Active Aging in Rural China:
A Proposal for Rural Age-Friendly Community in Fujian, China

by

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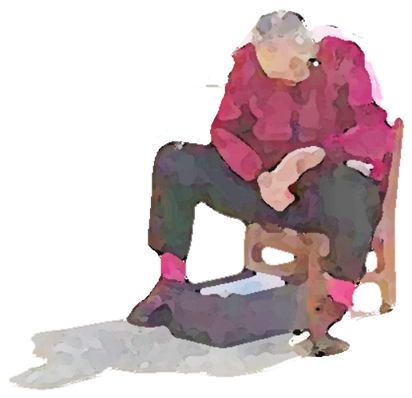

ABSTRACT

This practicum addresses the issue of ageing in place for rural elderly people in China. It examines how landscape architects can create age-friendly communities for rural elders through the re-design of Shang Tun Village in northern Fujian province. The design process aimed to provide comfortable environments, age-friendly facilities, social participation, and self-confidence for the elderly to help them age in place actively. The practicum provides design insights for developing age-friendly communities in rural China.

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Background

Modern medical technology and global economic growth have reduced human mortality and increased the world average life expectancy to a historical high. A century ago, people lived for about 45.1 years on average; but in 2020, the average lifespan was 73.2 years (MacroTrends, 2020). Moreover, MacroTrends predicts that by 2050, people will live for more than 80 years on average (MacroTrends 2020). This means that ageing is inevitable and the ageing population is growing worldwide. The ageing issue is especially serious in some developed countries and regions. For instance, in 2021, Canada had a life expectancy of 82.66 years,

Japan had 84.91 years, and Singapore had 84.07 years (MacroTrends 2020). According to the World Bank, 9.3% of the world population, or over 720 million people, were over 65 years old in 2021 (World Bank, 2021).

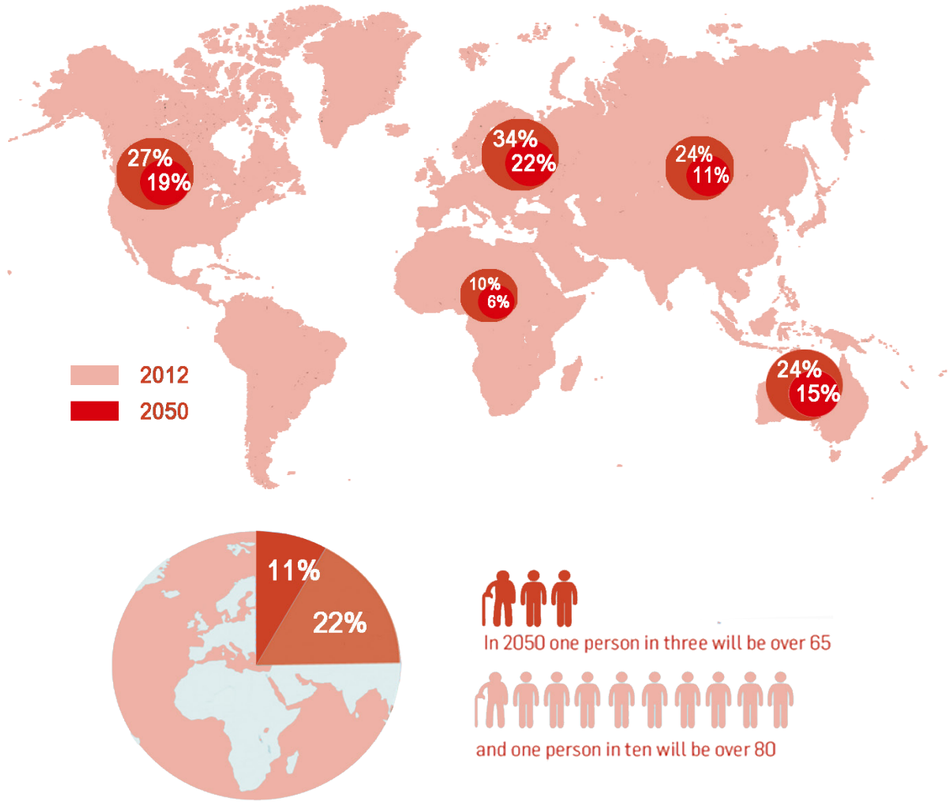


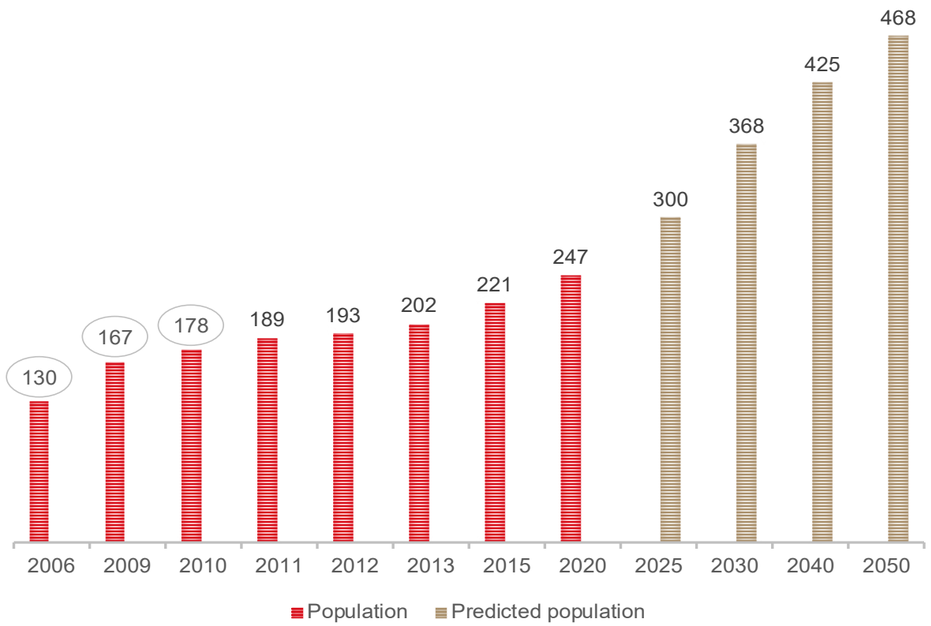
Figure 1-2: World ageing population prediction, 202W0.(MacroTrends 2020)

The ageing country

Despite being a developing country, China has a healthy and quality life. In 2021, the life expectancy of Chinese people was 73.64 years (National Bureau of Statistics of China 2021). China also had a baby boom in the last century, and now those babies have aged (National Bureau of Statistics of China, 2021). Currently, 167 million Chinese citizens are over 65 years old, making up about 12% of the population (National Bureau of Statistics of China, 2021). China's ageing system faces a significant challenge. The ageing issue is more serious in rural and remote areas than in cities. In rural areas and small towns, the older

population makes up 23.81% of the total rural population (National Bureau of Statistics of China, 2021); that is, almost a quarter of the rural residents are older people. They face more challenges than urban areas due to poor economic conditions, such as lack of convenient public transportation, public service facilities, and lower income (Li, 2019, 15). Therefore, the ageing issue in rural and remote areas should be a vital concern and addressed.

Figure 1-3: The ageing China, 2021.
(National Bureau of Statistics of China, 2021)



Age-friendly cities and communities initiative

To address the global ageing challenge, the World Health Organization (WHO) launched the age-friendly cities and communities initiative in 2006 (World Health Organization, 2007, iv). In 2015, the WHO reported that the initiative had made significant progress; 258 cities and communities had joined the global age-friendly cities and communities network–such as Manitoba in Canada (Menec et al., 2014, 33), Akita in Japan (World Health Organization, 2017), and Red Hill community in Singapore (Singapore New, 2020). However, Forbes News commentator Richard Eisenberg noted that out of 19,000 cities worldwide, only 136 mayors signed the Milken Institute's 2014 Best Cities for Successful Ageing Mayor's Pledge and committed to improving the lives of older adults in their cities (Eisenberg, 2020). This means that the age-friendly cities and communities network still needs more effort in the long term.

China’s age-friendly communities initiative

Based on the global age-friendly cities and communities initiative framework, in 2020, the Chinese national government put forward an initiative to build high-quality age-friendly communities (Tian & He, 2020). The initiative's primary goal is to set the standards for age-friendly communities and build age-friendly communities domestically, including clean environments, convenient public transportation, accessible public facilities, high-quality medical services, and community services (Tian & He, 2020).

However, some media doubt that the age-friendly community standard can be realized in rural and remote areas due to the huge economic gap between China’s urban and rural areas (Tian & He, 2020). In fact, most of the current research and practice on age-friendly communities in China are based on urban contexts (Li, 2019, 15). This means that Chinese scholars and practitioners have largely ignored the research and practice of age-friendly communities in rural and remote areas, which resulted in the research on age-friendly communities in those marginalized areas being still underdeveloped.

What can landscape architects do for age-friendly communities?

The Global Age-friendly Cities: A Guide published by WHO discussed eight topics that provide a comprehensive picture of an age-friendly city or community. These topics are outdoor spaces and buildings, transportation, housing, social participation, respect and social inclusion, civic participation and employment, communication and information, and community support and health services (WHO 2007, 10). These topics involve the structure, environment, services, and policies that affect older adults and their well-being. However, landscape architects can only create outdoor spaces that improve human and environmental health and cannot directly address all these eight topics. The following sections will discuss how landscape architects can contribute to rural age-friendly communities directly or indirectly.

1.Outdoor Spaces and Buildings

Among the eight topics mentioned above, the outdoor environment and architectural aspects are directly related to landscape architects. The outdoor environment and public buildings have a significant impact on older adults' mobility, independence, and quality of life (WHO 2007, 12). Safe and beautiful outdoor spaces are often featured in established age-friendly cities or communities around the world (WHO 2007, 12).

A pleasant and clean environment is often considered an age-friendly feature (WHO 2007, 12). Dirty streetscapes, unpleasant smells, noise and overcrowded environments can also lower old adults' evaluations of their neighborhood environment (WHO 2007, 12). Besides, green space is essential for old people in the neighborhood. In Halifax, some caregivers say old adults prefer small, quiet, contained green spaces over large busy parks with children (WHO 2007, 13). An age-friendly green space is well-maintained with safe and smooth roads (WHO 2007, 13). It should also provide adequate shelters, seating, and accessible toilets for seniors (WHO 2007, 13). Some older adults are less physically fit than younger people and need more frequent breaks to rest (WHO 2007, 14). Therefore, an age-friendly community adults have to face more potential needs to have enough seats evenly distributed within the community.

Older adults face more risks than younger adults when they leave home and travel outside (WHO 2007, 15). Therefore, old people tend to go out less to avoid accidents (WHO 2007, 15). An age-friendly community would encourage their old residents to travel by improving the walking environment, such as removing barriers in the pedestrian walk, widening the pedestrian road, providing more accessible facilities, etc. (WHO 2007, 15). Accidental falls are a major enemy for old walkers (WHO 2007, 16). To reduce the falling threat, the Global Age-friendly Cities: A Guide suggests using more age-friendly paving in the pedestrian walk (WHO 2007, 16). This age-friendly pavement has several advantages: a smooth, level, non-slip surface; enough width to accommodate wheelchairs; dropped curbs that are level with the road; clearance from obstructions such as street vendors, parked cars and trees; and priority of access for pedestrians (WHO 2007, 16). For seniors, the threat from traffic is more direct when they cross the street. To overcome the risk, some city municipalities will take some measures, such as limiting the speed of vehicles, giving way to pedestrians, and providing longer crossing times to help old adults cross streets more safely (WHO 2007, 17).

Public buildings should provide services for all citizens, including children, older adults, and the disabled. Therefore, architecture should include accessible facilities in these public buildings, such as elevators, ramps, wide doorways, suitable stairs, rest areas, adequate signage, and public toilets with handicap access. These facilities would ensure everyone uses the space comfortably and safely (WHO 2007, 17).

Age-friendly outdoor spaces and buildings checklist

Environment

• The community should be clean and limited noisy, odors, and other unpleasant or harmful features in public places.

Green spaces

• The community should provide well-maintained, safe green spaces. Green spaces should have adequate barrier-free toilets, shelters, and seats.

• Walkways: Pavement applied in age-friendly walkways should be well-maintained, smooth level, non-slip surface, and wide enough to allow wheelchair users to access. Barriers in the walkways, e.g., street vendors, parked cars, trees, and snow, should be removed.

Age-friendly outdoor spaces and buildings checklist

Roads

• The speed of cars should be limited, and drivers should give away to pedestrians. Roads have regularly spaced pedestrian crossings to ensure pedestrians cross the road safely. The pedestrian crossing lights should have visual and audio signals and sufficient time for old adults to help cross the road.

Public services

• Services should be located close to where old adults live and guarantee their accessibility. Communities should provide clean, well-maintained, and easily accessed public toilets and seats in the community. Public buildings should be accessible to ensure old adults and the disabled use facilities independently and confidently.

2.Transportation

Public transportation is important for older adults. Landscape architects can indirectly improve the community public transportation systems by designing comfortable and accessible public transport stops for older adults. An age-friendly community should have enough bus stops with appropriate distance between them (WHO 2007, 20). Older adults are not suitable for standing for a long time when waiting for public transportation due to their physical condition. Therefore, it is essential to add enough seats and shelters at the public transport stop to provide a comfortable and safe waiting environment for old users (WHO 2007, 24). Moreover, an age-friendly public transport stop should accommodate disabled and wheelchair users, such as ensuring the bus stop is accessible and barrier-free (WHO 2007, 24). Besides, information is an important factor for older adults who choose public transportation (WHO 2007, 25). Some cities would provide suggestions for older adults on how to use public transport, and some cities would improve bus timetables by using larger print and convenient locations (WHO 2007, 25).

In many cities, old drivers complained about insufficient and expensive parking facilities (WHO 2007, 27). Besides, the disabled and wheelchair users felt ignored since there were no disabled bays for loading wheelchairs (WHO 2007, 27). Therefore, landscape architects should provide enough parking spaces and priority parking for older adults and the disabled as well (WHO 2007, 27).

Age-friendly transportation system checklist

Transport stops

• Transport stops should locate in proximity, especially in communities with a higher old population. Transport stops should be equipped with shelters and seats to provide a safe and clean environment for users. Transport stops should be barrier-free and easy to access for old adults and wheelchair users. Transport stops should have a timetable with large print and be conveniently located.

Parking

• Priority parking bays should be provided for old adults and disabled people close to buildings and transport. Priority parking should have adequate wide space for wheelchair drop-off and pick-up.

3.Housing

According to the age-friendly cities guide by WHO, an ideal age-friendly housing is affordable and equipped with age-friendly facilities that allow older people to use the house safely and independently (WHO 2007, 30). However, for landscape architects, we can create an age-friendly housing environment by improving the quality of spaces around the house.

Maintenance can be costly and exhausting for older people, especially when they have a beautiful garden. To help older people save on the expense of garden maintenance, landscape architects can propose a low-maintenance garden or front yard for them. The low-maintenance design proposal may include wear-resistant paving, low-maintenance plants, and other materials that do not require frequent maintenance (WHO 2007, 32). Moreover, age-friendly housing should avoid places with potential natural or other disasters, such as floods, thunderstorms, or animal disturbance, and provide safety for old residents (WHO 2007, 35). Besides a garden, the front yard also serves as a good place to socialize with the community, which allows older people to chat with their neighbors without leaving their garden (WHO 2007, 34). Therefore, a good front yard should give seniors a sense of security and belonging while being moderately open and welcoming to neighbors and friends (WHO 2007, 34).

Age-friendly housing checklist

Yard

• If the house with a private garden or front yard, choose affordable and low-maintenance plants and other materials.

Community integration

• Housing and front yard design should integrate older people into the community.

Living environment

• Housing should not locate in areas with natural disasters or other potential hazards.

4.Social participation

Social participation has a strong effect on elders' well-being and health. WHO indicated that the ability to participate in social life depended on the activities, accessibility, and convenience of facilities (WHO 2007, 38). Older people complained that the lack of adequate support facilities such as affordable transportation, priority parking, toilet, and seating, prevented them from social participation (WHO 2007, 38). To encourage older adults to participate in social life actively, the guide suggests community centers should be within a walkable distance for older adults (WHO 2007, 38). The age-friendly community encourages the integration of people from various backgrounds, ages, and cultures, and better integration is seen as a way to counter ageism in society (WHO 2007, 40).

Therefore, intergenerational activities are considered a better way for social integration (WHO 2007, 42). This can be achieved by sharing spaces and facilities, such as sharing the unused part of the elementary school, the community park, and part of the community center (WHO 2007, 42).

Social participation checklist

Accessibility

• The location of public facilities should be close to older people in their neighborhoods, and older people could easily access it.

Facilities

• Facilities should be accessible and equipped with adequate priority parking space, accessible toilets, and seating.

Community integration

• Activity and facilities should be welcome from various backgrounds, ages and cultures. Spaces could be shared to promote intergeneration communication.

5.Respect and social inclusion

Older people face conflicting attitudes towards them (WHO 2007, 45). Some of them feel respected, recognized, and included, but sometimes they feel they lack consideration in the community (WHO 2007, 45). In a society that glorifies youth, “old” is often associated with negative images such as sick, disabled, and dependent; people in such social backgrounds would have a higher potential to show disrespectful behavior to older adults (WHO 2007, 46).

More interaction between generations could help people learn more about ageing and older people, and counter ageism (WHO 2007, 46). An age-friendly community is responsible for organizing encounters between the generations, such as working together, sharing the same space, inviting older adults to participate in civic or historical education at school, and providing volunteer opportunities for both older adults and young generations (WHO 2007, 46).

To counter ageism, the community should provide public education about ageing so that people learn cultural values and appreciate older adults (WHO 2007, 47). Besides, some signs express a negative image of older adults: hunched over and leaning on crutches, which would stereotype old people (WHO 2007, 47). Another way to increase respect and social inclusion for older adults is to show their contributions (WHO 2007, 47). Some Communities in Shanghai place a “hero list” in the community center to show older residents’ past achievements and present contributions (Shanghai Yangpu. 2021).

Respect and social inclusion

Intergeneration activities

• The community should encounter intergenerational and family interactions. Activities that bring generations together should be encouraged.

Increase confidence

• The community should provide old adults opportunities to share their knowledge, history and expertise with younger generations.

• The contribution of old residents should be recognized and remembered by community members.

Against stereotype and ageism

• The media that include old adults in public should avoid negative images and stereotypes.

6.Civic participation and employment

An age-friendly community would provide more volunteering and employment options for older adults (WHO 2007, 51). Landscape architects can indirectly impact this section by providing accessible places for volunteering or other civic participation. Places such as community centers should be easily accessed by older residents and these public facilities should provide barrier-free toilets, adequate seats, and other accessible facilities (WHO 2007, 51).

Civic participation and employment checklist

Places for civic participation should be accessible for by old adults. Facilities should provide barrier-free toilets, adequate seats, and other accessible facilities for old adults.

7.Communication and information

Staying connected with events and people and getting useful information is essential for older adults (WHO 2007, 60). Besides traditional media, such as radio, television, and newspaper, they can also access useful information from local notice boards (WHO 2007, 60). A community notice board can offer timely and free information on important matters, such as health, legal rights, benefit entitlements, services, and community events (WHO 2007, 61-63).
An age-friendly community should ensure that the local notice board is up-to-date and accessible for older adults. For those who have visual impairments or low literacy, oral communication is important (WHO 2007, 62). Therefore, local notice boards could have audio facilities to help older people get information more easily (WHO 2007, 62). Moreover, to improve the visual experience for older adults, public facilities could use larger font sizes and simpler language in their texts (WHO 2007, 63).

Communication and information checklist

• Provide local notice boards in public spaces that old adults could easily access.

• The information center could provide audio information for people who have visually impaired or not literate.

• Print information should have large lettering and plain language.

8.Community support and health services

Health and support services are essential for older people to stay healthy and age actively (WHO 2007, 66). A good age-friendly community should have adequate, well-located, easily accessible health services for older people (WHO 2007, 66). Health and support services should be barrier-free and allow the disabled easy access (WHO 2007, 67).

Community support and health services checklist

• Health and support services are well-distributed and easy to access for older people and the disabled.

9.Summary

These checklists draw on *The Global Age-friendly Cities: A Guide* from WHO and illustrate how landscape architects can design communities that are more inclusive and supportive of older people. The WHO guide emphasizes how institutions can improve their services for older people, such as providing more volunteer opportunities, lowering housing expenses, and upgrading public facilities.

The age-friendly cities guide suggests direct and indirect ways for landscape architects to design communities that are more supportive of older people. For example, they can create spaces that encourage intergenerational interactions and reduce the loneliness of older people, or they can make bus stops that are safe and comfortable for older people to use public transport and go out independently. Some factors, such as outdoor spaces, are directly affected by landscape architects. Thus, they have a crucial role in creating age-friendly communities.

CHAPTER 2:

CONCEPTS IN AGEING

Ageing in Place

Ageing in place means old adults can choose to age in the house and communities they are familiar with without sacrificing the quality of life. Most old adults prefer to continue living at home in their community despite declining health (Fricke and Unsworth 2001, 132). They do not think living in a residential nursing institution is a good idea (McGee et al. 2005, 35-48). These old adults said the residential nursing institution is their “last resort” (McAuley and Blieszner 1985, 188), and some old people even described the such institution as ‘an evil to be avoided at all costs’ (Wilson 2000, 53).

Stones and Gullifer argue that older adults avoid nursing homes warehouse connecting the past and present selves, which could offer a mental shelter for the self-identity of old adults. In addition, in the face of the rapidly increasing old population, the existing residential nursing institutions and staff cannot cover

most of the elderly (Coeneliussion et al. 2019, 857). Besides, not all seniors can afford the cost of a nursing institution. Therefore, most older adults prefer to live in their own houses and communities with which they are familiar.

However, ageing causes irreversible physical and mental changes to old adults, such as worse vision, weaker bones, and lower mobility and agility (Ageing in Place, 2018). Daily activities such as socializing, shopping, and dating will become difficult for older adults. As an organization that houses residents, the community should take the lead to serve old residents and create an age-friendly community, which will greatly help older adults who opt for ageing in place.

Concept of Age-friendly Communities

Based on the global ageing trend, scholars and institutions used different terms to describe “communities that are friendly for ages” (Ball and Lawler 2014, 23), such as elder-friendly communities, age-friendly communities, livable communities, and communities for all ages, and community ageing initiatives. However, the most common term used by recent publications is an age-friendly community, which was officially proposed by Word Health Organization (WHO) (Age-Friendly Massachusetts n.d.). In 2006, WHO started the age-friendly cities movement in 33 cities, and the age-friendly community has been gradually adopted by local governments, institutions, and scholars worldwide.

In the last decade, the age-friendly cities movement has gained significant momentum worldwide, and policymakers and scholars have shown a keen interest in creating age-friendly communities (Menec 2017, 99). However, the specific domains of the age-friendly community vary slightly among each institution. For instance, in 2000, the American Association of Retired Person described an age-friendly community as a place where people aged 50 and older have affordable and suitable housing, supportive features and services, and adequate mobility options (Kihl and Herberger 2005, 2). Other institutions follow the guide published by WHO, which defines age-friendly communities as a place that encourages active ageing by providing health care, social participation, and security to improve life quality for the elderly (World Health Organization 2007, 2-5).

Academic researchers also have helped to define the age-friendly community. In 2007, Alley et al. described it as a community “where older people are actively involved, valued, and supported with infrastructure and services that meet their needs” (Dawn 2017, 5). Greenfield et al. defined Age-Friendly Community Initiatives as stakeholders from multiple sectors working together in a specific local geographic area, aiming to make social and physical environments more supportive of older adults’ health and well-being (Greenfield 2015, 197). Recently, Scharlach and Lehning developed an integrative model to show three domains of an age-friendly community: environmental fit and accessibility, social engagement, and multidimensional health and well-being (Scharlach & Lehning 2016, 35-68).

Based on the Global Age-friendly Cities guide, WHO categorizes urban community ageing service into eight areas: outdoor spaces and buildings; transportation; housing; social participation; respect and social inclusion; civic participation and employment; communication and information; and community support and health services (World Health Organization 2007, 12-66). Although implementing an age-friendly community project requires collaboration from various participants, this research will focus on the outdoor environment and outdoor social engagement.

Conceptualizing Rural Age-Friendly Communities

The age-friendly movement encourages communities and neighborhoods to care about old adults' well-being, which brings positive effects for the elderly. However, Golant points out that community services have been mainly seen as the providers of services and supports to meet the needs of ageing individuals (Hans-Werner Wahl, Scheidt, and Windley 2004, 68-77). Moreover, researchers have questioned this approach by saying it would ignore issues relevant to rural regions, where communities lack adequate commercial support and volunteers to engage in age-friendly activities (Wahl and Lang 2004, 30).

A common image of rural communities is bucolic and bypassed (Joseph and Cloutier-Fisher 2005, Ageing and place: Perspectives, policy, and practice). Bucolic means rural areas have beautiful natural scenery, a slow-paced lifestyle, and a culture of supportiveness (Brown and Glasgow, 2008). However, the term "bypassed" implies rural communities have features such as being isolated, service-poor, and economically depressed. Compared with urban communities, rural regions have to deal with issues such as being far away from large centers, low population density, harsh climates, and low economic productivity (Cloutier-Fisher and Harvey 2009, 250; Cloutier-Fisher and Kobayashi 2009, 185-86).

Researchers suggest that many rural communities have challenges providing health and social services (Li, Zhu, and Liu 2017, 27; Davenport, Rathwell, and Rosenberg 2005,16). Moreover, the outmigration of the younger generation seeking employment in urban areas caused a volunteer shortage, which will add pressure to provide services for old residents (Li and Wister 2021, S8-12; Wu and Wu, 23).

Another common view of rural communities is bucolic. That is, rural communities have beautiful natural scenery, a slow-paced lifestyle, and strong social connections (Judith Celene Kulig and Williams 2012, 427-433). Keating and Eales argued that the lack of community services motivates old residents to have a sense of urgency to meet the needs of others and the community (Keating, Eales, and Phillips 2013, 319). The absence of community service ties individuals together and makes them face ageing issue proactively in these bucolic communities.

The viability gap caused by uneven regional development should be emphasized in the age-friendly discourse. These differences compel researchers to focus on a fundamental question: Does the existing age-friendly community framework suit rural communities? Keating and Eales stress that ageing should be seen as a dynamic movement rather than a static perspective (Keating, Eales, and Phillips 2013, 319). Therefore, they introduced the 'Best-fit' theory to reconsider the age-friendly concept in the rural community context (Keating, Eales, and Phillips 2013, 322).

The Theoretical Basis of Age-friendly Communities

Considering the mismatched needs and community services in rural communities, reviewing the Person-Environment Fit theory and related models for age-friendly community research is essential.

The age-friendly related theory could go back to Field Theory developed by American social psychologist Kurt Lewin. He argued that an individual's behaviour could be explained, predicted, and changed by creating life space based on human perception and psychological environment (Lewin 1943, 296-308). Kurt's conclusion is seen as the fundamental theory of humans and the environment and is widely accepted by scholars today.

Inspired by Kurt's Field Theory, French and Kahn proposed the Person-Environment Fit framework. The framework divided Person-Environment Fit into two types: Supplies-Values-fit refers to the matches between requirements and environmental support with similar characteristics (Caplan and Harrison 1993, 253-59). The second type is Demands-Abilities Fit. Individuals can meet environmental demands (Caplan and Harrison 1993, 259-61). Person-Environment Fit theory focuses on the interaction between the environment and individuals, emphasizing how people gradually influence the surrounding environment (Caplan and Harrison 1993, 271).

In the late 20th century, researchers have applied the person-environment fit theory to ageing issues, which aims to understand the interaction of individual ageing processes and the environment. For example, Lawton and Nahemow have combined ecology and ageing issues and built an ecology ageing model to explain how the environment affects the ageing process (Lawton and Nahemow 1973, 619). The ecology ageing model assumes that when an individual faces pressure from the surrounding environment, their performance is highly related to their individual ability (such as income, cognitive level, and health condition) (Lawton and Nahemow 1973, 623-31). In other words, people with higher abilities show better resilience when facing negative factors in the environment than those with lower abilities (Lawton and Nahemow 1973, 653-74). However, the ecology ageing model has been criticized for its limitation because it overemphasizes negative environmental issues and ignores residents' subjective initiative, which puts residents in a passive position while facing environmental change and ageing issue (Carp 1984, 290; Kajana 1982, 97-103).

Kaplan proposes the person-environment compatibility model as an alternative to the ecology ageing model, which has some limitations. According to this model, a supportive and restorative environment is crucial for different groups of people, such as the mess residents, disabled, children, and elderly. A compatible environment should offer various functions to help them achieve their goals in work, entertainment, and rest (Carp and Carp 1984, 328).

The ecology ageing and person-environment fit theory mainly reflect the western culture and economic backgrounds. Phillips and Cheng incorporate the Chinese traditional “Xiao” culture into the framework to adapt the theory to China’s rural context and develop the person-environment fit Model (Phillips et al., 224). This model views ageing as a continuous process that changes an individual’s health condition over time. Therefore, individuals need to adjust their abilities to match the environment and maintain their life quality (Phillips et al., 230). In other words, the model emphasizes the dynamic balance between individual and environmental factors (Phillips et al., 230).

The person-environment accommodation theory is a useful framework for age-friendly community programs and has gained wide acceptance among researchers. However, the theory’s feasibility remains doubtful. The theory assumes that an ideal environment can perfectly meet an individual’s needs, but some researchers argue that such a complete fit between residents and the environment is unrealistic in a real project (Menec 2017, 103). Therefore, current research uses the person-environment accommodation theory as a theoretical guide and focuses more on the subjective feelings of older residents. It also seeks specific solutions based on the regional differences. (Iwarsson, Isacsson, and Lanke 1998, 176-82).

Chapter Summary

This chapter introduces some key concepts of age-friendly communities, such as ageing in place, age-friendly, and age-friendly rural communities. It also reviews the theoretical development of age-friendly communities. The main theories of age-friendly communities are based on the person-environment fit theory. This theory states that ageing reduces individuals’ physical abilities and makes their daily environment more challenging. The age-friendly community aims to minimize the environmental barriers and help older people live comfortably.

CHAPTER 3:

FILLING THE GAP: AGE-FRIENDLY THEORY AND PRACTICE IN CHINA

The Increasing Ageing Population in China

According to the Seventh National Population Census of the People's Republic of China, more than 18.7% of the population was over 60 years old in 2020, and the percentage was even higher in rural areas (23.8%) (China Statistics Bureau 2020). The Census report reveals some characteristics of the Chinese population ageing process: the large number of ageing people, the rapid increase of ageing trend, the predominance of older adults in rural areas, and the rising education level of the elderly group (China Statistics Bureau 2020). The Census result indicates that China will face a more severe ageing challenge in the next decades (China Statistics Bureau 2020). Therefore, it is urgent to develop age-friendly communities and support the elderly to age in place actively.

Age-friendly Theory and Practice in China

The ageing issue in China drives domestic scholars to engage in research on age-friendly communities. In the 20th century, China lacked the theory and practice of age-friendly communities, leading many Chinese researchers to learn from the age-friendly community models in the United States, Canada, European countries, Singapore, Japan, and Hongkong (Dong 2005, 12-36). Influenced by western age-friendly community practices, Chinese researchers mainly focus on age-friendly housing and environment (Hu 1994, 39; Luo 1997, 47). However, some domestic researchers claim that age-friendly initiatives should be a holistic solution that covers housing, environment, theoretical foundation, policy support, financial assistance, and psychological needs of older residents (Wang 1997,47; Zhou 1997, 12) .

In the early 21st century, scholars agreed that the centralized elderly communities in the United States suited the physical needs of older adults and this age-friendly community model was adopted and implemented by big cities in China (Chao, 1999, 22). Since the centralized elderly community practice was successful in cities, scholars thought they had found the solution to the ageing issue in China. However, some researchers criticized the centralized elder community model as a resource-intensive plan that required close cooperation from different stakeholders and doubted the applicability of the community model in rural areas (Luo 1996, 31; Yao 2005). Moreover, the limitations of centralizing elderly communities became evident over the past 20 years. For example, Beijing Suncity Ageing estate, which was once regarded as a successful case of China's age-friendly community practice, faced difficulties due to the increased maintenance budget. Facilities such as ageing hospitals, banks, supermarkets, and community centers stopped operating, which caused inconvenience for older residents (Economic Information, 2019). The centralized elderly community model encountered challenges in China and researchers proposed alternative concepts: ageing in place, inclusive space, and person-environment fit model. Ageing in place means that older adults can live in an environment that they are familiar with and can access health care services in the local community, which aims to ensure that older adults age with dignity (Li 2012, 27-32). Inclusive spaces aim to meet the needs of the diverse population structure, offering residents of all ages an inclusive and multi-functional environment, and preventing discrimination based on ageing, physical

impairment, or cognitive decline (Li 2016, 28). The person-environment fit model encourages the positive interaction of individuals and the environment and finds the “best-fit” environment based on the local economy and cultural background (Phillips et al. 2010, 256).

The Chinese government has made remarkable progress in developing age-friendly communities in urban areas, reaching 1000 communities in 2021 (Tian and He 2020). However, Li argues that the success of age-friendly communities in cities has overshadowed the needs of rural communities, where the ageing population is ‘invisible’ in the ageing discourse (Li 2019, 109). He notes that most of the age-friendly communities in the current research scope are situated in big cities, with little attention to ageing issues in rural communities (Li 2019, 109). In China, more than 150 million older residents in rural communities demand a friendly environment, but the lack of age-friendly institutions and services makes rural age-friendly community projects more difficult (Li 2019, 110).

The Characteristics of Rural Communities

Rural communities have some distinctive features compared to urban communities, such as traditional ageing views, population structure, facilities availability and quality, social model, etc. It is essential to understand the rural context before suggesting specific solutions for the age-friendly environment issue.

Traditional Views of the Ageing Issue. The traditional views of ageing can be seen in two old sayings: “The purpose of raising children is to get care from the children when the parents become old” and “People should spend their last days in his/her hometown.” Even though these outdated ideas have been gradually replaced by mainstream social values, the research should take them into account as a specific cultural background without bias.

These sayings reflect the preferences of rural older adults: they want to live in their own houses with younger generations rather than live in ageing apartments or institutions that provide nursing services from professional staff. Although the children taking care of their old parents at home model has persisted for thousands of years in China, this ageing model is gradually collapsing due to the significant change in the rural demographic structure (Phillips et al., 224).

Demographic Change in Rural Areas. In China, there is a significant gap in public services and income distribution between urban and rural areas, and the average wages are much higher in cities (Luo 2021). In the past two decades, millions of younger generations moved to cities for better opportunities, leaving their old parents and grandparents in the countryside (Wu and Wu 2021). Those young generations work hard and do not have enough time and money to raise children; therefore, they send their children to the countryside to live with their retired parents. Besides the migration of younger generations, the rise in the average age of old adults increases the proportion of the elderly and worsens the imbalance of population structure. Eventually, minors and the elderly become the dominant groups in rural areas' age group, implying that age-friendly rural communities should cater to both old adults and children residents.

Lack of Basic Facilities and Public Services. Scholars agree that poor infrastructure and public services are a key reason why younger generations leave the countryside (Liu and Sha 2019, 70; West Forum 2015). The low financial support from local government has resulted in the underdevelopment

of basic infrastructure and public services in rural areas (West Forum 2015). The Third Domestic Agricultural Census shows that over 38% of villages lack streetlights on main roads, 75% of villages cannot offer parcel delivery services, 45.1% of villages need physicians or doctors, and 52.5% do not have grocery stores within 50 m2 (Nationall Bureau of Statistics of China 2017). In the rural area, vehicle ownership only reached 25 per hundred residents, but the positive side is that every family has at least one motorcycle, which ensures that residents living in the countryside can drive to nearby cities to access public services (National Bureau of Statistics of China 2017). The younger generation can drive to nearby towns for better services, but older residents who have lost mobility cannot go anywhere without help; thus, the countryside seems to become a "prison" for them.

Neighbourhood Social Network. People who live in the same village usually have similar cognitive levels and economic conditions (Paoletti 2014, 170). An interesting research finding revealed that individuals living in villages with less financial resources have a sense of urgency regarding the needs of others and the community (Phillips et al. 2010, 257). Economic hardship encourages residents to pool resources to achieve the same goal and reduce potential risks in life (Phillips et al. 2010, 257). Residents are also accustomed to helping each other in daily life, such as cooking together, sharing food, holding big events, etc.(Phillips et al. 2010, 257). Almost every resident is actively or passively involved in community affairs, and in the meanwhile, these community affairs would tie them closer (Phillips et al. 2010, 257). In other words, the friendly

social atmosphere can encourage residents' participation in the community issue, prevent the isolation of individuals, and support active ageing in rural communities.

Lack of Outdoor Space. A research focusing on age-friendly outdoor spaces identified the common issues in underdeveloped areas (Li 2019, 110). The outdoor activity spaces tend to be homogeneous, mainly consisting of small squares, fragment spaces in front of yards, and micro-spaces along roads, requiring a more diverse design language to achieve multiple uses (Li 2019, 110). Moreover, some outdoor spaces are far away and do not match the distribution of older residents, resulting in a low usage rate by the elderly (Li 2019, 110). Also, the facilities in the spaces, such as washrooms, planting beds, and streetlights, are not accessible, convenient, and safe for old users (Li 2019, 110). Based on the research, underdeveloped communities usually have narrow roads and limited parking spaces (Li 2019, 111). Some car owners choose to park their vehicles on the side of narrow roads and block the walking network, which directly reduces the community walkability for elders (Li 2019, 111). Even if an outdoor community space avoids these design flaws, it may still be neglected due to the lack of regular maintenance.

Chapter Summary

To sum up, cultural background and economic conditions create different contexts for rural and urban communities. Currently, most Chinese scholars concentrate on age-friendly communities in urban areas. However, considering the different cultural backgrounds and economic situations of rural areas, it is questionable whether the design suggestions in urban age-friendly communities can be applied to rural areas. Therefore, some design strategies based on rural contexts are needed to achieve age-friendly communities.

CHAPTER 4:

PRECEDENTS FOR AGE-FRIENDLY COMMUNITIES

Rural Age-friendly Communities in Manitoba, Canada

Manitoba is a midwestern Canadian province that is facing a serious ageing issue. The Manitoba Bureau of Statistics reported that, in 2019, about 16% of the population was 65 years and older. Moreover, the old population is projected to increase by 31% in 2028.

Inspired by the WHO's "age-friendly" concept, Manitoba launched The Age-Friendly Manitoba Initiative (AFMI) to support old adults to age in place actively and improve their life quality (image 4-1). The AFMI is a "comprehensive, multifaceted approach to addressing the needs of a growing seniors' population" (Manitoba Government, 2018). AFMI aims to foster age-friendly communities where old adults can stay active and healthy and continue participating economically and socially (Manitoba Government, 2018).

Figure 4-1:The AFMI benefits old adults in Manitoba wide.

In 2021, more than 90 communities joined the AFMI, which aimed to remove physical, economic, and social barriers, implement policies, systems, services, products, and technologies to create a quality life for all its community members, and enable them to stay active as they grow, live, play, and age (Manitoba Government 2018).

Urban areas are home to most Canadians, but many still reside in rural or remote areas. These areas account for nearly 23% of the older adult population in Canada (Turcotte and Schellenberg, 2007). Older adults in rural and remote communities face distinct challenges that differ from their urban counterparts (Menec et al., 2014). For instance, staying active and engaged in community activities may be hard for older adults who are “ageing in place” in rural areas (Federal/Provincial/Territorial Ministers Responsible for Seniors 2009, 11). They may also have limited or no access to support services, housing options, and transportation that can help them maintain their independence (Federal/Provincial/Territorial Ministers Responsible for Seniors 2009, 11).

Moreover, older adults often need to visit medical facilities due to their declining physical ability. However, in rural and remote areas, they may have to travel far from their communities to access health care services, which exposes them and their families to risks (Federal/Provincial/Territorial Ministers Responsible for Seniors 2009, 12). Hence, to safeguard “the most vulnerable older adults” (Federal/Provincial/Territorial Ministers Responsible for Seniors 2009, 10), the Canadian government and provincial government launched the Age-Friendly Rural/Remote Communities Initiative (AFRRCI) in 2006. The AFRRCI builds on the WHO age-friendly framework, which addresses eight critical dimensions of community life, and optimizes opportunities for health, social participation, and security (Age-Friendly Manitoba 2018).

To support older adults in improving their independence, physical health, and social interaction, communities should adopt age-friendly concepts for their outdoor spaces and buildings (Federal/Provincial/Territorial Ministers Responsible for Seniors 2009, 12). Walking is an important form of movement and physical activity for old adults, so communities should ensure that sidewalks, pathways, and trails are walkable and free of hazards such as slippery roads (Federal/Provincial/Territorial Ministers Responsible for Seniors 2009, 12). Moreover, footpaths should have accessible washrooms and rest areas with benches at a suitable height to accommodate the declining physical conditions of old residents (Federal/Provincial/Territorial Ministers Responsible for Seniors 2009, 13) . The community spaces should also be inclusive of people with different physical abilities, such as elders who use walkers, wheelchairs, or pedestrian scooters. Public buildings should have features such as fewer stairs, wheelchair ramps, and wide push-button doors to facilitate access and use (image 4-2). In addition, communities should clear snow and ice from roads promptly in cold winters to prevent elderly users from slipping (Federal/Provincial/Territorial Ministers Responsible for Seniors 2009, 13).

Image 4-1: Older people sitting on the bench.

Image 4-2: Public building set accessible stairs and elevators for people in different physical conditions.

According to a survey by AFRRCI, good roads, light traffic flow, prompt snow removal, and adequate parking options are important for the mobility of seniors living in remote areas who own cars (Federal/Provincial/Territorial Ministers Responsible for Seniors 2009, 14). However, these seniors also face challenges such as insufficient parking spaces for people with disabilities and fear of losing their independence if they have to give up their driver's licenses (Federal/Provincial/Territorial Ministers Responsible for Seniors 2009, 14). To address these issues, the local government has implemented a refresher course for drivers over 50 and a "limited driver's license" for those who lose their license but can still drive during daylight hours or within a five-mile radius from home (Federal/Provincial/Territorial Ministers Responsible for Seniors 2009, 17).

The Manitoba government has developed an age-friendly transportation system for old residents who use public transportation for their daily activities, such as volunteering, shopping, and socializing. This system includes affordable transportation options such as volunteer driver assistance, buses, and handi-vans (Age-Friendly Manitoba 2018). The parking lot also has parking spaces designed for wheelchairs and handi-vans (image 4-3) to facilitate access for people with physical impairments (Age-Friendly Manitoba 2018).

The age-friendly communities offer various indoor and outdoor social activities. Communities encourage individuals to participate in physical activities (image 4-4), culture, education, arts, and community celebrations through their

Image 4-3: Handi-vans for old travelers in a parking lot.

Image 4-4: Community pool for residents of different ages.

social networks (Age-Friendly Manitoba 2018). Community members also invite marginalized groups, such as newcomers and seniors who may be isolated, to participate in activities and help them promote a sense of belonging and live healthy life.

Age-friendly communities welcome people of all ages, genders, abilities, and backgrounds, especially seniors, providing them with social opportunities and helping them continuously contribute to and benefit from community life. Age-friendly communities provide opportunities for intergenerational activities and events that help old residents connect with friends, reduce ageism, and promote safety by reducing criminal behavior (Age-Friendly Manitoba 2018). Age-friendly communities provide opportunities for community engagement and volunteering to help old residents stay active and feel a sense of personal fulfillment after contributing their time, knowledge, and skills (Age-Friendly Manitoba 2018) (image 4-5).

Image 4-5: Old residents are invited to a community affair.

Except for efforts from all levels of government, many organizations are also contributing to promoting age-friendly in remote areas. Such as Active Ageing in Manitoba provides all Manitoba seniors with the opportunity to age actively, helping them improve health, mobility, and continued social participation (Active Ageing in Manitoba n.d.). The Transportation Options Network for Seniors promotes the development of age-friendly communities by providing information and education to Manitobans from a transportation perspective (Active Ageing MB n.d.). The University of Manitoba provides the latest research successes and assessments for developing age-friendly communities and a better understanding of social isolation in collaboration with Brandon University while reducing social isolation (Targeting Isolation 2021) (images 4-6, 4-7, 4-8).

Image 4-6: Logo of Transportation Options Network for Seniors.

Image 4-7: Logo of Active Ageing in Manitoba.

Image 4-8: Logo of the University of Manitoba

Spina and Menec (2015) identified four factors that influence the age-friendliness of rural communities in Manitoba: community size, location, demographic makeup, and leadership. They found that old adults in small towns face challenges such as lack of goods and services and social isolation, which discourage some retirees from moving there (447). However, some small towns near large urban centers attract more old adults because of the easy access to shopping and entertainment (448). They also found that age-friendly communities need a balanced ratio of older and younger generations, as communities that lose younger people tend to decline, while communities that have more younger people may not prioritize the needs and interests of older adults (455). Lastly, they argued that strong leadership is essential for making a community more age-friendly, as it affects the support and advocacy from municipal, regional and provincial governments for the initiative (458).

Good neighbor center in Yangpu district, Shanghai, China

The Yangpu District in Shanghai, China, is a successful example of an age-friendly community network. With 40.21% of its population aged 60 or above, the district faces a serious ageing issue that prompts local authorities to create age-friendly communities for old residents (China Commercial Industry Research Institute 2020). In 2012, a community-wide survey revealed that more than 95.3% of residents in the district were dissatisfied with the existing community services and facilities (China Youth 2017). As a result, the community and residents collaborated to set up the first Good Neighbor Center (GNC) in 2012, with the aim of providing more public services and improving the quality of life for residents (China Youth 2017). The cooperation model involves residents donating old housing as the location of the GNC, while the community administration center handles the operation and maintenance part. By the end of 2020, there were 60 GNCs operating in the Yangpu District (figure 4-1).

Image 4-9: Good Neighbor Center in Fushun Road, Yangpu District.

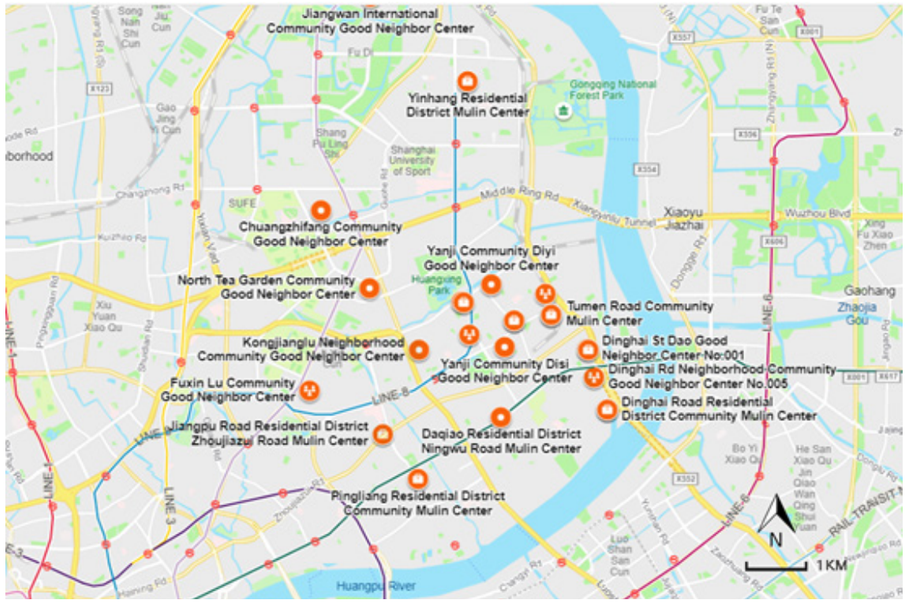


Figure 4-1: Good Neighbor Centers in Yangpu District, Shanghai, China.

Image 4-9 Good Neighbor Center in Fushun Road, Yangpu District.

GNCs are also called “the club on the doorstep” because they are within easy reach (Shanghai Yangpu 2021) (image 4-9). The Yangpu district has 60 GNCs in a network form, with one GNC per square kilometer. This ensures that residents can walk to the nearest GNC in 15 minutes or less.

GNCs aim to create an inclusive space for everyone regardless of age, gender, physical condition or ability. Each GNC offers different services and facilities to suit the needs and interests of different visitors, such as baking rooms, fitness rooms, reading rooms, dancing rooms, legal consultation services, and psychological consultation services (image 4-10, image 4-11 and image 4-12). Everyone can enjoy themselves here. For instance, older adults can have tea and chat with friends, teenagers can play video games together, and children can do handicrafts.

Image 4-10: The aunts are dancing at the Good Neighbor Center.

Image 4-11: The bakery kitchen in Good Neighbor Center.

Image 4-12: Fitness room in Yanji Street Good Neighbor Center.

Except for various opportunities for recreation and volunteering, some GNCs contained nearby outdoor spaces to provide community gardens and green spaces for residents. The Knowledge and Innovation Community (KIC) Gardens are the most popular garden among these community gardens. KIC Garden takes over 2200m^2 and is located in the center of the Yangpu District (image 4-13).

Image 4-13: The Knowledge and Innovation Community Garden.

The site was originally intended for building apartments, but the developer found that the municipal pipelines ran through the site, making it unsuitable for high-intensity development. The site was then deemed to have low commercial value. In 2021, the municipal hired the Knowledge and Innovation Studio to create a community garden for the nearby GNC. The KIC Garden has several agronomic spaces that aim to recreate the natural features of the idyllic countryside and give residents a taste of rural life. The garden has 38 plots of land that families

or individuals can rent, and professional plant instructors are available to help them grow healthy fruits and vegetables (Information Office of Shanghai Municipal 2022) (image 4-14). The KIC Garden is open to everyone who loves nature and plants: older adults can enjoy gardening, while children can learn about horticulture and the ecosystem here (image 4-15).

Image 4-14: People are planting vegetables in the community garden.

Image 4-15: Students are learning knowledge in the KIC garden.

The sidewalk also has a “pocket garden” that makes use of the abandoned space. The Fuxin Road pocket garden is a narrow space of 80 meters long and 2 meters wide, along the sidewalks on Fuxin Road. It has slides, swings, and other playful facilities based on the existing planting bed layout. It also has colorful geometric figures that express the vitality of the district (image 4-16). These facilities and pop-up designs turn the dull sidewalk into a playful public space. The Fuxin Road pocket garden is now one of the landmarks of the Yangpu district (Shanghai Yangpu 2021). It attracts younger people and some old visitors from nearby communities with its lively and fashionable design elements.

Image 4-16: The pocket garden in Fuxin Road.

Red Hill Silver Zones in Singapore

Singapore is one of the fastest ageing countries in Asia. The 2020 Singapore National Census data shows that residents aged 65 and above make up 15.2% of the population, and in the past decade, the growth rate of the elderly population has been higher than that of Japan, South Korea, and China (World Bank Organization 2020).

Since the ageing issue has become more urgent, the Singapore Land Transport Authority (LTA) reported that elderly-involved traffic accidents were increased continuously, especially in residential areas (Land Transport Authority 2020). Therefore, the Singapore government launched the Silver Zone project, aimed to improve existing traffic facilities, provide a safe and convenient traffic environment, and encourage older adults to stay

Image 4-17: Silver zone in Singapore.

active (Land Transport Authority 2020). In 2021, 25 Silver Zones were set up in Singapore, and the LTA claimed that the total number of Silver Zones would reach 50 by the end of 2023 (Land Transport Authority 2020) (figure 4-2).

Figure 4-2:Silver zones' location in Singapore.

The Singapore LTA launched the first wave of Silver Zones in 2014 in residential areas with a high old population. The Red Hill community was among the first five areas to pilot the project. The Red Hill Silver Zone reduced the average speed of vehicles by 15% (Li 2016) and the number of traffic accidents involving old pedestrians by 80% (Land Transport Authority 2020). These remarkable results are due to the humanized design by the local government and LTA.

The Red Hill Silver Zone has several design strategies for the age-friendly pedestrian system. The main strategy is to control vehicle speed. The Singapore LTA announced on August 12, 2021, that they would permanently lower the speed limit in the Silver Zones from 40 km/h to 30 km/h by the end of 2021 (Channel News Asia 2021). Besides the administrative regulations, the Silver Zone also uses road modifications to slow down vehicles, such as curved roads, mini-roundabouts, speed bumps, etc. For example, intersections are turned into mini-roundabouts to reduce the speed and conflict of vehicles and improve traffic safety. Other measures include using curved roads on long straight roads and using triangular road paint to mark the lanes to make them look narrower (image 4-18). At the entrance of the Red Hill Silver Zone, there is a slight arch on the road surface that makes vehicles bump slightly, reminding drivers that they have entered the elderly traffic safety zone and preventing them from being drowsy (Zhou 2018) (image 4-19).

Figure 4-18:Limit the speed of motor vehicles in the community.

Figure 4-19:Silver zones elderly-friendly features.

Although the speed of vehicles has dropped, there are still potential safety hazards for old pedestrians. Generally, old pedestrians walk slowly and cannot respond quickly to complex traffic situations. Considering the slow walking speed of old residents, the Red Hill Silver Zone includes a “safety island” in the center of the wider road, helping old residents with weak mobility can cross the wide road separately and extend the rest, observe, and respond time for them. Besides, the green light time has been specially extended for older adults, which allows them to walk slowly to cross the street. Including the Red Hill Silver Zone, most traffic lights in Singapore are equipped with special card readers. The seniors only need to tap their bus card, and once the computer system identifies the senior card, the traffic light will extend the green signal for up to five seconds (Singapore New 2020) (image 4-20). Moreover, the Red Hill Silver Zone

Figure 4-20:Card readers to extend traffic lights for old pedestrians.

also takes measures such as filling the road gaps, widening the sidewalks, dividing pedestrians and vehicles, and connecting the sidewalks to parks and urban green spaces to build a more comfortable walking system for old pedestrians.

In the densely populated areas of semi-disabled old residents, the Silver Zone has cleverly eliminated the height difference of curbstones by setting up road arches to ensure that wheelchairs can pass without barriers (Tang and Duan 2020, 21). Meanwhile, these areas have set more significant traffic signs, reminding passing vehicles to pay full attention to older adults using wheelchairs (image 4-21).

Figure 4-21:Safety Island in the Silver Zone.

The Silver Zones also apply the age-friendly concept to the living areas, not just traffic safety. For example, they add armrests to public chairs and anti-slip treatment to utility hole covers to prevent older adults from slipping on rainy days (Zhang 2020,22). They also improve the night lighting at intersections and sidewalks for more protection at night.

If the functions around the community are too monolithic, old residents will have to travel to multiple places to meet different needs. Therefore, the Red Hill community center and the construction unit of Singapore adjusted the single residential property into multi-purpose land, renovating and expanding community life service facilities such as business and catering, aims to avoid long-distance trips by old residents and increase the vitality of the community (Tang and Chai 2020, 192).

Discussion

After introducing three cases of age-friendly communities from different regions and scales, we could know that:

The Manitoba age-friendly community project targets older adults in remote and rural areas. These older adults face unique challenges compared to those in urban communities, such as limited access to goods, services, and social participation. These challenges make them the most vulnerable residents in Manitoba. The project also covers extended areas, benefiting almost every resident in Manitoba. This achievement is due to the cooperation of many different levels of government and organizations, including the Canadian federal government, the Manitoba provincial government, local municipal, and academic institutions, such as the University of Manitoba, and several non-profit organizations from various fields. Various organizations work together to improve the quality of life for old residents in Manitoba. Compared with the other two cases, the Manitoba age-friendly project interprets age-friendly from a more macro and systematic perspective. For example, compared with the “visible” design elements, the project has many “invisible” designs for old adults, such as encouraging socializing, providing employment opportunities, and recruiting volunteer drivers to provide transportation services.

Since there are a few practices of rural age-friendly communities in China, the case study part includes age-friendly practices located in an urban context in China. The age-friendly community in Yangpu District, Shanghai, sets up community centers as “points”, uses streets and roads as “lines” to connect each community center, and finally builds an age-friendly network covering the entire Yangpu Yangpu District. Although such an age-friendly community network is challenging to achieve in a rural context due to low population density, several design methods could be learned from this case. Unlike the other two cases, the Yangpu Good Neighbor Centers included vegetable fields and allowed old residents to use these fields for gardening or agricultural activities. Since Chinese culture holds a farming and agricultural tradition, the vegetable garden has rapidly become popular among senior residents. Most Chinese residents enjoy growing kitchen vegetables in their backyards, especially the old generations. Based on this case, setting up vegetable gardens for old residents

living in rural areas seems feasible. In remote and rural areas of China, most residents or their family members are engaged in agriculture activities, which means rural residents have an adequate knowledge base for plants in the backyard. Some older adults still have a passion for their land and actively devote themselves to gardening or agricultural activities after declining physical conditions. Besides, compared with cities, rural areas have many areas for planting. Therefore, vegetable gardens could be an opportunity for age-friendly communities in rural China.

Compared with the other two cases, the Red Hill Silver Zone in Singapore is more focused on increasing the safety of the pedestrian system. Many old adults are concerned about traffic safety and avoid going out, which makes them have a higher potential to reduce social interaction and become isolated. Therefore, a safe pedestrian system is essential for an age-friendly community. The Red Hill Silver Zone combines policy and design to help old pedestrians use the road safely, such as reducing the speed of vehicles and increasing the green light time in the crossing areas.

Although these three projects succeeded in different regions, scales, and contexts, they still share some design solutions.

First, three cases aim to create friendly communities rather than specific groups for everyone. In other words, everyone is welcome to use the environment comfortably and conveniently; no one will be excluded because of gender, age,

physical condition, or other factors. Communities without young generations will eventually die; in fact, most old adults live in diverse communities, including people of various ages and backgrounds. An age-friendly community should encourage the diversity of community members since people from different backgrounds can provide various insights and contributions to the community in different methods. Old residents could also gain vitality during the interaction with different community members. An age-friendly community should design for every resident so that the community could achieve sustainability and vitality.

Second, acknowledge the existence of vulnerable groups and address their needs. In this context, vulnerable residents represent the disabled, old adults, minorities, children, and others who might experience marginalization. Generally, these people have a higher potential to experience lower cognitive or physical levels than normal adults, so their needs should be highly concerned. In the case study, the general design strategies to help vulnerable groups include improving accessibility in public buildings, removing potential barriers on the road, reducing curbs and stairs to facilitate wheelchair users, increasing rest space and seating, considering both children and adults in the design scale, and using anti-slip material in the sidewalk to prevent accidental falls. These strategies can help vulnerable people use public spaces more safely and conveniently, giving them more opportunities to connect with others and preventing social isolation.

Third, these cases highlight the importance of accessibility as the ability to access services and goods in and around the community and move to distant

destinations. An age-friendly community must ensure residents achieve facilities that provide daily supplies and essential services within a walkable distance, such as grocery stores, banks, parks, community centers, medical centers, pharmacies, etc. The case of Manitoba's rural age-friendly communities mentions that some old adults living in small towns prefer driving in their daily life transportation, but these old drivers worry that they will lose independence once they give up their driver's license. In this situation, improving public transport services and inviting neighbors to volunteer to provide pickup services could be an appropriate solution. In communities without volunteer drivers, like the Red Hill community in Singapore, local municipal increases the frequency of public transportation and reduces the distance between bus stops to help old residents continuously go out for shopping, entertainment, and dating.

All cases encourage old adults to actively participate in social activities, public affairs, volunteer activities, and even re-employment. For old adults, declining physical abilities and loneliness are serious factors preventing them from actively aging. Besides, society often describes old adults as "fragile," "ageing," and "less valuable" as stereotypes having psychological harm to them. In Singapore, people use "silver generation" to describe old adults, which emphasizes old people are still valuable and powerful and help them against these stereotypes. Therefore, age-friendly communities must provide older adults with more opportunities to socialize and participate in public affairs.
The helping process of older adults building self-confidence and consistently contributing to society is called empowerment which can help them re-establish their sense of worth and lead an active life.

Unlike the Red Hill community in Singapore and the Yangpu age-friendly community network in Shanghai, the case in Manitoba highlights providing employment opportunities for older adults. In rural China, many older adults do not have pensions to afford a quality life; thus, some older adults claim severe discrimination exists against the elderly in employment, which prevents them from earning their livelihood. Therefore, helping the elderly in good health conditions to re-employ could improve their life quelity.

Chapter Summary

This chapter introduced three case studies from various regions, contexts, and scales, including remote and rural area age-friendly communities in Manitoba, Canada, the Good Neighbor Center in Shanghai city, China, and the Red Hill community age-friendly pedestrian system in Singapore.

Through the case studies, several design strategies for a good age-friendly community could be learned:

1. A good age-friendly community requires the support and effort of multiple stakeholders, including different levels of government, organizations from various fields, community administrators, and residents themselves.

2. Landscape architects should provide an inclusive environment and ensure every resident can use it safely, conveniently, and comfortably.

3. Landscape architects should be highly concerned about older people's physical condition and increase the accessibility of pedestrian systems and public facilities for them.

4. Landscape architects should avoid prejudice and discrimination during the design process, especially in breaking down the negative stereotypes about older people from society.

5. Landscape architects should design an environment that encourages older people to keep an active life, such as actively participating in outdoor sports, volunteer activities, and social connections.

6. Landscape architects should empower older people and encourage them continuously contribute to public affairs. Meanwhile, give older people more volunteer and employment opportunities to help them enhance their self-confidence and self-esteem.

CHAPTER 5:

SITE INVENTORY AND ANALYSIS

Site Location

This practicum takes place in Shang Tun Village, a rural area in the center of Guang Ze city, Fujian Province, China. Fujian is a coastal province in southeast China, and Guang Ze is in its northwest corner.

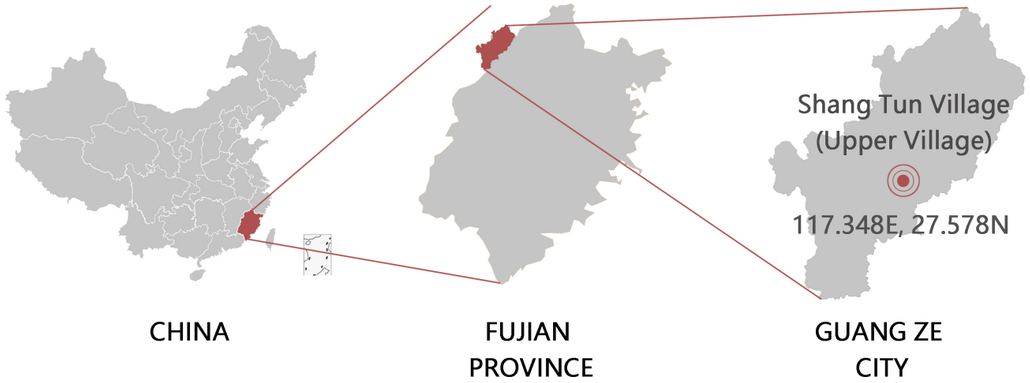
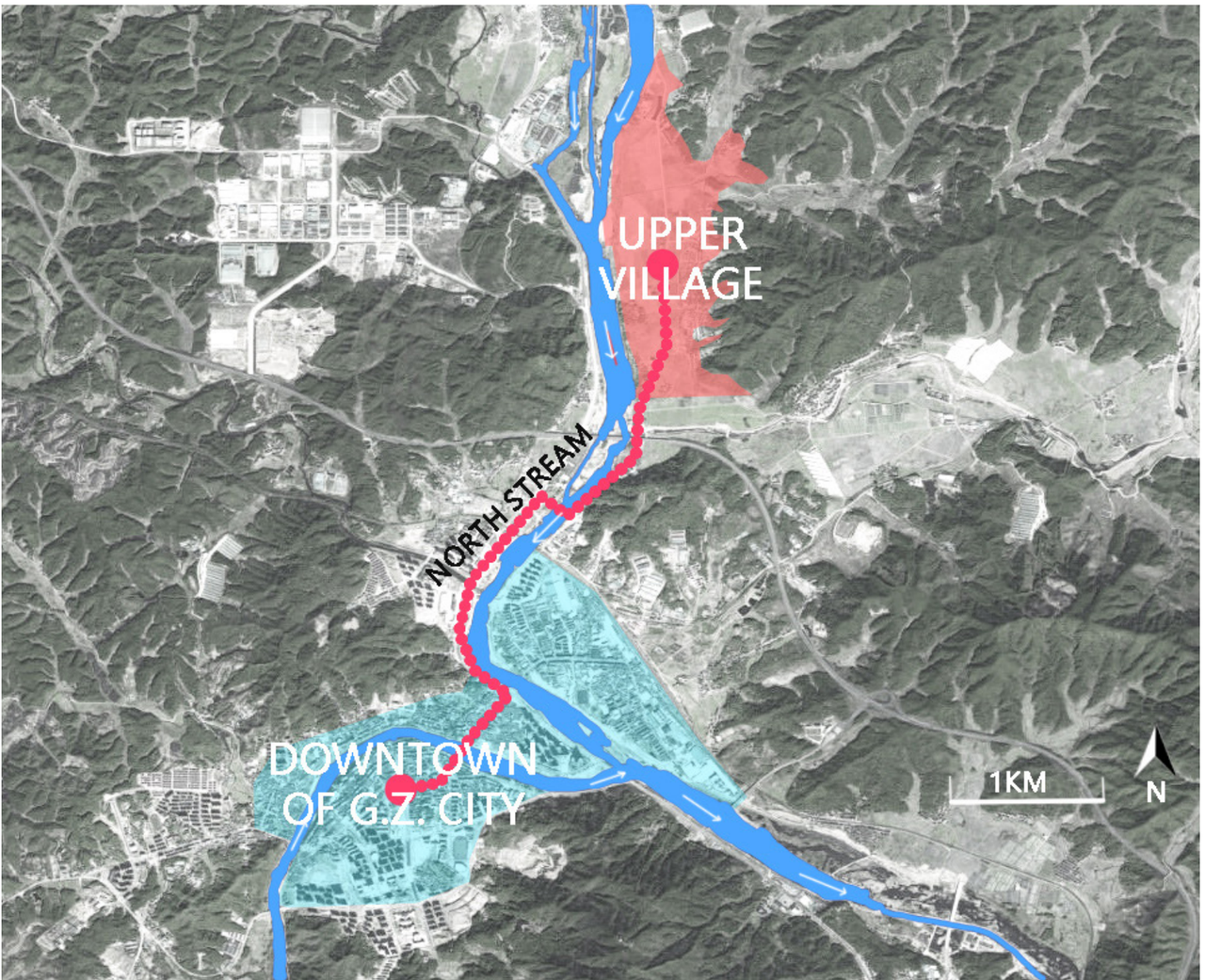


Figure 5-1:Shang Tun Village, Guang Ze City, Fujian Province, China.

The name of the village in Chinese is “Shang Tun”, which means “a village upstream of the river”. Shang means north, higher land, or upstream, and Tun means village (Online Xinhua Dictionary, 2022). In English, I will call it “Upper Village” to reflect its meaning and location. The Upper Village is a suburban area north of Guang Ze city center. It is about 5.5 kilometers away from the city center, which takes about an hour and 18 minutes to walk, 10 minutes to drive, or 15 minutes to ride a motorcycle (Google Maps 2022).

Figure 5-2:Upper Village location.



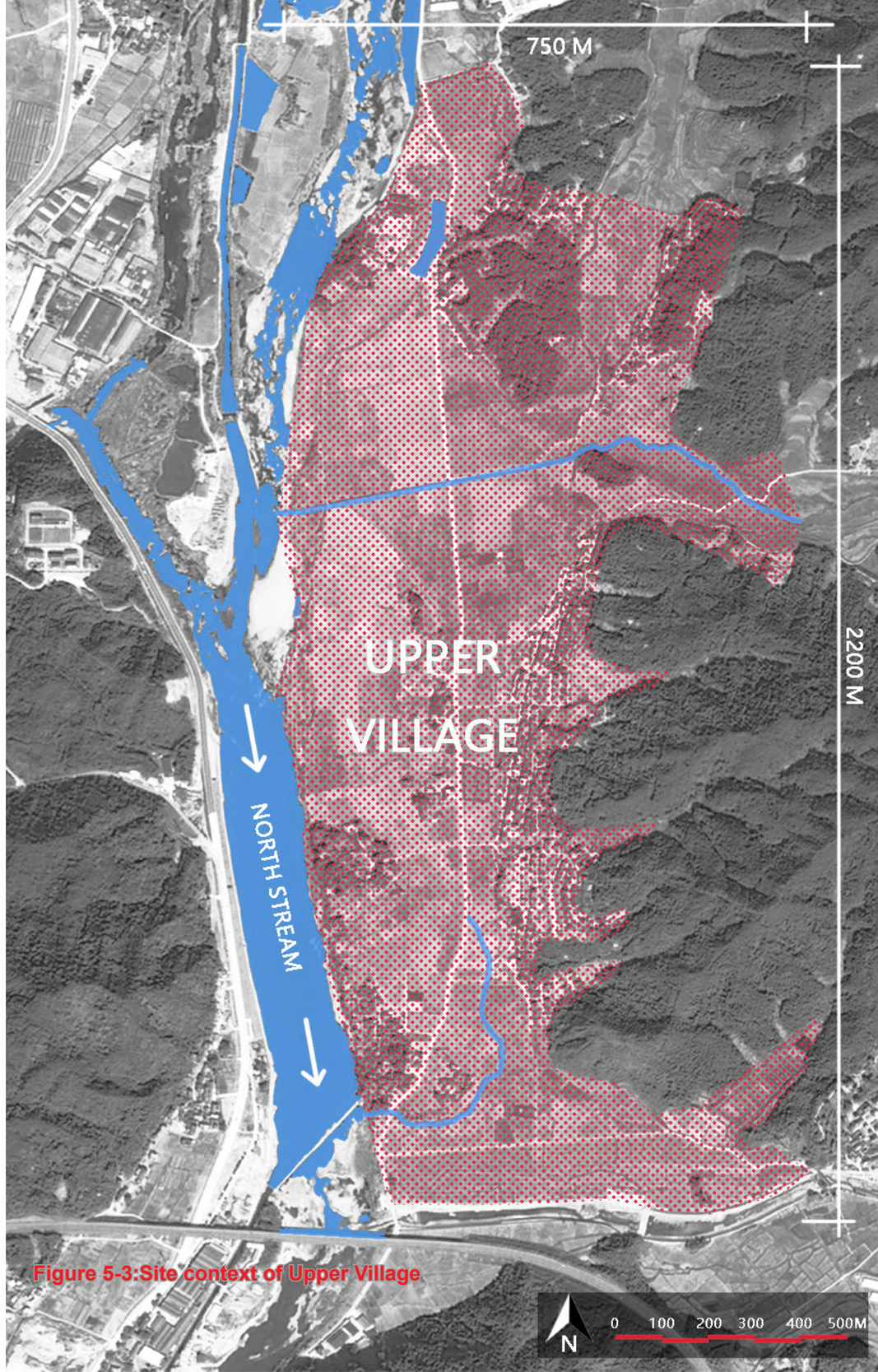


Figure 5-3:Site context of Upper Village

Building Style

Generally, the residences in the Upper Village are mainly single-family houses with 2-3 floors, typically reaching 6-9 meters high. The main materials of residences are red brick and concrete, and the exterior walls are white tiles or concrete. Houses are distributed along the street, and several solar streetlights are accompanied by these houses, providing lights at night.

Population

The 2019 census showed that 1653 people were registered in Upper Village (Guangze Government, 2021). Among them, about 450 people choose to live in other cities and only back hometown to visit their family members on vacations(Guangze Government, 2021). The chief of the village said that the resident population of Upper Village is about 1200 people, and more than 300 residents in thevillage are old adults aged 60 years old or above(Guangze

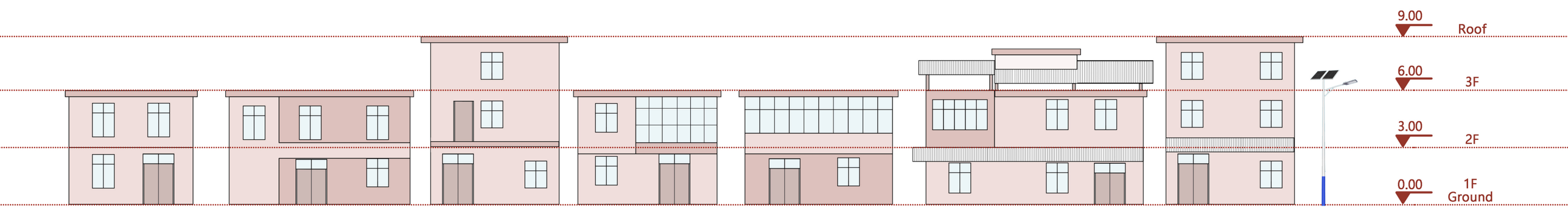


Figure 5-4:Upper Village building style

Government, 2021). In other words, old adults take up over 25% of the resident population in Upper Village, which is higher than the average level of the old population in China. The village and community are facing serious ageing issues. Therefore, the village and community have an obligation to provide an age-friendly environment for their old residents and help them age in place actively.

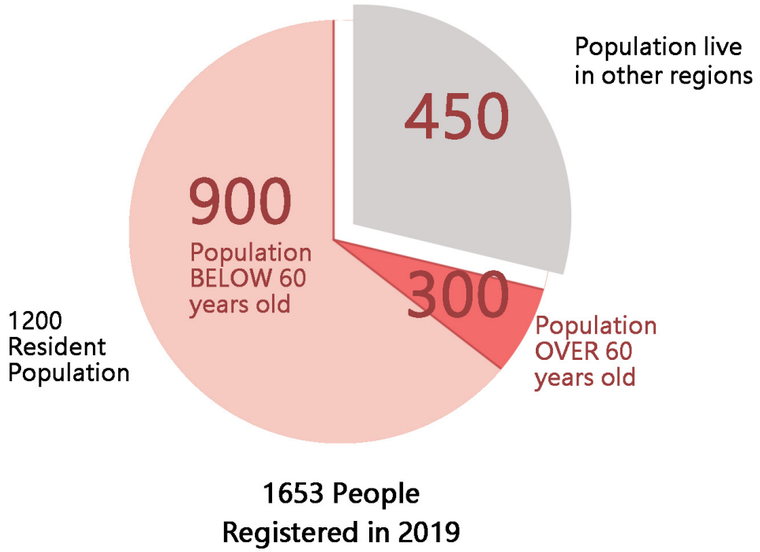


Figure 5-5:Population of Upper Village in 2019

Climate

Due to the lack of relevant climate data in Upper Village, the climate data employed in this practicum is from the Guang Ze City region. The village is located in the subtropical monsoon climate zone, which is characterized by its hot and rainy weather (Metoeblue, n.d.). In summer, the monthly average temperature can reach over 25 degrees Celsius. Moreover, in the hottest months, such as July and August, the monthly temperature could reach 30 degrees Celsius. In winter, the temperature is rarely below zero degrees Celsius. However, residents still complained about the cold winter since the site has high humidity and has no heating, which makes people feel cold even indoors. Therefore, residents hope to see sunny and warm days rather than cold rainy days during wintertime.

The climate also has a rainy summer. From April to June, the monsoon from the Pacific Ocean brings a lot of moisture to south China. When these moist clouds meet cold mountains, they produce rain (China Weather Network Fujian Station, 2019). The rain helps water plants and crops, but sometimes it causes floods, especially in flat areas.

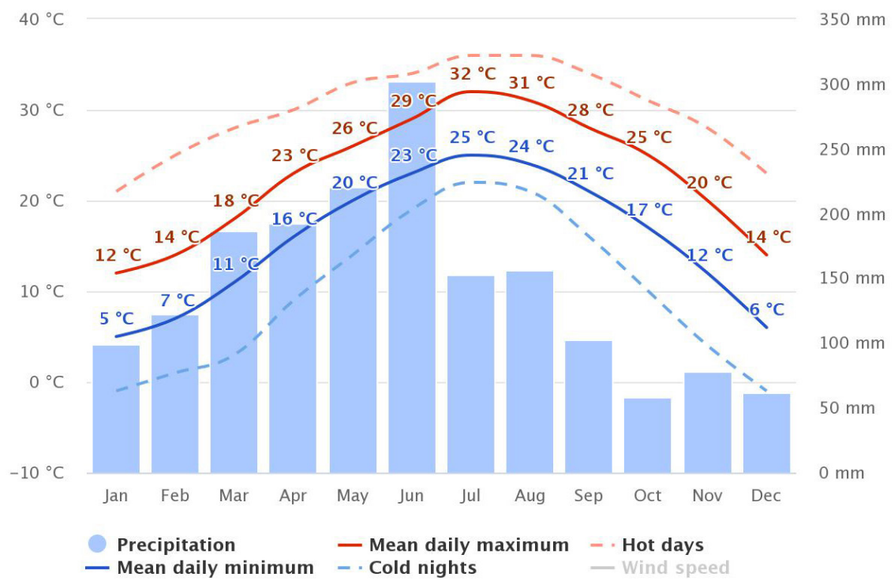


Figure 5-6: Monthly average temperatures and precipitation of Guang Ze City

Yearly temperature and trend

The mean yearly temperature and trend from 1979 to 2021 (figure 5-7) show that the annual average temperature has risen significantly (Metoeblue, n.d.). It was 16 degrees Celsius in 1979 and 17.5 degrees in 2021 (Metoeblue, n.d.). This may mean a warmer winter and a hotter summer for residents (Metoeblue, n.d.).

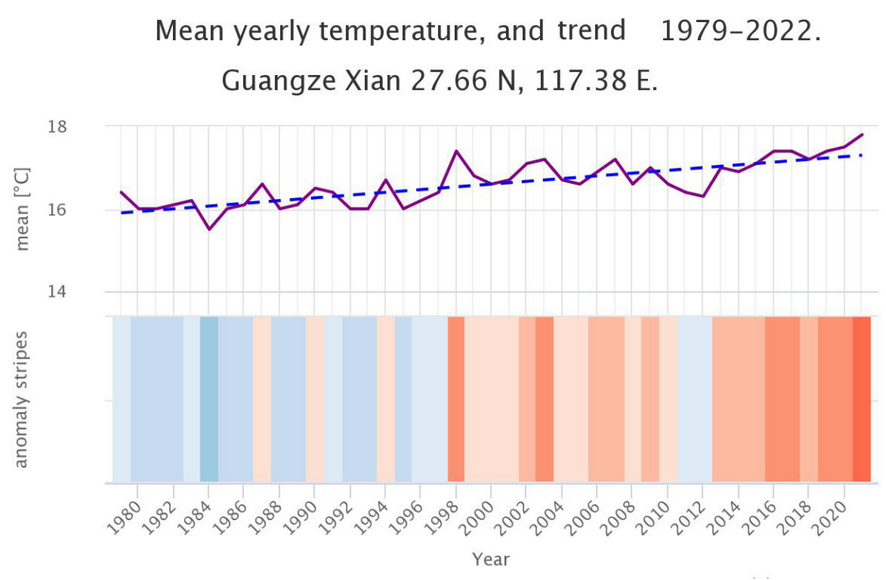


Figure 5-7:Mean yearly temperature and trend from 1979 to 2021

Annual weather

Another effect of high rainfall is less sunshine (Metoeblue, n.d.). Residents can enjoy sunny days from July to December, but in winter and spring, most days are cloudy or overcast. The climate of Upper Village is cold, windy, and wet in winter, which means residents need more sunshine then (Metoeblue, n.d.). In summer, the climate is hot and rainy, and residents would like a cool and breezy environment then.

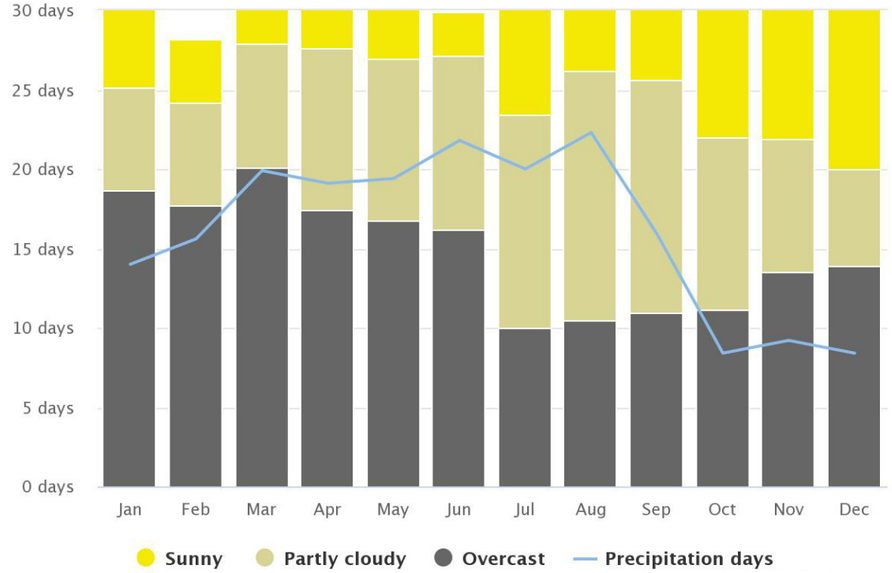


Figure 5-8:Annual cloudy, sunny, and precipitation days

Mobility

Vehicles

The vehicle ownership data is based on the database of the village's statistical department. In Upper Village, almost every family owns at least one motorcycle. "Motorcycle" in this practicum context refers to traditional gasoline motorcycles, two-wheeled electric motorcycles, and three-wheeled electric motorcycles. Based on the data, about 30% of households own at least one car. Cars may include four-wheel cars, vans, and mini trucks. However, the village lacks public transport; the only public transportation available is buses that operate only every Monday, Wednesday, and Friday (Sked n.d.).

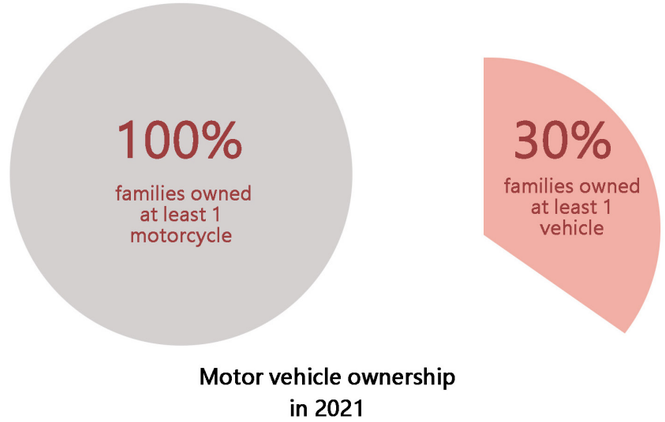


Figure 5-9:Upper Village vehicle ownership in 2021

Road system

To better understand the road system in Upper Village, the practicum divides existing roads into four types based on their function, width, and material.

The first-level road is two lanes wide and 7 meters in width. It is used to connect towns and cities, and concrete or asphalt surfaces are usually applied to support vehicles or heavy trucks. The first-level road does not include pedestrian sidewalks but leaves 0.1 to 0.3 meters of space on each side of the road for planting beds or temporary sidewalks.

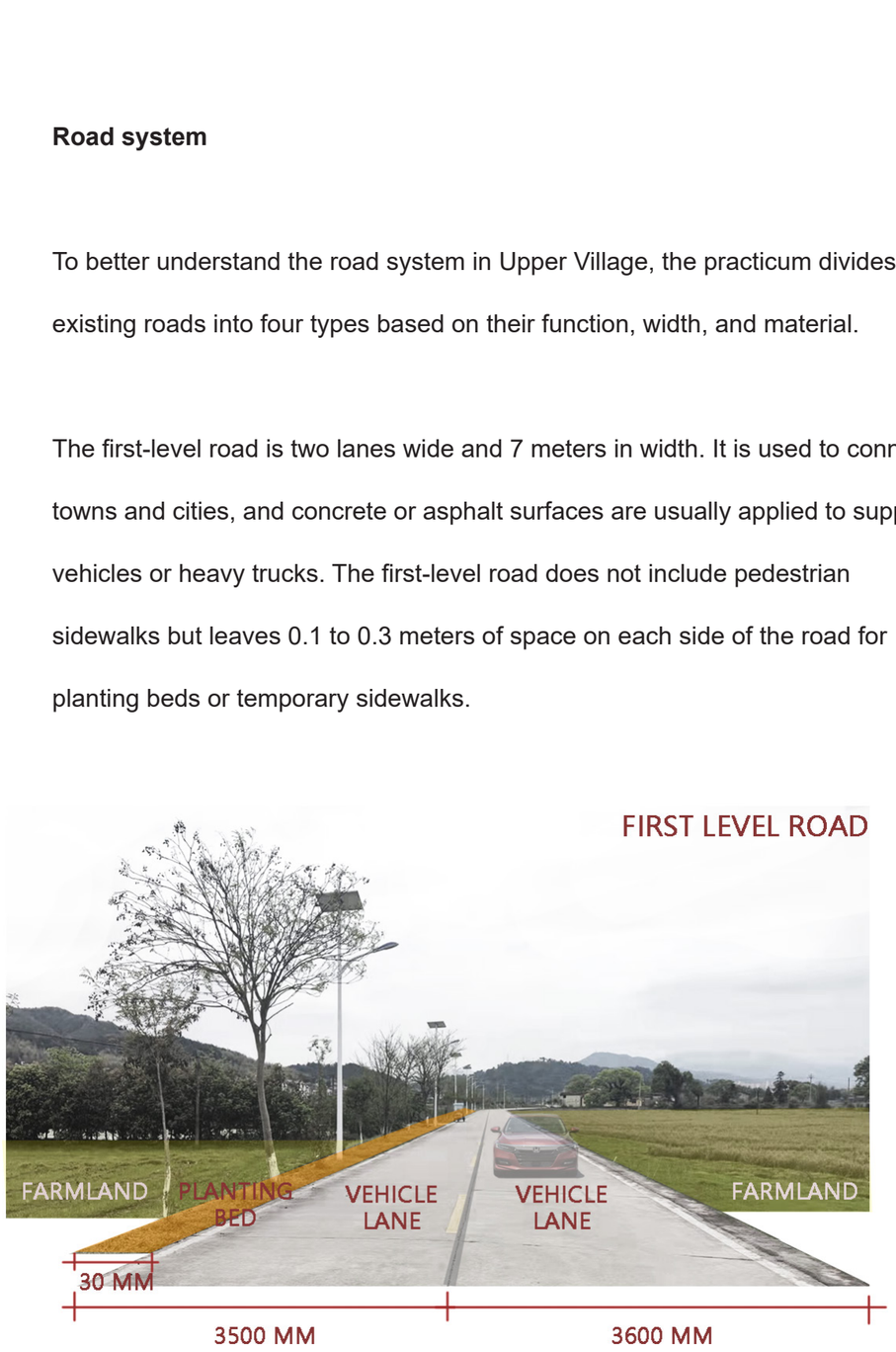


Figure 5-10:The first level road

The second-level road is a single lane with 3.8 meters in width. It is often used to connect first-level roads and different communities and areas within a village range. Generally, the material of second-level roads is concrete. Although this kind of road connects residential areas, a pedestrian sidewalk is not included. As a result, the second-level road is a mixed-use road where pedestrians and vehicles share the same space. To avoid potential traffic risks, drivers should slow down their vehicle speed to 40 KM/H, and heavy trucks are not welcome on such mixed-use roads. On one side of the second-level road, a planting bed with a 0.3-meter width is designed to guide the sight and improve the scenery on the road.

Figure 5-11:The second level road

The third-level road is a single lane with a width of 2.5 meters. It usually has a compact soil or concrete surface and is used by farmers and agricultural automobiles to connect residential areas and farmland. There is no planting bed or temporary sidewalk on the side of the road. Instead, powerline poles and solar streetlights are set on both sides of the road to ensure night lighting.

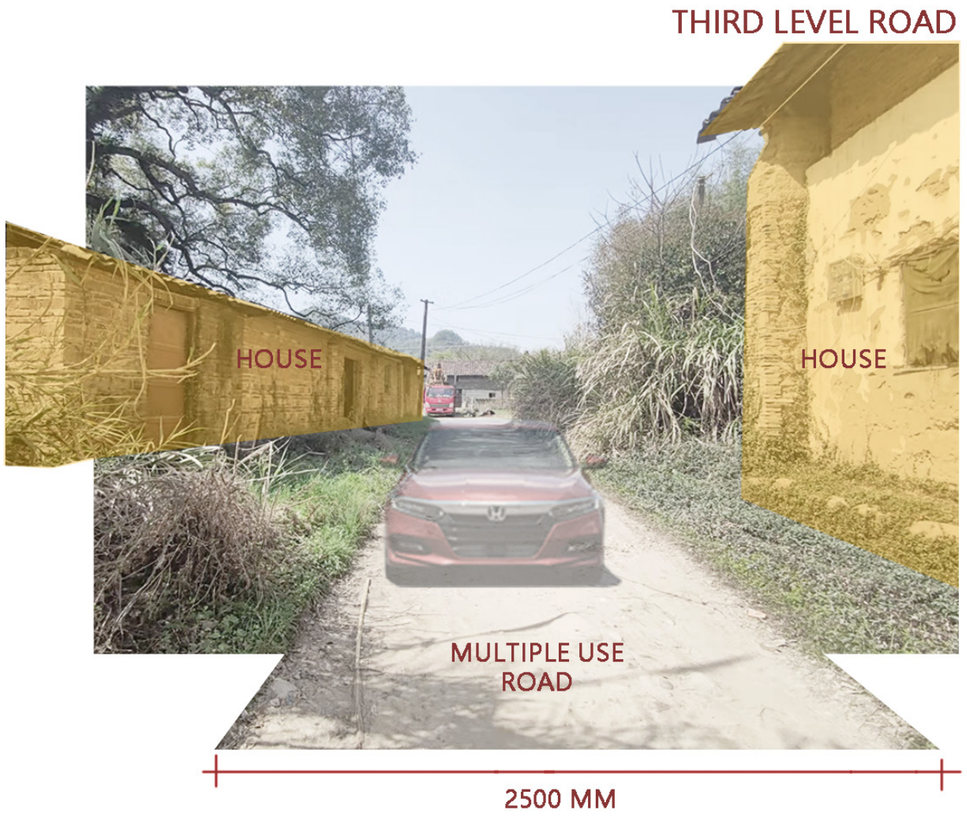


Figure 5-12:The third level road

The road in the residential area is 2.5 to 3 meters wide and often uses concrete as the surface. Residents and motorcycles use it to connect yards and houses within a residential area. Residents' front yards and open spaces are on the edge of the residential road. Powerline poles and solar streetlights are set on both sides of the road, providing lights at night.

Figure 5-13:Road in the residential area

Walking Distance

Walking distance is a distance that can be walked easily by most people. Generally, 250 meters is considered an acceptable walking distance, and residents can approach their daily necessities and groceries within this distance (Busch et al. 2015, 1). A moderate walk distance is between 500 to 700 meters, where residents can get public services and facilities (Busch et al. 2015, 1), such as banks and community centers. Eight hundred meters is the upper limit of the walking distance for pedestrians (Busch et al. 2015, 1). Exceeding this distance will make pedestrians feel tired and choose to take vehicles to reach their destination.

Taking the largest residential area as the base point, the maps developed three circles representing the 250 meters, 500 meters, and 800 meters walking distance. Busch's research indicates that the average walking speed of old adults is 0.8 meters per second, which means a 250-meter walk takes old adults 5 minutes and 10 seconds, a 500-meter walk requires 10 minutes and 25 seconds, and an 800-meter walking distance needs 16 minutes and 40 seconds (Busch et al. 2015, 4).

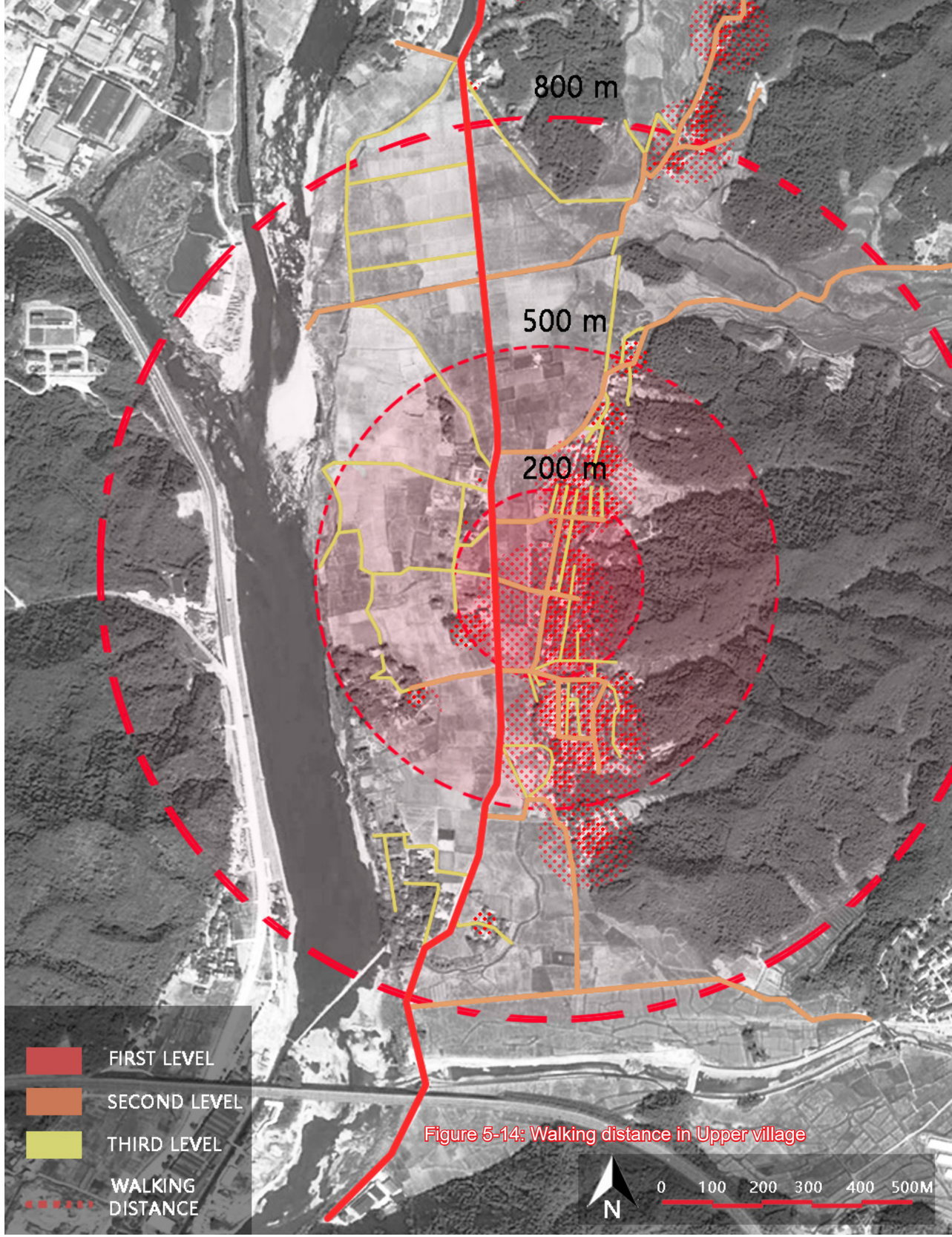


Figure 5-14: Walking distance in Upper village

Based on walking distance, important facilities such as local government, elementary schools, clinics, temples, bus stops, convenience stores, public washrooms, and playgrounds are labeled on the map to evaluate how easily residents can reach these services. The walking distance map showed that residents living in the middle part of the village could obtain most of the services within 500 meters and easily achieve public services in the village (Google Maps 2022). However, residents who live in the southern and northern ends of the village are not as lucky. They can reach facilities such as temples, public toilets, and bus stops nearby but need to walk at least 800 meters to the center of the village for more services (Google Maps 2022).

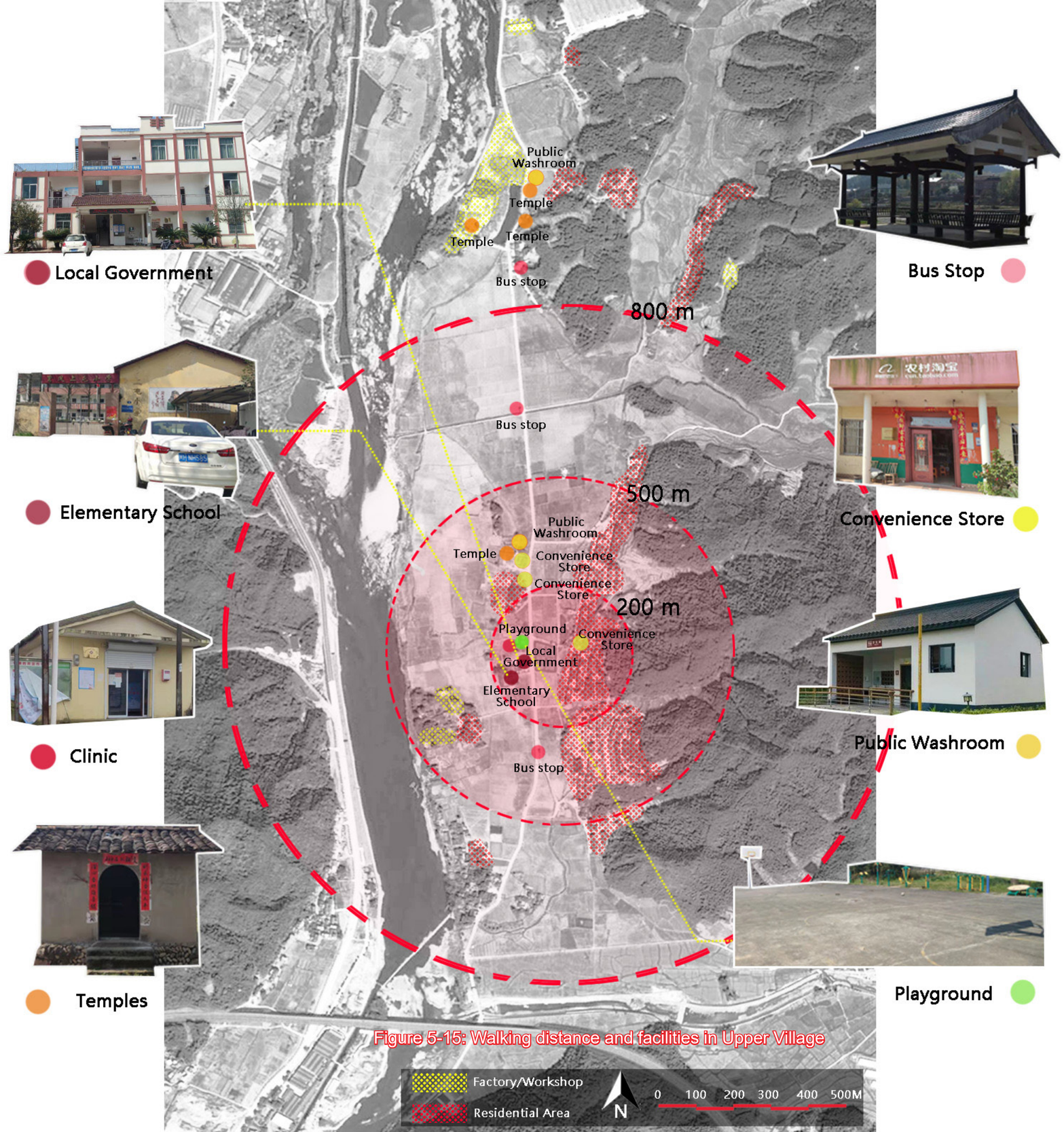


Figure 5-15: Walking distance and facilities in Upper Village

Lighting

In this region, most houses are west-oriented, and the hill has blocked most sunlight in front yards in the east. A hand-held thermometer is used to measure the temperature data of the site. It is observed that many old residents prefer to stay in places with sunlight. They sew clothes, play with grandchildren, dry clothes, and dry vegetables under the sunlight. Residents love sunny days, and many pet dogs lay on the ground and enjoy the sunshine.

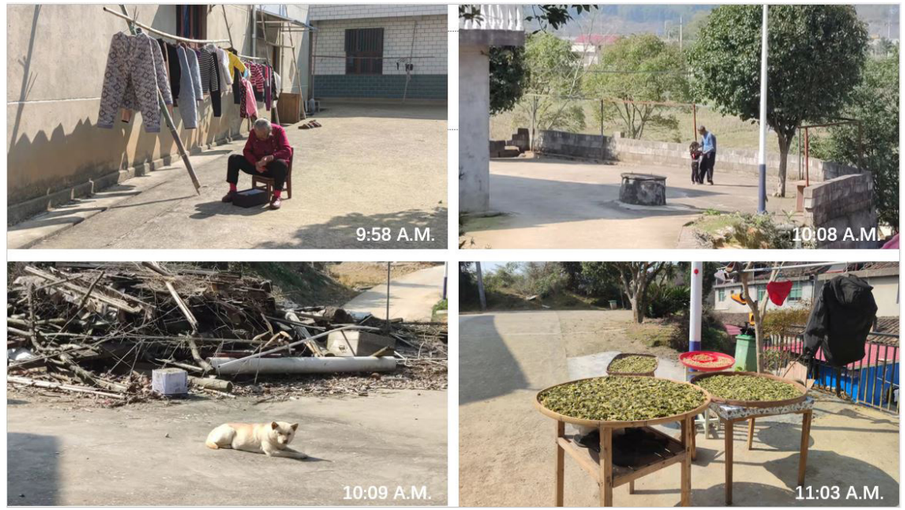


Image 5-16:Old lady sewing in the sun
Image 5-17:Grandfather playing with his grandchildren
Image 5-18:A dog is sleeping under the sunshine
Image 5-19:Residents drying vegetables

Most houses in Upper Village typically face west and are backed by mountains. By abstracting the typical house style and surrounding environment, we can get an image to show the context of a residential house. This image reveals the relationship between sunlight and house context by simulating lighting during a day (take spring equinox day as an example, which is sunrise at 6:00 and sunset at 18:00). The hillside on the east side of the house is about 30-50 meters high, blocking sunlight in the residential area during the morning (6:00-12:00). During the afternoon (12:00-18:00), the sun is in the west, and the residential area can get sunlight. From the lighting simulation, it can be learned that in the morning hours, residents cannot get enough sunlight in their front yards. It may be bad news for older adults who fear the cold. On cold winter mornings, there is not enough sunlight to dissipate the cold, and colder temperatures in residential areas may cause older adults to be less willing to engage in outdoor activities.

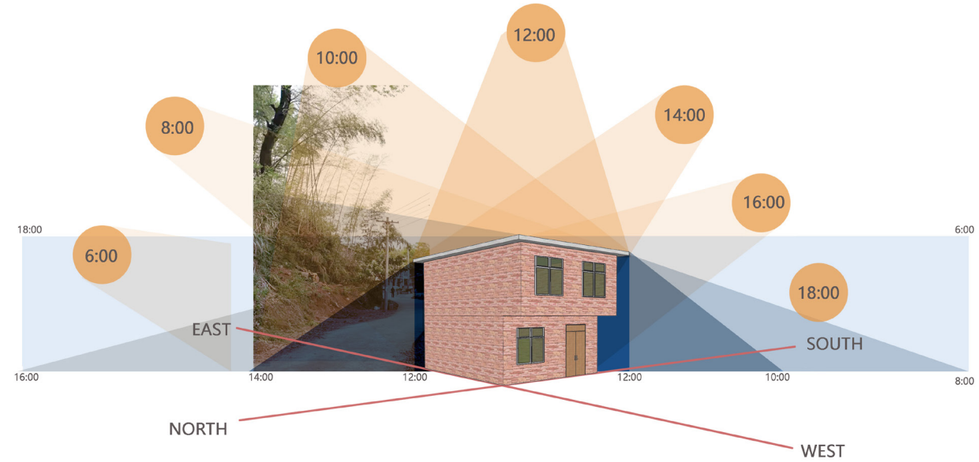


Figure 5-20: Typical shadow simulation in Upper Village

Schedule of Elders

Based on site observations and chats with residents, a typical schedule of older residents in Upper Village can be roughly drawn. In this practicum, older adults in the village are mainly divided into two groups: younger seniors and older seniors.

Younger seniors are those around 60 years old, usually still engaged in light jobs, such as housework, purchasing groceries, taking care of their grandchildren, and growing vegetables in their backyard. However, as the age of older adults increases, their physical condition gradually declines. Once they experience physical limitations, they prefer to reduce their working time and devote more time to recreational activities, such as chatting with friends in the front yard, taking a walk, enjoying outdoor sunshine, or watching TV. Generally, older residents wake up and go to bed earlier depending on the seasons. For example, in winter, older adults tend to wake up late and go to bed earlier while in summer they prefer to spend less time in bed.

Based on observations, it can be discovered that in Upper Village, the moving range of older adults is usually within the village. They usually farm in fields close to their house or chat with friends and neighbors in their front yards. They usually leave their house at 8:00 in the morning, are home for lunch around 12:00, leave home again at 15:00, and are home for dinner before 18:00. In the evening, they prefer wandering around the neighborhood and returning home around 21:00.

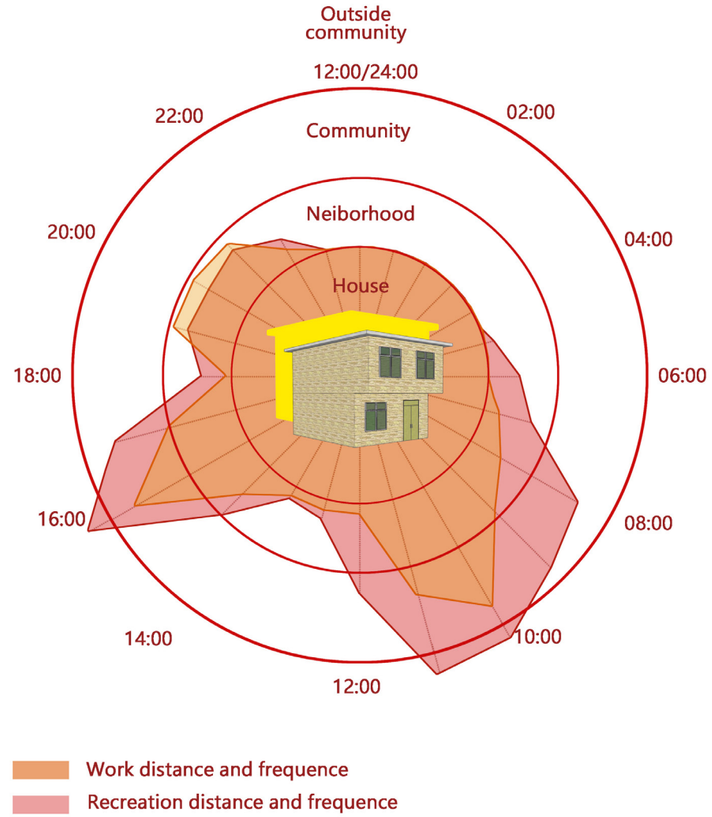


Figure 5-21: Travel distance of elders

Schedule of old residents

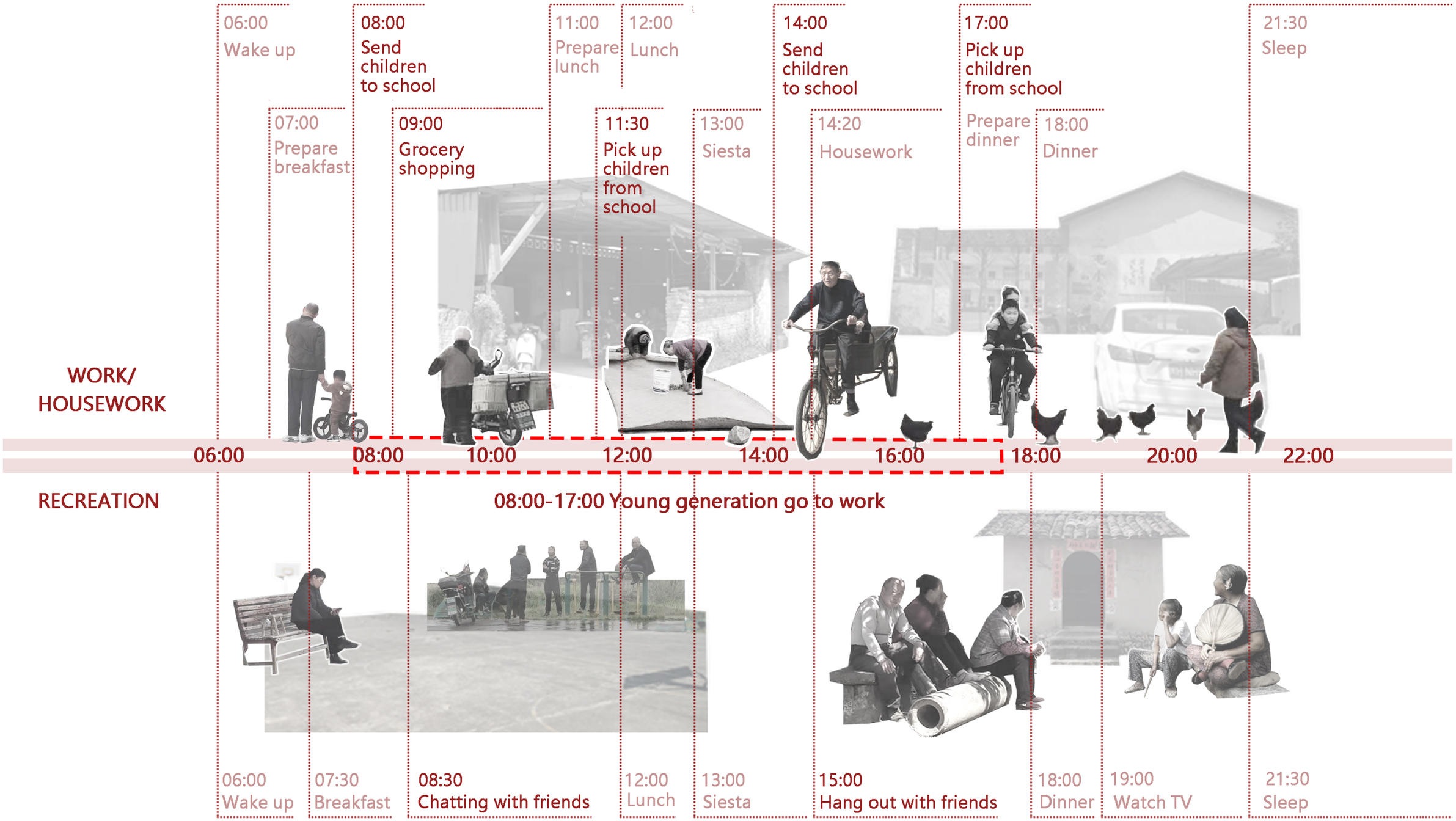
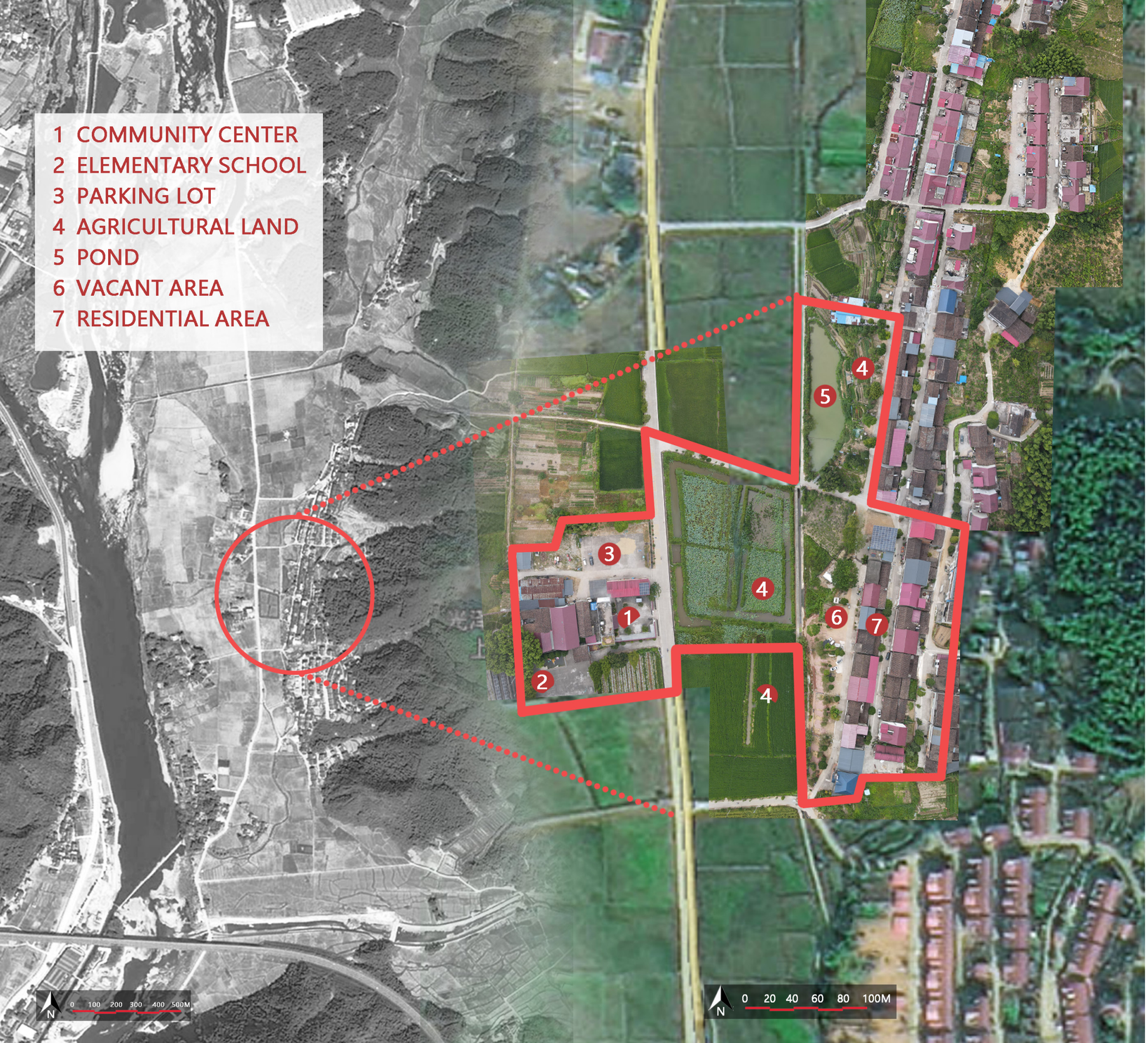


Figure 5-22: Daily schedule of elders



Site Selection

The community for further design is in the center of the village.

This community includes public facilities, natural landscapes, agricultural fields, a residential area, roads and paths, and vacant land. This community covers most conditions in the village, and the design for the community can be applied to other parts of the village.

Therefore, it is appropriate to choose this community as the detailed design for a rural age-friendly community.

Figure 5-23: Design site for the practicum

How People Use the Site

In the existing condition, the road is shared by pedestrians, vendors, bikes, motorcycles, and cars. The vacant space on the road edge is used for drying clothes, drying grain and vegetables, parking vehicles, placing garbage bins, and planting trees. Currently, the vacant space is mainly occupied by residents. Some people pile construction materials, and some build chicken houses to raise chickens, which strongly affects the environment of the neighborhood.

In the front yard and backyard, elders often sit there and chat with neighbors. Other elders are sewing or playing with grandchildren in the front yard. In the elementary school area, farmers use the road edge to grow vegetables. Cars and motorcycles are often observed parked here.

Figure 5-24: How people use the street in the residential area

Figure 5-25: How people use the vacant space

Figure 5-26: How people use their front and backyard

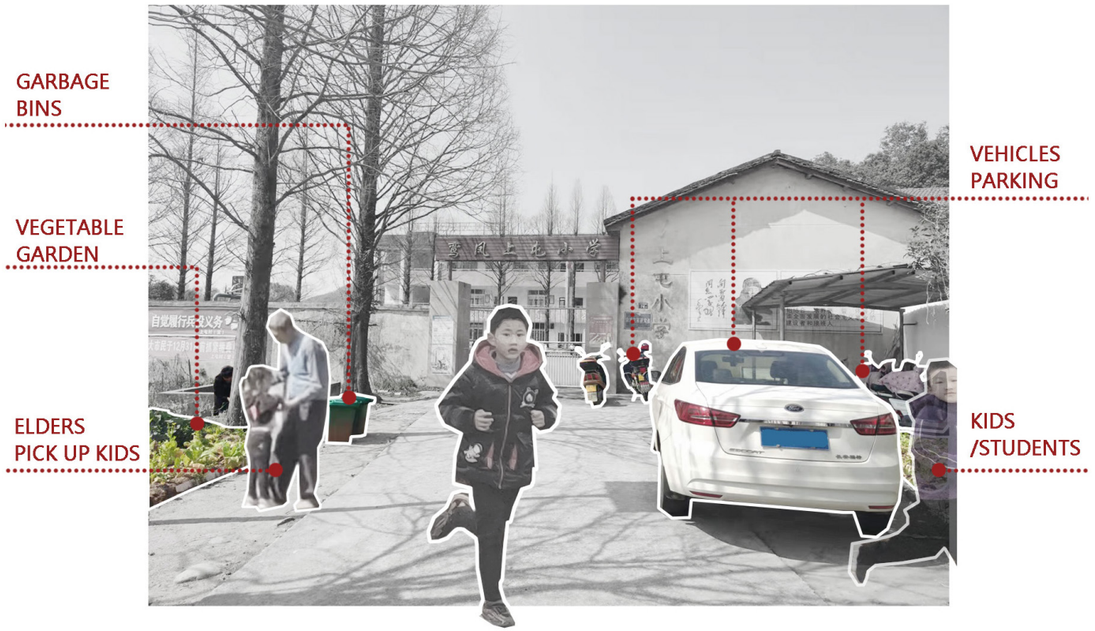


Figure 5-27: How people use the school zone

SWOT Analysis

Strength

1.The location of the residential area is far from the river and potential flood threat, bringing residents a sense of safety.

2.The small community allows every resident to know their neighborhoods and other community members; thus, older adults can quickly build an emotional connection with others than in a big community. The social network brings old residents a sense of safety and belonging to the community.

3.Most roads and paths in the community are safe, even, and accessible for old pedestrians.

4.In the community, most old residents have a front yard in their house and a “window” to connect to the community.

5.Almost every household has at least one vehicle, which gives older adults more choices in transportation.

6.Frequent visit facilities, such as elementary schools, town halls, places of worship and clinics, are concentrated in the center of the village, and most residents can easily access them.

Weakness

1.The decline in the younger population may cause a lack of volunteers to engage in age-friendly activities.

2.The frequency of public transportation in the village cannot meet the requirements of older adults.

3.Even though most families own at least one vehicle, many older adults cannot use them, which means they can hardly have long-distance travel without the help of others and decline in independence.

4.The village only offers essential public services and does not have adequate age-friendly related services and facilities.

5.Most old adults in the village have a low income, and some old adults still need to work to earn a living.

6.In winter mornings, the hillside on the east side of the village blocks the sunshine to the residential area and causes a colder winter.

In summer afternoons, the direct sunlight on the west side caused high temperatures in the residential area.

Opportunity

1.The elementary schools in the village provide opportunities for intergenerational communication between seniors and children.

2.The front yard of the old adults' house has the potential to become a space to stay and rest.

3.In the village, it is observed that old adults often gather to chat and recreation. It would be an opportunity to provide a recreation and gathering space for their meetings and activities.

4.Many older adults still have sufficient energy to engage in community work or volunteering.

Threat

1.Some paths in the village have significant elevation changes that may pose a considerable risk of accidental falls for elderly pedestrians.

2.Old residents walking at night may be at risk in some paths in the village that are not equipped with streetlights.

3.While sidewalks may not be a significant threat to elderly pedestrians walking on the second and third level roads, almost all roads in the village do not have well-defined sidewalks. This may bring a huge risk for pedestrians walking on the first-level road due to fast vehicles passing.

Strength + opportunities

1.Enhance the social network in the front yard by creating spaces for residents to gather and interact with each other.

2.Provide a more comfortable environment for elderly residents waiting and picking up their grandchildren at the elementary school entrance.

3.Provide designated spaces for residents to park their bikes, motorcycles, and cars.

4.Protect the existing trees by implementing measures to prevent damage or removal of trees during construction or development projects.

5.Provide spaces for intergenerational communication, such as parks and community gardens, where residents of all ages can come together to share experiences and learn from each other.

Weakness + opportunities

1.Introduce an “Elders’ cafeteria” in the community where younger elders can work and earn income while older elders can have a meal there.

2.Provide an age-friendly space for elders to gather, chat, and exercise.

3.Provide temporary parking spaces for picking up elders.

4.Add trees on the west side to provide more shade during summer.

Opportunity + thread

1. Some roads and paths should be modified into barrier-free designs.

Weakness + thread

1.Increase lighting density at night, especially in places where elders frequently visit to improve visibility and safety.

2.Add emergency buttons for elders to use in case of an emergency.

3.Sidewalks and traffic signages should be added at the side of the main street to improve pedestrian safety.

Requirements in the Site

Based on the site inventory, it can be found that elders need public support services such as good lighting at night, comfortable seats, emergency support, and safe walking paths. Many elders need to do housework, which requires some facilities such as drying racks and garbage stations to support their daily life. Elders also require recreation spaces for socializing, gardening, and exercising.

ELDERS' REQUIREMENTS

-Good lighting
-Seats
-Emergency support
-Safe walking path
-Warm sun in winter
-Shadow in summer

-Place to drying
-Pick up kids from school
-Garbage bins

-Socializing
-Gardening
-Exercising

Seats

Excercising & socializing

Gardening

Drying racks

Figure 5-28: Elders' requirements

The younger generation requires more advanced public facilities and recreation services than their parents. For example, they need parking spaces for their vehicles, a fishing point to kill time, and a beautiful environment that can invite friends to enjoy a wonderful tea time.

YOUNG GENERATION'S REQUIREMENTS

-Parking cars
-Parking motorcycles
-Temporary parking
-Pick up their parents/kids

-Take care of kids

-Fishing
-Socializing
-Exercising

Parking lot

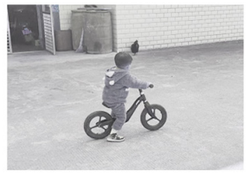
Social space

Fishing point

Figure 5-29: Young generation's requirements

KIDS' REQUIREMENTS

-Ride bycycle
-Place park bycycle
-Playground
-Intergeneration activities




Bike rack Playground

Figure 5-30: Kids' requirements

Currently, there are few recreation opportunities for kids, and they often ride a bike through the village after school. Therefore, bike racks are important for them to protect their “properties”. Besides, the playground is a good place for kids. They can make friends, know their neighborhoods, and spend energy playing there.

VENDORS' REQUIREMENTS


Temporary market

Figure 5-31: Vendors' requirements

Since there is no big supermarket in the community, vendors can be seen in this village. It will be good news for vendors if they can set up a temporary market in the community.

NIGHT TIME REQUIREMENTS

-Comfortable waking environment
-Safe walking path
-Lighting at night


Safe path Lighting at night

Figure 5-32: Night time requirements

Elders and people with vision disorders may have difficulties going out at night. Creating a safe and bright walking environment can help these people feel comfortable and safer at night.

Chapter Summary

The site inventory provides useful information for site design sessions. For example, the building style and interior layout help to understand the different meanings of the front yard and backyard for residents, and how residents use their yards. The front yard usually connects to the gate and road. Elders often sit near the front door for a long time to understand what is happening in their community. The backyard usually connects to the kitchen and is more private than the front yard. However, the backyard also connects to the road on the other side, so it is not a completely private space. Residents often invite friends and neighbors to their backyard. Therefore, the design goals of the front yard and backyard are different: the front yard will remain open to help elders better obtain their community, while the backyard needs more privacy and functionality.

Through the investigation of the climate, it was understood that the local area has hot summers and cold winters. Therefore, in the design, some deciduous tree species should be considered to provide shade for residents in summer and not block sunlight in winter.

Through the investigation of the road, it was learned that the community's streets are mainly dominated by driveways, and there is almost no space for sidewalks. Therefore, increasing sidewalks on main roads with fast traffic is of great significance to protect the safety of elderly people. In addition, site surveys have shown that there are fewer cars in residential areas, and mixed use of people and cars may be a good solution.

By drawing a walking distance map, it can be seen that elderly people have limited access to areas due to their poor physical conditions. Therefore, the design will consider adding paths to help elderly people reach their destinations more safely and conveniently.

Focusing on the behavior and daily schedule of the elderly, it is known that the elders usually move around near their own homes. Meanwhile, their daily life includes taking care of children, some simple housework such as drying clothes, shopping, preparing food, some gardening activities, socializing, etc. Therefore, when designing an elderly-friendly community, the practicum should consider helping the elderly to better engage in activities and help them maintain their daily lives.

Finally, through the analysis of the current site situation, we can intuitively understand the needs of residents and existing problems on site. Residents of different ages have different needs. For example, elders need a place to do some simple housework, pick up and drop off children from school, socialize, garden, exercise and rest; young people need places to park their cars and motorcycles, socialize and fish; children need places for entertainment and parking bicycles; there is a lack of lighting at night. The needs of community residents have a very direct guidance for design. Helping to meet the needs and solve difficulties of residents can help the community become more elderly-friendly.

CHAPTER 6:

RURAL AGE-FRIENDLY COMMUNITY PROPOSAL

Design Concept

Elders in the community mainly use the street, the community center, and the elementary school area for socializing. However, currently, these spaces are not designed for elders' needs, so they have limited options for recreation in the community. The design proposal focuses on improving the spaces that elders visit frequently, such as the school and the community center, the street space, and the pond edge. The proposal aims to enhance the functions of these spaces and make them more suitable for elders' social activities.

Based on the activity patterns of elders, the design proposal creates a path that links the school and the residential area. Currently, elders have to pick up their kids from the road in the south or north. The new path can shorten the distance for elders to pick up children from school and lower the risk of traffic accidents.

EXISTING TRACK OF ELDERS

GATHERING POINT AND PROPOSED PATH

Figure 6-1: Concept design for the community: existing track of elders
Figure 6-2: Concept design for the community: gathering point and proposed path

Figure 6-3: Planning map, Upper Village

The site consists of three main sections: the school entrance and community center, the community park, and the residential area. These sections cater to the diverse needs of the elderly, such as childcare, household chores, entertainment, social activities, and more.

The proposal emphasizes strengthening the social network for elders in the residential area. The social network will match elders' preferences and create "the social space in front of the door".

The community center offers various public services for elders. However, the space seems too formal and serious for them, so they rarely visit it. The proposal will try to make the community center look more inviting and friendly. Also, some elders have to pick up their grandchildren from elementary school. The proposal will design a waiting area for them.

The proposal includes a new path that connects the community park and the residential area. The path will be for pedestrians only, so elders can pick up their grandkids from school more conveniently and safely.

The community park can serve as a gathering space where villagers can organize events and activities. A vegetable garden is located on the north side of the park. The garden is a space for intergenerational social interaction. Each family can have a plot of land to grow vegetables. In the garden, elders can share their knowledge of agriculture and vegetation with children, and children can learn about the beauty of plants and nature.

OVERALL SITE PLAN

Figure 6-4: Overall plan for age-friendly community in upper village

Age-friendly Network

In the proposal, spaces that elders frequently visit are considered important “gathering points” that require age-appropriate retrofitting. Furthermore, roads and paths are used to connect these important nodes. A new pedestrian-only path has been designed to connect the residential area and the elementary school to make the community more convenient. Based on the important gathering points and mobility system, these “nodes” are expanded and form into “mats”. Through the cooperation of “nodes”, “lines”, and “mats”, an age-friendly system in the community can operate.

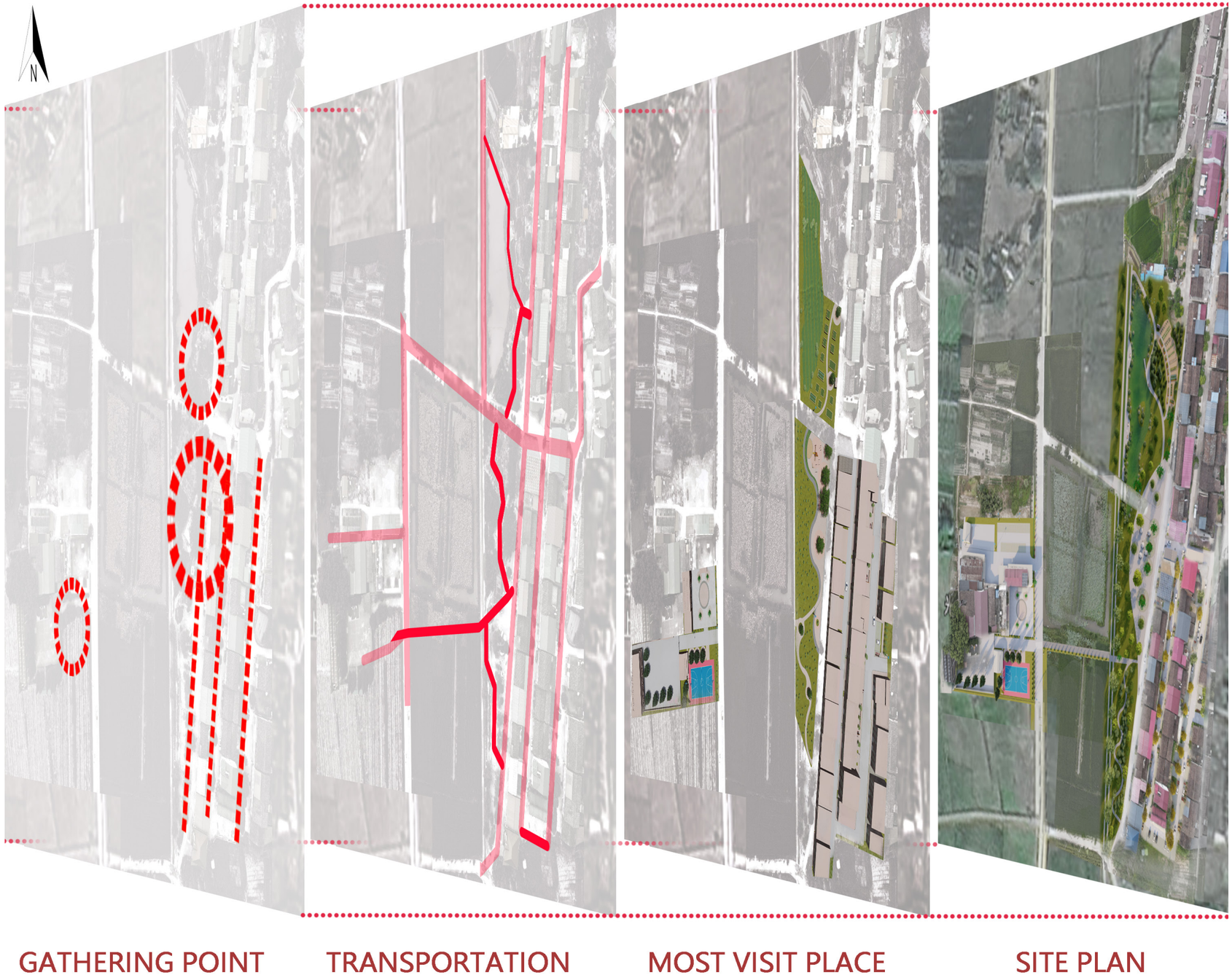


Figure 6-5: Age-friendly network

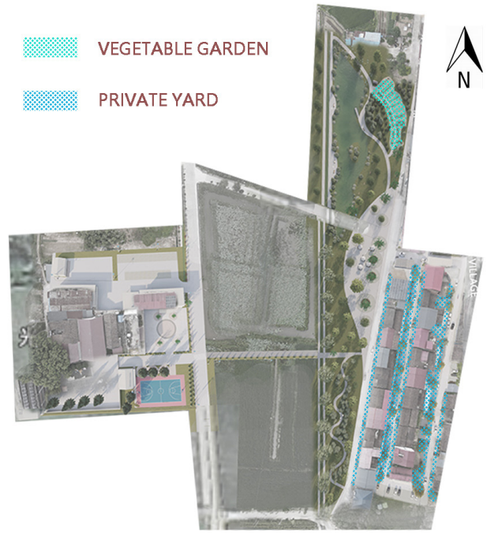
Green spaces are roughly divided into public and private spaces. Public green spaces are located near parks and community centers, which are convenient for residents and make use of existing greenery. Private green spaces are residents' own yards, which can be customized according to their preferences.

OUTDOOR SPACE AND BUILDINGS

A pedestrian path that links the school and the residential area was the key design change. It made it easier for the elderly to walk to the school and the community center, and encouraged them to join community activities.

MOBILITY

Figure 6-6: Outdoor space and buildings
Figure 6-7: Mobility



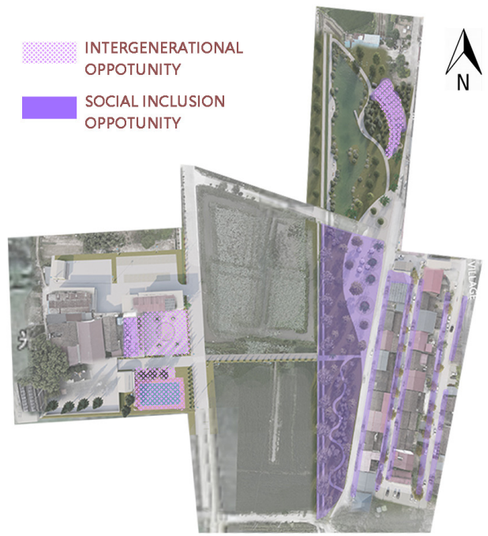
The proposal turned the front and back yards of each house from cluttered storage spaces into social and activity spaces. It also added vegetable gardens to satisfy the gardening interests of elderly residents.

HOUSING

The proposal created more spaces for the elderly to socialize, such as an elders' cafeteria, a community center, a park, a basketball court, and a community garden. These spaces offered various activities for the elderly to enjoy with their friends and neighbors.

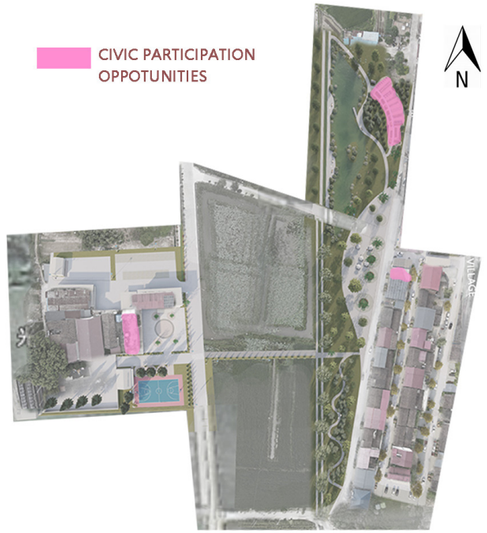
SOCIAL PARTICIPATION

Figure 6-8: Housing
Figure 6-9: Social participation



Elderly residents can earn respect by sharing their wisdom and contributing to the community. They can do this by teaching gardening skills in the community garden, joining community events in the park, or telling stories in the community center.

RESPECT AND SOCAIL INCLUSION



The elderly can be civically engaged in the community by gardening, volunteering at senior cafeterias, and joining community affairs.

CIVIC PARTICIPATION

Figure 6-10: Respect and social inclusion
Figure 6-11: Civic participation

The information board at the community center entrance provides community news and other information for the elderly. Also, some traffic signs are set up in the community to warn drivers and pedestrians of possible traffic hazards.

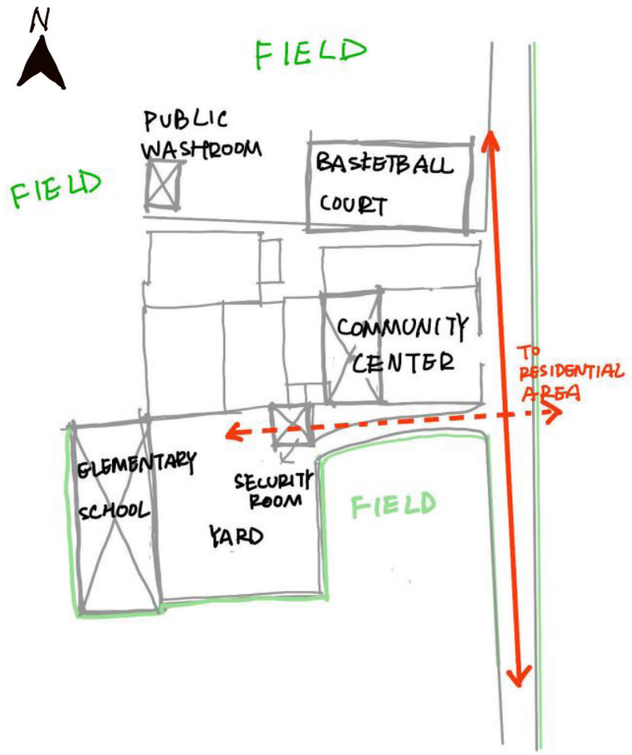
COMMUNICATION AND INFORMATION

Night lighting is essential for elderly residents. Lights cover most of the site to ensure safe night travel. Also, elderly people can get help from community centers and senior cafeterias if they face any difficulties.

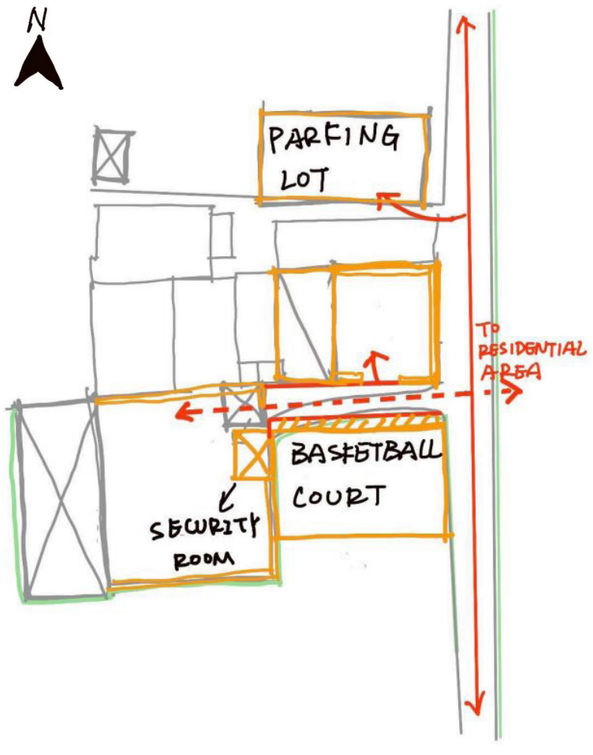
SAFETY AND COMMUNITY SUPPORT

Figure 6-12: Communication and information
Figure 6-13: Safety and community support

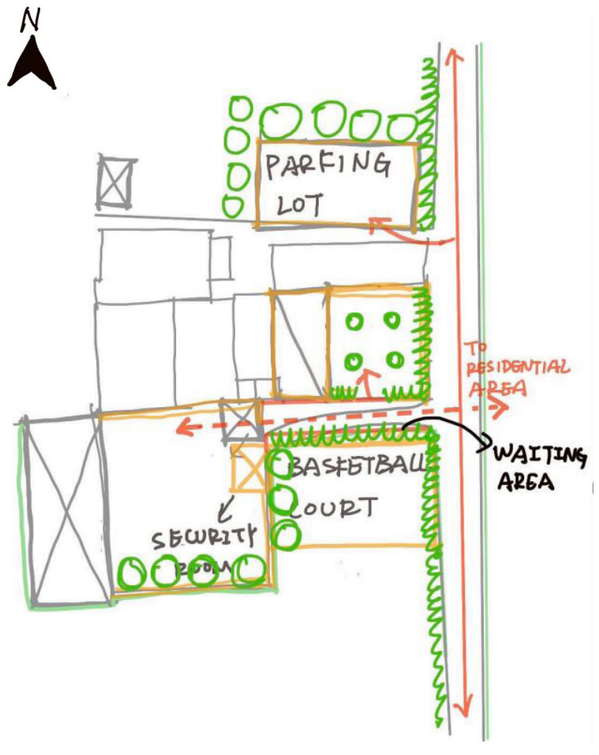
DESIGN PROCESS OF
SCHOOL ENTRANCE AND COMMUNITY CENTER



ADD PROPOSED PATH



RESHAPE SPACE



ADD VEGETATION

In the existing condition, this place mainly has an elementary school, a security room, a community center, and a basketball court, but these facilities cannot be used very well. In the overall plan, a road connecting the elementary school and the residential area has been added to facilitate elders in picking up and dropping off children. To meet the usage preference of the elderly, the proposal moves the security room to the south and changes the curved road to a straight road.

With the help of existing trees on both sides of the road, small spaces are formed. When waiting for children after school, elders can rest under the trees. In the current situation, the basketball court is rarely used, and residents park their cars there. Therefore, move the basketball court near the elementary school so that students and residents can use it more conveniently. The original basketball court is replaced by a parking lot where community staff can park their cars. The new road and basketball court reshape space and form a large, enclosed space. In order to allow older people to access the community center more safely and conveniently, the intersection of the community center is changed to one side of the proposed road and forming a larger courtyard.

Figure 6-14: Design process of school entrance and community center: add proposed path
Figure 6-15: Design process of school entrance and community center: reshape space
Figure 6-16: Design process of school entrance and community center: add vegetation

SITE PLAN FOR COMMUNITY CENTER & SCHOOL ENTRANCE AREA

0 5 10 20 METERS

A2

A1

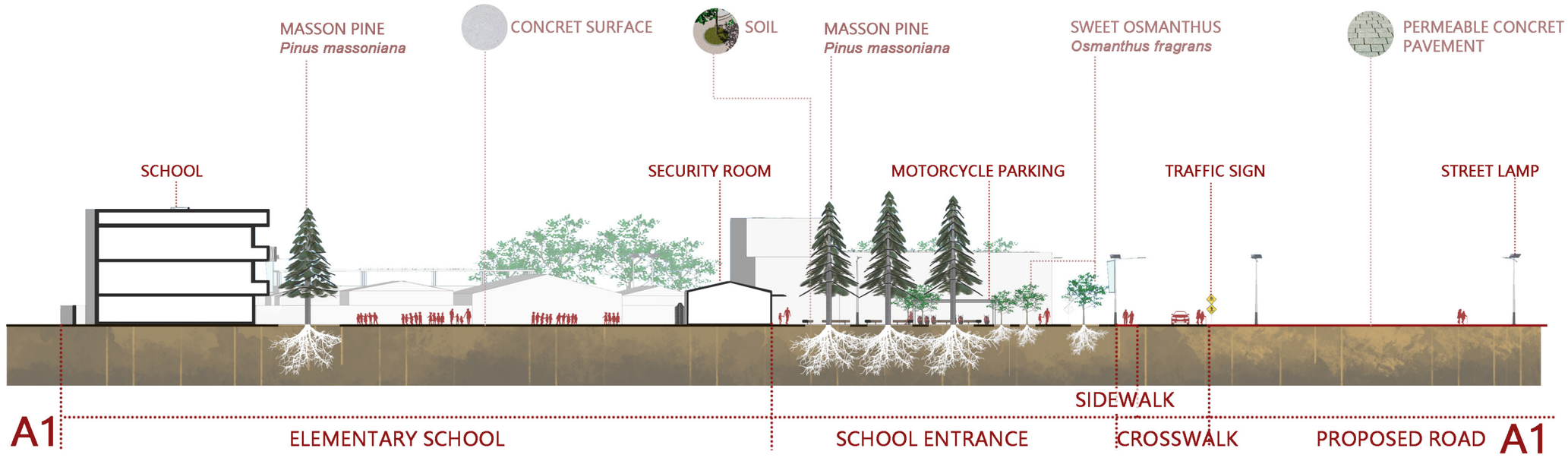
A1

A2

1 PARKING LOT
2 BASKETBALL COURT
3 COMMUNITY CENTER
4 SECURITY ROOM
5 PUBLIC WASHROOM
6 ELEMENTARY SCHOOL
7 PROPOSED PATH
8 TRAFFIC SIGN
9 SPEED BUMPS
10 CROSSWALK
11 PEDESTRAIN WALK
12 STREETLAMP
13 MOTORCYCLE PARKING LOT
14 SEATS
15 AGRICULTURAL BUMP

Figure 6-17: Site plan for community center and school entrance area

SECTION OF SCHOOL AND COMMUNITY CENTER ENTRANCE



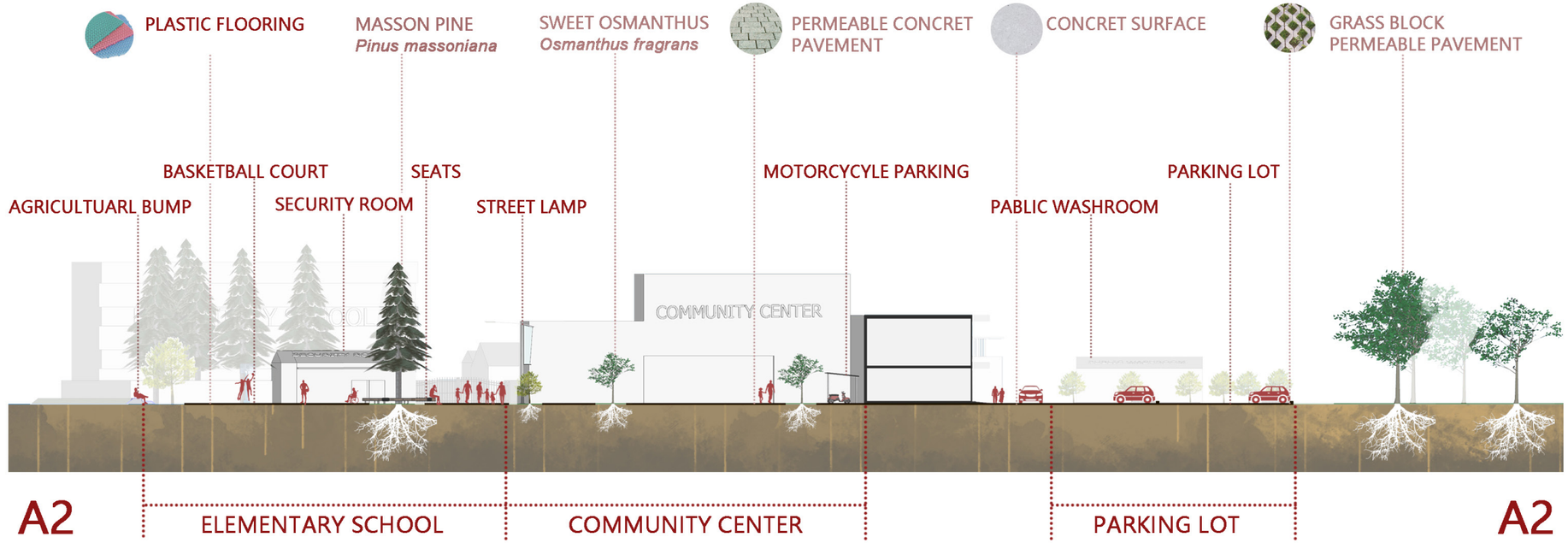


Figure 6-18: Section of school and community center entrance A1
Figure 6-19: Section of school and community center entrance A2

Figure 6-20: Existing condition of the entrance

The existing path to the elementary school is connected to the main road. Vehicles with fast speeds may cause potential risks to pedestrians, and the lack of sidewalks and crosswalks may lead them into a worse situation. The proposal introduced a sidewalk on one side of the road. The sidewalk employed a non-curb design and allowed elders who use wheelchairs to move freely. In addition, the identification sign and deceleration belt are added to the place to inform the vehicle to slow down.

Figure 6-21:Perspective of the entrance

Figure 6-22:Perspective of the entrance (10 years later)

Figure 6-23: Existing condition of school entrance

In the current condition, the path leading to the school is blocked by the security room. To make the school entrance more accessible to villagers, the security room was moved to the left side of the entrance, and the curved path was changed to a straight path. However, both sides of the path are used as vegetable gardens by local farmers and strongly affect the place's aesthetics. Meanwhile, elders require a place to wait and pick up kids from school. Therefore, the proposal introduces seats under the existing pine trees. Thus, elders can wait under the tree's shadow, and the vegetation under pine trees can increase the beauty of the path.

Additionally, in the current layout, the basketball court is not effectively used. In the proposal, it is suggested that the basketball court should be moved to the school's entrance. So, it can better encourage students and villagers to use it.

Figure 6-24: Perspective of school entrance

Figure 6-25: Perspective of school entrance (10 years later)

Figure 6-26: Existing condition of the community center

Figure 6-27: Perspective of the community center

In the proposal, it is suggested to replace brick walls with green shrubs to reduce the depressive sense of the community center while maintaining a sense of closure in the courtyard. Currently, the existing community center entrance is directly transferred to the main road which may cause potential safety issues due to rapid vehicles. Changing the entrance to the south side can increase the traffic buffer zone and reduce the possibility of traffic accidents.

In the proposal, the community center contained existing trees, a plaza, motorcycle parking lots, and an information board. The plaza can be used as a temporary gathering space when holding events. Information boards are set at the corner of the plaza and providing the latest news for elders.

Figure 6-28: Existing condition of parking lot

There is an existing playground on the north side of the community center. Currently, the basketball court is not well-used, rare residents play basketball there. Therefore, in the proposal, the basketball court is moved near the elementary school, and the playground is transformed into parking lot. The parking lot uses permeable pavement, which can prevent elders from slippery on rainy days. The parking lot is equipped with multiple solar street lights to ensure the implementation of elderly users at night. Meanwhile, the parking

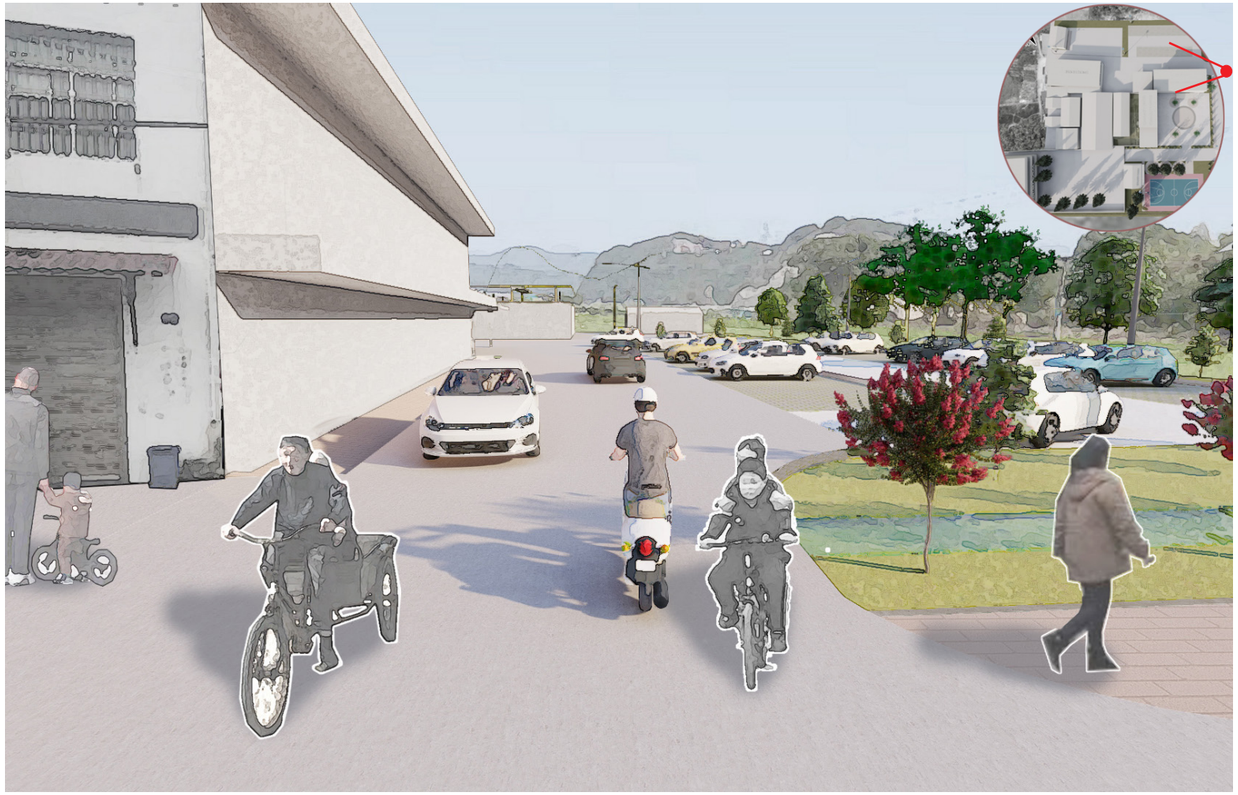
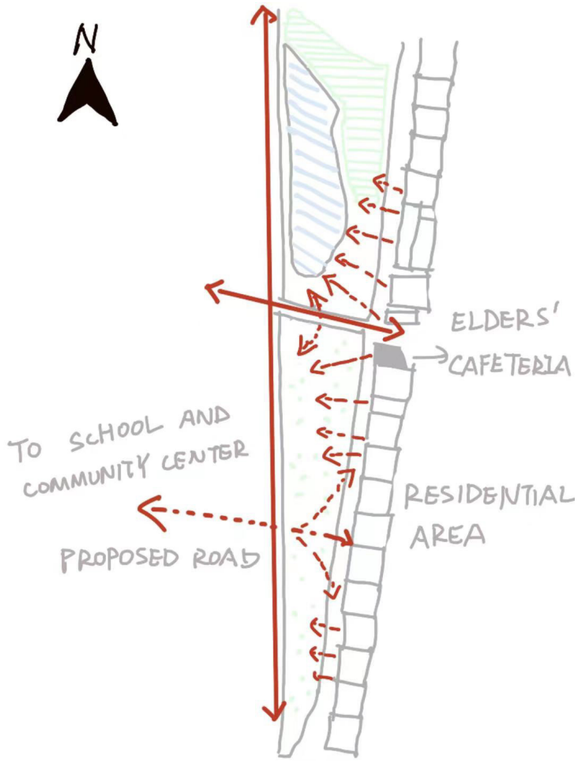


Figure 6-29: Perspective of parking lot

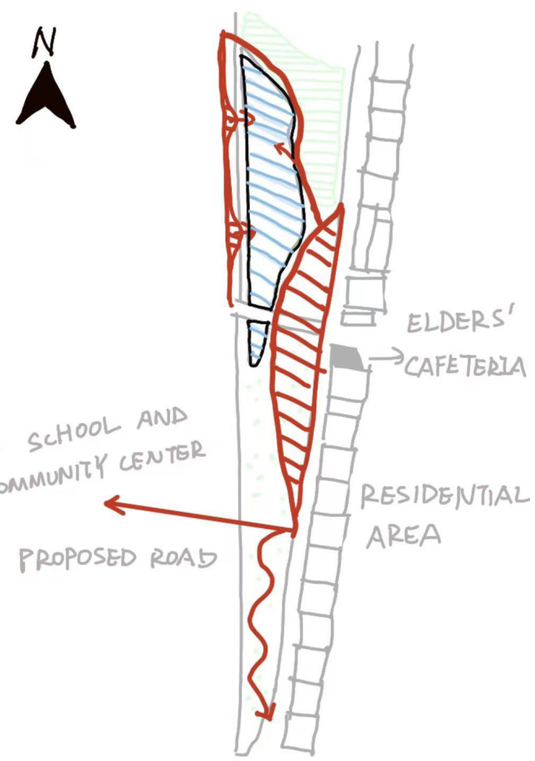
lot has a disabled and elder bay to provide bigger parking space for elder drivers.

In addition, the proposal adds a sidewalk on the side of the road. The sidewalk can visually remind drivers to avoid pedestrians and provide pedestrians with a walking space, reducing the traffic risk in the community.

DESIGN PROCESS OF COMMUNITY PARK



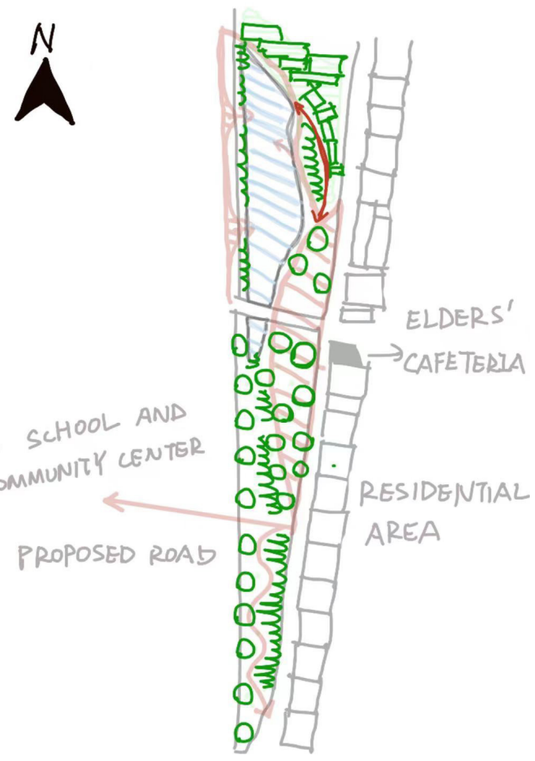
IDENTIFY POTENTIAL PATH



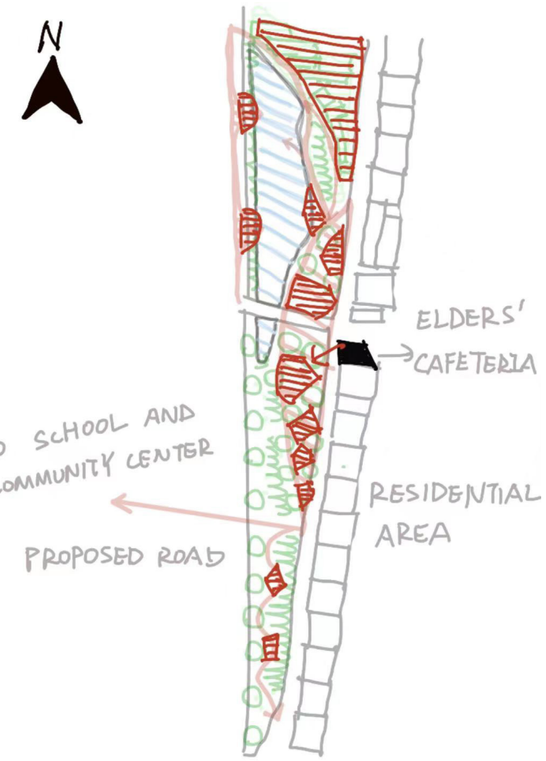
INTRODUCE CIRCULATION

The design goal of the community park is to provide opportunities for leisure, socializing, dining, fishing, and gardening for elders. According to the potential activity pattens of elders, this space is divided into hard paving space, quieter space, and planting space. Then add planting beds and vegetation in the place. For existing trees in the site, use planting beds to protect them. In the northside

Figure 6-30: Design process of community park: identify potential path
Figure 6-31: Design process of community park: introduce circulation



ADD VEGETATION



RESHAPE SPACE

of the pond, introduced several planting bed to build a community vegetable garden. And finally, vegetation shapes many small spaces where elders can hold activities. The open space at the intersection is used to build an elders' cafeteria to provide food for elders. The shadowed space can be used as an outdoor restaurant for the cafeteria.

Figure 6-32: Design process of community park: add vegetation
Figure 6-33: Design process of community park: reshape space

SITE PLAN FOR COMMUNITY PARK

0 10 25 50 METERS

1 PROPOSED ROAD
2 TRAIL
3 PLAZA
4 ELDERS' CAFETERIAL
5 OUTDOOR CAFE
6 PROPOSED PEDESTRAIN WALK
7 AGRICULTURAL DITCH
8 PLATFORM
9 ACCESSIBLE TRAIL
10 COMMERCIAL SHRUBS
11 COMMUNITY GARDEN
12 TOOL STORAGE

B1 B2 B3 B4 B5

+HP254.25
254.00
253.75
253.00
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+HP253.25
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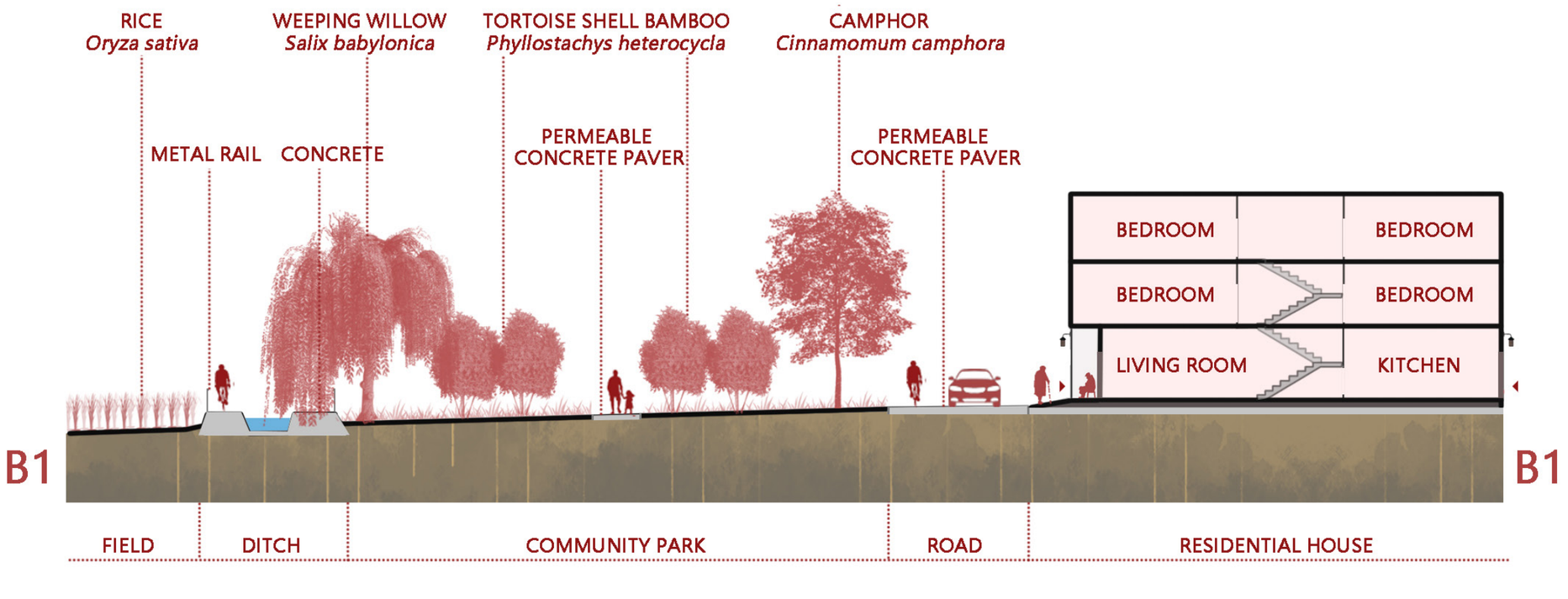
Figure 6-34: Site plan for community park

SECTION OF COMMUNITY PARK



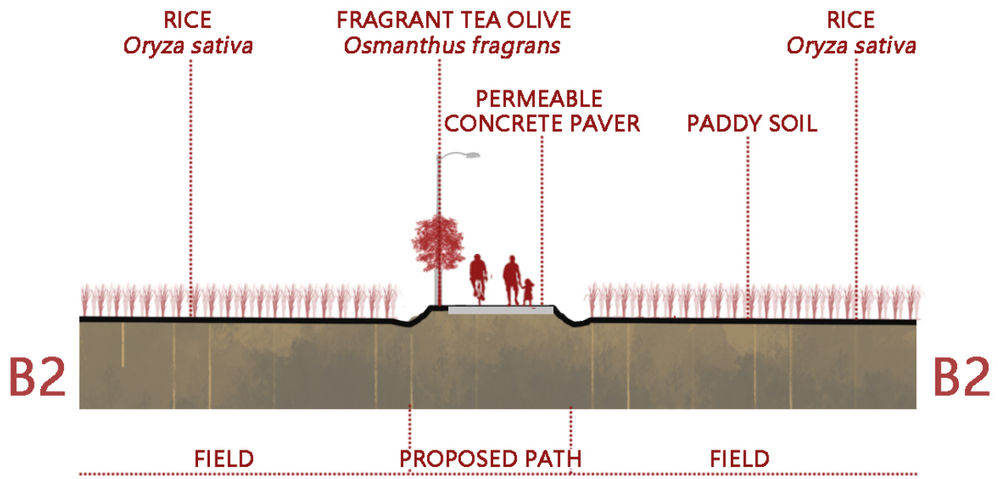


Figure 6-35: Section of community park B1
Figure 6-36: Section of community park B2

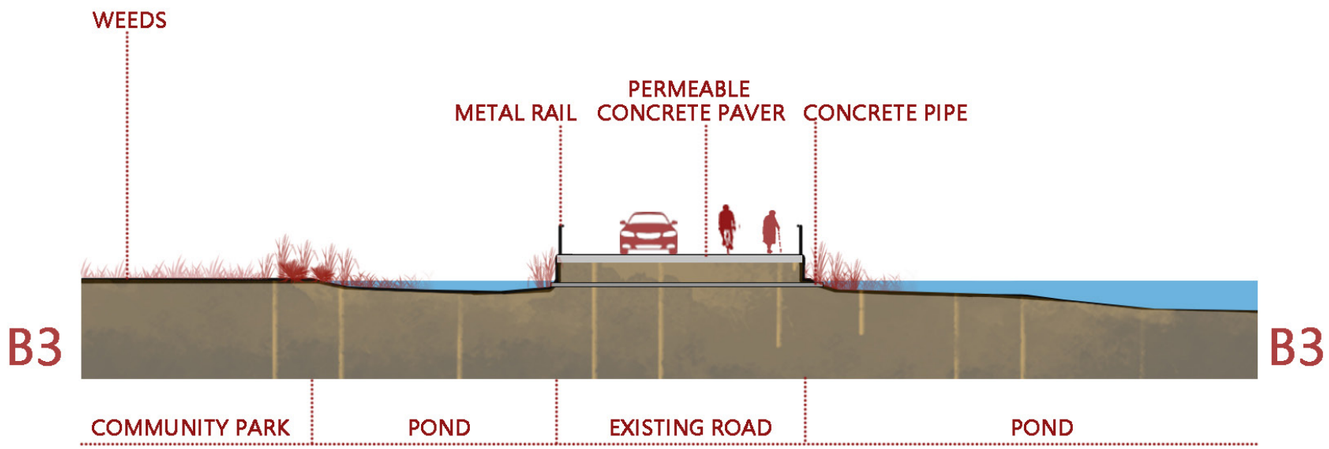


Figure 6-37: Section of community park B3

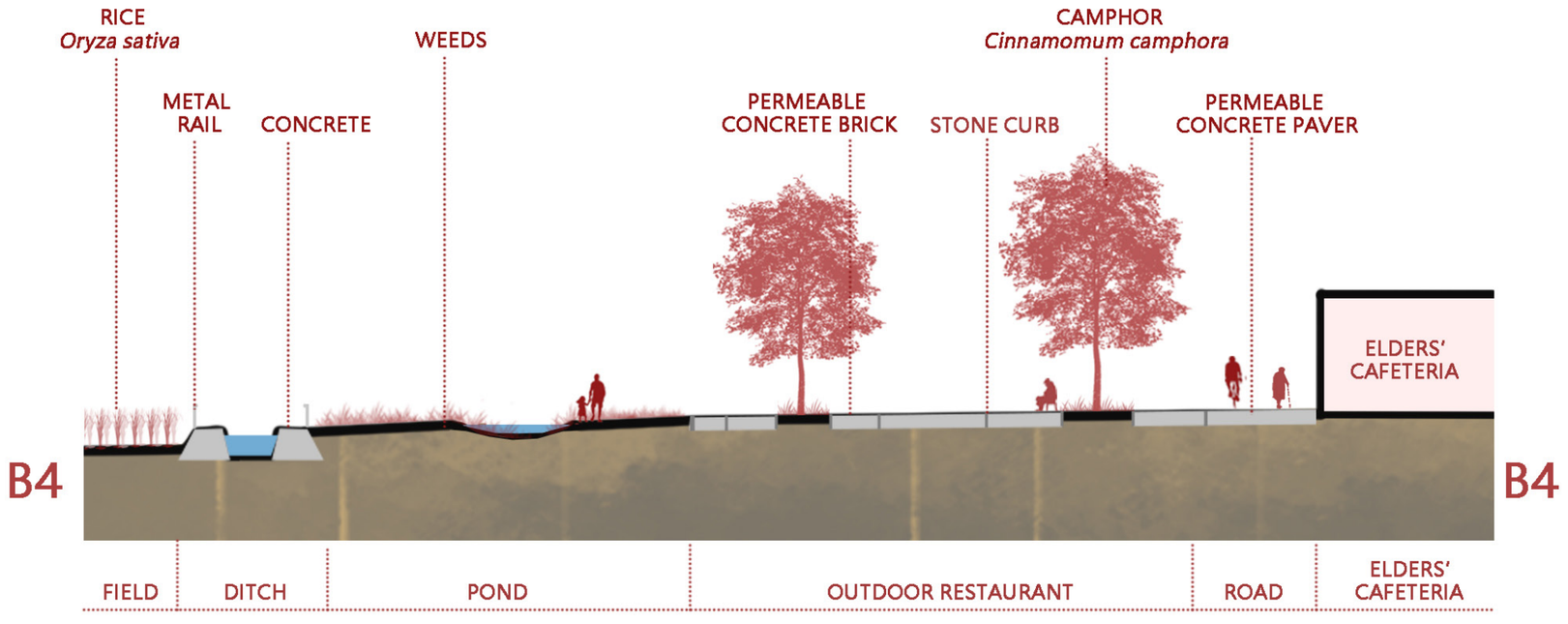


Figure 6-38: Section of community park B4

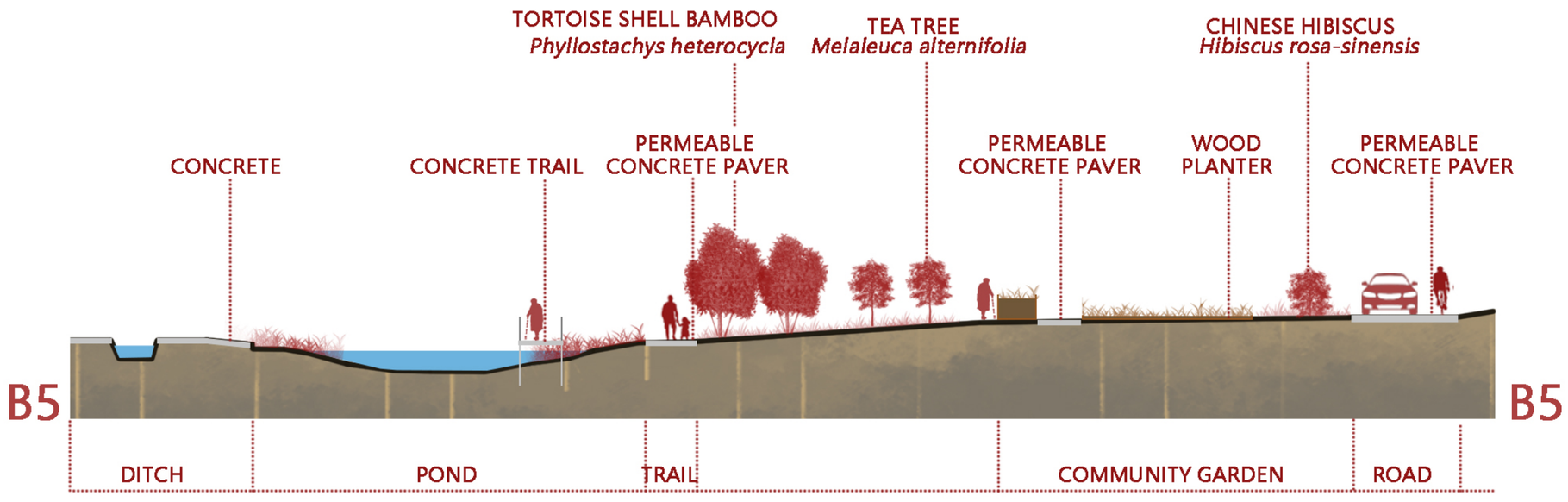


Figure 6-39: Section of community park B5

Figure 6-40: Existing condition of community park

The existing site is mainly used to cultivate trees. On the site, these big trees are landmarks in the village, and some elders prefer to gather and chat under these trees. The proposal uses planting beds to protect these trees and set up seats under them. The space under trees can become a more formal gathering space in the village. Moreover, elders can sit on seats to look at their grandchildren. Besides, the elders' cafeteria is close to the place, it could be used as an outdoor extension for the cafeteria.

Figure 6-41: Perspective of community park

In the proposal, these big trees are used as a social space in front of elders' houses. Planting beds are employed to protect and emphasize the position of these big trees. Several round-shaped seats are set under the tree canopy, which provides a more formal social space for old adults. To better fit elders' requirements, these seats are equipped with handrails and back.

Figure 6-42: Existing condition of community park and street

This space was underutilized in the existing site. People planted some trees to beautify the area and shade their houses from the sun. However, some residents also dumped clutter and trash cans in this space. This turned the public space into a “private storage space” that spoiled the community’s appearance. In this design, this space will be a leisure area for all the residents of the community.

Figure 6-43: Perspective of community park and street

The perspectives show the trail on the south of the community park. Unlike the park on the east, this place have more dense vegetation and focuses on providing a quieter place for elders. The trail’s pavement is permeable, free of the curb, and non-slippery, which aims to reduce the falling risk of older residents. Meanwhile, the proposal plays with the landform and vegetation to enhance the quiet atmosphere. Seats are set below the canopy, and elders can rest when tired.

Figure 6-44: Existing condition of community garden

Based on the site analysis, it can be found that villagers prefer to have a garden to grow some vegetables. The west side of the pond is a good place to build a community garden: vacant land can be constructed, near the residential area, near the road that elders can easily access, and has irrigation water from the pond. Considering the physical condition decline of elder people, the community garden is equipped with seats and elders can rest.

Figure 6-45: Perspective of community garden

The community garden has several vegetable plant beds. These planting beds are divided into different heights and areas to fit villagers in different physical conditions. For example, chest-height planting beds are suitable for elders and disabled people, and lower planting beds are designed for kids and teenagers. Moreover, the community garden can be regarded as an intergeneration social space. Every villager can have fun, elders can teach kids how to engage in agricultural activities, and kids can learn about nature from elders.

Figure 6-46: Existing condition of the pond

The pond is located on the north side of the community park. However, the pond is not well-used and gradually become wild. During the site visit, some villagers caught fish in the pond. In the existing condition, there is an agricultural ditch on the east side of the pond, and a trail is between them. The pond's edge is clean, and local farmers use the edge to plant vegetables. In the proposal, weeds and tall grasses, such as cat tails, Scirpus, pampas grass, and reed grass, are planted on the pond edge. These water-resisted grass can help purify waterbody and provide a habitat for water creatures.

Figure 6-47: Perspective of the pond

In the proposal, villagers can sit at the edge and fish. Besides, the pond bank is a good place for walking, and elders can have a short journey around the pond and experience the agricultural scenery. In summer, insects and frogs will sing in the grass so that villagers can enjoy the song from nature when walking on this trail.

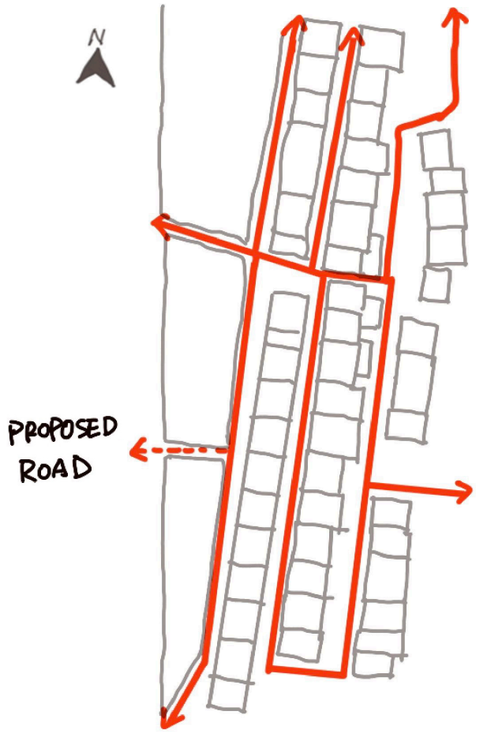
Figure 6-48: Perspective of the pond trail

These two perspectives can provide more details about the pond edge path. In the proposal, villagers can sit at the edge of water and fish. Besides, the pond bank is a good place for walking, and elders can have a short journey around the pond and experience the agricultural scenery. In summer, insects and frogs will sing in the grass so that villagers can enjoy the song from nature when walking on this trail.

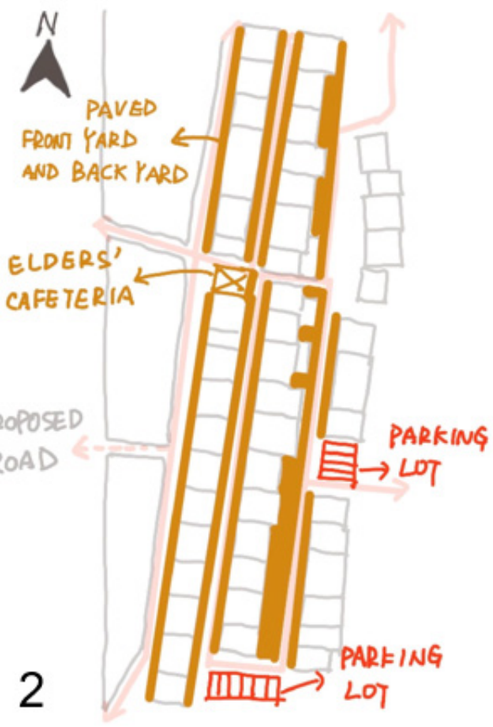
Figure 6-49: Perspective of the pond accessible slope

Seats are set up at the edge of the path for elder to stay and rest. At the same time, a slope with handrail has been added near the waterfront. The slope is accessible, which can allow people in railway access the water. Residents can access the water through this rail and provide more diverse experiences. Besides, the slope can be a good point for fishing.

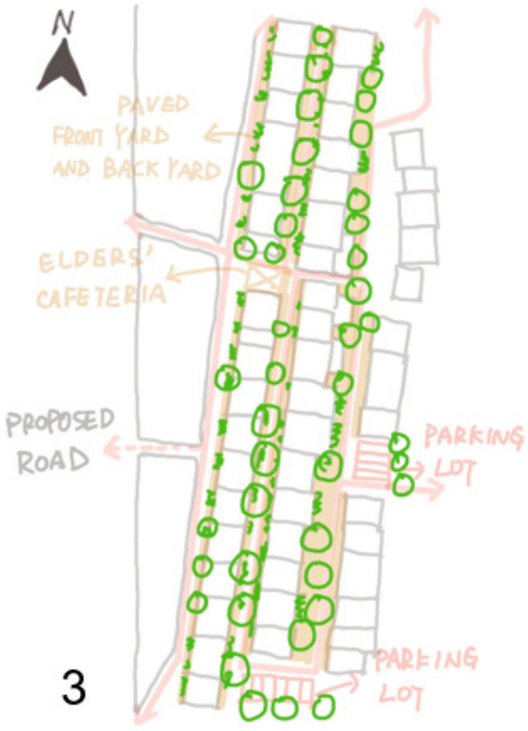
DESIGN PROCESS OF RESIDENTIAL AREA



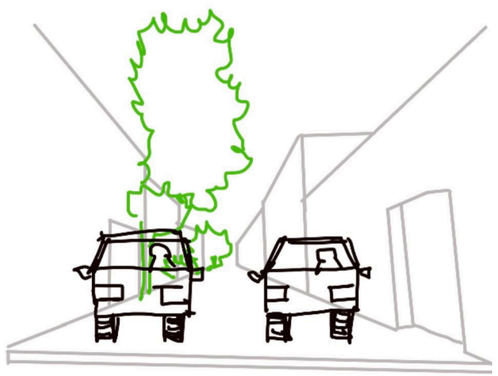
IDENTIFY CIRCULATION



RESHAPE SPACE



ADD VEGETATIONS



EXISTING TWO-LANE ROAD

PROPOSED ONE-LANE ROAD

↖ Figure 6-50: Design process of residential area: Identify circulation

↑ Figure 6-51: Design process of residential area: Reshape space

↗ Figure 6-52:Design process of residential area:Add vegetation

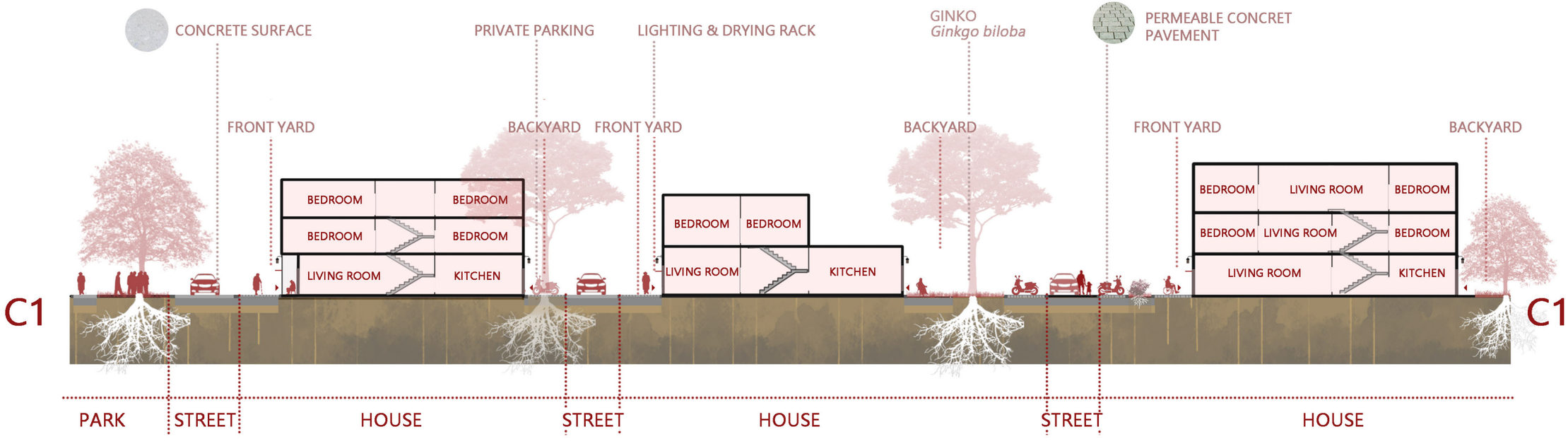
↙ Figure 6-53:Design process of residential area: Existing two-lane road

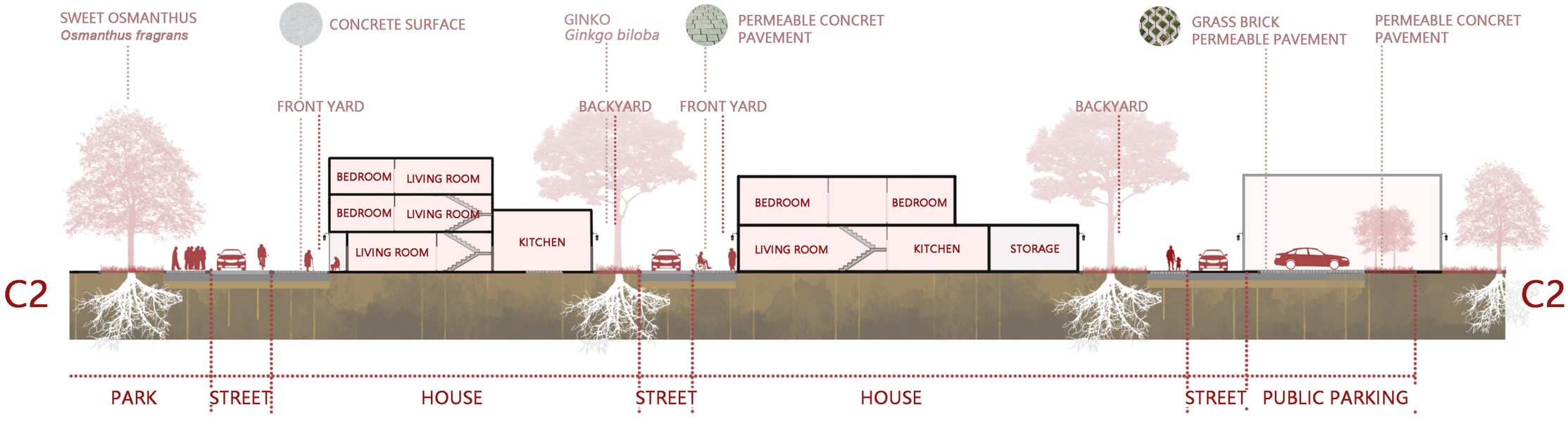
↓ Figure 6-54:Design process of residential area:Proposed one-lane road

The site survey found that the space where elders stay most frequently is in front of their houses. Therefore, it is crucial to improve “space in front of home”. The main design strategy for this area is to change the two-lane road into a one- lane road and provide additional leisure space for residential areas on both sides of the road. The space can be adjusted according to the preferences and needs of residents, giving them opportunities to create their yards. In addition, two small parking lots have been added to the site to meet the needs of visitors.

To better understand the shaping of street space, it is necessary to understand the structure of the site housing. The building is generally connected to two streets, one street is connected to the living room and can be called the “front yard”, and the other street is connected to the kitchen or storage room and can be called the “backyard”. In other words, a road is connected to both the kitchen in the front row and the living room in the back row. This special space layout will cause slightly different spaces on both sides of the road.

Figure 6-55: Site plan for residential area





↑ Figure 6-56: Section of residential area C1
↓ Figure 6-57:Section of residential area C2

Figure 6-58: Existing condition of residential area entrance

This vacant land is located at the entrance of the residential area. As depicted in the picture, the place has been simply paved, serving as a social gathering point.

According to the site inventory, many young people in the village need to work in the downtown and unable to return home and prepare lunch for their elderly parents. To encounter this issue, some communities establish elders' canteens to provide free or affordable lunches for these elderly. Therefore, establishing a elders' cafeteria in this vacant space would enable elderly individuals who cannot cook to enjoy delicious and nutritious meals, while providing a good social place for them.

Figure 6-59: Existing condition of residential area entrance

This perspective shows the main entrance to the community.

The community usually has a small traffic volume, and pedestrians can walk in the middle of the road. However, when there is heavy traffic, pedestrians can use the sidewalks on both sides of the road.

Through this perspective, we can get an idea of what the elders' cafeteria looks like. In the concept, it is a single-story building with large windows to provide natural light for the guests. Surrounding the building are shrubs and small trees, serving as boundaries between the structure and the road.

Figure 6-60: Existing condition of residential street

Figure 6-61: Perspective of residential street and park

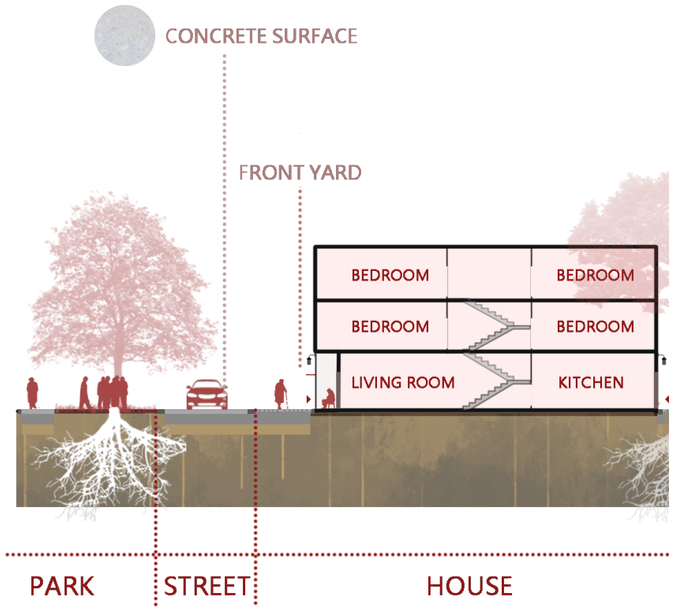


Figure 6-56: Section of residential area C1

This perspective show the relationship between residential houses, roads, and community parks. Residents use the front yard to place goods and park motorcycles in the existing situation. However, the front yard is a social space for elders in this village. Therefore, the front yard is mainly designed as an informal social area for elders in the proposal. In the front yard, elders can socialize with neighbors without leaving their houses, which aligns with their preferences. Moreover, the front yard pavement keeps a slope to connect the road and the house to ensure accessibility for wheelchairs.

The road is a mix-used road for cars, motorcycles, bicycles, and pedestrians. Gray curbs are used to define the edge of the road. There is no height difference between the road and the curb, which can ensure the accessibility of elders and people who use wheelchairs.

Figure 6-62: Existing condition of residential street (second row)

Figure 6-63: Perspective of residential street (second row)

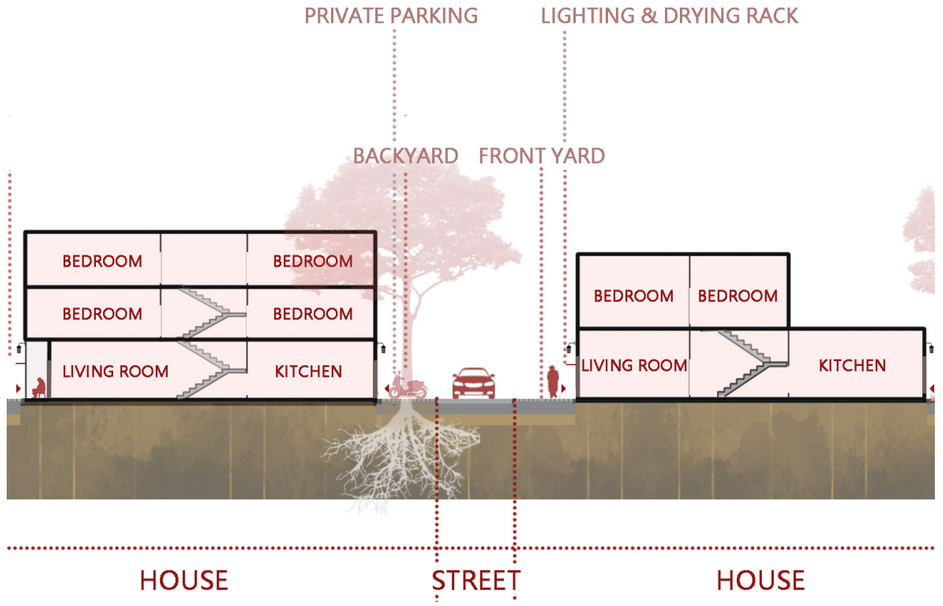


Figure 6-56: Section of residential area C1

This perspective shows the streetscape between two buildings. The left side of the street is a family's kitchen and backyard. Currently, some plants have been planted in the backyard. Therefore, the proposal uses planting pools to protect existing plants and define the boundary in the neighborhood. Seats are welcome in the backyard since residents can sit there to chat with friends and enjoy a beautiful time. The ginkgo tree is used here as street trees. Because the ginkgo tree is a deciduous tree, it can provide shelter for the streets in summer and not block the sun in winter. Meanwhile, ginkgo trees display beautiful golden leaves in autumn.

On the right side of the road is the front yard of another family. Older adults can also sit in the front yard to communicate with their neighbors.

Figure 6-64: Existing condition of residential street (third row)

Figure 6-65: Perspective of residential street (third row)

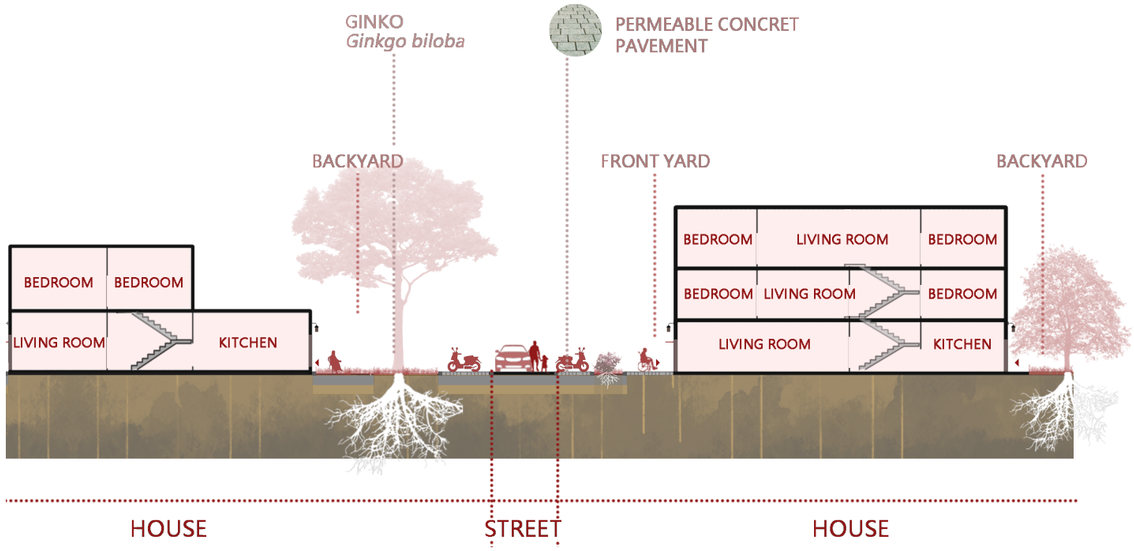


Figure 6-56: Section of residential area C1

There is more space between the third and fourth rows of houses than the second and third row houses, which gives residents more options for customizing their yards. In the community, concrete bricks are used in the front and back yards of houses, which can be easily installed or removed by residents. Residents will no longer be passively involved in the construction of the community; they will decide on their own yards. Residents can use their yard planting vegetation, place seats and tables, and parking their vehicles. This design strategy is often referred to as "empowerment," which can help older residents feel empowered to participate in community design and boost seniors' self-confidence.

POTENTIAL OF YARDS.....

Based on the site inventory, it can be found that most villagers use the backyard to stack items, such as wood, motorcycles, construction bricks, and recycling garbage, which strongly prevents elders from using the space. In the meanwhile, some villagers regard the backyard as a recreation space. They use fences and vegetation to define neighborhood space, set seats and tables, and invite their friends and neighbors to chat in the backyard. In the village, the backyard space is an important part of the social system of elders. Interacting with neighbors in the backyard can help elders keep a sense of security, and they will perform more actively in socializing.

In order to protect the existing trees and respect residents' preferences, this design has proposed several strategies for the backyard. Villagers can freely choose the appropriate countermeasures based on the current situation in their backyard. Some residents require cars and motorcycles, and they can choose the solution with motorcycle racks and car parking spaces; some residents prefer to plant flowers in the backyard, and they can choose the backyard proposal with planting beds; some residents want to keep privacy in their backyard, they can choose wooden fence to strengthen the feeling of closure.

PLANTING BED + BIKE RACK+ CAR PARKING

PLANTING BED + MOTORCYCLE PARKING+ SEATS

PLANTING BED + TREES

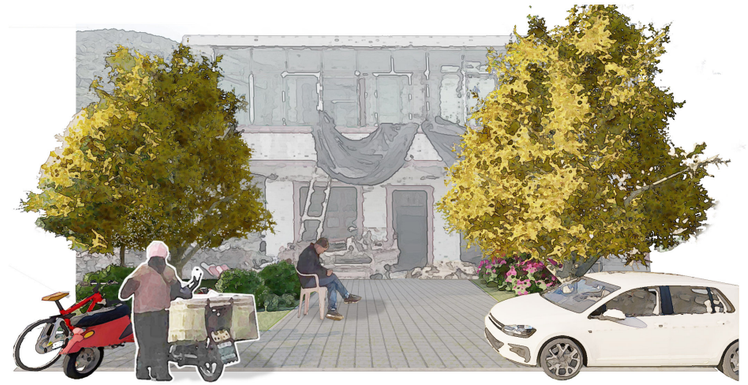
Figure 6-66: Potential of yards- plan 1
Figure 6-67: Potential of yards- plan 2
Figure 6-68: Potential of yards- plan 3

PLANTING BED + TREES

PLANTING BED + SEATS

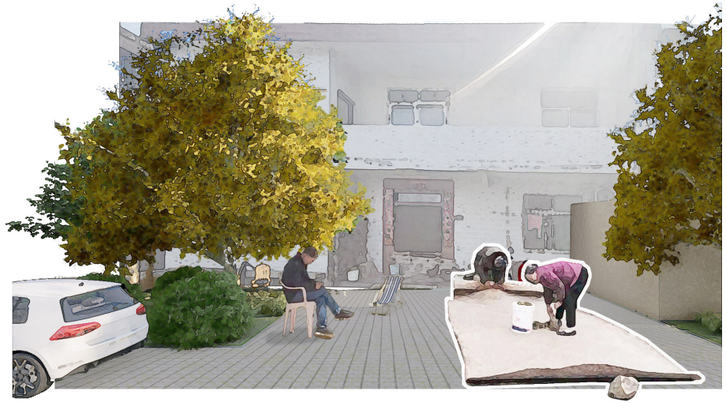
PLANTING BED + DRYING PLACE

Figure 6-69: Potential of yards- plan 4
Figure 6-70: Potential of yards- plan 5
Figure 6-71: Potential of yards- plan 6



PLANTING BED+ BIKE RACK + PARKING

SEATS + EXISTING TREE + CAR PARKING



PARKING + EXISTING TREE + DRYING PLACE

Figure 6-72: Potential of yards- plan 7
Figure 6-73: Potential of yards- plan 8
Figure 6-74: Potential of yards- plan 9

SEATS + EXISTING TREE + PARKING

SEATS + PLANTING BED + PARKING

SEATS + PLANTING BED + PARKING

Figure 6-75: Potential of yards- plan 10
Figure 6-76: Potential of yards- plan 11
Figure 6-77: Potential of yards- plan 12

Chapter Summary

To make the community more suitable for the elderly, this practicum improves the community environment through the following aspects in the design.

New path. A new path has been added connecting the northern residential area and the southern school and community center. Many elders need to walk from the northern residential area to the elementary school in the south to pick up their grandchildren. However, according to the current situation, elders need to bypass the farmland and walk a long distance to reach the school. To facilitate elderly people to pick up their grandchildren more easily, a path has been added through the farmland.

School area. To better fit the walking preference of elders, the practicum changed the path connecting the elementary school from its original curve to a straight road. At the same time, seats are set up under the existing pine trees as waiting areas for elders who are waiting for their children after school. The basketball court originally located on the west side of the community center has been moved near the elementary school so that children can use it more conveniently.

Community center. The existing entrance of the community center is directly connected to the road, and cars on the road may cause potential risks to elders when visit the community center. Therefore, the entrance of the community center has been moved to the east side, which is safer and easier to access. At the same time, a green vegetation wall replaces the concrete wall that originally surrounded the community center, which can reduce the formal feeling of the community center and encourage community residents to visit it. An information board has been added at the new entrance of the community center, and every resident who visits the community center or elementary school can learn about community news through it.

Parking lot. The original basketball court was not frequently used, but there was a demand for parking in the community. Therefore, this practicum used a parking lot to replace the basketball court on the west side of the community center. The parking lot is equipped with elderly priority bays and night lighting to enhance the experience of elderly drivers.

Community park. The current situation on the north side is a vacant land, which has been designed as a community park in this practicum. The community park is divided into a community garden, a pond, an open area mainly paved, and a quiet area mainly covered with vegetation. The community garden provides elders with gardening opportunities, including planting pools of different heights, water supply systems, and tool storage rooms. The pond extends to the other side of the road and has a walking path and seats along the edge of the pond. Elders can have various experiences when walking along the pond edge. A new elders' cafeteria has been added on the vacant land in the community where elderly people can get food and social opportunities. The paved space provides outdoor dining space for the elderly cafeteria. In addition, existing trees form many small spaces that can meet the needs of different groups of people in the community.

Residential area. This practicum has re-allocated the space of streets and yards for residential areas. Since there is little traffic volume in this area, the original two-lane roads have been changed to one-lane roads. Moreover, residents are provided with front and back yards that can be freely designed by them. Residents can plant plants, park vehicles, place tables and chairs in their yards. In addition, parking lots have been added to the south and middle vacant land of the residential area for temporary visitors to the community.

CHAPTER 7:

CONCLUSIONS

Rural elders in China face more severe challenges due to ageing, such as insufficient facilities, funds, and volunteers. Age-friendly communities can be a promising solution to improve their situation.

Based on the design of Upper Village for ageing in place, landscape architects can support active ageing in these ways:

-Create a comfortable environment for the elders.

Creating comfortable environments involves two key aspects: maintaining clean living spaces and incorporating green areas. A clean living space is crucial for the well-being of the elderly, promoting relaxation and supporting their overall health. In addition, green spaces play a vital role in any community, particularly when catering to the diverse needs of older individuals. These spaces should offer opportunities for various activities, such as playing with children, seeking moments of tranquility, fostering social connections, and providing privacy when desired. By ensuring the presence of both cleanliness and greenery, we can cultivate environments that prioritize the comfort and fulfillment of the elderly.

The re-design process aims to enhance both public and private environments, taking into consideration various improvements. As an example, vacant public green spaces are being repurposed, transforming bare soil into clean pavement adorned with lush vegetation. These revitalized public areas offer numerous benefits for the elderly, including opportunities for walking, exercising, engaging in leisure activities, and even fishing. Similarly, private spaces can be transformed into orderly and inviting areas by decluttering, introducing paved surfaces, and incorporating more greenery into residents' yards. By adopting this approach, potential hazards for the elderly, such as tripping over clutter, can be eliminated while simultaneously providing them with a cleaner and more aesthetically pleasing living environment.

-Provide opportunities for social participation for the elders.

Space serves as the bedrock for interpersonal interaction, and a well-designed environment holds the power to entice the elderly to partake in social activities. By creating a familiar and tranquil atmosphere, we can foster a sense of comfort and bolster the confidence of older individuals when engaging in social interactions.

This design not only incorporates several general social spaces accessible to all residents, such as community parks and centers, but also includes specific social areas designed to cater to the unique needs of the elderly in this community. By considering the habits and preferences of the elderly population, we have created spaces that are tailored to their requirements. For instance, the waiting area provides a comfortable space for elders to engage in conversations while waiting for their children to complete their school activities. Additionally, the yard offers a welcoming environment for elderly individuals with limited mobility to sit and socialize with passing villagers. For those who have a passion for gardening, the community garden provides an opportunity to cultivate vegetables alongside the younger generation. Furthermore, the elders' cafeteria serves as a gathering place where seniors can invite friends and enjoy a wholesome lunch together. These carefully designed elements contribute to the diversity of community social scenes, encouraging active participation in social activities for elders with varying physical conditions. By addressing their sense of loneliness and promoting active aging, these thoughtful design features play a crucial role in fostering a sense of community and well-being among the elderly residents.

-Offer age-friendly facilities.

The elders may face physical decline, but it can be mitigated by designing age-friendly facilities. For example, improve community walkability, add seats,

accessible toilets, and priority parking for the elders, provide canteens for elderly residents, ensure night lighting, eliminate road hazards, and reducevehicle speed for pedestrians.

In the case of the Upper Village community, several ideas have been implemented to provide such facilities, focusing on enhancing mobility for the elderly and eliminating inconveniences.

Improving mobility for the elderly involves the addition of a pathway connecting the community center and elementary school to the residential area. This pathway facilitates easier access to community facilities, enabling the elderly to navigate their surroundings more conveniently. Furthermore, the inclusion of designated parking spaces near residents' homes aids in facilitating their transportation needs.

Eliminating inconveniences for the elderly is a key consideration in the design, encompassing various features. These include the addition of seats throughout the community, equipped with backrests and handrails to provide comfort and support. The construction of an elders' cafeteria addresses the needs of those who may face challenges in cooking, ensuring they have access to nutritious meals. Moreover, increased lighting is implemented to enhance safety for elderly individuals during nighttime travels. Non-slip pavement surfaces are utilized to prevent falls and accidents, while wheelchair-accessible planting beds in the community garden offer opportunities for seniors with mobility limitations

to engage in gardening activities.

By incorporating these age-friendly features, the design of the Upper Village community aims to enhance the overall well-being of the elderly population, promoting their mobility, convenience, and safety while addressing their specific needs and challenges.

-Help the elders maintain confidence.

The elders may feel a loss of control over their lives due to physical decline. Age-friendly communities empower the elders to maintain their confidence. Some ways to help the elders re-empower themselves are: increasing facilities that suit their physical conditions, holding intergenerational activities, providing resting places for the elders, encouraging the elders to do some household chores, travel, and participate in community affairs.

In this practicum, several design methods have been implemented to maintain the confidence of seniors. For example, the addition of a path connecting the community center and residential area, along with the installation of extra streetlights and sidewalks, enhances mobility and ensures a safer environment for the elderly. Creating community and yard gardens offers them opportunities for light gardening activities near their homes, promoting a sense of control and facilitating intergenerational communication. Furthermore, the installation of

information boards at the community center enables seniors to access relevant information, empowering them to engage in their surroundings confidently.

By implementing these age-friendly design strategies, the practicum aims to support the elderly in regaining a sense of control over their lives, fostering self-confidence, and creating a thriving and inclusive community for all residents.

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Illustrations

Figure 1-1: Liu, Guanxin. *Age-friendly cities and communities around the World*. 2022.Digital drawing.

Figure 1-2: MacroTrends. *World ageing population prediction, 2020.* Digital drawing. Accessed February 22, 2021. https://www.macrotrends.net/countries/WLD/world/life-expectancy.

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