

Project Report on

Project 1: Space Management

Presented by the
Third Year Semester – V, B.Tech. IT

In the subject of

Open Elective 1
: Interior Design

Group No. 2

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GIVEN PROBLEM STATEMENT:

2000 SQFT bungalow for 2 elderly people and a caretaker

PLANNING PHASE:

After comprehensively delving into the subject matter of constructing a bungalow spanning an area of 2000 square feet, intended to accommodate two elderly residents and a dedicated caretaker, a series of deliberate decisions have been formulated to enhance the overall design and functionality.

Foremost among these decisions is the strategic augmentation of the door dimensions within each room, expanding them to a width of 3.5 feet. This calculated adjustment has been undertaken with the explicit aim of affording unencumbered mobility to individuals utilizing wheelchairs, thereby ensuring seamless movement throughout the domicile.

Simultaneously, an overarching theme of spaciousness and fluidity has been meticulously integrated into the layout, fostering an environment that readily facilitates unhindered movement. This strategic approach engenders an open-plan atmosphere, thereby fostering an innate flexibility in the arrangement of furnishings and the traversal of spaces.

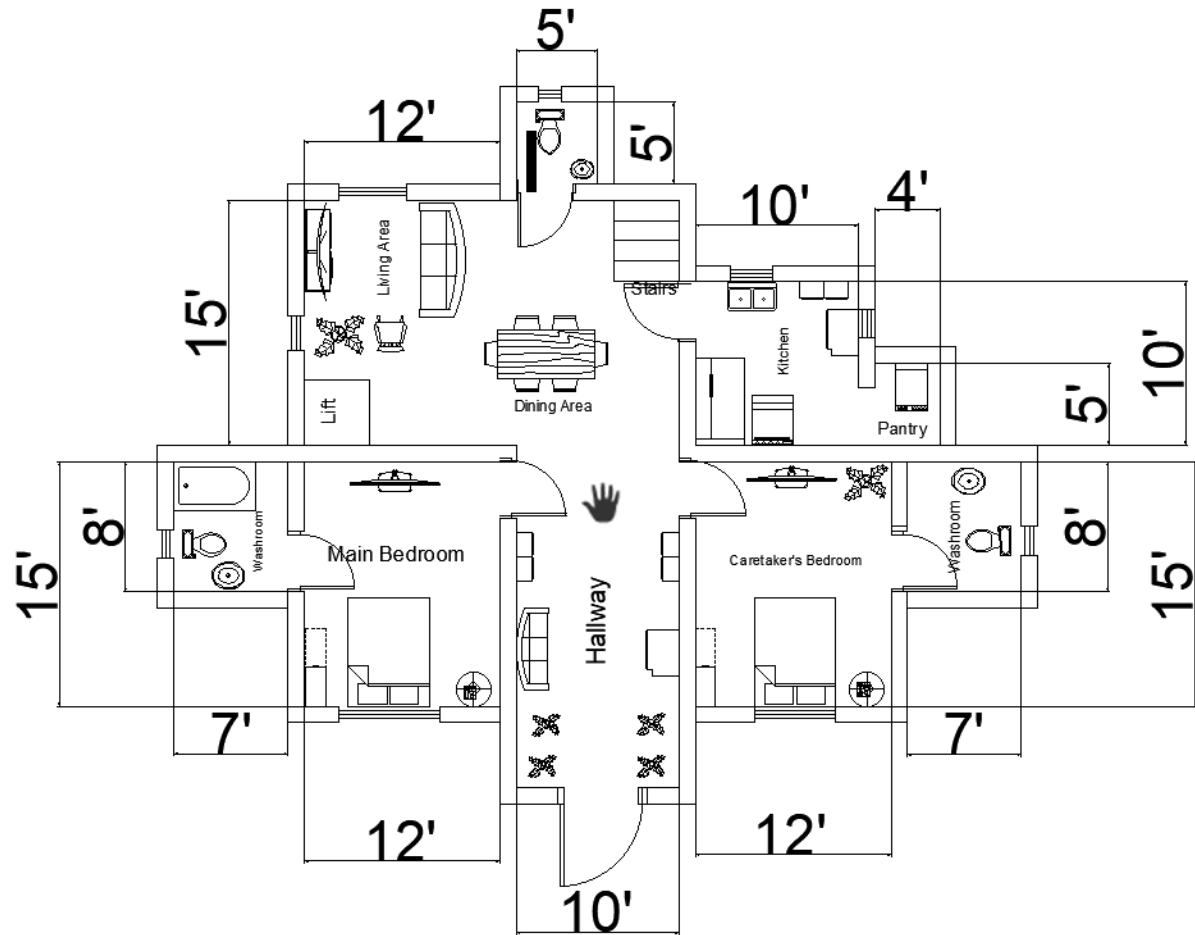
A further hallmark of the design manifests in the provision of ensuite bathrooms within each bedroom, supplemented by the inclusion of two communal bathrooms. This dual-pronged approach not only guarantees personal convenience but also attends to the requirements of guests and residents alike.

Turning our attention to the second floor, a concept of harmonious convergence with natural illumination takes precedence. Herein lies a designated gathering area, profusely bathed in natural light and adorned with a swing and verdant flora, exemplifying a tranquil sanctuary within the abode. Additionally, the second floor encompasses a library, affording intellectual respite, and a yoga room for physical and mental well-being, thoughtfully accompanied by an adjoining storage facility.

Supplementary to these amenities, an exquisite grand piano graces the second floor, evoking an aura of sophistication and artistic flair. To facilitate accessibility to this upper level, a dual-tier approach has been instated. The primary mode of vertical mobility is presented through an elevator, ensuring effortless ascent, while a secondary option of a staircase stands in parallel, catering to traditional preferences.

ARCHITECTURAL PLANS:

1. GROUND FLOOR -



DIMENSIONS OF THE FLOOR:

Hallway	10*30
Washroom-1	8*7
Washroom-2	8*7
Bedroom-1	15*12
Bedroom-2	15*12
Common Washroom -1	5*5
Pantry	5*4
Kitchen	10*10
Living room	15*12
Total	1097

15'

4.33'

15'

6'

10'

7'

Lift

Guest Bedroom

Washroom

4.16'

12'

10'

12'

6'

8'

8'

Library / Yoga

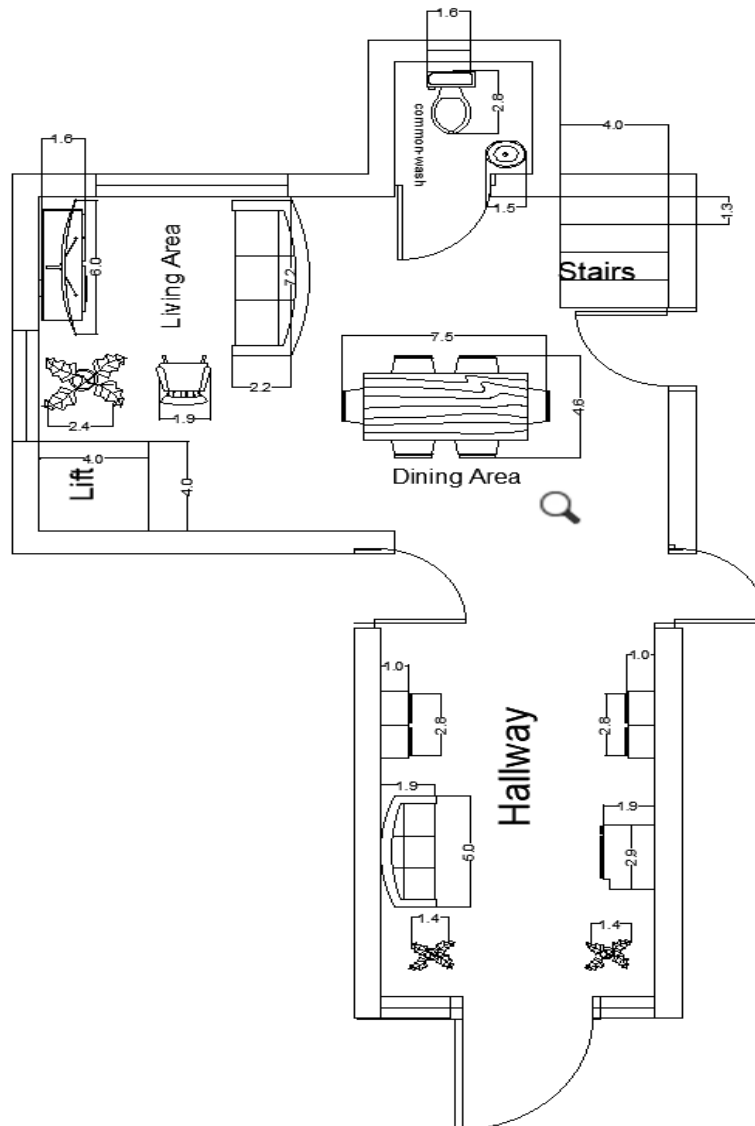
storage

Hallway - 2

Garden / swing

Library/Yoga	12*15
Bedroom-3	12*15
Washroom-3	8*7
Storage Room	8*8
Swing/garden area	14*10
Piano/sitting area/living room	14*17
Common Washroom - 2	6*8
Total	903

➤ **RAHUL'S WORK (A059) – HALLWAY + GARDEN AREA**



hallway – 200 sqft

cabinets (x2) - $3 \times 1 = 6$

sofa - $5 \times 2 = 10$

shoe cabinet - $3 \times 2 = 6$

plants (x2) - $1.5 \times 1.5 = 4.5$

total space occupied by furniture and decors = $6+6+10+4.5=26.5$

mobility space left = $200 - 26.5 = 173.5$

living room / dining area - 330 sqft

table - $7.5 \times 4.5 = 33.75$

lift - $4 \times 4 = 16$

rocking chair - $2 \times 2 = 4$

tv cabinet - $6 \times 1.5 = 9$

plant - $2.5 \times 2.5 = 6.25$

total space occupied by furnitures and decors = 70

mobility space left = 260

common washroom – 25 sqft

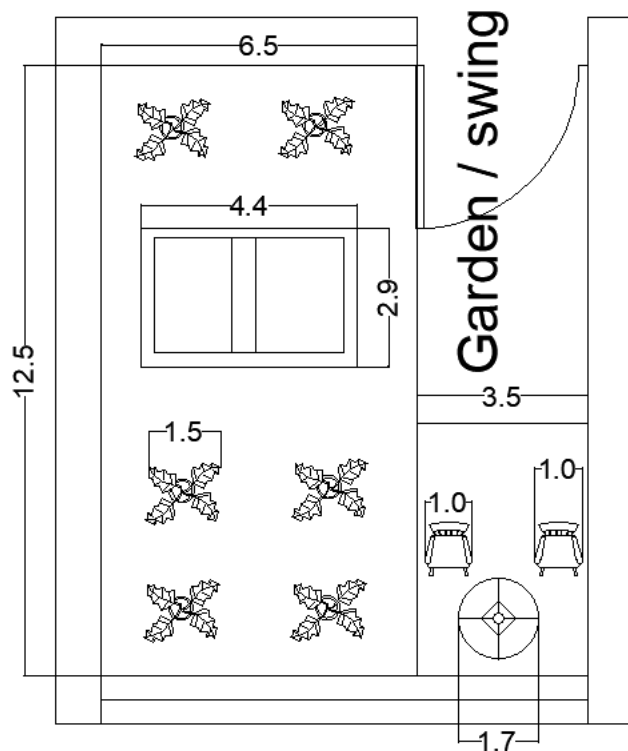
cummod - $2.8 \times 1.6 = 4.5$

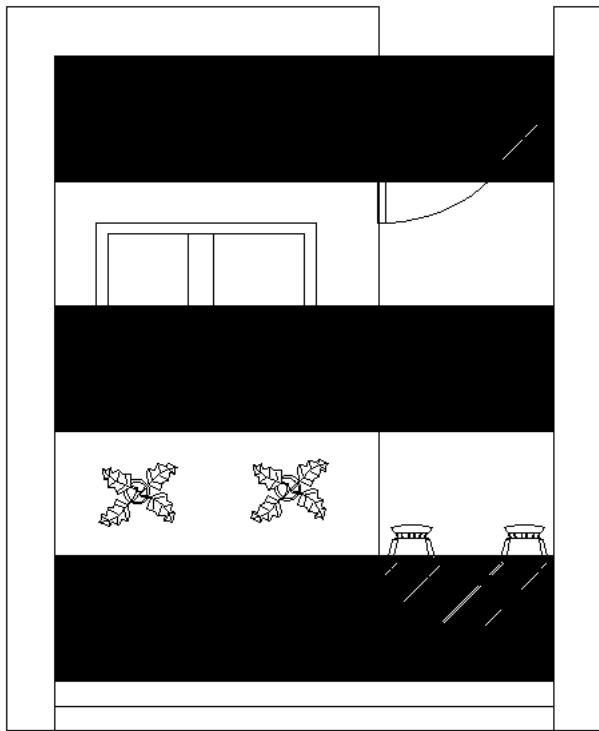
sink - $1.5 \times 1.5 = 2.25$

total space occupied by furniture and decors = 6.75

mobility space left = 18.25

The main hurdle was to give the elderly people who might be using wheelchair for moving around an easy access and mobility to different rooms and to move about in general in the entire plot. So we decided to break the traditional norm of 3ft wide doors to a 3.5ft doors for a much easier and better experience for the wheelchair users. We have also provided with a nice cozy area wherein the users can comfortably remove their footprint and store it inside the shoe cabinet just in front of them. There are also additional cabinets kept in the hallway which can come handy to keep in things needed while going outdoors. The dining area can easily accommodate 6 people with plenty of space to move about it. Then there's the living space which occupies a 60" TV unit, which has a sofa and a comfy rocking chair for a peaceful and relaxed ambience. The living room has plenty of natural light coming in. Then there's a lift which is a single person lift to move about the different floors. There are stairs to the right of the living space wherein there are 15 steps with a raiser height of 8 inches and a tread with of 10 inches. A nice crystal chandelier will bring all the elements together and it'll be placed above the dining table. Then there's the common washroom for easy access next to the stairs.





garden / swing – 125SQFT

$$\text{swing} = 4.5 \times 3 = 13.5$$

$$\text{plants (x6)} = 1.5 \times 1.5 = 13.5$$

$$\text{table} = 1.7 \times 1.7 = 2.9$$

$$\text{chair (x2)} = 1 \times 1 = 2$$

$$\text{total space occupied by furnitures and decors} = 32$$

$$\text{mobility space left} = 93$$

For any reason if the elderly people can't go out due to illness or lack of confidence. They can access the ECO-DECK / Garden area in the second floor. It has a round coffee table and 2 chairs the entire south part of the garden area is completely made up of glass, along with the strategically spaced glass panes on the roof which gives a lot of natural light and a sense of being one with the environment at the same time doesn't ruin the structural balance of the entire bungalow. Then there's the garden area which has plenty of indoor plants and turf like material as the flooring to mimic grass (the darkened area depicts the beams). It also occupies a swing which can be accessed by 2 people at once for entertainment.

➤ **SHRIYA'S WORK: LIVING SPACE (SECOND FLOOR) + GUEST ROOM**

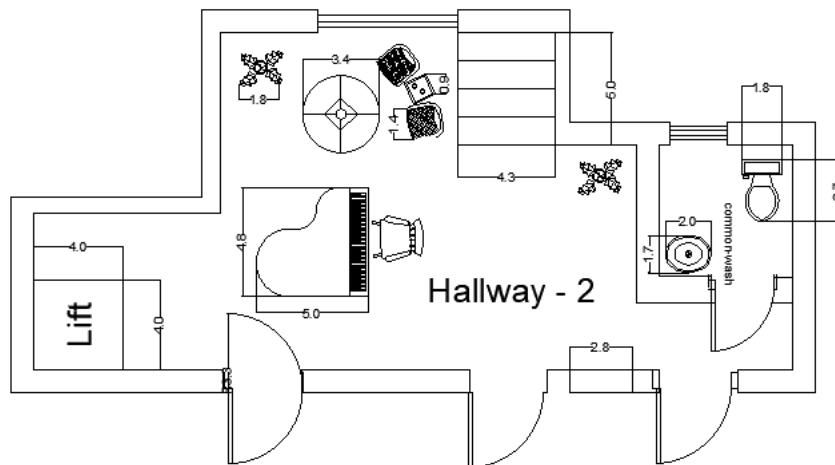


Table- $0.9 \times 0.9 = 0.81$

Lift- $4 \times 4 = 16$

Piano= $4.8 \times 5 = 24$

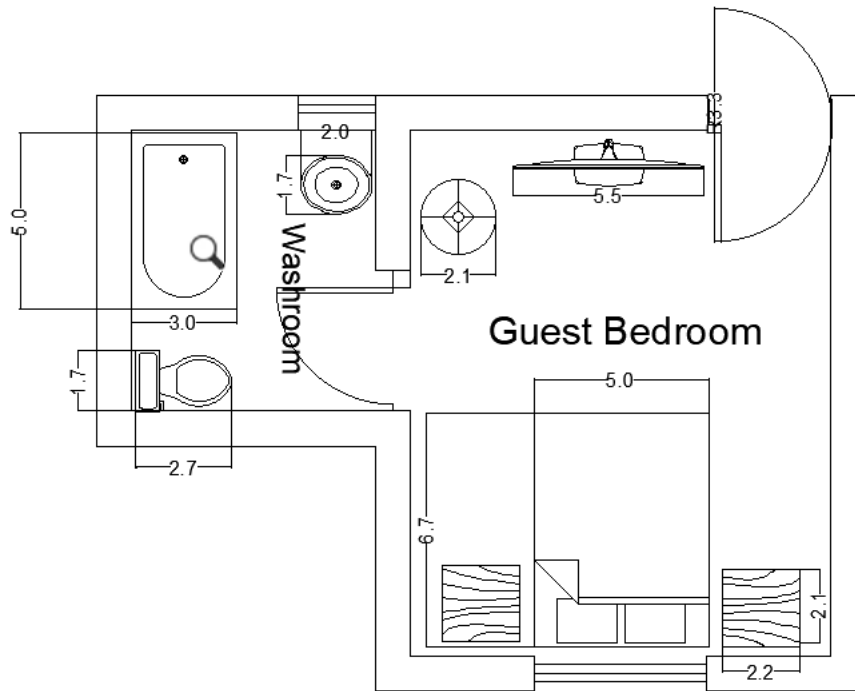
Lamp = radius $3.4 = 36.29$

Chair = $1.4 \times 1.4 = 1.96$

Total space = 200

Mobility space left = $200 - 82.66 = 117.34$

The hall on the second floor of the house is thoughtfully arranged for the comfort and convenience of the elderly residents who inhabit it. With a piano that hints at a passion for music, a functional table for various activities, and a strategically placed lamp that ensures ample lighting, the hall caters to both leisure and practical needs. The presence of a lift underscores the commitment to accessibility, allowing easy movement between floors. Accompanied by a chair, the hall strikes a balance between mobility and essential furnishings, leaving ample open space for unhindered movement, which is crucial for the elderly.



$$\text{Bed} = 5 \times 6.7 = 33.5$$

$$\text{Table} = 2 \times \text{radius } 2.2 = 30.39$$

$$\text{Lamp} = \text{radius } 2.1 = 13.85$$

$$\text{Tv} = 5.5 \times 1.0 = 5.5$$

$$\text{Mobility space in room} = 180 - 83.24 = 96.76$$

Bathroom:

$$\text{Bathtub} = 3 \times 5 = 15$$

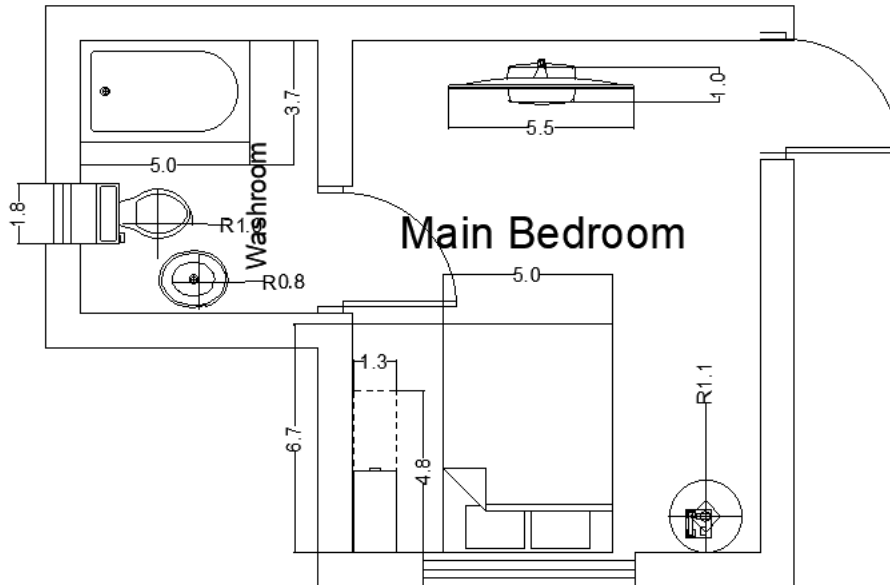
$$\text{Commode} = 1.8 \times 3.14 = 4.94$$

$$\text{Sink} = 3.14 \times 0.8 \times 0.8 = 2.0$$

$$\text{Mobility space left} = 56 - 21.94 = 34.06$$

The guest bedroom on the second floor of the house is a comfortable and accommodating space tailored for the needs of elderly occupants. The room is furnished with a cozy bed, a functional table, a lamp for ambient lighting, and a TV for entertainment. Despite the presence of these essential items, the room maintains a sense of open mobility, ensuring easy maneuverability for the elderly individuals. The adjoining bathroom is equally well-designed, featuring a bathtub for relaxation, a commode for convenience, and a sink for personal care. The layout leaves ample space for movement, reflecting a thoughtful approach to accessibility and comfort in this welcoming guest room.

➤ VEDANT'S WORK: MASTER BEDROOM + CARETAKERS ROOM



Main Bedroom – 180 sqft

TV – $5.5 \times 1.0 = 5.5$

Bed – $5.0 \times 6.7 = 33.5$

Storage – $4.8 \times 1.3 = 6.24$

Lamp – $3.14 \times 1.1 \times 1.1 = 3.8$

Mobility space left – $180 - 49.04 = 130.96$

Washroom – 56 sqft

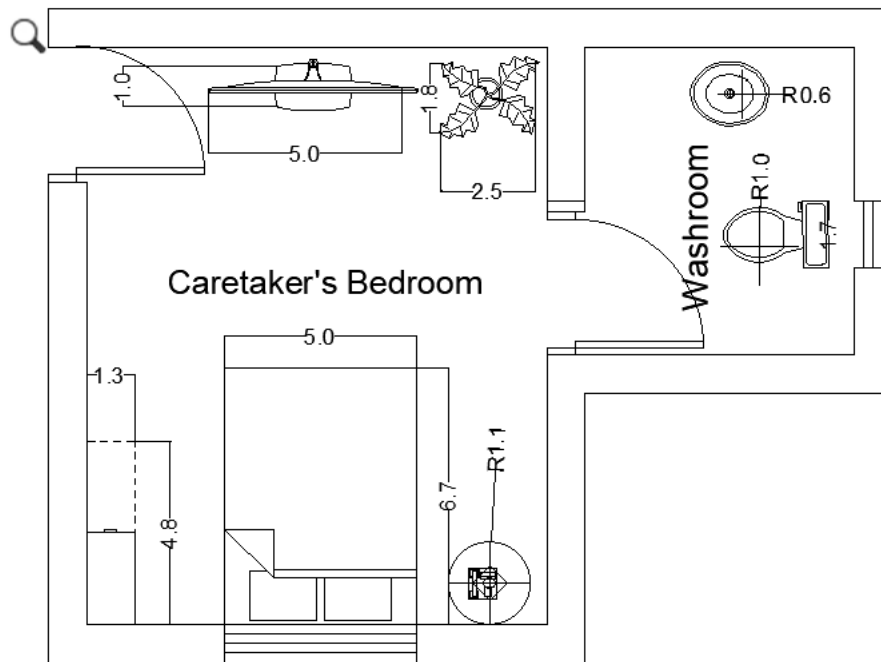
Bathtub – $5.0 \times 3.7 = 18.5$

Toilet – $1.8 \times 3.14 = 4.94$

Sink - $3.14 \times 0.8 \times 0.8 = 2.0$

Mobility space left – $56 - 25.44 = 30.56$

An elderly couple's bedroom is thoughtfully designed to provide comfort, convenience, and accessibility. The bed is typically the central focus of the room, designed to be easily accessible with ample space around it for easy movement. There is adequate storage space for books, magazine and also a bed side lamp strategically placed to provide adequate reading light and ensure easy access, if the couple wats to read some books and newspaper late at night. TV is positioned for comfortable viewing from the bed. The attached washroom is designed with a bathtub, toilet and a sink.



Caretaker's Bedroom – 180 sqft

$$\text{TV} - 5.5 \times 1.0 = 5.5$$

$$\text{Bed} - 5.0 \times 6.7 = 33.5$$

$$\text{Storage} - 4.8 \times 1.3 = 6.24$$

$$\text{Lamp} - 3.14 \times 1.1 \times 1.1 = 3.8$$

$$\text{Plant} - 2.5 \times 1.8 = 4.5$$

$$\text{Mobility space left} = 180 - 53.54 = 126.46$$

Washroom – 56 sqft

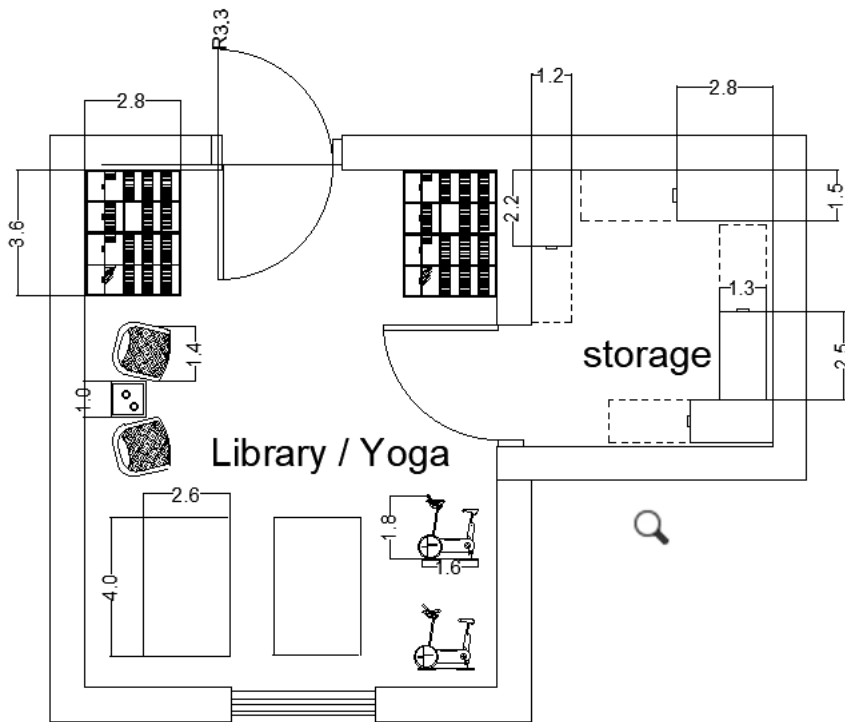
$$\text{Toilet} - 1.8 \times 3.14 = 4.94$$

$$\text{Sink} - 3.14 \times 0.8 \times 0.8 = 2.0$$

$$\text{Mobility space left} - 56 - 6.94 = 49.06$$

A caretaker's bedroom is a space thoughtfully designed for someone responsible for taking care of others, such as an elderly family. It's a place where the caretaker can rest, unwind, and have privacy when needed while remaining close to the elderly couple they are looking after. The bed in a caretaker's bedroom is comfortable and functional, providing a place for the caretaker to sleep and rest during breaks. It may have a simple and practical design. There is ample storage space for the caretaker's personal belongings, etc. A bedside lamp is essential for reading and providing gentle illumination during nighttime care without disturbing the other person in need of assistance. A television is often included for entertainment during downtime, It allows the caretaker to relax and unwind while keeping an eye on the person they are looking after, especially if they have mobility or health issues. Adding a small plant can create a soothing and homey atmosphere in the room which also motivates them to work harder at their job. Having an attached washroom is crucial for convenience. It ensures the caretaker has quick and easy access to bathroom facilities, which is especially important when providing care for someone with specific needs.

➤ **VASU : YOGA/LIBRARY + KITCHEN**



Library/Yoga

Chairs (X2)-1.5x1.5=4.5

Books Self (x2)-2.8x3.6=20

Side table-1.0

Treadmills(x2)=1.8x1.6=5.76

Yoga Matt(x2)=4.0x2.6=20

Total Space occupied by Furniture and equipments = 4.5+20+1.0+5.76+20=51.26

Mobility space left=180-51.26=128.74

Storage Area

Storage compartments-

2.2x1.2=2.64

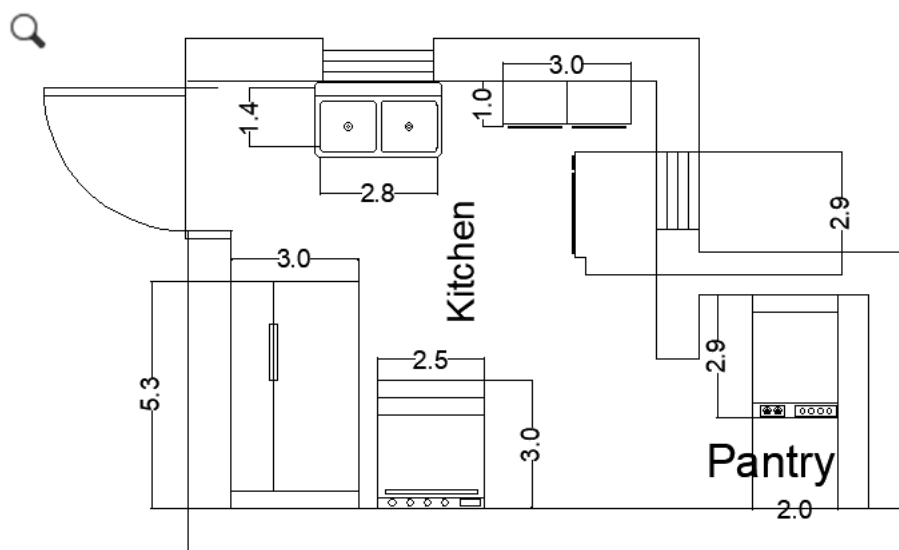
2.8x1.5=4.20

2.5x1.3=3.25

Total Space occupied by storage compartments=10.09

Mobility space left=64-10.09=53.91

The second floor of the bungalow is dedicated to providing intellectual stimulation through a well-stocked library. This space offers a diverse collection of books, periodicals, and digital resources, catering to a wide range of interests. The library promotes cognitive engagement and lifelong learning, allowing the elderly residents to explore new topics and revisit cherished literary classics. Comfortable seating and ample natural light create an inviting ambiance that encourages reading and contemplation. Adjacent to the library is a serene yoga room, designed with the holistic well-being of the residents in mind. This space is adorned with calming aesthetics, fostering a tranquil atmosphere for yoga and meditation. Regular yoga practice can contribute to improved flexibility, balance, and mental clarity for the elderly individuals. The yoga room provides a dedicated sanctuary for relaxation and self-care.



Kitchen/Pantry

Sink-1.4x2.8=3.92

Cabinets -1.0x3.0=3

Washing Machine -2.0x2.9=5.8

Fridge -5.3x3.0=16

Dishwasher -3.0x1=3.0

Oven- 2.5x3.0=7.5

Total space occupied by kitchen appliances=3.92+3+5.8+16+3.0+7.5=39.22

Mobility space left=120-39.22=80.78

The kitchen and pantry, fully equipped with modern appliances, enable the elderly occupants to prepare meals with ease, fostering a sense of independence. The spacious layout allows for smooth mobility, ensuring that they can move around comfortably. This layout encourages independent cooking and fosters a sense of autonomy, allowing the elderly residents to continue enjoying the pleasures of home-cooked meals.