



MODULAR REGENERATION

COMMITTEE



Gabriela Campagnol Co-Chair

For Gabriela Campagnol,

Your contribution to Modular Regeneration began long before the projects conception. Your History and Theory course ARCH638 provided me information that confirmed my interest to focus my design on sustainable urbanism. Further, the inspiration you provided made me search high and low for an impactful topic I could not only use for the last project in arch638 but for my thesis as well. Cultural regeneration, the concept I am so intrigued with; no matter location this concept always results in a unique product that is a direct reflection of the area's people.



James Haliburton Studio Professor

For James Haliburton,

You have been a stupendous professor and mentor for me over the past one and a half year. Your ARCH631 course laid a tenacious foundation of practicality and structural concepts in Architecture that contributed to my understanding of tectonics. Those skills increased my ability to interpret then create an aesthetic that reflects a strong understanding of tectonics. Your universality, facilitated, and reinforced my design process, producing an ideal learning environment, therefor I was able to producing my best Architectural work.



A n d r e a R o b e r t s Out-of-Department

For Andrea Roberts,

Before I began research I wanted Modular Regeneration to serve, advance and most importantly resort an African American Community. You focus on serving BIPOC communities therefor I knew you were the best candidate for my out-of-department member. Your expertise in Landscape Architecture Urban Planning resulting in robust critiques enabling me to create then apply impactful design solutions, that reinforce the projects goals.



Davi De Lima Vaz Xavier Chair

For Davi Xavier,

Your ARCH606 course provided me the opportunity to experiment with the concept of cultural regeneration. Which was extremely beneficial because your course allowed me to get ahead by learning from the mistakes that do not coincide with the concept. Primarily, your ubiquity through-out Modular Regenerations conception to eventual outcome was paramount to the success of the project. Plus, you taught me good design skills; "Aaron, what is your strategy," this phrase will be preminent with me forever, because it reinforces success, design or just life.

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ABSTRACT

Design Concept: Cultural Regeneration

ModularRegenerationisacommunalhubthatintegrates the physical, social, and cultural environment rebuilding the identity and sense of place in Northwest Goldberg. Located in the Northwest Detroit area, considered deteriorated. Northwest Goldberg is regenerating due to the resident's ambition to assimilate, modernize, and improve their neighborhood. Ambitions manifest as converting blighted lots into plazas, market spaces, rock, and community gardens. This project has five goals to temper these initiatives into formal regeneration.

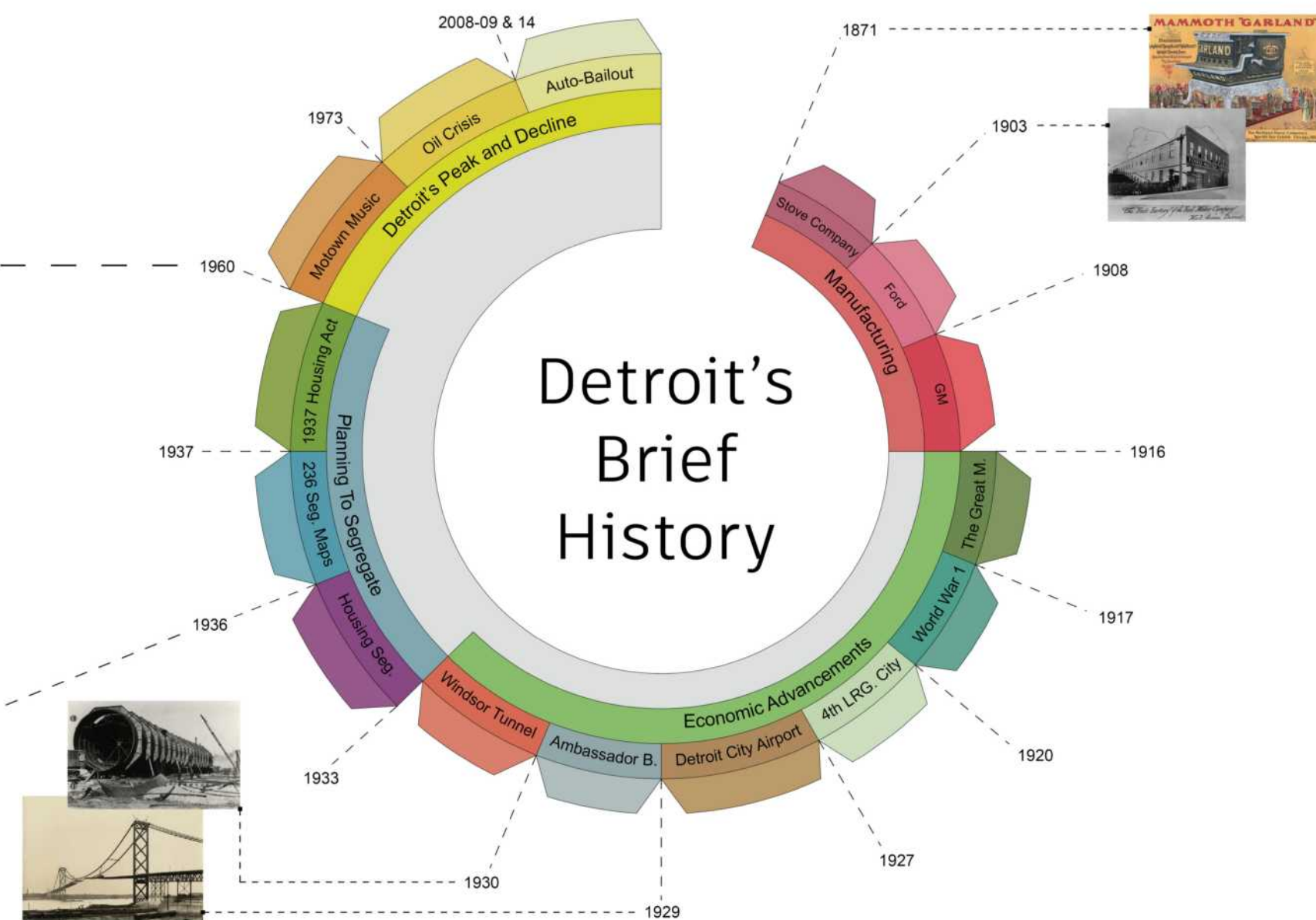
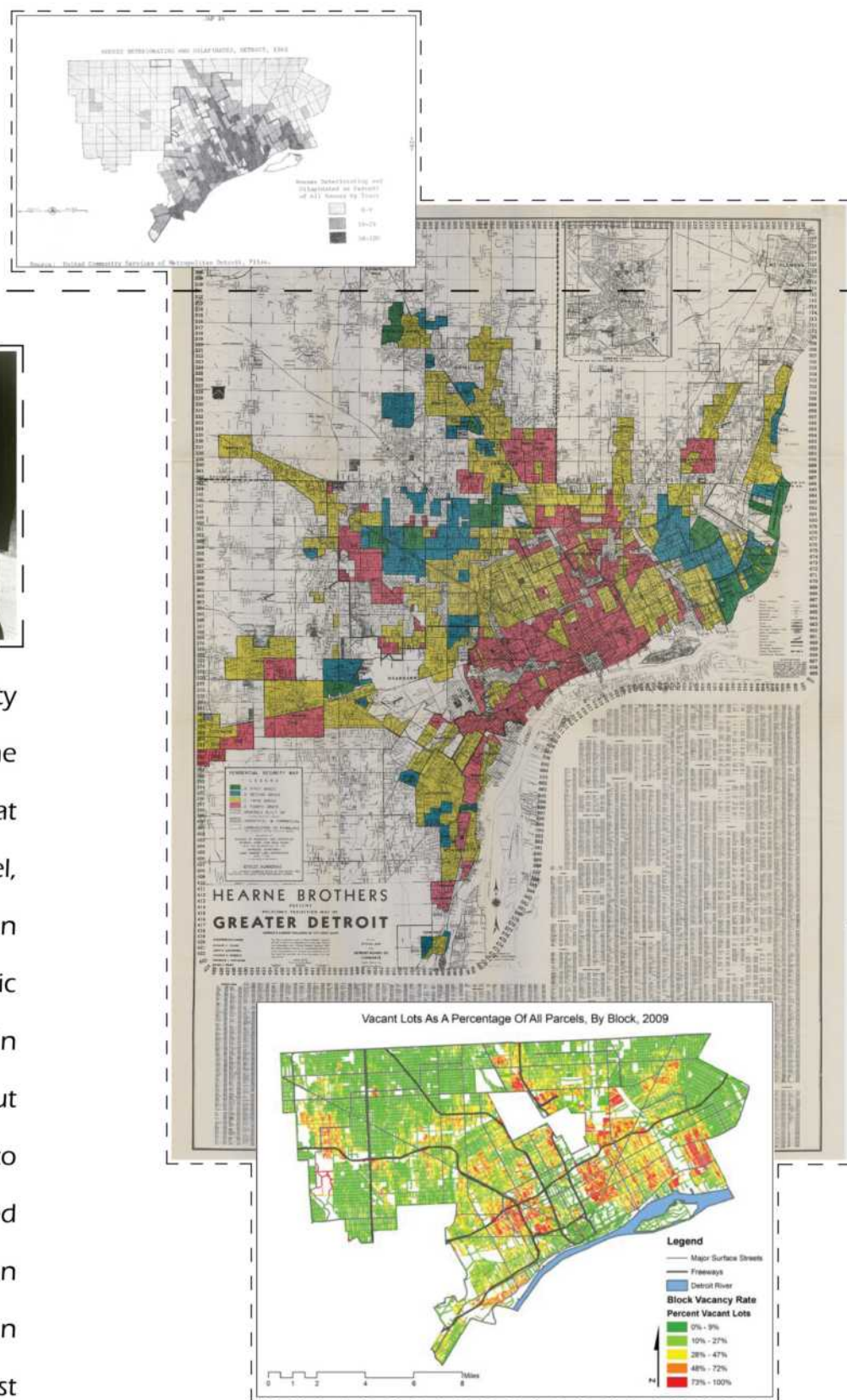
PROJECT GOALS

1. Promote advanced manufacturing for Detroit
2. Promote Northwest Goldberg's Artistic Culture
3. Promote Recreation
4. Promote Learning
5. Promote Commerce in Northwest Goldberg

01 DETROIT'S HISTORY



Detroit's history gives way to understanding how the city succumbed to ruin. From the late 19th century to the early 20th Detroit grew exponentially due to the great migration, a huge influx in manufacturing, aviation travel, and connection to Canada. Around 1940 the city began to implement housing segregation imposing systematic racism on African Americans. This forced them to live in desolate unmaintained areas far from the factories, but the job market was still strong, so the city continued to grow. During the 60's the civil right movement raged and at the same time Berry Gordy an African American artists wanted to contribute to the activism; therefore, in 1960 Gordy created Motown Records. Unbeknownst to him at the record labels start, Motown-Sound would break down racial barriers and connect humans through music's sovereignty, globally, for decades to come.

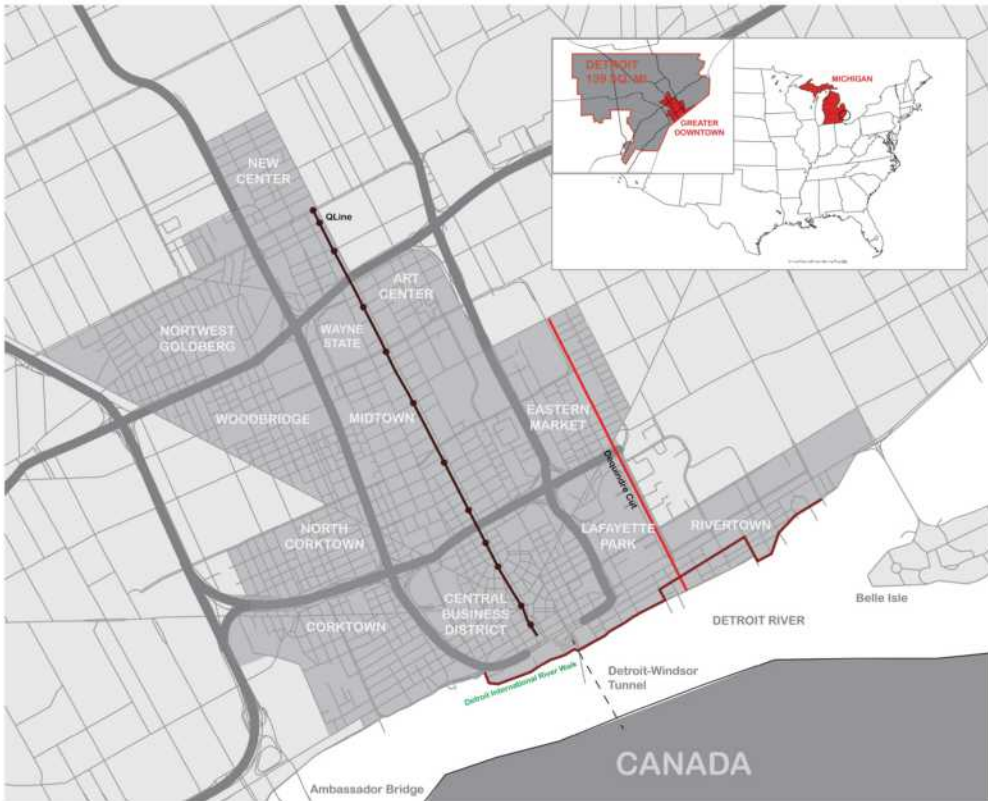


The 60's also marketed the start of urban sprawl, steadily moving residence away, un-densifying the city center (Greater Downtown Detroit) causing consistent sporadic decay. Further, technological advancements in manufacturing decreased jobs, removing more people from the city entirely. Finally, Detroit experienced the Oil Crisis of 1973, the auto-bailout of 2008, then bankruptcy in 2014. Resulting in the population to decrease almost

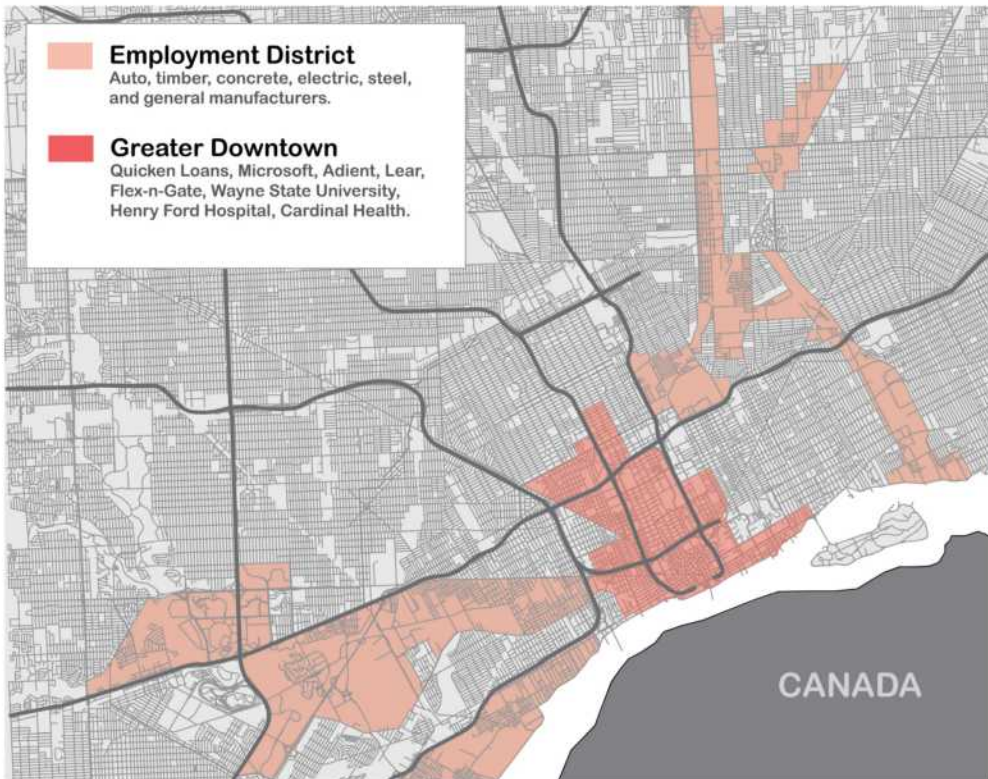
as quickly as it rose in the early 1900's. Detroit may seem dilapidated and blighted, cold, and empty, but the city's historic significance holds strong today. Regardless of their hardships, the city continues to be a hub for advanced manufacturing. The artistic culture spills paint but has no canvas to be seen on. An analogy to understand the city's history is a phoenix; collapsed in its own rubble, ready to arise a new life of its predecessor.

02 SITE SUITABILITY

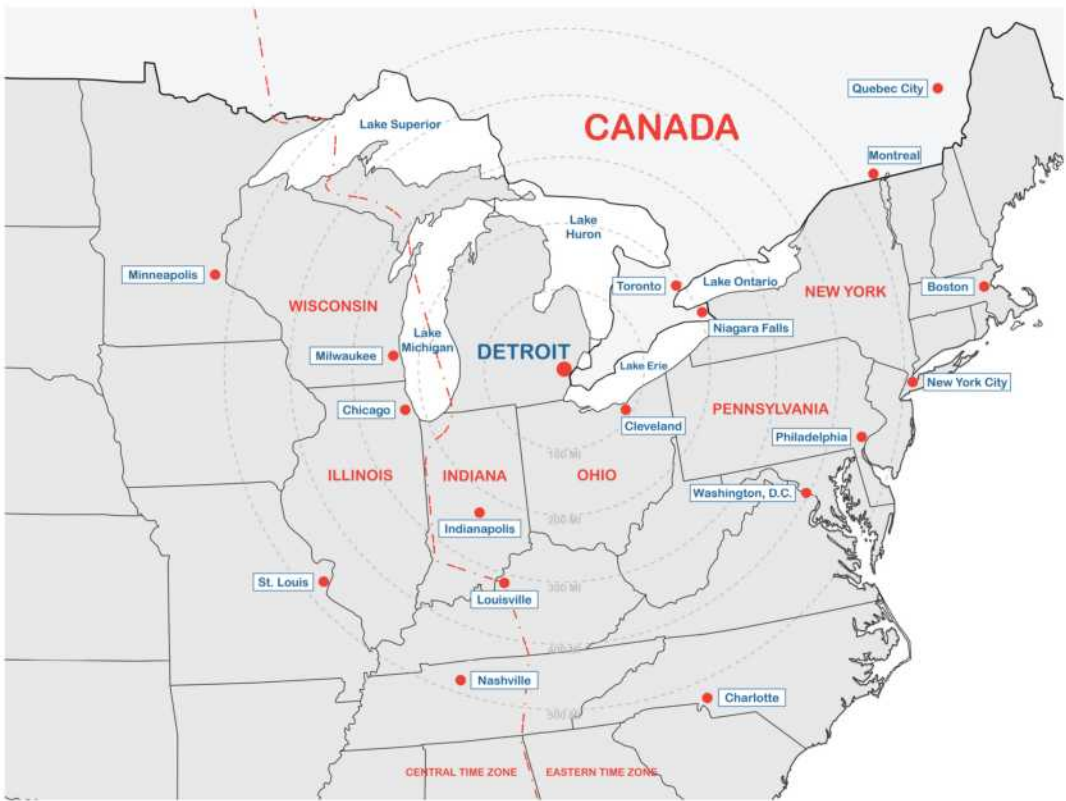
Communal Hub is sited in the only area of Detroit experiencing population increase, the city's center, Greater Downtown Detroit. Greater downtown is growing due to a surge in jobs, proximity to other large cities, and new building development. Six thousand and sixty-five people have made Greater downtown Detroit their home sense 2015 (per census). The population in 2015 was 35,037 people and in 2020 it grew to 41,102 people. Composed of 12 neighborhoods, two forms of public transportation (Metro bus and Q-Line Streetcar) (reference Context Map to the right).



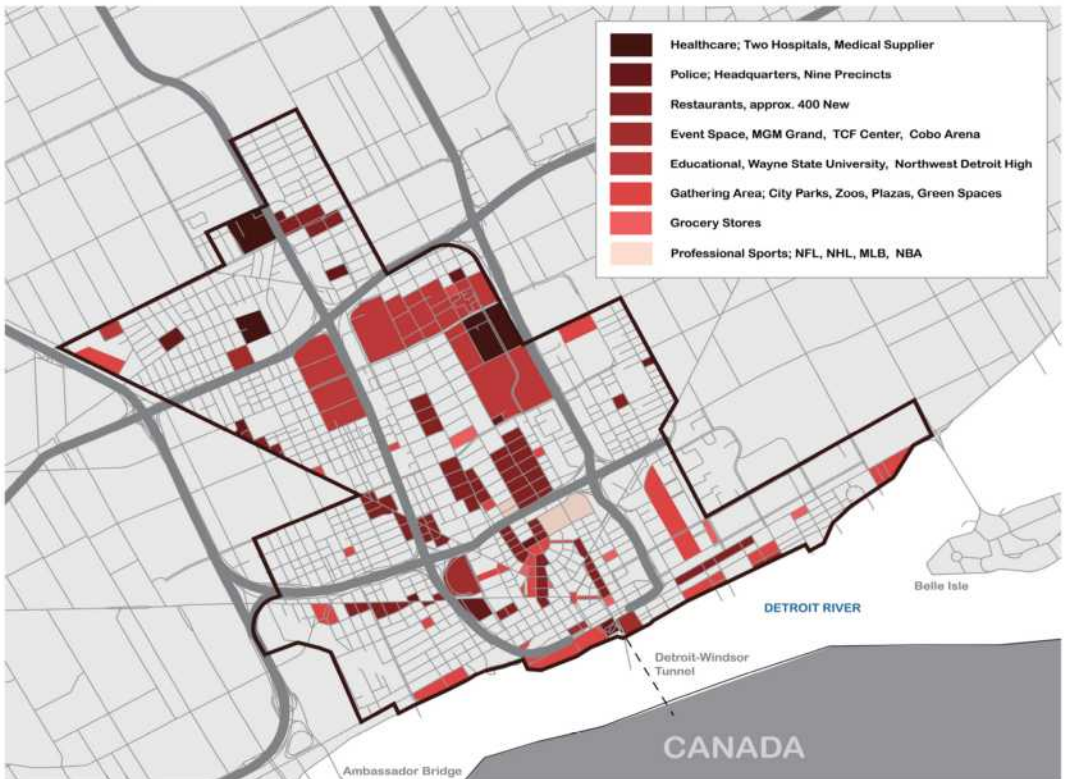
To the right (Skilled City Map) Illustrates Detroit's densification of the city center. Greater downtown has become an expansion of the current employment districts. Bridging the gap between the west and the east, solidifying the two into one. This occurs because the new jobs in greater downtown are related to the employment districts market sectors. Flex-n-Gate and Adient are automotive advanced manufactures, while Microsoft and Lear create innovative technological solutions for them. Companies not related to advanced manufacturing and technology companies are providing work and creating a well versed skill range in the city.



Detroit's geographical location gives it a competitive edge as a logistical hub, due to it being within a 500 miles radius of Americas most popular cities; Minneapolis, Milwaukee, Chicago, St. Louis, Indianapolis, Louisville, Nashville, Toronto, Niagara Falls, Cleveland, Washington, D.C., Philadelphia, New York City, Boston, Montreal, and Quebec City (reference Accessibility Map to the right).

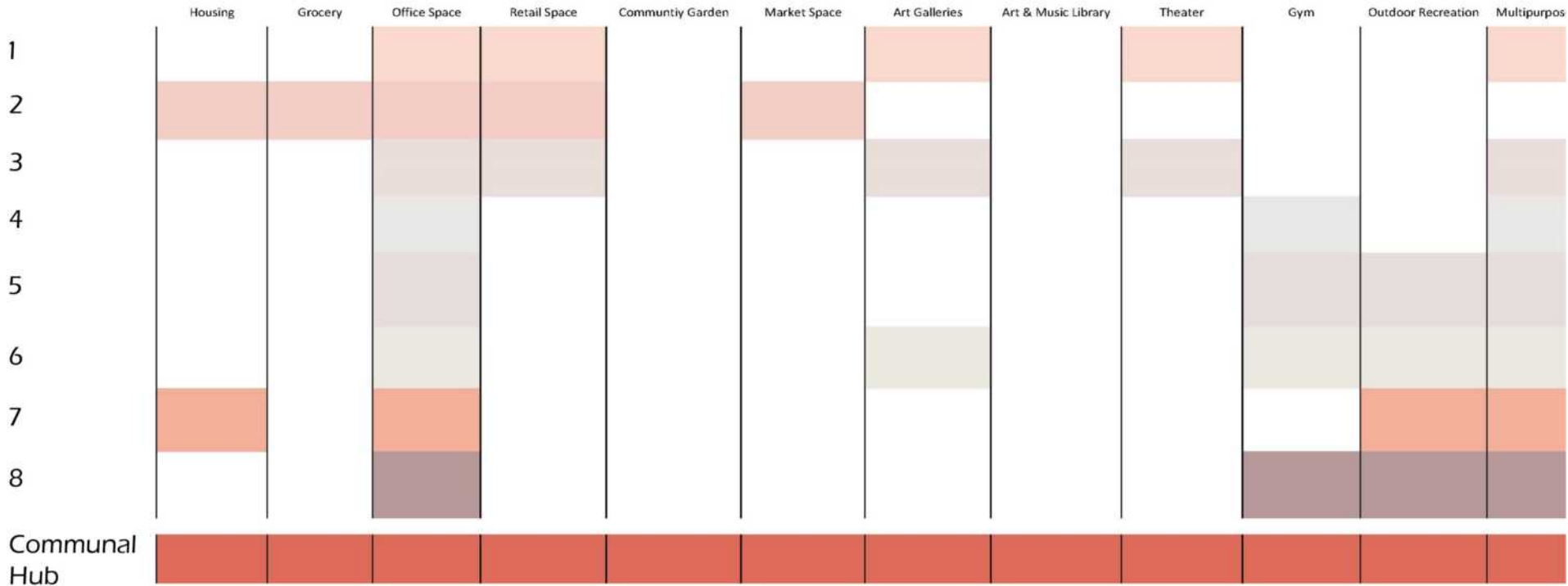


Greater downtown Detroit is experiencing a rise in new development. There have been approximately 400 new restaurants created in downtown and midtown (reference New Development and Attractions Map tot he right). The city has built several green spaces in downtown, Campus Martius Park being the most famous because this area hosts many events ranging food stand and market space to Christmas related events. There are many existing developments that are attracting people to the area as well. A lot of these bring investment for the city and are professional sport teams;



The Detroit lions (NFL), Detroit Redwings (NHL), Detroit Tiger (MLB), Detroit Pistons (NBA). The remaining are famous hotels and event spaces; MGM Grand, TCF Center, and Cobo Arena. As seen on the new development map these attractions are all located within the midtown or downtown area leaving the northern sector mainly undeveloped; therefore, to continue the spread a new development within greater downtown Detroit the most suitable place for the communal hub is Northwest Goldberg.

Currently there are eight centers in Detroit that offer amenities to the city but none located in Greater Downtown. (Reference Need for Center Map below and corresponding date to the right) one can see that the existing community centers are scatter throughout the city. Currently there are eight centers in Detroit that offer amenities to the city but none located in Greater Downtown. (Reference Need for Center Map) one can see that the existing community centers are scatter throughout the city.



1. Rock Christian Community Center
Detroit, Michigan, Belmont Neighborhood



2. Sweet Home Community Center
Detroit, Michigan, Martin Park Neighborhood



3. Arab Community Center
Detroit, Michigan, Hamtramck Neighborhood



4. Coleman A. Young Community Center
Detroit, Michigan, Eastern Market Neighborhood



5. Charles St. Community Center
Detroit, Michigan, Osborn Neighborhood



6. Brighter Detroit Community Center
Detroit, Michigan, East Village Neighborhood



7. Butzel Family center
Detroit, Michigan, Island View Neighborhood



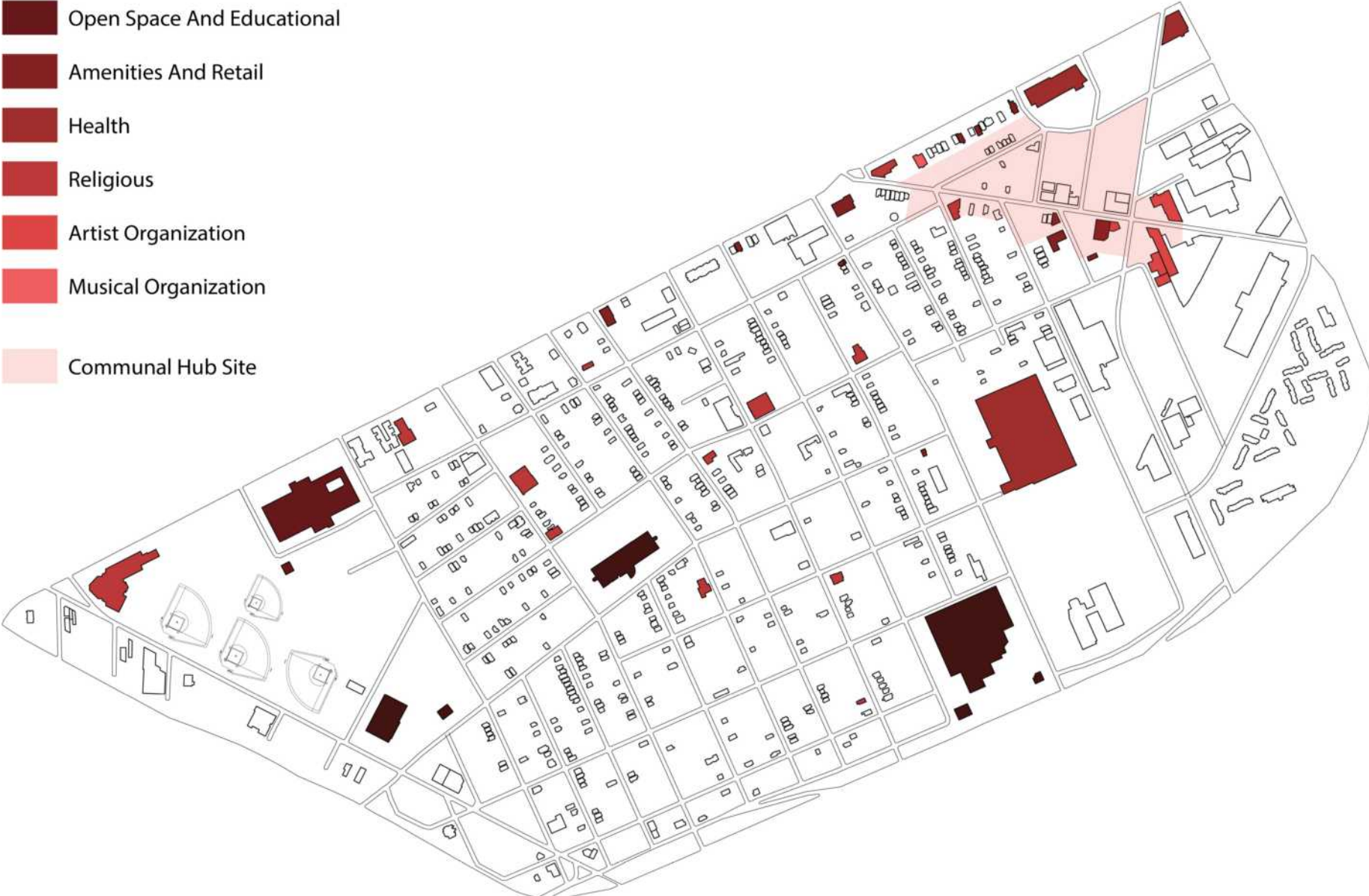
8. Delray Community Center
Detroit, Michigan, Delray Neighborhood

03

SITE ANALYSIS

Essential Services Map of Northwest Goldberg

- Government
- Open Space And Educational
- Amenities And Retail
- Health
- Religious
- Artist Organization
- Musical Organization
- Communal Hub Site



Northwest Goldberg is steeped in artistic culture, Berry Gordy founded Motown Music in this very neighborhood. There are three different artist organizations that produce and influence on a regional and local level; Make Art Work, York Project, and Art Block. Make Art Work is a non profit organization that creates paintings and sculptures for the city. York Project is a Garment manufacturer; for every garment purchased they donate an essential kit to a person experiencing homelessness in the United States. Art Block is a part of the Henry Ford Health System is a no cost requestable space for community groups, nonprofit and others to hold small events and meetings. The outside is decorated in graffiti by local artists. Next, some essential services (reference map to the left.).

The Map of Northwest Goldberg to the left indicates the present services in the neighborhood today. A police training facility and national guard office located within create a heavy government appearance within the neighborhood. There are four baseball fields within Bishop Park. Adjacent is Detroit Collegiate Preparatory high school, both spaces are noted as open space and educational on the "Essential Services Map of Northwest Goldberg." Several amenities and retail spaces are spread out with the neighborhood.



A man and a woman are standing in front of a bright pink Dough Dough Detroit Dough truck. The man, on the left, has a beard and glasses and is wearing a grey t-shirt. The woman, on the right, is also wearing a grey t-shirt. The truck features the brand name 'Dough Dough' in large white script, with 'DETROIT' in smaller white capital letters above it. Below the name, '2014' is visible. The words 'NW' and 'DETROIT' are also printed on the side of the truck. A cartoon illustration of a dough character is visible on the right side of the truck.



A large mural on a brick building depicts a group of people, including a man in a yellow shirt, walking up steps towards a building labeled 'DA LINDO'. The mural is painted in a vibrant, expressive style with a greenish-yellow background. It shows a diverse group of people, including a man in a yellow shirt, a woman in a blue jacket, and a man in a white shirt, walking up a set of stairs. In the background, there is a building with the words 'DA LINDO' on its facade. The mural is set against a backdrop of a brick building and a cloudy sky.

CURTIS JONES BASKETBALL COURT

Labels and Features:

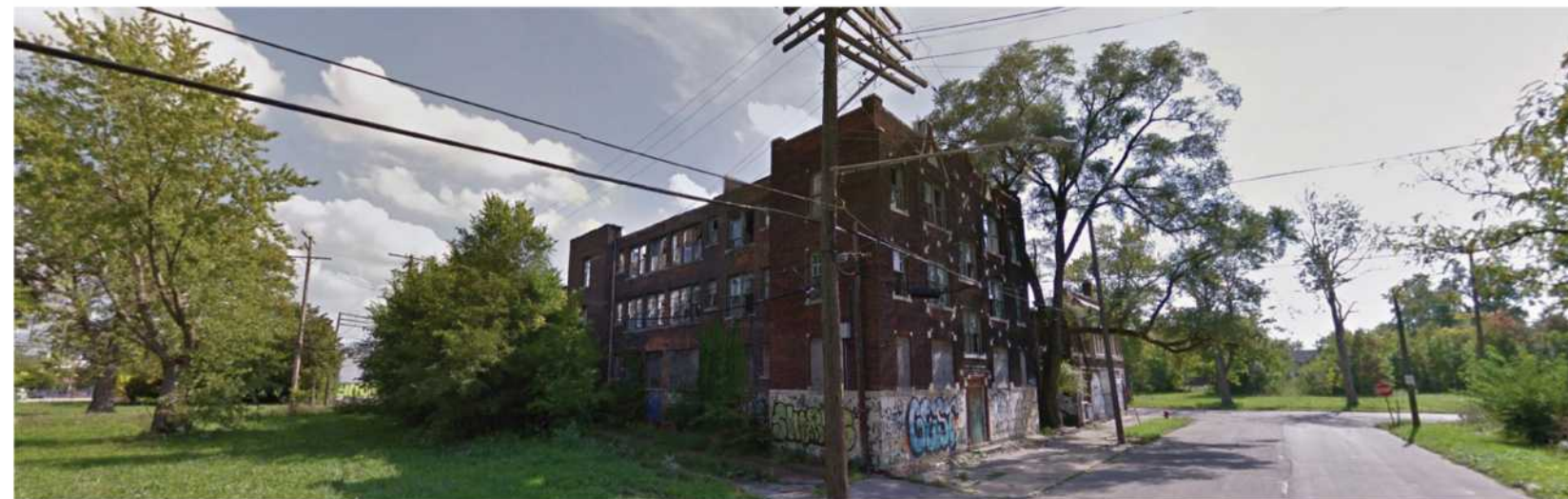
- Ferry Park Ave.
- PARK SIGN
- RAIN GARDEN
- COURT ENTRY, TYP.
- PROPOSED TREE, TYP.
- NEW SIDEWALK ON VERMONT
- Vermont St.
- (4) SMALL HOOP, TYP.
- (2) COURT LIGHTS
- (2) LITTER BIN
- (2) BLEACHERS
- FULL-SIZE BASKETBALL COURT
- COURT FENCE - 3 SIDES
- PATHWAY
- (2) PICNIC TABLE
- SWING SET
- PAVILION
- SLIDE TOWER
- OUTDOOR EXERCISE AREA
- (3) PEDESTRIAN LIGHT POLE
- TUFF SHED
- ALLEY





These four building's exterior materials have been re-
purposed and reapplied to Communal Hubs facade.

Brown Blocks's historic character lives on and now
can continue to serve through Communal Hub.



04 THEORY

The change the communal hub will bring one might call gentrification. The communal hub does not gentrify Northwest Goldberg because “Gentrification means wiping out the social history of an existing community or turning that history into a marketable cliché (Angotti 2).” Communal hub reenforces the social history of the existing community by providing space for the artistic culture and activities carried out by the residence to be seen and made accessible. Next, communal hub regenerate Northwest Goldberg by utilizing their unique characteristics of to promote commerce for them, provide better housing, and create recreational and learning space. This will prevent the displacement of the neighborhood residence because, “Cultural regeneration is restoring and improving the quality of urban life through the enhancement of the unique

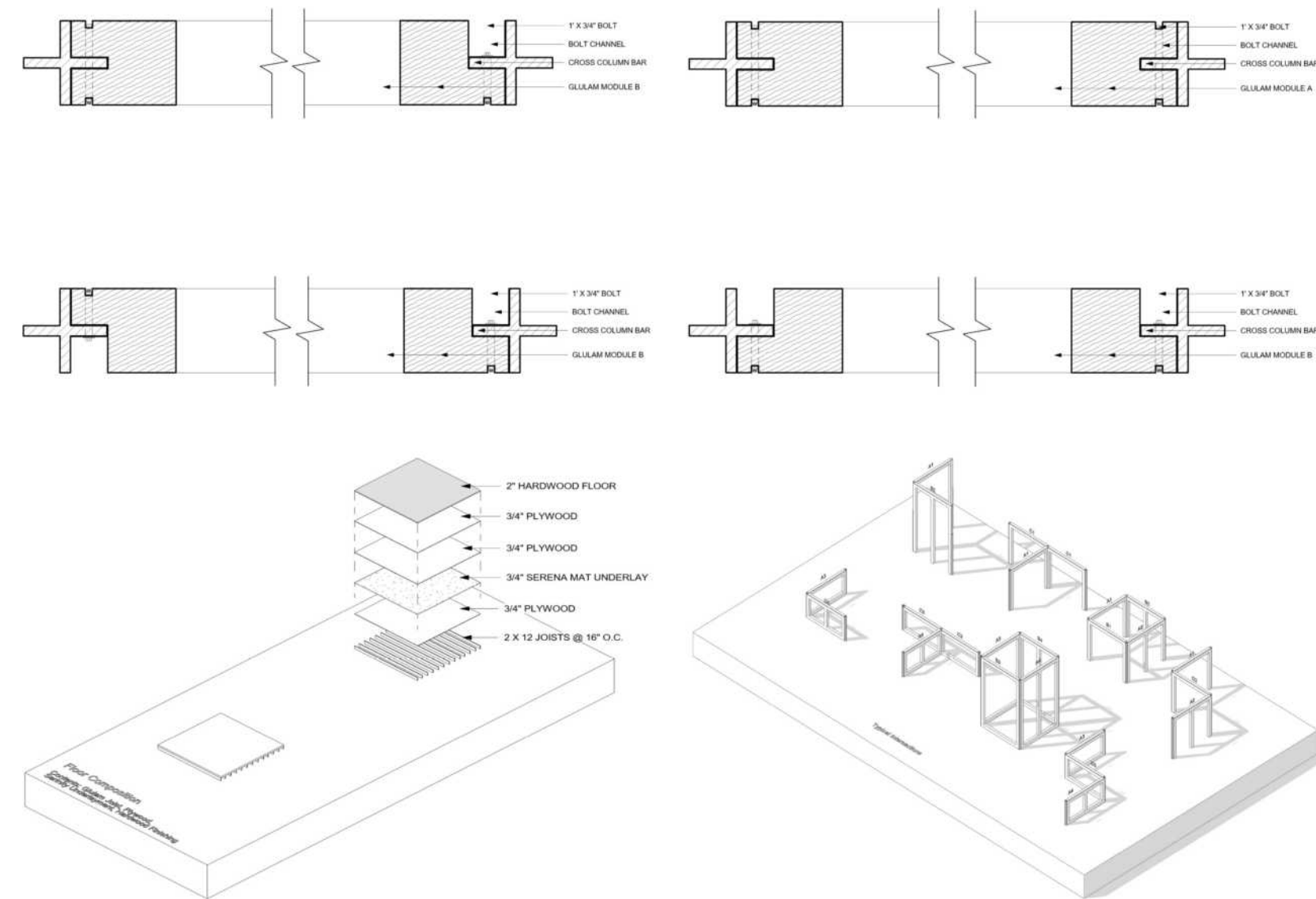
characteristics of a place and its people (Wansborough & Mageean 2).” The ability to host outside events in the assembly hall and art gallery will promote commerce in the neighborhood. Further, the rentable spaces on the second floor will do the same. The essential services that surround communal hub give purpose to the addition of housing. These businesses will be patronized by communal hub’s residence because they are within a walkable distance. Motown Record’s global influence and the art organizations in the neighborhood have information that can expand minds; therefore the art library will tell this story. Jane Jacobs also reenforces this notion as regeneration as “We need to discern, respect, and build upon the forces for regeneration that exist in slums themselves” (Jacobs 171).

05 THE ARCHITECTURE



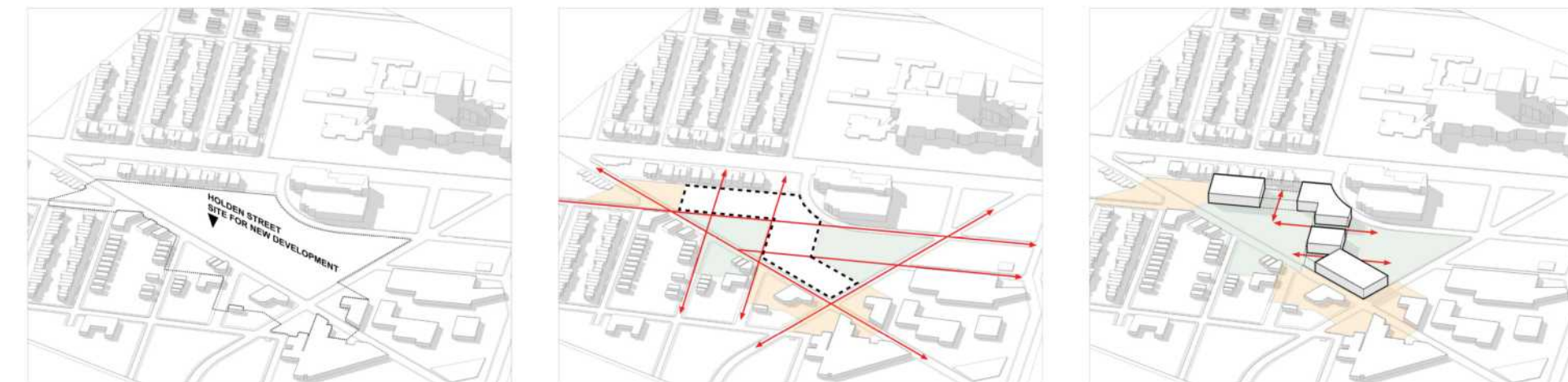
One of Communal Hub’s goals is to promote advanced manufacturing in the city. Communal Hub’s form and materiality needs to celebrate this monumentally to create a strong visual and symbolic correlation between the city and itself. Communal Hub is built from glulam beams manufactured in the employment districts (reference Skilled City Map).

These modules are four glulam beams joined together via a box joint then secured with a wooden dowel. To get these modules to fit together in a rectilinear fashion four variations were created (Reference 5.2. Construction Module Diagram). The chamfers in each module allow just about any rectilinear shape to be created. Then they are bolted to the cross column every 16” O.C. (reference the first images Module Connection Diagram on pg. 17).

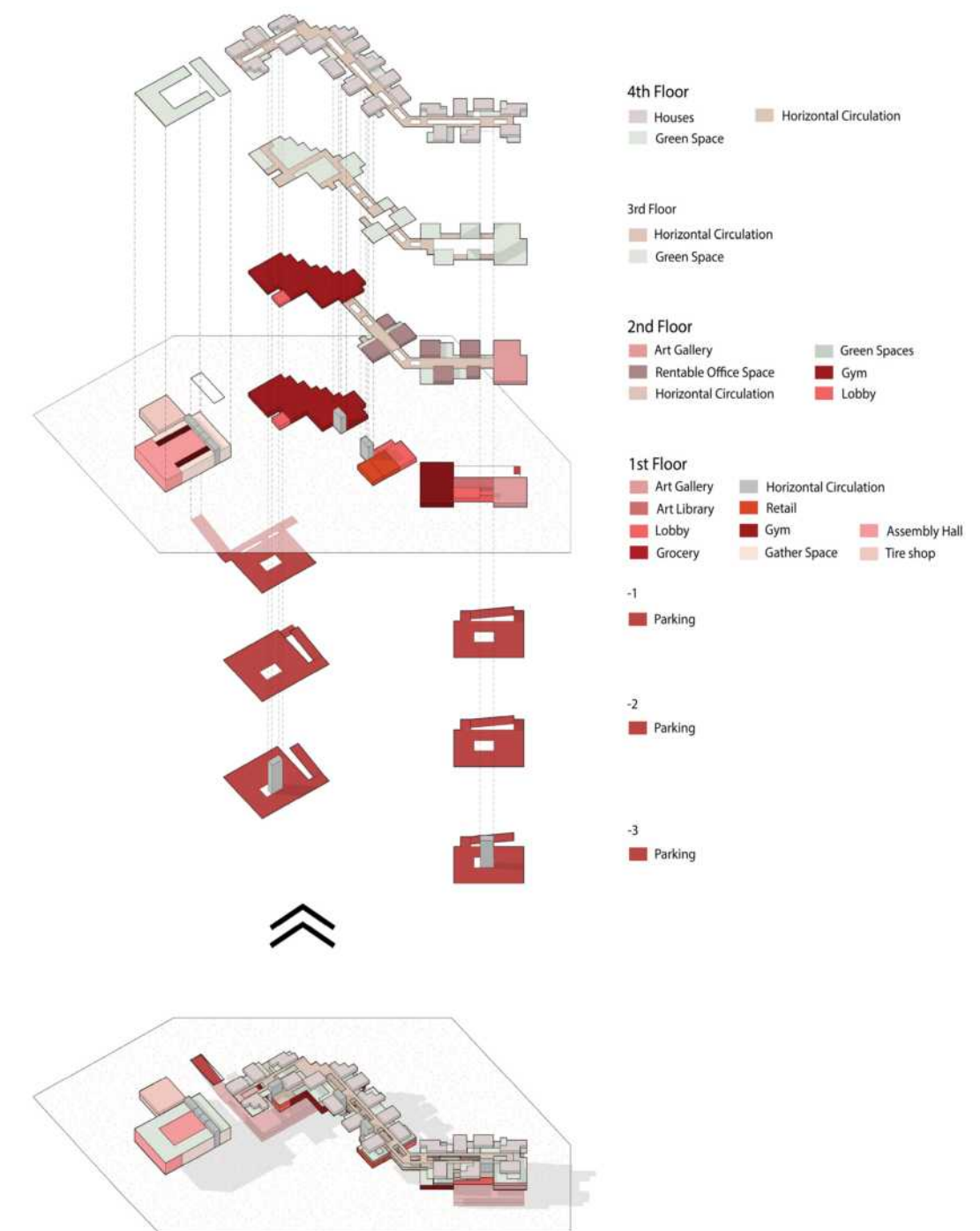


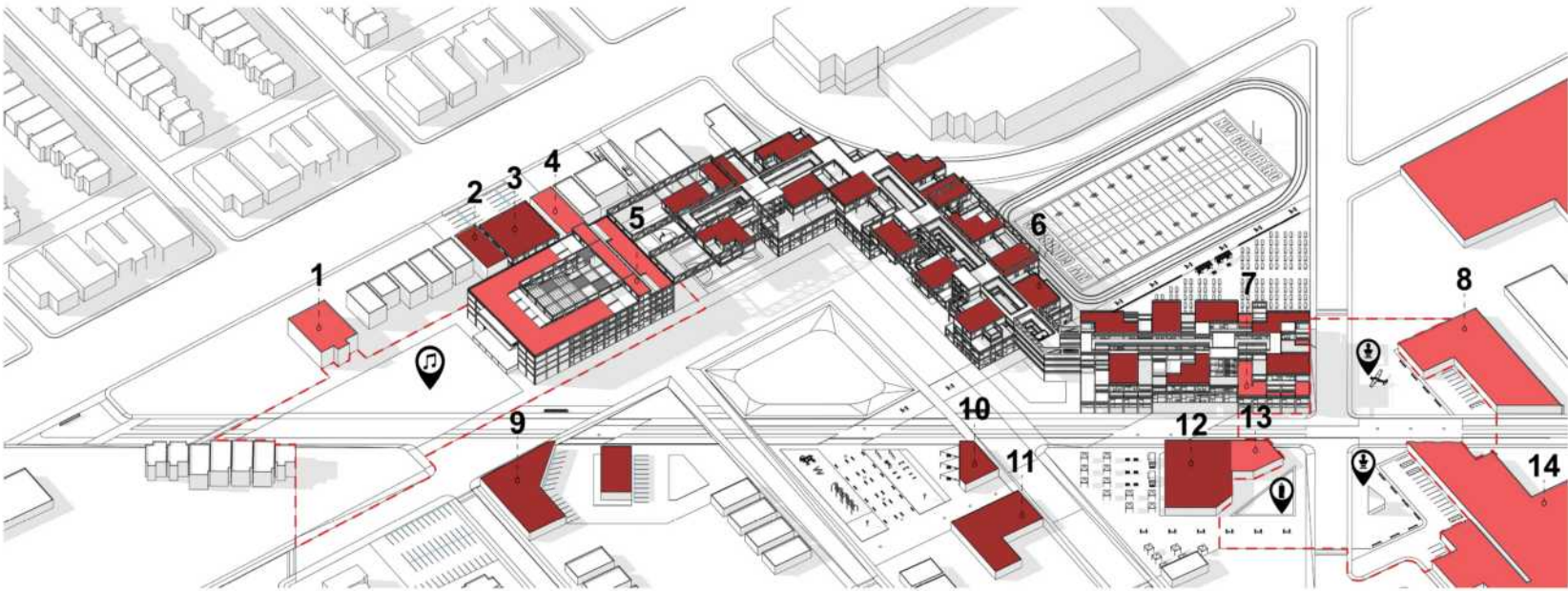
The chamfers in each module create flexibility when organizing and creating space. Then, they are bolted to the cross column every 16" O.C. (reference first image at the top of this page Module Connection Diagram). This Module also incorporates a Sound resistant floor Assembly to increase privacy and make each space more comfortable (reference Sound Resistant Floor Assembly Diagram above). This is an aesthetic that reflects the manufacturing conditions of the city.

The diagram above is a display of typical joint intersections. The modular system's flexibility allows for individual rectilinear forms or a continuous array. This system will allow additions to be created with ease. Unbolt then lift, drop then re-bolt the modules until the desired form is achieved. This method of construction will adapt to the future generations needs and wants. Increase Communal Hubs sustainability and longevity.



Next, to generate communal hub's form, strict attention must be paid to the surrounding context. Each portion of the communal hub programmatically correlates to an existing activity in the neighborhood. This is the communal hub building upon what is already there and not forcing new things. First, the area that the communal hub will occupy was identified. Second, orange illustrates those areas' function will be an extension of the art culture. The green is recreation space that will blend the gap between the two artistic spaces. Third, the existing infrastructure was utilized to zone the site. Using the road lines, this guided the design to be a vernacular fit within such an awkward shaped site. After extruding, then dividing the mass into four to connect the site back with the area on all sides. To create a cohesive aesthetic to the building the houses cap the top of the four separated masses. At the same time this increases the porosity of the building and adds interests visually and through the modality of movement throughout Communal Hub.



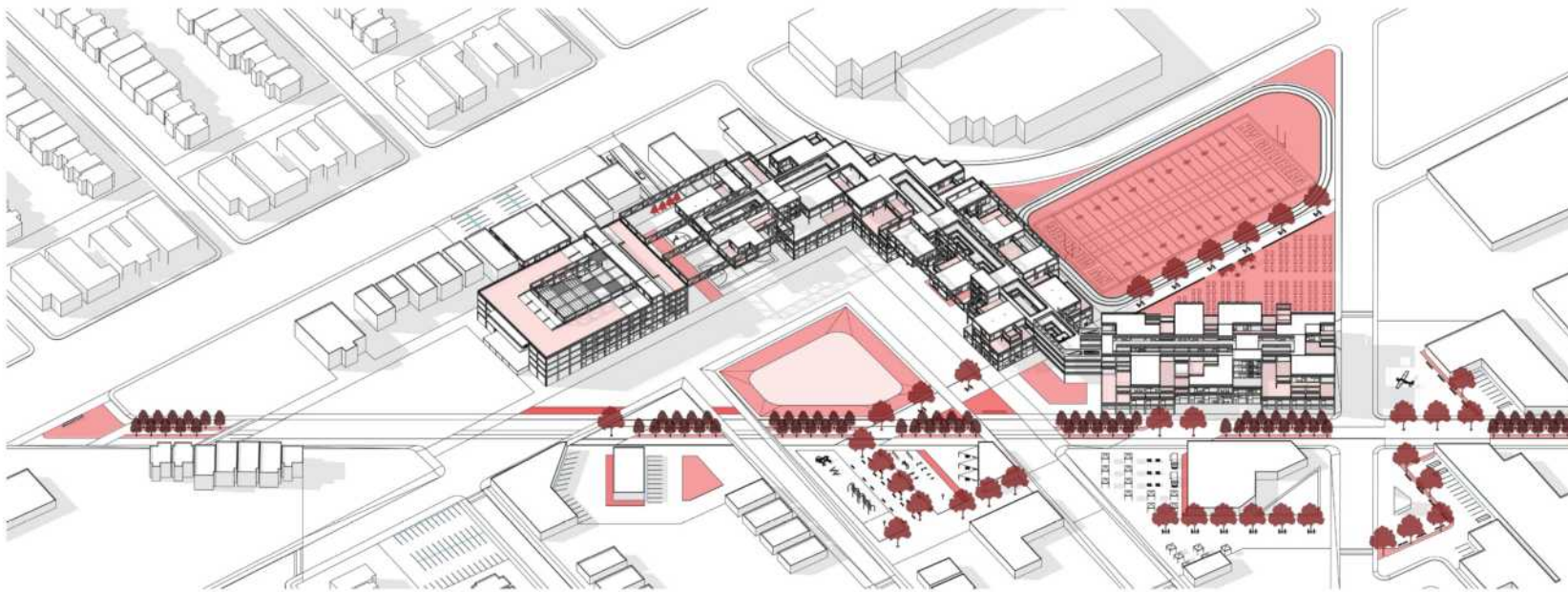


- CULTURAL**

 - 1. Motown Museum
 - 4. Brazelton's Flora
 - 5. Assembly Hall
 - 7. Art gallery & Library
 - 8. York project
 - 13. Art Block
 - 14. Make Art Work
- Living**

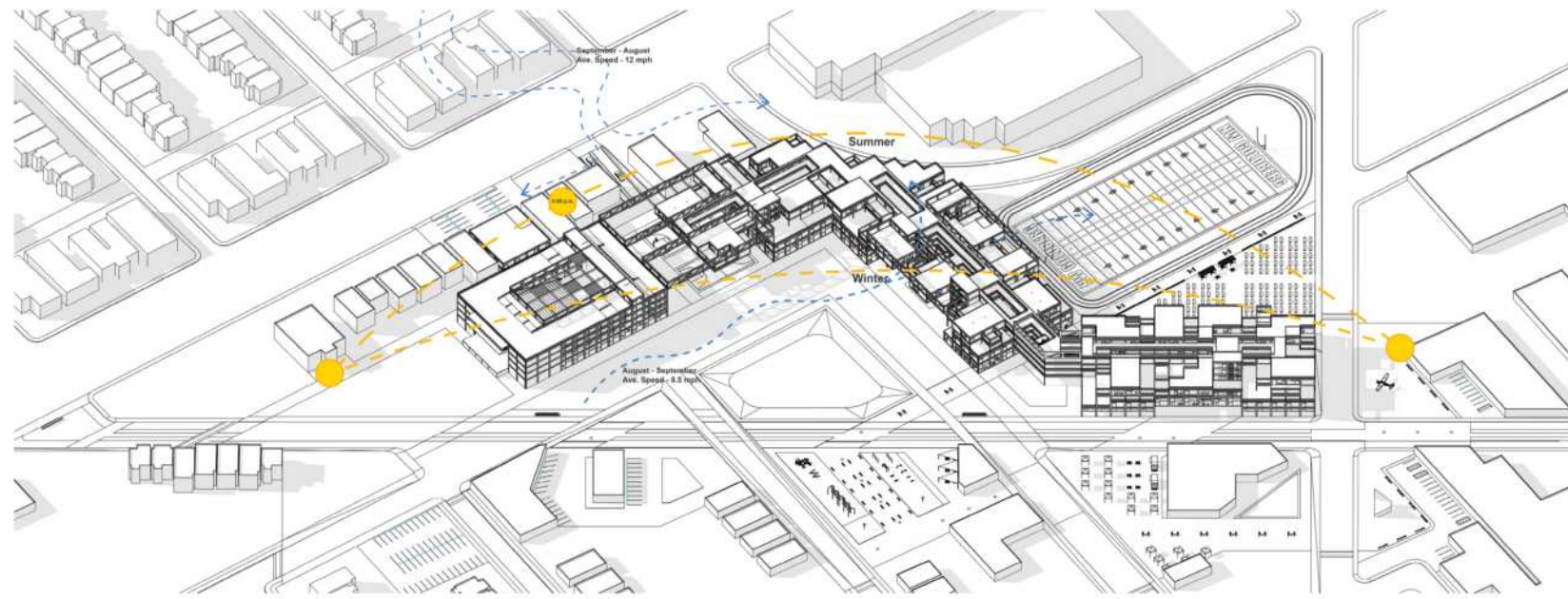
 - 2. Andy;s Pharmacy
 - 3. Tire Shop
 - 6. Houses
 - 9. Universal Triumph Dominion-God
 - 10. Marble Bar
 - 11. Michigan Humane Pet Pantry
 - 12. Weider Hardware, Distributors Wholesale
- Music Venue
 - Graffiti Garden
 - Sculpture Garden

To dive deeper into the programmatic lay out and correlation to the rest of the neighborhood (reference image above the Assets and Cultural Correlation) diagram illustrates the hub is building upon and enhancing the existing conditions. The Motown museum (existing) is being enhanced by the assembly hall and outdoor music venue. The next important area; Art block, Make Art Work, and York Project are all being enhanced by the art gallery and art library. Second the occupants that live in communal hub are extremely important they will support all the elements highlighted in dark red. Most are essential businesses with the exclusion of the Marble Bar. The community garden on the northeast end of the communal hub is a larger extension of the ones that are already being initiated in the neighborhood by Northwest Goldberg Cares.



- | | | | |
|--|-----------------------|---|--|
| | Deciduous | Basswood, Hackberry Trees | Large shading radius, colorful, way finding |
| | Coniferous | Wintergreen Box Shrub
Spruce Tree | Buffer, controls circulation & Wind control |
| | Grass | Buffalo grass | Soft surface, water absorption, hosts activities |
| | Extensive Green-roofs | Big blueestem, Switch, Blue grama grass.
Coneflower, Siberian Iris & Cypress | Shallow root, behave well in cold environments.
Water absorption, hosts activities. |

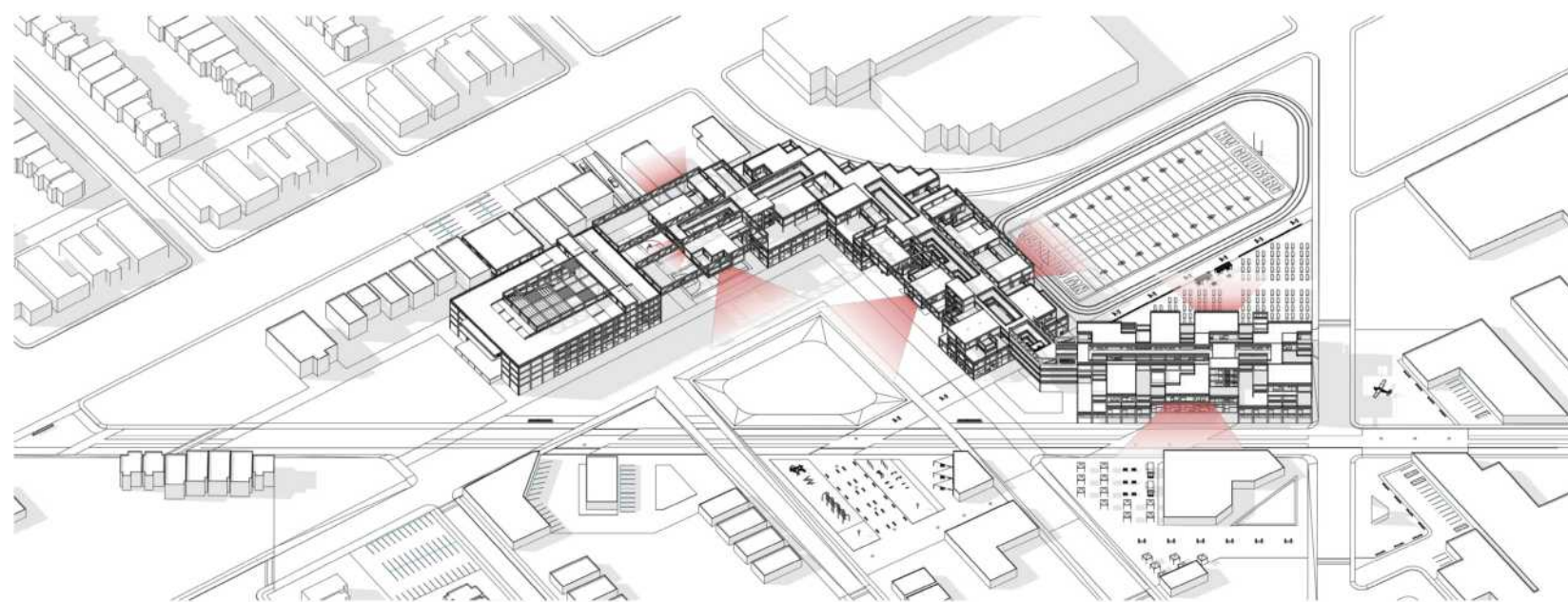
The vegetation diagram illustrates the different plants that I have designated on site and what functions those plants serve (reference image above Vegetation Diagram). For example, the coniferous plants highlighted in red are large Wintergreen Box Shrubs that are a buffer controlling circulation and separate two hard surface uses from another. The water feature will absorb a lot of the water runoff from the plazas. This feature can also be used later in the future for water collection and redistribution to the communal hub to increase sustainability. Lastly the most unique aspect of the water feature is that it will freeze in the winter allowing the neighborhood to utilize it as an ice-skating rink. This will bring money into the neighborhood, and due to its size, the water feature will be able to support many occupants from all around the city.



Snowfall - November to April (4.5 months), average liquid-equivalent monthly snowfall 0.5 inches.

Rainfall - most falls June to July, average total accumulation 2.7 inches.

Temperature - May to September (warm season), average daily temperature 73 degrees Fh. November to March (cold season), Average daily temperature 25 degrees Fh.



The hub utilizes a study of the climate to maximize sun penetration in the winter to passively heat the indoor spaces (reference image to the left). The wind analysis showed an opportunity for cross ventilation which resulted in a concept of porosity. This also allows for sun, and water penetration into the deepest areas of the communal hub to connect the occupant with the elements when outdoors.



Some other design decisions that influenced the communal hub's form are views the occupants will experience. (Reference image to the left) illustrates the 360-degree view residents have of the development and the city. This will act as an extra security measure and keep this area a live at night, therefore, after the businesses close, the development will still have activity.



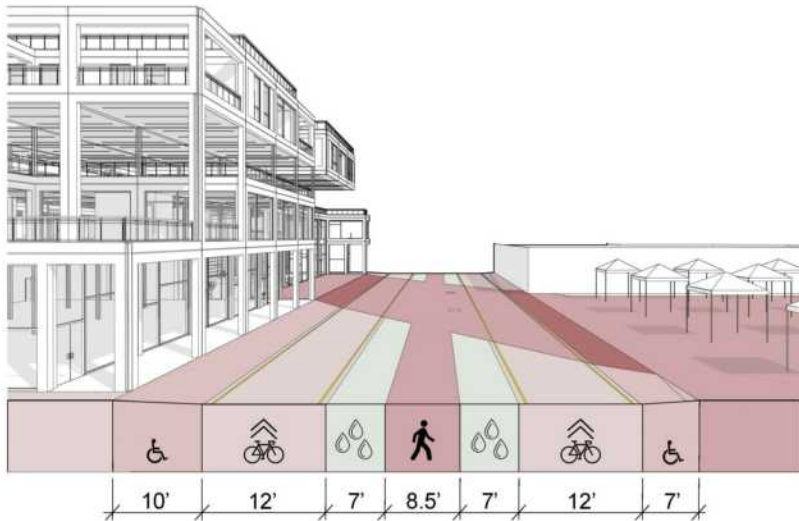
Upon initial inspection, holden street was a major barrier impeding the connection of the communal hub to the rest of the neighborhood. Therefore, the communal hub utilized a new format for Holden street to assist the modality of occupants from one side to the other. (reference image to the right Use Diagram). This redesign drastically slows down vehicular traffic while increasing the accessibility for pedestrians. This was achieved through 6 modes of traffic calming strategies.

First, “narrow lanes reduce speeds and minimize crashes on city streets by way of reducing the right-of-way and making drivers wary of traffic and adjacent users. Use the additional space for pedestrian space, cycle facilities, or green infrastructure” – Global Designing Cities.

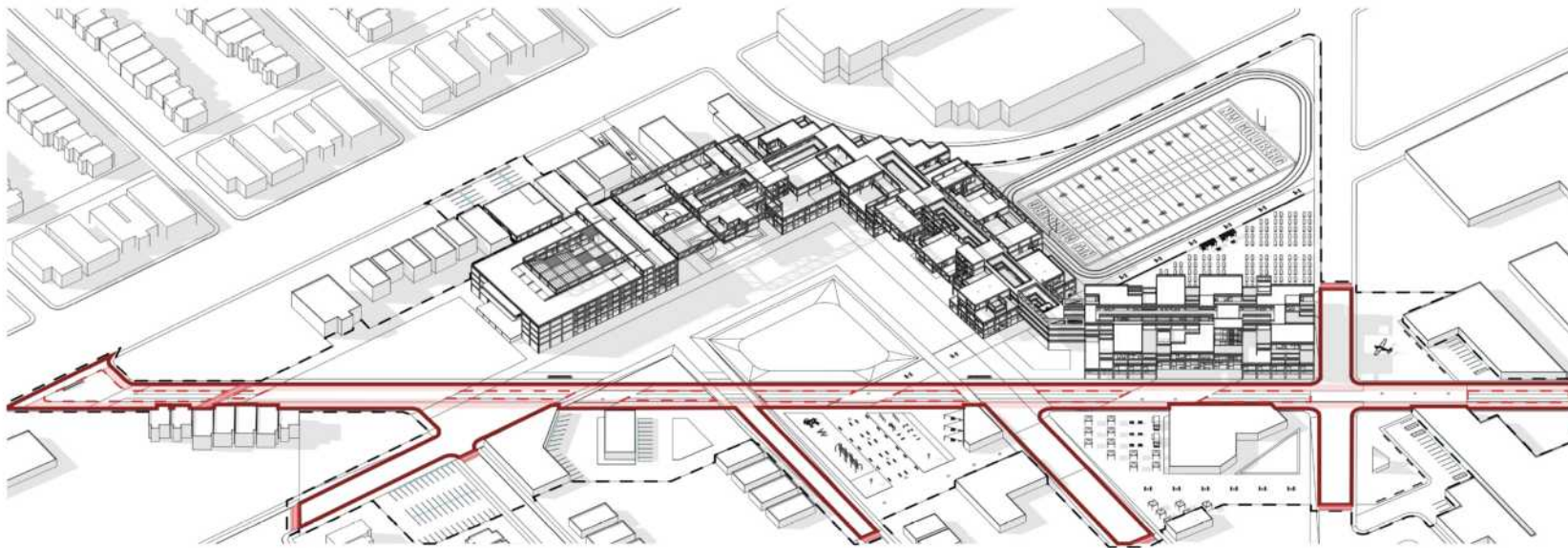
Second, building and trees; buildings at the right-of-way with articulated facades and windows indicate that a street is in an urban environment, not a highway” – Global Designing Cities.

Third, “speed tables are like speed humps, making motorists more cautious and wary of oncoming traffic” – Global Designing Cities.

Sixth, by removing the physical distinctions between pedestrian, cycle, and vehicular spaces, shared street treatments force all users to share the street, increasing awareness and reducing motor vehicle speeds”- Global Designing Cities.



Fourth, “pavement appearance can be altered through unique treatments that add visual interest, such as colored or pattern-stamped asphalt, concrete, or concrete pavers, which can be used to make other traffic calming techniques more noticeable to drivers. Pedestrian crossings and intersections can be painted to highlight crossing areas” – Global Designing Cities.



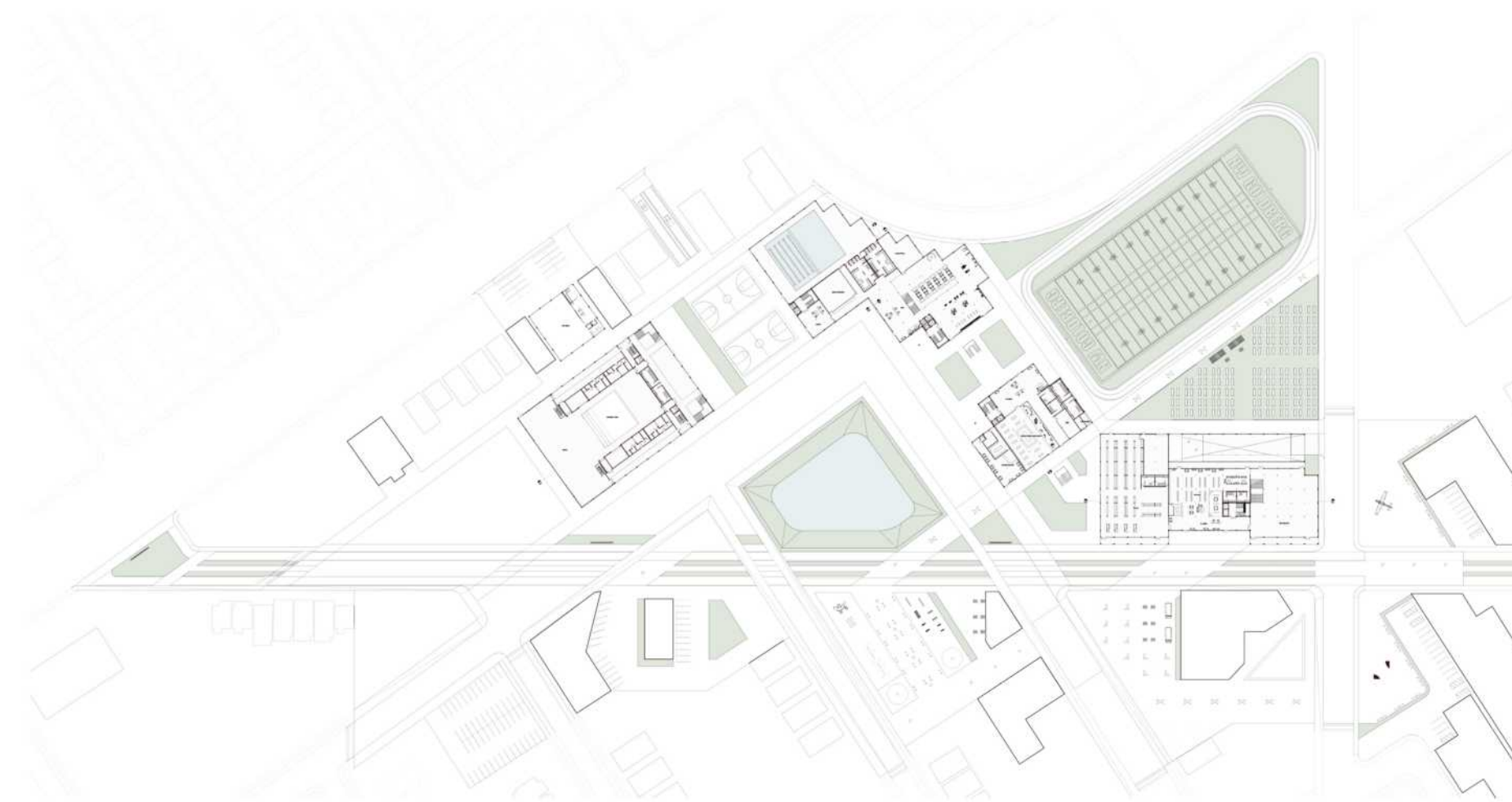
Fifth, “two-way streets, especially those with narrower profiles, encourage motorists to be more cautious and wary of oncoming traffic” – Global Designing Cities.

Sixth, by removing the physical distinctions between pedestrian, cycle, and vehicular spaces, shared street treatments force all users to share the street, increasing awareness and reducing motor vehicle speeds”- Global Designing Cities.

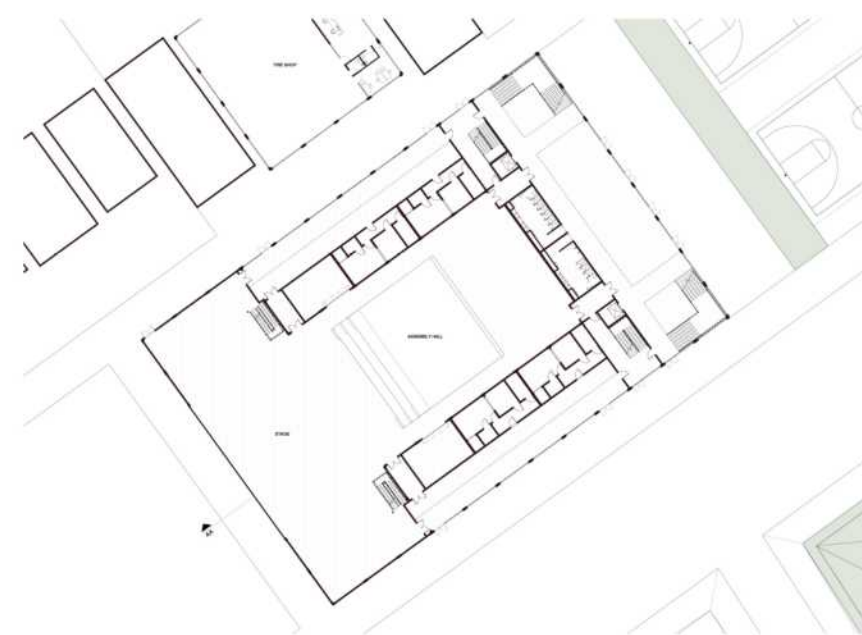
With all these strategies combined, this will create an extremely walk-able neighborhood and increase the pedestrian’s safety while moving between the communal hub and its assets (Reference Figure 5.13. Traffic Calming Strategies & Figure 5.14. Location of Traffic Calming Strategies).



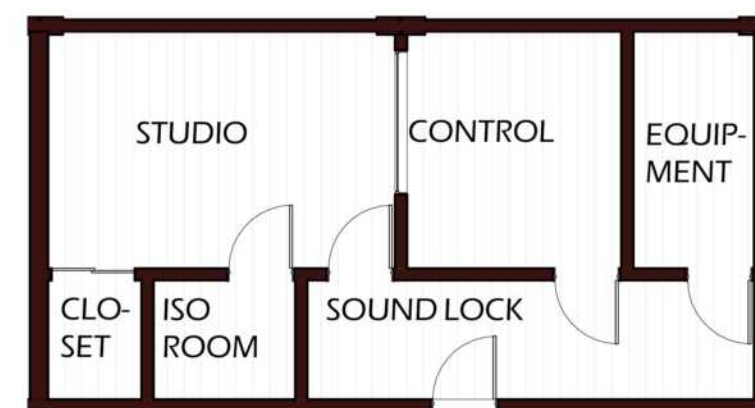




ENSEMBLE (LEVEL 1)



ENLARGED ASSEMBLY HALL



COMMUNITY RECORDING STUDIO

Level one harmonizes all five of Communal Hub's goals; utilization of the modular system, promoting the neighborhoods artistic culture making it visible and accessible through the assembly hall and out door music venue, art library, art gallery, and art block. Promoting recreation with the open field, community garden, water feature, gym, play ground & calisthenics park. Promoting learning though the art library then, promoting commerce for the neighborhood with the assembly hall, Detroit Dough, music and art supply store, and Crocketts grocery. Next, this portion of text will uncover the unique flexibility the assembly hall provides. The assembly hall's large operable door can be used to connect the interior to the outdoor music venue which can be used for an outdoor concert. The operable door can be used to drop off large auditorium seating (orange) by eighteen-wheeler trucks that will be put-together in the assembly hall. Both performance area sallows for multiple activities to be happening at once without relation.



Outdoor Music Venue & Roof Gathering



Outdoor Screening, Roof Gathering, Indoor Gathering

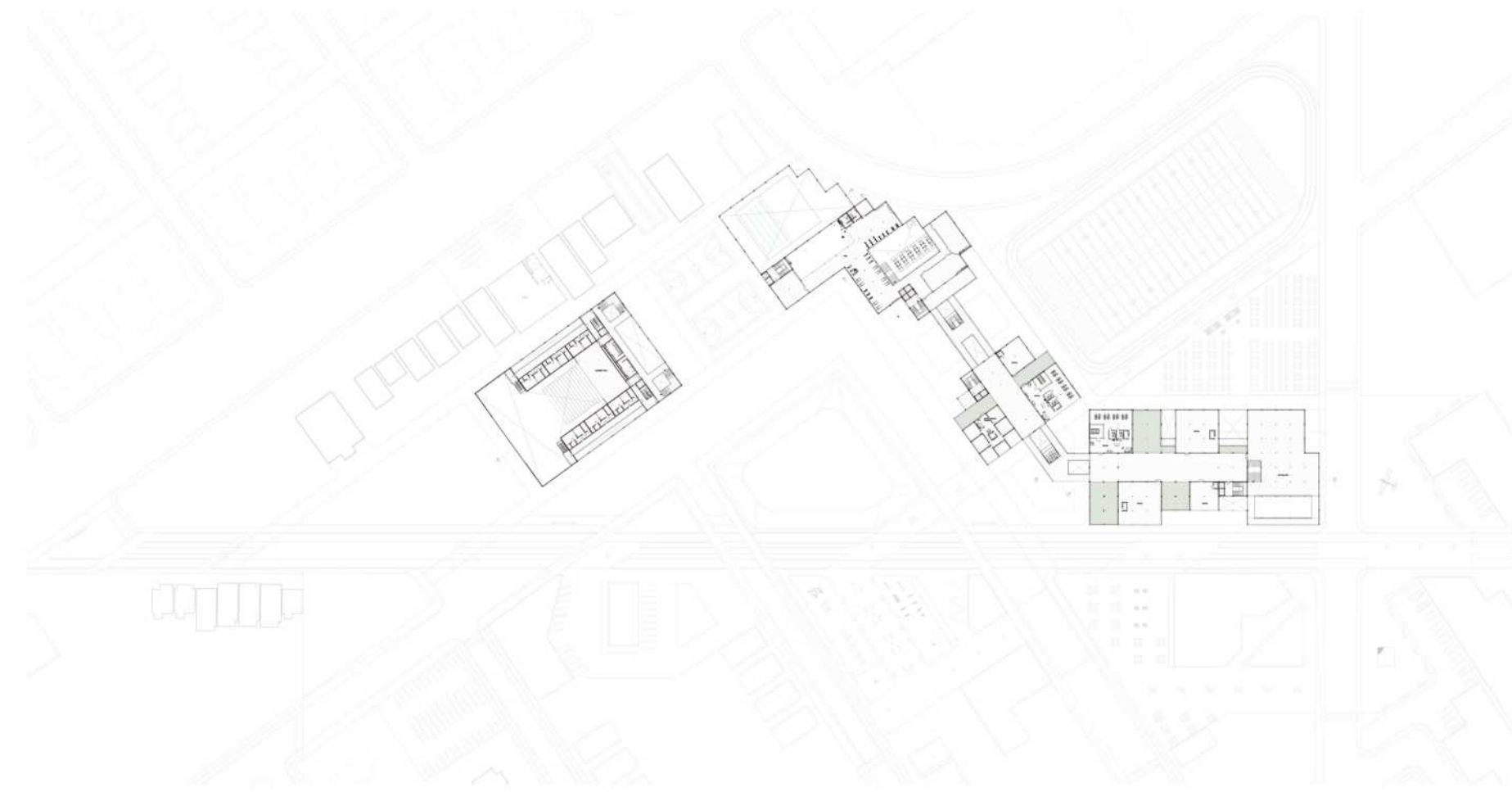


Outdoor Gathering, Roof Screening, Indoor Show



Indoor Show & Roof Gathering





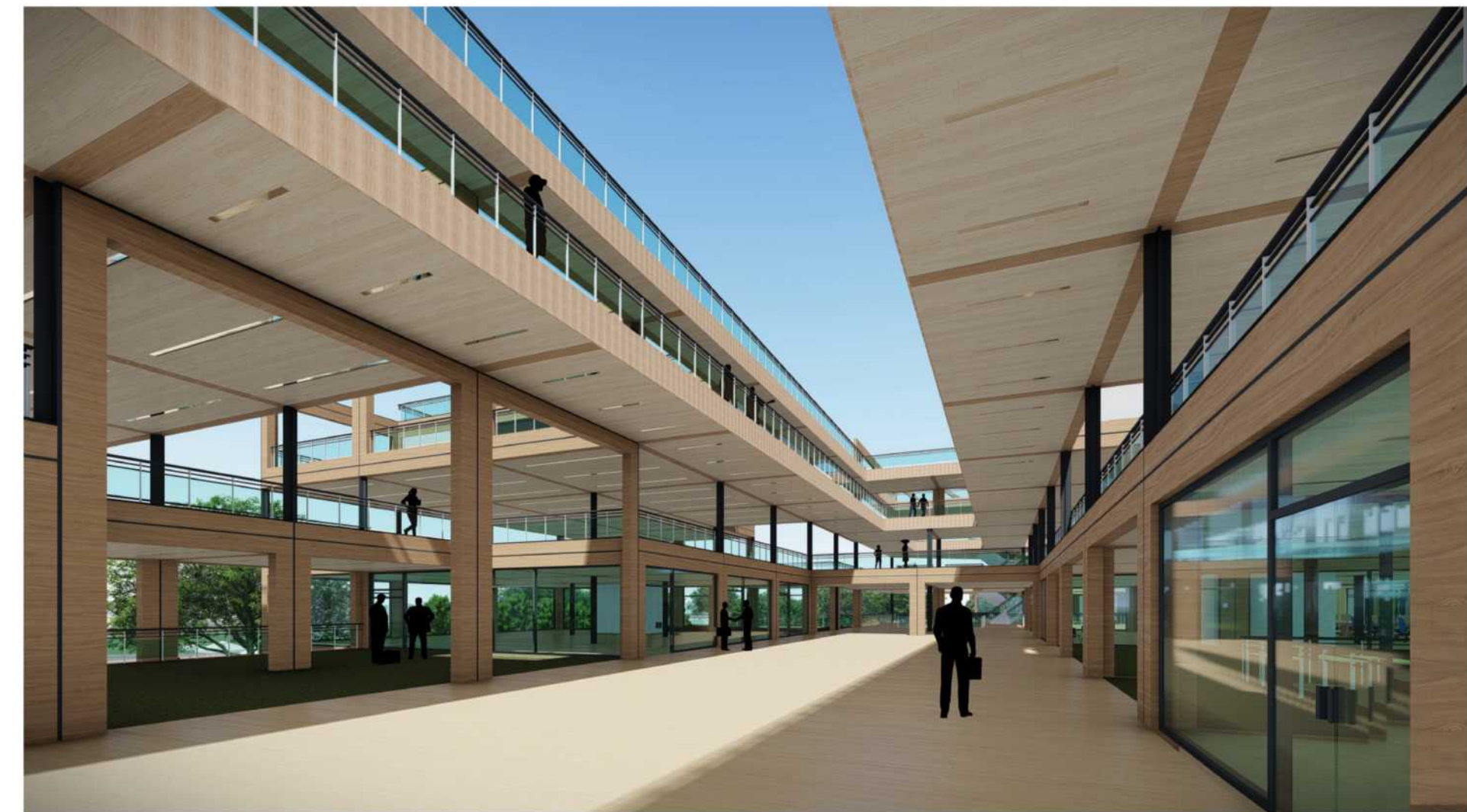
COMMERCE GENERATION (LEVEL 2)

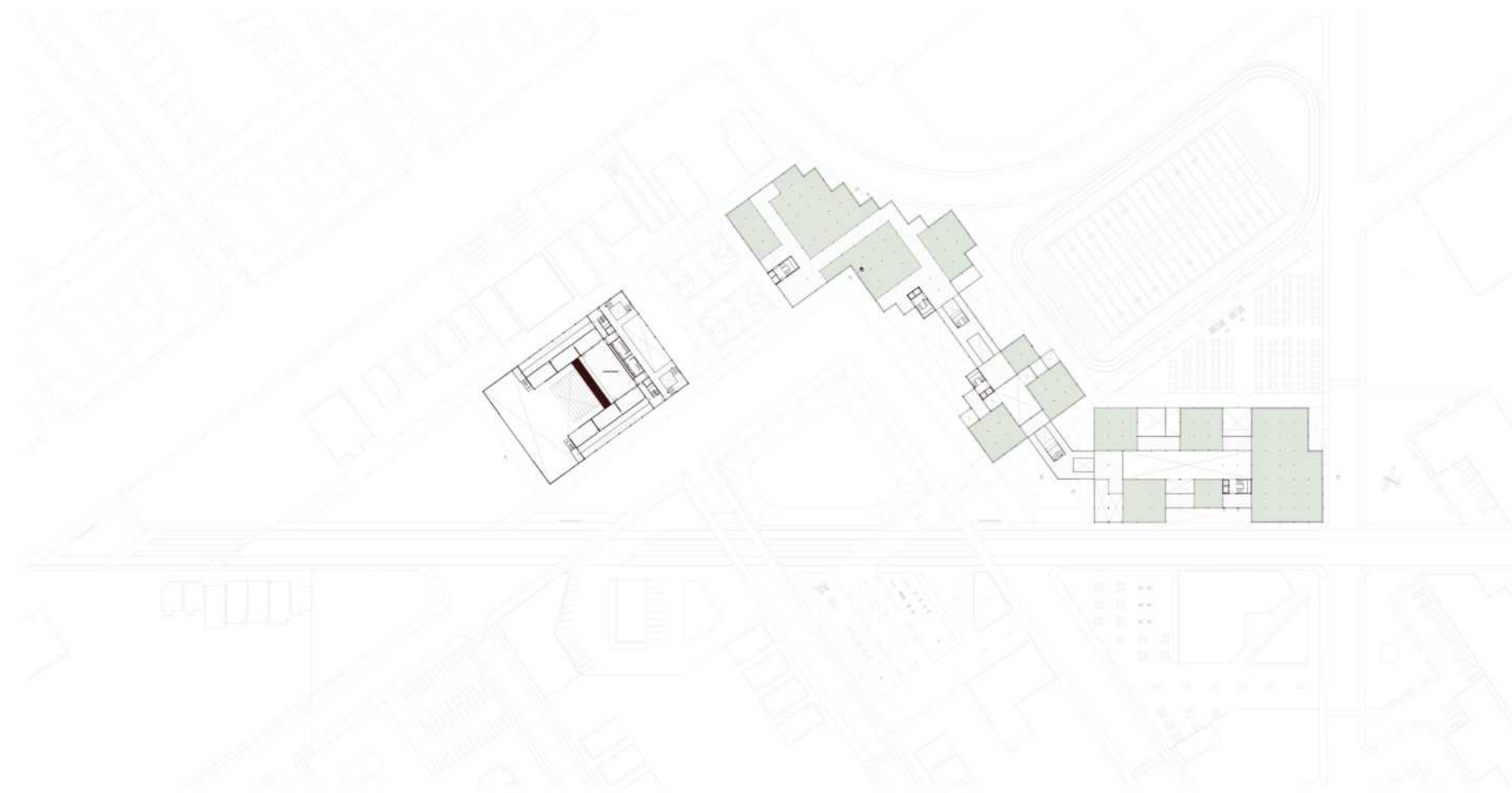


Level two generates commerce for the neighborhood through the assembly hall seven rentable office spaces, the gym, art library and gallery, reinforcing the overall goals. The Grand Hall which is horizontal circulation on the second level of the communal hub moves occupants from the art library and gallery to the rentable office spaces then the gym. This is a redesign of a typical hallway (reference image at bottom of page 30). Typical hallways are unsustainable and unfriendly. Needing to be artificially lit 24/7 and are not able to support collaboration of any kind this innovation must be implemented in communal hub to reenforce the



project concept. The large green spaces between the rentable spaces are to bring a nature element into the conversation. One will not have to go to the ground floor to experience green space because it is directly connected to their workspace. Further, the large voids in the roof and facade are connecting the occupants to the element on purpose. Just because one is inside of a building does not mean they are to be disconnected from the outside. To support healthy interaction and sustainability, communal hub balances the two.





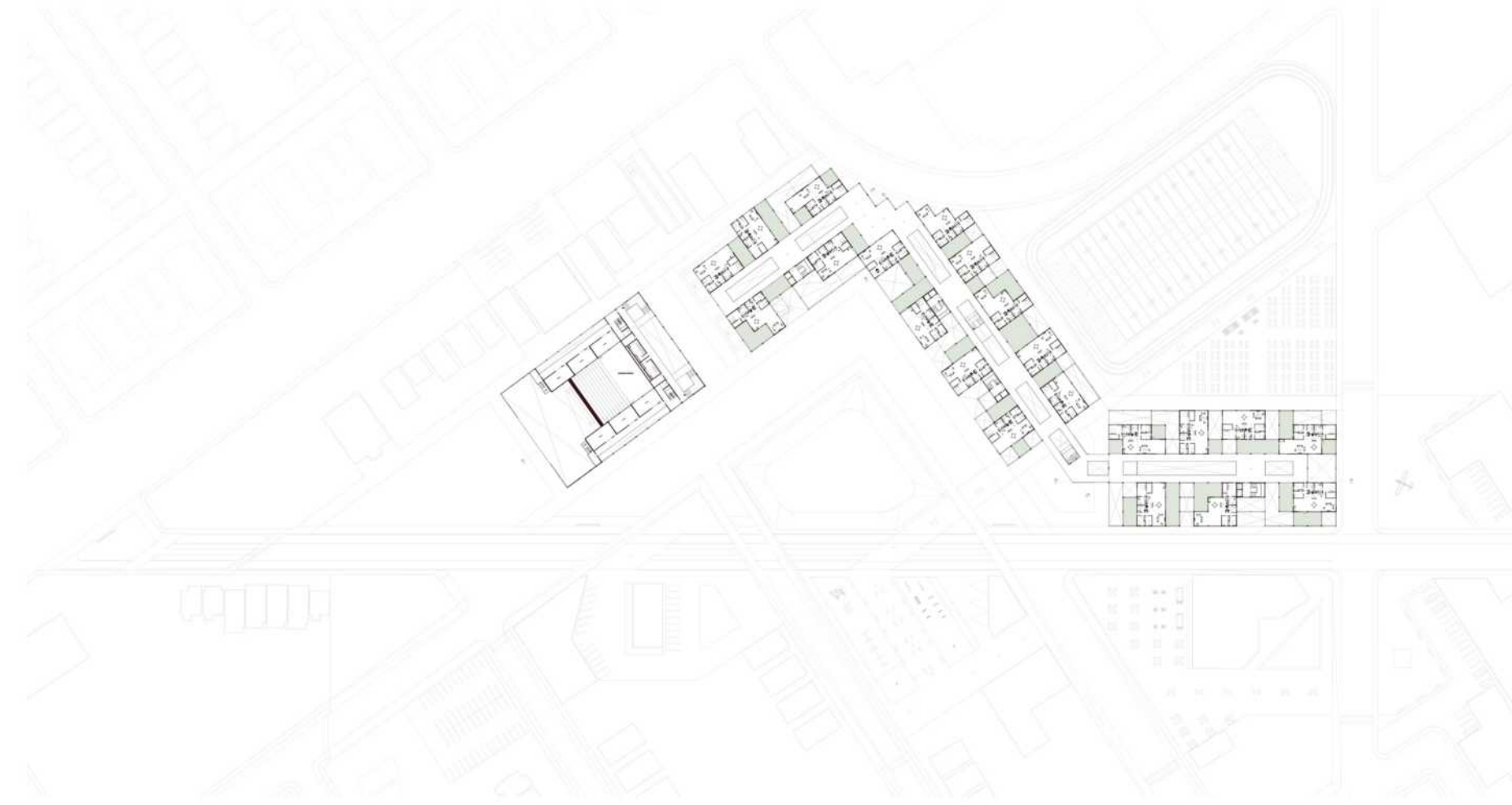
THE GREEN WAY (LEVEL 3)

0 20 40 60 100 200

The Green Way provides a safe, fun, and explorative adventure through fragmented green spaces overlooking the neighborhood and city by utilizing a series of green roofs connected by bridges that the occupants will meander around and interact with. The Green Way Floor Plan). The Green Way is a public space for the whole city. It hosts 360-degree views of the development and city, while guiding you through some of the most interesting moments of the communal hub. These range from large voids that connect the private housing level visually with The Green Way, the plazas, community garden, athletic fields, and water feature. One may access this space from two outdoor staircases and four interior social/egress

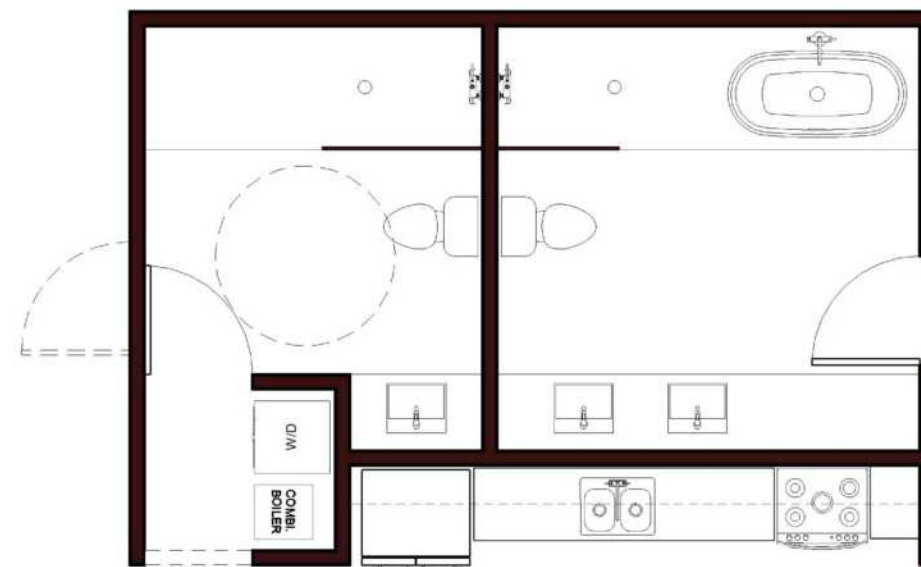
stair options that are equipped with elevators for ADA access.



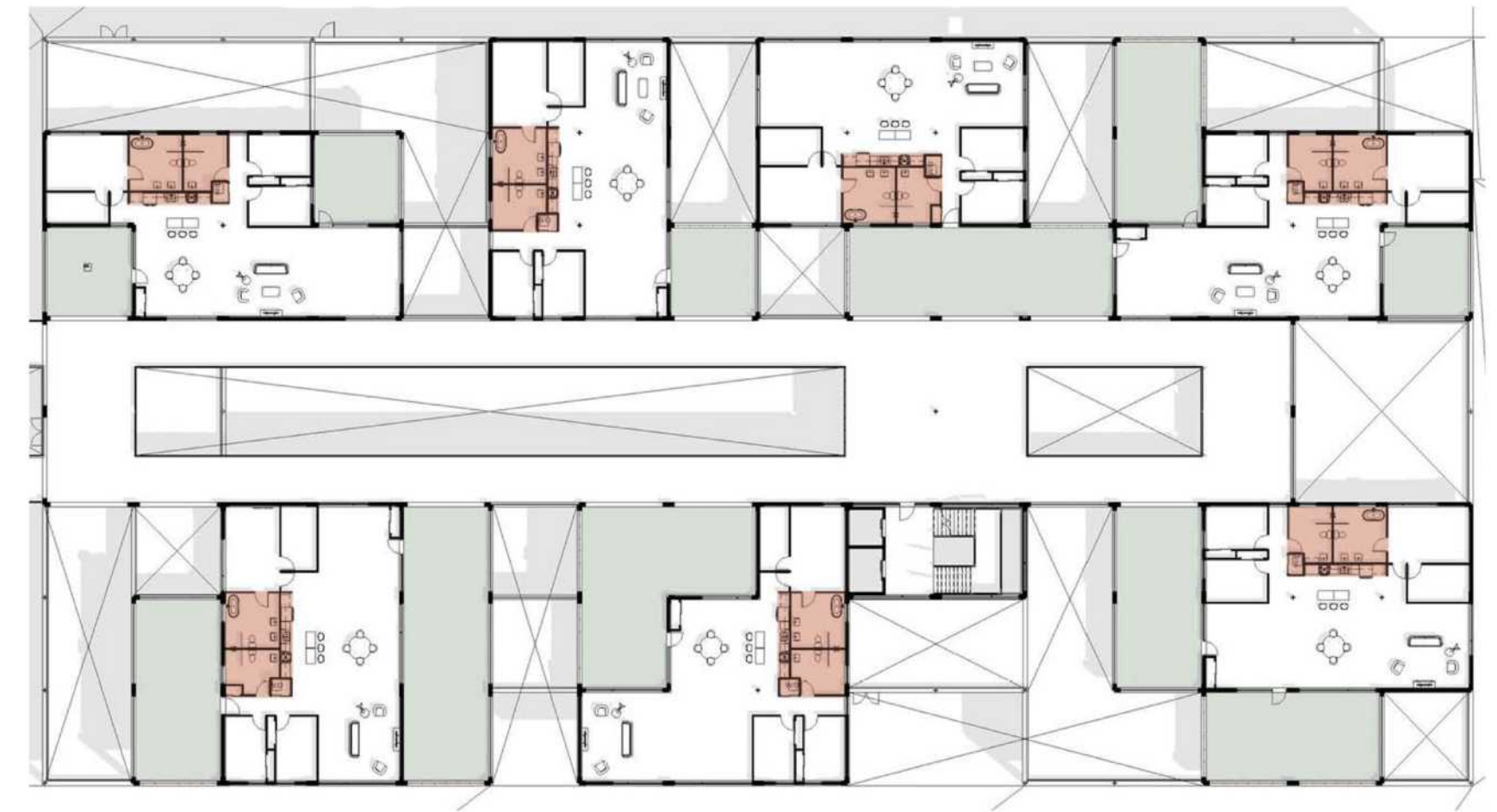


HOUSING (LEVEL 4)

Lastly, this text will explain the design strategies utilized to create the housing level. The fourth floor of the communal hub hosts twenty-one, three-bedroom houses. These houses are designed in the image of the neighborhood homes. This strategy links back to the theory of regeneration, communal hub is building upon what is already there and not forcing new ideas or things. Second, each house has a minimum of 400 square feet of green space. These green spaces are the front and back lawn of the houses. The houses in the neighborhood are all twenty-four hundred to twenty-six hundred square feet, therefore communal hub's houses



UTILITIES MODULE

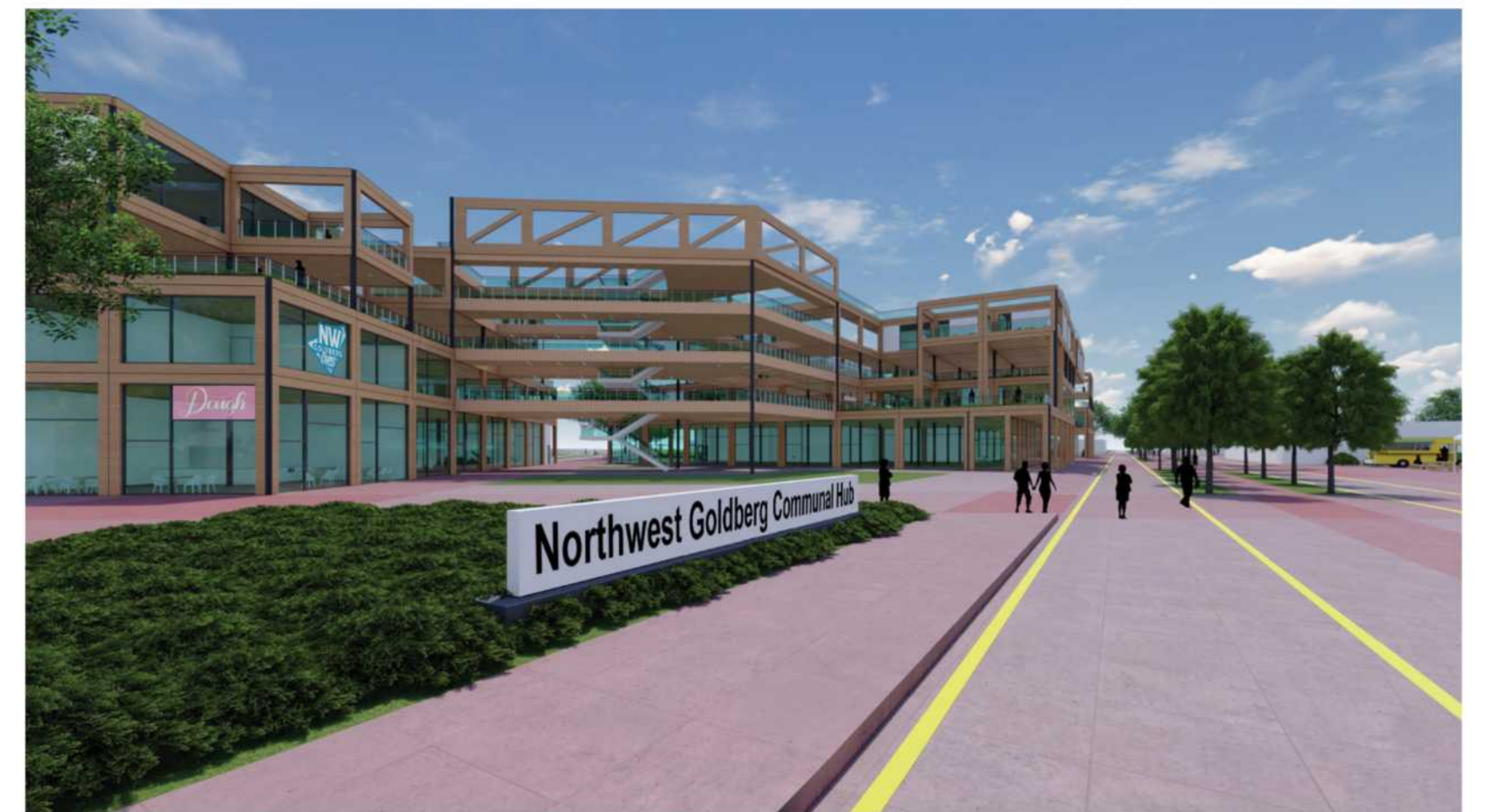


HOUSING DIAGRAM

are twenty-four hundred square feet. Most of the homes are three-bedroom houses with two full baths, kitchen, and living spaces so communal hubs' houses mirror this condition. These houses that are existent in the neighborhood have space between them, so communal hub's houses do not share walls and even further incorporate voids between the houses to increase privacy, sun penetration, cross ventilation, and water penetration to the lower levels (reference image above Housing Diagram).

Communal hub celebrates exposed elements, therefore, it is vital that the utilities of these houses are organized and located in one spot per house. To achieve this, communal hub utilizes a module containing all the utilities that can come from one large pipe. (reference Utilities Module). This module houses two full sized bathrooms, a large kitchen, washer and dryer, and a combination boiler, all in a 400 square foot area (20' x 20') (Reference Figure 5.20. Utilities Module). This also increases flexibility, enabling ease of modification.

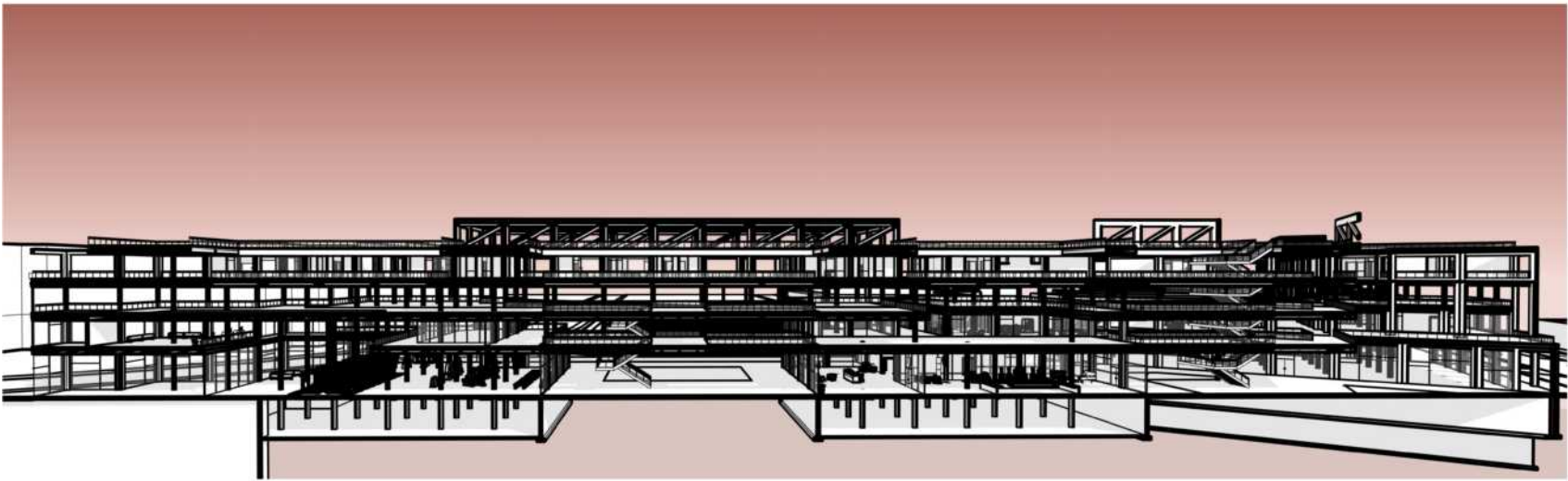




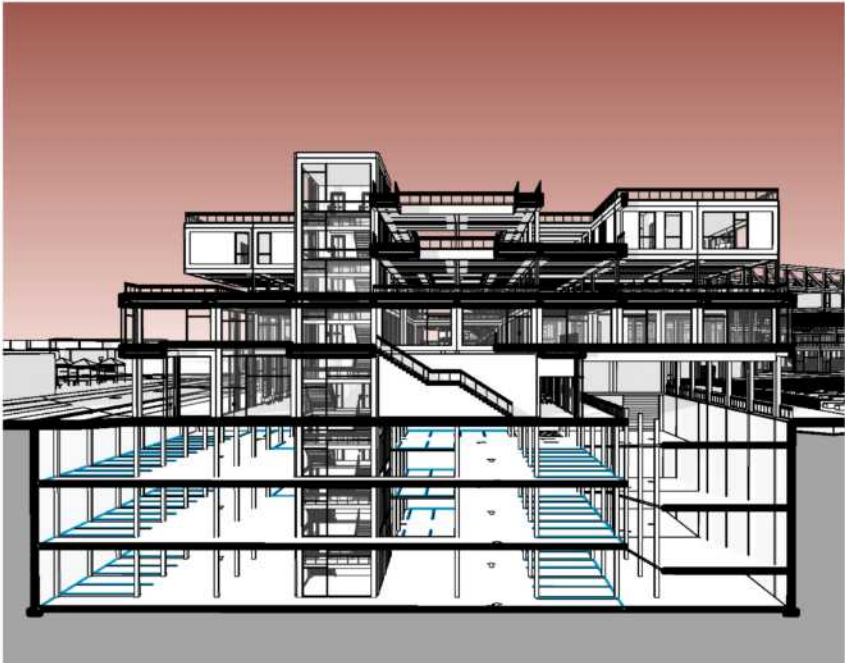
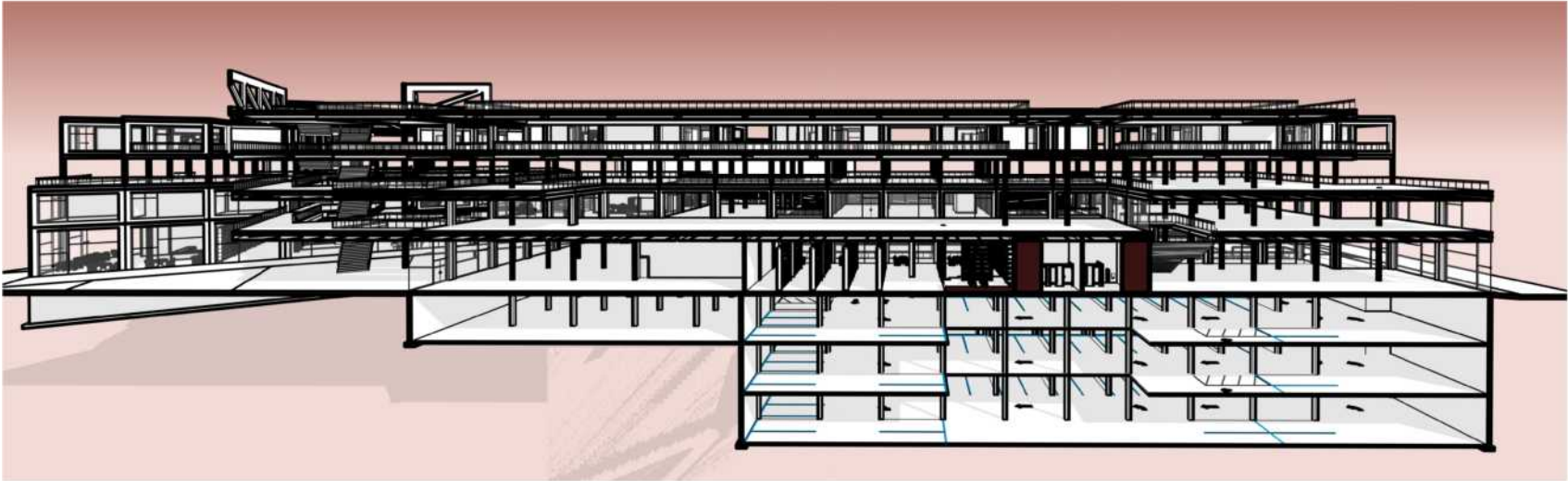
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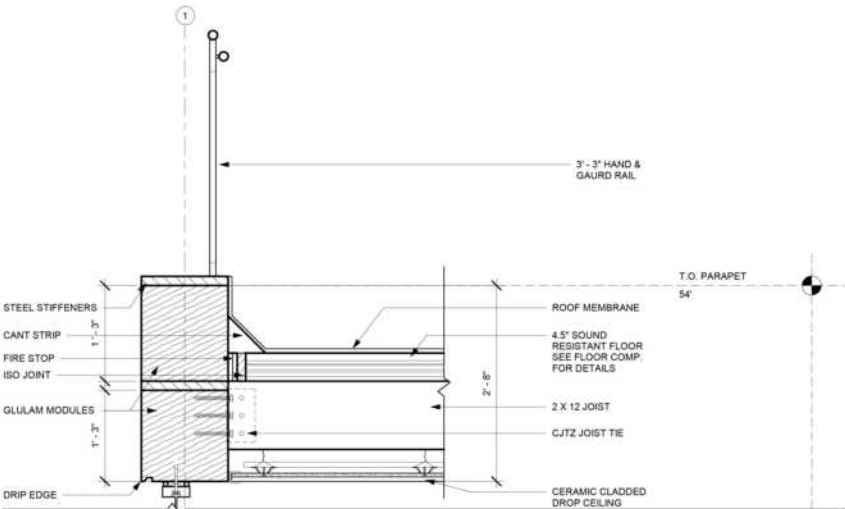
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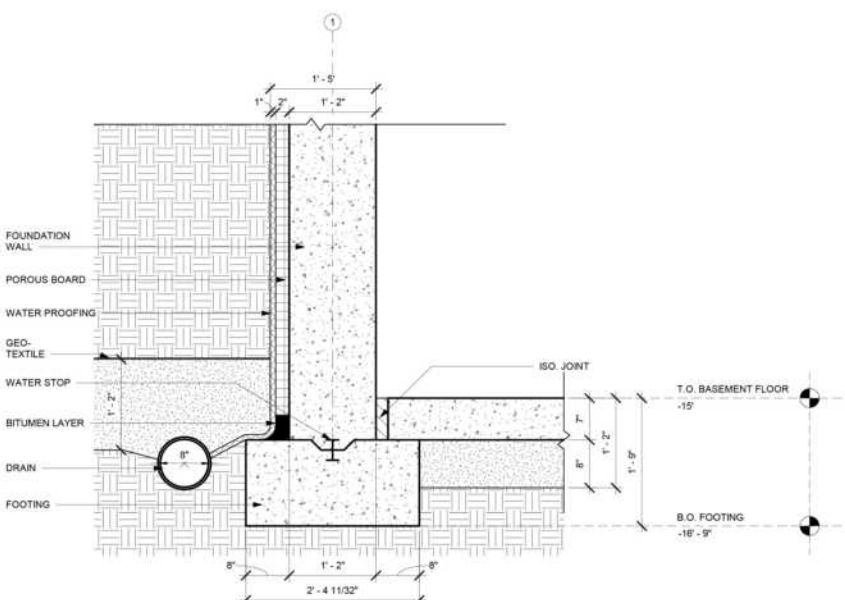
SECTION: CC



SECTION: EE



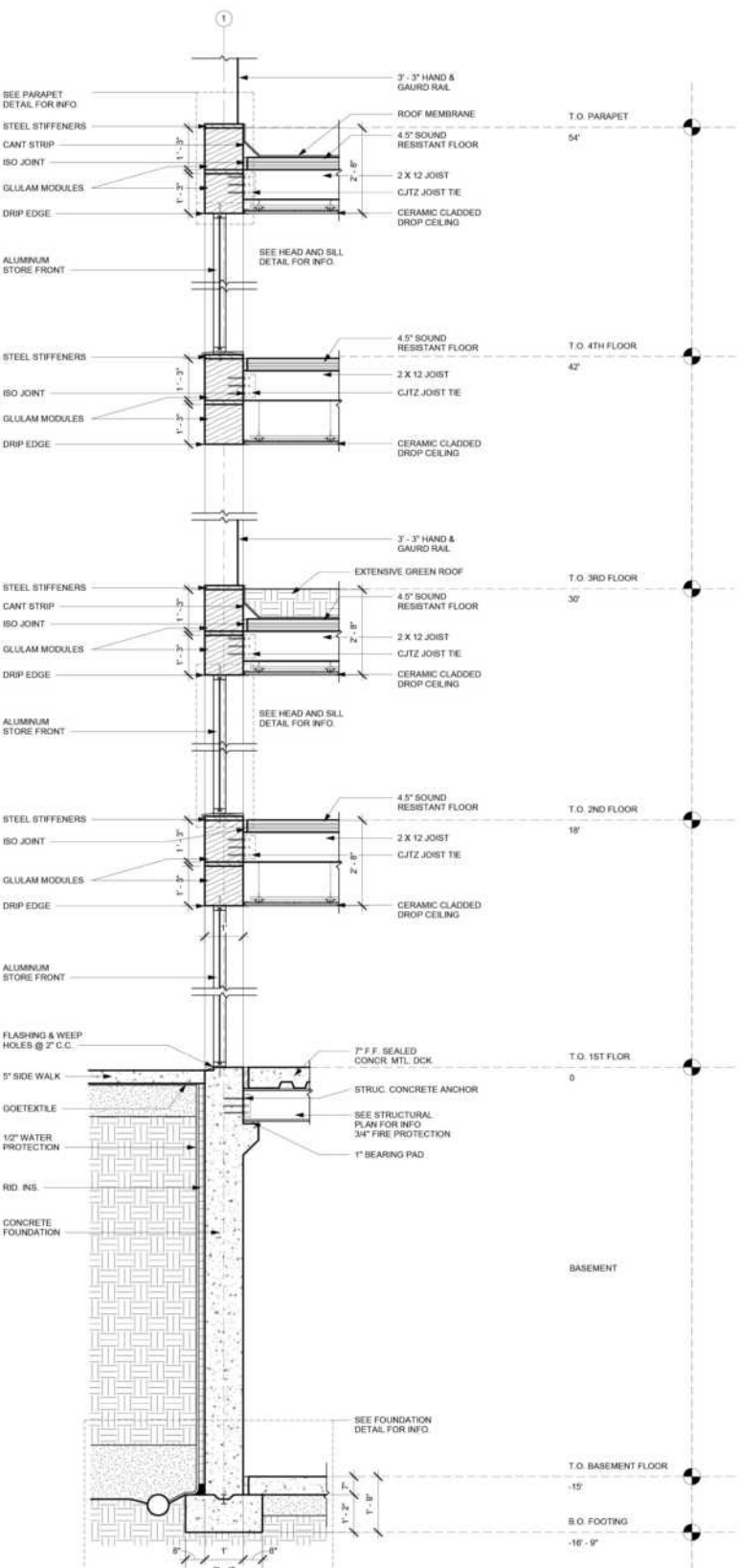
PARAPET DETAIL



FOUNDATION DETAIL



HEAD AND SILL DETAIL



SECTION: DD

CONCLUSION

In conclusion modular regeneration is a communal hub that regenerates the physical, social, and cultural environment through enhancing the unique characteristic of Detroit, Northwest Goldberg, and its residence. By creating physical improvements that celebrate the historic and social context of the neighborhood, communal hub does not gentrify, it becomes a catalysis for social and cultural identity, which provides a tenacious sense of place for the residence of Northwest Goldberg. Lastly, the implementation of better housing attracts, increases density, and solidifies the formal regeneration of Northwest Goldberg.

AUTHOR BIO



Modular Regeneration was created by Aaron Grimes while pursuing a Master of Architecture at Texas A&M University. With Grimes's Master Degree, he earned a certificate in Sustainable Urbanism. Born and raised in St. Louis, Missouri, Grimes migrated to Texas for education, and job opportunity.

To my family:

Due to your love, not one trail and or tribulation, have I had to navigated alone. Thank you, for sacrificing so much of you, to enable me to fly.

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IMAGE

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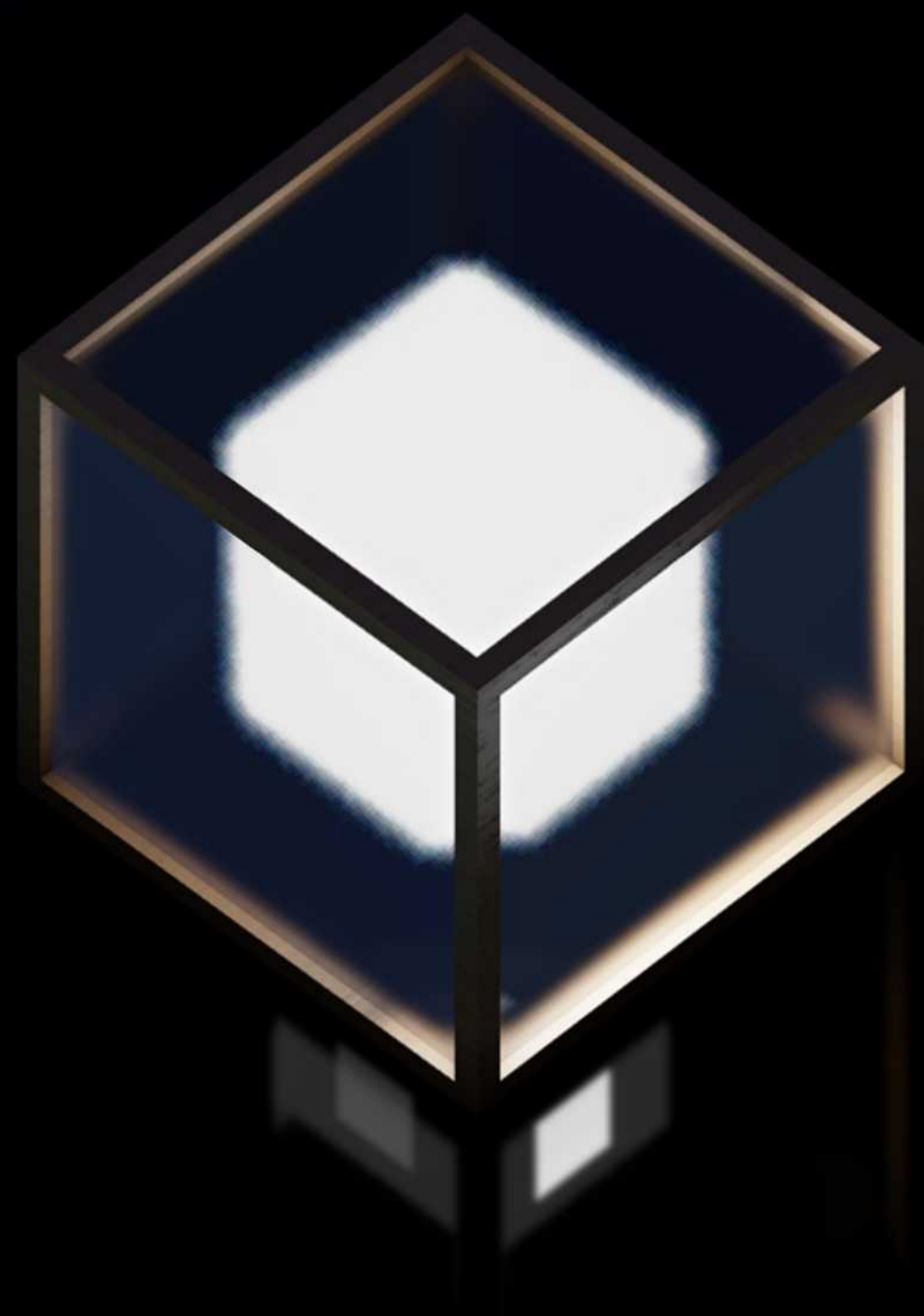
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