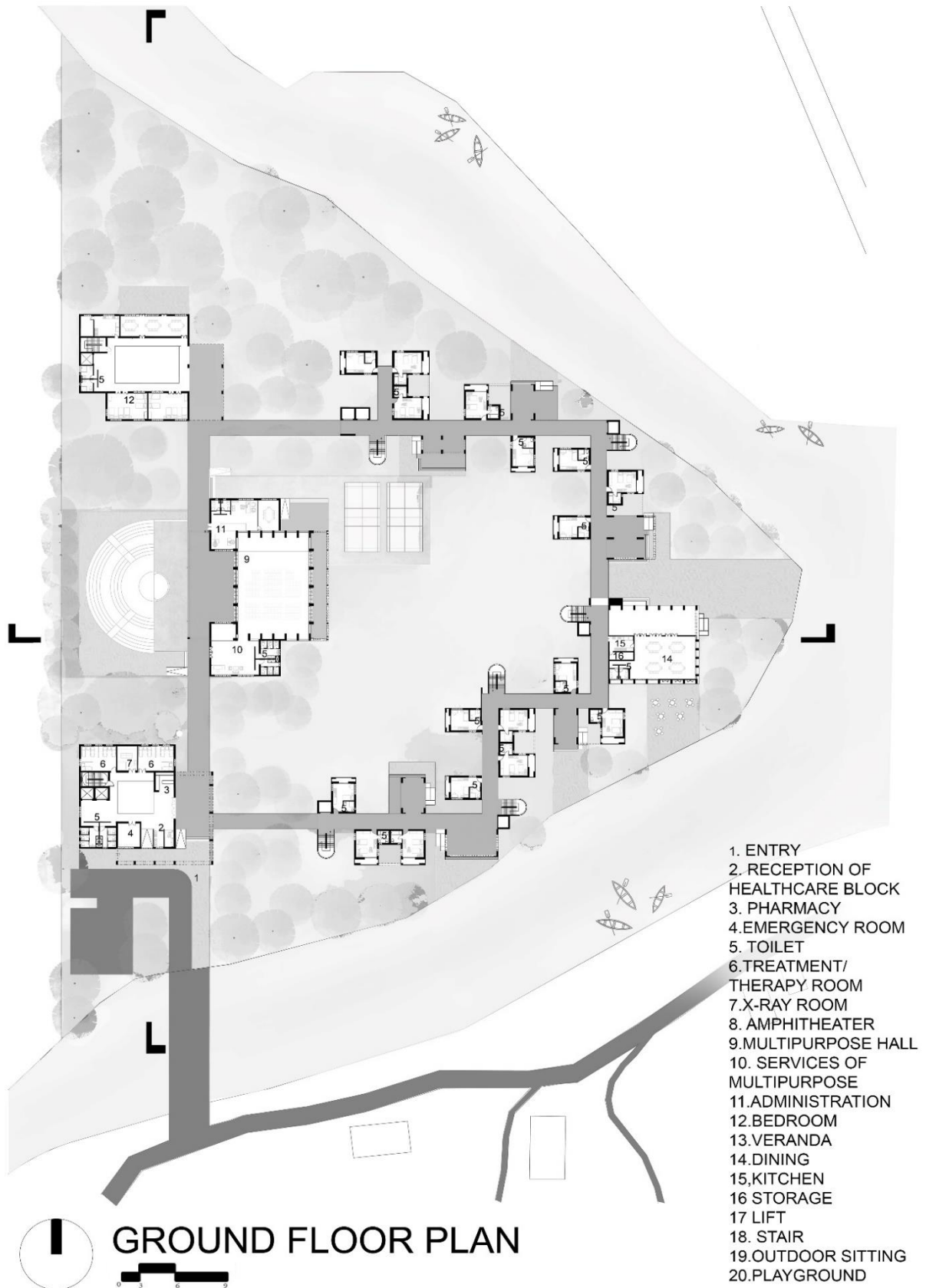
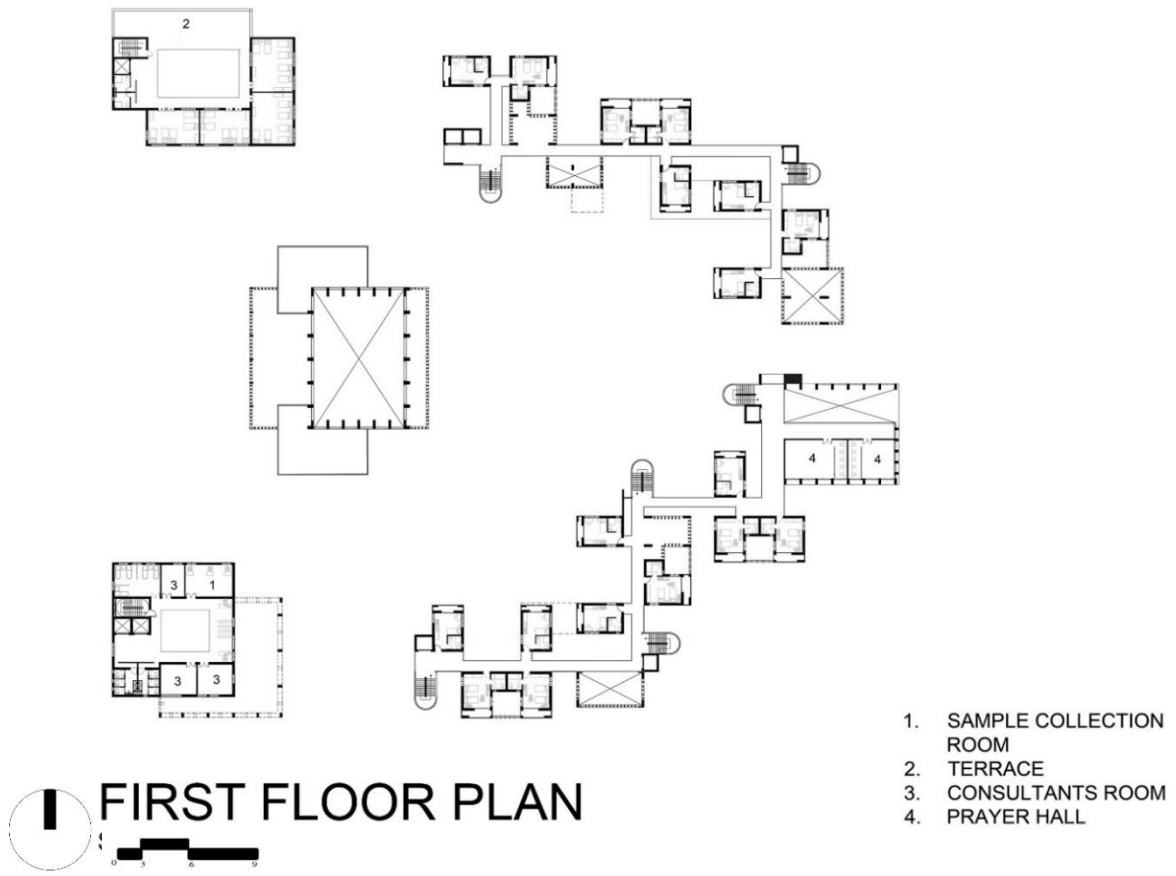
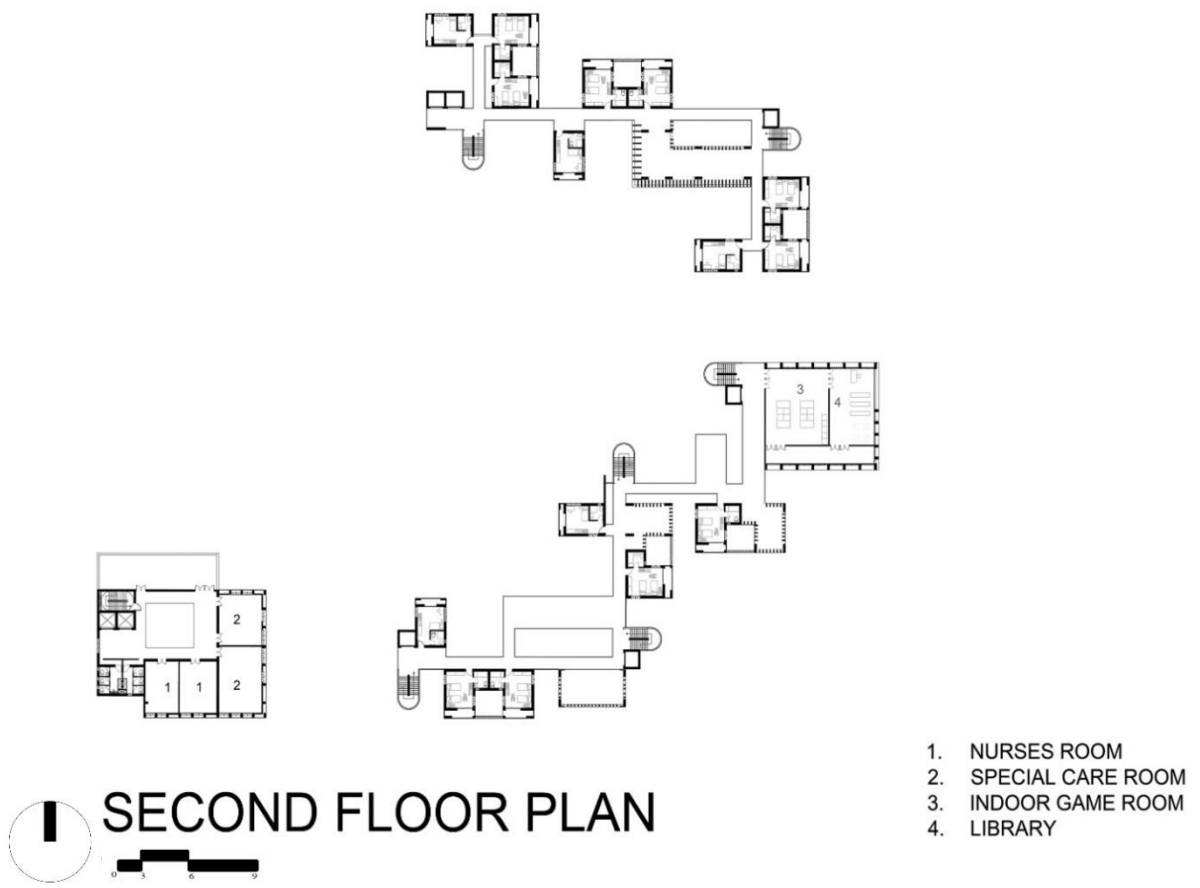


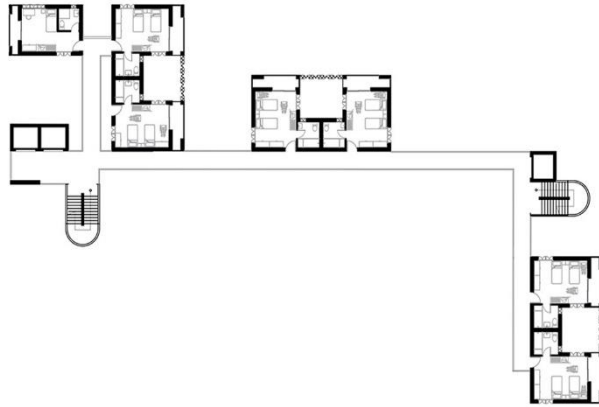
Fig.7.1.1: Ground floor plan; Source: Author



*Fig.7.1.2: First floor plan; Source: Author*



*Fig.7.1.3: Second floor plan; Source: Author*



### THIRD FLOOR PLAN



*Fig.7.1.4: Third floor plan; Source: Author*



### ROOF PLAN

*Fig.7.1.5: Roof plan; Source: Author*

## 7.2 Blowups

1. Dining hall
2. Kitchen
3. Storage
4. toilet

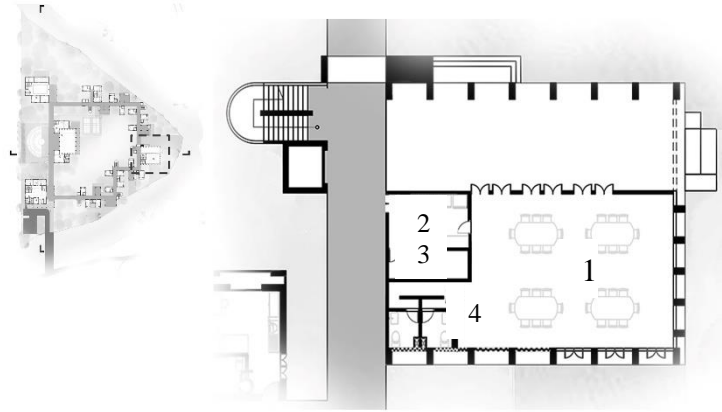


Fig.7.2.1: Blowup plan of dining block; Source: Author

1. Bedroom
2. Dining hall
3. Kitchen
4. Storage
5. toilet

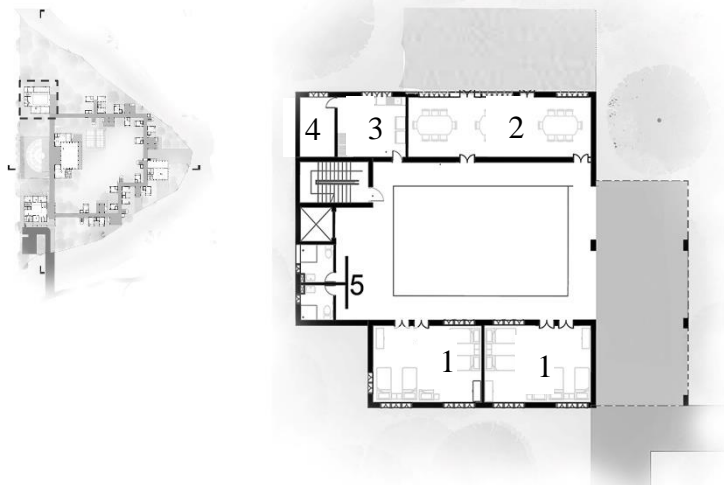


Fig.7.2.2: Blow up plan of staff accommodation block; Source: Author

1. Reception
2. Pantry
3. Meeting room
4. Multipurpose hall
5. Toilet

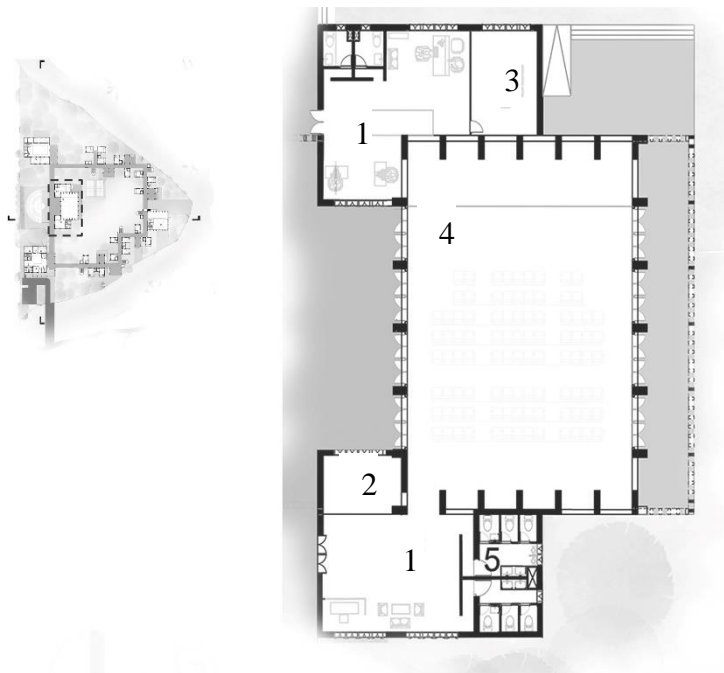


Fig.7.2.3: Blow up plan of multipurpose hall; Source: Author



- 1. Single bedroom
- 2. Double bedroom
- 3. Ghat
- 4. Lift
- 5. Toilet



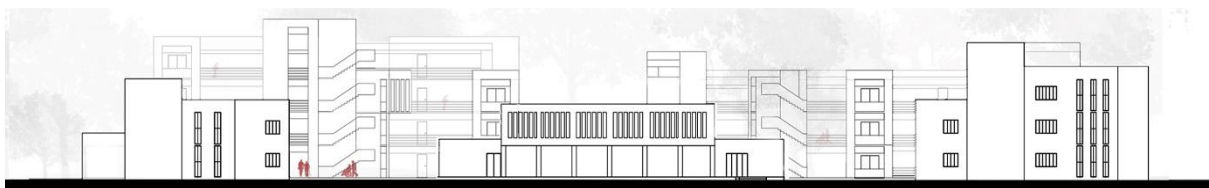
*Fig.7.2.4: Blow up plan of residential block; Source: Author*

### 7.3 Elevations and Sections



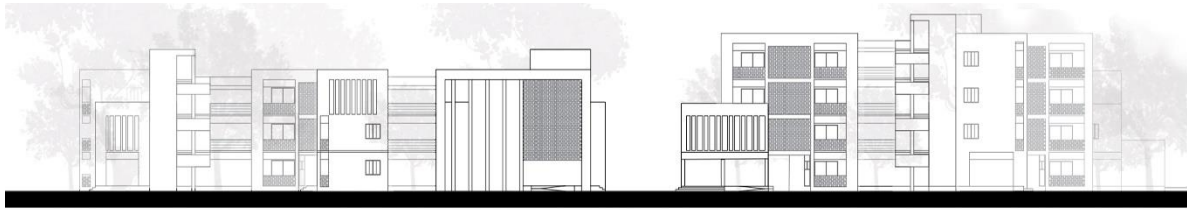
**SOUTH ELEVATION**

*Fig.7.3.1: South Elevation; Source: Author*



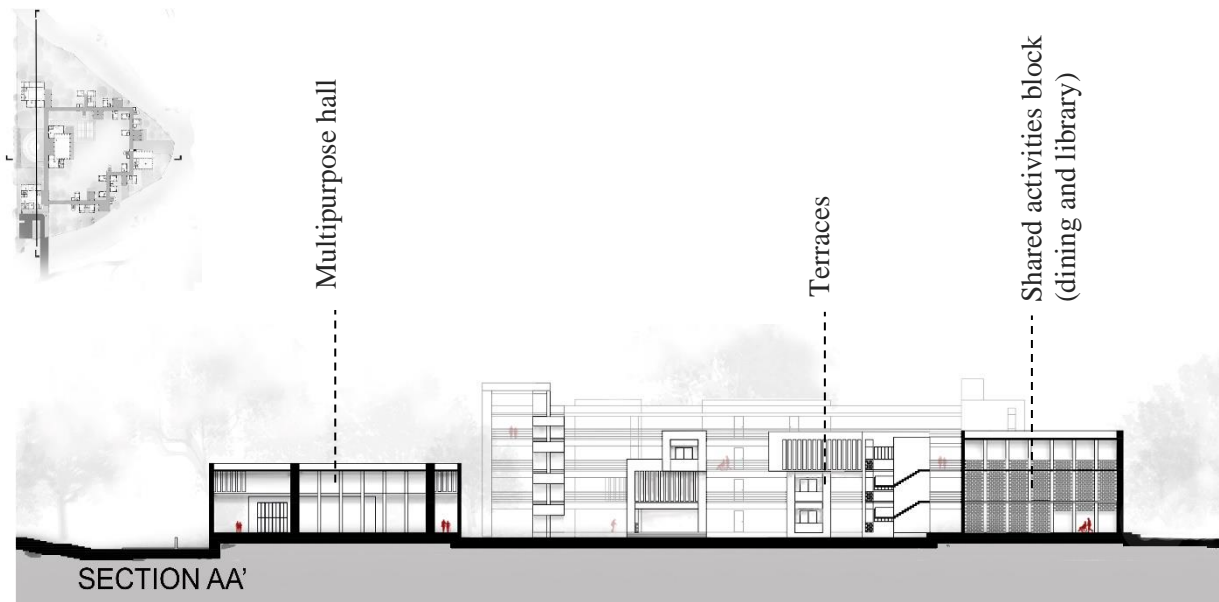
**WEST ELEVATION**

*Fig.7.3.2: West Elevation; Source: Author*

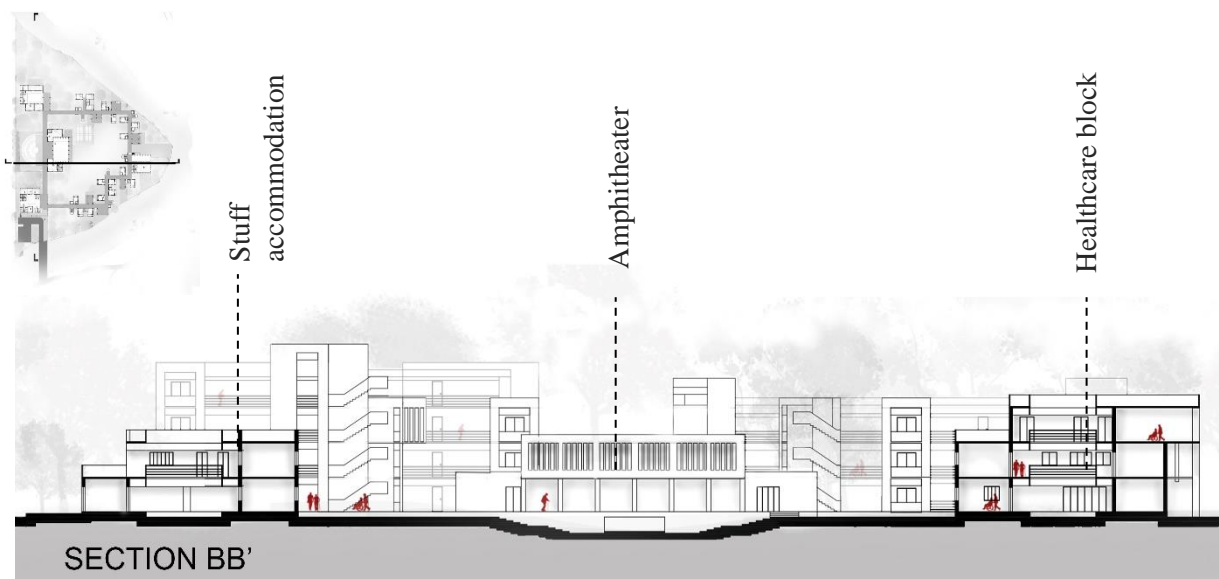


EAST ELEVATION

*Fig.7.3.3: East elevation; Source: Author*

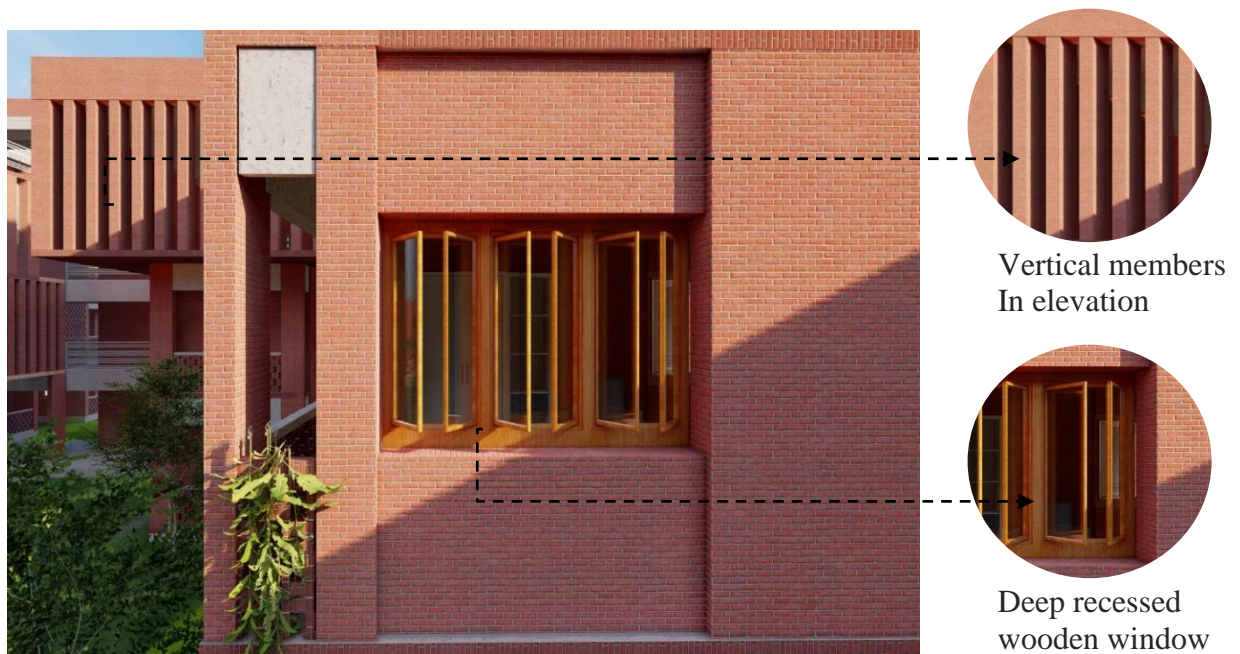


*Fig.7.3.4: Section AA'; Source: Author*



*Fig.7.3.5: Section BB'; Source: Author*

## 7.4 Elevation details



*Fig.7.4.1: Elevation details; Source: Author*

## 7.5 Rendered Images



*Fig.7.5.1: View from the entry; Source: Author*



*Fig.7.5.2: View of the dining and library block; Source: Author*





*Fig.7.5.3: View of the multipurpose block; Source: Author*



*Fig.7.5.4: View of the residential blocks along with the terrace spaces; Source: Author*



*Fig.7.5.5: View of the complex from the east side of the waterbody; Source: Author*



*Fig.7.5.6: View of the central green space; Source: Author*



*Fig.7.5.7: Amphitheater; Source: Author*



*Fig.7.5.8: Birds eye view from east side of the complex; Source: Author*



*Fig.7.5.9: Bird's eye view from the west side of the complex; Source: Author*



*Fig.7.5.10: Bird's eye view of the physical model; Source: Author*



*Fig.7.5.11: Bird's eye view from east side of the physical model; Source: Author*

## References

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## Appendix A.

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার  
স্থাপত্য অধিদপ্তর  
স্থাপত্য ভবন, সেতুনবাগিচা, ঢাকা

স্মারক নং- ২১৮/আর্ক/১৯৩৪/১৯৮০ তারিখঃ ৩০/০৫/৮০

নির্বাহী প্রকৌশলী  
মনিটরিং বিভাগ,  
গণপূর্ত অধিদপ্তর, পূর্ত ভবন, ঢাকা।

বিষয়ঃ সিলেট বিভাগীয় প্রবীণ নিবাস ও হাসপাতাল নির্মাণ শীর্ষক প্রকল্পের স্থাপত্য নকশা প্রেরণ প্রসঙ্গে।

সম্মানের সহিত জানানো যাচ্ছে যে, সিলেট বিভাগীয় প্রবীণ নিবাস ও হাসপাতাল নির্মাণ শীর্ষক প্রকল্পের প্রতিশোধনিত ১ সেট স্থাপত্য নকশা পরবর্তী প্রয়োজনীয় ব্যবস্থা গ্রহণের জন্য আপনার নিকট প্রেরণ করা হলো।

সংযুক্তিঃ ১ সেট নকশা।

(শাবাব রায়হান কবীর)  
সহকারী প্রধান স্থপতি  
বিভাগ-১২, চক্র-৪  
ফোনঃ ০২৯৫৫১৭১২

তারিখঃ ৩০/০৫/৮০

স্মারক নং- ২১৮/আর্ক/১৯৩৪/১৯৮০  
সদর অধিদপ্তর জন্য অনুলিপি প্রেরণ করা হলো (স্বৈচ্ছন্দ্যে তার ক্রমানুসারে নয়)ঃ

- ১। উপ-প্রধান স্থপতি, সার্কেল-৪, স্থাপত্য অধিদপ্তর, সেতুনবাগিচা, ঢাকা।
- ২। নির্বাহী প্রকৌশলী, সিলেট গণপূর্ত বিভাগ, সিলেট
- ৩। তত্ত্বাবধায়ক প্রকৌশলী, মনিটরিং বিভাগ, গণপূর্ত অধিদপ্তর, পূর্ত ভবন, ঢাকা।
- ৪। প্রধান স্থপতির মাস্টার কপি।

অফিস কপি।

(শাবাব রায়হান কবীর)  
সহকারী প্রধান স্থপতি  
বিভাগ-১২, চক্র-৪  
ফোনঃ ০২৯৫৫১৭১২