



Programming of Inter-generational Living Project in Pioneer Square, Seattle

Live better with Gardening.

Yuankun Yu



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ABSTRACT

Gardening Creates Better Community For Intergenerational Living

Horticulture has been regarded as the number one leisure activity and provides wonderful opportunity for exercise and socialization (Larson & Meyer 2006). Preliminary research has found that adult participation in gardening results in significant improvement in physical health (Shoemaker & Lin 2008), as well as mental health by creating feelings of pride, competence, and satisfaction (Larson & Meyer 2006). Similarly, it is also beneficial for younger generations to be involved in gardening to stay healthy while learning lessons about accountability, nurturing, and responsibility (Larson & Meyer 2006). Intergenerational gardening improves physical, emotional, and spiritual well-being for all participants (Larson & Meyer 2006). Gardening with younger generations enables the baby boomer generation to take part in an energetic and nurturing atmosphere. Also benefiting, pre-school children receive the care and attention they need while aiding aging citizens in physical tasks. Intergenerational community gardening not only helps aging people to stay healthy with moderate exercises, but also educates the younger generations about plants and responsibilities. It is suggested that the positive results of gardening can apply to all members of a community. This project will explore architectural approaches influencing the social behavior in green spaces to create a mutually beneficial and educational community for inter-generation living. Main research methods are to collect information and benefits about intergenerational gardening and synthesize them into a model for intergeneration housing design.

Keywords: Intergenerational, gardening, mutually beneficial, well-being, health

References

Shoemaker, C.A. and Lin, M. (2008). A MODEL FOR HEALTHY AGING WITH HORTICULTURE. *Acta Hort. (ISHS)* 775:93-98 http://www.actahort.org/books/775/775_10.htm

Larson, Jean, and Mary Meyer (2006). *Generations Gardening Together: Sourcebook for Intergenerational Therapeutic Horticulture*. 1st edition. 112. Binghamton, NY: The Haworth Press Inc., 2006. Print.

BENEFITS OF GARDENING

The two major leisure-time physical activities among persons aged 65 years and older are walking (men, 69%; women, 75%) and gardening (men, 45%; women, 35%) (Yusuf et al., 1996)



Benefits of older generations:

1. gardening can promote positive self-esteem;
2. gardening can inspire elders to continue use their brains;
3. gardening can instill pride in one's abilities;
4. gardening brings comfort to a person with familiar scents or scenes;
5. gardening can pass the wisdom and experience to other generations;
6. gardening can significantly improve elderly's physical health;
7. gardening provide a leisure activity for retired people.



Benefits of younger generations:

1. gardens can provide a safe environment for children to play;
2. gardening can teach children positive social and interpersonal skills;
3. gardening can encourage children to eat more healthy vegetables;
4. gardening can teach children about patience and life circle;
5. gardening can promote a positive learning attitude;
6. gardening can provide children an opportunity to learn from elders;
7. gardening can improve physical health of children ;



Benefits of community as whole:

1. gardening can bring the generations together;
2. gardening can mutually benefit both children and elderly;
3. gardening can provide a social place for different tenants;
4. gardening can benefit the whole community with produce;
5. gardening can develop close relationships between generations;
6. gardening can provide surveillance for children and properties.

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GARDEN TYPES

GARDEN TYPES

Type 1: Roof Garden. Case Study--Eagle Street Rooftop Farm

On the shoreline of the East River and with a sweeping view of the Manhattan skyline, Eagle Street Rooftop Farm is a 6,000 square foot green roof organic vegetable farm located atop a warehouse rooftop owned by Broadway Stages in Greenpoint, Brooklyn.



Advantages:

1. roof garden provides adequate sunlight;
2. roof garden can help insulate the building and prevent runoff;
3. roof garden provides more privacy and safety.

Disadvantages:

1. roof garden requires larger media for plants like trees;
2. roof garden requires access towards roof with elevators;
3. roof garden requires more facilities for irrigation and mechanism.

Suggestion:

Roof garden will be best suitable for small size eatable plants, and those that require more sunlight like flowers. Roof garden is a sustainable design strategy to hold the rainwater as irrigation and cool the building in the summer time. In terms of the layers of medium putting on the roof surface, a steady structure system is required for roof garden.

GARDEN TYPES

Type 2: Courtyard Garden. Case Study--Eagle Street Rooftop Farm

The Tietgenkollegiet Dormitory takes its form after the traditional circle-shaped Tulou-buildings from the Chinese south-east as a symbol, but also very functional grip, of both the common and individual life lived in a small village.



Advantages:

1. courtyard garden is able to grow large fruit trees;
2. courtyard garden does not require lots of maintenance;
3. courtyard garden provides easy access for all residents.

Disadvantages:

1. courtyard garden tends to get less sunlight w/ more than 5 stories;
2. courtyard garden lacks of privacy with public access;
3. courtyard garden tends to get stepped on a lot.

Suggestion:

Courtyard garden will be best suitable for large size trees to get more sunlight, and those eatable plants that require less sunlight like mushrooms. Courtyard garden is not the best option for farming gardens. It will serve the community best as a zen garden for people to rest and meditate.

GARDEN TYPES

Type 3: Vertical Garden. Case Study--Drew School San Francisco

Patrick Blanc, a French landscape and environmental designer/artist, design this vertical garden for the Assebmly Wing for Drew School, this project transform solid looking brick wall into this dynamic and living wall with all the plants and vegetations.



Advantages:

1. vertical garden saves space, make use of walls or vertical columns;
2. vertical garden does not require lots of maintenance with built-in irrigation;
3. vertical garden helps to make fresh air and moderate temperature.

Disadvantages:

1. vertical garden tends to grow small size plants like bushes;
2. vertical garden tends to treat as a symbol rather than a garden;
3. vertical garden tends to get uneven sunlight with vertical layout;

Suggestion:

Vertical garden will be best suitable for small size plants that require least amount of sunlight. It will require lots of mechanism for initial installation, but it will be more self-running later on. The interaction between people and plants will be reduced by this feature of vertical garden. Vertical garden is more like a natural setting for people to hangout.

GARDEN TYPES

Type 4: Balcony Garden. Case Study--Milano Santa Monica

An over 2 million square meters park with around 2000 apartments is currently in the work on Milan. Milano Santa Monica is situated in Segrate, a small city is eco-compatible, to make use of sunlight and the green space.



Advantages:

1. balcony garden shows personal characteristics of residents;
2. balcony garden does not require too much maintenance with pot plants;
3. balcony garden brings nature close to the units and the community;
4. balcony garden circulates fresh air into the building.

Disadvantages:

1. balcony garden tends to grow small plants in the pot or planters;
2. balcony garden compromises resident's privacy;
3. balcony garden is hard for visitors to interact with plants.

Suggestion:

Balcony garden will be best suitable for small size plants that can be placed in a pot or a planter. It will not require lots of maintenance except watering on a daily basis. The interaction between people and plants will only be limited by the acquaintances of the owner. But visitors still can enjoy the diversity of vegetations on each balcony and interact with the owner while he or she is out there taking care of the plants.

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SITE ANALYSIS

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Background information of the pioneer square area



Pioneer Square, Seattle's historic district, is at the southern end of downtown Seattle and is bordered on the south by Safeco Field and CenturyLink Field, on the west by the waterfront and on the east by the International District. Some 20 square blocks that make up Pioneer Square boast beautifully restored buildings designed in the Second Renaissance-Revival, Beaux-Arts Classical, and Richardson-Romanesque styles. Its Characteristic is also riched by those art galleries.

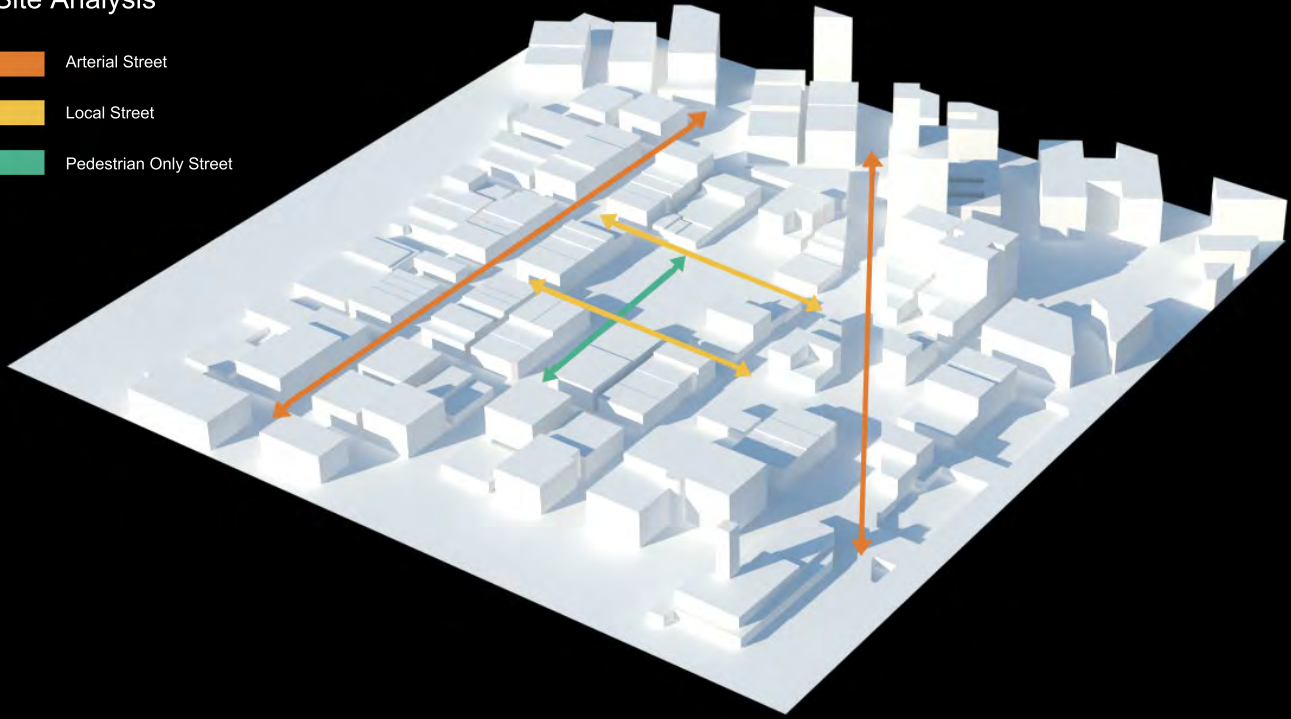


SITE ANALYSIS

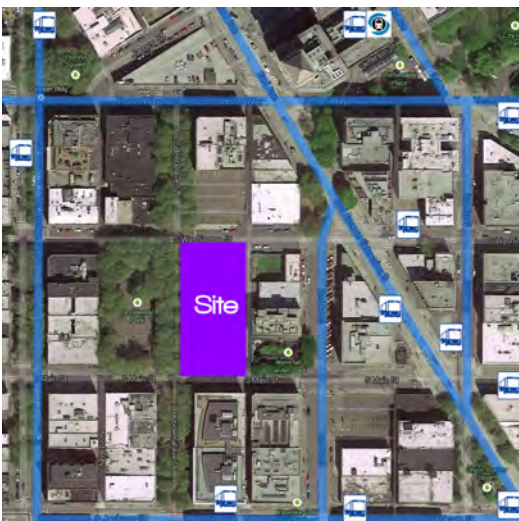
Traffic conditions

Site Analysis

- Arterial Street
- Local Street
- Pedestrian Only Street



The traffic patterns around our site is ideal for pedestrian traffic. Two main streets go around the site which also provide easy access to the subway or bus stations. There are not too much traffic along the two local streets on the north and south of our site. Furthermore, on the west of our site, a pedestrian only street provides direct access to the Occidental park and safe playground for the community members. Even as Seattle's overall score declined this year, some city neighborhoods saw big gains. Pioneer Square vaulted into the No. 3 spot, up from 18th last year, with a score of 96.8.



A screenshot of the Walk Score website interface. At the top, there are navigation links: "Walk Score", "Get Scores", "Find Rentals", "Post Listings", "Professional", and "Log in". Below this is a search bar with the placeholder text "Type an address, neighborhood or city" and a "Go" button. A "Share" button is also visible. The main content area features a street-level photograph of Pioneer Square with the text "Living in Pioneer Square" and "Seattle". To the right of the photo is a "Nearby Apartments" button. Below the photo are three score badges: "Walk Score 97", "Transit Score 100", and "Bike Score 76". Underneath these badges is the text "Add score badges to your site". Further down, there is a paragraph: "Pioneer Square is the 3rd most walkable neighborhood in Seattle with 1,190 residents." and another paragraph: "Pioneer Square has world-class public transportation and is very bikeable." On the right side of the page, there is a map of Seattle with Pioneer Square highlighted in orange, and a "Feedback" button at the bottom right.

SITE ANALYSIS

Views from the site location



View of South

South of our site is the State Building, red brick facade, with steel framed windows and cast-iron columns on ground floor, symmetrical facade with a central bay. Also further south, a new apartment is being built. It is not the most ideal view with same buildings.



View of North

North of our site is downtown Seattle, with the historical Smith Tower and lots of modern buildings on the far back. This view would be better because all the skyscrapers are far away as background of the city with the open view of the sky as well.



View of East

East of our site is main one floor height buildings with two restaurants one gallery and one garden. But there is a four story high apartment loft building next to the water garden which may block views towards east side.

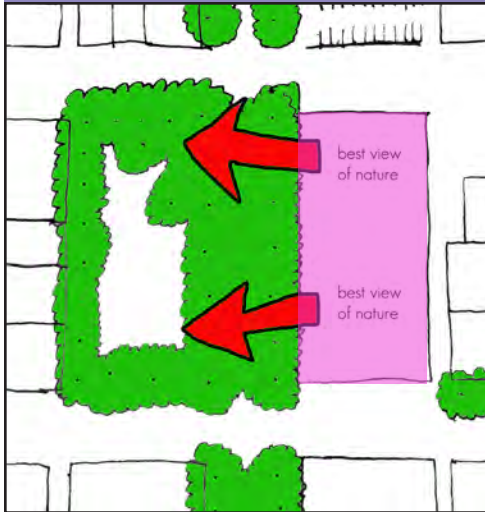


View of West

West of our site is the Occidental Park, with paved ground, the park is ideal place for outdoor activities. Further west there is the red-brick building with vines covered, creating this nature feeling of trees and plants together.

SITE ANALYSIS

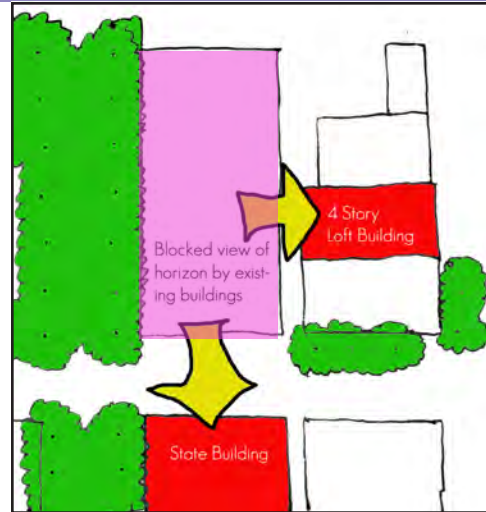
Diagramming of site conditions



Positive Views

- Green space
- Site

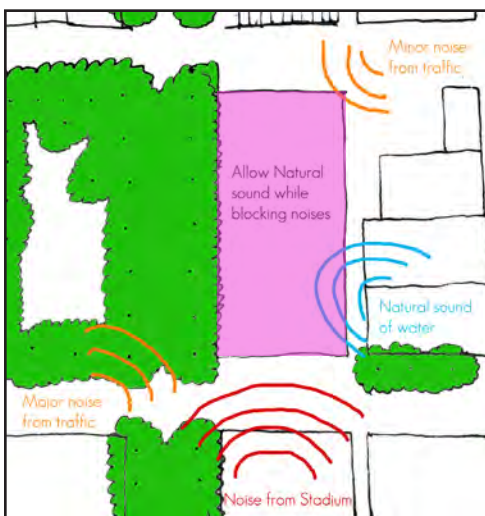
The best view from site is towards west because of the beautiful Occidental Park with plenty trees around. Make best use of this view with all the nature as well as protect the units from sunset light.



Negative Views

- Green space
- Site
- Blocking Buildings

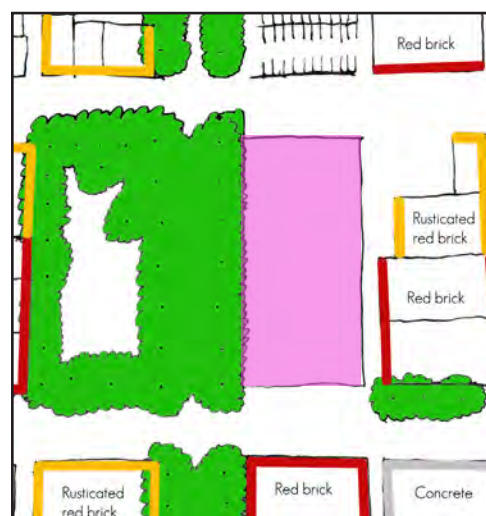
Part of the view towards east is blocked by the 4 story building. Also the State Building with its classical style might not be good as creating a retreat-like zen garden with brick buildings as background while replacing it with sky will be best.



Sound

- Water sound
- Traffic sound
- Sports sound
- Green space
- Site

Noise is a big concern for residential buildings. The nature sound of water from southeast is nice to soften all the traffic or sports sound from other directions. One more water feature could be added somewhere on the site.



Context

- Concrete
- Rusticated red brick
- Red brick
- Green space
- Site

Fitting in the urban contexts is more suitable for a residential building within a community. Historically, brick is widely used in this area. In order to make a difference while keep the same tradition, terra-cotta will be most ideal as a modern material.

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TARGET USERS

TARGET USERS

Type1:
Family with multiple young children



Family Members:

Father: Zhijie Lu, born in China, met his wife while studying in U. Washington.

Mother: Nancy Chang, American Born Chinese(A.B.C.), raised in Seattle.

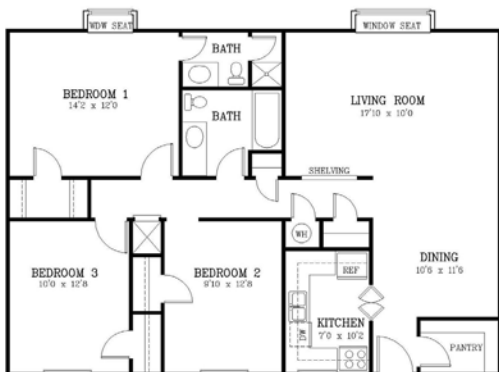
Son: Jerry Lu, 3-year-old A.B.C.

Daughter: Emily Lu, 10-month-old A.B.C.

Characteristics of This family type:

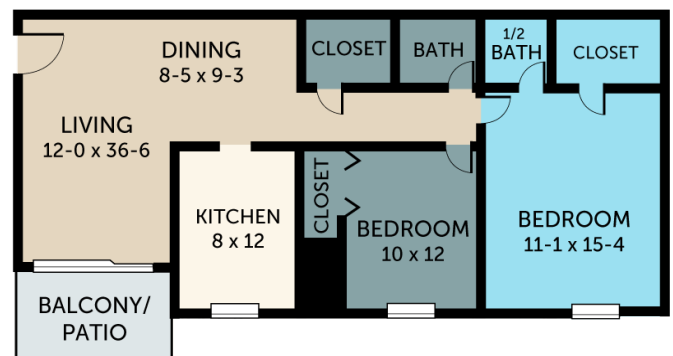
Father is raised in China with deep Chinese culture as background, while mother is raised in U.S. with partial Chinese culture. They are trying to find a place related to Asian culture, and close to the downtown. Also it will be having close day-care access to take care of their children while they are both out working. Since the two children are opposite gender, their parents hope a three-bedroom units will be most ideal, two-bedroom unit will also work for now.

Suitable Unit Layout: 3 Bedrooms



This 3-bedroom unit is best for the family with master bedroom also close to both other bedrooms. It will be easy for parents to take care of their children. Living room away from bedrooms also good for children to sleep early.

Alternative Unit Layout: 2 Bedrooms



This 2-bedroom unit is also similar to all the rules explained before, with bedrooms away from living area. But the 1/2 bath room is not suitable here for the master bedroom, that will be changed in the real design. This is only a reference towards unit layout.

TARGET USERS

Type2:

Family with 2 elders, young couple with one or two children



Family Members:

Grandpa: Jianguo Chen, recently get the U.S. green card come to take care of their granddaughter.

Grandma: Xiujuan Feng, same as above.

Father: Xiong Chen, met his wife while as representative for a Chinese firm in the U.S.

Mother: studied in U.W. while meeting her husband

Daughter: Kelly Chen, 4-year-old A.B.C.

Characteristics of This family type:

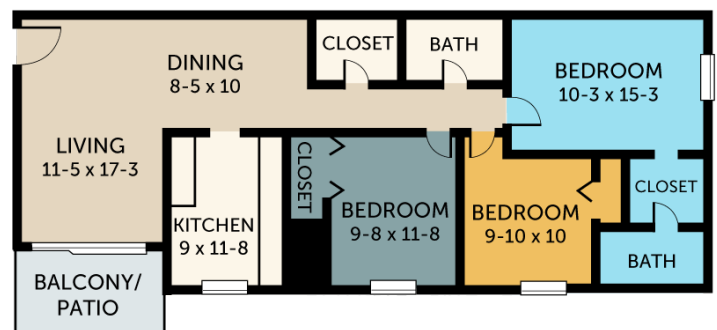
With two elders speaking only Chinese, the young couple are trying find a place close to International District for their parents to walk and shop. They are not that worried about day-care service since the two elders will take care of their young child. But, they hope to find a farming garden somewhere close to their home where the elders can grow vegetables and flowers as they did for more than 30 years as both a hobby and alternative way to eat fresh veggies. They are thinking about a three-bedroom unit will both work.

Suitable Unit Layout: 3 Bedrooms



This 3-bedroom unit is best for the family because all the bedrooms are close to each other so they could take care of each other. When the child grows older, and leave for college, the two elders could occupy one bedroom each. Or a care-taker is necessary for the elders, she could occupy the third bedroom.

Alternative Unit Layout: 3 Bedrooms



This 3-bedroom unit is a longer layout with bedrooms more close to each other. The main openings towards the south will be ideal for sunlight to get into those bedrooms and same as the living room with balcony area. Same for the elders to aging in the place with three bedrooms next to each other.

TARGET USERS

Type3:

Family with 2 elders and grandchildren



Family Members:

Grandpa: Jason Wu, studied in U.S. and became U.S. citizen after he got a job met his wife in the firm.

Grandma: Susan Lee Wang, emigrated to the U.S. when she was 16-year-old, raised only one child.

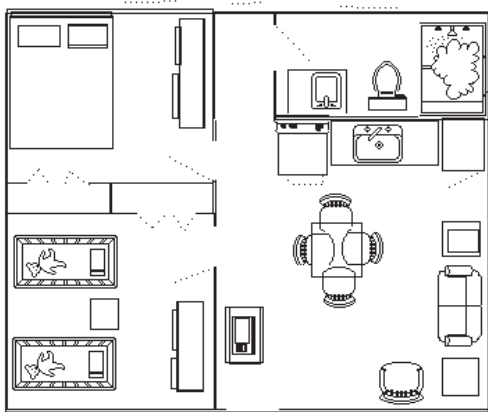
Grandson: Cory Tseng Wu, 3-year-old A.B.C.

Granddaughter: Kate Tseng Wu, 3-year-old A.B.C.

Characteristics of This family type:

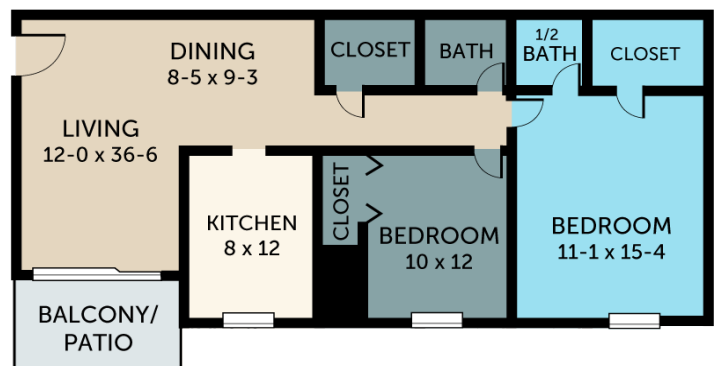
Both elders are recently retired from work while their son and their daughter-in-law are sent to China as representatives for American firms in Shanghai and Beijing. Worried about the environment in China, the young couple decided to leave their children for the two elders who are more than glad to take care this twin. They wish to find a place close to International District for the two children to learn Chinese culture. Also they hope an amenity as exercise room for walking will be ideal for them to stay healthy. They try to get a two-bedroom unit.

Suitable Unit Layout: 2 Bedrooms



This 2-bedroom unit is good for the family with master bedroom also close to children's bedroom. Since they will not take care of the children for real long time, they are not worried about separate kids into different rooms.

Alternative Unit Layout: 2 Bedrooms



This 2-bedroom unit is also similar to all the rules explained before, with bedrooms away from living area. The south side is more open than the previous version for sunlight. It will be good for Asian family to make kitchen a separate room because smell of food is strong.

TARGET USERS

Type4:
Family with 2 elders



Family Members:

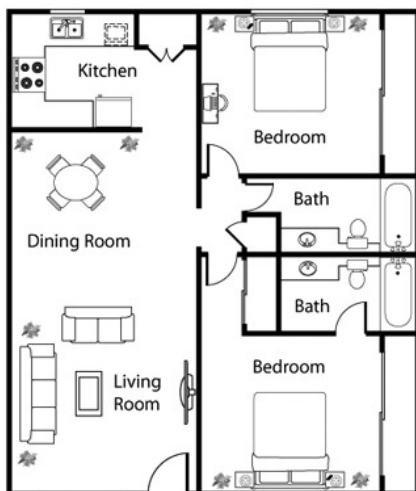
Husband: Brent He, born and raised in Seattle, met his wife in China during a visit to his grandpa in Hangzhou.

Wife: Yuxi Long, born and raised in China, moved and lived in Seattle, after married her husband. After their retirement, they try to find a place to aging at home with gardens to walk around.

Characteristics of This family type:

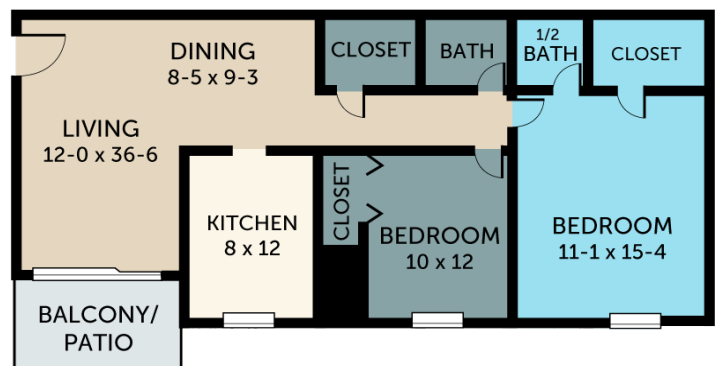
Their children are both adults and have families and this old couple's grandchildren are also taken care of by their own parents. Brent is a painter while Yuxi loves to eat Chinese food. As the art district of the Seattle, Pioneer Square becomes their ideal place to live with Chinatown in 5-minuter-walking distance. They wish a two-bedroom unit because Brent often works very late on his paintings.

Suitable Unit Layout: 2 Bedrooms



This 2-bedroom unit is good for the family with two bedrooms close to each other. The bathrooms are also close to the bedroom will be good for the elders. Care-taker could live in another bedroom if it is necessary

Alternative Unit Layout: 2 Bedrooms



This 2-bedroom unit is an alternative layout for the elder couple. Same principals work here with bedrooms close to each other and close to bathrooms. More openings will be on the east or west side of this plan because the site has more facade on east and west side.

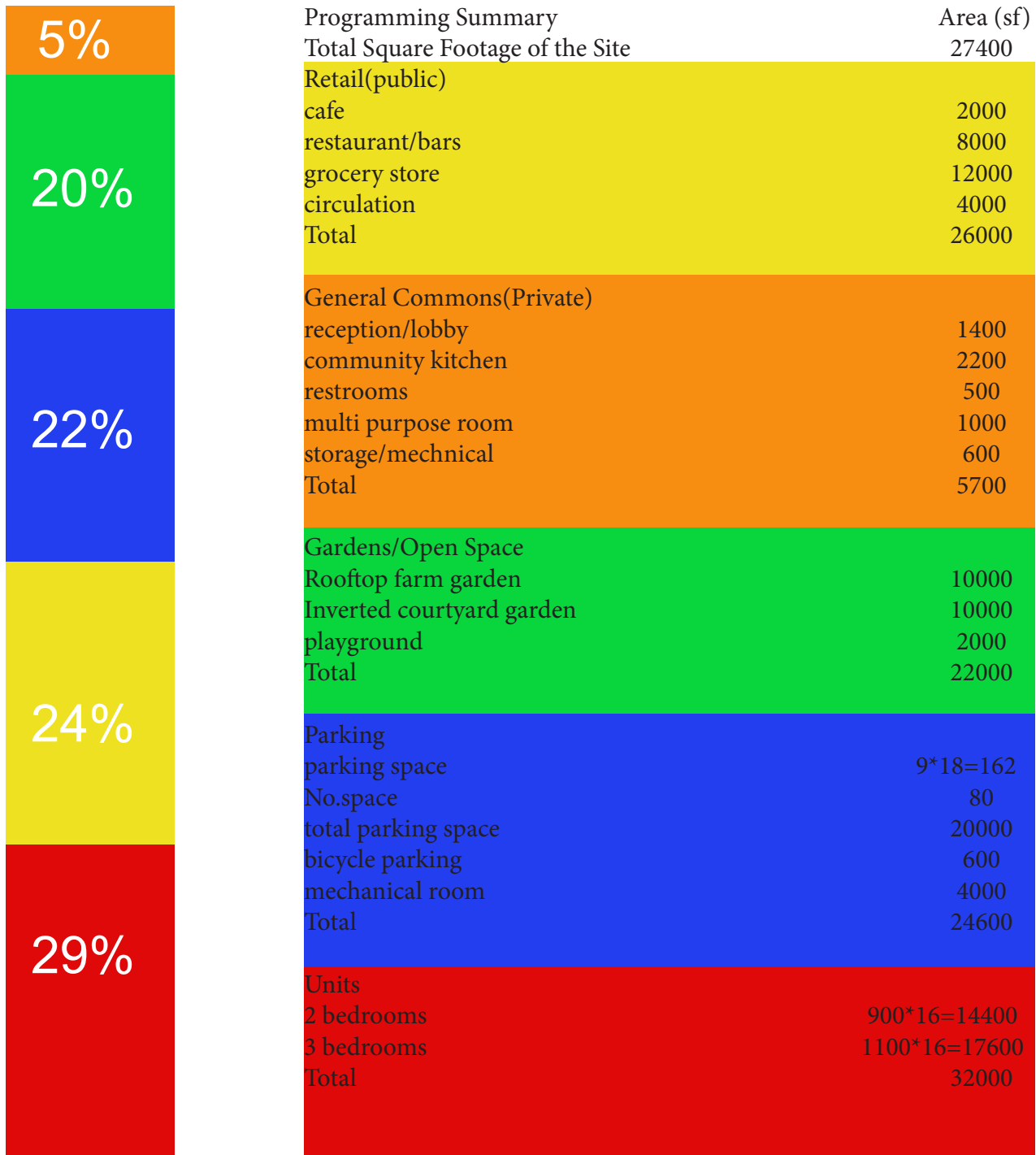
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PROGRAMMING OF SPACE

PROGRAMMING OF SPACE

General distribution: 5 story building with underground parking

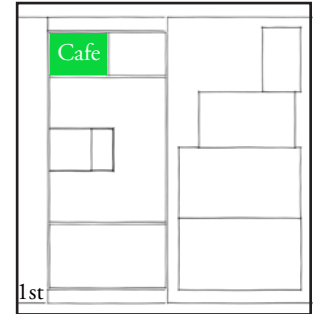


PROGRAMMING OF SPACE

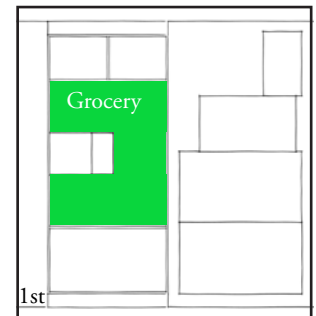
Ground Floor Retail Space



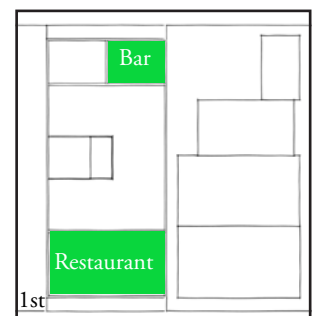
Cafe: Coffee shop provide baked products and coffee for the community and workers around the site with outdoor seating when there is sunlight. Corner site will be ideal for a coffee shop where people from multiple streets can see it.



Grocery Stores: market place for the neighborhood as safe and close store for daily uses and it could also be a ideal location for farmer's market when it comes to the harvest season to sell produce from the farm. It will take lots of space and require a loading/service area in the back alley. It will occupy about half of the place in the ground floor.



Restaurants/bars: Because of its ideal location, north of the main stadium of Seattle, it is possible to have some restaurants and bars on the ground floor for general public. This also require a loading/service area in the back. So the location of restaurants need to occupy both front and back of the site. Also they will use farming produce.

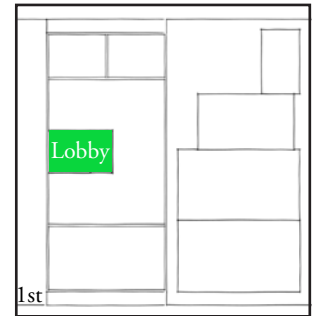


PROGRAMMING OF SPACE

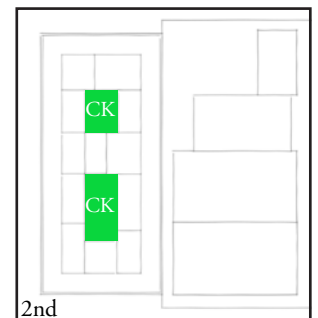
General Common Space (Mainly Second Floor, Except For Lobby)



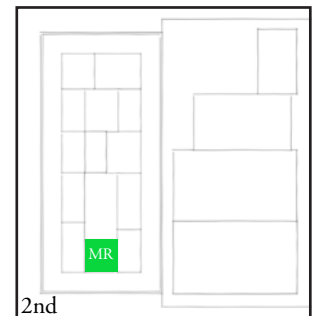
Reception/Lobby: This space is the main entrance for the residents of the building with seatings and entrance towards staircases and elevators. Also, positions like security guards and receptionist are available for retired people or unemployed workers around the neighborhood.



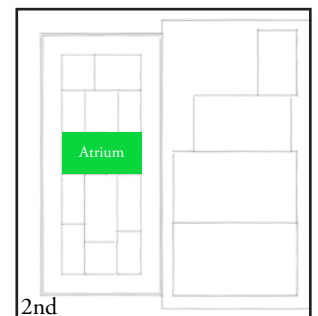
Community Kitchen: This space is for community members to cook food together and teach each other how to cook with their own recipes.



Multi-function Room: This space is for community members to get together for community activities and also this could be used as day care center on a daily basis.



Atrium: This space is the main vertical circulation of the building with the elevator is hidden rather than showing up in this image. Walking is encouraged as a daily exercise for the residents. Also, it will provide enough sunlight.

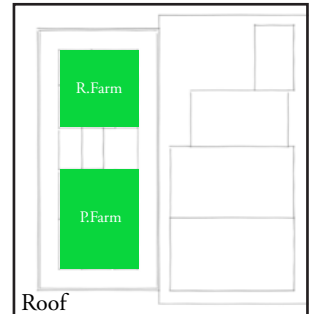


PROGRAMMING OF SPACE

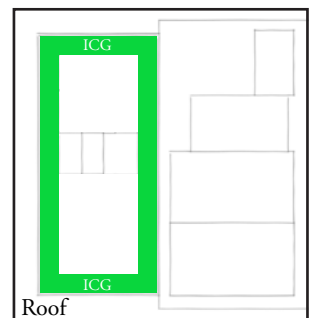
Gardens/Open Space



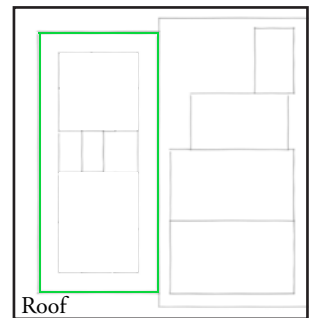
Rooftop Farm Garden: Two gardens are created on the roof, the south one is professional farming while the north one is for residents to farm. The community will hire someone or one of the young resident could live in an apartments for free if he grows food for restaurants or groceries.



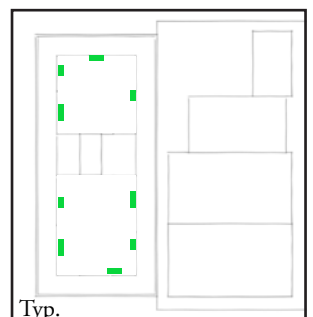
Inverted Courtyard Garden: This garden will mainly serve as the relaxed or zen garden for the community to walk or exercise. It will on the second floor and wrap around the units to create interactions between residents



Vertical Garden: On the second floor, the inverted courtyard garden will have a wall around it, the height of the wall will depend on the views to create a retreat or secret garden for the residents. Those walls will be full of plants to create this feeling.

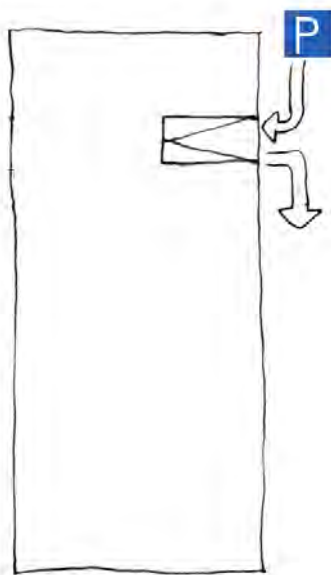


Balcony Garden: Balcony Garden is more like a private exhibition of the different tenants. It will be best to grow flowers and bushes on the rooftop garden and when they bloom or flourish, move down to the balcony to heal the neighborhood together by the beauty of nature.

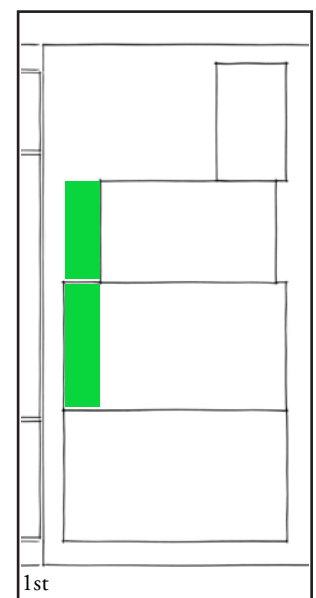


PROGRAMMING OF SPACE

Parking



One Way underground parking system with main entrance and exit located on the alley side so no traffic will influence the value of retail space on the other three sides of the site. The parking ramp will sacrifice partial space on the ground floor. It will be all right because it is part of large grocery store on the ground floor. On the right side of the site, lots of existing parking spaces prove the alley is also frequently used as parking access already.



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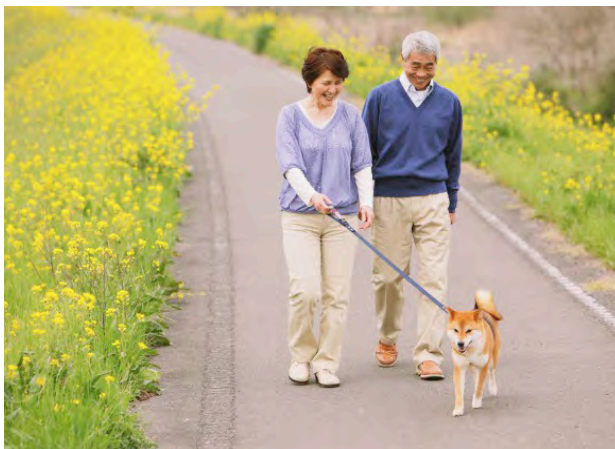
DESIGN SOLUTIONS

DESIGN CONCEPTS

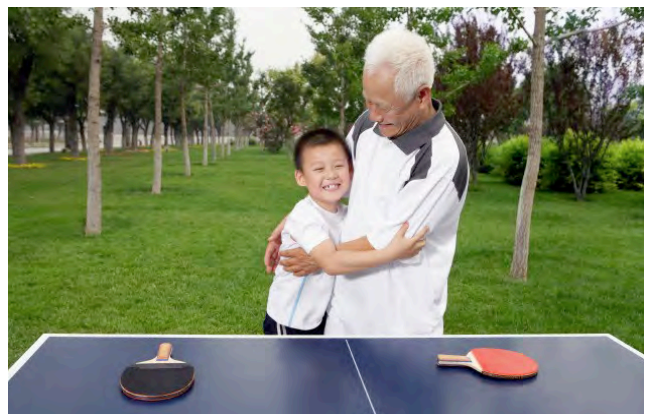
General ideas



Ground Floor will mainly occupied by retail space like cafes, restaurants, bars also a grocery store is necessary for the neighborhood. The professional roof garden will grow lots of vegetables for the restaurant or grocery store to sell as products. The residents can also make use of the other one to grow flowers or whatever they like. Those could also be sold in the shops on the ground floor or decorate their homes.



Second Floor will have this looped walkway for the residents to safely walk their dogs or meeting with other tenants. I realize it is not safe to walk in the Occidental park after sunset because it becomes the get-together place for homeless people. Also, night lighting is not good at the park. Safety is most important for children and elders, so I design this inverted courtyard, which surround the building in the center.



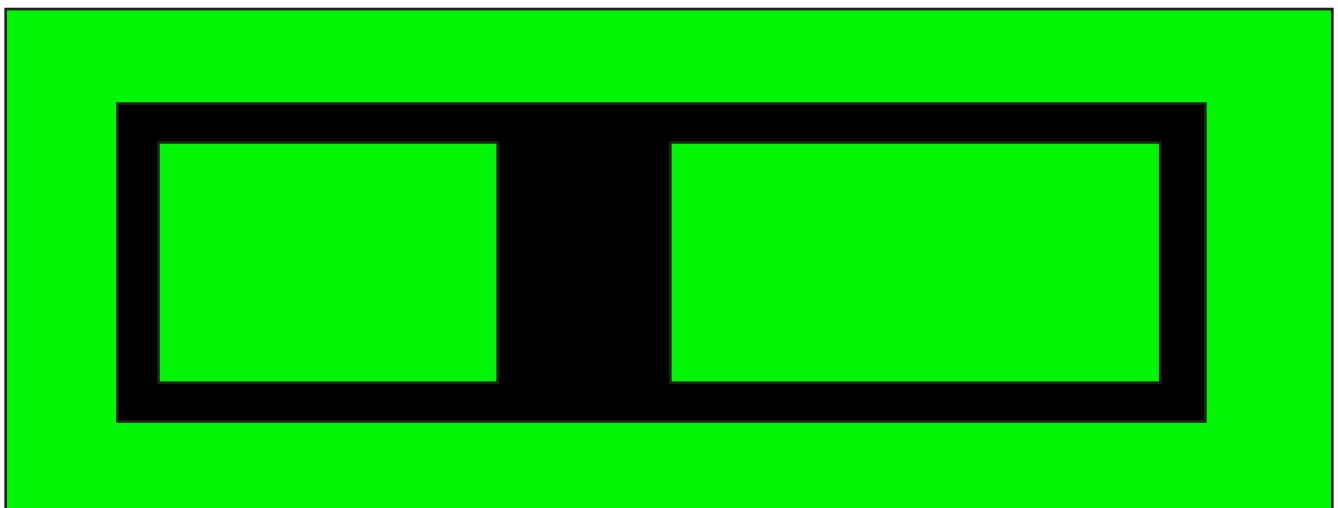
Grandparents babysitting young children are not limited to gardening anymore, there will be a multifunction room or an outdoor space for activities to happen like teaching music, playing chess or checkers, or even playing ping pong.

PART I

Main ideas: Building within a garden, garden within the building



My concept will be when you are walking on the elevated loop garden space, you feel like you enter a secret garden within the cityscape. Inside that garden is the main apartment units. my intentions are to have this vertical wall along the second floor to frame views towards the sky and this garden becomes the retreat zen garden for people to relax. while on the rooftop of the building, there will be two farming gardens serving different purposes.

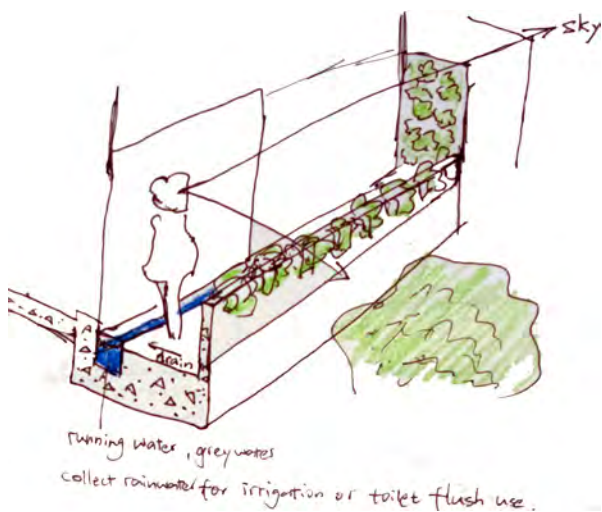


DESIGN DEVELOPMENT

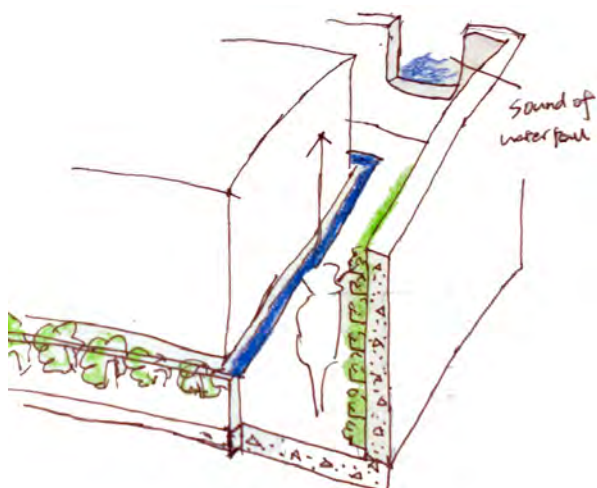
Walking experience, design sketches



Researches show walking is the best exercise for elders. Also, walking is important for young children when they are growing up. I design this walking garden for both younger generation and older generation to interact with each other. Walking experience is also a good environment to teach children or talk with them. Asian people like to take a walk and communing with each other and greet each other.



Water is also an important element in Asian culture. Fengshui suggested people should live close to water. With this running water as a collector for the rainwater, the garden is more vibrant. Also, framing the views will be important in my design process, with vertical garden on the wall at different height, residents will most feel like in a retreat secret garden from the city.



Since the waterfall garden is located at the southeast of our site and the water is running 24/7 even after it is closed. This type of natural sound will be good for residents to receive. But for the traffic noise should be blocked with the high wall and noise absorbent plants on the exterior. Another water feature might be added on the other side of corner, because the natural sound could cover part of the noise.

DESIGN DEVELOPMENT

Garden experience, exercise, community oriented space



Another characteristic of Asian people is that they love to grow vegetables on the pot or rooftop garden. It is hard to get some cooking ingredients in the U.S. The easiest way will be growing it by yourself. Also, Asians have thousands of years of history of farming, it is a tradition to keep especially for elders and to pass it over to the younger generation.



Instead of exercising in the gym, Asian people tend to do outdoor exercise together. A outdoor open space will be good for this need and also unify three generations together. The atrium space will be part of that outdoor space. Since Seattle rains a lot and get pretty cold at winter time, a covered space somewhere between outdoor and indoor space will be most ideal for residents.



A multi-functional space will be in each floor and as well as a shared dining space. The community organizer will set up Thursdays as a community meal night for every four and five units to cook a dinner for all the other family. In the daytime, when both parents of a family have to work, this shared community babysitting service is available for them to take care of their children. In return, they have to either cook a community dinner or just get along with other units which has retired elders to take care of their children. It works for elders need to be taken care of as well, either hire some care-taker, or invite one to live in the unit for free to take care of elders.