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A Green Dialogue for Aging Society

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A Disconnected Connecting Life

Architecture and Communication: A Green Dialogue for Placelessness

Request for Approval of Thesis Research Project Book Presented to:
Dr. Carpenter
Prof. Dytoc

and to the Faculty of the Department of Architecture
College of Architecture and Construction Management
by

Dian Tan

In partial fulfilment of requirements for Degree of

Bachelor of Architecture

Kennesaw State University, Marietta Georgia
Spring Semester 2018

Request for Approval of Project Book

Student Name: Dian Tan

Thesis Project Title: Architecture and Communication: A Green Dialogue for Placelessness

Student Signature _____

Approved by:

Thesis Advisor _____ Date _____
Professor William Carpenter

Thesis Coordinator _____ Date _____
Professor Elizabeth Martin-Malikian

Achnowledgement

This thesis would not be achived without the help from my thesis professors Prof. Carpenter and Prof. Dytoc. Thanks for pushing me to a higher level, and helpful feedback for my thesis research. I would also thank for the help from Prof. Martin on my thesis preparation, and the inspiration from Prof. Soleimani, and the support and encouragement from my parents.

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Design Theorem

Hypothesis

Overview

The Problem of Placelessness

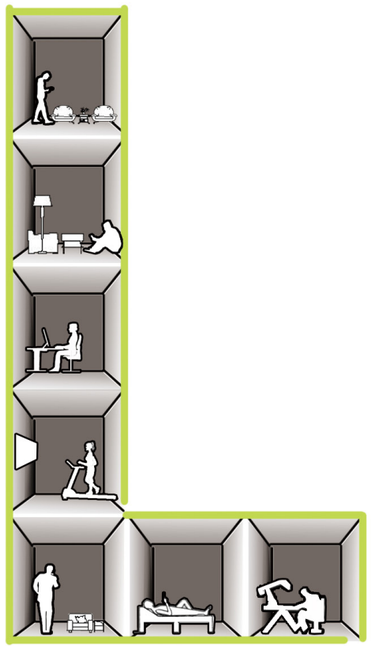
A Disconnected Connecting Life

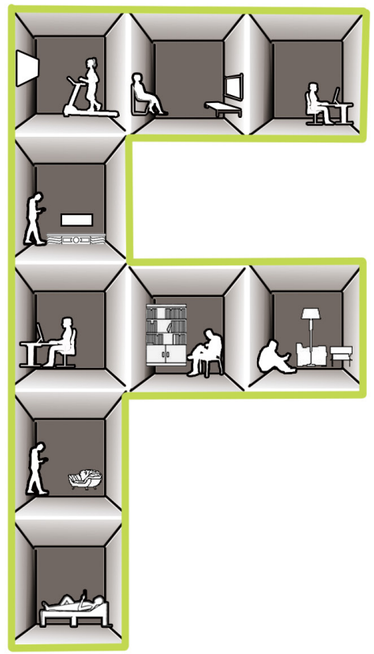
This thesis addresses the issue about disconnections of communication between human to human, and human to environment. It seems like we got connections with other people via various smart devices, meanwhile we are so disconnected with the people and environment where we are currently living. Technologies sometimes hinder the communicating ability of human. Architecture could become a media that contains more messages send to human, helping on the communication between human to human, and human to environment. Buildings in different functions encode different messages to human.

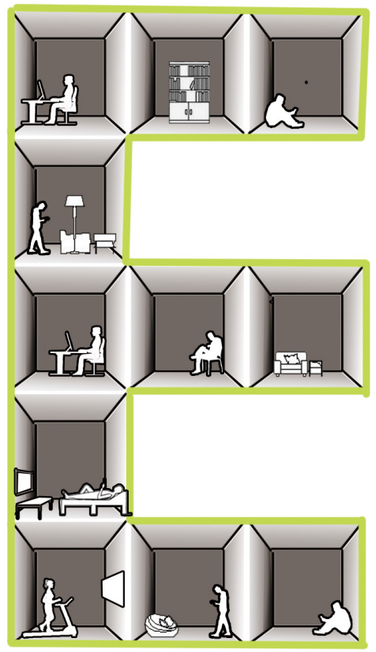
The high-rise micro housing encodes the basic message that is a shelter for the people who living a megalopolis city. In recent decades, there are more and more high-rise micro housings were built in China for the land-shortages and population explosion in the megalopolis cities, such as Beijing, Shanghai and Shenzhen. The perception and Interaction between human to human, and human to environment are constrained by the limited space and cost.

The rapid development in China make the young generation so disconnected to the traditional cultural contexts, and making the elder generation so disconnected to the rapid revolution. Architecture could be the media to interpret historical messages and new messages.

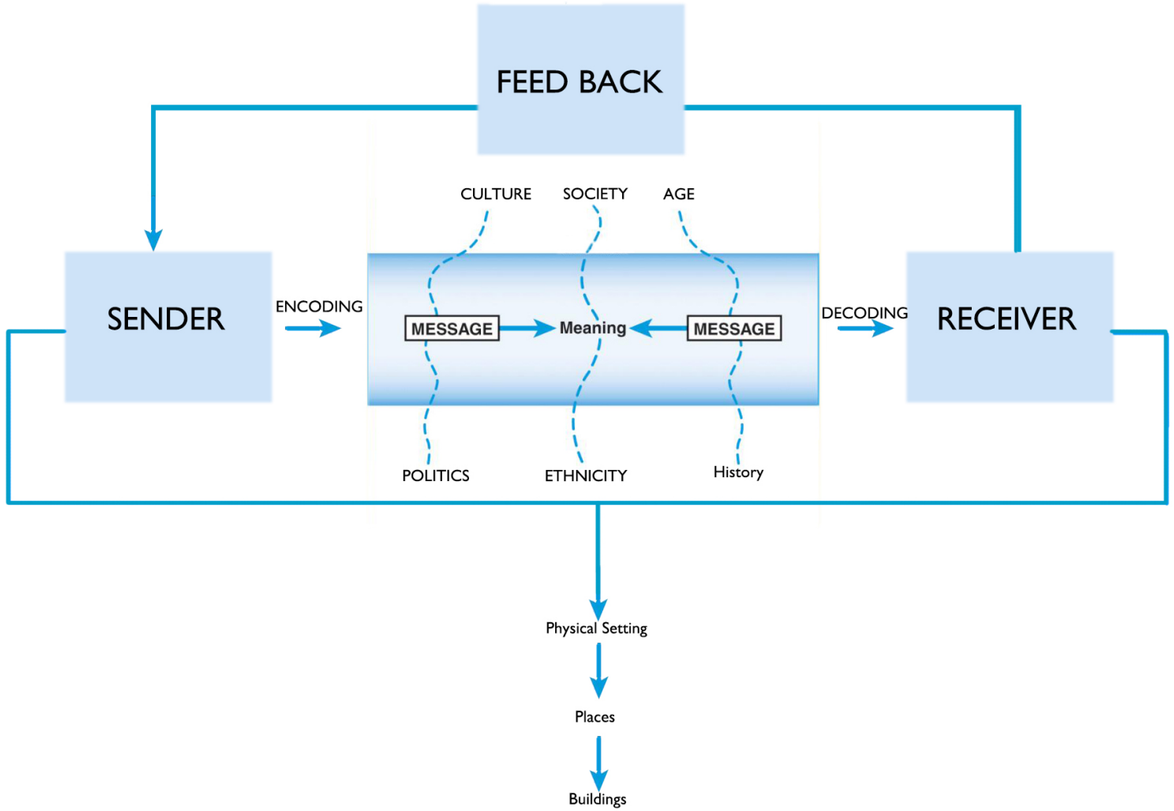
This thesis is searching for the role of architecture in the communication between human to human, and human to the environment. Architecture seems like a setting of communication, but we can make it as a participant. Architecture has its own languages: form, function, space and order, which impact so much on the human emotion, behavior and activities. Study on a specific city with a site, understanding the needs of residents and potential visitors and new settlers. Using architectural language to change people's emotions and behaviors. Different light and temperature would lead the residents have different feedbacks. Using traditional material to tell the historical contexts, creating space for leading people have more face to face communications.





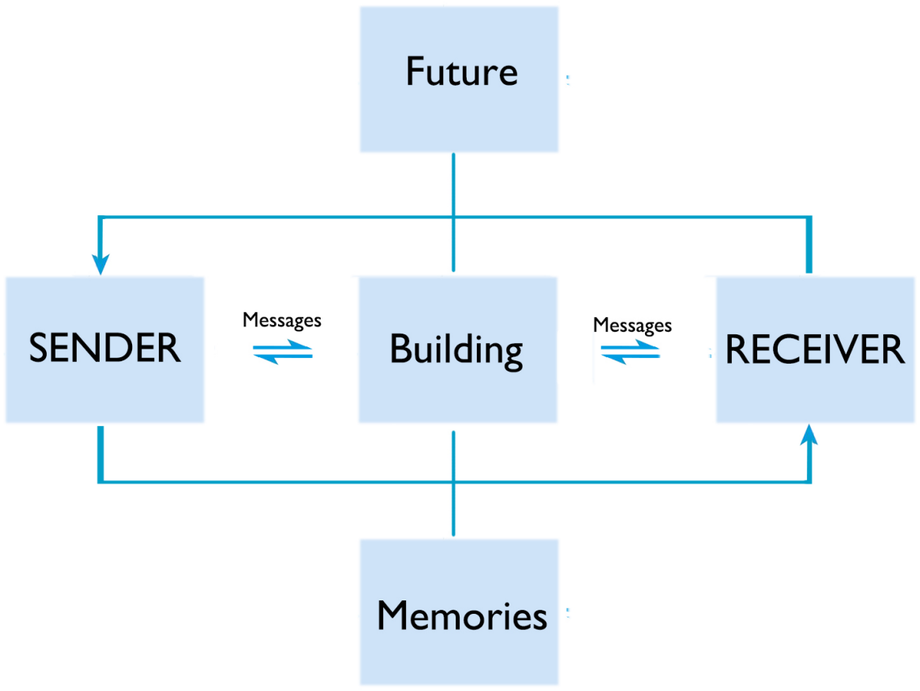


Communication Loop



In the process of human communication, the places become the physical setting of the communication. Buildings is just providing the space for communication. As a physical setting, building would influence on the behavior of human in so many ways. Light, tempurature, space, smell, and material, etc, those factors would influece on

Communication Loop Hypothesis



Making buildings as a media or participant instead of setting of human communiation. Buildings could contains the messages about historical, and cultural contexts, interpreting the local culture, and creating the memories for people, and also anticipating for the future. Creating memories is not mimic or imitation from the existing

Thesis Statement

This thesis address the problem of dissconnection of ageing coummnity and
ageing population in Chengdu China . Our life is constrained by where are we living, and the rapidly growing city physically and mentally hinder our connection with nature and people.
Architecture could be a device that help with the interation, involvement and communication,breaking the gap of youth and elder generation,building the connection with nature, and creating an new type of social structure

Relevance of the Design Hypothesis in Literature: Case Study

"Local Elements"

"The term critical regionalism is **not** intend to denote the **vernacular**, as this was once spontaneously produced by the combined **interaction of climate, culture, myth, and craft.**"(Frampton, 1983)

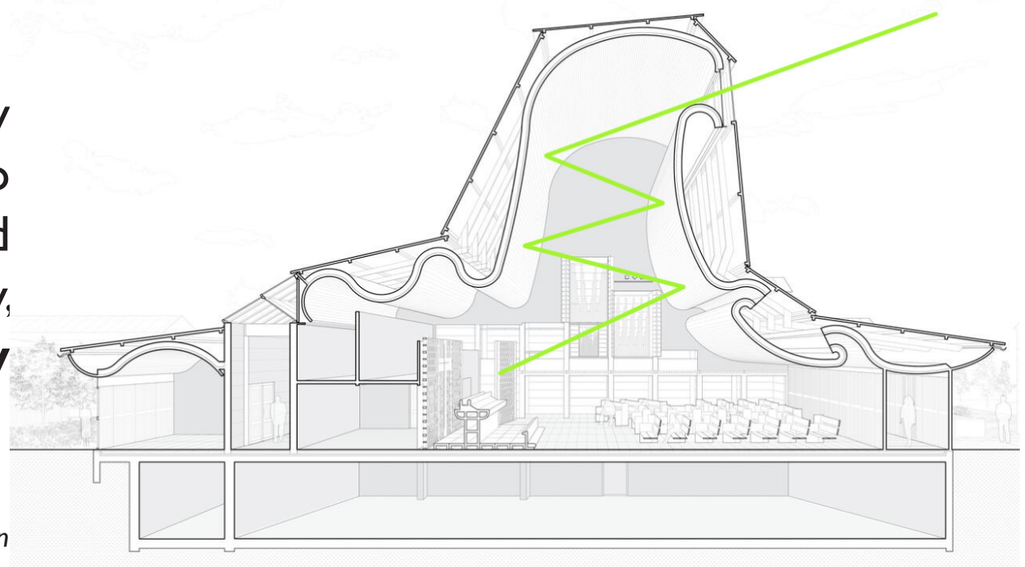
"Critical Regionalism is a **dialectical expression**. It self-consciously seeks to **deconstruct universal modernism** in terms of value and images which are **locally cultivated**, while at the same time adulterating these autochthonous elements with paradigms **drawn from alien sources**."(Frampton, 1983)

"Other important factors are his extra ordinary sensitivity towards **local materials, craft works, and, above all**, to the **subtleties of local light**—his sense for a particular kind of filtration, and penetration. Like Aalto's Jyvaskyla University, or his Saynatsalo City Hall, all of Siza's buildings are **delicately layered and inlaid into their site**." (Frampton, 1983)

Kenneth Frampton

Prospects For A Critical Regionalism

Saynatsalo Town Hall, Alvar Aalto



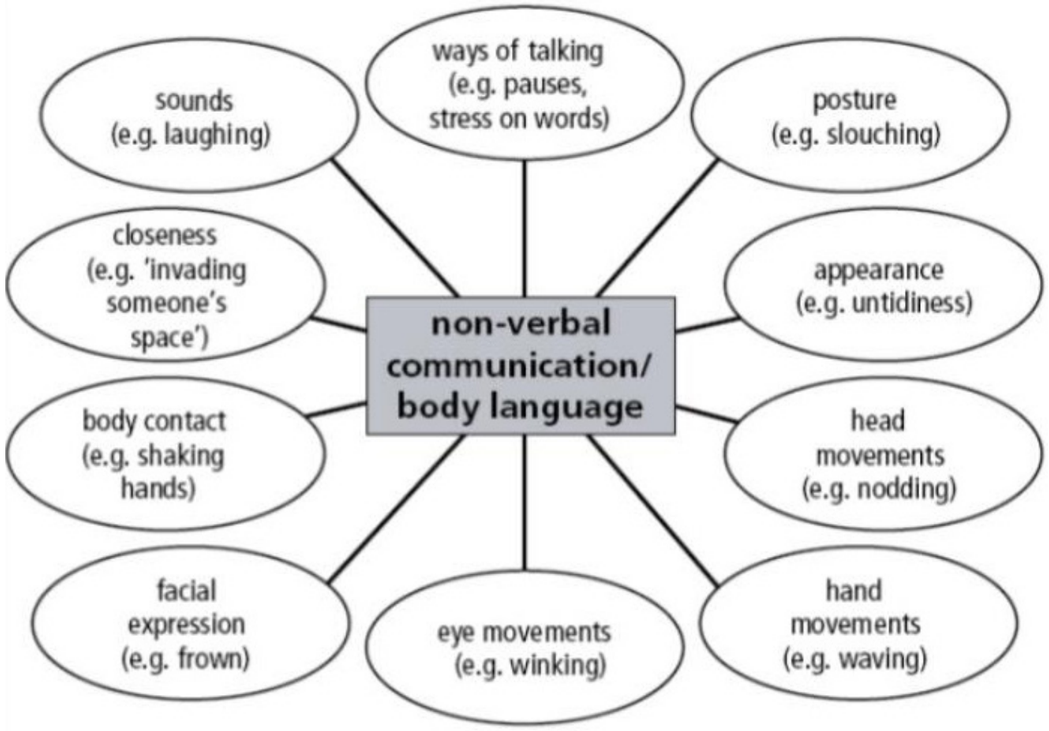
Bagsværd Church, Jorn Utzon

Relevance of the Design Hypothesis in Literature: Case Study

"Communication"

"A **gesture** that signifies the picking up of a glass depends to some extent on the fact that the gesture serves an entirely different purpose than the actual grasping, a congnitive and possibly communicative function that requires the **generation and expression of meaning**. The **relevant feedback** from an interlocutor will not be proprioceptive but, rather, congnitive and linguistic. Thus the body materializes language by means of movement that is already expressive. Insofar as it involves an open and indefinite power of giving significance, language transforms and transcends the natural power of the boday without leaving the body behind" (Gomez, 2016)

"Just as in literature there is the paradox created by the primacy of **poetic language** as speech that only subsequently **becomes ordinary**, a similar situation arises in architecture." (Gomez, 2016)



Alberto Perez-Gomez
Attunement

Relevance of the Design Hypothesis in Literature: Case Study

"Why Critical Regionalism"

"A critical **reevaluation of local environment and culture**, **employing modernist strategies**. Critical Reginalism's acknowledgement of local environments has particular revevance as the world faces a growing ecological crisis." (Tzonis, Lefaivre, 1986)

"Nor can contemporary buildings possess as buildings and for John Ruskin, a mid-nineteenth century Romantic Regionalist, that **strong quality of sympathy, affinity, memory, and familiarity a deep sense of voicefulness that convinceingly speaks of past as if it were one with the present, telling us all we need to know of national feeling or achievement."** (Tzonis, Lefaivre, 1986)

"An essential characteristic of critical regionalist buiding is that they are critical in two senses then. In addition to **providing constrasting images** to the anomic, atopic, **misanthropic ways of a large number of current mainstream** projects constructed world wide, they raise questions in the mid of the viewer about the legitimacy of the very regionalist tradition to which they belong."
(Tzonis, Lefaivre, 1986)

Alexander Tzonis and Liane Lefaivre

Why Critical Regionalism

Relevance of the Design Hypothesis in Literature: Case Study

The Communication Between Architecture and Local Elements

"Speed of Shadow"

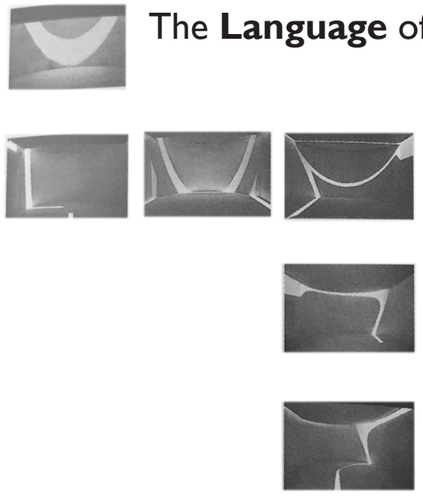
"Language becomes a form of light while light becomes labguage.Face to face with light in a volume, luminous space becomes dreamlike. A moment of intense sensibility ignites the intuition. Sideways, forward, backward... **the empty words of light are spoken in utter silence. "**(Holl, 2000)

"As light passes through small holes it spreads out, frays, and bends. **The resulting shadows do not necessarily look like silhouettes of the objects that cast them**. Light bends in ways that yield shadows with bright bands, dark bands, or no sharp edges."
(Holl, 2000)

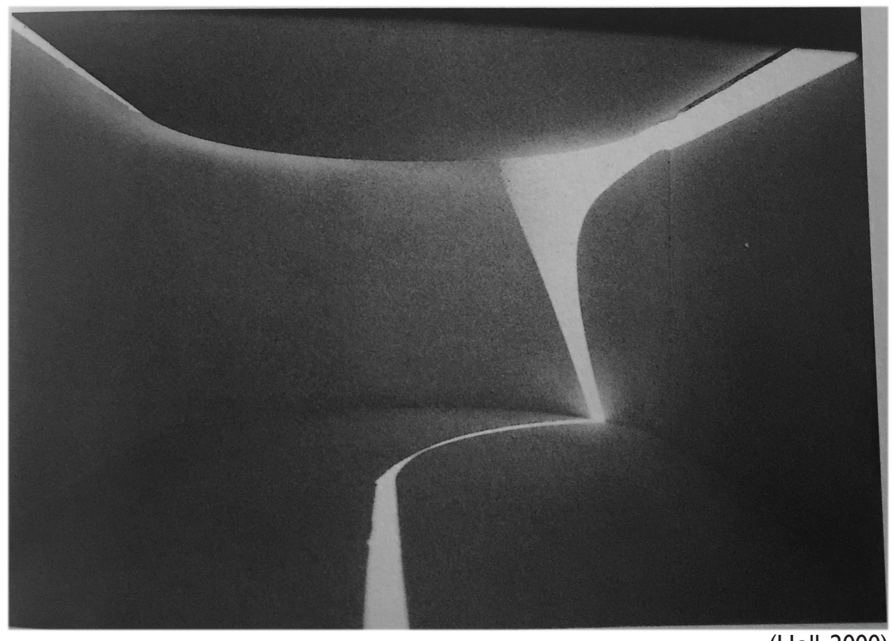
"In fact, light should be modeled full size as it falls off a wall at the square of it's distance to the source. The gallaries are organized in interlocking light sections. Between each section is an interval, which is the equivalence of silence in music and which forms **a reversible sequence that can can be "played" by bodily movenment."** (Holl, 2000)

Steven Holl

Parallax



The **Language** of Light



(Holl, 2000)

Relevance of the Precedent Analysis to the Proposed Project

Raffles City Chengdu, Steven Holl

Type and Context

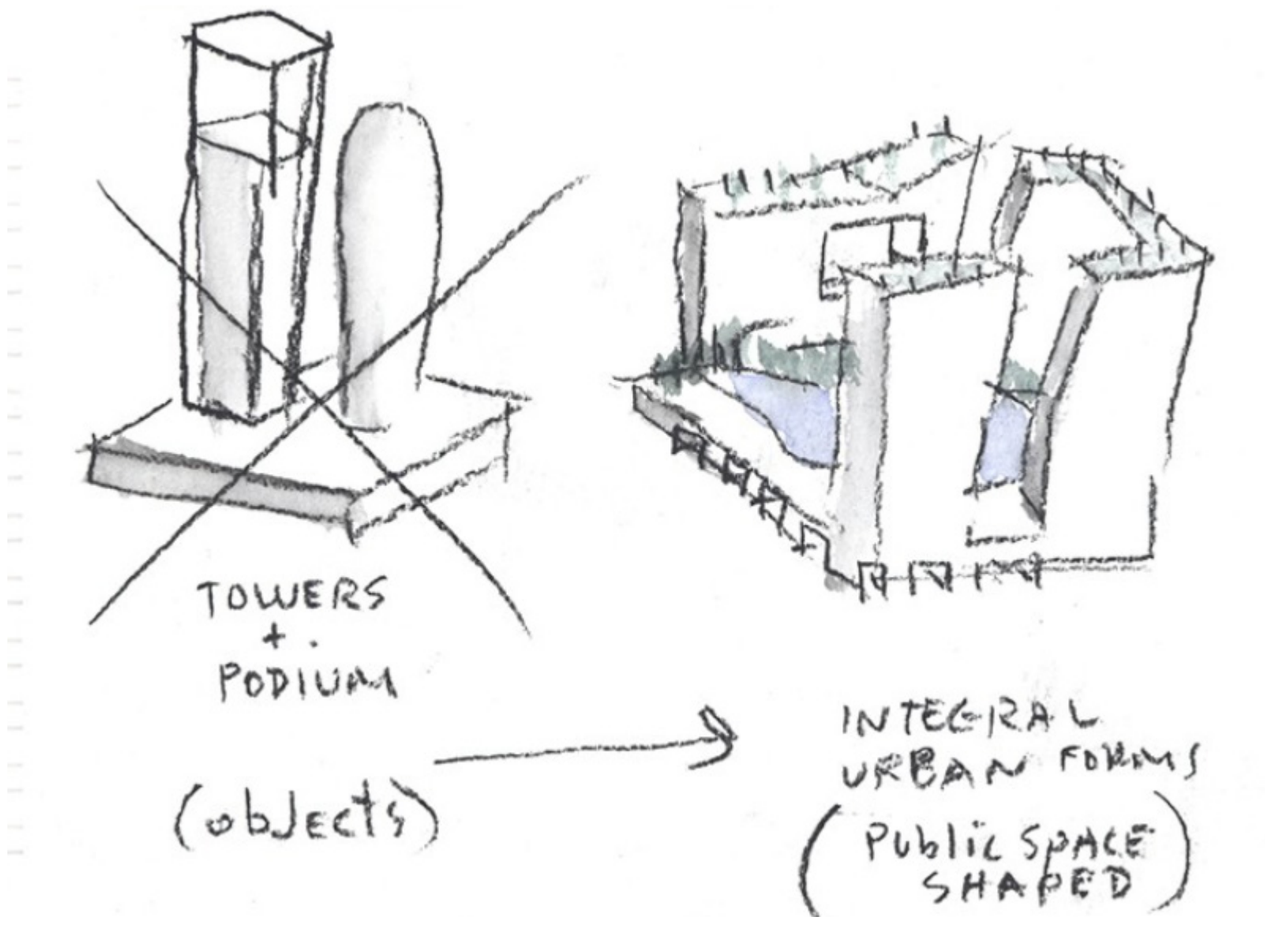
Program: Five towers with offices, serviced apartment, retail, a hotel, cafes, and resturants, and large urban public plaza.

Size: 3.336.812 sq ft

Status: Complete

Concept: "Creating a metropolitian public space instead of obeject-icon skyscrapers, this three million sf project takes its shape from its distribution of natural light"

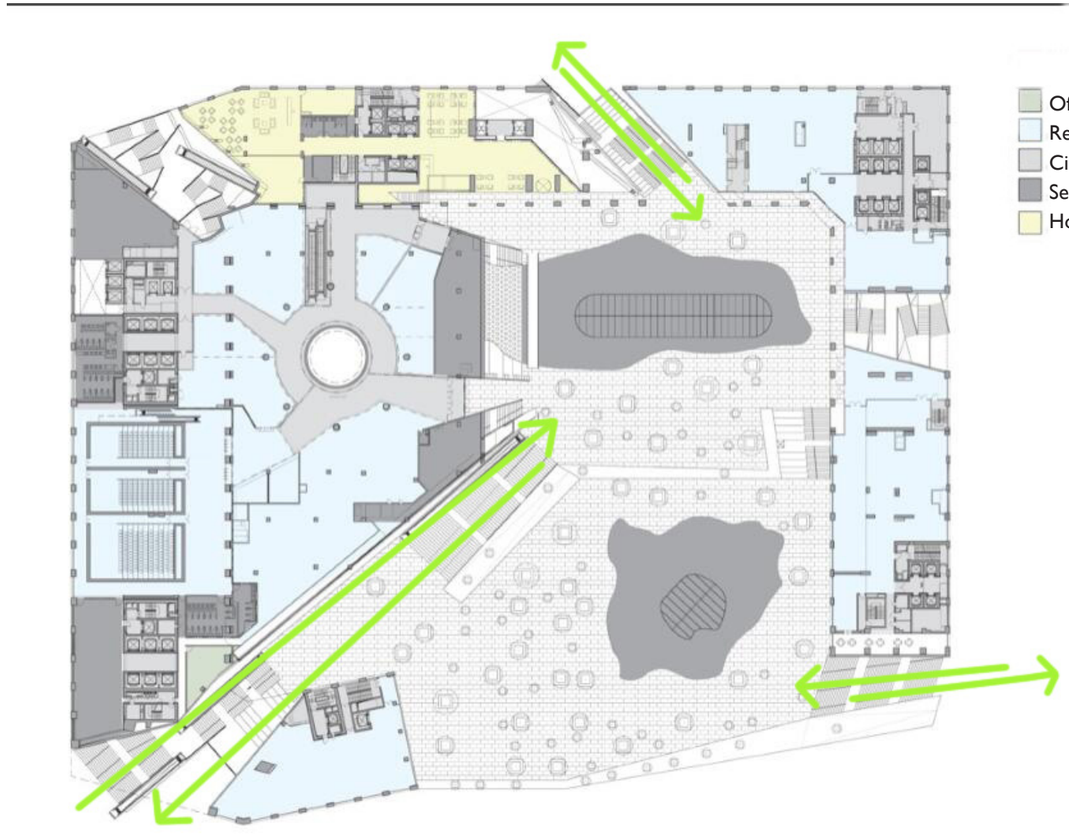
Object vs. Urban Sharing Space Public vs. Private

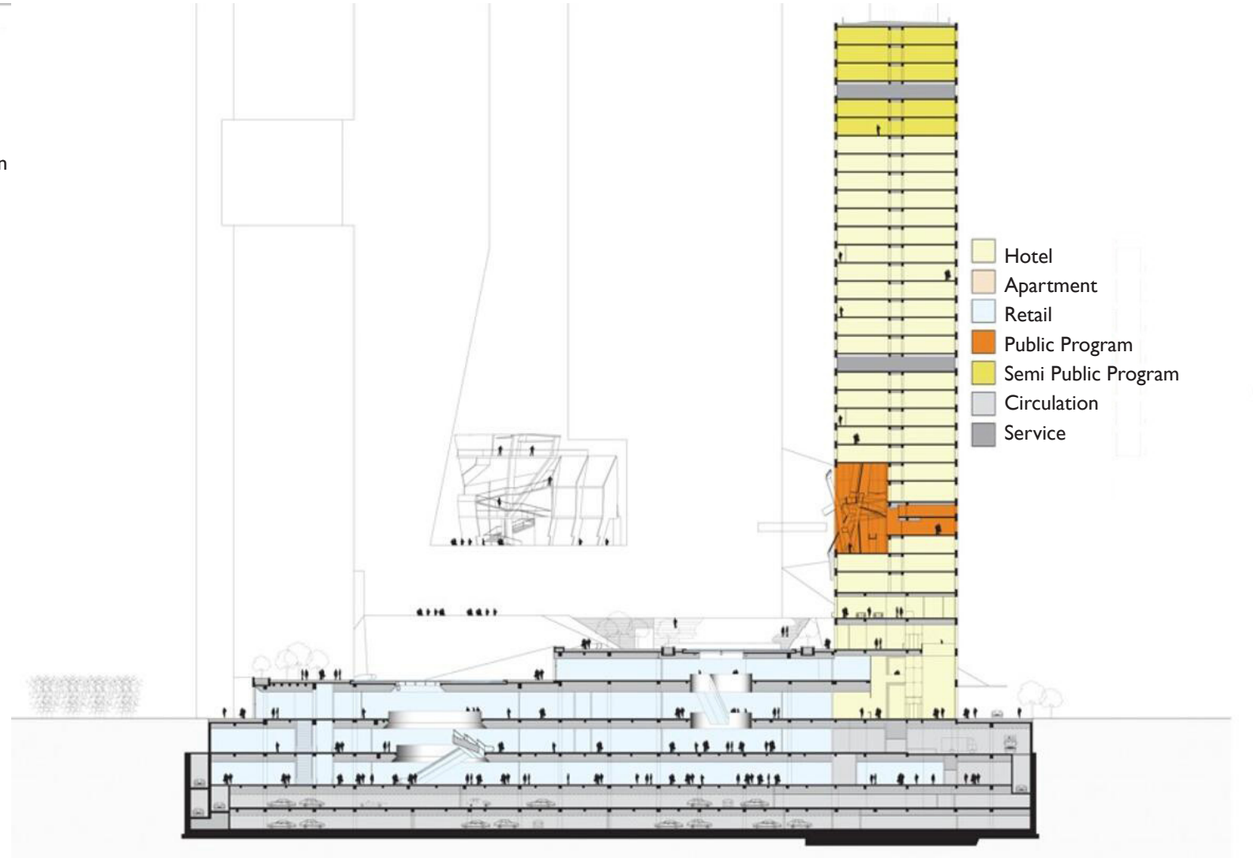


Urban Public Building should be more open to the public, which means more

Relevance of the Precedent Analysis to the Proposed Project

Raffles City Chengdu, Steven Holl

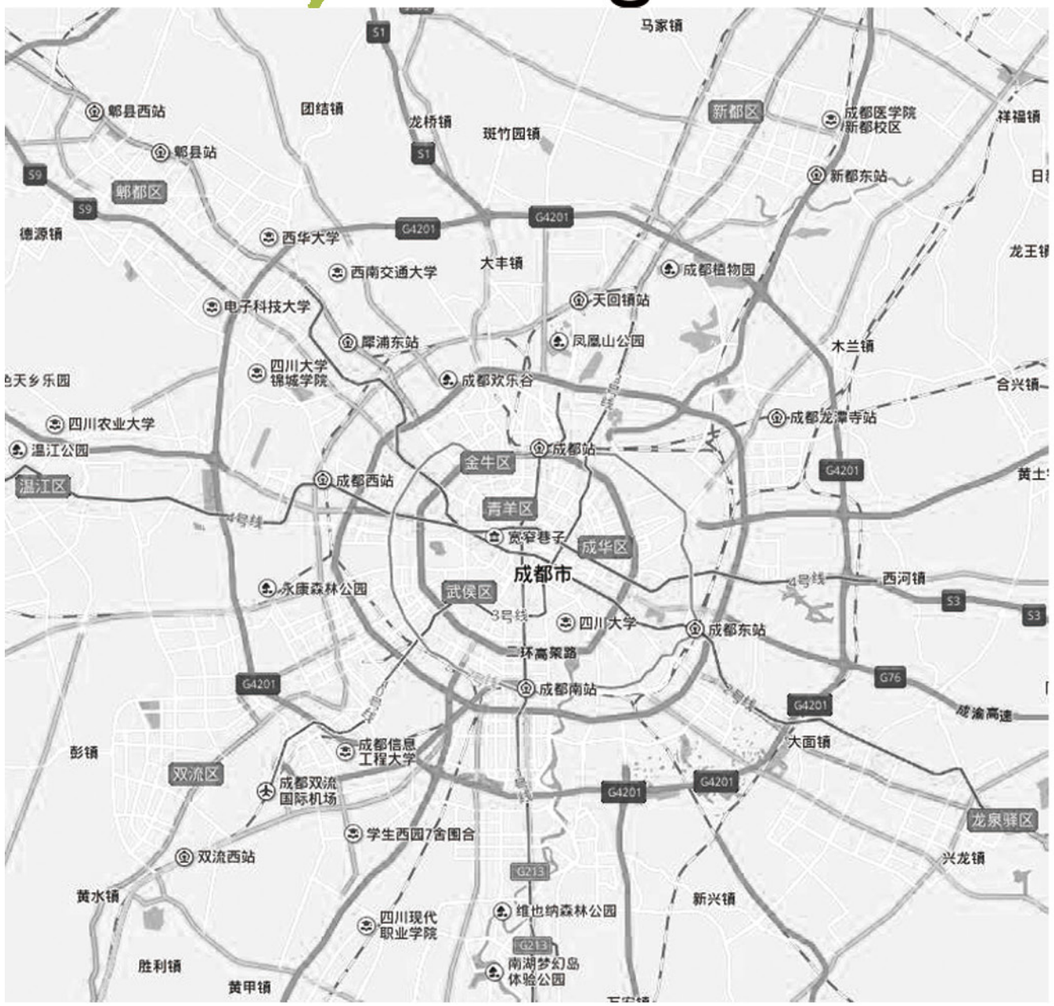




Design Analysis

SITE

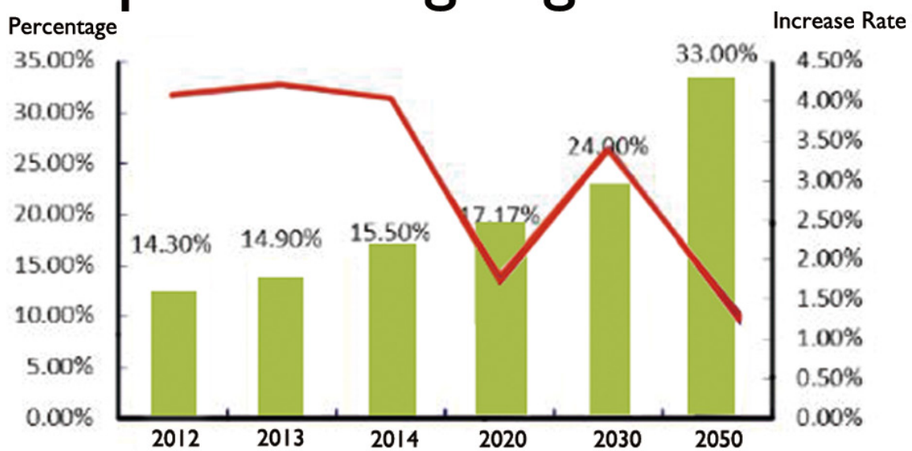
The City: Chengdu, China



Capital City of **Szechuan Province**
Population: **16 million** by 2016
Area: **5551** square miles
Density: **2883 people/sq miles**
5503 people/sq miles(Downtnow)
Tokyo: 4600 people/sq miles
Atlanta: 630 people/sq miles

The Problem: Disconnected Community and Aging Population

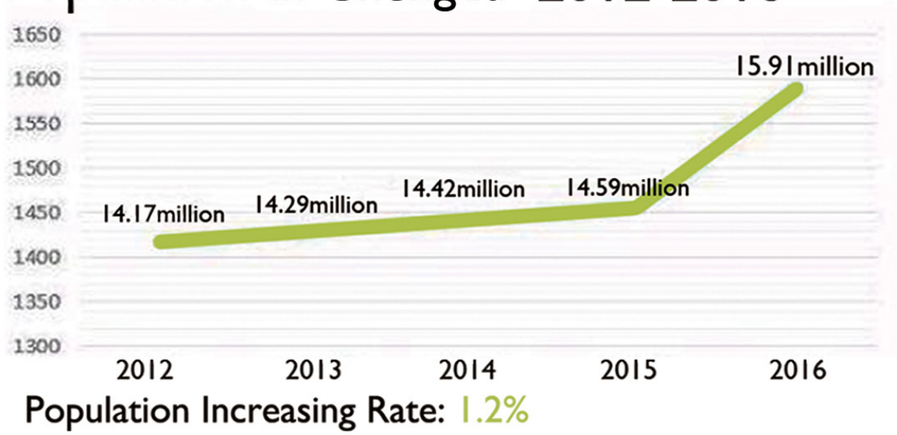
Population Ageing in China



People over 60yrs old percentage

2012-2050

Population in Chengdu 2012-2016

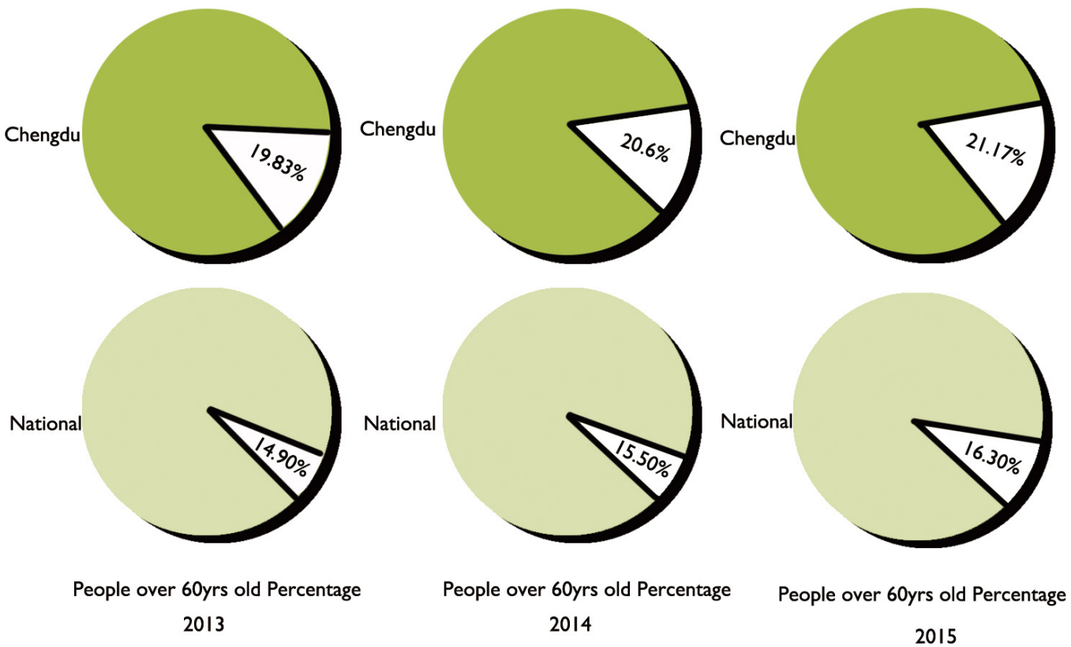


Population Increasing Rate: 1.2%

"China is ageing more rapidly than almost any country in recent history. China's dependency ratio for retirees could rise as high as 44% by 2050. The dependency ratio compares the difference between those not in the labor force with those who are working, or can work full-time. It is a yardstick geared to measure the pressure on taxable income going to support entitlement programs like Social Security and Medicaid in the U.S. for example. China's aging population is as big a worry as its debt bomb, if not more so, because China can make its debt disappear at the stroke of a pen, but the government cannot make millions of elderly and retirees disappear".

The Problem: Disconnected Community and Aging Population

Population Ageing in Chengdu, China

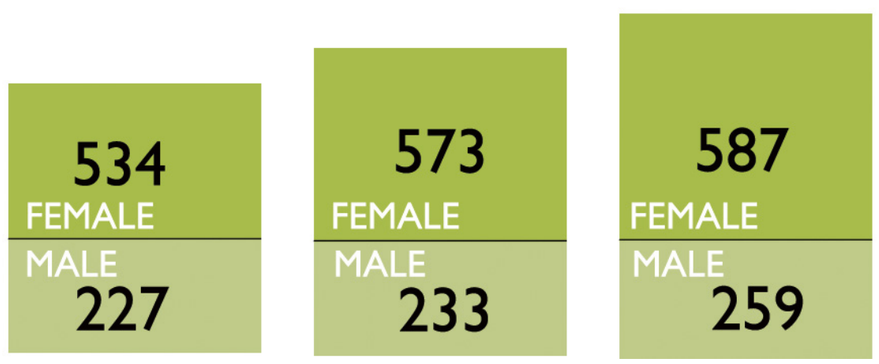


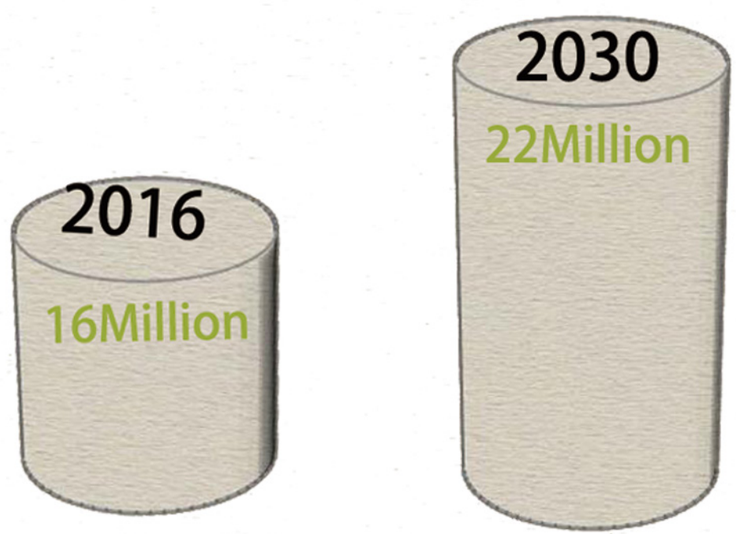
People over 60yrs old Percentage 2013

People over 60yrs old Percentage 2014

People over 60yrs old Percentage 2015

People Over 100yrs old in Chengdu





Population Comparing 2016 2030

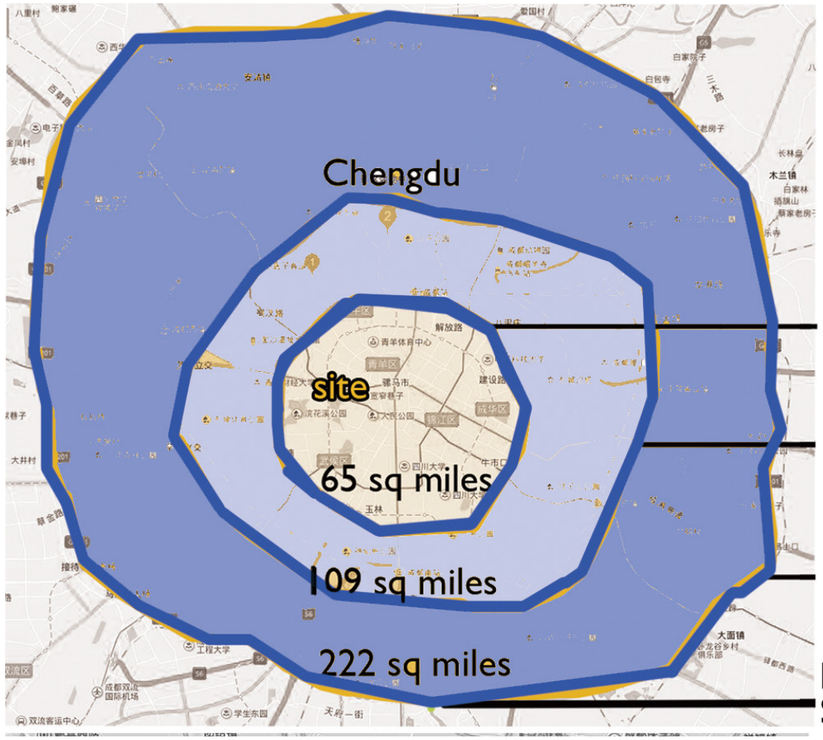
Expansion in Chengdu

Satellite View

2000

2016

Expansion in Chengdu

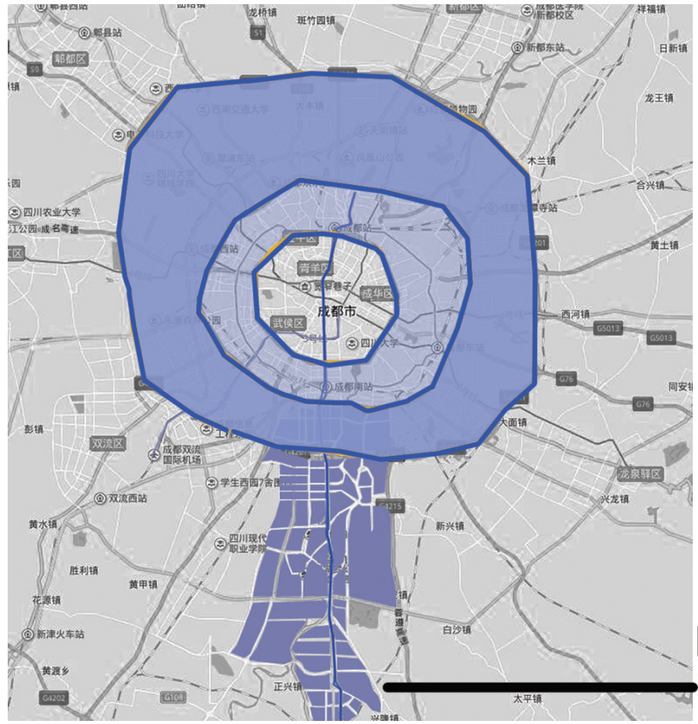


1996 First Road Loop

2008 Second Road Loop

2017 Third Road Loop

Future
Southward Expansion

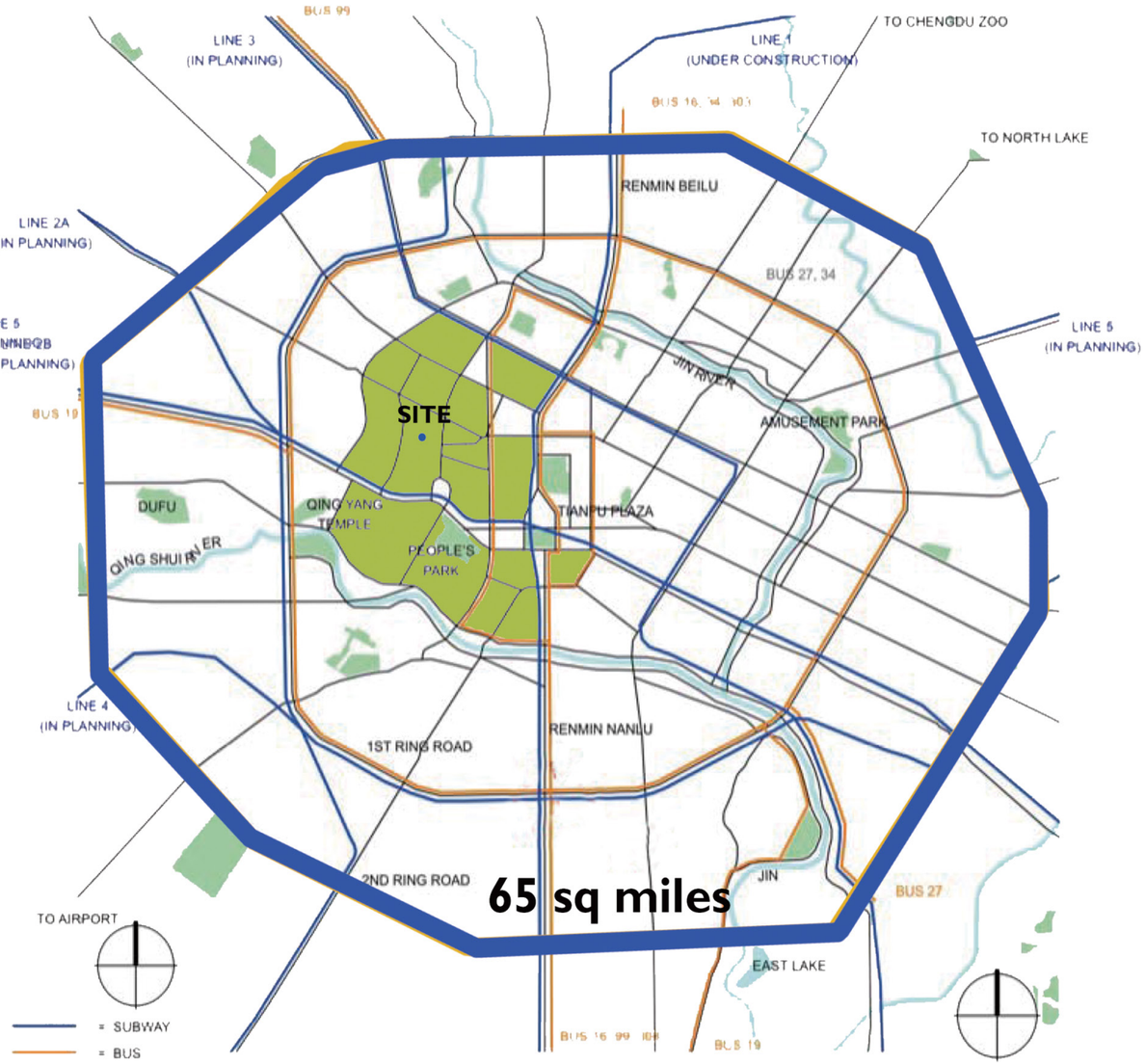


Future
Southward Expansion

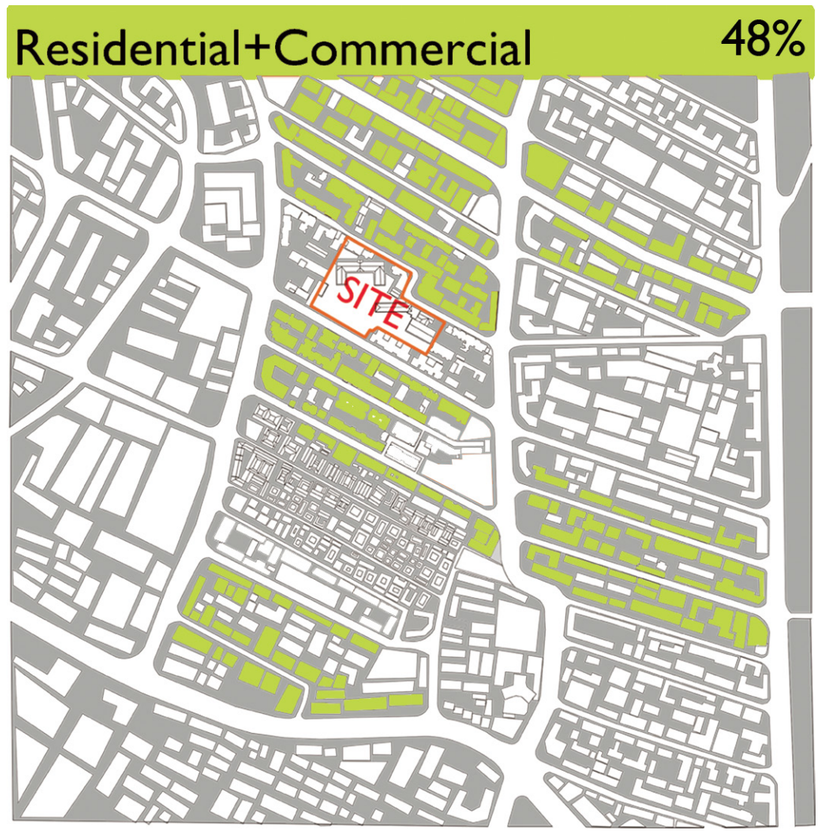
First road loop

First road loop

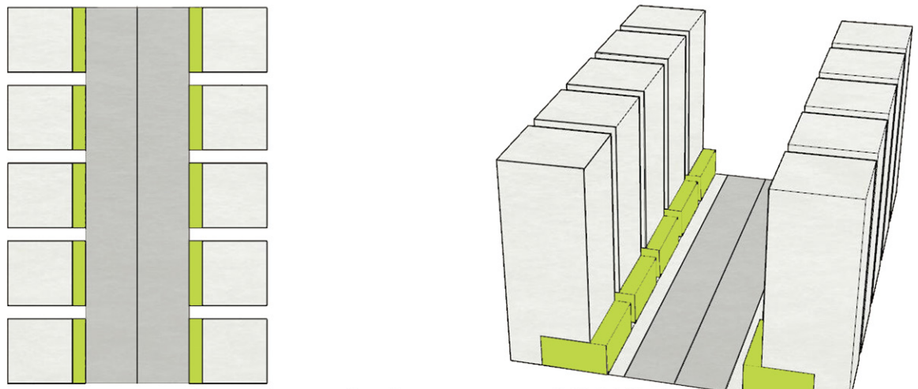
Old Community Zone in Chengdu



Zoning



Local Building Typology



Residential+Commerical(1970s)

Zoning

Residential 36%

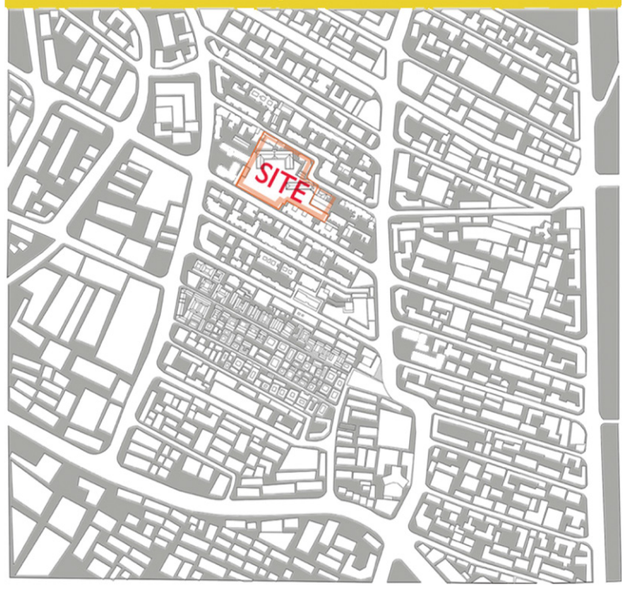
Educational 15%

Historical Preservation 15%

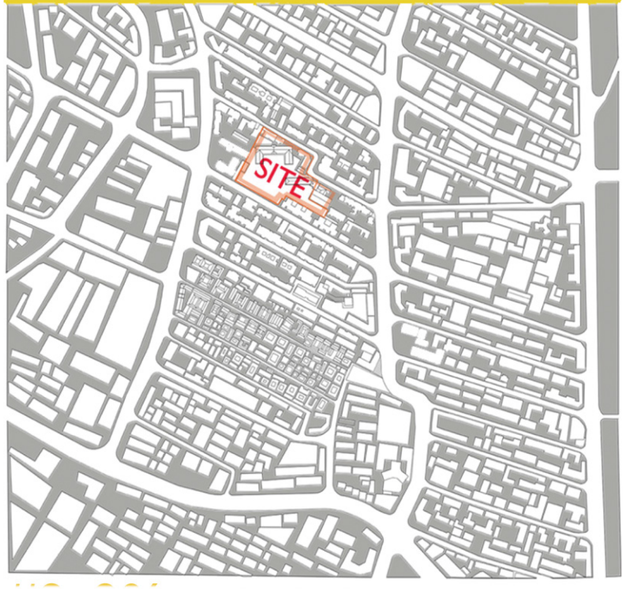
Hotel 10%

Commercial 4%

Public Green Space 0%

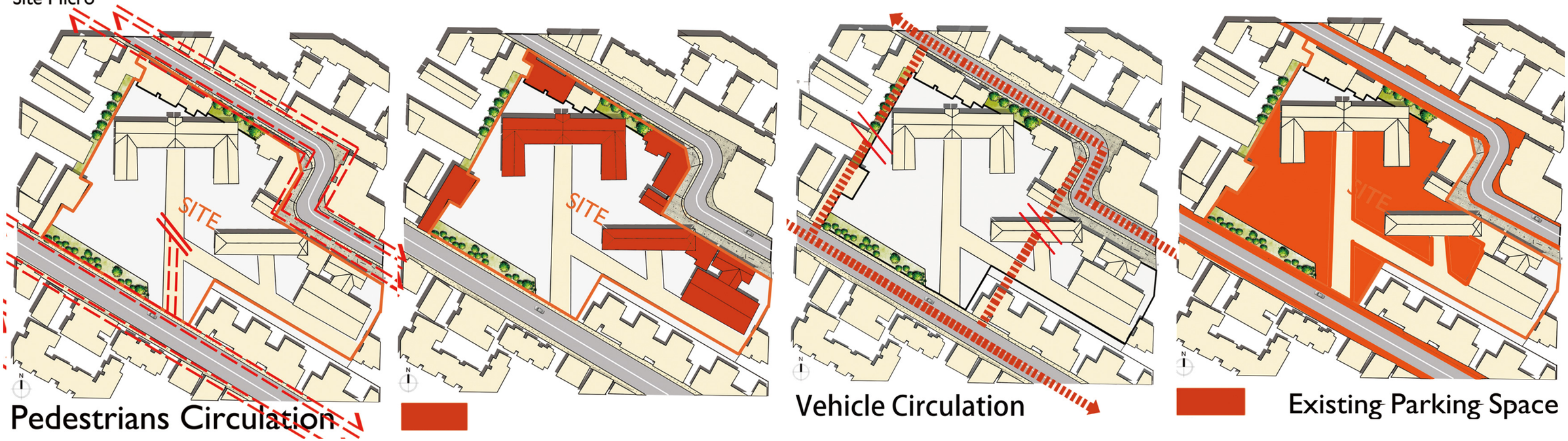


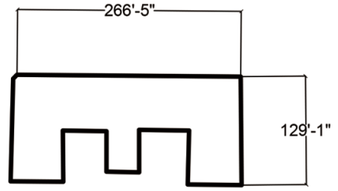
Public Gathering Space 0%



Site Micro

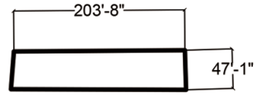
Site Micro





30,000sf

Hotel, currently abandoned



9,000sf

Hotel, currently abandoned

12,000sf

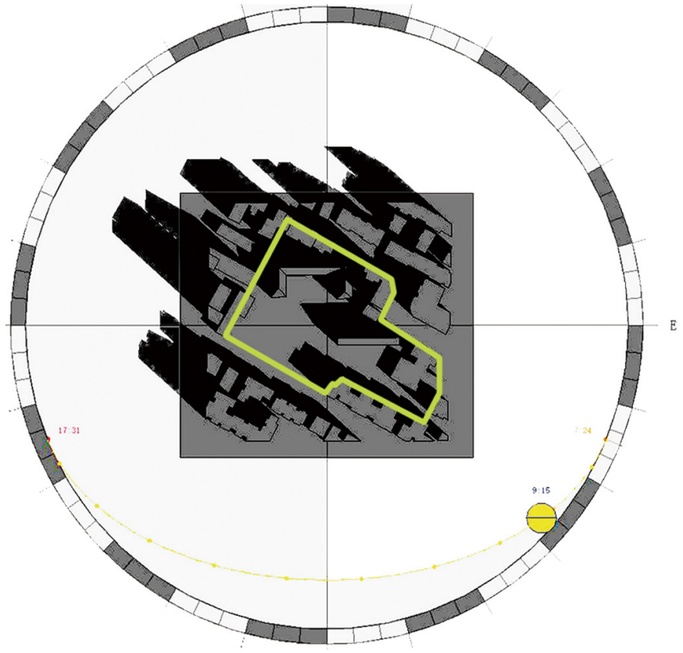
Theater of the Hotel
until 1990, currently abandoned
1stories

9,100sf

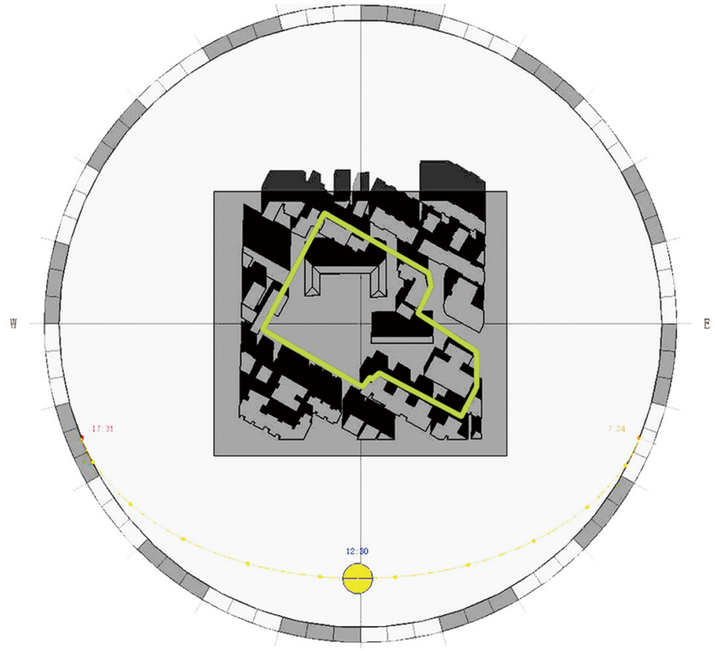
Apartments for employee of the hotel
7stories

2,050sf

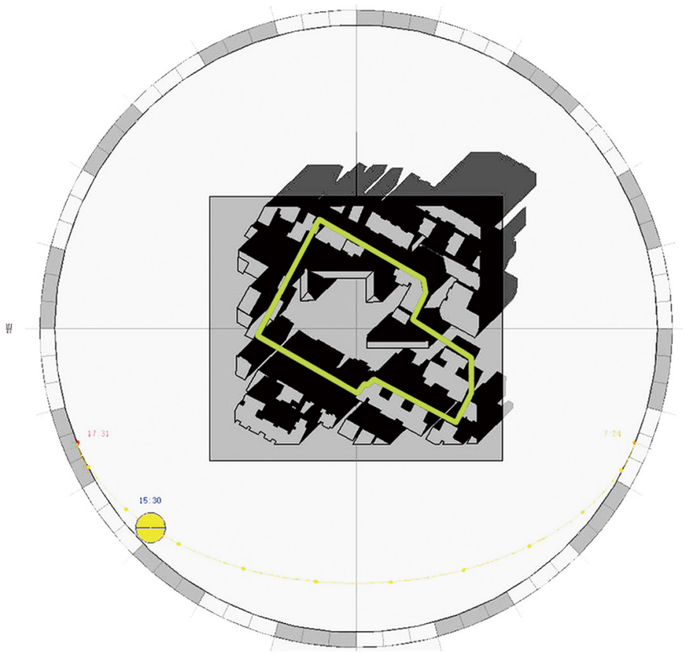
Unknow, 3stories



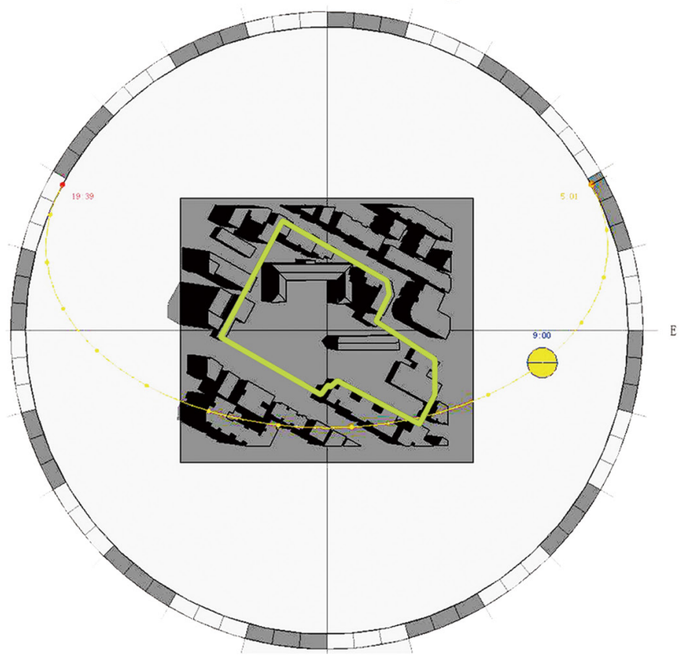
Winter Morning 9:15 am



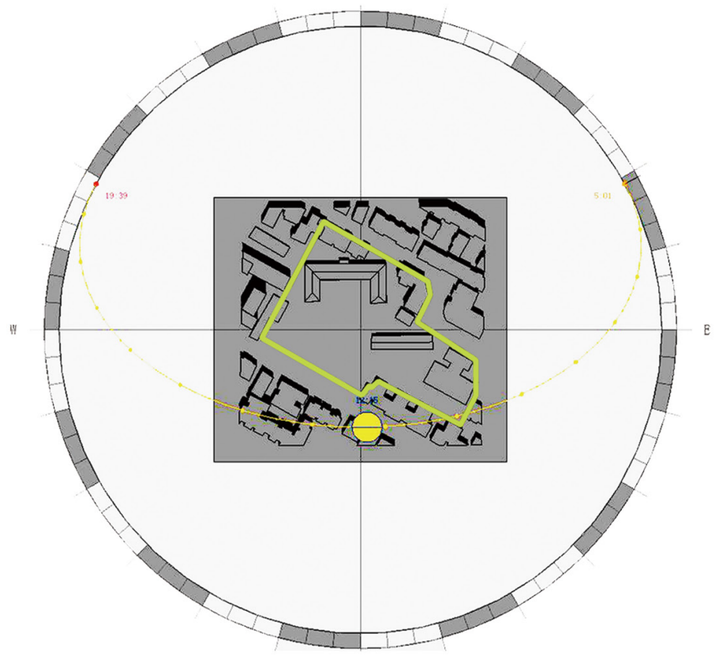
Winter Noon 12: 30am



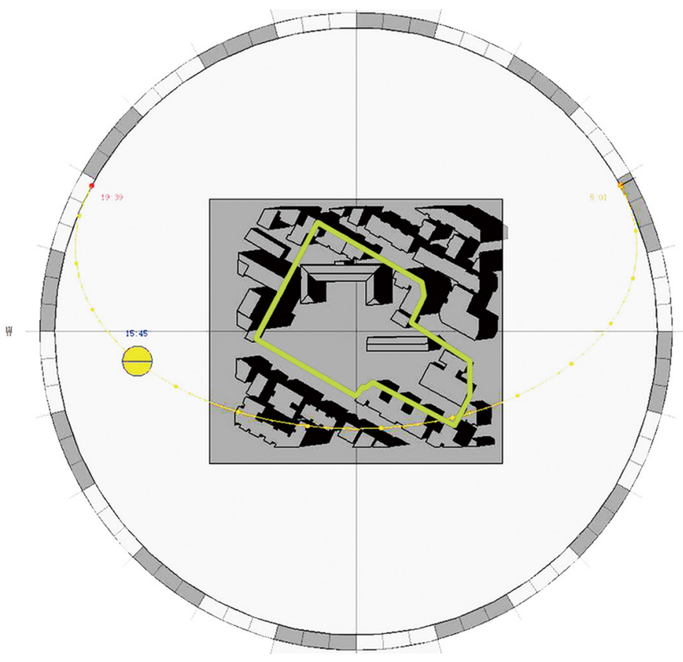
Winter Afternoon 3:30pm



Summer Morning 9:00am



Summer Noon 12:15am



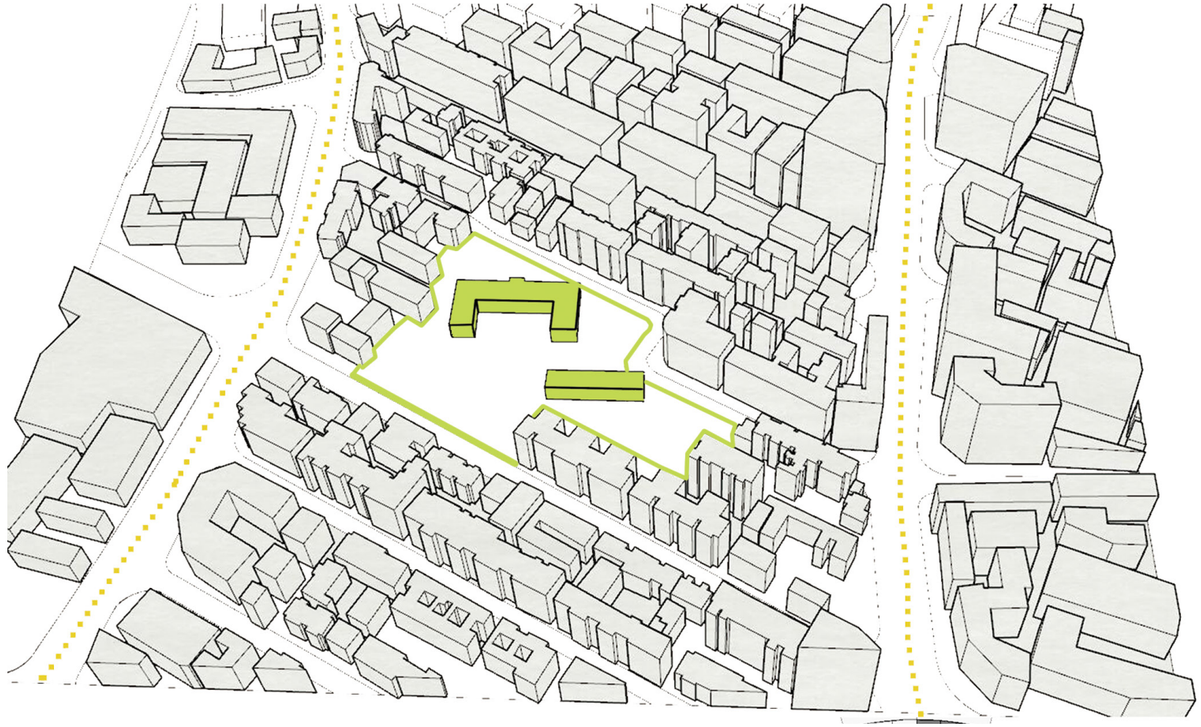
Summer Afternoon 3: 45pm

Traffic

Primary Street

Street

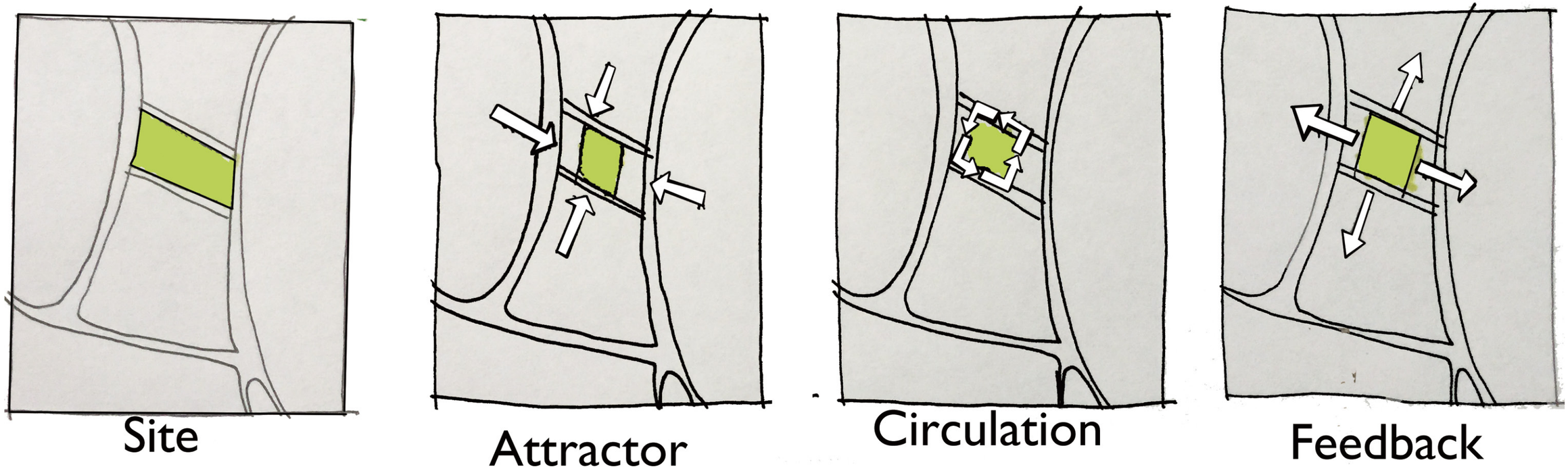
Walkway



Design Process

Mass&Concept

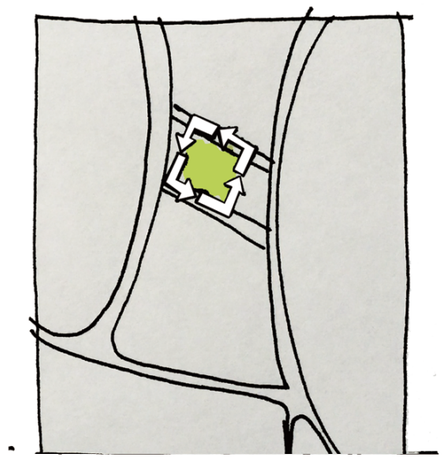
Concept



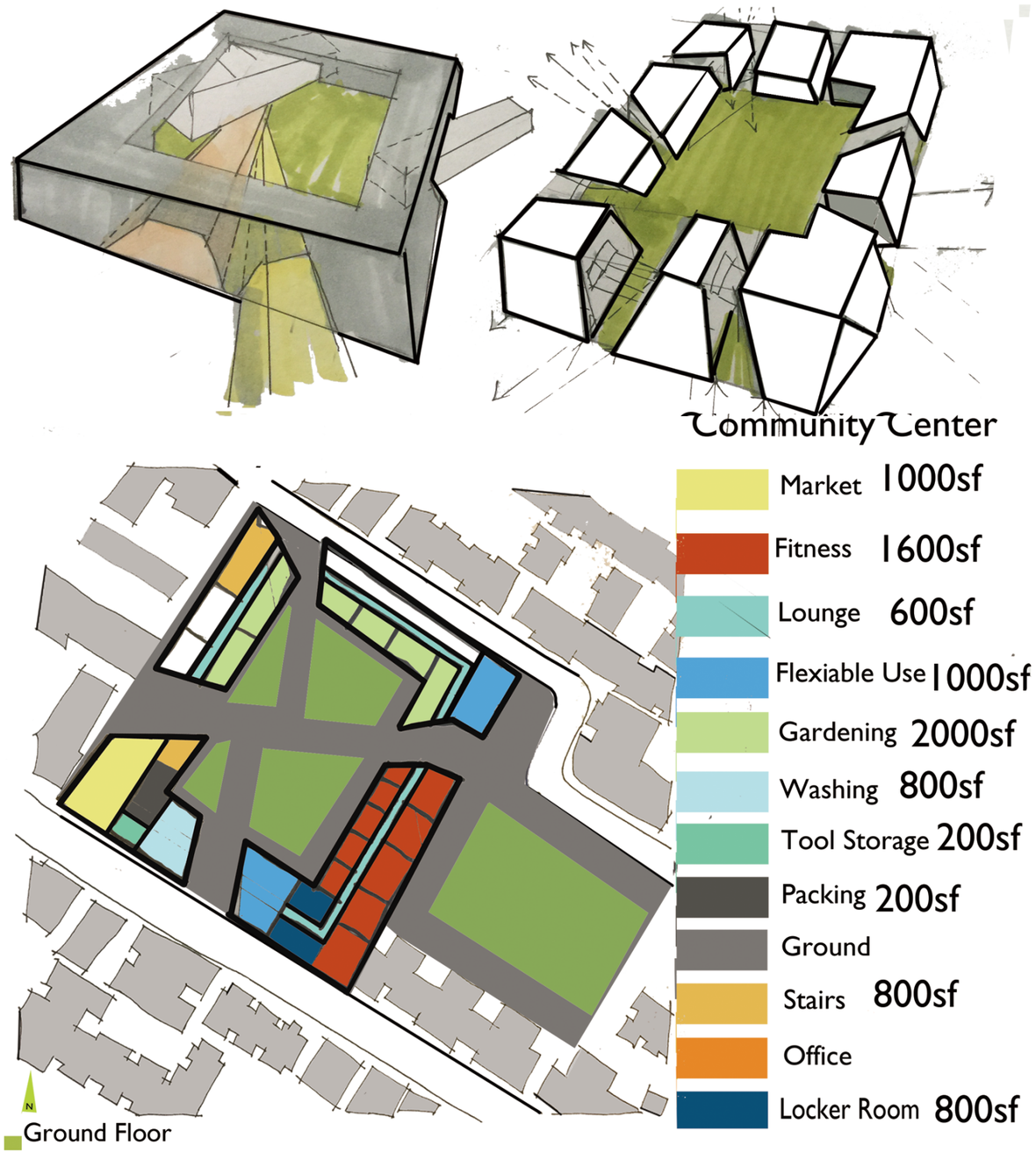
Concept

Attractor for the community, gathering people ,
Creating circulation on siteconnecting the two streets.Slicing the building by the potential path of pedestrain,
providing walking experience through the site.

Scheme I

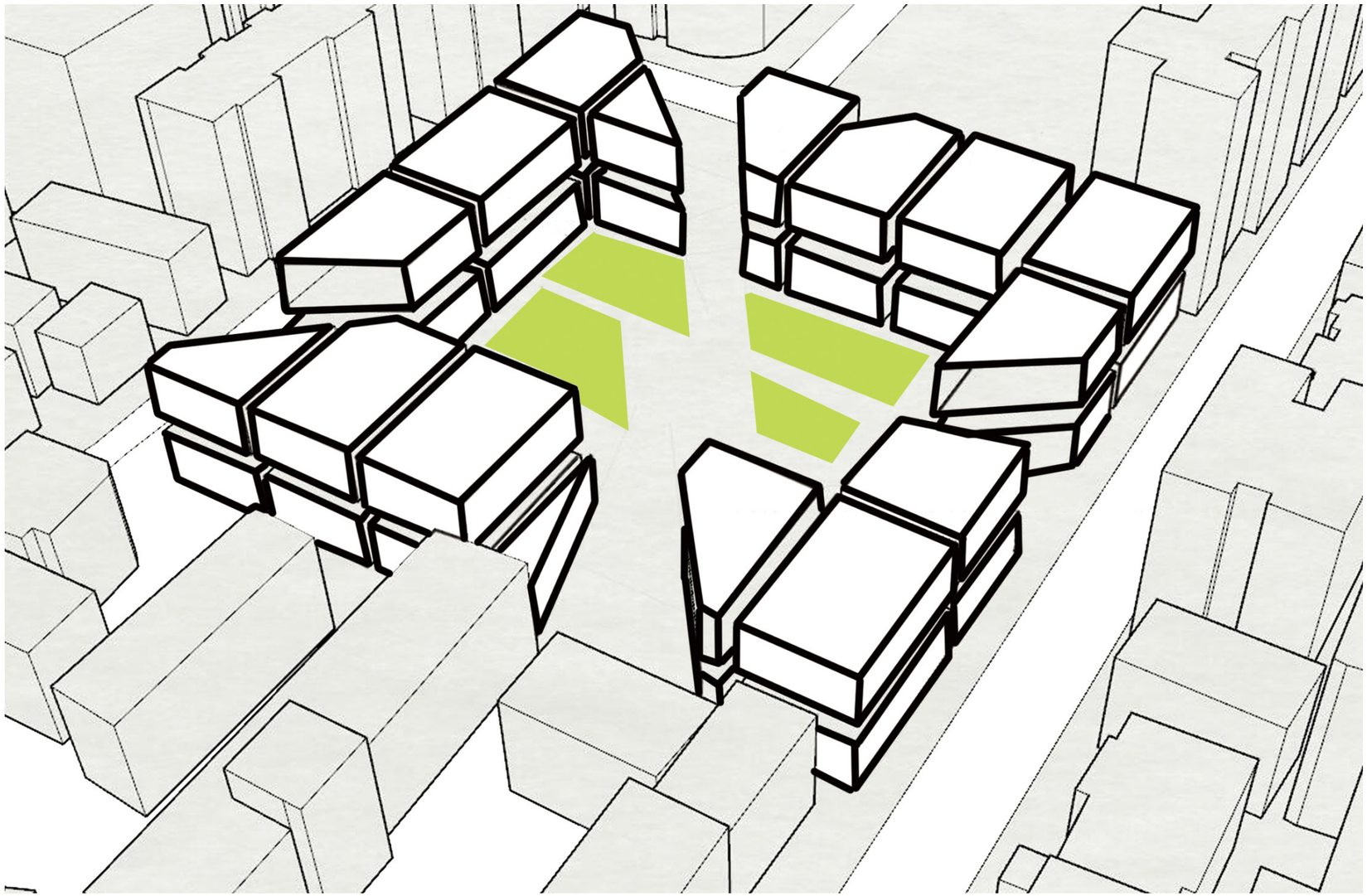


Creating circulation on site
Making it more accesiable
Keep the continuity of existing buildings

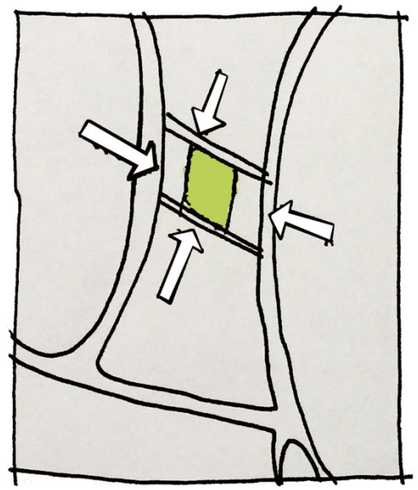


Scheme I Massing

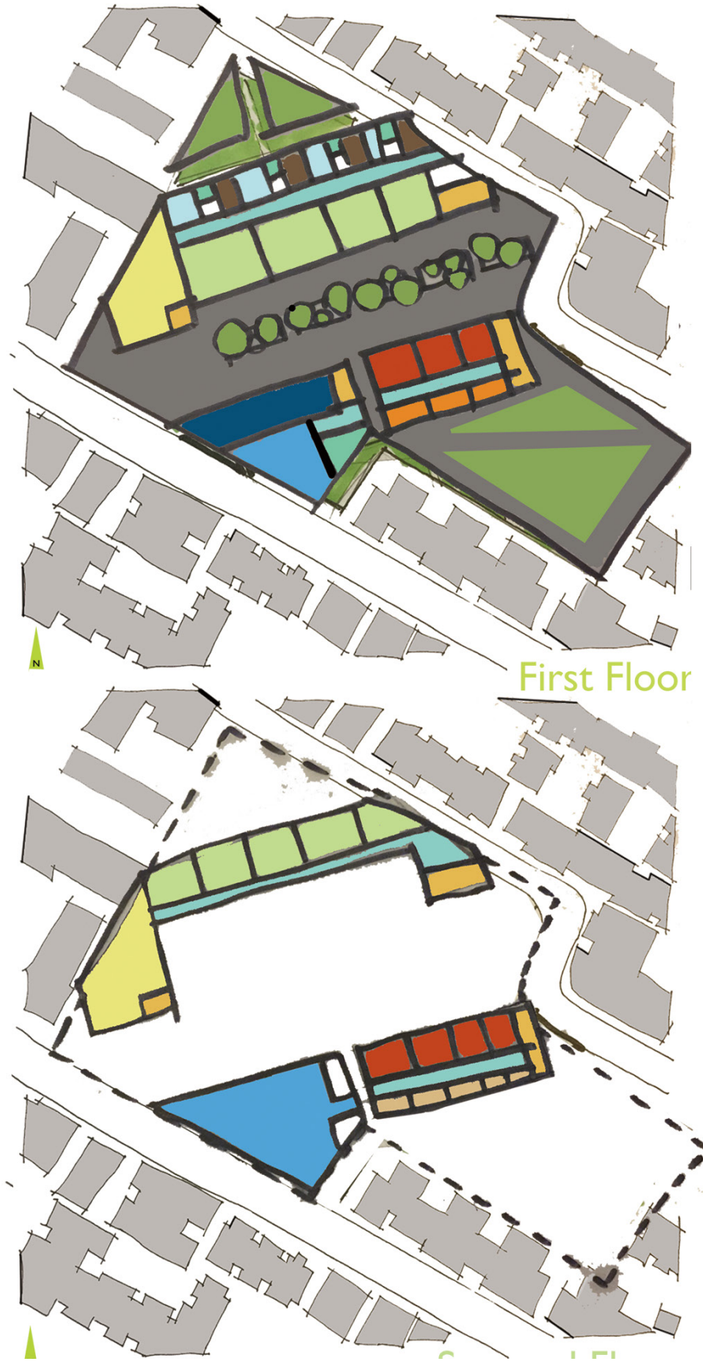
Project: Senior Community Center
2.4 Acrecs Buildings
3.6 Acres Green Space



Scheme II Concept



Creating separate green space for different use(garden, gathering, fitness facility)



Community Center

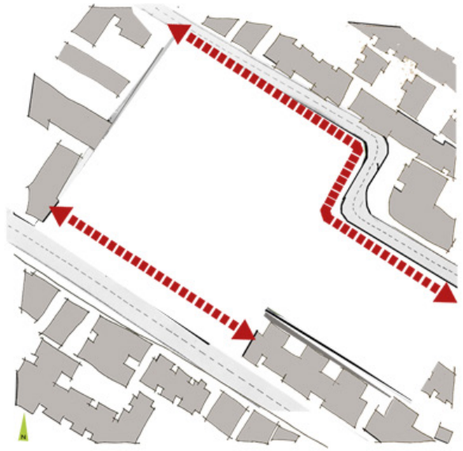
- Market 1500sf
- Fitness Room 2500sf
- Lounge 1000sf
- Flexiable Usel 500sf
- Gardening 2000sf
- Washing 800sf
- Tool Storage 600sf
- Packing 600sf
- Ground
- Stairs 800sf
- Office 600sf
- Locker Room 1000sf

Scheme II Massing

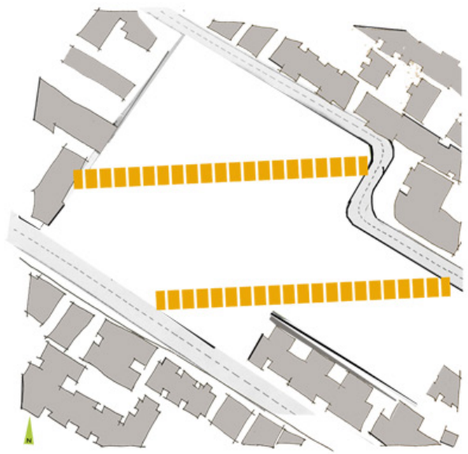
Project: Senior Community Center
2.4 Acrecs Buildings
3.6 Acres Green Space

Scheme III Concept

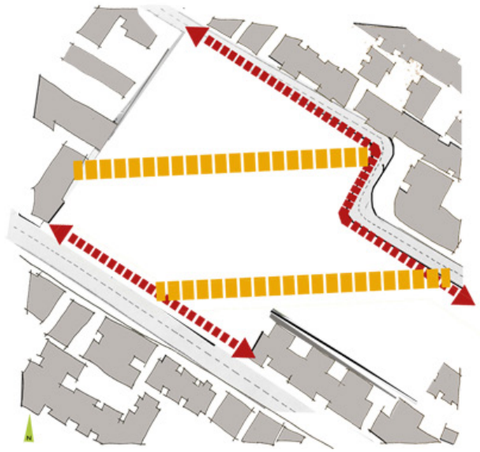
Concept Massing



Scheme 1

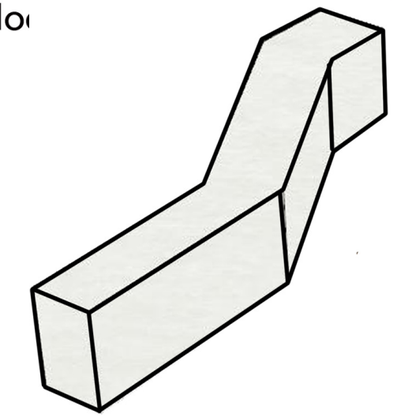


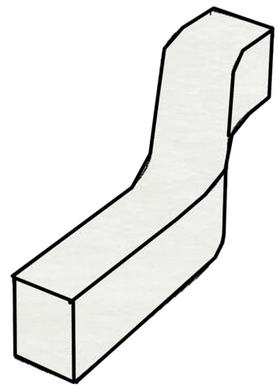
Scheme 2



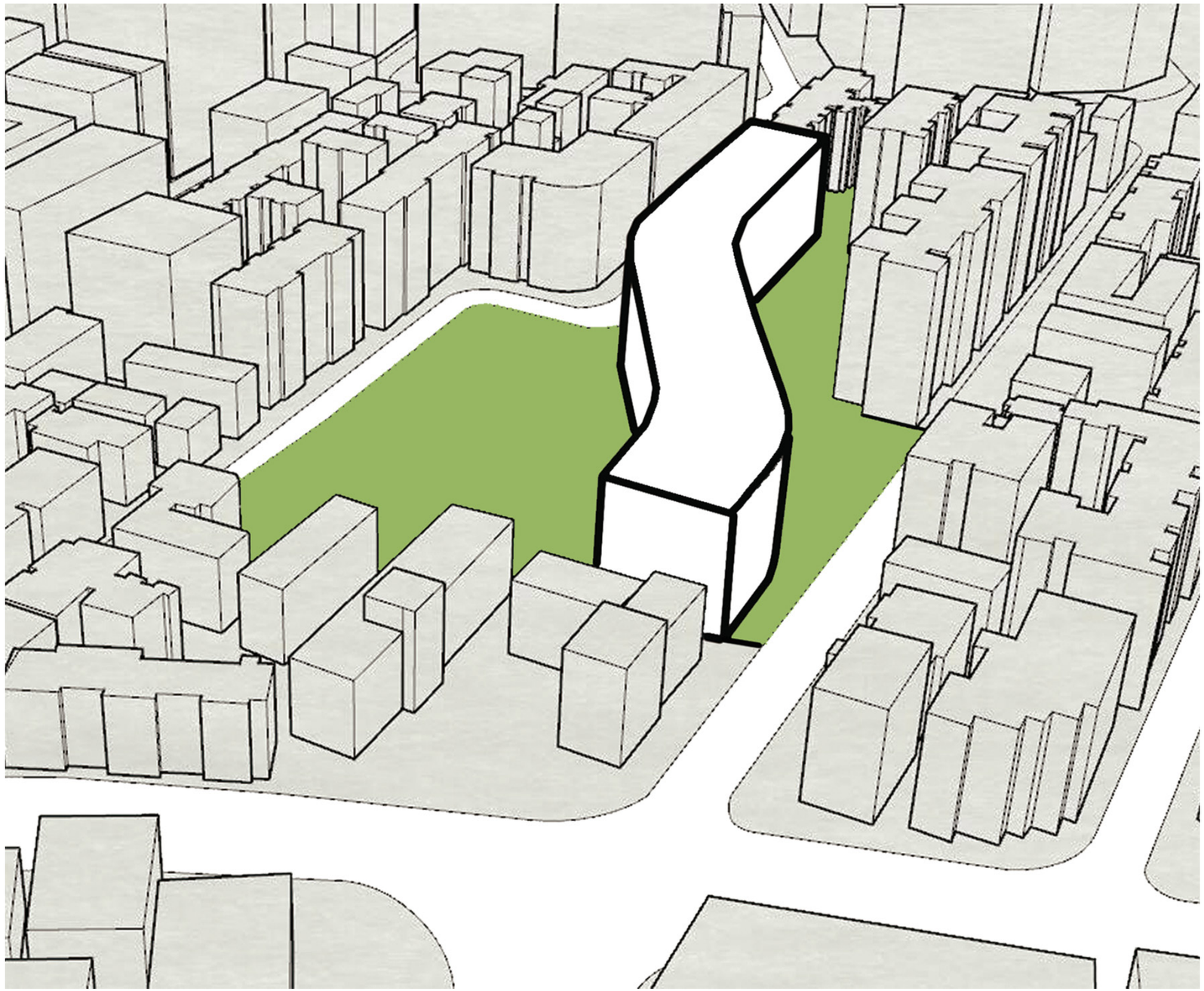
Scheme I +Scheme2

Ground Flo





Scheme III Massing



Project: Senior Community Center
2.4 Acrecs Buildings
3.6 Acres Green Space

Design Synthesis

Behavior&Program

Popular Activities for Senior in Chengdu(Youth barely get involved in)

Mahjong

Mahjong culture is still deeply ingrained in the Chinese community. Evolving from Liubo, an ancient Chinese game, Mah-Jongg is a traditional Chinese game with a history of thousands of years. With 144 Mah-Jongg tiles in a set, the game is designed for four players, each one with 13 tiles in a round. Each illustrated tile has its unique meaning, featuring distinctive characteristics and artistic conceptions of traditional Chinese culture. "Due to its influence and popularity, the game has been adapted into a widespread online entertainment.Similar to the Western card game rummy, Mahjong is a game of skill, strategy, and calculation and involves a degree of chance."

4 people per Mahjong Game

Square Dance

Square dancing in China first started to gain popularity in the 1990s. Then, it was a casual activity that required little organisation and, like today, it took place across the nation's parks and pedestrian streets. Today, the activity has become so popular that it has even been considered a sport in China. Last year, square dancing was for the first time included in China's National Games which took place in Tianjin. "According to professor Li Xiangru at Capital University of Physical Education and Sports, there were at least 10,000 provincial and national level competitions held across the country last year."

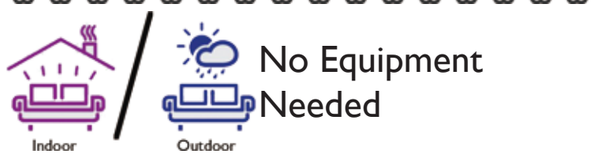
3 people Minimum-20+

No Equipment Needed

Taichi

Tai Chi Chuan is often called "the exercise of immortality" because of its regenerative powers and overall health benefits. Sometimes referred to as "moving meditation", Tai Chi Chuan is practiced for many reasons. From general good health to self-defense, it is a classic Chinese discipline that focuses on the development of Ch'i (internal energy), improved balance and physical strength, flexibility and mental awareness. Gentle in appearance, but completely effective for self-defense, the slow moving forms of Tai Chi Chuan are suitable for adults of all ages.

1 person Minimum-10+



No Equipment Needed

Gateball

The croquet originated in France. It was introduced to China in the 1930sIn 1948, the gateball began to rise in Japan. In 1970, it began to be promoted as an activity program for the elderly. The gateball occupies a small area, saves money, is very safe, and has simple technology, short game time, and small amount of exercise. It is suitable for middle-aged and old people, like the intense track and field competitions to ball games, there are few activities that seniors or physically weak people can play. Gateball are suitable for adults of all ages, **but youth don't like it. Having more activities for both?**

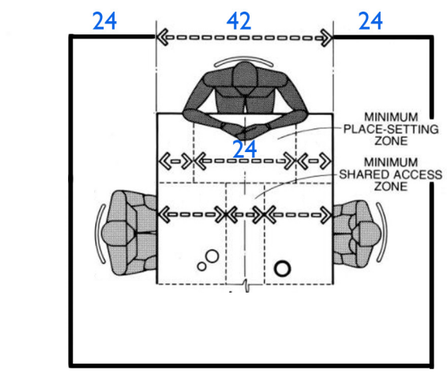
2 Teams

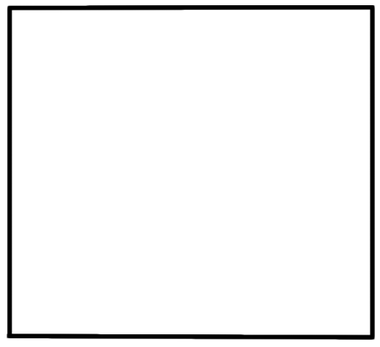
5 people/Team

Program&Square Footage

Mahjong

4 people per Mahjong Game

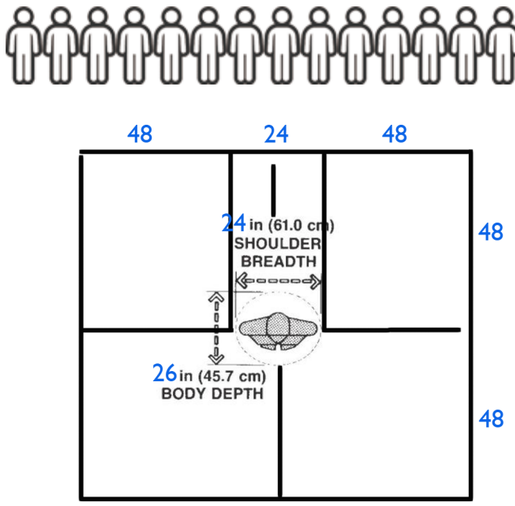


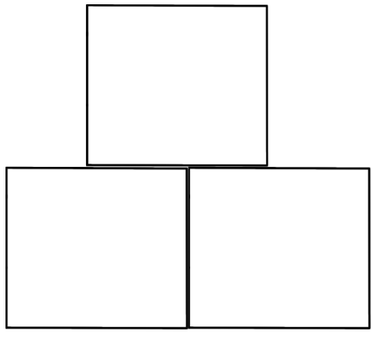


Space for a Mahjong Game
90"x 90"=5.7 SF

Square Dance

3 people Minimum-20+

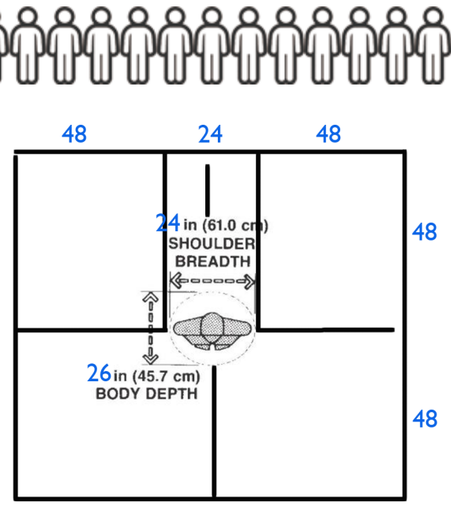


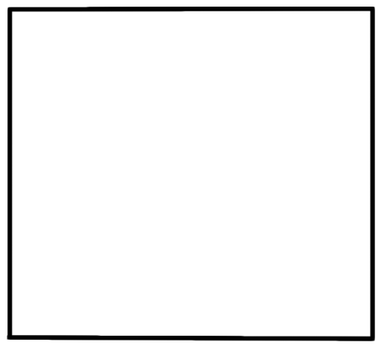


Space for 3 people square dance
120"x96"=80 SF

Taichi

1 person Minimum-10+



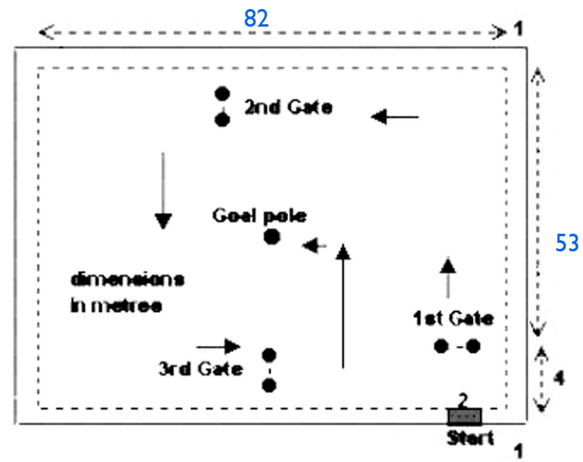


Space for 1 person Taichi
120"x96"=80 SF

Gateball

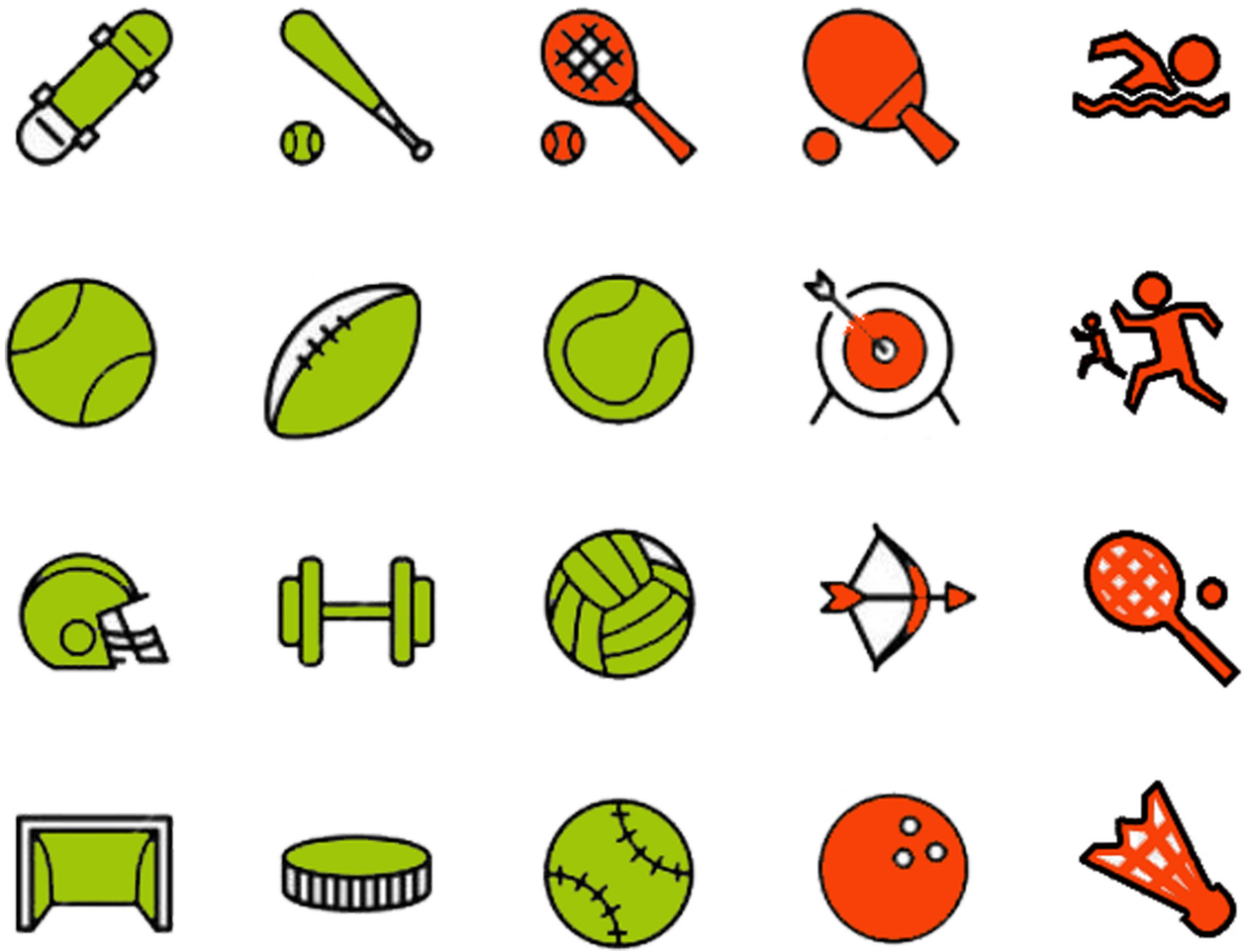
2 Teams

5 people/Team



Space for 1 person Taichi
82'x53'=4346 SF

Activities for Youth



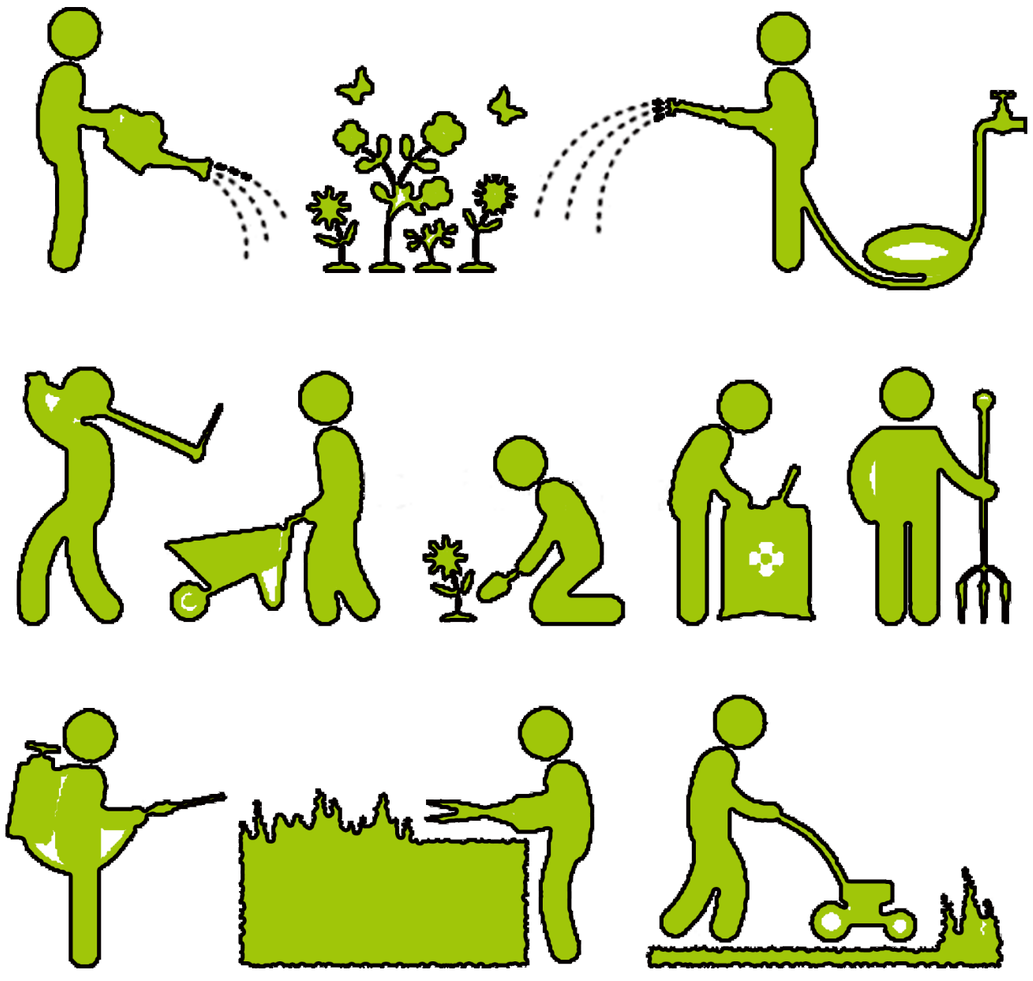
Activities senior could invovlved in

Teaching/Volunteering/Sharing

"every person you will ever meet knows something you don't." Older volunteers have a lifetime of experience and knowledge to share. Whether this is their first time volunteering, or they are a seasoned veteran, they have experience working and interacting with a very large variety of people. Younger volunteers may not have as much worldly experience, but they still have just as much **knowledge to share.** Youth today are growing up in a technology-based world, and using things like social media and mobile apps comes naturally to them. A great way to help integrate your volunteers is by allowing them to **teach each other.** Older volunteers can share stories and experiences relevant to the cause, while younger supporters can share their knowledge of technology.

Activities for Senior and Youth

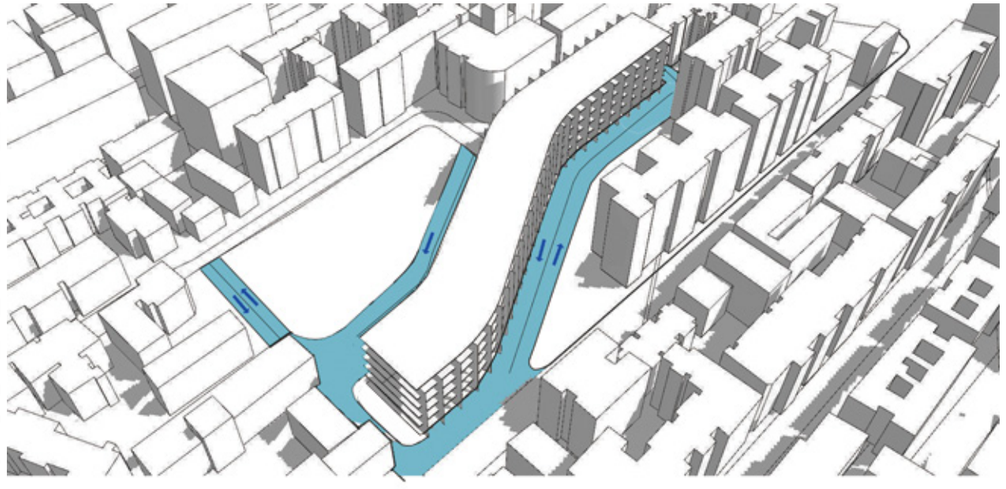
Gardening and Planting for Community



Community gardens can mitigate some of the problems that plague urban areas. They can be a beneficial addition to many communities by increasing the availability of nutritious foods, strengthening community ties, reducing environmental hazards, reducing food miles and creating a more sustainable system.Community gardens can help reduce negative environmental impacts by promoting sustainable agriculture; reducing food transportation costs and reducing water runoff. Humans, plants and animals can all benefit from urban agriculture since it creates habitats and improves the ecology of the area. "The benefits of community-based gardening projects likely extend beyond food security, as gardens provide fresh vegetables, and the process of gardening involves physical exercise. **Family and social relationships can also be strengthened through community gardening, since community members provide advice and support to help overcome challenges and all receive the benefits the gardening project offers. "**

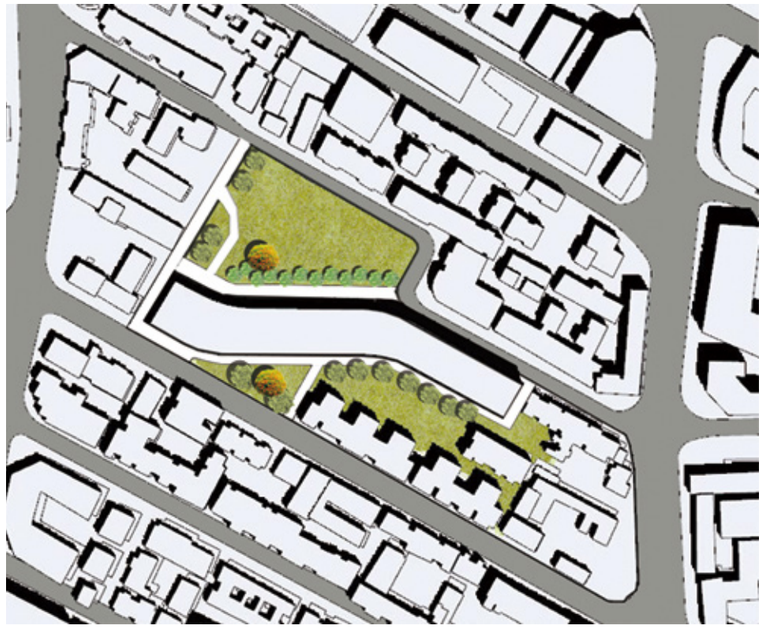
Site Plan

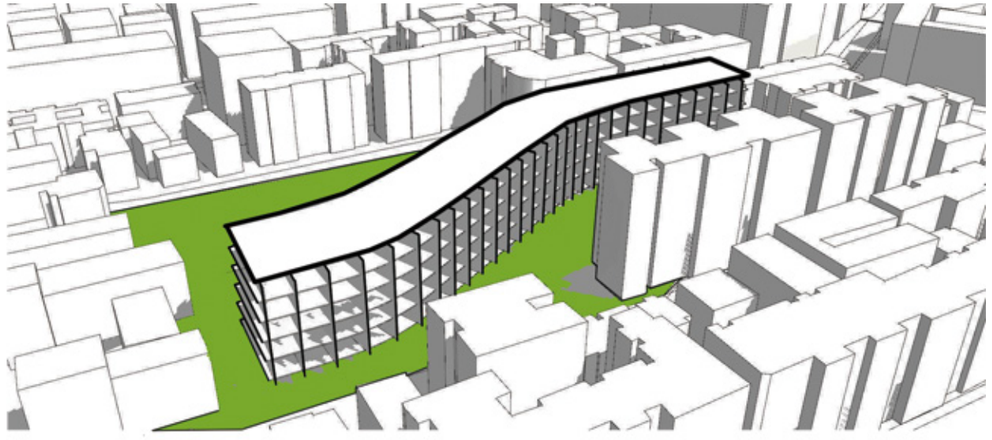
N



Circulation

Horizontal Circulation
Create new circulation on site for reconnection the site to the circulation of the community. plans provide convenient, efficient, and safe methods of navigation for all users. providing effective access management plans and internal roadway functionality designs for the site.





Outdoor Green Space

Outdoor Space(1.5 acres)
Create outdoor space for out activities that would benefit both elder people and youth, such as Outdoor theater or concert -- "Almost all communities, including small towns, have outdoor plays, song fests, or productions of some kind. If you live or work in a communal setting, invite some of the actors or performers to visit, answer questions, and do a little special acting for you" "Picnic – A more casual version of outdoor eating, it can be hosted in a yard, on a patio, or as an outing to a park. "

Parking Space for the Senior Community Center

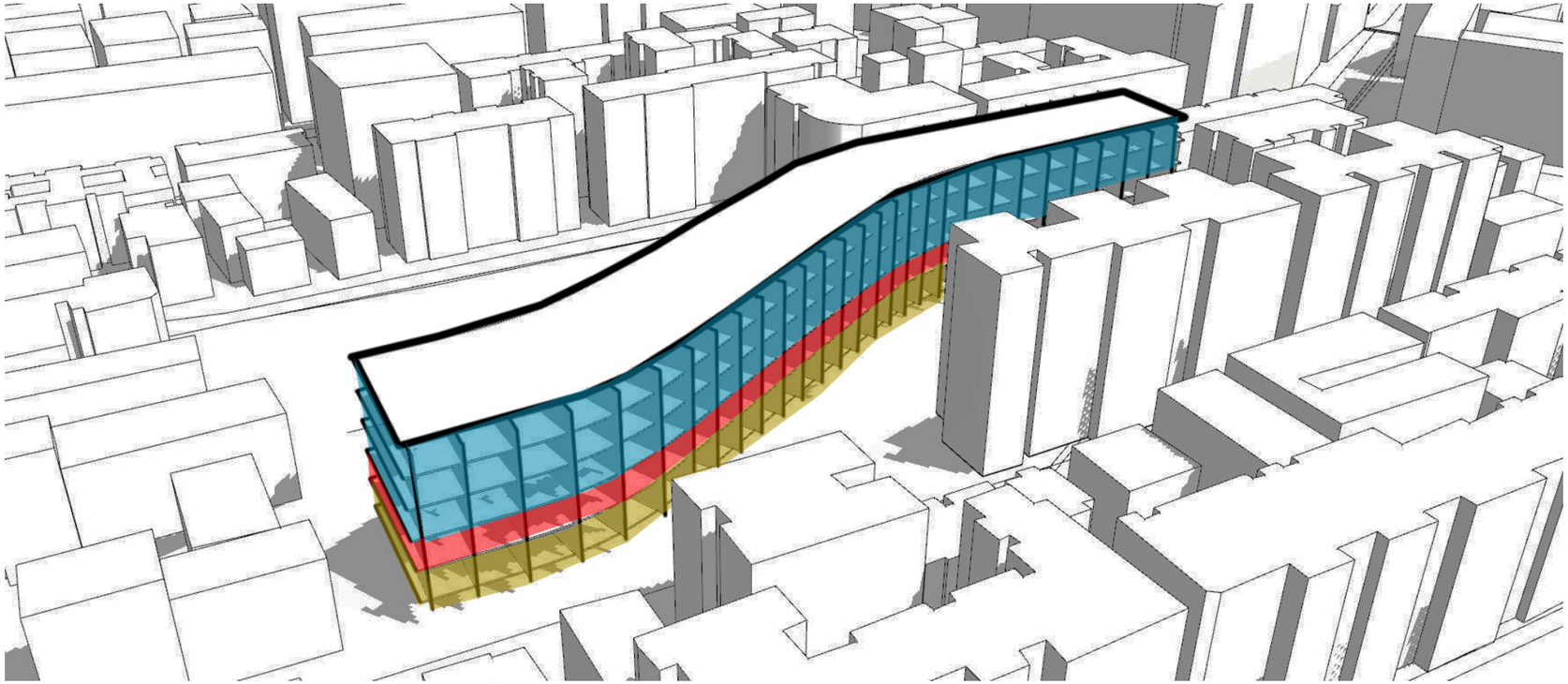
Core

Horizontal Circulation

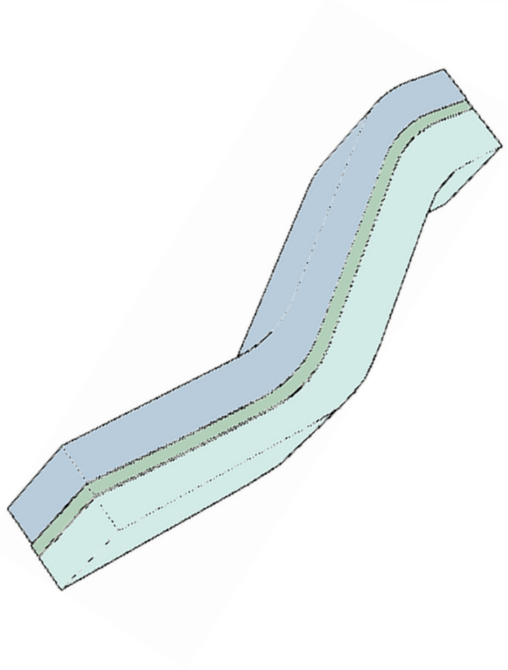
Recreation

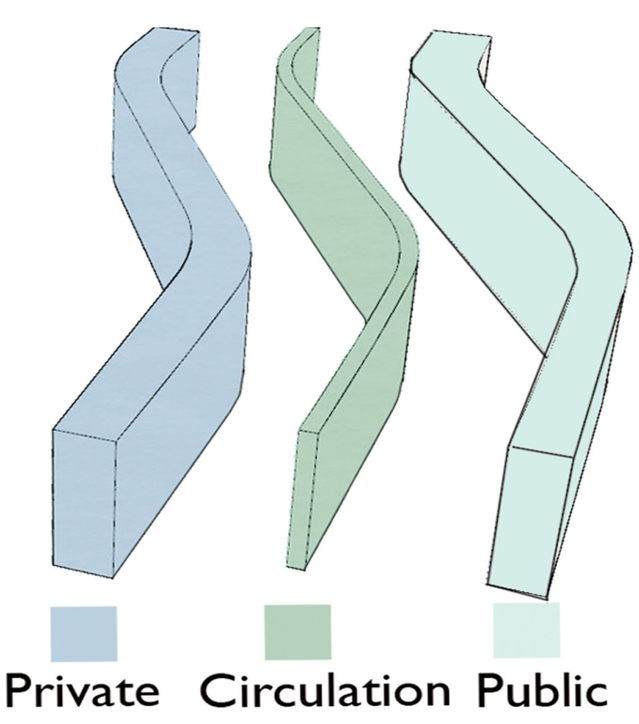
Service

Commercial+Sport

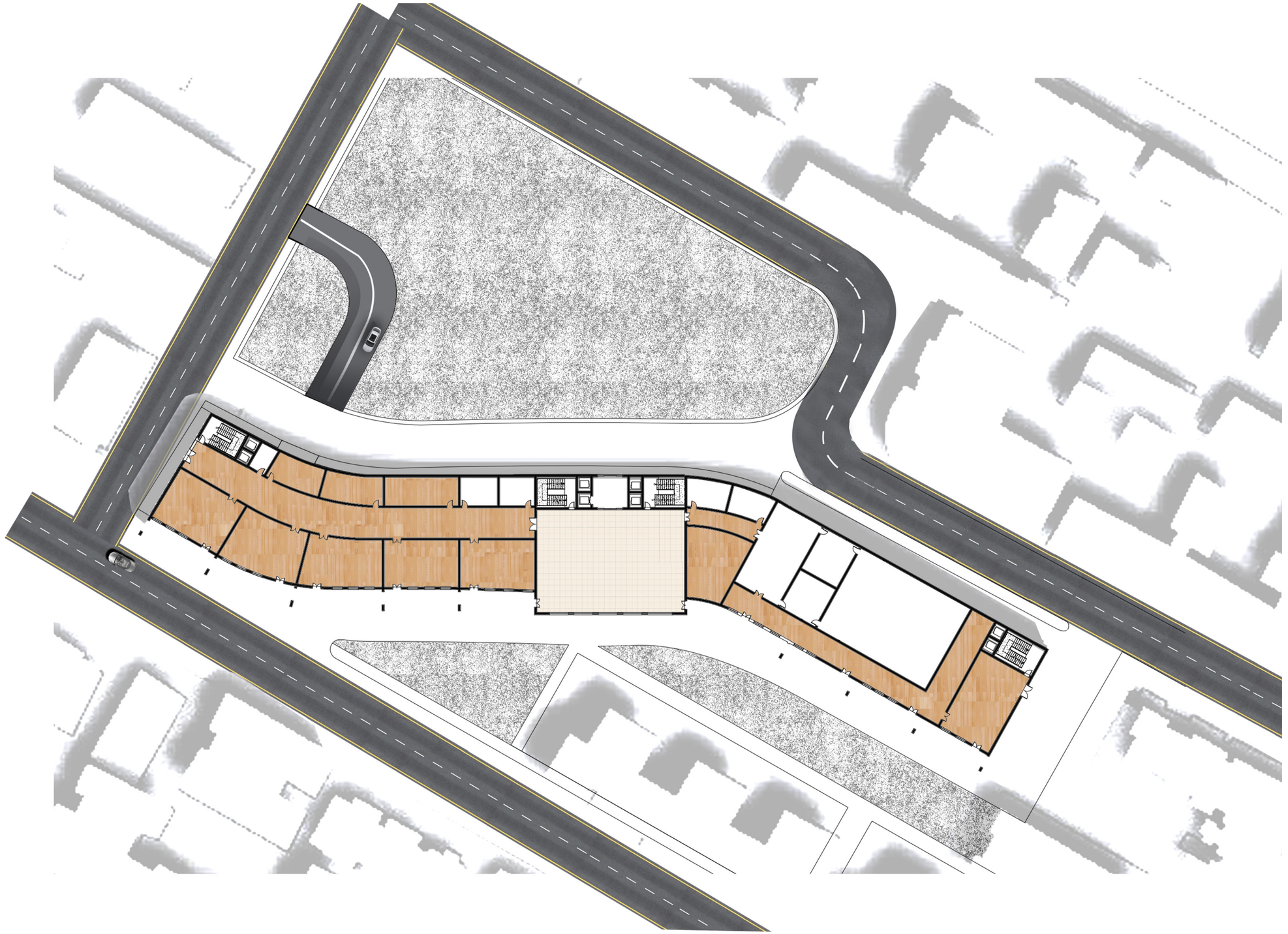


Vertical Circulation

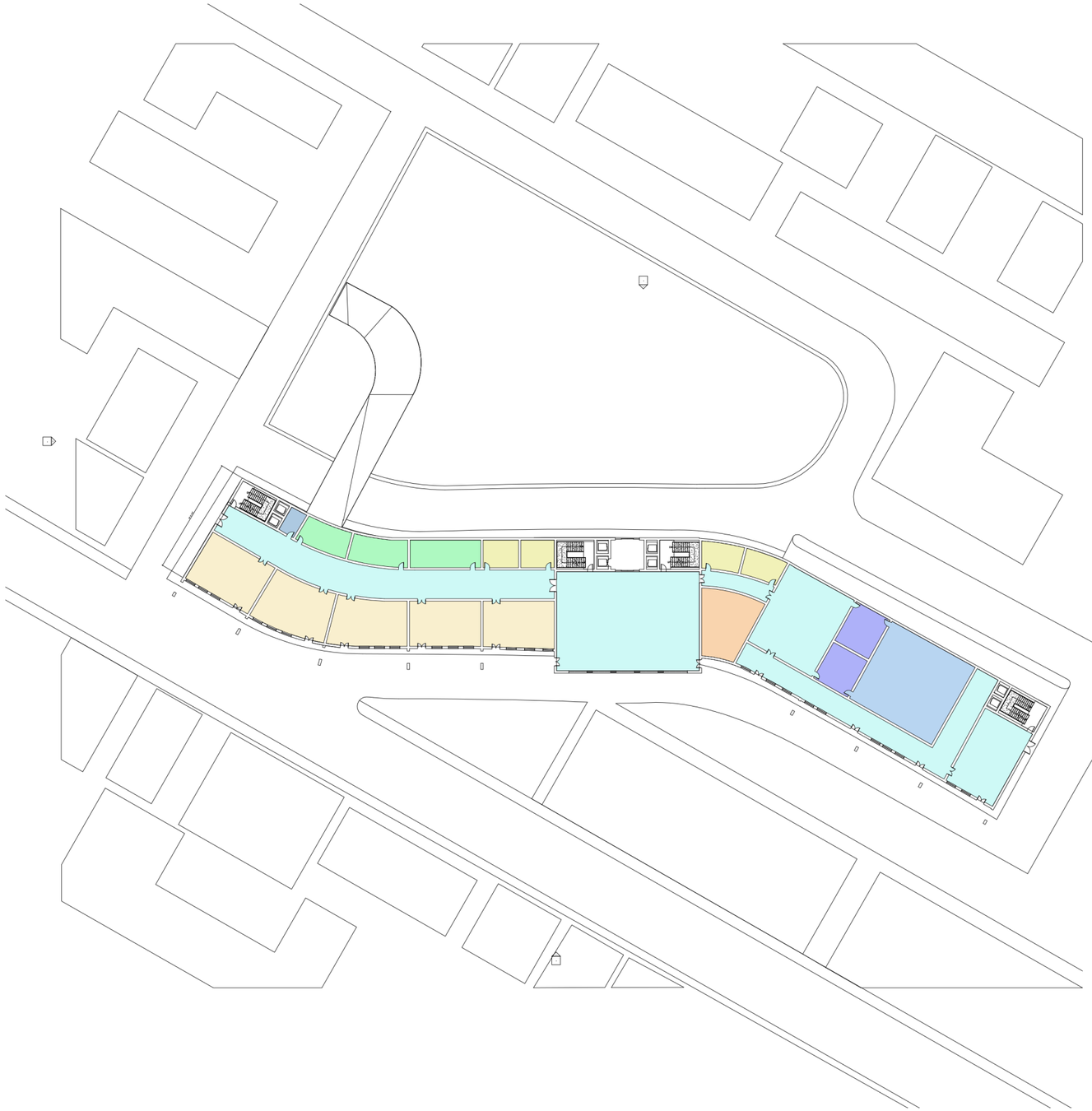




Groud Floor Plan



Groud Floor Programing



Lounge&Circulation

Farmer's Market

Washing%Packing

Restroom

Swimming Pool

Locker room

Equipmet

Theater

Gardening and Planting

Vegetation

Growing your own food

"Growing your own fruits and vegetables can offer you the opportunity to reduce the amount of pesticides that you use in your garden, making them healthier.
Growing your own fruits and vegetables will save your money at the grocery store.
Gardening increases physical activity. It is a great way to engage the whole family in physical activity and lets them help to take responsibility for the garden.
The fruits and vegetables grown in your garden will promote health because they are rich in nutrients, especially in phytochemicals, anti-oxidants, vitamin C, vitamin A and folate.
Gardening gives you're a real sense of appreciation when you can see the bounty of your efforts.
Growing a garden gives you a new appreciation for nature, when you can have the opportunity to see how things grow."

Food Plant (local plants in Chengdu)

Pumpking Plant

"Pumpkins do best when the seeds are planted directly in the ground.
If your growing season is very short, seed indoors in peat pots about 2 to 4 weeks before last spring frost. Be sure to harden off before transplanting. Wait until the plant soil is 70°F or more before sowing seeds. Optimum soil temperature is 95°F. Pumpkins are very sensitive to the cold. Plant seeds in rows or "pumpkin hills," which are the size of small pitcher mounds. With hills, the soil will warm more quickly and the seeds will germinate faster. This also helps with drainage and pest control."

Strawberry

"Strawberries are sprawling plants. Seedlings will send out runners, or 'daughter' plants, which in turn will send out their own runners.
Make planting holes deep and wide enough to accommodate the entire root system without bending it. However, don't plant too deep: The roots should be covered, but the crown should be right at the soil surface.
Provide adequate space for sprawling. Set plants out 20 inches apart, and leave 4 feet between rows.
Roots shouldn't be longer than 8 inches when plants are set out. Trim them if necessary."

Mint

"Minimal care is needed for mint. For outdoor plants, use a light mulch. This will help keep the soil moist and keep the leaves clean.
For indoor plants, be sure to water them regularly to keep the soil evenly moist.
At first, mints develop into well-behaved–looking, bushy, upright clumps, but they soon set out to conquer new territory with horizontal runners and underground rhizomes. "

Lettuce

"Direct sowing is recommended as soon as the ground can be worked.
Plant seeds ½ inch deep.
Snow won't hurt them, but a desiccating cold wind will.
If you want an earlier crop, however, you may start seeds indoors 4 to 6 weeks before last spring frost date for an earlier crop. Harden off seedlings for about one week, and transplant outside between 2 weeks before and 2 weeks after last spring frost."

Cucumber

"Cucumber plants are seeded or transplanted outside in the ground no earlier than 2 weeks after last frost date. Cucumbers are extremely susceptible to frost damage; the soil must be at least 70°F for germination. Do not plant outside too soon!
Before you plant outside, select a site with full sun.
Soil should be neutral or slightly alkaline with a pH of 7.0."

Blueberry

"Select a sunny, sheltered spot. While blueberries are tolerant of shade, better crops are obtained in the sun.
Blueberries thrive in soil that is acidic. The soil pH should ideally be between 4 and 5.
Soil can be acidified by mixing a small amount of granulated sulfur into the soil several months before planting. Peat moss, as well as pine bark or needles, are also good additions that will help acidify your soil."

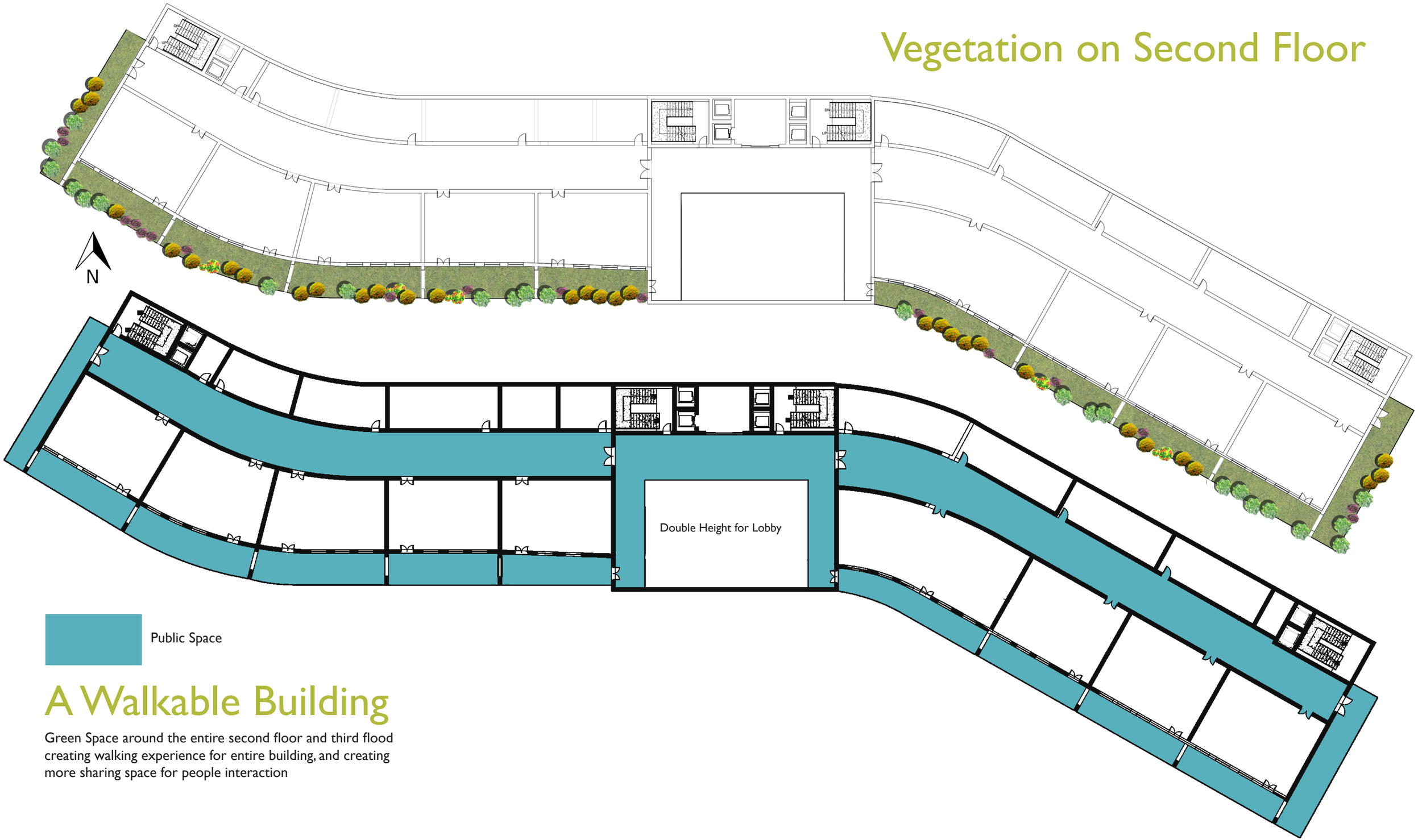
Potato

"With a hoe or round-point shovel, dig a trench about 6 inches wide and 8 inches deep, tapering the bottom to about 3 inches wide.
Potatoes are best grown in rows. Space rows about 3 feet apart.
Spread and mix in rotted manure or organic compost in the bottom of the trench before planting."

Grape

"Plant dormant, bare-root grape vines in the early spring.
Construct a trellis or arbor before planting.
Grape vines will need to be trained to some sort of support to grow upward. This will also cut the risk of disease.
Most grape varieties are self-fertile. To be sure, ask when you are buying vines if you will need more than one plant for pollination.
Before planting grapevines, soak their roots in water for two or three hours.
Select a site with full sun. If you don't have a spot with full sun, make sure it at least gets morning sun. A small amount of afternoon shade won't hurt. Your soil needs to be deep, well-drained, and loose. You also need good air circulation."

Vegetation on Second Floor

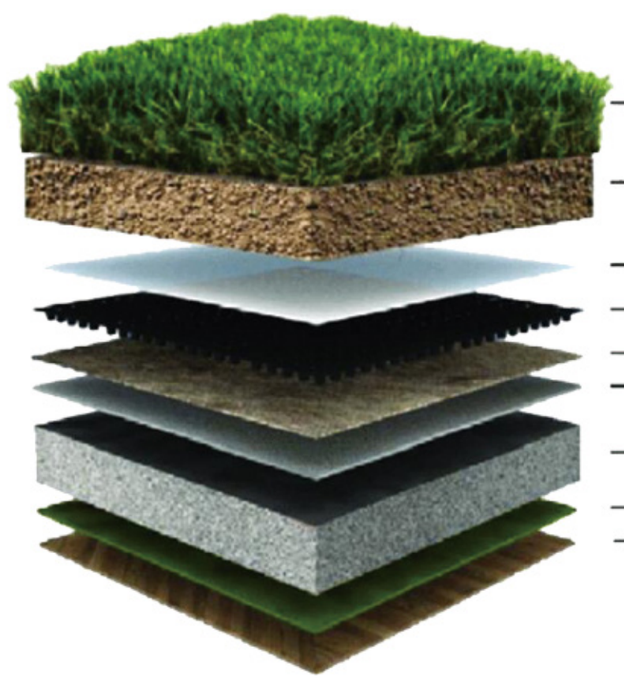


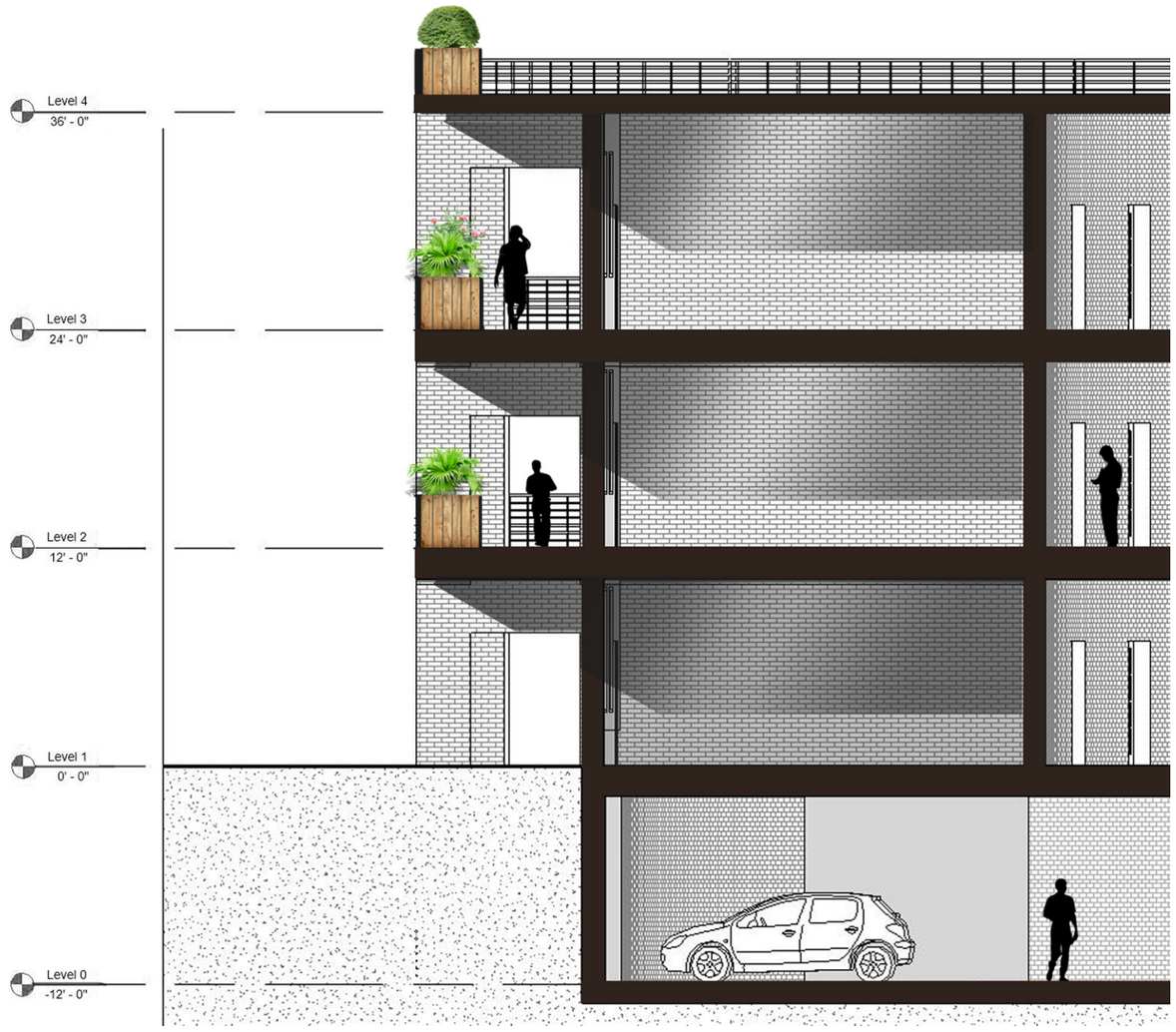
Public Space

A Walkable Building

Green Space around the entire second floor and third flood creating walking experience for entire building, and creating more sharing space for people interaction

Vegetation on Third Floor

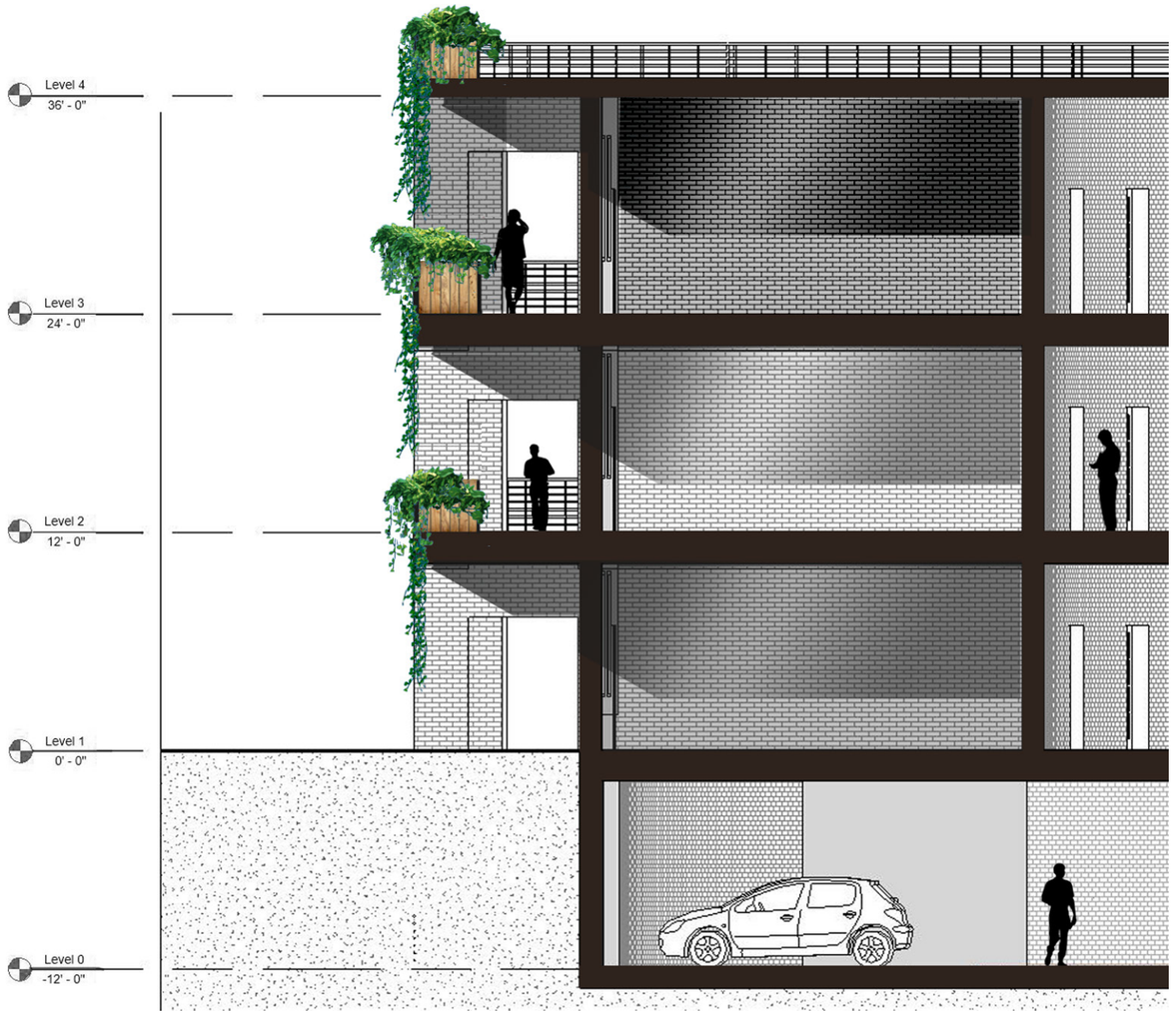




Vegetation Facade (Summer Plant Option)

Golden Potho(Devil's Ivy)

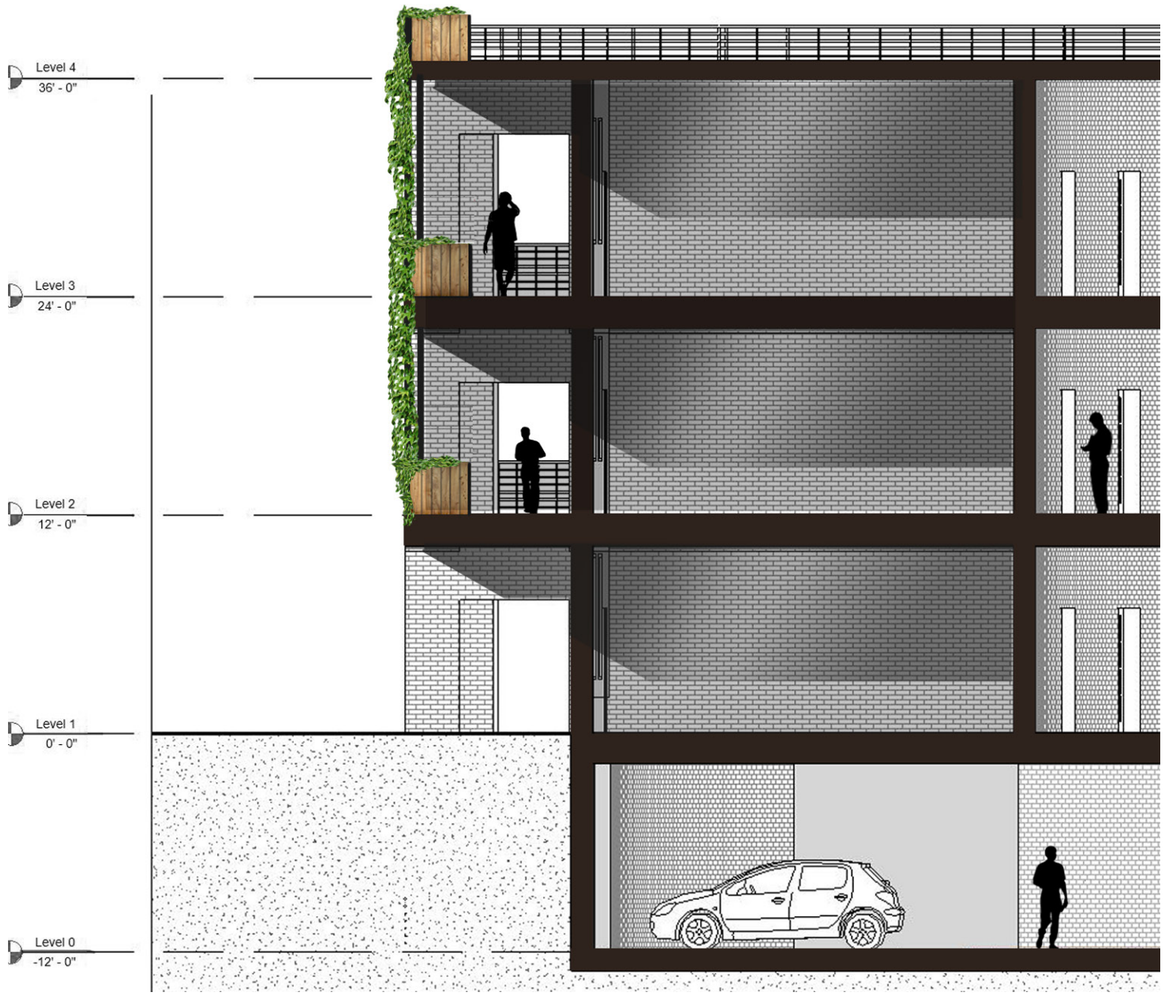
Golden Pothos (Devil's Ivy) plants are among the most popular houseplants for their versatility and easy care. Golden Pothos have a yellow and green variegation which make them easily recognizable and popular in a variety of settings. Also known as Devil's Ivy, Golden Pothos is a very versatile plant that can tolerate the lower light levels or bright filtered light of a home while also thriving in the full sun of a yard or grown outdoors in tropical. Need more water frequently during spring and summer, growing fast in summer, and less in winter, so it becomes natural shading system on facade.



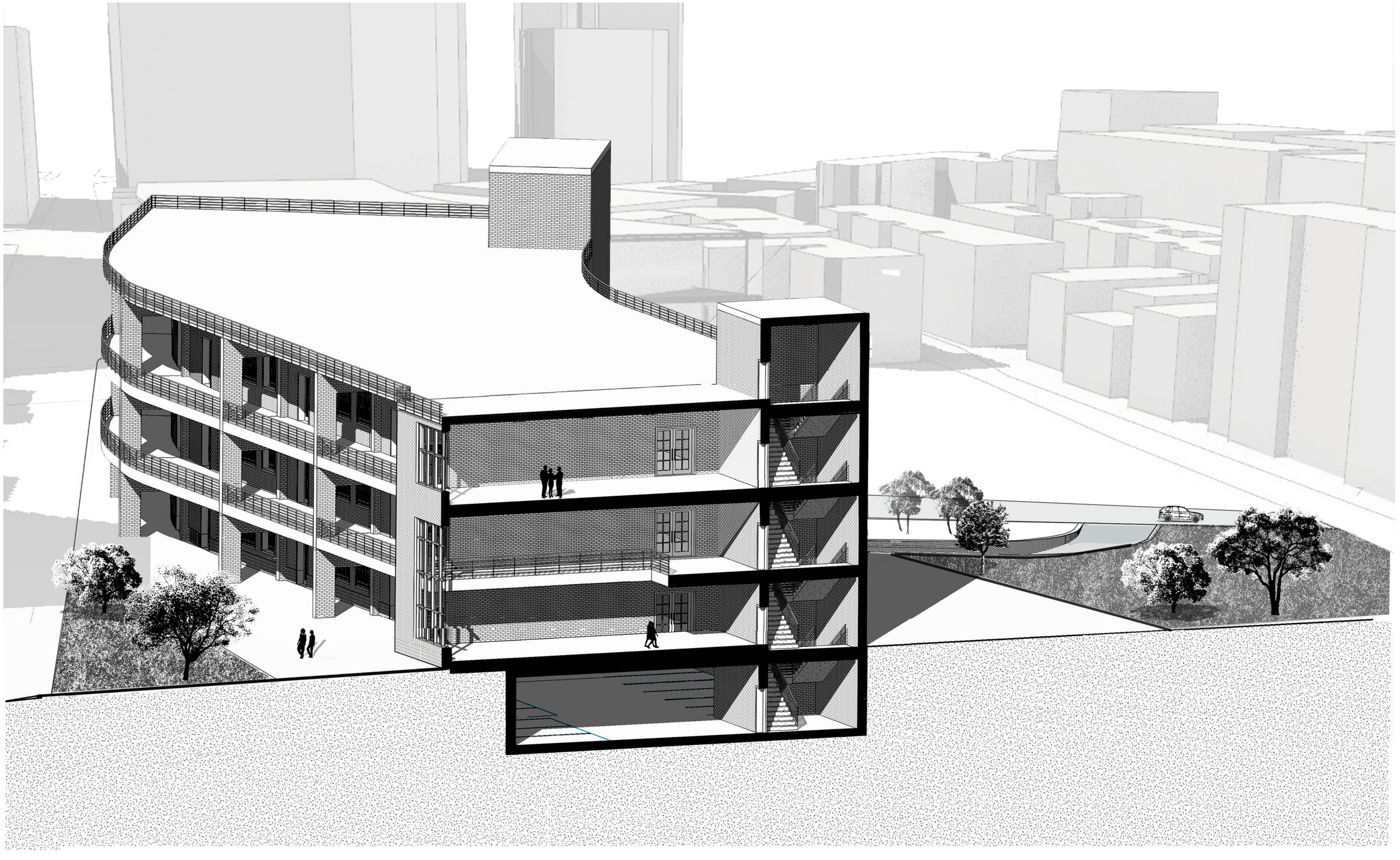
Vegetation Facade (Summer Plant Option Two)

Boston Ivy

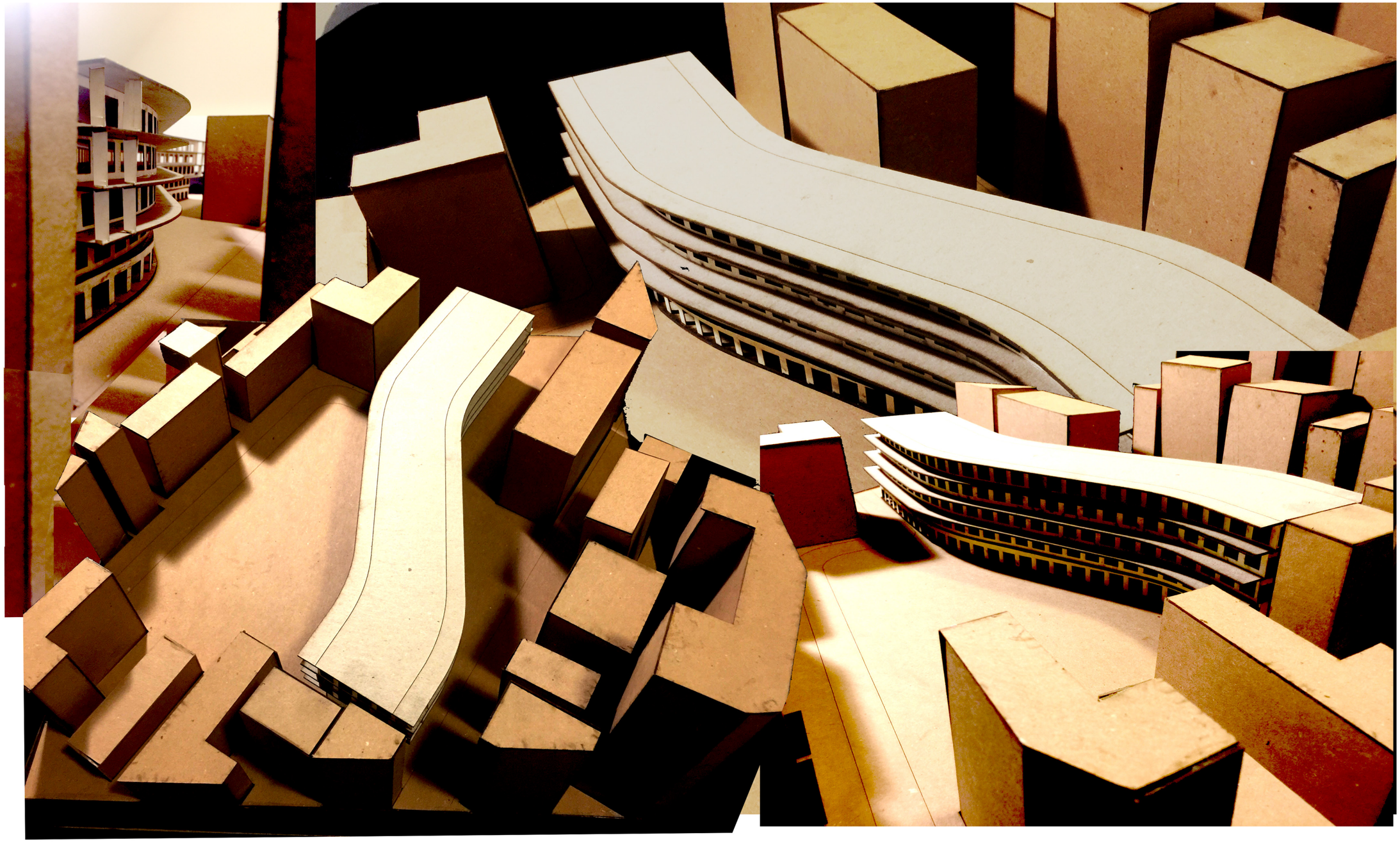
"This plant is widely grown as a climbing ornamental plant to cover the façades of masonry buildings. This usage is actually economically important because, by shading walls during the summer, it can significantly reduce cooling costs." To ensure plants thrive, amend the soil with organic matter to an 8- to 12-inch depth a week before planting. Provide Boston ivy with a deep watering once a week for the first growing season so the plants establish a deep root system. With proper care, vines can grow 3 to 10 feet per year.



Section



Physical Model



Work Cited