



Luo Ye Gui Gen

落叶归根

Falling Leaves and Returning Roots

*transforming an elderly's living environment*

Qiyu Zuo

2021



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a Master in Design at Massey University, Wellington, New  
Zealand

Qiyu Zuo

2021

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## **Abstract**

This spatial design research project explores the living habits of Chinese elderly living alone; it transforms an existing family apartment into a home specific to an elderly resident. The project builds on an ancient Chinese principle called filial piety to design a living environment where the elderly can extend the time that they live independently, securely and comfortably in their own home and amongst their own belongings. The design accounts for China's "home-based care" policy in which comfortable living space allows more elderly people to choose to live in their own homes instead of going to nursing homes, thus creating a healthier living environment and community.

Design factors include using design to combat loneliness, helplessness and mental illness while bringing joy and security. The method of my personal experience and practice were used to investigate the living environment and problems of the elderly, focusing on the ergonomics of residential environments, first-hand experiments of what it feels like to be elderly, and recollections of my grandparent's way of living. All of these factors inform a case study that involves the renovation of the interior spatial environment for my grandfather, who lives alone now. The design includes increasing the storage space, reusing the old objects, and the fluency of the space to respect my grandfather's behaviours.

The design proposition extending the basic principles of filial piety, respect, care and empathy as the core of the design, according to the clients' personal needs for design value transmission. This design concept may apply to other countries with an ageing population and urban diversification.

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# 壹 Chapter One: Introduction

## 1.0 About me

My hometown is Chongqing, China, next to Sichuan Province. Chongqing consists of thirty-eight districts and counties and accommodates more than a million people within a total of 82400 square kilometres. With a shortage of housing, high-rise buildings are the first choice for people to live in. My parents live and work in Chongqing. My grandfather is 80 years old and currently lives alone in a small town (Dianjiang County) in the Chongqing region. My grandpa would rather live alone in his own home rather than living in an apartment complex designed specifically for elderly people or live with his own children. He thinks the environment around the home is familiar to him; it makes him feel secure, and it provides a place for his children and grandchildren to visit when they return home. Grandpa's sense of attachment to his home makes me want to know what kind of living environment suits the elderly who live alone. I want to learn more about the future trend of a senior's home spatial layout in order to improve their happiness and reduce their loneliness.



Fig. 1. Chongqing - new buildings and old buildings, photograph by Qiyu Zuo, 2020.



Fig. 2. Chongqing outside view, photograph by Qiyu Zuo, 2020.

## 1.1 China's "home-based care" policy and filial piety culture

For more than 2500 years, the Chinese filial piety culture or "孝"(xiao) has maintained the major cultural force in the care system for the elderly at home (Gu and Liang 61). Filial piety is a Confucian concept, including respect, obedience, loyalty, spouse provision and elderly physical care (Zhan and Montgomery 210). Traditionally, parents raise their children. When parents get old, adult children need to start to live with their parents to repay their parents' love and care.

However, in today's world, it is difficult for adult children to live with their parents because of their work. Also, under the influence of the west, many elderly people in China choose to live alone or agree to go to a nursing home without disturbing their children's lives. Encouraging the elderly to stay in their own homes can enhance their independence. In order to relieve the economic burden brought by the aging population, China has put forward the "home-based care" policy (Zhou and Wang 1). The core principle of "home-based care" means the elderly can draw a home pension. Like the European policy of "aging in place", "home-based care" is designed to maintain independence in life rather than focusing on institutional care (L. Wiles et al. 362). China's "home-based care" policy is set according to the current situation of the elderly, aiming to avoid high nursing cost. "Home-based care" action includes installation of elevators for some old apartments, establishment of elderly hospitals, and the increase of community services and activities to support the elderly living. I hope that my research can assist to inform and improve how the "home-based care" policy is applied so that the elderly can live independently, safely and comfortably in their own homes.



Fig. 3. "The Chinese Words for Filial Piety." *Tengxun*, 19 Sep. 2017, <https://ru.qq.com/a/20170919/018356.htm>. Accessed Jan. 2021.



Fig. 4. "Some Elderly Play Mahjong in the Community Center." *Hshan*, 13 Jun. 2019, <https://www.hshan.com/life/2019-06/13/318666.html>. Accessed Jan. 2021.

## 1.2 Research aims and questions

### Aims

This design research aims to investigate methods of improving the living environment for the elderly living alone in China through a consideration of spatial atmosphere. This project aims to demonstrate how design strategies and concepts can be applied to enable the elderly to live more independently in their own home, reducing helplessness and mental illness and increasing happiness and a sense of harmony.

### Question

1. How can spatial and interior design assist to improve elderly independent living?
2. What kind of spatial atmosphere and layout encourages the elderly to have a better mood and feel more comfortable at home?

## 1.3 Research methods

This spatial and interior design study focuses on the social and cultural aspects of the elderly living environment and daily habits in Chongqing, China. I decided to target elderly people aged 65-85 for my design with the aim to encourage independent living.

In the early stage of the study, the research data came from secondary literature, which extracted some retired people's living behaviours, combined with the stories I heard about my own family

to enrich the previous study. Meanwhile, I looked at examples of other designers who had done similar kind of projects. I responded to the "home-based care" policy and considered reducing the burden of the elderly with economic but living comfort.

In the process of this research, I collected the information of the elderly at home and understand how their psychological and emotional changes. I invented a persona and undertook body experiments through observation, drawing and digital photo recording. To explore the collection habits of the elderly, I analyzed the usability of the furniture according to the old images, determine the recyclability, reduce the decoration cost and increase the familiarity with the environment.

"Iterative design is a design methodology based on a cyclic process of prototyping, testing, analyzing and refining a work in progress" (Zimmerman 176). According to iterative design principles, my design process includes: site analysis, test, prototype, sketches, experience, concepts, feedback, rendering and video. These steps are repeated to improve my final design.

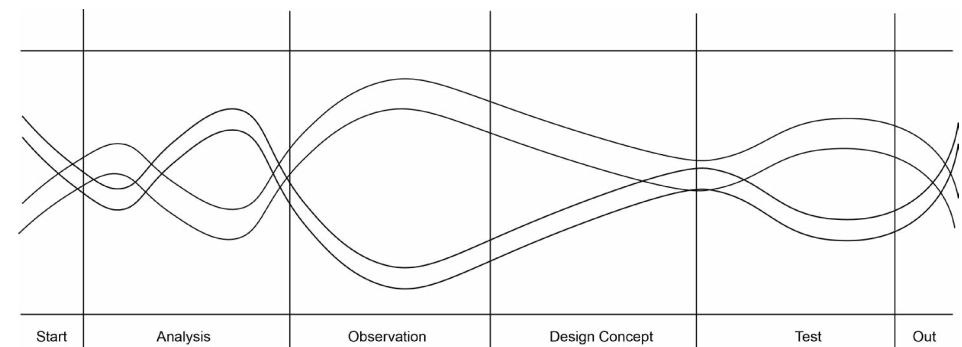


Fig. 5. *Iterative Design Process*, digital drawing by Qiyu Zuo, 2020.



## Chapter Two: Context Review

### 2.0 China Filial Piety culture - the historical relationship to contemporary attitude

Among the various forms of virtuous conduct, xiao ( 孝 ) comes first "(bai shan xiao wei xian)," (Confucius, *Shuoyuan*). This is a Chinese proverb, which mainly reflects the importance of filial piety in the family and is directly relevant to the present focus on aged care. "The earliest appearance of the word for filial piety is on a bronze vessel that can be dated to the very last years of the Shang dynasty or the earliest years of the Zhou, that is, roughly around 1000 BCE" (Chan and Tan 1). The word "filial piety" means "to serve the living parents and ancestors" (Chan and Tan 2) and is a Chinese cultural norm that recognises the need to maintain the relationship between family members. The concept of filial piety helps to ensure the central position of the family in China's ethical world. In the book *Filial Piety*, five principles are mentioned to provide for and attend to the daily needs of parents, to obey their commands, to take good care of them while they are ill, to arrange proper funerals when they passed away, to visit their grave sites at regular intervals, and to remember them through memorial services (Chan and Tan 2). I remember when I was in China, every January during the Spring Festival, my parents always took me to the grave sites to see our relatives who left before us, talk to them, and bring fresh flowers to them. Each of those times, I did not quite understand the reason why we did this. I only remember that my mother told me that although these relatives have left, and I did not even meet some of them, we still visit them every year and talk to them, whether they can hear or

not; this is our attitude of filial piety. My parents are using their actions to express their filial piety to me. When filial piety was used in my design, every concept reflects my love and care for my family, so filial piety has been extended here.

### Changing meanings of filial piety

The Chinese tradition of filial piety continues to be respected but it has also changed in recent times. In the article (2015) "Contemporary Moral Discourses on Filial Piety in Urban China," Sun Yuezhu mentions that filial piety has been transformed into family ethics based on an egalitarian inter-generational relationship and parent-child intimate relationship (771). The concept of filial piety in the 21st century has changed; it is different from the historical order to "respect, obey and support parents" (Sun 780). Every family has a different understanding of filial piety. According to the author Sun Yuezhu's interview with some adult single people, they think that respect in filial piety means a more equal/egalitarian parent-child relationship. Some people think that filial piety means independence, which in Chinese is called "duli": you are responsible for yourself and should not let parents worry. This constitutes a significant shift in the meaning and application of filial piety from historic to present times. "Filial piety is no longer an unconditional and one-sided obedience" (Sun 794). We should have mutual understanding, trust and consensus, rather than obey the hierarchical family order.



Fig. 6. "The Chinese Words for "Bai Shan Xiao Wei Xian"." *Kknews*, 15 Jun. 2017, <https://kknews.cc/zhmy/culture/bom46pm.html>. Accessed Jan. 2021.

## 2.1 China's "home-based care" policy and "empty-nest" syndrome

Zhou and Wang from Tsinghua University in Architecture, draw upon World Health Organization standards data to point out that the criteria for meeting "ageing country" are met when the number of elderly people over 60 years old exceeds 10% of the total population in a country or region, or over 65's accounts for more than 7% of the total population (Zhou and Wang 68). When the elderly population over 65 years old exceeds 14%, it is called a "rapidly ageing country" (Zhou and Wang 69). This is the international standard for judging the ageing of a country. However, since the 1980s, China's overall fertility rate has declined and life expectancy has increased, resulting in a rising proportion of the elderly population. From 2020 to 2050, it is estimated that the proportion of the elderly will rise from 17.17% to 30.95% (Zhou and Wang 71). In this ageing society, China has begun to learn from the western countries' pension methods, forming a transformation process from "hospital pension" (living in hospital), "facility pension" (nursery home/ community apartment) to "residential pension" (living at home) (Zhou and Wang 69). After the implementation of special pension institutions and rehabilitation facilities, it was found that 85.05% of the elderly preferred to live in their own home (Zhou and Wang 70). The elderly living in their own homes find them more secure and familiar than in the nursing home. Meanwhile, with the change of the meaning of filial piety and the development of urbanization, more and more young people are living further and further away from their parents due to factors such as schooling and working, resulting in a lot of "empty-



Fig. 7. "Empty-Nest" Syndrome." *Academy of Chinese Studies*, <https://is.chiciculture.org,hk/tc/passing-the-torch/138>. Accessed Jan. 2021.

nest" families. According to the data released by the National Commission on Ageing in 2009, the proportion of "empty-nest" households in urban and rural areas has exceeded 50%, and 70% in some large cities (Zhou and Wang 72). The words "empty-nest seniors" appeared in China, which means that elderly parents cannot get immediate care and company from their children and live alone at home. This means that the elderly need to be more and more independent, and can no longer rely on the traditional care model of children. This also requires that the living environment of the elderly can provide a safe and comfortable space to help the elderly live independently. This is why China's "home-based care" policy originated.

"Home-based care" for the aged is a type of universal old-age living mode, which aims to reuse the existing residence; the elderly residents do not need to move out. Relying on the service of families, neighbourhoods and community management organizations, it aims to provide convenient catering, bath assistance, door-to-door service and increase elevator and barrier-free access for the residential outside (Zhou and Wang 73). "Home-based care" could satisfy the living requirements of most elderly people as long as possible (Zhou and Wang 72).

At present, most seniors live in their old apartments which were built in the 1980s – 1990s. The houses, however, are generally old, and the internal design does not consider the needs of the elderly. For example, the toilet is mostly crouch type and far away from the bedroom; the rooms have a height difference; the passage and door width are narrow, which is difficult for

wheelchair use. Outside of the apartments, there is a need to install elevators and provide barrier-free access. With the change of the traditional model of caring for the elderly, the elderly will live independently at home most of the time. There is, however, a need to use spatial design to provide more support for the elderly independently living at home. This is the design problem I have addressed.



Fig. 8. "Kitchen in the 1990s Home." *Wangyi Home*, 2019, <http://home.163.com/19/1010/13/ER4MJUJB001086PB.html>. Accessed Jun. 2020.



Fig. 9. "Bathroom in the Old Apartment." *Wangyi Home*, 2019, <http://home.163.com/19/1010/13/ER4MJUJB001086PB.html>. Accessed Jun. 2020.



Fig. 10. "Dining Room in the Old Apartment." *Wangyi Home*, 2019, <http://home.163.com/19/1010/13/ER4MJUJB001086PB.html>. Accessed Jun. 2020.



Fig. 11. "Pathway in the Old Apartment." *Wangyi Home*, 2019, <http://home.163.com/19/1010/13/ER4MJUJB001086PB.html>. Accessed Jun. 2020.

## 2.2 Pension and homes: why choose to live alone

In China, there is a word called "落叶归根 -Luo Ye Gui Geng" or "Getting Home" which roughly means that when you grow old, you will return to the place where you were born (Gu and Liang 62). This is a return to life, a very traditional concept. Most elderly have a special attachment to a home even if the living environment is not safe such as not handrail and steps in the room. Some elderly people prefer to live in their own homes rather than move away from their inconvenient homes to nursing home with barrier-free facilities. However, if the living environment of the elderly is not safe, it will affect their quality of life. My grandfather is an example. He thinks his home is safe, which implies a sense of belonging and "emotional attachment to home" (Davey 135). The article, "House accessibility and residential relocation in older adults" refers to "family environmental barriers, which increase the probability of staying in a nursing home" (Granbom et al. 73). While comparing "home-based care" and nursing homes, "some people have a poor impression of the care home, dislike too many old people together, and think the price is too expensive" (Davey 133).

Some older people move to private nursing homes for physical and mental reasons. Some elderly people, however, will move away because their home cannot support their daily life. If the elderly people's living habits, views and preferences are considered in the elderly house design, including concerns for safety and comfort, the policy of "home-based care" will be better implemented.

There are several aspects to consider when analysing the living environment of the elderly. On the one hand, the living environment of some old people generates isolation and a lack of social interaction. As bodies age, a level of unhappiness and restricted movement and health can make it difficult for some older people to confidently integrate into society. The other aspects to consider is the type of housing. At present, there are four types of elderly living: individual housing, retirement village, public sector housing and private sector rental housing (Kuboshima 52). Considering the general economic situation of the baby boomers who have no continuous income, a "home-based" pension is the first choice for the majority of the elderly who can take care of themselves. Compared with the expensive elderly care community, living alone in an old apartment is more economical and comfortable.

## 2.3 Collection habits

I know from personal experience that elderly people often collect old objects such as plastic bottles and glass jars for drinking water, old newspapers or broken kitchen supplies. These items tend to fill all the storage spaces and are found stacked up everywhere in the house or apartment. This practice is like a London exhibition called *Waste Not* by Chinese artist Song Dong which shows his mother's collection of approximately 10000 items from the past 50 years (Dailymail). The exhibition shows the old people's living habits of collection and the connection between family and the story of objects. According to Song Dong, "no waste" was the slogan of the political and social turmoil period (Cultural Revolution) in China (Dailymail). In the early post-war period, everything was saved in the family, including things that might be regarded as rubbish, in case they were needed in the future. From the photos, it is clear that Song Dong's mother kept dolls, TV sets, books, plastic bottles, used toothpaste and kitchen utensils. Song Dong's mother's behaviour is similar to other elderly people's habits, as they are reluctant to throw away used objects. This habit is not only true of older adults but also of most other ages. I remember in a meeting with my supervisors Julieanna and Yueyun, I shared my point of view that "my grandparents liked to collect some used objects very much, it is a common feature of the elderly" (19 Oct. 2020). Then, Yueyun shared her opinion that this is not only true of the elderly, and she thought young people would also have this kind of habit. Her former flatmate still liked to collect kitchen things at a young age. Now thinking back, it is true



Fig. 12. Song, Dong. "Waste Not." Barbican, The Curve Gallery, 2012, <https://www.barbican.org.uk/whats-on/2012/event/song-dong-waste-not>. Accessed Feb. 2021.

that collection behaviour is everywhere.

When I was a kid, I always liked to collect garment hang tags. I would carefully store every brand of new clothes in a small iron box, and I thought they were precious. So, collecting is not the patent of the elderly, but it is more difficult for the elderly to give away or discard the objects they used. The collection of various objects by the elderly is the spiritual sustenance and joy of life. We should empathise and support the collection behaviour of the elderly in order to enact filial piety but also to support their on-going sense of home and family. Therefore, the senior home actually needs a lot of storage and display to accommodate their favourite collection habits, so that they can avoid the problem of a lack of space to put things and the resulting disorderly space. It is not that people should adapt to design, but that design should adapt to human behaviour.



Fig. 13. Song, Dong. *Waste Not*. 2012. Photography by Jane Hobson, 2012. "Objects With Stories," by Claire Hazelton, 8 Mar. 2012. [aestheticamagazine.com/objects-with-stories-song-dong-waste-not-barbican-art-gallery-london/](http://aestheticamagazine.com/objects-with-stories-song-dong-waste-not-barbican-art-gallery-london/). Accessed Feb. 2021.

## 2.4 Emotional well-being in elderly space

Winston Churchill once wrote: the connection between people and the places in which they dwell is a two way relationship (Gosling et al. 278).

After the age of 60, people's physical function decreases, especially in walking, hearing and vision (Zhang 940). Psychological problems in the elderly can also increase, such as insecurity and loneliness. Living alone is one of the most prominent factors affecting the well-being of senior citizens. The risk of falls, dehydration, hypothermia, infection and physical injury also usually increase when elderly people are living alone (Yeh and Lo 130). Helping the elderly to live more independently, comfortably, safely and reducing the anxiety and loneliness brought by the living environment is the key point of this design project.

Loneliness is mainly divided into social loneliness (no people and friends around) and emotional loneliness (lack of intimate relationship or confidante), which will lead to the risk of mental and physical diseases in the elderly, such as depression, heart disease and dementia (Stephens 2019). Lack of social support in the elderly community is also a reason for this group to feel lonely. In Jungsu Ryu and Jinmoo Heo's research paper "Relationships between leisure activity types and well-being in older adults", it was shown that encouraging the elderly to participate in cultural activities and design activities can improve their emotional well-being and stimulate their optimistic attitude towards the future (Ryu and Heo 338). Moderate leisure activities (such as walking,

gardening and chatting) can help improve the mental health of the elderly living alone. The effectiveness of using space in the interior environment and adding some leisure areas can relieve the anxiety of the elderly (Gosling et al. 280). It is, therefore, necessary to design work, rest and play areas in the home as the characteristics of a living environment can affect the feelings and thoughts of residents.

But elderly people's anxiety mainly comes from experiencing difficulties in daily activities and an unfamiliar new environment. Therefore, as a spatial designer, the design of interior space should not only focus on layout, colour and decoration but pay attention to the psychological feelings of residents' individual characteristics, such as past experience, preferences, culture, life stage and values, etc. A high-quality spatial environment means that the user's mental and emotional well-being is fully satisfied (Zhang 940). This will stimulate residents to have a greater attachment to the place. If the designer listens to residents' experiences and emotions, this will help them to better understand senior people's living habits. Focusing on the perspective of the elderly, the design focus should take into account their psychological needs and do so respectfully. Although environmental psychology analyses the general characteristics of human behaviour and psychology as a whole, it also recognizes individual differences and respects individual characteristics (Zhang 945). Therefore, this is the best method to carry out spatial and interior design renovation according to the individual characteristics of the elderly. Furniture placement,

decoration, material and colour characteristics can affect residents' emotions. Maintaining an elderly person's familiar style can have a positive influence on their mood.



Fig. 14. "Report on the Current Situation of the Elderly in Seven Cities of China." *Yiniu Health*, 20 Jan. 2019, [http://www.medbulls.com/article/763?type=news\\_center](http://www.medbulls.com/article/763?type=news_center). Accessed Jan. 2021.

## Chapter Three: Precedents

### 3.0 An unforgettable home

The spatial organisation of a home can help the elderly improve their daily activities and make them healthier. A good example of this can be found in the design "*An unforgettable home*" that Japanese designer Homma Takafumi created for Lu Falan, an 89-year-old woman with Alzheimer's disease (Wangyi Home). He redesigned her house according to the concept of "ageing decoration design" and with consideration of space, warmth, lighting, safety and comfort (Wangyi Home). A combination of poor lighting of the existing house, the passage and functional area were not obviously distributed, and the living room, dining room and rest area were mixed together making living difficult for Lu Falan because Alzheimer's disease makes it difficult to recognise rooms and functions. Homma Takafumi has redesigned the passageway area and functional area (fig. 15), including kitchen, dining room, courtyard, rest area, toilet and bedroom. They are all placed in a straight line, and each space functions as a single room, which makes it easier for residents to distinguish and recognize. The spatial division of the elderly people's home should be simple and functional to make them easier to use.

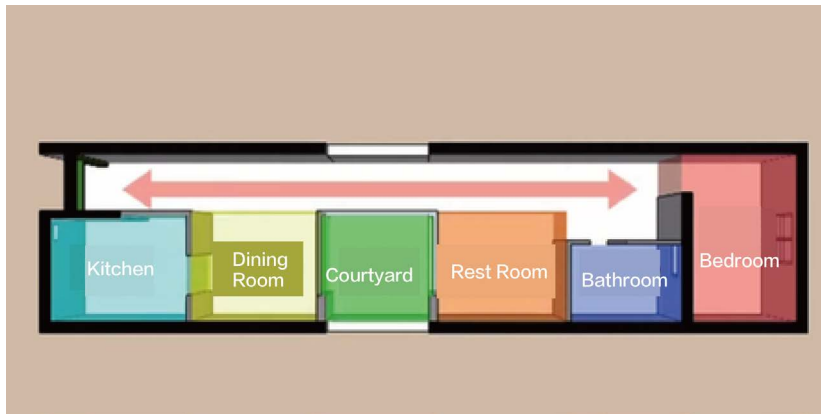


Fig. 15. Homma, Takafumi. "An Unforgettable Home." *Wangyi Home*, 2019, <http://home.163.com/19/1010/13/ER4MJUJB001086PB.html>. Accessed Jun. 2020.

### 3.1 A/ Partments

*A/ Partments* is an existing building renovation project in Chicago designed by architect Mark Rakatansky. The user-group consists of low-income and older individuals. The overall apartment room is designed as a multi-function open space, which is convenient for disabled and elderly people to use. The cabinet is used to divide the space, providing a large number of bookshelves and storage areas to display the individual possessions of residents, and by extension their characteristics. At the beginning of the *A/ Partments* project, Rakatansky considered that low-income housing could benefit from the thoughtful use of constructional systems across multiple apartments. A variety of materials in the interior were specified to make use of cheap multi-layer and acrylic sheets punctuated by some expensive but durable stainless-steel details. Rakatansky observed that personal objects are special to the elderly, and yet, in many housing environments, there is minimal space to display or store these objects, despite the fact that objects may signify memory fragments and personal and collective identities (Rakatansky 50). So, the main focus of his architectural design project was to create space to display and store those collections, to support the older people's habits. *A/ partments* is very similar to my project in considering the elderly people's collection habits and space use. In this project, Rakatansky shows how to transform an individual design into a collective template design. The choice of material is very important to ensure cost-effectiveness and durability.



Fig. 16. Rakatansky, Mark. "A/Partments." The MIT Press, no. 35, 1998, pp. 49. doi: 10.2307/3171238.

### 3.2 Zhou Yanmin/ China's senior building and residential building experts

Zhou Yanmin, a researcher at the Institute for the Elderly at Tsinghua University, was inspired by Japanese design. This case mainly analyzes Zhou Yanmin's interior renovation for her 75-year-old parents' apartment. In the video, Zhou said that "my parents love me so much, I want to use my power to make some good changes for their life" (Yixi). This project combines the designer's respect and cares for her parents and her wish for them to live a more comfortable life. This reflects the modern expression of filial piety which Sun Yuezhu states is based on mutual respect and care (Sun 794). In the design, the designer puts forward six key points of designing for the elderly: sight design; light design; sound design; storage design; barrier-free design; furniture details. I will summarize it into two aspects: physical and psychological care for the elderly.

#### **Space environmental and family member's psychology care**

In this design, Zhou used her understanding of her parents to analyze the psychology of the elderly in the interior environment and transformed the sight, light, sound, storage and furniture to better suit their living conditions and habits. In the living room (fig. 17), Zhou considered that sometimes she would go back to visit her parents and eat with them, so she added a mirror in the living room to form a reflection with the entrance. When she went home, her parents could see it in the living room, reducing the risk of parents rushing to stand up and answer the door. Fig. 18 is

the design of the kitchen. The wall of the kitchen has been turned into glass. This change lets the people who cook in the kitchen be connected to the elderly people in the living room and dining room while still isolating cooking fumes. Due to the lack of light in the toilet, part of the wall of the toilet was replaced with glass, and the reflected light from the bedroom was received to enhance the brightness. The reason why Zhou did this was that her parents are very economical and don't like to turn on the lights. In this way, allowing natural light to enter the toilet can preserve older people's financial habits and prevent them from falling. Fig. 19 shows the sound design. Because the two elderly people sleep separately, a small window is opened in her father's room to facilitate their communication before going to bed, so that they can hear each other's voice and sleep peacefully. The choice of furniture needs to consider a convenient scale (fig. 20). It should be able to be shifted easily when not in use. At the same time, the chair must be equipped with an armrest, and it should not be too light, for fear that the chair will turn over when the old people sit down. Here, I could see that Zhou's every small design was designed around the care for her parents, preventing them from injury, respecting their thrifty habits and caring about their psychology. These are the points I considered in my design.

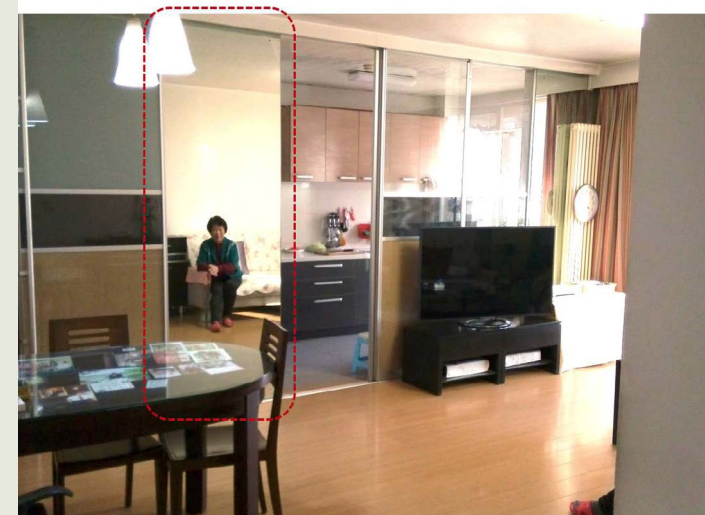
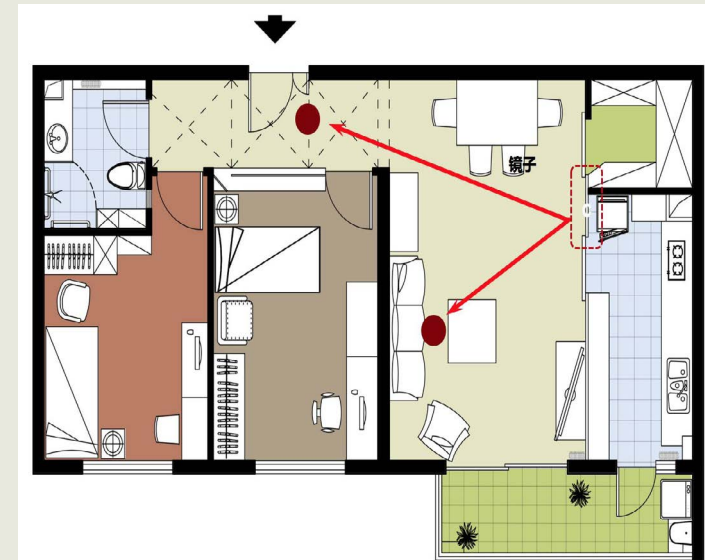


Fig. 17. Zhou, Yanmin. "Living Room." *Yixi*, 2015, <http://www.yixi.tv/h5/speech/151/>. Accessed Jun. 2020.



Fig. 18. Zhou, Yanmin. "Kitchen." *Yixi*, 2015, <http://www.yixi.tv/h5/speech/151/>. Accessed Jun. 2020.



Fig. 19. Zhou, Yanmin. "Bedroom." *Yixi*, 2015, <http://www.yixi.tv/h5/speech/151/>. Accessed Jun. 2020.



Fig. 20. Zhou, Yanmin. "Living Room Details." *Yixi*, 2015, <http://www.yixi.tv/h5/speech/151/>. Accessed Jun. 2020.

## Physical conditions for elderly experience

In Zhou's design project, accessibility design is considered in relation to the impact of physical conditions on the elderly. At the entrance (fig. 21), the height of the shoe cabinet is 850mm, which is the height of the national standard. Zhou felt that the tabletop of the shoe cabinet could be used as a handrail to lead to the bathroom and she left 300 mm at the bottom of the shoe cabinet to make the shoes easily accessible for elderly people. Zhou proposed that barrier-free design is not only for wheelchairs but also for testing the suitability of people and space (Yixi). In this case, the indoor balcony and living room's floor had a height difference. While, China's old apartments had steps to prevent flooding, technology can deal with this problem, making the ground inclined while keeping no steps (Yixi). Zhou even redesigned the floor leading to the balcony, and then set a small rug to prevent the parents from slipping when they entered the living room from the balcony. In considering the barrier-free design in the bathroom, it was necessary to add handrails (fig. 22), but Zhou mentioned that her parents did not want handrails because it would remind them that they were old. So, the solution was to set up a multi-functional towel rack, which was actually an invisible armrest. Zhou mentioned that there were more hooks at the entrance to the home (fig. 23), because her parents like to hang their clothes or bags. This reminds me of when my grandpa's home also had a lot of his plastic hooks, especially in the bedroom, where he likes to hang clothes behind the door and wardrobe. The choice of the door handle was also the key point of a barrier-free design. According to the current

physical characteristics of the elderly, the spherical shape needs grip strength and was relatively slippery when carrying water. The right-angle type was easy to hook the corner of clothes or bag, which was not suitable for the elderly (Yixi). Zhou chose the straight door handle, which the elderly could open with the strength of their hand and the whole body (fig. 24).

Design for the elderly requires an understanding of their daily life and their habits to make a design suitable for them. This case was Zhou's special interior design for her parents through daily observation, combining their psychological and physical needs. The designer's original intention was very similar to my goal, using my spatial design skills to design a comfortable and happy living environment for my family. At present, there is not much research on housing design for the elderly in China, especially for the elderly at home. This case could help other designers who care about the living environment of the elderly to find their research direction. When the interior and exterior space of the elderly are transformed at the same time, the "home-based care" policy could be more useful for the elderly group.



Fig. 21. Zhou, Yanmin. "Entrance One." *Yixi*, 2015, <http://www.yixi.tv/h5/speech/151/>. Accessed Jun. 2020.



Fig. 23. Zhou, Yanmin. "Entrance Two." *Yixi*, 2015, <http://www.yixi.tv/h5/speech/151/>. Accessed Jun. 2020.



Fig. 22. Zhou, Yanmin. "Bathroom." *Yixi*, 2015, <http://www.yixi.tv/h5/speech/151/>. Accessed Jun. 2020.



Fig. 24. Zhou, Yanmin. "Door Handrail." *Yixi*, 2015, <http://www.yixi.tv/h5/speech/151/>. Accessed Jun. 2020.

## Chapter Four: Design research

### 4.0 Analysis of elderly daily life

In the first phase of design, I collected some global reports on the health of the elderly, and read about the psychological and physical problems of the elderly in the living environment as well as analyzed some artworks on the topic. These large amounts of basic information helped me understand the situation faced by the elderly in their life and opened up my ideas and views on the design. Then I focused my research scope on the Chinese context which involved reading about the history of filial piety and the daily life of the general people after retirement. Gu and Chai's articles were most significant in demonstrating the movement characteristics of the elderly in five different age groups ranging from 69 to 83. As a person ages, their physical condition and ease of movement decrease significantly; the activity tracking of the elderly gradually changes from high-frequency outdoor activities to the community and surrounding activities, to stay at home for a long time (Gu and Chai 1621). Understanding the daily mobility of the elderly is very helpful for my research. The travel mode, travel time and types of activity educated me on the behaviours of the elderly group and proved helpful to organize the apartment interior space in my design.

This is a daily activity table for a typical Chinese "empty-nest" elderly couple (table. 1). The elderly couple's daily activities were based around parks, markets, communities and homes. From 8:00 a.m. to 6:00 p.m., they stay at home to rest or do

housekeeping. After dinner, they will go downstairs to do some simple workout with other residents and then go home to have a rest. The elderly person tends to stay at home much longer than outdoors, which makes the comfort of interior space a key factor in bringing more happiness to their life.

Time	Activity	Place	Distance	Transport	Company
6:30					
6:45	Workout	Park	3000	Tricycle	Partner/friends
7:45					
7:50	Go market	Veg Market	1000	Tricycle	Partner
8:00					
8:15	Breakfast	Home			Partner
9:00	Housework	Home			Partner
12:00	Lunch	Home			Partner
13:00	Rest/Housework	Home			Partner
18:00	Dinner	Home			Partner
18:55					
19:00	Workout	Community	350	Walk	Alone
19:55					
20:00	Housework	Home			Partner
23:00	Sleeping	Home			Partner

Table. 1. Gu, Zhilian., and Yanwei Chai. "Typical Elderly's Activity Diary in the First Phase of Retirement Living." *Progress in Geography*, vol. 34, no. 12, 2015, p. 1621. doi:10.18306/dlkxjz.2015.12.010.

#### 4.1 Observation: three case studies in Chongqing

A case study can be beneficial if you need to learn more about a little known or poorly understood issue or situation (Muratovski 49). My purpose is to support the independent life of the elderly. It is about the relationship between the elderly and the interior space. I researched elderly homes in Chongqing, China which helped me discover more about an old and existing building layout. In China, many elderly people live in 1980-1990s style housing dominated by families. The design goal then was to support and accommodate more people to live together, without considering the needs of the elderly (Zhou and Wang 71). This is also the case for buildings in Chongqing. The interior layout of the building does not take into account the convenience and entertainment activities of the elderly. People want more bedrooms for the family, and the toilet can only be far away from the bedroom due to technical problems. Most buildings have 9-10 floors, no elevators and few public spaces. Therefore, the implementation of a "home-based care" policy could help more elderly groups have a nice living environment.



Fig. 25. "Chongqingn Old Apartment Outside Views." *Anjuke*, 8 July 2020, <https://m.anjuke.com/cq/community/910367/?jump=site>. Accessed Jan. 2021.



Fig. 26 - 27. *Chongqing - Old Apartment Inside Views*, photograph by Qiyu Zuo, 2020.

To better understand the living layout of the elderly, my case study is based on the room layout of the 1980s, which is divided into two bedrooms, three bedrooms and four bedrooms. The two bedrooms case study came from secondary research, and the third and fourth bedrooms are observations of my grandparents' home. Firsthand information is obtained from my memory, history and conversation with my grandparents.

Fig. 28-29 is an uncommon two-bedroom apartment in an early modernist style. The living room has large windows and solid wood chairs. The kitchen's bottom cabinet (pink area) open style. Fig. 30 is my grandfather's home. The orange area emphasizes that the kitchen below-counter is open like a shelf, and the purple area shows the window decorations and curtains with personal characteristics in the bedroom. Fig. 31 is my grandmother's home. The most special part is the ground, which is made by cement stone. The furniture is black and green, with large dark windows and lace curtains.



Fig. 28. Chongqing - Two Bedroom Home - Large Window (Blue Area) and Cream White Walls (Purple Area), collage by Qiyu Zuo, 2020.



Fig. 29. Chongqing - Two Bedroom Home - Open Style Cabinet (Pink Area), collage by Qiyu Zuo, 2020.



Fig. 30. Chongqing - Grandpa's Home - Special Pattern Floor Tiles (Yellow Area) and Open Style Cabinet (Orange Area), collage by Qiyu Zuo, 2020.

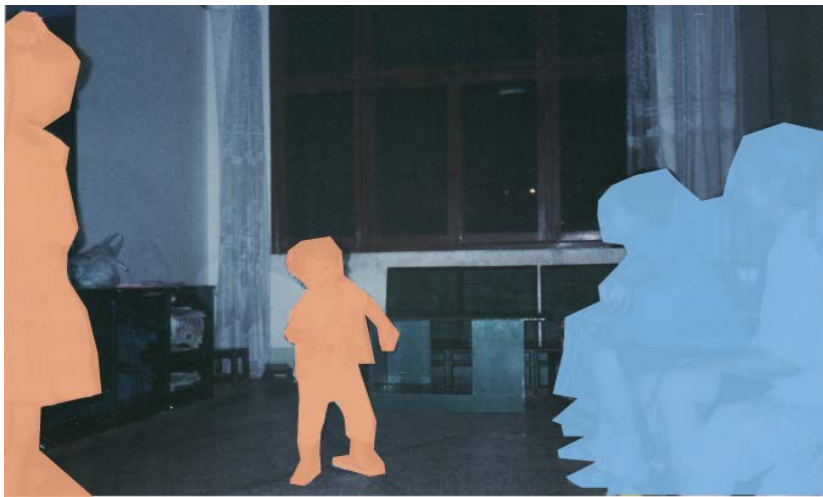


Fig. 31. Chongqing - Grandpa's Home - Cement Stone Floor , collage by Qiyu Zuo, 2020.



## 4.2 Explore 90's style apartment layout in Chongqing

Based on these photos and basic information, I simulated the floor plan to study the space layout of the apartment where the elderly lived. Fig. 32 has two bedrooms, fig. 33 has three bedrooms and fig. 34 has four bedrooms. The layout of these three apartments has common shortcomings. The bathroom and balcony have steps and the toilet is far away from the bedroom which is very inconvenient for the elderly. From the perspective of space, public space is independent of each other, and there is no interaction. The width of interior doors is generally 680mm, which is not barrier-free standard.

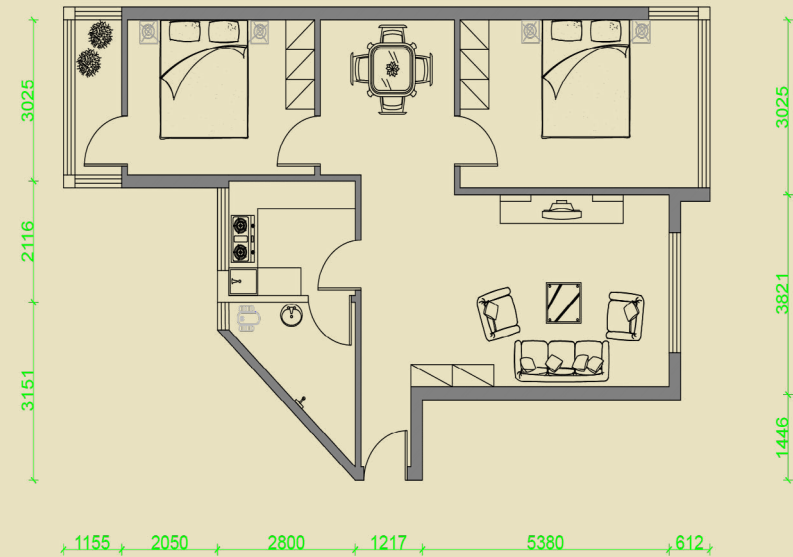


Fig. 32. Chongqing - Two Bedroom Plan, digital drawing by Qiyu Zuo, 2020.

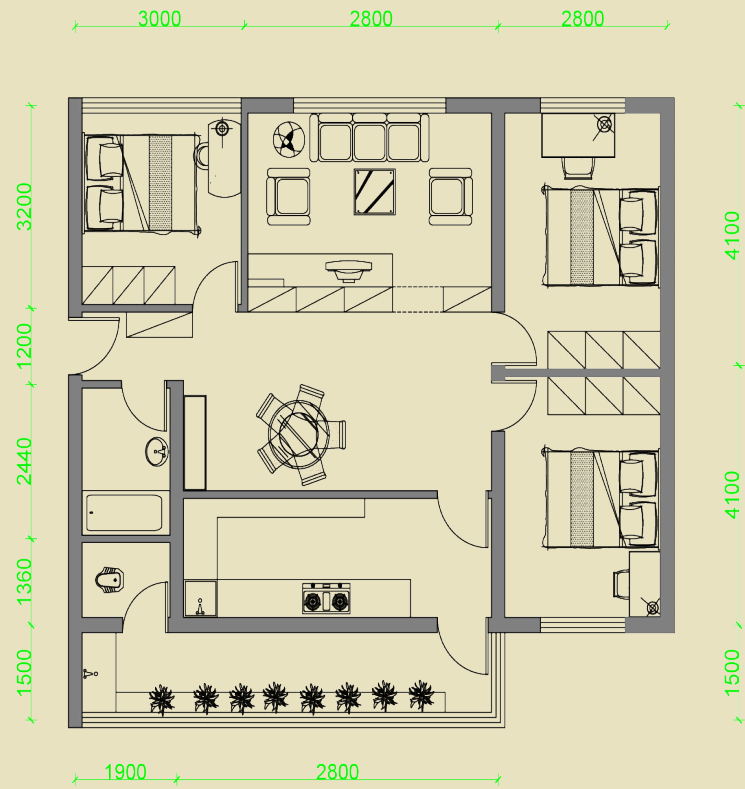


Fig. 33. Chongqing - Three Bedroom Plan, digital drawing by Qiyu Zuo, 2020.

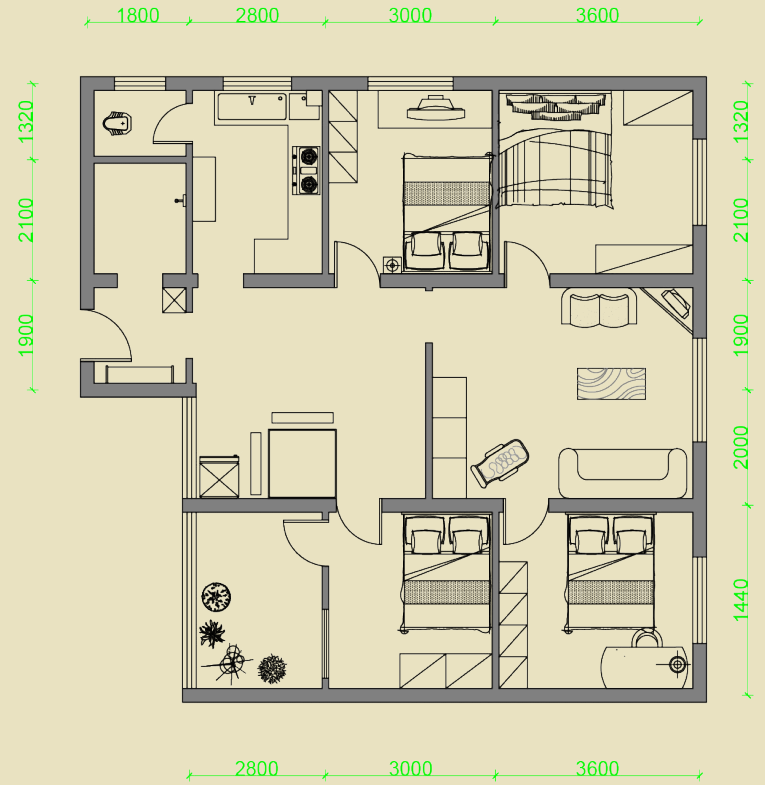


Fig. 34. Chongqing - Four Bedroom Plan, digital drawing by Qiyu Zuo, 2020.

## 伍 Chapter Five: Observation Experience

### 5.0 Empathy

"Empathy refers to the cognitive and emotional processes that bind people together in various relationships that permit the sharing of experiences as well as an understanding of others" (Alexsandro 40).

I used the method of empathy to experience the relationship between the elderly and the space. In spatial and interior design, empathy refers to transcending the role of designers. Designers can not regard users as abstract entities to only provide functional solutions but should understand the lives, experiences, aspirations and challenges of different groups, to establish an emotional connection with them (Wang 395). Because my project is for a specific group, I cannot just rely on collecting statistical data to complete my design. The method of design became aligned with being with people as a way to observe the relationship between the elderly and their home more closely.

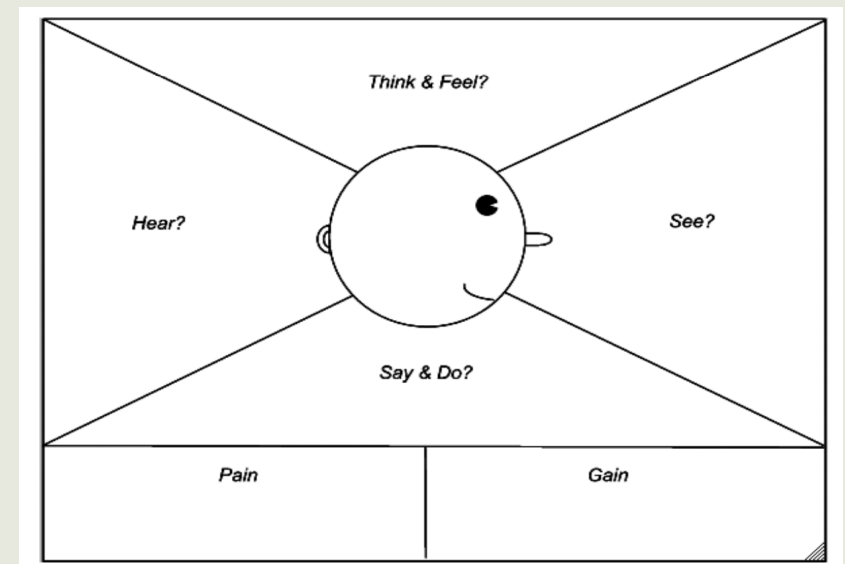


Fig. 35. Jilka, Michal. "Application of the Double Diamond Framework to Prepare the Communication Strategy of a Great Sports Event." *Studia Sportiva*, 2019, p. 102. doi: 10.5817/StS2019-1-10.

## 5.1 Persona

"When you are conducting a direct observation, you assume the role of an eyewitness and you are recording what you are observing in a systematic fashion" (Muratovski 65).

Through three case studies, I chose my grandpa's home for in-depth research and design. Because this is a real home, there can be more specific data to support my research. Also, I want to design a comfortable home for my grandfather, to help make his later life more interesting and happy. To make my grandfather satisfied with the design, I need to tidy up my grandpa's basic information and daily activities. So, I made up a persona (fig. 36 and fig. 37) about my grandfather and wrote some daily stories about my grandfather in detail to help my design development.

### A story about my grandpa:

Dai Hua was born in 1935 in China. He has four sons and one daughter. He has been separated from his wife for two years and lives alone in his old apartment. The apartment is close to his eldest son and fourth son's house. Sometime his children will come to visit him on weekends or holidays.

Because of his age, Daihua's hearing is not very good. So, when he's watching TV or talking to someone he always has the volume turned up, which sometimes affects his neighbours' rest. Also, Daihua lacks the ability to take care of himself. In the past, his wife took care of him and cooked for him. So, his son and daughter

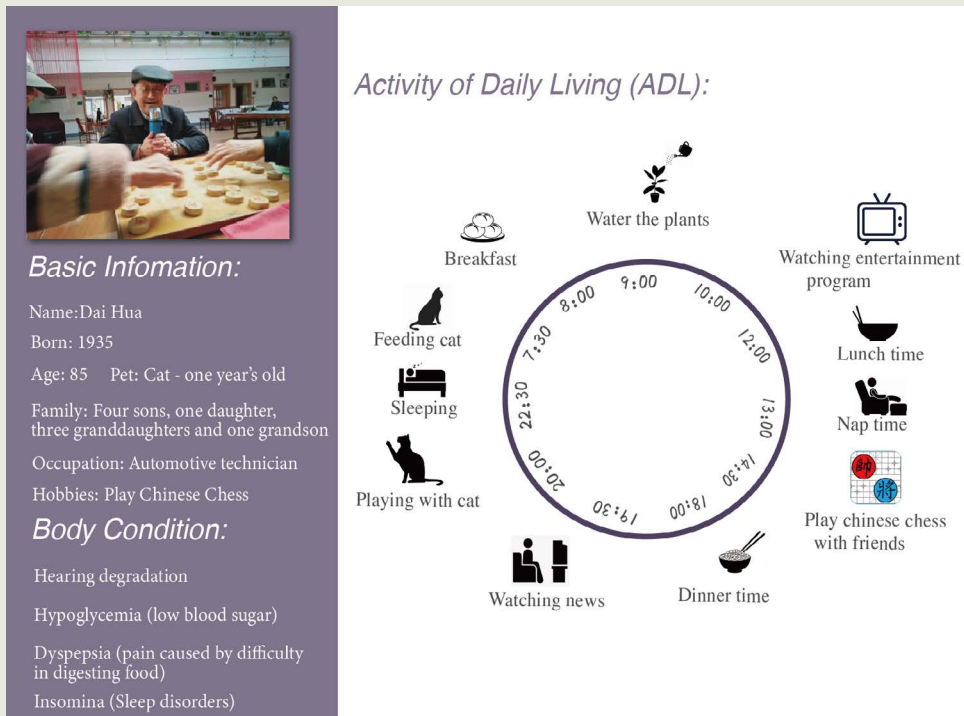


Fig. 36. Persona - Daihua Activity of Daily Living One, digital drawing by Qiyu Zuo, 2020.

hired a nanny to cook and clean for him. Dai Hua's cat is one year old. It's a pet he decided to keep after living alone for a year. The cat is clean, independent and does not need too much space.

### **Grandpa daily activities:**

Every morning, Daihua would come to the balcony to feed a cat. After breakfast, he will go to the living room to sit in his favourite recliner chair and watch the variety show. After lunch, Daihua will take a nap in the living room, and then go out to play Chinese chess with friends until dinner time. After dinner, he will watch the news channel and play with a cat before going to bed. But, Daihua will wake up in the middle of the night and need to watch TV before falling asleep again. The doctor prescribed him some medicine and advised him to do some exercise before going to bed.



Morning - Get up and eat tablets

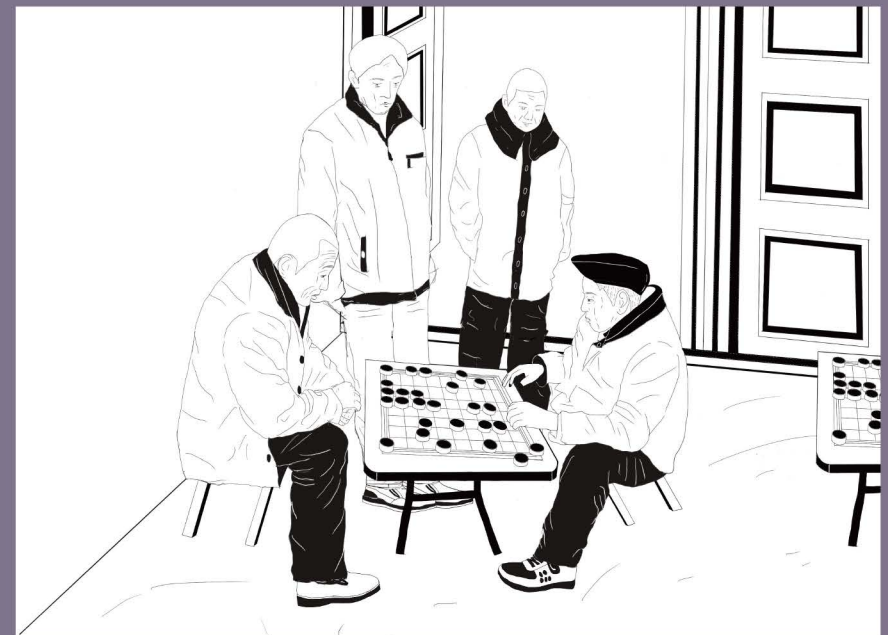


Morning - Feeding a cat

Fig. 37. *Persona - Daihua Activity of Daily Living Two*, digital drawing by Qiyu Zuo, 2020.



Noon - Eating Lunch with nanny



Afternoon - Play Chinese Chess with friends

## 5.2 Body experience story

When I started to think about interior furniture, I felt not sure what my grandparent's walking flows and daily activities at home were like. My height is 160cm. But, when I wear equipment to simulate the physical restrictions that elderly people commonly experience, my height changes to 155cm. That's my grandmother's height.

I prepare a headphone, one translucent fabric and two strings. When I wear a headphone, it is hard to hear voices around me. This was to mimic my grandfather's hearing loss. When the translucent fabric covers my eyes, I cannot easily see what is in front of me. With the two strings tied between my arms and legs, I cannot move normally; my back and legs cannot go straight. When I walk into our studio space, I feel pretty unsafe, as if I must walk slowly and I really need something to hold. I start to know that when you are getting old, your body will not listen to you anymore.

The first test was in the living room and dining room. The purpose was to test the seat, table, windows, small object and planting height. Through my experience, when I stood up to walk, the furniture with a height around 900-1100mm was the best invisible handrail to help me walk. If something dropped on the ground, it was not easy to pick up. I needed more strength in my legs and arms to support me to touch the object. When I stood in front of a cabinet and tried to open it, I found it impossible. The cabinet opened up and down; it was not suitable for me. If the cabinet

could be open on the right side, that would be easier. When I sat down, I felt the table's height around 700-800mm was far better for eating. The drawer lower than 600mm is not suitable for an elderly person standing up to use, but when I sat down to use it was good. The light switch heights around 850-950mm are easier to touch. When I imitated the gesture of planting and trimming the plants, sitting down to plant or on the higher bottom of the shed allowed me to trim the branches and leaves.

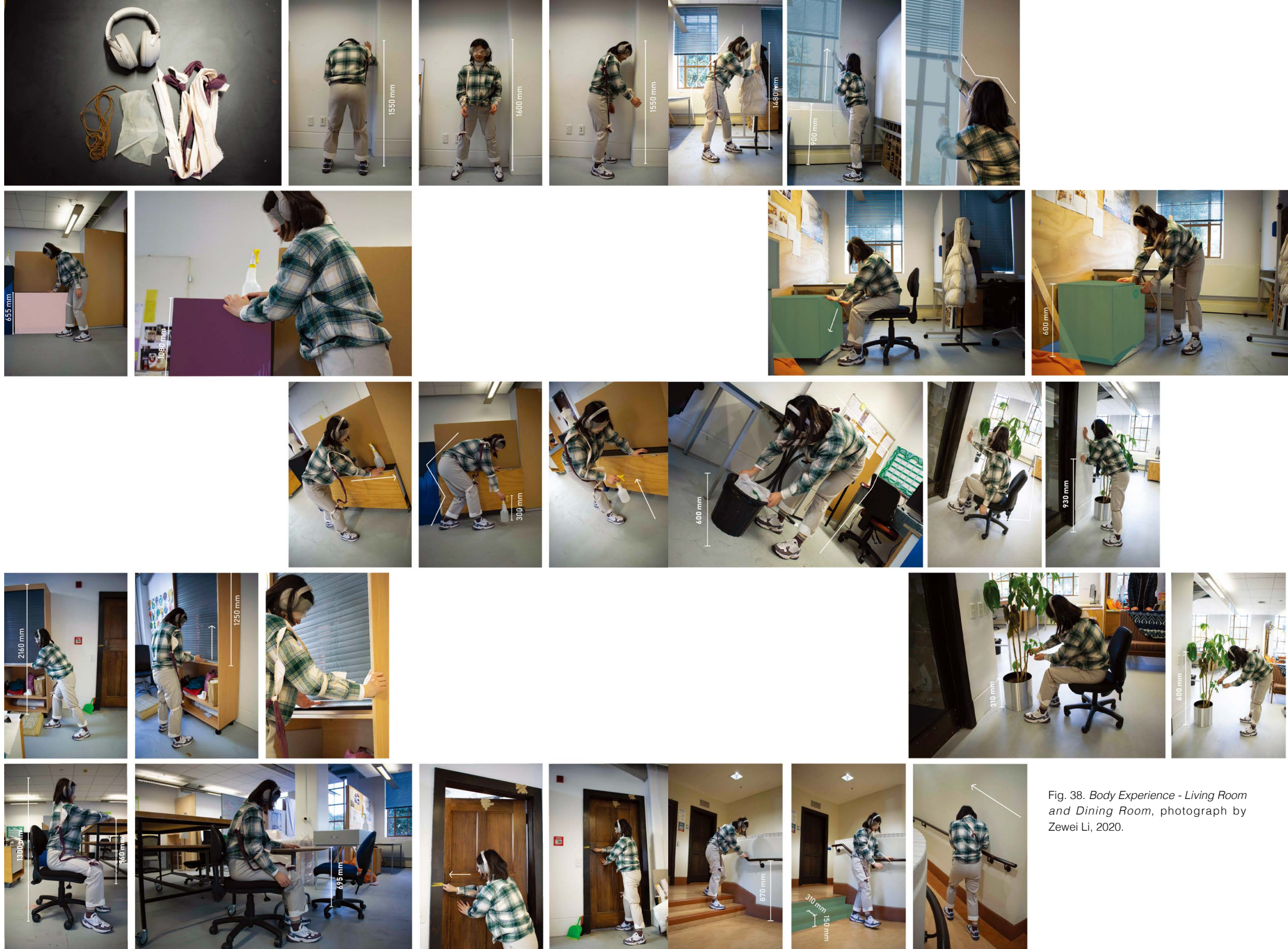


Fig. 38. Body Experience - Living Room and Dining Room, photograph by Zewei Li, 2020.

The second test was in the bathroom and kitchen. I found it not easy for me to walk from the studio to the bathroom. Because the eyes are fuzzy, I preferred the surrounding environment to be where the hand could touch, and the light was bright. When I entered the bathroom, I felt that the door was heavy and needed to be pushed open with a lot of strength. When I try to use the toilet, because of my body, I need to hold the wall beside me to sit down and get up. In addition, rotating ways to open the door or the hand wash basin makes my hands uncomfortable. In the kitchen, when I open the cabinet that turns out, I need to step back to fully open it, which was not very convenient for me at this time. The height of the below-counter is 895mm, which was suitable for me. When I tried to simulate using the kitchen in a wheelchair, I found that the cabinet was a little high and I could not touch the hand washbasin. When I went out of the kitchen, because there was a small step at the door, I could not easier get out when I sat on the chair.



Fig. 39. Body Experience - Bathroom and Kitchen, photograph by Zewei Li, 2020.

## 陆 Chapter Six: Design development

### 6.0 Rethinking

After the body experience experiment, I had become more aware of the problems that elderly people encounter in daily life. Based on the experience data and my grandfather's data, I made a chart (table. 2) to record which spaces and locations in my grandfather's home needed to be changed. For example, the width of the interior door and the arrangement between furniture should conform to the barrier-free standard; the material of the door could use transparent glass to improve the interior light transmission and support the line of sight to follow; the bedroom lacks storage space and the desk is too close to the bed which results in infrequent use.

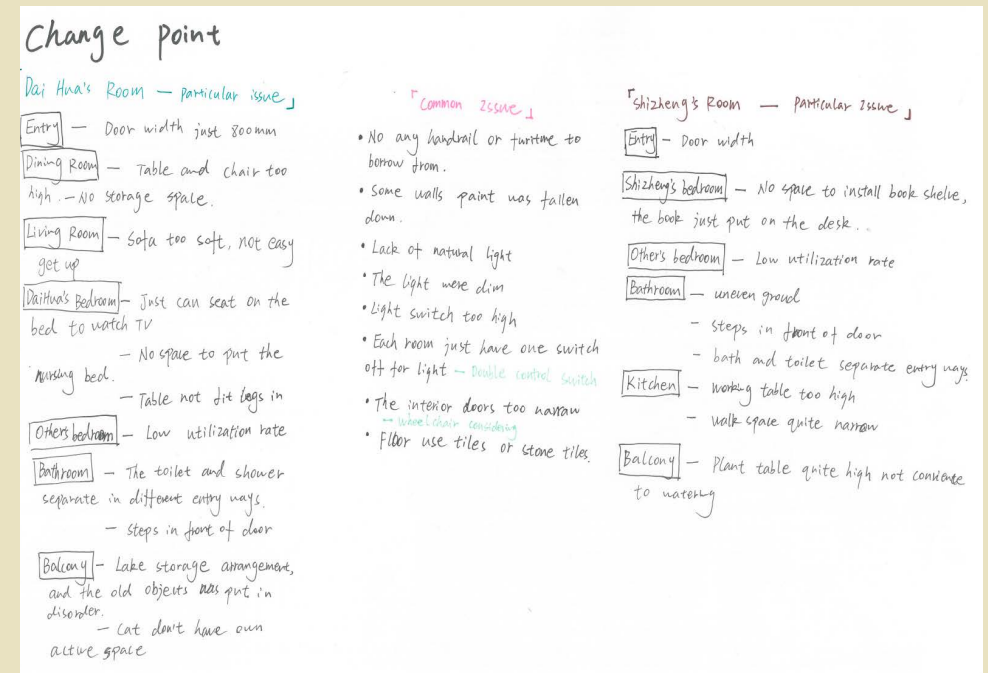


Fig. 36. *Persona - Daihua Activity of Daily Living One*, digital drawing by Qiyu Zuo, 2020.

## 6.1 Design criteria

In this phase, I began to narrow the scope of research and define the direction of a specific design and made a design diagram (table. 3). My design is based on filial piety and mainly divided into three parts: safety, comfort and joy to help the elderly feel emotionally positive and comfortable at home.

Define the design of living space for the elderly as follows:

*This is a safe space for the elderly to walk without barriers.*

*This is a comfortable space for the elderly to use in each room conveniently.*

*This is a joyful space for the elderly to stay at home when they do not want to go outside.*

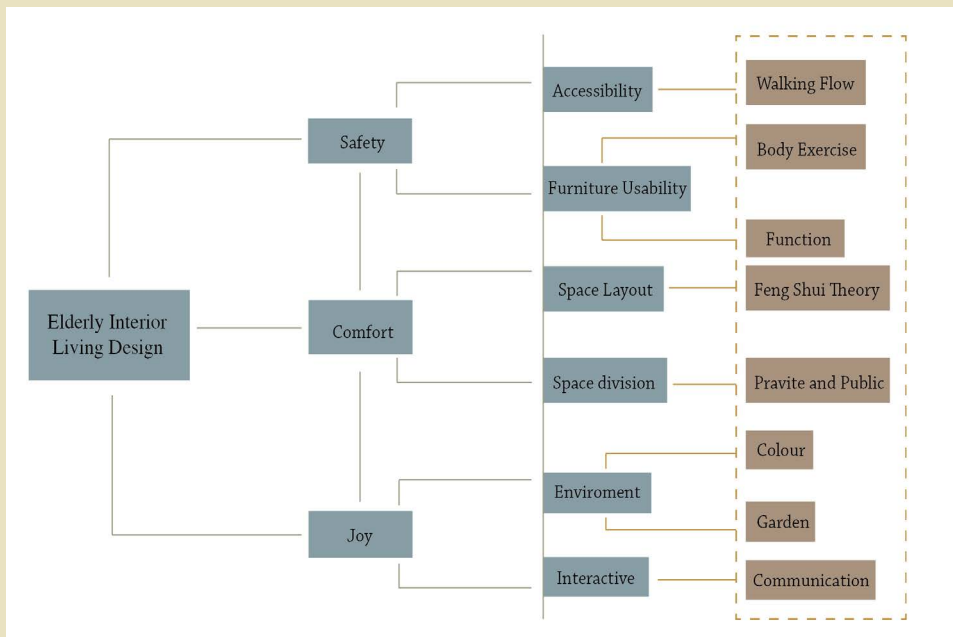


Fig. 36. Persona - Daihua Activity of Daily Living One, digital drawing by Qiyu Zuo, 2020.

## 6.2 Site analysis

My grandpa lives in Dianjiang County in Chongqing. It is three hours' drive from the city where my parents live (fig. 40). Grandpa's home is northeast. There are parks, a grocery store, chess and a mahjong club and small clinics nearby (fig. 41). China's building is very dense and a lot of residences were built without elevators in the 1990s. My grandpa lives on the third floor, in a small commercial apartment built near the street, with a total of 10 floors and shops at the bottom (fig. 42-44). Before the elevator was built, he would go up and down the stairs every day. In fig. 43, I made a 3D model of my grandpa's home simulate the placement of furniture so that I can study it in detail.

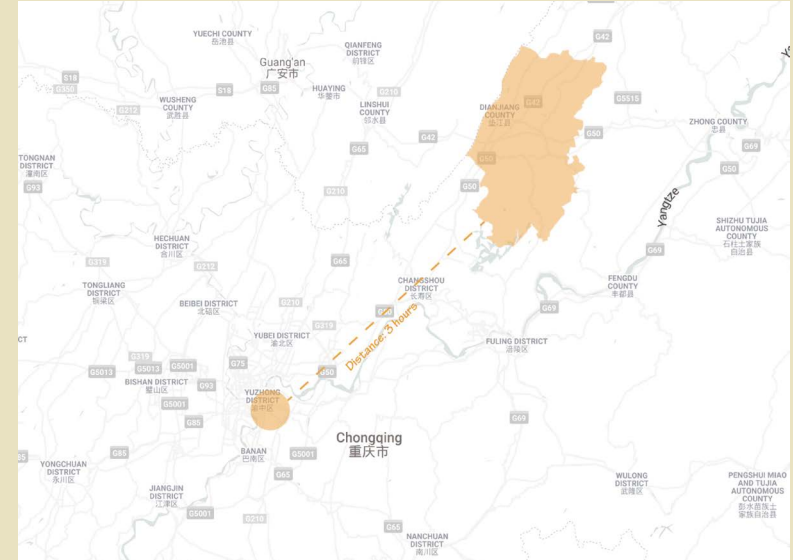


Fig. 40. Site Map - Chongqing to Dianjiang County, collage by Qiyu Zuo, 2020.

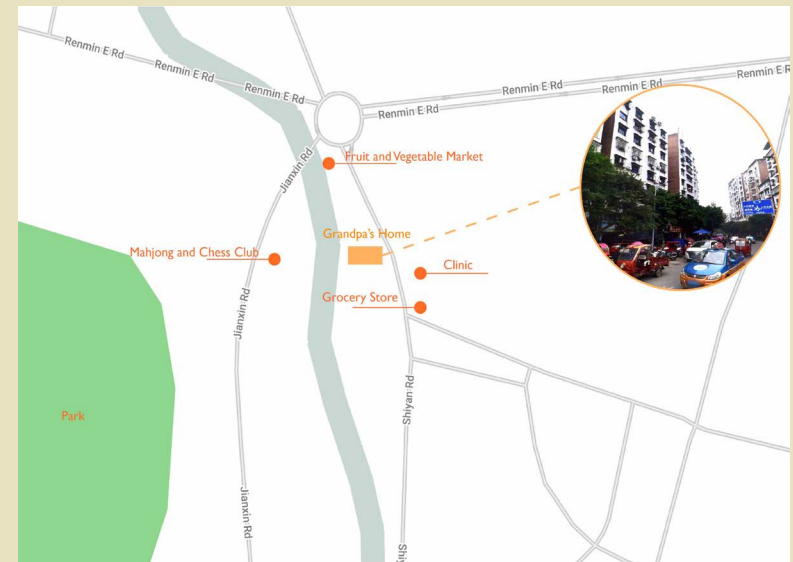


Fig. 41. Site Analysis - Dianjiang, collage by Qiyu Zuo, 2020.

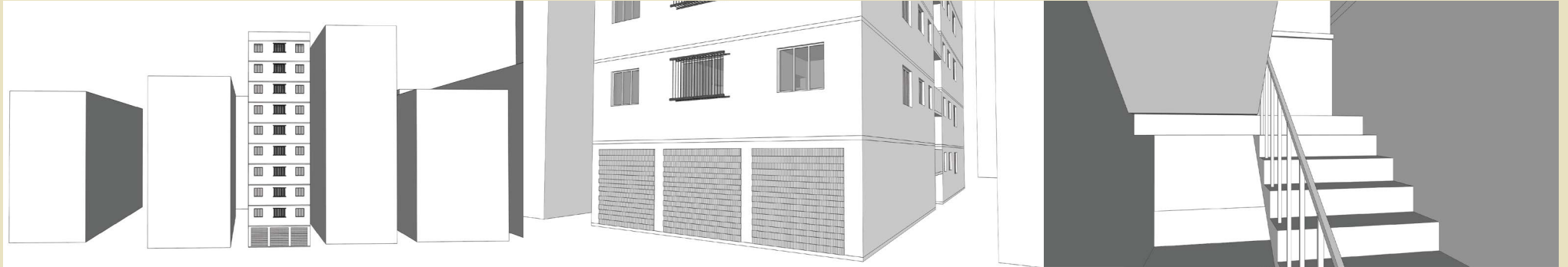


Fig. 42 - 44. *Grandpa's Home Outside Views*, digital drawing by Qiyu Zuo, 2020.



Fig. 45. *Grandpa's Home Interior View*, digital drawing by Qiyu Zuo, 2020.

## 6.3 Feng Shui theory

Feng Shui is a body of ancient Chinese knowledge. The core of Feng Shui is "people-oriented and the unity of nature and nurture". It aims to create harmony between the environment, buildings and people (Mak and Ng 129). In spatial design, we are talking about the relationship between people and space. In my opinion, Feng Shui and spatial design are similar when used in building, but they have different interpretations. For instance, the orientation of my grandfather's home faces south. In Feng Shui, such a direction brings you good luck and family harmony. In terms of spatial design, open space has good lighting and is relatively bright. It promotes communication between people and the mobility of space.

In the interior, the application of Feng Shui is mainly in the management of space, such as the location and function of the room, the direction of air circulation and the placement of furniture (Mak and Ng 130). In my design, I used the flow of Chi in Feng Shui and the interior layout of spatial design to create a living approach in line with my grandpa needs. In my design, I used the direction and the Chi flow of Feng Shui to create a living approach suitable for my grandpa.

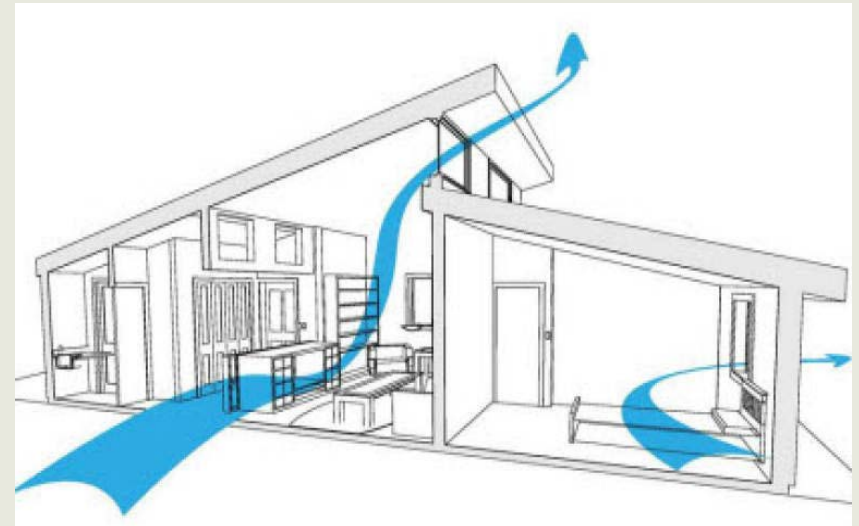


Fig. 46. "Classical Feng Shui - Ground in Good Chi." *The Sun Daily*, 24 Mar. 2017, <https://www.thesundaily.my/archive/2205214-ITARCH435279>. Accessed Jun. 2020.

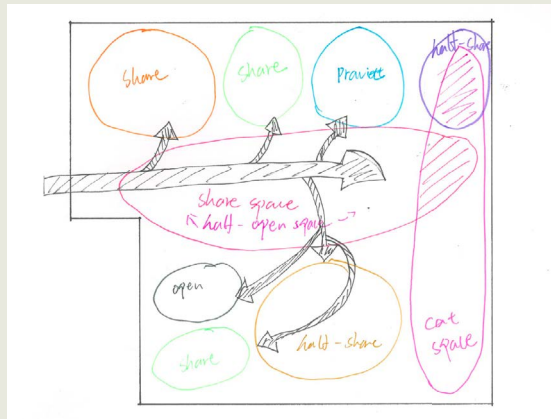


Fig. 47. *Space Division*, hand drawing by Qiyu Zuo, 2020.

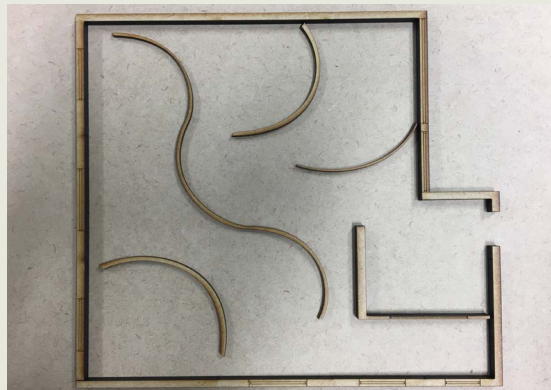


Fig. 48. *Design for Layout One*, physical model by Qiyu Zuo, 2020.

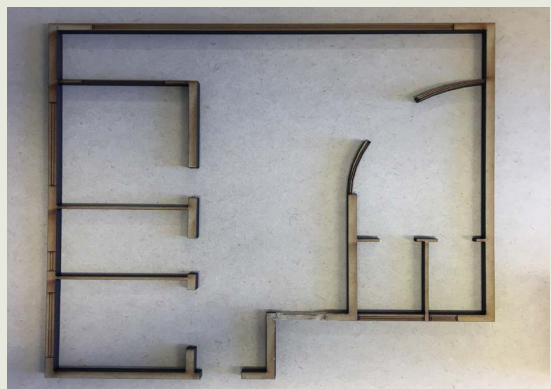


Fig. 49. *Design for Layout Two*, physical model by Qiyu Zuo, 2020.

## 6.4 Brainstorm for layout design

When I began to design the layout of my grandpa's home, the first thing to consider was the division of space. According to my grandfather's habits, I drew what space is needed (fig. 47). The bedroom was a private space, the kitchen, bathroom, dining room and living room were shared space, and the function room was semi-shared space. There are some spaces that in the older plan were not suitable for people to use. For example, the bathroom is too narrow, the kitchen is too dark, and the bedroom has poor lighting. In order to better develop my thinking of this space, I used a laser to cut the plan of the external wall and used some small sticks to create in this space. In fig. 48, I want to show a flowing and open space. The interior wall could be arc-shaped. However, considering that this is a renovation for the elderly, such a design has changed a lot for my grandpa. As in the previous precedents "*An unforgettable home*" Homma Takafumi designed each room as a straight line, so that the elderly can recognize the room and pass easily. So, I decided to slightly adjust each room to keep both sides parallel while trying to integrate the open space (fig. 49).

## 6.5 Design layout

The second factor was the open and streamlined space. The walking line was dominated by the dining room and living room and then extended to each room. According to Feng Shui theory, "creating a home with a smooth flow of Chi is central to Feng Shui because the flow of energy in your home sooner or later will be reflected in the flow of Chi in your body" (The Spruce). Space and air fluidity ensure that the Chi flowing into each room is like water. The living room and function room could provide temporary living space on holidays, so as to prepare for the arrival of more family members. At the same time, there is also a small bathroom nearby, which could be used when more people come or when my grandpa is in the function room. There is no need to go to the opposite side.

Finally, there was the problem of light. Because the apartment has only two sides with natural daylight, with the stronger side in the southeast direction of the living room, the whole space adopts the maximum opening of the living room and introduces light. Considering that my grandpa usually lives alone, the bedrooms were reduced from four to one. The master bathroom was located next to the bedroom. Referring to Feng Shui, it is better not to have a bathroom next to the entrance (Wu 151), so the bathroom is set in the middle, which is more convenient for each space to enter.

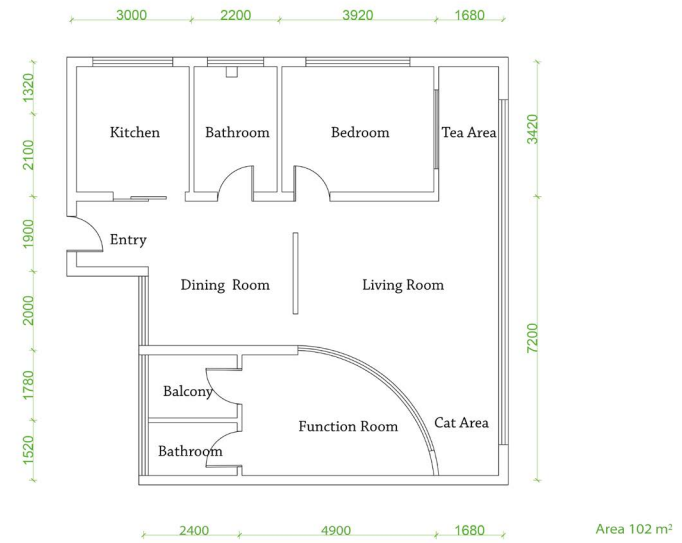


Fig. 50. *Redesign Granpa's Home Layout*, digital drawing by Qiyu Zuo, 2020.

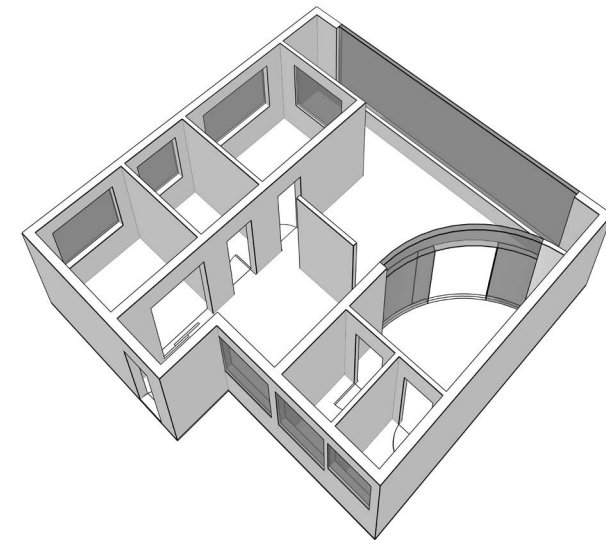


Fig. 51. *Redesign Granpa's Home Layout - 3D Model*, digital drawing by Qiyu Zuo, 2020.



## Chapter Seven: Design Concept

### 7.0 Mood board

Before I started to do the interior decoration in detail, I made a mood board to guide my design (fig. 52). The floor was made of a non-slip wood floor, where a tatami tea table was served. The cat has its own main area. The glass material was used to increase daylight. The main colours in the room yellow, beige and dark brown, conveyed a peaceful feeling.



Fig. 52. *Grandpa Home Interior Concept*, collage by Qiyu Zuo, 2020.



## 7.1 "Neo Chinese style"

In today's Chinese interior decoration market, the "Neo Chinese style" is popular, which integrates Chinese traditional culture into modern home furnishing. The "Neo Chinese style" uses original ecological colours and materials to create a natural and harmonious feeling, like oak, light glass and rock (Wu 152). In the design, I used wood, stone and some natural materials, and then mixed new materials, acrylic plate and glass. In this way, space kept the traditional charm and convenience.



Fig. 53. "What Different for Neo Chinese Style and Tradition Chinese Style." *Zhi Hu*, 26 Nov. 2018, <https://zhuanlan.zhihu.com/p/50893860>. Accessed Jun. 2020.

## 7.2 Design concept one



Fig. 54. *Floor Plan with Materials*, digital drawing by Qiyu Zuo, 2020.

Fig. 55 illustrates the entrance. I added a shoe cabinet with seats to facilitate my grandpa's access and storage function. There are hooks on the top of the chair for clothes or shopping bags. In the front space was the dining room (fig. 56). In geomantic science, the location of the dining room should be in the east direction. The original dining place of my grandpa's home was facing east, so there was no need to change it. I kept the original small square table and changed the chair into a more comfortable chair. Beside the wall cabinet could display my grandpa's wine collection. The screen between the dining room and the living room forms a semi-open space, which supports the independence of the dining room and allows the two spaces to communicate. On the left side of the dining room was the kitchen (fig. 57). Referring to the barrier-free design, the kitchen needs accessible cooktops, workstations, large space for turning room and transitions (Universal Design for Houses 19). Therefore, the kitchen I designed was three sides around the wall, so that every direction of the kitchen could be used. The counter has space for a wheelchair in the future. The desk dimensions extend to the outside by 50 mm to form an invisible armrest.

In the living room (fig. 58), the sofa is modern style and the main light comes from the large glass window at the back. Under the window is the area for planting flowers. On the left side of the living room is the rest area (fig. 59), where my grandpa could play chess with his friends on the tatami. On the right side of the living room is a separate area for cats (fig. 60). Cats could be put

into the glass cabinet when guests come. There is a hole under the glass cabinet to reach the pathway designed for cats, which is connected to the rest area. The function room could be used as a study or a second bedroom, which could accommodate more families to live together during the holidays (fig. 61). On the left is a small bathroom, so that grandpa could easily use the toilet while reading, without going to the opposite bathroom. On the right is the living balcony, which can meet the functions of washing and drying clothes. Fig. 62 shows the bedroom with two windows, one for ventilation and the other for sunlight. Next to the bedroom is the master bathroom (fig. 63), which is equipped with armrests and seats for my grandpa's consideration, so that he could take a shower independently.



Fig. 55. *Design One - Entry*, digital drawing by Qiyu Zuo, 2020.



Fig. 56. *Design One - Dining Room*, digital drawing by Qiyu Zuo, 2020.



Fig. 57. *Design One - Kitchen*, digital drawing by Qiyu Zuo, 2020.



Fig. 59. *Design One - Play Chinese Chess Area*, digital drawing by Qiyu Zuo, 2020.



Fig. 58. *Design One - Living Room*, digital drawing by Qiyu Zuo, 2020.



Fig. 60. *Design One - Cat Area*, digital drawing by Qiyu Zuo, 2020.



Fig. 61. *Design One - Function Room*, digital drawing by Qiyu Zuo, 2020.



Fig. 63. *Design One - Master Bathroom*, digital drawing by Qiyu Zuo, 2020.



Fig. 62. *Design One - Bedroom*, digital drawing by Qiyu Zuo, 2020.



Fig. 64. "90's Interior Scene - Studio." *Koukou*, <https://j.17qq.com/article/chhklocv.html><https://j.17qq.com/article/chhklocv.html>. Accessed Jun. 2020.



Fig. 66. "90's Interior Scene - Living Room." *Koukou*, <https://j.17qq.com/article/chhklocv.html><https://j.17qq.com/article/chhklocv.html>. Accessed Jun. 2020.

### 7.3 90's style for interior

Since the 1990s, China's economy has been developing, and more and more new things have entered China. People have started to understand and demand more from interior design. Home decoration in the nineties was not merely simple or functional, but also involved some ornamentation and wall decoration (Foreou). For example, pattern floor tiles, mosaics, green half walls, portraits on the walls, modular sofas, electrical appliances, solid wood furniture, lace, glass and doilies were all signs of that era. I found some photos about 90's home decoration in China to study (fig. 64-67). From those photos, I saw the appearance of my grandpa's home in my memory. I started to realized that my grandpa home's furniture and decoration was all from that era. Although with the progress of science and technology, more and more new home things appeared, he still chooses to keep some of his favourite furniture and decorations even now. I do not have any reasons for my grandpa to give up all his old furniture and then live in a totally new home. It is not respectful.



Fig. 66. "90's Interior Scene - Entry." *Koukou*, <https://j.17qq.com/article/chhklocv.htmlhttps://j.17qq.com/article/chhklocv.html>. Accessed Jun. 2020.



Fig. 67. "90's Interior Scene - Dining Place." *Koukou*, <https://j.17qq.com/article/chhklocv.htmlhttps://j.17qq.com/article/chhklocv.html>. Accessed Jun. 2020.

## 7.4 Design elements

After I studied those 90's interior photos, I began to observe the furniture and decoration of my grandpa's home. Highlights include some usable furniture and daily necessities, such as wooden windows, bamboo washbasins, pickle jars and old tables and chairs which could be included in the design. The ceramic tiles, curtain patterns and peony patterns on the quilt of my grandpa's home are the marks of that era and also my grandpa's style. I try to transfer these patterns to the walls of the kitchen and bathroom to achieve the effect of decoration and increasing the sense of familiarity.



Fig. 68. *Daihua's Home - Living Room*, photography by Qiyu Zuo, 2020.



Fig. 69. *Daihua's Home - Living Room*, photography by Qiyu Zuo, 2020.



Fig. 70. *Daihua's Home - Bedroom*, photography by Qiyu Zuo, 2020.



Fig. 72. *Daihua's Home - Dining Room*, photography by Qiyu Zuo, 2020.



Fig. 71. *Daihua's Home - Kitchen*, photography by Qiyu Zuo, 2020.



Fig. 73. *Daihua's Home - Bedroom*, photography by Qiyu Zuo, 2020.



Fig. 74. Draft Drawing for Interior Tiles, hand drawing by Qiyu Zuo, 2020.



Fig. 75. Colour Drawing for Curtain Pattern, digital drawing by Qiyu Zuo, 2020.

Fig. 76. Colour Drawing for Tiles Pattern, digital drawing by Qiyu Zuo, 2020.



Fig. 77. "Research for 90's Style Bathroom Tiles." 1688, <https://www.1688.com/huo/detail-635287308323.html?spm=a262i4.9164788.zhaohuo-list-offerlist.20.2edf50f8Ogj8rn>. Accessed Jun. 2020.

Fig. 78-79. Peony Flower and Fish Pattern in my Grandpa's Enamel Wash Bowl, photograph by Qiyu Zuo, 2020.

## 7.5 Design concept two

This was my second design concept because the previous design focuses too much on what interior style was suitable for my grandpa and I forgot how to encourage him to adopt such a new environment. So, this time I added the old objects from the original home to make my grandpa feel familiar, instead of facing a totally new space. In the interior, I changed the wooden floor into the original ceramic pattern tiles, and the wall surface was painted a half green colour which imitates the 90's old-fashioned style. The windows were restored to the wooden and kept flower pattern. Because my grandpa likes peony flowers, I added peony flower patterns on some cabinet surfaces. In the kitchen, bedroom and function room, I choose the industrial lamps which were similar to those in the military period.

In the bathroom, dining room and rest area, I used the incandescent light bulbs from my grandpa's original home. Because my grandpa had been a soldier, the portrait of Mao Zedong (Chairman Mao - Chinese communist revolutionary) has been displayed in his home. Meanwhile, my grandpa also likes to keep some words on the walls and front of the doors, such as "Fu" means luck and "Shou" means longevity (Madam ZoZo). He believes these wishes could make him healthier. The bottom cabinet of the kitchen was made into an open type, keeping the style of grandpa's original kitchen, and leaving a place for the pickle pot. The material of the kitchen wall has changed to the new version of ceramic tiles to make it easier to clean up, the pattern of the yellow flower in the middle had changed to the peony flower

that grandpa likes. Most of the furniture in the living room and bedroom reuses the old furniture of the original home, table, green curtain, black sofa, armchair and my grandpa's favourite reclining chair. The rest area includes changed entryways instead of tatami because elderly people cannot easily lift their legs. So, this version of the design adds more decorations and old objects, making it closer to my grandpa's life.



Fig. 80. Floor Plan, digital drawing by Qiyu Zuo, 2020.



Fig. 81. *Entry*, digital drawing by Qiyu Zuo, 2020.



Fig. 83. *Kitchen*, digital drawing by Qiyu Zuo, 2020.



Fig. 82. *Dining Room*, digital drawing by Qiyu Zuo, 2020.



Fig. 84. *Living Room*, digital drawing by Qiyu Zuo, 2020.



Fig. 85. *Garden*, digital drawing by Qiyu Zuo, 2020.



Fig. 87. *Function Room*, digital drawing by Qiyu Zuo, 2020.



Fig. 86. *Cat Area*, digital drawing by Qiyu Zuo, 2020.

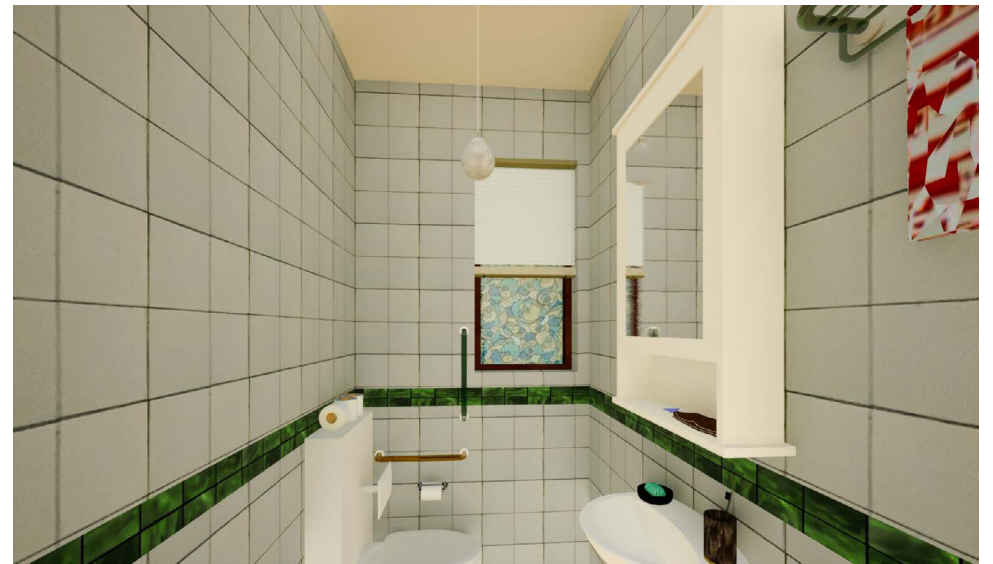


Fig. 88. *Small Bathroom*, digital drawing by Qiyu Zuo, 2020.



Fig. 89. *Balcony*, digital drawing by Qiyu Zuo, 2020.



Fig. 90. *Bedroom*, digital drawing by Qiyu Zuo, 2020.



Fig. 91. *Master Bathroom*, digital drawing by Qiyu Zuo, 2020.



## Chapter Eight: Final Design

### 8.0 Material exploration

In the design, I used some natural materials and furniture style of the 90's to carry on the transformation. In order to break the cold and unfamiliar space, the choice of natural materials and colour has become an important factor in my design. We are closely connected with natural materials such as cotton, wood, bamboo, earth and stone. These materials could fully show the beauty of nature, close to the distance between human and nature, and comfort our spirit and emotion (Zhang 941).

**The main materials used in this final design are:**

**Bamboo** – *used for curtain and wall decoration - I used bamboo as a curtain and wall decoration, because there were many objects made of bamboo in my grandpa original home.*

**Timber** - *spiced walnut and mahogany – used for grilles, chairs and cabinets.*

**Stone** - *cream mafil, marble and river rock – used for kitchen, bathroom and garden - desktop and ground.*

**Brick** – *garden's wall - in China, the building's construction in the 90's were made of brick and concrete.*

**Ceramic tiles** - *and with pattern – used for kitchen and bathroom wall.*

**Mosaic tiles** - *used for kitchen and bathroom floor.*

**Pattern tiles** - *used for open space, bedroom and function room floor.*

**Flower pattern** - *transform form my grandpa's duvet and favourite peony flower.*

**Industrial lamp** – *used for kitchen, bedroom and function room – to show 90's style.*

**White lamp** – *used for bathroom, dining room and garden - to show 90's style.*

Colour helps us connect with space, which could satisfy personal needs, both in physiological and psychological of interior space (Reed 9). People's emotions in the environment could change with colour. "Elements used to regulate emotions and thoughts could include photos of family, keepsakes and the colour of the walls" (Gosling et al. 283). In this project, the colour I used for mega greige, cooper, dark slate grey, dark sea green and agreeable grey. Dark sea green extends from the entrance to the half wall of the living room, which is the symbolic decorative style of the 1990s and could directly evoke my grandpa's memory. Mega greige is the colour of the bedroom wall, good integration with the furniture and brings a warm feeling into this space. The colour of the lamp in the bedroom is dark slate grey, which contrasts with the colour of the room. The overall wall is agreeable grey, without too much saturation and brightness, increasing the comfort of the room. Copper is used for the vegetable pot of the garden, which is a little brighter so that space will not form visual fatigue.



Mega greige

Copper

Dark slate gray

Dark sea green

Agreeable gray

Spiced walnut

Mahogany

River rocks

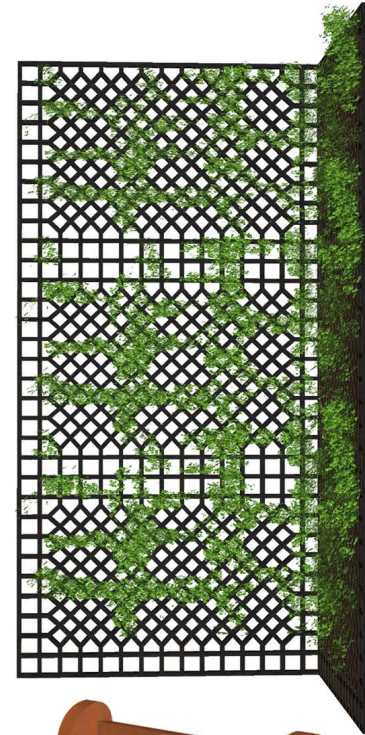
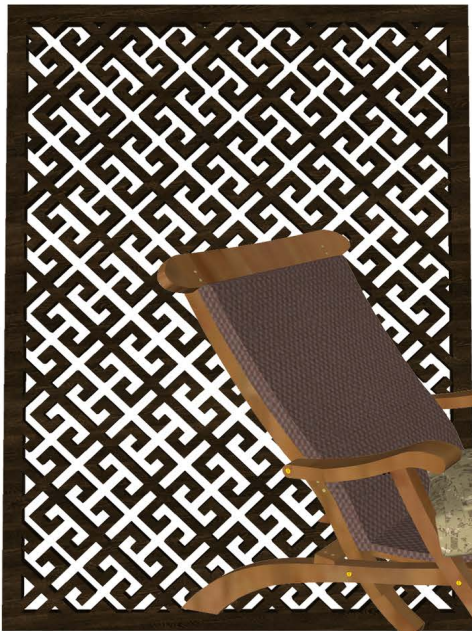
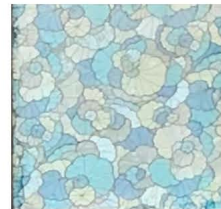
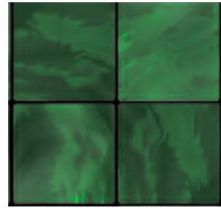
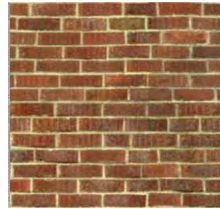


Fig. 92. *Material Exploration One*, collage by Qiyu Zuo, 2020.





Ceramic tiles

Flower pattern  
tile

Brick

Shell veneer tiles

Cream mafil

Window film

Pattern tiles

Mosaic tiles

Flower pattern

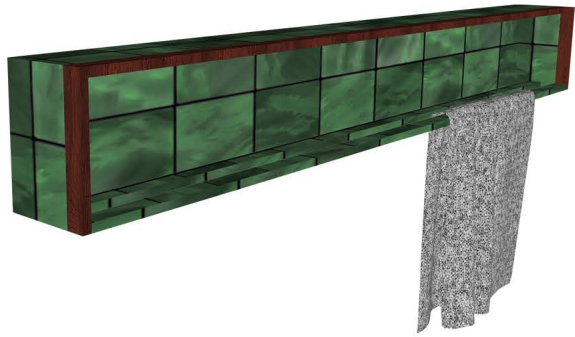


Fig. 93. *Material Exploration Two*, collage by Qiyu Zuo, 2020.

## 8.1 Furniture

According to the requirements of interior accessibility design, the distance between furniture and aisle should be more than 600 mm, to keep the walk space uncrowded and the future wheelchair usability. Meanwhile, the furniture in the living room and function room has mobility and could be used as temporary sleeping spaces to support more people.

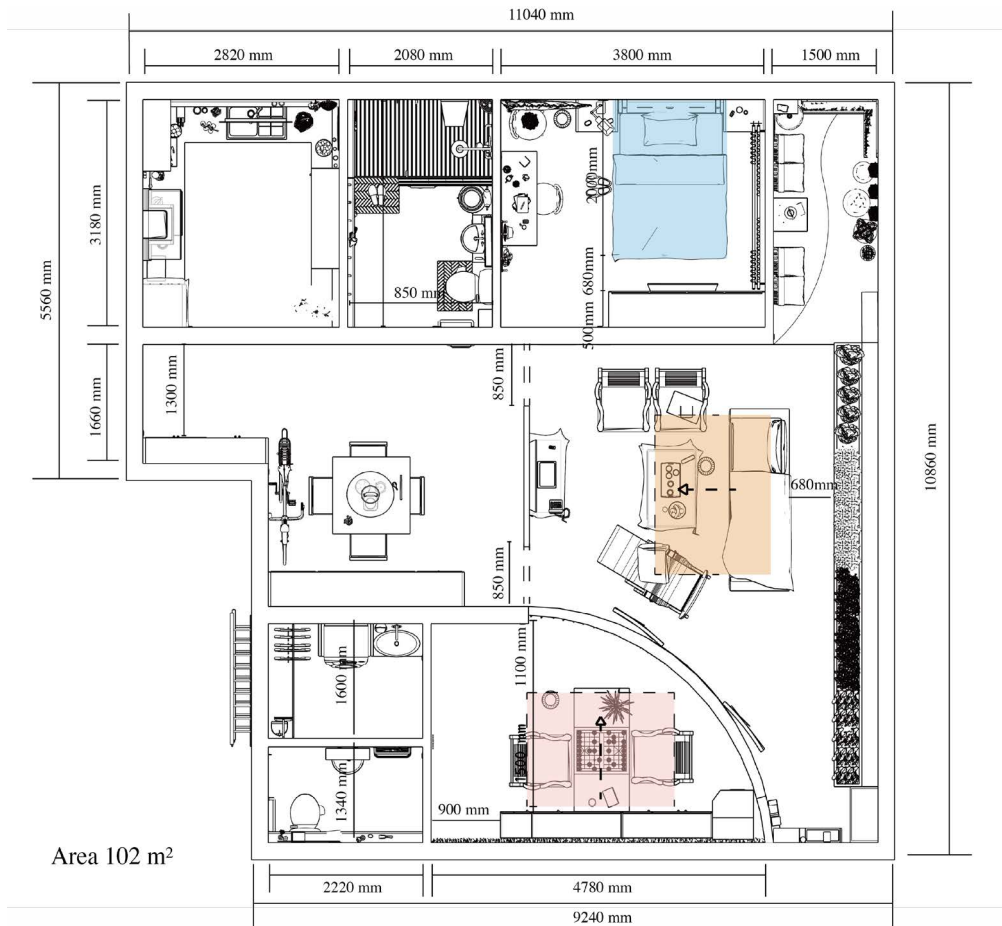


Fig. 80. Floor Plan, digital drawing by Qiyu Zuo, 2020.



## 8.2 Walk Circulation

The flow of space, air and movement starts at the dining room and living room and then extends to each room. According to the Feng Shui theory, space fluency and the airflow ensure that the air in each room returns.

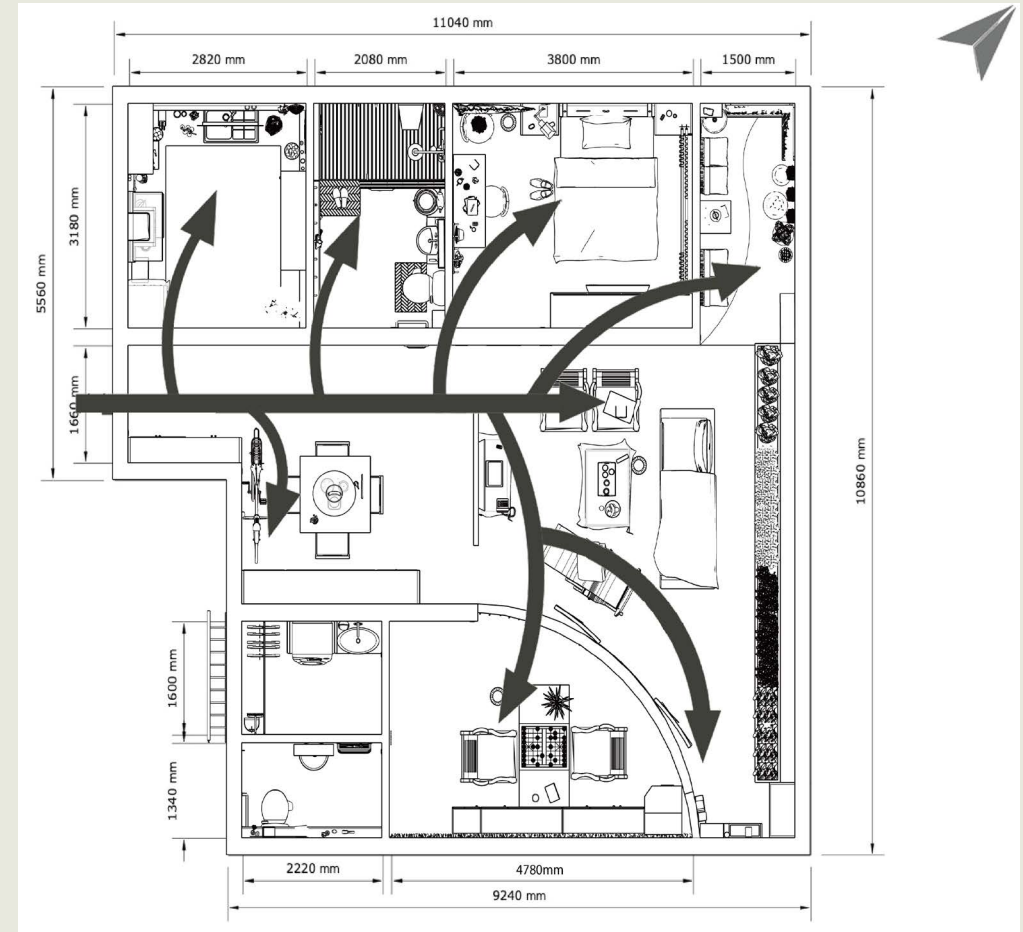
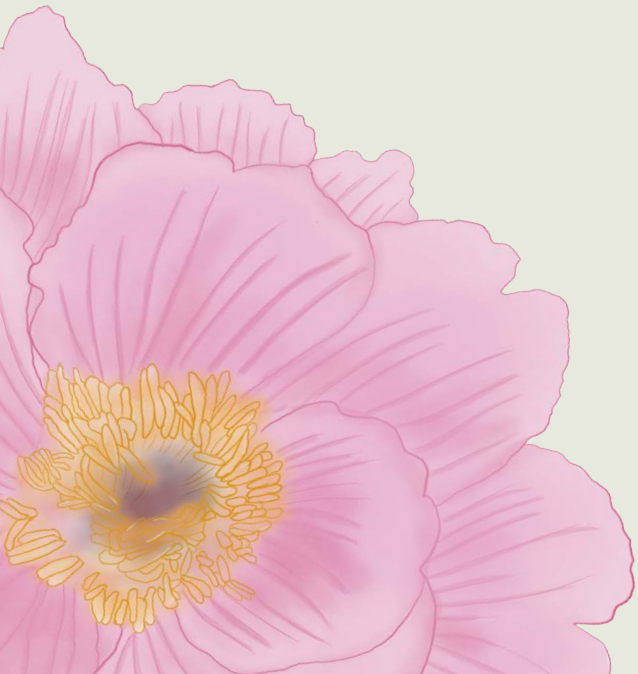


Fig. 80. Floor Plan, digital drawing by Qiyu Zuo, 2020.



### 8.3 Final space design

The final design is a supplement to my last concept. I began to attend to my grandpa's behaviours and hobbies, combined with my own understanding and design. The main changes were in the two bathrooms and the kitchen. Considering that the bathroom also needs storage space and safety control, in the master bathroom, near the door side, I added a row of horizontal double-layer cabinets. The first layer could hold commonly used items, and the edge uses wood materials to increase friction. The height is 90 cm, which could be used as invisible handrails. The second layer is a hollow shell, which could be used as a towel rack. In the corner near the toilet, I added a vertical cabinet to install my grandpa's vases and newspapers. Another difference is the curtain beside the glass door. Because the waterproof glass door is used in the shower area, and the glass material could invite the light in, I added the bamboo curtain outside of the glass door, which could be released when taking a bath, forming a hidden space as my grandpa would not like the feeling of transparency when taking a bath. Meanwhile, the bamboo curtain could also be a safety warning, telling my grandpa that this is a glass door. In the area near the wall of the kitchen, I changed the original tiles used for decoration into an outward platform, which became functional and could house some kitchen supplies. The clothes drying pole of the living balcony is intelligent, which could be lifted and lowered by the button beside the wall. I hope that while this design is about 90's style, I could maintain the convenience brought by modern technology and better service my grandpa's daily life.



**Morning: get up and drink water**

Fig. 81. *Bedroom*, digital drawing by Qiyu Zuo, 2020.



**Morning: tidy up**

Fig. 82. *Master Bathroom*, digital drawing by Qiyu Zuo, 2020.



**Morning: make breakfast**

Fig. 83. *Kitchen*, digital drawing by Qiyu Zuo, 2020.



Morning: eat breakfast

Fig. 84. Dining Room, digital drawing by Qiyu Zuo, 2020.



**Morning: watering the vegetables and prepare food for cat**

Fig. 85. Cat Area, digital drawing by Qiyu Zuo, 2020.



**Morning: wash the clothes**

Fig. 86. *Balcony*, digital drawing by Qiyu Zuo, 2020.



**Afternoon: prepare to go outside**

Fig. 87. Entrance, digital drawing by Qiyu Zuo, 2020.



**Afternoon: play Chinese chess with friend**

Fig. 88. *Function Room*, digital drawing by QiYu Zuo, 2020.



**Afternoon: use small bathroom**

Fig. 89. *Small Bathroom*, digital drawing by Qiyu Zuo, 2020.



**Afternoon: chatting with friend**

Fig. 90. Garden Area, digital drawing by Qiyu Zuo, 2020.



万事如意福临门

Afternoon: enjoy self time

Fig. 91. Master Bathroom, digital drawing by Qiyu Zuo, 2020.



## **Chapter Nine: Findings**

### 9.0 Summary of the findings

In this research project, I redesigned my grandpa's home according to spatial design principles to respond to the question of how the elderly can live independently. I learned that only by really understanding my grandpa's behaviour and the situation could I design a safe, harmonious and pleasant living environment for him and help him to avoid the loneliness and potential unhappiness that can come from living alone. The principles of filial piety in China, empathy, care and respect were my design focus. The design process used the iteration design research to guide my design thinking, to help me design in a cyclic process and based on the experience or story. In the discovery phase, I used my personal practice and empathetic approach to design experimentation to gain a deeper understanding of the elderly situation. As Gjoko Muratovski states, "the idea that to know others, one must do what the others do - or at least be present in the same environment" (Muratovski 57).

While undertaking this project, I gradually realized that a good design should not only have visual aesthetics, but also pay attention to the user's comfort and psychological state. As a designer, I could not just design space and style according to my own preferences. I must consider the culture, behaviours and environment of the people who use the space.

The most significant factor in altering my design for me was

that when I finished the first version of the design, I showed it to Julieanna and Yueyun. Julieanna asked me "if your budget was limited, which part of the room would you like to change most? " My answer was to paint the wall because colour could influence people's mood, but Julieanna thought it should be a blanket on the sofa, as she said: "small design can make the home different." Now thinking back, that conversation was a turning point in my design, from focusing on the functionality of the home to the smaller aspects relating to the daily behaviour of the elderly. This included thinking about the shapes and patterns of tile, window, quilt and tablecloth. I began to imagine that if I got to this age, if I was re-decorating or moved to a new home, what things I would like to keep, whether, for instance, I would want to keep the chair that had been kept for a long time, whether I would want to leave the tablecloth that I had been using all the time, whether would I want to have storage space for my collection of books I did not want to throw away. The answer was yes, I wondered if I have enough storage space to put my collection in.

From this perspective, I analysed my grandpa's information and learned about his bodily experience to develop my design, which made me realize what human-centred design is. In the spatial and interior, the design is personalized. I should know the person and not treat them like a fictional character or anonymously.

My design did not aim to redesign the whole building and to demonstrate home for all the elderly, but it focuses on the existing

apartment. It suggests reusing things and employing the concept of a society with filial piety to transform a family-style home into my grandpa's individual home. Reusing some of the original old objects can enhance his familiarity with the living space, is economical, and is conducive to the environment healthy.

This design demonstrates a design approach that considers the functional needs, social needs and spiritual and mental needs of a specific person; it is not a one-size-fits-all. Nevertheless, many elderly people may share certain functional, social, and spiritual needs which can help designers understand the basic information of the elderly. But everyone is an independent individual, which demonstrates the value of a close relationship between designers and elderly clients.

In the previous section of this exegesis, I mentioned that every year my parents would take me back to my hometown to visit my relatives in the cemetery. In retrospect, I find that I understand why my parents did it. Because this is the place where my relatives and my parents were born. My roots are here, and I also have memories here. This is our cultural tradition and custom. We will cherish the people around us while we miss our relatives. So, in this project, I chose to renovate my grandpa's home. I cherish the time with my grandpa and want my grandpa to see what this home will look like in the future.

The use of space will change with the times. In ancient China,

just women usually entered the kitchen, but now, the kitchen has become a social place and a communication space at home (Sina). As a Chinese culture, filial piety has changed from traditional obedience to respect. As a designer, I see the relationship between filial piety and design. When filial piety expresses respect and care, there are more changes in the interior space. Families can cook together, and the kitchen space becomes bright and joyful. When elderly people's actions remain inconvenient, the flow and safe space is the focal point of the design.

This research and design process could be used as a case to help designers like me who want to design for the elderly living space. At the same time, my design could support better implementation of "home-based care" policy, promote community construction, so that more elderly people in cities with high-density dwelling could live independently in a comfortable and safe environment.

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# Appendix

## Appendix one: photo licences


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<input type="checkbox"/> PR (Public Relations)		<input type="checkbox"/> Poster <input type="checkbox"/> Catalogue	
<input type="checkbox"/> Press (news)		<input type="checkbox"/> Brochure <input type="checkbox"/> Point of Sale	
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<input type="checkbox"/> Internet (specify URL)		<input type="checkbox"/> Other Advertising (specify)	
<b>LICENSED TERRITORY</b>			
<input checked="" type="checkbox"/> New Zealand <input type="checkbox"/> Australia <input type="checkbox"/> Australasia <input type="checkbox"/> Worldwide <input type="checkbox"/> Other (specify)			
<b>LICENSED PERIOD</b>			
<input type="checkbox"/> 1 year <input type="checkbox"/> 2 years <input checked="" type="checkbox"/> 5 years <input type="checkbox"/> In Perpetuity <input type="checkbox"/> Other (specify)			
<b>OTHER LICENCE DETAILS</b>			
<input type="checkbox"/> Special conditions of licence: (if any)			
<input type="checkbox"/> No right to alter image (see clause 1.1.3)		<input type="checkbox"/> The Photographer waives attribution rights (see clause 4); or	
<input type="checkbox"/> Photographer to act as agent (refer to clause 13.3)		<input type="checkbox"/> Attribution required as follows:	
<input type="checkbox"/> Weather permitting booking (refer to clause 17.1)			
<b>IMPORTANT NOTE</b>			
<small>The Photographer has accepted this order on Standard Photographic Terms and Conditions of Engagement as previously supplied to you. Please read and check this order confirmation carefully as the work will proceed according to these instructions. Please request our Standard Photographic Terms and Conditions of Engagement [v2006] if you require a further copy.</small>			
<b>CLIENT SIGNATURE:</b>		<b>PHOTOGRAPHER SIGNATURE:</b> <i>Zewei Li</i>	

Fig. 107. *Body Experience Photo Licence*, model by Qiyu Zuo, photography by Zewei Li, 2020.

## Appendix two: draft drawing

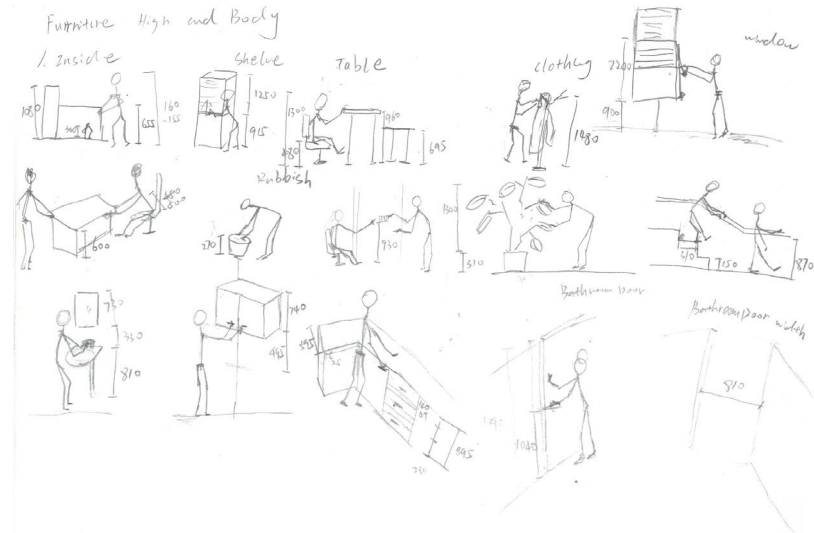


Fig. 108. *Draft Drawing for Furniture Scale Study*, hand drawing by Qiyu Zuo, 2020.

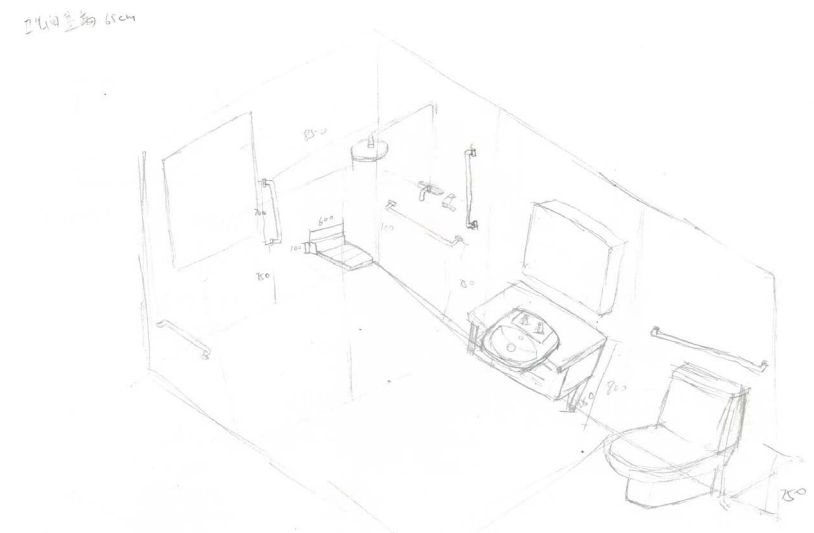


Fig. 109. *Draft Drawing for Bathroom Setting*, hand drawing by Qiyu Zuo, 2020.

### Appendix three: grandma's home drawing

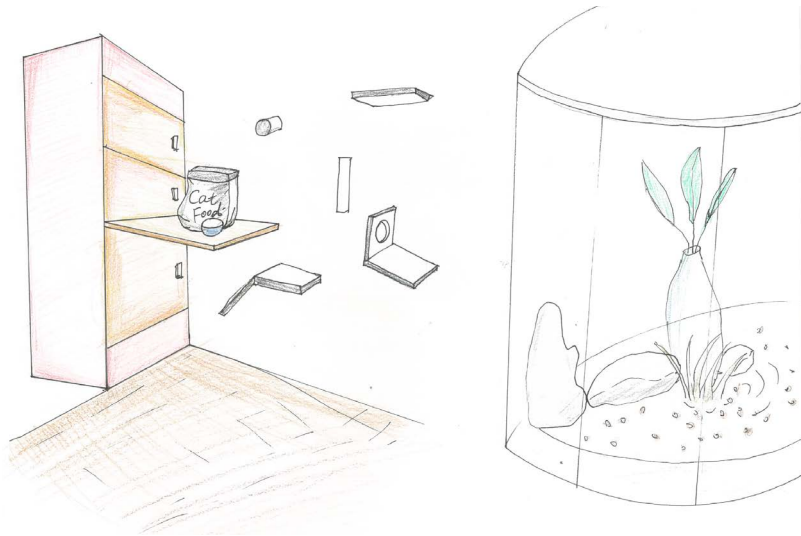


Fig. 110. Draft Drawing for Cat Space and Garden, hand drawing by Qiyu Zuo, 2020.

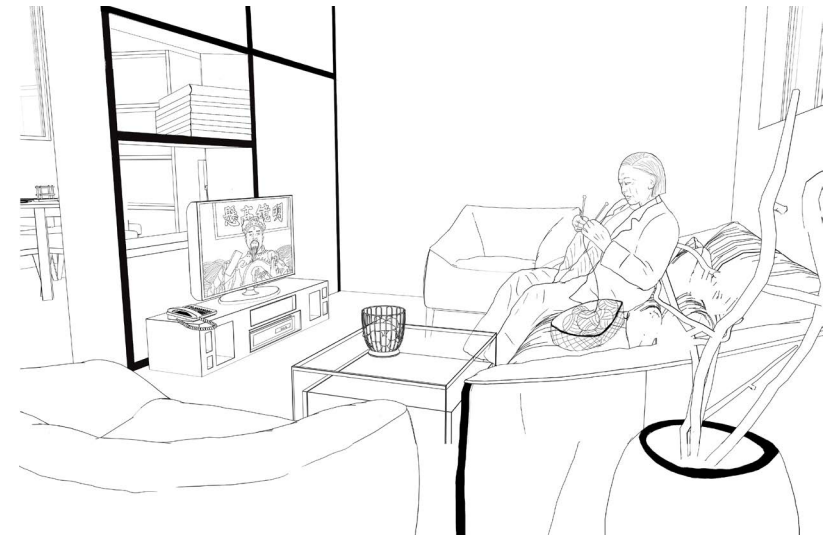


Fig. 113. Memories Drawing - Grandma in the Living Room, digital drawing by Qiyu Zuo, 2020.

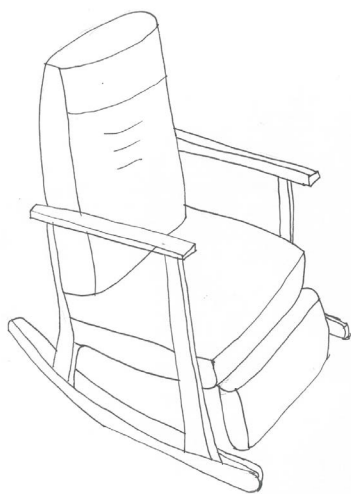


Fig. 111. Draft Drawing for Chair, hand drawing by Qiyu Zuo, 2020.

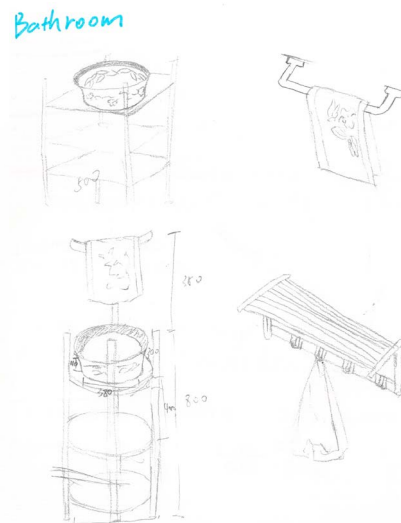


Fig. 112. Draft Drawing for Bathroom, hand drawing by Qiyu Zuo, 2020.



Fig. 114. Memories Drawing - Grandma in the Kitchen, digital drawing by Qiyu Zuo, 2020.

## Appendix three: physical model



Fig. 115. *Memories Drawing - Grandma in the Bedroom*, digital drawing by Qiyu Zuo, 2020.



Fig. 116. *Memories Drawing - Grandma in the Balcony*, digital drawing by Qiyu Zuo, 2020.



Fig. 117-122. *Test Furniture Style and Scale*, physical model by Qiyu Zuo, 2020.



Fig. 123. *Print Floor Plans*, physical model by Qiyu Zuo, 2020.

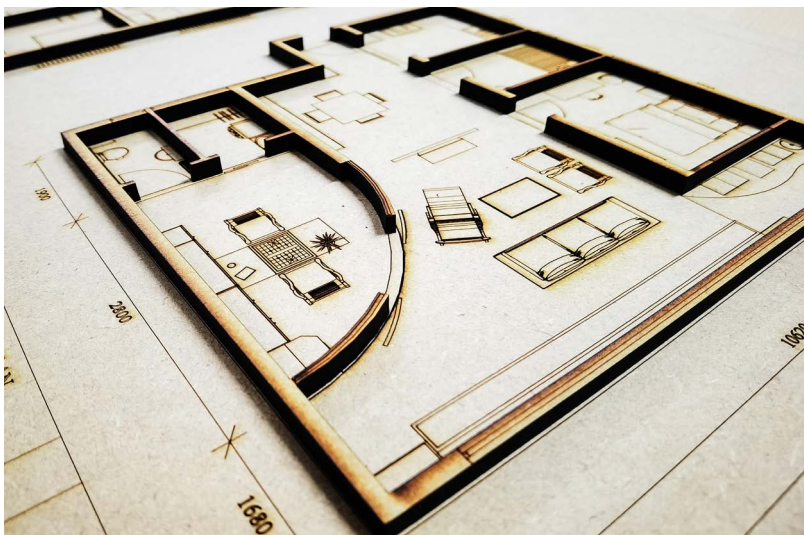


Fig. 124. *Print Floor Plans - Perspective Views*, physical model by Qiyu Zuo, 2020.



## Appendix four: details drawing



Fig. 125. Details for Entrance, digital drawing by Qiyu Zuo, 2020.



Fig. 126. Details for Kitchen Bamboo Material, digital drawing by Qiyu Zuo, 2020.

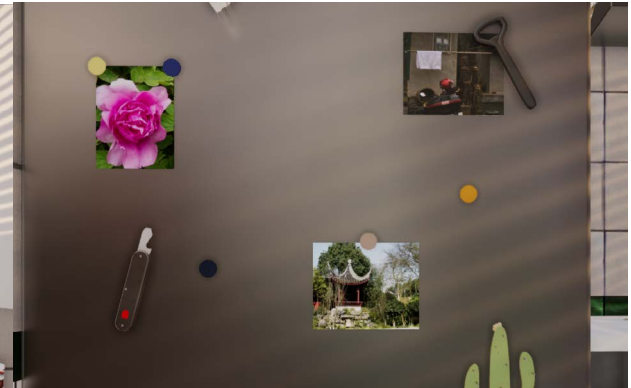


Fig. 127. Details for Kitchen Refrigerator, digital drawing by Qiyu Zuo, 2020.



Fig. 128. Details for Bedroom, digital drawing by Qiyu Zuo, 2020.

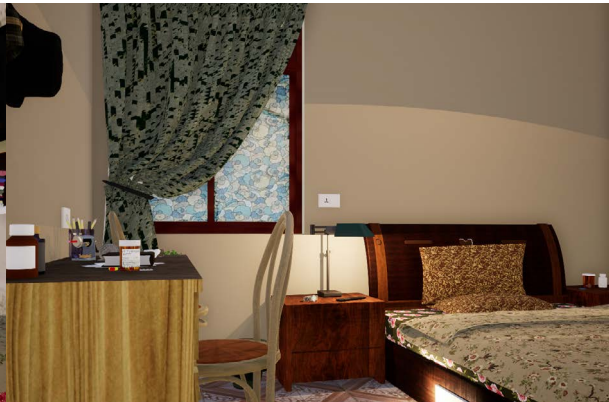


Fig. 129. Details for Bedroom, digital drawing by Qiyu Zuo, 2020.



Fig. 130. Details for Function Room, digital drawing by Qiyu Zuo, 2020.



Fig. 131. Details for Cat Play Towers, digital drawing by Qiyu Zuo, 2020.



Fig. 132. Details for Master Bathroom Hangers, digital drawing by Qiyu Zuo, 2020.



Fig. 133. Details for Master Bathroom White Lamp, digital drawing by Qiyu Zuo, 2020.



