# Building Senses
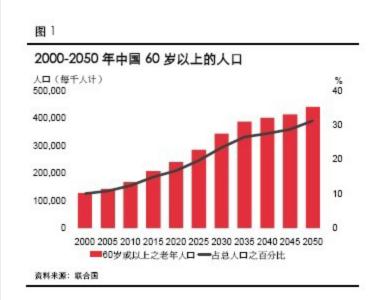
## a Fresh Look at a Meaningful Retirement
Community for the People of Zhengzhou, China"

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# Aging society in China



图 1

2000-2050 年中国 60 岁以上的人口

人口（每千人计）

60岁或以上之老年人口 ━ 占总人口之百分比

资料来源: 联合国

- Aging population is a serious problem in the world, especially in China. Since 1999, China started running into "aged society" and in the next 40 years, the total elderly population will reach to 437 million, which makes up 30% of the entire population.

# Senior support in China

- Depend on where the senior lives:

1. Social support: elderly facility.
2. Family support: lives at home.

- Disadvantages:

Elderly facility: 1.Locate in the suburb(isolation, forget by the society),

2.Bad living quality(charitable project, only fulfill the minimum requirement)

3.Consider less human factor

4. Boring and less activities(a place waiting for "death",)

5. the amount of elderly facility is not enough

Family support:  need to know the family structure shifting

# The traditional family structure?

# Family structure shifting

- There is an old Chinese proverb said: "there is an old, there is treasure". As an agrarian country, the family as a unit is working on the same farm land year after year to make living. Therefore, the old people, who has already gained lots of experience from working in the farm is always been admired and followed by the other family members. Therefore, the elderly is always being seen as the family leader and learning model. (Ganshaw, 1978).

- In the society, the social norm requires the elderly passing the knowledge and experience to their offspring and as the reward; the children have the responsibilities to give their parents support when their parents get old.

# However ……

# Family structure shifting

- With the modernization process taking place in China, people are not only making living based on the farming. More and more people moved into cities. The society system becomes more complex and various.

- People receive education in school and they do not have to stay where their family at and learn from their last generation.

When people start moving around, the traditional "big family" has been broke into single units and it reduces the family size. So the bounding among family member is not as tight as it used to be.

# The new type "4-2-1" family

- Two young couples each from single-child family are taking care and responsible for their own child(1) and both of their parents(4).

- In modern Chinese society, the speed of the life is fast and middle generation have a heavy working pressure. And they have to live and work in a different city far from their parents. Therefore, they do not have enough time to take care of their parents.

- Empty nest family

# Empty nest family

- Definition

  Empty nest family is the stage in the parents' life after their children left home.

  In China, there are 49.7% families in the city are empty nest family (Zhao, 2010).

- Effects depression, stress, worry, sense of lost….

- Health: Elderly has more chance to be sick than the young people and some just need assistance because of the age.

- Elderly Life becomes even harder after the death of their spouse

# Conclusion:

Either social support or family support is suited well.

# Problem Statement

So how could architecture help set up a better living style for seniors in the aging society?

# Statement of Intent

- Claim

  The design of the Retirement Community will improve life quality for seniors by fulfilling their physical and psychological needs.

  The new typology is a exploration of community based elderly support. The architecture not only serves the people who lives in it. It is also open to the nearby community and serves the elderly nearby.

# Statement of intent

- **Premise 1**: "The form of the building represents the significance of civilization"(Perkins, 2004). The design of the Retirement Community will connect the architecture to the people by bringing them in.

- **Premise 2**: The design helps shape people's behavior and enhance people's relationship.

- **Premise 3**: People is the main element in the architecture. This new living style will fulfill people's needs and set up a sense of place for the building.

# Statement of intent

- The project justification

    Through the thesis design, the project will remind society to rethink senior care and help change people's mind from the traditional methods for elderly support to a new approach that is more sustainable and meaningful.

# Design for human

- "Design is difficult because it must satisfy several criteria. These design (and evaluation) criteria constitute a hierarchy.
- First a space must be safe and healthy. A space must enable users to perform their functions.
- Second a design should not cause discomfort.
- Finally, a design should be aesthetically pleasing." (Bennett, 1977).
- Design for human is the key.

# What does elderly need?

# Elderly needs

- Typically, the entering age of elderly is 65 years old(based on UN's definition). With the age increase, every aspect of the body function starts to degenerate.
- Physiological needs:  consider the need of sound, light, temperature, humidity, human behavior, universal design.

- Psychological needs: based on "sense of place"

# Sense of place

- Sense of place

  *"A concrete term for environment is place. It is common usage to say that acts and occurrences take place. In fact, it is meaningless to imagine any happening without reference to a locality. Place is evidently an integral part of existence…In general a place is given as such a character of atmosphere." (Norberg-Schulz, 1980).*

Definition: People's feeling or perception of a space

The elderly needs:

- sense of security

- sense of belonging

- sense of community

- sense of be respected

- Sense of Security

 Elderly people often feel vulnerable and seek a greater sense of self-protection and self-reliance.

- Sense of Belonging

We live in the society with Family and friends. We always hope we are belonging to one or more specific groups. people could communicate in the group and then have the sense of self-worth and self-existing. Before the elderly retired, they are the active member of the society and after retirement, the elderly retreat from the society. Sometimes they feel lost. Therefore, the elderly need to involved in the group and interact with other people to get the sense of belonging.

- Sense of be respected

  Feel cared by other people and live in dignity

- Sense of community

  After retirement, usually the elderly will stay at home with family and neighbor. The community life becomes main part of the elderly life. In the book "Senior living, the author suggested that during the design of the retirement facility, we should design some space that helps the elderly set up the sense of warmth and space that let the elderly come across.( zhao, 2010).

# Site

China

City of Zhengzhou

The site is in Zhengzhou, Henan, China. The area is located in the center of China which is part of North China Plain. This region is one of the most populous regions in China. Zhengzhou is capital and the largest city of Henan province. The population is 8,626,505. The city is the economical, educational and political center of Henan province

The area is closes to downtown area and Huayuan Street commercial Circle. Before it is demolished, the area was a low income community. Most buildings on the site are concrete blocks with 2-4 floors. The construction quality is poor.

# Some comments about the site

- It is composed of overcrowded multi-stories buildings  and narrow alleys, which are difficult for vehicles to pass through.
- They are surrounded by skyscrapers, transportation infrastructures, and other modern urban constructions.
- They have become the breeding grounds for social problems such as crime, drug addiction.
- Looks ugly and dirty
- However, since low rise building encourage people go to the street level and interact. The area provides sense of community and neighborhood.

# Site

In the summer of 2012, Zhengzhou government  tear down the whole community and want to renovate the area. They proposed the site be a commercial, and residential mixed use area.



Bus station

Proposed site

Area future development

School area
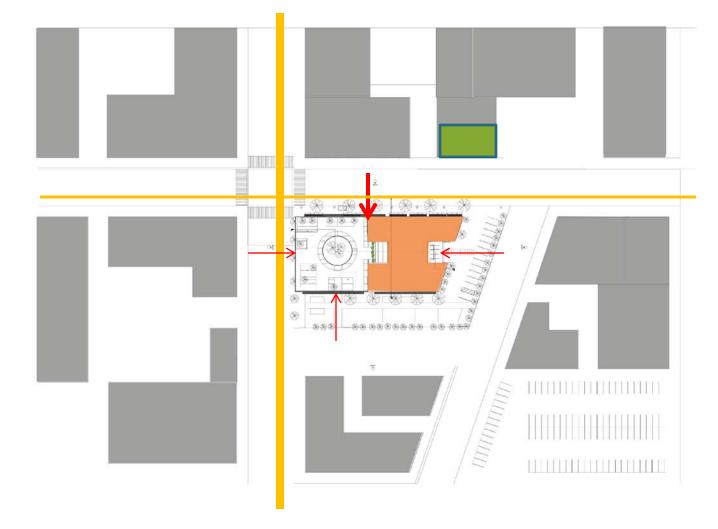
Hospital

Original site

Shopping center

Connection

# Site plan
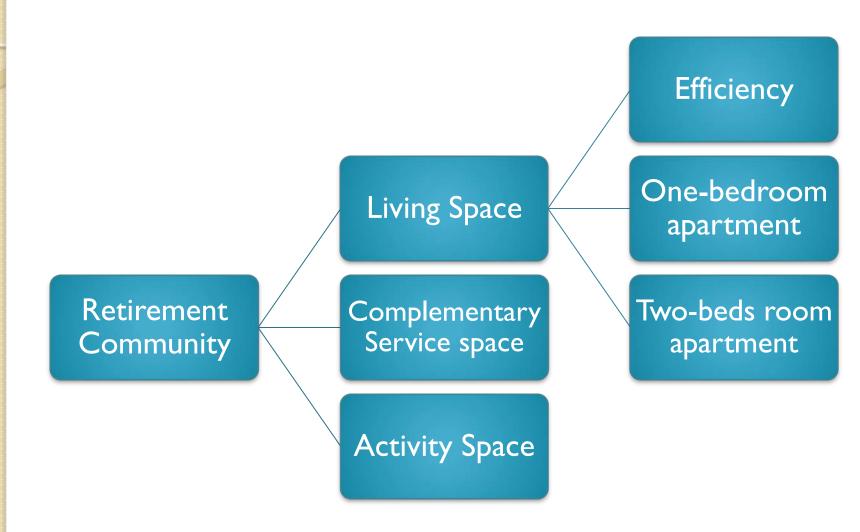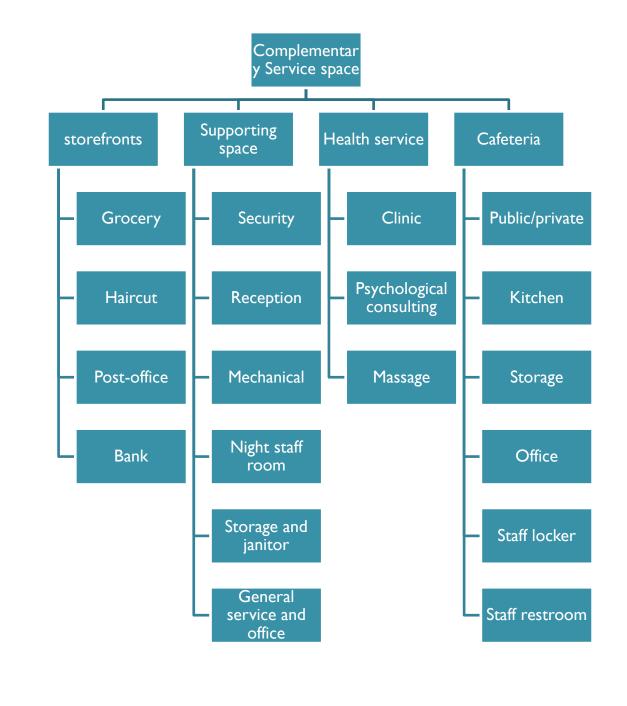


Entrance
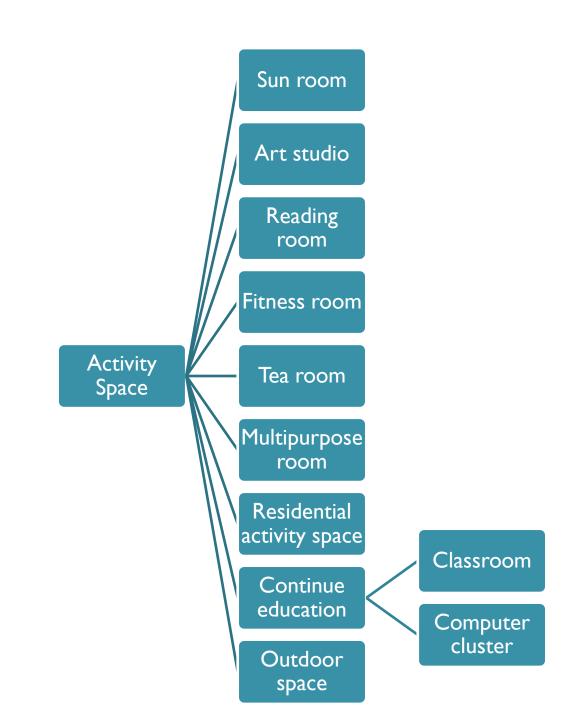
Traffic

- The proposed building is mixed use architecture. An elderly center is designed within the first two floors to let people join each other for activities. The rest floors are residential space.

# Program

Activity room

Outdoor space
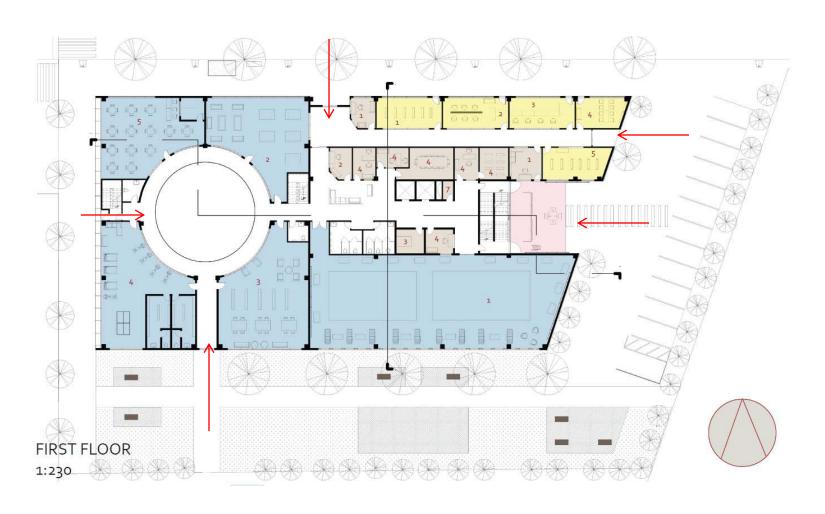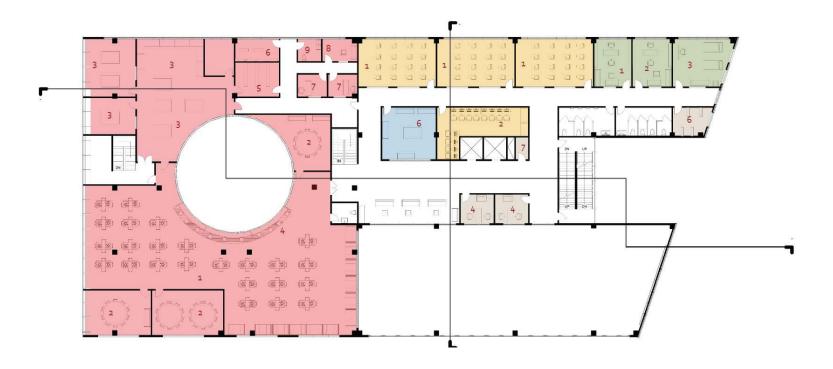
The low rise community creates an opportunity for people interacting at the street level and promoting socialization. In keeping the sense of community, every 3 floors are grouped to create a community that shares outdoor spaces, a communal activity room and a staff room.

# First floor plan



FIRST FLOOR
1:230
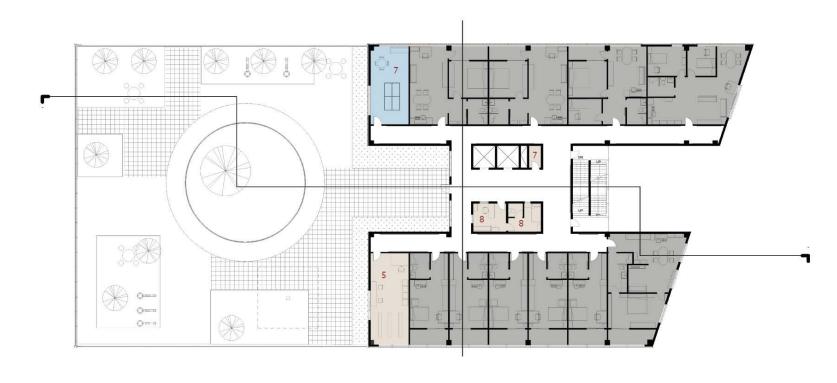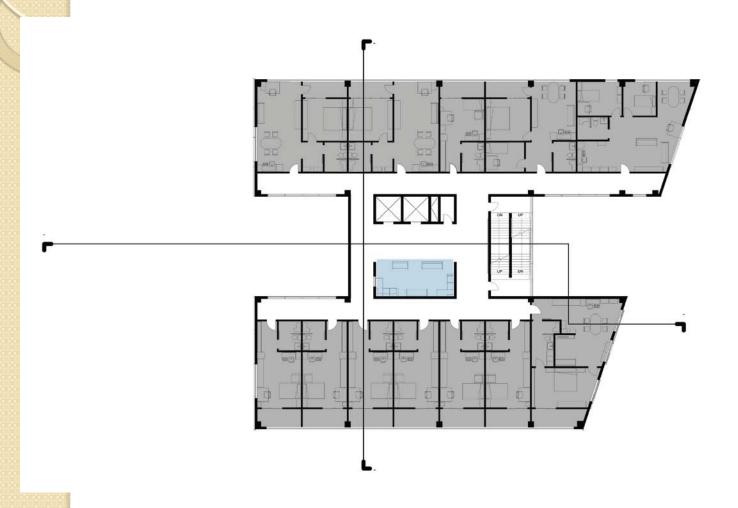
# Second floor plan

# Third floor plan

# Apartment floor plan

## CAFETERIA

1. PUBLIC DINNING SPACE   340 Sq. m

2. PRIVATE DINNING SPACE  29 Sq. m

3. COOKING AND FOOD PREPARATION   200 Sq. m

4. BAR

5. STORAGE 14 Sq.m

6. LOCKER 10 Sq.m

7. OFFICE 15 Sq. m

8. STAFF BREAK -ROOM  8.8 Sq.m

9. STAFF RESTROOM  6.5 Sq.m

## SUPPORTING SPACE

1. SECURITY  15 Sq.m

2. RECEPTION  15 Sq.m

3. MECHNICAL ROOM  10 Sq.m

4.   GENERAL OFFICE  11 Sq.m

5. NIGHT STAFF ROOM  23 Sq.m

6. STORAGE 12 Sq. m

7. JANITOR 3 Sq.m

8. GENERAL SERVICE ROOM 40 Sq. m

## HEALTH SERVICE

1. CLINIC  20 Sq.m

2. PSYCHOLOGICAL CONSULTING ROOM  20 Sq.m

3. MASSAGE 24 Sq. m

## LIVING UNITS

Efficiency 40 Sq. m

One-bed room apartment 64 Sq.m

Two-beds room apartment 64-80 Sq.m

## CONTINUE EDUCATION

1. CLASSROOM  40 Sq.m

2. COMPUTER CLUSTER 33 Sq.m

## ACTIVITY SPACE

1. SUN ROOM 340 Sq. m

2. ART STUDIO 132 Sq. m

3. READING ROOM 132 Sq. m

4. FITNESS ROOM  132 Sq. m

5. TEA ROOM  132 Sq. m

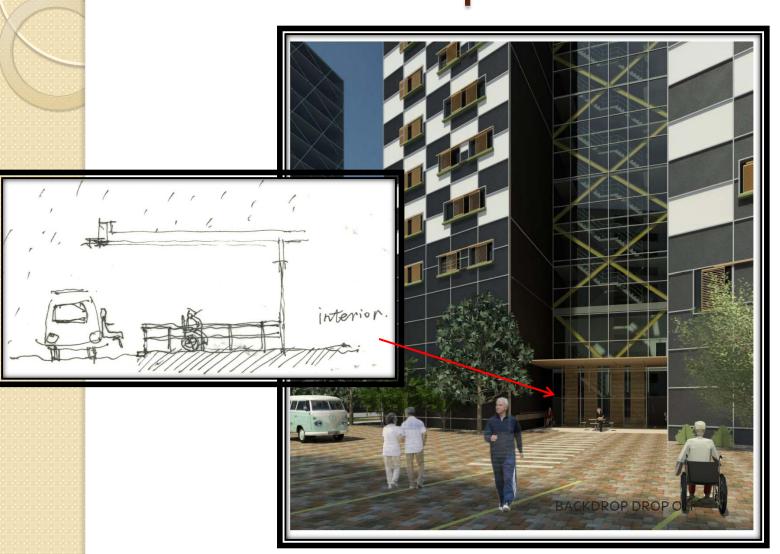6. MULTIPURPOSE ROOM  35 Sq.m

7. RESIDENCE ACTIVITY ROOM 40 Sq.m

## STOREFRONT

1. GROCERY 32 Sq.m

2. HAIRCUT 32 Sq. m

3. POST OFFICE   32 Sq.m

4. BANK  28 Sq.m

5. GIFT STORE 30 Sq.m
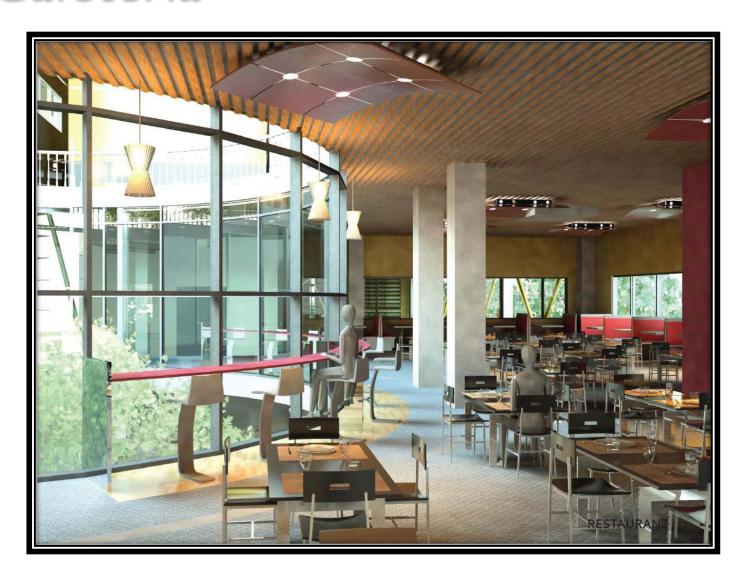
# Sun room

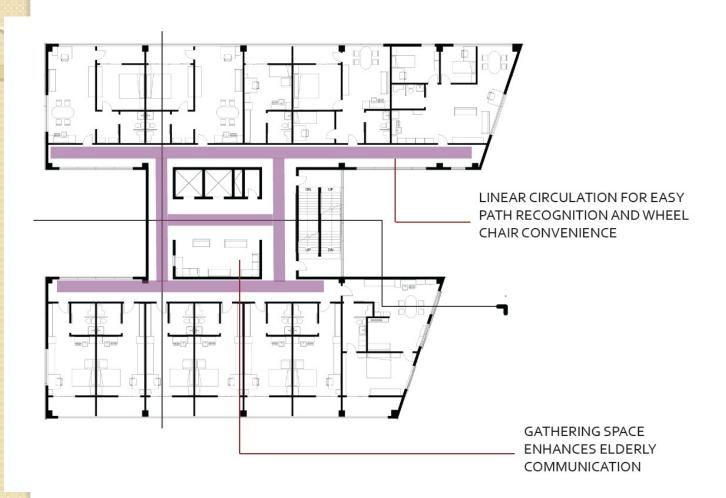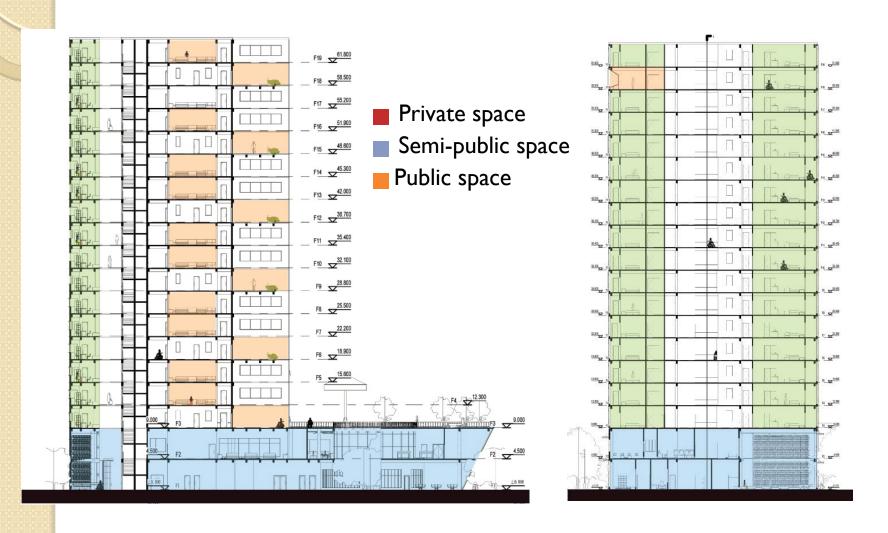# Outdoor space on roof



ROOF OUTDOOR SPACE

# Cafeteria

# Backdoor drop-off

In the core of the building, create semi-public space(rest area) for the elderly socializing and interacting with each other.



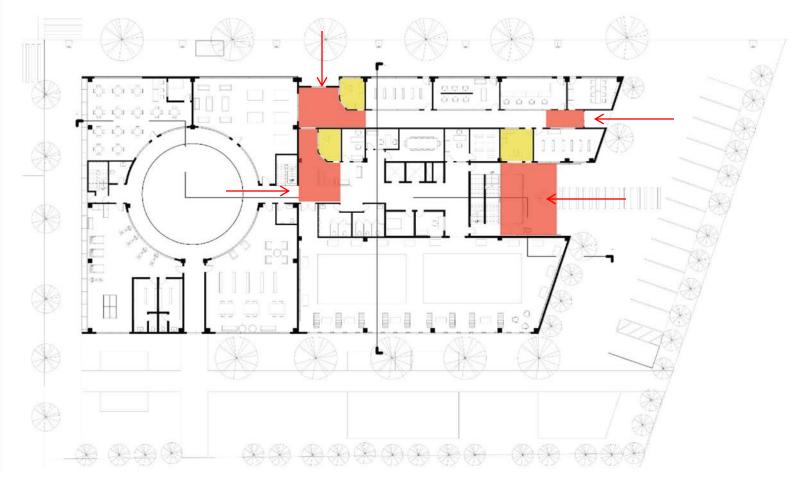LINEAR CIRCULATION FOR EASY PATH RECOGNITION AND WHEEL CHAIR CONVENIENCE

GATHERING SPACE ENHANCES ELDERLY COMMUNICATION

- In the book "Building Type Basics for Senior Living", the author talks about the elderly feel increasingly importance of the life after they become old and feel not as strong as used be. So it is not only crucial to create a physical safe environment, but also important to create a sense of feeling that the place is safe to live and enjoy life. (Perkins, 2010).

The building is divided into private spaces, semi public spaces and public spaces to separate people.



Private space
Semi-public space
Public space

# Controlled entrance for the open floor
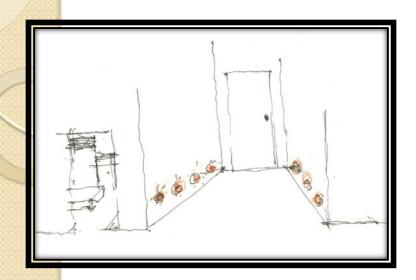
# Living space design
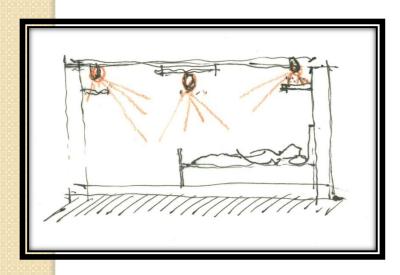
- Living space is where the elderly spent most time for daily life. Assistant living environment is highly recommended  for designing the living unit.

According to research, for living space people prefer Smaller room than larger room

HANDRAIL INSTALLED ALONG THE HALLWAY

0.47

SPACE RESERVED(47CM) FOR CONVENIENT WHEEL CHAIR ACCESS

SLIDING DOOR OFFERS EMERGENCY ACCESS

METAL BAR INSTALLED FOR RESTROOM AND SHOWER SUPPORT

0.77

SPACE(77CM) RESERVED BETWEEN WALL AND BED FOR WHEELCHAIR AND EMERGENCY ACCESS

1.59

Entrance bench for elderly to sit and change shoes

Temporary storage space

Bed receives indirect light

Awning window reduces wind speed and create natural ventilation
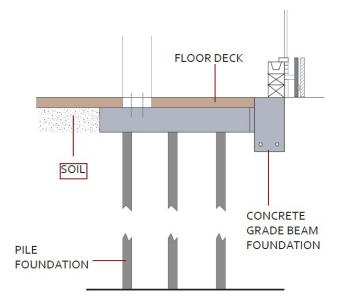
Night light indicates the path between bed and restroom
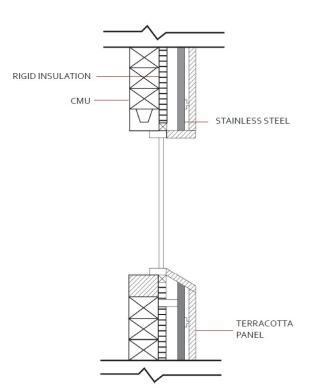
Supporting bar

Non-slip carpet

# Structure and material
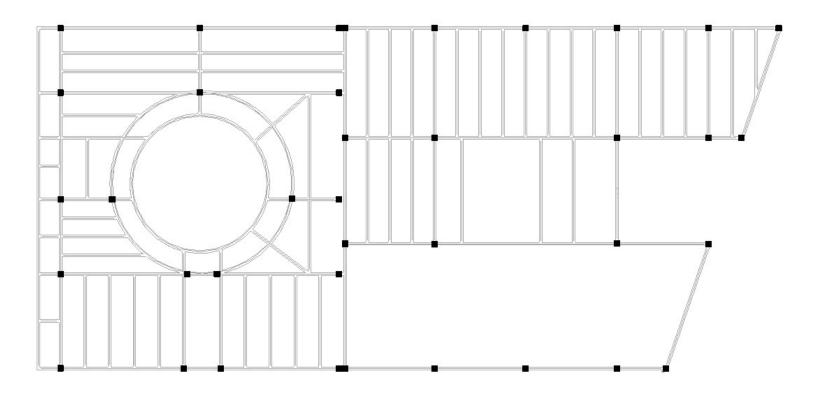


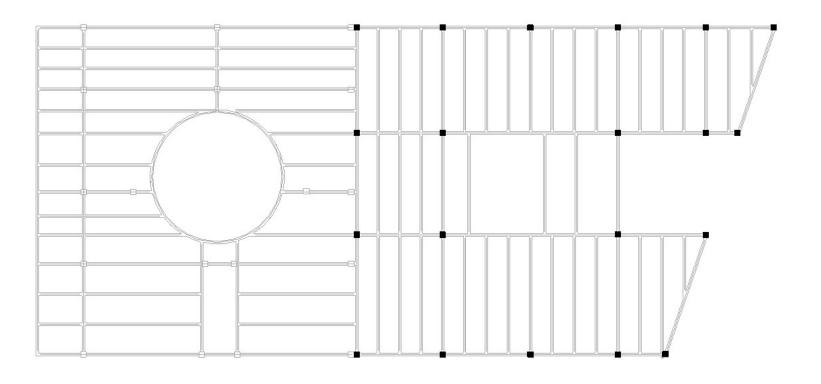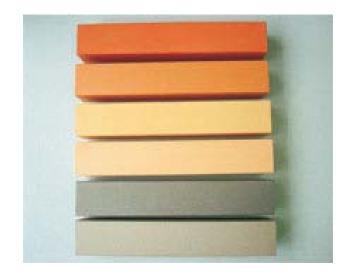FLOOR DECK

SOIL

PILE FOUNDATION

CONCRETE GRADE BEAM FOUNDATION

RIGID INSULATION

CMU

STAINLESS STEEL

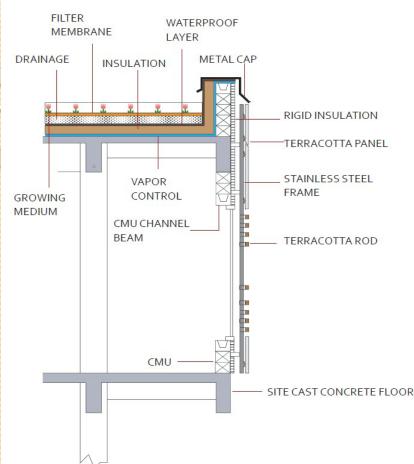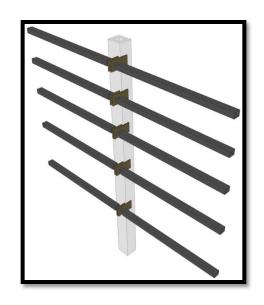TERRACOTTA PANEL

# Structure

# Structure

# Structre

# Building skin

- Ceramic curtain wall
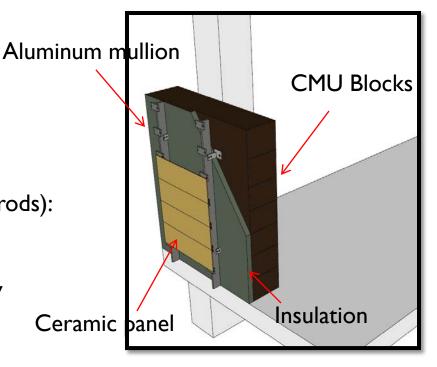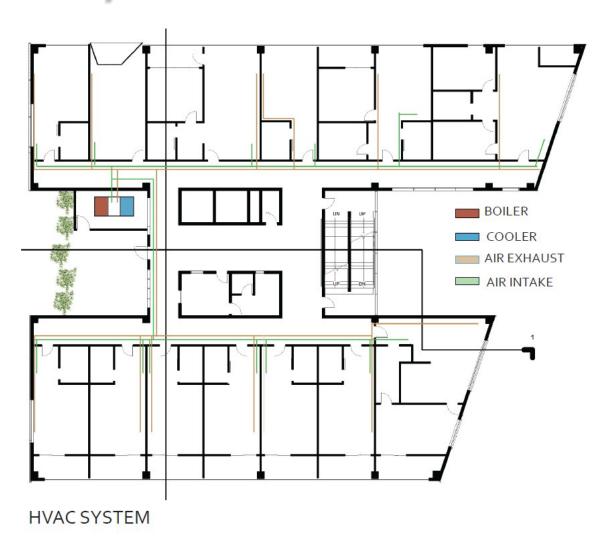
Using terracotta as building skin(panels and rods):
1. Environmental friendly
2. Light weight with good acoustic insulation
3. Good fire-proof and anti-freezing property
4. Self cleaning(static feature)

# HVAC system



| | |
|---|---|
| 🟥 | BOILER |
| 🟦 | COOLER |
| ⬜ | AIR EXHAUST |
| 🟩 | AIR INTAKE |

HVAC SYSTEM

# Question ?

- Thank you.