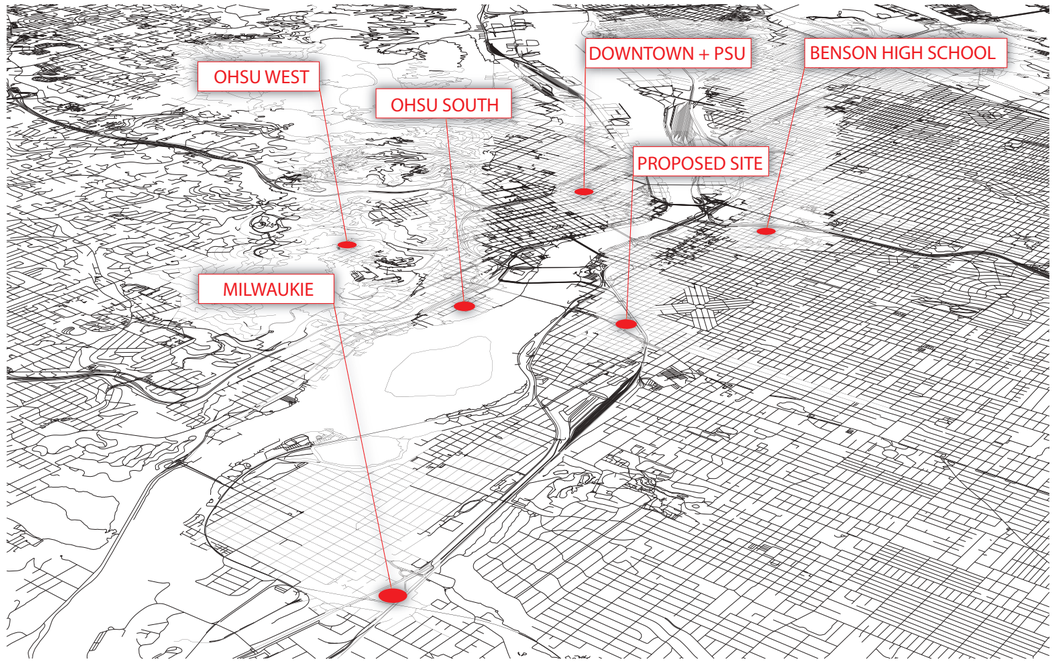
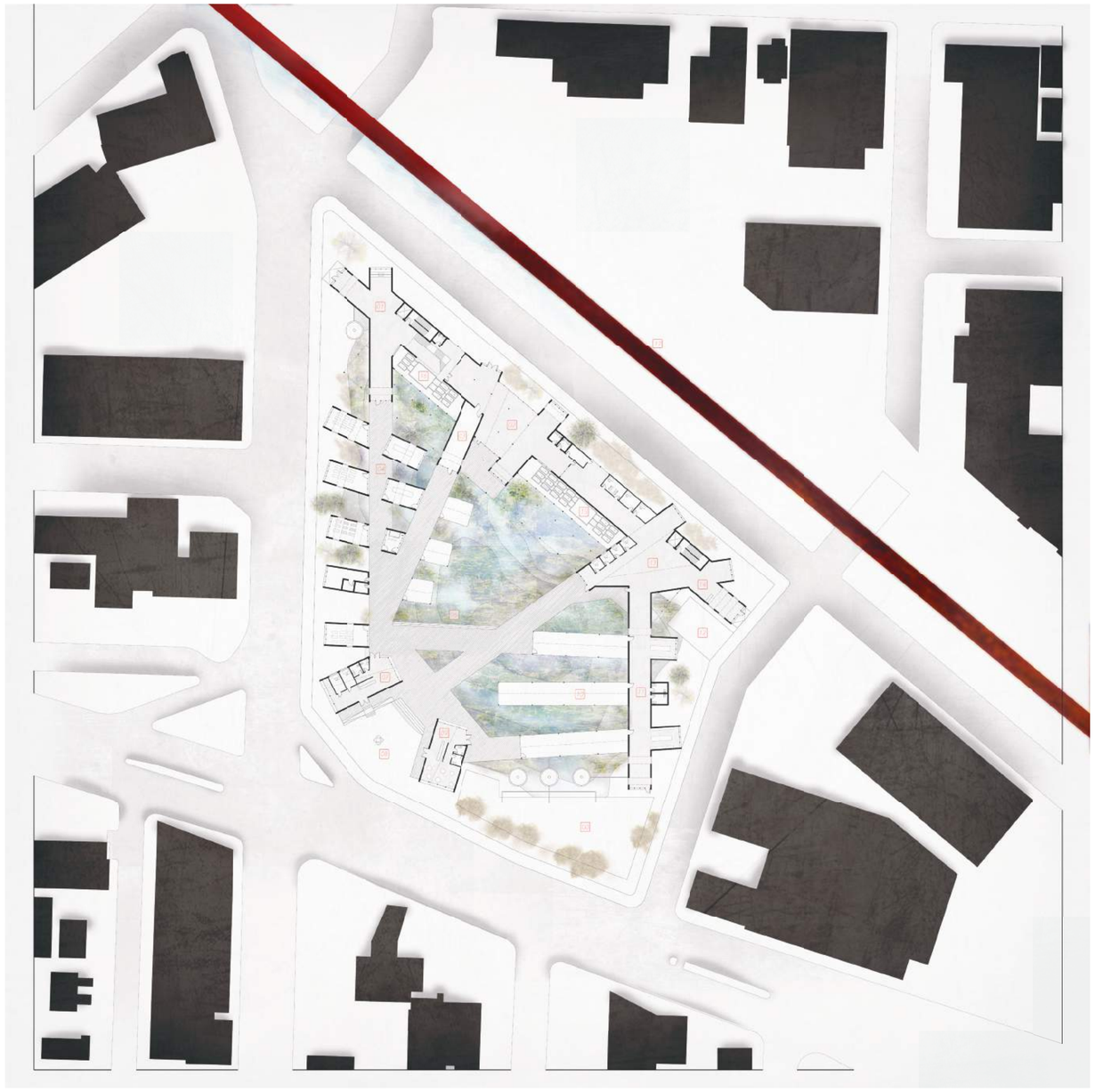
1210 se gideon street : INFRASTRUCTURE FOR URBAN AGRICULTURE

Kellen Thayer



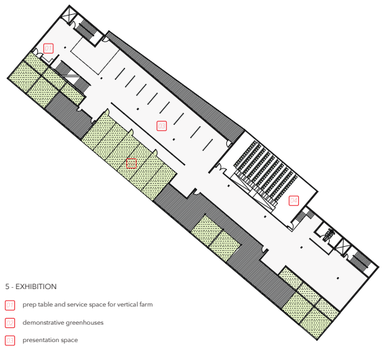
1 - COMMUNITY CENTER

00 community garden
01 public transit lobby
02 restaurant
03 kitchen for restaurant + students
04 classrooms + greenhouses
05 classroov
06 access to wetland
07 personal transit lobby
08 artesian well
09 cafe + waiting room
10 greenhouses
11 botony labs
12 loading dock
13 faculty offices
14 faculty lobby
15 aquaponic facilities
16 aquaponic facilities
17 orange MAX line + station



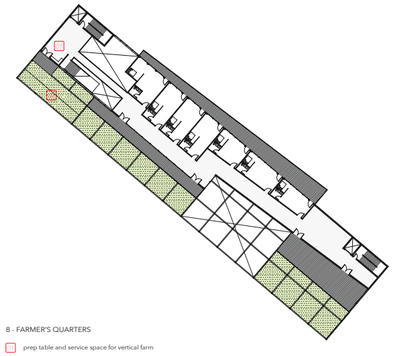
3 - FARMING

01 prep table and service space for vertical farm
02 pin up space



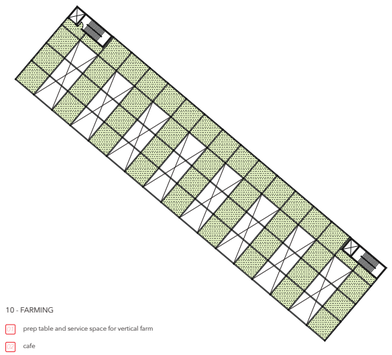
5 - EXHIBITION

1 prep table and service space for vertical farm
2 demonstrative greenhouses
3 presentation space
4 auditorium



8 - FARMER'S QUARTERS

1 prep table and service space for vertical farm
2 greenhouse

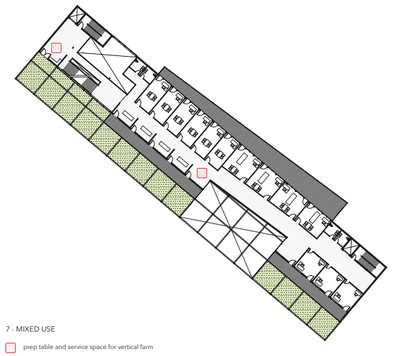


10 - FARMING

1 prep table and service space for vertical farm
2 cafe
3 rentable office space

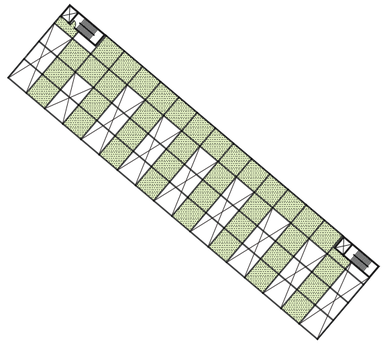
4 - FARMING

1 prep table and service space for vertical farm
2 pin up space



7 - MIXED USE

1 prep table and service space for vertical farm
2 rentable office space with work tables



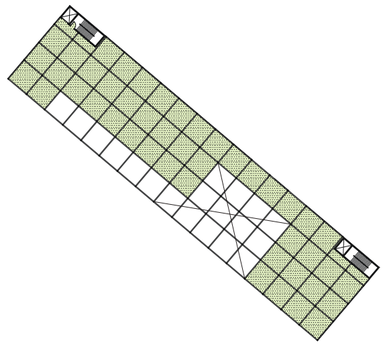
11 - FARMING

3 - FARMING

1 prep table and service space for vertical farm
2 pin up space

6 - MIXED USE

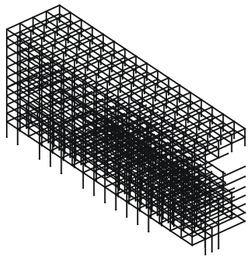
1 prep table and service space for vertical farm
2 cafe
3 rentable office space



9 - FARMING

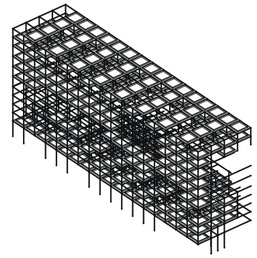
Infrastructure:

Polycarbonate extrusions form framework which wraps southern facade.



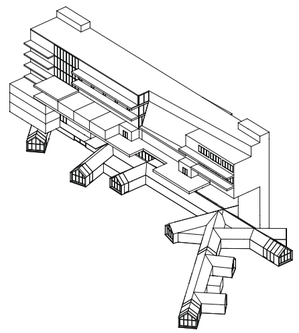
Application:

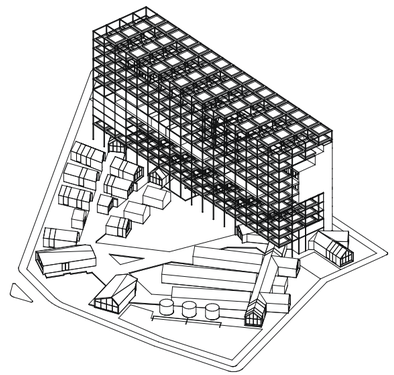
Planters and greenhouses fill the space provided by infrastructure, allocating empty modules for sunlight penetration.



Economy:

Green infrastructure wraps the facade of a mixed use office and residential building, providing funding for the on-site facilities dedicated to education.





Cafe + Waiting Room

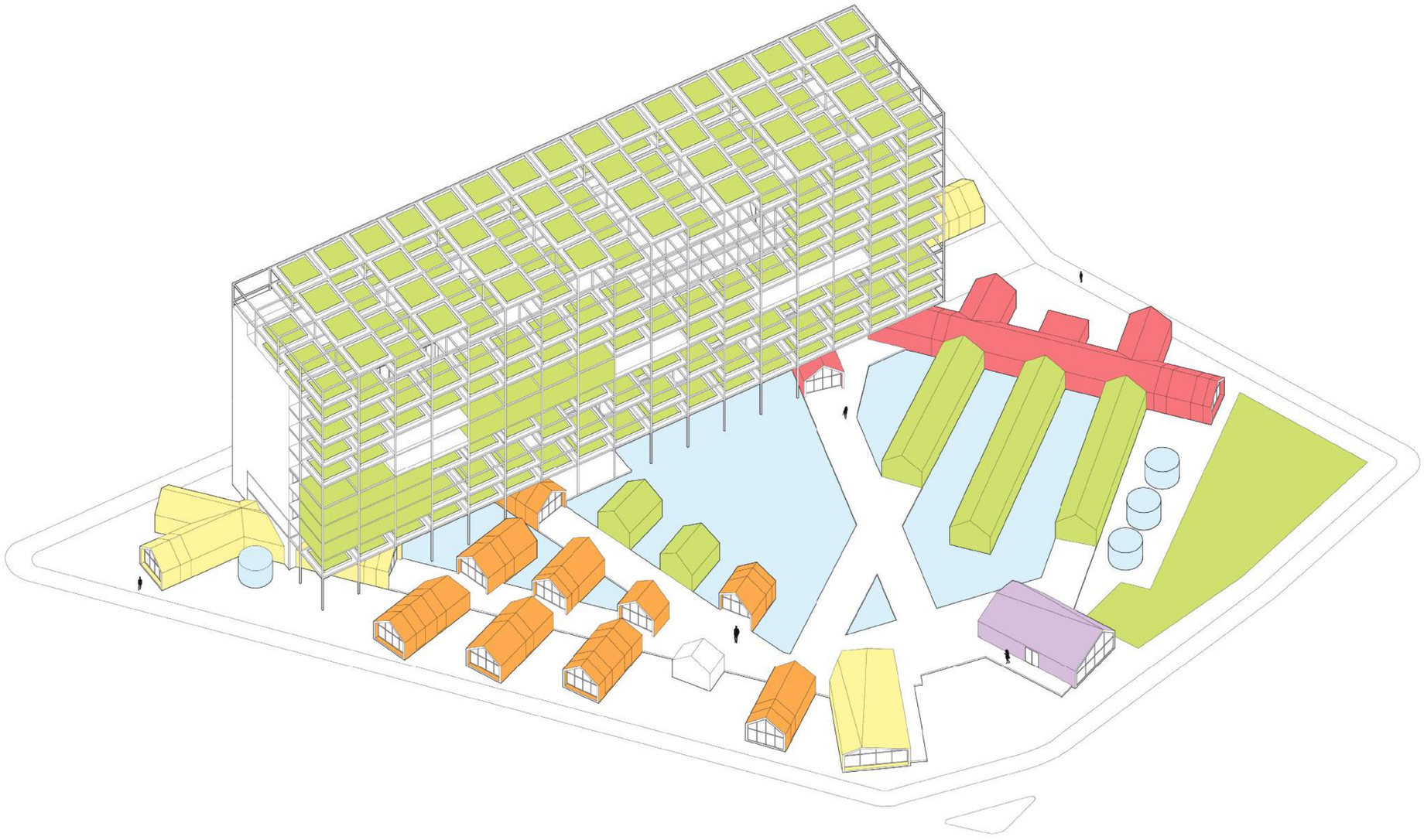
Faculty Offices + Botony Labs

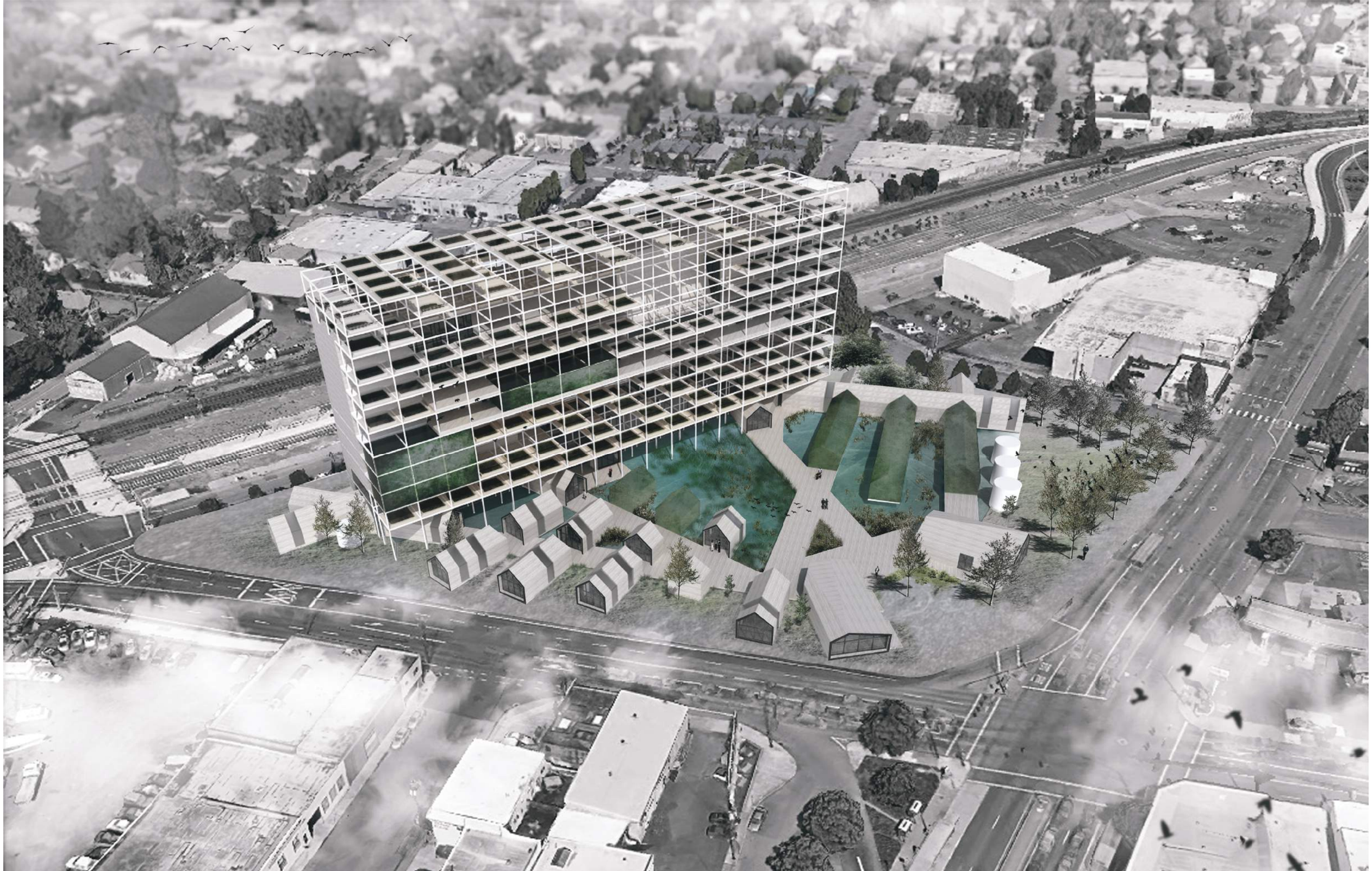
Vertical Farming + Greenhouses

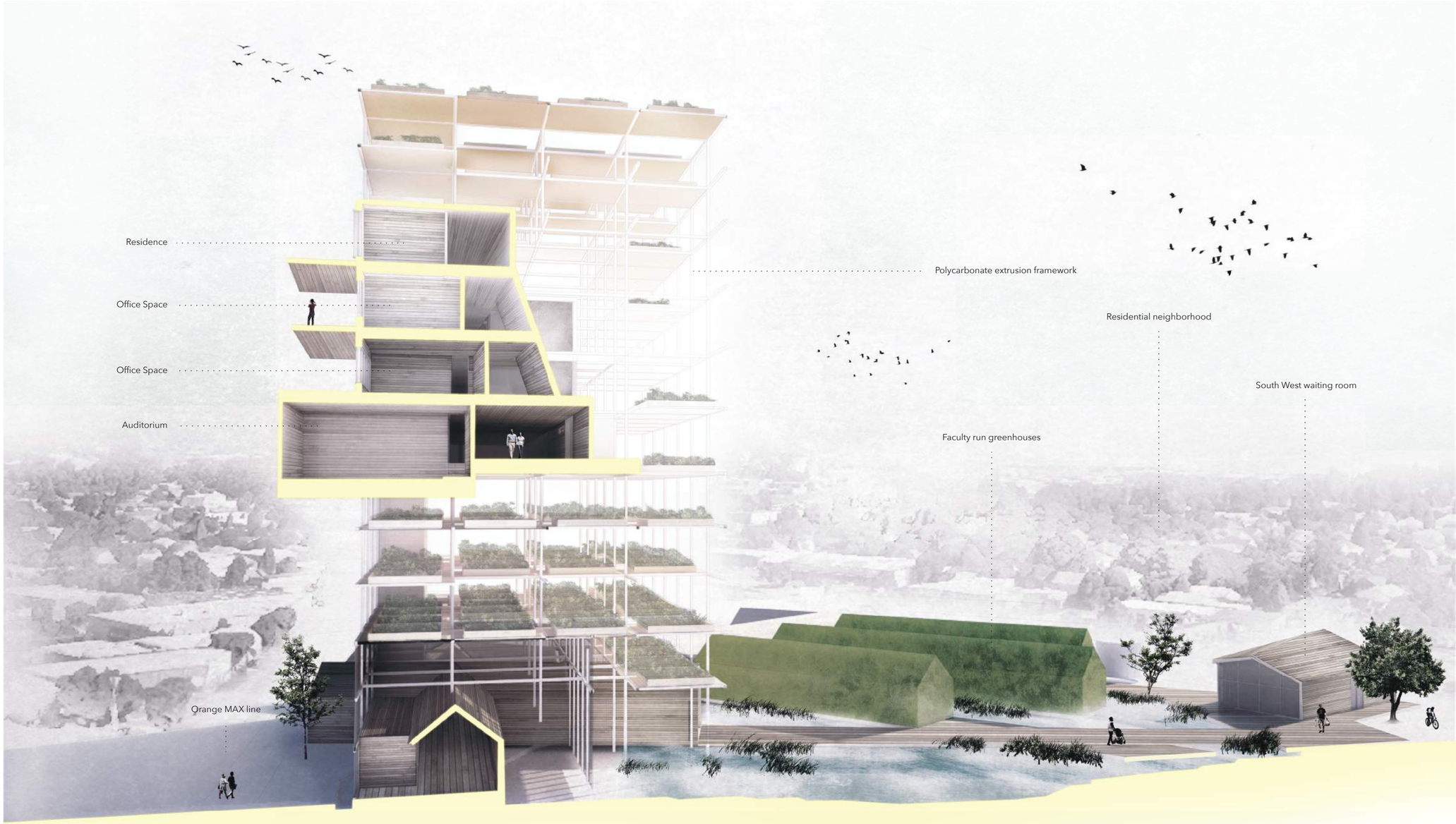
Teaching + Learning Space

Wetlands + Water Treatment

Lobbies + Information







STORMWATER TREATMENT:

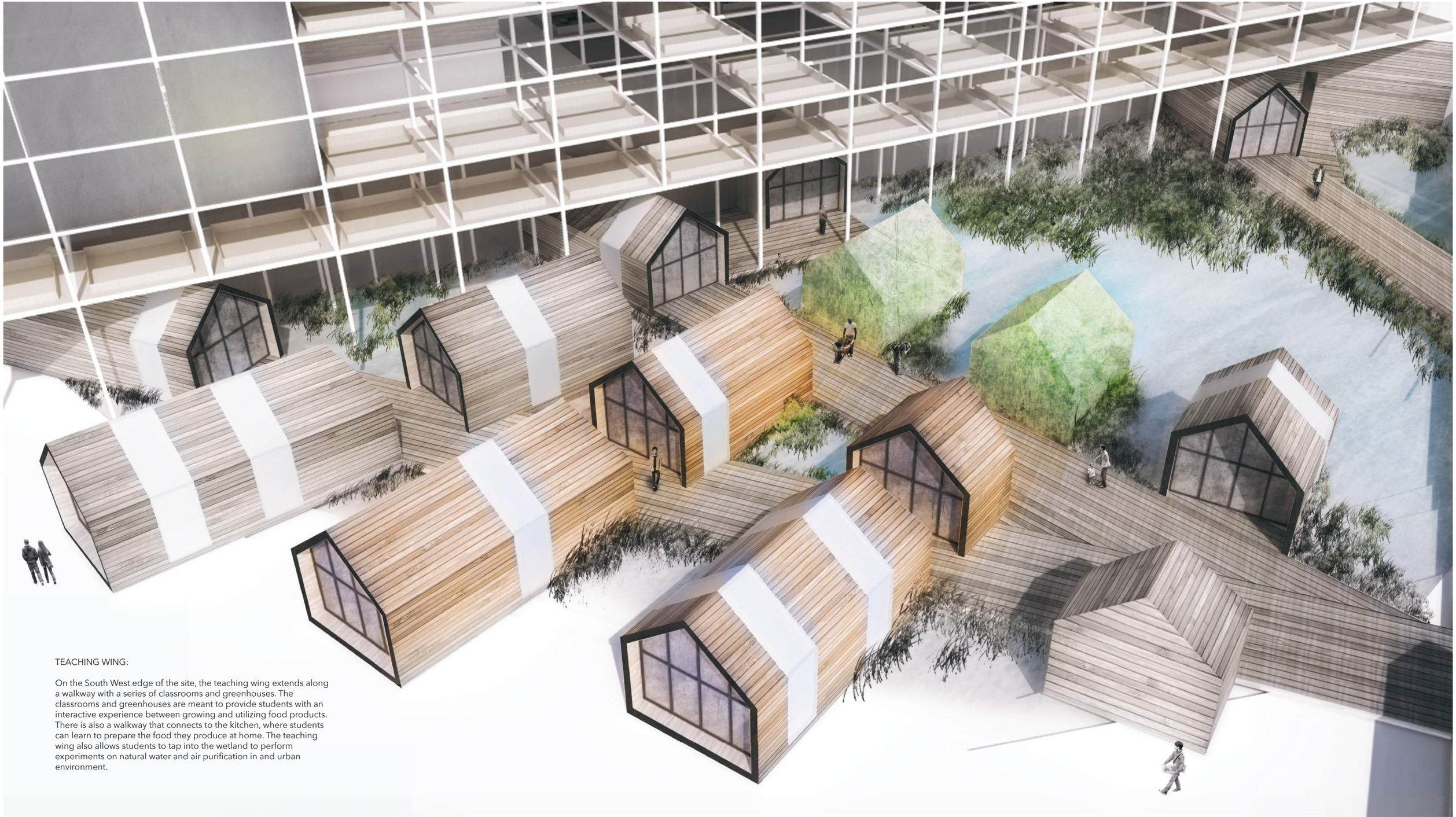
Portland receives 38.2 inches of rainfall annually. This provides any developing project a unique opportunity to capture and retain that water. Water is collected from the rooftops of the gable structures on the ground floor and is relocated to treatment systems on the southern end of the site. This water is cleaned and repurposed to support the Community Center's Agricultural and bathroom facilities.

WATER:

32.8 inches of water annually fall on the site. The site is roughly 131,000 square feet. This provides the site with about 26,000,000 gallons of water per year. While a significant portion of this rainfall will provide the Community Center with grey water, the majority of the rainfall will help support the wetland. As the seasons change, the wetland will fluctuate in depth in accordance with the seasonal rainfall trends.

GROUNDWATER ACCESS:

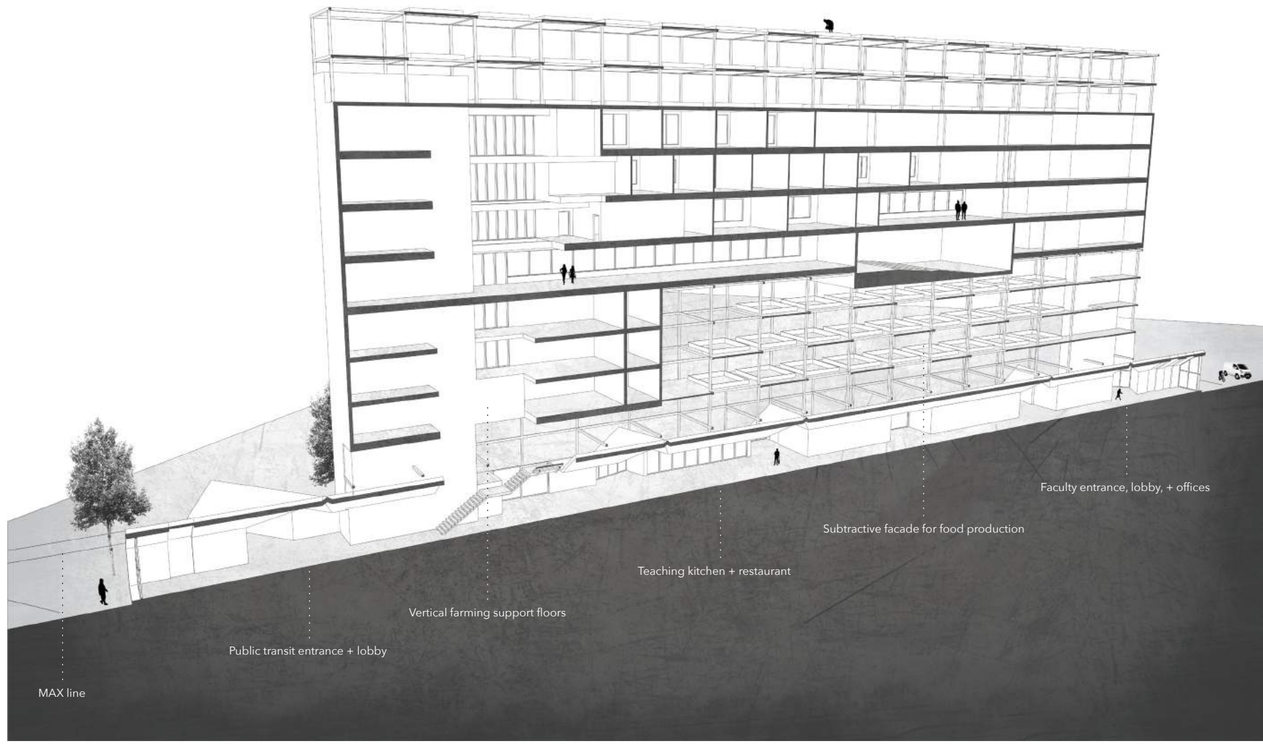
The watershed between the cascades and the Willamette River harbors a number of groundwater streams. These streams lie within the aquifer or moving water below the surface. This water flows East to West from local hills such as Mt. Tabor, which is located roughly one mile to the East of the site. This water flows in a major groundwater stream directly underneath the South West corner of the site. Accessing this groundwater is crucial to the success of this urban wetland. This water will typically run straight into the controversially polluted Willamette River. By bringing some of this water to the surface, it is able to maintain a clean state while supporting a local ecosystem. This water is accessed with an artesian well which is located near the main entrace of the site along the South West courner. The artesian well penetrates the aquifer comprised of permeable materials of rock and sand to extract the water using the natural pressure of the aquifer.



TEACHING WING:

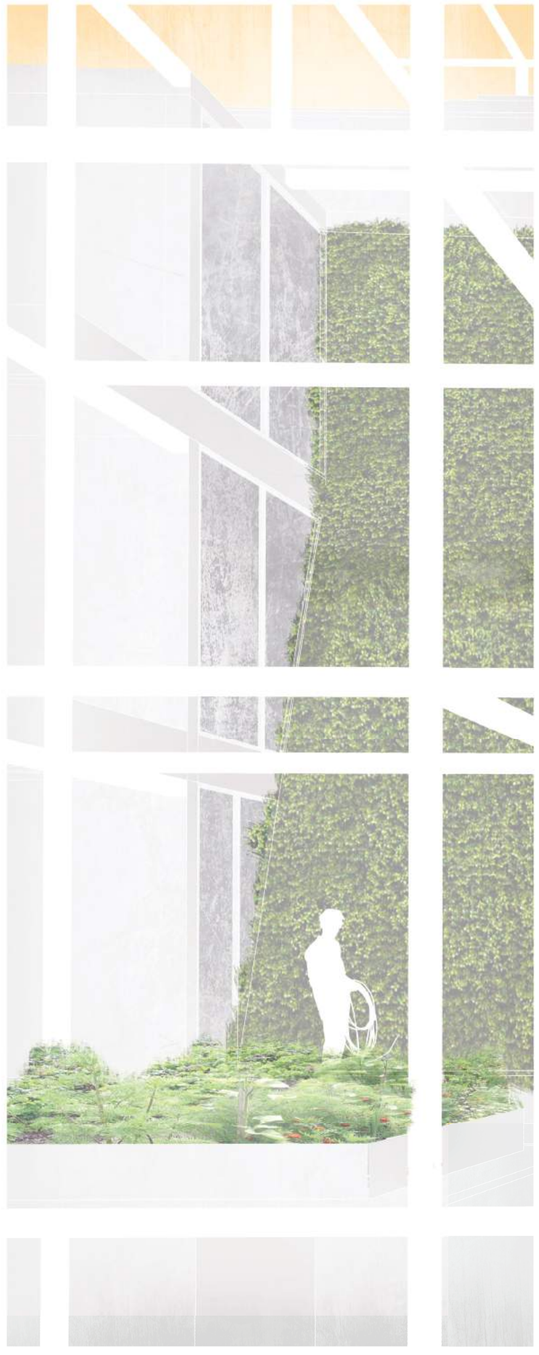
On the South West edge of the site, the teaching wing extends along a walkway with a series of classrooms and greenhouses. The classrooms and greenhouses are meant to provide students with an interactive experience between growing and utilizing food products. There is also a walkway that connects to the kitchen, where students can learn to prepare the food they produce at home. The teaching wing also allows students to tap into the wetland to perform experiments on natural water and air purification in and urban environment.


SE Powell Street
Cafe + waiting room
Fluctuating wetland
Aquaponic facilities
Connecting hall between faculty and restaurant
MAX line

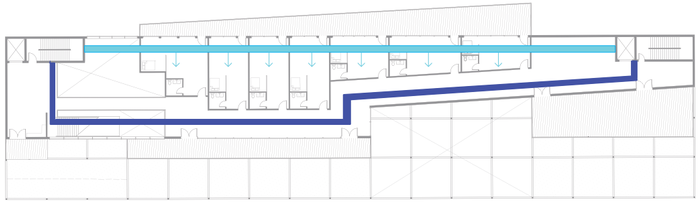

Faculty entrance, lobby, + offices
Subtractive facade for food production
Teaching kitchen + restaurant
Vertical farming support floors
Public transit entrance + lobby
MAX line

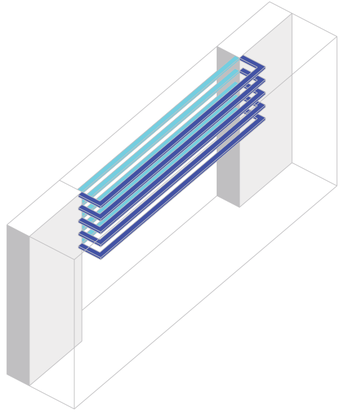
ARRIVING AT THE SITE:

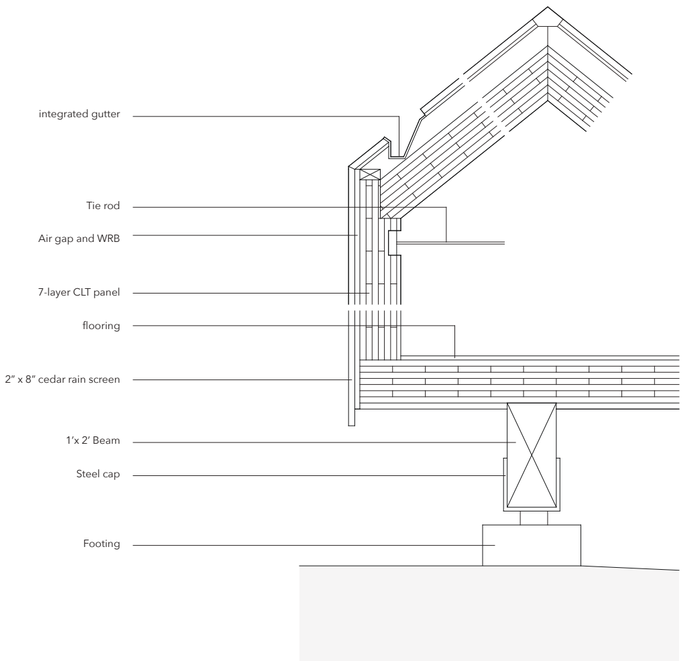
Portland's expanding growth boundary is increasing the distance between citizens and the city center. As the city trends to stretch south, many Portlander's are looking towards public transportation to get to and from work. The new Orange MAX line is intended to connect the people of Milwaukie and Brooklyn neighborhoods to the city center. The line runs north to south and crosses the Willamette River adjacent to OHSU's south waterfront campus. As the cities largest employer, OHSU requires many of its employees to commute from Portland's southern suburbs. The Orange MAX line is a connection between home life and work life for many people. One of the main stops on the way to OHSU is the Clinton Street Station, which is across the street from the proposed community center. This provides the community center with a unique opportunity to serve as a gateway to the city for many commuters. The intent is to leave a positive and curious impression on commuters. Generating interest through unique building languages, green space, and visual site lines, the goal is to intice people to stop by and visit, sparking interest in environmental ideology. The stop also provides a convenient location for after school programs, as the line has connection that reach each of Portland's East side school districts.

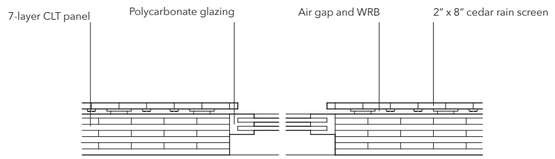


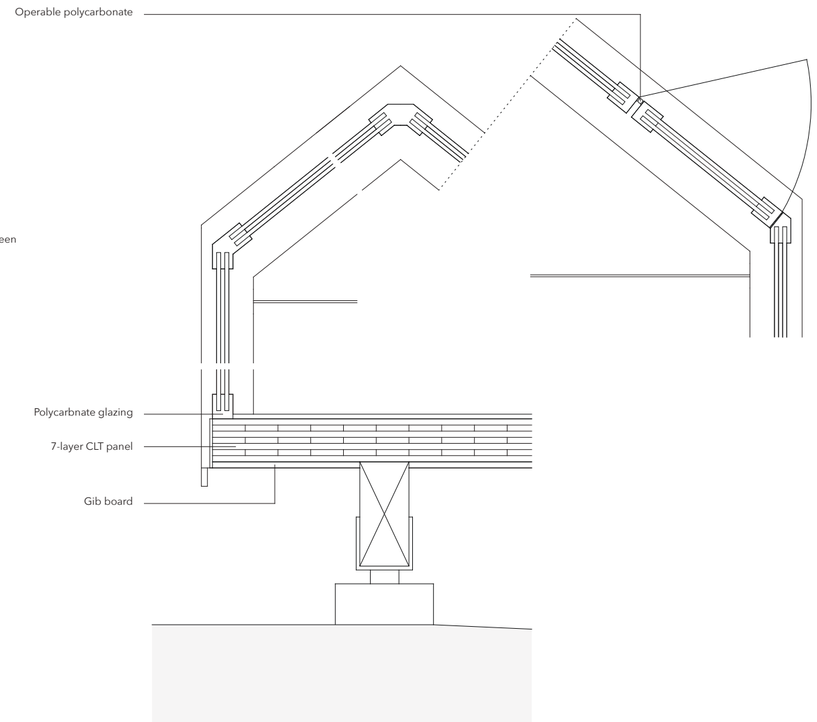
Typical floor HVAC

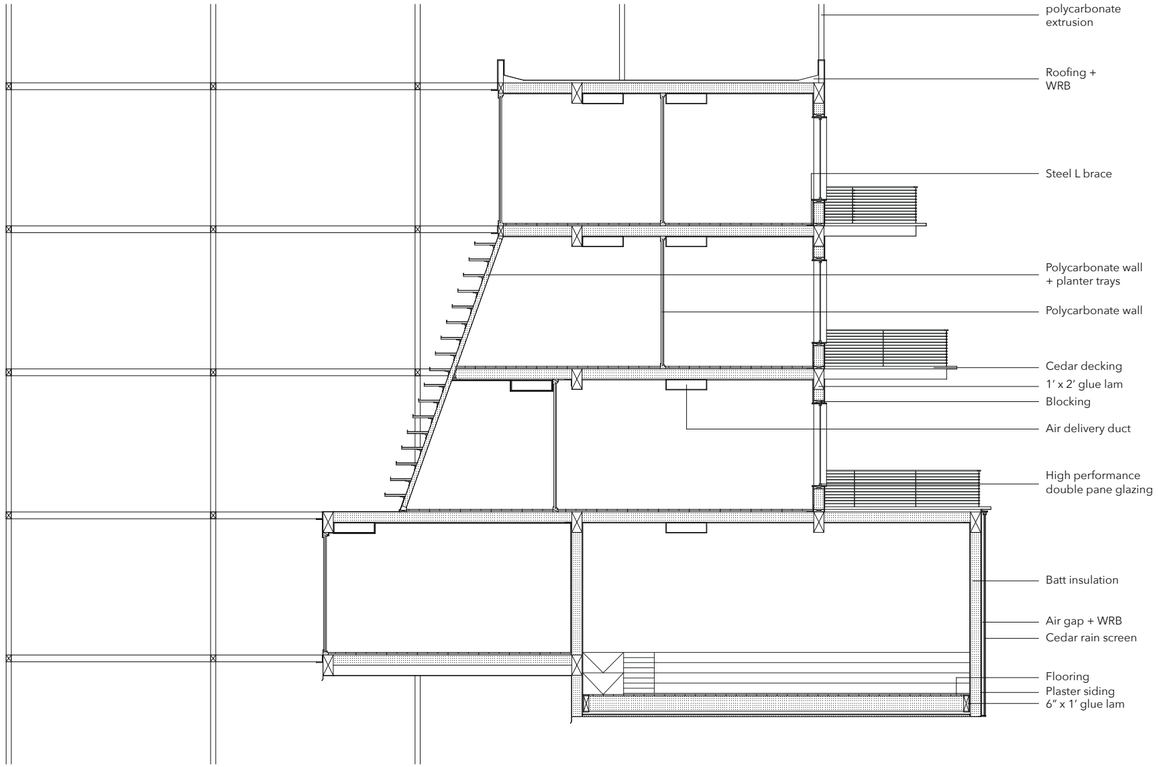





integrated gutter
Tie rod
Air gap and WRB
7-layer CLT panel
flooring
2" x 8" cedar rain screen
1'x 2' Beam
Steel cap
Footing


7-layer CLT panel
Polycarbonate glazing
Air gap and WRB
2" x 8" cedar rain screen


Operable polycarbonate
Polycarbnate glazing
7-layer CLT panel
Gib board


polycarbonate extrusion
Roofing + WRB
Steel L brace
Polycarbonate wall + planter trays
Polycarbonate wall
Cedar decking
1' x 2' glue lam
Blocking
Air delivery duct
High performance double pane glazing
Batt insulation
Air gap + WRB
Cedar rain screen
Flooring
Plaster siding
6" x 1' glue lam