A UNIVERSITY-BASED COMMUNITY HOME
for the elderly who need to be cared for in Wuhan city

FOREVER YOUNG

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A UNIVERSITY-BASED COMMUNITY HOME FOR THE ELDERLY WHO NEED TO BE CARED FOR IN WUHAN CITY

Creating a community to support the care of the elderly in urban China

by
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Abstract

In 2000, when it entered the aging society, the elderly population was 129 million 980 thousands, during the decade from 2000 to 2010, the number of empty nesters in China increased rapidly, and the proportion of empty nesters in urban areas in China increased from 42% to 54%. The proportion of empty nesters living in rural areas is 30.77%. In 2013, the population of empty nesters in China exceeded 100 million. In 2030, the number of empty nesters in China will reach 200 million. There are more and more problems in housing. The economic conditions of the elderly are limited, and the number of new houses that can be afforded is small, which has caused widespread phenomena in modern times: the residence of empty nesters live in poor conditions compared to other types of the elderly.
The family pension is China's traditional pension model, and currently still dominates in rural and urban areas in China; the following model is social pension, for example, there are old-age foundations in some villages in Yiwu, and accepts donations from the society (the national or the world's enthusiastic people who are mainly overseas Chinese), and the monthly living allowance is given to the elderly according to the age. The other model is community pension, such as nursing homes or residential for the elderly.
On the other hand, the city has been gradually moving towards a high-density, high-rise and large-scale tendency with the rapid development of the economy and the process of urbanization. Building sustainable communities for people is a worth exploring question especially for the elderly in this situation.

As for the concept "Forever young", it is not only just a mentality that I have always believed in, which is positive and passionate about things, but I also hope that the elderly also have this mentality. The elderly can enjoy life and enrich their lives with the educational resources of the university. Any, doing some work in restaurants and cafes can help increase self-identity and help the elderly's mental health.

Forever young, and enjoy their lives.

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1 Introduction

1.1 Existing Conditions

1.2 Current issue in China

1.1 Existing Conditions

TOP 8 POPULATION AGES 65 AND ABOVE (% OF TOTAL POPULATION)

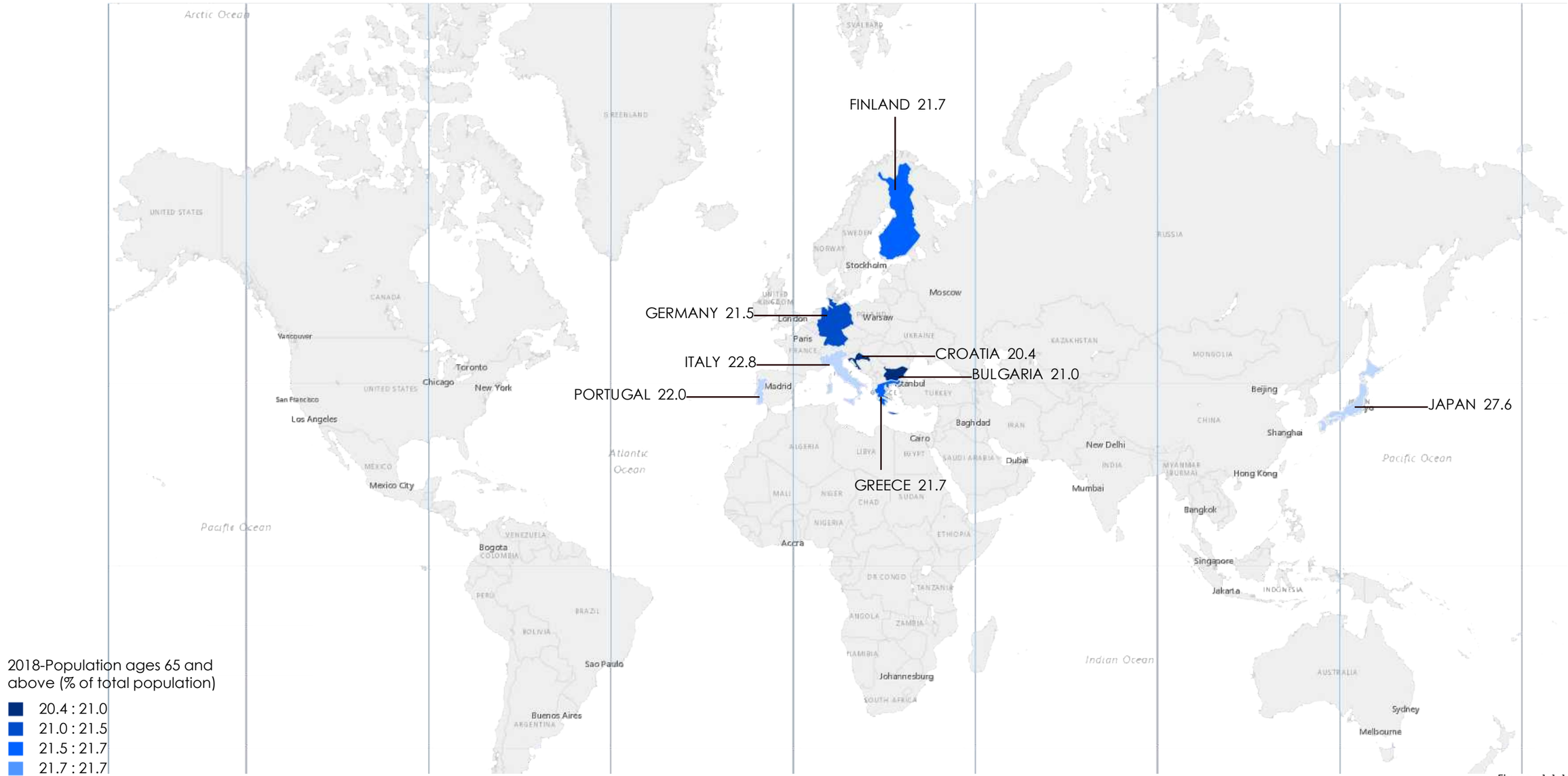


Figure 1.1.1

The world's population is ageing: older persons are increasing in number and make up a growing share of the population in virtually every country.

Top 8 countries about population ages 65 and above (% of total population) in 2018: Japan, Italy, Portugal, Finland, Greece, Germany, Bulgaria and Croatia. The probability of top eight countries account for more than 20%. Percentage of elderly people in China is 10.9.

Source data elaborate from: https://databank.worldbank.org/reports.aspx?source=2&series=SP.POP.65UP.TO.ZS&country=

TOP 10 POPULATION AGES 65 AND ABOVE, TOTAL

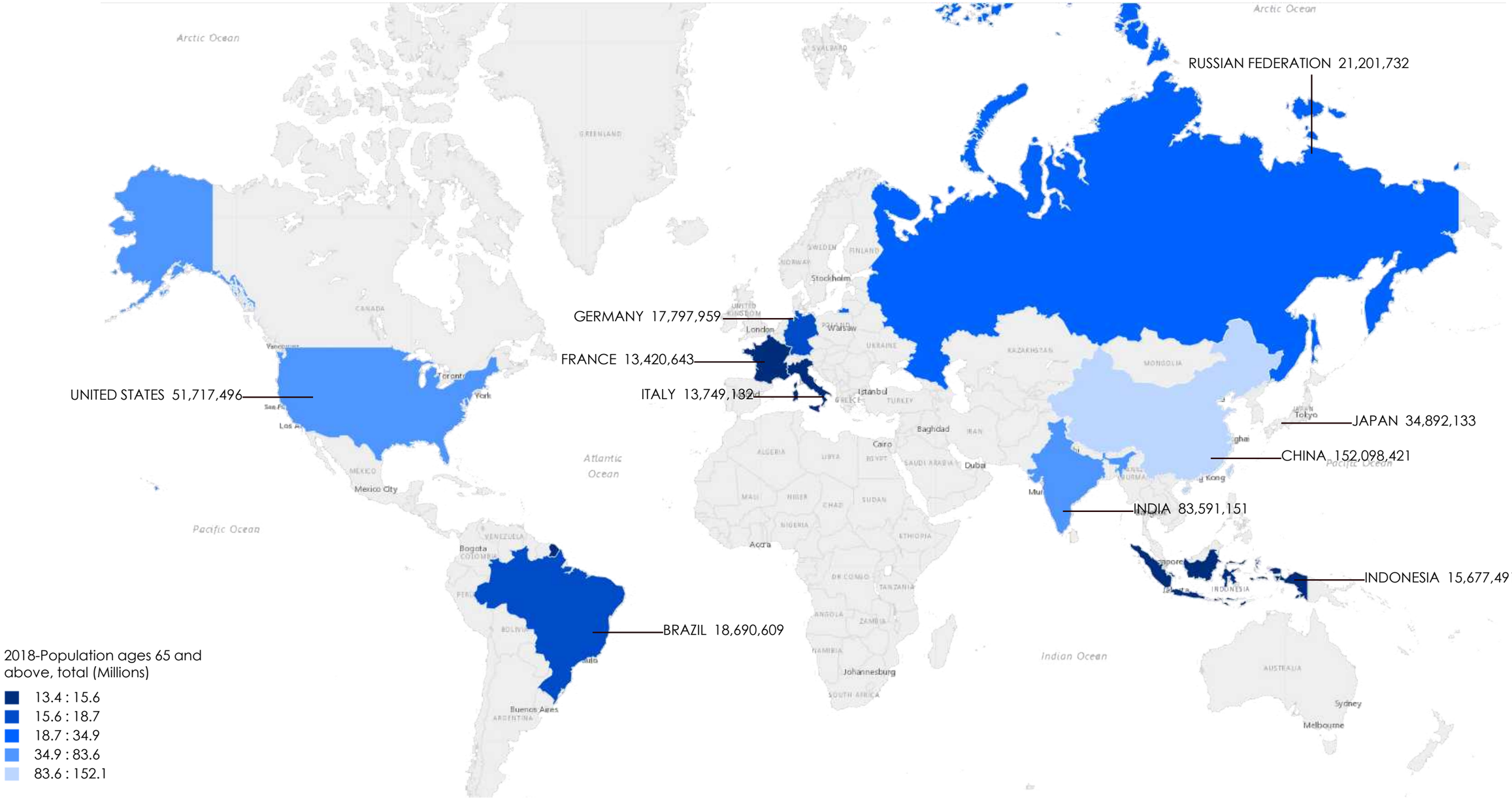


Figure 1.1.2

Top 10 countries about population ages 65 and above in 2018: China, India, Japan, United State, Russian Federation, Brazil, Germany, Indonesia, Italy and France. Although the proportion of the elderly in China is not high, due to the huge population base in China, the number of elderly people is particularly high.

Source data elaborate from: https://databank.worldbank.org/reports.aspx?source=2&series=SP.POP.65UP.TO&country=

1.2 Current issue in China

China, **the most populous country** in the world, is facing the **rapid graying** of its population.

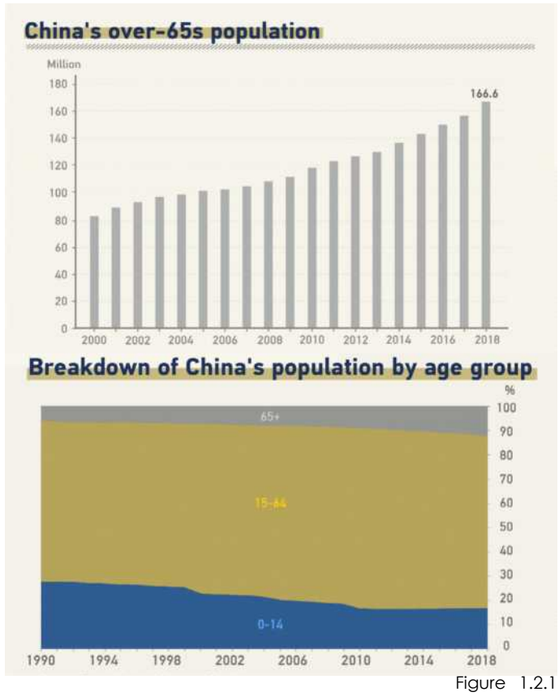


Figure 1.2.1

At the end of 2018, 11.9 percent of its population (166.6 million people) were 65 or older, according to data from China's National Bureau of Statistics. Generally, a society is considered relatively old when the proportion of the population aged 65 and over exceeds 8 to 10 percent.

The ratio of young to old will be dramatically imbalanced by the rising ranks of the elderly.

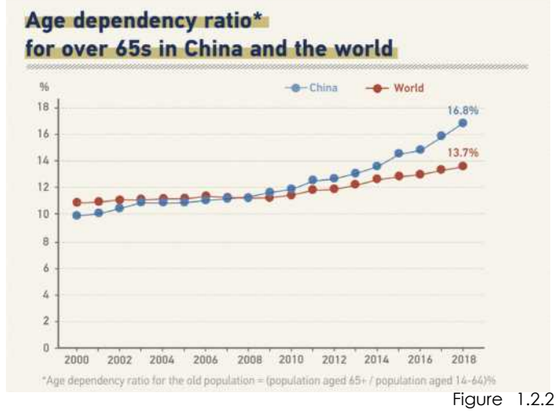


Figure 1.2.2

Seen from the graphic left, China's age dependency ratio for over 65 surpassed the world average's in 2009 and became three percentage points higher in 2018.

The age dependency ratio of older dependents is the proportion of people older than 64 to the working-age population, between 15 and 64.

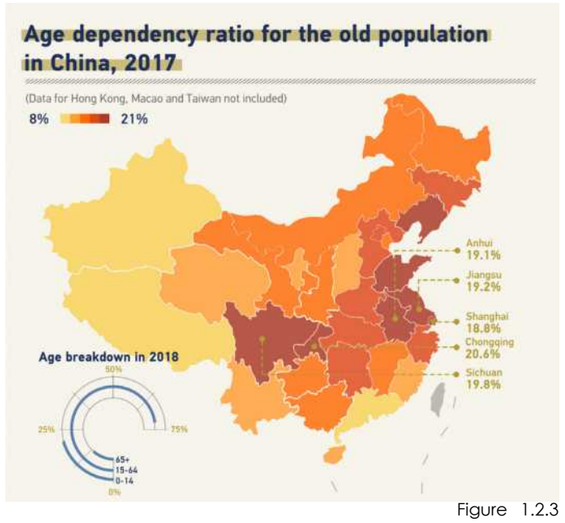


Figure 1.2.3

If we take a closer look at different regions in China, **the whole country has entered an aging stage, but at distinct levels**.

In southern Guangdong Province, for example, the age dependency ratio for the elderly is 10.3 percent, meaning 10 people in working age (14-64) support one senior citizen. Guangdong also has the largest GDP in China. However, in southwestern Chongqing Municipality, which had the highest age dependency ratio for the elderly in 2017, **five young people need to support one elderly person**.

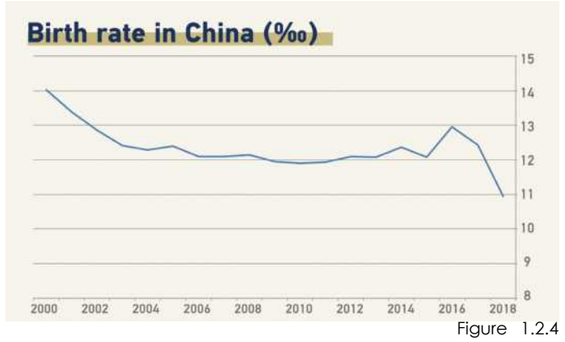


Figure 1.2.4

Figure1.2.1 - Figure1.2.4
Source: https://news.cgtn.com/news/2019-07-11/Graphics-Is-China-ready-for-an-aging-population--IeuKRoApQ4/index.html

Challenges and government's response

China's aging crisis is well underway. Given the declining fertility rate, China's aging process is irreversible and increases pressure in areas like pensions and health systems.

China has taken measures to deal with the aging population, including **building and improving medical and health systems** for the elderly, **promoting flexible retirement**, **encouraging family care combined with social care**, and **loosening birth policy**.

Regions where the aging population is becoming a severe issue have already started to find different strategies to try and balance the situation, such as in Liaoning Province, where retirees are encouraged to start private businesses.

Reforming the birth control policy has so far done little to defuse China's aging issue.

China formally **scrapped its one-child policy** in 2016, and has since encouraged couples to have a second child – but the number of births has not surged as expected.

After a bump in 2016 – consisting mainly of women who'd waited to have a second child – the birth rate then fell the following year. Many factors can influence a country's birth rates, including the number of women in fertility age, their educational level, and the overall social and economic development.

2 Problem Analysis

2.1 Conceptual definition

2.2 Old-age care in rural China and towns

2.3 Analysis about the happiness of the elderly

2.4 Analysis about the health status of the elderly at the nursing home and at home

2.1 Conceptual definition

2.1.1 Classification of empty-families

The elderly: 60-74 years old are younger elderly people, 75-89 years old are elderly people, and 90-year-old is a long-lived elderly people.

Empty Nester: a name for a family type. It refers to the family that children leave the family after they grow up and leave their parents.

Empty nesters are divided into the following types:

Primary empty-nest families: With the rapid development of society, people's ideas and concepts are rapidly updated, and dink-family groups are rapidly an important part of society. There is also a family of couples who are unable to have offspring due to illness, and they are forced to choose the living mode of both husband and wife.

Secondary empty-nest families: it refers to families that have been separated after their children have grown up, including pure empty-nest families and similar empty-nest families.
Pure empty-nest families: Old people in single-aged families living alone and couples living together belong to this type.
Similar empty-nest families: Although children do not live with the elderly, there are other relatives accompanying the elderly.

Self-care empty nester: the elderly can basically complete the tasks in daily life, including the elderly self-care empty nesters (over 80 years old) and the young self-care empty nesters (60-79 years old);

Empty Nester in need: empty nesters who cannot fully take care of themselves over the age of 60;

Empty Nester in care: empty nesters who are over 60 years old and unable to take care of themselves.

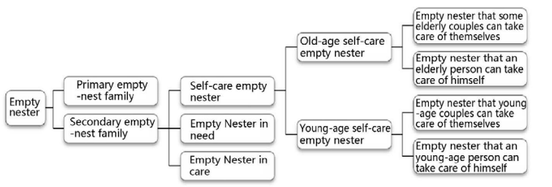


Figure 2.1.1 Classification of empty-families

2.1.2 The status of empty nesting in China

The size of the family is increasingly miniaturized. As children grow up and leave their families to study or work, and In the case where the fertility rate continues to be low, a large number of core families will be transformed into empty-nest families, resulting in a corresponding increase in the number of empty-nest families.

The status of empty nesting in China.
During the decade from 2000 to 2010, the number of empty nesters in China increased rapidly, and the proportion of empty nesters in urban areas in China increased from 42% to 54%. The proportion of empty nesters living in rural areas is 30.77%. In 2013, the population of empty nesters in China exceeded 100 million. In 2030, the number of empty nesters in China will reach 200 million.

Living conditions of empty nesters.
There are more and more problems in housing. The economic conditions of the elderly are limited, and the number of new houses that can be afforded is small, which has caused widespread phenomena in modern times: the residence of empty nesters live in poor conditions compared to other types of the elderly.

2.2 Old-age care in rural China and towns

2.2.1 Rural areas in economically developed areas (taking Zhejiang rural areas as an example)

STATUS
Rural social security is not perfect, and **family pension is still the main way of rural pension**, which makes rural empty nesters face more uncertainty in terms of economic support, life care, and spiritual comfort.

TYPES OF RURAL EMPTY-NEST FAMILIES
According to the 2003 survey of Zhejiang University's "Study on Ageing in the Process of Urbanization in Zhejiang":

The first category is the type of forced empty nesters. This type includes the elderly without children or relatives, but also they have children, but there is a tendency to push between the brothers, and even disgust and dislike the elderly. Such elderly people are relatively poor in basic things, spiritual comfort or life care.

The second category is the type of voluntary empty nesters. Most of them are healthy couples, who are healthy and can take care of themselves, and they are 60 to 70 years old. They think it is more comfortable for them to live alone and can reduce contradictions caused by living habits, dietary preferences, ideological generation gaps and family relationships, especially the relationship between mother and daughter.

The third category is the type of helpless empty nesters. The elderly want to live with their children, but their children are forced by their lives. They must go out to work, and leave the elderly at home.

THREE REASONS FOR THE FORMATION OF RURAL EMPTY-NEST FAMILIES
(1) The implementation of the rural contract responsibility system provides the possibility for farmers to move towards efficient employment.

(2) The process of urbanization and industrialization in rural areas has accelerated, and the "identity system" and "household registration system" have been loosened, and the easing of the system has finally made it possible for young farmers in economically backward areas to go out to work.

(3) **The family planning policy** has reduced the number of children in the family and the miniaturization of the family size.

THE PENSION CRISIS OF RURAL EMPTY NESTERS
(1) The quality of life of the empty-nest elderly family is lower than the average living standard of the rural population.

(2) The situation of no money to see a doctor has become the most difficult thing in the life of rural empty nesters. Due to the urban-rural structure, rural medical security is being re-established, and most elderly people do not have any medical insurance. Even in economically developed areas like Zhejiang, 76% of the elderly in rural area do not have any medical insurance. Among them, the number of the elderly without empty medical care in the empty-nest family is as high as 87%.

(3) **The phenomenon of "care for absence" of empty nesters is increasing** : It refers to the phenomenon that needs care but is not taken care of. The children of the family members are the main caregivers of the rural elderly, and the children have the obligation to support the elderly, which includes the daily care of the elderly.

The phenomenon of "care for absence" is mainly caused by the fact that it is impossible to take care of the elderly personally, due to restrictions of time and space. For example, in the mountainous areas where the economy is underdeveloped, it is more common in the rural areas "**adults go out for work and earn money, and the elderly and children are watching the farm at home**" .

As the aging of the countryside accelerates and the elderly population increases, the pressure of life care will become heavier and heavier. The care of the elderly will become the core issue of the current and future rural family pension, and also become a major social problem in the countryside.

THE APPROACHES TO THE ELDERLY IN THE EMPTY NESTER IN THE VILLAGE.

(1) Chinese traditional "filial piety" cultural propaganda to raise the awareness of the people's family pension: the family pension is China's traditional pension model, and currently still dominates in rural areas, this situation will not change for a long time. It is difficult to change from family pension to social pension in the short term.

86% of the elderly surveyed never thought about living in a nursing home. 9% of the elderly thought about it, but considering the economic reasons, it is unrealistic to enter the nursing home, and 5% of the respondents did not know.

(2) Relying on land security, actively explore the current forms of multiple old-age security for the elderly:

(2.1) On the basis of vigorously developing the village-level collective economy, establish a special fund or pension fund for village-age or township-age ageing, the relief for the construction of elderly welfare facilities and the elderly with special difficulties, and the old-age pension for the elderly. The surveyed village in Yiwu town has an old-age foundation, and accepts donations from the society (the national or the world's enthusiastic people who are mainly overseas Chinese), and the monthly living allowance is given to the elderly according to the age.

(2.2) **Improve the physical and cultural quality of the elderly and realize the transfer of some elderly people to the city**: One of the main reasons why old people are unwilling to enter the city and live with their children is that it is difficult for the elderly to adapt to the life of the city. The improvement will reduce the extent of the role conversion of the elderly after entering the city. The old people are willing to enter the city and enrich the family.

Rural villages with good conditions can also learn from the practice of towns to organize "empty nesters" to implement a centralized support strategy.

(3) In order to provide the elderly with a sense of worthiness and happiness , we should establish old-age activity centers and other social care services in rural areas.

The reason why the Rural Aged Activity Center is an important part of the community care service facilities is based on the following two points:

First, the purpose of building an activity center for the elderly is to **provide various activities and communication places for the elderly in the community, to enhance the emotional interaction between the elderly, to enrich the life of later life** and finally to enable the elderly to enjoy life. Second, the construction of the activity centers for the elderly is a common aspiration of community members and village cadres. It is jointly funded by the village collective economy and members.

In short, for the rural areas dominated by the food and clothing to the well-off stage, we should promote the establishment of a comprehensive complementary old-age security system with family pension, social pension, self-accumulation (savings, insurance) and collective pension. In addition, the government should actively promote the establishment of a pension system, mobilize social resources to assist rural empty nesters, and support them in their later years.

2.2.2 The characteristics of empty-nest family living in towns

REASONS FOR FORMATION

As a special family type, the empty-nest family's existence and rapid development are inseparable from the implementation of a family planning policy in China. As the only child in a family grows up and then leaves the family, the phenomenon of empty nesters appears.

(1) The development of economic technology: With the development of the modern society's commodity economy, the living pattern of traditional large family settlements collapses rapidly, resulting in a smaller family size. As young people leave home to make a living in the city, the rest of the family are only the elderly.

(2) Changes in cultural concepts: Modern society advocates independence, and young people want to be able to get rid of the control of the older generation.

(3) Policy orientation: The implementation of the family planning policy has also led to an increase in empty-nest families. When the family planning policy is 2015,, these parents were 55-60 years old, and their only children have already formed their own families. The children's leaving home is the beginning of empty-nest phenomenon, even if they can live with their parents to form a family of "421", as a middle-aged adult, they face a lot of pressure, and have to work hard. In fact, it also caused the empty nest of the elderly.

THE IMPACT OF EMPTY-NEST FAMILIES

The weakness of empty nests is that the empty nesters will become more autistic and unwilling to communicate with others in the absence of long-term lack of care. Eventually, it may lead to psychological problems, and empty-nest families are not conducive to young women to participate in labor, traditional Older people will help their children to care for their grandchildren, and the separation of families has forced young and middle-aged women to take care of their children from work.

(1) The level of home service needs to be improved: the probability of an accident in an empty nester at home is significantly higher than that of other people. According to the study of the article "The most common injury suffered by an empty nester is a fall", among the most vulnerable factors for empty nesters, the top five are falls, gas, animal bites, car accidents and poisoning, and the incidence of injuries to empty nesters reached 13.4%.

(2) Effects on the health of the elderly: Some studies have concluded that the healthy status of the empty nesters is obviously better than that of other types of elderly people. The affairs in life need to be done by themselves, and the bones are invisible and exercised. And proper labor is also conducive to the formation of a positive attitude.

(3) The psychological impact on the elderly: The impact of empty nesters on the psychology of the elderly is more negative. Due to the lack of communication with others in the long-term, empty nesters will become lonely, jealous, suspicious, afraid of contact with society.

CHARACTERISTICS OF EMPTY NEST FAMILIES

(1)The number of empty nesters and elderly people living alone grew significantly: in 2010, the number of elderly people living in urban and rural areas was 49.3%, an increase of 8 percentage points over 2006 and an increase of 10.4 percentage points from 2000. From 2000 to 2010, The proportion of the elderly in China's total population has increased from 10.33% to 13.26%, an increase of 2.93 percentage points. Although the growth rate of the elderly is more alarming, the growth rate of the empty nesters is much higher than the overall number of the elderly.

(2) Advance of the empty nest period: China has been implementing the family planning policy for more than 30 years. Most of the only children in this generation have grown up. They are faced with the choice of employment or schooling and need to leave the family early. Parents enter the empty nest period in advance.

(3) Female elderly more than male: According to the statistics of the sixth census (the census is conducted every 10 years) in 2010, among all empty-nest elderly, male empty-nest elderly occupied 48.27%, and the female accounted for 51.73%, which indicates that there are fewer males than females in empty nesters.

DISTRIBUTION CHARACTERISTICS OF AGE

Age (years old)	60+	60-64	65-69	70-74	75-79	80-84	85-89	90-94	95-99	100+
Total (10×4)	1824.39	380.42	356.12	378.87	348.55	226.44	99.98	27.42	5.97	0.60
Percent	100%	20.8%	19.5%	20.7%	19.1%	12.4%	5.5%	1.5%	0.3%	—

Figure 2.2.1 Number and proportion of elderly people living alone in all ages in 2010 Population Census

According to the survey, empty nesters over the age of 70 account for 64.56% of the total number, and **the age of empty nesters is generally high.**

ECONOMIC SOURCES

According to the third survey of the situation of urban and rural elderly population in China in 2010, there is no big problem in the life of some people with pensions, and even there will be a balance of 2,000 RMB per year. They are less dependent on their children because they have a certain economic base.

For those who do not have a pension, if the pension is obviously insufficient, they can only rely on their children. The economic situation of this part of the elderly is worthy of social concern.

SICK CONDITIONS

The higher the age, the more serious the disease of the elderly in the empty nesters. At the middle-age and the old-age, the disease rate of empty nesters is about 2/3. That is to say, only one out of every three elderly people is in good health.

2.2.3 Characteristics of empty nesters

PHYSIOLOGICAL CHARACTERISTICS OF EMPTY NESTERS

Old people in empty-nest families are often more likely to age than other elderly people when they are affected by negative emotions; It also has a more adverse effect on the sensory function of the elderly, such as the rapid deterioration of sight and hearing. As for some elderly people who are unable to adapt to empty nests in the short term, if they are not effectively treated, their impact on the physiology of the elderly is extremely serious, which will lead to the early termination of their lives.

PSYCHOLOGICAL CHARACTERISTICS OF EMPTY NESTERS

To a certain extent, empty nesters will be affected by empty nest syndrome. In the process of transition from the non-empty nest stage to the empty nest stage, the elderly will be unable to adapt for a short time. The parents who live around their children in daily life feel lonely and sad. If this negative emotion is not handled well, the situation will further deteriorate. In addition, the physical condition will continue to deteriorate. **The elderly will have many psychological problems, including feelings of loss, loneliness, helplessness, and cautious transition.**

FINAL CONSIDERATIONS

In short, in recent decades, with the rapid development of China's economy, the gradual change of national cultural concepts and the lag effect of **the family planning policy**, the number of empty nesters in China's cities and towns has increased significantly. Since China's pension infrastructure and welfare policies related to old-age care are relatively backward, empty-nest elderly people with pensions can maintain basic living, and the economic situation of elderly people without pensions can no longer maintain normal life. Not only that, most of the empty nesters have caused many problems in their physical and psychological problems due to lack of companionship and lack of life fun. The problem of urban empty nesters has gradually become a big social problem.

2.3 Analysis about the happiness of the elderly

2.3.1 **Status**: For the elderly, Changes in physiology, economic status, and social roles threaten the independence and dignity of the elderly and easily lead to adjustment crisis for the elderly.

Chen Baifeng (2009) found that the suicide rate of the elderly in rural China is high. Wu Xiaolan (2010) pointed out that there are many depressions in the elderly, which is surprising. This increasingly appears to be important and meaningful for the study of subjective well-being of the elderly.

2.3.2 **The key factors affecting the happiness of the elderly**: **income inequality** and health as two important factors are increasingly concerned by economists.

2.3.2.1 **The relationship between income inequality and subjective well-being**: The impact of income inequality on individual subjective well-being in China and abroad has not reached a consistent conclusion, because it depends mainly on the trade-off between pure income inequality aversion and "tunnel effect".

2.3.2.2 **The relationship between health and subjective well-being**: A clear conclusion has been drawn from the related research in psychology and happiness economics that health is significantly positively correlated with SWB (Subjective well-being).

2.3.2.3 **The impact of income inequality on health through indirect health**: Inequality in income affects the health of the elderly and indirectly affects their subjective well-being.

In the 1990s, the **Income Inequality Hypothesis** determined by health was established. The theory points out that **at the higher regional level, income inequality is significantly negatively correlated with subjective well-being.**

2.3.3 **Urban-rural differences in income inequality and health impact on the well-being of the elderly**: Due to the differences in the urban-rural dual structure unique in China, the living environment, medical conditions and Cultural values of the elderly in urban and rural areas are very different, which will also make it great differences in the social activities and mental state of the elderly in urban and rural areas.

(1) The relative income effect and the comparison effect are more pronounced in the "acquaintance society", which leads to the fact that the elderly in rural areas still have psychological factors after controlling their health;

(2) The concept of Chinese traditional culture is more ingrained in rural areas than in urban areas. In addition, farmers are recognized as the lower status in Chinese society, and they are psychologically disadvantaged for a long time, which makes the rural elderly have relatively low psychological tolerance to income inequality;

(3) Compared with the urban old age, rural elderly have lack of medical insurance and low medical accessibility, which makes the negative impact of income inequality on their health become greater, and aggravate the dislike of income inequality.

3.1 **Income inequality has a greater impact than urban elderly on the negative subjective well-being of rural elderly.**

3.2 The status of health indicators has a significant positive impact on the well-being of urban elderly. Moreover, **it has a greater impact on the happiness of urban elderly than rural elderly.**

In a word, first of all, **income inequality** has a significant negative impact on the subjective well-being of the elderly in China, and it mainly affects the subjective well-being of the elderly by influencing the health of the elderly;
Secondly, **the impact of income inequality** on the well-being of the elderly has significant urban-rural differences, and its negative impact on rural elderly is much greater than that of urban elderly;
Finally, income inequality has significant differences in the well-being of the elderly with or without medical insurance. **Old people with medical insurance have higher levels of happiness, and income inequality has a much smaller negative impact on their well-being.**

2.4 Analysis about the health status of the elderly at the nursing home and at home

2.4.1 **Current situation**
Pension approaches to the old-age people and the factors affecting their lives and health have found that **the elderly in China do not have a high evaluation of their health status.**

Previous studies have confirmed that **about 56% of suicides are caused by depression** (Mei Chen Yuxi et al., 2003).

	The elderly in nursing home			The elderly at home		
	Frequency	Effective percentage	Cumulative percentage	Frequency	Effective percentage	Cumulative percentage
0 points	3	1.6	1.6	1	0.2	0.2
1～5 points	65	35.6	37.2	219	38.1	38.1
6 points	13	7.1	44.3	75	13.0	51.3
7 points	19	10.4	54.6	65	11.3	62.6
8 points	16	8.7	63.4	58	10.1	72.7
10 points	10	5.5	68.9	41	7.1	79.8
11 points	13	7.1	76.0	44	7.7	87.5
12 points	14	7.7	83.6	31	5.4	92.9
13 points	12	6.6	90.2	15	2.6	95.5
14 points	6	3.3	93.4	7	1.2	96.7
15 or more points	12	6.6	100.0	19	3.3	100.0
	N=183	Mean=7.84		N=575	Mean=6.96	
	Mode=5.0	Median=7.0		Mode=6.0	Median=6.0	

Figure 2.4.1 Distribution of depression index scores about elderly people in the nursing home at home

The higher the score, the higher the degree of depression, and vice versa. It can be seen that **the average degree of depression of the elderly in nursing homes is higher than that of the elderly at home.**

	Beta and significance level		
	All the elderly (Model 1)	At hursing (Model 3)	At home (Model 2)
The elderly at home	0.179***		
Male	−0.005	−0.080*	0.173*
Shenzhen household registration	0.029	−0.030	0.147
Marital status (for unmarried persons)			
Married	−0.178	−0.290	0.035
Separation or divorce	0.003	−0.114	0.186*
Widowed	−0.016	−0.134	0.113
Education level (for primary school and below)			
Junior high school	−0.106**	−0.114**	−0.060
High school or secondary school	−0.152***	−0.143**	−0.075
College	−0.208***	−0.184***	−0.152*
Undergraduate and above	−0.163***	−0.145***	−0.194*
Age	0.224***	0.288***	0.057
Constant	0.037	1.451	3.473
N	740	570	168
Adjusted R Square	0.153	0.219	0.096

*p< 0.05, **p< 0.01, ***p< 0.001.

Figure 2.4.2 Analysis about the degree of depression in the elderly

After joining the age and education level, it is found that **the degree of depression of the elderly at home is higher than that of the elderly in the nursing home.**

2.4.4 Degree of depression
Therefore, **what really affects the degree of depression is the degree of education and age: the degree of education is negatively correlated with the degree of depression.** The higher the level of education, the wider the interest and communication, and the more colorful the life may be, so the degree of depression will be lower; on the contrary, the elderly with low education may feel more lonely and depressed.

There is a positive correlation between age and degree of depression. The older the age, the higher the degree of depression, and vice versa.

In short, in terms of mental health, the prevalence and degree of depression of the elderly in the nursing and at home are relatively high, and **the depression of the elderly at home is significantly higher than that of the elderly in the nursing home. The degree of depression of the elderly in the nursing home and at home is negatively correlated with the level of education.** However, the educational level of the elderly at home has a more significant impact on depression.

Judging from the self-evaluation of health status, the self-evaluation of the health status of the elderly in the nursing home is higher than that of the elderly at home. Responding to the mental health problems of the elderly, We should not only strengthen academic research in this area, but also provide more social support for the elderly in terms of policies, because **social support can improve the mental health of the elderly** (Chen Lixin, Yao Yuan, 2005). **In addition, interpersonal interactions and communications help to slow down depression**. Therefore, we should vigorously develop daily care services for the elderly in the community, and provide more space for interaction for the elderly at home.

3 Status of elderly housing

3.1 The status of Chinese elderly housing

3.2 Overseas countries and regions pension model

3.1 The status of Chinese elderly housing

3.1.1 **The main bodies of all parties have tried, real estate companies have become the market leader**

Real estate companies have become the main force in the development of old-age housing due to their long-term experience in real estate development. According to public information, there are currently more than 30 real estate companies involved in the construction, development and operation of pension housing, and more than 80 express willingness to enter the market.

Based on huge market potential, many real estate companies regard pension homes as the strategic direction for the future, as an opportunity for business transformation and income structure and growth model transformation.

China's pension service industry has only just started, but we have also observed more and more institutions to join this market. (See Table 2 for details)

3.1.2. **The product structure is gradually enriched, but it has not yet formed scale.**

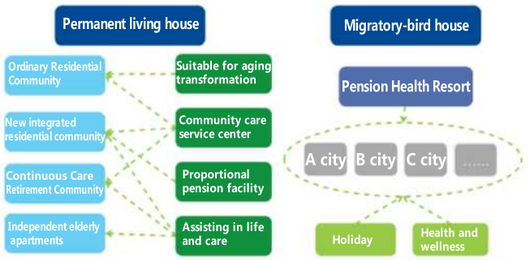


Figure 3.1.1 Classification of Chinese pension housing products

At present, the length of residence of Chinese pension housing products can be divided into permanent residence type and migratory bird type; from the function, it can be divided into suitable residential, comprehensive living housing, continuous care retirement housing and elderly apartments.

- **Existing Ordinary Residential Community:** At present, a large proportion of the elderly in China directly or indirectly own their own real estate and are willing to live in a familiar community environment, so the willingness to live in a special old-age community or elderly apartment and other aged care institutions is not strong.
- **New integrated residential community**: This is a community where young people and older people live together. Generally speaking, they are large in size and are located outside the city center, but the transportation facilities are gradually improving.
- **Continuous Care Retirement Community:** This community is a specialized community for the needs of the elderly, providing self-care, care, and integration of residential facilities and services for the elderly in the community, depending on age and health. Let them spend most of their old age in a familiar community.
- **Independent elderly apartments:** this is a more specialized retirement facility that usually relies on the city's medical resources and is located primarily within the city area.
- **Pension Health Resort**: The resort-style pension base is essentially a leisure resort service with a core of pension culture.

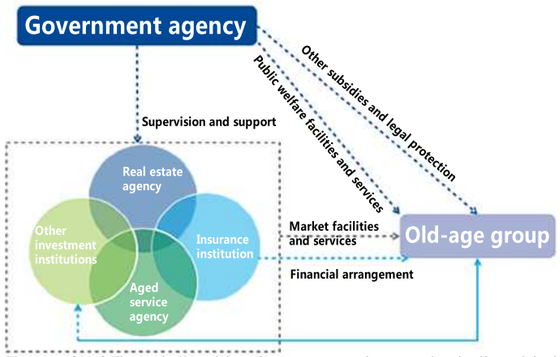


Figure 3.1.2 The relationship of government agencies to the elderly

Government agencies mainly perform three functions: **the formulation and implementation of pension policies, the provision of public welfare services and services, and the supervision and support of commercial facilities and service providers.**

3.2 Overseas countries and regions pension model

3.2.1 United Kingdom __Government-led type

- The UK's pension model has undergone a transition from traditional welfare institution pensions to community pensions; community service centres have local government funding to establish and maintain, providing daily services to the elderly in the community.
- About 3/4 of the elderly in the UK over 65 years old live in their own homes. **The government provides home-based care services** and helps to renovate and repair the elderly's own homes through low-interest loans and subsidies.
- **Provide different levels of care services** based on self-care conditions.
- **Services provided by the market-based residential market** include public facilities, social activities, housekeeping, catering and care.

3.2.2 United States __Market development operation type

- American pension services are **highly market-oriented and industrialized**. The government does not directly operate pension institutions, but implements functions such as management, insurance, and rescue qualifications.
- **Home care is still the mainstream**, and many service providers offer different levels of daily care, medical care and services.
- The old-age real estate market is fully competitive. The size of a single project is generally small, and **a separate operating model of managers and owners is implemented**.
- **American pension estates are mature** and have a variety of market segments including active elders, independent living, assisting living, professional care and continuing care communities.

3.2.3 Japan __Multi-party cooperation type

- The Japanese pension industry has formed a complete industrial chain and a comprehensive pension insurance system.
- Home-based pension is very developed, with "two generations of residence" and long-lived residences as choices, cooperating with community and home care services.
- The development of Japanese residential houses is very diverse, with developers, insurance companies, industrial companies, governments, etc. actively participating, so the cooperation model reduces operational risks and costs.

3.2.4 Hong Kong __Market operation type

- Hong Kong's elderly service level is among the highest in the world, mainly due to the mature civil society atmosphere in Hong Kong, the government's systematic planning and stable investment, and the respect of the whole society for the elderly.
- The Hong Kong Government's old-age policy is "based on home-based care and residential care as a backup" .Support for home-based care through the Community Care Services Programme for the Elderly; at the same time, the proportion of beds in residential care homes is higher than the world average.
- Recognition of caregivers from academic, curric, and social levels ensures the development of professional talent and the stability of service levels.
- The government acts as a plan for implementation, direction, assessment and resource allocation, the main supply and operations are done by the private sector.
- Different types of pension and rescue welfare policies guarantee endowment needs in different living conditions and levels.

3.2.5 Singapore__Traditional Family Pension Type

- Singapore promotes and encourages family pensions and advocates the traditional Chinese lifestyle of three generations.
- The first country in the world to legislate for "duty to support parents" .
- HDB will give three generations of family members a price concession and priority arrangement in the HDB application and distribution. The family's future estate tax will also be exempted from preferential treatment.
- Launched a series of subsidy schemes to provide pension and medical benefits to low-income families who need to support the elderly to reduce the burden on the family and improve their enthusiasm for supporting the elderly.

4 Goal

The initial goals for this project were:

1. Create a **elegant space** to provide the elderly to enjoy their life
2. Use this place as an **community** hub to make people's life eaiser
3. Create **positive memory** with the community
4. Eco-friendly **energy use**
5. Improve the **accessibility**
6. Design programs to help them have **better communication**
7. Landmark building, and help to **identify** this area
8. In a way, the elderly can realize their value and gain a **sense of self-fulfillment**

Based on the researches and issue analysis, the goals were developed through this information gathering process. I defined three groups of people who will benefit from this project including elderly, students and others (teeachers, doctors, volunteers and relatives). In order to create afeeling of home for all these community members, I started setting up the goals from the idea of function, experience, interaction activities and etc.

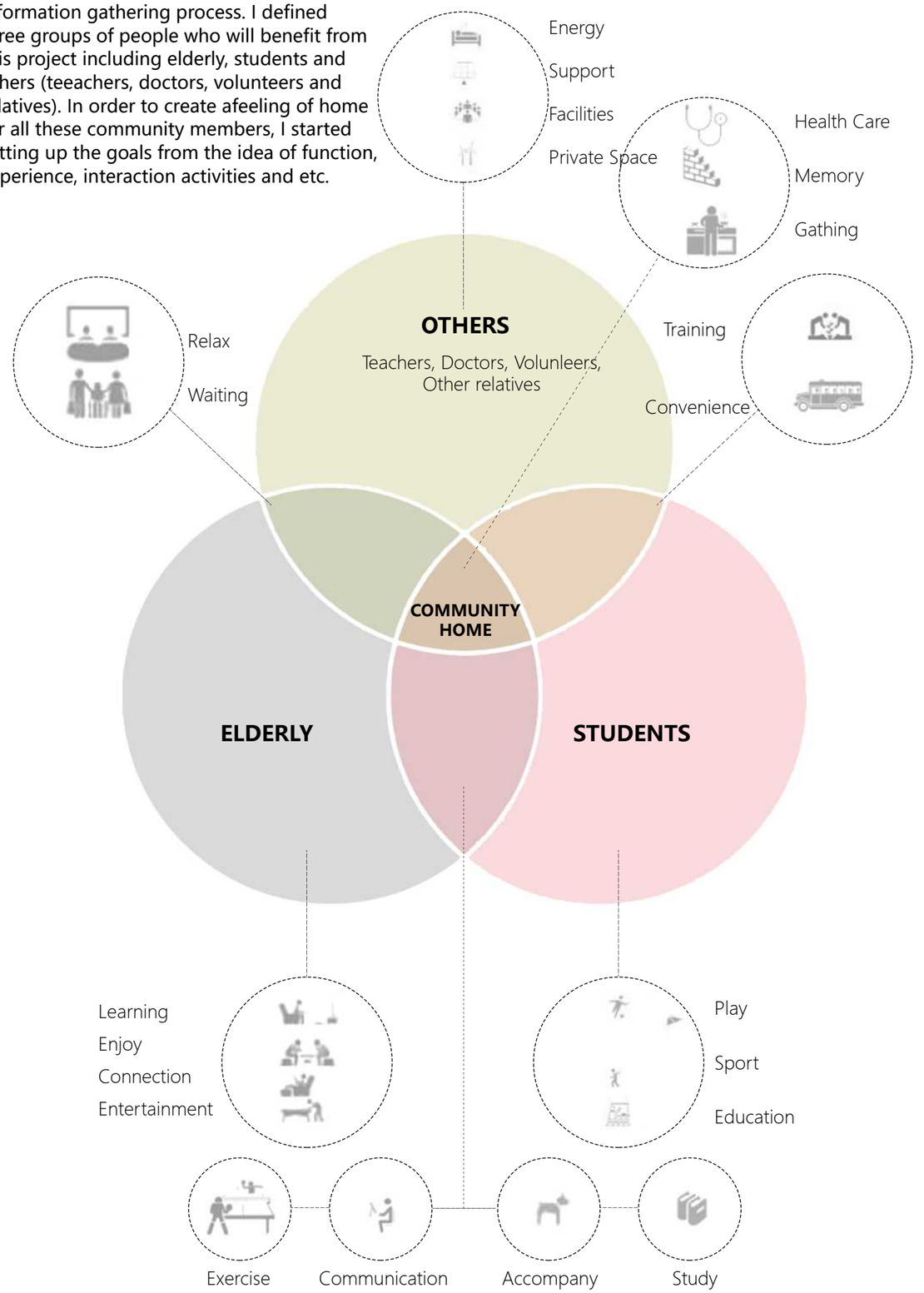


Figure 4.1

5 Needs and building codes for senior community

5.0 Introduction

5.1 Urban and spaces requirements for community pension buildings

5.2 Inner spaces requirements for community pension buildings

5.3 Design specifications for Chinese elderly buildings

5.0 Inctroduction

Figure 5.0.1

Figure 5.0.2

This chapter mainly collects and summarizes some specifications and requirements about the architectural space and specific details of the elderly building in China, including external and internal requirements for community pension buildings, and design specifications. All the information are from <Architectural design data set> and <The Theory of Architectural Spatial Combination>.

Figure5.0.1
Source: http://www.uzzf.com/viewimg_126209_0.html

Figure5.0.2
Source: https://m.kinpan.com/material/detail/201804062316449306809b79e3b3e43

5.1 Urban and spaces requirements for community pension buildings

1) Medical facilities are in the vicinity;

The combination of "hospital + community pension facilities" is a trend of future community development. Community pension buildings are based on the community and carry out full or day care services so that the elderly can enjoy the surrounding nursing profession in their familiar community environment.

2) Green landscape;

The green environment can create a more natural activity and vision space for the elderly, so that the old people can live and interact in a relaxed atmosphere.

3) Convenient transportation;

Convenient nursing homes are convenient for visiting the elderly family and keep close with their families.

4) The environment is beautiful and quiet;

If the site is close to the beautiful environment, such as the Greenland Park and a good landscape, it will be more conducive to the life and rest of the elderly, and will be greatly helpful for the psychology and physiology of the elderly.

5) Strong cultural atmosphere;

Where the cultural heritage is strong, the pace of life will be slower, and there will be more opportunities for school volunteers to participate in the rehabilitation service.

6) Located in urban areas or residential areas;

As far as the current urban development is concerned, new large-scale nursing homes cannot be set up in urban areas. With the expansion of urban land use and the relocation of residential areas, nursing homes are also developing in the suburbs. It is not advisable to develop a community of older people in both sociology and economics. It is the will of the elderly to let the elderly continue to live in a familiar residential environment and to share the joy of living with other residents. It is also the most scientific, economic and reasonable choice.

5.2 Inner spaces requirements for community pension buildings

As a kind of old-age care institution, the nursing home is a place for the elderly and the elderly who are obstructed by the action. According to the results of the survey and related regulations, it should include several functional parts such as accommodation, entertainment, catering, medical care and management. The accommodation and the entertainment parts are the core parts of the nursing home.

1) accommodation part;

Although it is a form of settlement, the accommodation part of the nursing home is still the most important private living space for the elderly. The indoor layout details should be combined with the physiological characteristics of the elderly to ensure the convenience and safety of the elderly. At the same time, space should be divided.

2) entertainment part;

Nursing homes are places where the elderly enjoy their declining years and also the center of their activities. In particular, those who are free to move have a strong desire for self-expression and like to participate in some cultural performances. The entertainment part of the nursing home is mainly composed of an communication hall and an activity room.

(a) The communication hall can be located near the entrance foyer or in an area where traffic is concentrated.
(b) The activity room provides the elderly with some simple fitness activities and a small and self-contained cultural performance.

3) Rest section;

The rest of the nursing home consists of two parts: the indoor rest section and the outdoor rest section. Mainly for the elderly to stay for a short time.
Old people have limited mobility due to factors such as old age and weakness, so it is necessary to set up scattered and convenient resting spaces, especially in various traffic convergence centers.

4) Catering section;

It not only provides a feeding place for the elderly who can basically take care of themselves, but also provides places for people who can act independently to drink tea, chat, and watch TV.

5) medical care;

The medical care part is an important functional part of the nursing home. The specific function is to provide the elderly with the necessary health care and emergency services to protect the lives of the elderly. It is generally adopted by setting up a medical office or a health care provider.

6) Management part;

The management part of the nursing home can be divided into administrative office and logistics service. They should be properly separated from the elderly housing, and have a relatively independent entrance and exit. They can also be set up independently in the office management area or on the top floor of the building.

5.3 Design specifications for Chinese elderly buildings

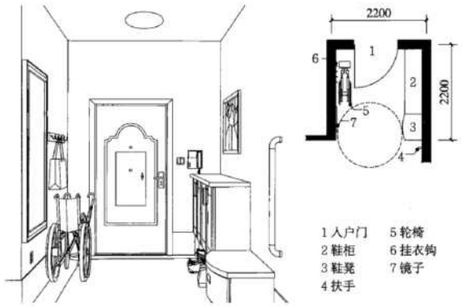


Figure 5.3.1

•General rules

1. The housing of the elderly should be flat, and it is not advisable to have indoor stairs or steps.

2. The height of the inner floor of the set should not be high. The smooth transition should be achieved by finding the slope and downhill.

3. The main space in the suite of the elderly (such as the living room, the bedroom where the elderly live) should be in good orientation.

4. The space in the set should be kept in close contact, making the moving line convenient and smooth.

5. Bedrooms, bathrooms and other key functional spaces should consider the care of others, and the space requirements for wheelchair access and swing.

6. In the design of the sleeve, the living needs of the elderly under different physical conditions such as self-care and disability should be considered. The form of the structural structure, the layout of the space, and the design of the equipment pipeline should all reserve the possibility for future transformation, or make appropriate lurking. design.

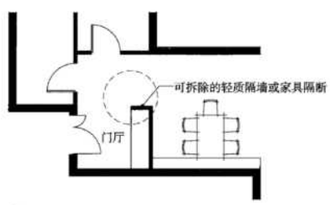


Figure 5.3.2

•Hall

1. The **entrance hall** should ensure adequate clearance to meet the needs of wheelchair access and emergency access.

2. The entrance hall should have space for changing clothes, changing shoes and storing wheelchairs, and should be reserved for the position of the bench and the armrests.

3. The accessibility and adaptability of the foyer space should be ensured. It is not advisable to use a load-bearing wall to define the space.

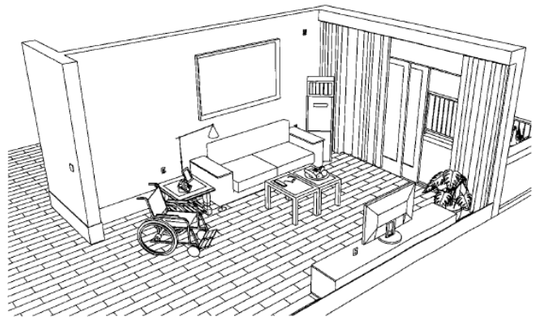


Figure 5.3.3

•Living room

1. The **living space** is located directly in the middle of the house, so that the elderly can get closer to other spaces from the living room, thus reducing the distance and facilitating home life.

2. The opening and depth of the living room should be determined according to the layout of the furniture, the width of the wheelchair and the suitable direct viewing distance of the TV for the elderly. usually the living room should be ≥ 3m, and the depth should be ≥ 3.6m.

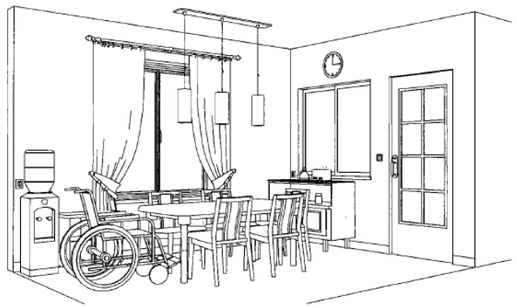


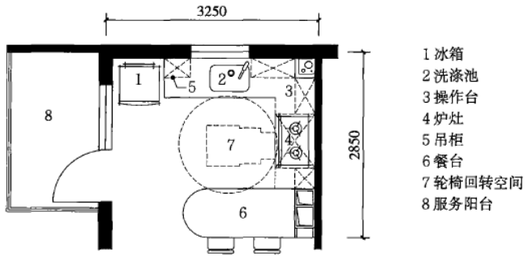
Figure 5.3.4

•Restaurant

1. The restaurant should be set up close to the kitchen, so that the elderly can send meals, tableware and other activities more convenient.

2. The restaurant space should have room for expansion to meet the needs of children to visit or family gatherings, for example, the restaurant can be connected to the living room to achieve mutual borrowing of space.

Source: <Architectural design data set>



1 厨房典型布置示例

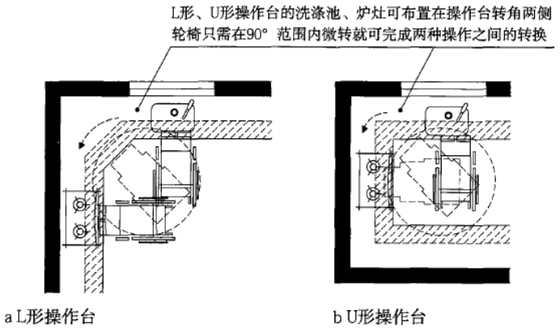


Figure 5.3.5

•Kitchen

1. The layout of the residential kitchens of the elderly should ensure a reasonable operation flow line, so that the operation flow can be smoothly delivered without hindrance.
2. The kitchen should have sufficient worktops, and the sink and stove should be connected by a worktop.
3. The kitchen designed for the elderly in wheelchairs should have a U-shaped and L-shaped layout. The washing pool and the stove should be placed on both sides of the corner of the console to avoid frequent shifting of the wheelchair.

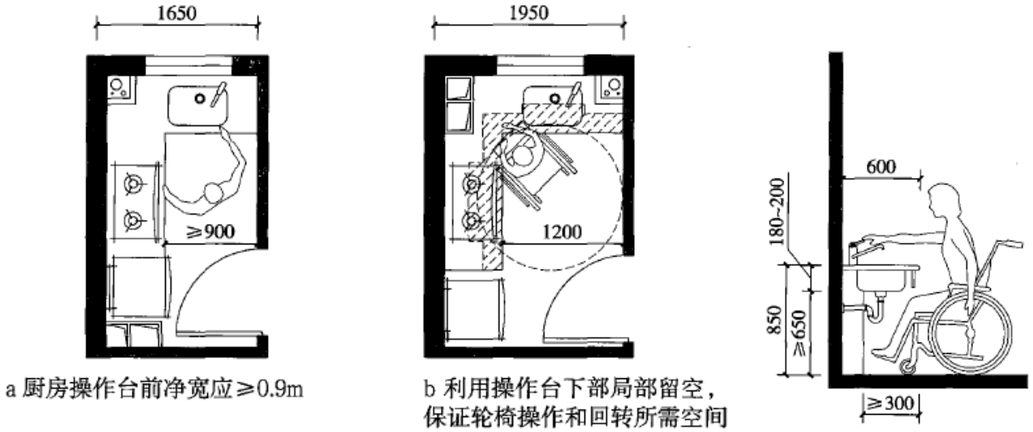


Figure 5.3.6

4. The clearance and activity in front of the kitchen counter should be ≥ 0.9m. Usually, the height left in the lower part of the washing tank and the stove is ≥ 0.65m, and the depth should be ≥ 0.3m

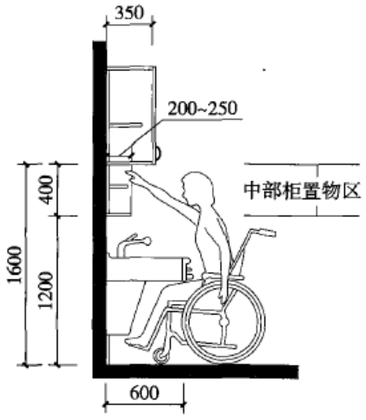
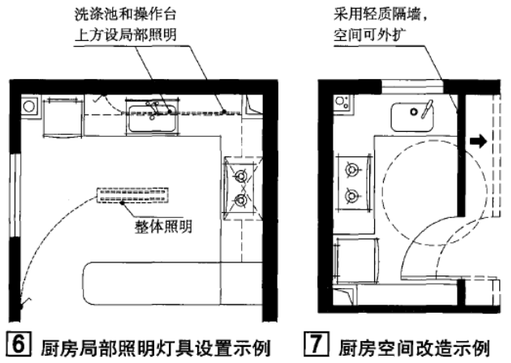


Figure 5.3.7

5. The kitchen of the elderly residence should be equipped with a middle cabinet between the wall cabinet and the countertop to store the common items within the reach of the elderly (especially wheelchair elderly). The middle cabinet should be set within a height range of 1.2 to 1.6 m from the ground. The depth of the cabinet should be 0.2 to 0.25 m. Avoid touching the head.



6 厨房局部照明灯具设置示例　7 厨房空间改造示例

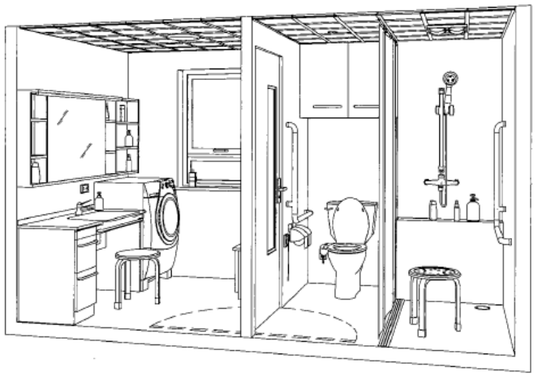
Figure 5.3.8

6. In addition to the overall lighting, the kitchen should also be equipped with local lighting in the washing and cooking operation area to ensure that the elderly can see it when operating. See 6.

7. The kitchen floor material should be non-slip, anti-fouling and easy to wipe.

8. There should be safety precautions against the use of water, electricity and gas.

9. The size of the kitchen and the layout of the furniture will create new demands as the physical condition of the elderly changes. The kitchen space should have the possibility of flexible transformation to replace the space when necessary to meet the needs of the elderly,



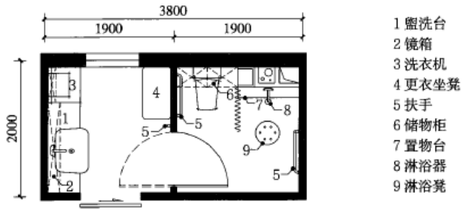
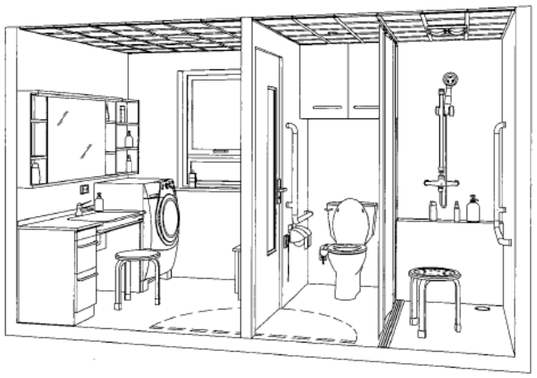


Figure 5.3.10



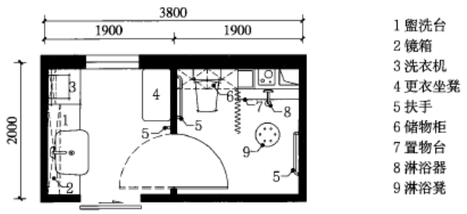


Figure 5.3.11

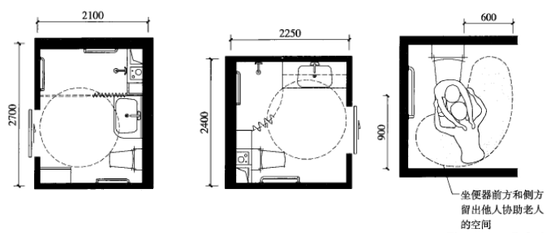


Figure 5.3.12

•Bathroom

1. The bathroom should be in close contact with the elderly bedroom to facilitate the elderly to use nearby to avoid danger or inconvenience in the evening.
2. The toilets for the elderly should be equipped with at least three sanitary wares, such as toilets, baths and face cleaners.

3. In addition to meeting the layout requirements of bathroom equipment, the space size of the bathroom should also consider the operation space for others to assist the elderly in toilets and bathing, and should consider the needs of wheelchair elderly people.

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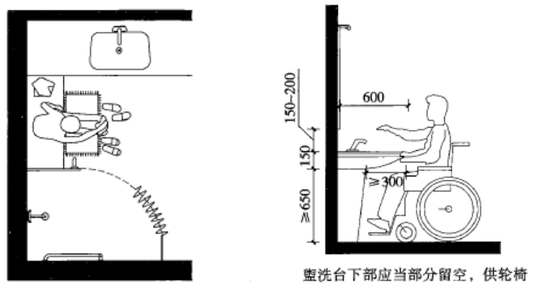


Figure 5.3.13

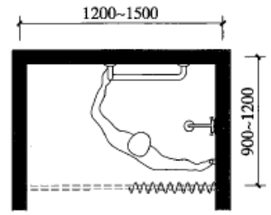


Figure 5.3.14

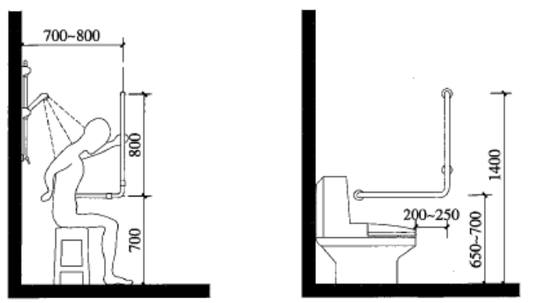


Figure 5.3.15

4. Sit-up conditions should be provided for the elderly's washing, bathing, dressing and other activities, such as seating in the bathing, dressing area and front washstand.

5. For the washstand suitable for sitting posture, the net height under the space should be ≥ 0.65m, and the net depth should be ≥ 0.30m.

6. Compared with the bathing bath, the health of the elderly home should be given priority in the form of a shower to ensure the safety of the elderly and to facilitate the use of the elderly and other people.

7. The shower partition should adopt the soft partition of the shower curtain, which is convenient for wheelchair access and use. It also helps others to assist in the operation when bathing.

8. Safety grab bars should be provided next to the toilet and in the shower area and dressing area to assist the elderly to sit up and turn around when going to the toilet, bathing and changing clothes.

9. The health door should adopt an openable door or sliding door to facilitate emergency rescue; the opening width of the door should be ≥ 800mm to ensure wheelchair access.

10. The ground connection between the bathroom and the adjacent space should be smooth, and there should be no threshold or height difference.

11. The bathroom should be flexible and adaptable to meet the needs of the elderly for different physical conditions, and the space needs to be flexibly expanded and changed.

•Bedroom

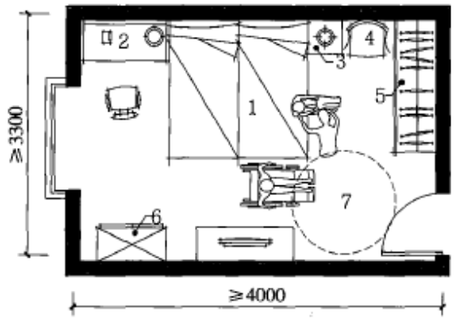


Figure 5.3.16

1. The bedroom space of the elderly residence should have space for wheelchair access, swing and care, and it is advisable to consider the space for two beds to meet the needs of elderly couples sleeping or nursing staff at night. It should be ≥ 3.3m, and the depth should be ≥ 4.0m.

2. The entrance to the bedroom should not be too narrow or tortuous. The opening width of the door should be ≥ 800mm, so that the wheelchair can enter and exit and the stretcher can be accessed during emergency rescue.

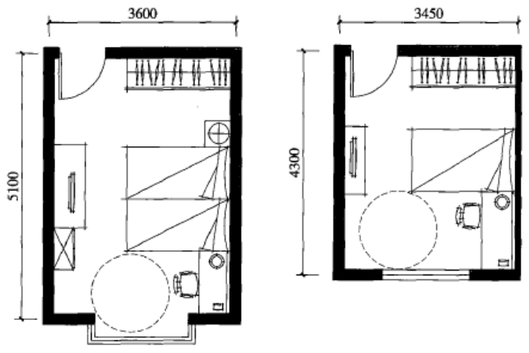


Figure 5.3.17

3. There should be no height difference between the bedroom and the main activity area in the home. The floor material should be non-slip and wear resistant.

4. The bedroom is adjacent to the bathroom.

5. Pay attention to the relative positional relationship between the bedroom door and the window opening fan, organize the flow line of the indoor ventilation, and avoid the indoor air venting corner.

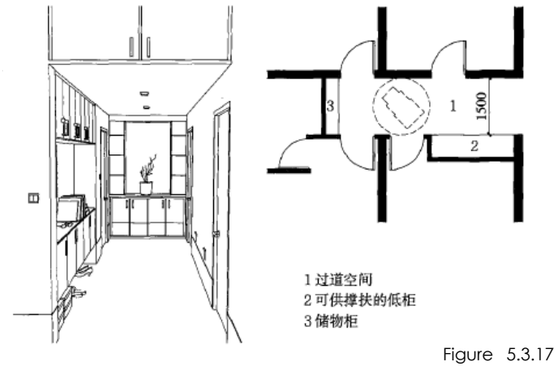


Figure 5.3.17

• Aisle

1. The indoor aisle should be marked with a net width of 1.0m, and should not be too tortuous for wheelchair access.

2. There should be no steps and height differences in the aisles, and smooth connections should be guaranteed.

3. A wall panel can be set up below 350mm from the aisle wall to avoid the wall of the wheelchair pedal or other walking aids when passing.

4. Special lighting should be provided when the aisle is long or there is a turn to ensure uniform illumination.

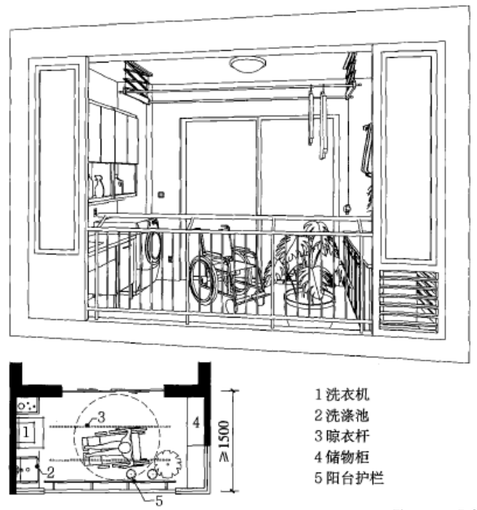


Figure 5.3.17

• Balcony

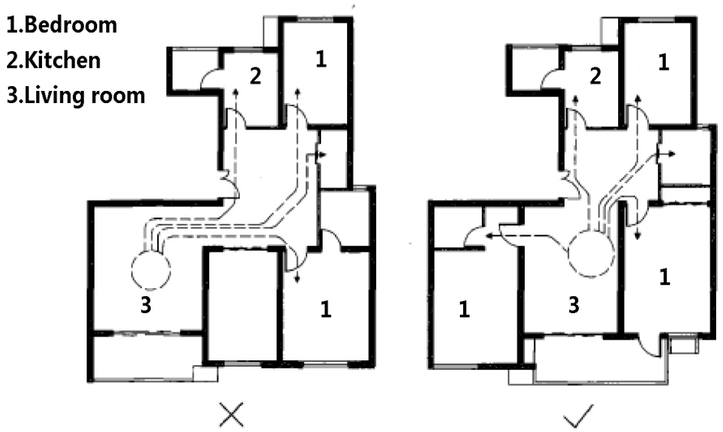
1. There should be a balcony for the elderly to meet the needs of the elderly to plant flowers, wash clothes, leisure and fitness. The depth of the balcony should be ≥ 1.5m, in order to carry out various activities, as well as the stop and turn of the wheelchair, see 5.

2. Washing machine and washing facilities should be installed in the balcony to make the laundry and washing functions close to shorten the housework.

3. The balcony floor is usually slightly lower than the indoors to facilitate the import and export of the elderly and wheelchair users.

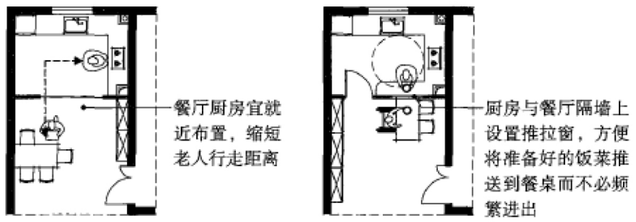
4. Safety protection measures should be taken. Protective railings should be installed on the inside of the floor-to-ceiling glass to prevent the elderly or wheelchair from accidentally hitting the window glass.

● Spatial layout

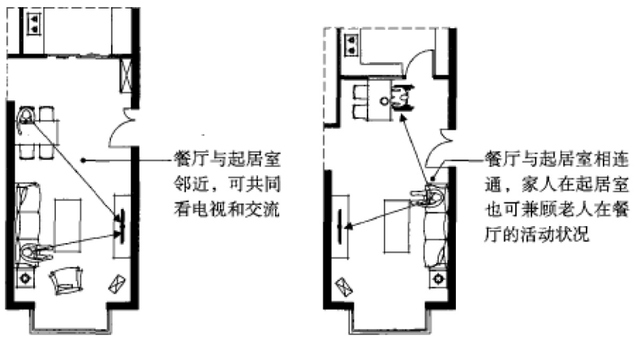


1 Comparison of living room layouts

①The bathroom is close to the old bedroom, making the streamline to the toilet short



②Restaurant and kitchen are located nearby



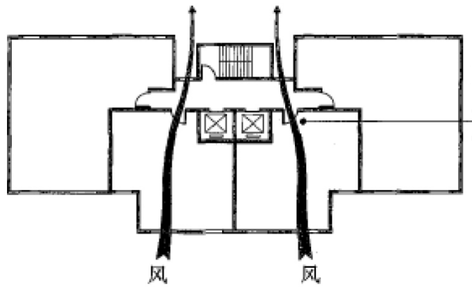
③The living room is connected to the dining room for easy interaction between family members.

2 套内空间就近组合安排的示例

● Orientation, daylighting and ventilation

The number of sunny rooms and the priority of the room function

Number of sunny rooms	the priority of the room function
One room	1.elderly bedroom
Two rooms	1.elderly bedroom; 2.living rooms;
Three rooms	1.elderly bedroom; 2.living rooms; 3.other bedrooms
More than three rooms	In addition to the above functions, restaurants or study rooms can be arranged.



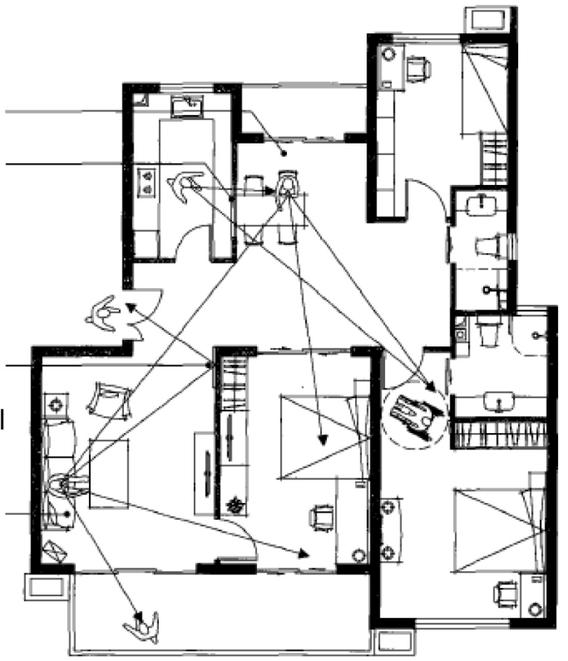
Improve air ventilation by forming air paths through the alignment of doors, public corridors and windows

1 Example of improving southward crossing ventilation with common space

● Sound and sight

Opening window between kitchen and dining room

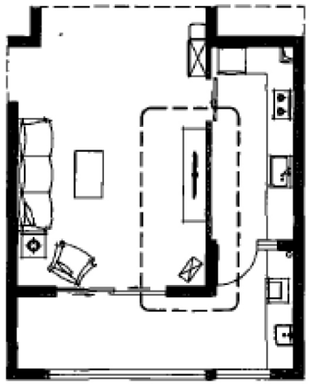
Extend the viewing range with the reflection of the mirror, but not too much, so as not to create a spatial illusion



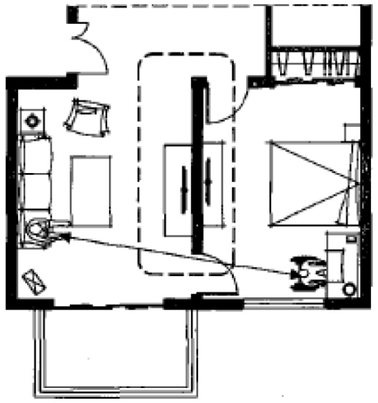
2 Example of using the reflection of the door and window opening and mirror to enhance the line of sight

- **Cycling route**

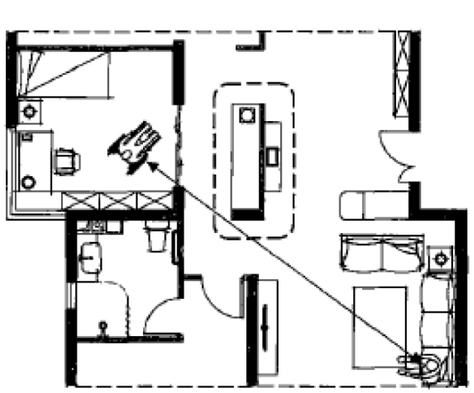
"Cycling route" means that there is a cycling routebetween the various functional spaces in the house by opening a door, etc..



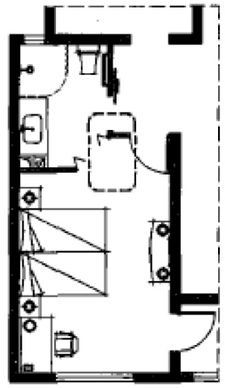
1.The balcony is connected to the living room and kitchen.



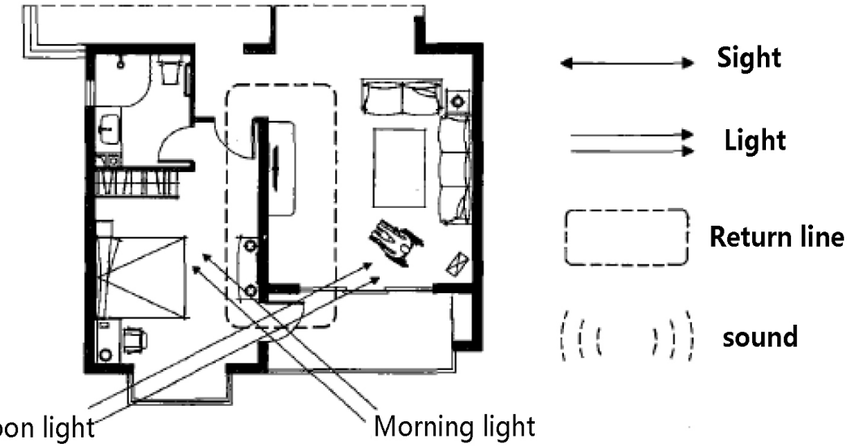
2.The bedroom and living room form a return line.



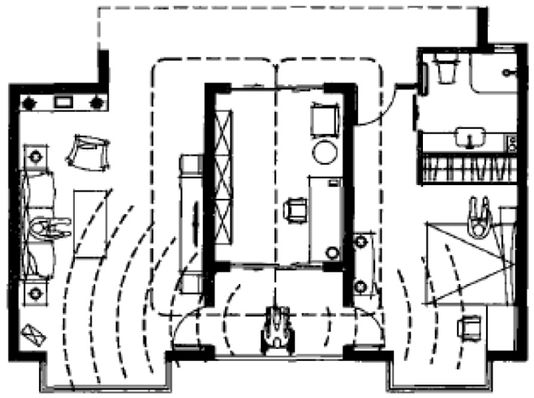
3.The middle of the sleeve forms a return line



4.The bathroom and the bedroom form a return line.



5.The balcony connects the bedroom to the living room, forming a return line and allowing light to enter the interior.



6.The spaces are connected to each other to form a plurality of moving lines, which contribute to the sound access.

3 Example of forming a "return line" in different spatial conditions

6 Preliminary Analysis

6.1 Location Analysis

6.2 Climate Analysis

6.3 Site Analysis

6.4 Transportation Analysis

6.5 Specific Information

6.6 Surrounding Analysis

6.7 Analysis of the two targets: the elderly and students

6.8 Analysis of daily life`s rhythm

6.1 Location Analysis

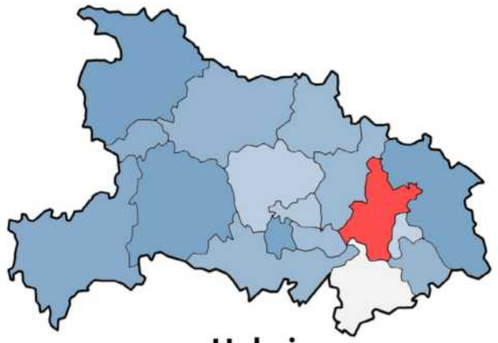


Figure 6.1.1

• General information

Wuhan is the capital and largest city of the Chinese province of Hubei, and it is the most populous city in Central China, with the area of 8569.15 km² and a population of over 10 million(11.081 million) , the seventh most populous Chinese city. “The golden waterway “the Yangtze River and its Han River traverse the urban area, dividing Wuhan City into three parts, forming the layout of the three districts of WuChang, HanKou and HanYang.

• Advantages of higher education

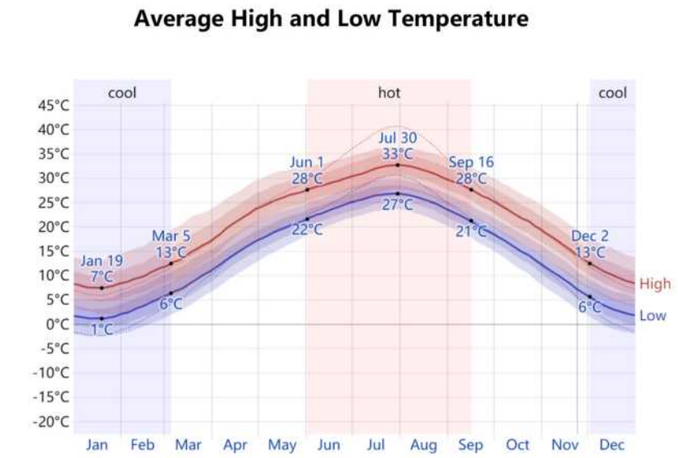
The city has 37 colleges and universities including Wuhan University, Huazhong University of Science and Technology, Huazhong Agricultural University, China University of Geosciences (Wuhan), Wuhan University of Technology and other 8 key undergraduates, 6 undergraduate courses, 7 private undergraduate and 16 colleges and universities.

According to statistics, there are a total of 594,000 students enrolled in colleges and universities in the planning area, accounting for 50% of the number of students enrolled in universities in Wuhan (the number of students enrolled in Wuhan is about 1.18 million).

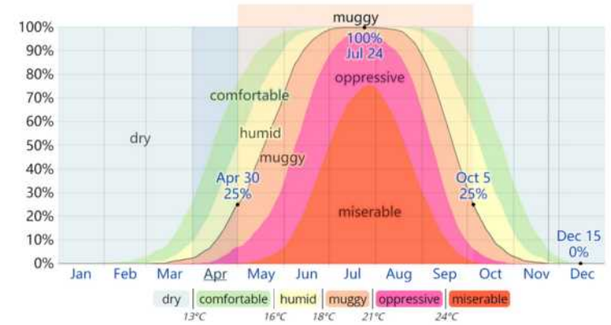
6.2 Climate Analysis

Wuhan has a north subtropical monsoon (humid) climate with abundant rainfall, abundant heat, rain and heat in the same season, cold winter and hot summer, and four distinct seasons.

The annual average temperature is 15.8 ° C -17.5° C, the extreme maximum temperature is 41.3 ° C (August 10, 1934), and the extreme minimum temperature is -18.1 ° C. The annual precipitation is 1150 mm - 1450 mm, and the rainfall is concentrated in June-August every year, accounting for about 40% of the annual rainfall.



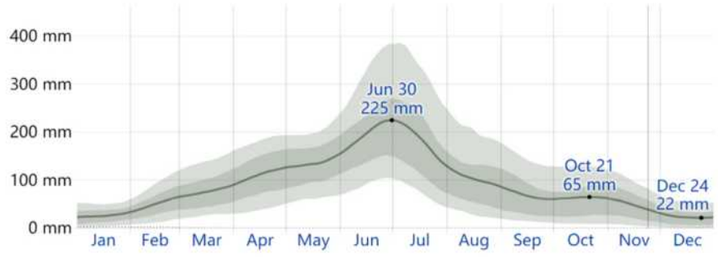
The daily average high (red line) and low (blue line) temperature, and the thin dotted lines are the corresponding average perceived temperatures.



The percentage of time spent at various humidity comfort levels, categorized by dew point.

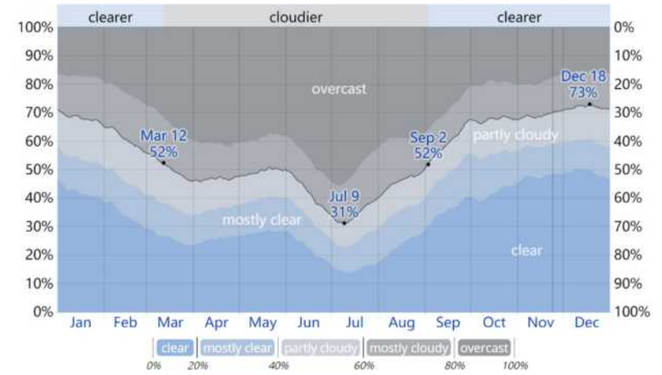
Figure 6.2.1

Average Monthly Rainfall



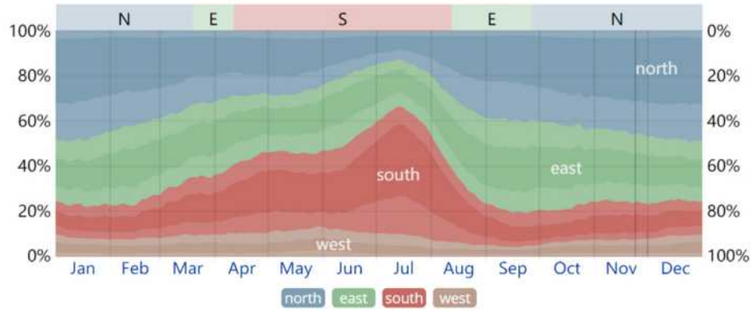
The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question.

Cloud Cover Categories



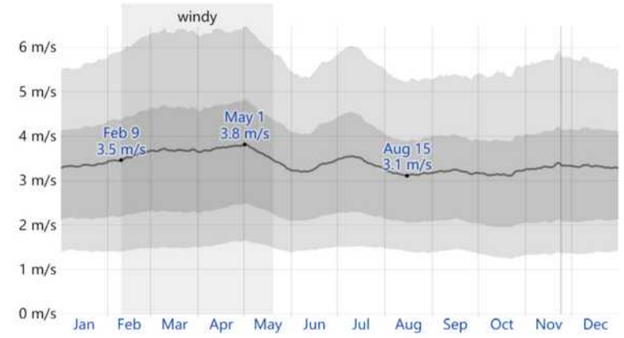
The average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year.

Wind Direction



The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 0.4 m/s. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Average Wind Speed

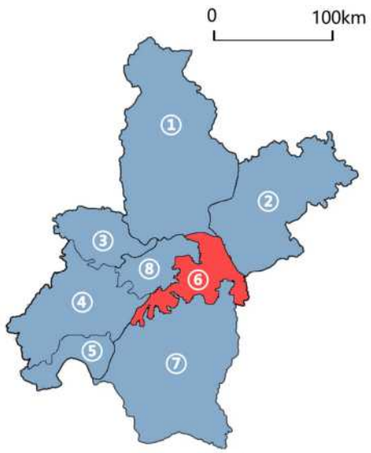


The average of mean hourly wind speeds (dark gray line)

Figure 6.2.2

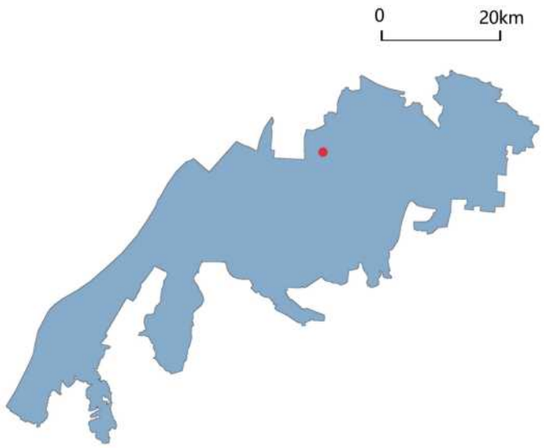
Figure 6.2.3

Figure6.2.1 – Figure6.2.3
Source: https://weatherspark.com/y/128408/Average-Weather-in-Wuhan-China-Year-Round#Sections-BestTime

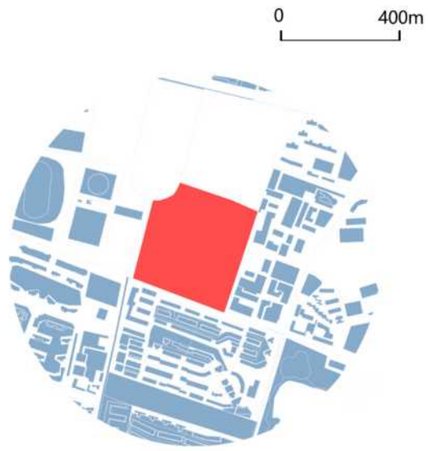


Wuhan

1. HuangPi district
2. XinZhou district
3. DongxiHu district
4. CaiDian district
5. JiangNan district
6. HongShan district
7. JiangXia district
8. New town area



Hongshan District



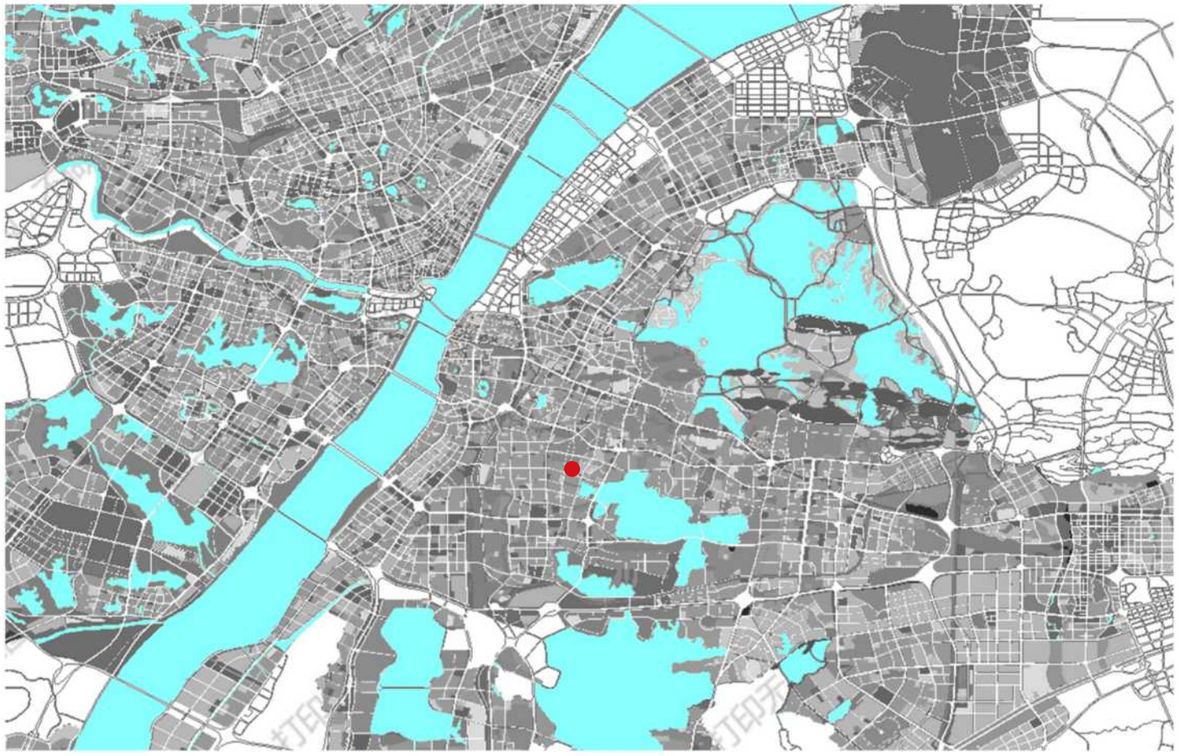
Site

Figure 6.2.4

Brief introduction of the site:

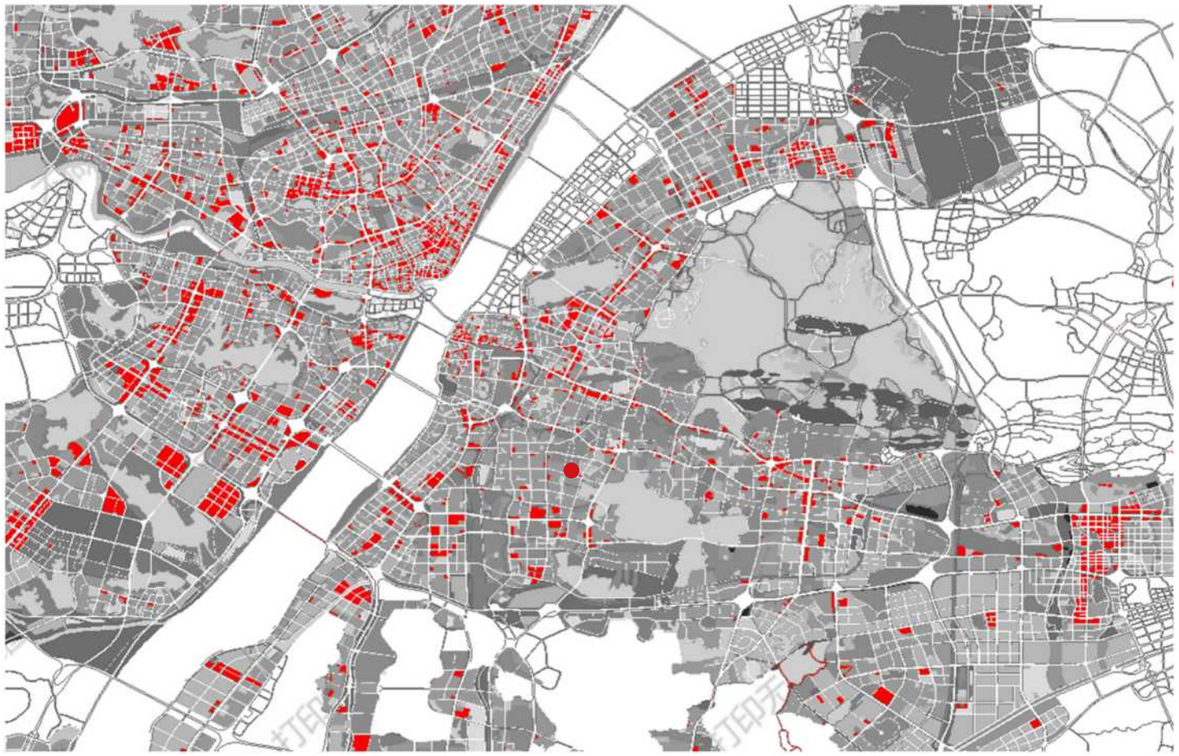
The site is located in an open space of the South Lake Campus of Wuhan University of Technology, adjacent to Wenzhi Street, 300 meters to the east of Nanhu Park; Hongshan District Swimming Hall is on the west side of the base. There are the internal streets of the university on the west and north sides; on the east side, there are residential buildings and several corporate buildings.
Total area: 11.7ha

6.3 Site Analysis



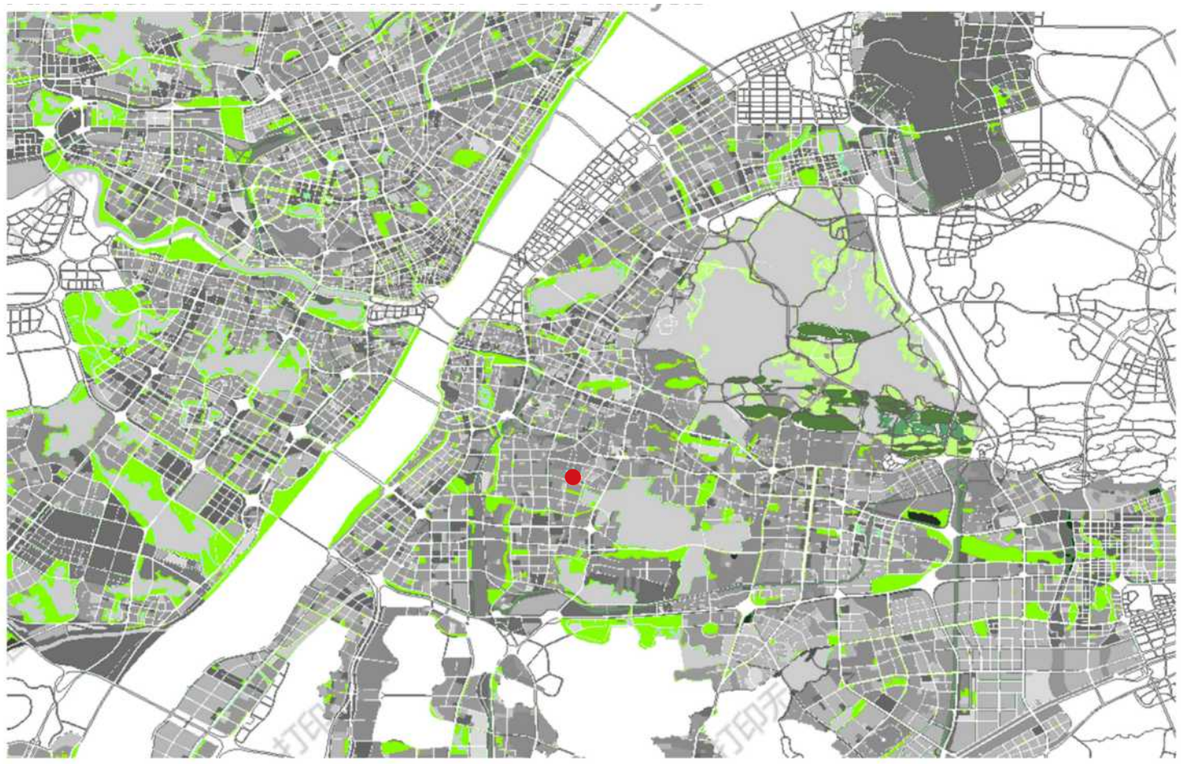
● SITE

Water distribution map



Distribution map of commercial area

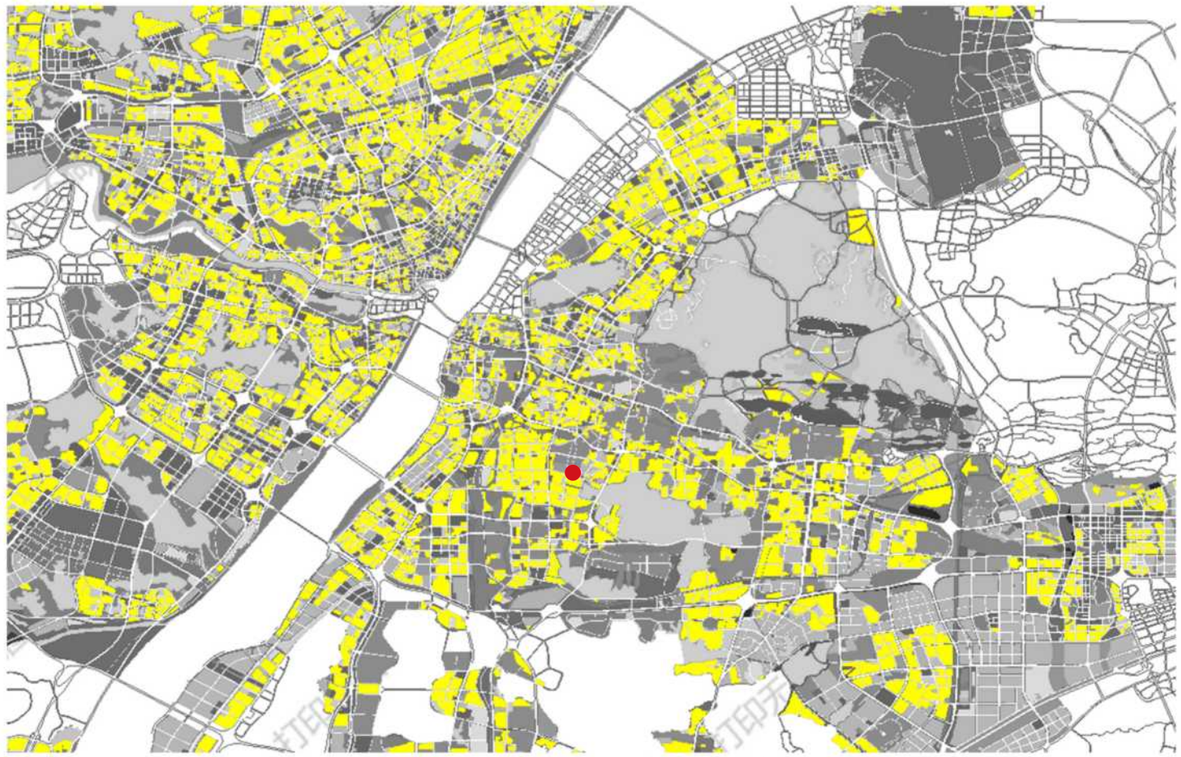
Source: http://whonemap.zrzyhgh.wuhan.gov.cn:8020/



Distribution map of public space

Park　Protective green　Forestry　Woodland

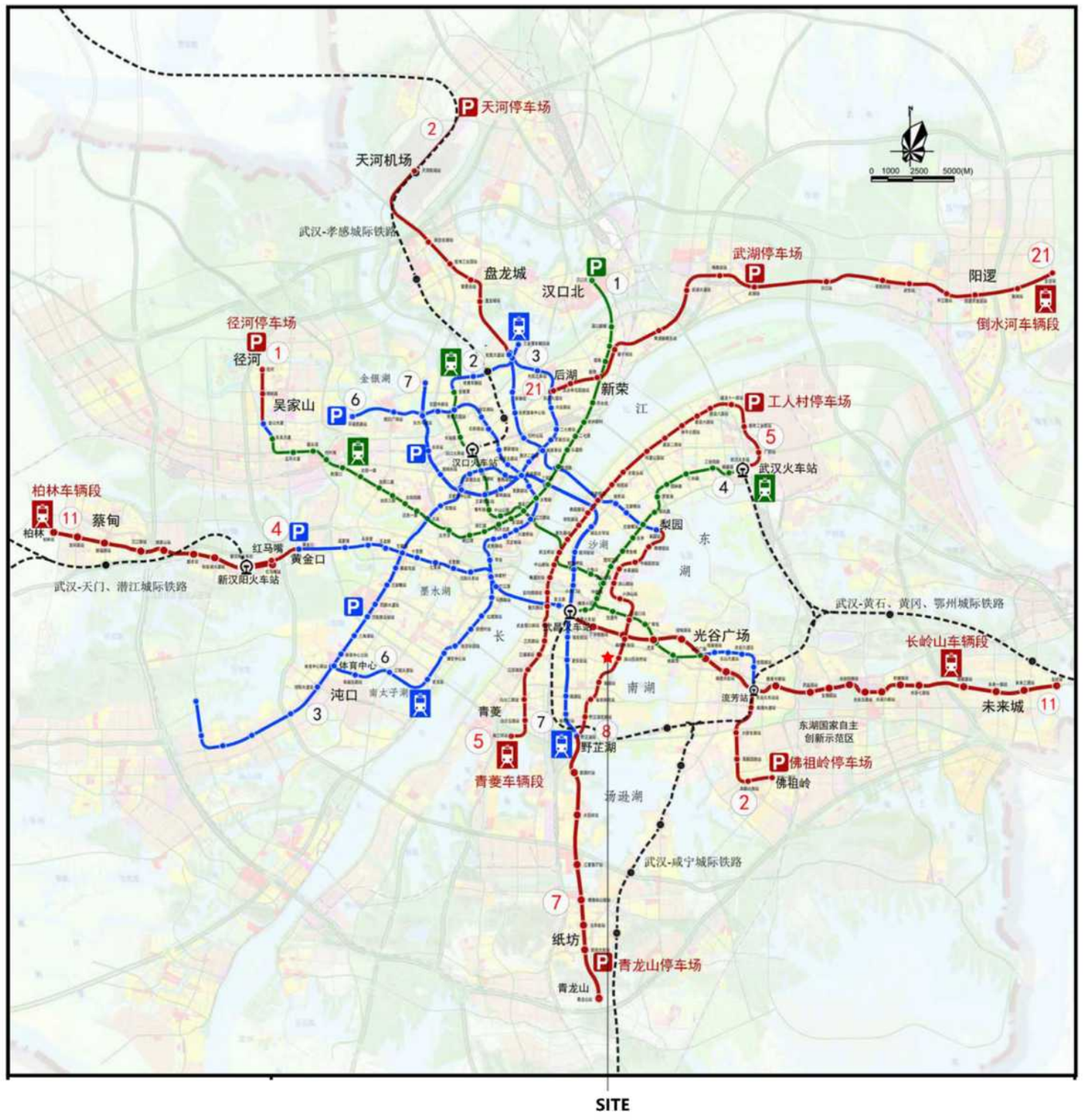
Square　Green space　Landscape　Grassland



Distribution map of residential area

6.4 Transportation Analysis

The third phase of urban rail transit construction planning in Wuhan: The second phase of Line 8 is from Liyuan to Yeqihu Station. The line is 16.7 kilometers long and has 12 stations with an investment of 13.772 billion yuan. The planned construction period is 2018-2021.



Already running track route

Approved track route

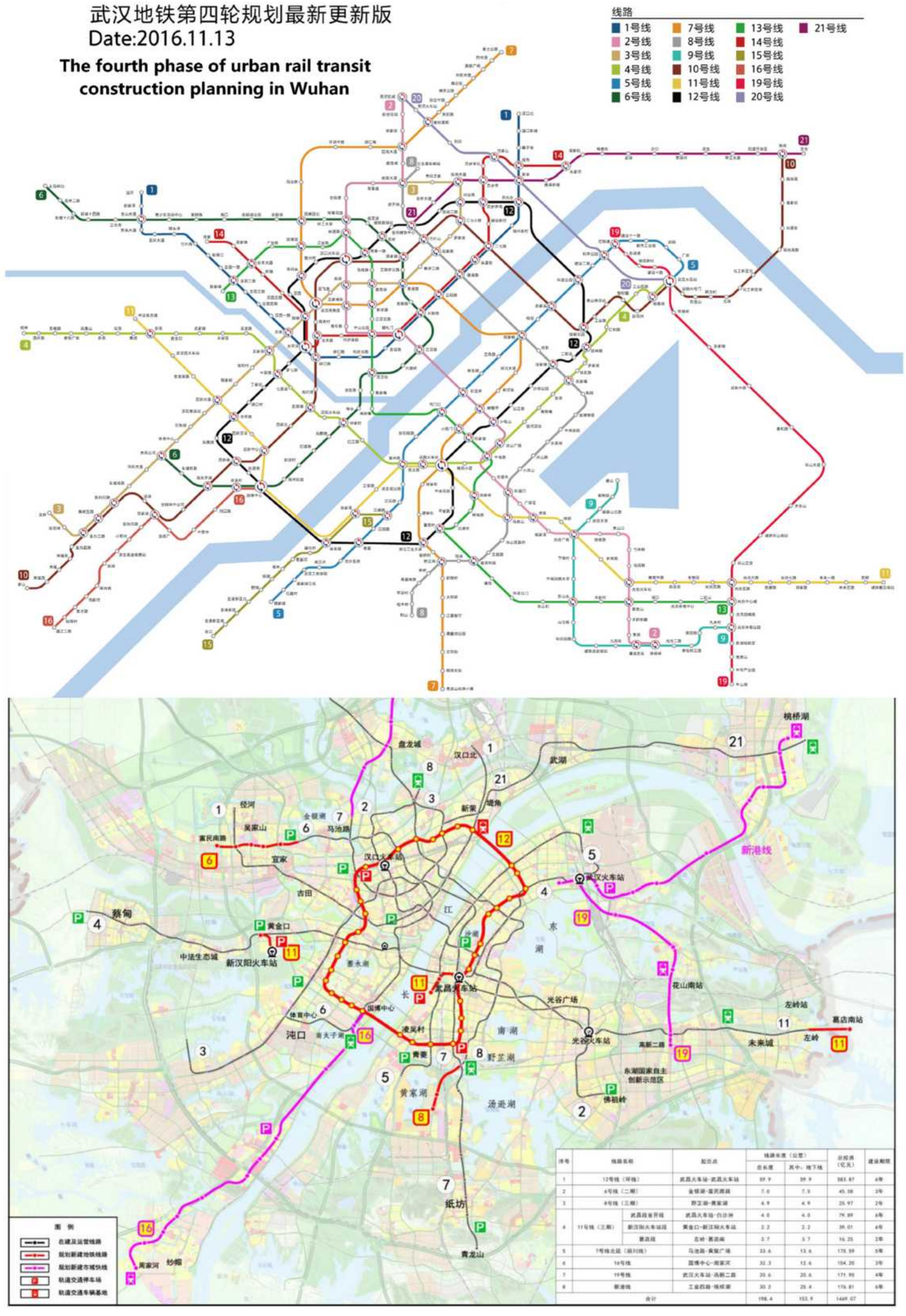
New track route

Rail vehicle (轨道交通车辆段)

Rail transit parking lot

Intercity railway

Source: http://www.wpdi.cn/project-1-i_11296.htm



6.5 Specific Site Information

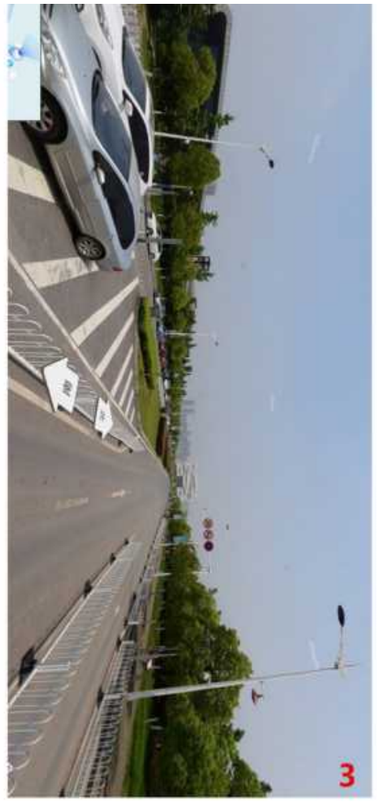
General Plan 1:5000

Brief introduction:

The site is located in an open space of the South Lake Campus of Wuhan University of Technology, adjacent to Wenzhi Street, 300 meters to the east to reach Nanhu Park; Hongshan District Swimming Hall is on the west side of the base. There are the internal streets of the university on the west and north sides; on the east side, there are residential buildings and several corporate buildings.

Total area: 11.7ha

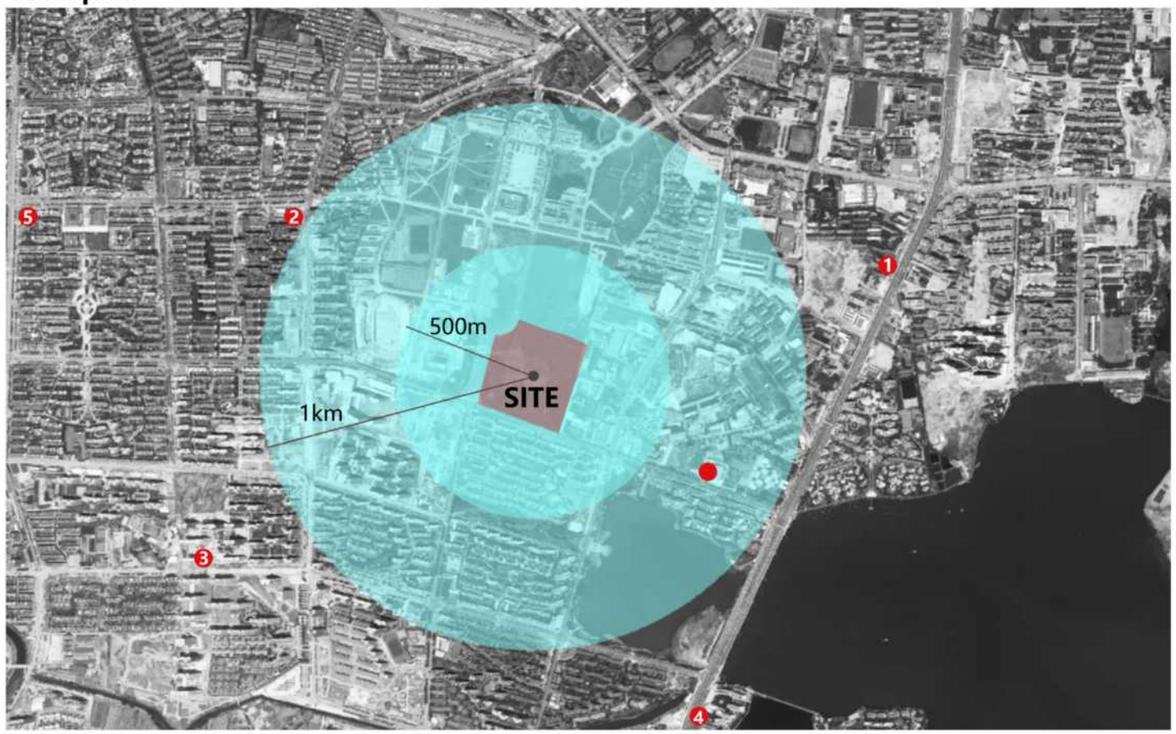
Source: https://www.google.com/maps/place



Source: https://map.baidu.com

6.6 Surrounding Analysis

1.Hospital



Scale---1:15000

1. China Construction Third Engineering Bureau Wuhan Central Hospital
1.6km___5mins/car; 26mins/walk; 26mins/bus

2. Wuhan Fangtai Hospital
1.2km___6mins/car; 18mins/walk; 23mins/bus

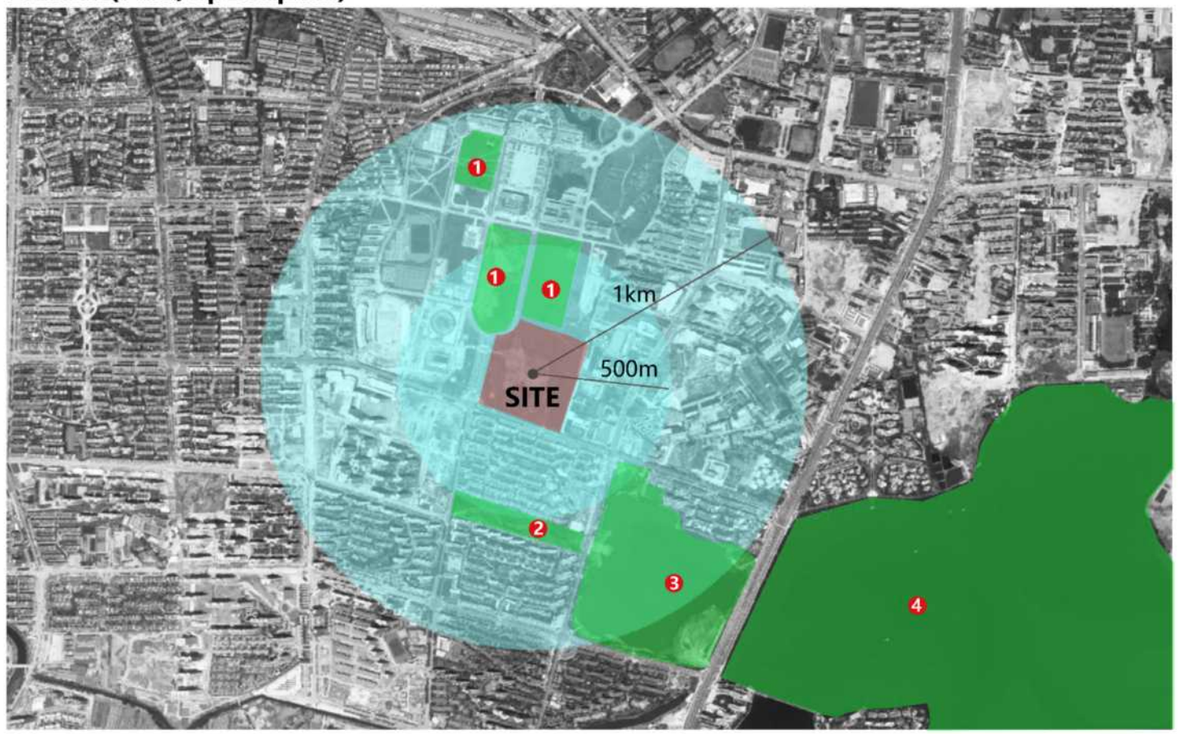
3. ShengAi Chinese Medicine
1.9km___5mins/car; 26mins/walk; 16mins/bus

4. Wuchang Hospital
1.7km___8mins/car; 27mins/walk; 26mins/bus

5. Wuhan Blue Lake Hospital
2.4km___6mins/car; 35mins/walk; 29mins/bus

6. Hubei Disabled Rehabilitation Center
0.7km___4mins/car; 11mins/walk;

2.Green(Park/open space)



Scale---1:15000

1. Green Space of Wuhan University of Technology

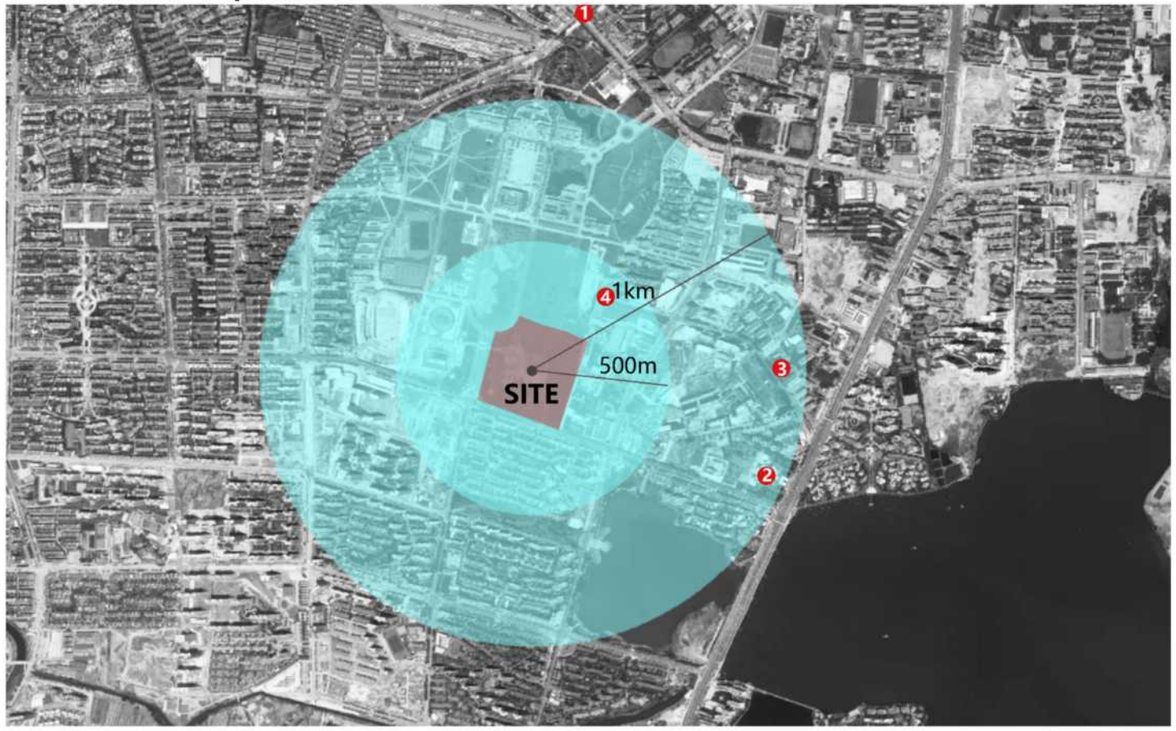
2. Urban green space

3. Nanhu Park

4. South Lake

1.武汉理工大学绿地 2.城市绿地 3.南湖公园 4.南湖

3.Government department



Scale---1:15000

1.Hubei Provincial Public Security Department
1.9km___6mins/cars; 28mins/walk

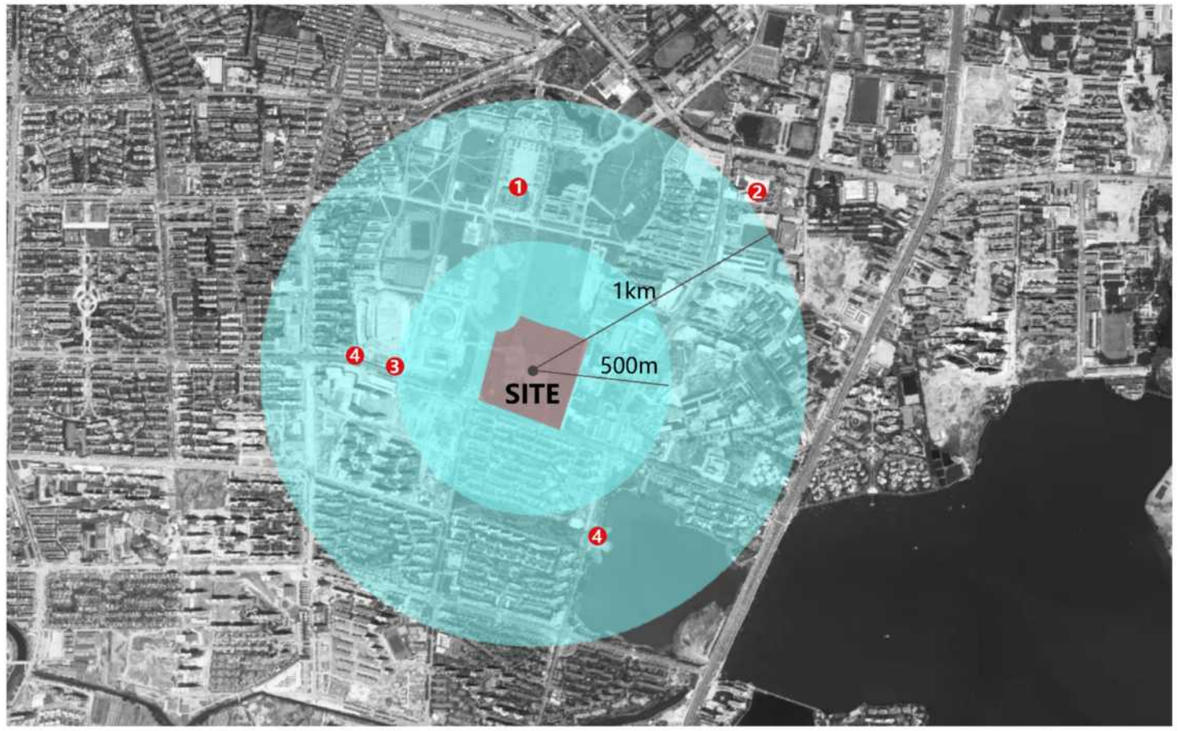
2. Hongshan District Governmentt
0.9km___5mins/cars; 15mins/walk

3. Wuhan Hongshan District Government Affairs Service Center
1.1km___4mins/cars; 16mins/walk

4.Hongshan Community Neighborhood Committee
0.3km___5mins/walk

1.洪山区政府 2. 武汉市洪山区政务服务中心 3.洪山社区居委会4.湖北省公安厅

4.Cultural service facilities



Scale---1:15000

1. Bo Xue Square

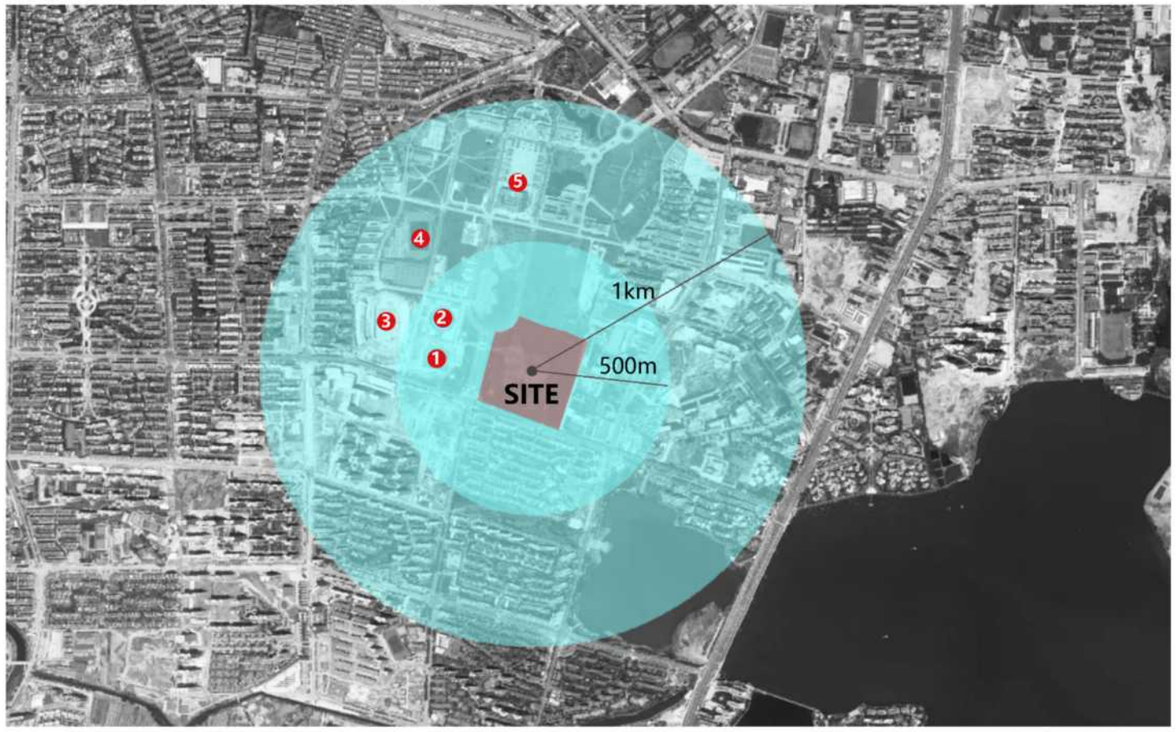
1.Hubei Provincial Publishing House

3. Hongshan District Cultural Building

4.24-hour library

1.博学广场， 2.湖北省出版城，3.洪山区文化大厦，4.24小时图书馆

5.Entertainment service facilities



Scale---1:15000

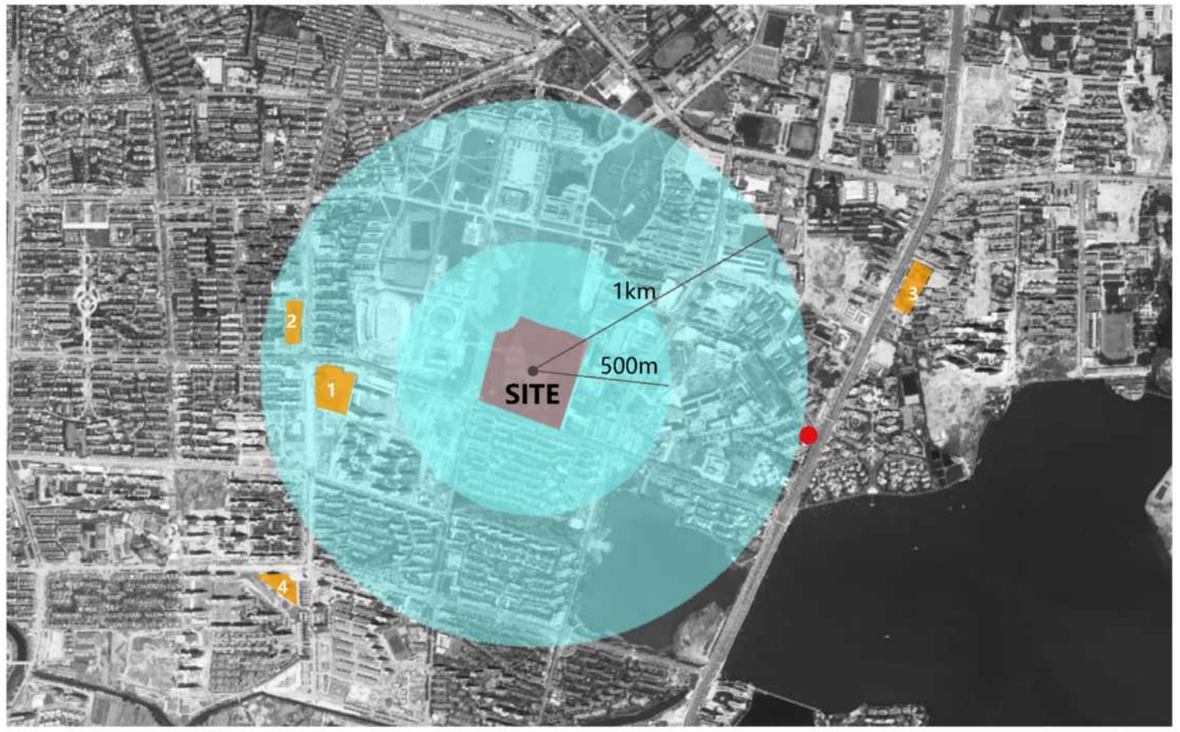
1.2.3. Wuhan University of Technology Sports Center (Swimming pool, gymnasium, outdoor stadium)

4. Stadium

5. Boxue Square

1.2.3.武汉理工大学体育中心，4.体育场 5.博学广场

6.Commercial service facilities



Scale---1:15000

1. Wuhan Weijia Danang City

2. Nanhu City Square,

3. Nanhu Central Square

4. WanXiang Square

1.武汉维佳佰港城，2.南国南湖城市广场，3.南湖中央广场，4.万象广场

7.Schools

Scale---1:15000

1. Wuhan University of Technology

2. Colorful Kindergarten

3. Hongshan District First Primary School

4. Wuluo Road Primary School

5.Yingge Middle School

6. Wuluo Road Experimental Primary School

1.武汉理工大学，2.七彩贝幼儿园，3.洪山区第一小学，4.武珞路小学，5.武汉市英格中学，6.武珞路实验小学

6.7 Analysis of the two targets: the elderly and students

The elderly

1. **Main mission**——**Keep healthy**——Do sports and fitness by themselves+Participate in other sports activities
2. **Further mission**——**Maintain mental health**(Have a certain sense of belonging)——Communicate with loved ones or people in society
3. **Expanded mission**——**Live and learn**(keep up with the times)——Study in the community or use university resources
4. **Final mission**——Maintain a sense of social responsibility, do something that can achieve self-worth and **increase self-identity**(Make them feel alive and meaningful)——Do what they can

+

Students

Ⅰ.**main mission**——**Keep up, study hard**——Go to class, study and exams
Ⅱ.**Further mission**——**Strong body, stay healthy**——Do sports and fitness by themselves+Participate in other sports activities
Ⅲ.**Expanded mission**——**make the university life more exciting and colorful**——Participate in club activities or learn new skills (playing piano, guitar or roller skating)
Ⅳ.**Final mission**—— **achieve self-worth**——Do part-time (tutor or waiter, etc.), and volunteer activities (obligation to sell newspapers, condolences and accompany empty nesters)

—

Combine

A:Self-care elderly　B.The elderly in need　C.The elderly in care

1. **main mission**——**Keep healthy**——Fitness, square dance, walking or jogging + Holding an elderly sports meeting(A+B)
2. **Further mission**——**Maintain mental health**——College student volunteer activities combined with community symposiums, playing chess with friends, playing mahjong; plantation; raising pets;(A+B+C)
3. **Expanded mission**——**Live and learn**——University elective course[Social Course (teaching people how to communicate with others);Health Course (go to the mountain to meditate)] (A+B)+c

Two approaches——①**Normal class**:Painting course; music course; practical course; photography course.
②**Online lecture**:Appreciation of works of art; novels telling the nature of stories; courses related to philosophy

4. **Final mission**—— **increase self-identity**——Do what they can do(A)+b

①**Mutual assistance in old-age facilities**:To a certain extent, self-care the elderly can take care of the elderly in care, which can lower the rent.()
②**Work/part time**:Clean up classrooms or toilets; old people with certain abilities can be teachers
③**Creation**:Online sales; literature; painting; music, etc.

6.8 Analysis of daily life`s rhythm

Source: https://www.shutterstock.com/search/elderly

7 Concept Analysis

7.1 The concept: Forever Young

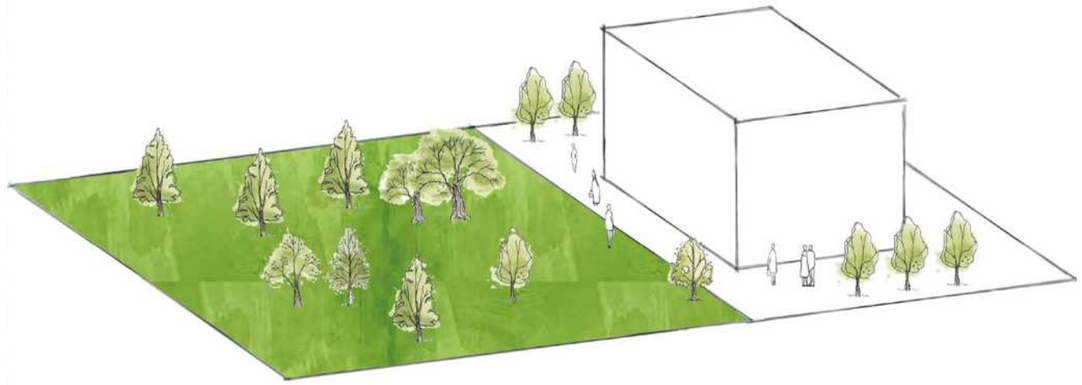
7.2 Shape Generation Analysis

7.1 The concept: Forever Young

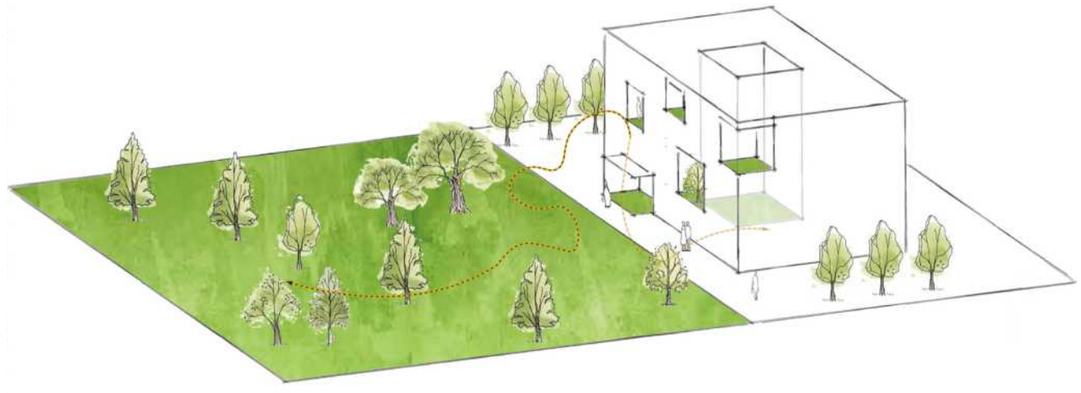
Forever Young — **Abstraction** → **Concretization**

Vitality **Green Space+ Public Space**

1.Less **building land**, and more **green land**



Planning **green space** for the elderly to comfortablely enjoy



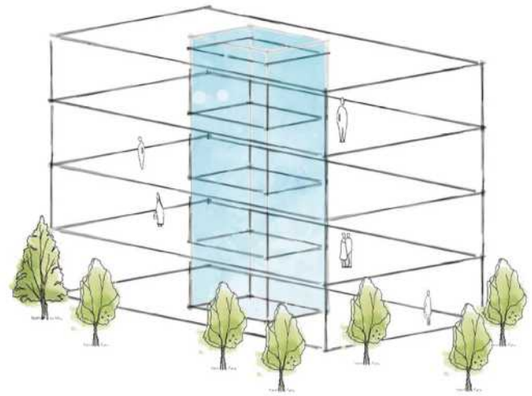
Horizontal greening, and vertical greening.The depth between structure and the exterior walls not only provides shared public space and green space, but take green through the entire building

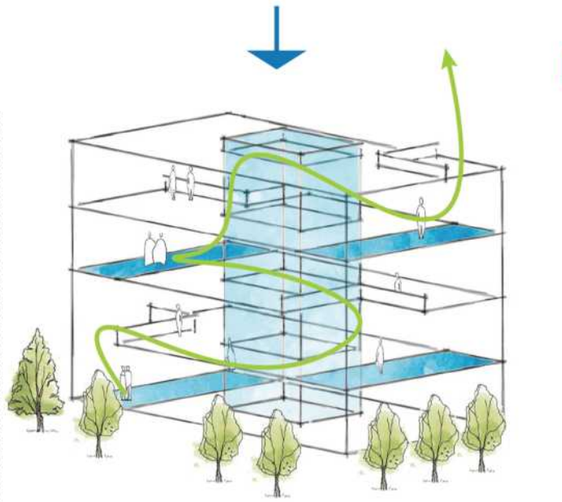
Forever Young

Abstraction

Concretization

2.Less **Isolated space**, and more **Public space**





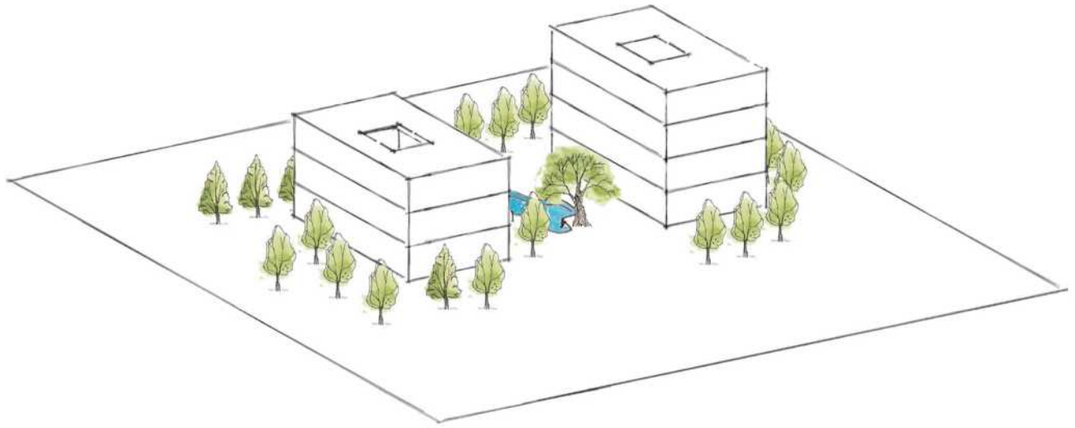
It is a better way to get through the vertical space rhythmically which can make the communication between layers more frequent, compared to simply opening the vertical gap

Forever Young

Abstraction

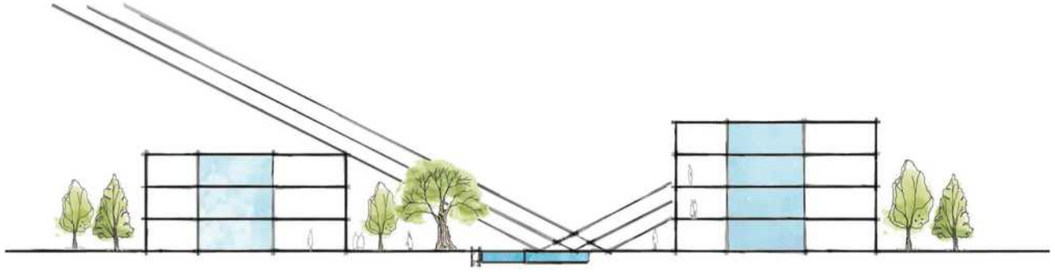
Concretization

Hope **Light reflection (Ceremonial sense)**



Solar elevation angl in Wuhan:

Winter Solstice Day:26°41′
Summer Solstice Day: 73°32′

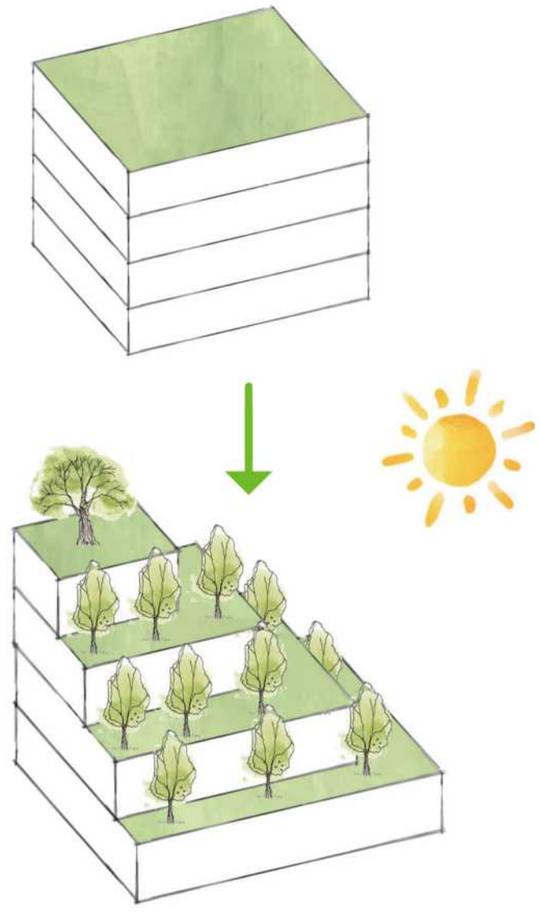


On the south-facing side, this is a good way to **provide shadow and reduces the solar heat gains inside the building to grow plants** and design the depth between structure and the exterior walls in the summer. In the winter, the plants would wither and the elderly could enjoy the normal sun bath.
On the north-facing side, trying to use the reflection of light in the lake and other buildings to bring sunlight into the room, it is like the sun is calling the elderly to walk out.

Forever Young → **Abstraction** → **Concretization**

Growing **1. "Growing" building**

Upward momentum in the building's shape



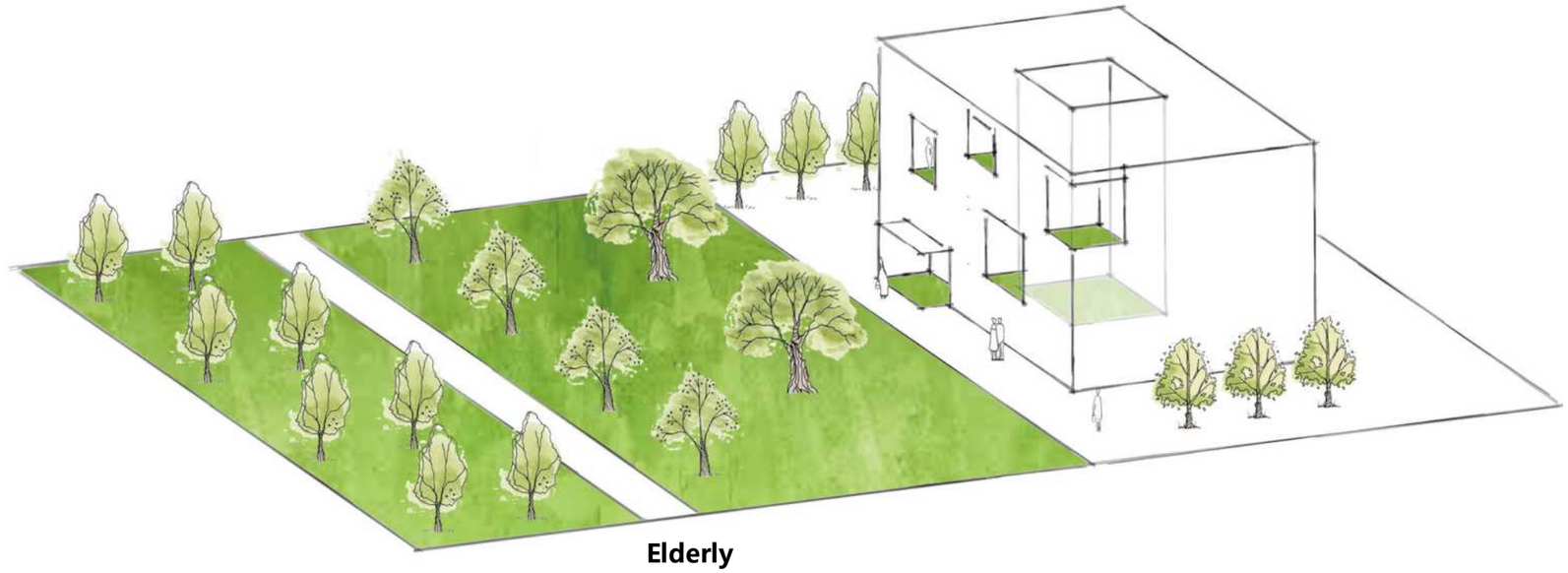
Forever Young

Abstraction → Concretization

Growing **Materials, spital grow, and building grow**

3." Growing" space Create the public space which are not defined.

Try to design some public space inner the building and green space in the site, which are not defined, and that means these **undefined space could become various functional space** according to different users. For example, the elderly could play chese or rest under the shade of tree, meanwhile, students could play volley-ball or soccer between trees.



Students

Valleyball

Riding

Skateboard

Football

Elderly

Stroll

Afternoon tea

Painting

Chess

Jogging

Reading

Source: https://www.shutterstock.com/image-vector

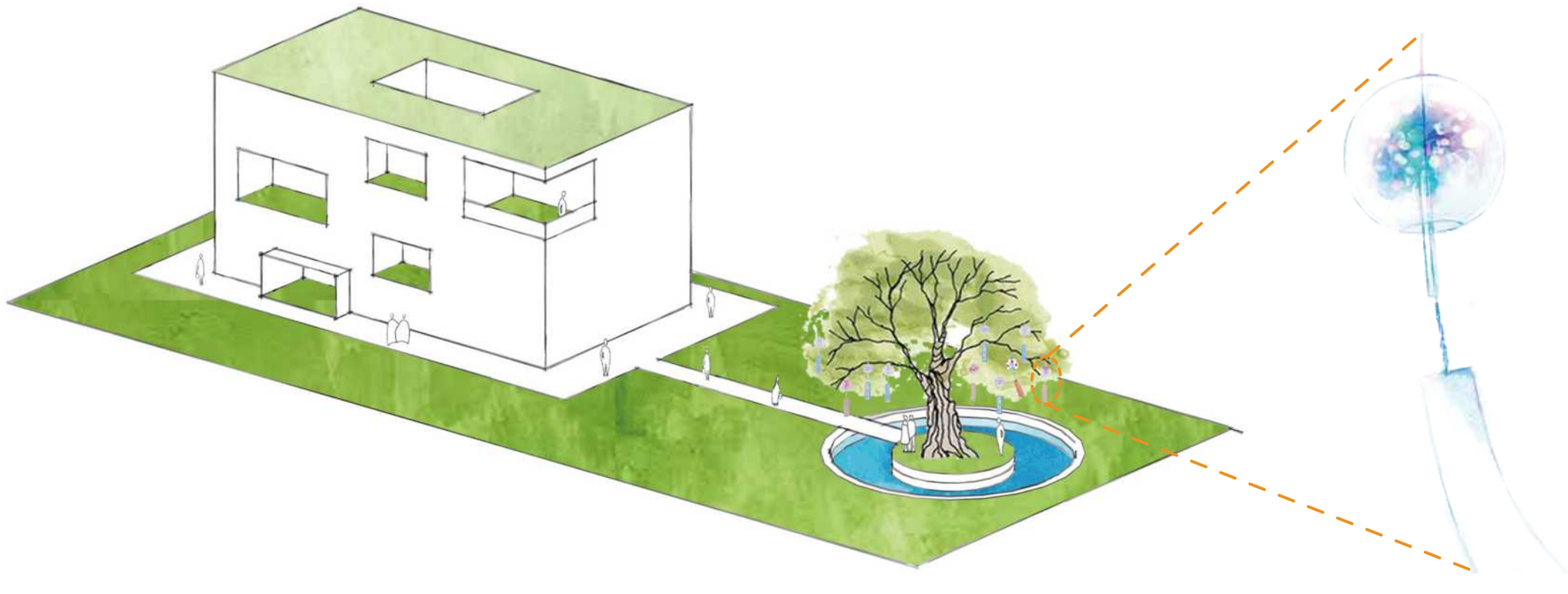
Forever Young

Memory

Abstraction

Concretization

Remember Born to death

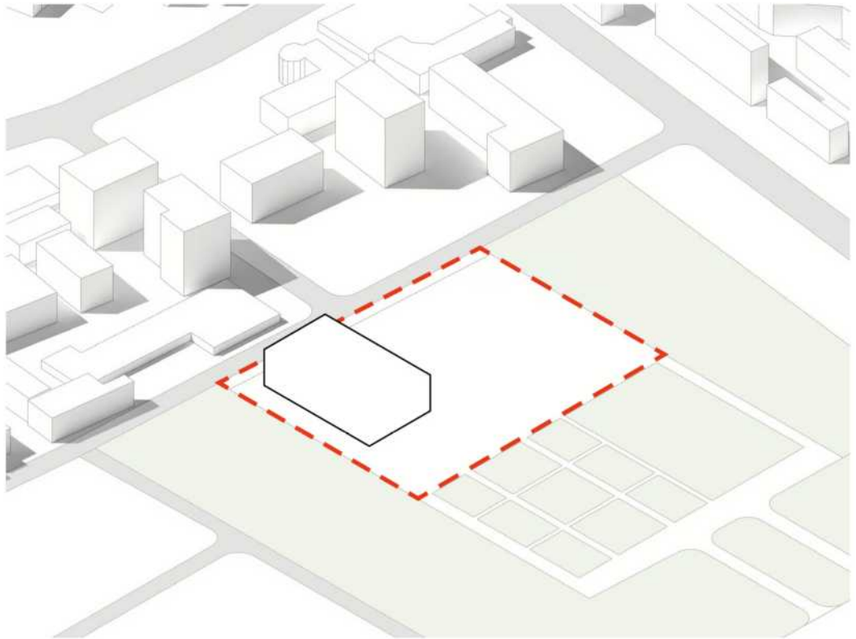


Face to death, and born to death This is the ultimate problem in designing elderly homes. When people are in old age, they have no sustenance in their hearts and will begin to have deep fear of death.
The Buddhist family said that **after death, people will reincarnate**. In this program, I not only want to meet the basic requirements of the old people in terms of function, but also **pay more attention to their psychological needs**.

Try to **use a substance to carry life** and let them create memories by themselves while they are living. Try to design a ceremonial space outside – there is a tree with wind chimes in the round pool. In normal times, the elderly can enjoy the scenery here, or they can hang a wind chime of their own. When they die, their family can pin their own thoughts here. **When the wind starts, they will hear the crisp ringtones. That may be the elderly' s response to the families.**

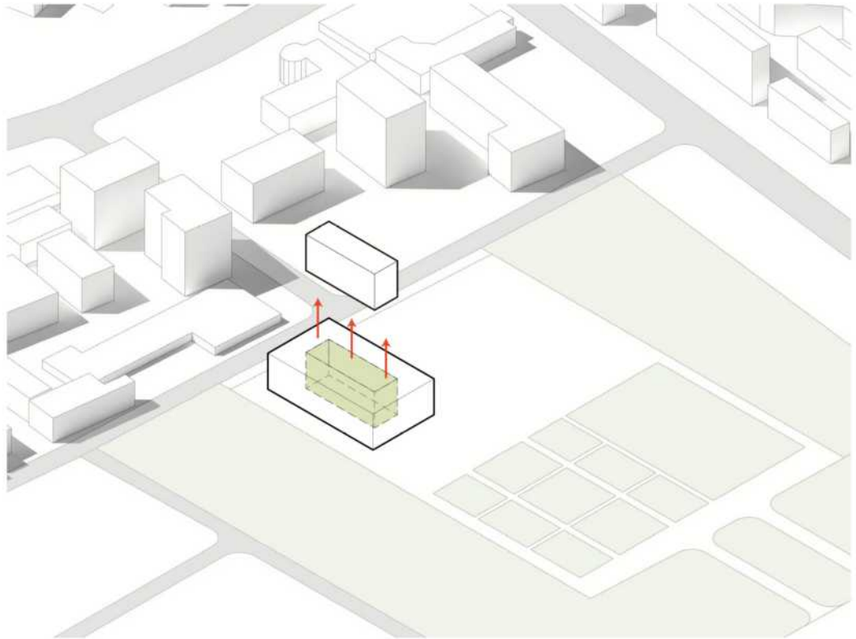
As the trees grow year by year, some wind chimes will fall into the pool without care, in a sense, it means that an old man is forgotten; while others are replaced by the year-round, and still ringing with the wind. As the movie "**Coco**" says "**Death is not the End. Being Forgotten is.**"

7.2 Shape Generation



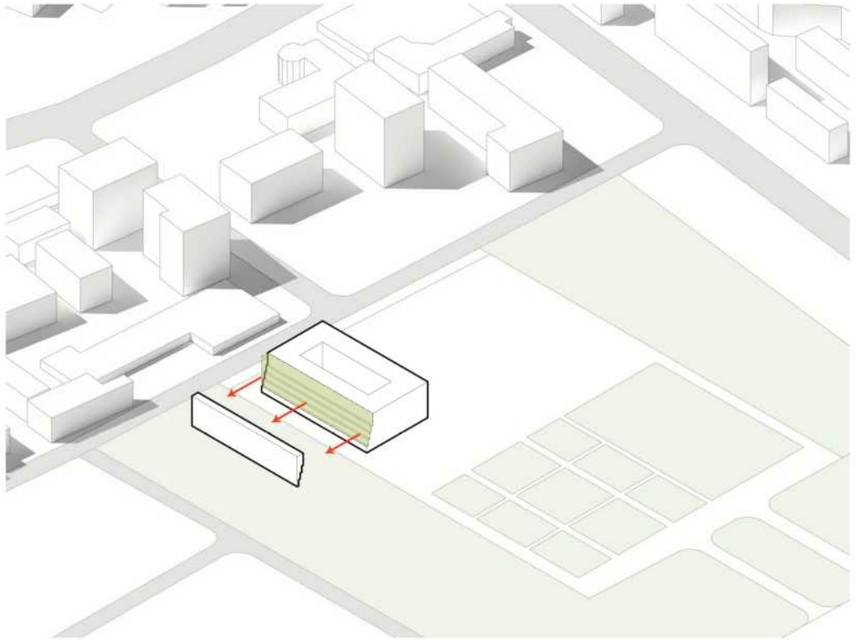
SITE

The site is located in the university campus, with green landscapes on three sides and a planned road on the other， which there are residential buildings and several corporate buildings.



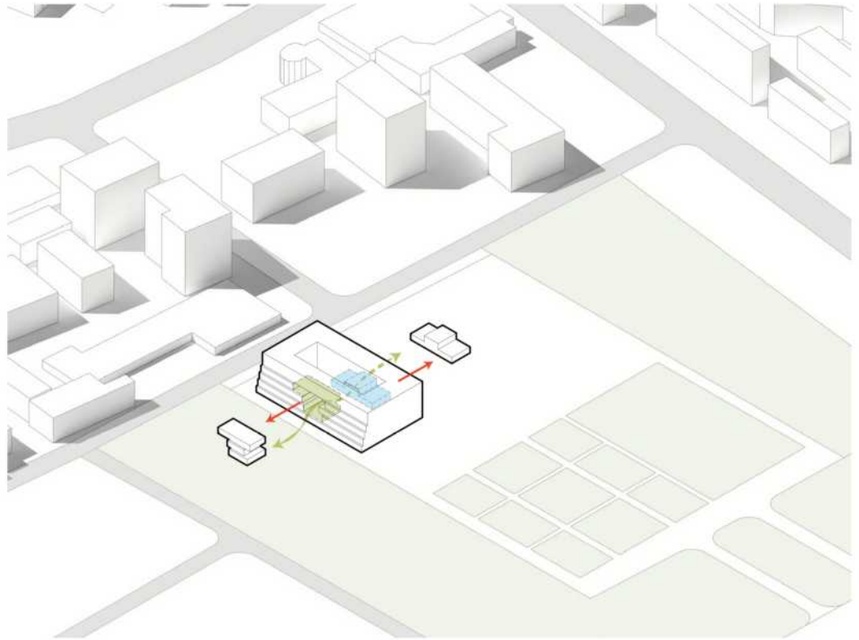
ATRIUM

The middle of the block is hollowed out to form a enclosed courtyard for the elderly to entertain and rest.



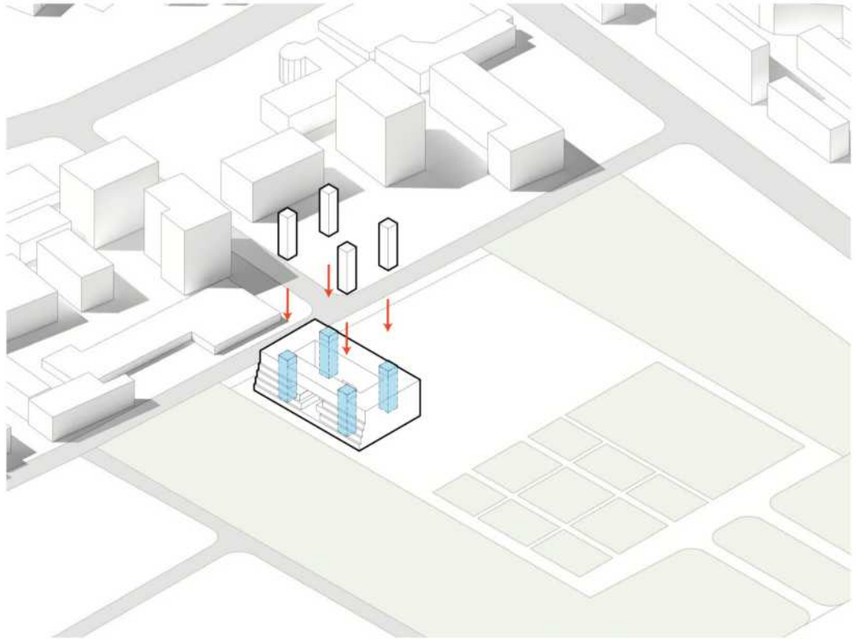
GREEN FACADE

The reserved space on the façade is for plants, and the green façade is conducive to energy saving.



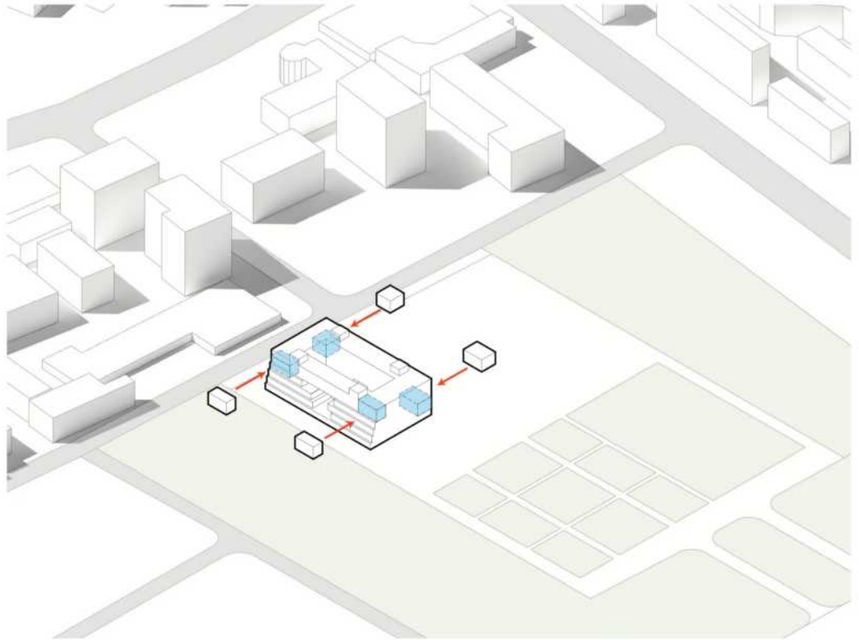
CROSS-VENTILLATION

Cross-space can form induced airflow, which creates a breeze through the central void space.



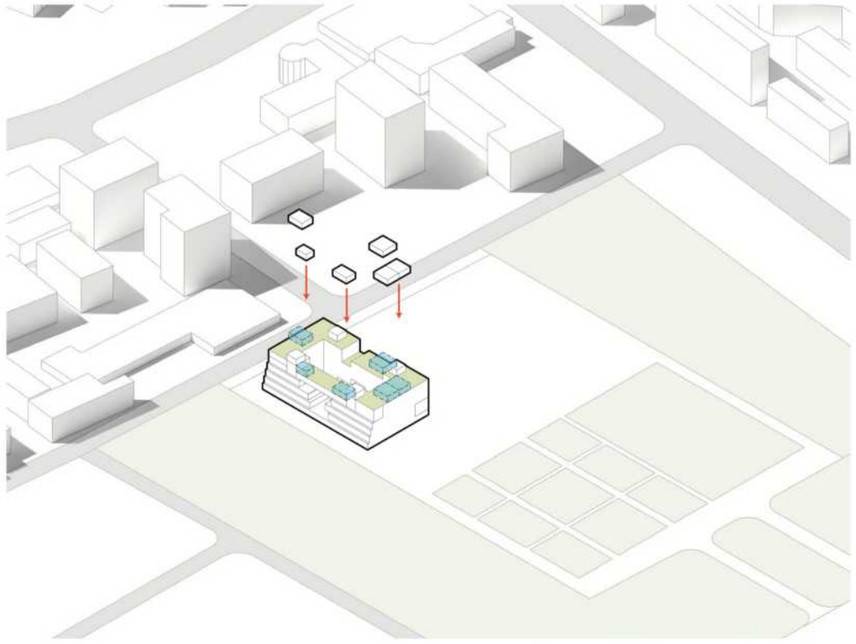
VERTICAL CONNECTIONS

According to the requirements of building safety regulations, there are four vertical traffic cores in the four corners of the block.



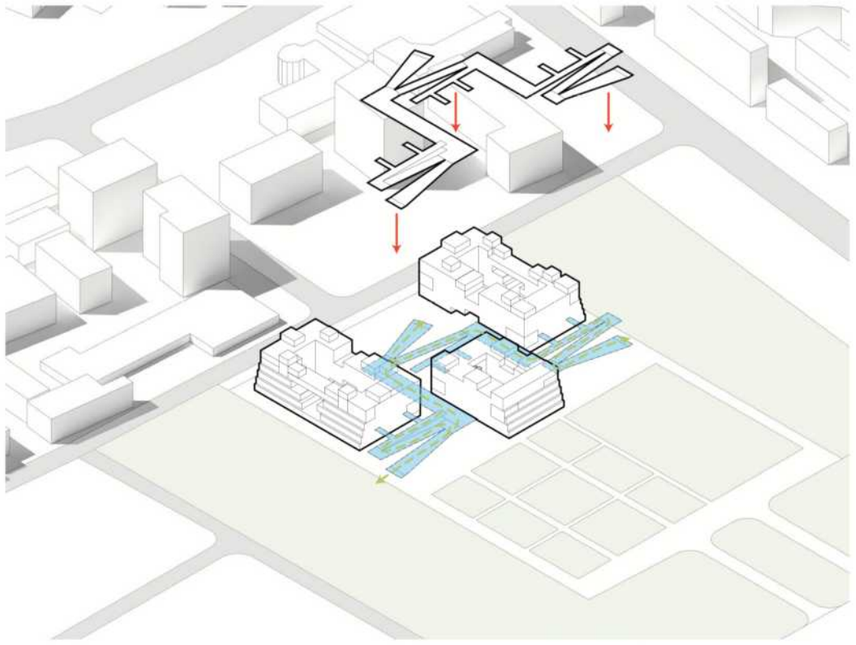
COMMUNITY SPACES

From the second floor, there will be public space in the interior of the building, and there will be a space for opening every two floors, aiming to create more communication space for the elderly.



GREEN ROOF

Available roof provides a spacious leisure platform for the elderly, such as walking, chatting and enjoying the tea time.



CONNECTION PLATFORM

The three buildings are connected at different heights with a landscape platform.

8 Questionnaire Analysis

8.0 The significance of the questionnaire

8.1 Analysis of Park (Parco Vittorio Veneto)

8.2 The Result of Field Research

8.0 The significance of the questionnaire

This questionnaire was conducted at Cavalieri di Vittorio Veneto Park in Torino city, which is a cozy urban public space that seniors nearby love, and I interviewed a total of 31 for the elderly, and would like to try to explore the reasons why this park attracts the elderly from the following aspects: the behavior of the elderly in the park and the frequency and time spent by the elderly in the park in winter and summer.

The purpose of this questionnaire survey is to transform the advantages of this park into different urban public spaces through the questionnaire survey, which can be used in this project planning.

Final project___the University-based community for the elderly

Field research

1. **Do you like this park(Parco Vittorio Veneto)?/Ti piace questo parco(Parco Vittorio Veneto)?**

- ◯ Yes/Si
- ◯ No
- ◯ Maybe

2. **What characteristics do you like about this park?/Quali caratt piacciono di questo parco?**

Multiple choice questions

- ☐ Green landscape/ Paesaggio verde
- ☐ public space/ spazio pubblico
- ☐ Enjoy the sun bath/ Goditi il bagno di sole
- ☐ pool/ piscina
- ☐ Sign structure in the square/ Firma la struttura nel quadrato
- ☐ Nearby gymnasium/ Palestra vicina
- ☐ Sports facilities/ Impianti sportivi (basketball court, fitness corner)
- ☐ The atmosphere here/ L'atmosfera qui

3. **What do you usually do in this park in summer?/Che cosa fai di solito in questo parco in estate?**

Multiple choice questions

- ☐ Walking with dog/ Portare a spasso il cane,
- ☐ Walking/a piedi
- ☐ running/ in esecuzione
- ☐ flying a kite/ far volare un aquilone
- ☐ playing football/ giocare a calcio
- ☐ picnick
- ☐ gathering with friends/ riunirsi con gli amici
- ☐ family gatherings/ riunioni di famiglia
- ☐ roller skating/ pattinaggio a rotelle
- ☐ enjoying the scenery/ godendo il paesaggio
- ☐ Others

4. **What do you usually do in this park in winter?/Che cosa fai di solito in questo parco in inverno?**

Multiple choice questions

- ◯ I won't come/Non verrò
- ☐ Walking with dog/ Portare a spasso il cane,
- ☐ Walking/a piedi
- ☐ running/ in esecuzione
- ☐ flying a kite/ far volare un aquilone
- ☐ playing football/ giocare a calcio
- ☐ picnick
- ☐ gathering with friends/ riunirsi con gli amici
- ☐ family gatherings/ riunioni di famiglia
- ☐ roller skating/ pattinaggio a rotelle
- ☐ enjoying the scenery/ godendo il paesaggio
- ☐ Others

5. **How many times do you go to this park every week?/Quante volte vai in questo parco ogni settimana?**

- ◯ 1-2 times/1-2 volte
- ◯ 3-5 times/3-5 volte
- ◯ 5 or more times/5 o più volte

6. **When do you usually come to this park?/Quando vieni di solito in questo parco?**

- ◯ In the morning/ Di mattina
- ◯ At noon/ A mezzogiorno
- ◯ In the evening/ In serata

7. **How long do you stay in the park each time?/Quanto tempo rimani nel parco ogni volta?**

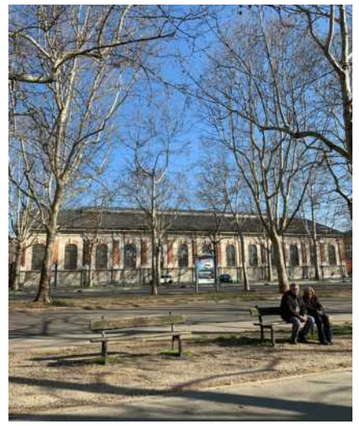
- ◯ Within 1 hour/ Entro 1 ora
- ◯ 1-2 hours/ 1-2 ore
- ◯ More than 2 hours/ Più di 2 ore
- ◯ Uncertain/ Incerto

8. **Which aspect of the park needs to be improved? (waste?chairs?and so on) /Quale aspetto del parco deve essere migliorato? (Rifiuti? Sedie? E cosi via)**

8.1 Analysis of Park (Parco Vittorio Veneto)

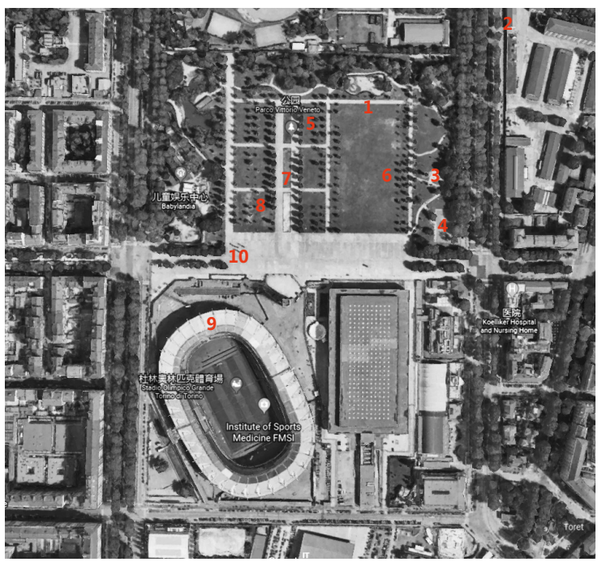
Cavalieri di Vittorio Veneto Park

1.Panorama 1



2.Rest aside the street

Perspective 1



Parco Vittorio Veneto

3.Fitness center

4.Basketball

5.Rest with family and dog

Perspective 2

6.Sun bathe

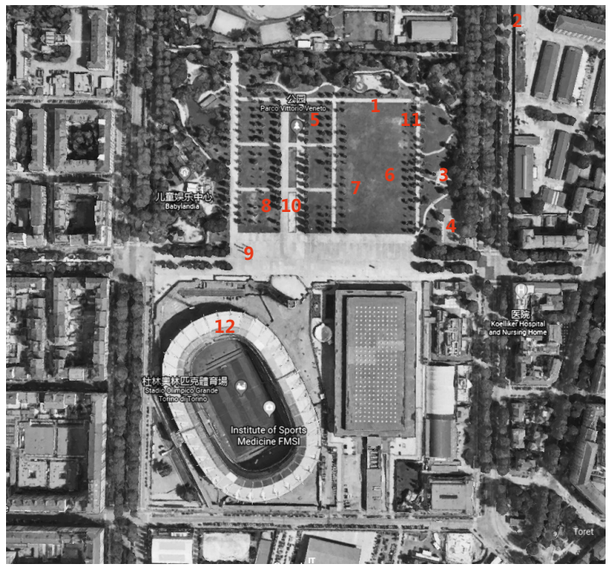
11.Panorama 2

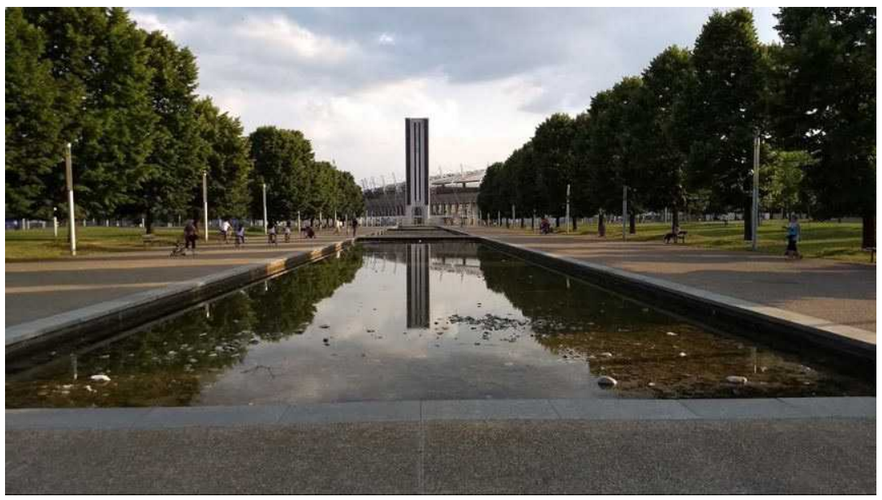
Perspective 3

7.Play soccer

8.lay on the grass with friends

9.Sign constucture





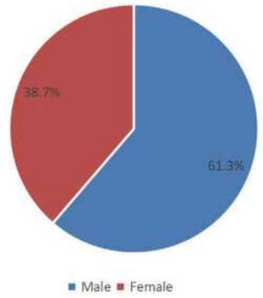
10.Small pool

12.Stadium

8.2 The Result of Field Research

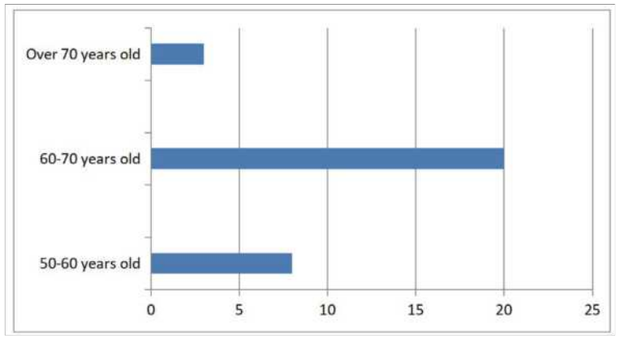
The total number	31

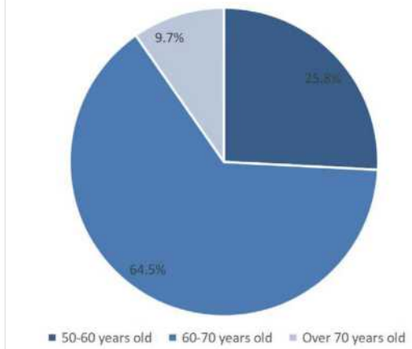
Male	19	61.3%
Female	12	38.7%



0. Age distribution		
50-60 years old	8	25.8%
60-70 years old	20	64.5%
Over 70 years old	3	9.7%

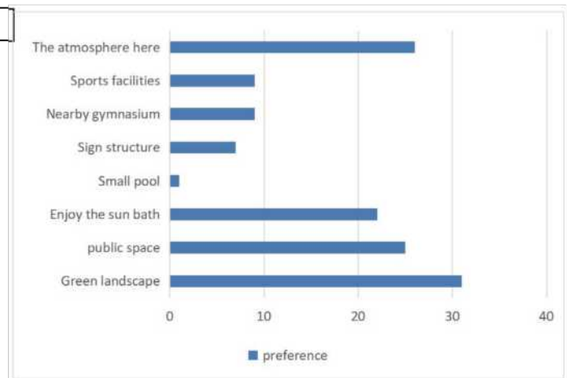
Male	6	19.4%
Female	2	6.5%
Male	11	35.5%
Female	9	29.0%
Male	2	6.5%
Female	1	3.2%



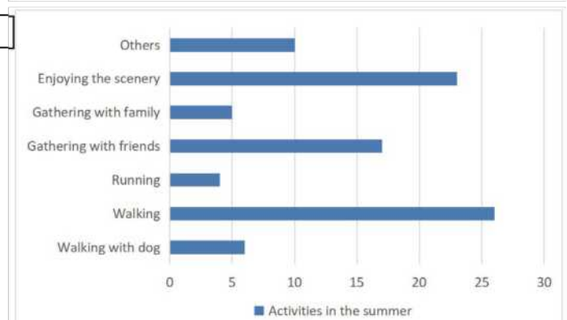


1. Do you like this park(Parco Vittorio Veneto)?	
YES	31

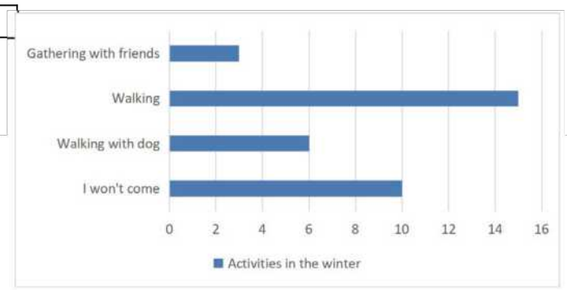
2. What characteristics do you like about this park?		
Green landscape	31	100.0%
public space	25	80.6%
Enjoy the sun bath	22	71.0%
Small pool	1	3.2%
Sign structure	7	22.6%
Nearby gymnasium	9	29.0%
Sports facilities	9	29.0%
The atmosphere here	26	83.9%



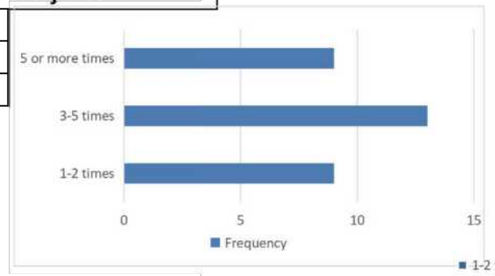
3. What do you usually do in this park in summer?		
Walking with dog	6	19.4%
Walking	26	83.9%
Running	4	12.9%
Gathering with friends	17	54.8%
Gathering with family	5	16.1%
Enjoying the scenery	23	74.2%
Others	10	32.3%

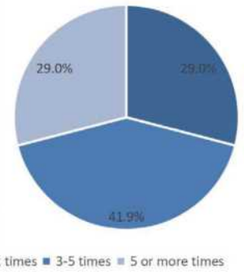


4. What do you usually do in this park in Winter?		
I won't come	10	32.3%
Walking with dog	6	19.4%
Walking	15	48.4%
Gathering with friends	3	9.7%

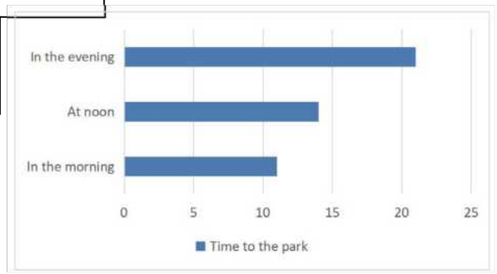


5. How many times do you go to the park every week?		
1-2 times	9	29.0%
3-5 times	13	41.9%
5 or more times	9	29.0%

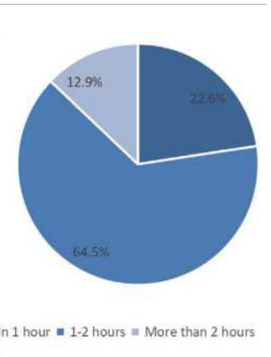




6. When do you usually come to this park?		
In the morning	11	35.5%
At noon	14	45.2%
In the evening	21	67.7%



7. How long do you stay in the park each time?		
Within 1 hour	7	22.6%
1-2 hours	20	64.5%
More than 2 hours	4	12.9%



8. Which aspect of the park needs to be improved?
There are not enough benches for rest in the park

Final conclusion

1. It is significant to design green enviornment for the elderly to enjoy the sun path in park.
2. It is important for seniors to arrange enough rest and entertainment spaces in public space.
3. Elderly people help physical and mental health in outdoor activities, including walking, jogging, ridding, running and other activities.

9 Design Proposal

9.1 Design Concept

9.2 General Plan

9.3 Technical Drawings

9.4 Exploded Axonometric Drawing

9.5 Types of Accommodation

9.6 Function Analysis

9.7 Sectional Perspective and Details

9.8 Sustainable Analysis

9.1 Design Concept

Design Concept

The destination of this design is in China, where aging is becoming more and more serious, trying to explore and research the cultural heritage and pension strategy of old-age buildings from a new perspective, which is the University-based elderly community.

Students and the elderly, there are many similarities in the needs of the living environment for two groups with large age differences.Such as quiet atmosphere, away from the noisy neighborhood without affecting daily life, green landscape, safe security, convenient living, etc. These physical requirements are all tried to be achieved by some design means and space experience, such as indoor and outdoor atriums, green facades and roofs, connecting landscape platforms between buildings and planning leisure parks around the building.

In terms of psychological needs, one is the kind of confusion without social experience, and the other may be the sorrow of the life that is about to end. Older people not only need physical, intellectual and spiritual stimulation, but they also increasingly need a sense of security, familiarity, continuity and proof of personal value and meaning of existence. Therefore, there are not only psychological counseling rooms, painting rooms, reading rooms, study rooms and meditation rooms for the elderly, but also trying to open experimental restaurants and cafes, and work for a certain period of time according to the physical condition of the elderly themselves.

That is "live to the old and learn to be old" .
That is "**FOREVER YOUNG**"

9.2 General Plan

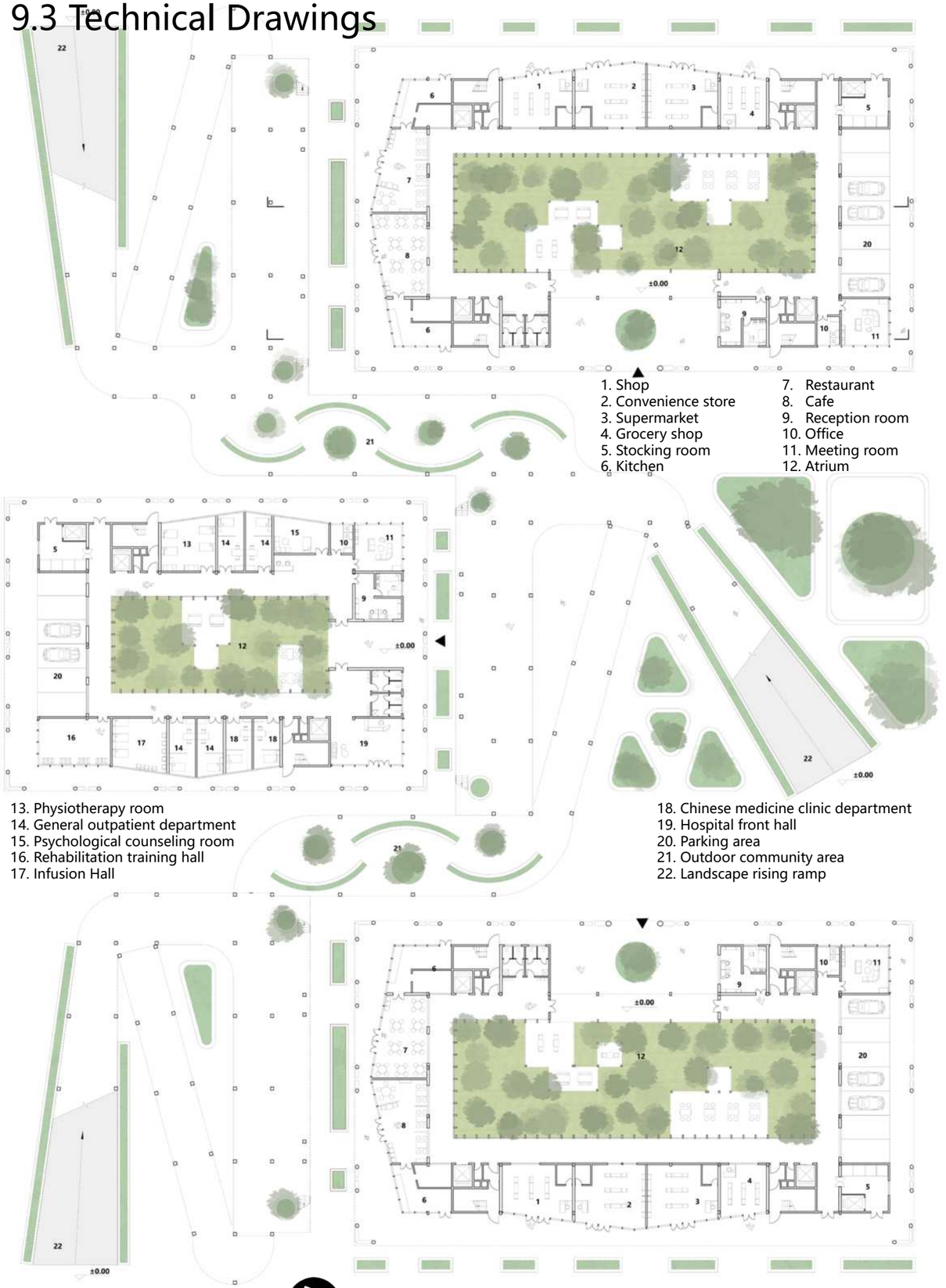
General Information:

Planning area: 12.4 ha
Site area: 28712.3 m²
Building area: 33820 m²
Number of rooms: 142
Greening rate: 22%

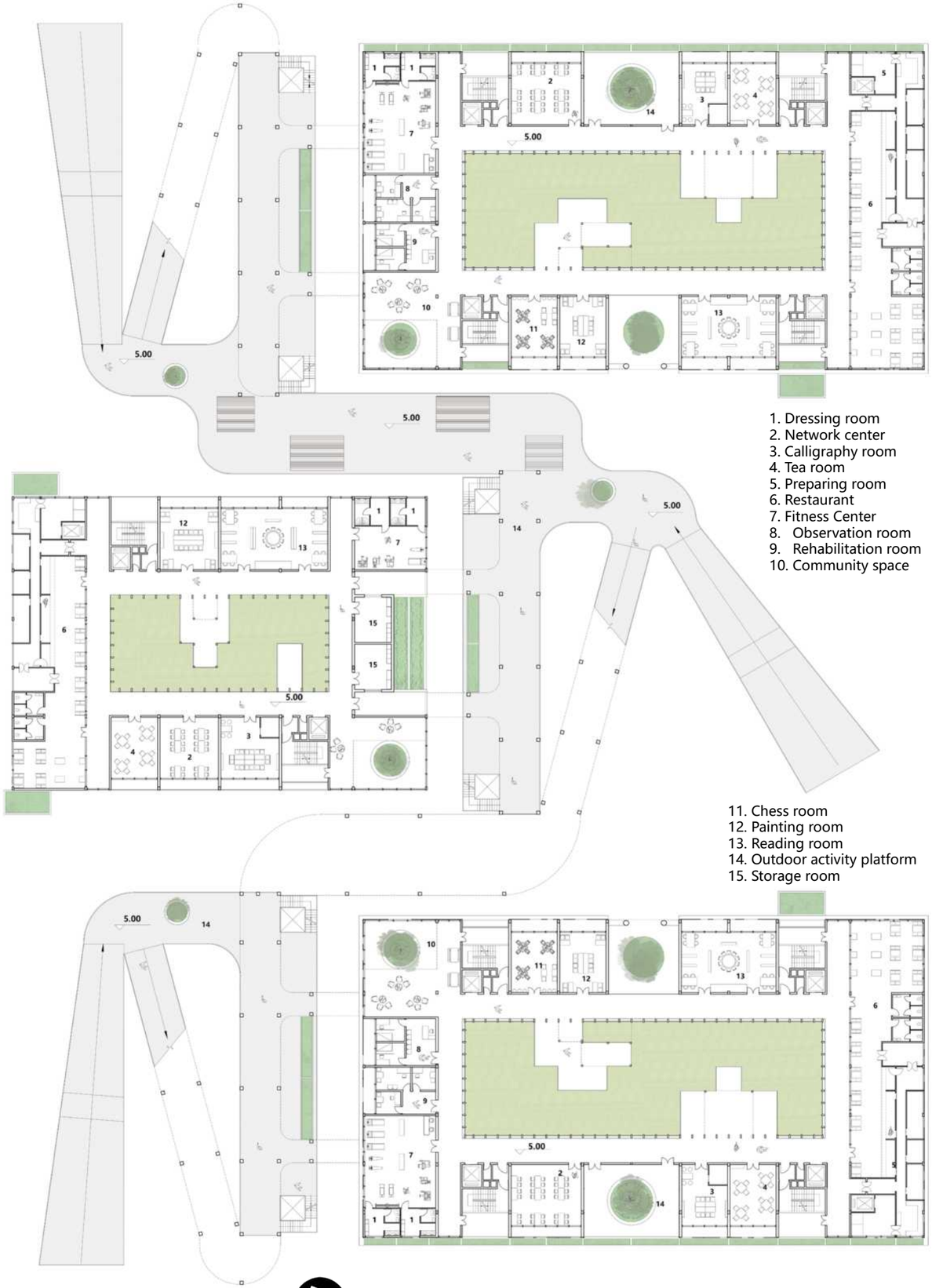
General Plan-scale

0 20km

9.3 Technical Drawings



Gound Floor-scale 0 7.5km

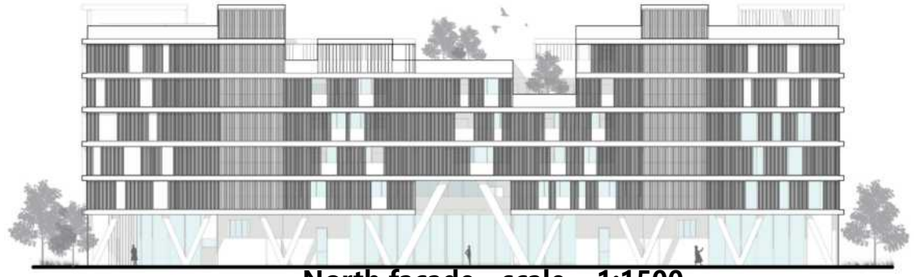


First Floor-scale 0 7.5km

1. Resident
2. Preparing room
3. Meditation room
4. Office room
5. Community space
6. Outdoor activity platform

Second Floor-scale

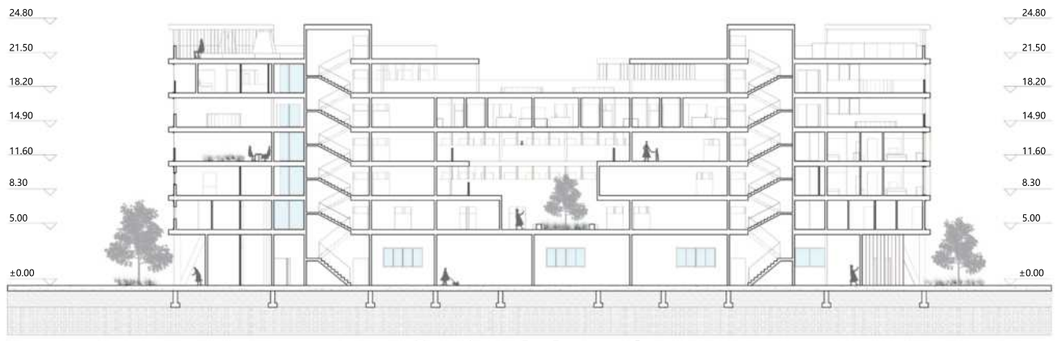
0 7.5km



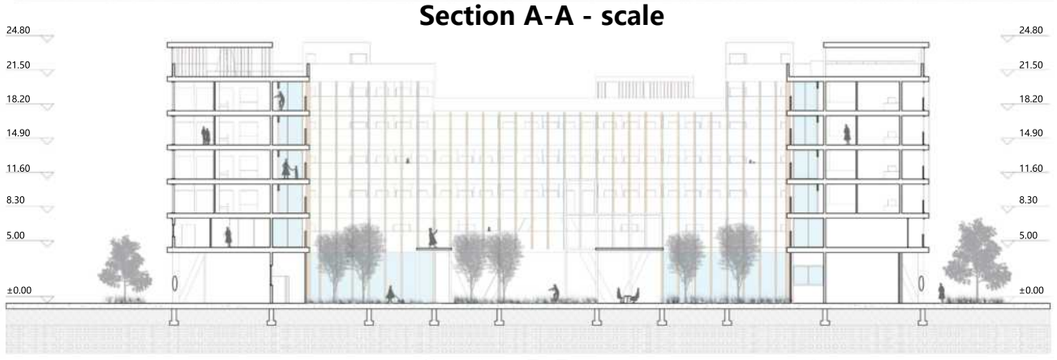
North facade - scale 1:1500

South facade - scale

East facade - scale **West facade - scale**



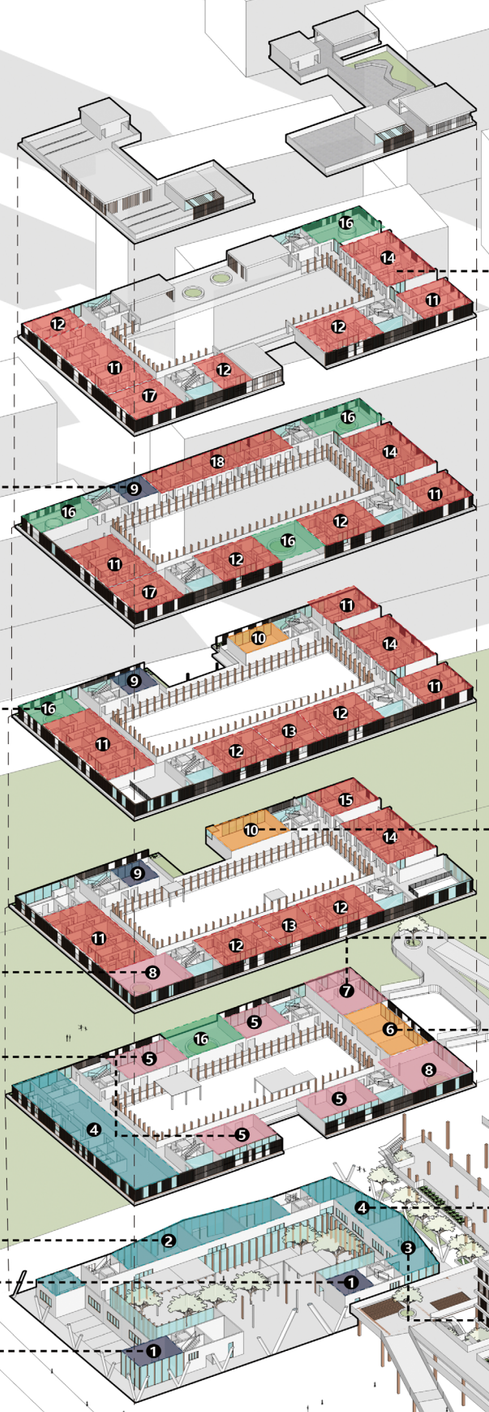
Section A-A - scale



Section B-B - scale

0 7.5km

9.4 Exploded Axonometric Drawing



[MANAGEMENT ROOM]
[21.20]Supervise the living conditions of the elderly at the same level to prevent accidents

[OUTDOOR LANDSCAPE PLATFORM]
[17.90]Supervise the living conditions of the elderly at the same level to prevent accidents

[COMMUNICATIVE HALL]
[14.60]Provide platform space for communication for the elderly

[ENTERTAINMENT FACILITIES]
[5.00]Including network center, calligraphy room, tea room, chess room, painting room and reading room

[STORE]
[±0.00]Including shop, convenience store supermarket and grocery shop

[OFFICE]
[±0.00]Including reception room and meeting room

[BEDROOM]
According to the different physical conditions and psychological needs of the elderly, they are matched to the bedroom of different scales, to create an organic and diverse living space.

⓱ **Single room** for the old-age self-care the elderly (over 80 years old) and the young-age self-care the elderly (60-79 years old). (4.5m×9.0m)

⓬ **Double room** for two self-care elderly or two aged people who cannot fully take care of themselves, in this way, they can accompany and help each other. (6.0m×9.0m)

⓲ **Double room** for self-care couple. (6.0m×9.0m)

Triple room for two elderly in need/care + medical staff room. ⓫(7.0m×9.0m) ⓮ (7.5m×9.0m) ⓯ (8.0m×9.0m) ⓭ (9.0m×9.0m)

[MEDITATION ROOM]
[14.60]Old people can quietly in this room, meditate, and vacate themselves

[FITNESS CENTER]
[5.00]Running, leisure and social space for the elderly

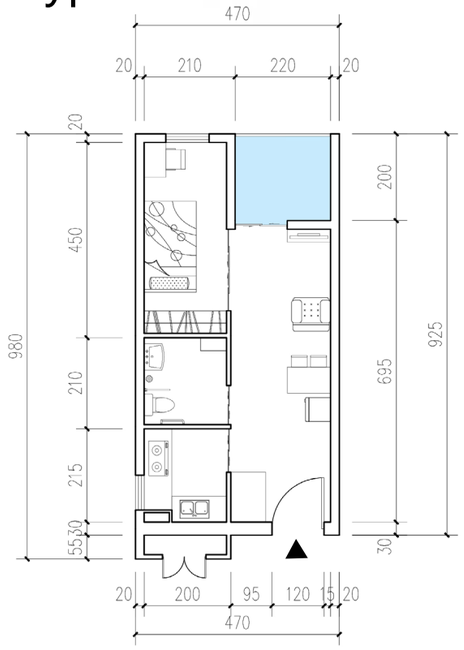
[MEDICAL SERVICE ROOM]
[5.00]Including observation room and rehabilitation room

[`FORGET' RESTAURANT]
[±0.00]Let the old people work in the restaurant and do what they can to do

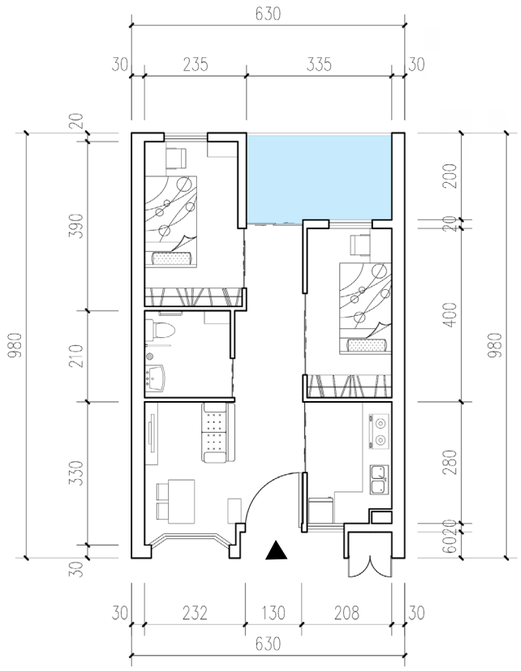
[`REMEMBER' CAFE]
[±0.00]For the elderly and students to relax and experience.

- **Recreational facility space**
- **Office Space**
- **Living service space**
- **Medical service space**
- **Residential space**
- **Outdoor landscape space**

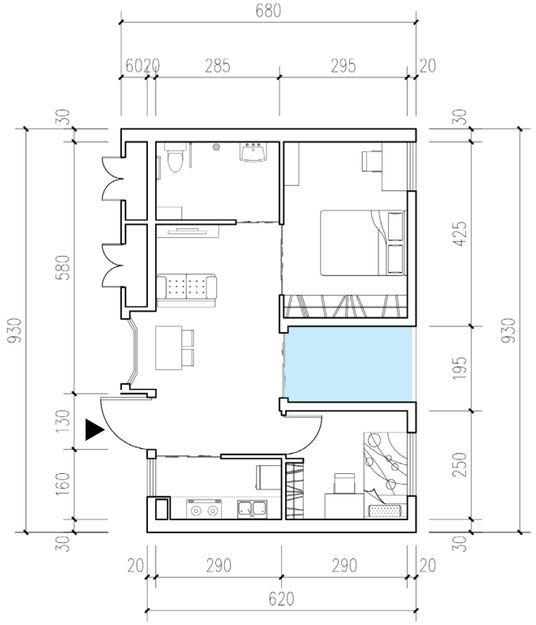
9.5 Types of Accommodation



(4.5m×9.0m) **Single room**

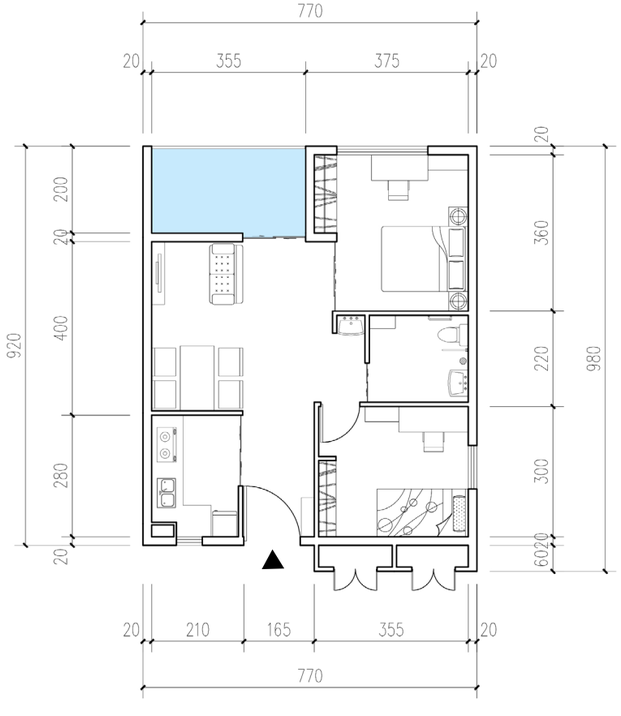


(6.0m×9.0m) **Double room**

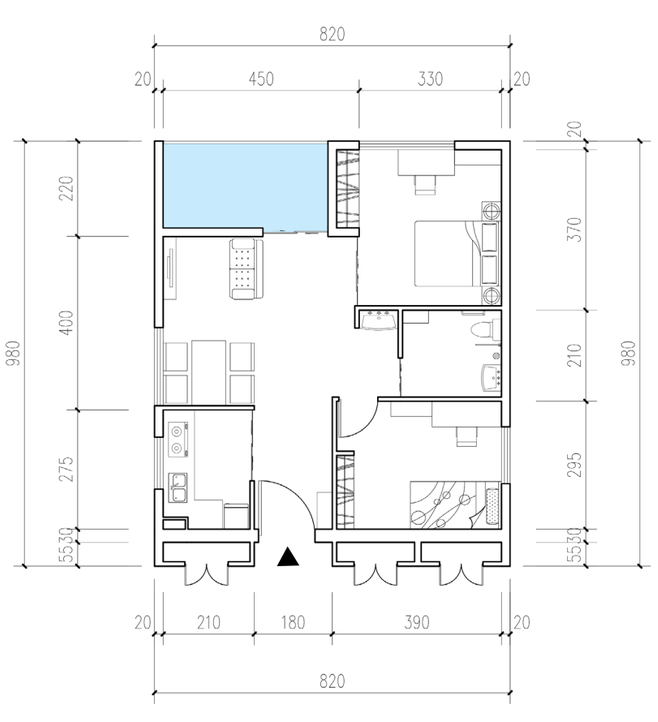


(6.0m×9.0m) **Double room**

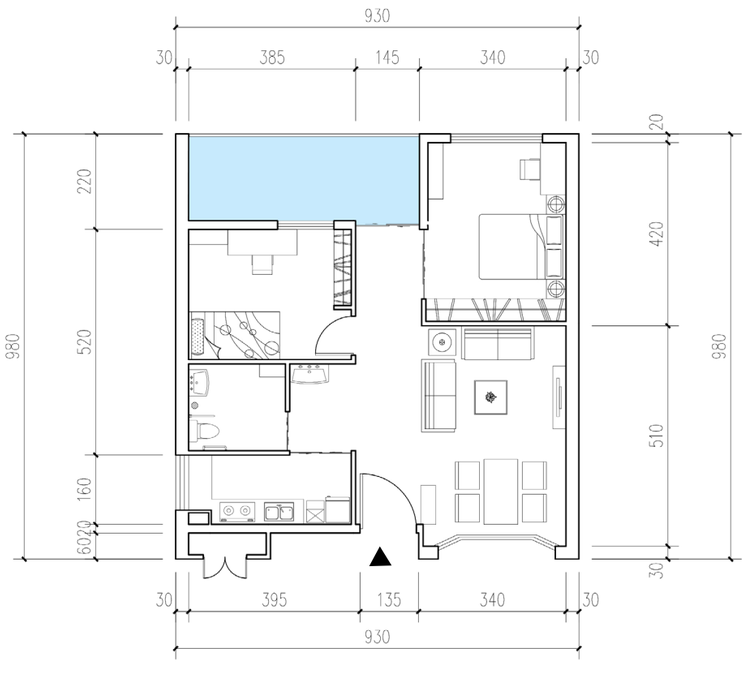
(7.0m×9.0m) **Triple room**



(7.5m×9.0m) **Triple room**



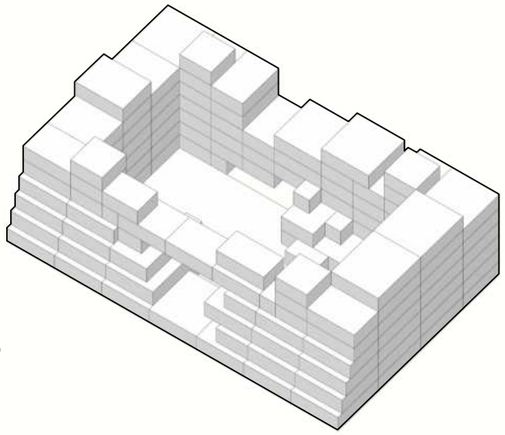
(8.0m×9.0m) **Triple room**



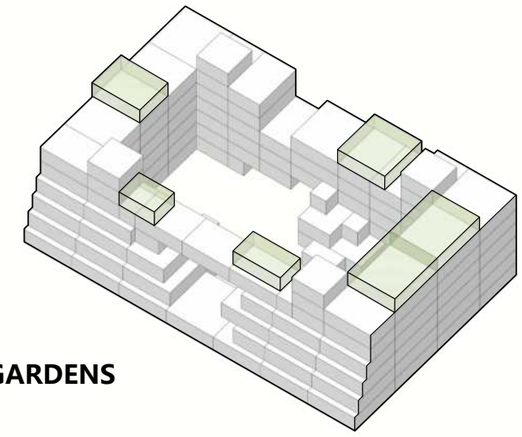
(9.0m×9.0m) **Triple room**

Scale 1:200

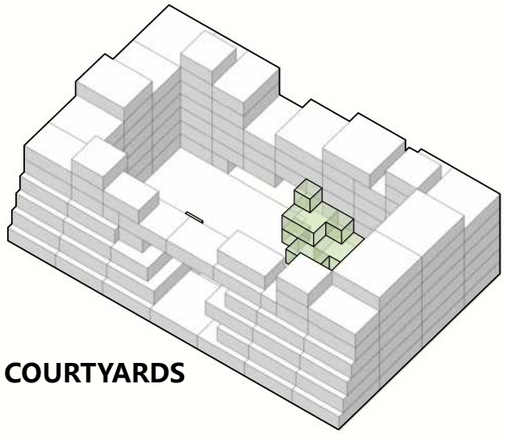
9.6 Function Analysis



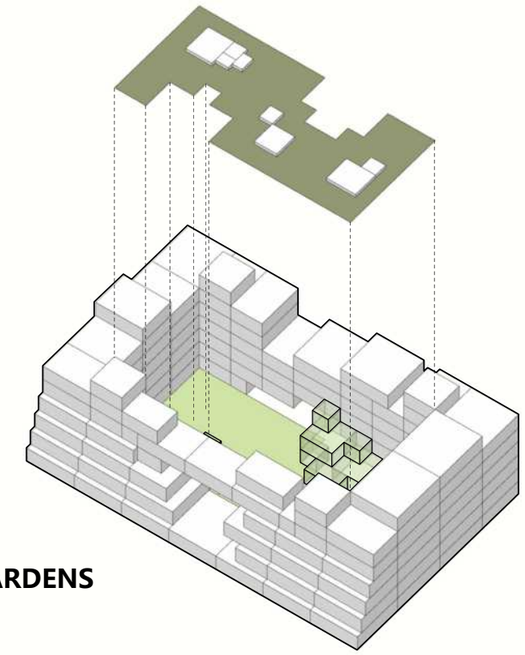
VOLUME



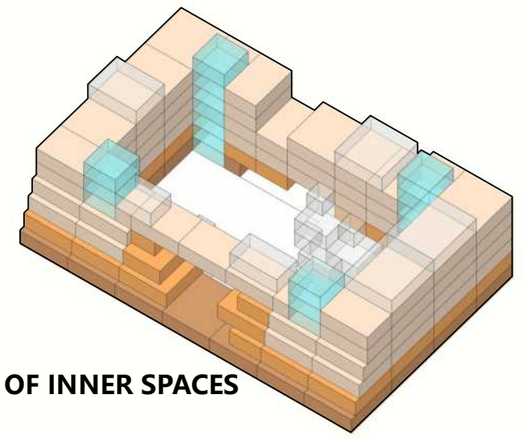
ROOF GARDENS



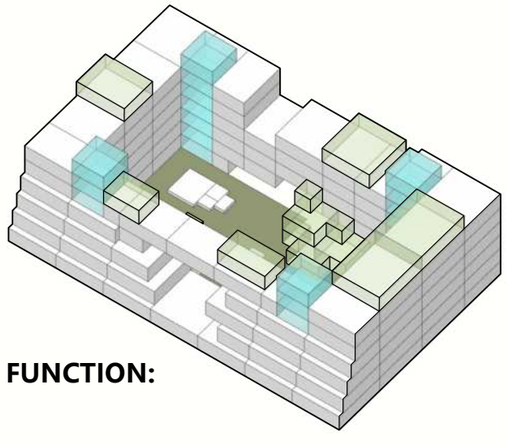
PRIVATE COURTYARDS



URBAN GARDENS



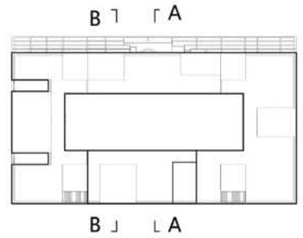
FUNCTIONS OF INNER SPACES

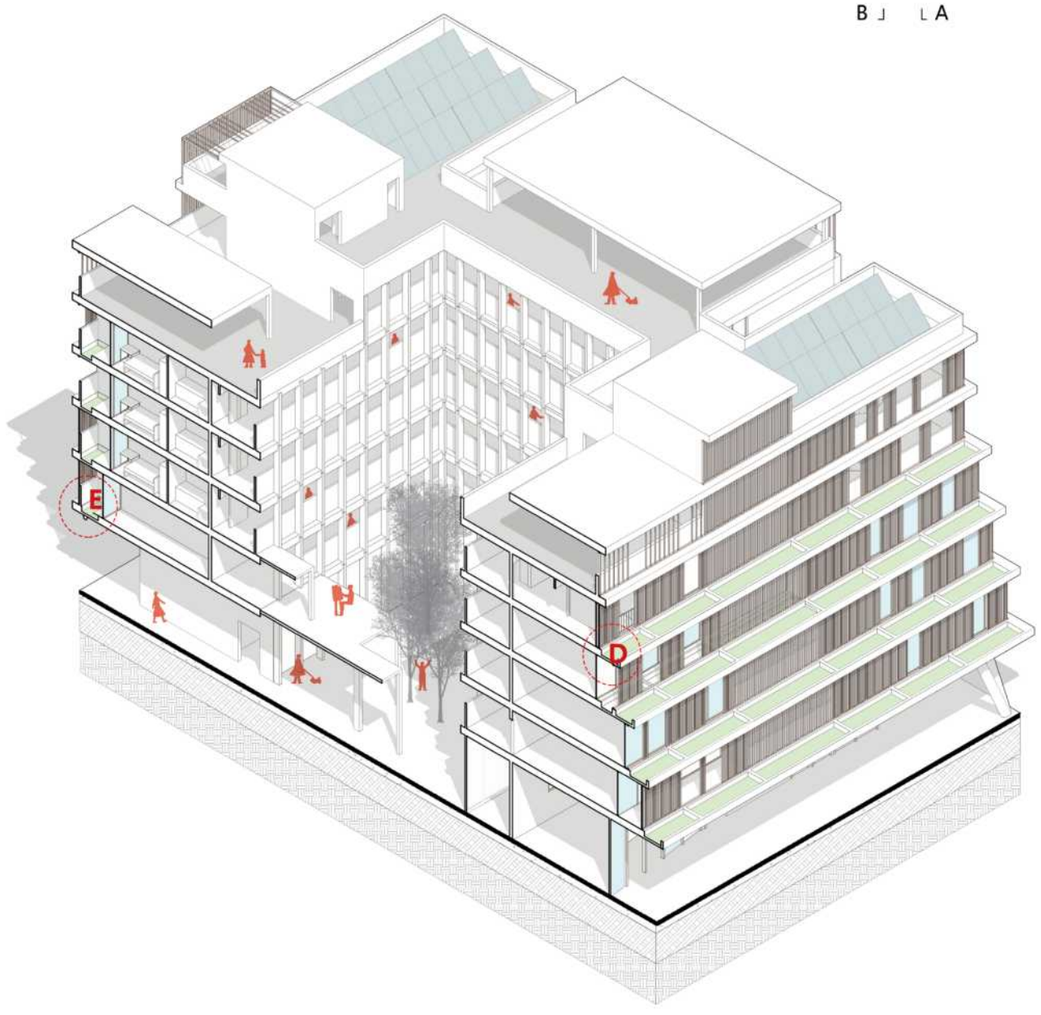


ASSEMBLY OF FUNCTION: PROPOSAL

9.7 Sectional Perspective and Details

Sectional perspective A-Scale

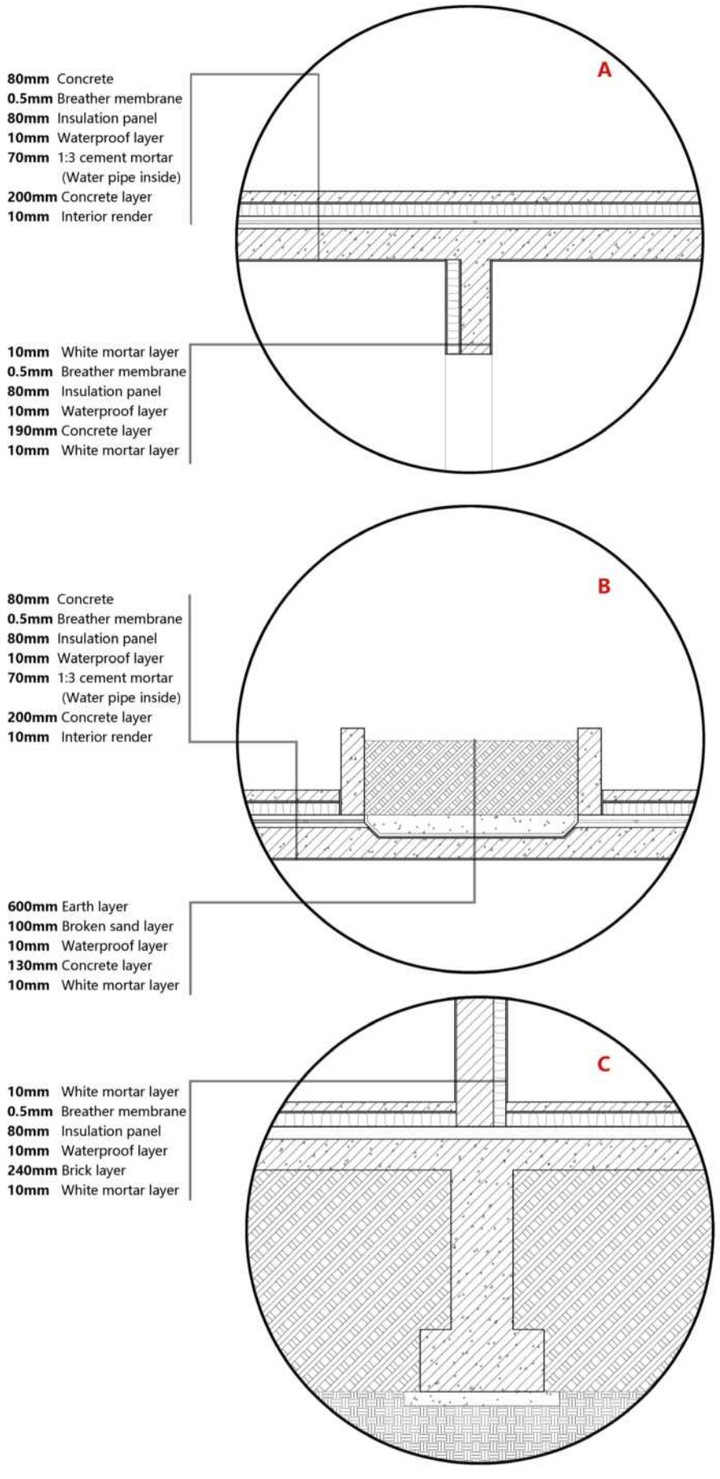




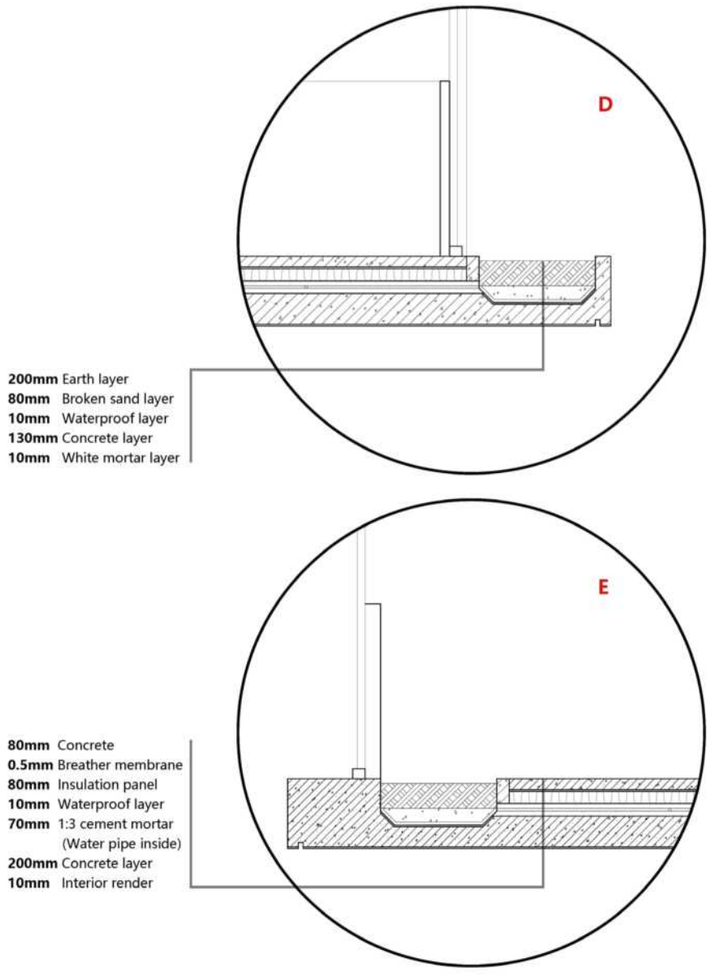
Sectional perspective B-Scale

0 2km

0 2km



Detail 1:40



Detail 1:40

9.8 Sustainable

ROOFTOP DECK SPACE provides a connection to sunlight and the landscape, protects roof from direct solar gain

SOLAR COLLECTOR SYSTEM for hot water and energy production, protects roof from direct solar gain

GREEN ROOF provides heat reduction and stormwater collection

Water efficient species and irrigation techniques minimize amounts of water consumed by landscape

FSC-CERTIFIED IPE WOOD SCREEN placed internally shades the circulation spaces

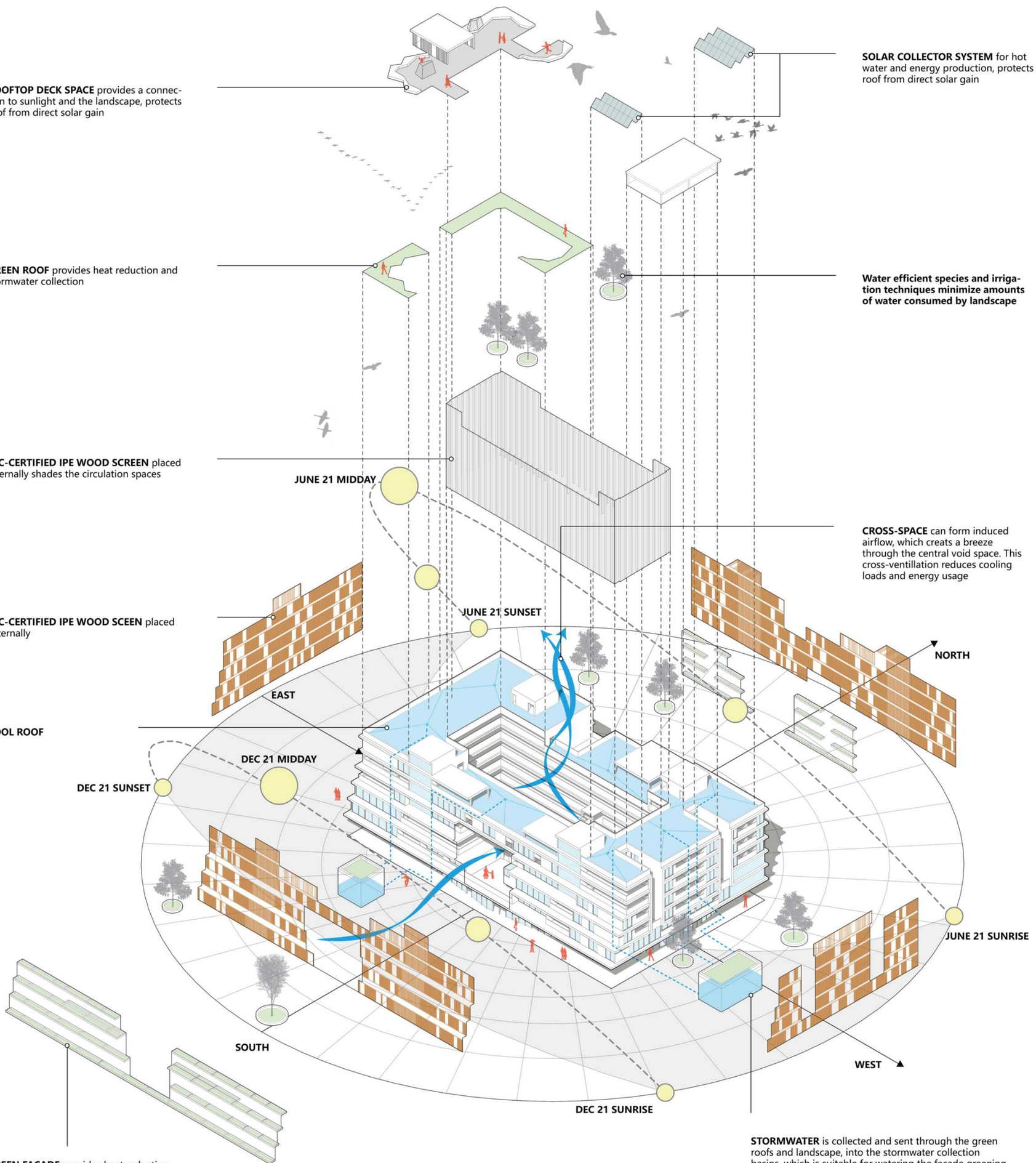
CROSS-SPACE can form induced airflow, which creates a breeze through the central void space. This cross-ventillation reduces cooling loads and energy usage

FSC-CERTIFIED IPE WOOD SCEEN placed externally

COOL ROOF

GREEN FACADE provides heat reduction and stormwater collection

STORMWATER is collected and sent through the green roofs and landscape, into the stormwater collection basins, which is suitable for watering the facade greening and part of the living water of the apartment for the elderly. Especially for toilet water, due to the physiological aging of the elderly, the frequency of using toilets by the elderly will become higher and the water consumption will become more



Conclusions

College-based retirement communities(UBRC) can maintain the physical, mental and mental activity of the elderly through various activities, which will greatly help the physical health of the elderly. Such a planning layout can allow the elderly to share the resources of the university city, and can also promote the old.

In addition, UBRC can provide a variety of behavior patterns for the elderly to meet a variety of needs: continue to learn, living active, play with others and increase the intergenerational communication, which is the better way to bulid the mental health of the elderly.

The issue: This mode of pension requires social support from the government, universities, medical institutions, etc.

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LAWS

[1] Code for design of buildings for elderly persons, JGJ 122-99

[2] Code for design of residential building for the aged

[3] Standard for design of care facilities for the aged. JGJ 450-2018

[4] Architectural design code for fire protection

[5] Urban and Rural Planning Law

[6] Wuhan Urban Planning Regulations

[7] Technical Regulations on Wuhan Urban Building Planning Management

[8] Regulations on Urban and Rural Planning of Hubei Province

APPENDIX

■ Location Analysis

China

Hubei

Wuhan

General information

Wuhan is the capital and largest city of the Chinese province of Hubei, and it is the most populous city in Central China, with the area of 8569.15 km² and a population of over 10 million(11.081 million) , the seventh most populous Chinese city. "The golden waterway "the Yangtze River and its Han River traverse the urban area, dividing Wuhan City into three parts, forming the layout of the three districts of WuChang, HanKou and HanYang.

Advantages of higher education

The city has 37 colleges and universities including Wuhan University, Huazhong University of Science and Technology, Huazhong Agricultural University, China University of Geosciences (Wuhan), Wuhan University of Technology and other 8 key undergraduates, 6 undergraduate courses, 7 private undergraduate and 16 colleges and universities.

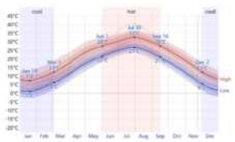
According to statistics, there are a total of 594,000 students enrolled in colleges and universities in the planning area, accounting for 50% of the number of students enrolled in universities in Wuhan (the number of students enrolled in Wuhan is about 1.18 million).

Climate information

Wuhan has a north subtropical monsoon (humid) climate with abundant rainfall, abundant heat; rain and heat in the same season, cold winter and hot summer, and four distinct seasons.

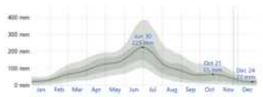
The annual average temperature is 15.8 °C -17.5 °C, the extreme maximum temperature is 41.3 °C (August 10, 1934), and the extreme minimum temperature is -18.1 °C. The annual precipitation is 1150 mm - 1450 mm, and the rainfall is concentrated in June-August every year, accounting for about 40% of the annual rainfall.

Average High and Low Temperature



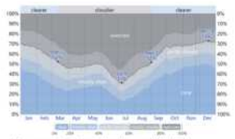
The daily average high (red line) and low (blue line) temperature, and the thin dotted lines are the corresponding average perceived temperatures.

Average Monthly Rainfall



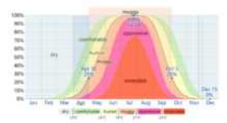
The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question.

Cloud Cover Categories



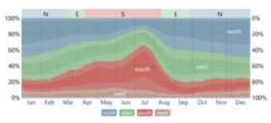
The average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year.

Humidity Comfort Levels



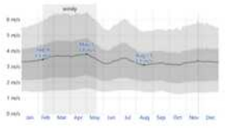
The percentage of time spent at various humidity comfort levels, categorized by dew point.

Wind Direction



The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 0.4 m/s. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Average Wind Speed



The average of mean hourly wind speeds (dark gray line)

Source:
https://weatherspark.com/y/108408/Average-Weather-in-Wuhan-China-Year-Round#Sections-BestTime

■ Site Analysis

Distribution map of public space

Park
Square
Protective green
Green space
Forestry
Landscape
Woodland
Grassland

Distribution map of residential area

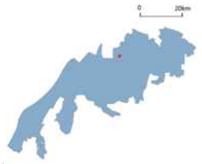
Water distribution map

Distribution map of commercial area

■ Location Distribution

Wuhan

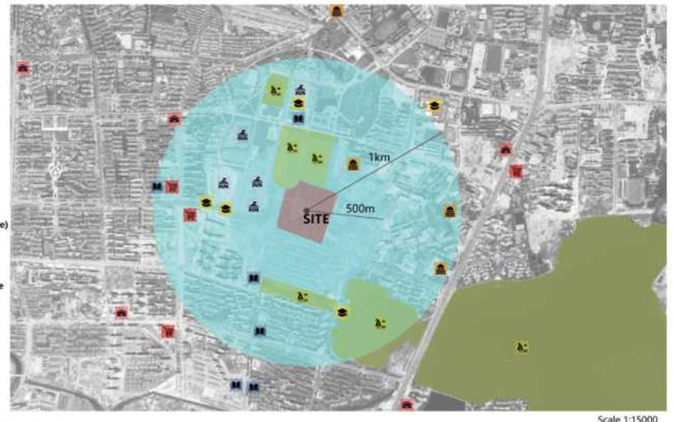
1.HuangPi district
2.XinZhou district
3.Dongxihu district
4.CaiDian district
5.JiangNan district
6.HongShan district
7.JiangXia district
8.New town area


Hongshan District

Site

1.Hospital
2.Green area (Park/open space)
3.Government department
4.Cultural service facilities
5.Entertainment service facilities
6.Commercial service facilities
7.Schools

■ Surrounding Analysis



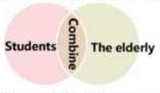
Scale 1:15000

Brief introduction of the site:

The site is located in an open space of the South Lake Campus of Wuhan University of Technology, adjacent to Wenzhi Street, 300 meters to the east of Nanhu Park; Hongshan District Swimming Hall is on the west side of the base. There are the internal streets of the university on the west and north sides; on the east side, there are residential buildings and several corporate buildings.

The total area: 11.7ha

■ Analysis of the two targets (The elderly and students):



A:Self-care elderly B.The elderly in need C.The elderly in care

1.Main mission—— **Keep healthy**——Fitness, square dance, walking or jogging + Holding an elderly sports meeting(A+B)

2.Further mission—— **Maintain mental health**——College student volunteer activities combined with community symposiums, playing chess with friends, playing mahjong; plantation; raising pets;(A+B+C)

3.Expanded mission—— **Live and learn**——University elective course[Social Course (teaching people how to communicate with others); Health Course (go to the mountain to meditate)] (A+B)+c
Two approaches——①**Normal class**:Painting course; music course; practical course; photography course.
②**Online lecture**:Appreciation of works of art; novels telling the nature of stories; courses related to philosophy.

4.Final mission—— I**ncrease self-identity**——Do what they can do(A)+b
①**Mutual assistance in old-age facilities**:To a certain extent, self-care the elderly can take care of the elderly in care, which can lower the rent.
②**Work/part time**:Clean up classrooms or toilets; old people with certain abilities can be teachers
③**Creation**:Online sales; literature; painting; music, etc.

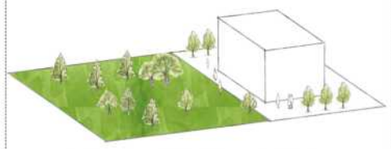
■ Analysis of daily life`s rhythm

■ Concept Analysis__Forever Young

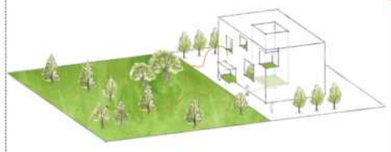
Abstraction Concretization → Vitality+Hope+Remember

Vitality Green Space+ Public Space

1.Less **building land**, and more **green land**

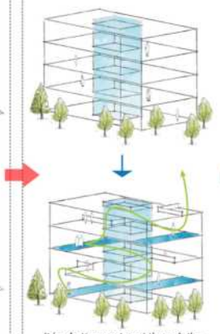


Planning **green space** for the elderly to comfortablely enjoy



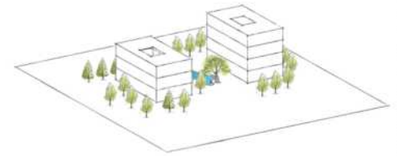
Horizontal greening, and vertical greening.The depth between structure and the exterior walls not only provides shared public space and green space, but take green through the entire building

2.Less **Isolated space**, and more **Public space**



It is a better way to get through the vertical space rhythmically which can make the communication between layers more frequent, compared to simply opening the vertical gap

Hope Light reflection (Ceremonial sense)



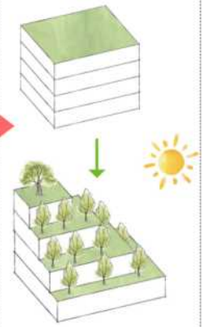
Solar elevation angl in Wuhan:

Winter Solstice Day:26°41'
Summer Solstice Day: 73°32'

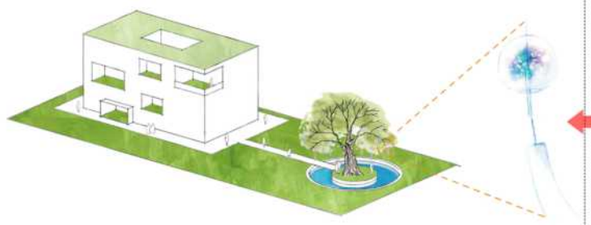
On the south-facing side, this is a good way to **provide shadow and reduces the solar heat gains inside the building to grow plants** and design the depth between structure and the exterior walls in the summer. In the winter, the plants would wither and the elderly could enjoy the normal sun bath.
On the north-facing side, trying to use the reflection of light in the lake and other buildings to bring sunlight into the room, it is like the sun is calling the elderly to walk out.

Growing 1. "Growing" building

Upward momentum in the building's shape



Remember Born to death

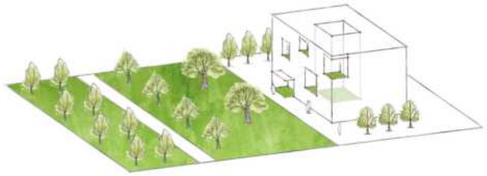


Face to death, and born to death. This is the ultimate problem in designing elderly homes. When people are in old age, they have no sustenance in their hearts and will begin to have deep fear of death.
The Buddhist family said that after death, people will reincarnate. In this program, I not only want to meet the basic requirements of the old people in terms of function, but also **pay more attention to their psychological needs**.

Try to **identify a symbal of the lives** and let them create memories by themselves while they are living. Try to design a ceremonial space outside – there is a tree with wind chimes in the round pool. In normal times, the elderly can enjoy the scenery here, or they can hang a wind chime of their own. **When they die, their family can pin their own thoughts here. When the wind starts, they will hear the crisp ringtones. That may be the elderly`s response to the families**.

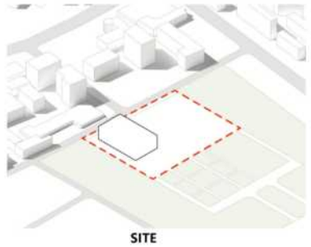
As the trees grow year by year, some wind chimes will fall into the pool without care, in a sense, it means that an old man is forgotten; while others are replaced by the year-round, and still ringing with the wind. As in the cartoon movie "Coco" (2017) we can say **"Death is not the end. Being forgotten is."**

2. "Growing" space: Create the public space which are not defined.



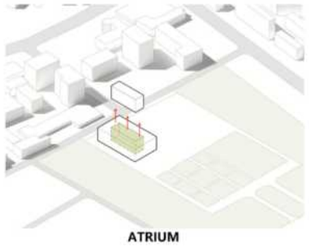
Try to design some public space in the building and green space in the site, which are not defined, and that means these undefined space could become various functional space according to different user`s activities. For example, the elderly could play chess or rest under the shade of tree, meanwhile, students could play volleyball or soccer between trees.

■ Shape Generation Analysis



SITE

The site is located in the university campus, with green landscapes on three sides and a planned road on the other , which there are residential buildings and several corporate buildings.

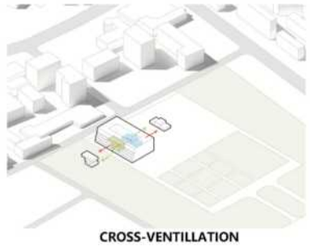


ATRIUM

The middle of the block is hollowed out to form a enclosed courtyard for the elderly to entertain and rest.

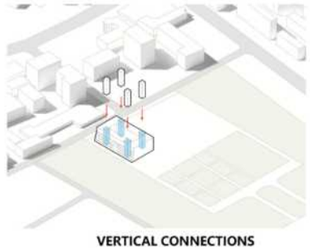
GREEN FACADE

The reserved space on the façade is for plants, and the green façade is conducive to energy saving.



CROSS-VENTILLATION

Cross-space can form induced airflow, which creates a breeze through the central void space.



VERTICAL CONNECTIONS

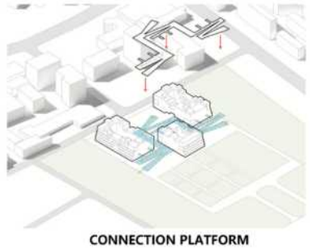
According to the requirements of building safety regulations, there are four vertical traffic cores in the four corners of the block.

COMMUNITY SPACES

From the second floor, there will be public space in the interior of the building, and there will be a space for opening every two floors, aiming to create more communication space for the elderly.

GREEN ROOF

Available roof provides a spacious leisure platform for the elderly, such as walking, chatting and enjoying the tea time.



CONNECTION PLATFORM

The three buildings are connected at different heights with a landscape platform.

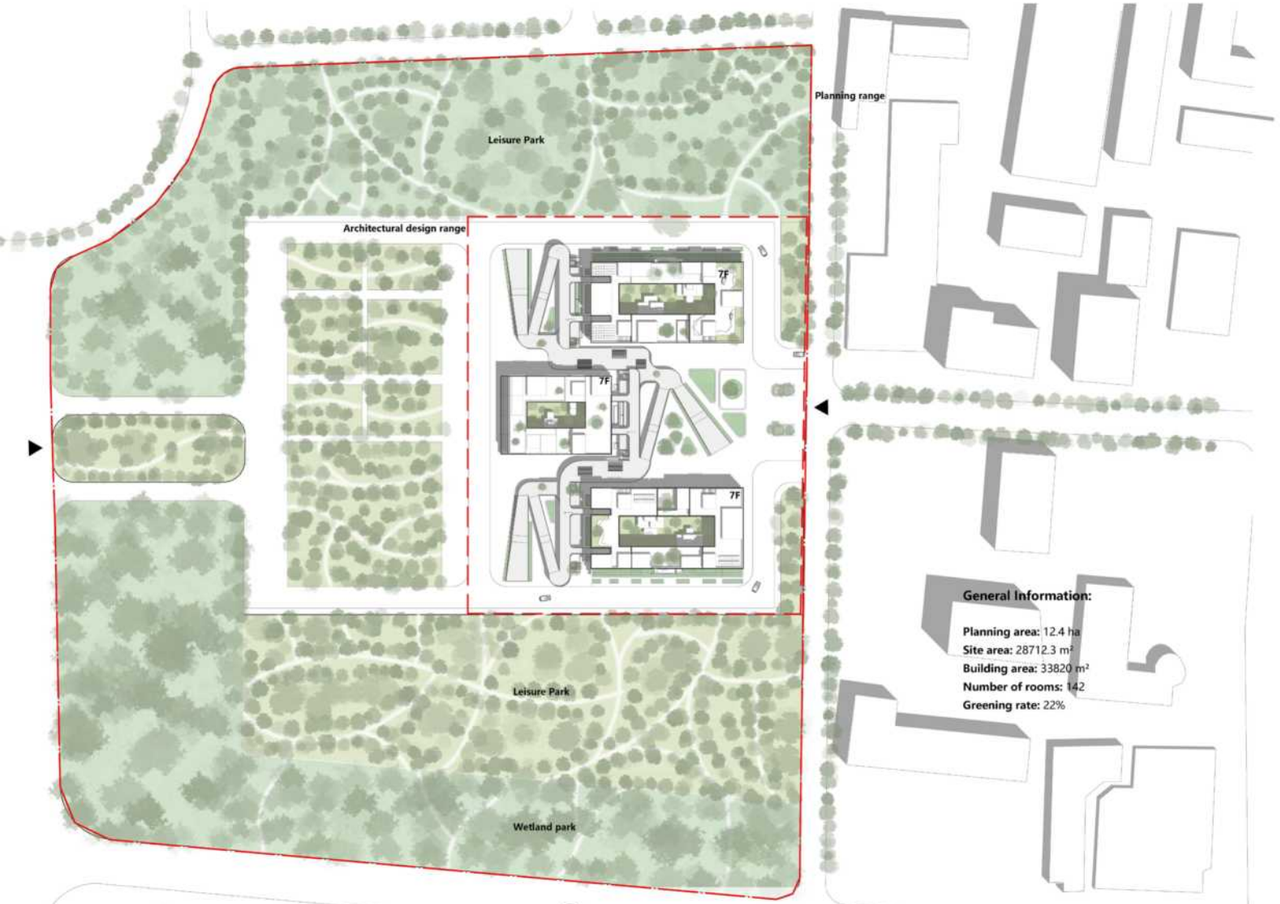
Design Concept

The destination of this design is in China, where aging is becoming more and more serious, trying to explore and research the cultural heritage and pension strategy of old-age buildings from a new perspective, which is the University-based elderly community.

Students and the elderly, there are many similarities in the needs of the living environment for two groups with large age differences.Such as quiet atmosphere, away from the noisy neighborhood without affecting daily life, green landscape, safe security, convenient living, etc. These physical requirements are all tried to be achieved by some design means and space experience, such as indoor and outdoor atriums, green facades and roofs, connecting landscape platforms between buildings and planning leisure parks around the building.

In terms of psychological needs, one is the kind of confusion without social experience, and the other may be the sorrow of the life that is about to end. Older people not only need physical, intellectual and spiritual stimulation, but they also increasingly need a sense of security, familiarity, continuity and proof of personal value and meaning of existence. Therefore, there are not only psychological counseling rooms, painting rooms, reading rooms, study rooms and meditation rooms for the elderly, but also trying to open experimental restaurants and cafes, and work for a certain period of time according to the physical condition of the elderly themselves.

That is "live to the old and learn to be old".
That is "**FOREVER YOUNG**"

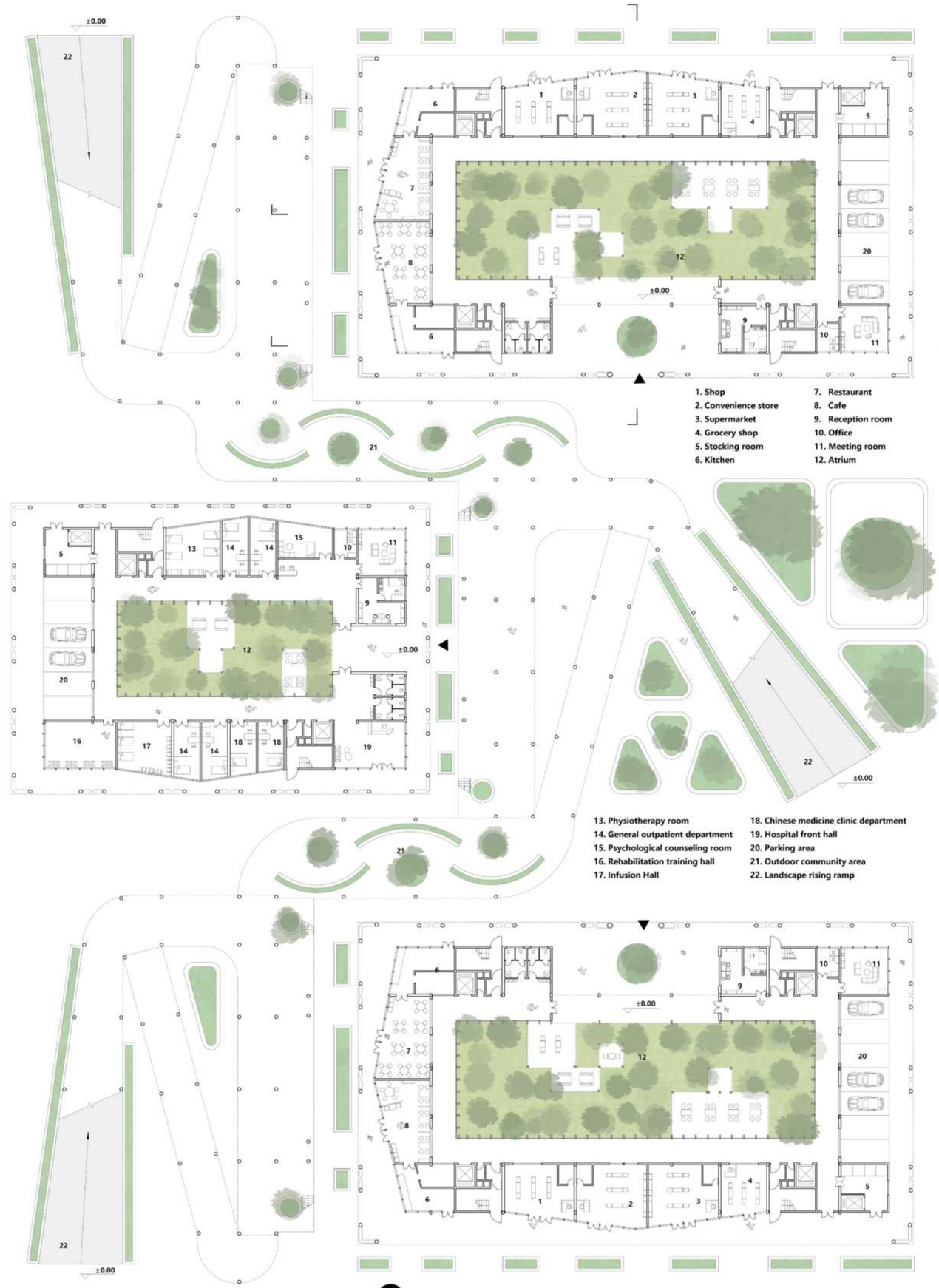


General Plan-scale 1:1000

General Information:

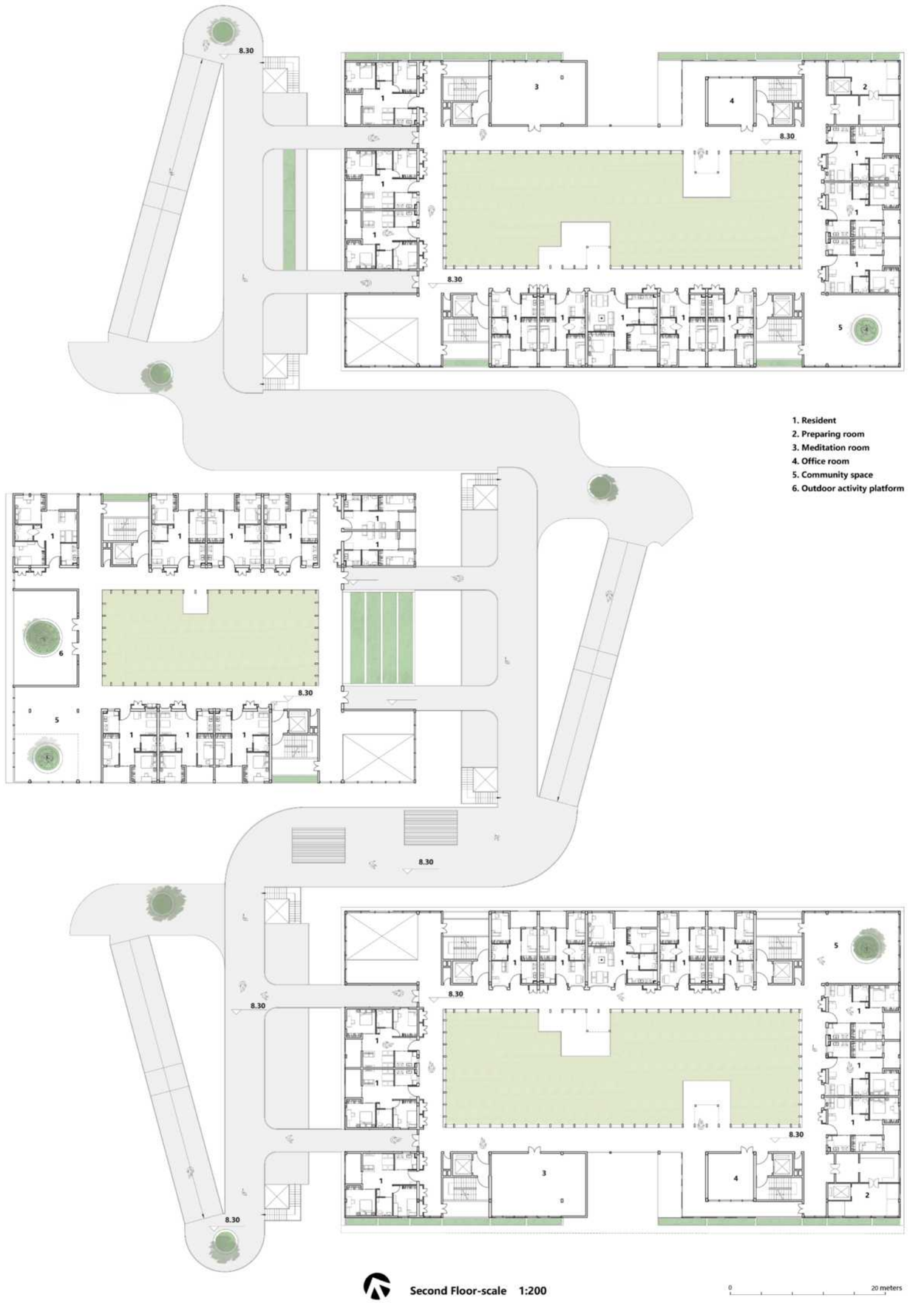
Planning area: 12.4 ha
Site area: 28712.3 m²
Building area: 33820 m²
Number of rooms: 142
Greening rate: 22%

0 100 meters


±0.00
22
1
21
±0.00
±0.00
±0.00

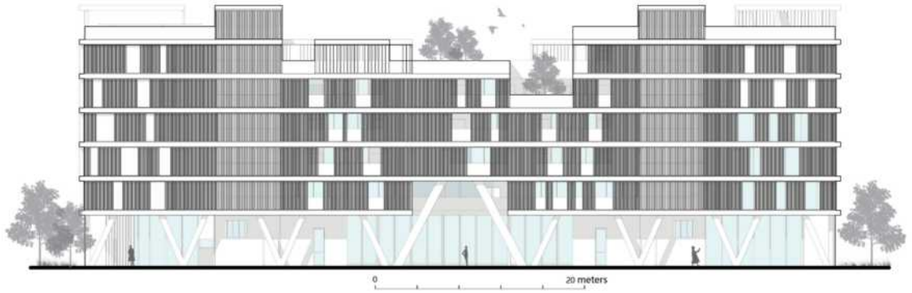
First Floor-scale 1:200

0 20 meters



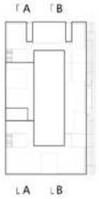
Second Floor-scale 1:200

0 20 meters

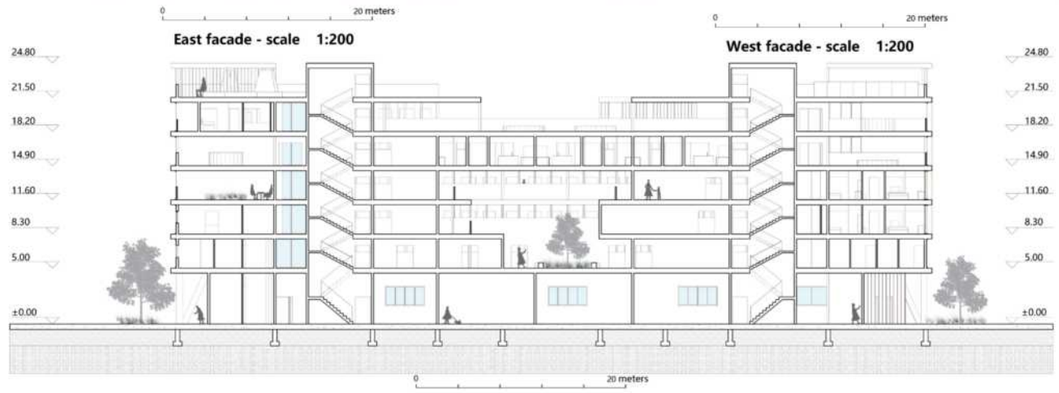


North facade - scale 1:200

South facade - scale 1:200

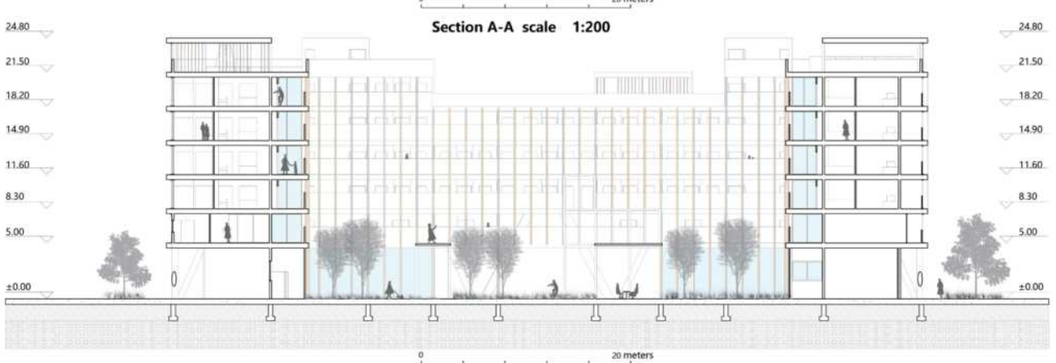


East facade - scale 1:200

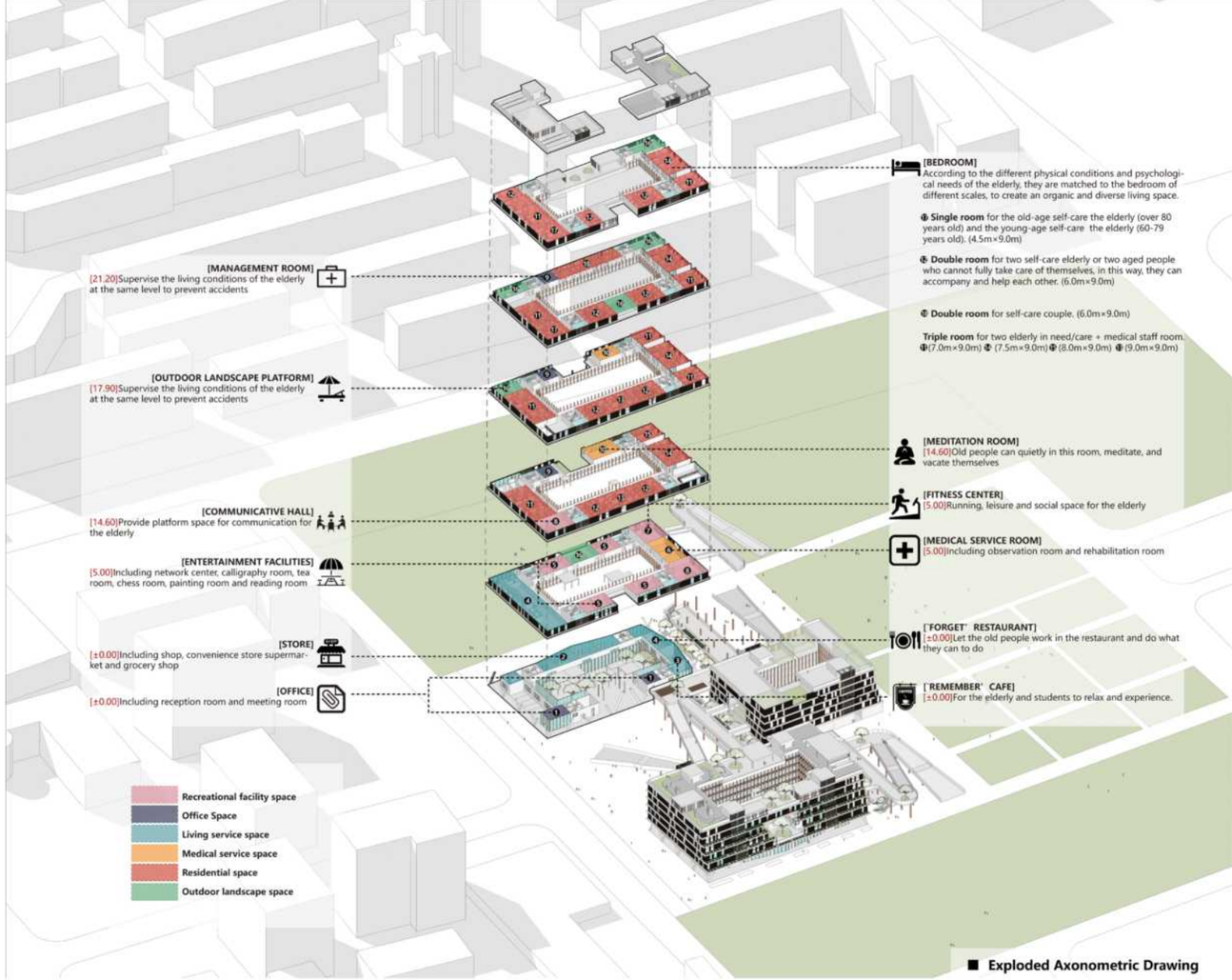


West facade - scale 1:200

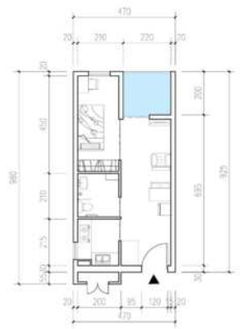
Section A-A scale 1:200



Section B-B scale 1:200



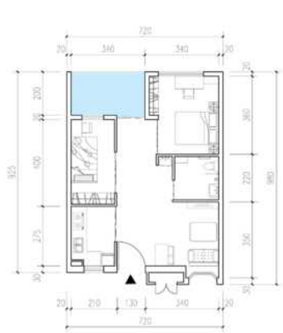
■ Exploded Axonometric Drawing



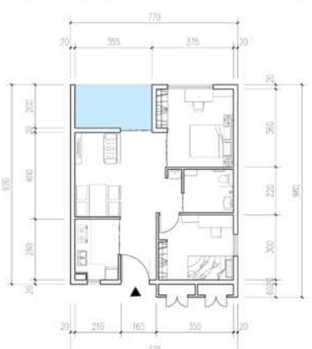
(4.5m×9.0m) **Single room**

(6.0m×9.0m) **Double room**

(6.0m×9.0m) **Double room**

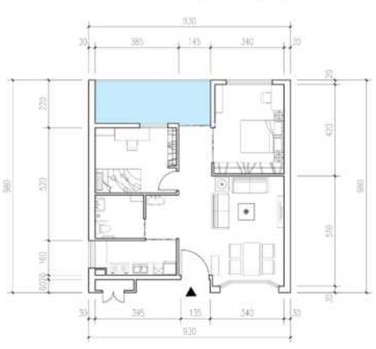


(7.0m×9.0m) **Triple room**

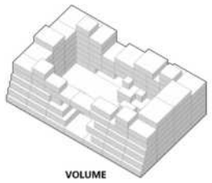


(7.5m×9.0m) **Triple room**

(8.0m×9.0m) **Triple room**



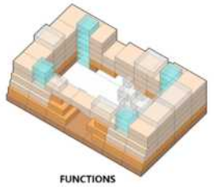
(9.0m×9.0m) **Triple room** **Scale 1:100**



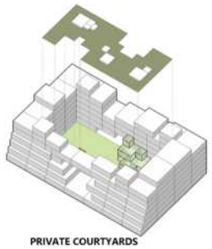
VOLUME

URBAN GARDENS

ROOF GARDENS



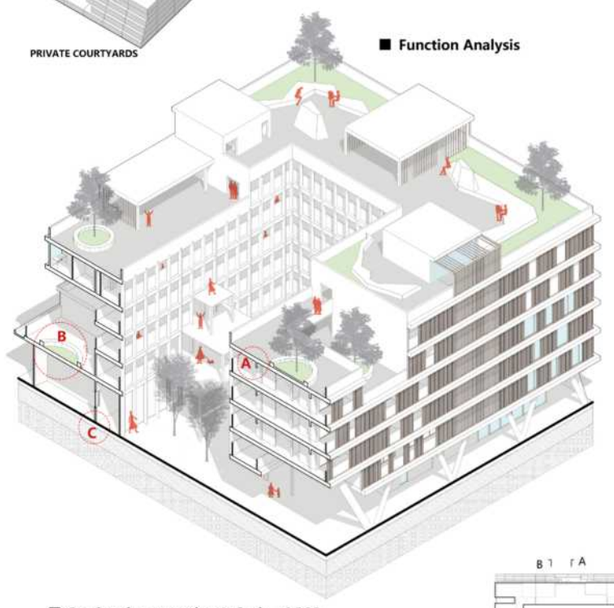
FUNCTIONS



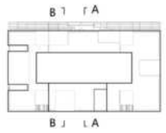
PRIVATE COURTYARDS

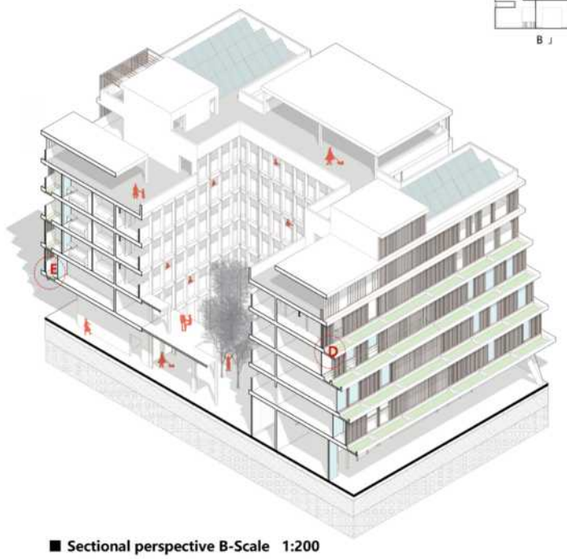
PROPOSAL

■ **Function Analysis**

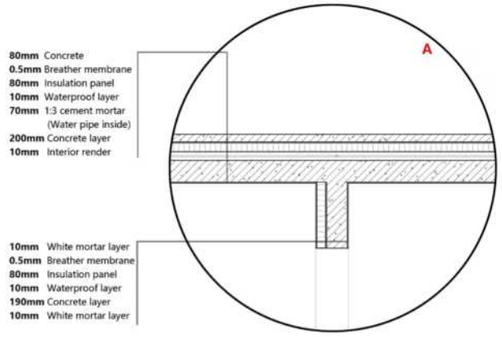


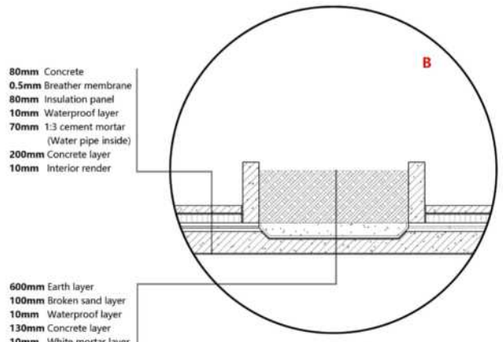
■ **Sectional perspective A-Scale 1:200**

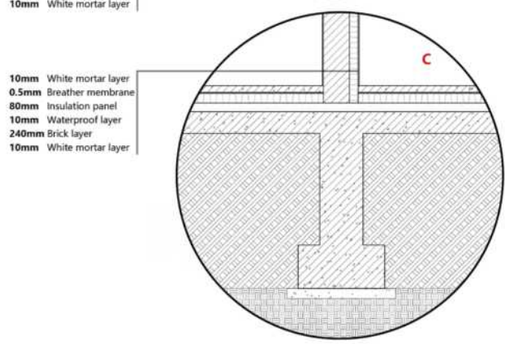


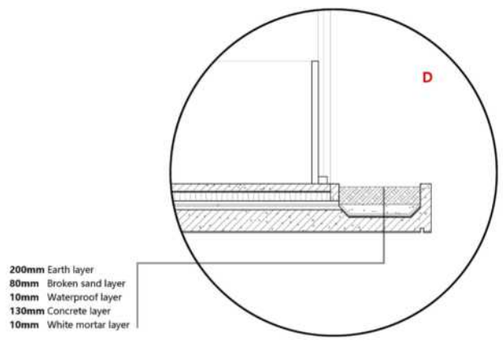


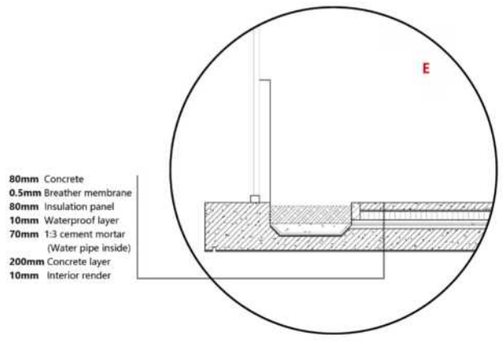
■ **Sectional perspective B-Scale 1:200**











■ **Detail 1:20**

ROOFTOP DECK SPACE provides a connection to sunlight and the landscape, protects roof from direct solar gain

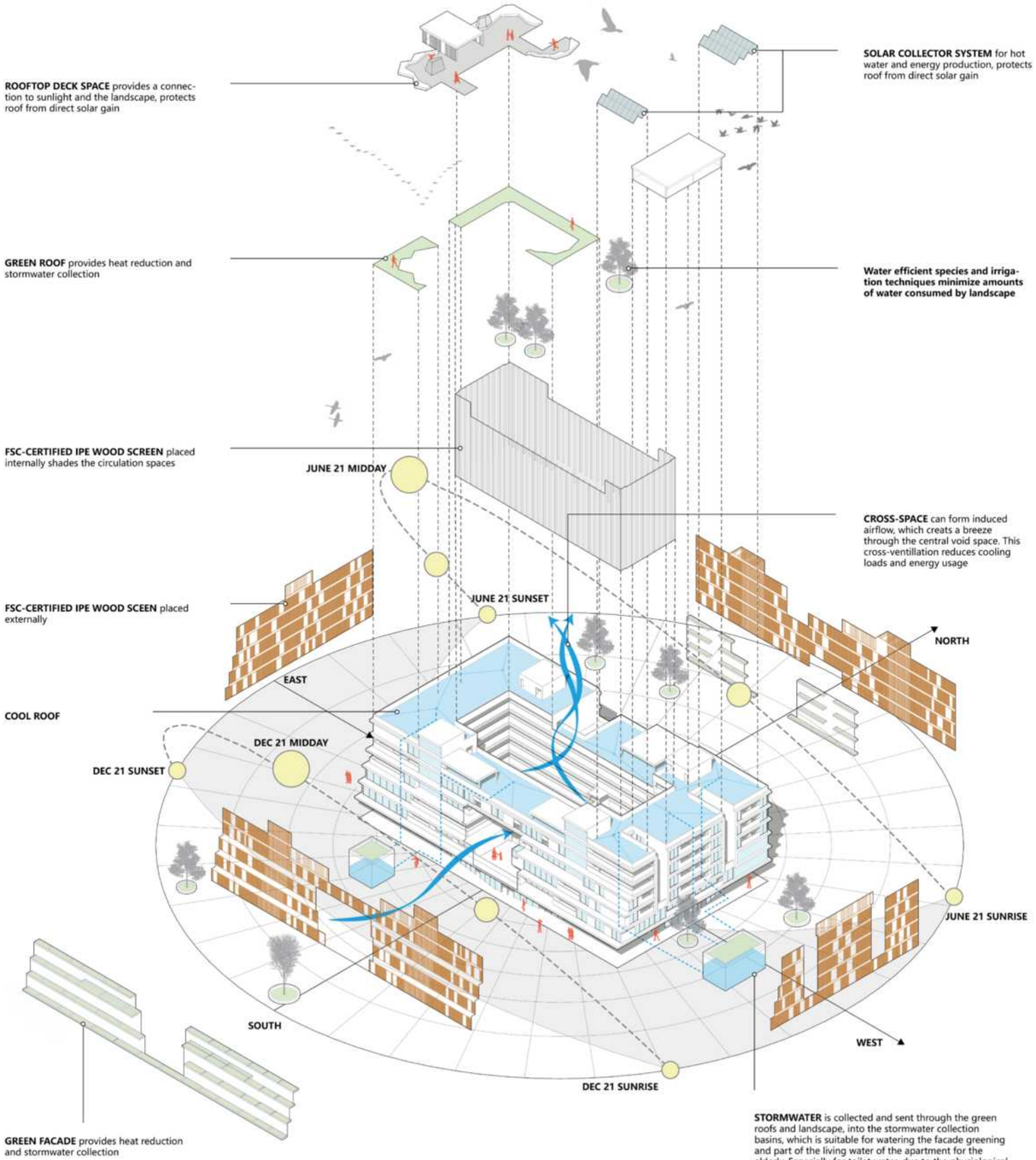
GREEN ROOF provides heat reduction and stormwater collection

FSC-CERTIFIED IPE WOOD SCREEN placed internally shades the circulation spaces

FSC-CERTIFIED IPE WOOD SCEEN placed externally

COOL ROOF

GREEN FACADE provides heat reduction and stormwater collection



SOLAR COLLECTOR SYSTEM for hot water and energy production, protects roof from direct solar gain

Water efficient species and irrigation techniques minimize amounts of water consumed by landscape

CROSS-SPACE can form induced airflow, which creats a breeze through the central void space. This cross-ventillation reduces cooling loads and energy usage

STORMWATER is collected and sent through the green roofs and landscape, into the stormwater collection basins, which is suitable for watering the facade greening and part of the living water of the apartment for the elderly. Especially for toilet water, due to the physiological aging of the elderly, the frequency of using toilets by the elderly will become higher and the water consumption will become more