

Nourishing the City:
Integrating Local Food Systems in Seattle's Central District

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ABSTRACT

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The agriculture industry is one of the main contributors to environmental degradation due to massive amounts of water and energy consumption, greenhouse gas emissions, and waste. Meanwhile, food insecurity disproportionately affects on populations based on race, socio-economic factors, and location. This thesis explores the opportunities to develop a food center within Seattle; one that nourishes the community and the environment, while working to equitably serve people through access, affordability, education, and social capital.

Centered between Seattle's Central and International Districts and near the two major Washington interstates, the proposed food center on Rainier Avenue is situated at a critical node in the city; one that is culturally diverse, food-centric, and rapidly developing. The project incorporates the adaptive reuse of a 1923 cosmetics factory into an urban food center for locals and tourists; a place to serve the community and educate visitors on sustainable food practices, food supply systems, and the Circular Economy model.

The food center contains aspects from each phase within the food supply chain, from production to waste recovery, to provide visitors with a holistic understanding of the food system. The center also provides spaces for the community to learn, grow, gather, and dine together. Nourishing the City is reimagining how local food systems can better integrate into under-resourced communities for a more equitable and sustainable future.

THANK YOU -

to Kathryn and Gundula for your expertise and guidance week after week. Your classes set the foundation to my passions in adaptive reuse and urban agriculture. You both inspire me in the work that you do and I was so honored when I found out you accepted my faculty request.

to my studio friends, past and present, that have become family. You challenge me, inspire me, and push me to be a better designer.

to Julia, Halina, and Glenn, for your endless love, support, and pep talks. While the last year of the pandemic has been full of isolation and challenges, I am grateful to have had each of you by my side carrying me through on the hardest of days.

and to my family, my biggest supporters, for I would not be where I am today without your endless support and love. I am eternally grateful.

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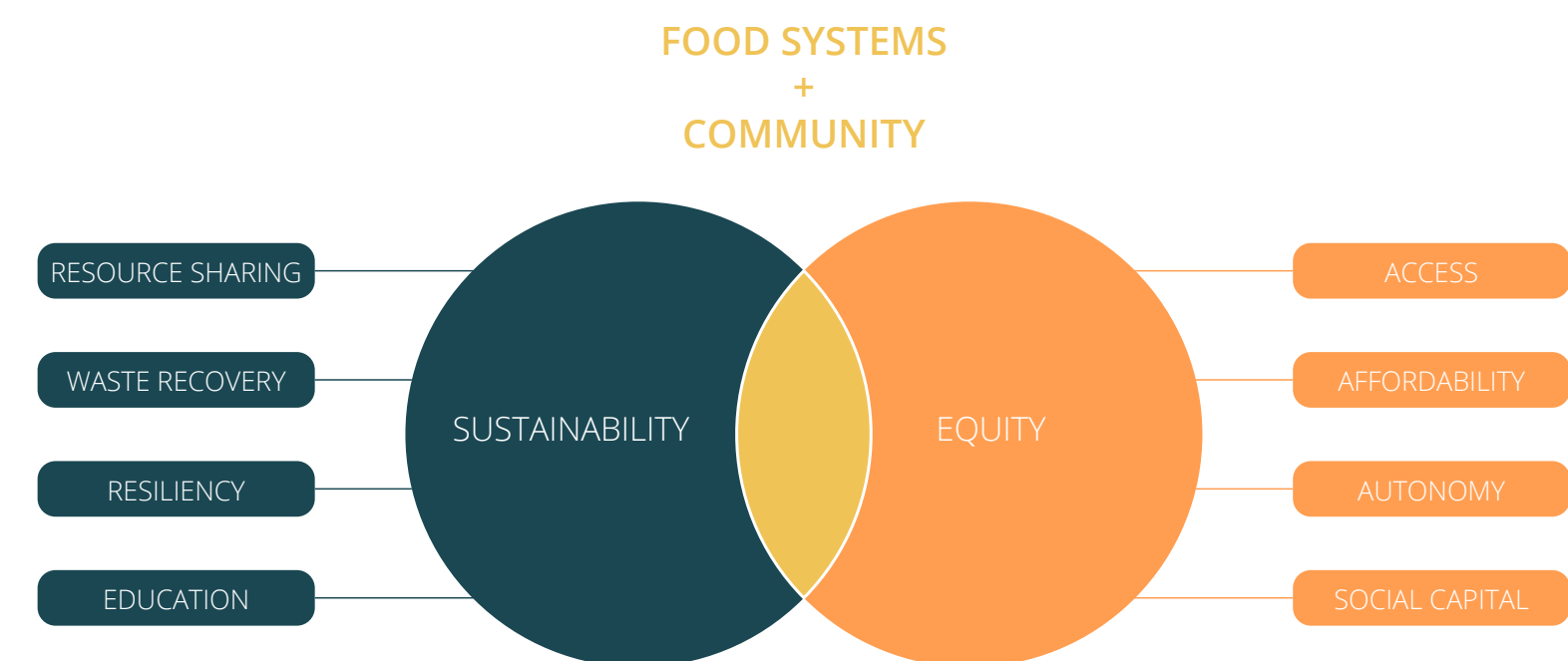


Figure 3:
Venn Diagram of the goals directing the project:
sustainability and equity, and their sub categories

INTRODUCTION

Climate change is negatively impacting every major ecological system on the planet and the rate of decline is increasing yearly. Agriculture consumes 70% of the global fresh water¹ and is responsible for 10% of the total U.S. greenhouse gas emissions.² While natural resources are depleting at an inconceivable rate, the global food supply chain throws away over 30% of the food it produces,

wasting ample amounts of water, energy, and labor.³ The agriculture industry is in need of sustainable solutions that can mitigate the environmental impacts the current processes are having on the planet. With the climate crisis at the forefront of many political agendas, it is time that built environment professionals get involved in reimagining how the food system nourishes our cities.

OPPOSITE
Figure 1:
(LEFT) - Satellite image of city grid in Rome, Italy.

Figure 2:
(RIGHT) - Satellite image of crop circles in Eastern Washington.



DESIGN OF THE CITY + FOOD

“The fact that our words ‘culture’ and ‘cultivate’ share the same stem (the Roman cultus) tells its own story. Cultivation and civilization in the Graeco-Roman world were inextricably linked.”

Carolyn Steel (Hungry City)⁴

Prior to the industrialization of food in the 19th century, cities were planned and designed with their food closely integrated. Just as the symbolism of political or religious buildings were designed and interpreted as centers of power in the city, so were the city’s markets. Borough Market in Southwark, London, is one of the oldest food markets that has been present in its current location for over one thousand years.⁵ Its success is contributed to its location, serving as a central node for the city.

In the earliest civilizations, markets were essential features for urban life. They were centers for trading goods, while also serving as vital sources of social and community engagement.⁶ However, as the industrialization of the food system evolved, the distance between the source of food and urban life grew farther apart. This distancing can be attributed to several factors including public health and hygiene practices, as well as economical motives for cheaper, vaster, land. However,

there were adverse consequences to the distancing between cities and their food.

Societies became further removed from production, processing, and the entirety of the food supply chain. Just as the 20th centuries hid away utility processes of the functioning city (such as sewage, water treatment, and waste facilities) agriculture too became a mirage behind the curtain that emerged between urbanization and industrialization. People today lack the physical, spiritual, and emotional connection to the source of their food. Knowledge of cultivation practices are widely lost for the commoner and only five corporations are responsible for roughly 90% of the United States’ food supply.⁷ Revitalizing the connection of food production, processing, and waste recovery back into the city will serve to restore the social capital and food knowledge back into communities to ultimately improve health, food justice, and provide further opportunities for more sustainable agricultural practices.

OPPOSITE

Figure 4:

(LEFT) - 18th Century markets served as vital social spaces and were often considered the city center. Image of Borough Market in 1729 depicts the liveliness the market once encompassed.

Figure 5:

(MIDDLE) - Industrial-grade combines harvesting grain.

Figure 6:

(RIGHT) - Urban agriculture, like this commercial rooftop greenhouse at Lufa Farms in Montreal, are gaining momentum in cities for their environmental benefits.

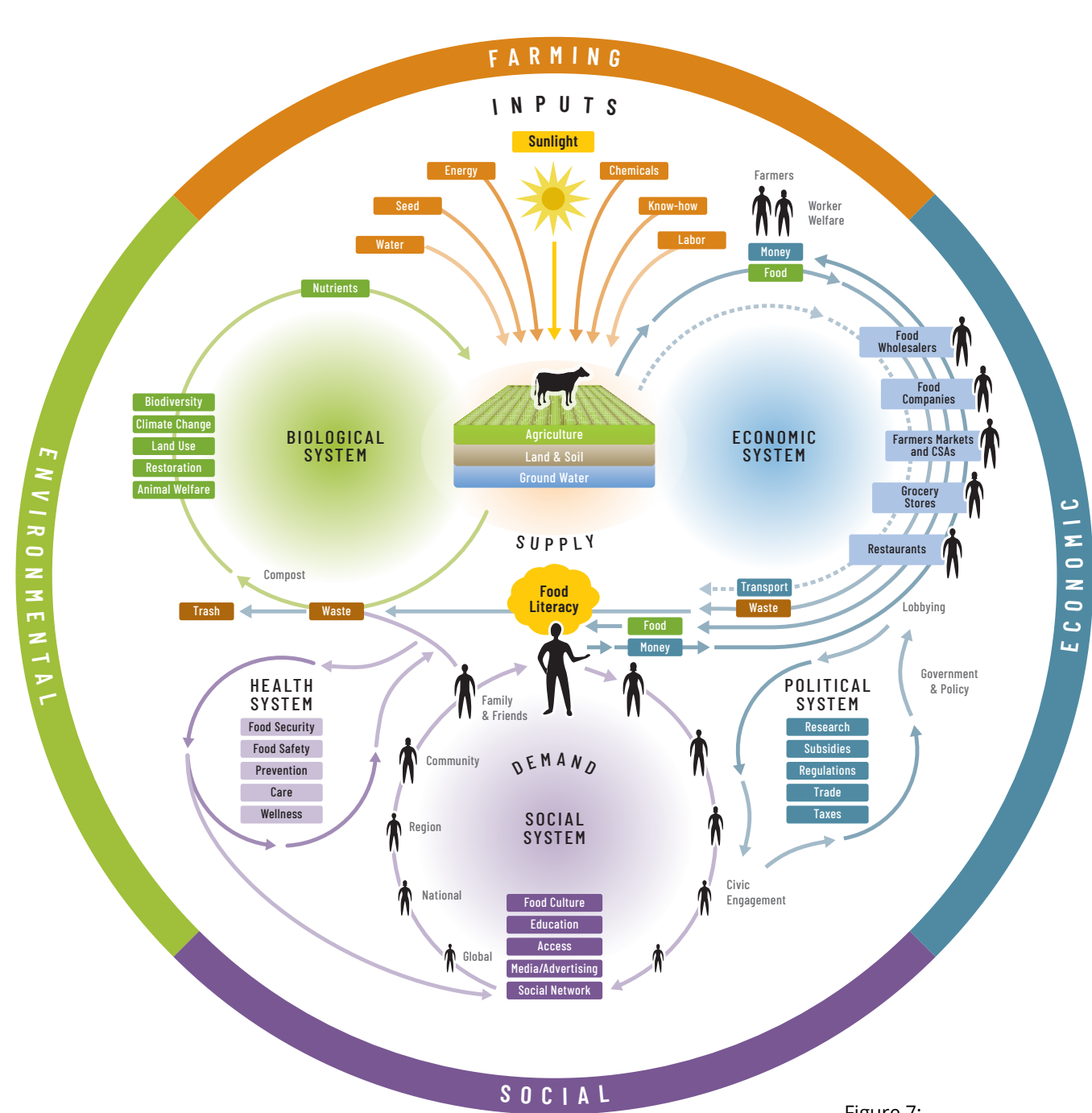


Figure 7: Global food supply chain diagram and the entities involved within the system as a whole.

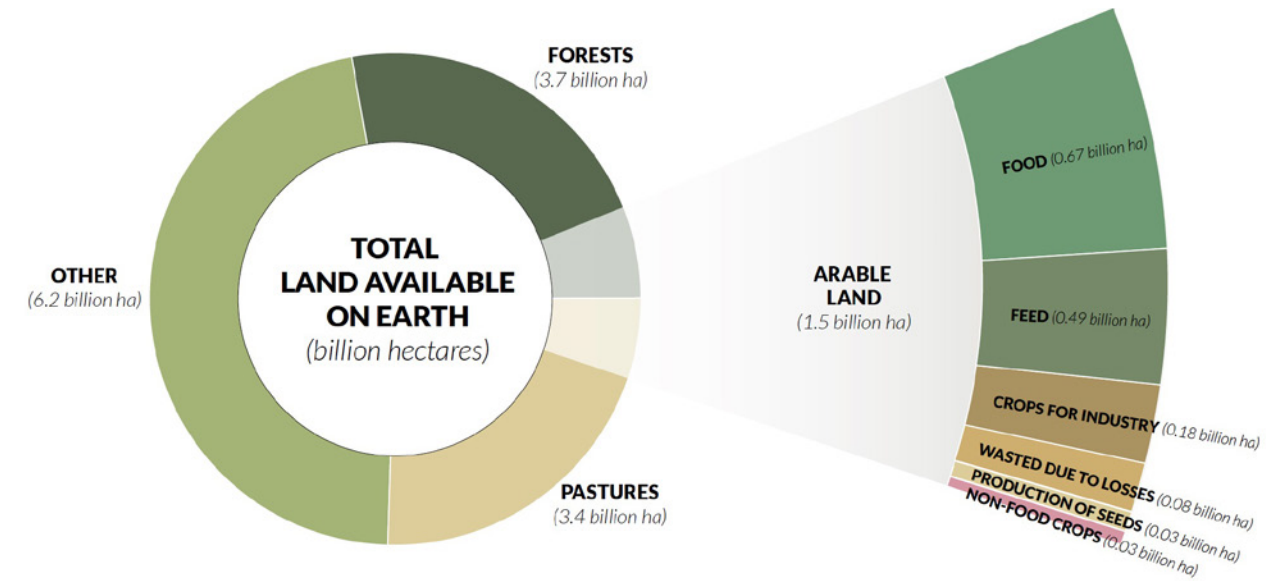


Figure 8: Arable land utilized for agriculture takes up over 10% of the total land surface on Earth.

BACKGROUND

“The shopping centre which can do more than fulfill practical shopping needs, the one that will afford an opportunity for cultural, social, civic and recreational activities will reap the greatest benefits.”

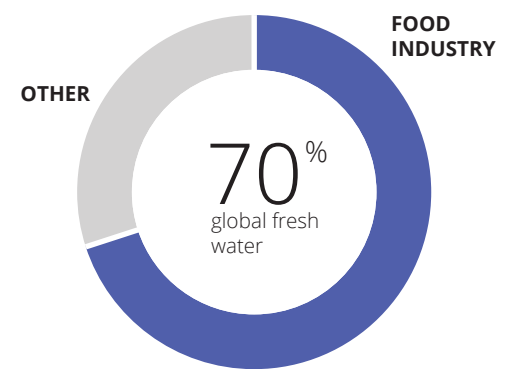
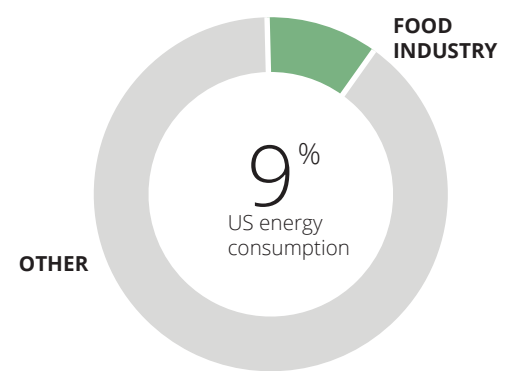
Victor Gruen (Hungry City, 79)⁸

GLOBALIZATION

Production processes have evolved over time to result in the current global food system we have today. This system is extremely complex, influenced by politics, economics, government regulations, and technological advancements. Since the end of WWII, the food supply chain has grown exponentially. While the food system has proven successful in producing enough yield to feed the population growth, there is growing concern in the current system’s ability to sustain the environment for years to come. Production techniques that are now

considered “conventional” must be re-evaluated to fit the requirements of the growing climate crisis. The need for the system to become resourceful, regenerative, and sustainable has never been greater.

SUSTAINABILITY | Land, Water, Energy + Waste
In 2011, the Food and Agriculture Organization of the United Nations (FAO) released a report on the state of the world’s land and water resources for food and agriculture



which provided the stark reality of where the current practices are leading. This report included a firm call-to-action for governments and the private sector to be “more proactive in advancing the general adoption of sustainable land and water management practices.”⁹ The cause for concern is rooted in the statistical data that represents the massive use of resources in order to operate the current food system. The agricultural industry depends heavily on land, water, and energy, while wasting over 30% of the food that is produced.¹⁰ The food supply chain is in need of new strategies and a shift in structure in order to sustain the remaining finite resources to feed the population for years to come.

This thesis project draws on innovations such as urban agriculture and the Circular Economy model to directly address these sustainable land and water management issues. The project challenges the way food is produced by bringing production closer to dense populations, as well as implementing a food environment into a neighborhood that works to educate and inform the community to serve not just as

Figure 9: The food industry contributes significantly to the environment impacts of water usage, GHG emissions and pollution.

a source of sustenance but one that is rich in giving back to community.

Additionally, innovative environmental design strategies would be utilized to further challenge how this food center could be net zero for water, energy, and waste. Through the implementation of resource sharing, rain harvesting cisterns, daylighting strategies, anaerobic digesters, composting toilets, and rooftop PV panels, this project has the potential to reset the standard of how our food is produced, processed, distributed, and recovered.

EQUITY | Food Access, Affordability + Quality Resolving the food system challenges is not just a matter of mitigating environmental impacts, but it must serve communities equitably. Due to decades of racial injustices and integrated systemic issues, the current food system is in need of restructuring to better serve people more equitably. One critical piece that must be at the forefront of this conversation is food justice, defined as, “a process whereby communities most impacted and

exploited by our current corporate controlled, extractive agricultural system shift power to re-shape, re-define, and provide indigenous, community-based solutions to accessing and controlling food that are humanizing, fair, healthy, accessible, racially equitable, environmentally sound, and just.”¹¹ Along with food justice comes the need for food sovereignty, or the ability to self-govern the freedom of choice, both within what foods to consume, but also the means of production and distribution of the food system.¹² This concept is based on giving back power to those working within the food system, rather than at the demands of corporations and markets.

From the selection of the site, to the design of the program and the building, this thesis addresses equity as an essential means to direct the project. Nourishing the City requires a cognizant read of the community’s needs and puts the priority of the development within the power of community. In order to address food justice, this thesis explores opportunities for food sovereignty and improving the food environment in and around the context of the Central District.

Other resources that address inequities within the food system include, “Bringing Food Equity to the Table” a paper written by Laura Anderson from Wellesley Institute. In Anderson’s writing, she defines the two main issues of food accessibility as one, being a failure of social support

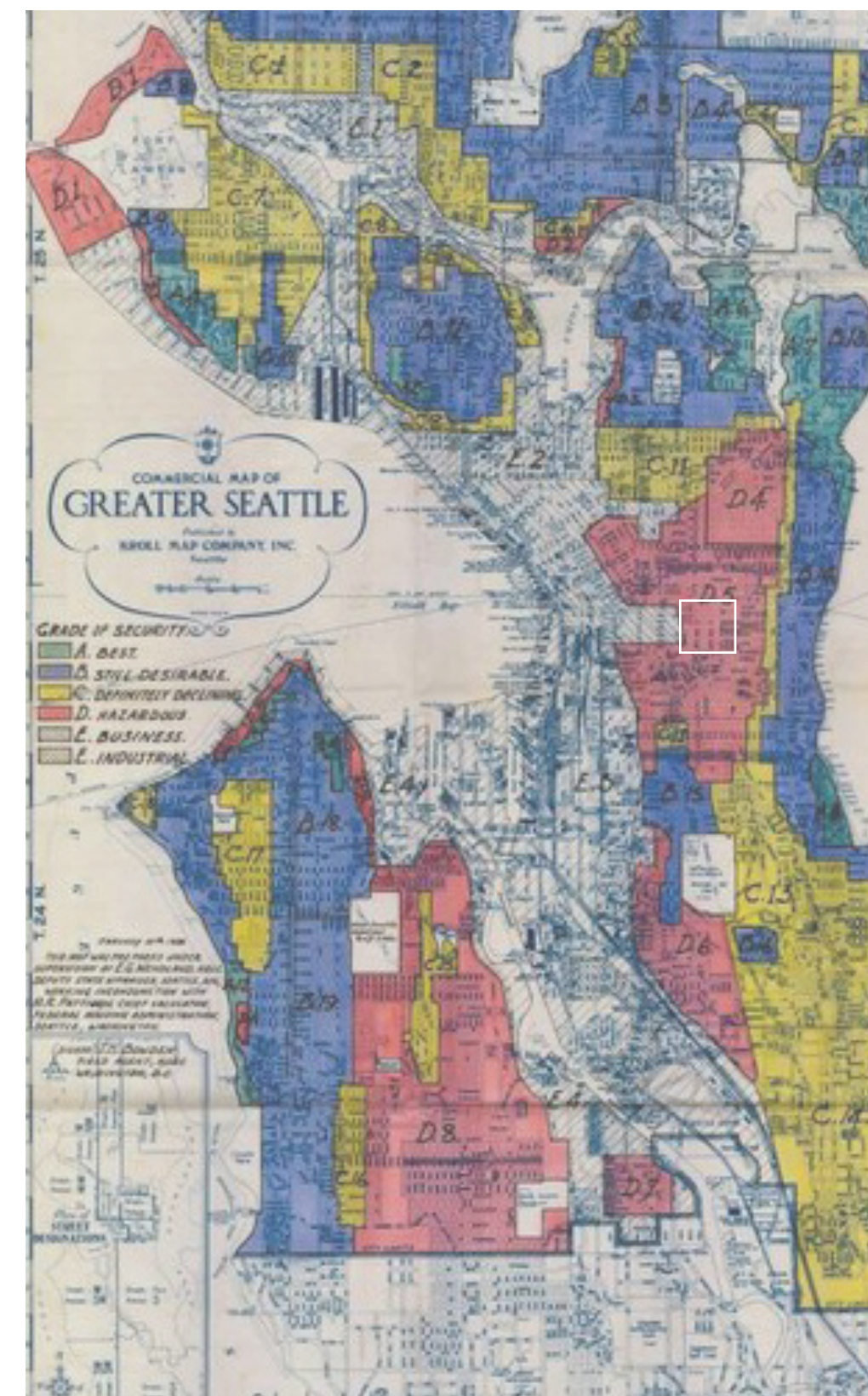


Figure 10: Historical map of Seattle shows the redlined neighborhoods; a racially discriminatory housing practice that communities of color are still face impacts from today.

systems to ensure people have enough money for healthy foods and two, improving equity within the food environment. She goes on to break down what a 'food environment' means. There are four key features that make up the food environment. These include geographic food access (or the proximity of food stores, restaurants, and community food sources within a given geographical area), food availability (or the specific foods available within that area), food affordability (or the cost of food in the given area), and food quality (or the freshness and nutritional value of the food available).¹³

All of these features that make up the food environment are critical in establishing equitable food systems throughout all neighborhoods. However, historically speaking, lower income neighborhoods have often been classified as food deserts; a term dubbed by the USDA to describe geographical areas of low-income census tracts with a substantial number or share of residents with low access to retail outlets selling healthy and affordable foods.¹⁴ While the commonly referred to term works to identify areas within the food system that lack equitable resources, it fails to address the systemic and rather structurally racialized inequities that are built into the system. Malik Yakini identifies the issues of the term, food desert, for it, "...doesn't speak to the intentionality of the conditions that exist in communities that have low access to healthy foods. The reality is that public policy and economic practices have created these areas that have low access to foods."¹⁵ Yakini and other food activists prefer to use the term 'food apartheid' which can be defined as: "the systemic

destruction of black self-determination to control [BIPOC community's] food (including land, resource theft and discrimination), a hyper-saturation of destructive foods and predatory marketing, and a blatantly discriminatory corporate controlled food system that results in [BIPOC] communities suffering from some of the highest rates of heart disease and diabetes of all time."¹⁶ This thesis will identify food apartheid neighborhoods in order to narrow down the focus site of the project. Just as food equity is one of the two essential pillars to the project, site selection and the carrying out of the design process will work to breakdown the inequities within the current food environment of the surrounding neighborhood in order to address and mitigate the elements that have created the food apartheid in the first place. While Anderson's four key features that define a food environment will help to quantify and assess how the project address the qualities of the food environment.

LOCALIZATION

It is abundantly clear that the structures formulating the current food system must be adapted to fit the current context that the environment and the people face. The industrialization that led to the globalization of the food system and its supply chain have proven their lack of resiliency, especially during the most recent shock to the system with the COVID-19 pandemic. The global food supply chain has been designed to function at such high efficiency, that one shift in the system can cause quite a large disturbance to the functionality as a whole.

COMMUNITY ENGAGEMENT

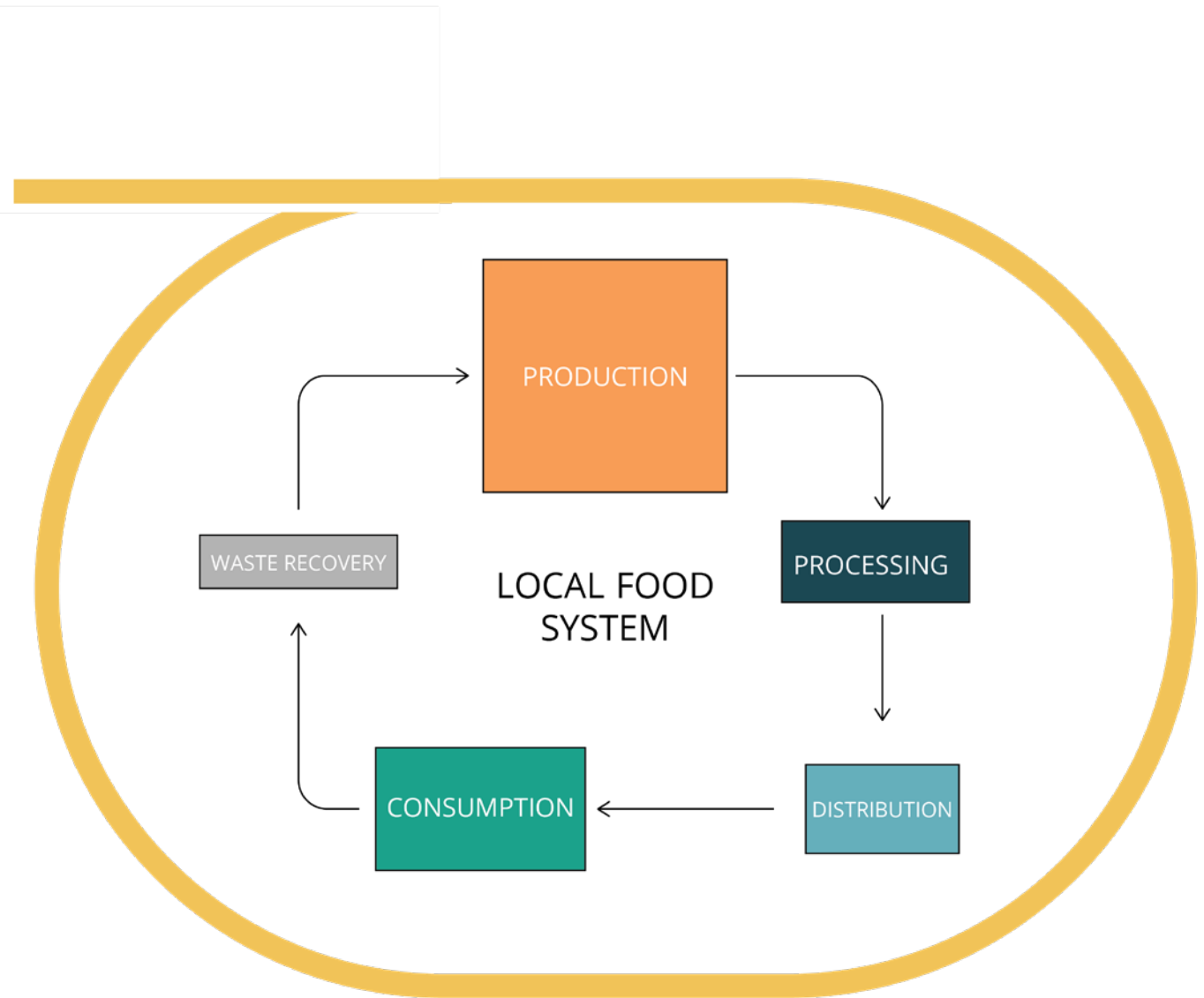


Figure 11: Circular food system, where resources are recovered throughout the process. The local food system proposed for the project is centered on community engagement.

For example, Figure 12 shows several tons of potatoes that were dumped, rather than distributed to their typical market destinations of the food industry for large businesses and organizations like schools, offices, and restaurants.¹⁷ Due to the mass shutdowns of business operations, the food industry was inundated with supply and demand issues like this one. Partially due to distribution and many farmers being sole suppliers to commercial markets only, shutdowns resulted in mass quantities of bulk food with no where to go. It was too expensive to distribute to a facility to repackage in smaller quantities for supermarkets. Meanwhile, supermarkets experienced higher demands during these lock-down making it difficult for suppliers to keep up with their existing distribution structures. The food industry's supply chain experienced several months of unpredictable supply and demand that resulted in mass amounts of food waste, all while millions of people were out of work and experiencing food insecurity. The industry was desperately in need of a system that was more adaptable.

Reinvisioning a more localized system of operations will allow for flexibility to adapt more quickly to changes. This flexibility will become critical for extreme weather conditions that are eminent in the future of our climate, as well as any other unknown factors that can cause a shift.

The structures in place that feed society must be resilient, flexible, and diversified, and this project explores the execution of such a system in the context of localization.

Resiliency must be at the forefront of the conversation when discussing how to restructure the system, as it is critical for both the climate crisis and feeding the population. Ultimately, creating a more localized response for food production, distribution, and access addresses sustainability and equity on varying levels. First, bringing production to the city allows for tighter resource flows and opportunities for resource sharing. Secondly, creating a closer connection to waste handling within the system allows for a circular, closed loop model for nutrient and resource loops. Additionally, transportation and therefore, greenhouse gas emissions, will be significantly reduced through the proposal of a closer geographical distribution model. And lastly, localization of the food supply allows for more autonomy over food choices, additional job and business opportunities for local entrepreneurs, market support for local farmers, and provides communities the opportunity to adjust more easily to their needs.



OPPOSITE
Figure 12:
Piles of potatoes discarded due to
supply chain issues resulting from
COVID-19 shutdowns.

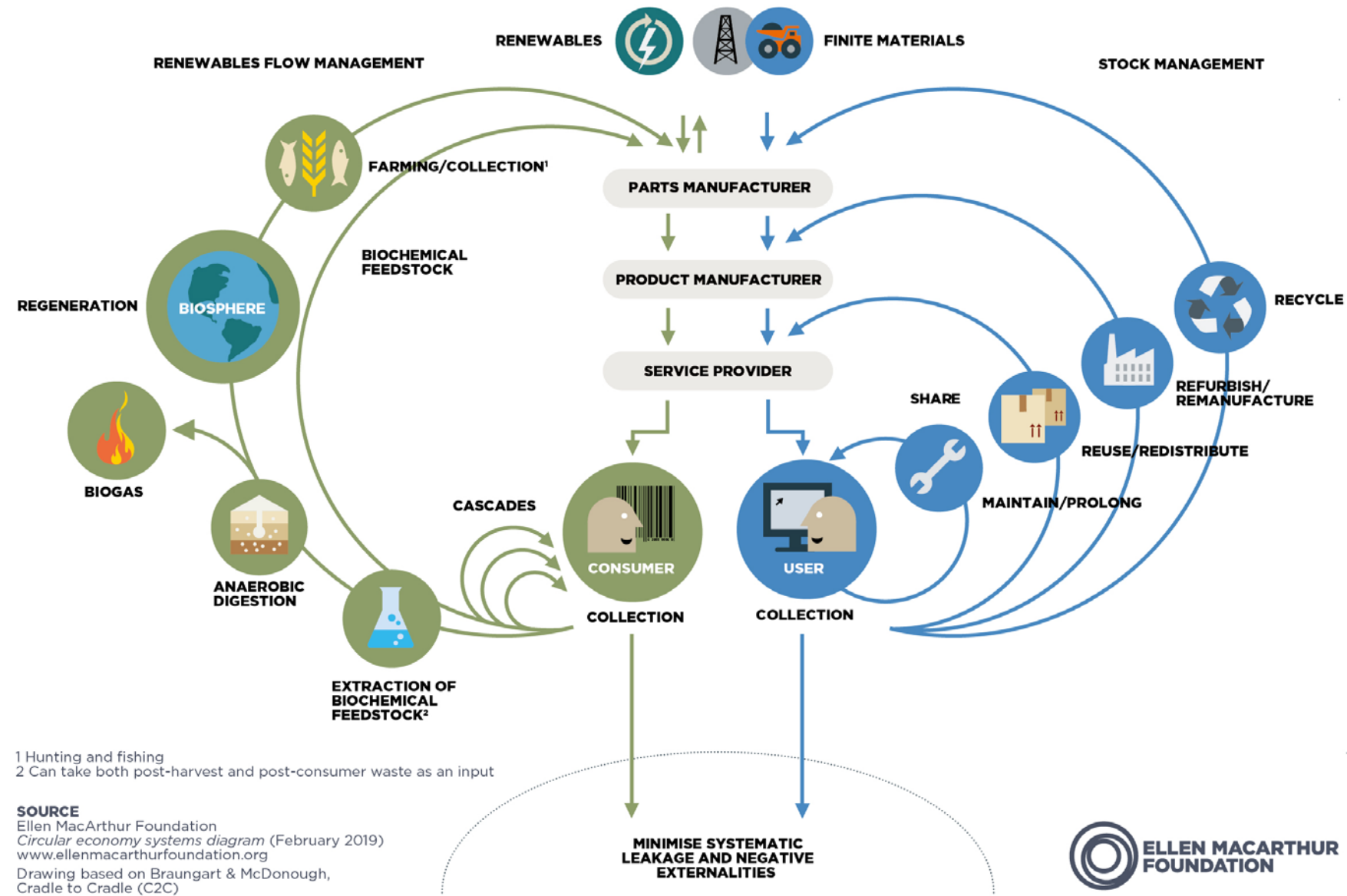


Figure 13:
Circular Economy systems diagram

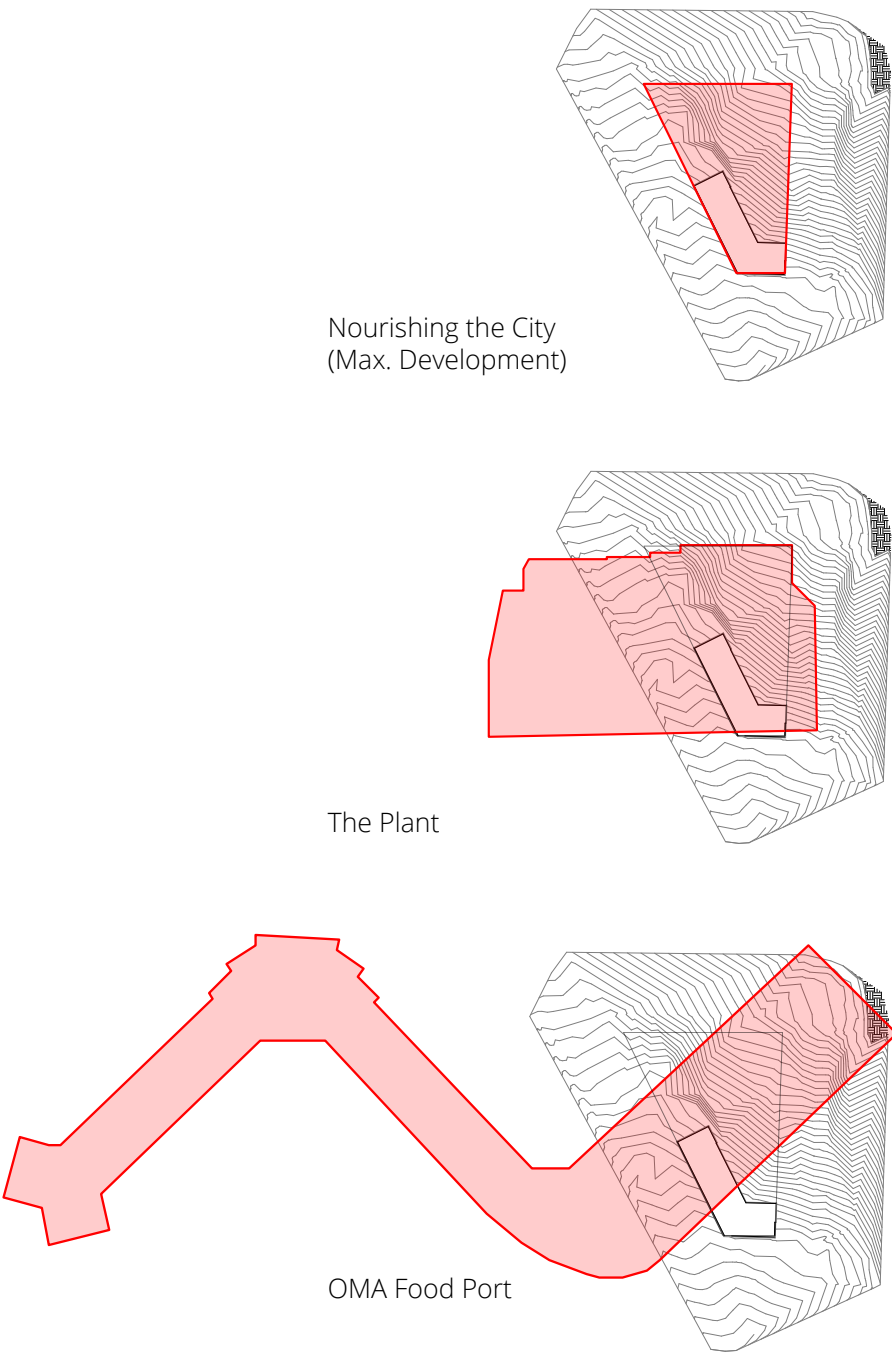
FRAMEWORK

An evolutionary leap in the industry's ability to mass-produce food is the reason we face these issues in the first place. But with this efficiency comes consequences.¹⁸ The industrialization of the food system created detrimental effects to the environment and our society and change to the system is needing to happen immediately. But how will these changes be made and whose responsibility is it to do so? Nourishing the City works to address these questions and proposes a realistic solution from a local level that could be adopted and replicated throughout the nation to show that small fundamental changes within the system can significantly impact the food supply chain and reduce the negative effects that are inherent within the current model. The intention of this thesis evolved from a number of different works, from food activists, government agencies, scientific research, and organizations all working to find a solution to the global food supply chain. Focusing on the Circular Economy model and two food center case studies, this project helped to build the foundation for future research in this area.

CIRCULAR [FOOD] ECONOMY -

The Circular Economy concept is defined as a framework for an economy that is restorative and regenerative by design. This concept is steering away from the current linear model of how products and goods are sourced and disposed of today. It re-imagines how to close the loop using three main principles: keeping products and materials in use, regenerating natural systems, and designing waste and pollution out of the system.¹⁹

While this idea has gained momentum in recent years, the origin of the concept is difficult to trace back to a single creator or timeframe. It is believed that the circular economy concept began gaining moment in the late 1970's by a few academics, thought-leaders, and businesses. Some of these roots include, Cradle to Cradle, the concept and certification process of materials in industrial and commercial contexts to be continuously recovered and reutilized, referred to as 'technical metabolism,' to eliminate waste and create a system that models nature's 'biological metabolism.' Or Walter Stahel's model, an architect and industrial analyst, who



published a research report in 1976 that developed the idea of the “closed loop” and established four main goals: product-life extension, long-life goods, reconditioning activities, and waste prevention. Additionally, from this report came the conception of ‘functional service economy’ more commonly known today as ‘performance economy.’²⁰ These are just two of the many iterations of similar concepts that have established the Circular Economy model.

The design for this thesis investigates opportunities to apply the principles of the Circular Economy to the food industry; an industry that has been designed to function at such a high level of efficiency that many resources end up being wasted. The three main Circular Economy principles of keeping materials in use, regenerating natural systems, and designing waste and pollution out of the system creates a set of sustainability guidelines for the project and sets aspirational goals for the urban food center. Applying the Circular Economy principles, the project captures on opportunities such as waste recovery from compost and packaging, the adaptive reuse of an existing building, energy and water recycling opportunities within the building and site design to meticulously evaluate and challenge what it means for a food center and a local food system to be ‘circular.’

Figure 14: Nourishing the City’s site overlaid by two case study projects, The Plant and OMA’s Food Port building footprints comparing project scales

THE PLANT

“Our mission is to cultivate local circular economies. We envision a future where the shift in production, consumption and waste is driven at the local level, generating equity and economic opportunity for all residents.”
-Plant Chicago²¹

Beginning in 2011, the non-profit organization, known as Plant Chicago, started their circular economy journey by purchasing the building and property of an old stockyard in Chicago’s Back of the Yards neighborhood. The next eight years marked just the beginning of a project still growing today, known as The Plant.²² Overall, the project serves as a business incubator, represents a circular economy, and stands for local, sustainable food practices. The 93,500 sq. ft. building is home to a variety of local food businesses working together to represent a model for the Local Circular Economy Principles. The eight principles include: renewable energy, resource sharing, recapturable materials, community benefit, local sourcing, shared business success, local waste recovery, and equitable benefits.²³ This case study is unique in comparison to other urban farms in its use of the Local Circular Economy as its guiding principles for operation, business development, and the adaptive reuse aspect of the property.

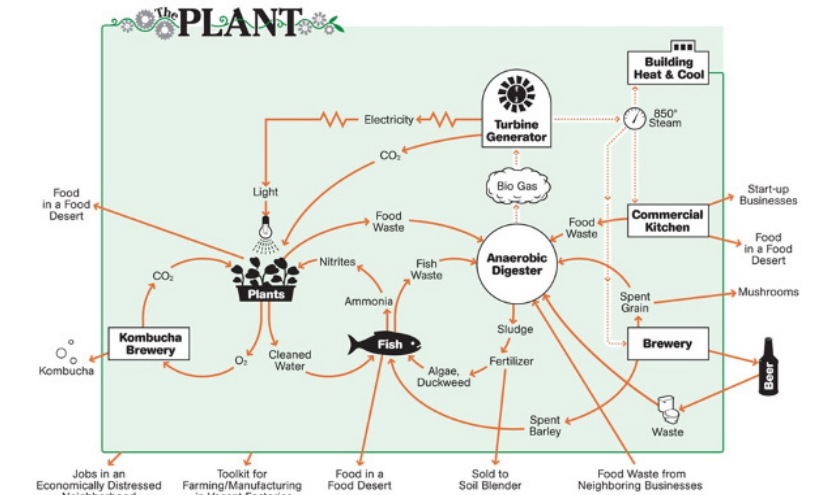


Figure 15: (TOP) - Exterior of The Plant at the south-east corner of the property

Figure 16: (MIDDLE) - The Plant’s businesses incorporating the Circular Economy model

Figure 17: (BOTTOM) - The Plant’s eight local circular economy principles

LOCAL CIRCULAR ECONOMY PRINCIPLES





The Plant is home to over twenty food-related businesses including: a kombucha and beer brewery, a vertical farm, beekeeping, a microgreens farm, a cheese distributor, a coffee roaster, aquaponic growing system, and more.²⁴ They also have plans to implement an anaerobic digester on site. Each of these food-producing businesses share resources and work together to close some of the loops that would otherwise lead to waste entering the landfill, excess water needing to be treated, or energy being underutilized.



The other aspect of The Plant's operational model that successfully touches on the principles is the utilization of the community. The facility operates with six main employees, accompanied by a board of twelve directors, voluntary advisory committees from local leaders and professionals, an auxiliary board, and many sponsors and partners.²⁵ Overall, the facility has approximately an equivalent of 95 full-time employees and is at 85% capacity for leasable spaces.²⁶ Together, the team is made up of a variety of experts to keep this operation moving. This benefits the community by providing more jobs in an area that was previously an abandoned stockyard. As well as provides spaces for small businesses to grow and learn from industry leaders like themselves.



Studies have shown, urban farming comes at a steep financial cost. Many facilities must supplement their farms with additional services or sell produce at a premium price due to the high cost of operating these facilities.²⁷ One way in which Plant Chicago is combatting this economic issue is through its educational programs, hosting events, and renting out spaces for other businesses. The businesses can then learn from one-another and share resources in order to further support

Figure 18:
(TOP)
Exterior garden at The Plant

Figure 19:
(MIDDLE)
Brick removal of original brewery

Figure 20:
(BOTTOM)
Aquaponics system

the Local Circular Economy Principles. They also dedicate part of their resources to educating the community and creating a high level of transparency to allow for this business and operation model to be seen and replicated elsewhere. The Plant hosts farmers markets, private and public workshops and classes, and has an ongoing list of groups conducting research within the facility.

The other component of The Plant that ties directly into the Local Circular Economy Principles is the reuse of an existing building. Built in 1925, the original building site was home to a meat packing plant and has since been repurposed for a new life. After roughly 85 years in operation, the stockyards shut down and the building sat vacant for many years. "Not only are empty buildings a waste, but foregoing maintenance for long enough eventually degrades the components of the building to the point where it truly is unusable," said Rachel Swenie.²⁸ However, Bubbly Dynamics saw the potential of the USDA-grade facility and transformed it into the food incubator known as The Plant.²⁹ The importance of this adaptive reuse project was not to strip the inside and create something entirely new, but rather breathe life into a building that laid dormant for so many years. Bubbly Dynamics stepped in to utilize the already existing structure as the backbone, which further supports the guiding principles of the circular economy: sustainability, waste reduction, and utilization of resources. Utilizing existing buildings not only eliminates the production and transportation of new materials, but also reduces the amount of material going into the landfill from demolition while capitalizing on materials that have already emitted carbon in their original production. Overall, The Plant has done a successful job at carrying out

their mission and maintaining the values of the Local Circular Economy. From construction to operation, The Plant engages the community through education while creating a vibrant space that provides jobs and healthy foods to the surrounding neighborhoods. Local tenants are given an opportunity to grow their business at an affordable cost while learning from others in their industry. The Plant stands as a model and case study for the further development of Nourishing the City to explore the opportunities of the circular economy in not only a food incubator space, but also applying to the a local food supply chain model as well.



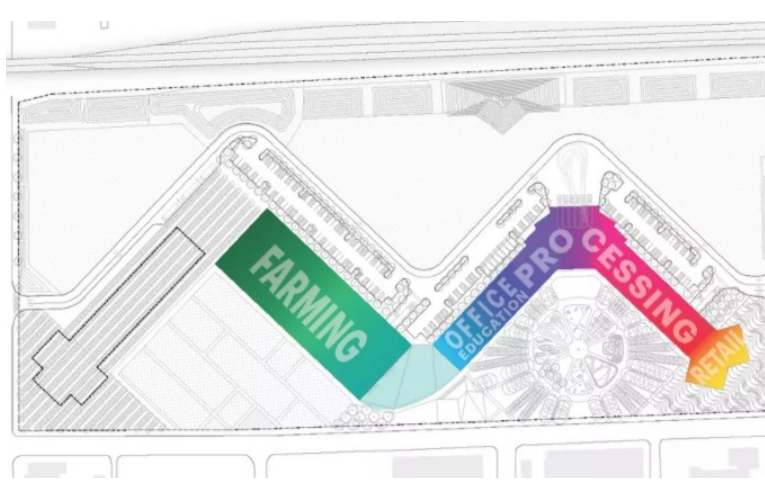
Figure 21:
Anaerobic digester installation



Figure 23:
(TOP) - Exterior playgrounds and gardens for community engagement

Figure 24:
(MIDDLE) - Program integration of farm, office, processing, and retail spaces

Figure 25:
(BOTTOM) - Conventional system versus traditional food hub versus West Louisville Food Port, with the farming and consumer components



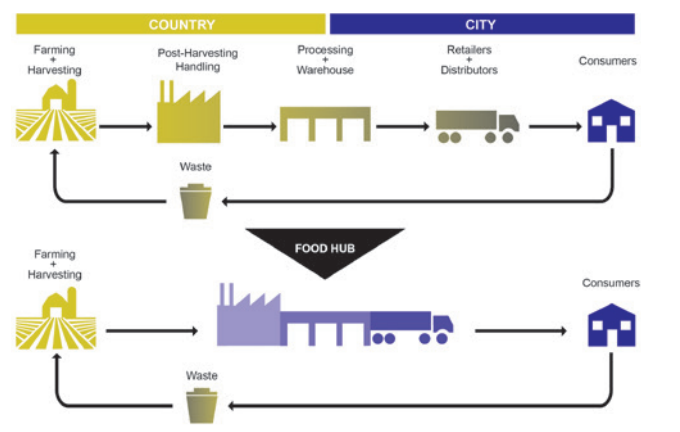
OPPOSITE
Figure 22:
OMA Food Port Master Plan

OMA FOOD PORT -

Commissioned in 2014 by Seed Capital Kentucky, OMA developed a design for a food port in West Louisville, Kentucky. The 24-acre site was home to the National Tobacco Works warehouse, which was in operation for over 100 years before closing its doors in 2009. The site was chosen for its designation as a food desert and its close proximity to Louisville, a top foodie city. The site was intended to help serve the greater city as a necessary resource to connect farmers and suppliers to shipping and distribution, enhancing the growing local food movement.³⁰

OMA's design for the food port incorporated the typical food hub, consisting of aggregation, distribution, storage, and marketing, to include farming, processing, a teaching kitchen, and retail to get the community more involved.³¹ The idea to weave these programs together would help reconnect people and food; the tie that had been broken when rural and urban life grew further and further apart. While the scale of this project is over seven times the scale of the proposed project for this thesis, the underlying goals remain similar: improve the ways people interact with their food in an urban context. OMA's design for a food port sets the precedent for

further exploration and development of a food port as a typology of architecture. A food port has the potential to be an integral part of a neighborhood's urban plan and sustainability strategy. Drawing from this typology could inform how neighborhoods become more self-reliant and sustainable, while simultaneously addressing equity and resiliency of food systems in a direct and intentional way. Nourishing the City picks right up where OMA's food port left off: invisioning how to work food back into the city at a neighborhood (rather than regional) scale to integrate people, food, education, and sustainability together.



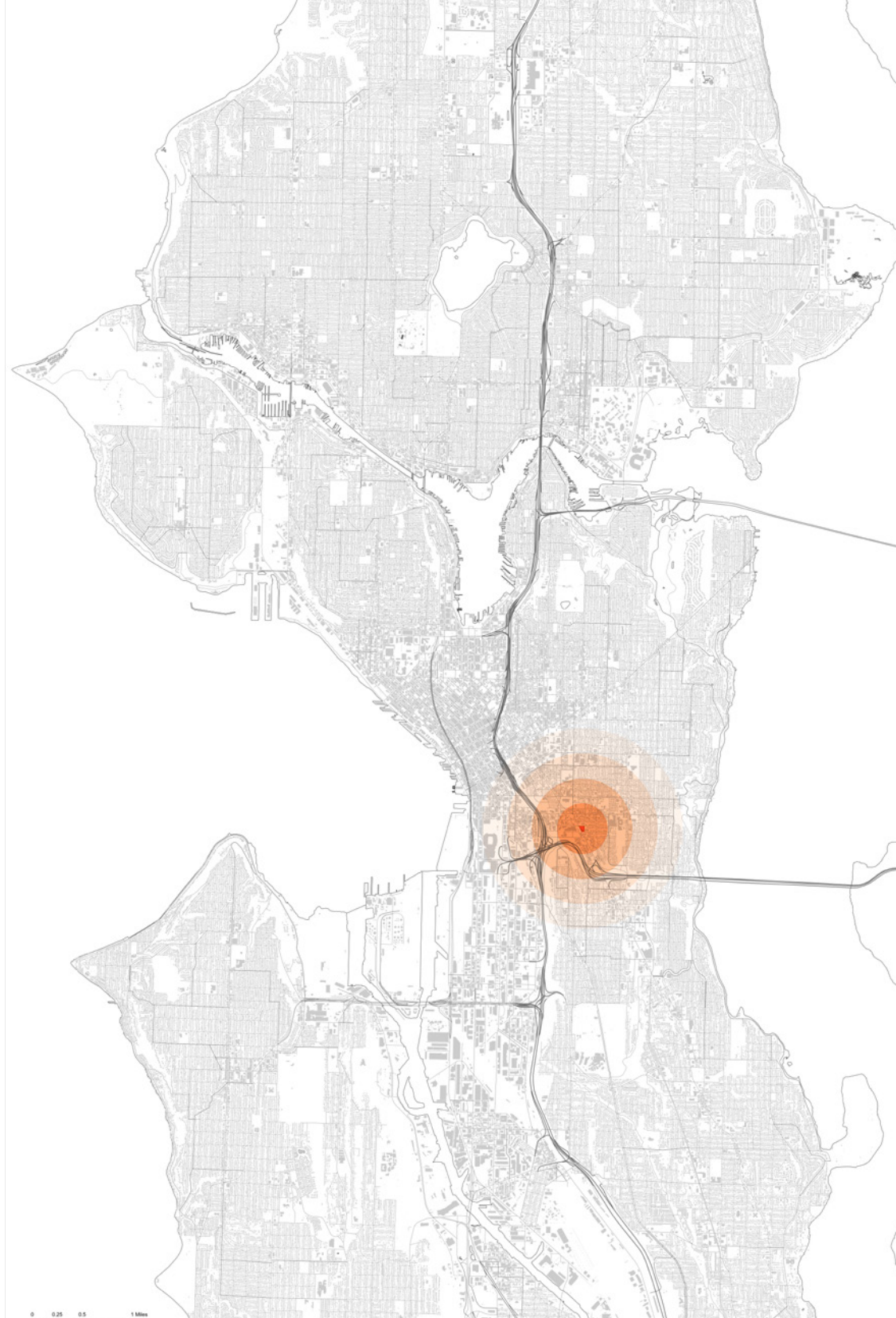


Figure 26:
Nourishing the City site location

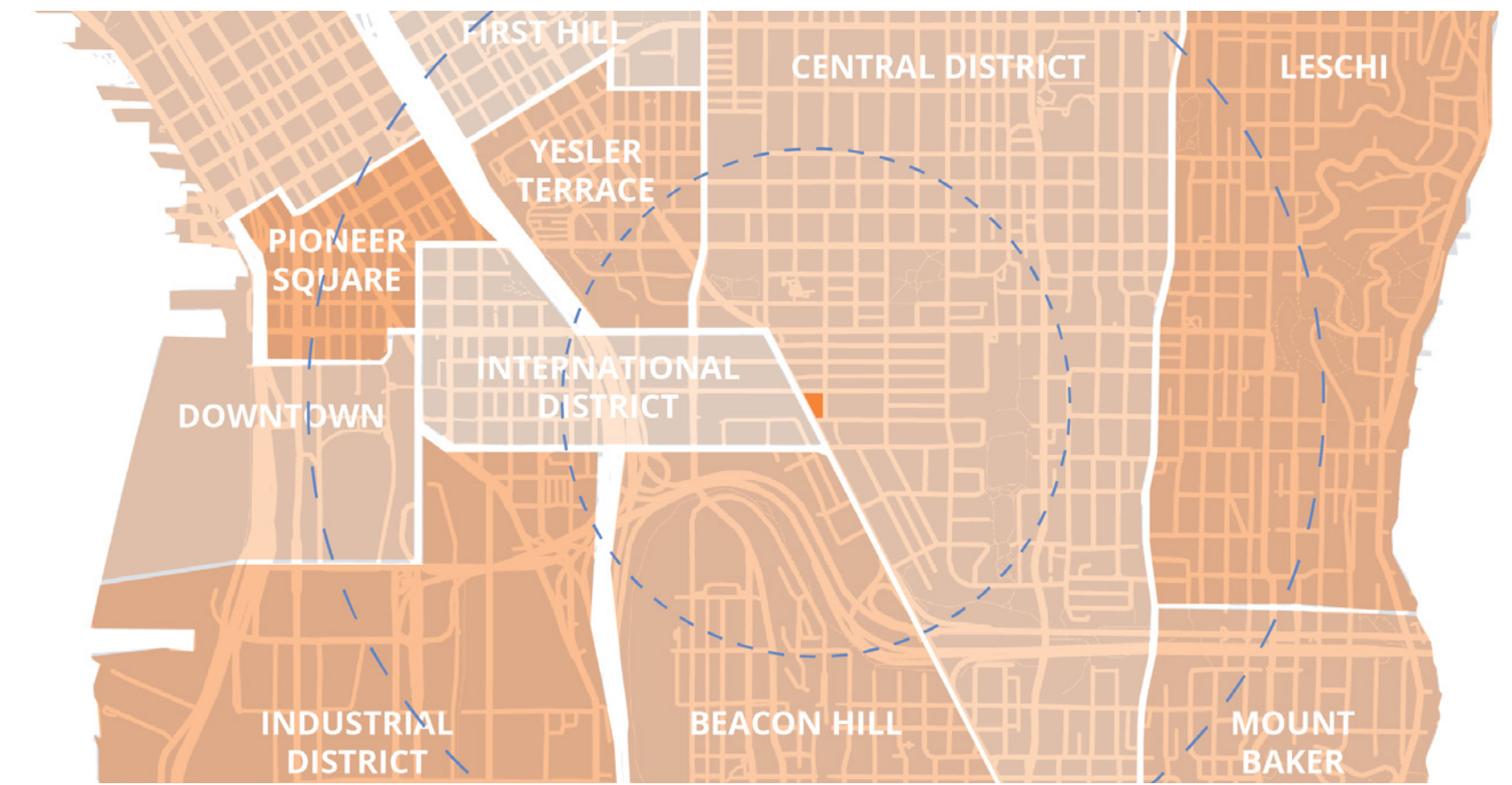


Figure 27:
Neighborhood context surrounding site

METHODOLOGY

SITE SELECTION -

Selecting the right site was imperative to the development of this thesis. The food center needed to be placed in a location that had a high level of density, diversity, and somewhere that could truly benefit from having a resource like this in its neighborhood. Site selection began by looking at a variety of resources which included: census data tracts and a study on the current food environments in Seattle neighborhoods (e.g. existing location of supermarkets, P-patches, parks,

health, and income statistics). Utilizing these databases, the project evaluated neighborhoods in Seattle based on the following criteria: walkability, population density, diversity, income, and the current food environment. It was important to the outcome of this project to find a space within a neighborhood that would provide an additional vital resource; a place that serves not only as a source of food, but a space to gather, learn, and build community together.



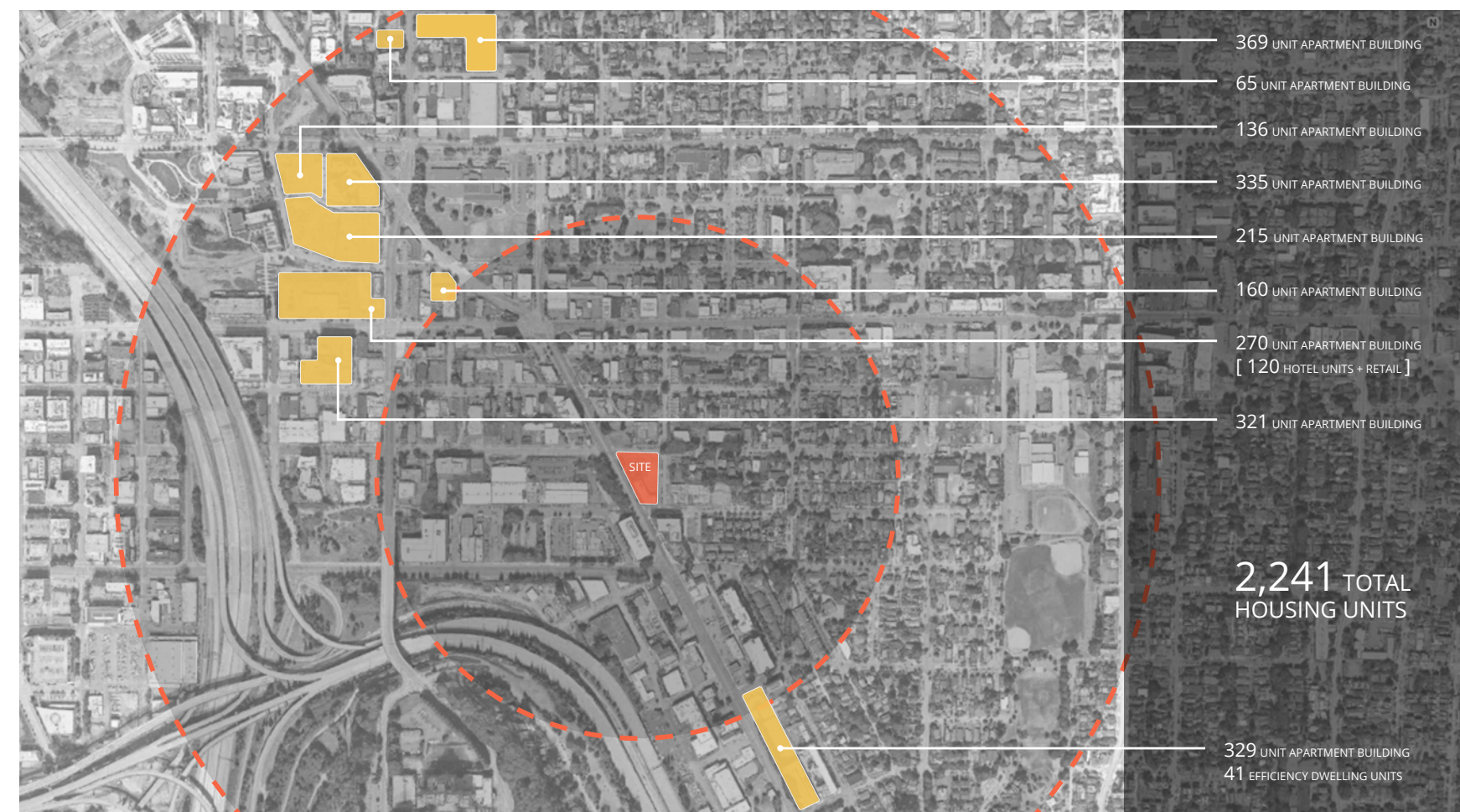
This portion of the analysis resulted in looking into existing building stock and potential site opportunities in South Park, High Point, International District, and Central District. While several other sites were considered, ultimately the location, historical context, and growth opportunities in the Central District and particularly at 622 Rainier Avenue site were established as having the most potential for the further development of the project. As well as recognizing the high potential of displacement in this area, this location will help to provide job opportunities, better access to food, and space for

community programs to support the social equity goals of the project.

SITE ANALYSIS -

Centered between Seattle’s Central and International Districts the proposed food center is situated at a critical node in the city; one that is culturally diverse, food-centric, and rapidly developing. The site is located within a half-mile of Washington’s two major interstates and directly off the main thoroughfare of Rainier Avenue;

Figure 28:
Project site and surrounding zoning map



situated between Weller and Lane Street. The site is within a particular area of the city that has not been the center of immense growth, until recently. While the site sits within Neighborhood Commercial (NC2-65) zoning, it is surrounded to the east by single family and lowrise residential. Additionally, this site is located within the 23rd and Union-Jackson Residential Urban Village; a boundary designated by the City of Seattle as an area with high risk of displacement. This designation has been put in place by the city with input from the community to limit zoning changes in the area.

Figure 29 highlights the surrounding residential development projects proposed or currently in progress within a half mile of the Rainier site, totaling an additional two thousand housing units to the neighborhood. While the urban village intentions are to protect the site and surrounding, there is growing concern from the community to preserve the culture and history of the neighborhood. There is no denying this location is at a critical point of seeing a resurgence in development, but in order to address the needs of the community this site provides a perfect opportunity to incorporate a food

Figure 29:
Recent and in-progress residential development surrounding project site



center that provides nutritional and social sustenance to the neighborhood, while preserving the character and scale of the existing building on site.

The site is anchored to the south-west by an elbow-shaped masonry structure, and the remaining two-thirds of the property lies undeveloped. The northern, vacant portion of the lot poses an inherent challenge with steep grade changes. There is a fourteen foot grade change running north-south along Rainier Ave. and a sixteen foot change running east-west along S. Weller St.

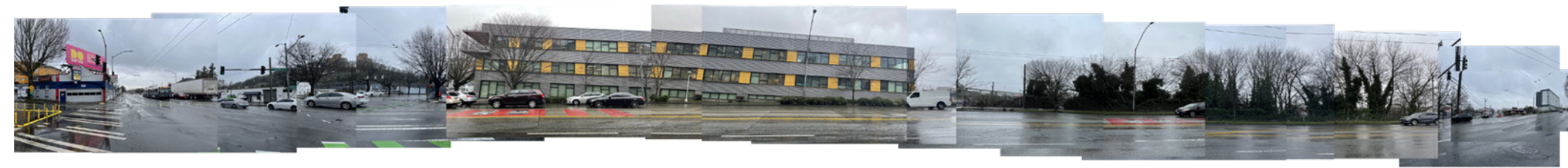
Lastly, the proposed food center location is advantageous for its close proximity to the interstates for delivering and receiving goods, as well as its relationship to Rainier Avenue as a primary north/south connection between Beacon Hill, the International District, and the Central District.



Figure 30:
(TOP) - Current conditions of existing building's southwest facade situated on Rainier Avenue

Figure 31:
(MIDDLE) - Southern facade of factory showing brickwork and large window openings

Figure 32:
(BOTTOM) - Northern, vacant lot and eastern facade showing surrounding context of the adjacent multi-family residential and views towards Beacon Hill and Pacific Tower



ACROSS FROM SITE (RAINIER AVE.)



WEST ELEVATION



EAST ELEVATION



SOUTH ELEVATION

Figure 33:
Site elevations of current conditions

COSMETICS FACTORY

1923 - 1954



SITE HISTORY -

The building on-site was originally designed to be a cosmetics factory for hair stitches, similar to hair extensions, and was owned by J.J. Wittwer Company. Designed in 1923 by Seattle's architecture firm, Schack, Young & Myers, the two-story unreinforced masonry building was designed to embrace a Gothic Revival or Collegiate Gothic style, (which can be seen on the original elevation in Fig. 38) but was ultimately constructed in a less ornate manner. The building contains its original structure of a heavy timber post and beam system with a reinforced concrete foundation. At the northern wing the spaces were used for the primary production areas for the factory, while the southern wing contained offices and worker spaces. Ultimately, the building changed

WEST COAST PRINTING

1954 - 2016



ownership and continued functioning as a production facility, yet this time, for printing.³²

In 1954 West Coast Printing purchased the property from J.J. Wittwer company to relocate their operations from Main Street in the International District. The printing company was owned by two Japanese brothers, one of which, (Theodore) was awarded for his efforts in improving relations between the United States and Japan. While the owners remained involved members of the community in their personal lives, their company also had strong ties to surrounding businesses in the neighborhood. They specialized in Japanese typesetting, business cards, restaurant menus, and other notices

COMMUNITY FOOD CENTER

2021



Figure 36:
Factory reimaged into Urban Food Center

OPPOSITE

Figure 34:
(LEFT) - J.J. Wittwer Company tax assessor photo, 1937

Figure 35:

(RIGHT) - West Coast Printing, 2005

and were one of five printers located in the International District. The brothers conducted business on the first floor and would lease the second floor spaces to various tenants over the years. West Coast Printing ultimately sold the business and closed their doors in 2016.³³

While the building has laid dormant since, it is clear that this site, with its history and strong Japanese cultural ties, retains a story; one of the neighborhood, of the community, and of the rich culture that has left its mark in the Central District and beyond. The original masonry building has only had two owners in its nearly 100 years of operation. And today, Nourishing the City is reinvisioning this old factory and its surrounding site to become a

vital piece of the neighborhood again. This location has served as a means of production, a source of jobs, and represents a piece of the history of this neighborhood and its character must be preserved.

Nourishing the City is reimagining the 1923 factory and its surrounding property to re-integrate this city block back into the community. The project proposes an adaptive reuse of the factory to create a food center at the heart of this culturally rich neighborhood. This corner of Rainier Avenue is being reinvented as a critical node within the city for locals and tourists; a place to serve the community and educate visitors on sustainable food practices, food supply systems, and the Circular Economy model.

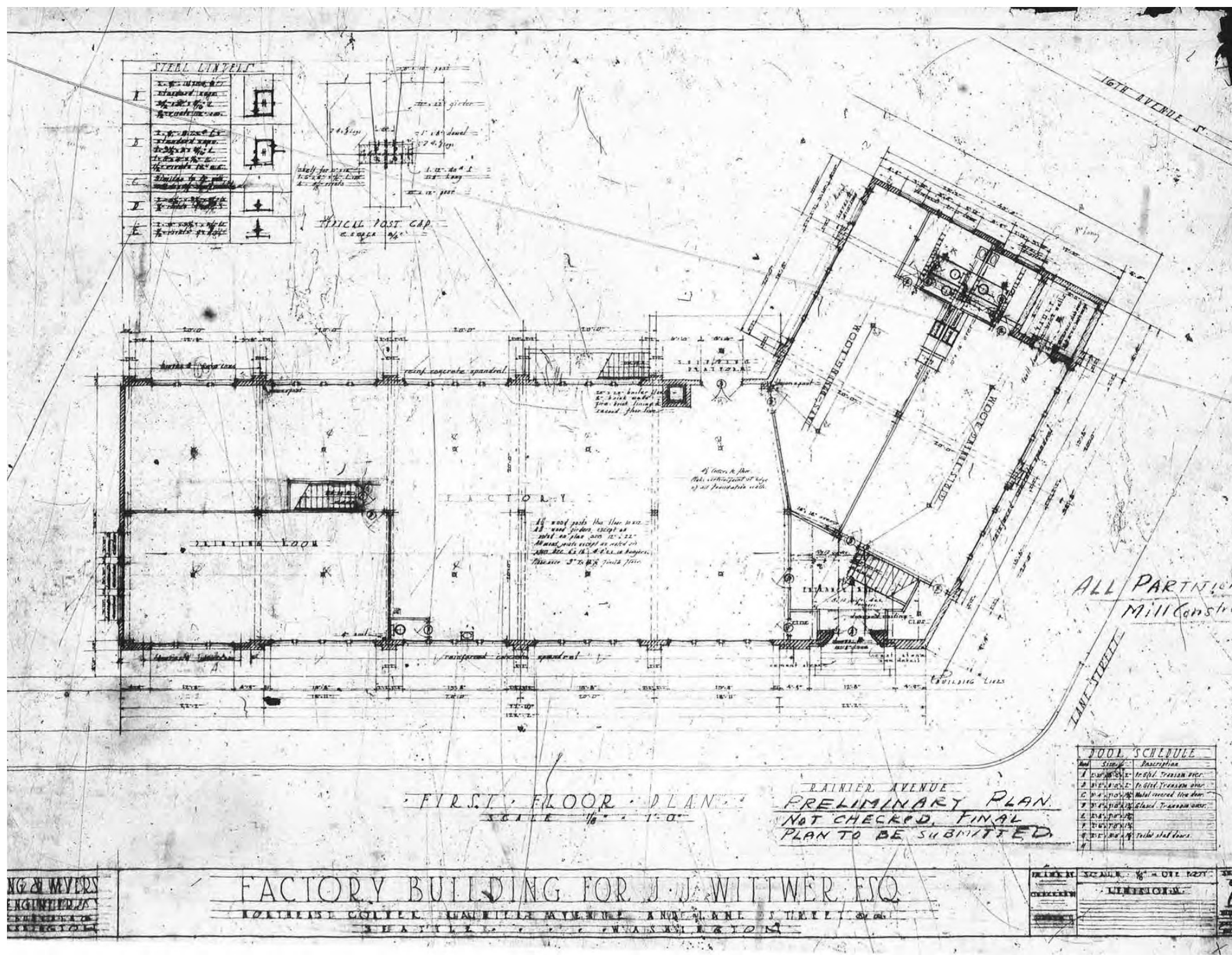


Figure 38: Original building elevations

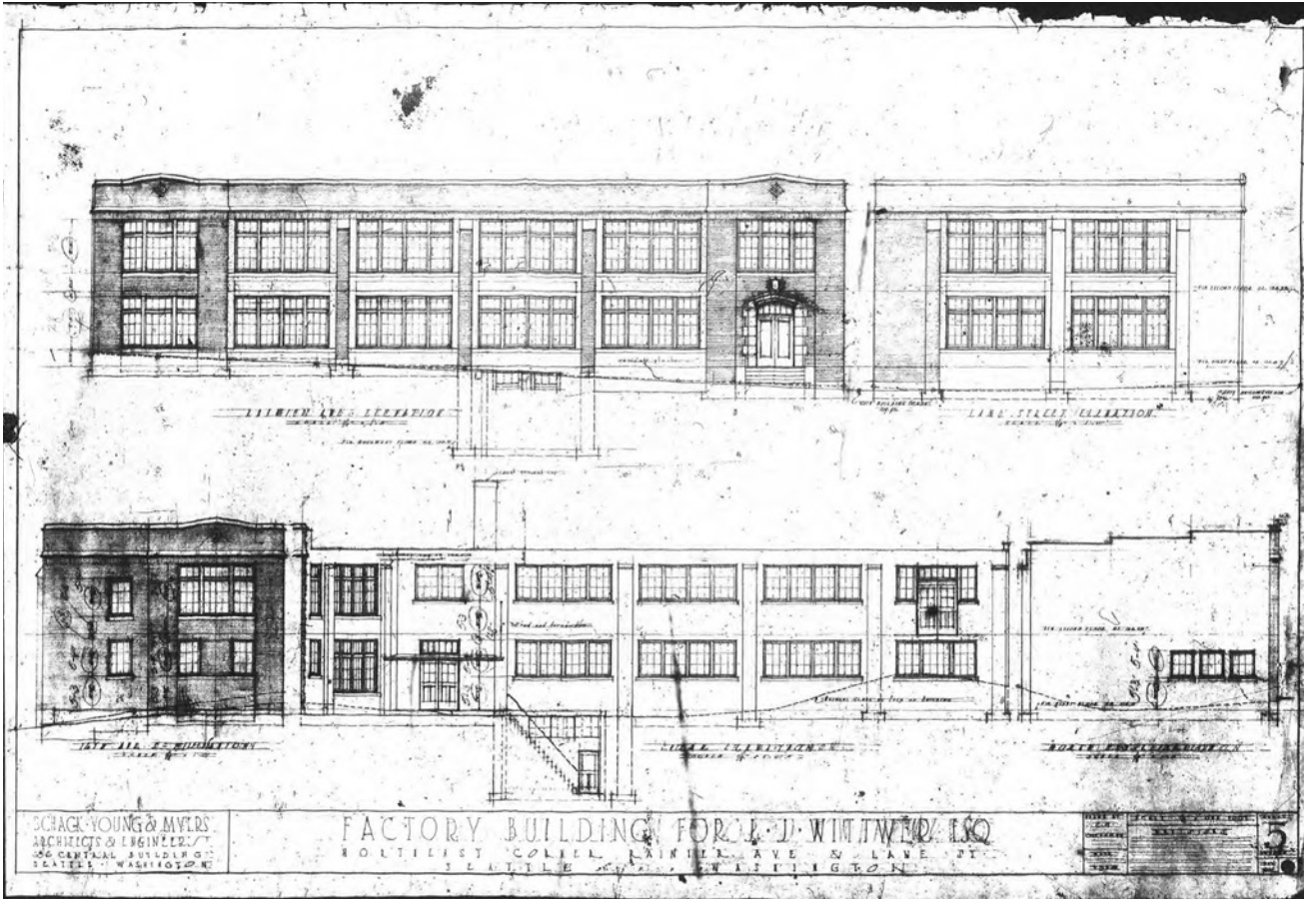


Figure 39: Advertisements for J. J. Wittwer and their products

A Special Sale of SWITCHES

MILLINERY of the hour demands a great wealth of hair, and if a woman has it not, never worry, we will supply a switch, a match so perfectly that no one would be the wiser.

We name some very low prices today on switches of extra fine quality. They are made from the best of imported hair, with no short ends, but every one is perfect.

2-oz. 18-inch Long Hair Switch	\$1.00
2-oz. 20-inch Long Hair Switch	\$1.50
3-oz. 22-inch Long Hair Switch	\$2.50
3-oz. 24-inch Long Hair Switch	\$3.00
3 1/2-oz. 26-inch Long Hair Switch	\$5.00
4-oz. 28-inch Long Hair Switch	\$6.00

We have a magnificent collection of hair ornaments and fancy combs.

Mail Orders Filled

J. J. WITTWER
Manufacturer and Importer
620 SECOND AVENUE

Something Different for Bobbed Hair

There is a tremendous difference in bobs. Some are wonderfully attractive and becoming, while others, well—which kind is yours? I wish you could picture the becoming kind I have in mind—the sort that makes men turn to admire. I can't tell you what the color is, but it's full of those tiny dancing lights that somehow suggest auburn, yet which is really no more actual color than sunlight. It's only when the head is moved that you catch the auburn suggestion—the fleeting glint of gold.

You have no idea how much your bob can be improved with the "tiny tint" Golden Glint Shampoo will give it. If you want a bob like that I have in mind, buy a package and use for yourself. At all drug stores, or send 25¢ direct to J. W. Kott Co., 612 1/2 1st Ave., Seattle, Wn.

Golden Glint SHAMPOO

RINSE New COLOR LUSTRE SILKEN SHEEN
into your hair—this safe easy way

No. 1 BLACK	No. 4 GOLDEN BROWN	No. 7 TITIAN BLONDE	No. 10 DARK AUBURN
No. 2 DARK COPPER	No. 5 NUT BROWN	No. 8 GOLDEN BLONDE	No. 11 LIGHT AUBURN
No. 3 CARLE BROWN	No. 6 SILVER	No. 9 TOPAZ BLONDE	No. 12 LUSTRE GLINT

theShade nearest the color desired in your hair—then by a simple rinsing operation, silken sheen replaces dullness and a tiny radiant tint enriches the natural color of your hair. Your hair will feel as if brushed for hours—tangles and snags gone and every hair in place. Get a package of Golden Glint today.

10c & 25c AT VARIETY & DRUG STORES. 100 MILLION RINSES HAVE BEEN SOLD

OPPOSITE Figure 37: Original first floor building plans of cosmetics factory

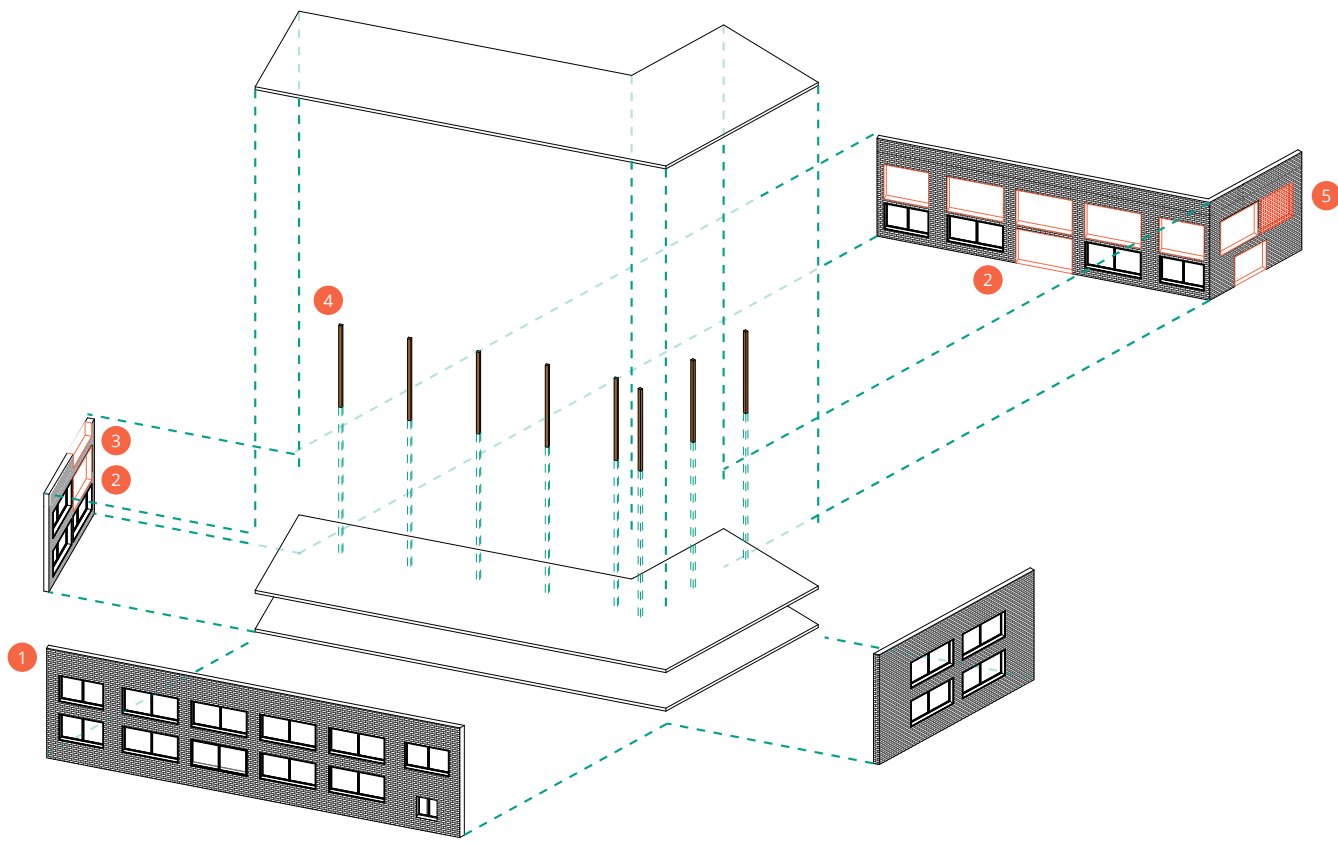
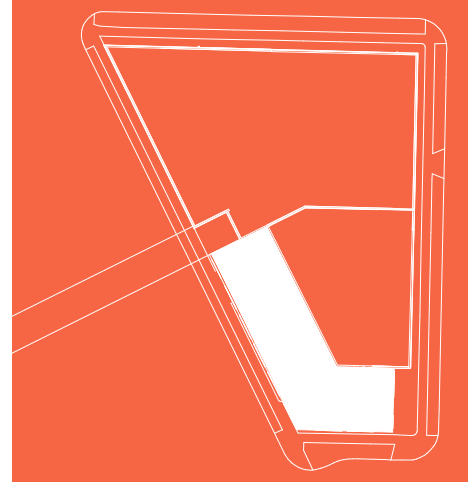


Figure 40:
Interventions proposed for the existing building on site



- 1 RETAIN EXTERIOR WALLS
- 2 REMOVE WINDOW + PUNCH OPENING TO FLOOR
- 3 REMOVE PARTIAL PARAPET FOR ROOF ACCESS
- 4 RETAIN TIMBER COLUMNS
- 5 REMOVE WINDOW + INFILL MASONRY WALL



Figure 41:
Overall site plan showing future production site

DESIGN PROPOSAL

PRIMARY VS. FUTURE GROWING SITE -

The food center is made up of a primary site, on the east side of Rainier Avenue, as well as a future (Phase II) production site, at the western side of Rainier. The primary site houses aspects from each phase within the food supply chain, from production to waste recovery, to provide visitors with a holistic understanding of the food system. As well as providing community spaces, to learn, grow, gather, and dine together. While the primary site serves as the community's interface to the local food system, the western site will provide the bulk of the

food production to feed the market and surrounding community. The food center will lease the rooftops and parking lots of the neighboring Goodwill and Public Storage properties to develop up to 330,000 square feet of additional rooftop growing spaces. Additionally, a pedestrian bridge over Rainier Avenue is proposed to connect the two locations for informational tours and other educational opportunities. While this thesis acknowledges the larger production site, the scope of the project focuses on the eastern primary site.

FACTORY TO URBAN FOOD CENTER -

Retaining the old factory's structure and character was important for the development of the project to preserve a piece of the history and culture of the area, as mentioned, but it also serves as a sustainable incentive to address the environmental goals of the project. Utilizing the existing structure contributes to the sustainability of the project for its embodied carbon, or the comprehensive total Green House Gas emissions exerted to construct the original building (including material manufacturing, extraction, processing, transportation, etc.). Studies show that utilizing existing building stock, rather than demolishing and building newer, "greener" buildings does not always prove to be more sustainable.³⁴ Embodied carbon plays a major role in determining whether demolishing or reusing an existing building is the more environmentally conscious decision.

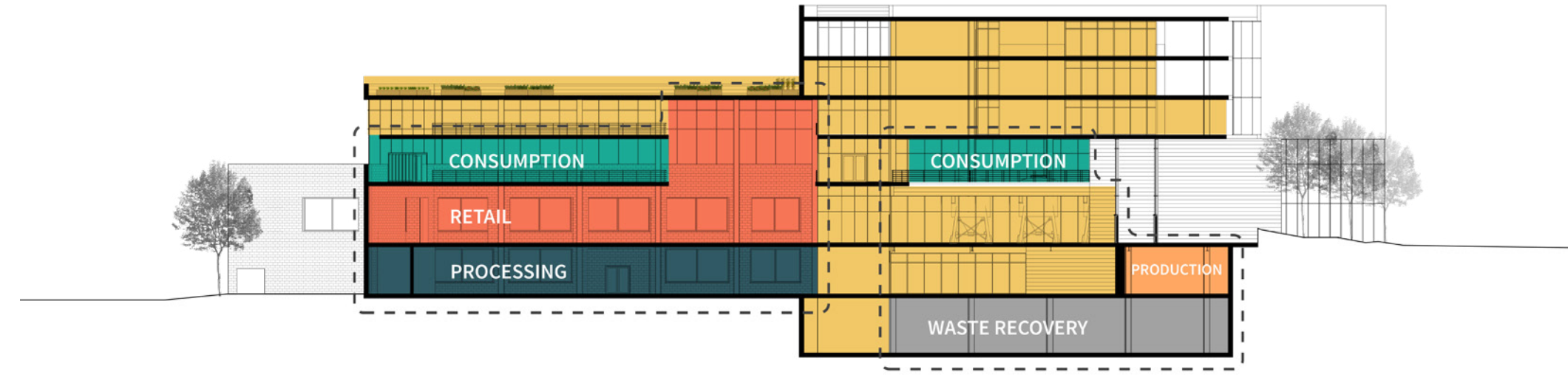
Further exploration, beyond the scope of this project, could assess the embodied carbon and calculate whether retaining the building in fact would result in a more sustainable solution. However, for the sake of this investigation, and the historical/cultural significance of the building, it was

determined the design would incorporate the existing building into the new urban food center.

The design carefully approaches the existing structure to preserve almost the entirety of the exterior facade, especially the two primary street-facing facades on Rainier Ave. and Lane Street. Ultimately, the intervention was to retain all of the exterior walls and window bays, and punch openings on the northern and eastern walls to allow for stronger connections between the existing building and the expansion (see Fig. 40). Another important design decision was to retain the existing structural grid and carry the same rhythm throughout the expansion to seamlessly transition how the building reads from the exterior and the interior between both the existing and at the new expansion.

The existing structural grid runs north/south with timber columns every twenty feet and retains the same cadence as the fenestrations of the existing building. The new expansion steps back at the western, mid-block, Rainier edge with a glass gasket, indicating a clear distinction between the new and the old. It was also important

Figure 42:
Section showing how program works together to accomplish the Circular Food Economy goals



to the design of this adaptive reuse project to maintain the original building footprint and height to preserve the character and form of the original building from the street. This allows the expansion to take advantage of the old factory's roof to become a lower terrace with growing spaces and outdoor dining overlooking Phase II's rooftop greenhouses across Rainier Avenue.

PROGRAM DEVELOPMENT -

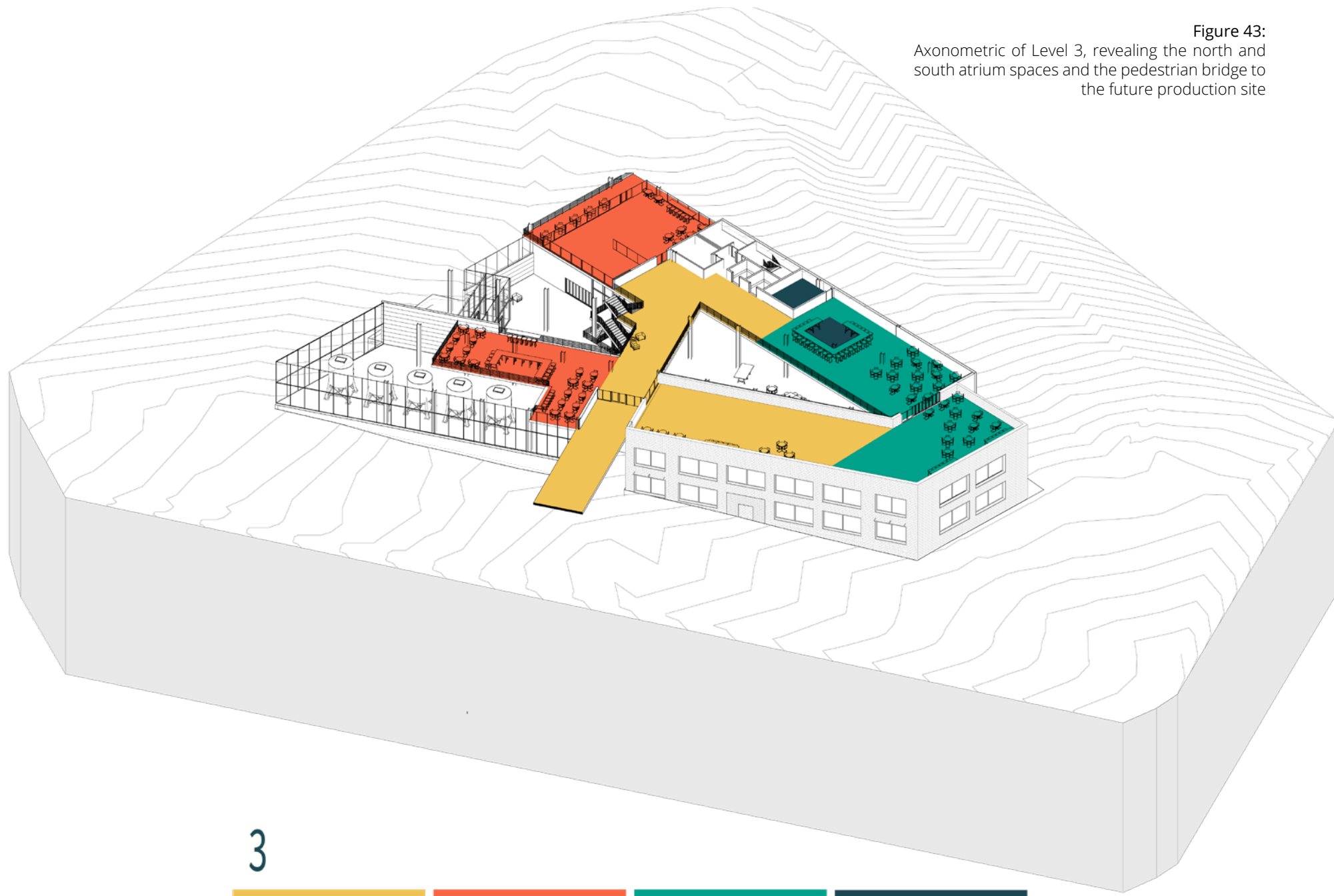
The program for the food center is carefully curated to provide opportunities for small businesses and food

entrepreneurs to share resources and knowledge, while devoting roughly half of the building footprint to community spaces. The neighborhood food center has the potential to become a vital resource for the community with teaching gardens, community kitchens, and gathering spaces. The food center works to reimagine the food supply chain and create a more localized solution for food production, distribution, and access, addressing sustainability and equity on varying levels.

The building program is broken up into two essential elements; the spaces that are part of the circular food

Figure 43:

Axonometric of Level 3, revealing the north and south atrium spaces and the pedestrian bridge to the future production site

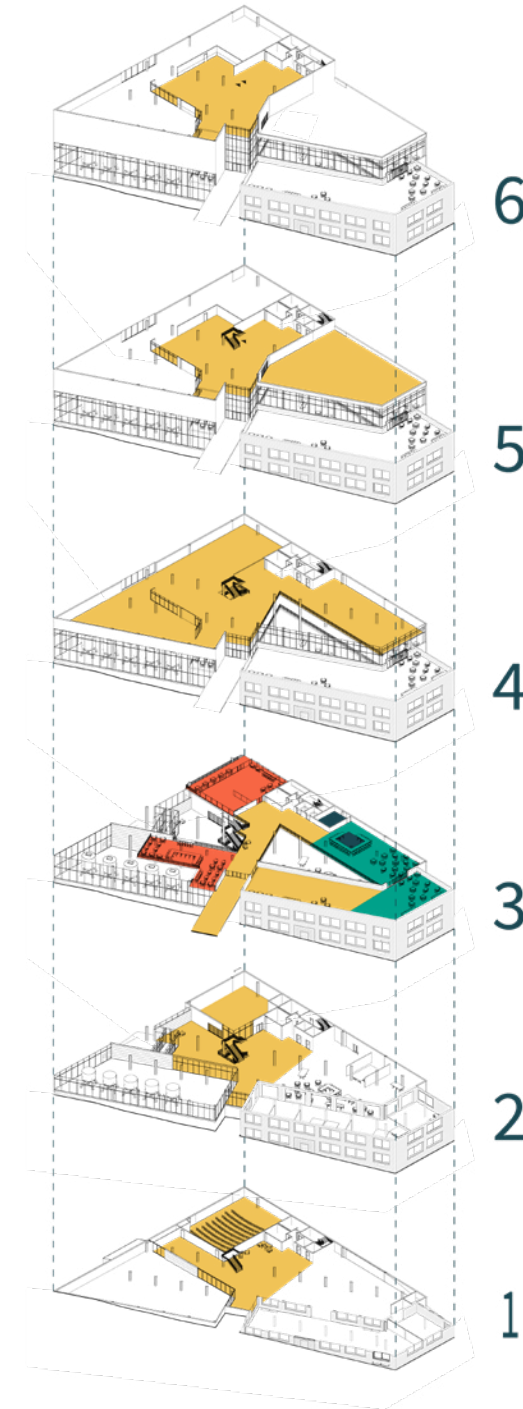


3

COMMUNITY SPACE	RETAIL	CONSUMPTION	PROCESSING
ROOFTOP GARDEN OUTDOOR SEATING FLEXIBLE GATHER SPACE	BEER TAP ROOM BAKERY	RESTAURANT OUTDOOR DINING	KITCHEN KIOSK MAIN RESTAURANT KITCHEN

Figure 44:

Axonometric of Levels 1 -6 indicating the shifting community spaces at the core of the design



economy model and the spaces that are devoted to community engagement, education, and transparency. The community spaces are highlighted in yellow and each floor has been designed around these spaces.

Vertically speaking, the community spaces shift and transform throughout the building, based on the food-related programs. While the food-related programs vary floor-to-floor, they all are devoted to specific elements within the food system; whether that is producing, processing value-added products, selling, consuming, or waste recovery processes.

Some of the more public spaces include a community kitchen with a flexible gathering space that could be utilized to host meal programs, community events, or rent for local food entrepreneurs needing a commercial-grade kitchen.

They also include classrooms, teaching gardens and demonstration kitchens, as well as community meeting spaces. The combination and interaction between food-system related programs and the community driven programs creates a set of dynamic and diverse spaces throughout the building.

CIRCULAR FOOD ECONOMY -

Building off the Circular Economy model and applying it to the food system, the food-related programs within the building are carefully curated to share resources and turn one processes' waste into another's production, creating a resource efficient loop, where the production of beer creates spent grain that can be utilized by the neighboring bakery and for the cultivation of mushrooms below. This strategic integration all ties back to the sustainability goals of the Circular Economy model and applying

these methods to create a model for a sustainable local food system.

PRIMARY PUBLIC SPACE -

Focusing on the primary public levels, floors two and three, double and triple height spaces to the north and south permeate the floor plates to allow for a visual and audible connection between the varying floors. This also helps to bring more light into the primary central spaces on the ground level and create a dynamic flow between the market, dining, growing, and flexible gathering spaces.

With the majority of car traffic occurring on Rainier Avenue, the main entrance has been located at the mid-block on the northern edge guiding visitors directly to the central atrium and market. While the northwest corner and the primary Rainier Avenue edge contains a double height glazed space with large tanks and other brewing equipment to showcase the making that occurs on site.

Interior glazing is used throughout the building to give occupants the opportunity to see the processing,

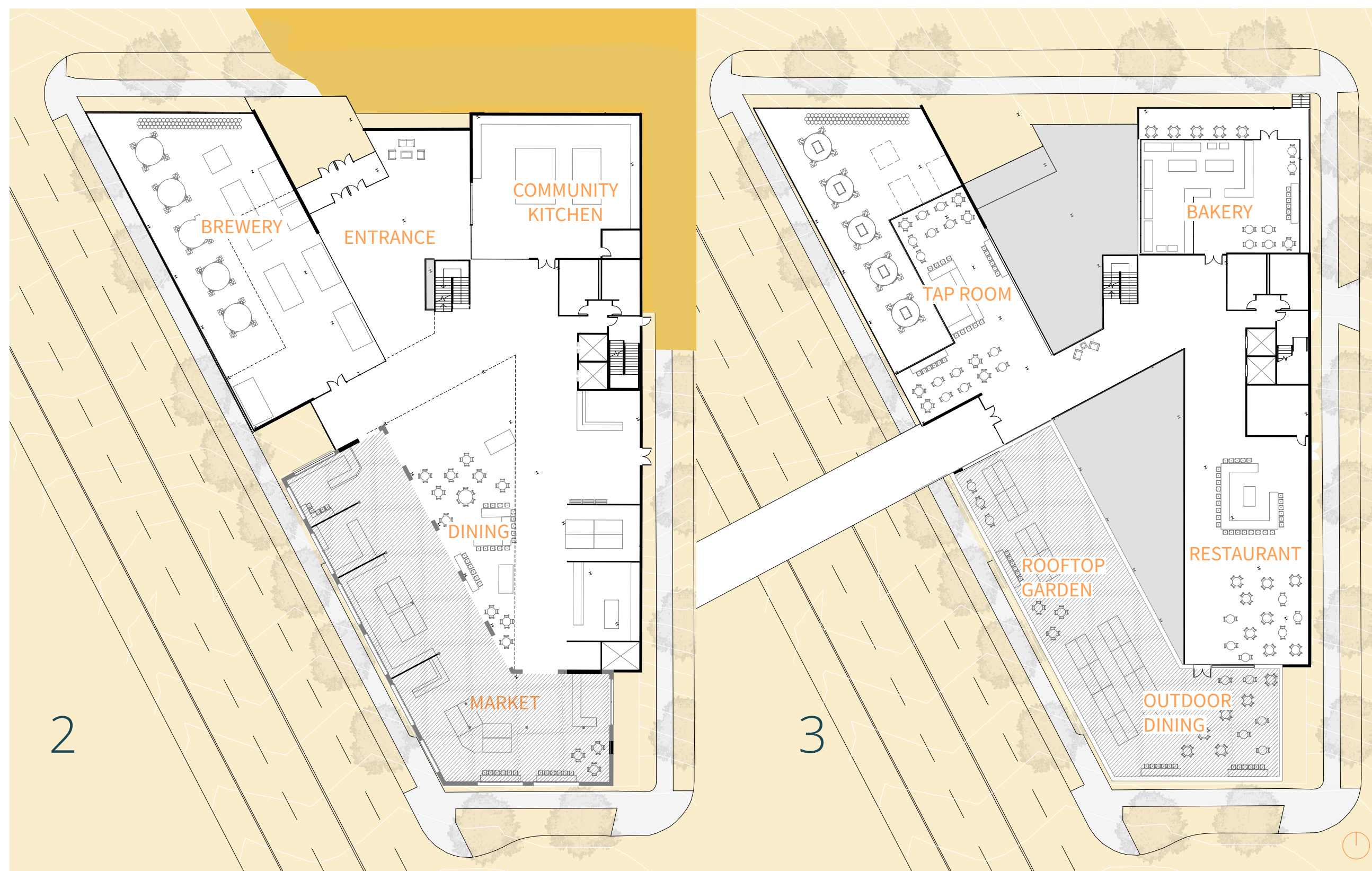


Figure 45:
Level 2 floor plan with primary entrance at the north

cooking, creating, and any 'behind-the-scenes' actions that take place in order for food to reach our plate. Showcasing all elements of the process, including waste recovery at the lowest level, is important to educate occupants on the impacts of the food system to health and the environment.

Anchored in the footprint of the original factory, the market takes advantage of the regularity of the existing structure to form permanent market stalls within the 20 foot bays. While the factory's exterior east wall has been punctured through where the windows once were, to open up for circulation and connection to the atrium. This food center serves as a dynamic place; one that could be visited for a quick bite to eat, somewhere to gather with neighbors for an evening out, or even a space that visitors spend an entire day learning about circular food and sustainable food practices.

Figure 46:
Level 3 floor plan with pedestrian bridge

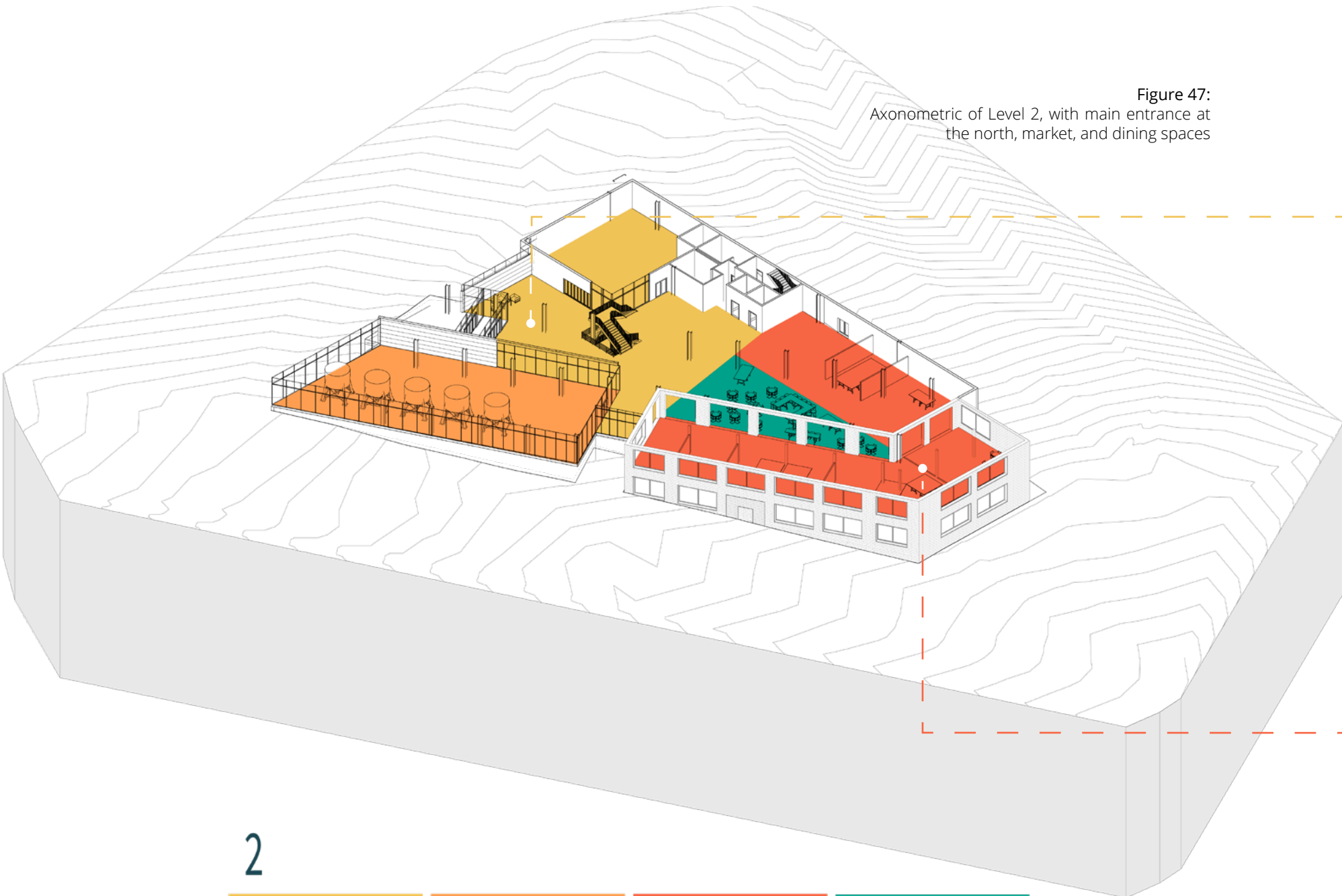


Figure 47:
Axonometric of Level 2, with main entrance at the north, market, and dining spaces

- 2**
- COMMUNITY SPACE
COMMUNITY KITCHEN
FLEXIBLE GATHER SPACE
 - PRODUCTION
BREWERY
 - RETAIL
MARKET
 - CONSUMPTION
CENTRAL DINING



Figure 48:
View from double height entrance lobby looking toward central stair, between the community kitchen and brewery

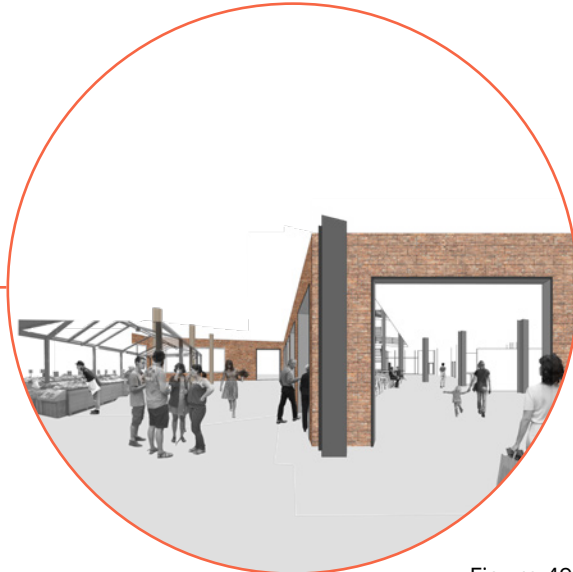
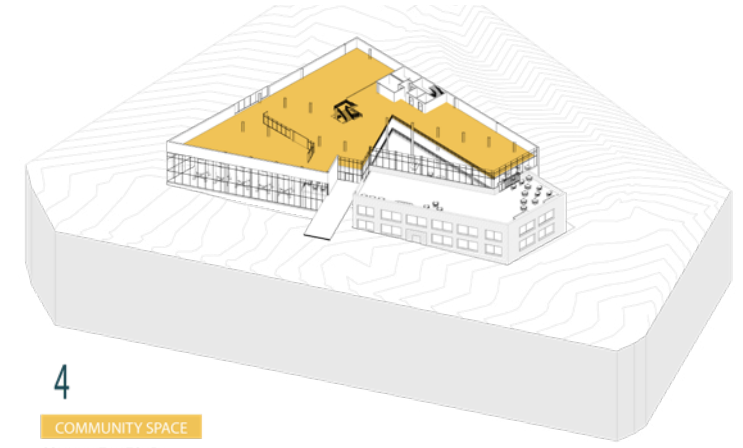
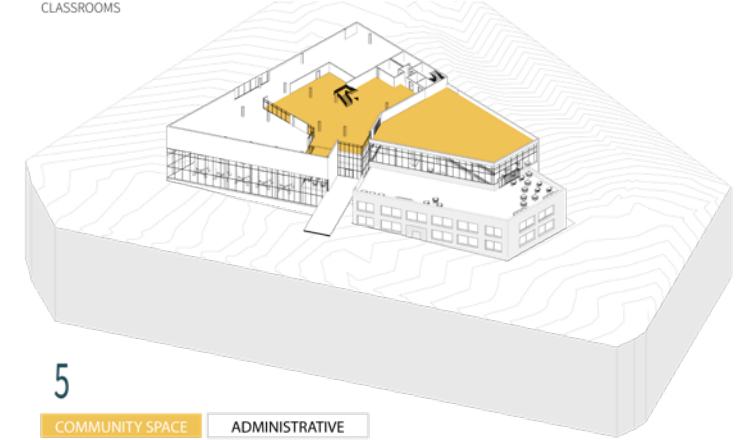


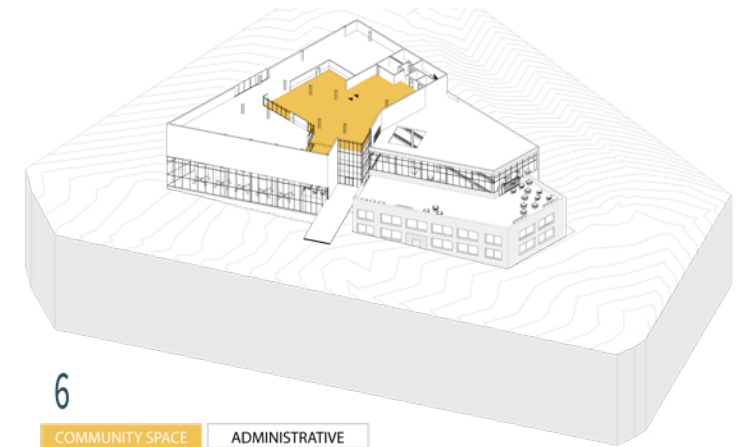
Figure 49:
View from inside the market space revealing the punched openings where the factory's windows once were



- 4**
- COMMUNITY SPACE
 - COMMUNITY KITCHEN
 - FLEXIBLE EVENT SPACE
 - CLASSROOMS



- 5**
- COMMUNITY SPACE
 - ADMINISTRATIVE
- TEACHING GARDEN
 - OFFICES
 - TEACHING KITCHEN
 - FLEXIBLE EVENT SPACE



- 6**
- COMMUNITY SPACE
 - ADMINISTRATIVE
- FLEXIBLE MEETING SPACES
 - OFFICES

Figure 50:
Axonometric of Level 4 - 6



CONCLUSION

It is time to start imagining what the future of the food industry could look like. The proposed Central District Food Center would bring food production back into the city to further connect people to the source of their food. It will bring jobs and market opportunities for local food entrepreneurs to make and sell products, as well as create a resource for the community. Somewhere for people to gather, learn, cook, and cultivate a sense of community again. The design proposal is site specific

and site conscious; one that educates and feeds the community while closing the loop on food resources. The innovation of this food center is changing the way we buy, sell, distribute, and ultimately think about food in our communities. With a rapidly densifying neighborhood, the food center anchors itself within the old factory, preserving the character and a piece of the neighborhood's history.

Nourishing the City is about two key elements: sustainability and equity. By focusing on these two pieces, the urban food center re-imagines how the food system can integrate back into the city in an intentional way that embraces and revitalizes a sense of community. This project could serve as a model in various locations in order to resolve many of the challenges that are inherent in the current food system. Nourishing the City is breaking away from the linear, waste and profit-driven food supply

chain and re-centering the focus to a local, regenerative and community driven system. The new approach builds upon equity, education, and the environment. Through repurposing existing infrastructure, building a food system that is cyclical and resource efficient, and by re-connecting people to the source of their food, we can nourish the community and the environment for many years to come.

Figure 51:
North/south section through the market, central dining space, and main entrance looking west

TERMINOLOGY

- FOOD APARTHEID** - The systematic destruction of Black self-determination to control one's food (including land, resource theft, and discrimination), a hyper-saturation of destructive foods and predatory marketing, and blatantly discriminatory corporate controlled food systems that results in [communities of color] suffering from some of the highest rates of heart disease and diabetes of all time. Many tend to use the term 'food desert,' however food apartheid is a much more accurate representation of the structural racialized inequities perpetuated through our current system.
- Food Justice Blog & More. (n.d.). Dara Cooper
- FOOD DESERT** - Regions of the country often feature large proportions of households with low incomes, inadequate access to transportation, and a limited number of food retailers providing fresh produce and healthy groceries for affordable prices.
- Dutko, P., Ploeg, M. V., & Farrigan, T. (n.d.). Characteristics and Influential Factors of Food Deserts. 1.
- FOOD JUSTICE** - A process whereby communities most impacted and exploited by our current corporate controlled, extractive agricultural system shift power to re-shape, re-define, and provide indigenous, community based solutions to accessing and controlling food that are humanizing, fair, healthy, accessible, racially equitable, environmentally sound, and just. Food sovereignty is a framework going beyond access to ensure that our communities have not only the right, but the ability to have community control of our food including the means of production and distribution.
- Food Justice Blog & More. (n.d.). Dara Cooper
- FOOD SOVEREIGNTY** - A shift away from corporate agricultural system and towards our own governance of our own food systems. It is about our right to healthy food produced through ecologically sound and sustainable methods, with the right to define and ultimately control our own food and agriculture systems. Shifting from an exclusively rights based framework to one of governance puts the needs of those who work and consume at all points of the food chain at the center rather than the demands of corporations and markets.
- Food Justice Blog & More. (n.d.). Dara Cooper

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