ABSTRACT

Title of Thesis:	RENDERING CONNECTION: SYMBIOSIS THROUGH OVERLAPPING AND LAYERING
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This thesis seeks to create a space that enables social energy in traditional senior apartments by overlapping with another program, the animal center. Animals, as spiritual beings, may help ease stress and loneliness in the elderly. Also, animals can be seen as catalysts for intergenerational activities between residents and adopters. Architecture has ability to integrate two categories social beings that have both been isolated and neglected. Spatial and temporal devices of overlapping and layering have the potential to relate or unite disparate elements in an interdependent and mutually reinforcing connection. Through rearranging, overlapping and layering programs that are often co-existent in contemporary society, architecture can keep the elderly and animals active and engaged.

The site for this project is in China. China currently struggles with a series of issues relating to populations of both the aging and of animals. In China, as the population

shifts from the country to the cities, senior citizens are increasingly socially isolated. At the same time, animal overpopulation, particularly dogs, becomes more of a problem each year. The final project offers a design that seeks to socially integrate seniors into the larger community, creating opportunities for residents to meet and mingle with other people from the surrounding communities.

RENDERING CONNECTION: SYMBIOSIS THROUGH OVERLAPPING AND LAYERING

By

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Dedication

My parents, thank you for supporting.

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Assistant Professor Jana VanderGoot, Chair

Professor Michael Ambrose, Associate Director

Professor Brian Kelly, Director

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Chapter 1: Introduction and Background

Introduction

Rendering a connection between a senior apartment and an animal center relates to spatial, momentary and perceptual experiences. The independent and mutually reinforcing connection with natural elements integrates two categories of social beings that both have been isolated and neglected and offers seniors a vibrant lifestyle that keeps them active and engaged and thereby increase the possibility of healthy and happy. This prototype will be examined through the lens of embodied structural forces, unique architectural features, and social circumstances, in order to create a viable transformation and neotype: a “pet positive senior apartment”. The thesis will answer the question of how architecture can help senior people reconnect to the social community in a kind of positive symbiosis of people, animals, and natural environment.

Bond between humans and animals

The powerful and mutually beneficial bond between humans and animals is one of the most fundamental bonds that human beings experience today. A study done by Denise Humphries, the developer, consultant of the PetNet information website called *Benefits of Owning Pets,* stated that 62% of pet owners said "having a pet around made it easier to get into conversation and create a friendly atmosphere."[1]

[1] “An elderly companion: 5 reasons to get your loved one a pet”, modified December, 2015, accessed March 1, 2016, http://www.allseasons-

"It can be hard to meet new people, but pets are a great icebreaker,"[2] states U.S. News & World Report in a 2010 article by Philip Moeller titled *10 Reasons Older People Need Pets*.

Animals and senior citizens

The need for a space that is designed to encourage senior citizens to reengage is growing. As people age, they tend to feel energy drain away from their body system, and thus they prefer to stay at home watching television or reading good books rather than heading out for their social lives. However, a study published in the Journal of Health and Social Behavior found that it is important that staying active and engaged has a positive affect on aging peoples' metal health in terms of slowing down the loss of cognitive function.[3] According to Everyday Health, "keeping your mind stimulated or interacting with your peers may help ward off dementia and depression," Krisha McCoy states in *How to Stay Socially Engaged as You Age.*[4] Maia Szalavitz, the journalist for Time, states in the article titled *Friends with Benefits: Being Highly Social Cuts Dementia Risk by 70%*, a study from the Rush

homecare.com/December_2015/an_elderly_companion_5_reasons_to_get_your_loved_one_a_pet.php

[2] "10 Reasons You Need a Pet", U.S.NEWS, published January 7, 2010, accessed March 1, 2016, http://money.usnews.com/money/blogs/the-best-life/2010/01/07/10-reasons-you-need-a-pet

[3] "Why it's important for seniors to remain social and active" accessed March 6, 2016, http://simplythebesthomecare.com/importance-of-seniors-staying-socially-active/

[4] Krisha McCoy, "How to Stay Socially Engaged as You Age", *Everyday Health,* accessed March 6, 2016, http://www.everydayhealth.com/senior-health/enhancing-your-life.aspx

Alzheimer's Disease Center in Chicago, indicates that compared to the least social peers, highly social seniors had a 70% reduction in the rate of cognitive decline.[5]

Animals, as common spiritual beings, can provide opportunities for people to be more active and engaged. Having a pet can gently encourage people to have more social interactions. A study from Veteran's Hospital found that residents are comfortable in having a verbal interaction with others when a dog accompanied them.[6] Also, a study from a Special Care Unit of a nursing home shows that dogs can increase socialization among persons with Alzheimer's disease.[6] Nadine Kaslow, PHD, professor of psychiatry and behavioral sciences at Emory University in Atlanta, states that dogs help people overcome social isolation or shyness, "Sometimes the conversation stays at the 'dog level,' sometimes it becomes a real social interchange."[7]

Animals and young adults

"The young adults in the study who had strong attachment to pets reported feeling more connected to their communities and relationships,"[8] the Cummings School of Veterinary Medicine at Tufts University's Megan Mueller, Ph.D., a developmental psychologist and research assistant professor, recently revealed,

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[5] Maia Szalavitz, "Friends With Benefits: Being Highly Social Cuts Dementia Risk by 70%", *Time, accessed March 6, 2016, http://healthland.time.com/2011/05/02/friends-with-benefits-being-highly-social-cuts-dementia-risk-by-70/*

[6]Drs. Foster & Smith Educational Staff, "Why Man's Best Friend is Man's Best Friend", accessd March 6, 2016, http://www.drsfostersmith.com/pic/article.cfm?aid=1201

[7]Jeanie Lerche Davis, "5 Ways Pets Can Improve Your Health", accessed March 6, 2016, http://www.webmd.com/hypertension-high-blood-pressure/features/health-benefits-of-pets

[8] "Caring for Animals May Make Teens Better Adults", accessed May 15, 2016, http://sites.tufts.edu/vetmag/summer-2014/caring-for-animals-may-make-teens-better-adults/

adding that youth who have strong connections with pets also benefit from this relationship socially.

Animals and children

In a 2016 New York Times article titled *HEALTH; Children and Their Pets: Unexpected Psychological Benefits*, Daniel Goleman states that "In new research into the bonds between humans and animals, therapists are discovering that pets provide unexpected psychological benefits for children beyond the obvious."[9]

Animals and inmates

Even in the Prison Dog Program, inmates and abandoned dogs interact as two groups that face isolation and rejection, giving each other hope when their paths merge, and they become the salvation for each other. In the California State Prison in Los Angeles County, photographers Shaugn Crawford and John Dubois spent six days observing the program called Paws for Life, "capturing these often surreal scenes of inmates and their dogs lounging in cells, playing in the prison yard, going through obedience training, and, ultimately, bonding." This was reported in Time by Josh Sanburn in an article named *Inside the California Prison Where Inmates Train Rescue Dogs.*[10]

[9] "HEALTH; Children and Their Pets: Unexpected Psychological Benefits", The New York Times, published January 11, 1990, accessed March 1, 2016, http://www.nytimes.com/1990/01/11/us/health-children-and-their-pets-unexpected-psychological-benefits.html

[10] Josh Sanburn, "Inside the California Prison Where Inmates Train Rescue Dogs," Time, February 2, 2015

An animal shelter is a facility that houses homeless and unwanted animals. Pets in these facilities receive treatment if they are sick or injured and receive careful consideration in terms of food and other physical needs. In most shelters, animals are restricted to the living quarters and often end up being euthanized. As residents of the animal shelter, all pets can do is sit and wait in cages for someone to come along and save them, which they do week after week with few successes and a bare chance to be adopted.

Taking advantage of the connection between humankind and the animal kingdom would improve the health and well-being of both. People benefit from human-animal interaction. Recent evidence has proved that animals have ability to ease stress, enable people to retain health, help people engage in social communities and assist people in maintaining mobility into old age[11]. In return, human beings can keep animals health and happy by interacting and giving consideration to them.

Senior citizen physical and psychological changes

Senior citizens face challenges when losing a spouse and friend. Seniors are confronted with adult children who are engaged in their own lives, and the reality of boredom in life from retirement and lack of routine activities. The unique problems senior citizens face today are social isolation and loneliness. According to the U.S. Census Bureau, 28% of elderly that are aged above 65 lived alone in 2010. As people age, the likelihood of living alone has increased. Moreover, more and more senior

[11]Sandra McCune "Evolution of research into the mutual benefits of human–animal interaction" Animal Frontiers: The review magazine of animal agriculture(Vol. 4 No. 3, p. 49-58). published December 22, 2014, https://www.animalsciencepublications.org/publications/af/abstracts/4/3/49

citizens do not have children.[12] Social isolation and loneliness can result in a higher risk of mortality, even if it is uncertain whether these two effects are independent or whether loneliness is an emotional representation that associates with social isolation that impairs health.[13] As a social species, says Dr. John Cacioppo, a neuroscientist and psychologist at the University of Chicago, our brains have evolved to link to society, and when the linkage is impaired, our cognitive performance declines alongside.[14]

The Issue of Aging in China

As the population of the elderly in China grows at an accelerating rate, according to United Nations projections, there are about 132 million people in China, and 9.4% of the population is 65 or older. By 2025, the senior population will increase to 195 million, 13.2% of China's population; and in 2050, the population will increase to 332 million (22.7%), estimates William Lavely, University of Washington professor of international studies and sociology. The accelerated growth of the older population compels that senior apartments will become an urgent and promising project in China. However, the entire market is at the preliminary stage of facing challenges, since senior citizens are reluctant to live in senior apartments, which is counterproductive to their traditional lifestyle and culture.

[12] Sarah Stevenson, "20 Facts about Senior Isolation That Will Stun You" accessed March 8, 2016, http://www.aplaceformom.com/blog/10-17-14-facts-about-senior-isolation/
[13] Andrew Steptoe, "Social isolation, loneliness, and all-cause mortality in older men and women", PNSA vol. 110 no. 15 (November 12, 2012), accessed March 8, 2016, http://www.pnas.org/content/110/15/5797.full
[14] John T. Cacioppo, "Perceived Social Isolation and Cognition", Trends Cogn Sci. Author manuscript; available in PMC 2010 October 1. Accessed March 8, 2016, http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2752489/

Traditional Chinese cultural influence

In traditional Chinese culture, people usually age alongside their family and, unfortunately, because of the dramatic economy, the social structure has changed over time, and senior citizens usually do not have their families around. Their children and grandchildren are moving out to the city, even moving out of the region, and seniors do not live in the community they used to live in. They have been disconnected from relatives and isolated from society.

Stemming from confusion, traditional Chinese families view filial piety and respect for senior citizen as the highest virtue, and adult children are expected to give consideration to their parents in their old age.[15] "Placing your parents in retirement homes will see you labeled as uncaring or a bad son. To abandon one's family is considered deeply dishonorable," said Zhou Rui, a Beijing resident. Placing relatives in senior house is a highly uncommon phenomenon in rural area. The elderly in China tend to self-diagnose when they have health problems and take over-the-counter medicine without their doctor's consent rather than going to see a doctor, unless they have severe symptoms. Even in extreme circumstances, such as senior citizen suffering degenerative illness, most families prefer to hire caregivers rather than place their parents in nursing homes.[16] Also, the fear of being isolated and forgotten keeps them away from senior apartments, where their health and well-being could be monitored.

[15] "7 Cultures That Celebrate Aging And Respect Their Elders", modified February 25, 2014, accessed March 7, 2016, http://www.huffingtonpost.com/2014/02/25/what-other-cultures-can-teach_n_4834228.html

[16]Wang Ke and Chris Dalby, "Respect Your Elders", *China.org.cn* (April 17, 2007), accessed March 7, 2016, http://www.china.org.cn/english/China/207500.htm

So, pets become a nature solution for that. They provide accompany and comfort to these lonely people. My thesis is about creating a pet positive senior community that socially reconnects senior people.

Symbiosis – human beings, animals and access to water, trees, and fresh air

According to the dictionary, *symbiosis* means any interdependent or mutually beneficial relationship between two persons, groups, etc. This thesis seeks to discover and create a space in which seniors and pets connect in a positive way to form a symbiotic relationship with nature infusion that enhances each other. "Although the object have a value of their own, their integration into the architecture is essential: Spaces and objects form a symbiosis and enhance each other."[17] Also, by hybridizing two programs, the confined space not only benefits senior citizens by animal's comfort, but also infuses with other generations' contributions and dedication.

Approaches

The thesis will research readings and precedents that analyze prisons with animals, children with animals, and senior people with animals, dedicating this research to exploring the correlation between senior apartments and animal centers. There are a variety of approaches for exploring this connection. One of the methods could be to study and analyze massive existing senior apartments and animal centers compositions, space organizations, program distributions. The project will draw out their respective approaches and elements of space construction, rearranging and

[17]Nicholas Tamarin, "SPAN & Zeytinoglu Designs Austrian Pavilion For Expo 2010 Shanghai" last modified May 4, 2010, accessed May 15, 2016, http://www.interiordesign.net/projects/9310-span-zeytinoglu-designs-austrian-pavilion-for-expo/

overlapping the two programs in order to come up with new interpretations that consist of the two program elements. Finally, it could examine and select the appropriate scheme among a series of alternatives that optimize the shared engaging space that can be designed to respond to the social isolation challenges.

This thesis seeks to create a space that provides not just a home, but a place of fostering intergenerational conversation and interactivities by crossing program boundaries.

Vegetated *environment* enhances communication

A good place for interaction is a place where people meet naturally and interact. The hypothesis in these methods is that connected spaces are related to natural, attractive, recreational areas, or areas for relaxing.

Experiencing nature is always a way to enhance communication. People of all ages and social statuses become equal when experiencing nature. Also, sharing the experience of nature can bring out our better selves, and animals are always an integral part of nature. People tend to share the same beautiful and cheerful experience with others such as watching dogs playing or cats climbing. “Experiencing nature with others reminds us that sharing comes naturally, and we’re meant to be communal.”[18] Some case studies indicate that people are inclined to generate unconscious communication in nature.[19] Rachel Kaplan states in the *Journal of*

[18] Greg Seaman, “How Nature Brings us Together”, modified June 7, 2012, accessed March 8, 2016, http://learn.eartheasy.com/2012/06/how-nature-brings-us-together/
[19] Rachel Kaplan, Stephen Kaplan, *The Experience of Nature A Psychological Perspective*, p300-317

Architecture and Planning Research that a survey implicates that gardens affect people more socially than other landscapes, including parks or open grassy areas.[20]

Entertainment and leisure activities, such as theaters, sports facilities, libraries, museums, and so forth, can always bring people together. These leisure activities attract diverse groups of people into these spaces and encourage interaction with each other. Also, entertainment invites people to share and discuss their feelings, thoughts and experiences.[21]

This thesis aims to create a pet positive space that emphasis on the connection between seniors and social as a shared natural, spatial and perceptual experience and utilize the special bond linked between human and animals, human and nature, animals and nature to generate unconscious communication and that connect senior residents and social. Spatial and momentary devices of overlapping and layering have the potential to relate or unite disparate elements in an interdependent and mutually reinforcing connection.

[20] Rechel Kaplan, *Journal of Architecture and Planning Research,* 2,115-127 (1985)
[21]Phil Rabinowitz, Implementing Promising Community Interventions, Chapter 26. Changing the Physical and Social Environment, Section 8. Creating Good Places for Interaction, accessed March 8, 2016, http://ctb.ku.edu/en/table-of-contents/implement/phsyical-social-environment/places-for-interaction/main

Chapter 2: Programing

Programs

Senior apartment basic kinds of environment

Common spaces that are sensitive to the changing needs of the aging in the workplace and in the community.

Residential spaces that extend and maximize independent living, and thus heighten quality of life and reduce dependence on the nation's health care and social service resources, and

Care facilities that are efficient and responsive to the needs of the elderly, and that improve care and perhaps even apply new concepts that may help improve the quality of life and extend life itself.

This senior apartment will consists of entries, a lobby/reception area, clinic, office and administrative spaces, vertical transportation, a central food service area, activity area, residential services, dwelling units including assisted living units and independent living units, and mechanical facilities, common area, residential support, patio/path, and green space.

Activities are a secondary determinant of the quality of life for senior citizens when compare to physical care. Designing and developing residential and healthcare environments for aging people has principles that include "vibrant public gathering space to encourage face-to-face interactions, celebration, and resident participation."[22] The companionship pets provide can contribute significantly to the

[22] American Institute of Architects. (2008). Design for aging review (9th ed.). page 7, Mulgrave, Vic.: Images Publishing.

overall well-being of the elderly. “This is, however, more a programing than design issue.”[23]

Based on the program, “Public,” is defined as a place where strangers as well as residents may enter, to “private,” where only residents can enter. A spatial hierarchy that is arranged from “private,” “semiprivate,” “semipublic,” to “public,” protects these different uses of space, and stimulate interactivities. The confined space is public space.

Patio/path

A good location for a patio is next to an activity area where people enjoy watching. Provide a barrier-free access from the building interior to the outdoor recreational area. The outdoor recreation area should be able to receive daily sunlight in the fall and shade in the summer and also it should consider where pets will be walked and played with. If the outdoor space includes eating activities, they should be located adjacent to indoor kitchens and bathrooms. A walkway is a key element, due to the fact that the thesis mainly focuses on connection. Consider including a special bond of texture, nonslip pavement, and good lighting for walkways. Also, plan walkways as an easily accessible area from the residential units to activity areas.[24]

[23] American Institute of Architects. (1985). Design for aging : An architect's guide. Page 63, Washington, D.C.: American Institute of Architects.
[24] American Institute of Architects. (1985). Design for aging: An architect's guide. Page 134-137, Washington, D.C.: American Institute of Architects.

Animal Center

Assistance dogs

Assistance dogs provide a specific service to their owners and thus greatly enhance the quality of their lives. There are three types of assistance dogs: guide dogs for the blind and the visually impaired, hearing dogs for the deaf and hard of hearing, and service dogs for people with disabilities other than those related to vision or heating. Dogs for the blind have been trained formally for over seventy years, and the public is just becoming aware of how a therapy dog can provide emotional support to an elderly owner through companionship. According to *Assistance Dogs* International, a coalition of nonprofit assistance dog organization. Service dogs can help lessen many different types of disabilities. "These specially trained dogs can help be retrieving objects that are out of their person's reach, opening and closing door, turning light switcher off and on, barking to indicate that help is needed, finding another person and leading the person to the handler, assisting ambulatory persons to walk by providing balance and counterbalance, providing deep pressure, and many other individual tasks as needed by a person with a disability."[25] People may have an emotional support animal (ESA) due to a mental illness disability. The U.S. Congress propagandizes the effectiveness of assistance dogs for veterans; as people becoming aware of these companion dogs, they will play a pivotal role that will provide help for people suffering from mental health.

[25] "Service Dogs", accessed May 15, 2016, http://www.assistancedogsinternational.org/about-us/types-of-assistance-dogs/service-dog/

Animal Center program

Animal center programs consist of circulation, mechanical and janitorial areas, pet storage and isolation areas, work support areas, outdoor pets' play space, and administration including adoption area, training area, and clinic.

Public space in animal center are play space, adopting area, and training area.

Possibilities of shared space

Parks

Parks offer countless benefits to residents. They serve as places for people to exercise, enjoy nature and spend time with other people. Elizabeth Dugan, a public administration instructor at South University Online states, "They allow residents a common setting to congregate for recreation and exercise," "people can encounter others with common concerns."[26] Parks served as places where people gather. However, since parks are outdoor spaces, they are operated under some restrictions such as weather and time.

Courtyards

The courtyard can be counted as an indoor park, which is more peaceful, and it has no weather and time limits. The courtyard offers the opportunities for residents to socializing with friends and relatives, sitting in the sun, and group activities. "The

[26] Parks and Recreation Centers Bring Communities Together, accessed March 8, 2016, http://source.southuniversity.edu/parks-and-recreation-centers-bring-communities-together-59072.aspx

staff should have easy visual access to the courtyard and be able to monitor residents' activities at all time."[27]

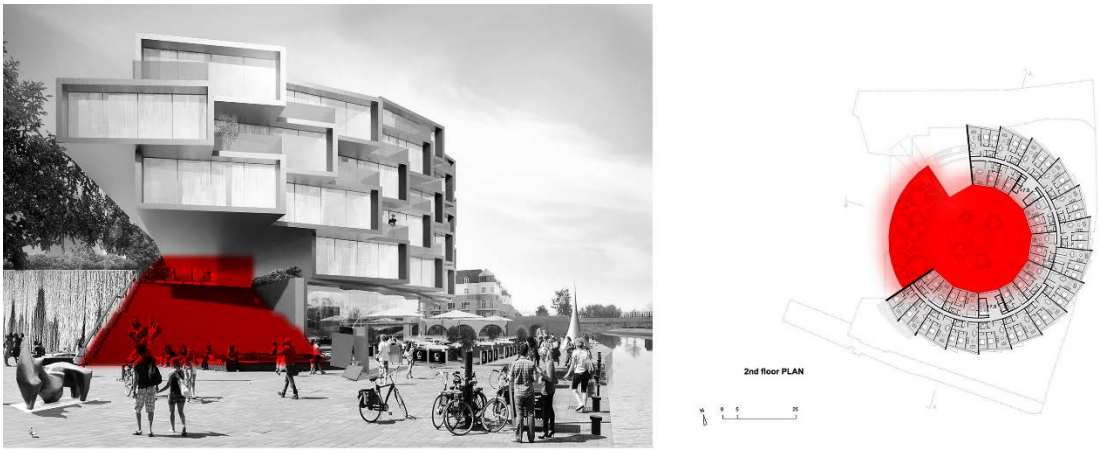


Figure 1A development bid proposal for the Spelthorne Borough Council, designed by Architects of Invention, image edited by author: Haomin Yang, Image underlay resource http://www.archdaily.com/599109/architects-of-invention-s-housing-proposal-puts-community-at-its-center

The inspiration from this case is the attractive entrance of this building which can inspire me using this kind of entrance could attract more people to come into the courtyard of the building, it is an effective way to active the garden of the animal center and senior apartment which can improve the communication between seniors and other people.

Green roofs

Other than aesthetic improvement, stormwater management, moderation of urban heat island effect, insulation, biodiversity, increased roof waterproof membrane

[27] Margaret P. Calkins, M. Arch.(1988). Design for Dementia, page 100-101, National Health Publishing

durability, improved air quality,[28] green roofs also serve as a green space where people can gather and interact.

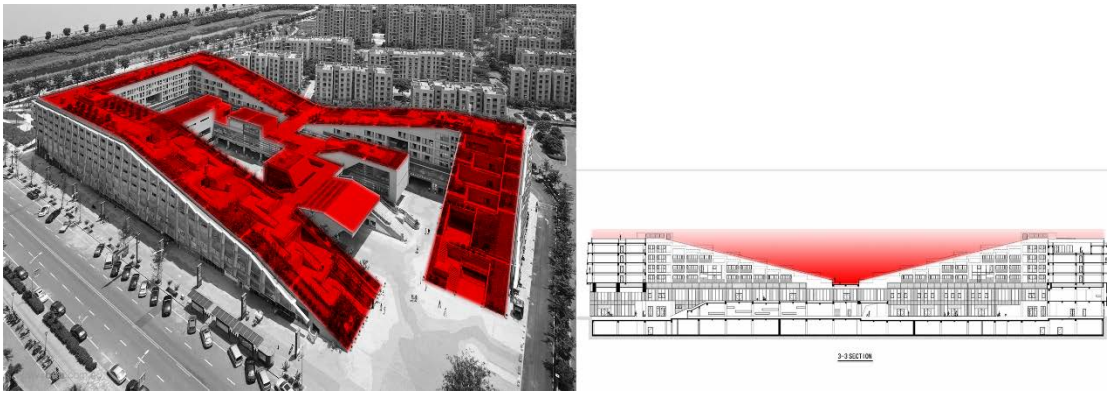


Figure 2 Hangzhou Duolan Commercial Complex designed by BAU Brearley Architects + Urbanists, image edited by author: Haomin Yang, Image underlay resource http://www.archdaily.com/522376/hangzhou-duolan-commercial-complex-brearley-architects-urbanists

This project is like a huge courtyard that an animal center is surrounded by senior apartments. The roof of the animal center could be a public yard for both animals and seniors. At the same time, every single senior apartment has its private garden that other people cannot disturb them. This is a great layout for this thesis project.

Terrace/Patio

Figure 3 Arena Apartments designed by Ellivo Architects, image edited by author: Haomin Yang, Image underlay resource http://www.archdaily.com/617835/arena-apartments-ellivo-architects

[28] "Green Roof Benefits", accessed March 8, 2016, http://www.greenroofs.org/index.php/about/greenroofbenefits

The inspiration for my thesis project from this case is we can create a half open space on the second floor so that seniors and animals could share this relatively private out door area. And this area will not disturb both of them. And the first floor could also be a traditional animal center. So this half open space is more like a transition space and it is relatively private and quiet. It is a great way to insert an animal center with an outdoor area into a traditional senior apartment.

Streets

The street as an urban corridor for mobility and a tool that can encourage elderly people to move toward communal public spaces where they might connect with younger generations.

Chapter 3: Research and Precedents

Narrowing capabilities of the elderly

With advanced age, our environmental needs become more complex. The likelihood of changes in familial, societal and occupational roles increases with age. Loss of health, sensory acuity, independence and physical capability may also accompany advanced age. As the aging individual is able to tolerate less insult from the environment, the environment becomes progressively more important to the individual's personal sense of orientation, well-being and general ability. By the same token, the architect's design challenge grows as programmatic parameters narrow from the vast population of aging to more-clearly defined kinds of individual users.

"One leading specialist applies a nontechnical but entirely apt nomenclature to people in their later years. In this nomenclature,'go-gos' are people – perhaps recently retired – who are capable, active and eager to exploit their new-found freedom. 'Go-slows' are less capable or less eager to be so active. 'No-gos' are generally incapable, physically or in other ways, of major activity."[29]

Figure 4 'go-gos', "go-slows" and "no-gos", image draw by author: Haomin Yang

[29] American Institute of Architects. (1985). Design for aging : An architect's guide. Washington, D.C.: American Institute of Architects.

As the deign audience range from the general aging population to the go-slows ad no-gos, one of the design goal is to make this transitions as smooth as possible as the user shifts.

The physical changes experienced during the aging process generally involve mobility, strength and stamina, vision, hearing, and tactile and thermal sensitivity.

Mobility

To accommodate elderly mobile limitation, there is a need to design not only consider interior environment as a space to enhance mobility, in terms of prevent seniors tripping or falling, but also consider building sites, streets, outdoor space as a design elements to provide seniors slowed reaction times. And sign systems takes limitation of sign into consideration.

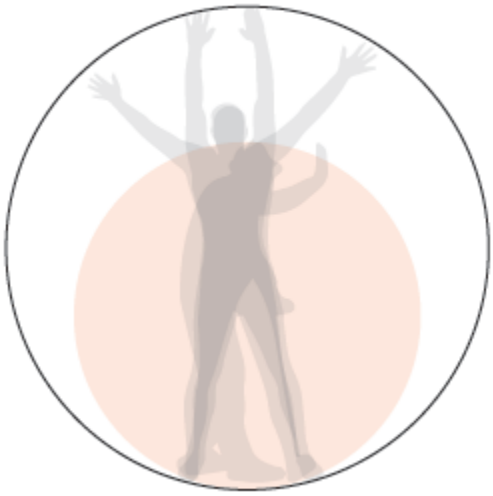


Figure 5 Mobility Loss, image draw by author: Haomin Yang

Visual decrease

Vision starts to decline as early as age 40, long-term impairment includes loss of visual field and acuity, decreased color sensitivity and increased glare sensitivity.

“Older people may require up to twice as much light as younger people to achieve equal visual acuity.” It’s become more difficult to differentiate from one another when colors has similar intensity, especially when the object against the similarly background and when viewed under uniform lighting conditions. Increasing illumination levels, size of signs, or contrast of colors through architectural design can effetely make visually resented information more recognizable. Glare is another problem, which can affect “balance, orientation, attention span and short-term memory.”[30]

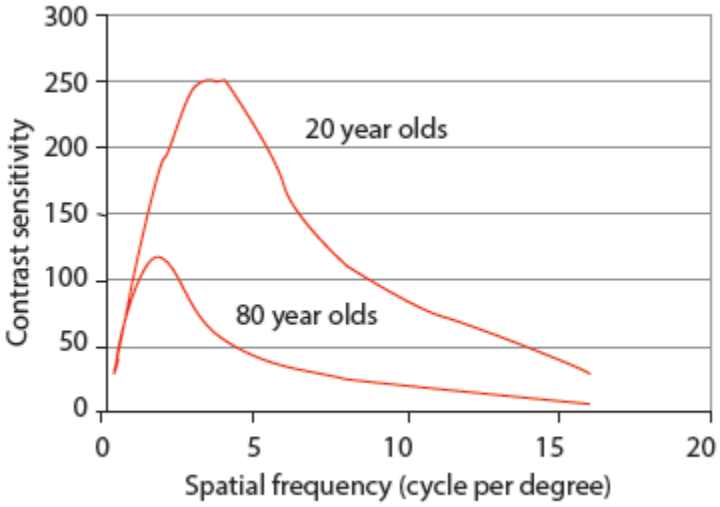


Figure 6 Visual Impairment, image draw by author: Haomin Yang

Hearing decrease

Before the visual impairment, our hearing ability starts to decrease noticeably. Senior people frequently lose their high-frequency hearing as they age.

[30] American Institute of Architects. (1985). Design for aging: An architect's guide. Washington, D.C.: American Institute of Architects. Page 8

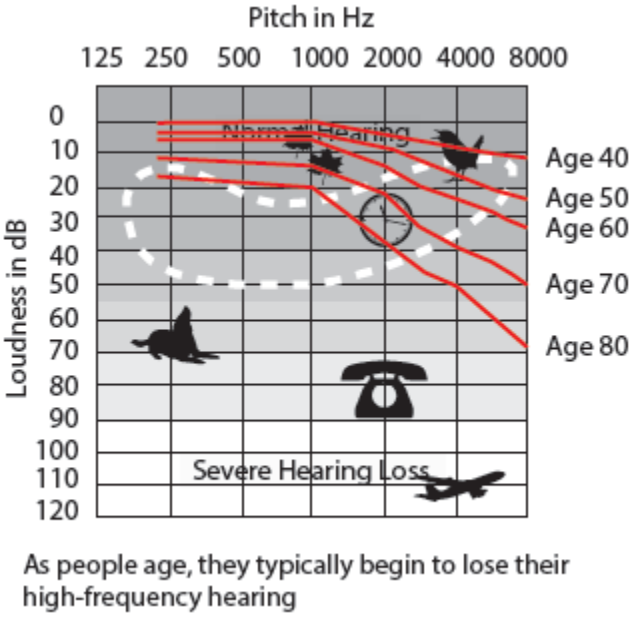


Figure 7 Hearing Loss, image draw by author: Haomin Yang

Strength decreasing

Strength and stamina reduced with mobility. “Joints normally become more rigid with advancing age. Muscle strength and coordination decrease.”[31] A round knobs may become hard to grasp and use.

[31] American Institute of Architects. (1985). Design for aging: An architect's guide. Washington, D.C.: American Institute of Architects. Page 7

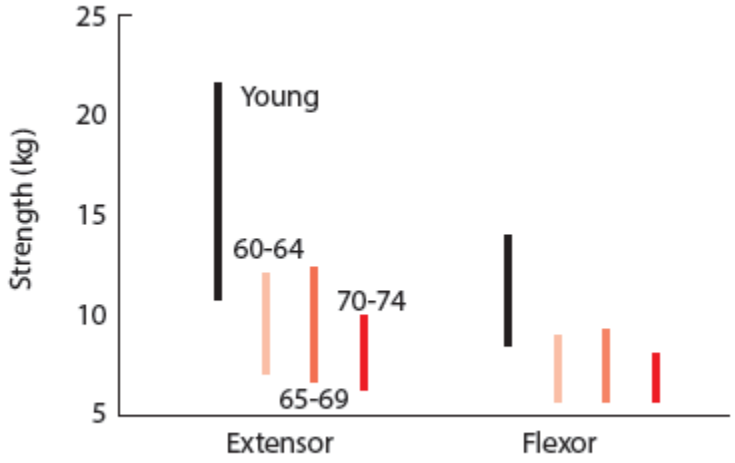


Figure 8 Strength Impairments, image draw by author: Haomin Yang

Figure 9 Strength Impairments, image draw by author: Haomin Yang

Decrease in Haptic Abilities

As people age, sensitivity to touch gradually declines because skin lost moister and elastic. Common tactile losses are declines in sensitivity to pain and temperature. And the declines in sensitivity to temperature brings a dual threat to senior people. “Because the senior people can be both less aware of dangerous changes in temperature and less able to tolerate such changes. Many older people

have a significantly narrower ‘comfort zone’ than the young.”[32] Senior adults normally prefer more warmth in winter, and are less capable of tolerate heat in summer, especially when they are immobile.

Vernacular Architecture

Traditional Chinese courtyard house

The traditional Chinese courtyard house is an old-established housing typology that is rooted in traditional Chinese culture, and courtyard houses together with its environment is the place where the daily activities of residents and the public contact between neighbors happen.

This type of house is the kind that senior citizens grew up in before all the skyscrapers were built. The courtyard house has a linear sequence of space from public to private. The courtyard at the center of the house is the public space open to the whole family, and that the central piece becomes the social core of the family. Rooms are aggregated from the center point, which is a traditional Chinese cultural design.

Traditional Chinese courtyard house transformation

To reinterpret this type of house, the idea is to extract the basic pattern in the traditional courtyard house and embed the unique motif into the unit design, thus forming a new type of unit that contains some elements that senior citizens are familiar with, transforming the traditional living habits of a family living together into

[32] American Institute of Architects. (1985). Design for aging : An architect's guide. Washington, D.C.: American Institute of Architects. Page 8

a new life style where, instead, three old friends live together. The shared center space could offer the potential opportunities of communication and reminiscence to senior people.

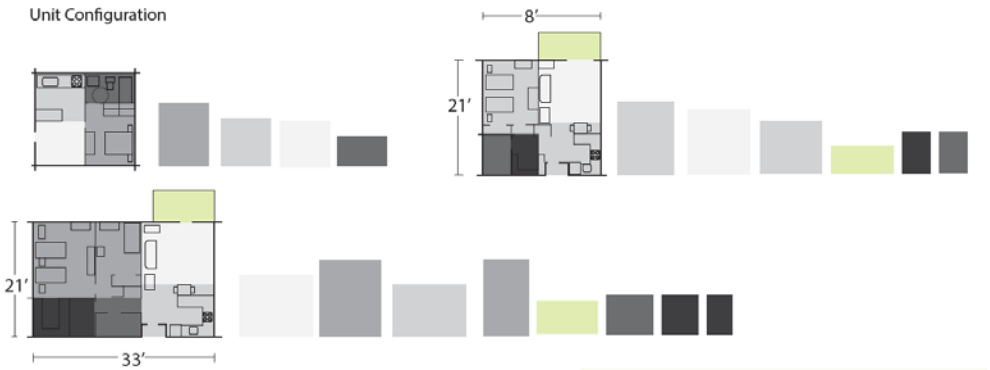


Figure 10 Unit Configuration - Source: Author Haomin Yang

Precedents

The main take away from precedents would be analyzing the site development, circulation, the vertical transportation, type of dwelling unit and its size, number of units, and activities areas.

Vertical Farming Hybrid to House Singapore's Aging Population, proposed by SPARK

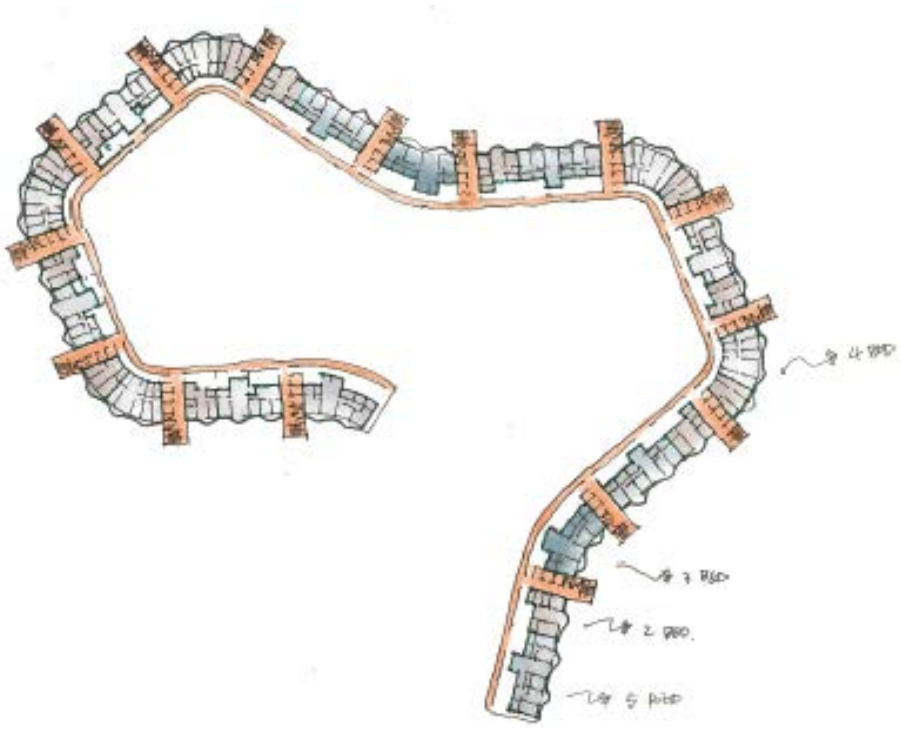


Figure 11 Floor Plan, Orange stands for corridor, grey stands for units - Source: Author Haomin Yang

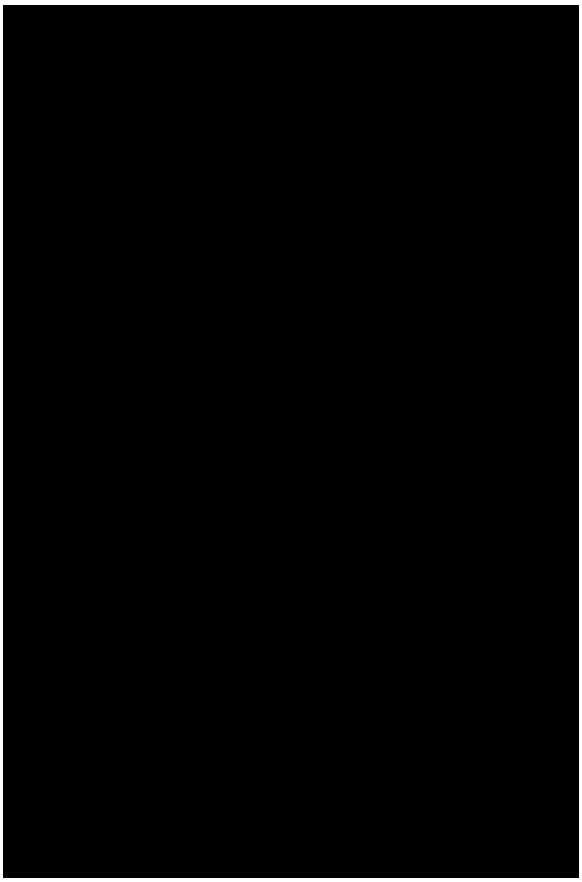


Figure 12 Section and Deck Level, http://www.archdaily.com/573646/haus-hohlen-jochen-specht?ad_medium=widget&ad_name=navigation-prev

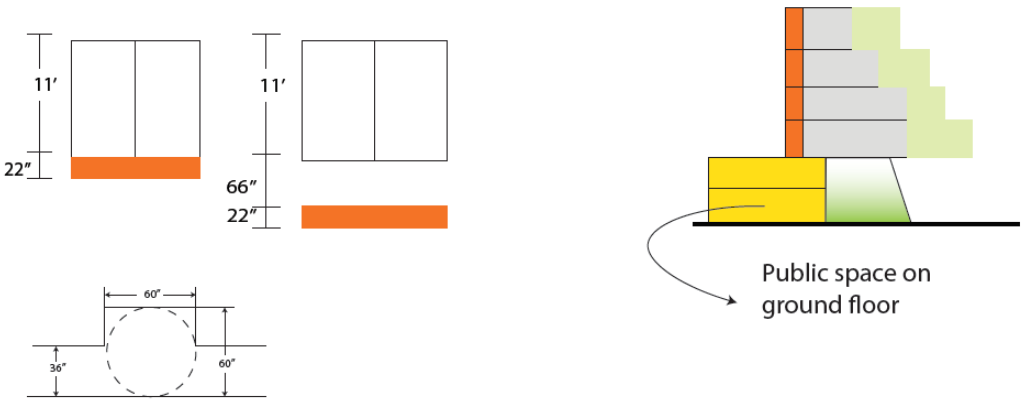


Figure 13 Parti diagram - Source: Author Haomin Yang

Establishment for Dependent Elderly, designed by PARALLELE

Figure 14 Floor Plan - Source: Author Haomin Yang

Figure 15 Street View, http://www.archdaily.com/533102/establishment-for-dependent-elderly-parallele/53d9c936c07a80452b00039c-establishment-for-dependent-elderly-parallele-photo

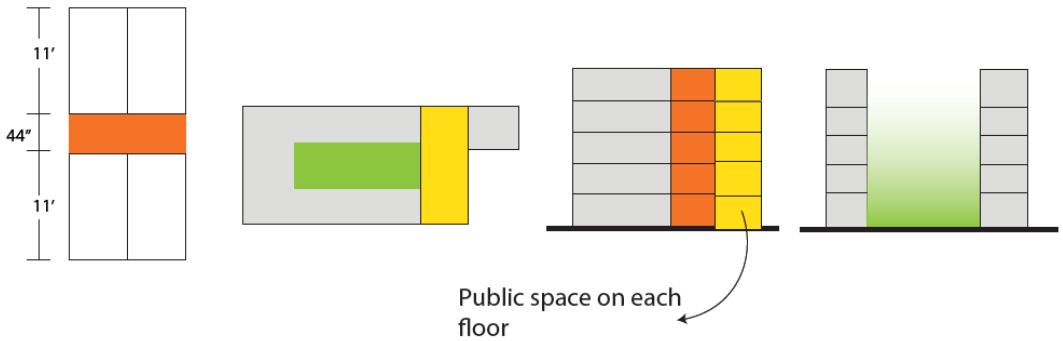


Figure 16 Parti diagram - Source: Author Haomin Yang

Armstrong Place Senior Housing, designed by David Baker & Partners

Figure 17 Courtyard, http://www.archdaily.com/153359/armstrong-place-senior-housing-david-baker-partners/5014ffb428ba0d58280010d9-armstrong-place-senior-housing-david-baker-partners-photo

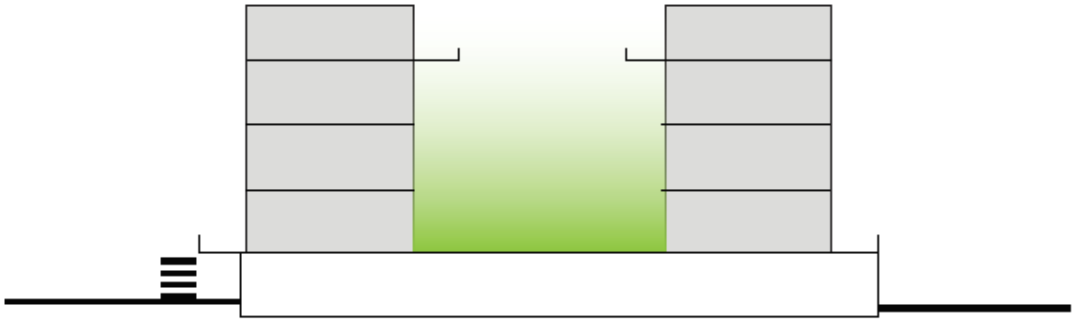


Figure 18 Parti diagram - Source: Author Haomin Yang

Paisano Green Community, designed by Workshop8

Figure 19 Street View, http://www.archdaily.com/271384/paisano-green-community-workshop8/5049631628ba0d0c56000174-paisano-green-community-workshop8-photo

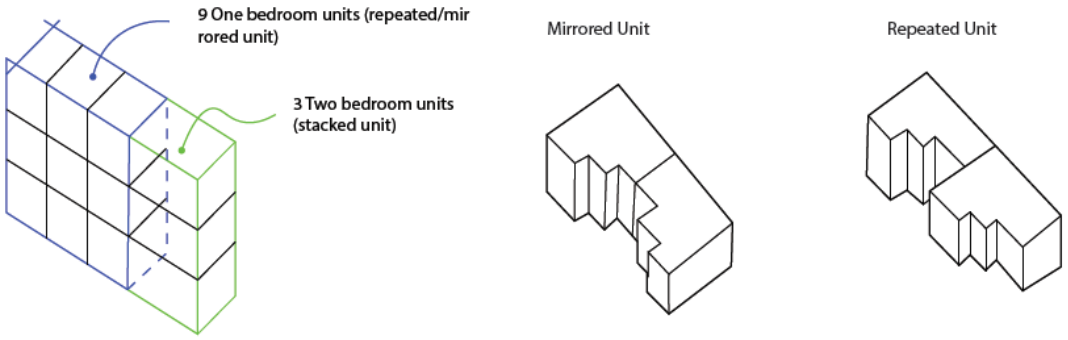


Figure 20 Unit Layout - Source: Author Haomin Yang

Chapter 4: Criteria

The programming and design procedures must consider the needs and values of the elderly. The project starts with an identification and scope of development intended. Before design process, the following criteria must be considered:

- Consider how many dwelling units will be provided, and of what types and floor areas
- Consider what type, number and magnitude of common service facilities
- Consider what type, number and magnitude of ancillary service and facilities
- Consider the location of the site, and its physical feature, size, contours, and constraints
- Consider how much parking will be required
- How much and what type of outdoor space can be accessed

Development size and dwelling-unit mix

According to *Design for Aging: An Architect's Guide*'s rules,

> "Market developments for the elderly generally should not be smaller than 90 to 100 dwelling units, to economically justify such programed services as security, activities, transportation, counseling, residential services and central food services."
> "A recommended maximum size is 200 to 350 dwelling units is based on the assumption that high concentrations of elderly people may be inclined to encourage isolation from the community and could possibly cause abnormal neighborhood development."
> "Each development of elderly housing should offer a range of dwelling-unit types and sizes to accommodate a wide range of housing needs and life-styles" [33] such as single, couple, and multi-generation.

[33] American Institute of Architects. (1985). Design for aging : An architect's guide. Washington, D.C.: American Institute of Architects. Page 11

Density

The density of the site should consider “the number of units proposed, the size of the proposed site, the amount of common area, the parking required and the gross open space to be provided.”

Other factors

Some other special factors affecting the elderly should also be considered:

- Elderly people are less mobile than people in younger age groups. Therefore, the housing dwelling unit should be conceived of as a home, and not as transient housing.
- The elderly desire a choice in living situations, within a given community. Therefore, a variety of dwelling unit sizes and floor plans should be provided.
- ADA or universal design considerations
- Access to contained outdoor space
- Medical staffing
- Auxiliary programs, Physical therapy/exercises facilities
- Swimming or aquatic therapy
- Hairdresser/barber services
- Because of lack of mobility, senior residents maybe not be able to reach community recreation and social service facilities. And that the project should have the basic service within a walkable distance.
- The senior people need an environment that extends and enhances the duration of independent living because of the autonomy desire. The design

process should consider maintaining their sense of autonomy, meanwhile, guaranteeing the safety and security of senior residents.

Senior apartment program analysis

Entries

The senior facility's main lobby can be an important community space where the comings and goings of residents and visitors can be surveilled. A secondary entrance for those residents who are prefer to be able come and go without constant watched. Canopies or building projections can be designed to protect building entries from precipitated unpleasant weather and other hazard. A pick-up and drop-off point is necessary for vehicular convenient, and also a pedestrian pathway to public transit stop.

Lobby/reception area

The lobby or reception area is a connection to the outside world. It's an alternative space of the front porch where senior people usually congregate, communicate, overlooking all the people coming, going and passing by. A place in lobby or reception can be provided to senior citizen to have this activity without being directly in the path of circulation. Bathroom, restaurant, and drinking fountains should be located nearly.

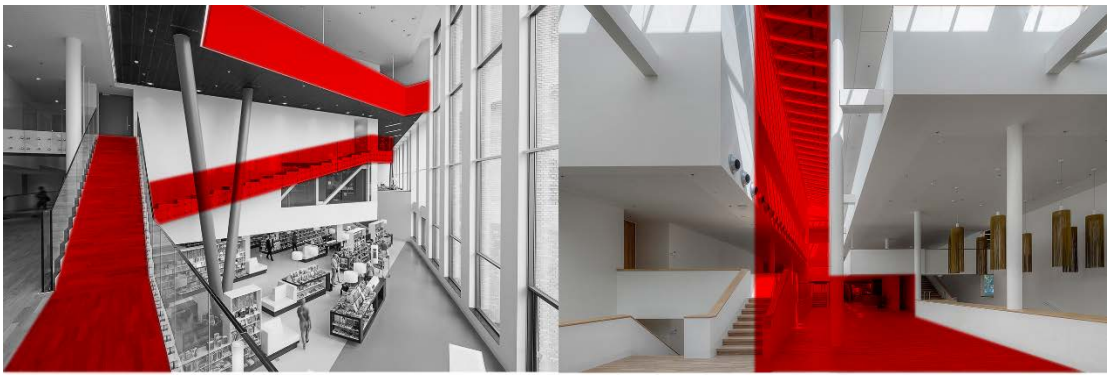


Figure 21 Culture Complex De Nieuwe Kolk, designed by De Zwarte Hond, imaged edited by author Haomin Yang, original resource http://www.archdaily.com/514880/culture-complex-de-nieuwe-kolk-de-zwarte-hond

Private space in the high space, public space on the ground, At the same time, private and public could have eye contact and do not disturb each other. This reminds me of a great layout relationship between seniors and animal center in one building. The air lanes surround the lobby is also a half open space for seniors to have a closer relationship with the animal center lobby.

Vertical Transportation

Elevators

Handrails should be provided in the elevator cabs on the three sides 32 inches above the floor. Providing time control of the signals and automatic door is necessary in senior facility. “Many older people require additional time to realize a cab is arriving, decide in which direction it is going, find which elevator shaft the cab is in, stand up, gather belongings, move to the door, enter, find the control panel and select a floor – all before the door closes.”[34]

[34] American Institute of Architects. (1985). Design for aging : An architect's guide. Washington, D.C.: American Institute of Architects. Page 88

"Provide at least one elevator with a minimum cab size of 67 inches to accommodate stretchers and large furniture."[35] It is distressing to see friends and neighbors taken out on stretchers, provide this elevator a separate service level or door can help relief senior psychological stress even they are knowledge of the unavoidability of death and illness.

An elevator lobby with seating on each floor can offer a rest area for residents.

Ramps

Many senior people find that the wheelchair ramp hard to use because they walk with off-balance and lack of strength. And thus stairs should always be included to provide an alternative to ramps wherever a height changes.

Stairs

Because of visual impairments, stairs and stepdowns should have different colors and surfaces to differentiate tread edges. Having contrasting colors on risers and treads are particular helpful. Having seats on the top, bottom and intermediate landing to provide a rest area for senior uses to regain energy. Especially on the open stairs leading to congregate amenities, the rest area can offer both rest, overlook, and gathering opportunities.

[35] American Institute of Architects. (1985). Design for aging : An architect's guide. Washington, D.C.: American Institute of Architects. Page 88

Figure 22 Engel & Völkers' New Headquarters, designed by Richard Meier & Partners, image edited by author Haomin Yang, original resource http://www.archdaily.com/318226/engel-volkers-new-headquarters-richard-meier-partners

Ramp is the theme of this case. It is easy to use for both seniors and animals. Because of the long ramps surround the lobby inside the building, seniors and animals can have a great place to play and communicate even in bad weather.

Residential services

"Residential services range from house-keeping services and food service, including central food services, private kitchen and dining area to such retail-oriented services as beauty, barber, gift, sundry"[36], cafe and grocery market.

[36] American Institute of Architects. (1985). Design for aging : An architect's guide. Washington, D.C.: American Institute of Architects. Page 119

Senior people can be really interested in services and delivery, which connects them to the broader world. The design could provide connection space, such as overlay the circulation and entrance of service and front door, or have an activity area that can overlook the service area.

Exercise area

Design exercise area with a recreational, rather than therapeutic appearance would encourage people to utilize the equipment. Commercial spas, for example, provide aquatic therapy, and meanwhile stimulate social conversation. Plants, warm color, small rest area, and music can help enhance the active atmosphere.

Locate exercise areas a place where can provide previewing opportunities from other space for those residents who are not engaging in the activities.

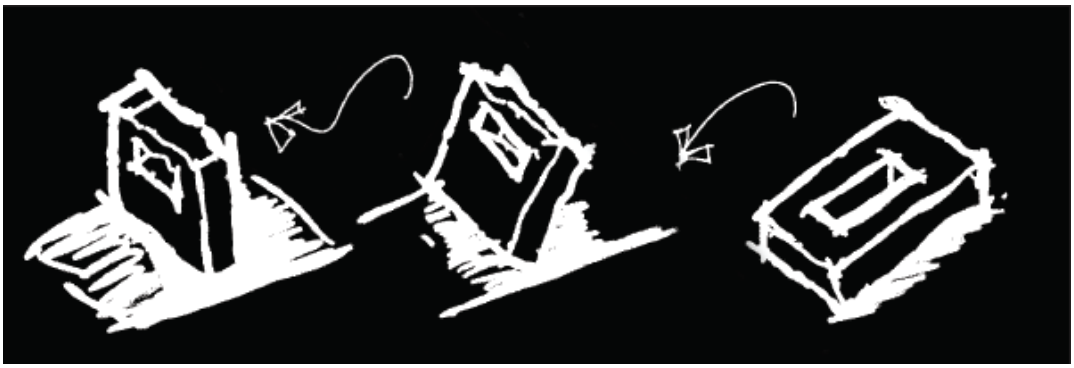


Figure 23 Vertical Courtyard Concept - Source: Author Haomin Yang

Figure 24 Mirador residential building communal terrace, designed by MVRDV, image edited by author Haomin Yang, original resource https://archidialog.com/tag/mirador-residential-building/

Figure 25 BOOM Community climbing wall, designed by Hollwich Kushner, image drew by author Haomin Yang

Figure 26 dynamic rocky wall shared by senior residents and animals - Source: Author Haomin Yang

Dwelling units

Entries

A niche in the corridor outside the unit with a small table or shelf can enable residents unload package which opening the door. Provide lighting to illuminates the

keyhole. Using nonuniform hallway furnishings as a place marker to differentiate entries along a corridor. A vestibule with a coat closet and enough space can allow residents and their visitors to put on coats and also block the view from front door to the private space.

Bedroom

The bedroom it a private space and the most protected space. The bedroom usually has two twin beds (or one king size bed), side tables, dresser, chair, tv and stand, and circulation. Senior people should be able to enjoy the beautiful view form the bed through window (sills are 15 inch to 20 inch above floor).

Balconies

Balconies is a semiprivate space where could provide beautiful view of site activity visual and audible privacy for residents. The size of balconies usually is 50 to 60 square feet, which contains two chairs and a table.

Kitchen

Residential kitchen in units should be directly adjacent to the entryway to enable senior residents easy to unload packages. “Access to living spaces should not be through the kitchen.”[37]

Living room

Living room is a semiprivate space for senior people to reading, watching TV, dining, working on hobbies, entertaining family, friends, and guests. A good view should be provided from chairs and couches by the window.

[37] American Institute of Architects. (1985). Design for aging : An architect's guide. Washington, D.C.: American Institute of Architects. Page 100

Many old people move from previous house, many of them bring their accumulated precious items that has special significance to them. Some empty living rooms can be designed to allow residents layout their living room in a way they familiar with. And a storage in the living room is necessary to contain all these items.

Figure 27 a trained dog barks when the handler has emergency - Source: Author Haomin Yang

Figure 28 A concept of a trained dog can push the bottom to illuminate the room in order to seek help when a resident has emergency - Source: Author Haomin Yang

Figure 29 Radian Apartments designed by Erdy McHenry Architecture, image edited by author Haomin Yang, original resource http://em-arc.com/

Exits

Senior people are not able to move quickly out of a building, even through an accessible route. Designing sleeping rooms as the first level of protection called "defend in place". And "horizontal evacuation to an adjacent smoke compartment is the second level of protection, and vertical evacuation using stairs is the third."

Program

					Size	metric
Senior Apartment Program					88,410	8,213
Lobby/Reception Area					80	7
Office and Administrative Space					3,000	278
Vertical Transportation						0
Central Food Service					3,000	278
	Dining				3,000	278
Residential /Public Common Area					4,000	371
Activity Areas					3,500	325
	Library				2,500	232
	Exercise area				1,000	92
Residential Services					1,000	92
	Retail				1,000	92
Dwelling Units						0
	independent living					0
		one bedroom	40	1,000	40,000	3,716
		two bedroom	10	1,100	11,000	1,021
		two bedroom plus den	5	1,300	6,500	603
	assisted living					
		one bed/single room	3	335	1,005	93
		two-bed/double room	5	465	2,325	215

Health Service					4,000	371
stuff support					150	13
Mechanical Facilities					1,350	125
animal programs					12,724	1,182
clinic					3,168	294
Medical Area					1,056	98
Cat Isolation					300	27
Dog Isolation					1,000	92
cages(4'*6'*6')			30	24	1,440	133
bath area					240	22
community center					1,584	147
public animal receiving					240	22
Food prep, storage, &kitchen					528	49
Training Area					3,168	294
Total					121,361	11,274

Table 1 Program - Source: Author Haomin Yang

Site Selection Criteria

Public transportation

Visual decrease and other impairments reduce senior people's chances for driving. Easy accessible public transportation is an imperative condition that a senior apartment site has to consider.

Location

A retirement facility will have easy access for visiting friends, services, such as hospitals, clinics, libraries, stores, etc., and thus allow senior people to have activities without encountering traffic threats or steep slopes. In fact, 80% percent of the senior citizens are willing to move to a place within eight miles of their preretirement home after retirement, because they are familiar with the community, and can keep social contacts with friends.

Neighborhood

When older people move from their homes and neighborhoods to a senior apartment, many of those longstanding relationships are weakened or severed. In selecting a site for a new facility for senior citizens, it should be located near the existing neighborhoods of many of the prospective tenants.

Orientation

In tradition senior apartment, living space are located on the south in order to maximum daylighting in the living room and that oriented communal space face north.

In the new type of senior apartment, architects give priority to the communal space, and let south facing living space be a secondary concern. A ring form circulation designed to encourage senior citizen to communicate with each other. In the new type of senior facility, senior people would spend more time in the communal space, which keeps them stay socially connected and active.

Topography

The site will have relatively flat topography, with relatively level areas for outdoor activities. A through building site circulation can be planned to utilize elevators to change grade while crossing the site.

Chapter 5: Site

Site Selection

Context

This thesis formally investigates senior apartments located in Tianjin, China, based on the site selection criteria including security, accessibility, and topology. The criteria were chosen because they would have direct impact on the design. The site should to be located in an area that lies in old city are in order to serve the population of senior citizen and their families. This thesis, particular also serve the public. This site sitting in a preliminarily urban context juxtaposed to the east by the west lake park across the boulevard. The unique condition surrounding the site within the context includes the Zoo Park, west lake waterfront, public facilities and services, and communities. Because of security concerns, a corner is preferred over a slot site, where senior people have access to the facility through a buffer zone.

Figure 30 Tianjin, China - Source: Author Haomin Yang

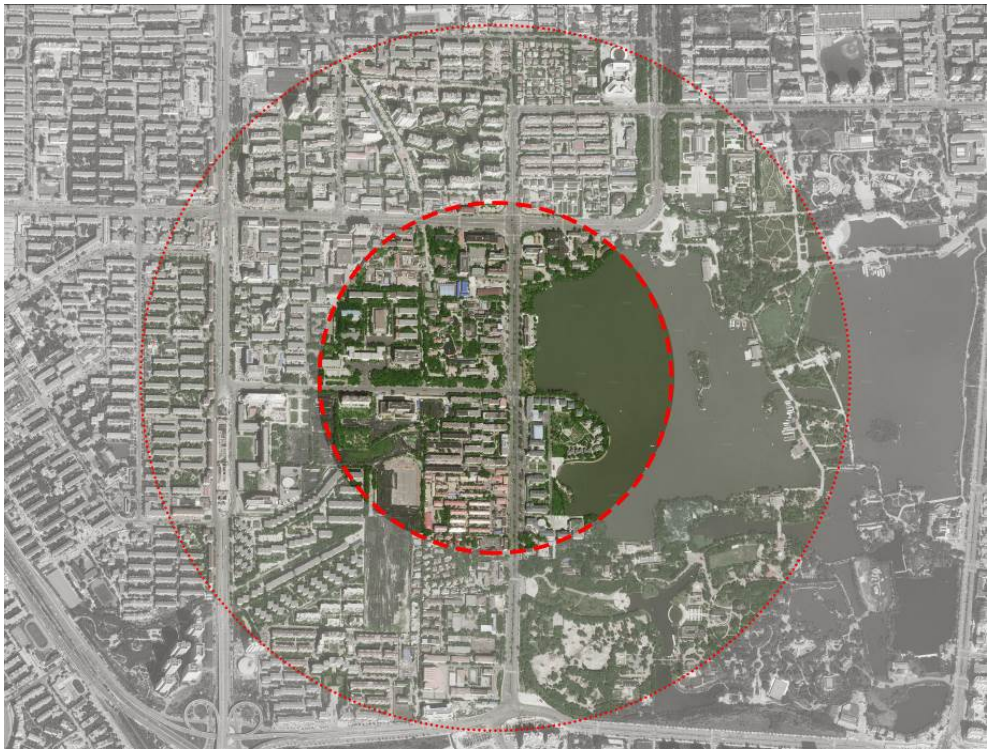


Figure 31 Context: 500m radius and 1000m radius - Source: Author Haomin Yang

The surrounding communities that can offer services for the potential residents of the facility. These could serve to support the development of the intended project. The combination of high dense communities fabric, urban park as well as strong support of commercial within the 1000m radius made the site most appropriate.

The site has easy access to surrounding service including bank, hospital, institute, library, and park. The zoo park attracts those people who are likely to spend time with animals, which indicates the potential opportunity of having people who are willing to visit the facility or even volunteer to work in the animal center.

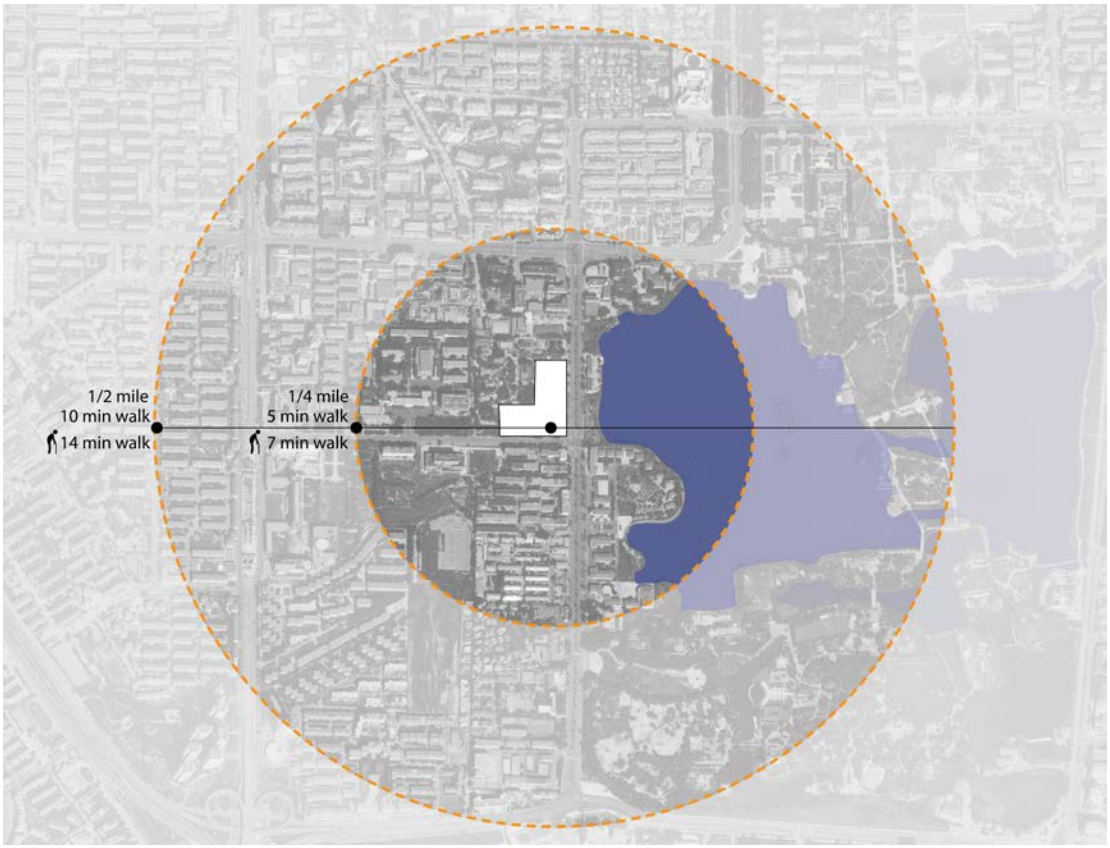


Figure 32 West Water Lake - Source: Author Haomin Yang

Figure 33 West Lake Water View - Source: Author Haomin Yang

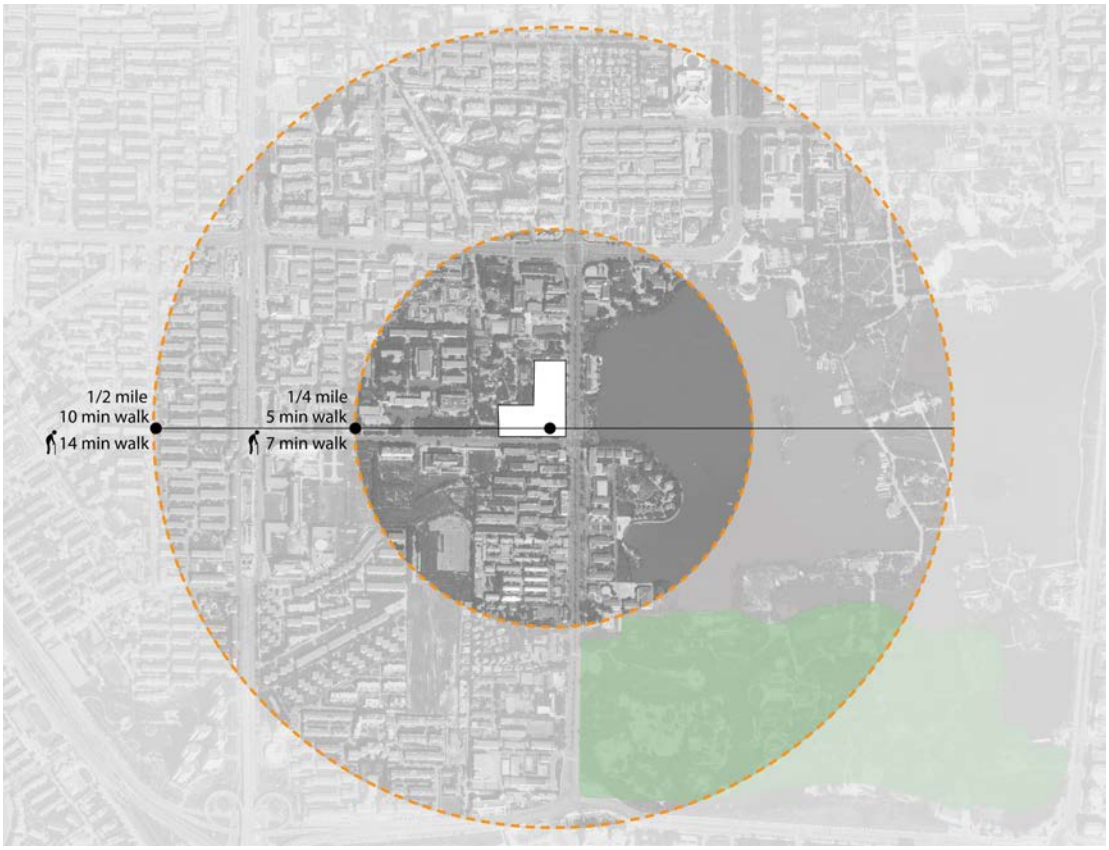


Figure 34 Zoo Park - Source: Author Haomin Yang

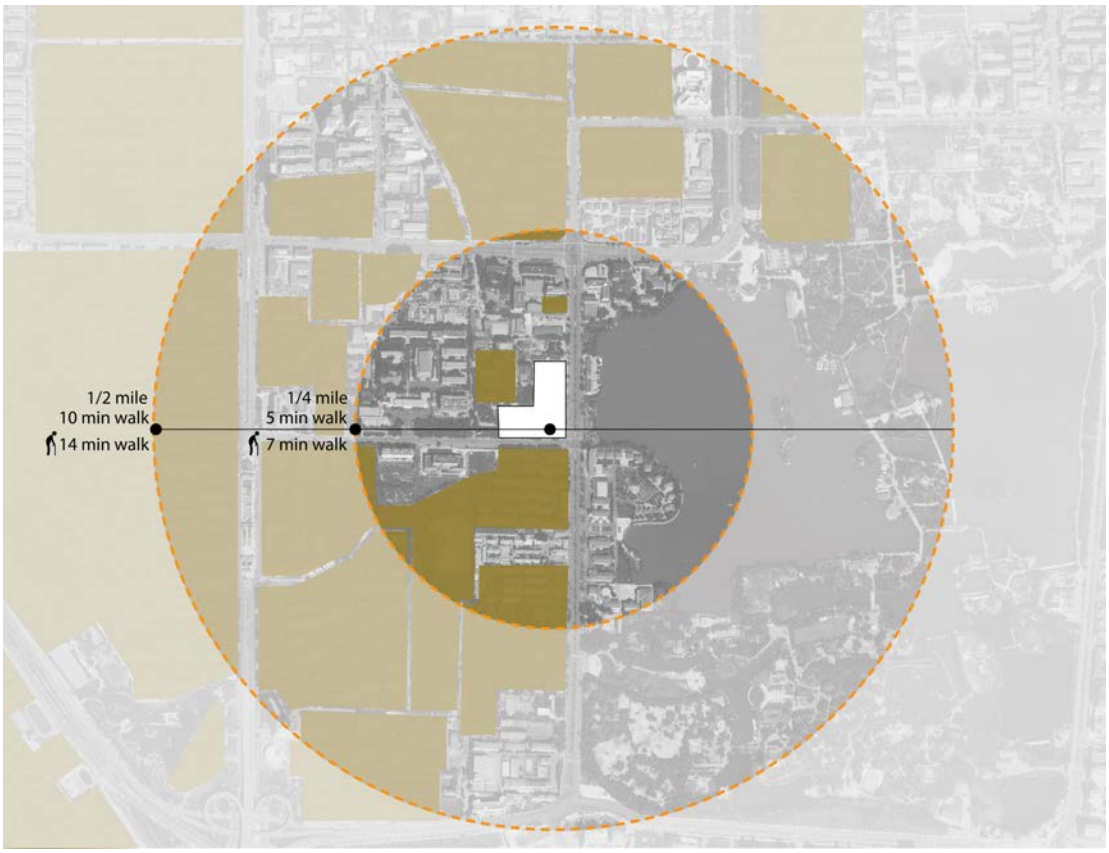


Figure 35 Surrounding Communities - Source: Author Haomin Yang

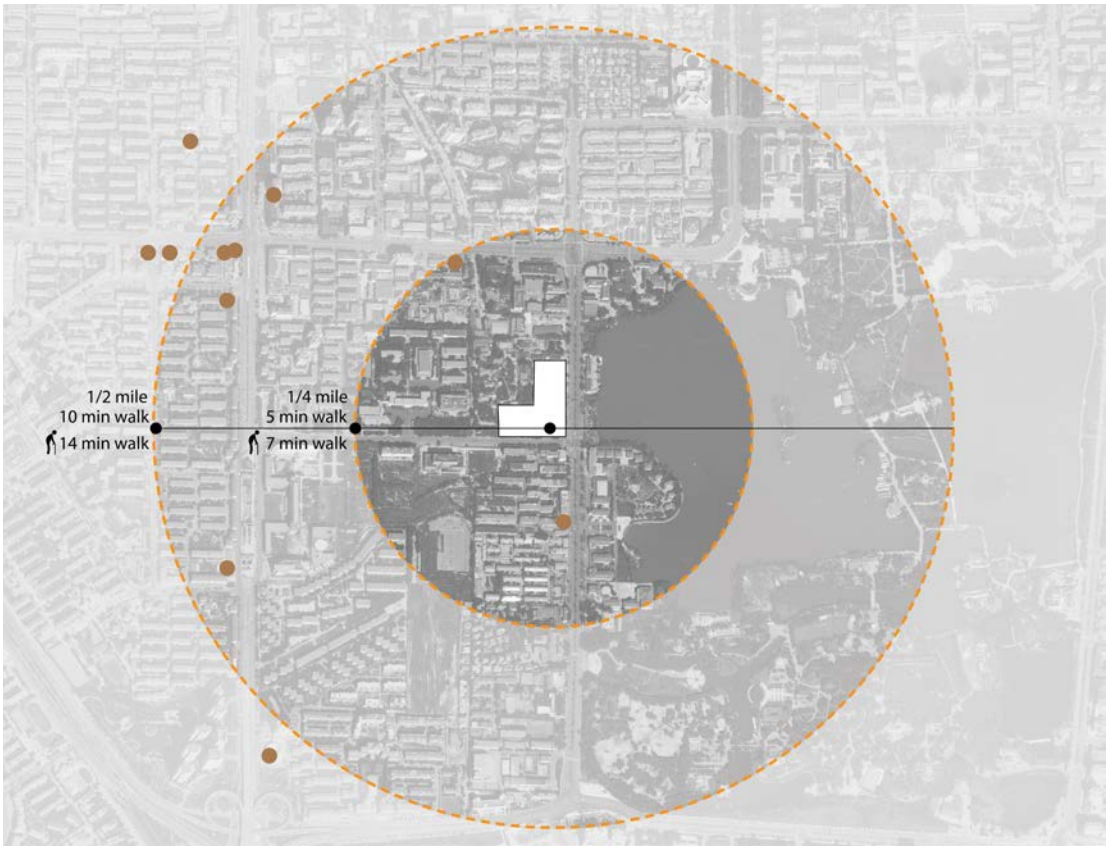


Figure 36 Restaurant and Entertainment - Source: Author Haomin Yang

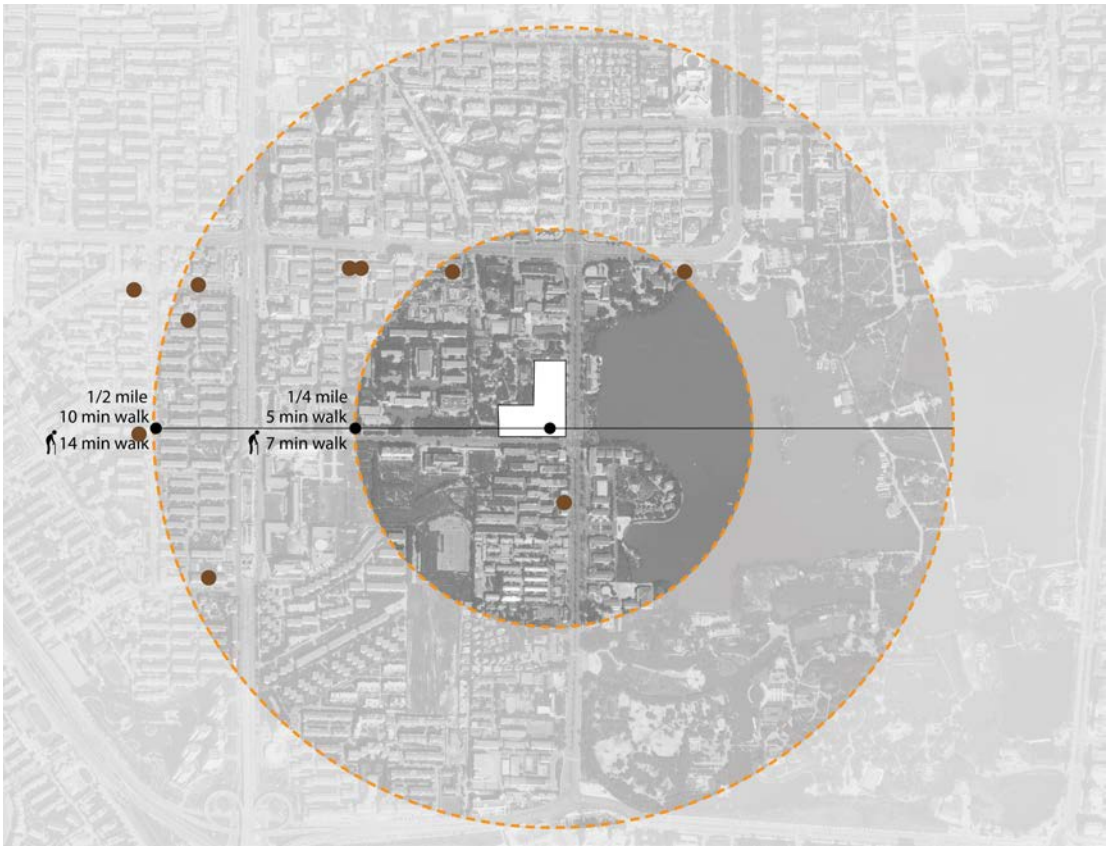


Figure 37 Grocery Stories and Markets - Source: Author Haomin Yang

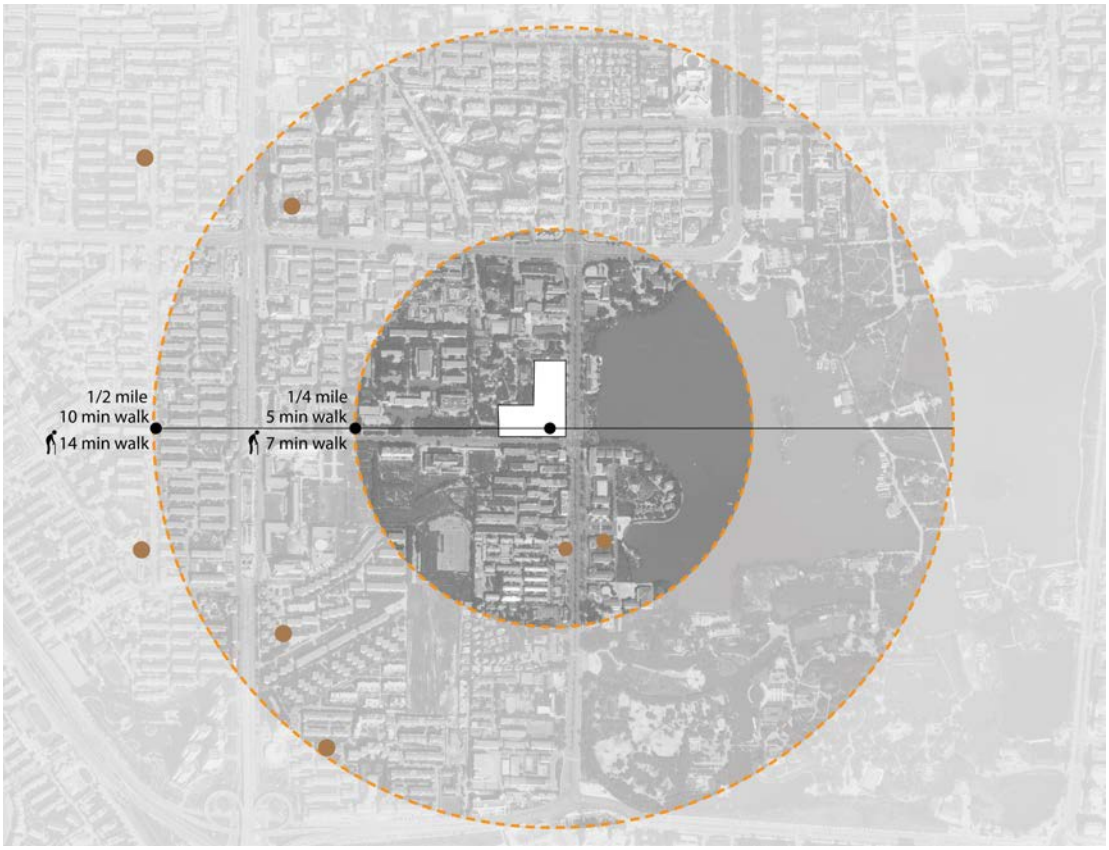


Figure 38 Hospitals and Clinics - Source: Author Haomin Yang

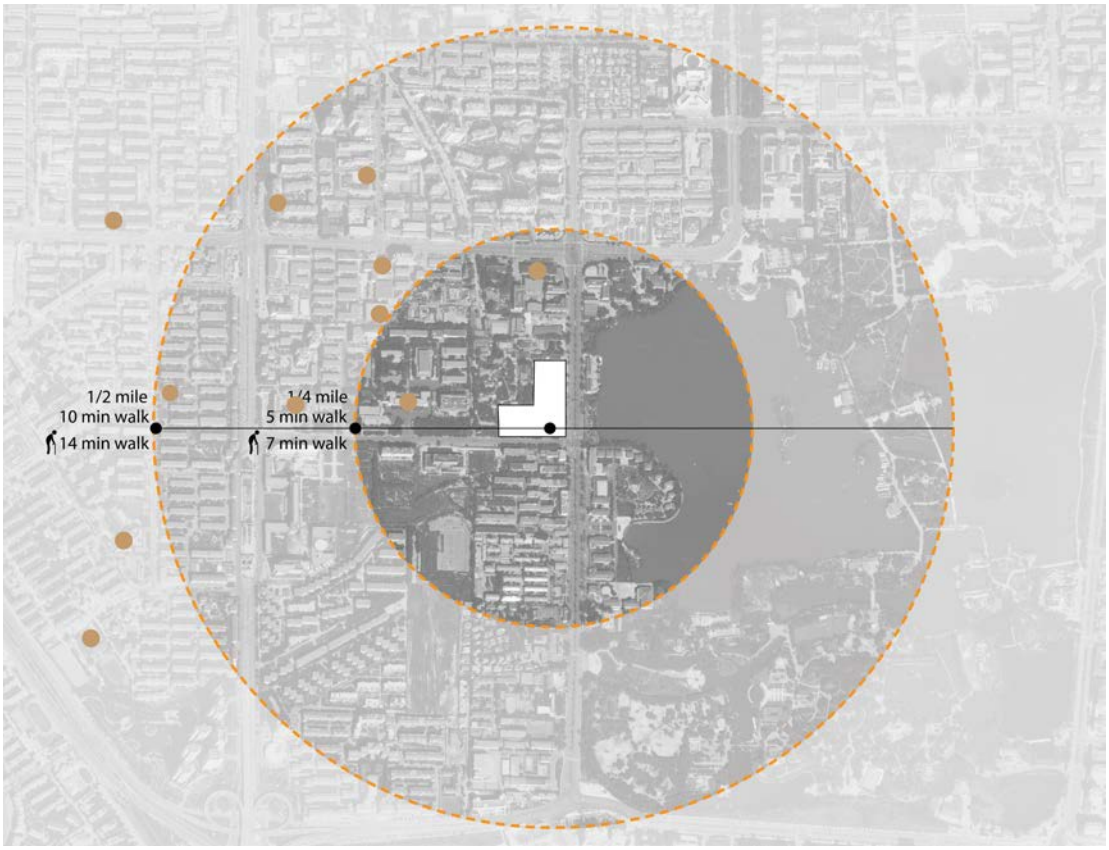


Figure 39 Institutes - Source: Author Haomin Yang

Accessibility and Transportation

The transportation system consist of a network of walking, biking, and driving. The main access points into the site are through Shuishang Gongyuan W Rd approaching from the east as well as Yuliang Rd coming from the south. This site is very accessible with three bus stops, which reach the metro station, and approximately a 12-minute walking distance to the Hongqi South Rd metro station and Zhoudeng Memorial Hall metro station.

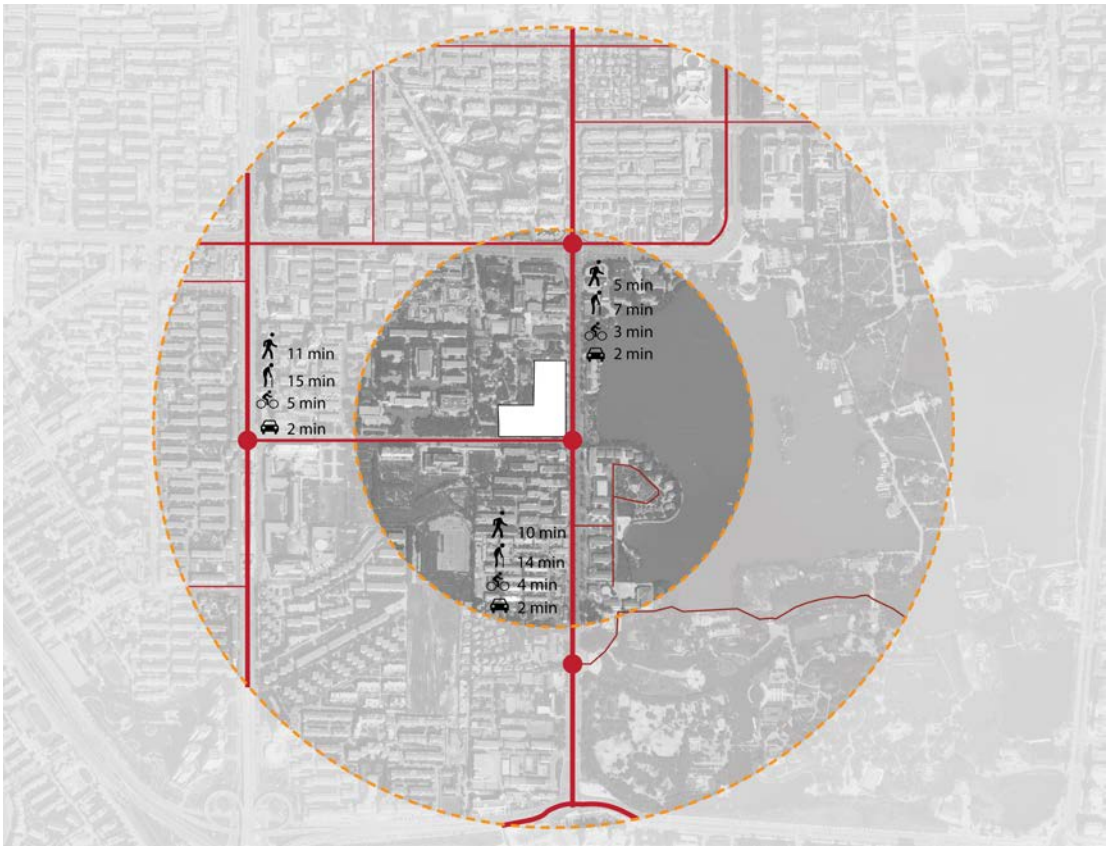


Figure 40 Road Network - Source: Author Haomin Yang

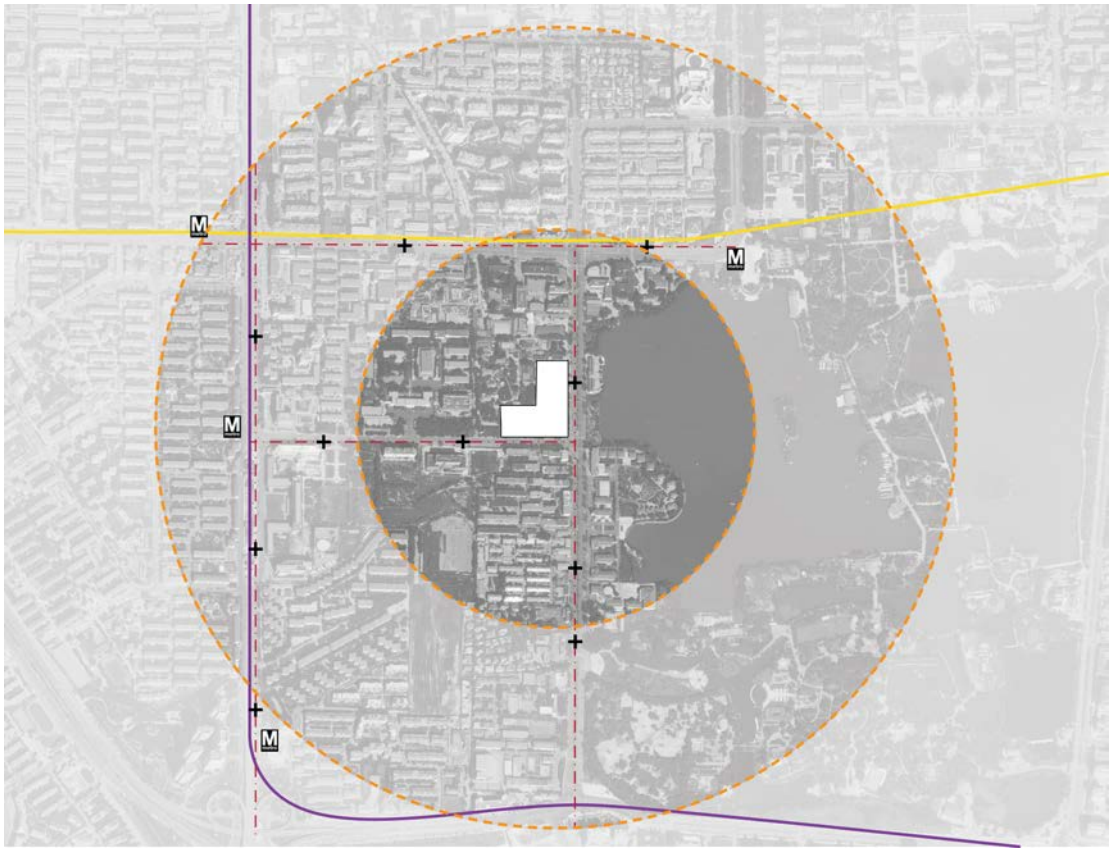


Figure 41 Metro and Bus - Source: Author Haomin Yang

Figure 42 Accessibility: Approaching from East and South - Source: Author Haomin Yang

Character of Local Building

The architecture around the site consist of the high rise building.

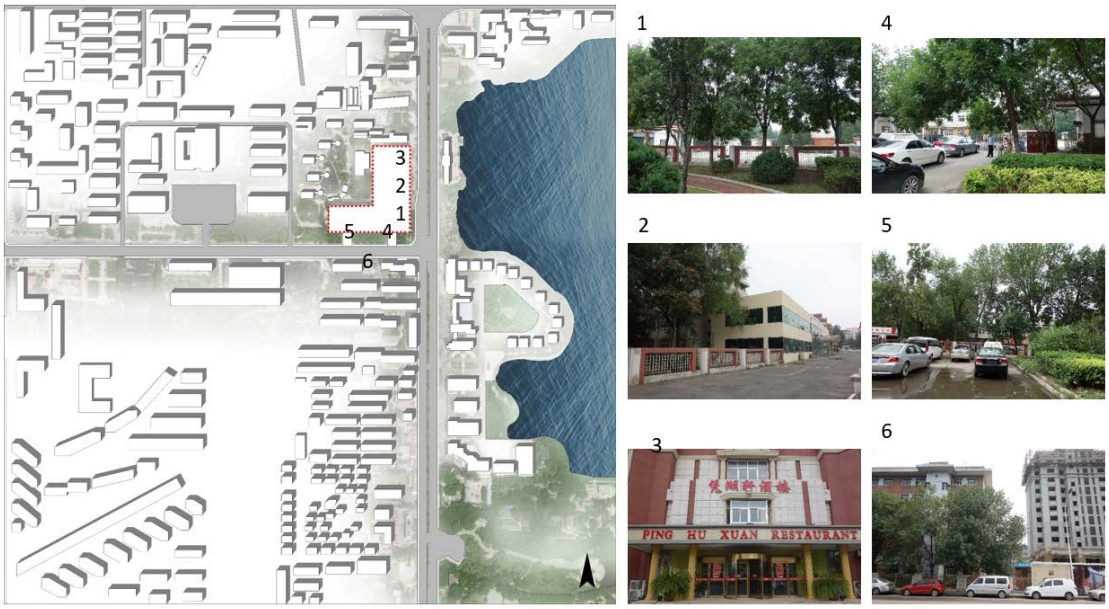


Figure 43 Site Present Situation - Source: Author Haomin Yang

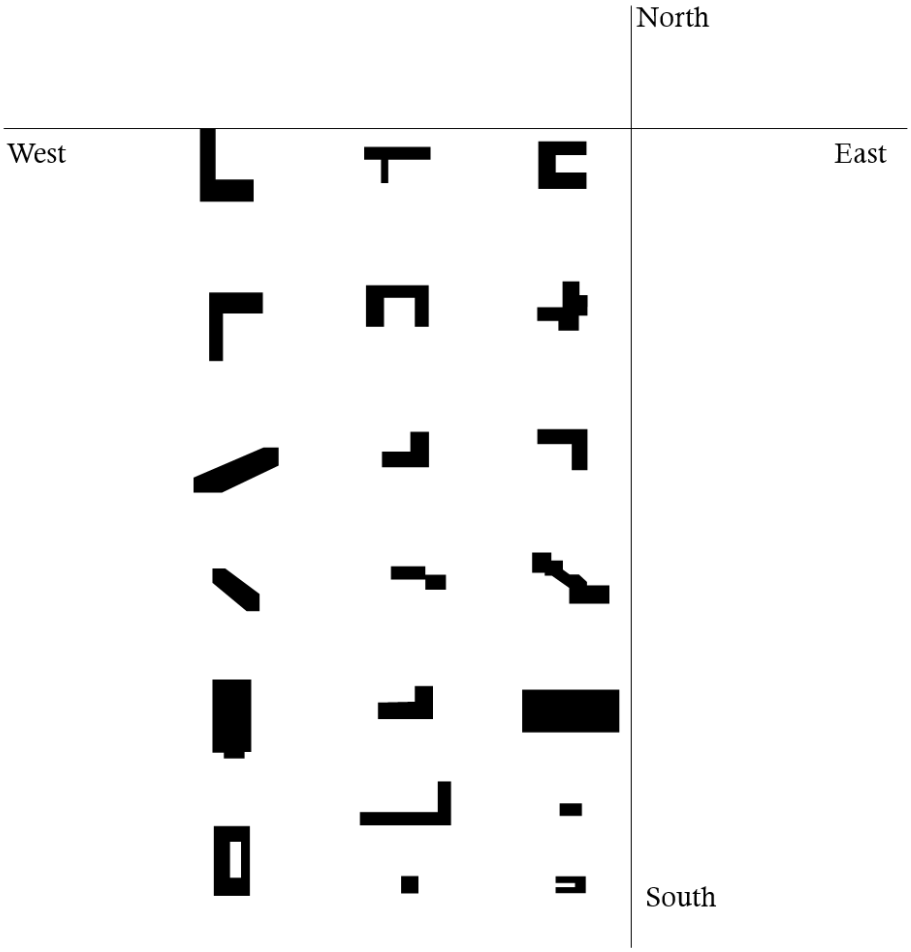


Figure 44 Local Architecture Form - Source: Author Haomin Yang

Figure 45 Shuishang Gongyuan W Rd and Street Façade - Source: Author Haomin Yang

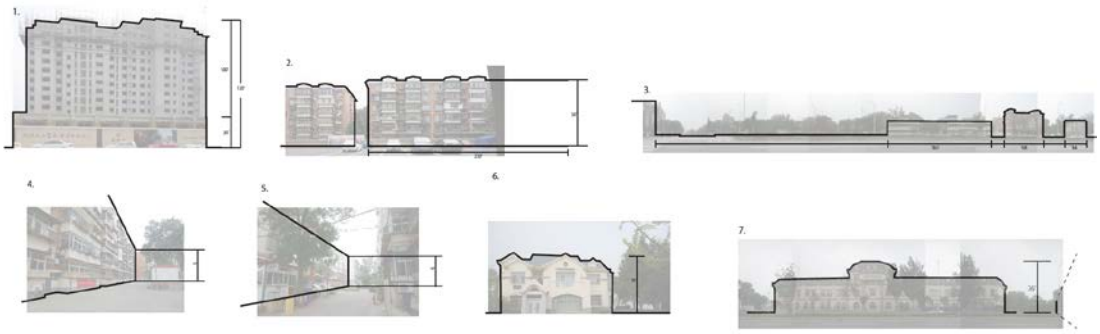


Figure 46 Local Architecture Appearance - Source: Author Haomin Yang

Street scale

The street section indicates that there is a row of trees alongside the boulevard, and 6-foot tall bushes within the park fence block the view to the waterfront from the ground level. The boulevard consist of 8 lanes, and a green island in the middle. The street is perpendicular to the boulevard has 4 lanes and street parking on two sides of the street.

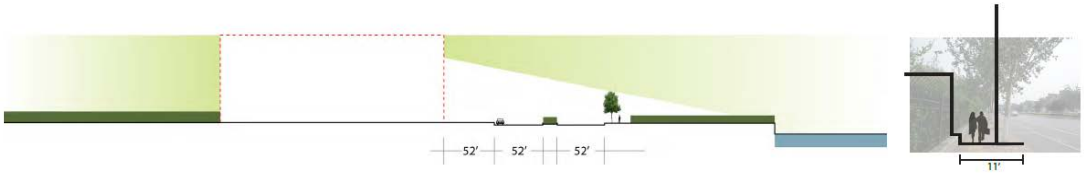


Figure 47 Shuishang Gongyuan W Rd Street Section - Source: Author Haomin Yang

Analysis

To summarize the site analysis, one of the perceptions is that the site has inward engagement including embracing both the communities and nature. Also, on the outside, the site has the advantage of offering a beautiful water view at certain levels.

Proximity to the zoo park and other existing communities is fundamental to the success of this proposal. This site has the opportunity to make the proposal become a social blender that socially integrates seniors into the larger community, creating opportunities for residents to meet and mingle with other people from the surrounding communities. Elevated public space will be implemented in the design to response the site situation. Also the passable path on the ground level is necessary to connect to other communities and the park.

This thesis proposal seeks to achieve the architecture as a catalyst between communities as well as capture the waterfront view by elevating the structure.

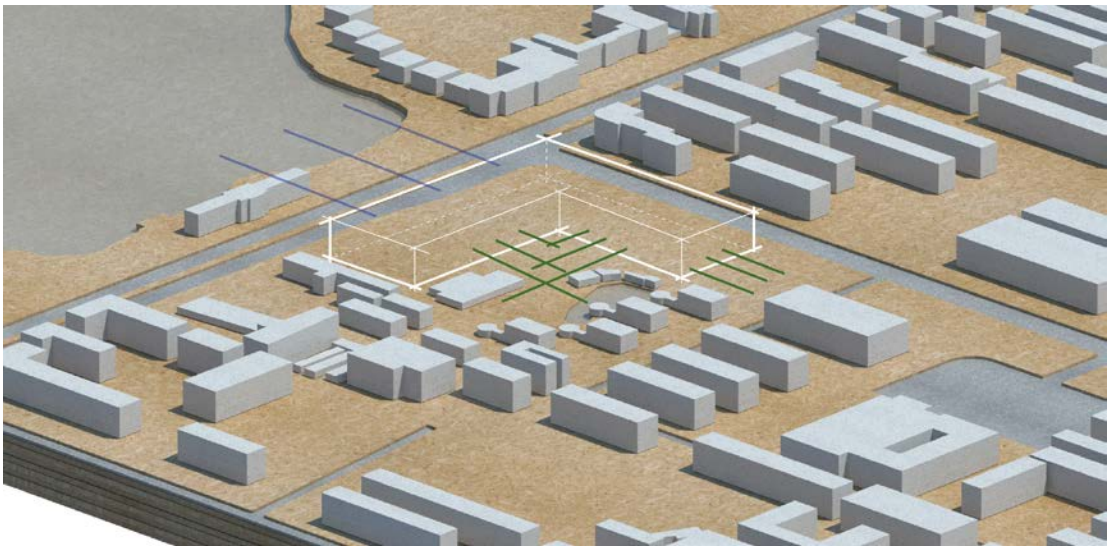


Figure 48 Waterfront visual connection and green space connection - Source: Author Haomin Yang

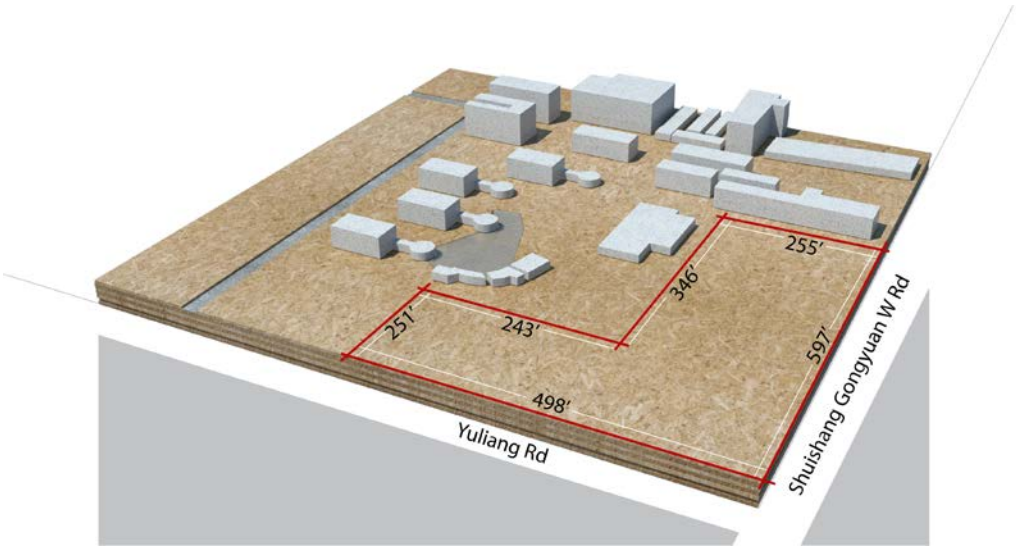


Figure 49 Site Size - Source: Author Haomin Yang

Chapter 6: Design Principles, Method and Concept

Connection

The connection between the senior apartment and the animal center is what this thesis will focus on. The concept of overlapping and layering has been expressed by the different layers of public spaces— green spaces overlap with living units and an animal center.

How to utilize animal center as a catalyst to stimulate the environment of senior apartment? How to arrange four primary spaces, namely, a senior everyday living space, a pets' space, a connection space, and a green space to attract other generation.

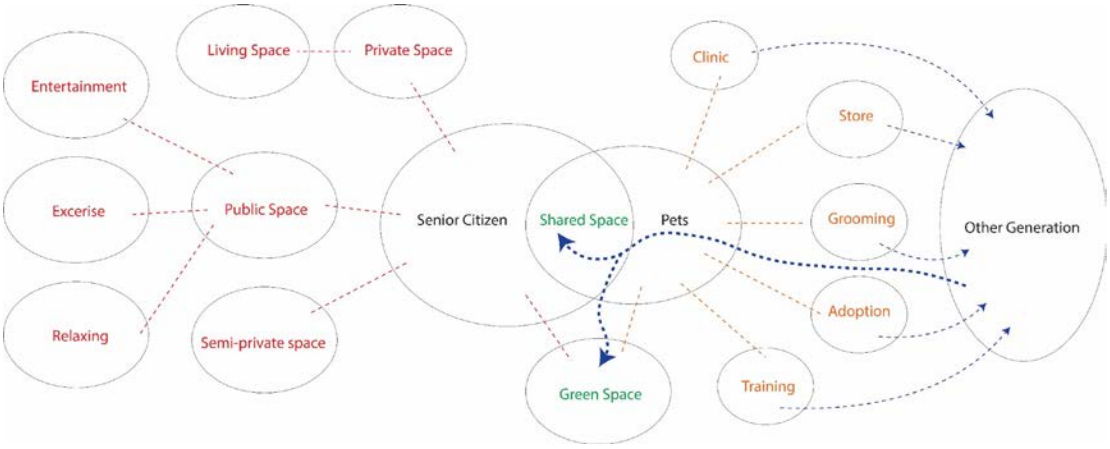


Figure 50 Connection Diagram - Source: Author Haomin Yang

Design Principle

With research of knowing senior citizen's physical and psychological challenges, precedents study, space topology configuration, and site analysis, the design principals were established to regulate and would be incorporated in the design. The design principles are accessibility, safety and navigation, rest and respite, connection and interaction. Each of the principle reflects on one decision that made

on the design. Diversifying and energizing connection space to create the interactive atmosphere.

Approaches

I will practicing this theory through two approaches, all which share the same principal of socially integrating seniors into the larger community and keeping them engaged. The processes of design and conceptual framework are differentiated from one another, but the result of innovative connection through intertwining concept reminds constant.

Addition

The first approach is integration, which means regarding senior apartments and animal centers as independent programs and designing them respectively. The process of designing two individual programs requires adhering to the principle of promoting and stimulating the mutual exchange between people in terms of interaction and communication. Overlaying and overlapping these two independent programs in various ways will help select the final results that optimize the social energetic. The “integration” approach meets the principle that gains connection space through interweaving.

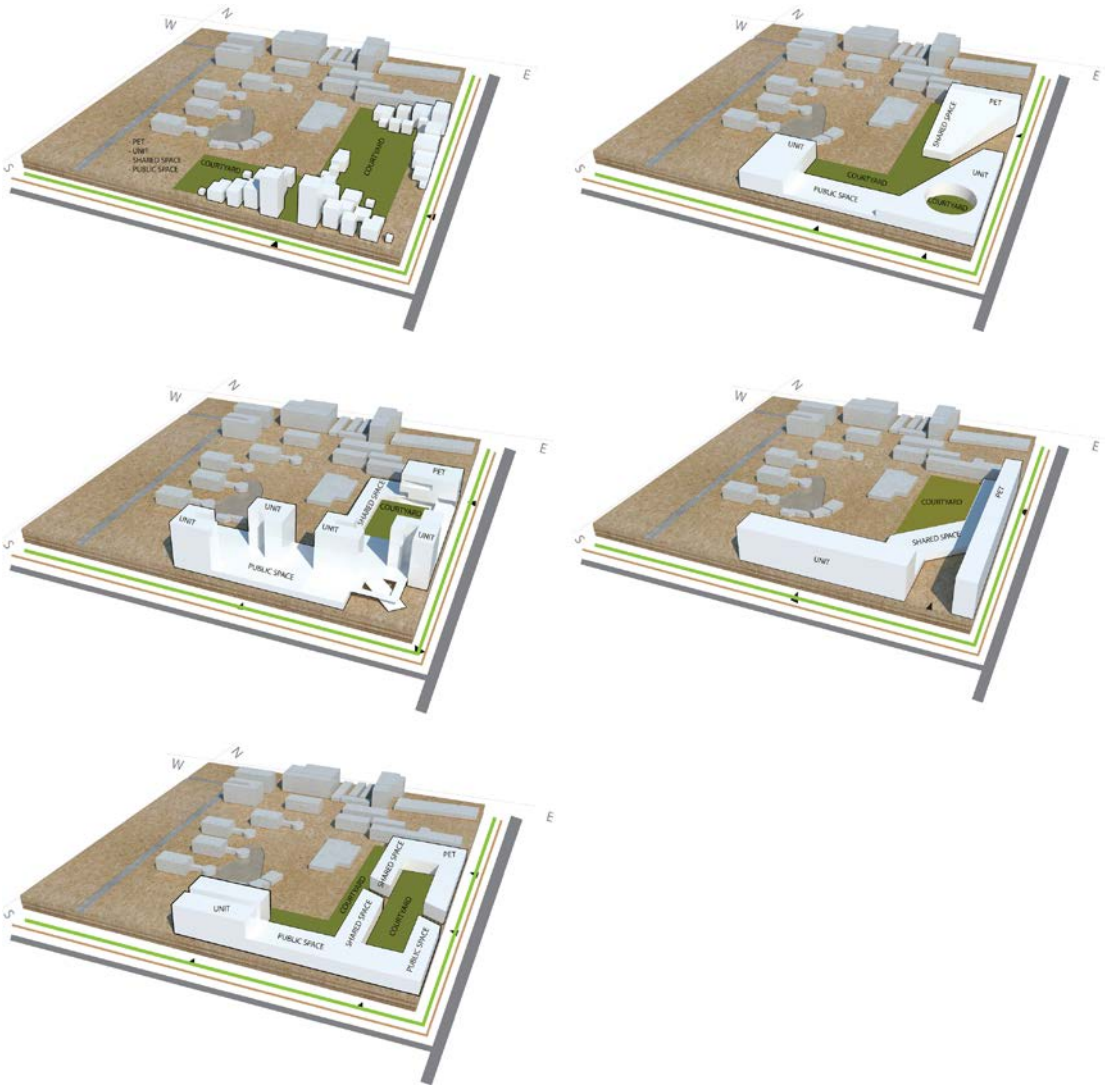


Figure 51 Schematic Design with Addition Approach - Source: Author Haomin Yang

Split

The second approach is designing an integrated program that contains senior apartment programs and animal center programs and recognizing space hierarchy, of which the primary space would be the senior apartment, and the secondary space would be the animal center. Meanwhile, exploring the methodology that uses an animal center program as an architectural catalyst to activate and stimulate the spatial connection area will thus foster the intergenerational activities between senior citizens

and adopters. To gain an interactive atmosphere, the spatial connection could be injected as a new function result to a new program. With this approach, the final result is more monolithic.

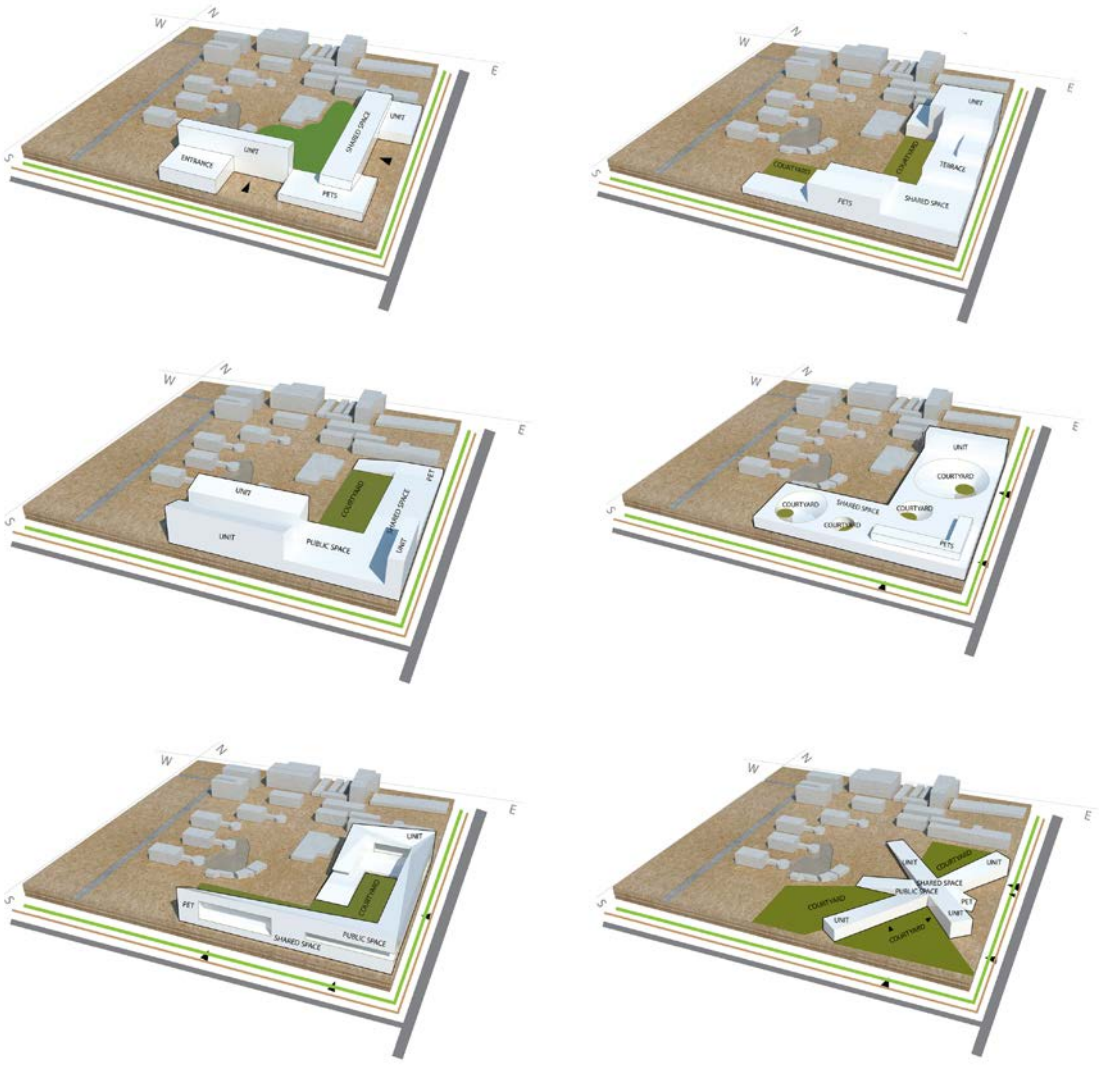


Figure 52 Schematic Design with Split Approach - Source: Author Haomin Yang

These eleven preliminary schematic designs can be summarized into three basic principles of space planning, courtyard, semi space, and parallel bar space.

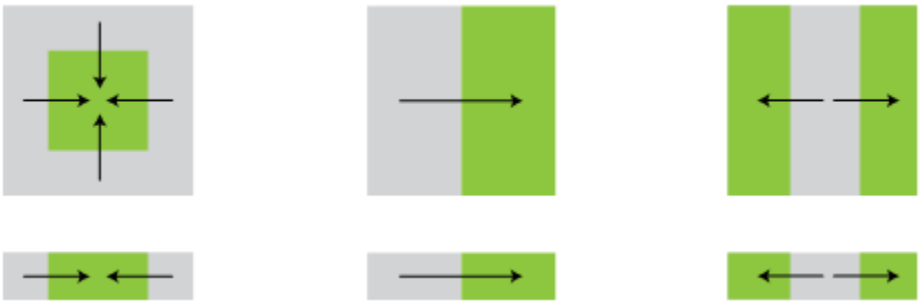


Figure 53 Green Space Typology _ Courtyard, Semi Space, and Parallel Bar Spaces - Source: Author Haomin Yang

Design Principle and Concept

Design Concept _ Connection through overlapping and layering

The courtyard is a completely enclosed space, it is a static and naturally introverted. On the contrary, the I-shape is a dynamic and naturally extroverted space. Its primary orientation is along the axis with a pair of symmetrical vertical plans. The P-shape consists of a courtyard and an I-shape space; thus, it is the combination of destination and a connector. The connector connects the apartment and pets center. By adding two public spaces, there is another connector has been created, which connecting the senior apartment and city. Also, a sloped plaza connect the ground to the promenade on the second level.

The project communal spaces consist of a U-shape and two P-shape spaces from the higher level to the grass roots. The U-shape terrace located above third floor and occupied by senior independently and privately without interruption by public. It is the most private and quiet communal space. The P shape terrace on the second level is a shared space by elderly and pets with a relative open atmosphere. The P

shape space on the ground level is the most open space where shared by elderly, pets and public. Therefore, the connection space is in a transitional layer which is form static to dynamic, from enclosed to open along with the level changes from higher to ground.

The rich and complexity levels meets varied and particular needs of different type of people. Enriching the connection creates the perfect setting to introduce a more playful experiences and interactives. In addition, some elements- waterfalls, cobblestone corridor, lawn, playground, ring-shape walkway, café, digital screen for movie, monumental stairs- creates varied space and interest in the connection space.

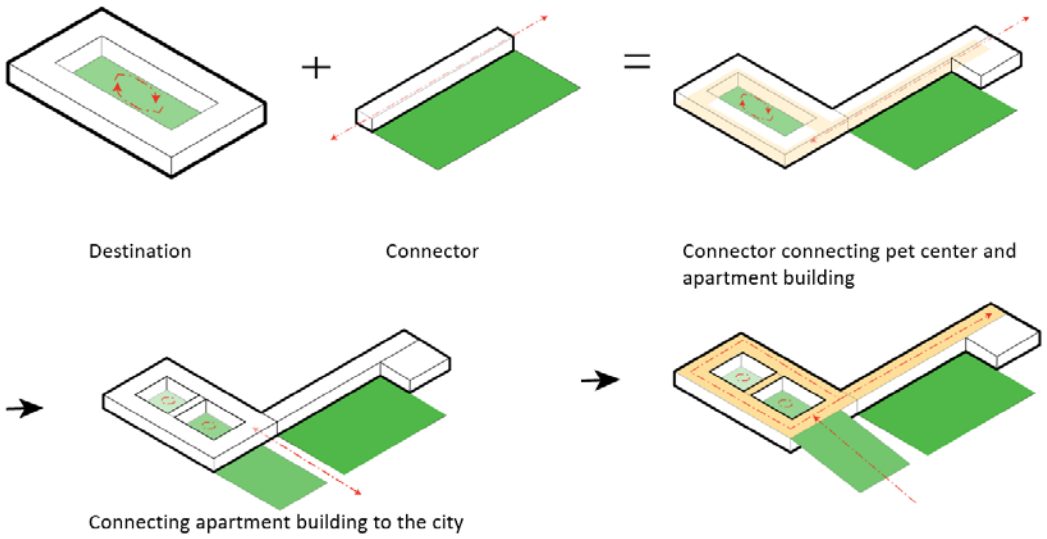


Figure 54 Design Concept - Source: Author Haomin Yang

Separation and connection

Separating senior apartment and animal center to decrease the on the two ends to decrease animal center disturbances in senior living spaces. A setback park implemented as a green buffer zone, which protect people from traffic. Multi green space provided to offer a privacy hierarchy for residents. Different path and entrance

is responsible for the way people approaching the site, such as by bus, by car, by bike, and by walk. In consideration of the senior mobility, vertical transportation including stairs, ramp and elevator offers people convenience to go up and down, in and out throughout the site.

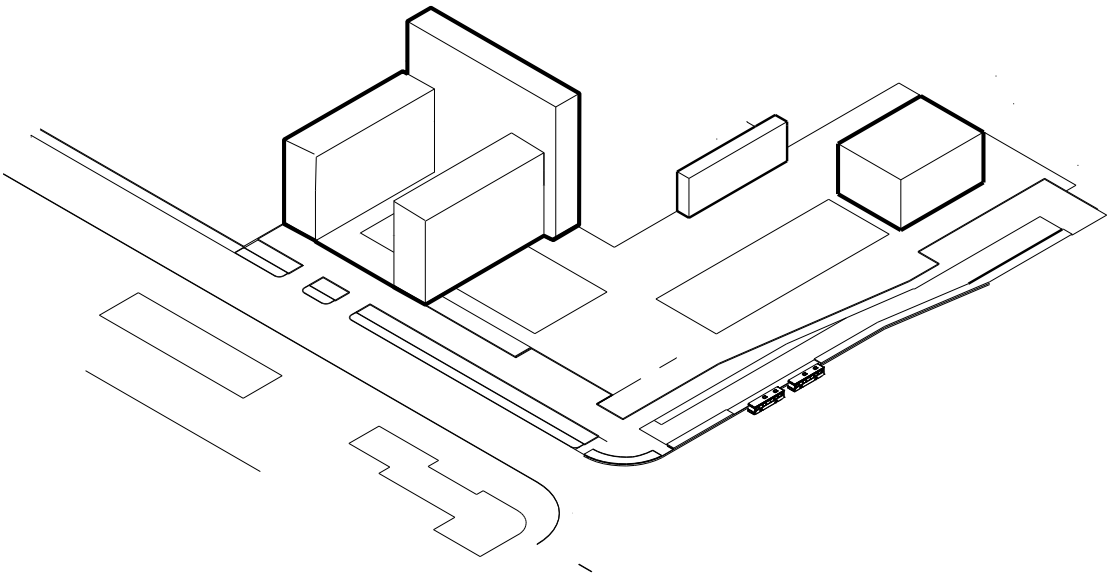


Figure 55 Program Separation - Source: Author Haomin Yang

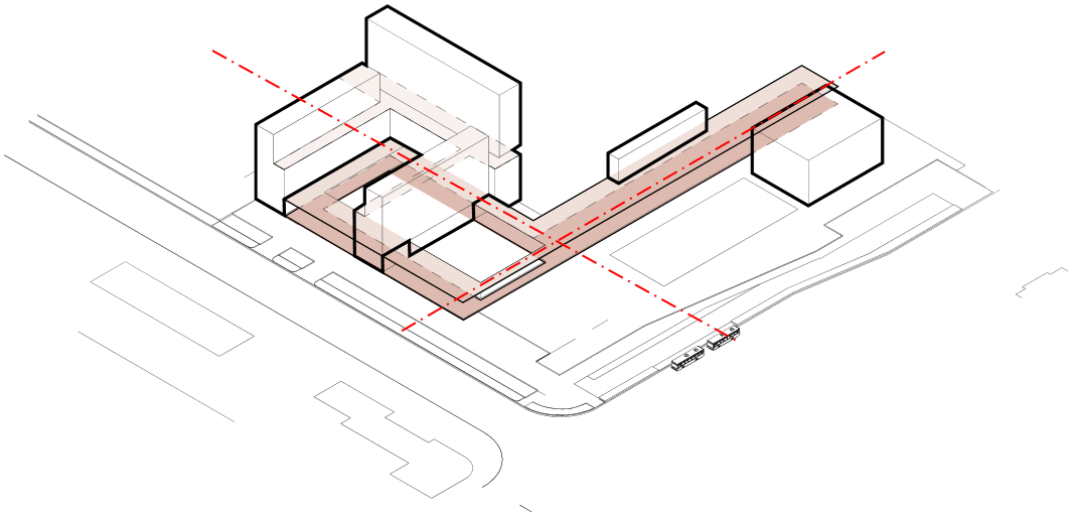


Figure 56 Passage Intersection - Source: Author Haomin Yang

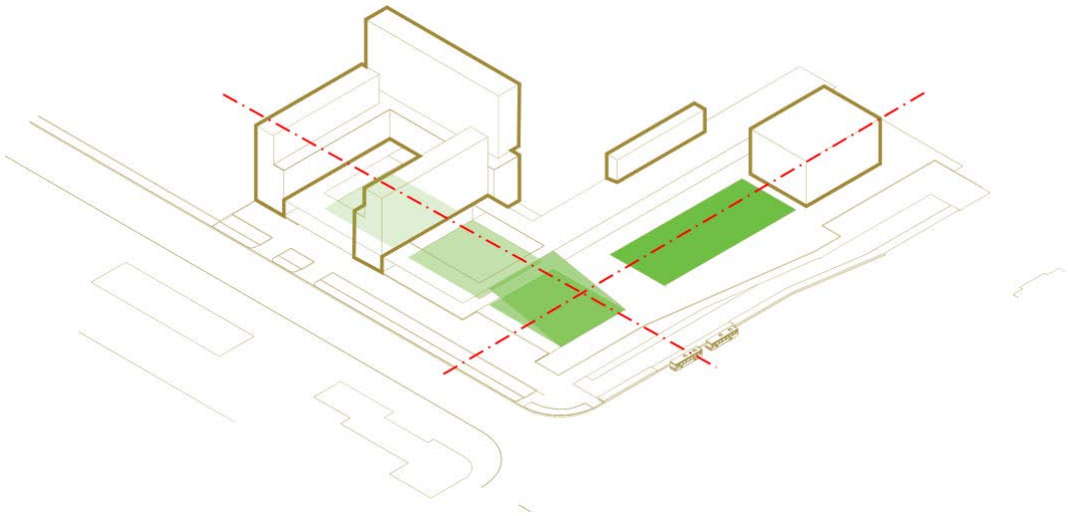


Figure 57 Green/Public Space Intersection - Source: Author Haomin Yang

Chapter 7: Design Proposal

Throughout the research and design investigation, four principles were developed as a way to help guide the process to respond to senior citizens' stigmas that they are facing today: accessibility, safety and navigation, rest and respite, connection and interaction.

Figure 58 Site Plan - Source: Author Haomin Yang

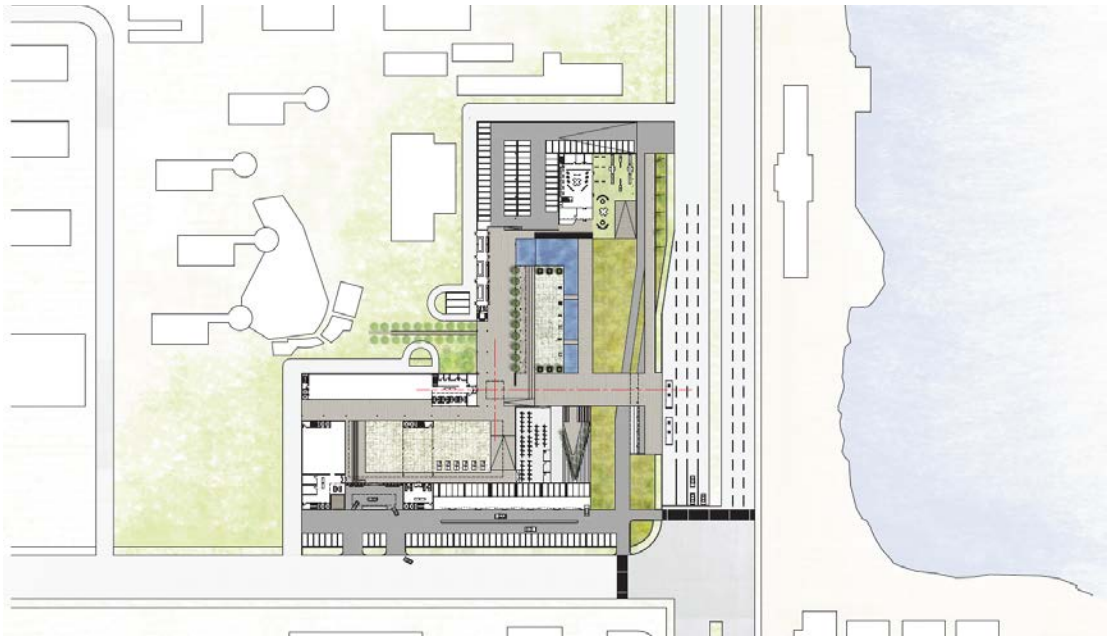


Figure 59 Ground Level Plan - Source: Author Haomin Yang

Figure 60 Second Level Plan - Source: Author Haomin Yang

Figure 61 Main Street Facade (East) - Source: Author Haomin Yang

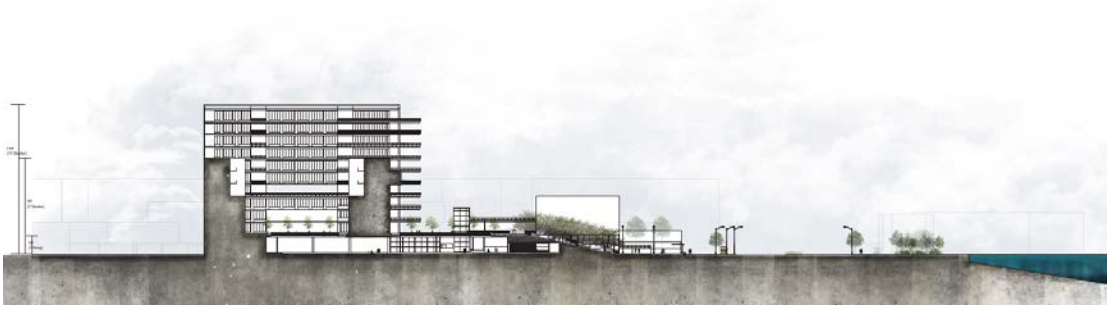


Figure 62 Section - Source: Author Haomin Yang

Accessibility

For an individual who faces the challenge of loss of mobility, accessibility is extremely important. The monumental stair is incorporated with a ramp to allow all kinds of people and animals access from the ground. The senior apartment main lobby is accessible and easily visible from the main street. An orientation device has been designed to help senior residents access the main lobby including rows of trees, a vertical plan, and a paving pattern. The center of the passage axis is located in front of the senior apartment main lobby on the ground floor, emphasized by the light well above. The bright spot that is cast through the light will always guide visitors or residents to the entrance whether they approach from the bus stop, the animal center, or the bike parking area, which is located underneath the monumental stairs. The view to the lake has been offered on each level of the building, and this visual accessibility to the lake brings a water view to the people who are in the terrace, in the cafe, or on their balconies.

Figure 63 Bird View - Source: Author Haomin Yang

Figure 64 View toward Senior Apartment Lobby Entrance - Source: Author Haomin Yang

Figure 65 View underneath the Monumental Stairs - Source: Author Haomin Yang

Figure 66 Senior Apartment Entrance - Source: Author Haomin Yang

Safety and Navigation

Safety and navigation clarity also ties into the narrowing capability of visual loss and hearing impairment. The commercial parking lot and residential and staff parking lots are located at two ends of the site, respectively, to be completely separate from the public open spaces that protect seniors from any traffic. The drop-off zone is located on the south side of the site and directly connects to the building. A water

feature and a cobblestone paved area can protect the senior residents from city streets, and thus decrease the hazards from traffic. Trees on the boulevard also play the same role of creating a green buffer zone between the public plaza and Main Street. The senior housing and outdoor spaces are designed to have multiple overlook levels so that at any given time, there are many people watching the main public spaces either from their apartments or from an outdoor upper-level balcony. This decreases the potential for crime and helps maintain the feeling of a safe space.

Figure 67 Drop-off Zone View - Source: Author Haomin Yang

Figure 68 Drop-off Entrance View - Source: Author Haomin Yang

Rest/Respite

Providing places for rest and respite is important to the design of a comfortable environment for senior people. There are massive seating area includes indoors and outdoors. In terms of outdoor seating, the park and outdoor seating are provided for those people who become tired or need a rest on the way to lobby, or vice versa, on their way to the bus stop. The terrace and higher-level balconies also provide seating for seniors who get tired as they walk. In terms of indoor seating, the lounge provides indoor seating with a view of courtyard. The café also offers indoor seating for seniors and also gives them a place to have tea and dessert while having the water view and park view. Stairs are a significant piece in this project: there are moments while you are climbing and you are moving vertically, but there are other moments where you have respite with smaller flat areas, and these areas with persuade seating and a place for viewing.

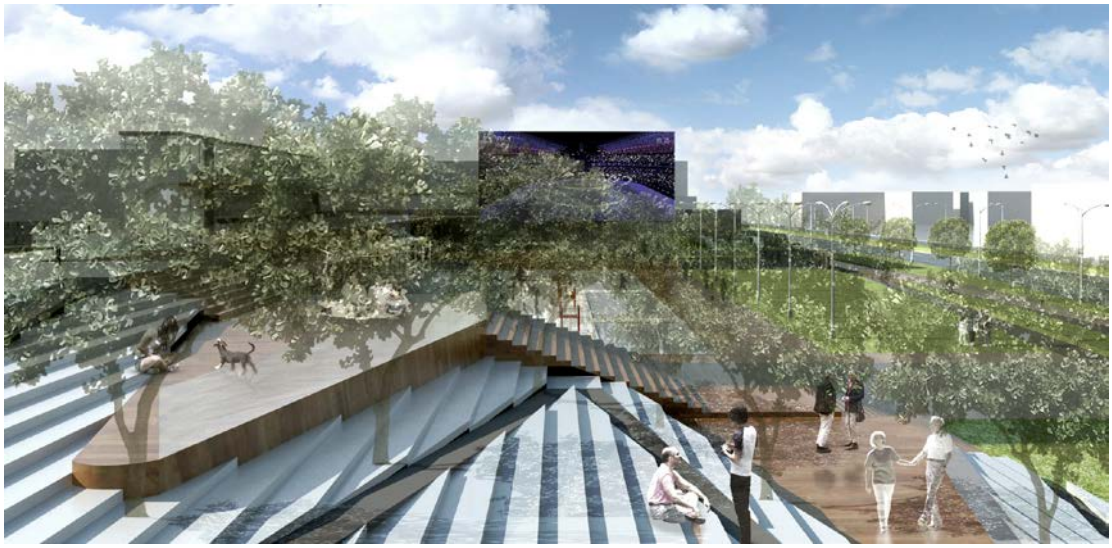


Figure 69 Monumental Stairs with Smaller Flat Area - Source: Author Haomin Yang

Figure 70 Senior Apartment Lobby - Source: Author Haomin Yang

Figure 71 Café - Source: Author Haomin Yang

Connection/Interaction

Finally, creating moments for connection and interaction is a significant component to lessen the feeling of being loneliness and isolation. The actual connector connects the animals and the green space. The corridor that connects the animal center and senior apartment. Two transparent LED screens hang on the apartment facade that display the scene of people and pets playing together; this connects people with pets. A LED screen hangs on the pet center wall that plays CCTV channel (China Central Television), to connect seniors with society. This digital display can be seen from anywhere on the site, which gives seniors the latest news and events in the world.

Figure 72 Park View - Source: Author Haomin Yang

Figure 73 Park View 2 - Source: Author Haomin Yang

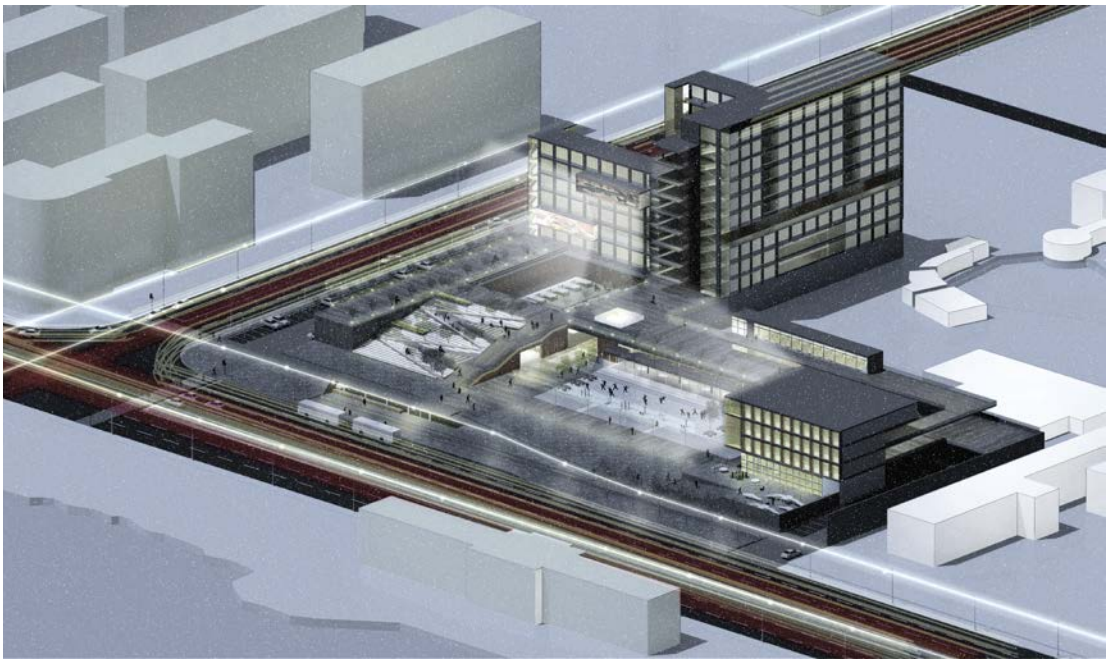


Figure 74 Night Bird View - Source: Author Haomin Yang

Conclusion

The character of the project as a place for seniors and pets is advertised to the city through the architecture. It helps to build pride of place and better integrates the pets and seniors into the larger city of Tianjin so that they feel ownership and have a special place in the city.

The answer of thesis question of how to rendering connection between senior apartment and animal center is multi-layered coexist. Having multiple stratifications can bring diversity of spaces and corresponded experiences range from private to public, from enclosed to open, from static to dynamic, from respectively independent space to shared public space. Sharing resources with public also energize and stimulate the public space. Furthermore, elements like screen, waterfalls, viewing platform enrich the connection space, and thus introduce a symbiotic setting with static and dynamic atmosphere, enclosed and open space, which creates a space that

benefits senior citizen, pets, public and community to achieve the maximum harmony situation.

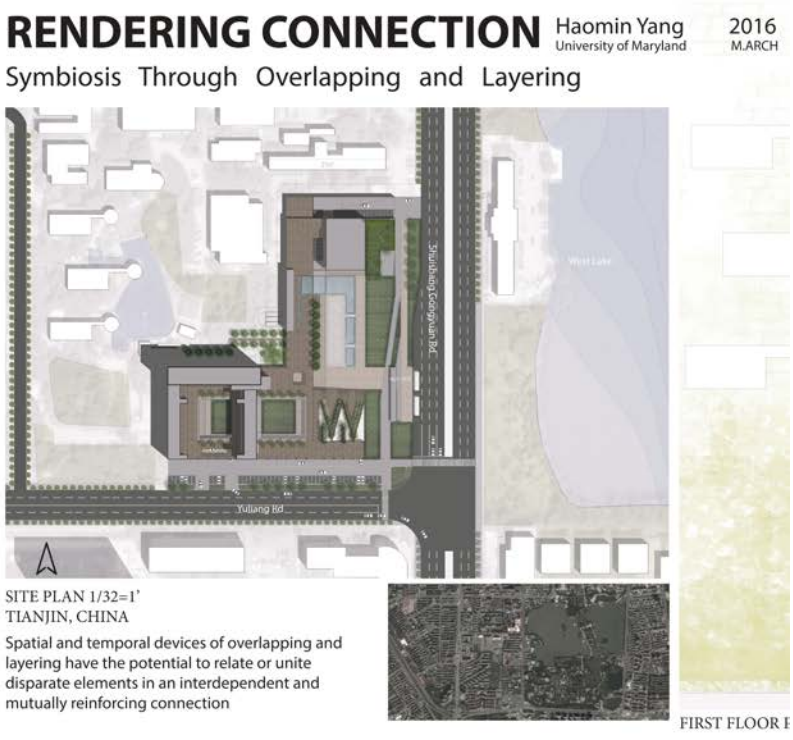


Figure 75 Presentation Board 1- Source: Author Haomin Yang

'LAN 1/16"=1'

Figure 76 Presentation Board 2 Source: Author Haomin Yang

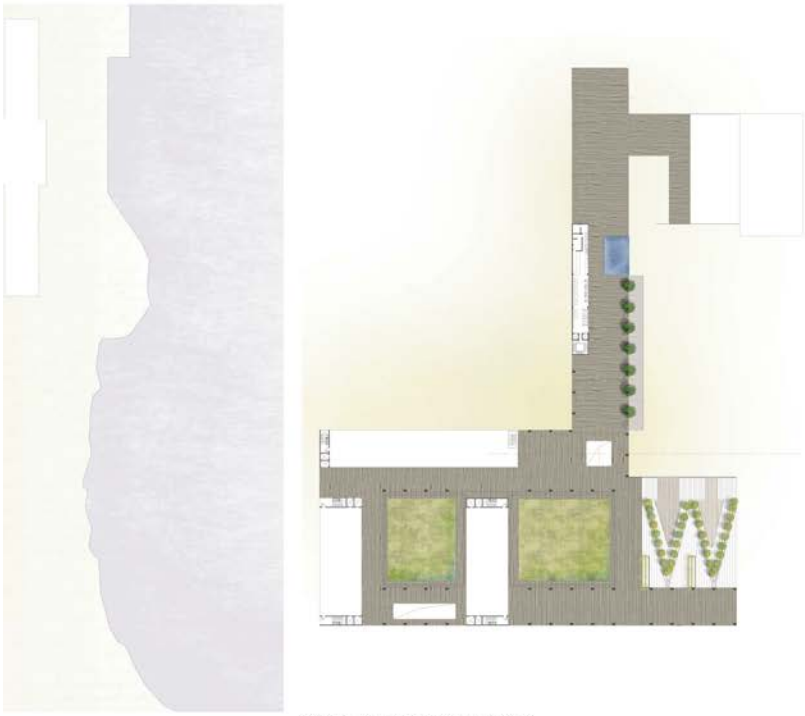
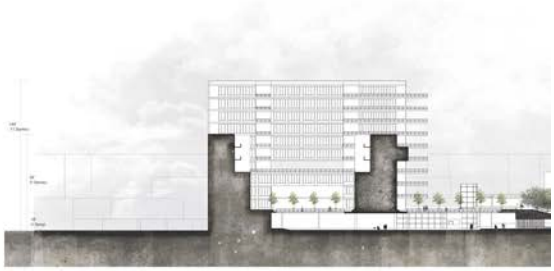


Figure 77 Presentation Board 3 Source: Author Haomin Yang

EAST ELEVATION 1/8"=1'



SECTION 1/16"=1'

Figure 78 Presentation Board 4 Source: Author Haomin Yang

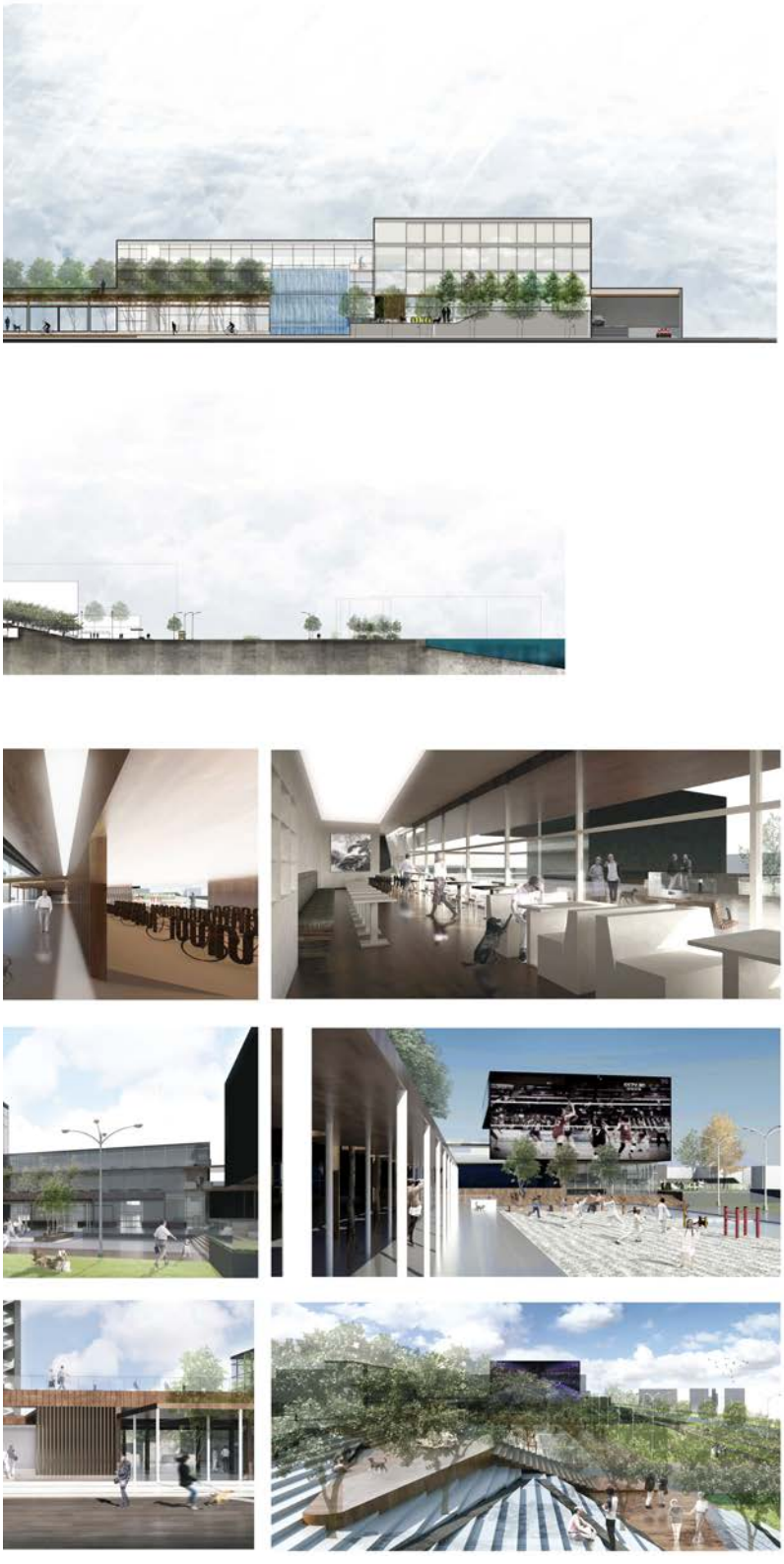


Figure 79 Presentation Board 5 Source: Author Haomin Yang

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