

FIASCO: A STUDY ON ADAPTIVE RE-USE FROM RELIGIOUS SANCTUARY TO ART AND CULTURE COMPLEX



Julian McKnight

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Scholarly Abstract

Near the end of a building's lifecycle, many times when the building is no longer deemed useful, decisions are made whether to wait out a new tenant for the structure or to destroy it to make way for new construction. If the latter, while the building waits, its materials are left to the elements to decay away through natural weathering over time. To give these environments new life would not only reinvigorate the surrounding area with a renewed purpose, but is also a much more sustainable process of construction than simply demolishing and creating whole new structures.

To be able to capitalize on the structure, material, and identifying characteristics of an existing building is the goal of a well performed adaptive re-use project. This project outlines steps and the process in which an architect should complete as they go through the phases of construction for this process. The steps that I developed to complete this process are Observation, Preservation, Renovation, and Activation. Through the completion of this process a respectful interchange of ideas, character, and structure is shared between the old and new.

The host of this process of adaptive re-use is a Catholic school located in Pittsburgh PA, originally built in 1875. Over its long history it has seen many changes and additions to its original construction but has since been abandoned for over ten years. This thesis takes this building and explains the process of re-use for taking this abandoned Catholic school and creating an artist residency and community complex.

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General Audience Abstract

Near the end of a building's lifecycle, many times when the building is no longer deemed useful, decisions are made whether to wait out a new tenant for the structure or to destroy it to make way for new construction. If the latter, while the building waits, its materials are left to the elements to decay away through natural weathering over time. To give these environments new life would not only reinvigorate the surrounding area with a renewed purpose, but is also a much more sustainable process of construction than simply demolishing and creating whole new structures.

This thesis outlines the process one should complete when renovating or adding onto an existing structure. The host of this study is a Catholic school from 1875 that is being adapted and re-used to become an artist residency and cultural art space.

ACKNOWLEDGMENTS

FRIENDS AND FAMILY : The love, support, and patience from you all is what allowed me to be able to produce this piece and I am grateful to have you.

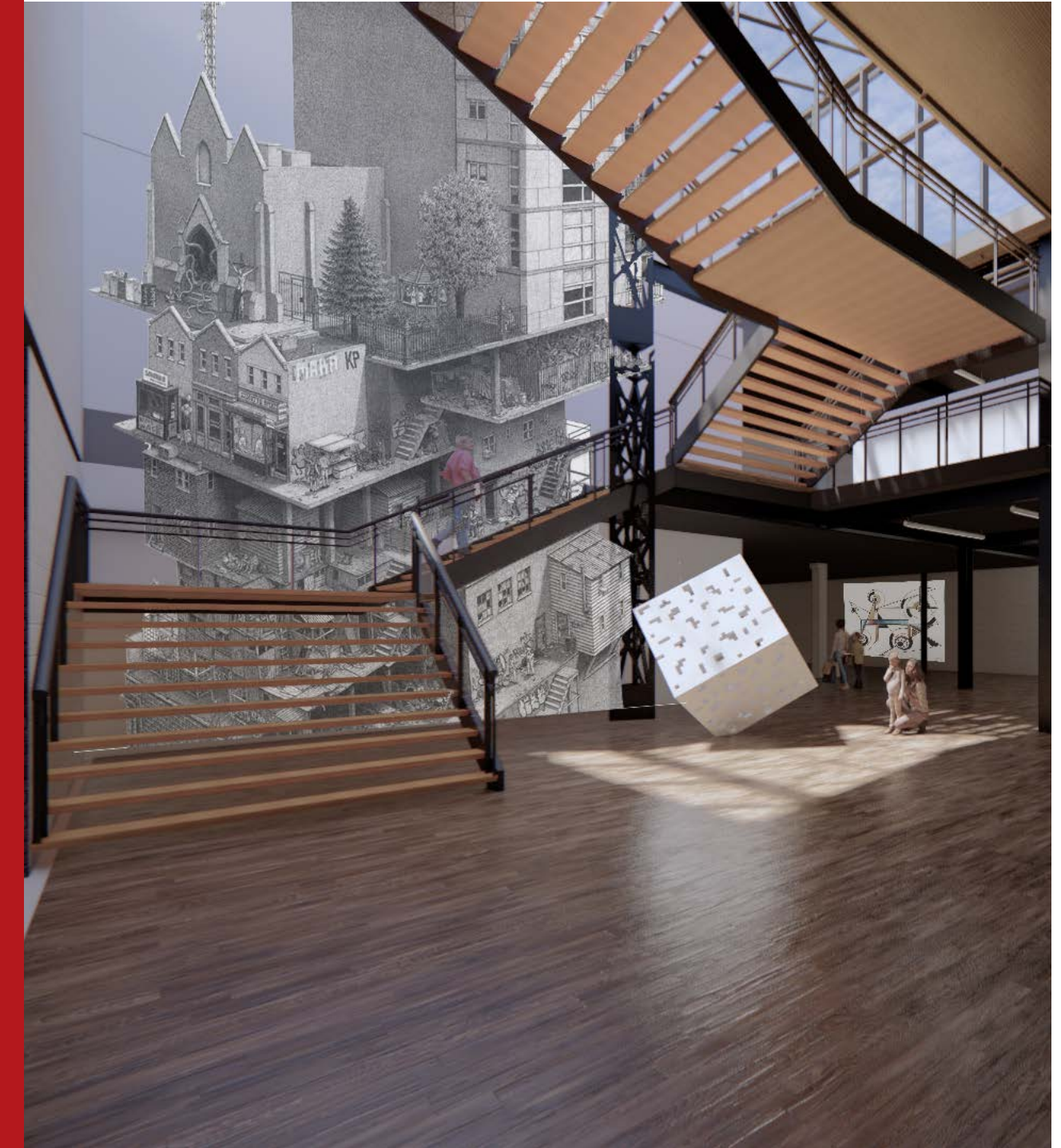
COMMITTEE MEMBERS : Thank you for your wisdom and guidance as I developed this thesis. The knowledge you have gained has proven to be helpful to me in more ways than you can imagine

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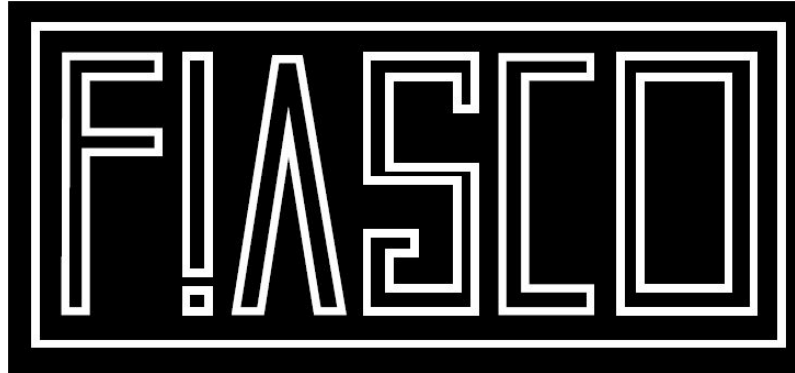


INTRODUCTION

The process of adaptive re-use is one that has been done since buildings started being constructed. It is a more sustainable and more cost effective system of building than new construction. It also acts as a form of preservation as the history of a structure is allowed to continue on after its initial purpose of program. This act of preservation enriches a city as the history held in its structure is able to continue to be part of the community.

This process has always interested me and I was very fortunate to discover an opportunity to explore it. I am connected to an artist who recently found and purchased an abandoned Catholic school in the northern Pittsburgh area named the Incarnation Academy Elementary School and Rectory. This multi-building site includes a large main building that was used as an academy with classrooms, halls, a working kitchen and a gym. The second structure on the site is the residential building that was used to house the priests and instructors for the academy. Both buildings have primarily brick masonry facades whose additions through time show different stages of weathering. This difference in material appearance reflects its history as the original building was built in 1875 and changed hands multiple times before it was abandoned in 2006.

The name of the artistic organization that is taking over is called Fiasco, whose name was created to reinvent the connotation of the word while also embracing the chaos behind its meaning.



When dealing with an existing building it is important to create a respectful relationship between the old and new. To approach this relationship through the process of adaptive re-use, I have developed four stages to go through that apply to all projects of this type.

1. OBSERVATION

This step is where information about the existing building is researched and studied. This includes previous owners, changes to the buildings over time, zoning information, vicinity studies etc. Surveys of the building as well as studies about existing conditions are also completed during this step

3. RENOVATION

Design changes are made during this step. To respond to the two previous phases, the renovation phase continues to make additions and subtractions to the building form as well as establishing new program uses for each of the spaces.

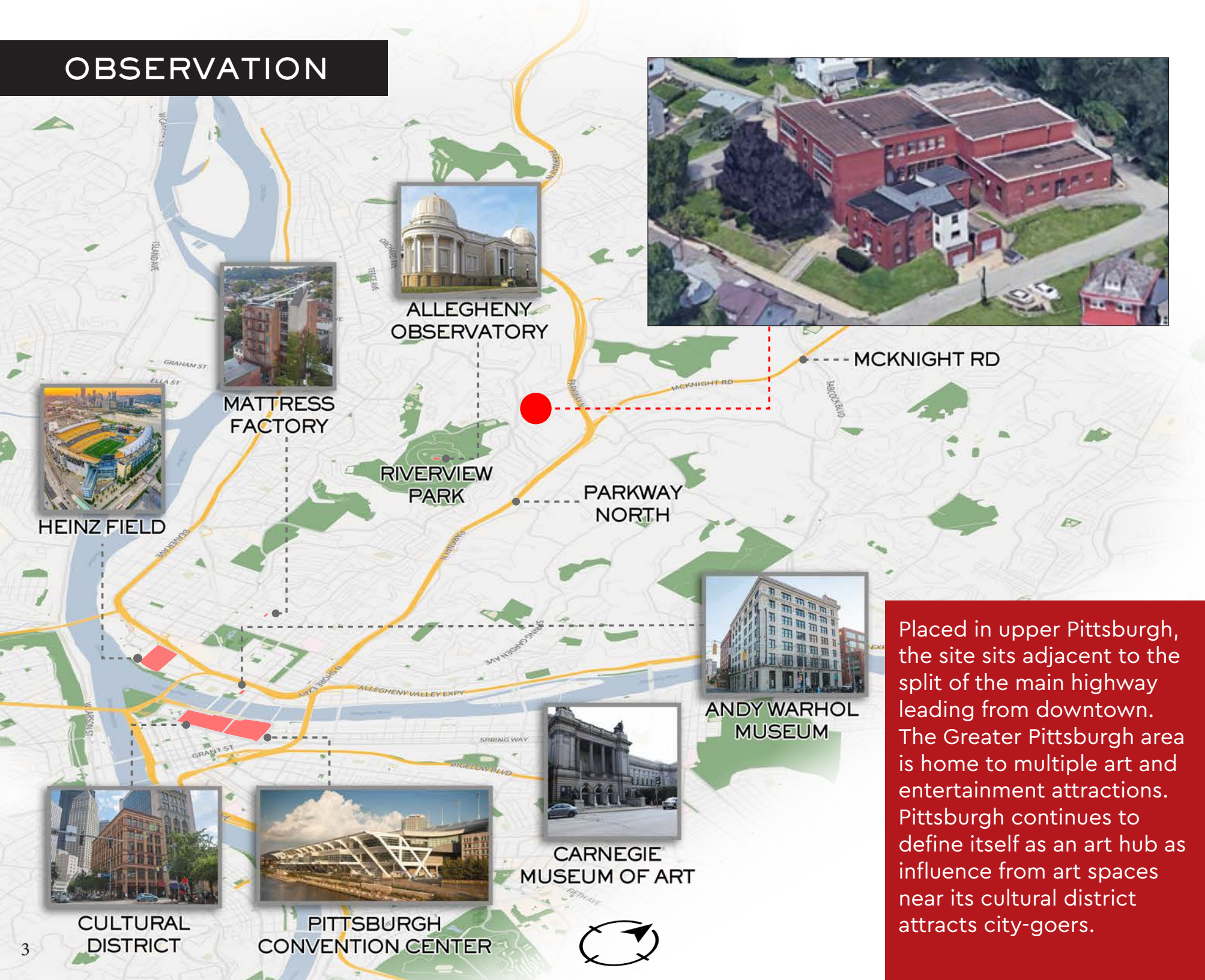
2. PRESERVATION

Now that the building has been studied, it must now be evaluated during this phase. Decisions on what must remain and what can go is decided based off of historical significance, identity, and structural necessities. A study on what aspects are successful and unsuccessful in the building can also inform decisions on new changes.

4. ACTIVATION

As a reflective phase, activation explains why and how the building and its program will be successful when re-introduced to the community and the city as a whole. Elements are explained to have certain values in the community and act as attractive aspects to the building while also potentially responding to a need

OBSERVATION

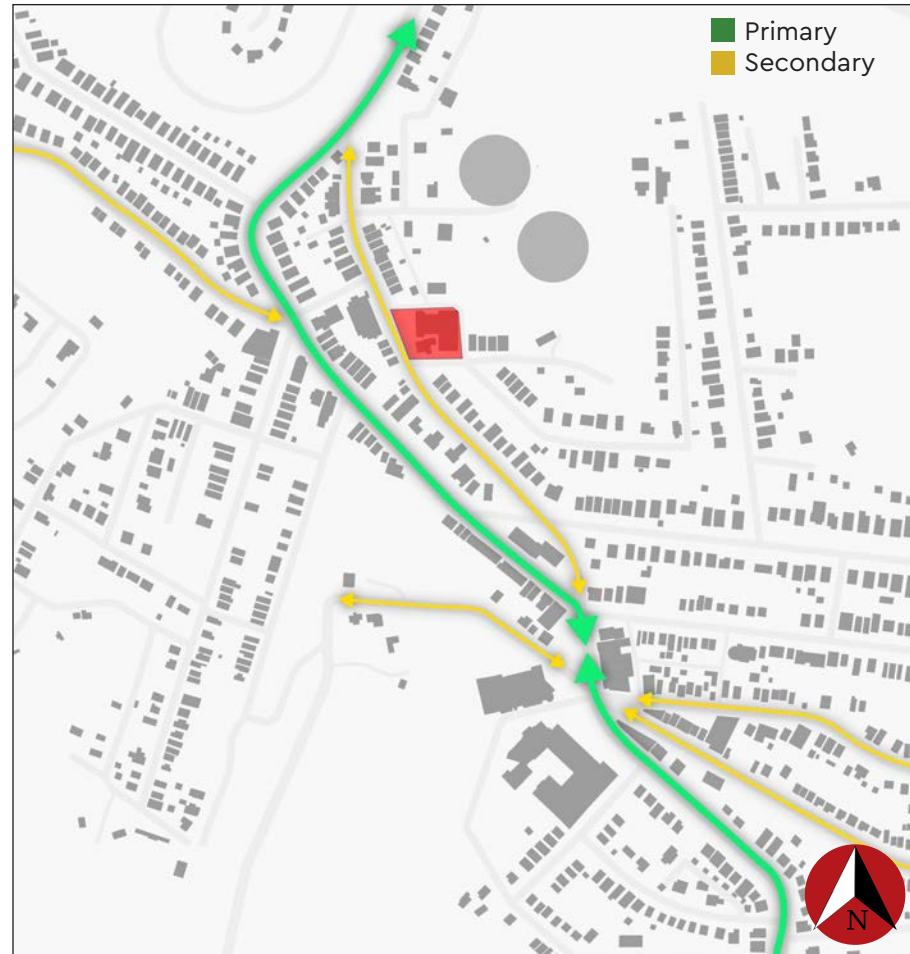


Placed in upper Pittsburgh, the site sits adjacent to the split of the main highway leading from downtown. The Greater Pittsburgh area is home to multiple art and entertainment attractions. Pittsburgh continues to define itself as an art hub as influence from art spaces near its cultural district attracts city-goers.

Closer to the site itself, the area surrounding is primarily residential. Supporting this local population is a small market area placed at the exit to the highway. The local high school is also placed nearby, directly adjacent to the northernmost tip of Riverview park. Next to the site is a small parklet whose name refers to the reservoir directly behind the site. Brashear Park reservoir is also the location of the highest elevation in Pittsburgh, denoting the importance of the topography in the site and its surroundings. Directly across the street is the Incarnation of the Lord church, who acts as the previous owners of Fiasco

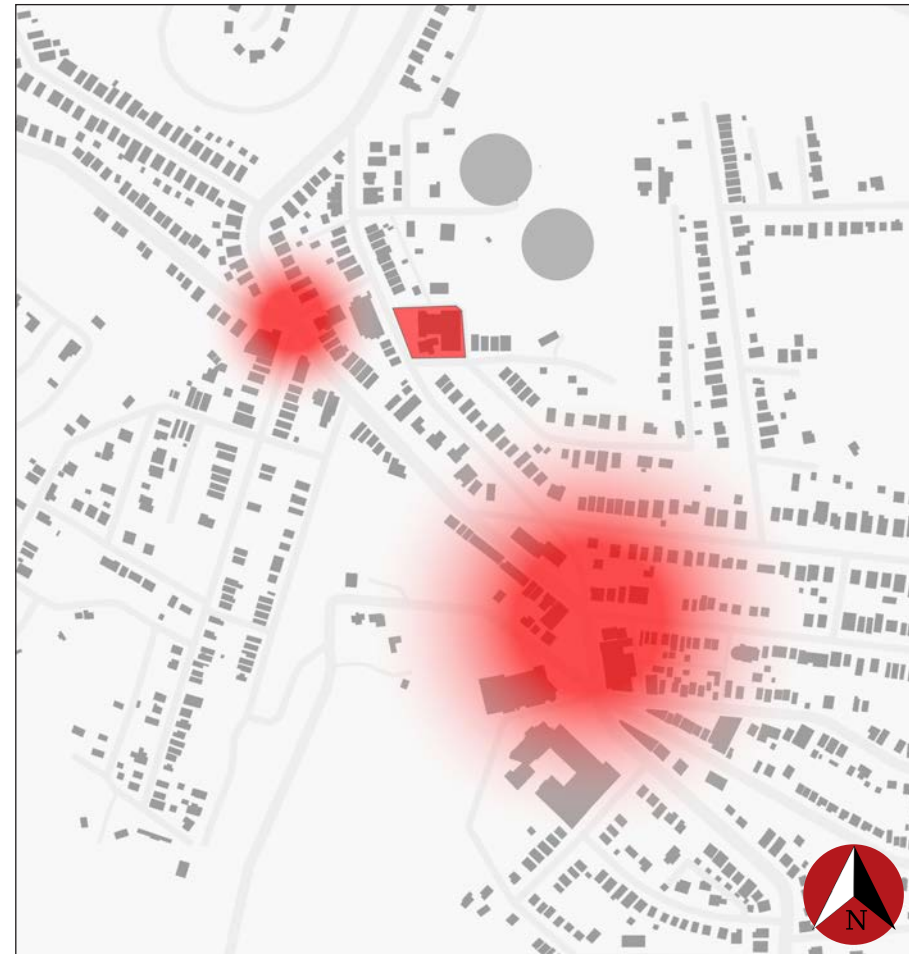


STREET HIERARCHY



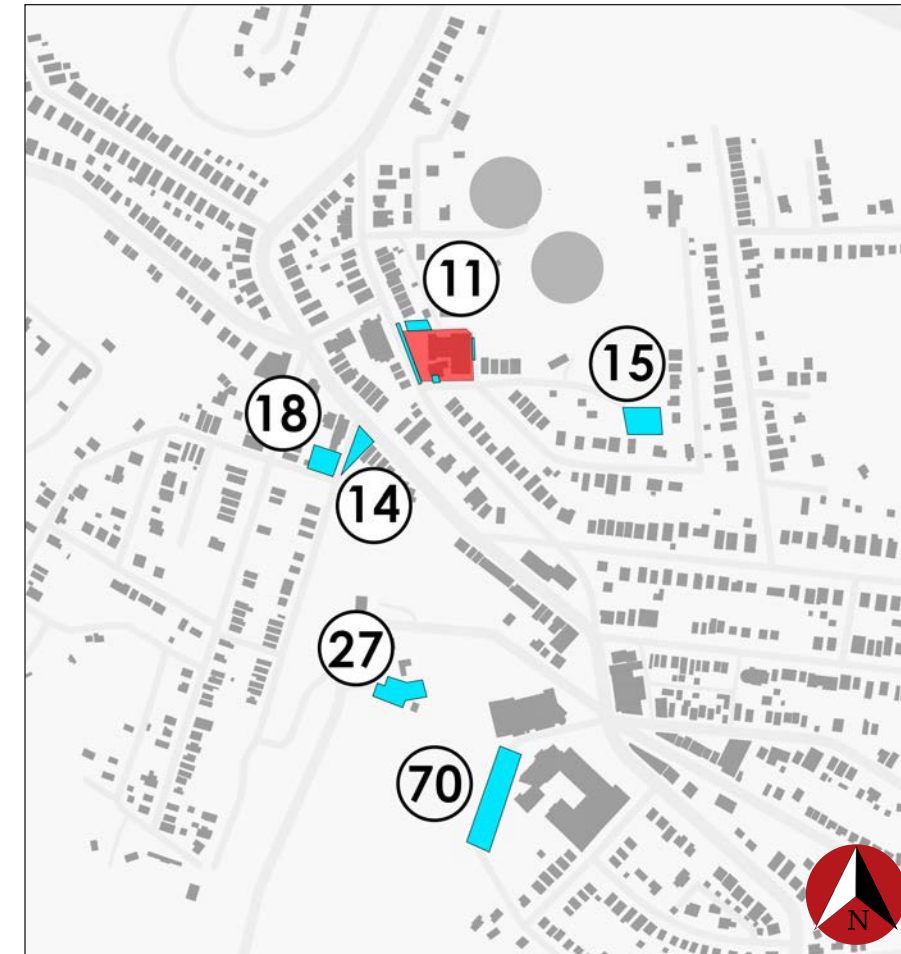
Major streets branching from Parkway North highway reach through the Perry North area leading visitors to our site located on the curve of this thoroughfare

PUBLIC INTERSECTION



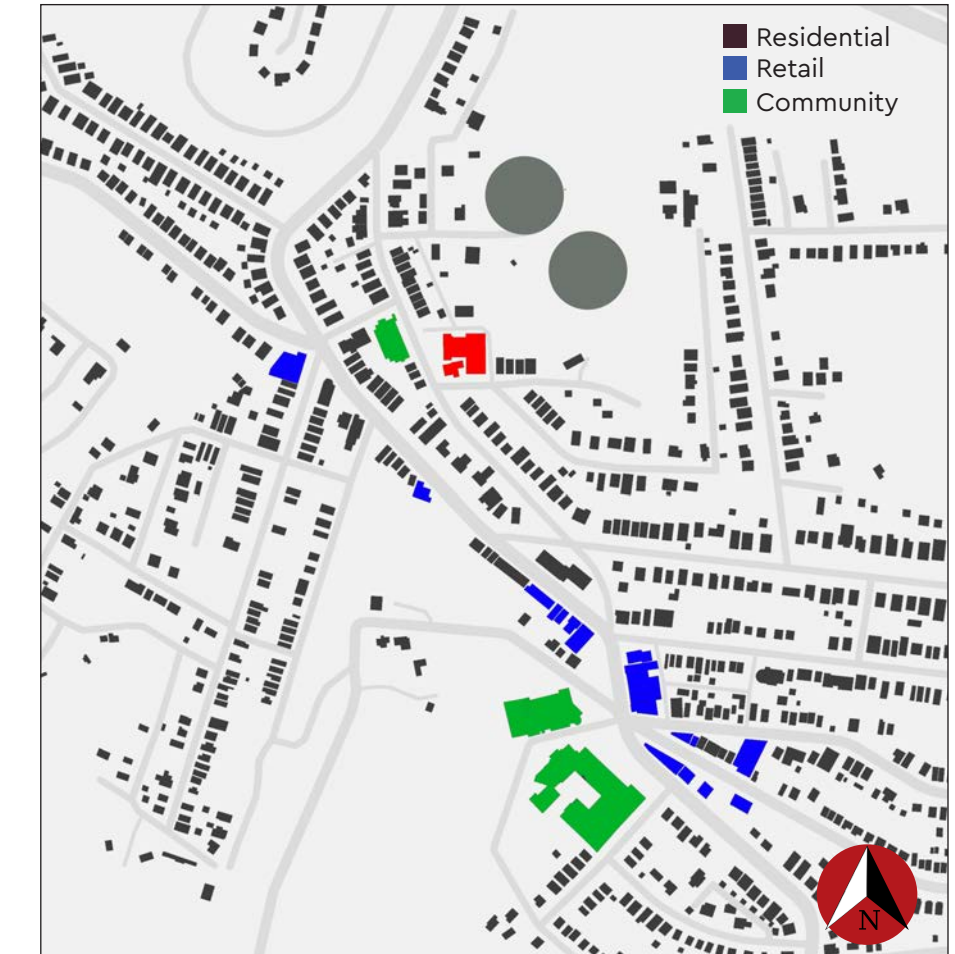
These nodes denote the areas in which public traffic is concentrated. With the large intersection located at the end of the street Fiasco is located on, this shows the likelihood of the direction of traffic flow to the site from that point

PARKING AREAS



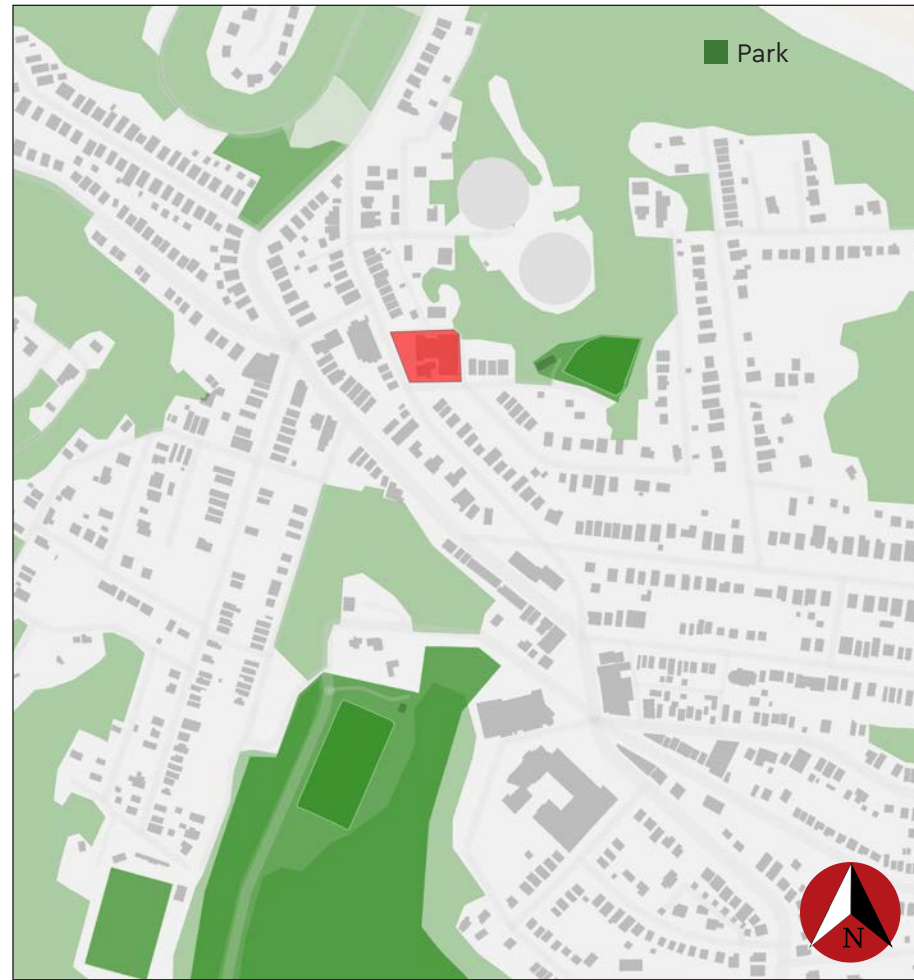
With parking being an obstacle for the site, alternative access to the building was developed. A shuttle system running from each of these parking locations will supplement the small amount of available parking due to the pre-existing conditions of the site

FIGURE GROUND



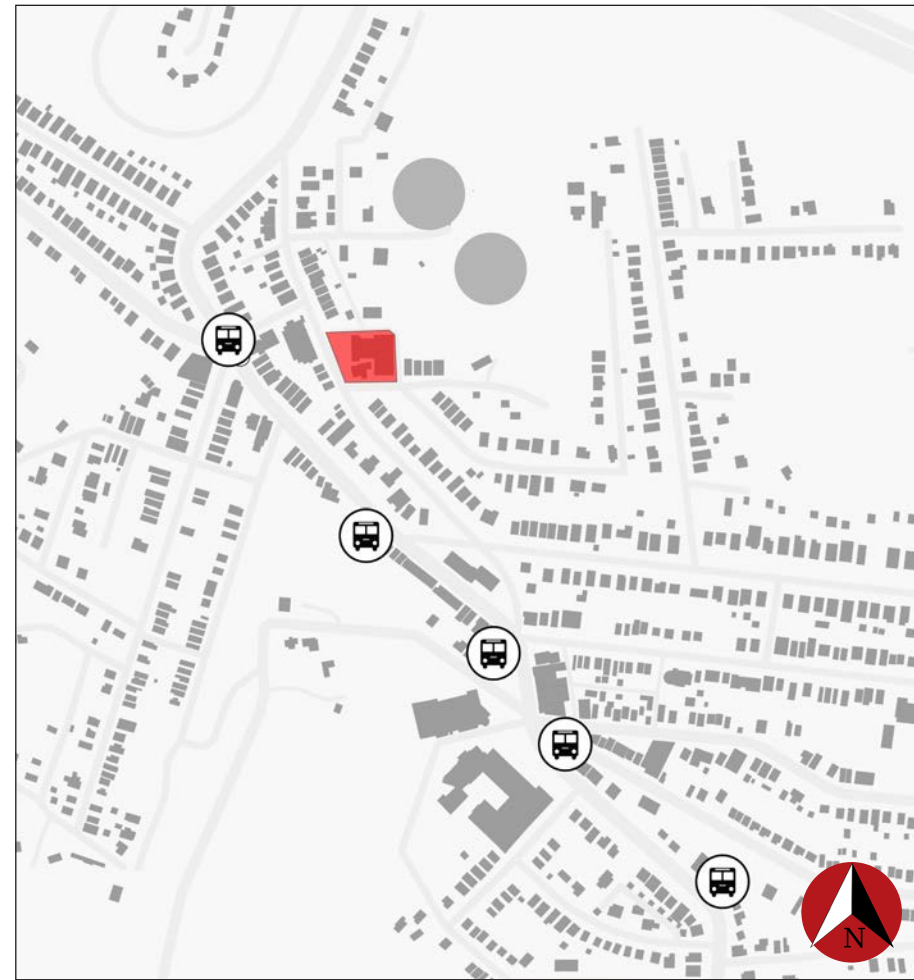
This figure ground exemplifies the amount of residential areas located around Fiasco. Small areas of retail buildings can be seen in blue, while community buildings can be seen in green

GREENSPACE

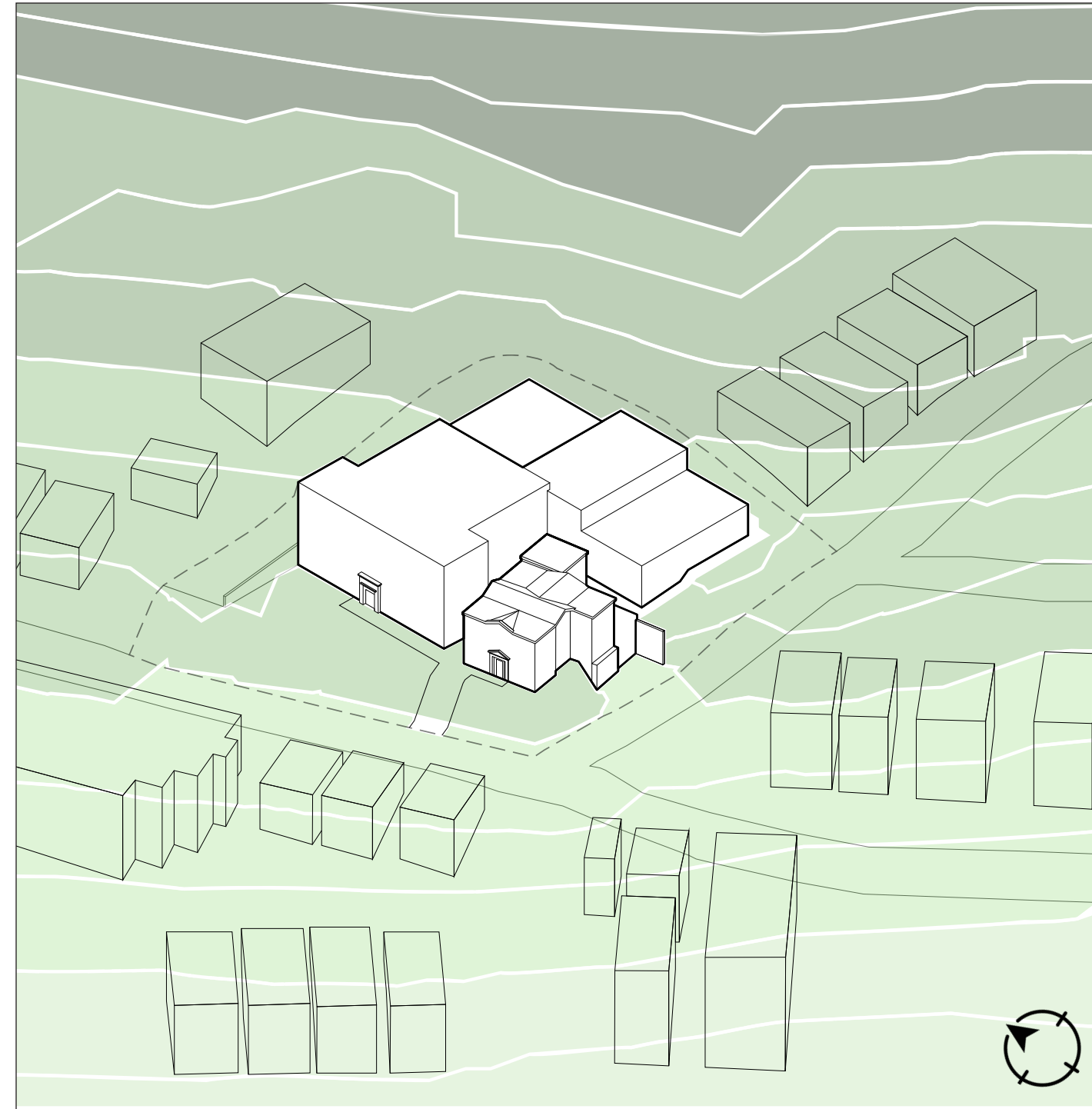


While still being part of Pittsburgh, Fiasco benefits from its distance from downtown by the mass amount of vegetation in close proximity. With two parks within less than a mile away, and lush forest surrounding, the biophilic effects can be quickly recognized by visitors of the site

PUBLIC TRANSPORTATION



Perry North supports its pedestrians with a local bus system that reaches through the main thoroughfare of the area. While plenty of bus stops are located along this route, it is noticeable that outside of this main street, access to public transportation is minimal



One of the most striking elements of this project is the topography of the site and its surroundings. Shown here is each topography lines shown at 10ft intervals. As downtown Pittsburgh sits at the height of the confluence of the two rivers, Perry North sits at the highest elevation in the city. Because of the change in topography, each floor of the building also has access to the ground, as the terrain rises from front to back of the site. This creates multiple issues but also introduces interesting elements to the project. The height supplies Fiasco with an incredible viewpoint of the city, besting even the view of the observatory located nearby.

SITE PLAN

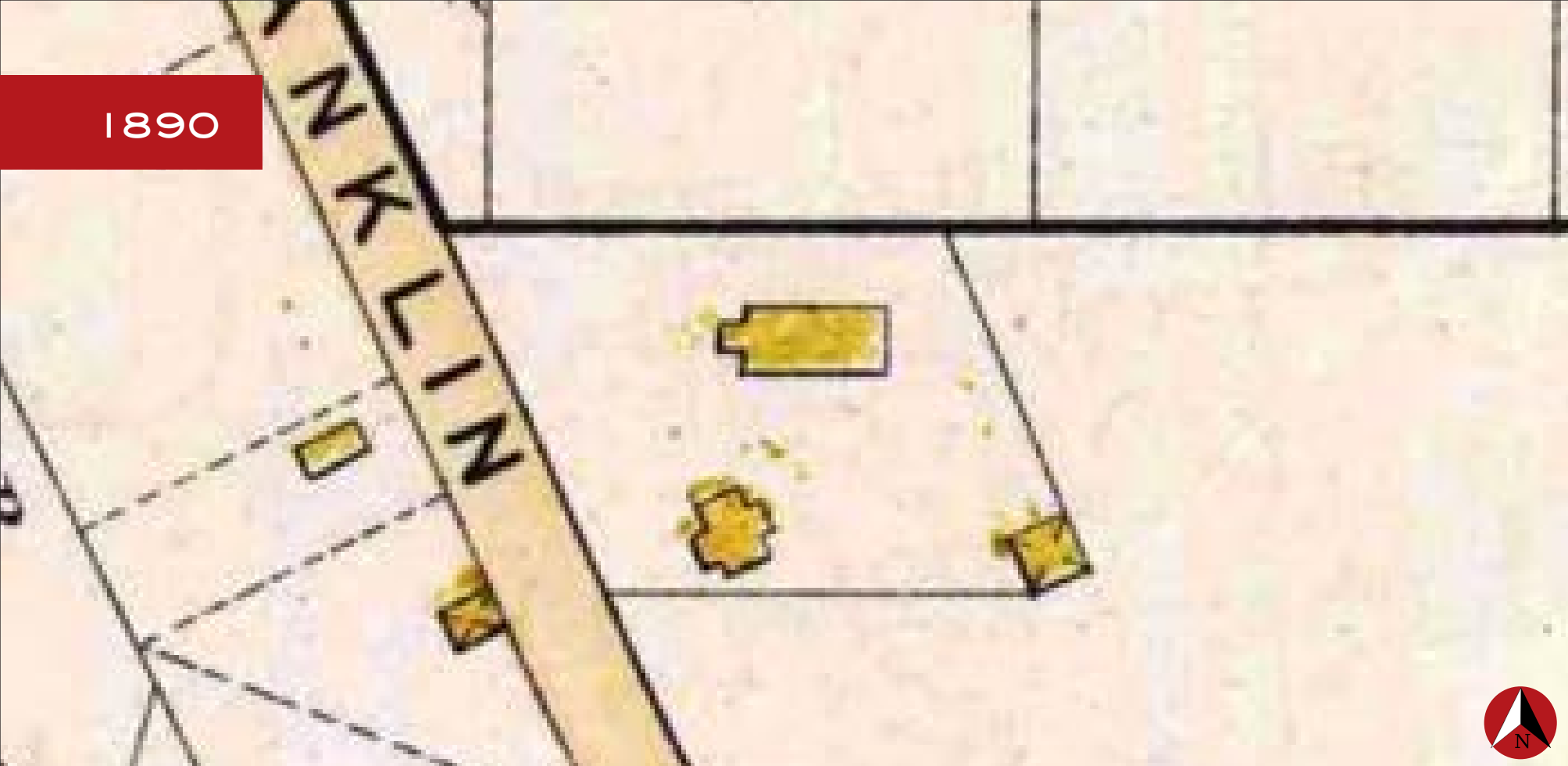
The site front is located on Franklin Road, while Santiago street acts as an access street that wraps behind. Backed up to the forest that leads to the reservoir, the main facades of the building face west and south. Neighbored by single family housing, Fiasco is embedded in the community surrounding.



Analyzing the site made notice of the different elements affecting the building. The aggressive terrain change from west to east creates effects of access and vantage points around the building. This effects the direction of pedestrian traffic as it moves through the site, starting from the main stair and diverting through each entrance. Instead, natural progression pulls you into the canyon between the building as it is in line with the entrance stair, directly to the core of the building. Sun path and wind direction also take into play as the vantage points are determined, and elevated exterior access is evaluated

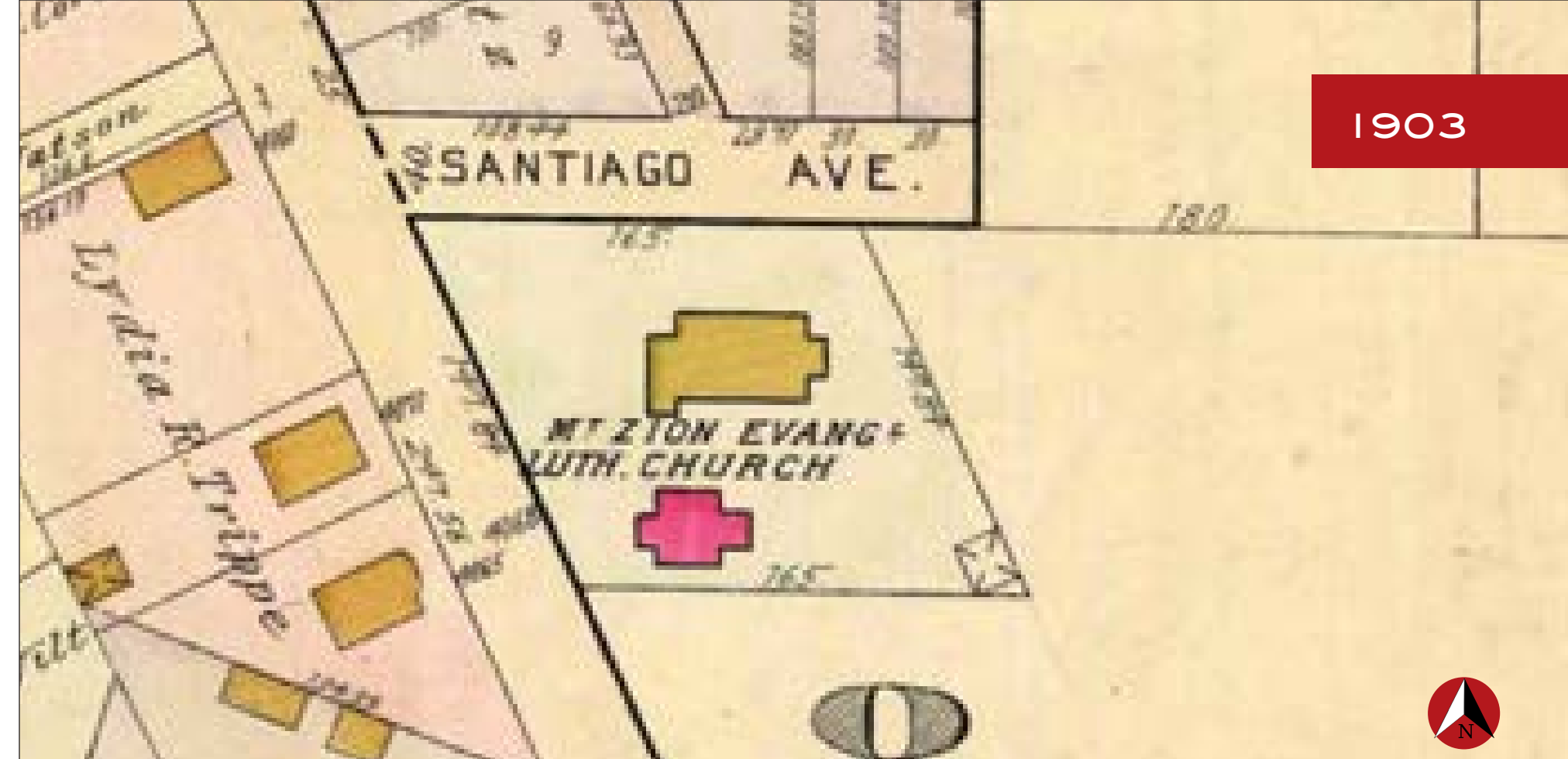


1890



As I researched into the history of the Incarnation Academy, I was able to locate site information through Sanborn maps, created periodically. This gave me a viewpoint into the past as it allowed me to see how the building changed and transformed over time. The building itself was built in 1875, and the next publication of these maps was done in 1890. Above you can see the oldest iteration of the Incarnation academy. This original construction still had the two separate buildings on the site, but both are significantly smaller. There also seems to have been a small structure on the southeast corner of the lot. Looking at its surroundings one can also notice the lack of neighbors. This denotes that this building is among the oldest buildings in the area, holding its history through all these years.

1903



In the 1903 publication of site maps you can see additions have been made to the main building. Close analysis shows a shift in the grid of the two buildings. Previously they are seen to be oriented differently, where here they are shown as the same orientation. This is unlikely to be a physical change but instead a more accurate interpretation of building information. Surrounding the site at this point, more structures are beginning to populate the area as lots begin to be subdivided to make way for current and upcoming residential units. Also the use of the building is noted as being the Mt. Zion Evangelical Lutheran church, denoting the changing of hands through multiple religious groups over time.

1923

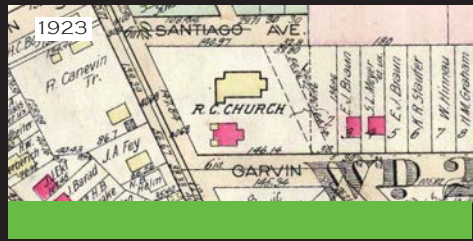
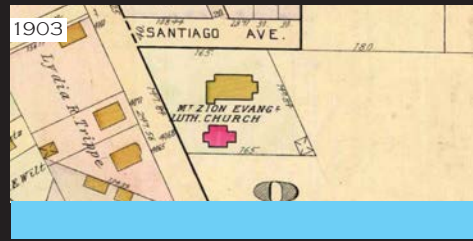
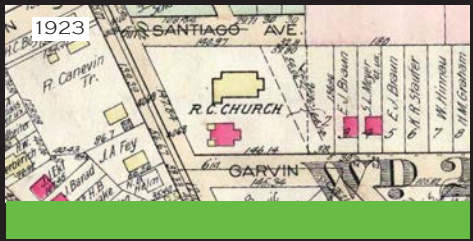
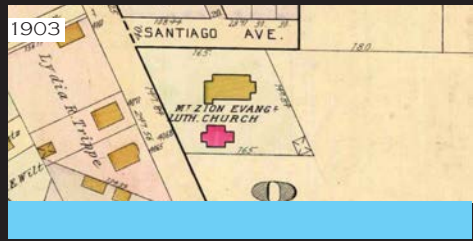
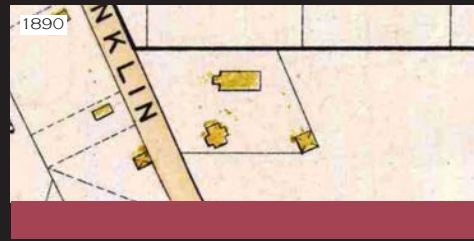


By 1923 Pittsburgh is currently at the height of its steel production era. This boom in industry can be seen reflected in the growth in population around the site. On the site itself we can see two small additions have been made at the west facade of the residential building and the small structure on the south east corner of the lot has been removed and left to the neighboring lot. Lastly we can see the change in the owners of our site from the Mt Zion Evangelical Lutheran Church into a Roman Catholic church.

1957



In this final map we can see the switch from hand drawing to aerial photography. This new technology at the time was very crude and legibility was diminished. In this grainy image though you can see the building form now resembles the structure today. Also we can see that the lot across the street has been bought and another church has been raised. At this point we can assume that our building was purchased to be used as an academy by the newly built Incarnation Church.

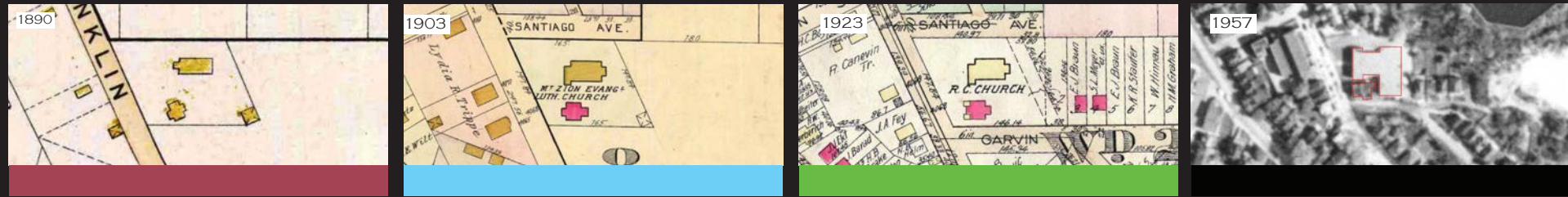


With the information from the historical site maps as well as the site survey I did in person, I can deduce approximately when each of the walls had been constructed. This evaluation would help me to decide which of the bricks are the oldest and therefore, most historically relevant. Much of this lowest floor is unexcavated as the topography rises from west to east. The residential spaces on the main floor can also be seen to have much of the existing brick preserved to this point, with the small additions on its west facade created to add bedrooms to its space.

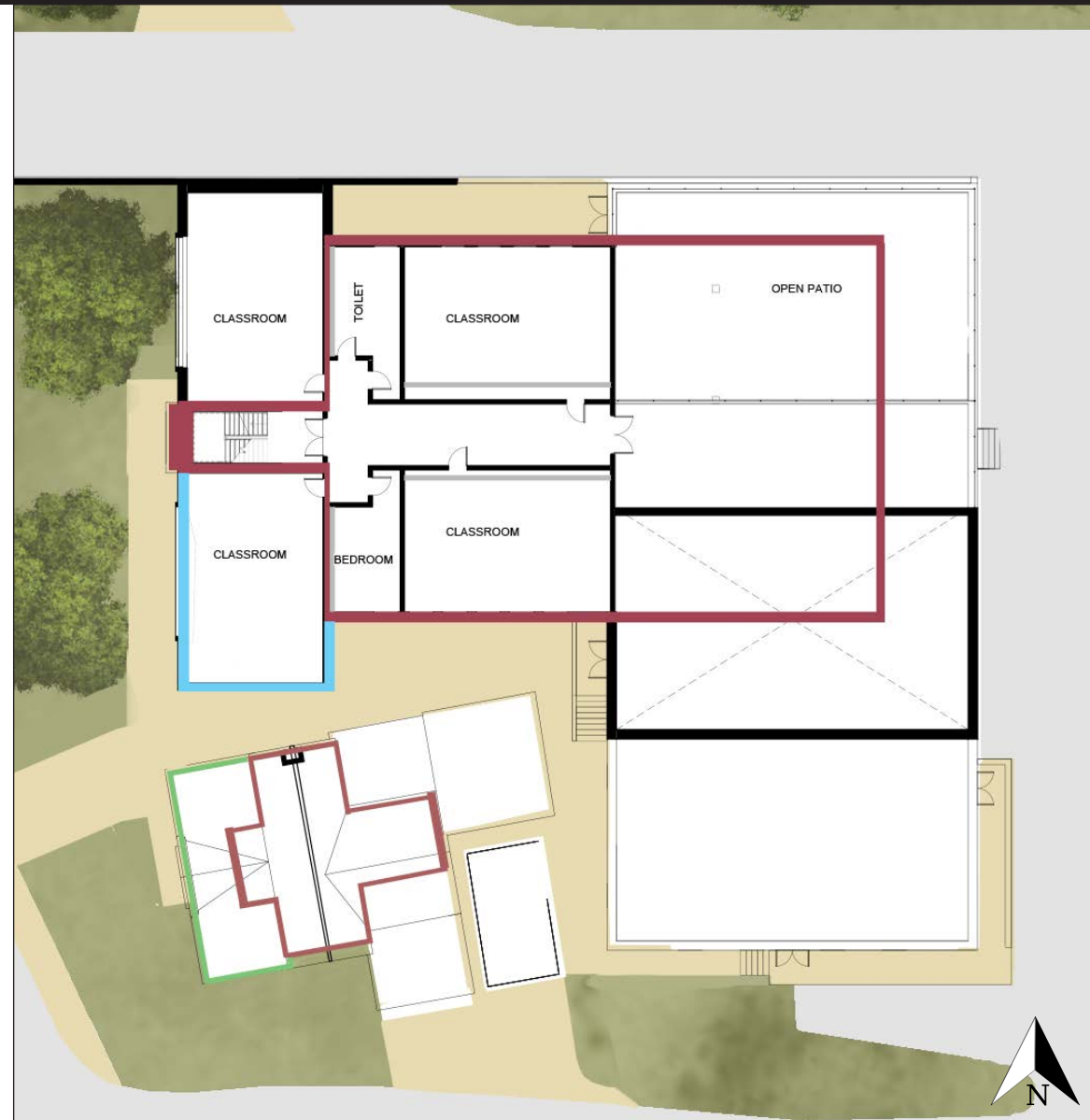


On this main floor you can see the full form of the building from 1890 as it lines up with the walls and columns. This denotes the classroom spaces were the first to be constructed and primarily used as the hall for the earlier churches. Only until 1957 were the walls for the double height gym space and supporting kitchen area constructed. The small addition done in 1903 can be seen to be the stacking classrooms on the west facade and another addition after 1957 was made to match on the other side. The residential space also expanded to accommodate more bedrooms spaces to its upper floor.





On the uppermost floor the classrooms are replicated and stacked from the lower floors. One can also see the double height space from the gym as it extrudes up creating enough room for the full basketball court. An open area on the back of the main space is opened up to create an outdoor area that is enclosed only by a chain link fence. The change in roof heights can be deduced from this level's plan as it includes open roof, double height view below, and ground level open area all at the same elevation height .



From the information gathered from the research and documents available as well as a visit to the site supplemented with a full survey, I was able to compile enough information to create an accurate 3D model with which to visualize the current building. This virtual reconstruction further informed different aspects of the building to continue to be analyzed and evaluated

The overall form is very rectilinear in both the main and the residential buildings. Facing westward, the main building's front windows gain the light directly into the classrooms. The front pediment can also be seen bringing people into the main building.



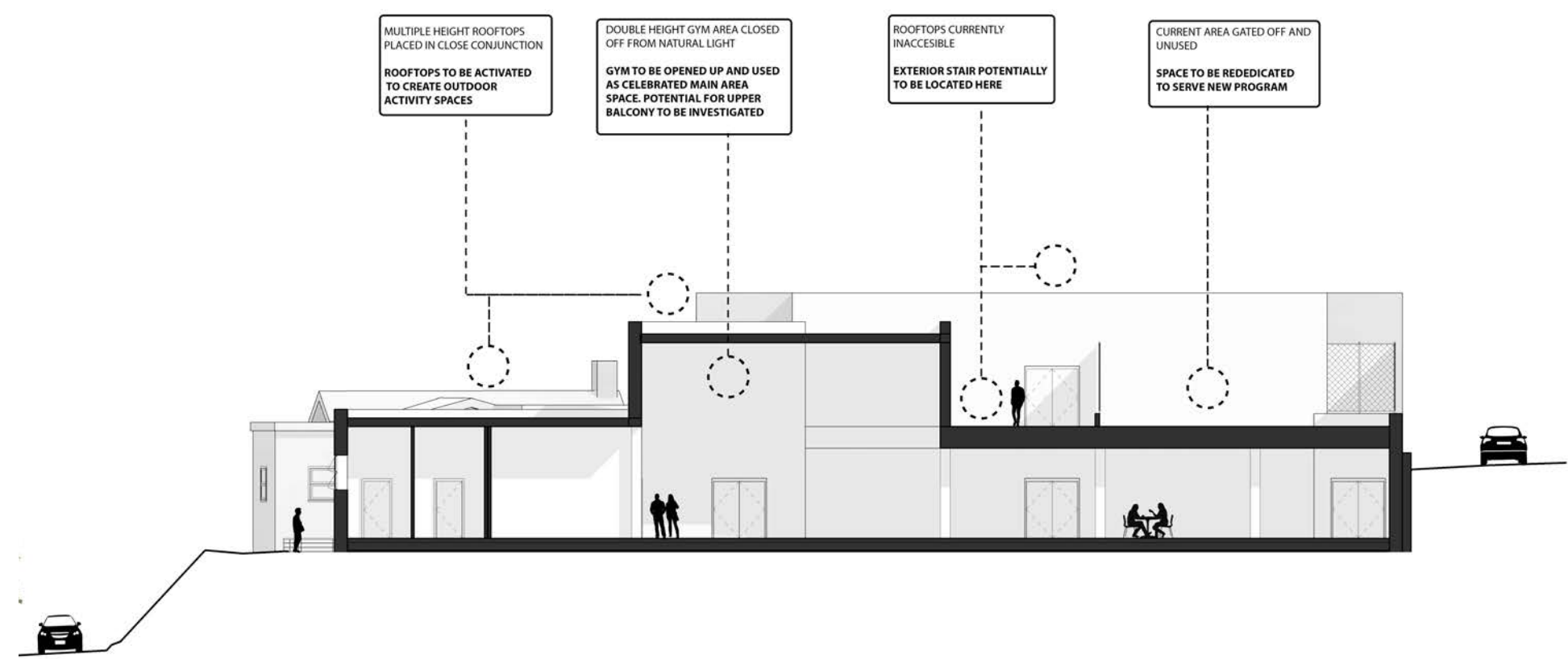
From this southwest corner you can see the stairs from the street, which one must trek upwards just to reach the base floor of the building. Also the composition of the main and residential buildings can be seen to contrast in size, but stay consistent in material.

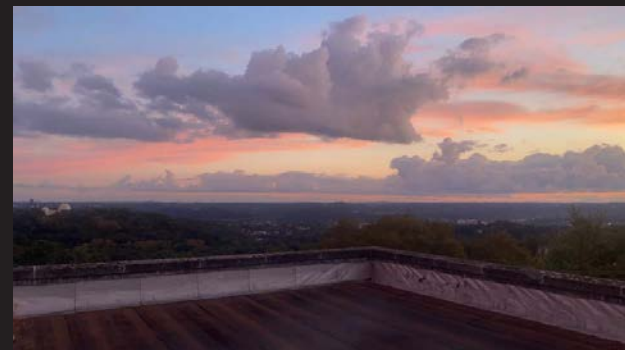
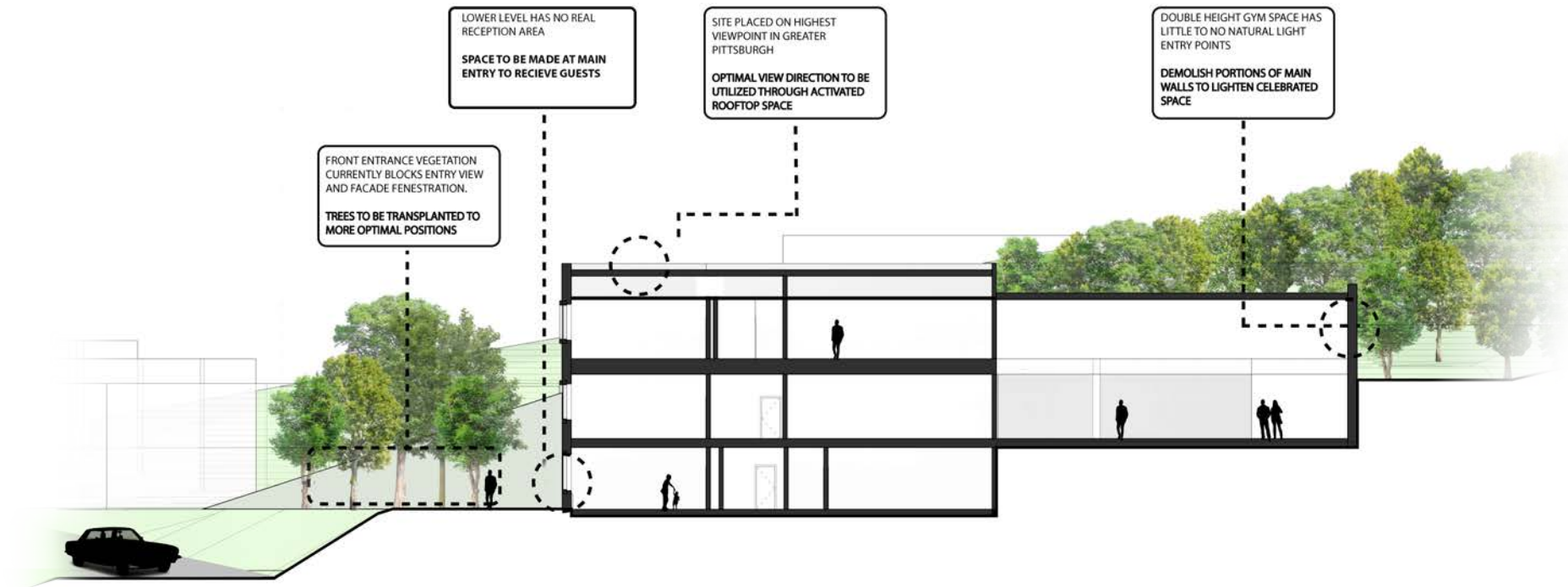


The southern facing facades can be seen here. At this viewpoint, the multiple heights for the rooftops throughout the site can be seen in depth. Also, below the residential space there is reserved parking for those living in the home.



From this northwest corner, the open outdoor area can be seen. This corner is where the topography meets at its highest point in the site, with the access street sloping at a steep grade to meet back to Franklin Road

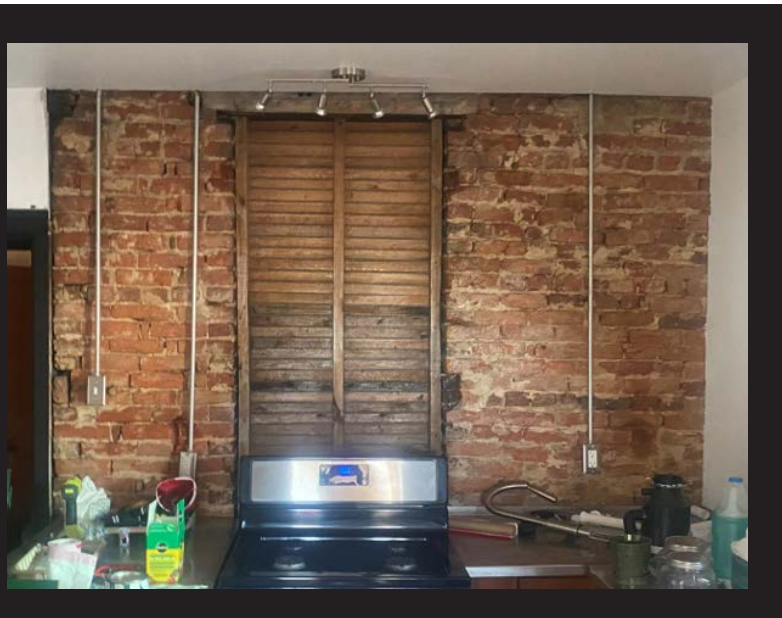




PRESERVATION

The preservation step during this process is where it is determined what parts of the existing building are vital to the building's history and character. Here are a few of the most important preservation items.

- The existing brick from its initial construction is the oldest visible material on the site, with its history being held since 1875
- The existing structure is steel columns and beams that are exposed in some areas and encased in CMU blocks in others
- The pediment at the front of the main building is an identifying aspect. It is constructed to be an identifier, having its name physically engraved into it.
- The view over Pittsburgh is an incredible aspect of the building that exists but is not utilized



Because the main material of the facades are existing masonry, and it was identified as an identity defining characteristic, actions were taken to preserve the oldest sections as much as possible. Research into masonry preservation gave insight on what methods are actually achievable.

Single brick and brick section displacement is a useful method for masonry preservation as it allows the designer to remove the existing bricks to then be used elsewhere. This technique preserves each piece's integrity and appearance caused by natural weathering on its surface. This process of removal and replacement can be used in multiple ways such as filling in doorways or windows on a facade, or extending and creating new portions of walls with bricklaying types that are sure to match. To deconstruct and rebuild masonry with the same bricks also requires its reconfiguration to match its previous state by replicating the aesthetics of brick masonry, categorized by color, pattern, and brick material.



RENOVATION



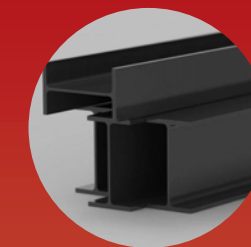
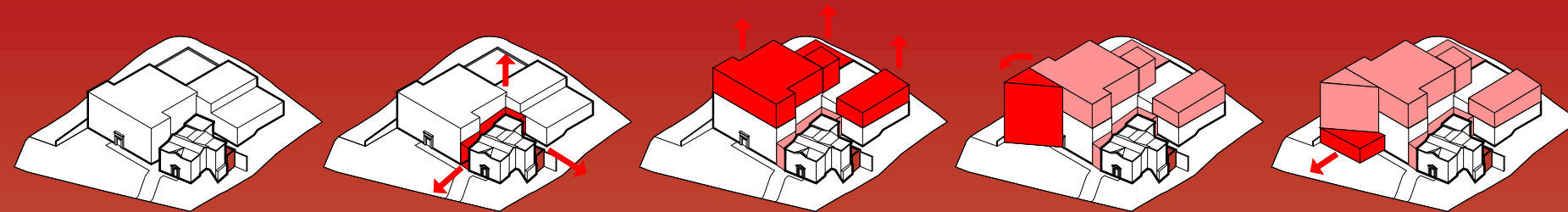
For the renovation of the building, the steps of observation and preservation were taken into account, while also applying architectural principles to make the space as a whole more efficient and enjoyable.

First of which was the front entryway, making the area not only ADA accessible, but also creating seating areas and providing greenery to the entry. This entry then leads you under the overhang, through the pediment, and into the canopy that leads to the main spaces.

Material choice was influenced by the existing building materials used, as well as the historical significance of steel production in the Pittsburgh area. The concrete and Cedar were chosen to offset these heavy materials to signify new construction as well as for their sustainable properties.



INNER CANYON HALL



Powder Coated Carbon Steel



Original and Reclaimed



Original and Reclaimed CMU Blocks



Fiberglass Reinforced Concrete



Red Cedar Lumber

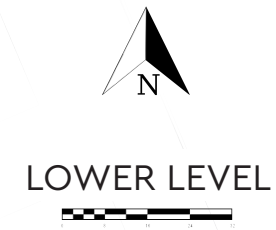
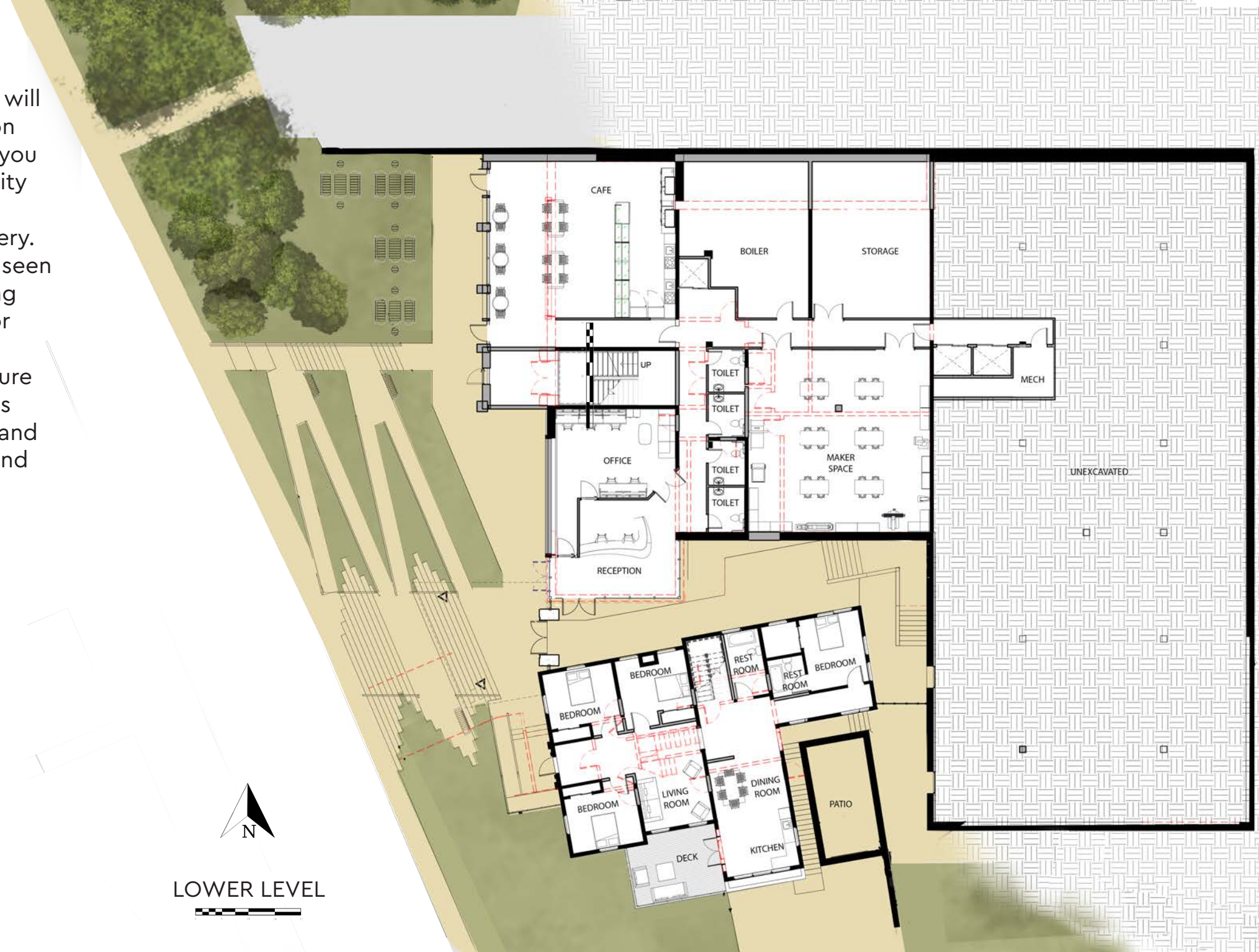


CAFE AREA

The entryway brings you to the relocated pediment, where one will see the cafe space and reception office. Continuing inside brings you to the maker space for community learning, while moving into the canopy leads you up to the gallery. The residential entrance can be seen at the entry node as well, leading to the communal living space for resident artists. Changes were made here to bring more exposure to the original 1875 brick facades while also simplifying its layout and adding more bedroom spaces and an outdoor deck area.



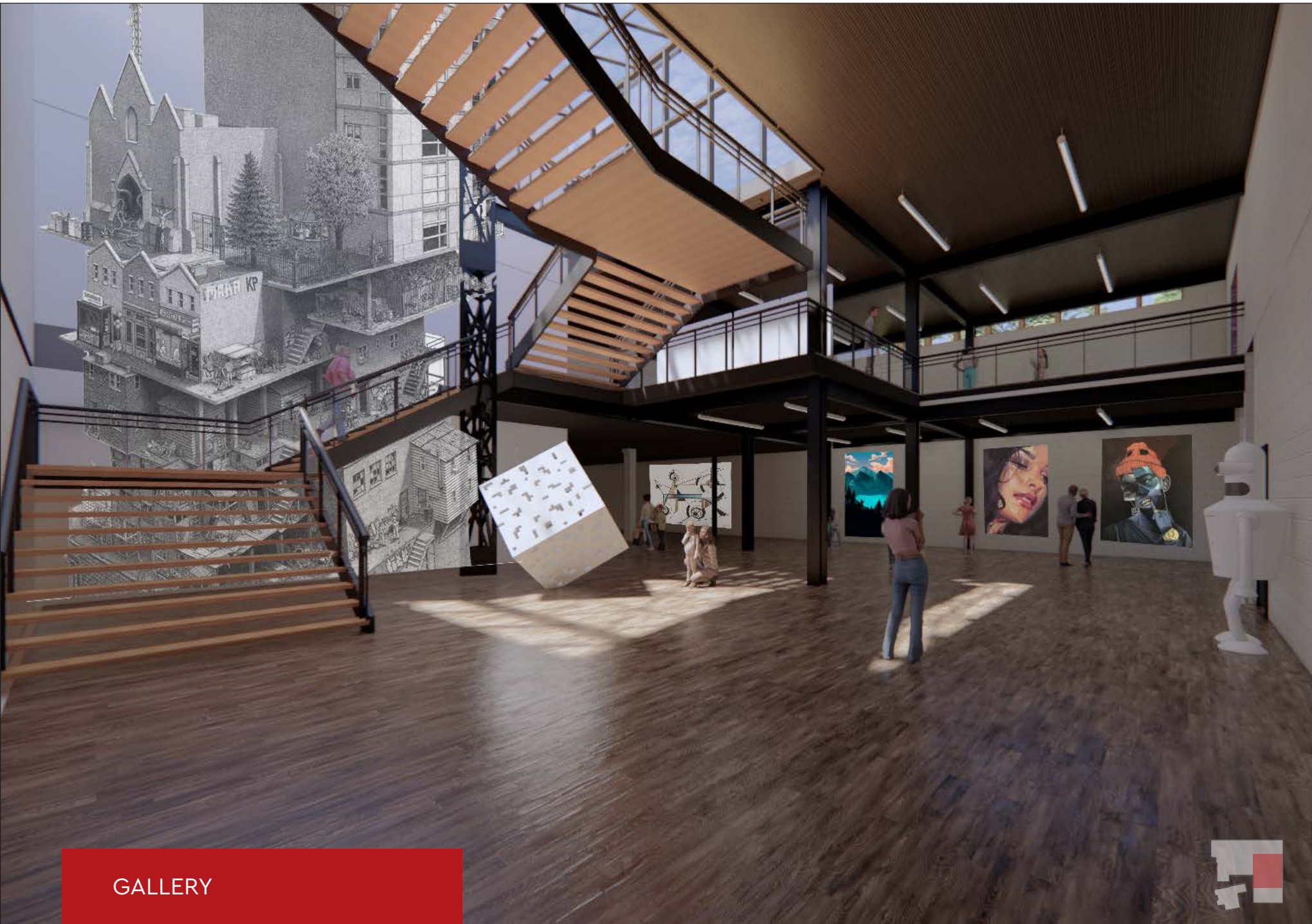
MAKERSPACE



On this floor you can see the main double height gallery space directly at the end of the entry path. This area is accompanied by an exhibition area, learning kitchen, classrooms and multiple installation spaces to create an environment of education, art, and entertainment in the space. The residential building's change in layout has continued to add more bedrooms of different sizes to accommodate those whose residences are longer accordingly.

RESIDENCY SPACE





GALLERY



INSTALLATION SPACE





GALLERY VIEW 2

The central stair from the lower floor brings you to the added upper level of the gallery, allowing for more activated space in the double height area. The new floor leads to the upper layer of installations and classrooms while also leading to the greenhouse, where visitors can grow fruits and vegetables that they are taught how to prepare in the learning kitchen directly below.

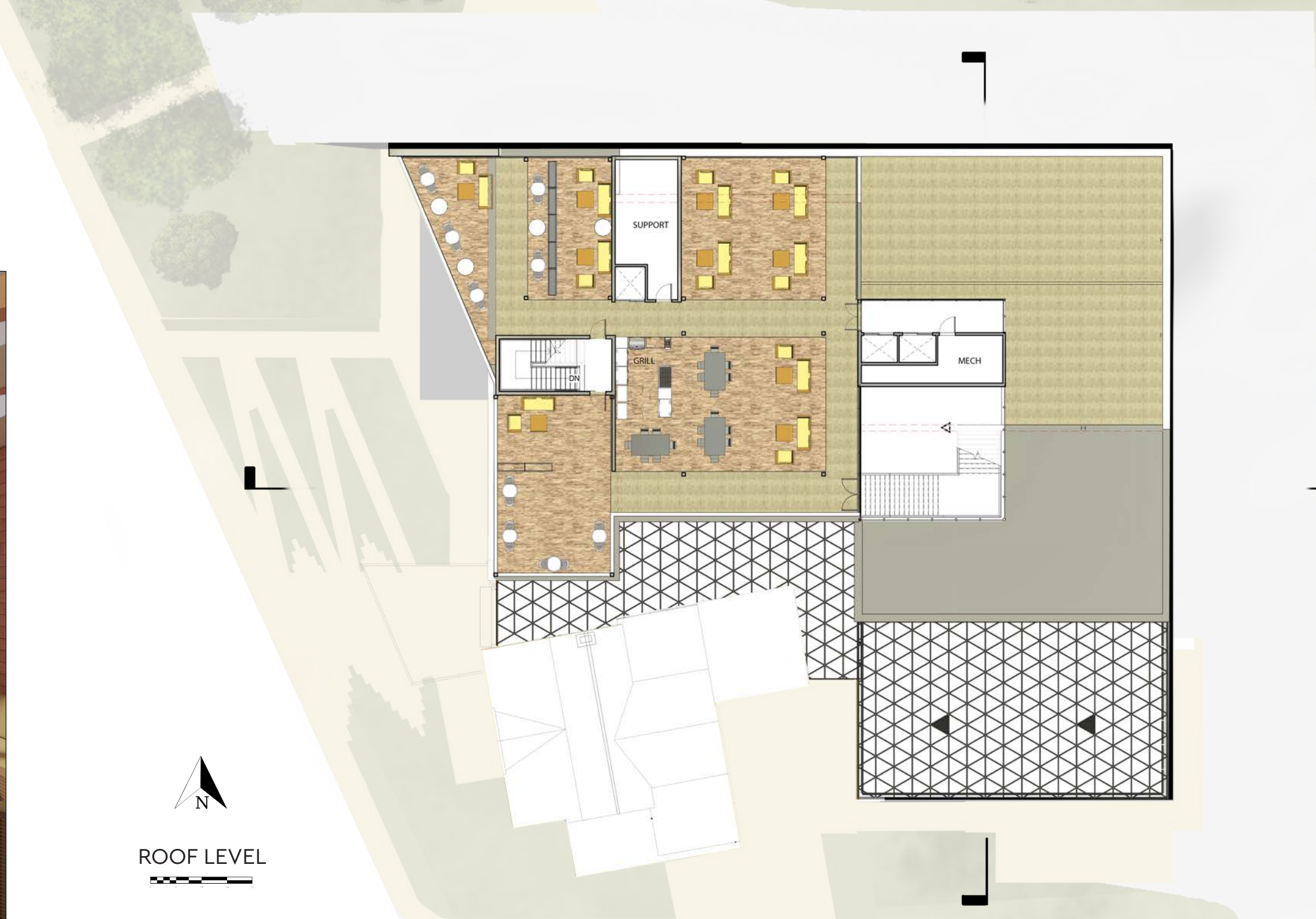


GREENHOUSE ROOF AREA



The central stairwell continues vertically through the building moving up onto the roof level inside a glass enclosure. The roof space has been activated to take advantage of the incredible view of the city, allowing for gathering space to be used as a relaxation area, with multiple seating spaces and a full commercial kitchen and grill to host visitors as they enjoy the Pittsburgh skyline.

ROOF AREA

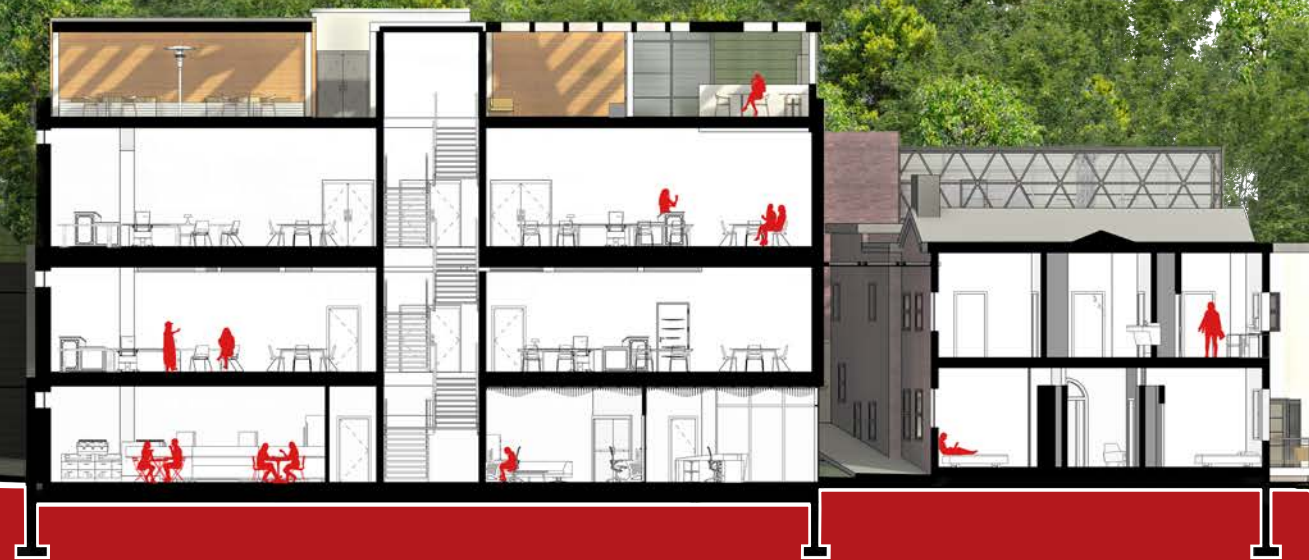


N
ROOF LEVEL
[Scale bar]

WEST ELEVATION



SECTION A



The multiple levels of the main building are composed of many communal spaces for art and education. The classroom spaces stacked above provide a flexible area to be used for whatever educational purposes the instructors see fit, while the makerspace in the basement supplies the tools and machinery to create any and everything the artists or visitors can imagine. The residential space will house the artists and provide space to live and collaborate with other creatives



SOUTH ELEVATION



SECTION B

The double height gallery space is the most celebrated area, as it's double height wraps around the core of the building. The central stair reaches from the main floor up through the roof allowing visitors to traverse the height of the building freely. The rooftop adds more gathering space at the top of this complex, allowing the community to take advantage of the elevation of the site and the views that come with it.

CONCLUSION/ FINAL THOUGHTS

To adapt a building to its new use is a process that not only requires architectural ingenuity, but also a respectful relationship between the old and new. To honor a building while changing it is a process that can be treated in many different ways depending on history, site, community, and any other number of factors. No matter the situation, the four steps outlined in this thesis are to be completed to ensure the best result, as they include all of the necessary processes that will yield a well thought out project.

Through the buildings transformation, the new program will continue the life story of this structure from 1875 and into the future. Fiasco will benefit from the history and community it is now tied to, while in response, the community and history of the site will also benefit from Fiasco's new presence. This symbiotic relationship should be the goal of all adaptive re-use projects as we look forward towards new architectural endeavors.

ADDITIONAL MEDIA



EXPRESSION



WONDER



EXPLORATION

As a study done alongside my thesis I have produced these vignettes through a screen printing course. Each of these pieces are to describe three different experiences that Fiasco will host. First on the left is expression through art that is created by the installation artists. Second is wonder from the perspective of someone seeing the building from the outside and is pulled in through curiosity caused by the sudden change in form. Last is exploration, from the perspective of visitors to the cultural center.

The study of screen printing felt reminiscent to that of this project. As each layer of paint and shape is placed on the canvas, it continues to redefine the final product as a composite piece whose whole is greater than the sum of its parts.

IMAGE CREDITS

PG 12

Map showing location of Incarnation Academy. Google Earth, earth.google.com/web/

PG 14

Allegheny Observatory - The Pittsburgh 1 ;<https://thepittsburgh100.com/history/2018/07/16/allegheny-observatory/13102> [Fair Use]

Mattress Factory ; Mattress Factory ; O’Driscoll, Bill (May 31, 2018). “Visionary Mattress Factory Founder Barbara Luderowski Dies At 88”. WESA. [Fair Use]

Heinz Field: Live Nation ; <https://www.livenation.com/venue/KovZpZAFa6nA/heinz-field> [Fair Use]

Andy warhol museum: Warhol.org; <https://www.warhol.org/museum/> [Fair Use]

Carnegie museum of art: Post Gazette; <https://www.post-gazette.com/ae/art-architecture/2021/11/08/Carnegie-Museums-Pittsburgh> [Fair Use]

Pittsburgh convention center: Visit Pittsburgh; <https://www.visitpittsburgh.com/meetings-blog/david-l-lawrence-convention-center/> [Fair Use]

PG 15

KDKA Satellite: Cord Cutters News; <https://www.cordcuttersnews.com/nextgen-tv-is-live-in-pittsburgh/> [Fair Use]

Brashear resevoir: Post Gazette; <https://www.post-gazette.com/life/homes/2016/07/15/Observatory-Hill-s-Neighborhood-History-Tour-offers-a-look-back-to-the-past/stories/> [Fair Use]

Riverview Park: Discover The Burgh; <https://www.discovertheburgh.com/riverview-park/> [Fair Use]

Perry Academy: Tribune Review Live; <https://triblive.com/local/perry-academy> [Fair Use]

Incarnation of the Lord Church: Catholic Church Directory; https://catholicchurch.directory/mass-times/pa_pittsburgh_incarnation-of-the-lord-parish [Fair Use]

Note: All other photos created or taken by the author

IMAGE CREDITS

PG 22-25

Sanborn Fire Insurance Map from Pittsburgh, Allegheny County, Pennsylvania. Sanborn Map Company, Vol. 3, 1890;1903 Vol. 3; Jun, 1923; Republished 1957, 1957; Map. Retrieved from the Library of Congress, <www.loc.gov/item/sanborn07911_005/>. [Public Domain]

PG 37

Brick Masonry Removal: ArborTech; <https://droold.com/arbortech-brick-and-mortar-saw-is-the-perfect-tool-for-easy-safe-and-fast-brick-removal/> [Fair Use]

PG 40

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