

Lamination: A New Chinatown Market

Problem Statement

Background

Located at the intersection of W Cermak and S Wentworth in Chinatown, this expansive lot is divided nearly in half by a Chicago “L” red line station. Additionally, the site is flanked along the east by the Metra train line. The immediate context of the area is surrounded by a library, small market, and restaurants. Currently the site functions as a parking lot and is the primary entrance to Chinatown from the “L” train. The direct access to transit and commercial properties makes this an ideal location for a new transitional/ permanent market, cooking school, food court, cultural museum, and greenhouse growing center.

This unfortunate parking lot entrance to one of Chicago’s most distinctive neighborhoods, breaks the bonds between a new (north) and old (south) Chinatown district.

The program for the site requires a minimum of 150,000 SF of total building program focused in market retail. Within the program a required 20,000SF temporary/movable stall market requires a clear span of 80’-0” in one direction. This long span structure and required square footage take up nearly all of the ground space and require the proposed building to interact with the trainline bisecting the site.

Design Concept

Concept

Lamination: A New Chinatown Market is a structure sculpted by its context and function. Laminations of space are formed by the trains that bound and divide the site. The North-South orientation of each of these trains pushes and directs the programmatic lamination process spanning both sides of the Chicago “L” A series of five equal laminations characterize the site from west to east. The public western side is the most elaborate variation of the laminations and connects old (south) and new (north) Chinatown with an entry plaza translated into the temporary market. As the structure crosses the “L” tracks it is simplified through a filter of programmatic uses and modulation of structure. The bonds between each lamination are characterized by the north to south column line that also acts as a service element for mechanical and circulation.

First Lamination

The westernmost lamination is a soft transition off the street through the temporary outdoor market plaza. This area is characterized by a bosque of trees that mimic the architectural structure of the laminations to follow. This plaza includes lightwells and planting that extends the lines of the market and delineates interior and exterior spaces. During the outdoor market season, goods are sold from the temporarily covered kiosks and booths between the trees.

Second Lamination

Moving into the temporary market, one notices first the main axis of the space. From the south, this axis is entirely composed of transparency above; while from the north, the overhead plane appears solid. The market hall features the building's elegant long span structure of 80' from east to west. A rhythm of solid and void on the western façade delineate the entries and exits for summer days into the first lamination (plaza).

Third Lamination

Nested below the elevated train platform, the center lamination is a primary artery for the project and naturally operates as a food court and entry into the Chinatown market from the "L". From the elevated train tracks, views into the market entice visitors to venture down into the temporary market. Once below the train, patrons can purchase food and sit at tables or the bar style seating that overlooks the temporary market.

Fourth/Fifth Lamination

A secondary entrance off of Cermak Rd. enters directly into the permanent market allowing patrons to bypass the temporary market for the permanent market, greenhouse, or cooking school. On the upper level, patrons have a view into the greenhouse before entering into the cooking school which lines the fourth lamination. The main feature of this space is the ample use of borrowed light through the greenhouse preventing any unnecessary heat gains into habitable spaces, while evenly daylighting the upper level.

Structural Design

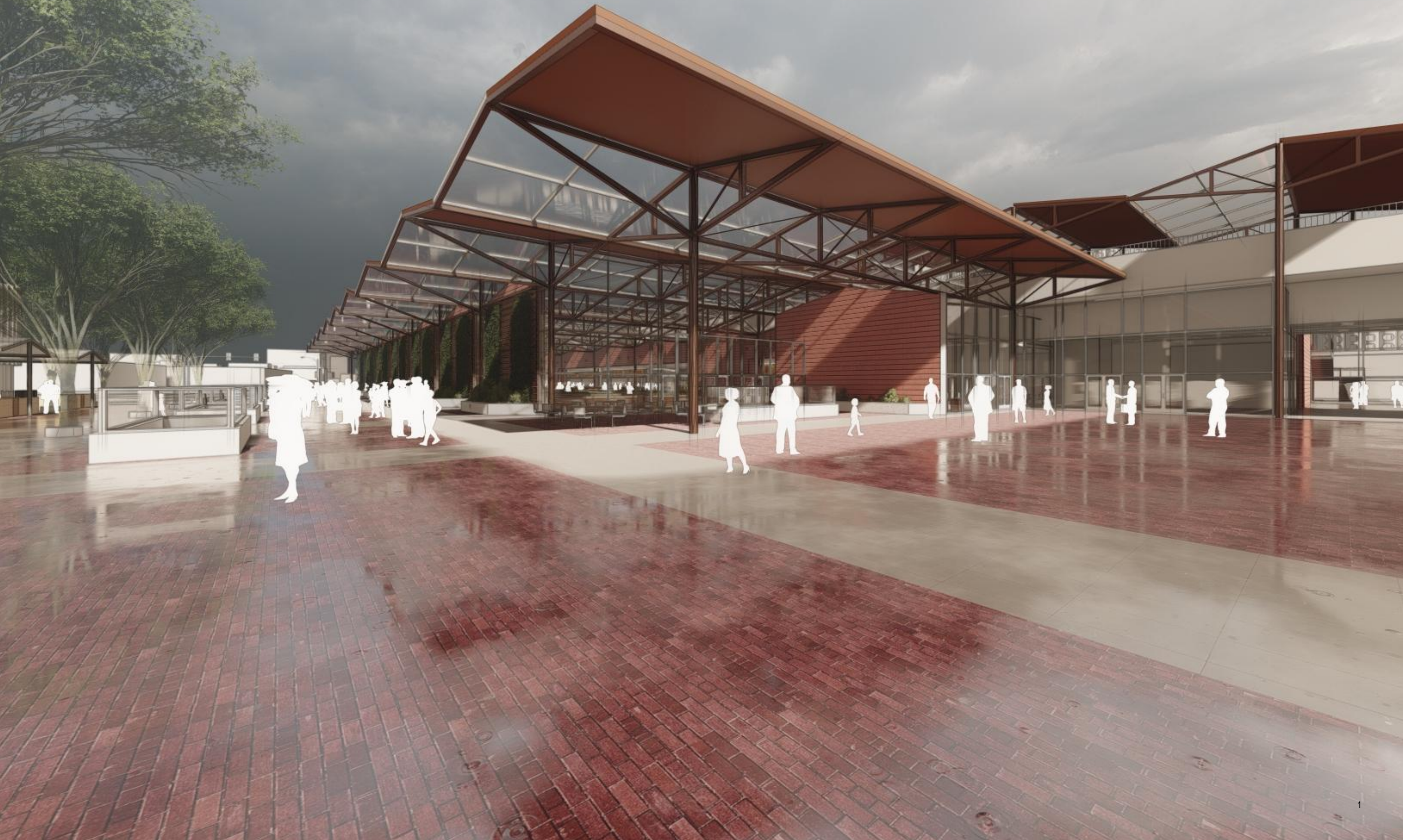
A series of ridges and valleys running east to west work as a directional cantilevered beam system similar to a spaceframe. The purity of the structure allows for breaks between the solid canopy to bring north light into the space. The undulation of the ridges is directional and acts as a bonding or repetitive theme between laminations. Rainwater management of the roof directs portions of the water collected to the solid west façade planter walls. These planting walls are broken with transparency on either side of the structural column to draw attention and bring the eye upwards to the canopy establishing the formal space of the market. As the structure moves west to east it adapts in complexity to the programmatic uses housed below—west being most complex and the eastern permanent market being the least.

Systems/Passive Design

Between laminations are gaps of solid and void that act as passage for mechanical systems to feed the various programmatic spaces. The mechanical plant, situated on the north side of the fourth lamination, services the whole building through these barriers of service space.

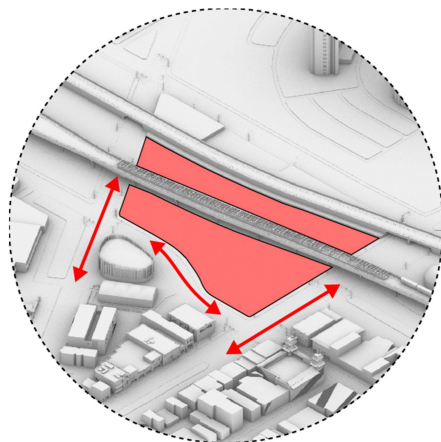
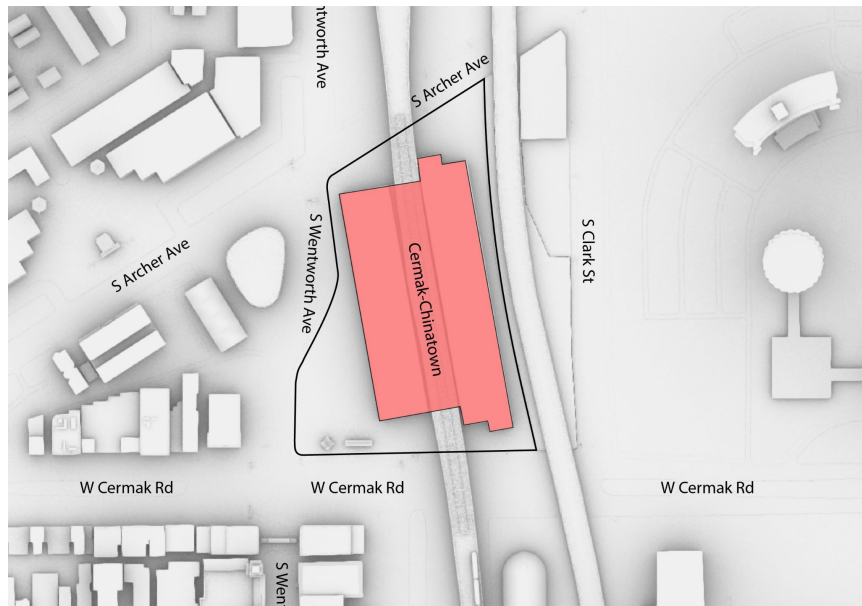
Passively, the structure takes advantage of northern light to avoid excessive heat gains, while the southern portion of the undulating roof allows for photovoltaic arrays to nest themselves evenly across the second lamination roof. The fourth lamination's double roof system pulls air from the west and moves solar heat gains away from the cooking school and into the greenhouse. The greenhouse then acts as a heat buffer only transmitting light into the spaces during the hot months—but also can share the heat during the cooler months.

LAMINATION: A New Chinatown Market

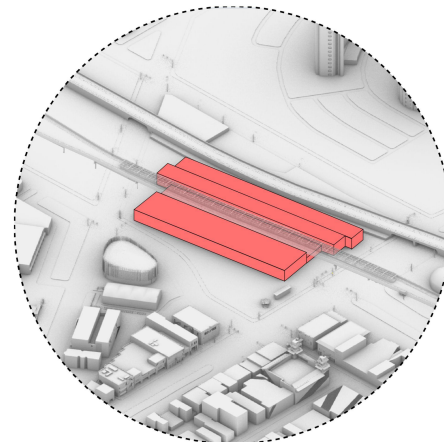


SITE ANALYSIS & FORM CREATION

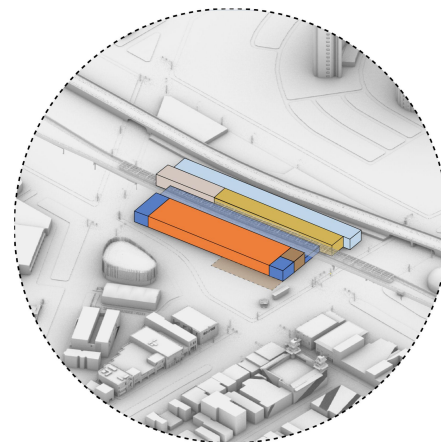
Located at the intersection of W Cermak and S Wentworth in Chinatown, this expansive lot is home to a red line station. The immediate context of the area is surrounded by a library, small market and restaurants. Currently the site functions as a parking lot. The direct access to transit and commercial properties makes this an ideal location for a new transitional/ permanent market, cooking school, food court, cultural museum, and greenhouse growing center.



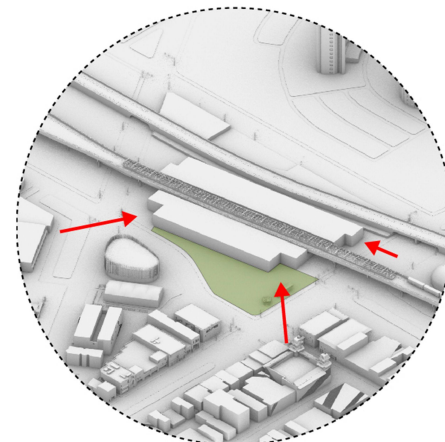
Site Circulation



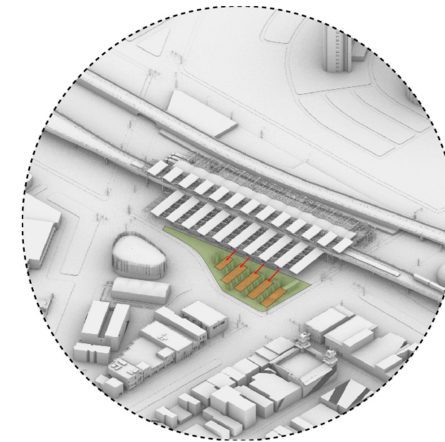
Initial Massing



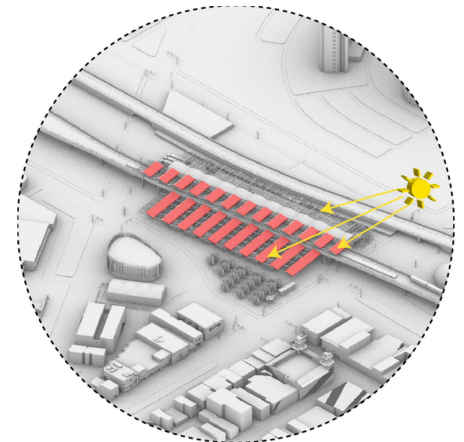
Program Development



Pedestrian Access



Open Market



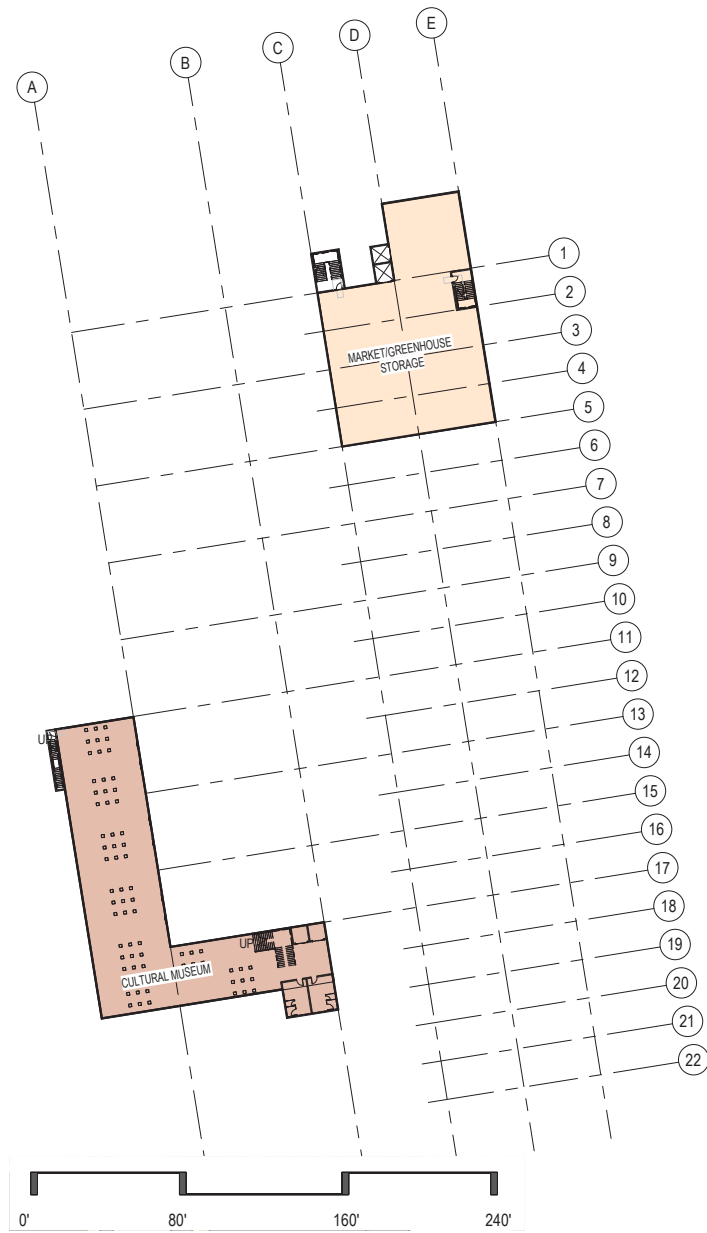
Daylighting

CHINATOWN MARKET

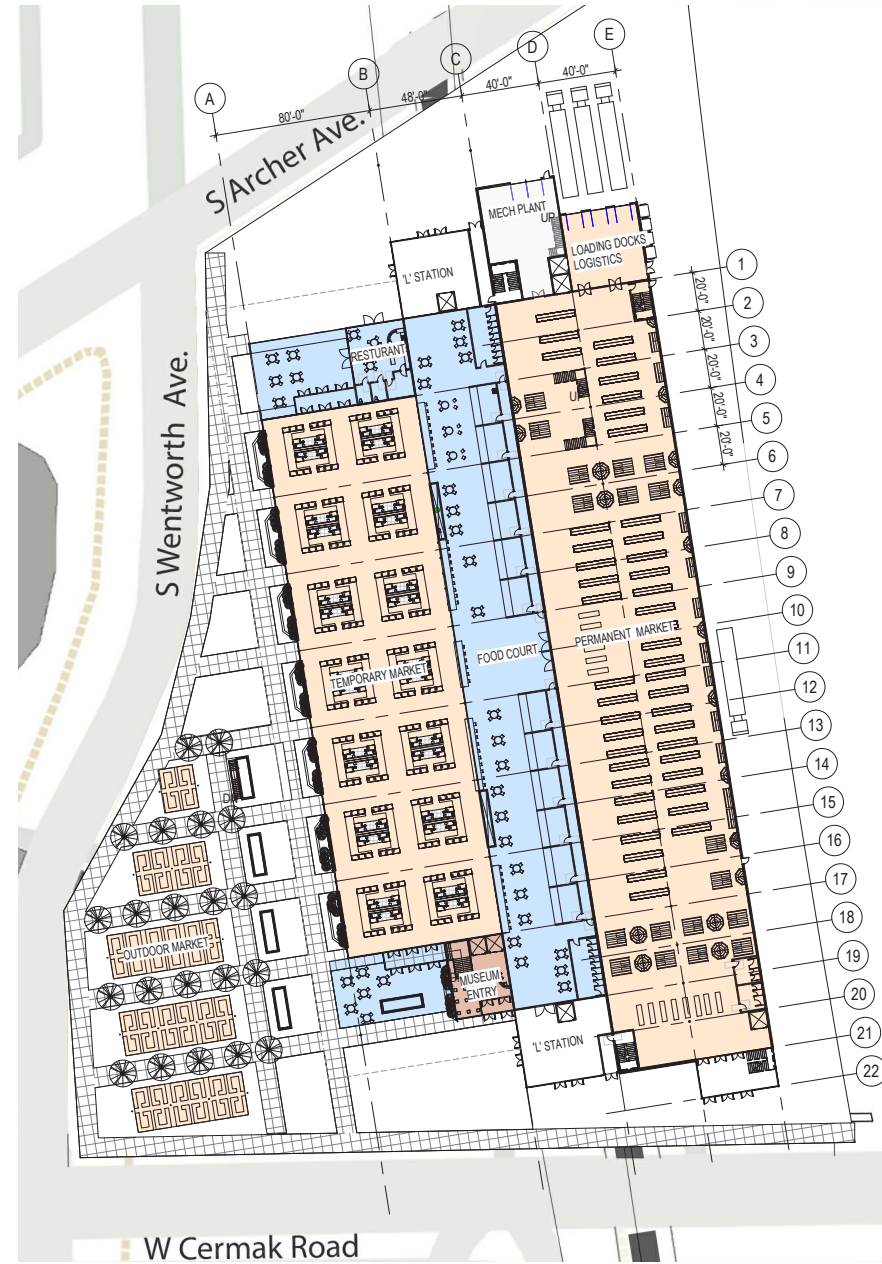
Floor Plans

- Temporary Market: 22,400 SF total
Outdoor Market: 5,200 SF total
Permanent Market: 44,500 SF total
- Food Court: 30,000 SF total
- Cooking School: 10,700 SF total
- Greenhouse: 17,000 SF total
- Cultural Museum: 9,900 SF total

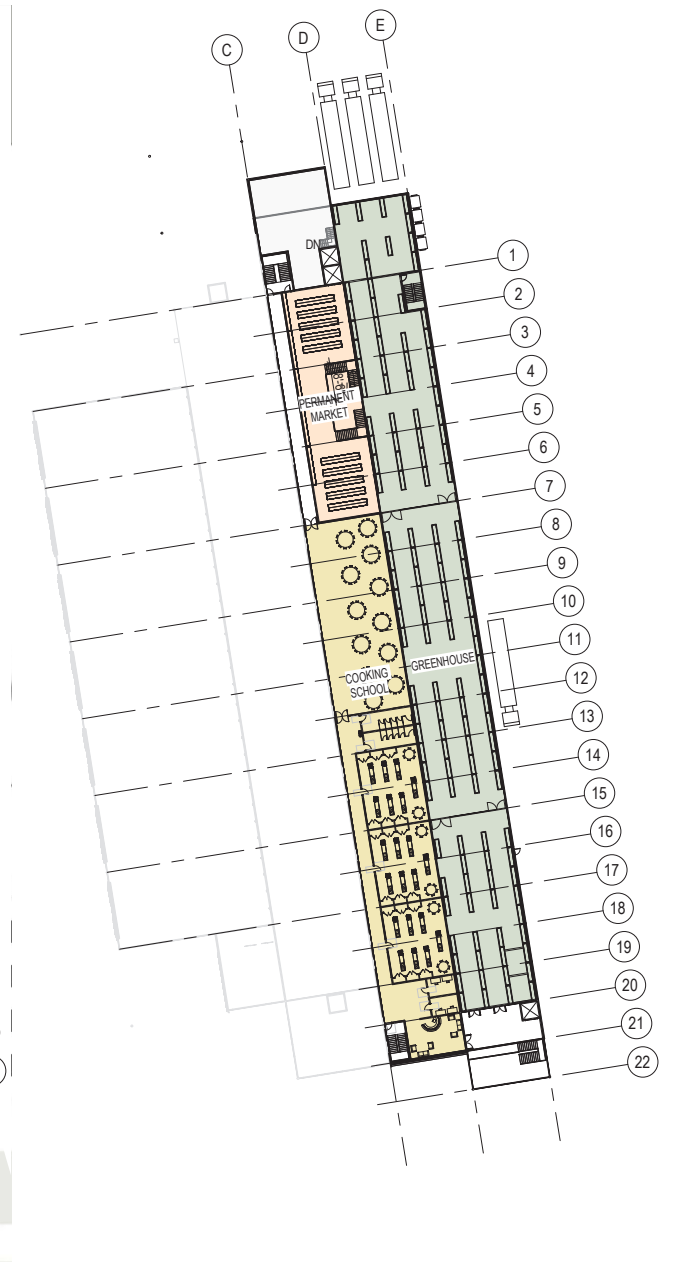
- Service: 6,000 SF total
Misc. Circulation: 7,500 SF total
Total: 153,200 SF



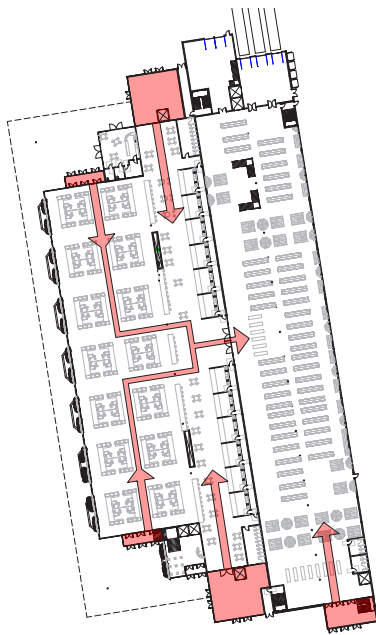
1 Lower Level
1" = 50'-0"



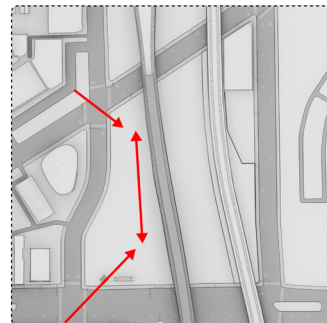
2 First Floor
1" = 50'-0"



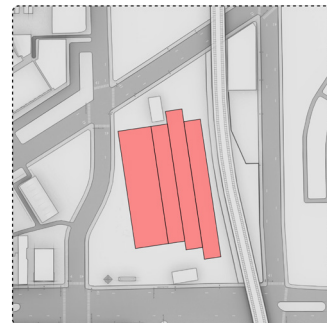
3 Second Floor
1" = 50'-0"



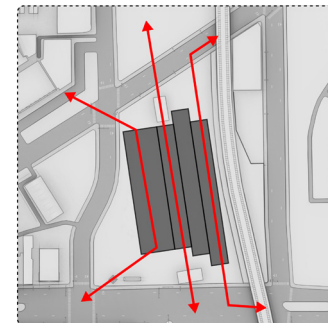
CIRCULATION



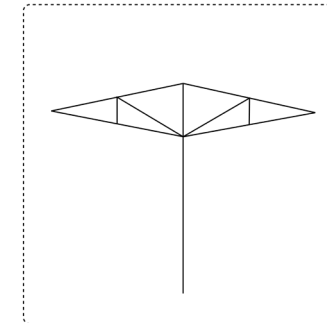
CONNECTION



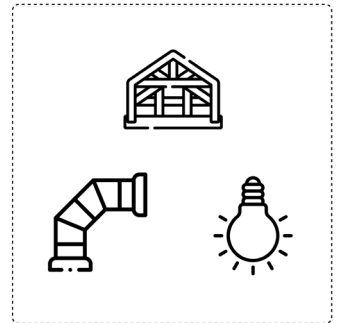
LAMINATION



FLOW



MODULARITY

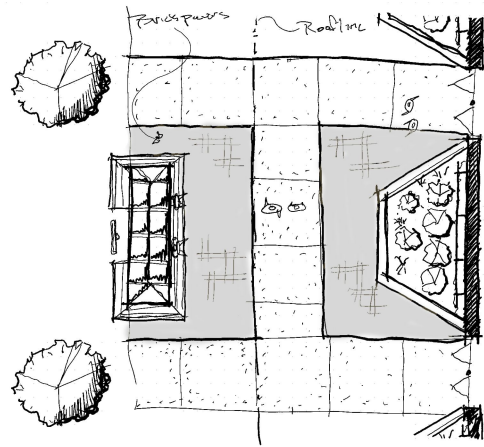
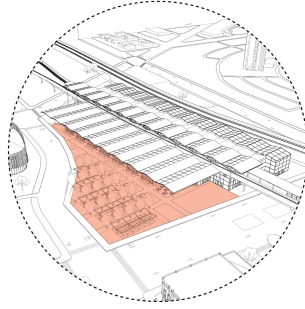


SYSTEMS INTEGRATION

FIRST LAMINATION

Plaza Design

The westernmost lamination on site is a soft transition off the street through the temporary outdoor market plaza. This area is characterized by a bosque of trees that mimic the architectural structure of the laminations to follow. This plaza includes lightwells and planting that extends the lines of the market and delineates interior and exterior spaces. During outdoor market seasons goods are sold from the temporarily covered kiosks and booths between the trees.

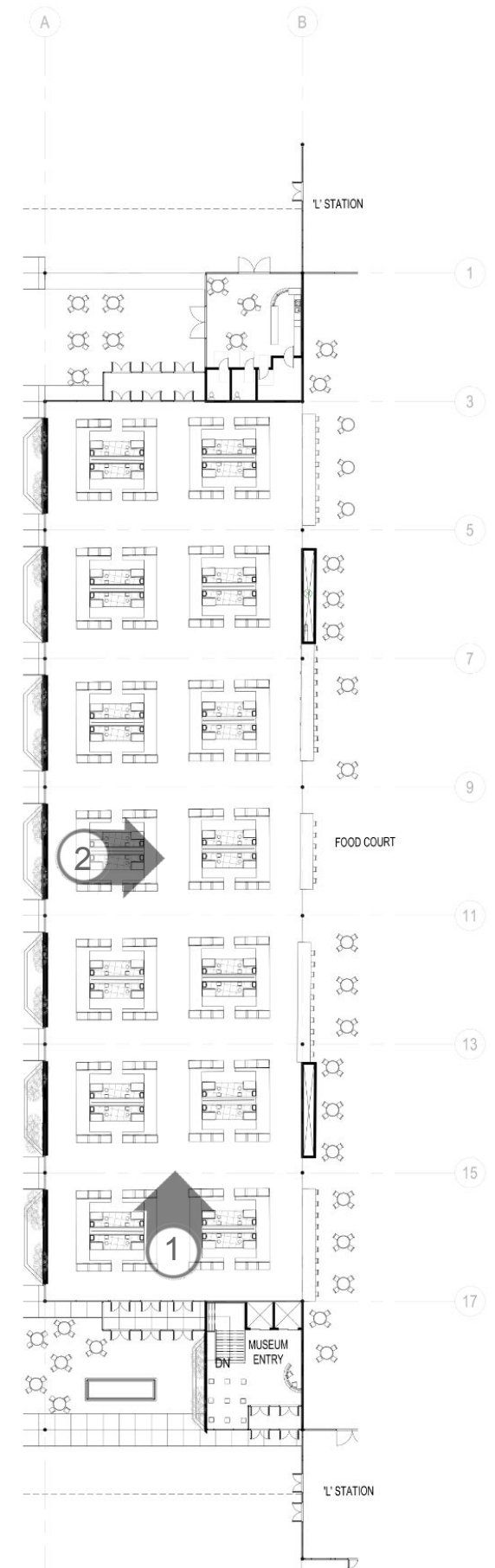
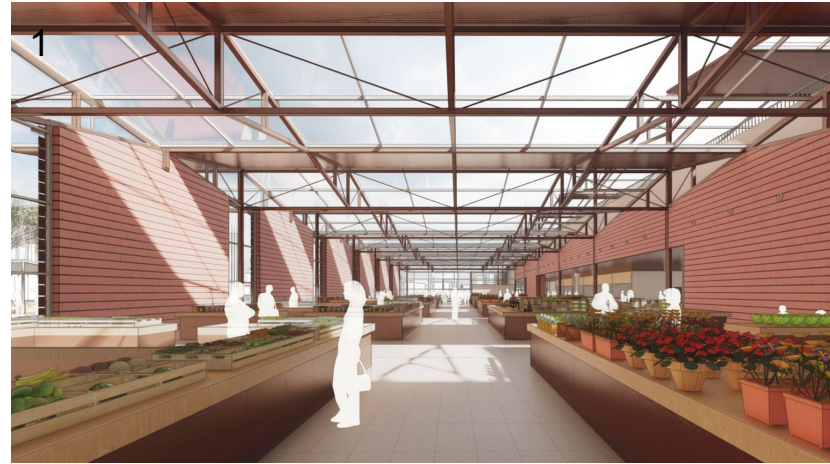
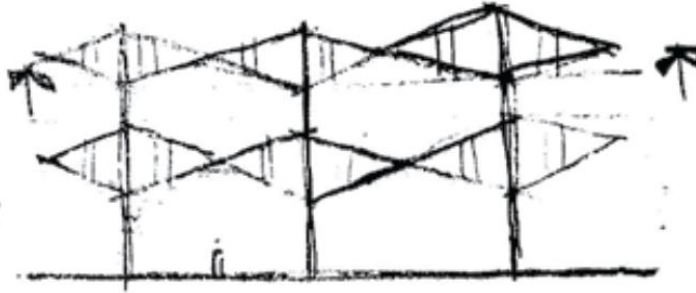
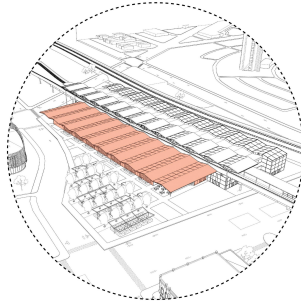


FIRST FLOOR PLAZA

SECOND LAMINATION

Temporary Market

Moving into the temporary market, one notices first the main axis of the space. From the south, this axis is entirely composed of transparency above; while from the north the overhead plane appears solid. This main temporary market hall features the buildings elegant long span structure of 80' clear from east to west and 40' from north to south. A rhythm of solid and void on the western façade delineate the entries and exits for summer days into the fifth lamination or plaza.

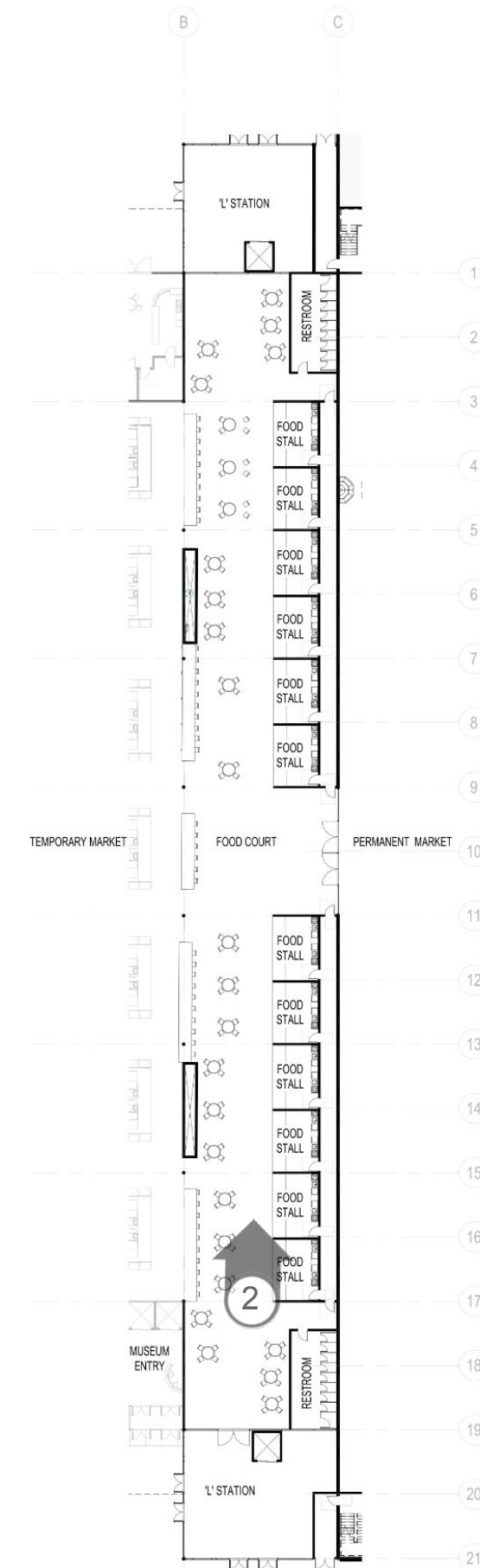
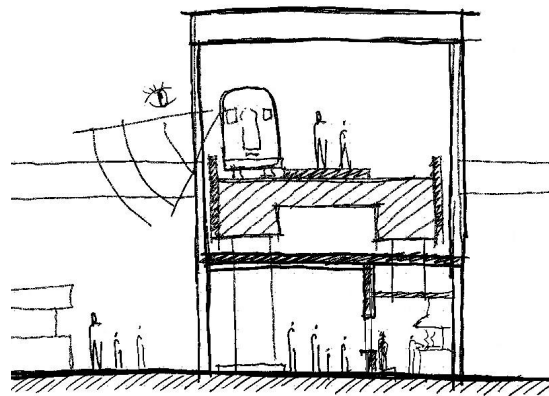
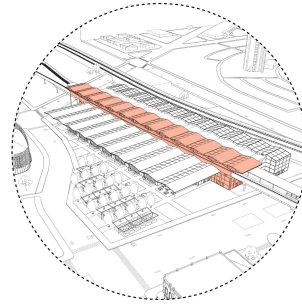


FIRST FLOOR MARKET

THIRD LAMINATION

Food Court - Train

Nested below the elevated train platform, the center lamination is a primary artery for the project and naturally operates as a food court and entry into the Chinatown market. From the elevated train, views into the market entice visitors down into the temporary market space. Once below the train, patrons can purchase food and sit at tables or the bar style seating that overlooks the temporary market.

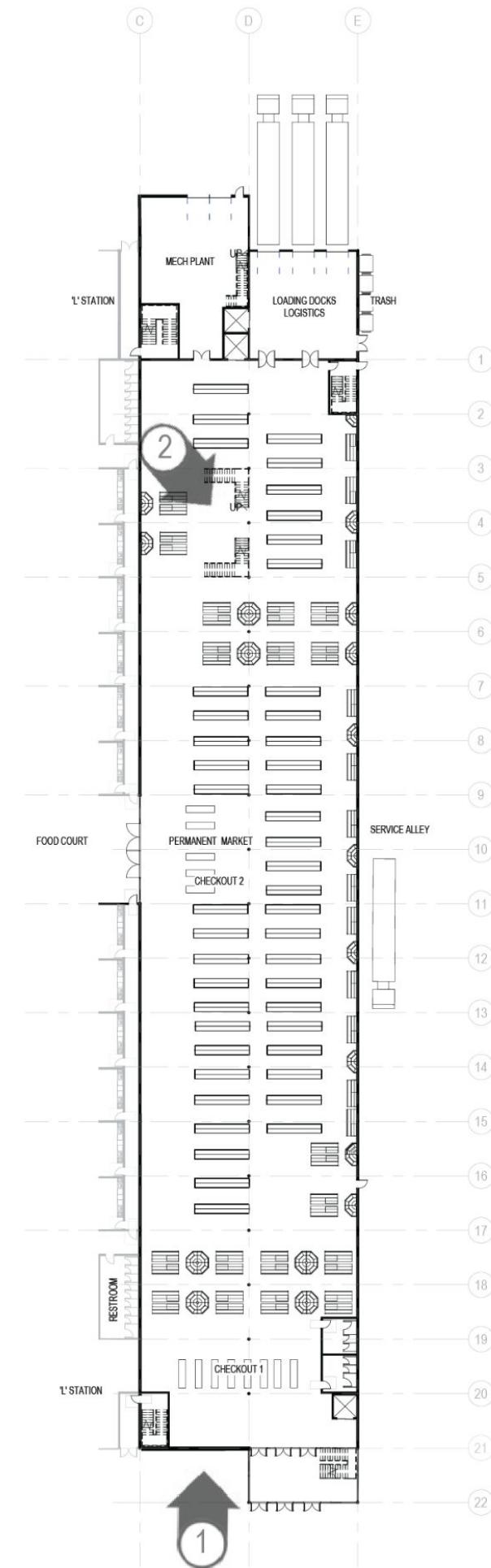
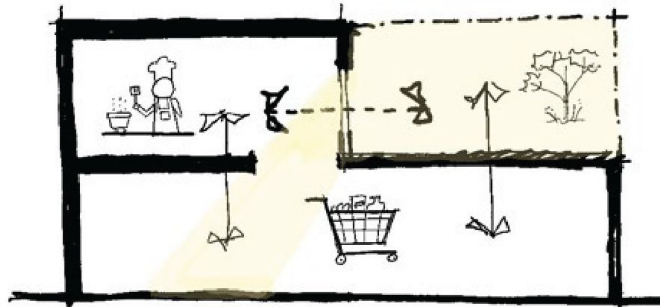
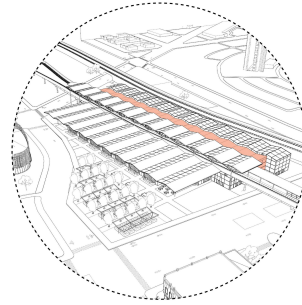


FIRST FLOOR FOOD COURT

FOURTH-FIFTH LAMINATION

Permanent Market

A secondary entrance off of Cermak Rd. directly into the permanent market allows for patrons to visit the exact area of the structure they desire. This entryway also serves a dual purpose as an atrium space connecting the cooking school and greenhouse to the street and market below. The main feature of the lower level market is the dual height space that allows for natural light to enter into the market through the buffer of the greenhouse

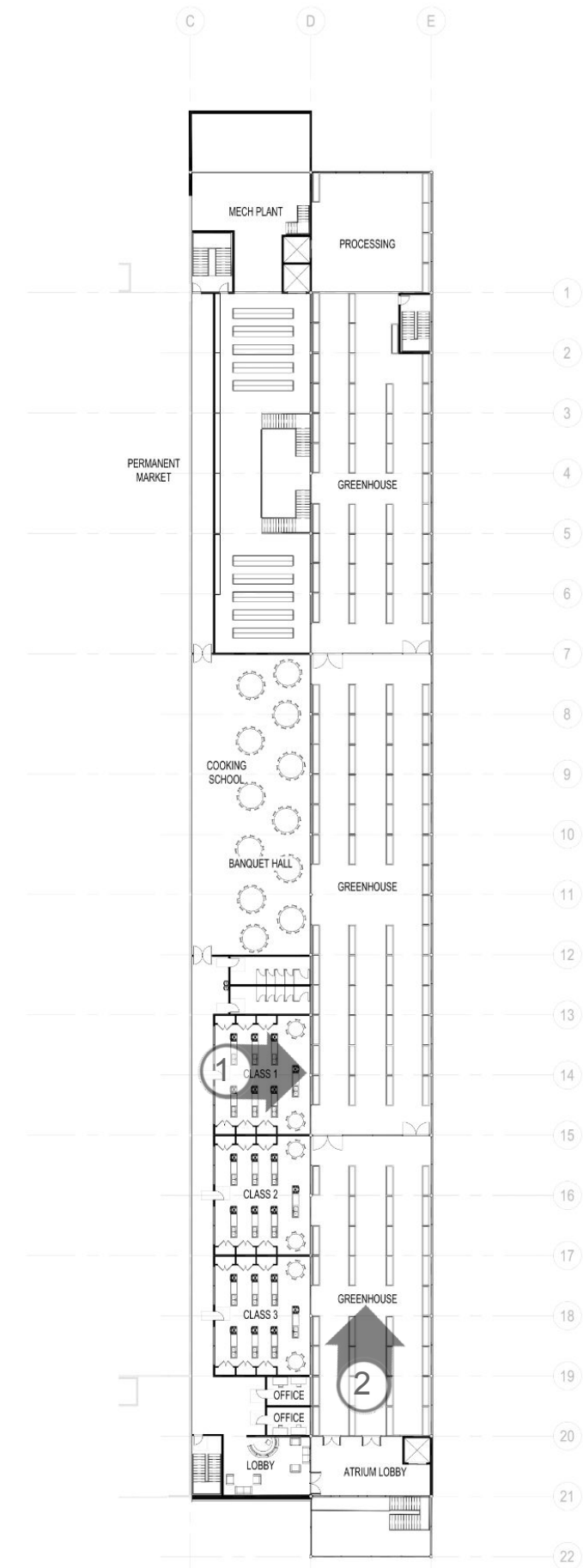
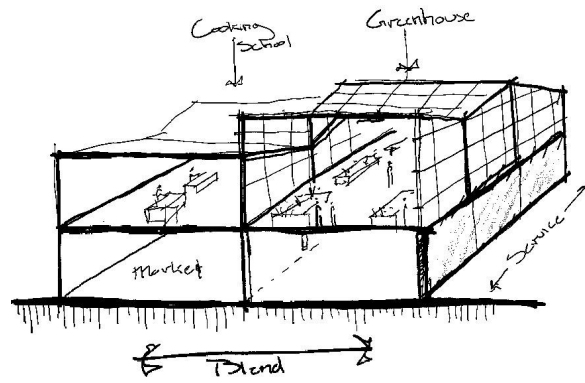
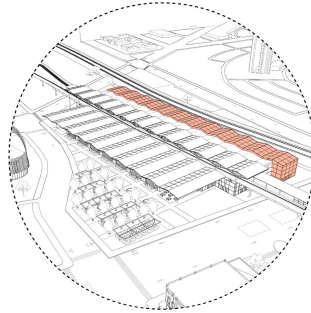


FIRST FLOOR PERMANENT MARKET

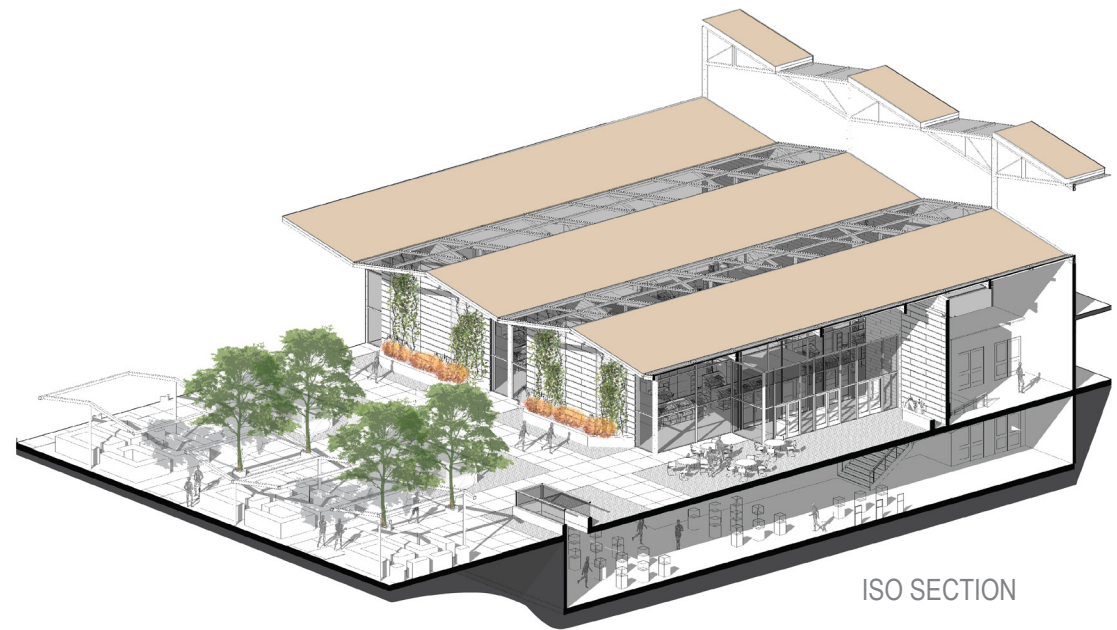
FOURTH-FIFTH LAMINATION

Cooking School - Greenhouse

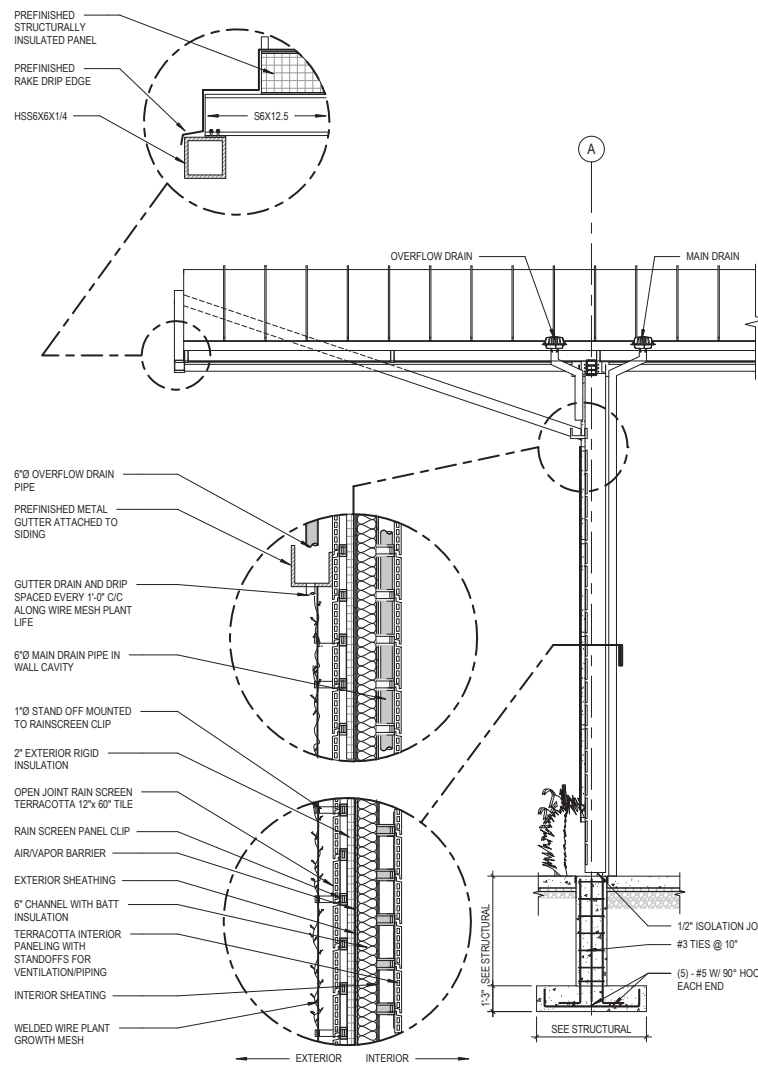
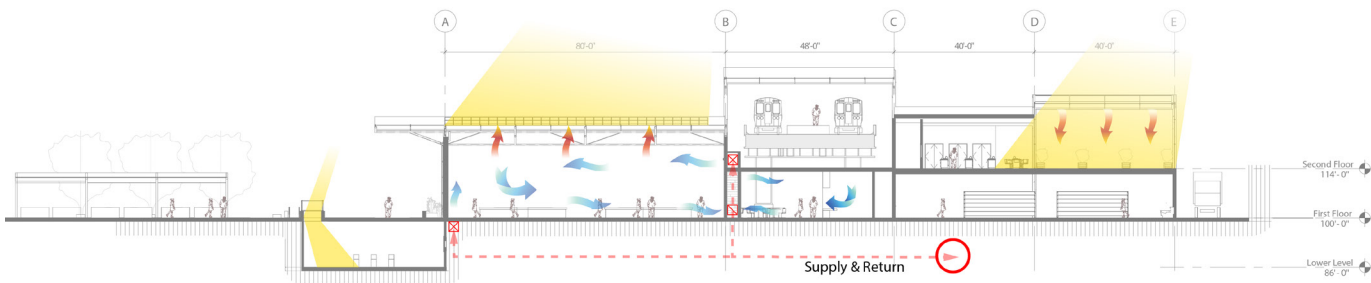
Entering off of the main atrium, patrons get a view of the greenhouse infrastructure before entering into the cooking school which lines the fourth lamination. The main feature of this space is the ample use of borrowed light through the greenhouse preventing any unnecessary heat gains into habitable spaces, while at the same time evenly daylighting the upper level.



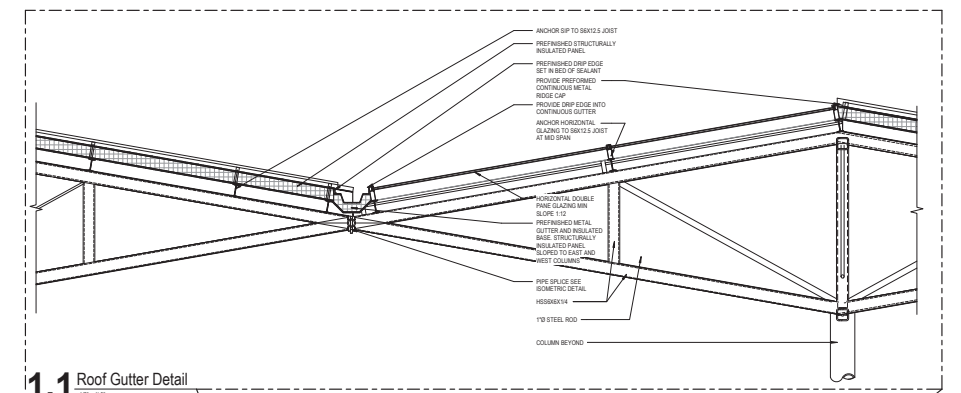
SECOND FLOOR



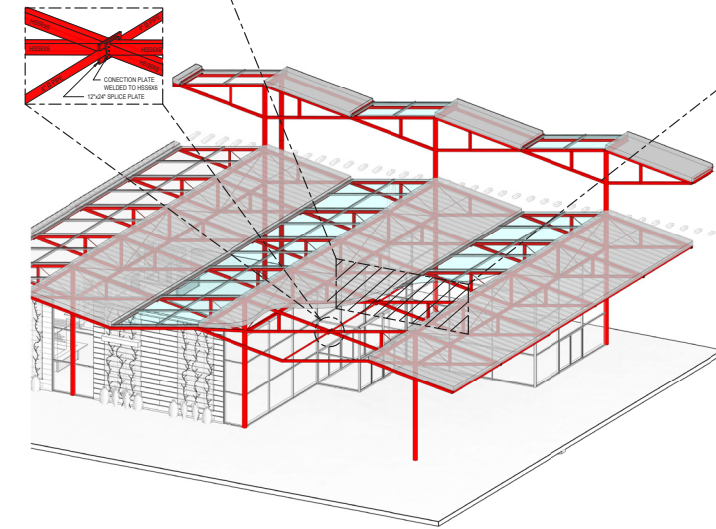
ISO SECTION



CONSTRUCTION DETAILS



1.1 Roof Gutter Detail



CONSTRUCTION DETAILS

Air is distributed into the main temporary market hall. Other spaces would have a more simplified and traditional style of heating and cooling due to their programmatic use and spatial ability to adapt.

The roof structure caps and accents the structural form below. Details on the adjacent page highlight how rainwater management is detailed on the project through a series of piped fixtures and a vegetation rain-screen wall.



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