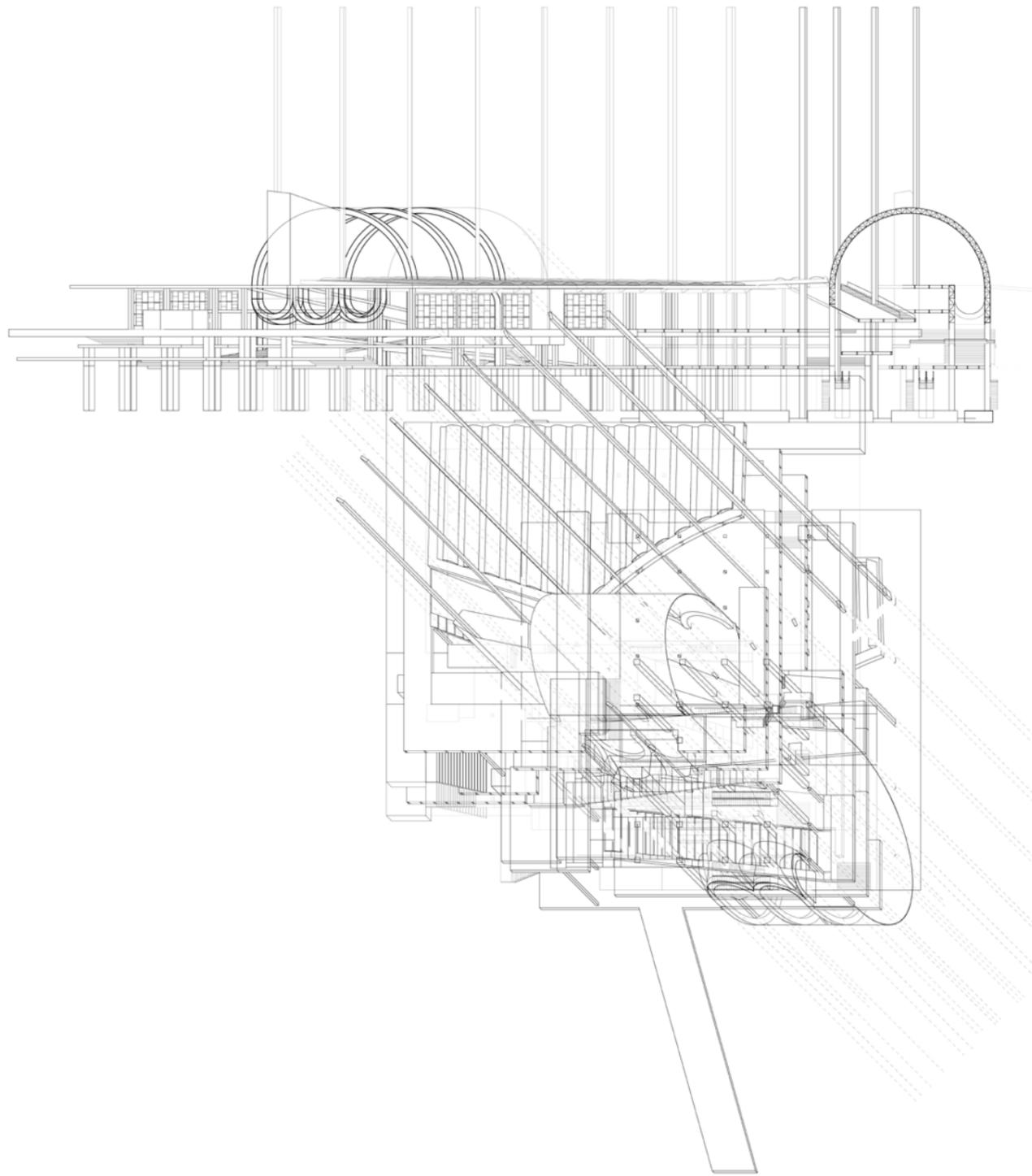


Yilin Zheng

*Columbia University GSAPP M.S.AAD
yz4323@columbia.edu*



01 Transient Processor

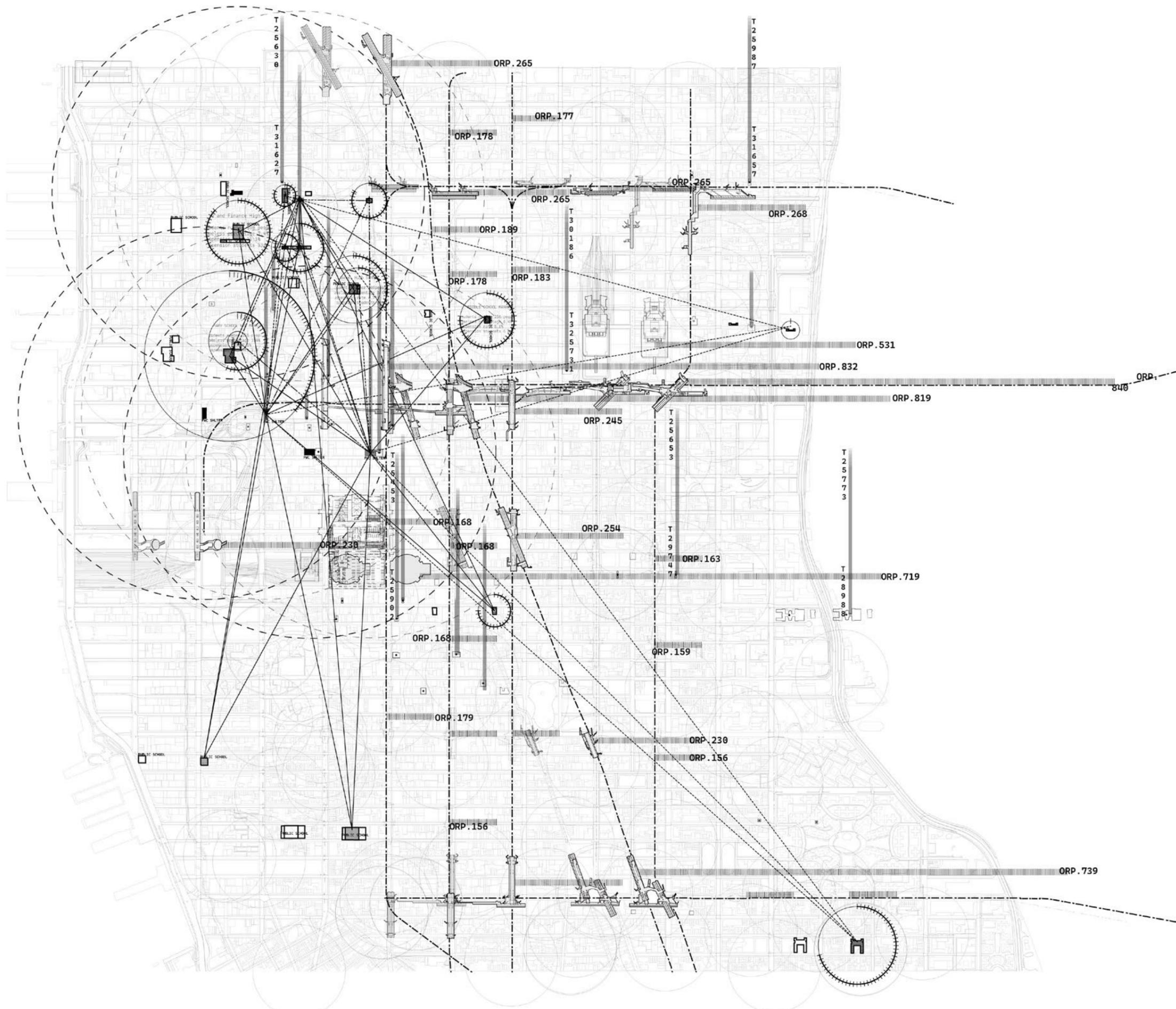
And, Also?

***Columbia University
Advanced Arch Design Studio
2022.06-2022.08***

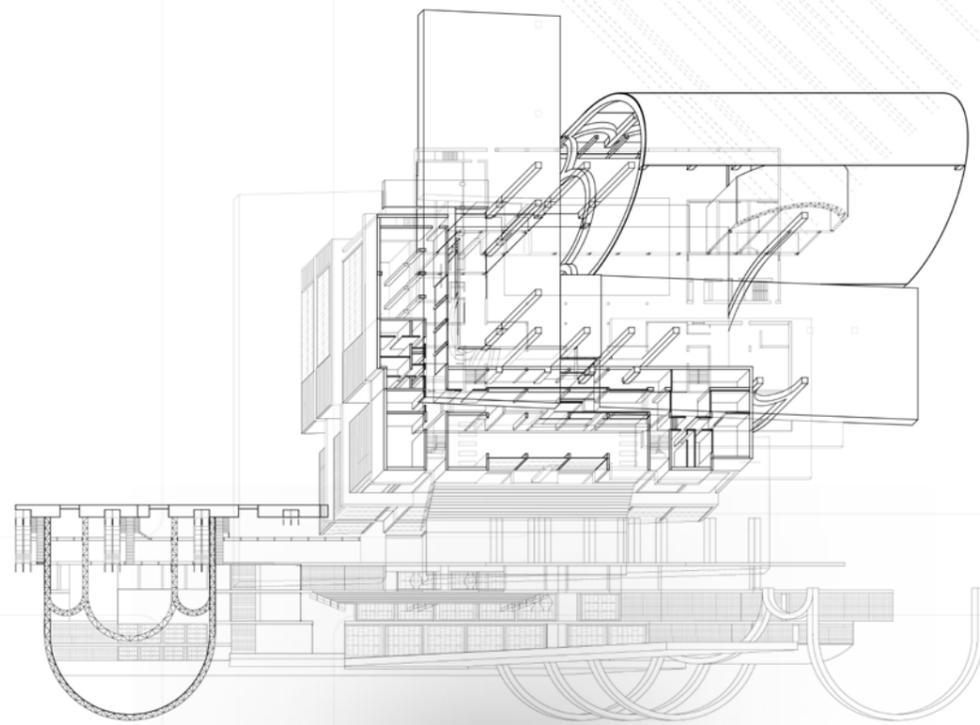
***Site: New York City, USA
Pairs work with Chengyu Zhang***

Programs: Rhino, Grasshopper, PS, AI

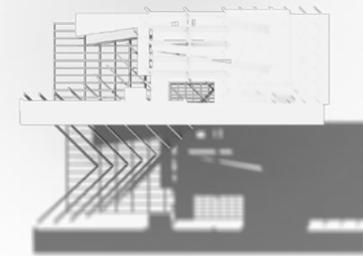
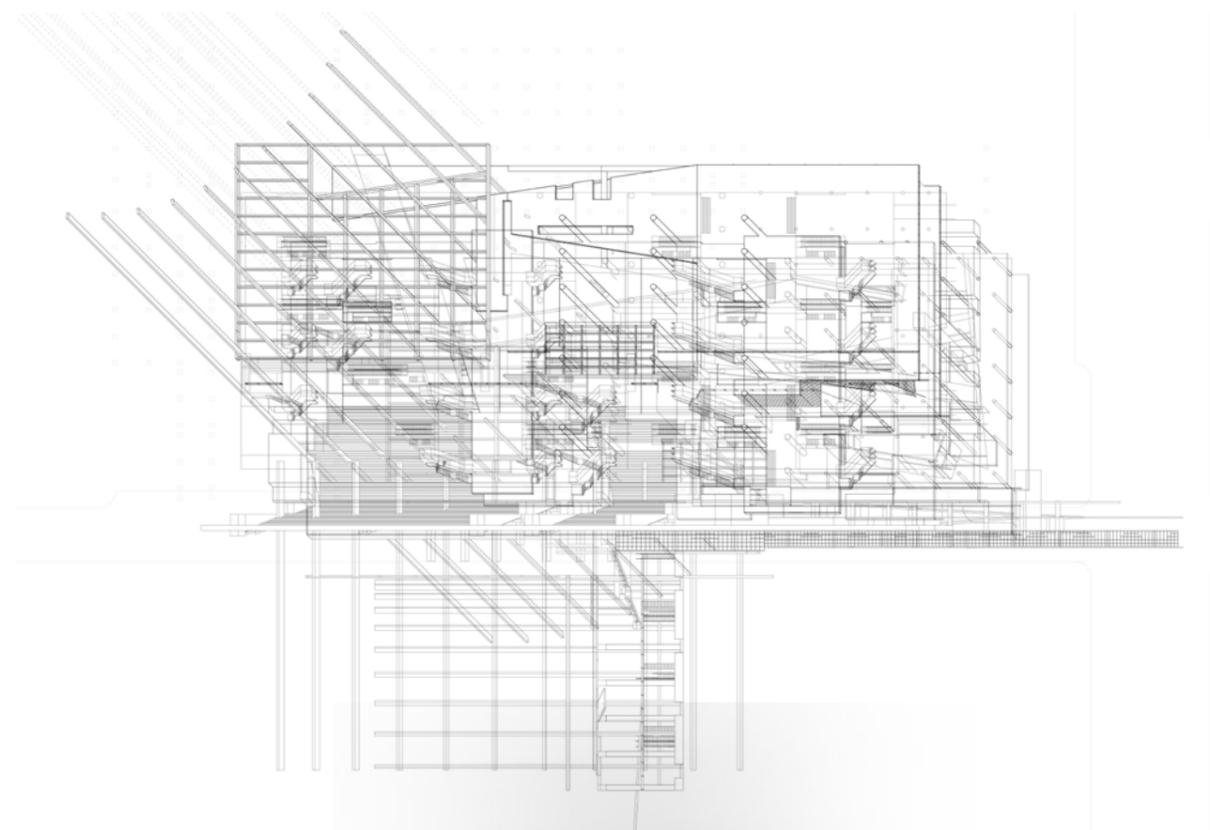
Instructor: Karla Rothstein



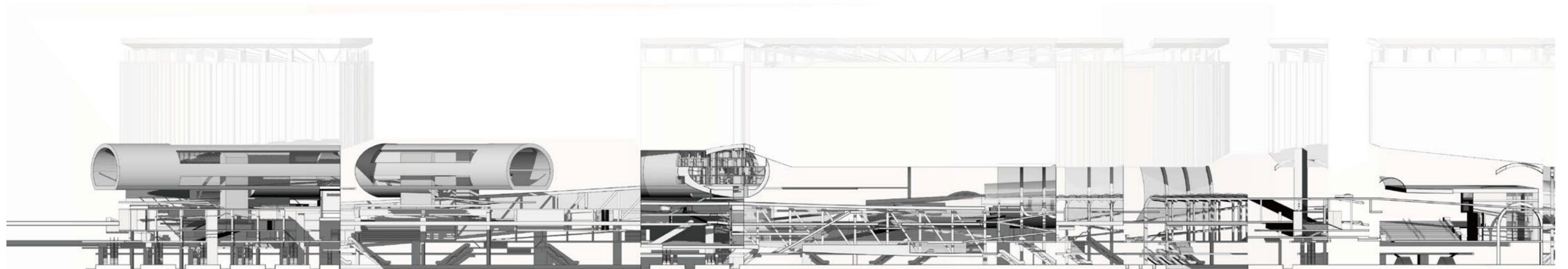
- Rail Line
- - - Subway Lines
- Building Footprints
- Roadbed
- Homeless Observed / Station (High >3)
- ◻ Homeless Observed / Station (Normal 1-3)
- Homeless Observed / Station (Low <1)
- ||||| Unsheltered Homelessness & Have been Engaged by Street Outreach (2020-20)
- DHS Shelter - Single Men (SM)
- DHS Shelter - Single Women (SW)
- DHS Shelter - Families with Children (FWC)
- DHS Shelter - Adults Families (FA)
- DHS Shelter - Other (LGBT, Elder, etc.) (OT)
- Individuals and Families that Utilize DHS Shelters
- ◻ Public School - Elementary school (E)
- ◻ Public School - Middle School (M)
- ◻ Public School - High School (H)
- Student Number
- Low-Income Homeless Percent
- Homeless Students Percent
- Suspension Rate
- 0.5 miles from FWC Shelters
- - - FWC Shelters to E School
- - - FWC Shelters to M School

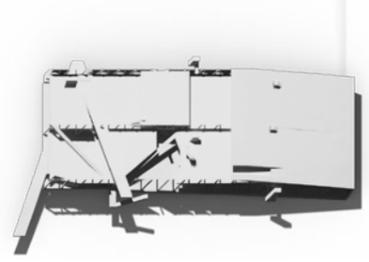
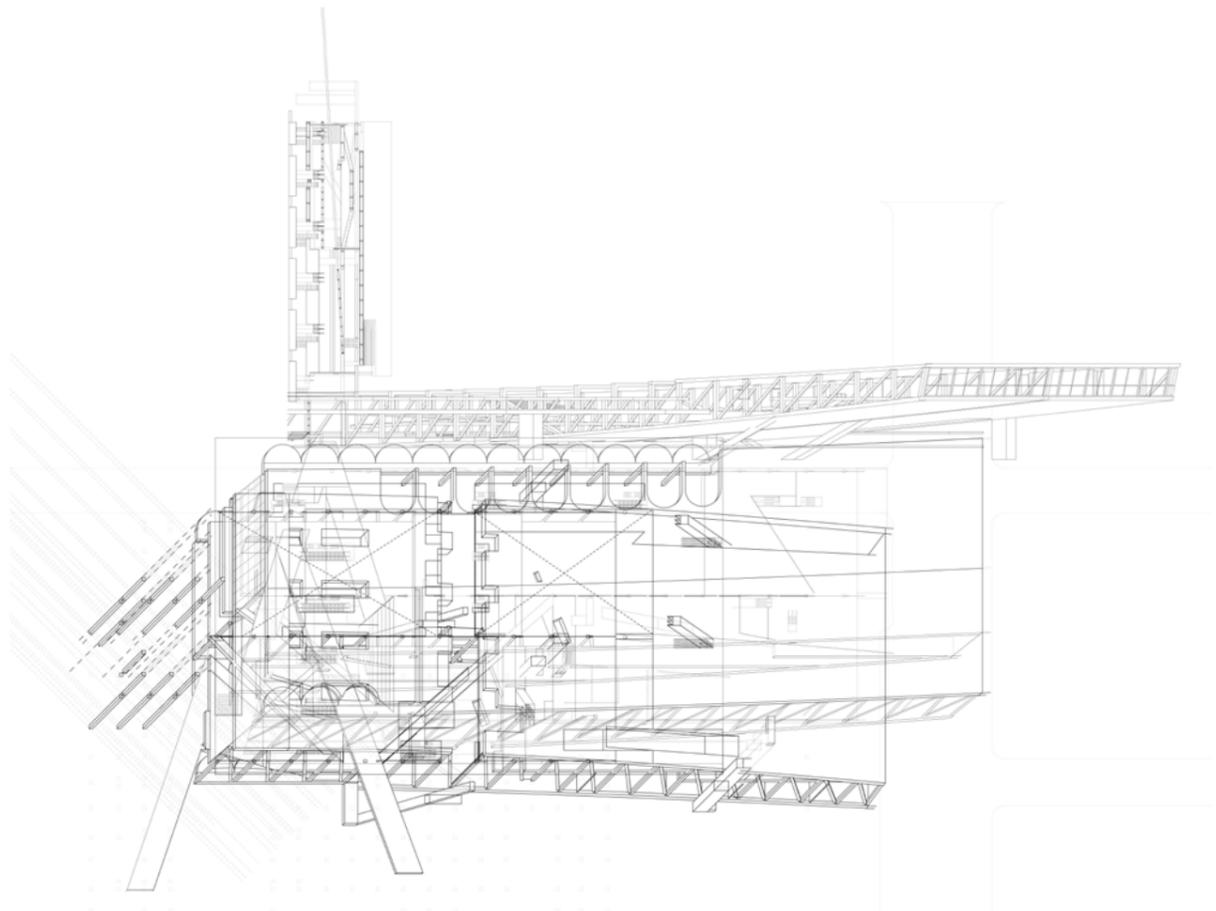


Academic Department

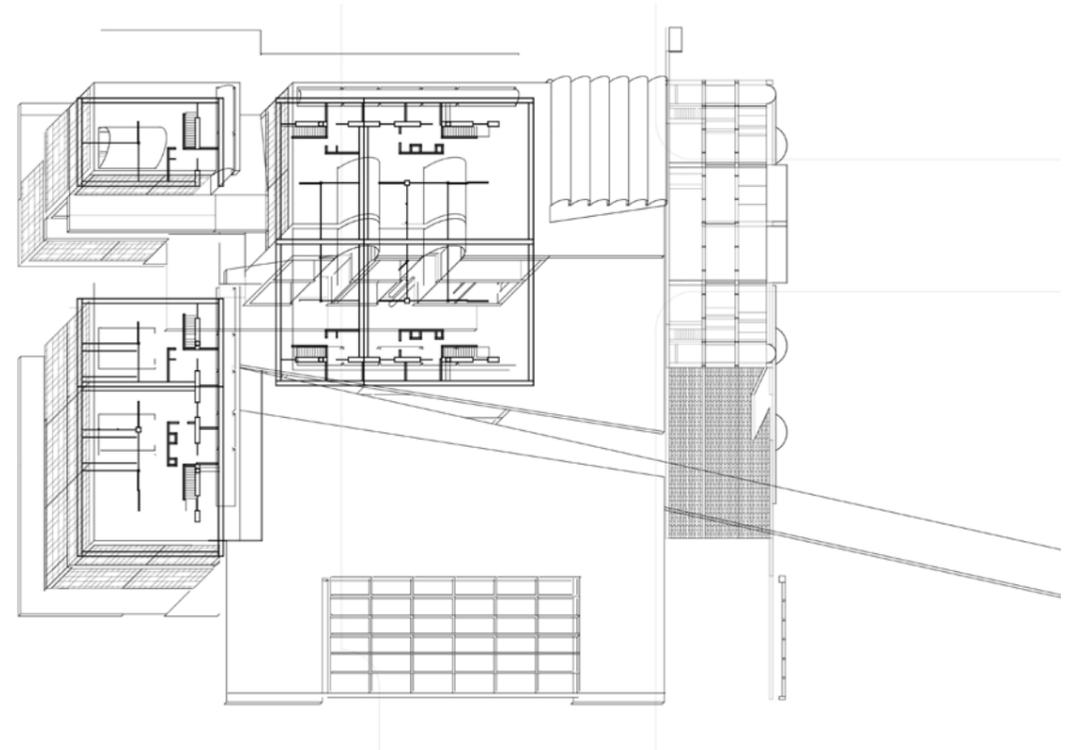


Sub-Program

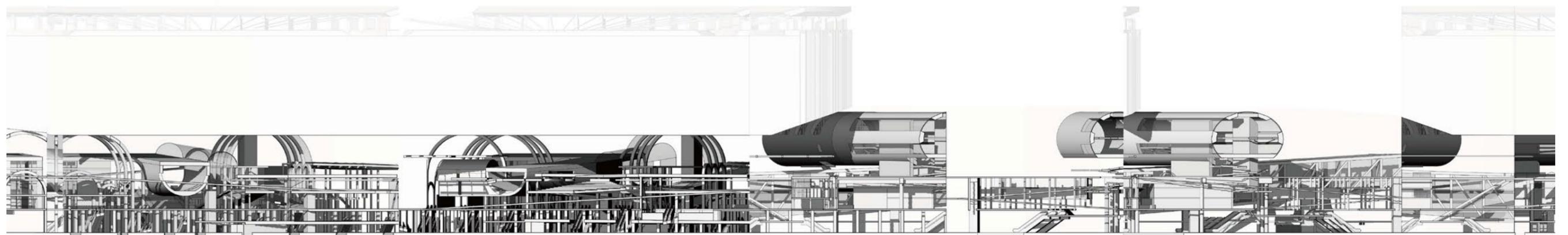


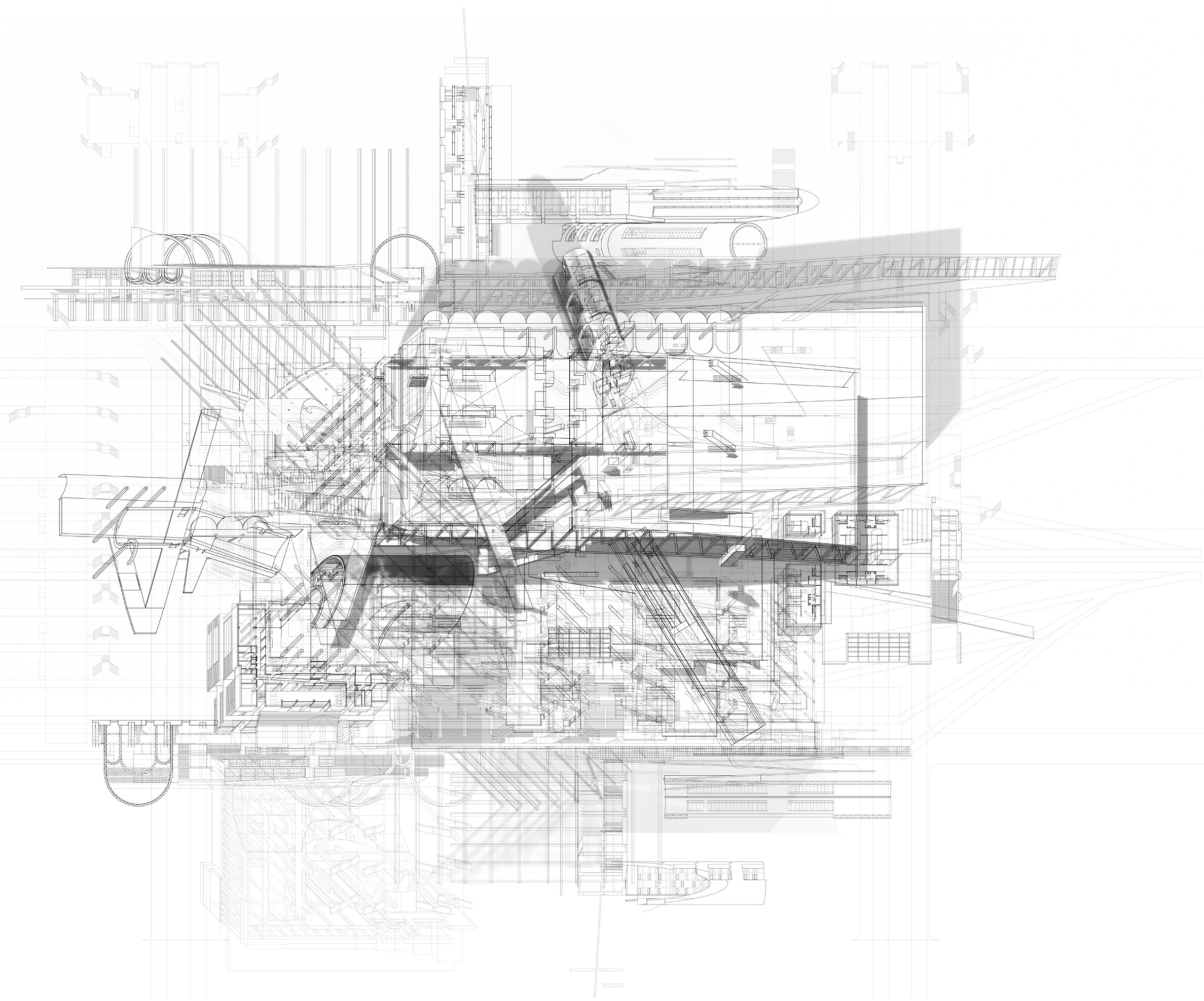


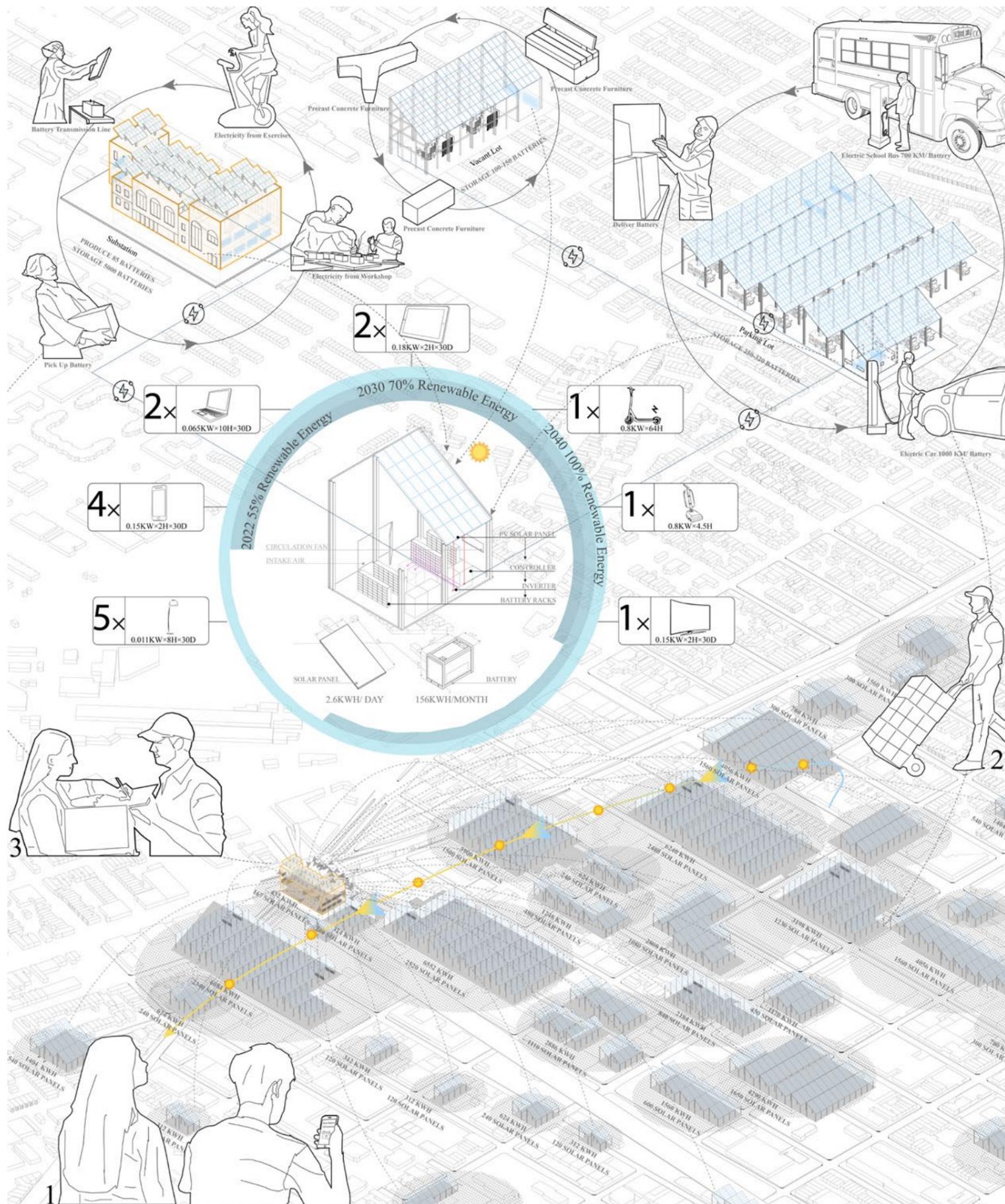
Permanent Housing



Temporary Housing







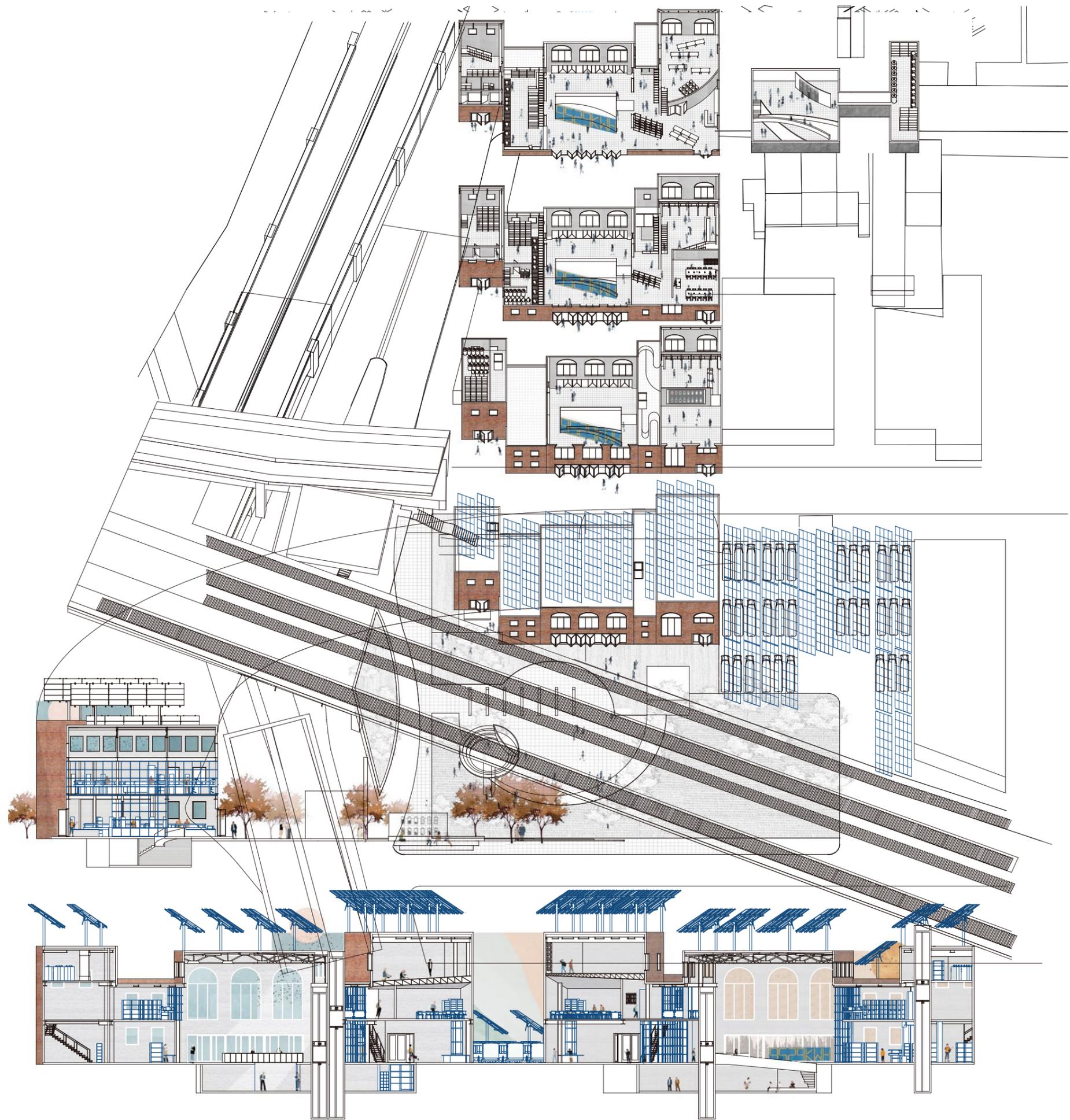
02 Solar Farming

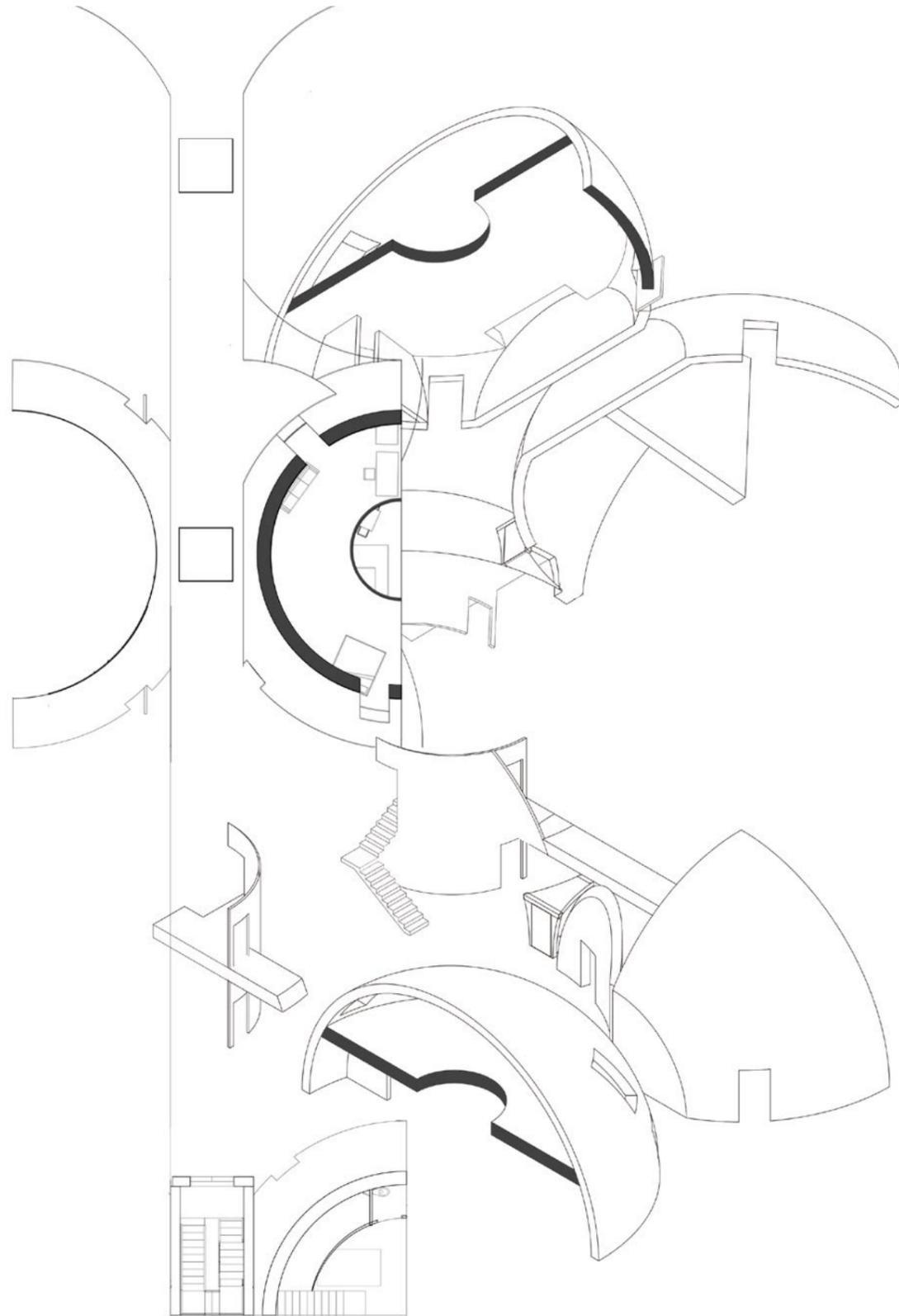
Accessibility

Columbia University
Advanced Arch Design Studio
 2022.09-2022.12

Site: East New York, USA
Pair work with Ming Ding
 Programs: Rhino, Sketchup, PS, AI

Instructor: Laura González Fierro





03 Bunker Housing

Radical Re-use, built matter as finite resource

*Columbia University
Advanced Arch Design Studio*

2023.01-2023.04

*Site: Tirana, Albania
Individual Work*

Programs: Rhino, PS, AI

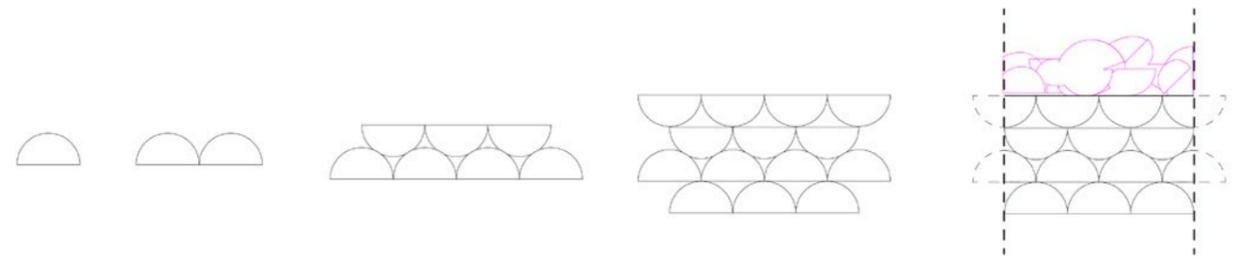
Instructor: Olga Aleksakova, Joel McCullough



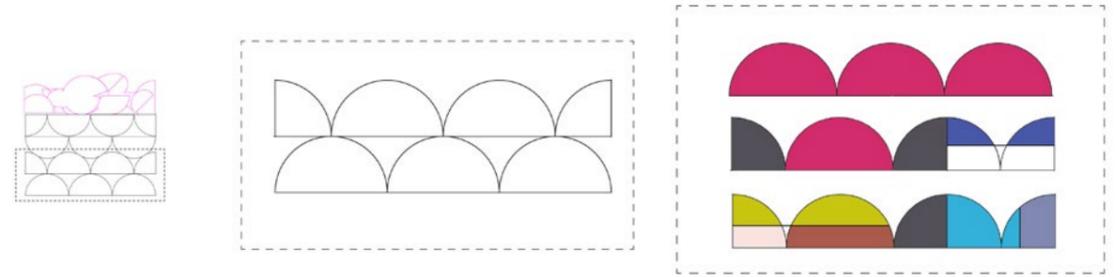
Tirana City Map



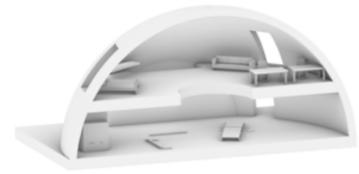
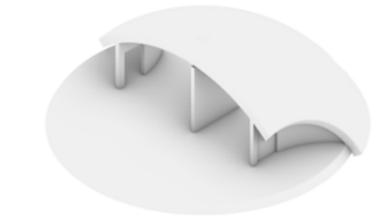
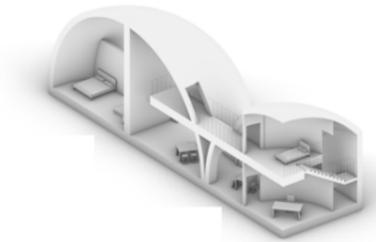
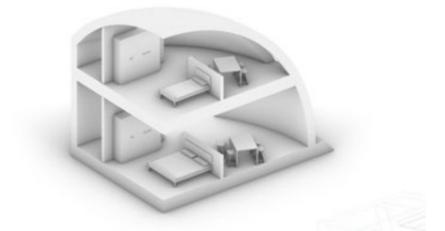
Project Site Map

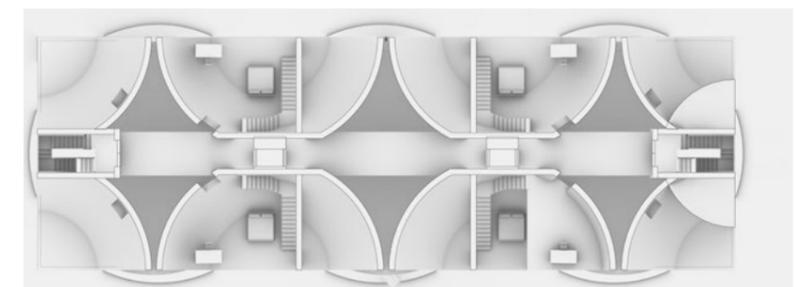
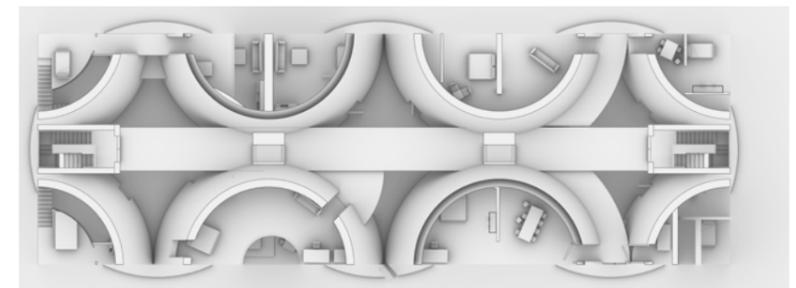
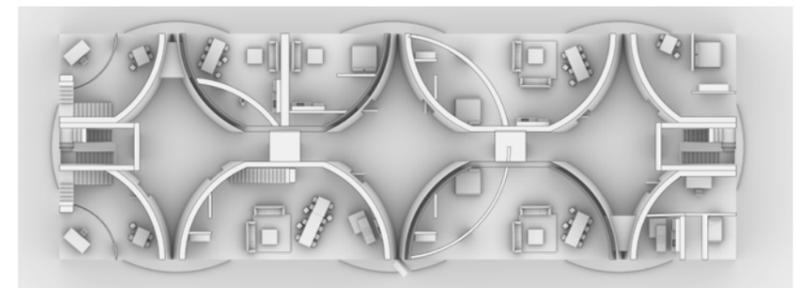
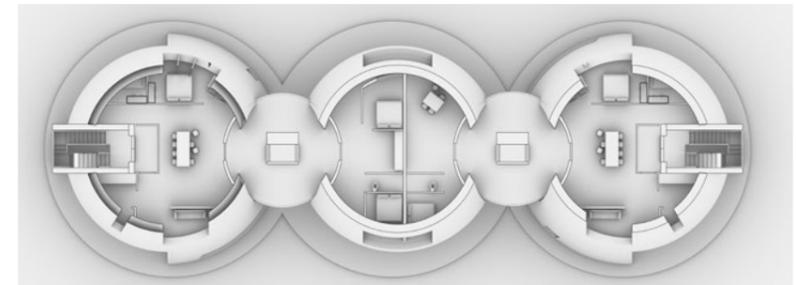
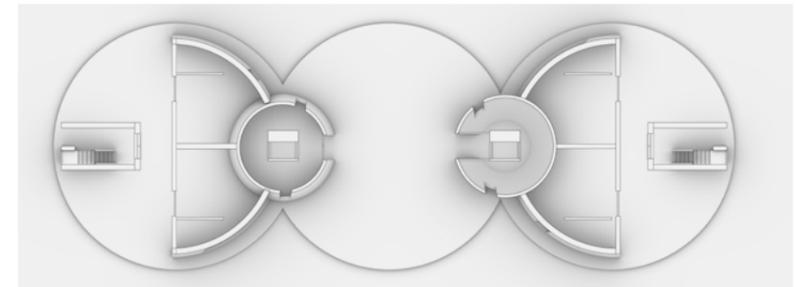


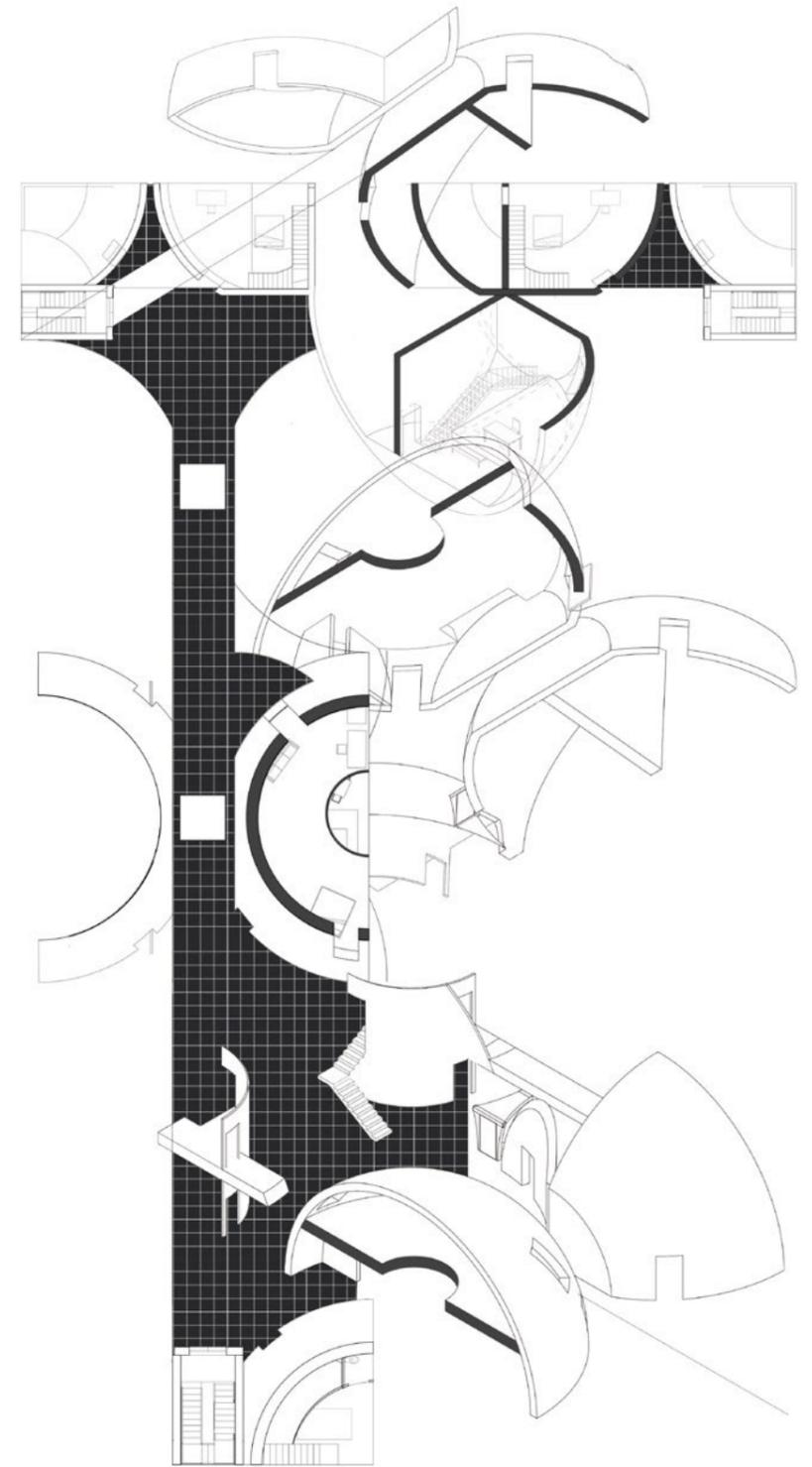
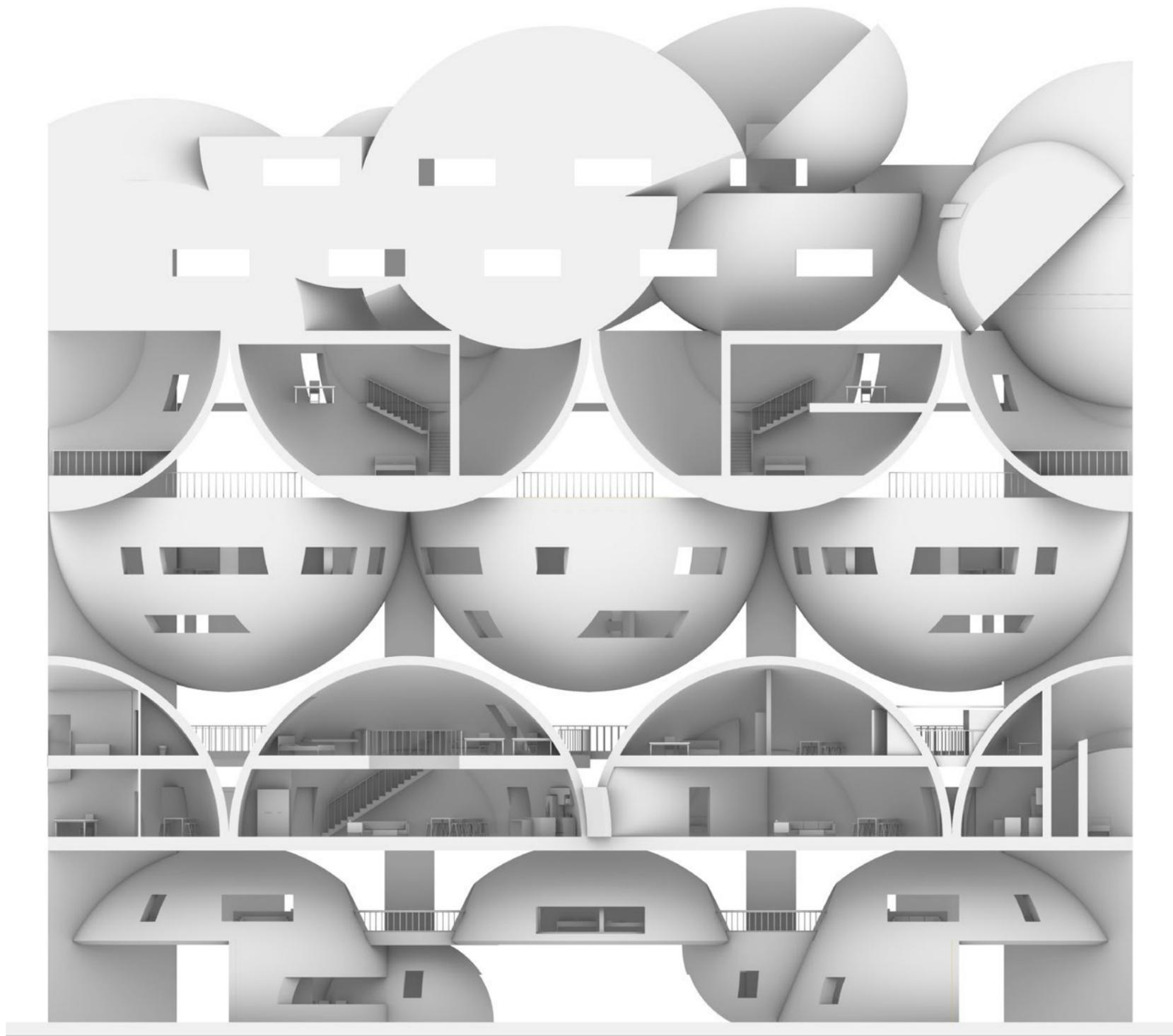
Multi-Function
Housing



Units Typologies







Existence Symbols | Joan Jonas

ARGUMENTS Summer _2022 Final Essay

Joan Jonas, who was born in 1936, has committed her life to feminism and the multidimensional, sometimes inexplicable artistic practices of human and animal relations. Jonas never restricted her works or practices to a single discipline; instead, she actively sought out possibilities to work in the arts, film, installations, writing, voice, and other areas. Things that exist, as part of this world, how can we find the symbol of their existence? How can we use art to mark the footprint of existence which impacts that cross simultaneous scale in nature, space, time, and humanity?



Fig.1.1 Mirror Pieces

The mirror is one of the crucial display tools in Jonas' early works to explore the relationship between the human body, pieces, boundaries, and self. She was inspired by Jorge Luis Borges¹, who brings the feature of mirrors into his creations. For instance, in the work Mirror Piece by Joan Jonas (Fig.1.1), the performers brought a big mirror with them on the stage, and spun the mirror steady and slowly. In this way, the concept of the space was changing as the mirror movement. It not only reflected the body of the performer but also involved the audience. Jonas intended to arouse the anxiousness of the audiences, so that people can pay attention on feminism and narcissism which she used the mirror to examine the naked body.

In this way reflects women's anxiety about their perfect image in public and body objectification.

Mirror has the characteristic to reflect beauty, mystery, and wickedness. When we observe the self in the mirror, what we see is only the illusory mirror image reflected by us, rather than the real self. However, we need to perceive ourselves through external information and feedback. In such a fast internet age, people have been covered by consumerism and submerged in the data river. By looking and observing each part of the body to find out who is the real self. Meanwhile, on the other hand, it alludes to the state of women watching themselves, which breaks away from the hegemony of the male gaze and enables women to be the masters of their eyes. I think this is a brave attempt in the last century, to call for gender quality and speak for women.

Apart from saying that Joan Jonas has all unexpected art representations of mirrors, she also breaks the boundaries between audiences and the performers. The edge is reset up for the space, even we can consider it kept changing as the performance going. During the same period in Japan, Arata Isozaki², who has a similar attempt on the same page. He created a pair of demonstration robots³ for the 1970s Osaka World Expo. The robots as a performance stage were allowed to move around on the site, Mr. Isozaki removed the stage and eliminated the boundary between the stage and the seats to create a super transformative illusionary theatrical experience; also bringing visual and acoustic cooperation and enhanced perception for later festivals, events, and celebrations.

1 Jorge Luis Borges, Argentine short story writer. The unique reflection of the mirror is integrated into the structure of the article



Fig.1.2 Demonstration Robot, 1970

I think these installations and design intentions are trying to reflect the potential and possibilities of spatial diversities and richness. Different from Mr. Isozaki, Joan Jonas is more personal and ritualistic about boundary interpretation, because of the combination of more interdisciplinary artistic performances, fragmentary style, the combination of performance and video projection, improvised drawing on stage, recitation of poetry and other acts.

Throughout all the works of Joan Jonas, for example, Organic Honey's Visual Telepathy (1972), which display with video, engaged with the acoustic design. Jonas wears a mask, robes, and decorations with peacock feathers. The video plays with a harsh sound to create a strong contrast visual effect.



Fig.1.3 Organic Honey's Visual Telepathy, 1972

Joan Jonas has been interested in how we see reality and the thinking of multi-identifications. The constantly changing between reality and fiction, makes the audience switch back and forth between immersion and disengagement. She tries to bring out the audience to question and think about "What is femininity" and "The role of women".

The edges among poetry, film, performance and painting are not clear when she started making arts. I can see that this is a poetic act, soft and gradual, not directly provoking the position of male power, nor giving a precise definition, but through such image, to bring attention to the existence of such alternative ways of voicing. Her works always make people think more about the motives behind this, rather than directly forcing her creative intentions into public view.

In my opinion, I think each of her works of art is an exploration of reality, self, illusion, space and time. We can find ourselves in each of her creations, the imprint of our existence, often forgotten and ignored in our daily lives. From Jonas's perspective, the presence of the female imprint is powerful, and we can find female power and make anyone rethink the position of women in her works. She believes that the body is important, the medium through which all these intentions are conveyed, the important symbol through which we find ourselves and affirm our existence. Last but not least, we have not been tamed and degraded by the data age and the information age. We can still find the essence and the answer in various forms of artistic expression.

2 Arata Isozaki, Japanese architect, urban designer. He was awarded the RIBA Gold Medal in 1986 and the Pritzker Architecture Prize in 2019.

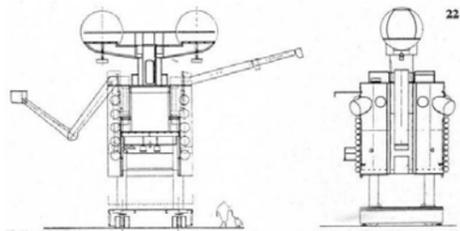
3 Demonstration robots, named Deme and Deku, were designed as an installation and placed in the 1970's Expo.

Project: Demonstration Robot by Arata Isozaki TRANSSCALARITIES_Summer 2022 Final Essay

Against a backdrop of full political, social and technological development and turmoil, the 1970 Osaka World's Expo, with the theme "Progress and Harmony for Humankind, showcase the revolutionary changes in technology and society, including prefabricated frames, tensile structures, metabolism, making this became one of the most pioneering concentrated architectural exhibitions.



Most striking installations were created by Arata Isozaki, a demonstration robot. They were named Deme and Deku. The robot has a head, a body, a base, and two different-length arms. In the head, there are two control rooms that will gather and process the data before sending it to the main control room. It can raise up, turning the base of the foundation into a stage for performance. People can observe the robot moving slowly and reacting by generating smoke, smells, light, and sounds when data and instructions are delivered. Deme and Deku took on multiple functions as the site's hosts and manipulators, which caused a wave of reconsideration regarding architectural machines. While Mr. Isozaki has removed the stage and eliminated the boundary between the stage and the seats to create a super transformative illusionary theatrical experience; also bringing visual and acoustic cooperation and enhanced perception for later festivals, events and celebrations.



Compared to the Tange's festival plaza, the master roof structure and the intention to the superstructure to adapt to the function changes. Deme and Deku introduce the "space of random encounter" and public participation into the expo. Compared to other metabolic practices in Festival Square, for example, the capsule tower by Kisho Kurokawa and Expo tower by Kiyonori Kikutake. Deme and Deku demonstrate the uncertainty of architecture through real interaction with the audience, disturbing the technical utopia that is unified by the massive steel prefabricated roofs. Due to the different perceptions of technology and machines, we can see Kenzo Tange's completely rational definition of technology, while Isozaki believes more in the ritualized expression of technology. In contrast, Kenzo Tange's idealized and standardized rooftop shows hierarchical control and is even tedious compared to the machines with semi-free will. These two machines are full of quotation and humorous mockery, which to some extent rebelled against the technical rationalism led by Kenzo Tange in the metabolic school. The performances of Deme and Deku are real and palpable. Instead of coordinating or compromising under the roof, they provoke a reflection on technological utopia through an interactive experience of truth and humor.

In my opinion, no matter what kind of consciousness architecture is based on, it should maintain and preserve the most fundamental emotional connection between architecture and people, instead of seeking human consciousness dominance and rationality.

Electrified in the Roaring Twenties ARCH, ENG & POLIECOLOGY_Fall2022 Final Essay

ABSTRACT

The year 2022, marks the 104th anniversary of the end of World War I (1913-1918), and the 1920s, known as the "Roaring Twenties," will also be more than 100 years ago. (see Fig1.1) The United States of the 1920s was a period of significant change on every side. And these changes became a reliable structural element in the decades that followed, so that the United States had become a world superpower by the end of the twentieth century.



Fig1.1 Wall Street brokers gesturing to signal trades on the Curb Market in the mid-1920s.

Prior to that time, the whole society and families did not have enough financial means to support people spending extra money on anything other than working and raising a family, and the living conditions of the average American family were generally modest and homogeneous. Factories and farms also operated in a traditional pattern; labor is still the mainstay of production. However, World War I changed the map of the world and reshuffled the status of each country, the United States burst into a new, prosperous social look in the 1920s to the whole world. One of the biggest and most important economic highlights was the widespread use of electricity, into homes, into production lines, into farms, and so on.

In 1919, 55% of the manufacturing industry in the United States was powered by electricity, which led to the invention and widespread use of electrical equipment: radios, refrigerators, vacuum cleaners, washing machines, and many more. A reasonable price made average households able to own electrical equipment. Many modern fashions, such as jazz music, were invented during this time and became popular throughout the United States. People were freed from housework and could enjoy life, and the upper classes were live a more luxurious and dissipation life.

Industrialization also attracted a large number of people to move to the city, thus, the city scale was keep expanding. This was followed by the rise of building construction. Vehicles were also popular here - no longer a luxury symbol for the few. Goods were produced quickly and consumed quickly by the suddenly wealthy. As people moved from rural areas to urban living, more than half of Americans were living in cities by 1920, making the United States largely urbanized, with New York, Philadelphia, Chicago, and Los Angeles all developing into world-renowned metropolises. Mechanized industry replaced the original labor agriculture as the focus of the economy. The government constructed blueprints for electrified farms, which meant a shift in the economic paradigm and thus many new jobs, and economic opportunities sprang up; however, it was not as the policymakers had imagined, as the holders of electricity were private power companies, and the rural power supply was minimally profitable or even unprofitable due to long lines and low load density, so before 1935s, 90% of the rural areas in the United States did not have access to electricity, which strongly affected the progress of rural economic development and the improvement of farmers' living conditions.

At the same time, the spread of electricity and automobiles in cities became a major impetus for the construction period in the United States, and construction began to flourish. Walking through the streets of American cities in the 1920s, people could see skyscrapers, straight and wide roads and avenues, bustling crowds and rolling traffic, wires and telephone lines woven like a dense spider web over the streets, people could listen to radio stations to learn about news that was happening all the time, upcoming products, and a dazzling array of department stores and illuminated markets. ...

All of this picture was so prosperous and ahead of the world as never before. To the point of nowadays, people still discuss this glorious period after 100 years. People now talk about economic development in the post-epidemic era, and perhaps the 1920s and 2020s are have some very similar points: severe inequality, urban-rural disparities, and financial bubbles. People have come to understand the end of the 1920s and the crisis, which was so complex yet with great potential, and at the same time full of pitfalls. And now that electricity and mechanization, technology and information technology have become more widespread than people could have imagined, what will the new roaring era bring?

Electrified into Home

The electrification of the American home was a lengthy and complex process. In fact, the emergence of home appliances dates back to the early nineteenth century; however, electrification and the widespread use of household appliances in the United States did not find practical application until some economic factors, as well as shifts in social patterns and productivity, were met, and a paradigm shift in society and productivity shifted. If it hadn't been for the work of William Sturgeon, an Englishman who in 1832 discovered how electricity is converted into mechanical energy, we still wouldn't be able to use televisions, generators, recorders or other electrical appliances. It was until the 1890s that electric irons, coffee machines and toasters were introduced. In addition, many of the mechanical inventions of the 20th century, including washing machines, vacuum cleaners, dishwashers and electric stoves, were actually developed in the 1850s or 1860s, but were not commercialized, not to mention normal usage in ordinary homes.

After the First World War, the American people's demand for electrical appliances soared, which also promoted the development of industrial manufacturing and sales, and started the popularization of electrical appliances. In other words, the economic and political consequences of the United States' involvement in World War I accelerated the introduction of appliances into the average home. With the change of the international status of the United States, the transformation of social productivity from artificial to electrification, coupled with the transformation of social ideology and economic factors, household appliances gradually appear in people's conception of the new family structure.

In fact, in a decade before World War I, about one million immigrants arrived in the United States each year; After the United States entered World War I, however, transoceanic travel became dangerous and limited. Immigration dropped sharply during the war, from an average of nearly one million to a low of 110,618 in 1918. This led to the lack of cheap labor, and in order to make up for this gap, the electrical appliance market got the corresponding market demand. At the same time, it also satisfies the embodiment of the status symbol of middle-class people psychologically. It not only improves the work efficiency of family housework, but also serves as a symbol of status. Remember that in 1920, only 35 percent of American homes had electricity. By 1929, nearly 68 percent of American homes were electrified.



Fig.1.2 Electrified Kitchen

With the emergence of the new scientific home and the electrified home, the role of the domestic servant began to fade in the family structure. Perhaps a rich family no longer needed so many domestic servants to work, which meant that a large number of people lost their jobs. The ensuing change was that the mistress of the family or the woman became the core center of the bourgeois family spirit and domestic life. Household appliances such as electric washing machines and vacuum cleaners freed middle-class women from backbreaking housework. Housekeepers were no longer needed due to the electric doorbell, and the layout and way of operating the home has changed dramatically.

Perhaps the kitchen is a good example. It is worth mentioning that the all-electric kitchen (see Fig.1.2), which was shown at the World's Columbian Exposition in Chicago in 1893, has already demonstrated people's desire for electrification. One hundred and thirty years later, the majority can't help but marvel at the inventions of the time: the electric frying pan, the coffee filter, the toaster and the dishwasher. Even if it seemed like a vision at the time, it was an important motivator.

Manual Dishwasher, 1887s, Josephine Cochrane

There was a great invention at the World Columbian Exposition: the manual dishwasher. When people talk about Josephine Cochran, they say she was a very rich woman who didn't do the dishes herself. In 1870, when she married a wealthy businessman and moved into a mansion, she started to join Chicago high society. After a social dinner, some precious dishes got dirty while washing, she decided to find a better way to do it instead of doing it by hand, and said, "If no one else is going to invent a dishwasher, I'll do it myself!" Her invention became successful and effectively relieved tired housewives of the responsibility of washing dishes after meals.

One might think that in the situation of the electrification of the United States at that time, the development of technology solved so many difficulties in life that people no longer have to worry about life without electricity, which is unimaginable. The development of electrification also emancipated and promoted the development of women's status, and the role of new women occupied a place in the new society in the 1920s. Millions of women took blue-collar and white-collar jobs, for instance, service, manufacturing, and specialized. They were able to participate in the booming consumer economy. It is also thanks to the popularization of household appliances that women have more time and energy to pursue their favorite things and even invent. However, this is also a double-edged sword. Although the former affairs dominated by the manual are replaced, the efficiency is obviously improved, but it brings more complicated things. Not all women benefit from this, perhaps they need to take on more of the housework and arrange for the machines to work properly. In a word, the development of electrification has led to the development of society, the change of social structure and the change of family structure. All these promote people's pursuit and expectation of a better quality of life. If viewed from a long-term perspective, its application and popularization not only urge the further progress of science and technology, but also subtly affects all aspects of human development. It's a very important, still, very significant milestone.

S.H. Woodruff and the Electrical Adobe House, 1921s, Electrical adobe house

Just as the background of the 1920s mentioned in the introduction, the extensive application of electrification made many new things spring up overnight. And new media, namely broadcasting, advertising and so on become the most advanced, the most rapid means of publicity. In the western part of the United States, Los Angeles, as the real estate economy begins to develop, they need a unique, high-end tool to advertise their products, attract the attention of buyers and be eye-catching.

SH (Sidney H.) Woodruff co-created and conceived one of the largest electrified advertisements in the world. The modern two-story showroom (see Fig.1.3) at Second Street and Larchmont Avenue will serve as a demonstration model for an all-electric home, filled with every new electrical appliance.

"Architect Harley Bradley described in the January 15, 1921, Journal of Electricity that the home "incorporates in its construction all the most modern electrical features of present-day building methods including 117 outlets, 37 of which are convenience outlets of the latest plug-in type for the efficient use of all household electrical appliances and laborsaving devices, underground electrical service and complete telephone wiring."

"This home will be completely furnished and decorated, "ready to live in" by Barker Bros. of Los Angeles....In addition to the furnishings, this home will be equipped by the electrical industry with about fifty of the very latest and most practical household appliances, which can be seen in actual operation."

These devices included dishwasher, silver polisher, knife sharpener, mixer, vacuum electrical fan, vacuum cleaner, phonograph, heater, range, sewing machine, warming pad, electric piano, refrigerator, boiler, washing machine, dryer, ironing machine, tire inflator, battery recharger, and car polisher. These unique and special features and "artistic decoration" would hopefully draw high end, exclusive customers."

This impressive advertisement came out and provided the public with the opportunity to visit. In a short period of time, the value of land in the whole area went up like crazy, reaching \$250,000. The publicity effect was achieved one by one. Thus, more developers and private enterprises see this piece of fresh cake in front of them, and the dividends make them to develop with this new and unique building type. The construction of electric homes was encouraged, and electrification, supported by publicity and education, took hold and was embraced by many middle-class families. I think it's a perfect combination of a new era and a new opportunity, where electrification gets publicized, and more people, from east coast to west coast, from urban to rural, are gradually being electrified; At least getting awareness to spread helps the process along. Even now, more than a hundred years later, people are still exploring the future of electrification.

Electrified into farm

In fact, "The Roaring Twenties" depicted the good life of the city, the widening gap of the lifestyles between urban and rural residents, and the 1920s was also a time of economic crisis for farms. Urban people see a rich consumer economy, while farmers see the prices of their crops, milk and land falling year by year. In Wisconsin, farmland values fell nearly forty percent from 1920 to 1930.

It's hard for current people to imagine daily lives without electricity: cooking and heating on a wood stove, manually pumping water, working and doing housework under a kerosene lamp. In 1932, a lot of people were living this way because only ten percent of rural areas were electrified, and the electrification process was so slow that more than half of the population had to buy private power plants to generate electricity. Rural residents who live far from existing power station are forced to buy gasoline-fueled electricity, and in some cases still live without electricity.

In the early 1900s, before electricity applied, horses and windmills, entire farm families of labor and workers helped with daily tasks. Sometimes people had to be split the wood by hand, in order to heat the house and light a fire in the kitchen. Water is manually pumped from the well and cows are milked by hand. Kerosene lamps are shared in the home: for eating, reading, doing housework, to name a few. They provide some bright light, but it also danger and burn for a very limited time. Besides, fixing kerosene lamps is a dangerous task. As a result, farm families have few other ways and time for leisure, hard to see efficient housework and farm work. Food and storage were a big challenge for farms. With no refrigerator, they can only physically keep warm or cool with ice they get in the winter. Or by pickling vegetables, meat which is stored in cellars.

Washing clothes and ironing are also difficult and tedious tasks for farm housewives. They need to carry water, pump it, clean it, wring it all by hand. Irons are also very inefficient, they need to be heated several times at the same time, and occasionally staining clothes in need of re-cleaning.

There are a lot of manual tasks on the farm: manual pumping, farm cleaning, manual milking, manual moving, etc.; In short, during the same period, much of the labor force in the city could be replaced by electrical equipment, while the labor force on the farm still needed manual labor. But because the land is so vast and sparsely populated, it is not profitable for private power plants to connect to remote rural areas. In terms of construction, rural power plant construction requires more than the city, the cost is also higher; Coupled with weather, land, economy, transportation and other factors, leading to the delay of rural electrification. The gap created by this power gap has certainly led to public discontent and increased the level gap between the cities and the farms, which hindered the modernization of the farms and the countryside.

Publicity is an important aspect, but another important point is that electrification is still new to the public and requires additional training of how to use it. So, REA uses visual equipment to demonstrate knowledge and communication about electrification to the public, and through this to show how electrification can change people's lives. How to organize new farm planning system is also an important technical topic. To help people learn new technologies, REA hired Louisan Mamer (1910-2005), who grew up in a farm without electricity. Mamer and her team members travel around the country teaching people who have never had electricity how to safely operate and maintain electrical equipment, cook and do household chores by using electricity. The percentage of electrified farms jumped from just 3.2 percent in 1925 to 90 percent in 1950.

I believe that in the middle of the last century American society has given women new positions and roles, and their roles have changed because of the growth of electrification, and they have played a pivotal role in leadership and business practices. Compared to the far East, most Chinese women in the Qing Dynasty were still struggling under the deepest oppression of women in the feudal society. They were the lowest class of society, the appendages of men. In addition to the development of science and technology, social progress also requires all people to assume their due social roles.

At the 1939 World's Fair in New York, a striking and impressive project brought a new vision to rural and agricultural life: electrified farms. The theme of the New York Expo, "The world of tomorrow," is driving policy makers and stakeholders to think about how to make rural America electrified to improve the efficiency of individual farming. In this World Fair exhibit, the farm built by architect James W. O'Connors has: Greenhouse, brooder, cooperative, orchard, poultry house, farmhouse, pasture, vegetable garden, information booth, silo, barn, milk house and workshop. This series of programs allows farmers and their families to fully work within this blueprint system. All production rooms are mechanized, and people no longer need to consume a lot of physical energy to do farming. Farmers were freed from the toil of farm work, so they had the opportunity to experience more than farm life. In this system, machine power replaced human power, and the roles of peasant men and women were reshuffled and transformed. Electric utilities have made an important contribution to the electrification of farms. As mentioned earlier, in fact, in 1920, there were 6.5 million farms in the United States, but fewer than 100,000 were connected to the grid. In 1939, the year this vision was conceived, less than 30 percent of farms in the United States had access to electricity. Both the middle class and the public are aware of the gap between the utopian vision of farm electrification and the reality. Most farmers get electricity only by co-working with neighbors and participating in electric cooperatives. Electricity will improve the working efficiency and the living standard and comfort of families in rural areas. The government also encourages more people to stay in rural farms. They believe that if farmers get advanced science and technology and investment, they can produce more products. Franklin D. Roosevelt also tried to address the problem, working with Congress to create the Rural Electrification Administration (REA). By providing low-interest loans directly to agricultural cooperatives for 25 years, to be repaid over 30 years. Farmers can organize to provide cooperatives to expand public power generation and to fund the construction of new public power plants.

Rural Domestic Electricity Consumption

People with the vision and REA and the efforts of the government, in 1935 Roosevelt proposed the establishment of the Rural Utilities Service (RUS) to promote the process of rural electrification, and obtained the approval of the Congress to set up long-term low interest loans, by the government to help farmers in the form of voluntary rural electric cooperatives, farmers only need to pay 5 to 25 dollars to become a member. Within a few decades of its establishment, about 90 percent of farms in the United States were connected to the grid.

Electrified farms are no longer a far-off blueprint, but are being implemented on rural farms. Electric light is one of the first things that a farm gets when it gains electricity, and it is one of the most transformative sources of home life and farm operations. Cleaning dangerous kerosene lamps is no longer a weekly chore. The popularization of electric lamp not only illuminates a wider range, but also provides enough illumination. People no longer read, study and communicate in dim rooms. They can naturally engage in other activities at night, such as reading, sewing, doing homework and so on.

With electricity on farms, water can be piped to rooms, kitchens and workshops. Instead of pumping by hand, farmers can carry water in bad weather, making life easier. After the purchase of each household appliance, the operation efficiency of the farm has been greatly improved, and the living qualities of farmers has been significantly improved and promoted.

In the years after much of rural America was electrified, REA continued to work to bring telephone lines and later Internet connections to rural areas. In the short span of more than a decade, the United States has set a good example on the road to national electrification. It is still a typical example in the development of the world afterwards. One might think the electrification of American farms was successful because of strong political support: Congress and government departments, and the establishment of REA was an indispensable success factor. The second is the policy of long-term cheap credit, which fundamentally solves a major stumbling block to electrification. And keeping up with The Times are education and training programs that encourage farm families to use electricity more efficiently and waste less. Although the overall picture is not perfect, and the subsequent economic crisis has thrown both urban and rural areas into crisis and challenge, this period of history is still worth learning from.

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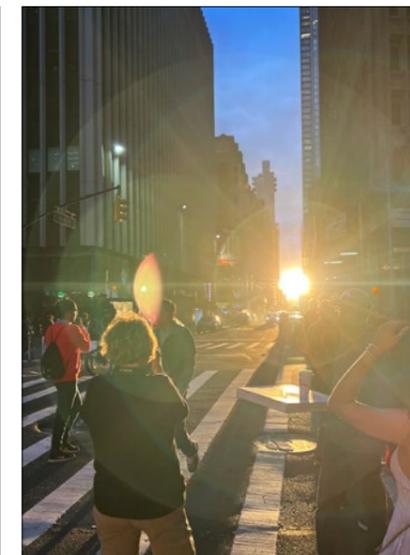
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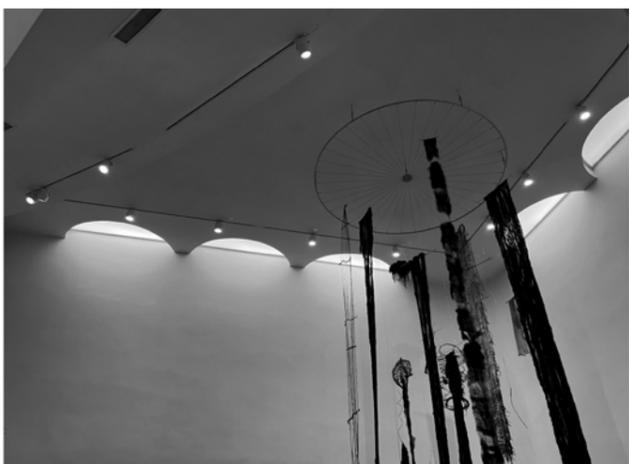
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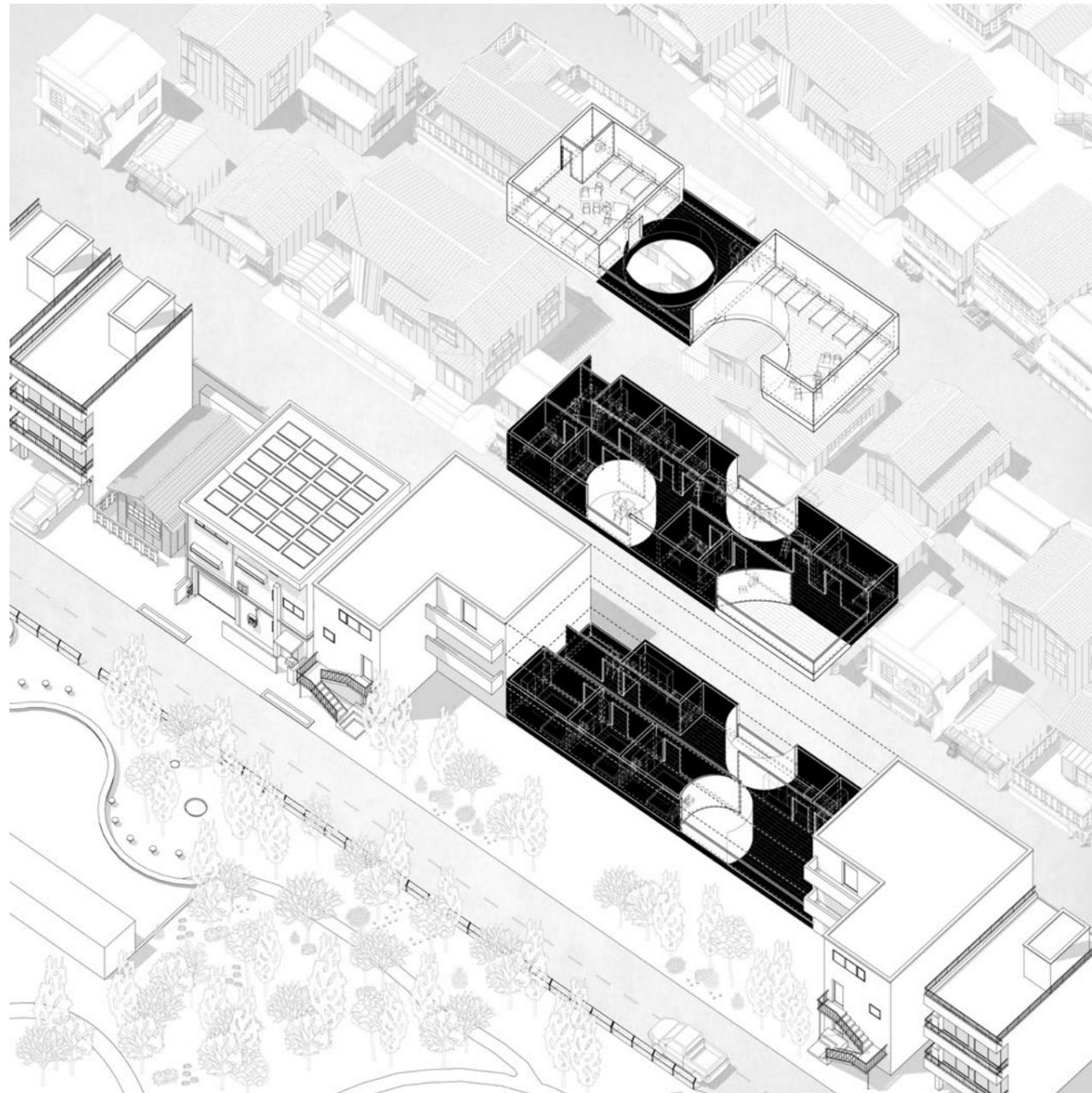
Instructor: Michael Vahrenwald











Abstract

Danchi housing complex, Japan's largest social housing experiment chapter in Japanese architecture and urban history, continues to be a vital example of affordable housing for many residents afterward. Danchi housing grew up between the 1950s and 1970s, in order to face the rapidly growing population, and played an important role in shaping modern Japan. As time flies and technology develops, the morphology and structure of society have changed enormously. Danchi housing cannot be adapted to the new trends due to its rigid form and function. Nevertheless, the residents living in the Danchi housing are middle-aged and elderly, which causes a serious, non-negligible issue of aging and lonely death. In a recent report by The Mainichi Shimbun newspaper, it was revealed that 538 individuals in Tokyo and Osaka died "lonely deaths" while living with others between 2017 and last year.

These findings have prompted us to rethink of the social structure and how architecture should respond in a new capacity to aging and reducing lonely deaths among the elderly in a country where humanism is the utmost concern. This project is mostly considered the reshuffle of the rigid of Danchi complex, to create an active, healthcare, and let the seniors engage with society's development.

The Growth, Risk and Fall of Danchi Housing

Danchi, which means "group land" in Japanese, refers to a type of large-scale public housing built in Japan during the post-World War II period. These housing complexes were designed to address the severe shortage of housing at the time and provide affordable homes for Japanese citizens. These large-scale public housing developments typically consist of multiple blocks or buildings arranged in a grid-like pattern, with a focus on creating self-contained communities within the larger complex. The history of Danchi can be traced back to the late 1940s, when Japan was facing a severe housing crisis due to the damage inflicted by the war. To address this problem, the government launched a massive public housing program, which led to the construction of thousands of Danchi complexes across the country. The first Danchi complex was built in 1955 in Tokyo, and it quickly became a model for other housing projects across the country.

These complexes are typically located in suburban or semi-rural areas, away from the city center, and are characterized by their uniformity and functionality. The individual units within a Danchi complex are usually small and basic. The exterior of Danchi buildings is typically plain and utilitarian, with low-cost materials and efficient construction methods. The individual housing units are often arranged in a repetitive pattern, with each unit having a similar layout and features. (Fig.1.1) In the larger scale of the Danchi complex, each unit will be connected by a narrow and long corridor, it made the circulation in a simplex way. The common space is confined, and neighbors were isolated.



Fig1.1 Wakamiya Danchi: two 3DK units in a typical one-staircase building plan

In addition to the individual housing units, Danchi complexes originally also include a range of amenities such as schools, shops, parks, and community centers. These amenities are designed to create self-contained communities within the larger housing development, and to promote social cohesion and a sense of community among residents. However, as society changes and the population moved to the city center, there were a lot of abandoned facilities occurred. New generations move out of the Danchi complex, only the seniors are left.

Tatiana Knoroz "Japanese mass housing from the 1960s is a fascinating cross-cultural experiment that merged Western and Soviet modernist typologies with traditional Japanese elements. Once a symbol of a new "modernized" way of life, it has since become a burden for Japanese society. Current living conditions in these housing estates are unsuitable for elderly residents and have given rise to the phenomena of kodokushi—lonely, unnoticed deaths inside of the apartments. " Archdaily, February 19, 2020

However, "Lonely death," or kodokushi, is a growing problem in Japan, particularly among the elderly population. This refers to cases in which individuals die alone and go unnoticed for a significant period of time. The country's rapidly aging population and changing family structures are two of the primary causes of this phenomenon. As traditional family structures deteriorate, more elderly people are living alone, without the support of family or close friends. Furthermore, numerous elderly individuals do not have strong social networks or opportunities for socialization, which can contribute to feelings of loneliness and isolation.

The issue of kodokushi has become a major concern for the Japanese government and society as a whole, with efforts being made to address it. Some local governments have put in arrangements to help elderly people who live alone, such as regular check-ins and assistance with daily tasks. Additionally, community-based programs, volunteer organizations, and other initiatives are being developed to provide socialization opportunities and combat social isolation among the elderly.

Overall, the author is interested in how to archive and reactive the Danchi housing complex and also solve the Kodokushi issue in Japan. This project is intended to adapt the demographic changes, and social issues and bring in more modernization investment. So, a series of new modules will plug into the original Danchi housing complex, new facilities will be introduced while maintaining the original independence. The common new program will be thoroughly enjoyed by a small number of residents. Meanwhile, the elderly can look after each other without being too bothered.

How To Deal with the Urgency?

Danchi housing has received a lot of architectural criticism over the years, with some claiming that the design doesn't meet the needs of modern residents. One common criticism leveled at Danchi housing is that the structures lack individuality and character, with many of them appearing monotonous and identical. Another criticism leveled at Danchi Housing is that the design frequently seeks functionality over aesthetics or livability, resulting in buildings that feel sterile and uninviting. Some argue that the buildings can be oppressive and alienating, with long corridors and concrete walls that create a sense of isolation and anonymity.

New Plug-in Units

So that in this project, the new element--- circle, is introduced into the new design. They are not a large-scale unit to bring the dramatic changes, but a medium-scale, radius is about 4 to 6 meters, depending on what function needs to be adapted. The Danchi housing layout can be reconfigured to better suit its intended purpose. If the original room is occupied as a new remodeled area, there will be new rooms combined and seniors will choose whether or not to go to the shared room based on their wishes. round shape view from the open to below openings.

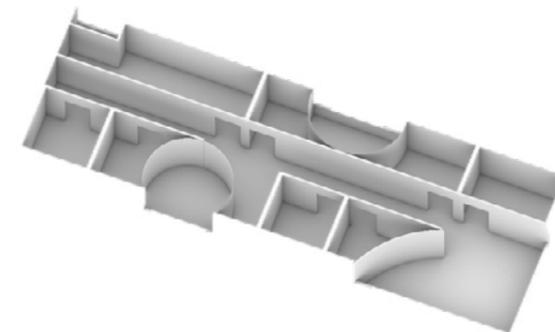
And the old people can gain the new viewing deck at the corner, as a common leisure space. They can play chess, tea talk, produce handicraft works, and such. They can notice who is attending to the activities and who were not. In addition to making sure enough space for the social organization worker can help and organize the seniors to hold some activities to promote their mental health.

The new module will located in different places in the building, in order to break down the long corridors and solid walls. The residents can operate the garden inside the building, though some of them are not able to get out of the room too often by themselves. Or some old are not willing to engage too much with strangers, and this module will help them to protect and respects their privacy and wishes.

Activity Garden

The relationship between landscape and housing is a crucial aspect of urban design and architecture. The design and integration of natural landscapes with housing can have a significant impact on the mental and physical health and well-being of residents, particularly for old people. So that in this project, a single road was replaced by a long park; as the designer considers, the design and integration of natural landscapes with housing can have a significant impact on the mental health and well-being of residents. The public garden will encourage the old people to access to nature can help to reduce stress, anxiety, and depression, and promote relaxation and feelings of well-being. Additionally, views of natural landscapes from housing units can provide a sense of connection to the environment and a feeling of tranquility. Furthermore, the presence of green spaces and natural landscapes can have positive social effects by promoting a sense of community and connection with others. Public parks and communal gardens can provide opportunities for socializing and interacting with neighbors, which can improve social cohesion and reduce social isolation.

In addition to promoting mental and physical health, the integration of natural landscapes with housing can also have positive social effects. Communities with green spaces and natural landscapes can also provide older adults with opportunities for intergenerational interaction and socialization. Parks, community gardens, and other outdoor spaces can serve as venues for community events and activities, such as concerts, picnics, and festivals, which can bring people of all ages together. In addition, the renovation of Danchi and the new organization's adoption can relieve some of the employment pressure and provide employment opportunities for more people. Further, the arrival of this new module allows the elderly to participate in the operation of the whole system, where the elderly are both the providers and the served; overall, this proposal is a project renovation to preserve the Danchi as a traditional building for the care of the elderly and to relieve the pressure of society. However, the reality is that segregation has some unpredictable consequences but this project aims to alleviate the pernicious consequences of segregation and to bring new vitality and possibilities to the elderly and the community and the city. This project is only intended to alleviate the pernicious consequences of segregation and on that basis to bring some new vitality and possibilities to seniors and communities and cities.



IF BUILDINGS COULD TALK_Spring 2023

Instructor: Sharon Ayalon

Group: Claire Koh, Jiyeon Hwang, Yilin Zheng, Annie Yu

The Jazz Balls interactive art/sound installation playfully depicts Harlem Jazz history. It will introduce future generations to Harlem's glorified tradition in a fun and educational way.

The artwork will be installed at a playground in Riverside Park in Morningside Heights. It aims to introduce the children and visitors of Morningside Heights to the jazz history of neighboring Harlem in a playful manner. It will evoke interest in one of the most significant roots of Harlem that have been overshadowed by the other mainstream reputation of the neighborhood. The installation is made of ten sound modules that are installed along a railing of an appropriate height for children to interact. Each module will be made of a plushie ball and a rope, with electronic parts secured along the top of the speaker and along the rope. The visual side of the installation is inspired by musical notes - the foam balls on a cord. They are arranged in a way that hints at the tempo and the pitch of the sound module.

JAZZ BALLS

WELCOME TO WORLD FAMOUS
RIVERSIDE THEATER
CLAIRE KOH, JIYEON HWANG, YILIN ZHANG, RENWEN YU

Each ball contains a unique sound of different chords, tempos and instruments used in a common jazz progression. Children can activate the installation by pulling the plushie ball at the end of the rope, which will play the individual sounds from the speaker. The accumulation of children playing could create the sound of an improvised jazz session. There will be four modules containing general beats made of piano, drums (S2), and double bass, three modules containing pieces performed by the famous musicians of Harlem (La Vie En Rose by Louis Armstrong, Strange Fruit by Billie Holiday and Take the A Train by Duke Ellington) and three modules containing sounds of a specific drum (hi-hat, tom, snare) for interactive purpose.

Children could play these modules individually to familiarize themselves with the musical progression, or basic drum beats, or history of jazz. They could also stack them together to create their own unique piece of jazz. The electronic parts are made of a circuit board wires, push button and a piezo speaker. Since the piezo speaker may not be loud enough to adequately deliver the sound to the visitors, we made special speakers out of paper plate and caps that face down towards the users (children). The installation is accompanied by a brochure that describes the installation, a brief jazz history of Harlem and several notable figures.

JAZZ BALLS BACKGROUND AND BEAT JAZZ OF HARLEM SOUND EFFECT

<p>Background Beat 1: Excerpt from: Lick No. 1 - Left Hand Variations Blues Piano Lesson #11</p> <p>Title: Walking Bass (I - VI - ii - V) - Two Chord/Bar Artist: David Magyel</p>	<p>Jazz of Harlem 1: La Vie En Rose - played by Louis Armstrong</p>
<p>Background Beat 2: Excerpt from: Dynamic Jazz Beat / Backing Track 120 BPM (royalty free)</p> <p>Artist: Jim Doolay</p>	<p>Jazz of Harlem 2: Take the A Train - piano solo by Duke Ellington</p>
<p>Background Beat 3: Excerpt from: Lick No. 1 - Left Hand Variations Blues Piano Lesson #11</p> <p>Title: Walking Bass (I - VI - ii - V) - Two Chord/Bar Artist: David Magyel</p>	<p>Jazz of Harlem 3: Strange Fruit - By Billie Holiday</p>
<p>Background Beat 4: Excerpt from: John Goldsby - Solo Double Bass Performance of "Sweet and Lovely"</p> <p>Title: Sweet and Lovely Artist: John Goldsby</p>	<p>Sound Effect 1: Hi-Hat Sound Effect 2: Tom Sound Effect 3: Snare</p>

