

# CONTINUING CARE RETIREMENT COMMUNITY

*A THESIS*

Submitted in partial fulfillment 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**

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**NOVEMBER 2021**



## DEPARTMENT OF ARCHITECTURE

### BONAFIDE CERTIFICATE

This is to certify that this Thesis Report is the bonafide work of Nilufer Fidelis.E (37210025) who carried out the Thesis entitled “Continuing Care Retirement Community” under our supervision from July 2021 to November 2021.

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## DECLARATION

I, **Nilufer Fidelis.E** hereby declare that the Thesis Report entitled “**Continuing care retirement community**” done by me under the guidance of **Ar. Yusuf Chiniwala** (Internal Guide), **Dr. Arul Malar.R**(Internal Review Member) and **Ar. SarithaVarikkara** (External Guide) Sathyabama Institute of Science and Technology is submitted in partial fulfilment of the requirements for the award of Bachelor of Architecture Degree.

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**SIGNATURE OF THE CANDIDATE**

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**Nilufer Fidelis.E**

## ABSTRACT

Retirement homes moreover known as ancient age homes, senior living communities, autonomous living communities are planned for elderly individuals who are over 56.

Retirement communities give different lodging choices, commonly lofts, personal condominiums that won't require uncommon care, help for 24/7 or talented nursing, and helped living choices for older folks who require extraordinary consideration and care. Retirement communities offer eating benefits, Clothing, housekeeping, other exercises, social programs, and other fundamental comforts like pools, spas, exercise centers, clubhouse, and more.

A few offer crisis therapeutic care, specialists on call, and talented medical caretakers. Free living communities contrast from Proceeding Care Communities which offer helped living, talented nursing, and different levels of healthcare.

The information required was collected from different investigation papers, books, and websites. The information collected is analyzed by doing a point by point investigation of the case studies.

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## 1. INTRODUCTION

A Continuing Care Retirement Community (Ccrc) Is An Alternative Residential Option For Senior Citizens (Usually 65 Years Of Age And Older) That Provides Flexible Housing Options, Services And Amenities.

Ccrs Includes Levels Of Care In One Location. These Are:

- Independent Living – Where Residents Live Independently On Their Own While Enjoying Access To A Wide Array Of Services And Amenities.
- Assisted Living – Where Residents Receive Help With Activities Of Daily Living (Adls), Such As Eating, Bathing And Dressing.

Different Types Of Senior And Elderly Care Living Options:

- Independent Living Communities
- Assisted Living
- Nursing Or Care Homes
- In-Home Care
- Temporary Or Day Care
- Palliative Care

### 1.1 GENERAL INTRODUCTION

#### **1.1.1 Aim :**

To Provide An Environment, Which As Far As Is Possible Replicates The Resident's Previous Home Life With Independent Units, Assisted Living And Skilled Nursing.

#### **1.1.2 Objectives :**

- To Provide A Safe And Care Free Environment For The Elderly.
- To Provide Individual Housing Units,Shared Or Assisted Living For Elderly.
- To Provide Amenities And Other Services Within The Community.
- To Study The Aspects Of Barrier Free
- To Provide Interactive Spaces To Enhance Their Social And Emotional Living.
- To Study Their Psychological And Mental State,Lack Of Preparedness For Ageing,Loneliness And Other Health Concerns.

### ***1.1.3 Scope :***

Research Conducted By Tata Trusts Estimated That The Total Capacity Across Senior Living Facilities Is Currently At 97,000 Beds (Rounded).The Study Indicates That The Need For Senior Living May Rise To Around 8 To 10 Lakh Beds In The Next 10 Years, Which Is An 8 To 10 Fold Increase Over The Current Base Implying A Compounded Increase Of ~25 % Annually Each Year.

## **2. LITERATURE STUDY**

### **2.1 ROLE OF ARCHITECTURE IN HEALING PROCESS**

'Healing Architecture' Is Received To Conjure A Sense Of A Nonstop Handle; In Making An Environment Physically Solid And Mentally Appropriate. For Way better Arranging And Planning Of Spaces, Modelers And Analysts Attempted To Analyze The Relationship Between Physical Parameters Included In Making Wellbeing Care Centers And Their Impacts On Patients Health-Related Results Such As Patients Consolation Levels, Recuperation, Length Of Remain, Pharmaceutical Admissions, Stretch Levels, Etc...

#### ***2.1.1 Open Spaces :***

The Positive Impact Of Nature And Presentation To The Outside Diverts Elderly

Individuals From Push And Uneasiness Level. Individuals Enduring From Dementia; Forceful Behavior Related With A Unpleasant Involvement May Well be Reduced.

#### ***2.1.2 Natural Light :***

92% Of The Patient's Considered Sunlight To Be Pleasurable And Calming. Only 2% And 1% Of Patients Considered Sunlight To Be A Nuisance.

#### ***2.1.3 Fenestrations :***

'Power Of Window ' Has Proven How The Patients Recover Faster When Their Rooms Had A Direct View Of The External Natural Environment Rather Than A Blank Wall.

#### ***2.1.4 Colours :***

Colours Have A Significant Impact On The Psyche Of Patients. Colour Intends To Encourage Activities, While Other Promotes Passive Behaviour. Yellow, Blue, Green, Purple And Orange Are The Colours Mostly Liked By Elderly People.

#### ***2.1.5 Views And Vistas :***

All The Spaces Should Have Views And Vistas Of Nature From Maximum Spaces Calming And Interesting And Stimulating Views Decreases The Blood Pressure Level Openness And Views Make The Rooms Spacious

#### ***2.1.6 Materials :***

Materials Are Considered To Take Off A Coordinate Impact On Generally Sense Of The Environment Just Like The Capacity To Influence The Sound Environment, Circulate Development, Increase/Decrease Consolation And Different Activities. Characteristic Materials In Case Utilized In Spaces Have Not Only Recuperating But It Incorporates A Positive Impact On Environment. Eg: Against - Slip Tiles, Reflexology Foot Way, Finished Dividers, Etc...

### ***2.1.7 Welcoming Entrance :***

Entrance Is The First View Of Which Depicts The Environment Inside. It Should Be Alluring To Generate A Good Impression Shaded With Trees Or Canopies, Well Landscaped With Trees, Plants And Water Body.

Exposure To Sunlight Gives Better Health Outcomes. Design Of Openings In The Interior, Visual Comfort Plays An Important Role The Light Should Not Create Undesirable Glare.

### ***2.1.9 Lawns :***

Nature Has Therapeutic Abilities. Access To Landscape To Occupants Offers Feeling Of Liberty And Seclusion Building Should Create Outdoor Space In Relationship To Landscape & Climate.

### ***2.1.10 Proximity Of Spaces :***

All The Interactive Spaces Such As Gathering Spaces And Activity Rooms Should Be Close To Wards, And Centralized To Increase Involvement And Participation. There Should Be Good Internal Connections Between Spaces.

### ***2.1.11 Access To Nature :***

Nature Has Therapeutic Abilities. Access To Landscape To Occupants Offers A Feeling Of Liberty And Seclusion. Contact And Access To Nature Increases The Recovery Rate And Decreases The Stress, Blood Pressure And Maintains Normal Heart Rates.

### ***2.1.12 Wayfinding:***

Elderly People Experience Difficulties With Navigating Their Environments, And May Need To Rely On Signs.They Also Have Difficulties With Focusing Their Visual Attention Elders Can Literally Follow The Path To Their Destination In This Colour Coded Space.

### 2.1.13 Privacy :

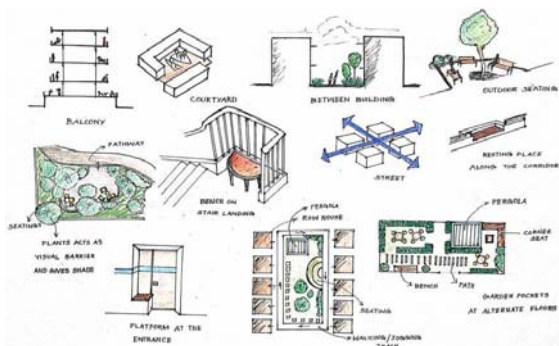
Spaces Should Respect The Privacy Of The Occupant There Should Be Degree Of Liberty To The Patient To Decide The Level Of Interaction With The World Use Of Curtain Partition Walls, Noise Reducing Material & Finishes Can Be Helpful In Providing Privacy In General Wards

### 2.1.14 Visual Comfort :

As Everyone Has Different Comfort Levels, In Terms Of Visual,Liberty Of Regulating Temperature, Opening Of Windows, Control Of Light Through Curtains And Blinds Should Be Provided.The Ceilings Could Be Painted In Darker Colors Than The Walls To Have A Restful Gaze. The Room Light Should Not Be Direct Or Focus Lights, It Could Be Reflected Off The Walls And Ceiling To Provide A Sense Of Visual Release.

### 2.1.15 Chromatherapy :

Color Can Be Used To Help Balance A Person Physically, Mentally, Emotionally, Or Spiritually. Relaxing And Calming Color. Lowers Blood Pressure, And Can Lead To Better Sleep. Promotes Balance Within, Calm The Nervous System And Lower Blood Pressure. Stimulate The Mind, Boosts Energy Will Power Poor Appetite Anemia, And Fatigue. Calming, And Believed To Be Purifying And Cleansing As Well. Helps With Concentration, Digestion, And Promotes A More Joyful Outlook.



**Fig 2.1 Conceptual sketches**

## 2.2 GERIATRIC AGE :

- Age group is not defined precisely, WHO defines old age as
- $\geq 60$  years (developing countries) or  $\geq 65$  years (developed countries)
- EUROPE: Starts from 65 years of age
- AMERICA: 70 to 71 years of age for men and 73 for women
- BRITAIN: 70 years of age
- DEVELOPING COUNTRIES: Considered old when you start receiving
- some form of pension.
- CHINA: 60 for men and 50 for women
- INDIA: India has the lowest retirement age in Asia, with 58 considered the age to retire.
- LIBYA, a country in AFRICA: 65 to 70 years of age
- AUSTRALIA: 67 years old however the Government is also pushing older people to remain working.
- TURKEY: Beginning 55-year-old and you are considered old when you reach the age of 70.

### 2.3 AIMS OF PROVIDING HEALTH CARE :

- Maintenance of healthy function.
- Detecting severe disease at an early stage.
- Prevention of deterioration of an existing health problem.

### 2.4 FIRST OLD AGE HOME IN INDIA

The first old age home in India came up in Thrissur, Kerala in 1911. It was started and set up by the Raja of Cochin and was called the Raja Varma old age home. In Kerala, the elderly comprise almost its percent of the population and the state has been aging faster than the rest of the country.

### 2.5 ASSISTED LIVING ADMISSION REQUIREMENTS AND CRITERIA

- Have severe cognitive impairment.
- Show behavioral symptoms such as wandering.

- Have extensive medical needs.
- Require daily nursing services.

## 2.6 REASONS WHY RETIREMENT HOMES ARE BECOMING A MUST TODAY

Most of us would have second thoughts of our parents having to live in a retirement home during old age. But due to the modern situation where most children are working away from home, abroad, or in another city, the best option and sometimes the only option is to keep them in a retirement home.

Old age people living alone in a house or an apartment when their children are working abroad. They face so many myriad problems every day and their children will also be under considerable tension regarding their well-being. In such a situation a retirement home can act as a perfect solution for both.

Some Of The Reasons Why Retirement Homes Are Becoming A Must Today :

*Children are working away from home :*

Most children reside in other countries or in another city for work purposes and the aging parents are left alone with no one to look after them. Retirement homes give the opportunity to live as a community giving the feeling of an extended family with the same age group.

*Safety is an issue for senior citizens:*

Nowadays crimes have become common against senior citizens, they are easy targets. But living in a retirement home gives protection and security because of constant screening visitors. CCTV offers constant surveillance and video intercom monitor visitors.

*Stress-free living :*

Working daily at home may not be mentally stressful but it's physically stressful

and demanding, mainly for senior citizens. At retirement homes, the daily chores are mostly done and taken care of by the association offering them a stress-free living. Even the cooking is taken care of at the community kitchen.

## 2.7 LONELINESS

Loneliness is a common phenomenon that basically all humans have to deal with at a certain point in their lives. Loneliness occurs in all range groups to both men and women in any culture. People experience loneliness in many different ways with a varied amount of impact.

Anne Forbes simplifies loneliness into two different types: external and internal. External loneliness relates to the life circumstances of a person and Internal loneliness is something related to one's personal traits.

### **2.7.1 Causes**

Loneliness happens among all ages, but often elderly people are associated with this. And this is due to the loss of a partner or decline in health seems to be of more importance for developing loneliness.

The common causes of loneliness are;

#### *TERMINATION :*

- The common cause of loneliness is the ending of a relationship. The examples are :
- Loss of someone caused by death.
- Separating from someone
- Divorce
- Widowhood

#### *PHYSICAL SEPARATION :*

Another cause of loneliness is caused by physical separation. It occurs when a

person moves to another place and moves away from its social contacts who used to live close hearted. Moving from your own home to a home for elderly people.

### **2.6.2 Consequences**

Being lonely gives a negative feeling to a person. But being lovely normally motivates people to connect or reconnect with other people. The people who are lonely always often show signs of depression. Physical health is the common cause of depression. Another consequence of loneliness is suicide and suicide attempt. Family conflicts, serious. physical illness and both major and minor depressions, loneliness is one of the main causes, associated with suicide among elderly people.

### **2.6.3 Reducing Factors**

Feeling lonely is a negative factor but this can be changed into a more positive situation and make the person feel less lonely, the amount of loneliness can be reduced in different ways.

### **2.6.4 Activation**

Retirement homes can possibly make people feel less lonely because they get in touch with other people. At retirement homes, they get opportunities to interact with many people and stay actively involved with the society around them rather than staying at home alone and waiting for someone to visit them. The elderly people are also encouraged to take part in various activities that help them to expand their social network, leading to less feeling of social isolation.

## **2.8 OLD AGE HOMES IN INDIA :**

There are 728 old age homes in India, information about the 547 homes are available and out of these 325 homes are free of cost while 95 old age homes are on a pay and stay basis and the remaining 116 homes have both options and 11 homes have no information.

## 2.9 DIFFERENT TYPES OF SENIOR AND ELDERLY CARE LIVING OPTIONS:

### *Independent Living Communities :*

Independent living communities are for both singles and couples who can look after themselves but want to live in a community with their own age group.

This community has an abundance of programming and activities for the elders.

- Fitness classes like yoga, meditation
- Art, music, and writing.
- Seminars for seniors about mental health.

### *Assisted Living :*

Assisted living is also a type of housing for people who need levels of medical and personal care. It can be individual rooms and apartments or shared rooms.

The services offered by assisted living communities vary from facility to facility

- One to three meals a day.
- Medication
- Personal care includes bathing and dressing
- Laundry and housekeeping.
- Emergency care (24/4))
- Medical service.
- Recreational activities.

## 2.10 GROUP ENVIRONMENT :

The Main Aim Of Retirement Community Is To Enable Residents To Maintain Their Independence For As Long As Possible Without Jeopardizing Their Safety. Provide Individual Care, Permitting Flexible Daily Rhythms And Patterns.

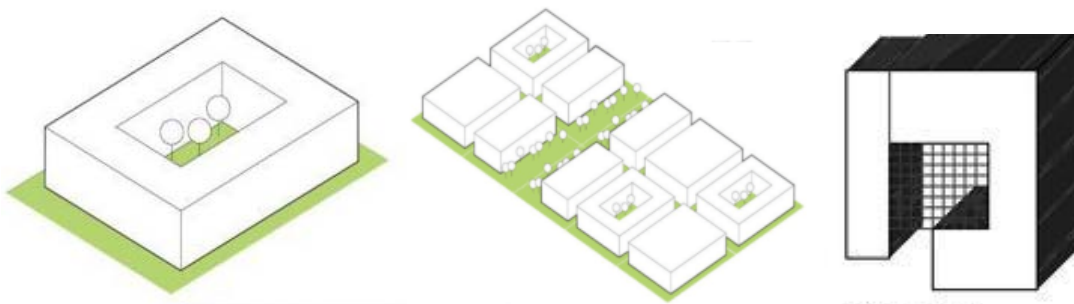
Create Small - Group Environments That Support Relationship Building. Enable And Encourage Participation In Activities Of Daily Living, Allowing For Flexible Scheduling

To Accommodate Individual's Needs Addressing Physical, Social, Mental And Spiritual Well Being.

## 2.11 SEGREGATED CARE :

Segregated Care In Retirement Community Has A Tangible Impact On Resident Behaviour, Their Social Abilities, And Care Outcomes.

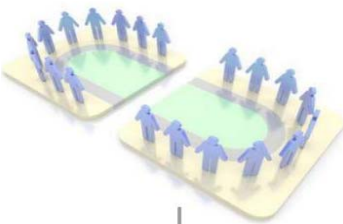
Residents With Cognitive Impairments Living In Small-Scale Environments Indicate Mainly Positive Effects On All Outcomes Investigated; Strong Evidence Was Found For Improved Social Abilities, Functionality And Well Being.



**Figure 2.2***Courtyard concept*

## 2.12 POPULATION SIZE :

Designing Individual Households Where 8 - 10 Residents Share A Common House Or Cottage. Two Households Can Be Linked Or Adjoin Each Other To Share Common Support Spaces.



**Figure 2.3***Population size*

## 2.13 ACCESS TO OUTDOORS

Provide Easy Access To Outdoor Space This Gives Them Opportunities For Socialization. Bright Light Exposure And Sunlight Therapy.

Supports Better Sleep Hygiene And Contributes To Management Risk Programs.



***Figure 2.4 Outdoor space,Natural light and ventilation***

#### 2.14 FENESTRATION :

Elderly People Are Highly Susceptible To Cold Breeze And Temperature. Typical Nursing Homes Built Force Flow Through Ventilation System In Which Both Cool And Warm Air Pushed Through Ceilings,Grills Often Creates Breezes And Germs Can Be Distributed.

#### 2.15 NATURAL LIGHT :

Exposure To Sunlight Gives Better Health Outcomes. Design Of Openings In The Interior, Visual Comfort Plays An Important Role The Light Should Not Create Undesirable Glare. Sufficient Lighting Should Be One Architectural Effort For People With Dementia.

#### 2.16 COURTYARD

Consider Including Enclosed Courtyards Within The Building Footprint. These Courtyards Are Fully Enclosed And Secure By Nature Of Being Surrounded By The Building(S), Allowing Residents Free Access Without Fear Of Wandering Away From The Facility.

## 2.17 NEIGHBOURHOOD :

Every Neighbourhood Has An Identity. Through Different Themes Of Cobbled Streets To A Broad Walk Through Fare, Every Material Contributes To Their Spatial Experience And Interaction Of Community. Lighting , Seating Nodes And Interconnected Pathways Create Unique Spaces For Individuals To Find Refuge And Gives Opportunities For Social Interaction.

## 2.18 VILLAGE CONCEPT

The Village Concept Is A Cluster Of Small One Storey Buildings That Are Interconnected By Side Walks With A Central Community Core. Small Individual Houses Thrives Independently From The Community Core And Is Focused On Independence And Privacy.



***Figure 2.5 Village concept***

## 2.19 ORIENTATION AND WAYFINDING :

Residents Experiencing Cognitive Impairment Become Confused Easily And Get Lost In Their Environment. They Have Difficulty In Navigating Routes. Wayfinding Consists Of 3 Key Components :

- Knowing Where You Are
- How To Get Somewhere (Mental Map)
- Recognizing When You Have Arrived



***Figure 2.6 Colour doors***

- Name Plates On Doors.
- Different Colour Doors.

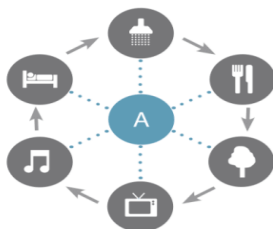


***Figure 2.7 Plates***

Residents With Dementia Ate More And Showed / Displayed Less Agitation When Dining Arrangements Incorporated Brighter Light And Heightened Colour Contrast.

## 2.20 ORIENTATION BY SENSORY INPUT :

- Effective Circulation Pattern. Adapted And Modified From Evidence Based Design
- Decision Point Based On Sensory Input Not Memory



***Figure 2.8 Sensory input***

## 2.21 MATERIALS :

Since Brick Is A Natural Material It Makes The Whole Complex More Vernacular , Visually And Psychologically.Use Of Exposed Brickwork Gives More An Earthly Feel To The Residents.



*Figure 2.9 Exposed brick, concrete tiles for pathway*



*Figure 2.10 Hard landscaping, Soft landscaping*



*Figure 2.11 Floor texture, Terracotta*

### 3.STANDARDS

#### 3.1 AVERAGE SIZE OF DWELLING UNITS :

| Number of rooms | Dwelling unit size (sq.mts.) |
|-----------------|------------------------------|
| 1 BHK           | 40-60                        |
| 2 BHK           | 50-80                        |

**Figure 3.1 Average size of dwelling units**

### 3.2 INDICATIVE NORMS FOR RETIREMENT HOMES AS GROUP HOUSING

| Plot size (sq.mts.) | Ground Coverage (%) | FAR                                                                    | Dwelling density (DUs/Acre) | Height Excluding stilts (mts.) |
|---------------------|---------------------|------------------------------------------------------------------------|-----------------------------|--------------------------------|
| 1500                | 45                  | 1.2<br>(for higher FAR, State Government may conduct relevant studies) | 100                         | 12                             |

**Figure 3.2 Norms**

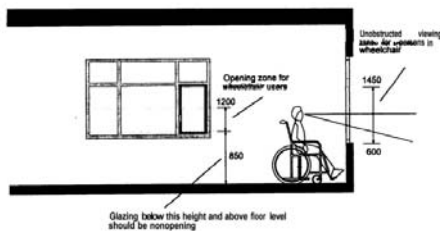
### 3.3 SPECIFICATIONS FOR COMMUNITY FACILITIES AND OPEN SPACES :

| Medical Room                           | Community Space                                 | Convenience Store                          | Total Open Spaces |
|----------------------------------------|-------------------------------------------------|--------------------------------------------|-------------------|
| Minimum 15 sq.m/25 DUs or part thereof | 2 sq.m / person or 300 sq.m whichever is lesser | 2% of BUA or 20 sq.m. whichever is lesser. | 55% of Site area  |

**Figure 3.3 Specifications for spaces**

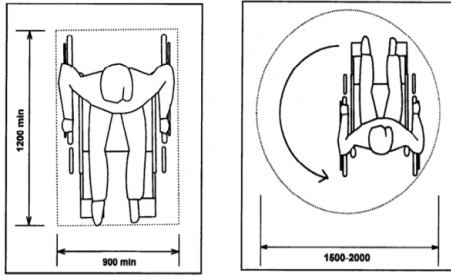
### 3.4 DESIGN :

- All Buildings With More Than One Floor Must Be Provided With Lift.
- Interior And Exterior Design Of Building Spaces Should Consider Movement Of Wheelchairs.
- Door Opening Should Not Be Less Than 900mm In Width.
- Furniture Should Be Lightweight, Without Sharp Edges And Ergonomic Design Specific To The Design Of Senior Citizens.
- Sliding Windows Should Be Used Preferably.

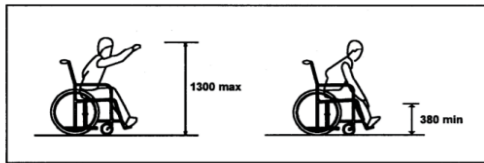


**Figure 3.4 Window**

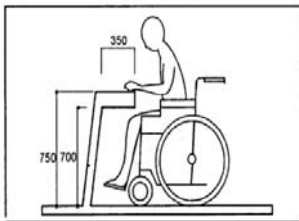
### 3.5 SPACE ALLOWANCE FOR WHEELCHAIR



**Figure 3.5 Space allowance for wheelchair**

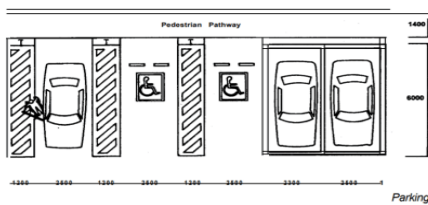


**Figure 3.6 Cupboard height and reach**



**Figure 3.7 Table height**

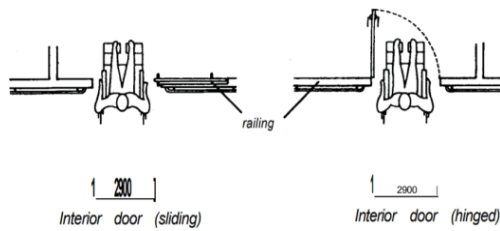
### 3.6 PARKING



**Figure 3.8 Parking**

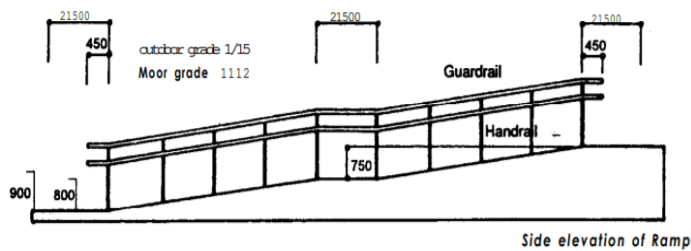
Entrance Door / Exit = 900 Mm

Entrance Landing = 1800 X 2000mm



**Figure 3.9 Door entry / exit size**

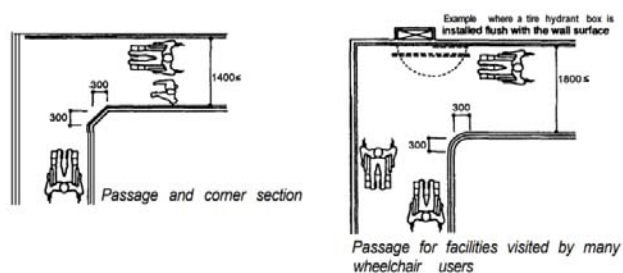
### 3.7 RAMP



**Figure 3.10 Ramp**

- Ramp Shall Be Finished With Anti-Skid Material.
- Width = 1800mm With 1:12 Gradient
- Shall Not Exceed 9m And Handrails Should Be Provided On Both Sides Of The Ramp With 800mm Height.
- Minimum Gap From Adjacent Wall To The Handrail Shall Be 50mm.

### 3.8 CORRIDOR

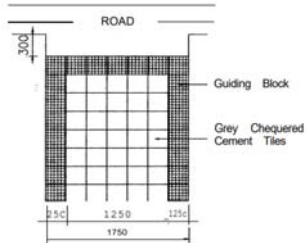


**Figure 3.11 Corridor width**

- Minimum Width Of The Corridor Shall Be 1500mm

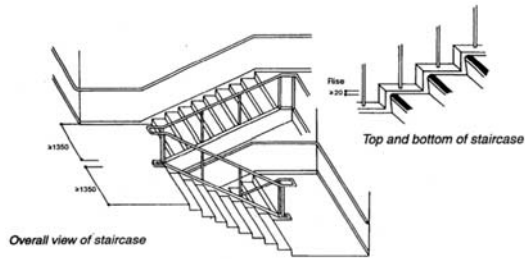
- Slope Shall Always Be Provided With A Ratio Of 1:12 .
- Handrails Shall Be Provided For Ramps And Corridors.
- Guiding Floor Materials, Anti-Skid Tile Shall Be Provided To Guide The Person With Difficulties.

### 3.9 WALKWAY



**Figure 3.12 Walkway**

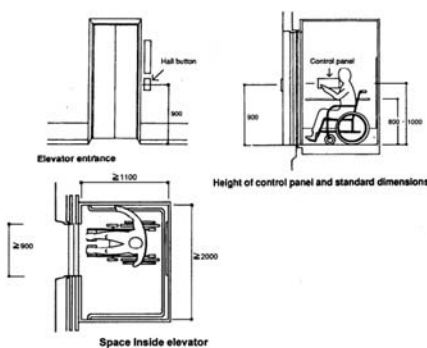
- Walkway Should Be Constructed With Non-Slip Material And Different From Other Areas.
- Staircase:
  - Clear Width Not More Than 1500mm
  - Height Of The Riser < 150mm
  - Width Of The Tread - 300mm
  - Handrails Should Be Provided On Both The Sides.
  - 12 Treads In A Single Flight (Maximum).
  - Spiral Stairs Should Be Avoided.
  - Radium / Fluorescent Strips Should Be Installed In All The Stairs.
  - Square Nosing And Open Stairs Should Be Avoided.
  - Steps Should Not Be Introduced Into Corridors.
  - Provide Handrails / Grab Bars On The Stairs. Handrails Shall Be Extended 300mm On Top And Bottom Of Each Flight Of Steps.



**Figure 3.13 Stairs**

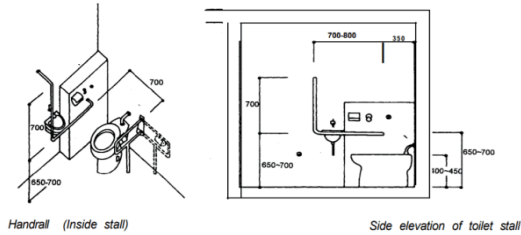
### 3.10 LIFT

- All Lifts Must Have Audio And Visual Signages And Signalling Systems.
- Mandatory Ramps Should Be Provided Throughout The Building To Provide For Wheelchair Access.
- Clear Internal Width = 1100mm
- Clear Internal Depth = 2000mm
- Entrance Door Width = 900mm
- Lift Lobby = 1800 X 2000mm Or More
- Handrail = 1000mm Above The Floor Level
- Door Closing : 5 Sec



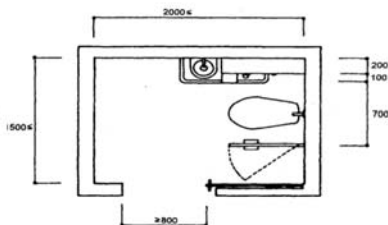
**Figure 3.14 Elevator**

### 3.11 TOILET

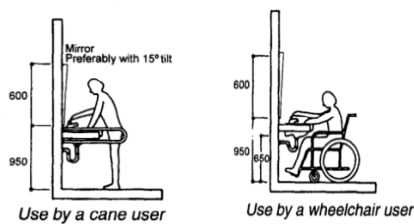


**Figure 3.15 Toilet**

- MINIMUM SIZE : 1500 X 1750 MM.
- MIN CLEAR OPENING OF THE DOOR = 900MM AND THE DOOR SHALL SWING OUT.
- VERTICAL/HORIZONTAL HANDRAILS WITH 50 MM. CLEARANCE FROM WALL SHALL BE MADE IN THE TOILET.
- THE W.C. SEAT SHALL BE 500 MM FROM THE FLOOR.
- WASH BASIN SHOULD BE PROVIDED WITH GRAB RAILS
- ANTI-SKID TILES
- OUTWARD OPENING DOORS INCASE OF EMERGENCY WHEN THE SENIOR CITIZEN IS INSIDE THE BATHROOM.

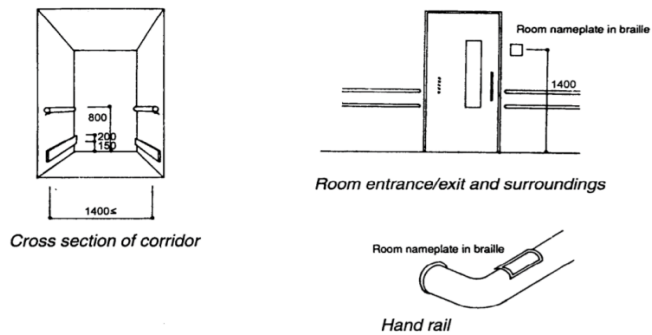


**Figure 3.16 Toilet detail plan**



**Figure 3.17 Cane user and wheelchair user**

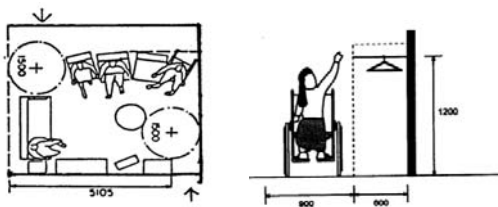
### 3.12 SIGNAGES



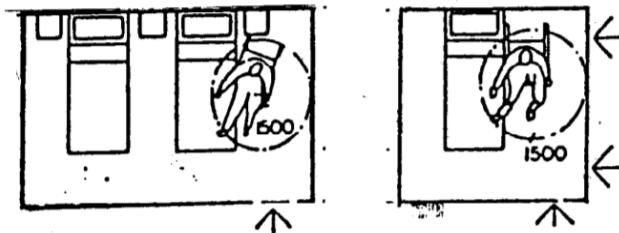
**Figure 3.18 Signages and handrail**

- International Symbol Mark For Wheelchair Shall Be Provided Near Lift, Ramps, Staircase, Toilet, Parking Areas, Etc
- To Ensure Safety Walking There Shouldn't Be Any Protruding Sign.
- Illuminated / Fluorescent / Radium Strips Shall
- Be Installed On All Stairs To Act As Guides,
- Especially In Low Light And Night-Time Conditions

### 3.13 LIVING AND DINING



**Figure 3.19 Living and dining**



**Figure 3.20 Bedroom**

- 1500MM TURNING RADIUS SHOULD BE PROVIDED IN SPACE FOR A WHEELCHAIR NEAR ALL THE ENTRY POINTS.
- LIVING DINING COMBINATION IS PREFERABLE TO A KITCHEN DINING COMBINATION.
- AT LEAST 900MM SHOULD BE PROVIDED AT THE SIDE OF THE BED FOR THE WHEELCHAIR.
- 900MM (MIN) WIDTH SHOULD BE PROVIDED IN FRONT OF THE BEDROOM CLOSET.
- THE MAX. AND MIN. HEIGHT OF SHELF SHOULD BE 1400 AND 300 MM.

## 4. CASE STUDY

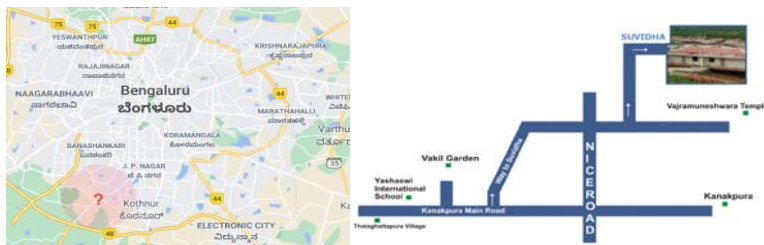
### 4.1 SUVIDHA RETIREMENT VILLAGE

Location: Nice Ring Road, Bangalore

Area: 30 Acres

Project Year: 2004

Architects: Jaisim-Fountainhead



**Fig 4.1 Site Location**

The Suvidha Retirement Village Has Been Set Up By SushrutaVishranthiDhama Ltd.

This Facility Was Conceived By Few Doctors Of The Bangalore Hospital, Which Is Situated At The South End Circle, Jayanagar, Bangalore, This Is The Reason Why 70% Of The Investors Are From The Medical Profession.

Suvidha Has 180 Cottages With All The Amenities With A 3-Acre Water Body, Peaceful Walkways, A Meditation Center, Gym, Etc...



***Fig 4.2 Lake near the site***

Suvidha has 180 cottages with all the amenities with a 3-acre water body, peaceful walkways, a meditation center, gym, etc... The residents should have to be so many years of age.

*Assisted living facilities:*

Housekeeping, Safety, Kitchen, Shopping trips, Physical comfort, Health care services, Transportation.

*Other facilities:*

Clubhouse, Cafeteria, Gym, Library, Home delivery, Parlour, 24/7 security, Auditorium, Buggy service.

*Dwelling Units:*

- Work Phase 1-A Consists Of An Additional 20 Cottages In Progress.
- The Village Consists Of Single Dwelling Units And Each Single Unit Measures 925 Sq.Ft
- It Consists Of A Living Cum Dining Cum Kitchenette, One Bedroom With An Attached Bathroom, And One Extra Room, A Bathroom Across The. Entrance Of The Lobby And Verandahs On Two Sides.

#### *Health Care:*

- Fully Furnished.
- The Health Care Center Is Located In The Dormitory Block Near The Clubhouse.
- It Is Equipped For Both Primary And Emergency Health Care With Required Equipment Necessary For The Residents.
- There Is A Small Operation Theatre For Minor Surgeries.

#### *Medical Services:*

- Routine checkup (BP, sugar)
- Oxygen concentrator.
- Primary health care center.
- Heart start monitor
- Operation Theatre (minor surgery)
- Oxygen concentrator.

The primary health care center consists of a lounge, dining, doctor's cabin, 3 private rooms, a small operation theatre, and services like kitchenette and storeroom. The major loophole is that this health center has only one entrance thus it makes it tough for the workers to dump the medical waste from the operation theatre. (Area = 340 sq.m)

#### *Clubhouse, Gymnasium, And Recreation Facilities:*

The gym located inside the clubhouse has been equipped with a motorized treadmill, magnetic cycle, x-bike, Home gym, two AB slimmer, and yoga mat. As the gym has enough space, table tennis has also been placed. There are two badminton courts near the clubhouse and a swimming pool.



***Fig 4.3 Clubhouse***

***Landscaping :***

Suvidha has an extensive landscape area of about 10 acres around the cottage and common areas. There are over 3000 trees planted on the site.



***Fig 4.4 Walkway***

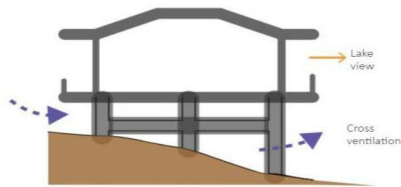
***Fig 4.5 Landscape***

***Cottage 126, Suvidha :***

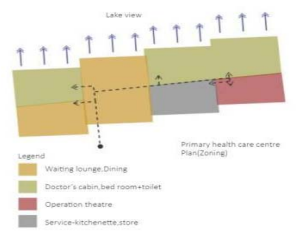
- Cottage 120 is a cottage of Ar. Jaisim. The cottage looks like a treehouse and the materials used in the construction of this cottage are different from other cottages.
- The ground is coated with terracotta tiles and sand. The false ceilings are made of inverted baskets painted with white coatings.
- Small trees and plants are set up which acts as an element of the landscape. In the stilt, there is a semi-open sitout space.
- The spaces of the cottage are workspace, study, lounge, kitchen, and bedroom.
- Materials used in the cottage are brick, clay, terracotta, stone, glass, and

wood.

- These materials are locally available and play a major role in maintaining the temperature of the cottage.
- The cottage has 2 turbine ventilators that keep the cottage well ventilated



***Fig 4.6 Lake view from cottage balcony***



***Fig 4.7 Primary Health care center planning***

## 4.2 SMILES SENIOR CITIZEN LIVING :

Location: Jayadarsini Township, Medchal, Hyderabad

Area: 2633.6 Sqm

Project Year: 2012

Architects: AAB Associates

Smiles is an old age home in Hyderabad. Its premise has a meditation hall, an amphitheater, rooms with TV, telephone, wifi-connectivity to chat with their loved ones.

Housed at Jayadarsini Township, Medchal, 26 km from Secunderabad, SMILES has been a home for 55 years and above. The site is 2033.6 sq.m in area and has a courtyard creating a pleasing environment. Central courtyards help the residents to talk with each other. At the entrance, there is a mural of trees, monkeys, and a laughing Buddha.

*Type Of Accommodation:*

Comprehensive housing service is available to all residents and they have a free choice of any of the following accommodation.

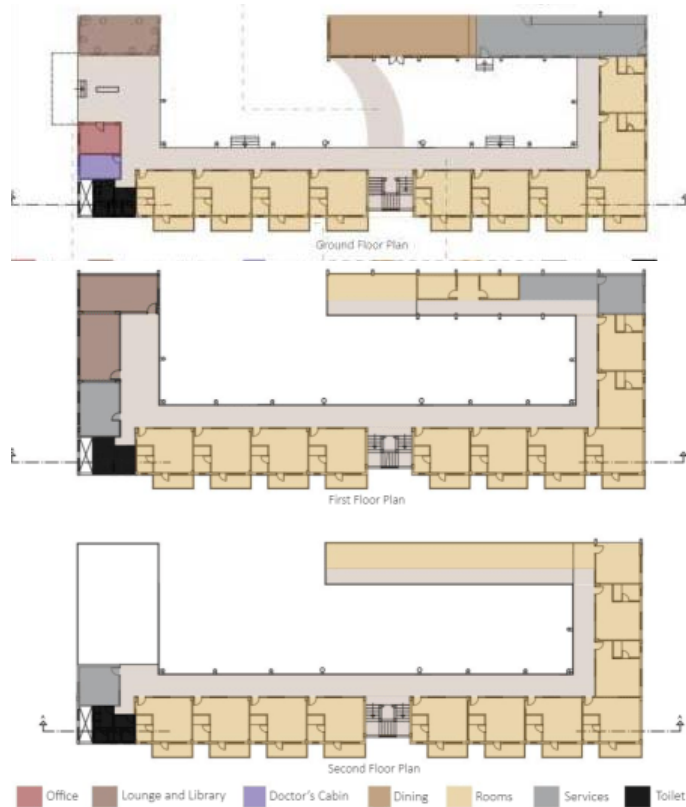
- Single Room.
- Double room (2 habitants sharing)



***Fig 4.8 Floor plan***



***Fig 4.9 Master plan***



**Fig 4.10 Floor plans**

#### *Types Of Food :*

- Clean and hygienic vegetarian food.
- Services of a dietician are also available.

#### *Facilities At Additional Cost:*

- Laundry
- Guestrooms
- Phytotherapy
- Food service for guests.
- Doctor on call, medicines, ambulance service, nursing care
- Personal care products
- Special attendants for the sick.

- Shuttle services to town center and city.

Materials used for the facade are bamboo, wood, and glass which act as a day of light and shadow. The corridor width is 3m with non-skid tile flooring and guides rails sides. A central courtyard to connect all the residents' bright colors like orange, yellow, green are used based on color theory. Grab bars are installed in the toilet near the WC and shower areas. Anti-side flooring is laid.

- Single- 275 sq.ft
- Double - 350 sq.ft

#### 4.3 SOCIAL COMPLEX IN ALCABIDECHÉ

City: Alcabideche

Country: Portugal

Area: 9956 Sq.M

Year: 2012

Architects: Guedes Cruz Arquitectos

Architects In Charge: José Guedes Cruz, César Marques, Marco Martinez Marinho

The Alcabideche Social Complex Is A Housing Complex Promoted By The Fundação Social Do QuadroBancário (Social Foundation For The Banking Sector), Of High Quality In Terms Of Construction And Landscape, Which Aims To Help To Fill A Gap In The Elderly Support System.



***Fig 4.11 Social complex walkway Fig 4.12 Walkway and green space***

This Project, Concluded In 2012, Using A Regular Layout With A Modulation Of 7.5m, Supports An Edified Structure Of 52 Houses And A Support Building.

As In A Medina The Streets Of Different Widths Are Reserved For Pedestrians Who Enjoy The Protection Of The Shade Provided By The Houses By Day And At Night Are Guided By The Light The Houses Give Off.

The Translucid Roofs Light Up At The End Of The Day In Groups Of 10, Alternately, Over The Area Of The Complex, Subtly And Evenly Lighting Up Streets, Plazas And Gardens.

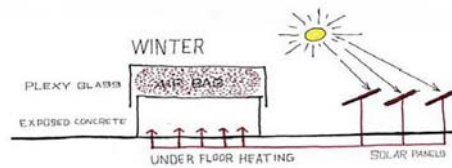
The Roofs Of The Housing Units Also Have Other Functions. In The Event Of An Emergency, Users Can Activate An Alarm That Alerts The Control Station Located In The Central Building And The Box-Shaped Roof's Light Changes From White To Red.



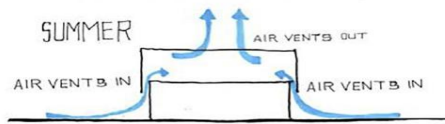
***Fig 4.13 Roof light changes from white to red***

A calm, anyway brilliant air is made that grants customers to stream around evening

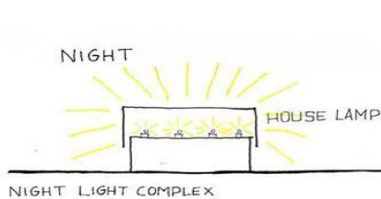
time among the different levels and spaces of the complex without stresses or objectives.



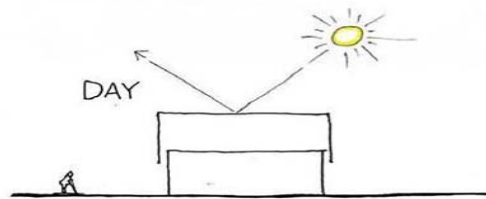
**Fig 4.14 photovoltaic plant provides electricity**



**Fig 4.15 Air movement and circulation inside the roof**



**Fig 4.16 Roof lights up at night**



**Fig 4.17 White roof reflects the daylight**

Lastly The Environmental Balance Inside The Houses Is Due To The White Box Of The Roof's Ability To Reflect Light And The Thermal Efficiency Of The Cushion Of Air Created Between The Roof And The Habitable Area On The Base Of Exposed Concrete.



***Fig 4.18 Master plan***

Ultimately the natural equilibrium inside the houses is because of the white box of the rooftop's capacity to mirror light and the warm effectiveness of the pad of air made between the rooftop and the livable region on the foundation of exposed cement.



***Fig 4.19 Roof turns to red during emergency***



***Fig 4.20 Unit plan***

The houses are framed by a core of exposed cement with a "harsh" formwork of wooden machines that house the tenable region, parlor and kitchen, room and washroom, and a crate during which the fabric ,plexiglass, has explicit attributes: impression of the sun's beams (white), being impermeable, being impervious to the climate and to fireside and which allows the sunshine in (clear).

The concern to recycle natural resources was also reflected in the use of water from a

groundwater source, which appeared when the foundations were being dug, for irrigating the green areas and washing the roads and pavements, thereby also helping to reduce the cost of running the complex.



***Fig 4.21 House 15 and 16 with walkway and lawn on either side***

#### 4.4 PARKSIDE RETIREMENT HOMES

Architects: Mindspace

Area: 278709.12 Sq.M

Year: 2018

City: Bangalore

Country: India

Lead Architects: Sanjay Mohe, Avinash Ankalge, Sravani Vobilisetty, Gowtham Srinath

Landscape Designers: Design Milieu

Contractors: Expat Group

Structural Consultants: S And S Associates

Brigade Group: Amar Mysore, Ambika Mallela, Sumathi Bhat, Jyothi Rn, Sujith Sn, Manjunath Br

Lead Architects: Sanjay Mohe, Avinash Ankalge, Sravani Vobilisetty, Gowtham Srinath

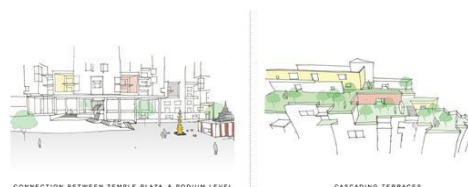


***Fig 4.22 Parkside retirement homes front view***

#### ***4.4.1 Site Context:***

- Located 40 Kms Towards The North East Of Bangalore.
- Devanahalli Is An Ideal Suburban That Has All Basic Amenities But Is Also Away From Urban Traffic.
- Distance From Railway Station - 39.6 Km
- Distance From Airport - 10 Kms
- Nearest Metro Station - 39 Kms
- Nearest Ring Road- 36.7 Kms

As A Response To This Context Podium Level Is Opened Up And Connected To The Temple With Wide Steps And Cascading Terraces At Higher Levels Along The South Side Is Created To View The Flights Take Off And Land.



***Fig 4.23 Connection between temple and podium and cascading terraces***

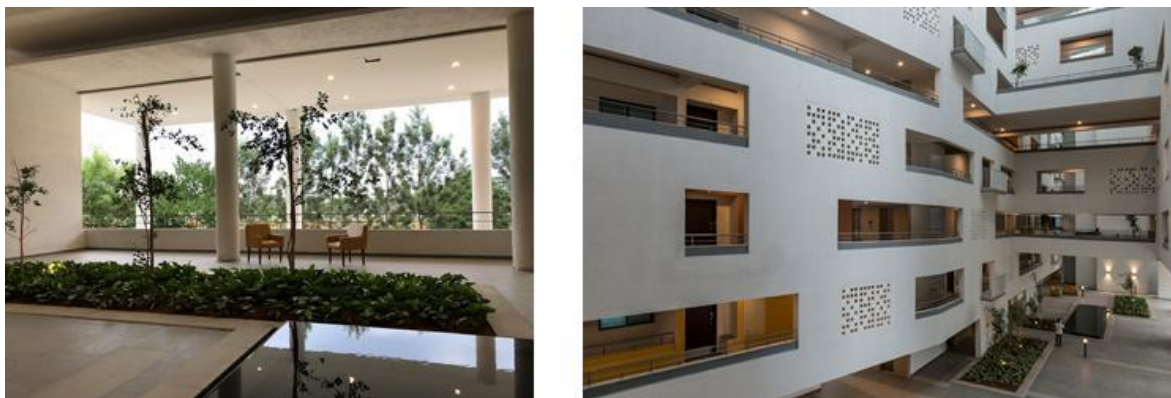
Atrium :

- These Homes are Designed With An Airy Open Plan.

- The Activity Rooms Are Dispersed Across The Floors and through the Building. Therefore, the Moment You Open Your Door, you feel like you Are Being Welcomed Into The Centre Of The Community.
- The Central Soaring Atrium Invites Light And A Feel Of Expansive Space. The Open Design Allows For The Free Flow Of Air – Even While Lending a Singular Feel To Your Home.



***Fig 4.24 Central atrium space and lobby***



***Fig 4.25 Lobby space and atrium***

The Activity Zones Are Distributed Across The Floor For Easy Access And To Have A Lively Atmosphere And Encourage Interaction Across The Building. Each Of The Floors Has One Activity Centre Which Is Visually Connected Across Different Levels Through A Central Atrium With A Skylight.



**Fig 4.26 Key plan**

Existing

temple, Physiotherapy, Gym, TV Room, Lounge, Outdoor Dining, Western entry, Lobby, Mail box room, Indoor dining, Admin block, Kitchen, Salon, Store, Eastern entry, Amphitheater, Store room.

#### **4.4.2 Special Design :**

The plan must follow the standard guidelines for the elderly-design guidelines to meet the requirements of the elderly, for example:

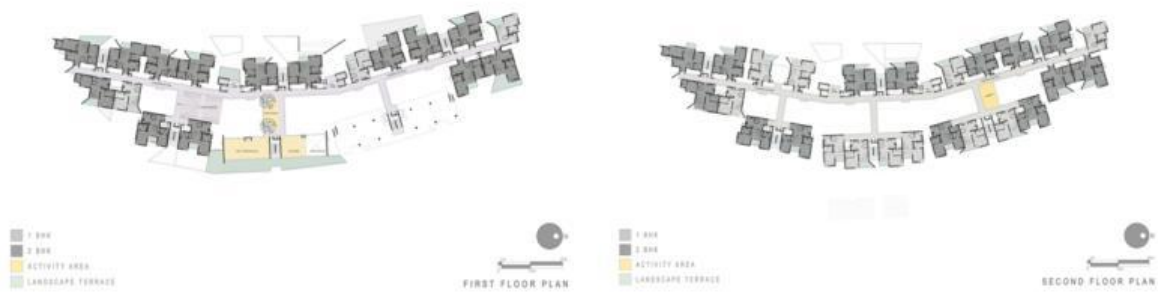
- Wide corridors.
- Doors for wheelchair movement.
- Handrails in corridors and bathrooms.
- Place the shopping bag near the door.



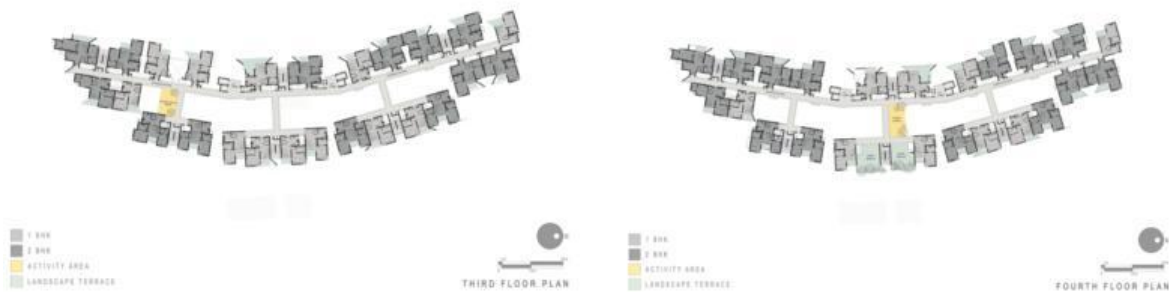
**Fig 4.27 Special design for residents**



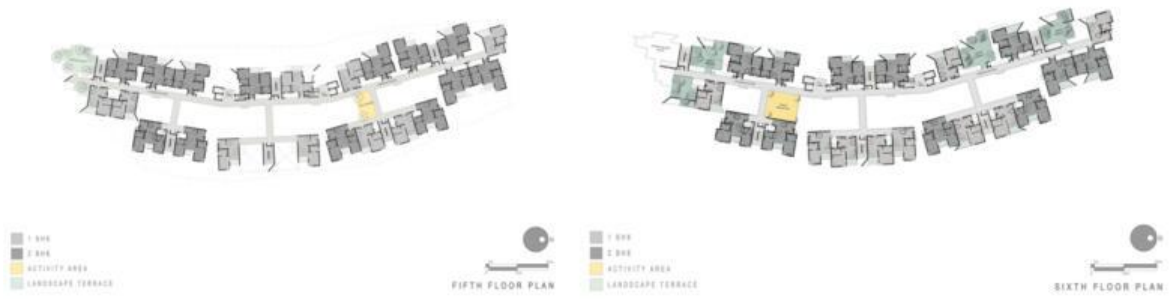
**Fig 4.28 Ground Floor plan**



**Fig 4.29 First and Second Floor plan**



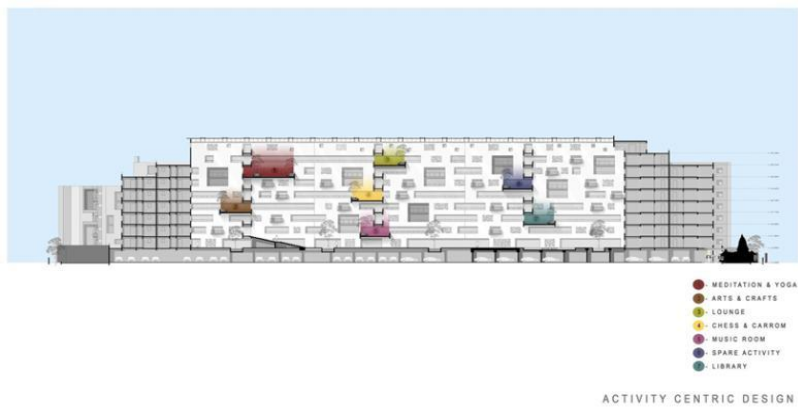
**Fig 4.30 Third and Fourth Floor plan**



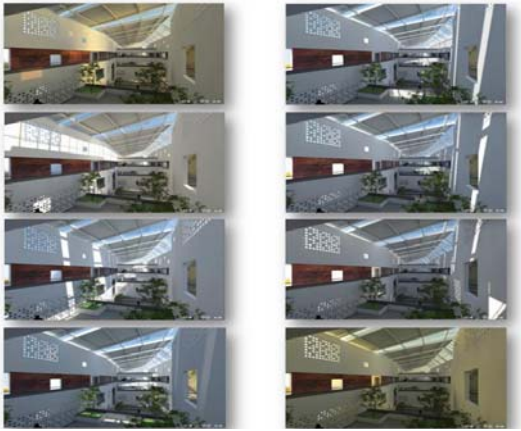
**Fig 4.31 Fifth and Sixth Floor plan**



**Fig 4.32 Seventh Floor plan**



**Fig 4.33 Activity centric design.**



**Fig 4.34 Sunlight through the atrium at different timing**

1bhk And 2bhk Unit Plan :

There Are 2 Types Of Residential Units(1 And 2 Bhk)

1bhk Living Cum Dining, Master Bedroom, Toilet, Kitchen And Balcony

2bhk Living Cum Dining, 2 Bedrooms, 2 Toilets, Kitchen And Balcony

Features:

- Anti Skid Tiles To Prevent Accidental Or Unintended Actions.
- Low Threshold Of Balcony Doors For Easy Wheelchair Access
- Emergency Pull Cards That Are Connected To The Nurse Stations
- Door Peepholes For Wheelchair Users At 43"
- No Automatic Features For Safety Purpose
- Provision Of Door Kick Plates For Wheelchair Users.



**Fig 4.35 1BHK and 2BHK unit plan**

| CASE STUDY ASPECTS     | SUVIDHA RETIREMENT HOMES                                                                                             | PARKSIDE RETIREMENT HOMES                                                                  | SMILES OLD AGE HOME                                                       | ANTARA SENIOR LIVING                                                               | INFERENCE                                                                  |
|------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| LOCATION               | NICE RING ROAD, BANGALORE                                                                                            | DEVANHALLI, BANGALORE.                                                                     | MEDCHAL, BANGALORE.                                                       | DEHRADUN,UTTARAKHAND                                                               | THERE SHALL BE A HOSPITAL AT 5KM PROXIMITY.                                |
| SITE PROXIMITY         | 18 KM FROM BANGALORE.                                                                                                | 40 KMS FROM BANGALORE CITY CENTER.                                                         | 37 KM FROM BANGALORE.                                                     | FEW KMS AWAY FROM MUSSOORIE, HARDWAR                                               | THERE SHALL BE A HOSPITAL AT 5KM PROXIMITY.                                |
| SURROUNDINGS           | FARM LAND.                                                                                                           | BRAIGADES ORCHARDS TOWNSHIP.                                                               | JAYADARSINI TOWNSHIP.                                                     | TOWNSHIP.                                                                          | RESIDENTIAL OR FARM LAND.                                                  |
| TOTAL SITE AREA        | 30 ACRES                                                                                                             | 60 ACRES                                                                                   | 2,633.6 SQ.M                                                              | 13.2 ACRES<br>NO.OF SENIOR = 35/ACRE                                               | —                                                                          |
| CAPACITY               | 200 COTTAGES                                                                                                         | 156 HOUSES (1 BHK + 2 BHK)                                                                 | 35 ROOMS                                                                  | APARTMENTS - 224 UNITS<br>3-4 FLOOR LEVEL BLOCKS                                   | —                                                                          |
| FORM GENERATION        | LINEAR ROADS WITH RECTANGLE SHAPE COTTAGES.                                                                          | STILT + 7 FLOORS CENTRAL ATRIUM WITH A SKYLIGHT.                                           | RECTANGLE SHAPE BUILDING WITH A CENTRAL COURTYARD.                        | CLOSED CLUSTER                                                                     | SIMPLE FORMS ARE PREFERABLE FOR ELDERLS TO ACCESS FREELY.                  |
| ARCHITECTURAL PLANNING | SITE-LEVEL PLANNING.                                                                                                 | RESIDENTIAL COMPLEX WITH STILT + 7 FLOORS.                                                 | SIMPLE AND LINEAR PLANNING                                                | CLOSED CLUSTER COMBINING BUILD FORMS WITH NATURE                                   | SPACES SHOULD BE SIMPLE AND CIRCULATION AND ACCESSIBLE.                    |
| SPATIAL PLANNING       | COTTAGES ARE LOCATED ALL AROUND THE SITE AND THE CLUBHOUSE IS NEAR THE ENTRANCE.                                     | SPACES ARE LOCATED AROUND THE CENTRAL ATRIUM.                                              | SPACES ARE LOCATED AROUND THE COURTYARD.                                  | .UNITS ARE ARRANGED IN CLOSED CLUSTER IN BLOCKS                                    | PLANNING SHALL BE DONE TO ACCESS SPACES EASILY.                            |
| USER CIRCULATION       | COTTAGES ARE SPREAD ALL OVER THE SITE WHICH MAKES IT DIFFICULT FOR THE RESIDENTS TO ACCESS FROM ONE PART TO ANOTHER. | THE ACTIVITY CENTERS ARE ACROSS THE FLOOR FOR EASY ACCESS AND TO HAVE A LIVELY ATMOSPHERE. | FREE FLOW OF USERS                                                        | EACH RESIDENCE HAS A MIX OF APARTMENT SIZES TO PROMOTE SOCIAL BONDING.             | CIRCULATION SHALL HAVE EASY ACCESS AND SHALL BE USER-FRIENDLY FOR ELDERLS. |
| DAYLIGHTING            | ALL THE COTTAGES HAVE WINDOWS AND BALCONIES.                                                                         | THE ATRIUM SKYLIGHT BRINGS IN EASTERN LIGHT AND AVOIDS GLARE.                              | ALL THE ROOMS HAVE 1.5M WINDOWS THUS THE ROOMS USE LESS ARTIFICIAL LIGHT. | ALL THE UNITS HAVE WINDOWS AND BALCONIES THUS THE ROOMS USE LESS ARTIFICIAL LIGHT. | THE ROOMS SHALL BE WELL VENTILATED WITH LESS USE OF ARTIFICIAL LIGHTING.   |
| PARKING                | 100 CARS (3540 SQ.M)                                                                                                 | LIMITED CAR PARKING AT THE STILT LEVEL.                                                    | NO CAR PARKING.                                                           | BASEMENT AND OPEN PARKING                                                          | SUFFICIENT CAR PARKING SHALL BE PROVIDED.                                  |

**Table 4.1**

## SITE ANALYSIS

LOCATION : ARALVAIMOZHI, KANYAKUMARI



THE SITE IS LOCATED IN SOUTHERN PART OF THE WESTERN GHATS OF SOUTH INDIA NEAR A MAJOR HIGHWAY (NH 944) CONNECTING KANYAKUMARI TO TIRUNELVELI FAR AWAY FROM THE CITY HUSTLE WHICH IS VERY VITAL FOR RETIREMENT HOMES. IT IS A CALM AND SERENE LOCATION SURROUNDED BY LAKES, AGRICULTURAL LANDS AND GREEN COVER.

### AREA AND DIMENSIONS :

AREA - 13 ACRES ( 52,609 SQ.M )



### ACCESSIBILITY :

HOSPITAL - 3.5KMS  
BUS STOP - 3KMS  
PLACES OF WORSHIP- 5KMS(PROX)  
RAILWAY STATION - 5.9KMS  
PRIMARY TO SECONDARY ROAD - 3.5KMS  
AIRPORT - 60 KMS  
BANK, ATM POST  
OFFICE, INSTITUTION SHOPS, (WITHIN 5KMS PROXIMITY)

### TRAFFIC DENSITY :

THE MAIN TRAFFIC FLOWS ON THE NATIONAL HIGHWAY ROAD CONNECTING KANYAKUMARI - TIRUNELVELI (NH944)  
THE SECONDARY TRAFFIC IS FROM THE RESIDENTS OF ARALVAIMOZHI.

### HIERARCHY OF ROADS :

PRIMARY ROAD (NH944) - 15M  
SECONDARY ROAD - 8M

### LAND USE PATTERN :

- FARM LAND
- VEGETATION
- SITE
- WATERBODY
- RESIDENTIAL
- INSTITUTION



### CLIMATE :



THE CLIMATE IS TROPICAL AND THE SUMMERS ARE MUCH RAINIER THAN THE WINTERS.

### WIND DIRECTION :

WIND FLOWS FROM SOUTH-EAST TO NORTH-WEST.

THE TEMPERATURE HERE AVERAGES 26.9 °C | 80.4 °F.

PRECIPITATION HERE IS ABOUT 793 MM | 31.2 INCH PER YEAR.

### SENSORY ANALYSIS :

- NORTH SIDE OF THE SITE HAS THE VIEW OF AGRICULTURAL LANDS, HILLS, COCONUT PLANTATION AND LAKE.
- WEST SIDE OF THE SITE HAS THE VIEW OF POIGAI HILLS.
- EAST SIDE FACING RESIDENTIAL AREA AND COCONUT PLANTATION.



Plate 5.2

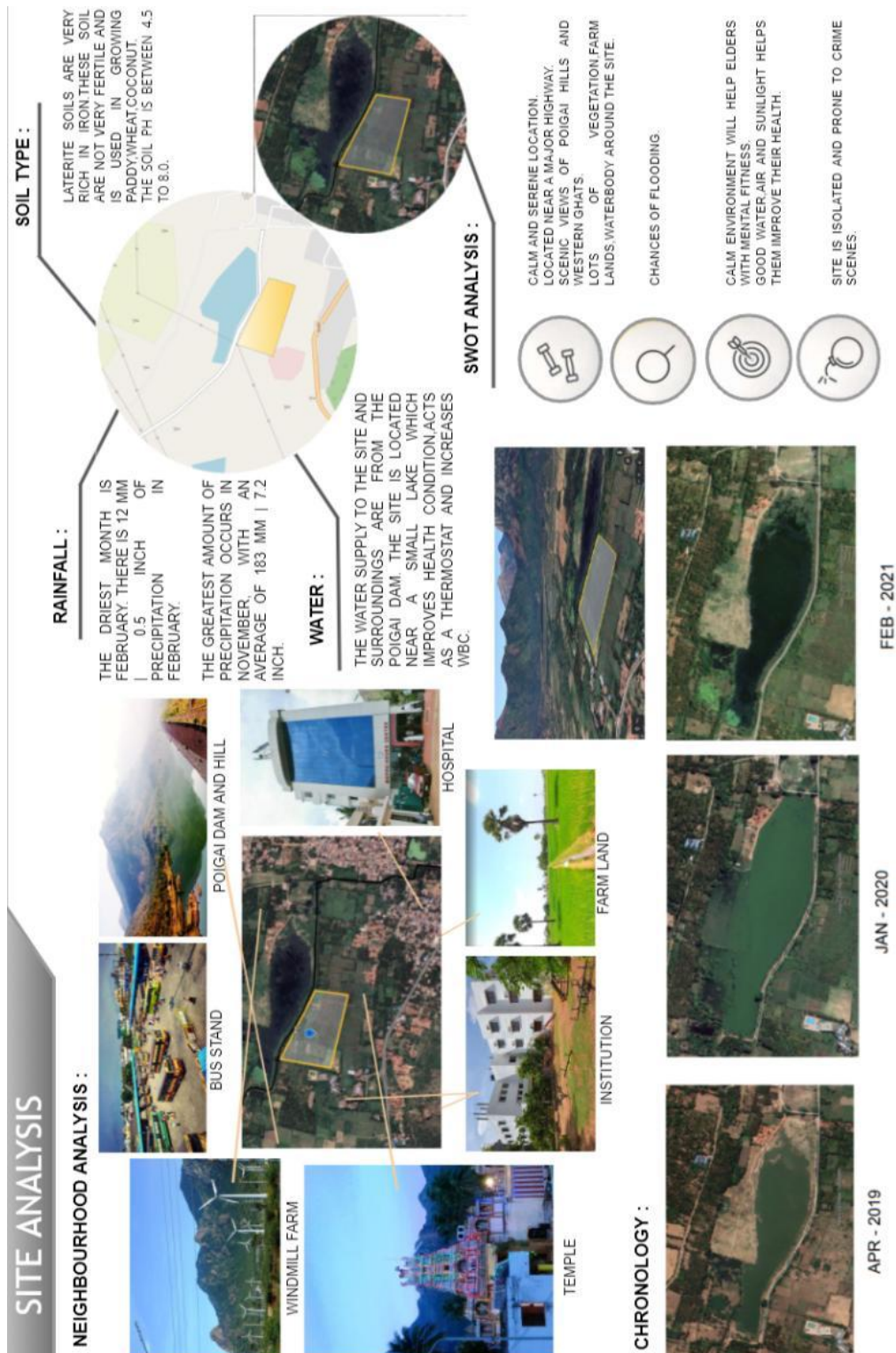


Plate 5.3

Plate 5.4



Plate 5.5

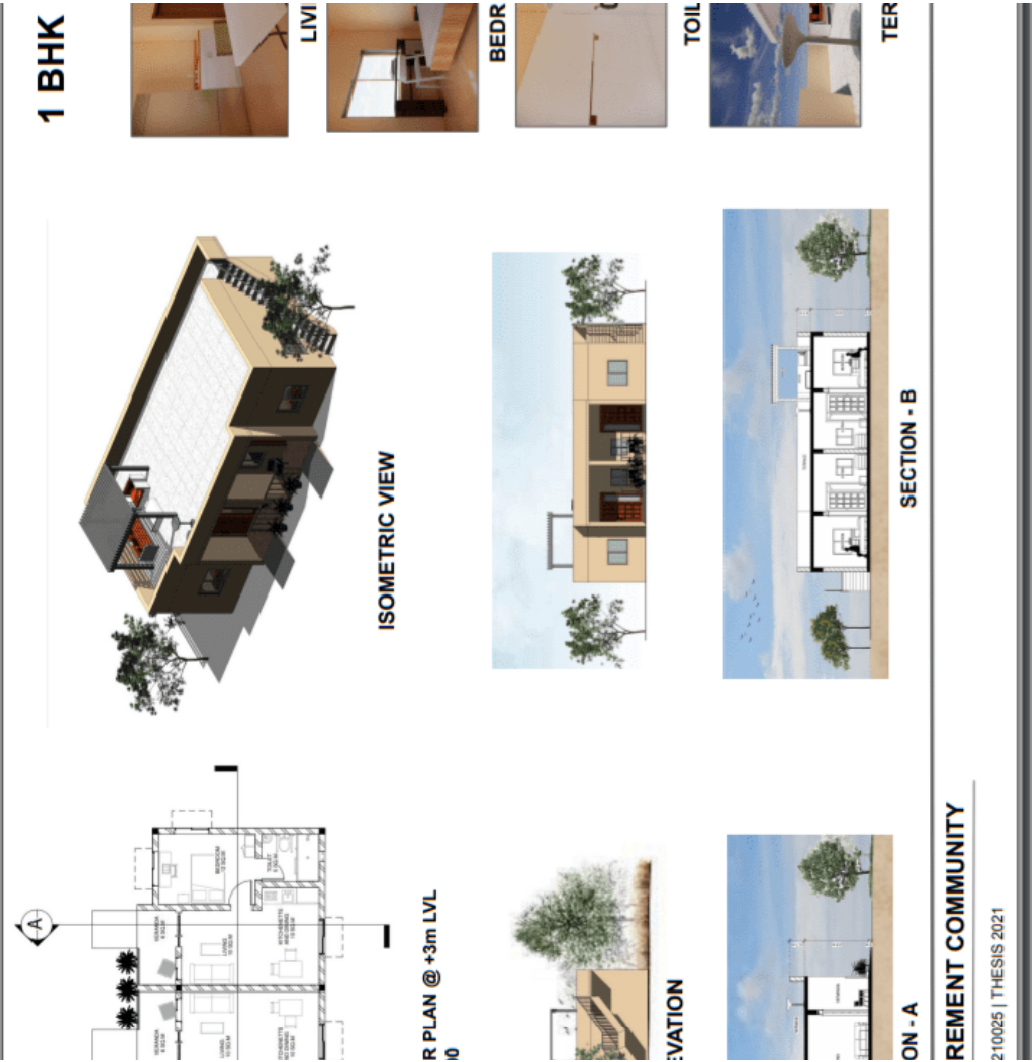


Plate 5.6

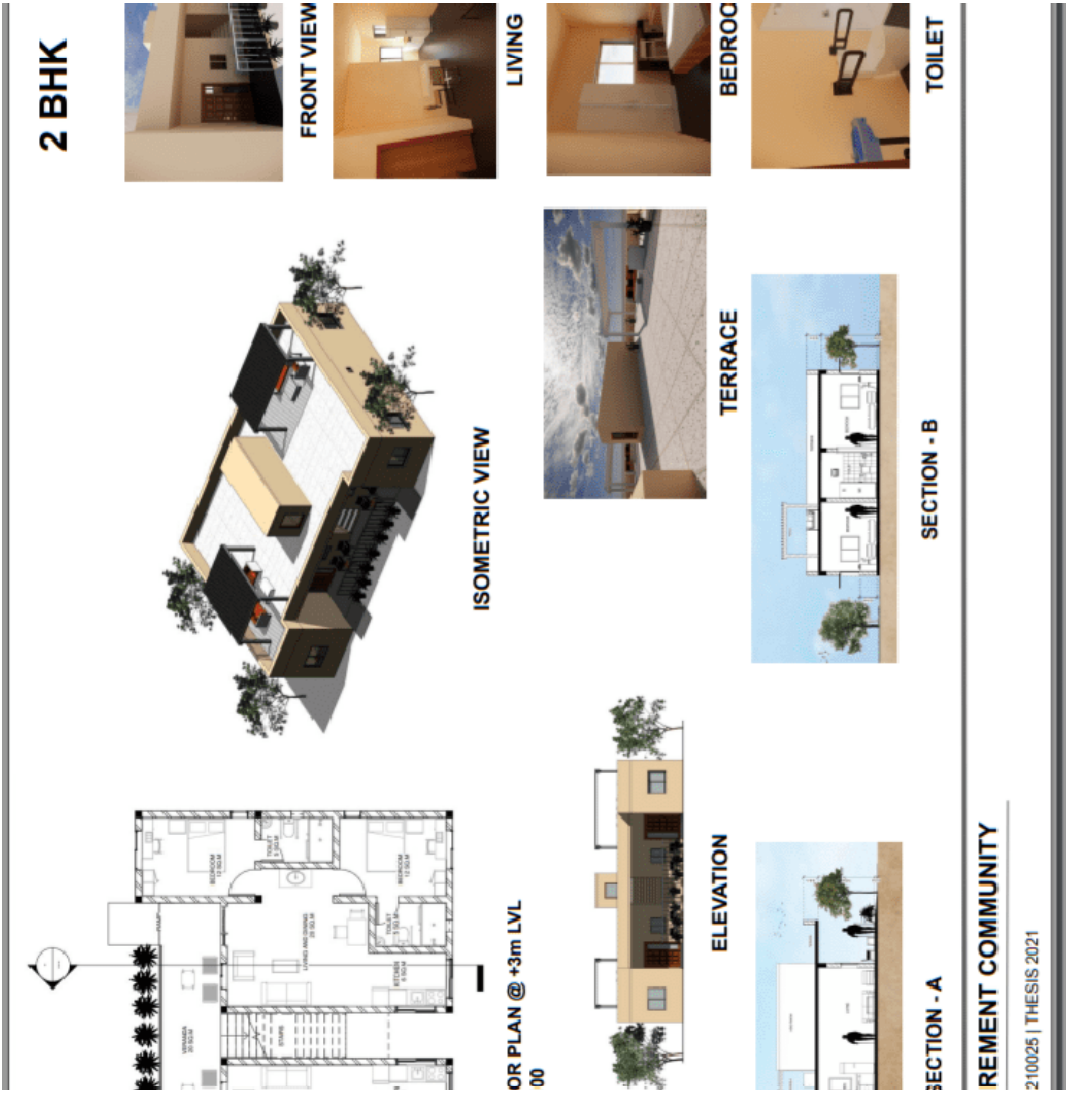


Plate 5.7

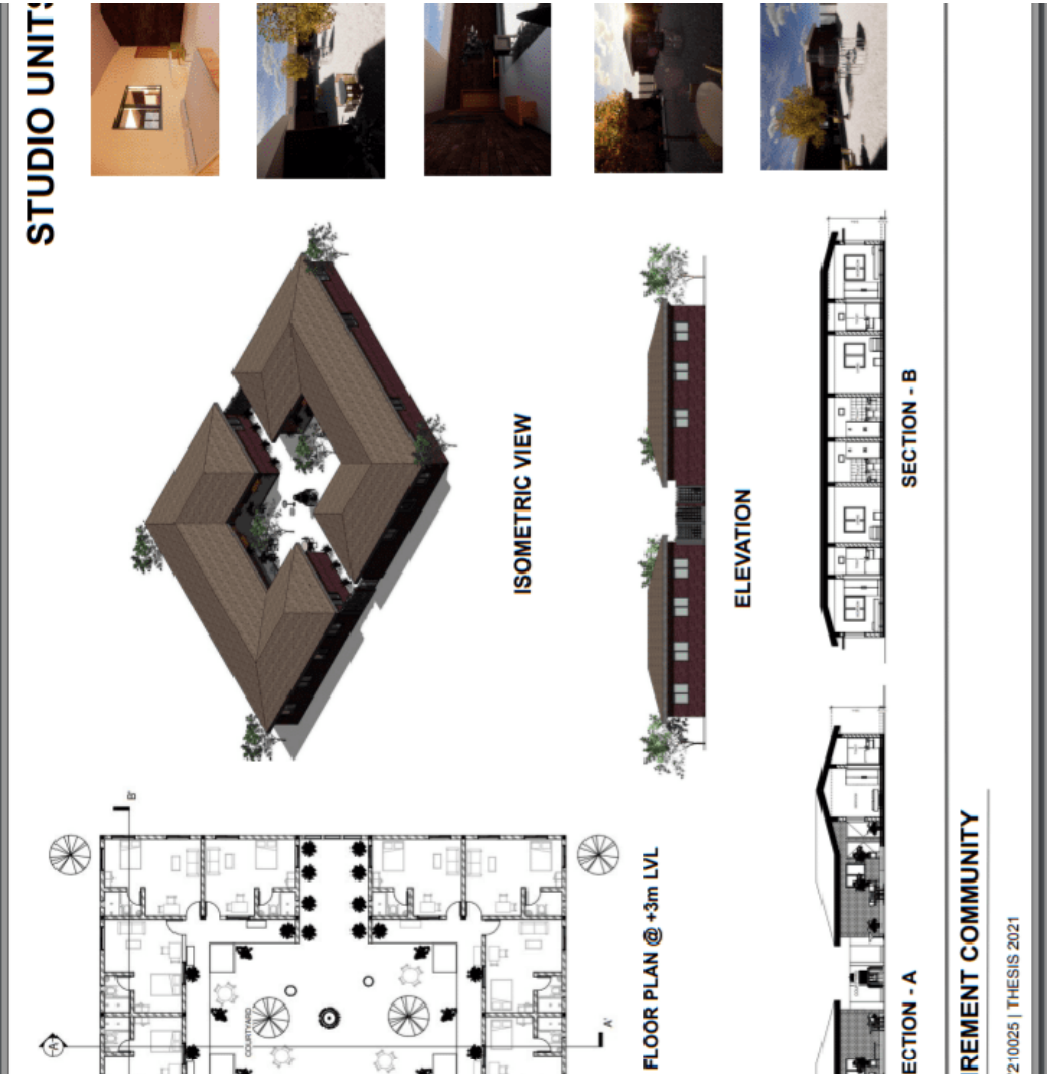


Plate 5.8

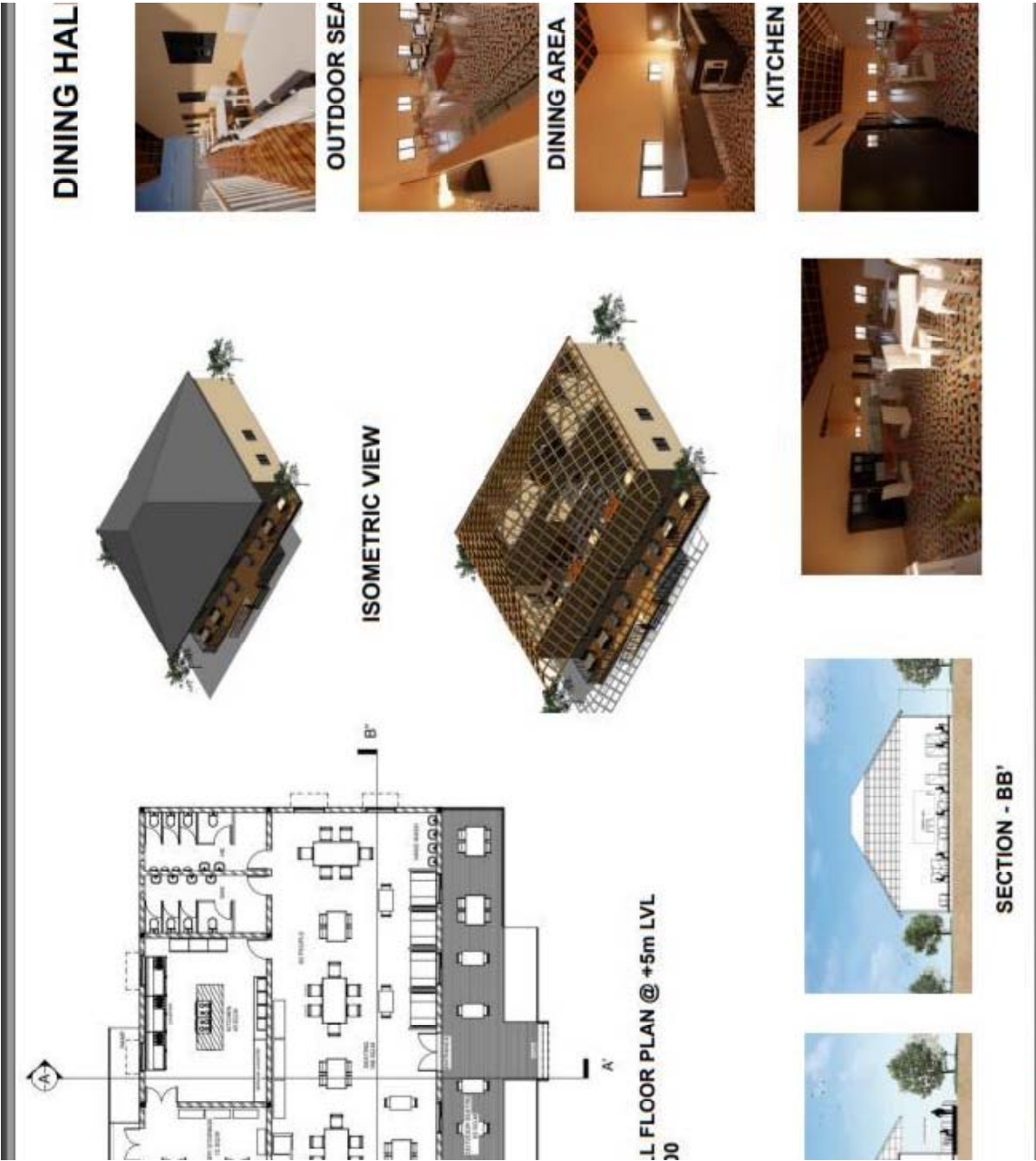


Plate 5.9

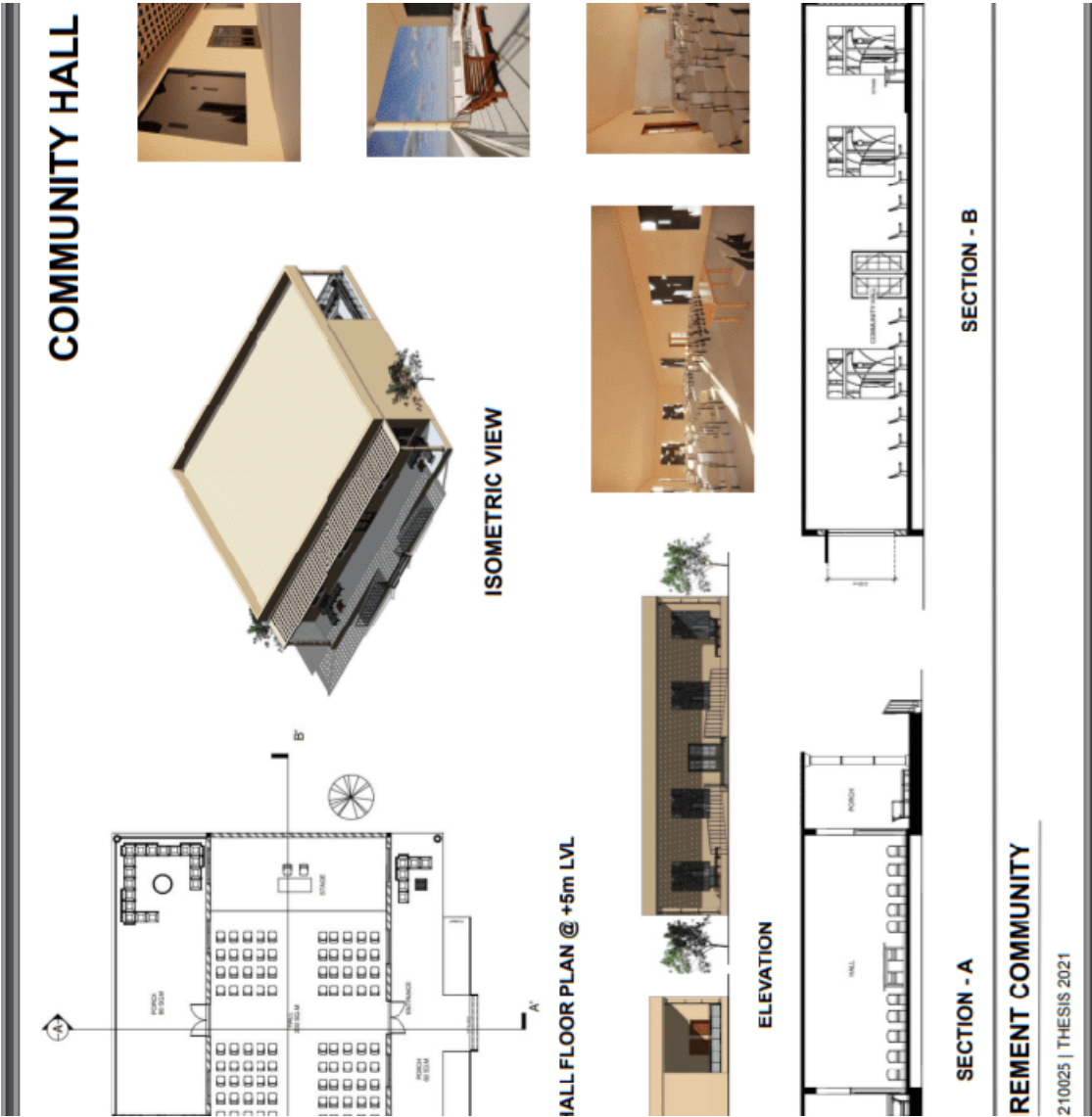


Plate 5.10

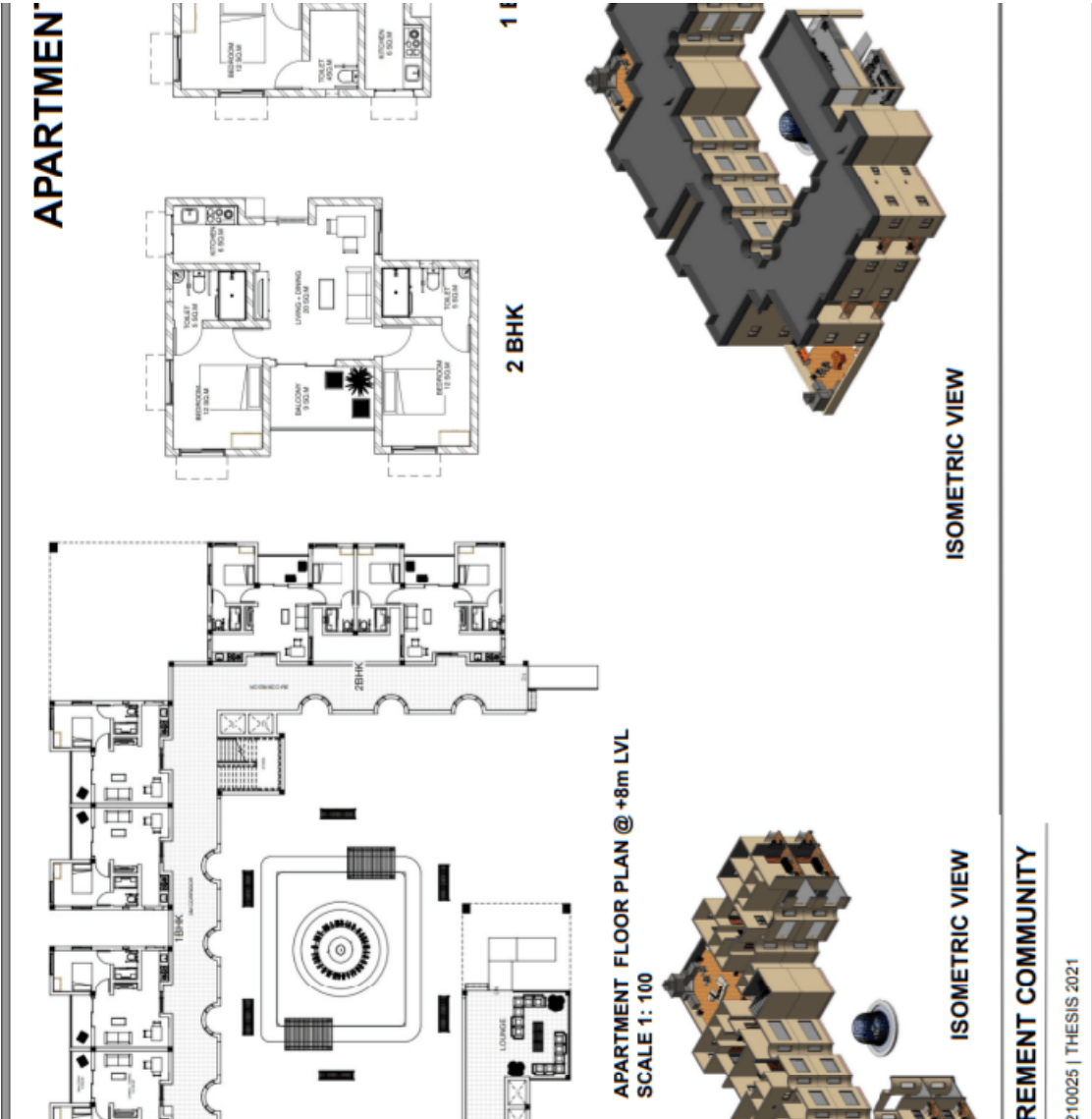
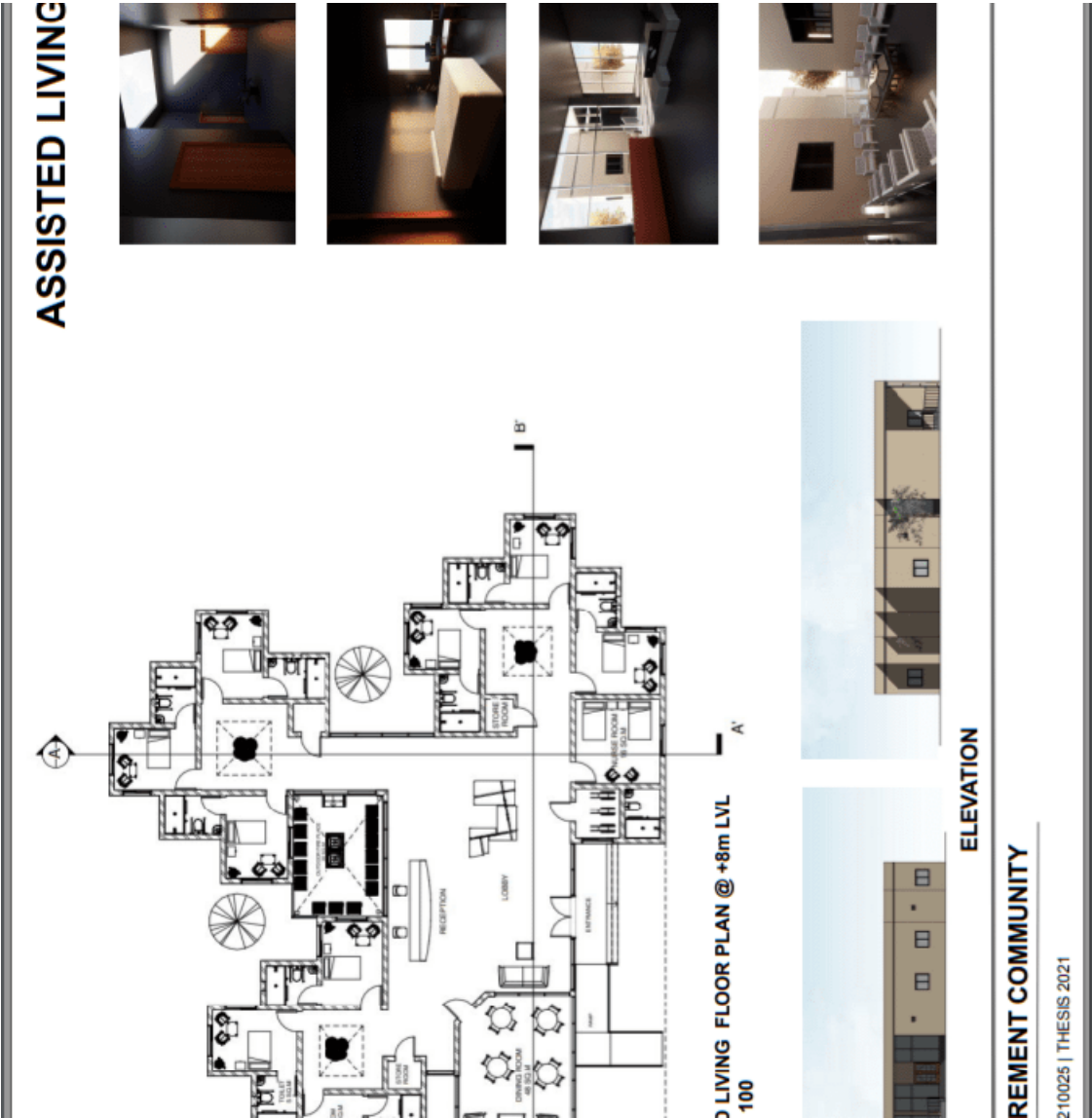
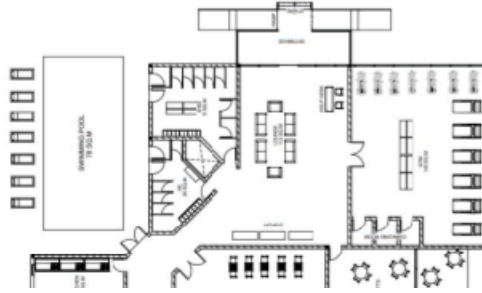


Plate 5.11



# CLUB HOUSE



LIBRARY



LOBBY



COFFEE LOUNGE

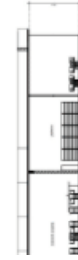


GYM



INDOOR GAMES

DOOR PLAN @ +4.5m LVL



SECTION



ELEVATION

## REMENT COMMUNITY