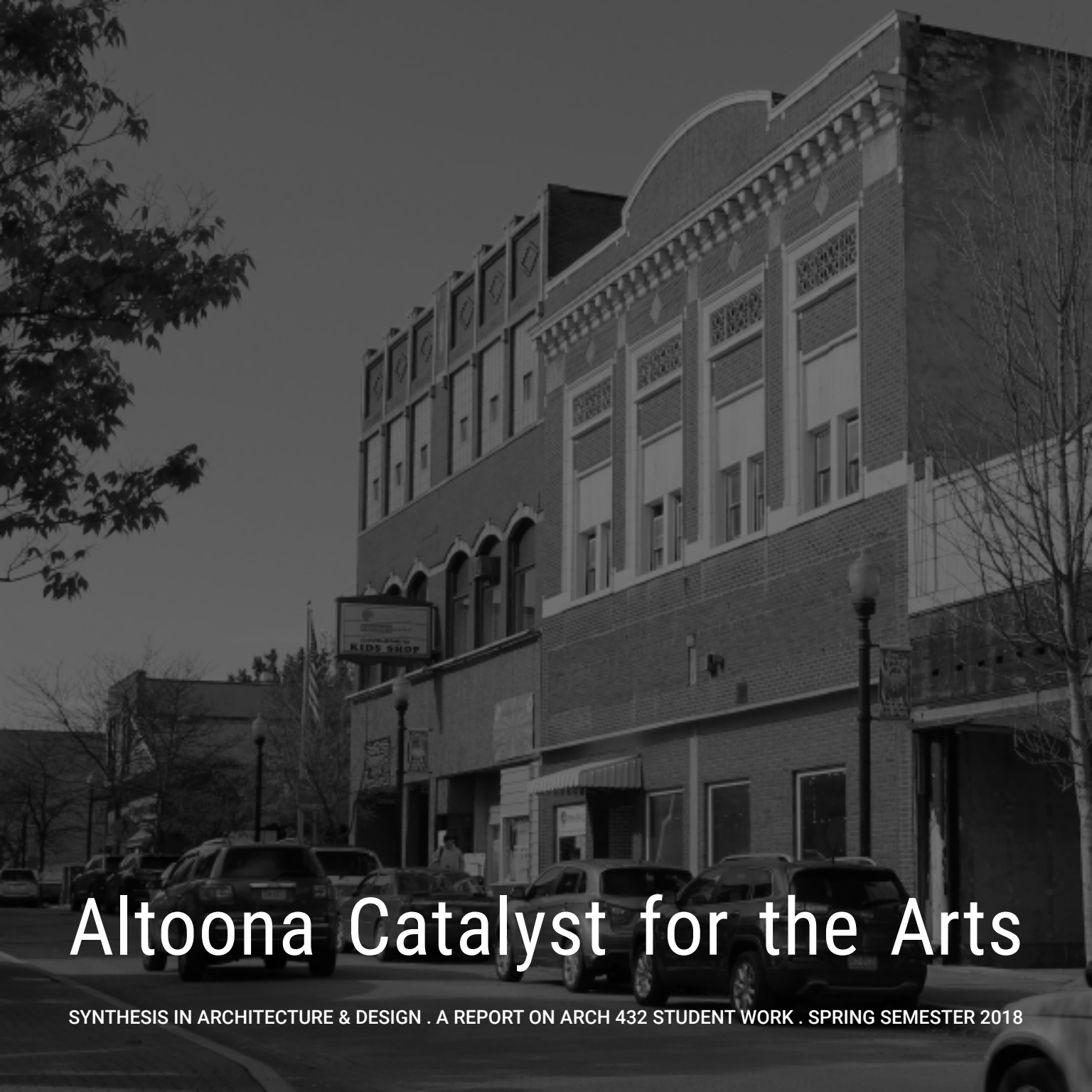

Altoona Catalyst for the Arts

SYNTHESIS IN ARCHITECTURE & DESIGN . A REPORT ON ARCH 432 STUDENT WORK . SPRING SEMESTER 2018

THE PENNSYLVANIA STATE UNIVERSITY
ARCH 432 Architectural Design VI
Spring 2018

Altoona Catalyst for the Arts

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CONTENTS

1 Introduction

Altoona is on the verge of a Renaissance! This is the vision of Arts Altoona and the Altoona Renaissance Team, whose mission is to develop and implement strategies that will increase the economic vitality of downtown Altoona; strengthen the city's role as a center of education, cultural, and social activity; and enhance Altoona's reputation as an exciting place to live and visit by marketing the city's unique history, cultural assets, and recreational opportunities.

The Altoona Renaissance Team's most important role is to create and implement big ideas for Altoona. Based on research conducted in cities throughout the Commonwealth of Pennsylvania and along the eastern seaboard, utilizing best practices for using the arts as an economic driving force to transform Altoona from a typical rust belt city to a brain belt city. Core focus areas for the Altoona Renaissance Team and their citywide partners are: education, culture, and quality of life. The following are proposed:

1. Experience Altoona: Focus on livability in expanding activities and assets that increase the number of people who live in Altoona and support economic growth of the city.

2. An economic plan for the arts, focus on developing in expanding cultural activities in assets to increase the number of people who visit Altoona and Support to economic growth of the city.

3. An education think-tank: expand or improve educational offering and experiences in Altoona that are not duplicative of any K-12 educational initiatives already underway. Special focus on providing opportunities for the approximate 1/3 of the population that is at or below federal poverty guidelines. (Altoona Arts Strategic Plan 2017-20, Executive Summary)

Central to Renaissance Altoona's vision is making a space for creativity and guiding development to support creative production and consumption. Here, the plan advocates for an incubator program in the city, establishing a hub of creative production downtown and further supporting arts and culture venues. The 'Artist Maze" will be a visual arts center inspiring innovation through opportunities to experience the creative process and engage with artists. The Maze will encourage community participation in the visual arts through its exhibitions, open studios, art residencies and art education classes for all ages. Where innovation and creativity are explored, experiences, shared and celebrated. (Altoona Arts Strategic Plan 2017-20, Executive Summary)

The Artist Maze is envisioned as a mixed-use facility combining food/beverage service with resident artist studios and galleries. An existing building, formerly known as the JK Sports Building or Kress Building, located on 11th Ave will be renovated to "serve as an anchor on one end of the proposed downtown core Creative District. Additional studio space will be reserved for visiting artists who can be in residence for varying periods of time and provide local artists, residents and visitors with master classes and workshops.

The Altoona Renaissance Team are interested in creating a community arts space where traditional,

expressive and conceptual artists come in contact with one another and the larger community. **"We envision a place where art is paramount and the atmosphere is intelligent, educational and welcoming."**

Twenty-four fourth-year architecture students worked in teams of two or three to research the community, analyze needs, and propose integrated solutions to transform an existing Altoona landmark, the Kress building, into a cultural hub and community asset. These designs were realized through an interactive partnership with Penn State Sustainability Institute Sustainable Communities Collaborative (SCC), Penn State Altoona, and Arts Altoona and their community partners. The project work is included herein.

Street view of the Kress Building and adjacent building.

PROJECT SITE

The Altoona Creative District bridges Downtown, Center City, and Logantown in Altoona, Blair County, Pennsylvania. The former Kress Building, on 11th Avenue, has been identified as an anchor point within the district. It is located near the intersection of 14th Street and shares a party wall with existing buildings on each side. The building to the west will be renovated as a museum. There is a 'grandfathered' egress connection from the proposed museum to the second floor of the former Kress Building that must be retained. The building to the east of the site is being renovated as a much-anticipated bakery.

There is a service alley at the rear of the building. As a public amenity it may be possible to expand the existing Kress Building to accommodate the "Artist Maze". Local zoning regulations are to determine if additional stories can be added to the existing building; and if the use of "air rights" over the single story building is allowed. A public plaza, across 11th Avenue from the site, connects to the Amtrak Transit Station offering regional bus and train access. The plaza and 11th Avenue may be designed as an extension of the Art Catalyst, indicating its prominence in the Creative District.

Penn State's Altoona campus, a PSU Launch Box satellite space, other art- and entrepreneurship spaces and organizations are located around the "Artist Maze". A large building, the former First United Methodist Church, located a few blocks from the "Artist Maze" site, is proposed to become an Artist Education Center. Collaborative programs and activities include those for engaging youth (Arts in Motion) and at-risk populations (Pathways to

Above: **Aerial of view of the plaza between the Kress Building and the railroads.**
Below: **Krest Building front facade detail and back facade at the alley.**

Success).

“ARTIST MAZE” PROJECT

The goal is a building of an artistic community through socialization thereby removing the often-isolating effect of working as an artist in a rural area. That is a large space for artists to work, classes to be taught, exhibition, and art talks to be held. (The Altoona Renaissance Team, 2017)

There are four main areas of the Artist Maze catalyst for the arts:

- Exhibition and event space for sharing diverse arts endeavors, including fine arts, music, lectures, dance, new media productions, with the public;
- Production and education spaces for artists and the community;
- Residential space for visiting artists;
- Commercial space for a local food/beverage proprietor.

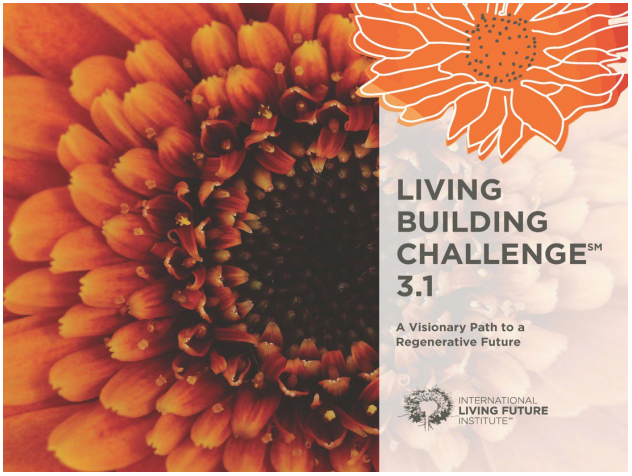
Each team defined the distribution and spatial needs for artist studios, education and exhibition space(s), resident artists, and café/commercial space based on their project research and interpretation of community needs.

SUSTAINABILITY AND CODE INFORMATION

Sustainability is integral to intentions for community and economic development. The “Artist Maze” builds on the embodied energy and history of its site while projecting needs for the future. Therefore, the design is to showcase sustainable development, meeting standards set forth by the Living Building Institute’s Living Building Challenge.

“The Living Building Challenge is the world’s most rigorous standard for green buildings. Going above and beyond LEED certification, Living Buildings strive for net-zero or net-positive energy, are free of toxic chemicals, and lower their energy footprint many times below the generic commercial structure.” (living-future.org) Each project presented here is organized according to the Living Building Challege petals: place, water, energy, health and happiness, materials, equity, and beauty.

All public, residential and workspaces must be humanely designed incorporating access to exterior views, controlled day-lighting and natural ventilation whenever possible. All public spaces will be ADA accessible and Universal Design Compliant. Egress requirements for all public, studio/production and exhibition and performance spaces must be International Building Code (IBC) compliant. Fire Safety requirements must comply with the local and national fire codes.



The Living Building Challenge 3.1 Standard Cover

2 Design reviews, workshops, and exhibition

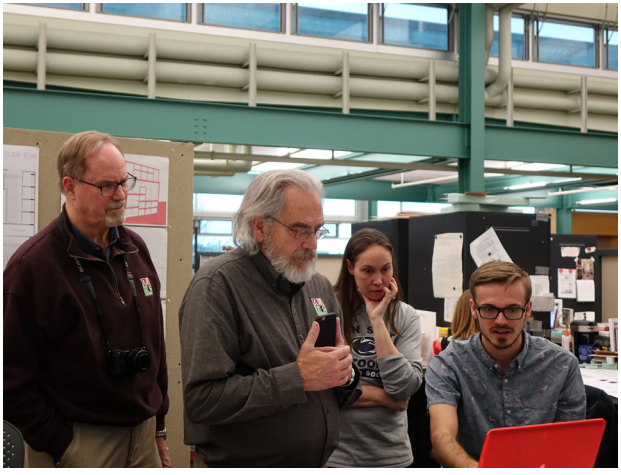
This project was supported through an interactive collaboration and partnership between the Hamer Center for Community Design at Penn State, Penn State Sustainability Institute Sustainable Communities Collaborative (SCC), Penn State Altoona, and Arts Altoona and their community partners.

The Spring 2018 collaboration started on January 16 of 2018 when students and faculty visited the project site and attended presentations and tours to hear and better understand the Arts Altoona perspectives and vision for the "Artist Maze" project. On February 08 of 2018, Arts Altoona and Sustainable Communities Collaborative representatives attended project schematic reviews and provided feedback to the students.

Further input on the student designs was provided by professional architects and the Altoona community during "Design Synthesis" reviews on April 5 and final project reviews on April 26 of 2018. In a grand finale, a public presentation and exhibition of student work was held in Altoona and attended by many community representatives and the media.

Lecture at Penn State Launch Box by Ken Decker, Arts Altoona Vice-President with the presence of Mayor Pacifico

Schematic design review with community partners at the Stuckeman School

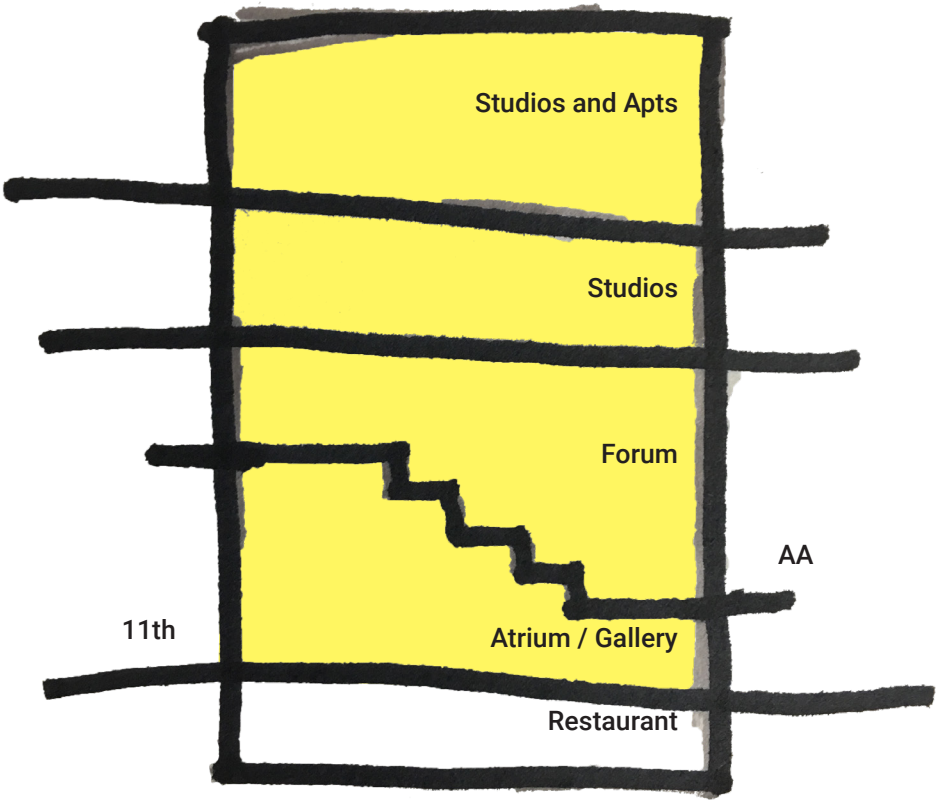


Studio workshop with Arts Altoona, Penn State Altoona, and Sustainable Communities Collaborative representatives

Design synthesis review

Final design review

3 Student Projects



Conceptual Section

THE BEACON

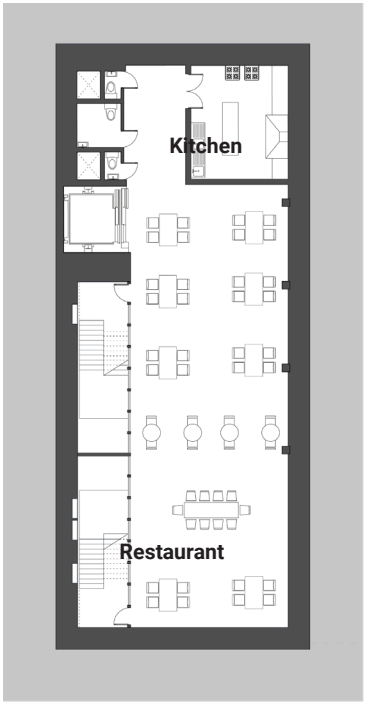
Jessica Molnar, Rebecca Sultz

Inspired by the historic nature of Altoona and the Kress building, we decided early that it was vital to restore the Kress building it to its original splendor and retain its historic status. In doing so, our goal is to create a destination for artists, tourists, and locals. Our proposal uses the Kress building as a centerpiece and as a “beacon” of the Altoona arts district, because of the beacon’s connotation with “hope” and “brightness”. The physical tenants of this concept are the use of light and visibility to not only draw people into the building, but to connect them to a variety of spaces once inside.

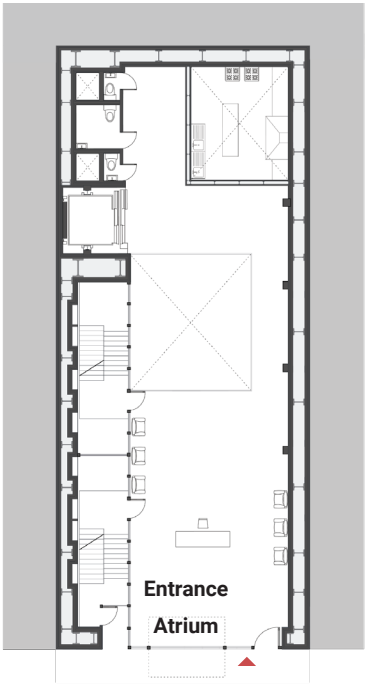
ORTHOGRAPHICS

After evaluating the surrounding businesses in tandem with our program, we felt it necessary to include:

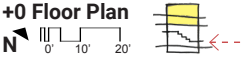
- A **Restaurant / Bar** that provides the opportunity for nightlife and supplements gallery spaces;
- An **Entrance Atrium** that opens up the interior of the building and doubles as permanent gallery space;
- A **Performance / Presentation** space that gives the opportunity for a variety of performance types;
- Some **Studios spaces** for creation;
- An **Artists' Marketplace** that provides an area for people to congregate and for artists to interact with clients or the general public;
- **Live / Work Spaces** that can be rented by traveling artists.

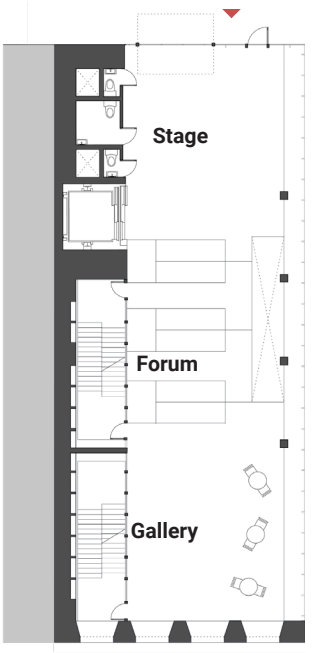


-1 Floor Plan



+0 Floor Plan



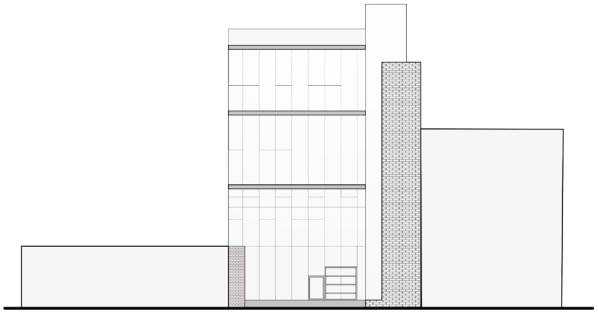


+1.5 Floor Plan

Building Plans

11th Avenue Elevation

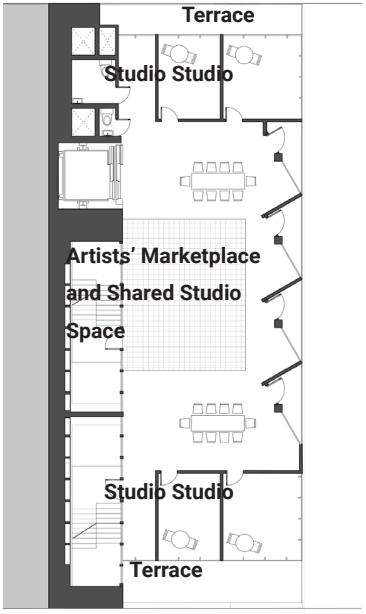
0' 10' 20'



Artists' Alley Elevation

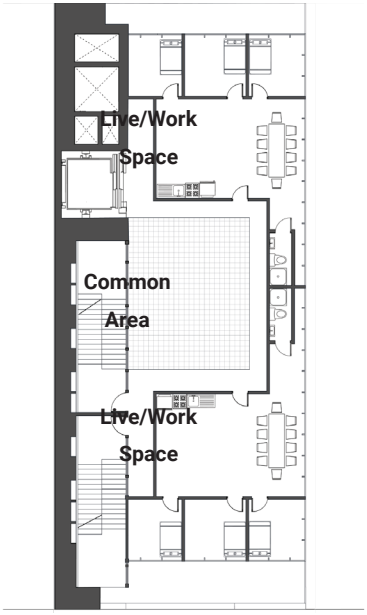
0' 10' 20'

Building Elevations The front elevation shows the existing historic facade with an updated marquis. Both facades also feature a garage door that can be opened to continue the spaces into Heritage Plaza and Artist's Alley respectively.



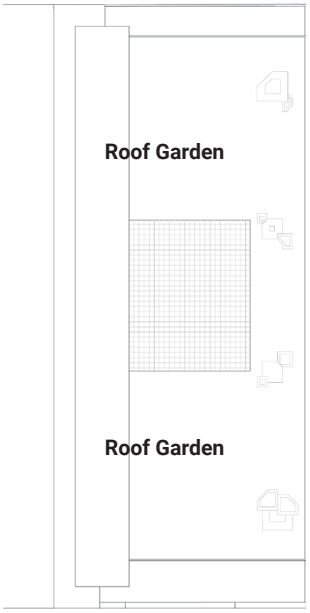
+3 Floor Plan

N 0' 10' 20'



+4 Floor Plan

N 0' 10' 20'

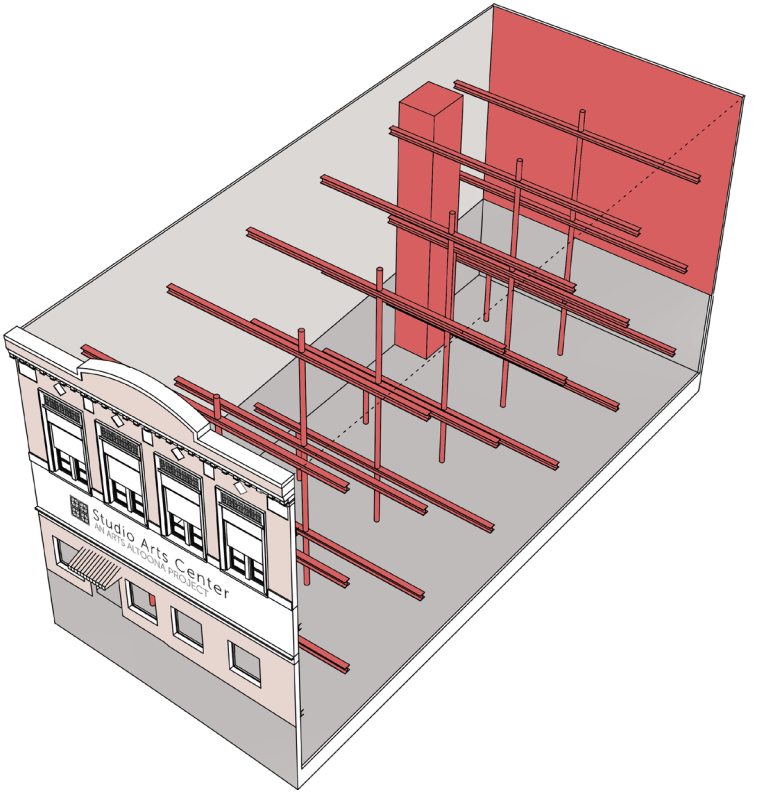


Roof Plan

N 0' 10' 20'

PLACE

This design reestablishes balance between the built environment and nature by emphasizing the visibility throughout the building. The Morse code design in the interior and exterior curtain walls, forum steps, and artists' studios and apartments allow visitors to connect with the building on a human scale. Visitors can enter through the Artist's Alley entrance, onto the stage and forum, or through the 11th Avenue entrance, into the atrium. In addition, the 11th Avenue entrance connects the building to Heritage Plaza, a peaceful community green space, allowing for access to natural ventilation and light. We also chose to stay within the existing building footprint to pay homage to the previous design and to create a beautiful green space on the adjacent roof.



Preservation Diagram After discussing the implications of maintaining the existing structure, we have decided to entirely remove the building's steel structure. The facade facing Artists' Alley will also be removed and redesigned to match the remodeled building exterior. A new elevator will replace the existing Kress Building freight elevator.

United States | North America

(the world)

Pennsylvania | United States

(the state)

Blair County | Pennsylvania

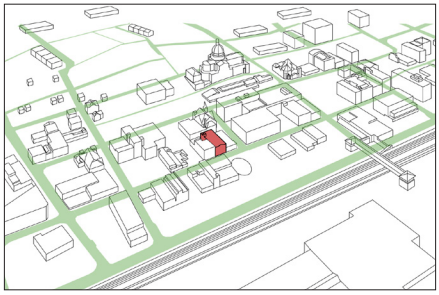
(the county)

Altoona | Blair county

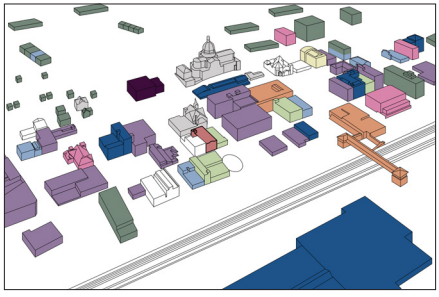
Our site

Former Kress Building
1406 11th Ave
Altoona, PA 16601

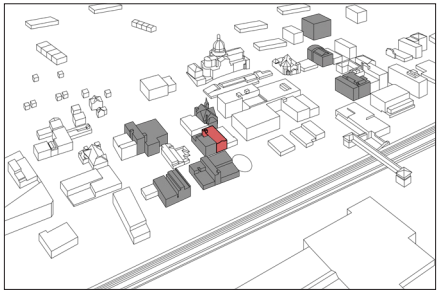
Existing Vegetation



Existing Roads



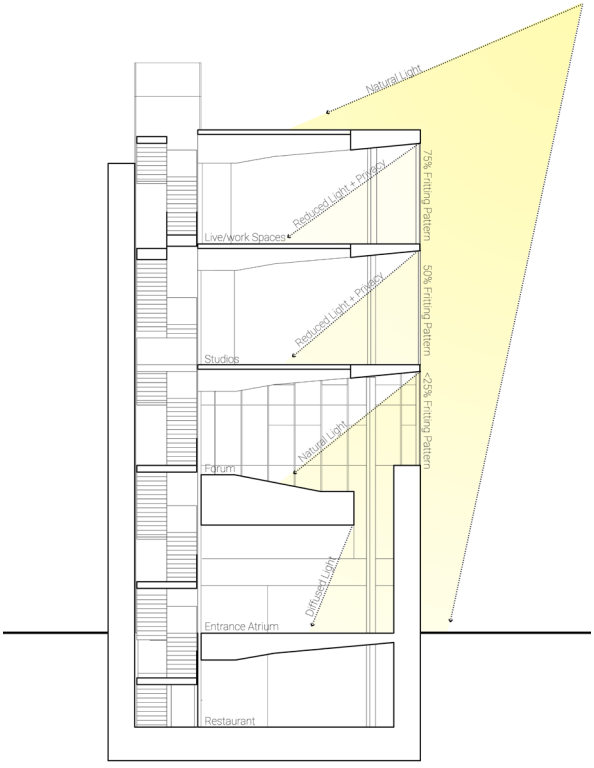
Building Usage



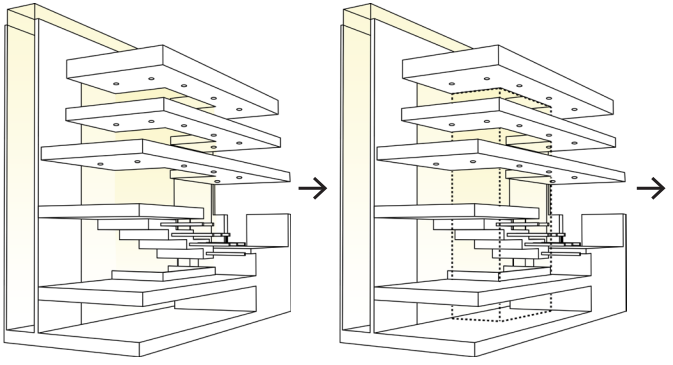
Historically Registered Buildings

ENERGY

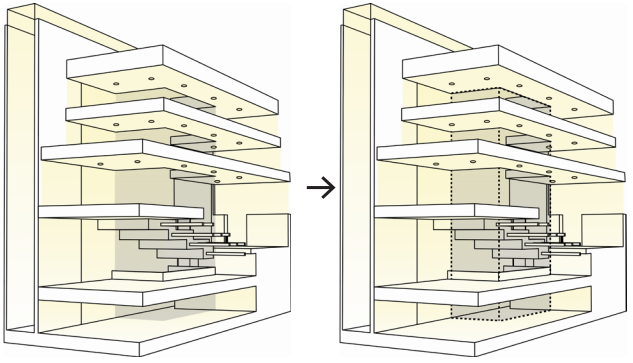
The Beacon strives to positively affect the environment. The design reconciles the modern energy crisis by implementing inventive daylighting techniques, ventilation systems, radiant heating, and geothermal (ground source) wells to create a net positive building that integrates seamlessly into the existing context. The sawtooth design inside the collaborative studio space, as well as the gradient fritting pattern bring light into the building in a soft manner to foster creative work and retain inhabitants' privacy. Additionally, the circulation core and the glass block floors act as light wells. The natural ventilation system pulls air into the circulation core, creating a stack effect and replenish fresh air in the building. Finally, the geothermal and radiative graying system draw heat from the ground and sunlight, respectively, to utilize less energy from mechanical systems.



Lighting Gradient Concept

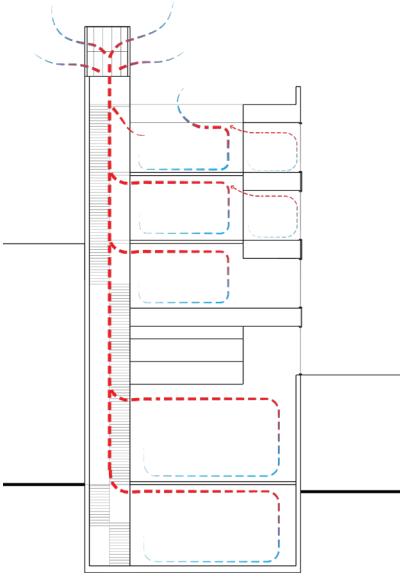


Natural Daylighting **Expression of Skylight**

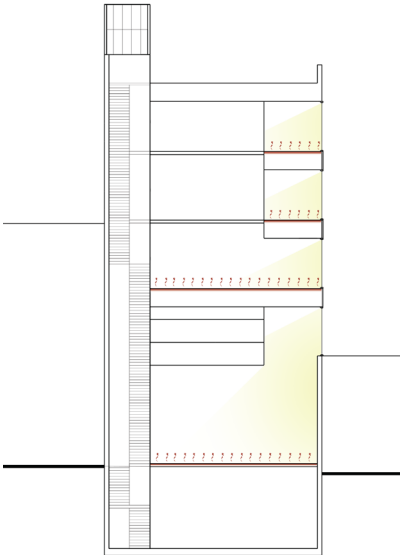


Artificial Lighting **Expression of Void**

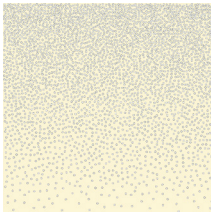
Lighting Diagrams These diagrams illustrate our design's relationship with exterior and interior lighting. The exterior light is controlled by the fritting pattern while the artificial light is used to create the central void space.



Natural Ventilation

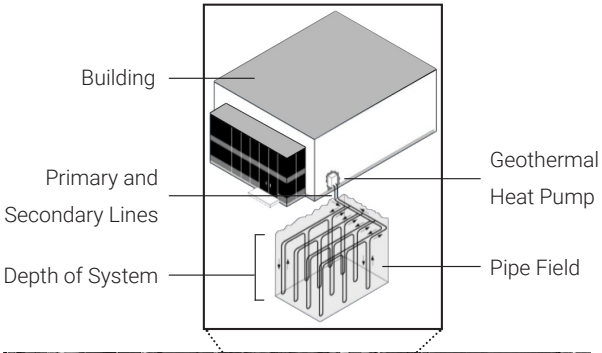


Radiative Heating



Exterior Wall Fritting Pattern

Passive Systems The building is designed to utilize natural ventilation techniques and radiative heating from the heft of the floor plates.



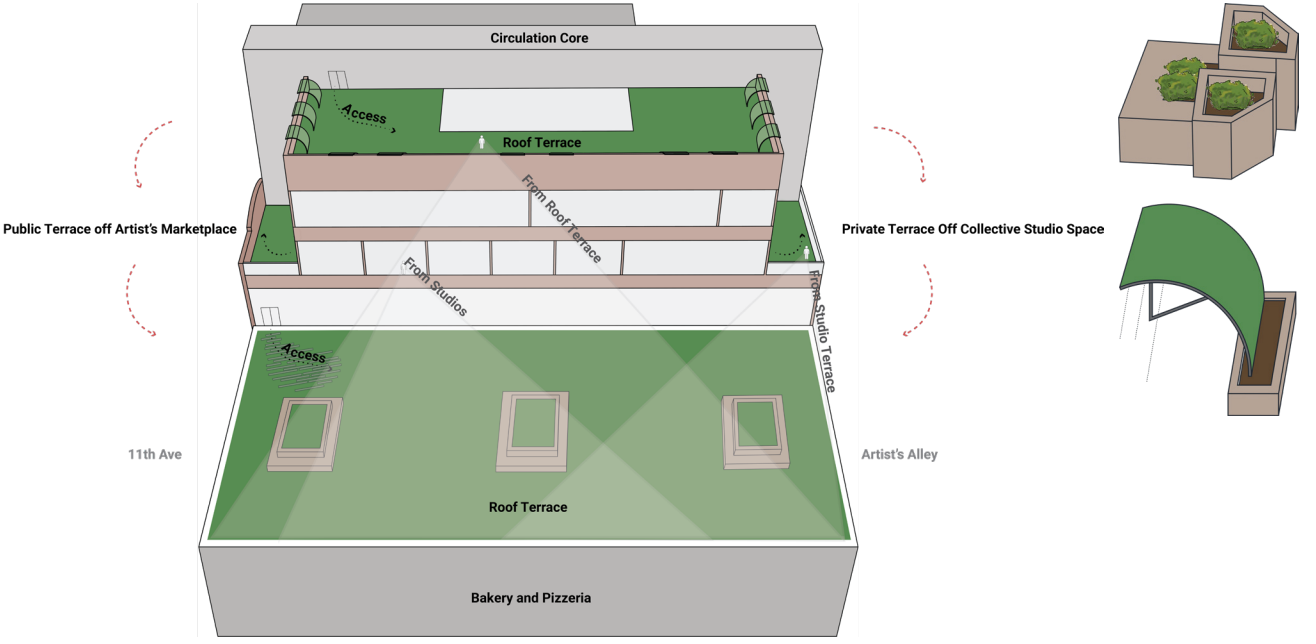
Geothermal Systems - Closed Loop Vertical Geothermal System

One of the options for our design was the use of a 36 ton geothermal system that could be located below heritage plaza or along Artists' Alley.

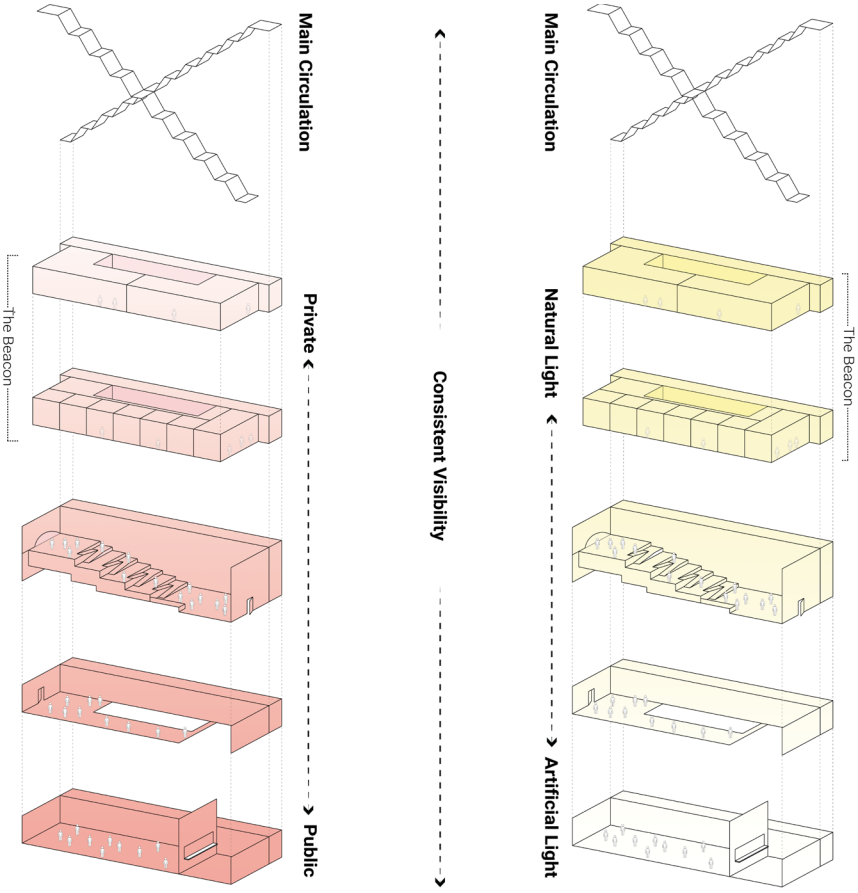
* These systems would require burial 10-12 ft deeper due to placement under paved surfaces - this moves the water table 4-8 ft lower than if placed under undeveloped ground.

HEALTH + HAPPINESS

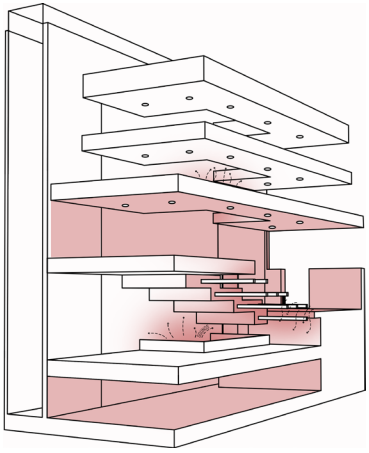
Humanity spends its life mainly indoors. The Beacon creates views of Downtown Altoona through slim windows in the stair core, as well as the phenomenal connection to Heritage Plaza, terraces on the front, back, and east elevation, and the roof garden. The roof garden provides a connection to nature because it is an accessible green space, and the planters also serve as benches while providing guests' orientation towards beautiful views.



Green Space Diagrams and Components: Terrace, Bench Planters, and Parapet Trellis We felt it was necessary to give artists an inspirational space. This cascade of green spaces allow the artists and the public to enjoy the outdoors and the views of the valley.



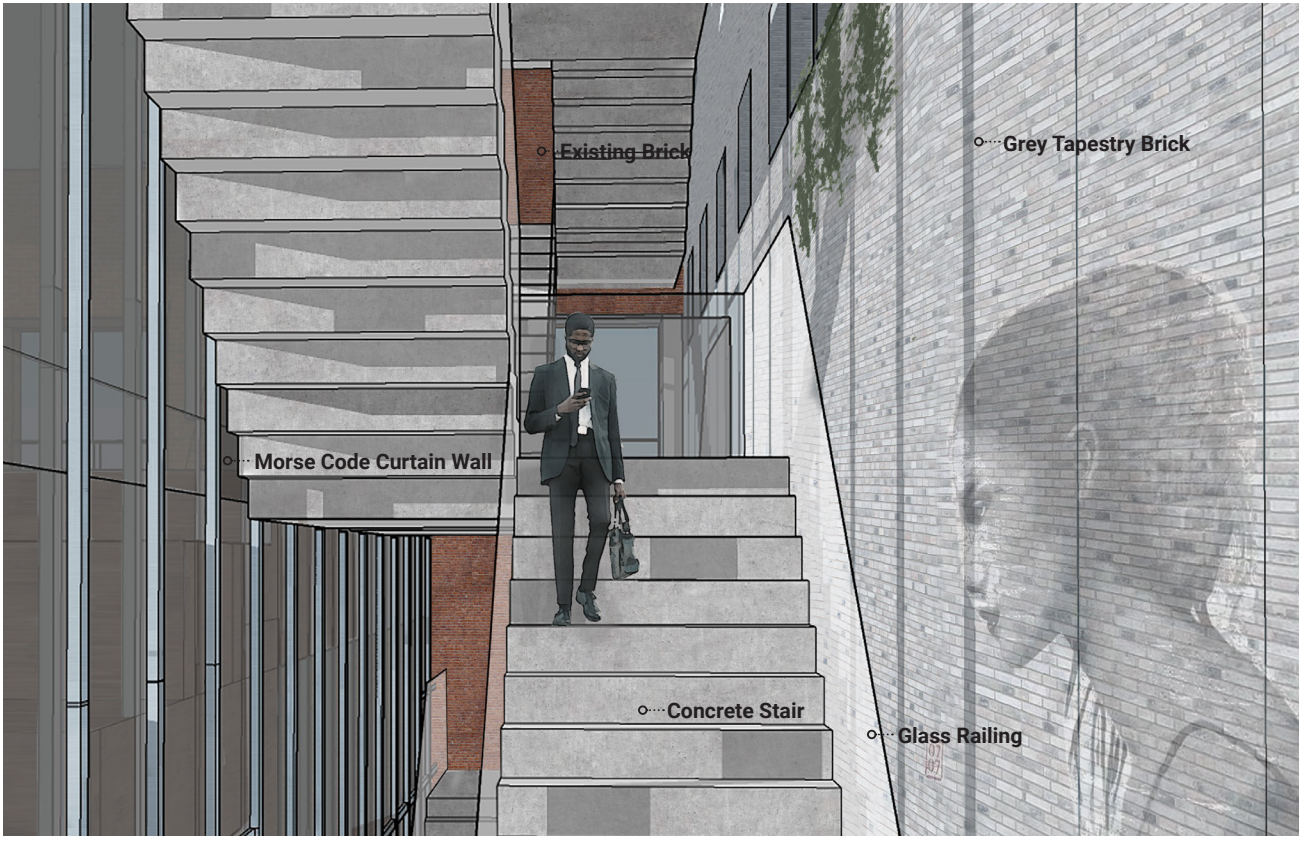
Public and Private vs Natural and Ambient Lighting Needs



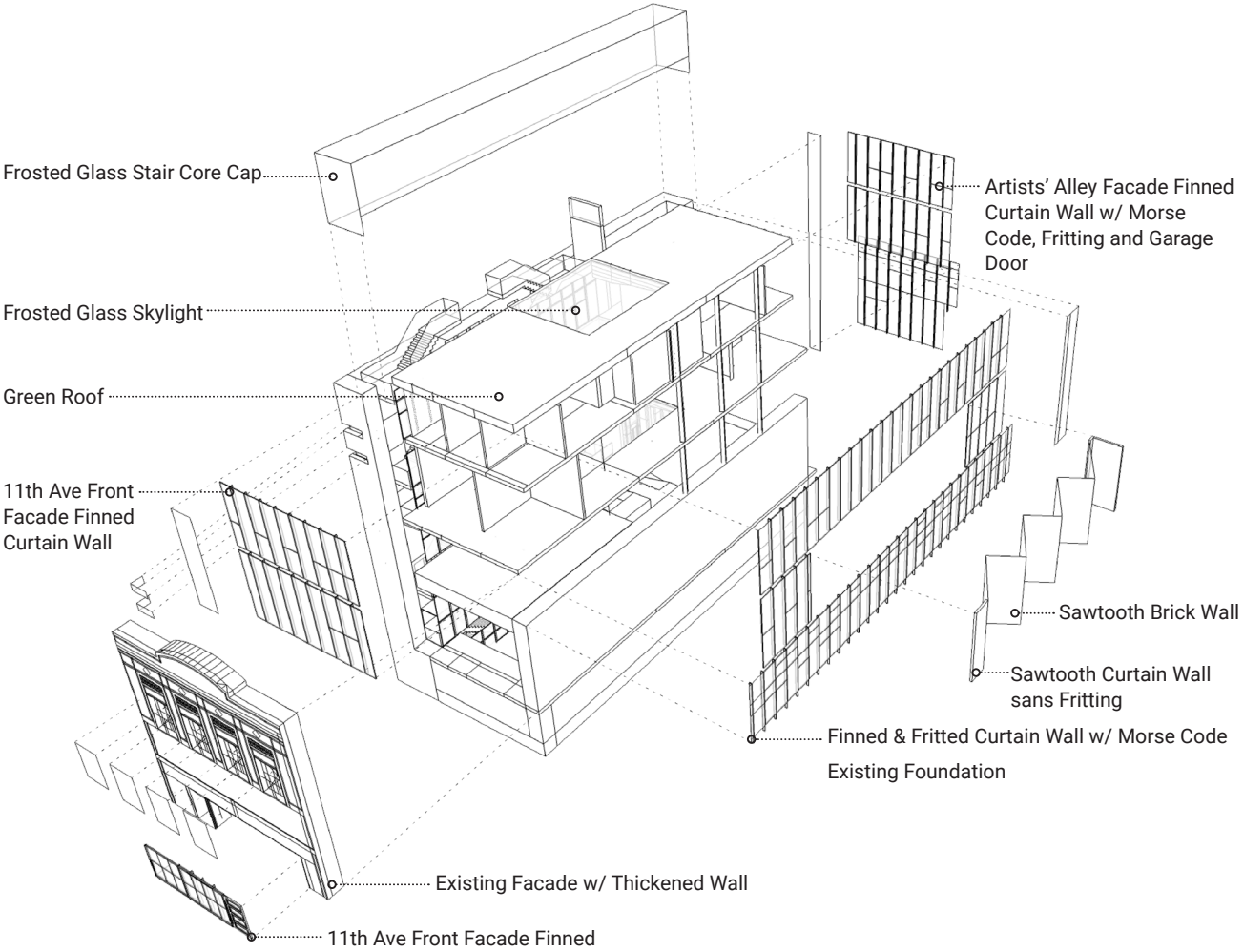
Ambient Sound Patterning Diagram Despite the quietness in the neighborhood, the openness of the interior spaces will allow for sound to move throughout the building. We have isolated the atrium level as the point of convergence for sound emanating from the restaurant in the basement and sounds from the forum space. Measures will need to be taken to keep the noise from becoming a problem in the communal spaces.

MATERIALS

The material feel of the building is industrial, to reflect Altoona's history. The original front facade was preserved to show reverence towards the historic Downtown, as a significant amount of buildings in the context are archived in the Historic Building Register. The glazed facade relays the sleek concept of the Beacon, watching over Altoona, beckoning visitors inside with temptations of vibrant artistic works and performances. The dark wood of the forum brings to mind performance halls, while the exposed brick emphasizes the surrounding buildings. Overall, the materials bring out the creativity of the artists and the spirit of the future Altoona Art District.



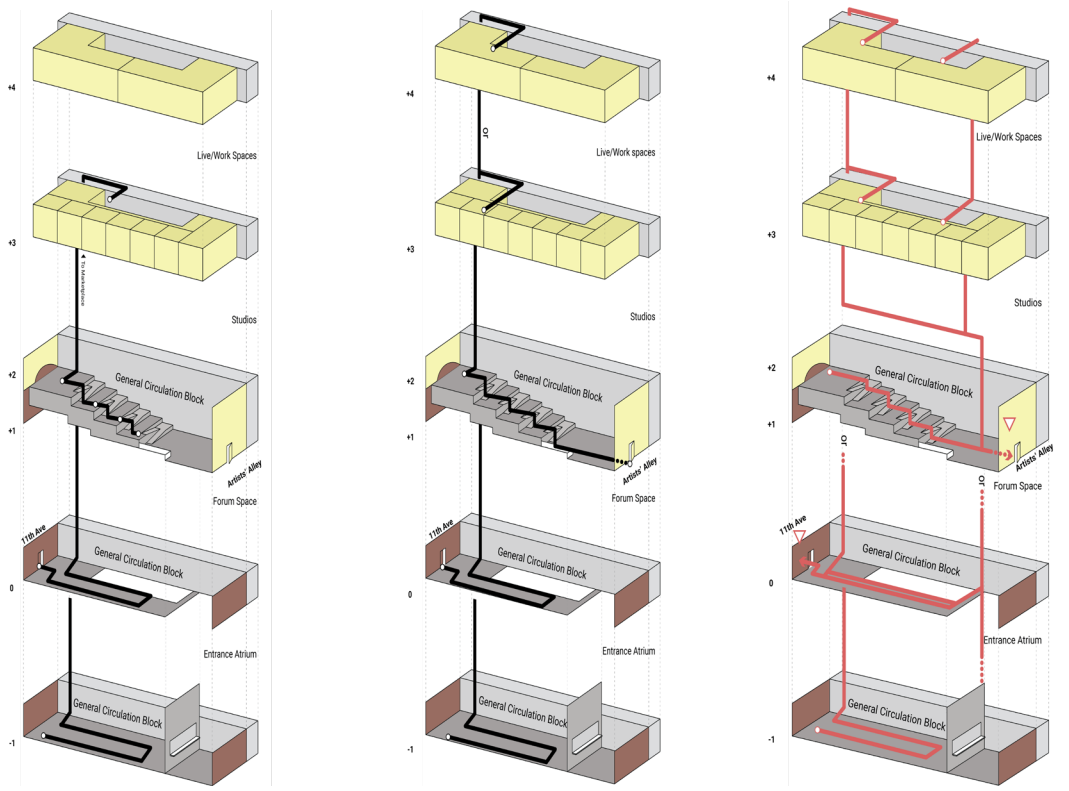
Stair Core Interior Rendering The stair core is one of the few places in the building where all of the materials come together to create a rich interior space enhanced by the artists' work.



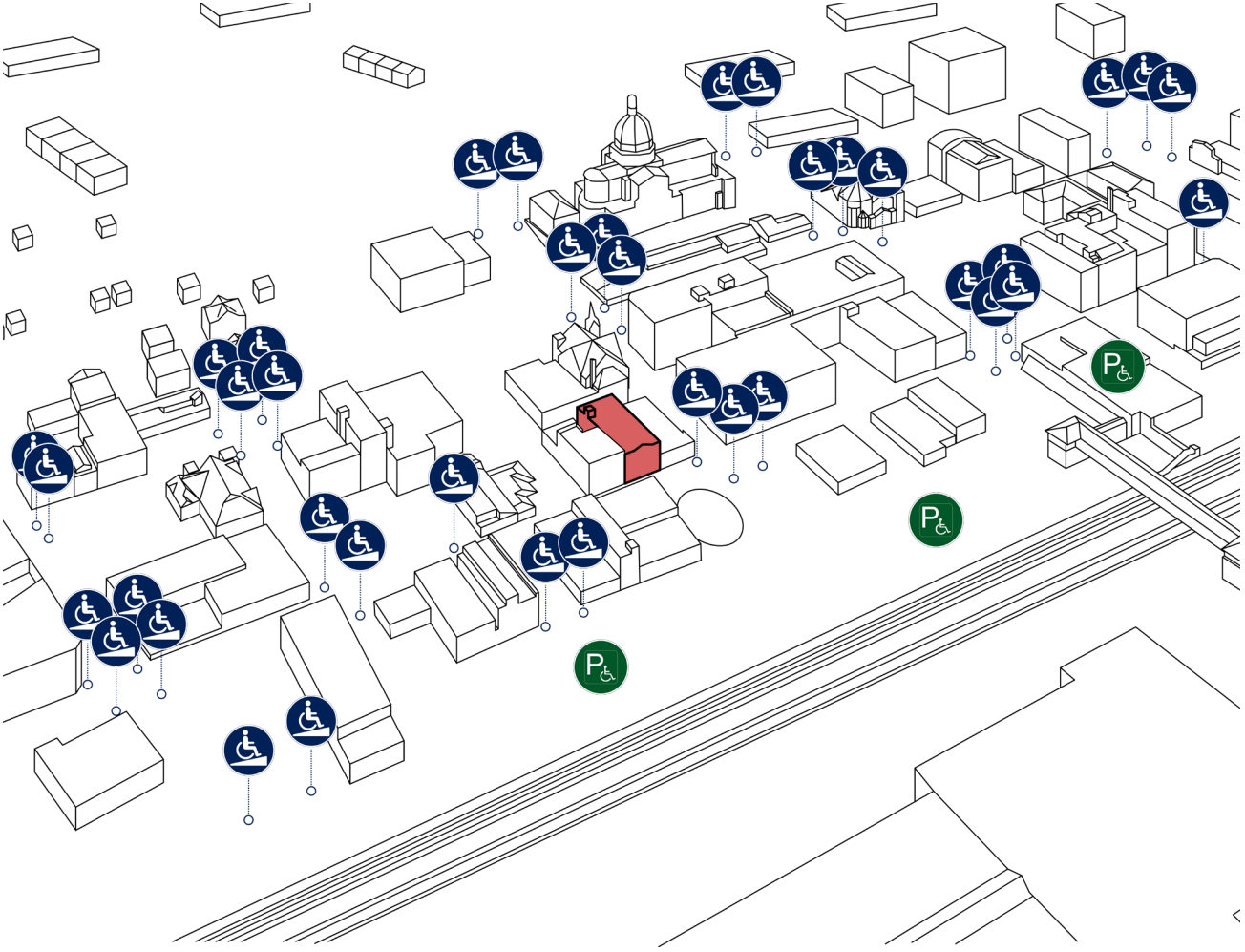
Enclosure Study To achieve the concept of the Beacon, we needed to have a very distinct exterior aesthetic. Much of the building has been enclosed in fritted curtain wall while maintaining the existing facade.

EQUITY

This design upholds the dignity of all members of society, regardless of their physical ability or economic status. All spaces except the apartments are accessible to the public, and green spaces, natural ventilation, and daylight are prevalent throughout the building, allowing visitors to connect with the building and its surroundings. The elevator stops at every floor to emphasize this not only visual, but also auditory and physical connection of the floors. The atrium floor has a cutout to encourage the ambiance of the restaurant below to float up, while the forum provides a stair-ramp, to an accessible route to the rental gallery, a mezzanine unreachable by the elevator. Additionally, the roof garden and Artists' Market provide exciting social opportunities for all visitors, bolstering the community-oriented culture of Altoona.



Daily and Emergency Routes The left diagram shows the public's route through the building, the center diagram shows how an artist or tenant may move through the space, the diagram on the right shows possible emergency routes.



Indicates a crosswalk with a ramp up to sidewalk level

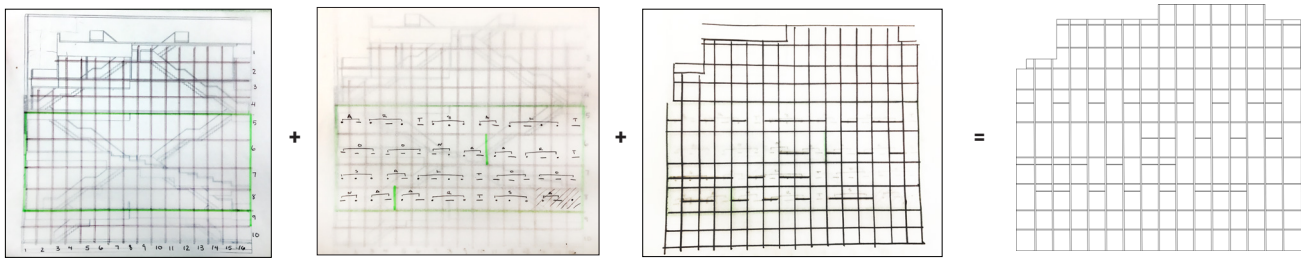
Indicates public parking with specially marked accessible spaces

Accessibility Site Plan To ensure that our building was truly accessible to all, we mapped all of the accessible elements in the nearby streetscape. This confirms that there are accessible routes in all directions to our building

BEAUTY

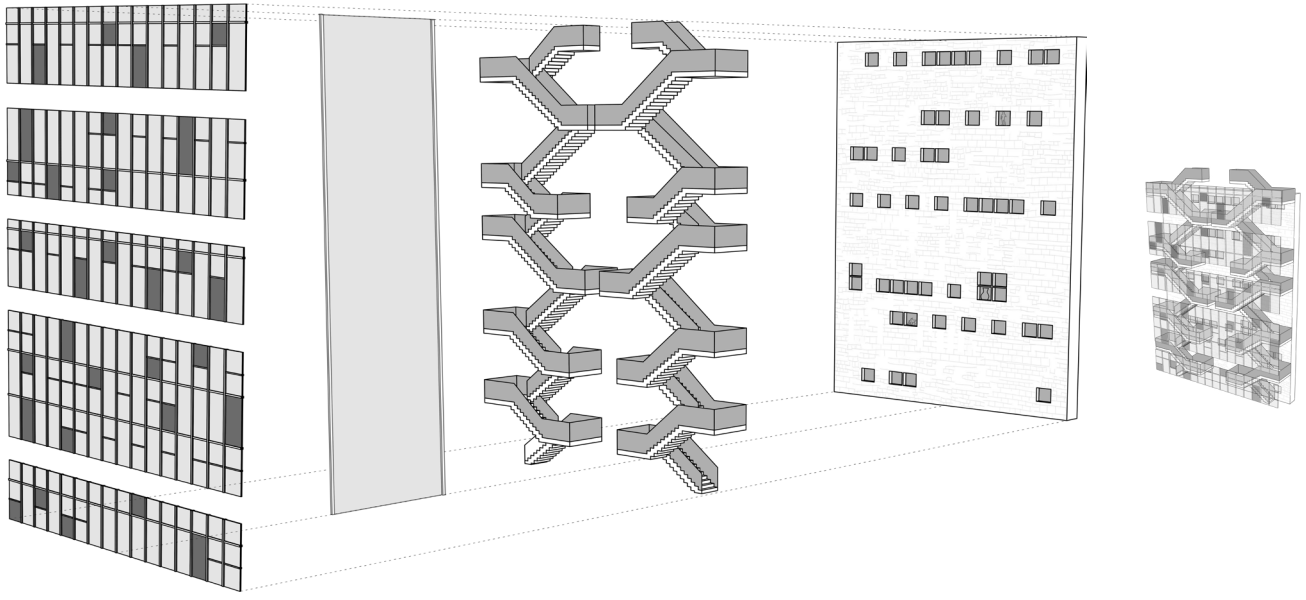
The Beacon acknowledges the historical context of Altoona with the maintaining of the historic facade and integration of local brick into the design by leaving it exposed. The building reflects the city's industrial heritage, but retains its own identity by integrating inventive design decisions. These include the Morse code detailing, gradient fritting, and layering of architectural elements. The form of the building recalls a light box. The intent of this is to integrate the building into the community through transparency and visibility, but also coax natural daylight into and throughout the spaces, creating a more welcoming atmosphere for inhabitants and guests.

Forum and Stage Interior View This view is taken looking from the Rental Gallery towards the stage and Artists' Alley.



Layer 1 **Layer 2** **Layer 3** **Final product**

Morse Code Derivation These drawings show the application of the Morse Code concept to the interior stair core wall. The Morse Code spells out "Arts Altoona". The pattern is repeated with the dots indicating which panels will be broken with smaller window panes.



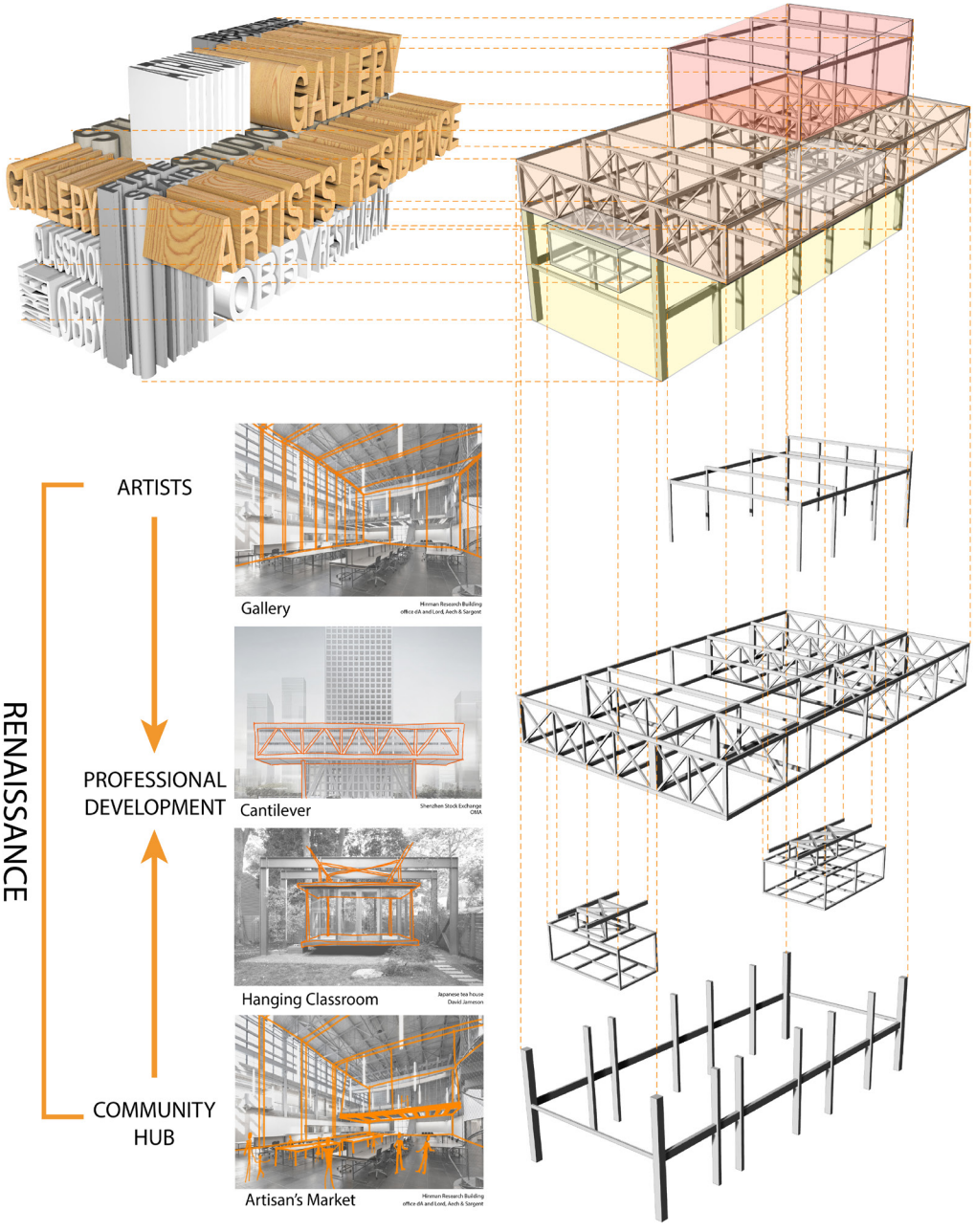
Stair Core Component Exploded Axon Once the Morse Code panels were planned, we were able to apply them to the curtain wall and then extrude the panes to make niches for art in the masonry wall.

UPWARDS IN ARTS & COMMUNITY

Gabriela Rojo, Jeffrey Carroll, Yanan Cheng

The community members of the uprising creative district in Altoona, Pennsylvania called upon Penn State's architecture students to create a cultural center of the arts. Our group's intention through our design was to create a space where locals and visitors to the town would be encouraged to travel through each floor and synergize with professionals, academia, and in-house artists. As you move upward through the central atrium you will gradually interact with various areas including open markets, event space, a restaurant, classrooms, professional art studios, residential units (cantilevered from the side of the building), gallery spaces, and a rooftop biergarten.

CONCEPT

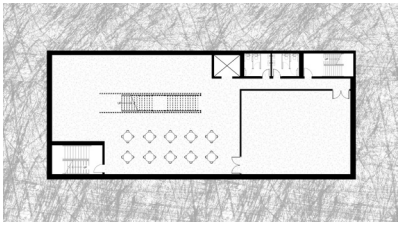

ARTISTS
PROFESSIONAL DEVELOPMENT
COMMUNITY HUB
RENAISSANCE
Gallery
Hinman Research Building
office dA and Lord, Aech & Sargent
Cantilever
Shenzhen Stock Exchange
OMA
Hanging Classroom
Japanese tea house
David Jameson
Artisan's Market
Hinman Research Building
office dA and Lord, Aech & Sargent

ORTHOGRAPHICS

Site plan Downtown Altoona. The project site is between 11th and 12th Avenue and to the east side of 14th street, highlighted in red.

Ground Floor Plan This open community space features a farmer's market and restaurant. People can see directly to the upper floors through the atrium in the center.

Second Floor Plan Reinforcing and celebrating the public meeting space, classrooms are hung from the truss above.

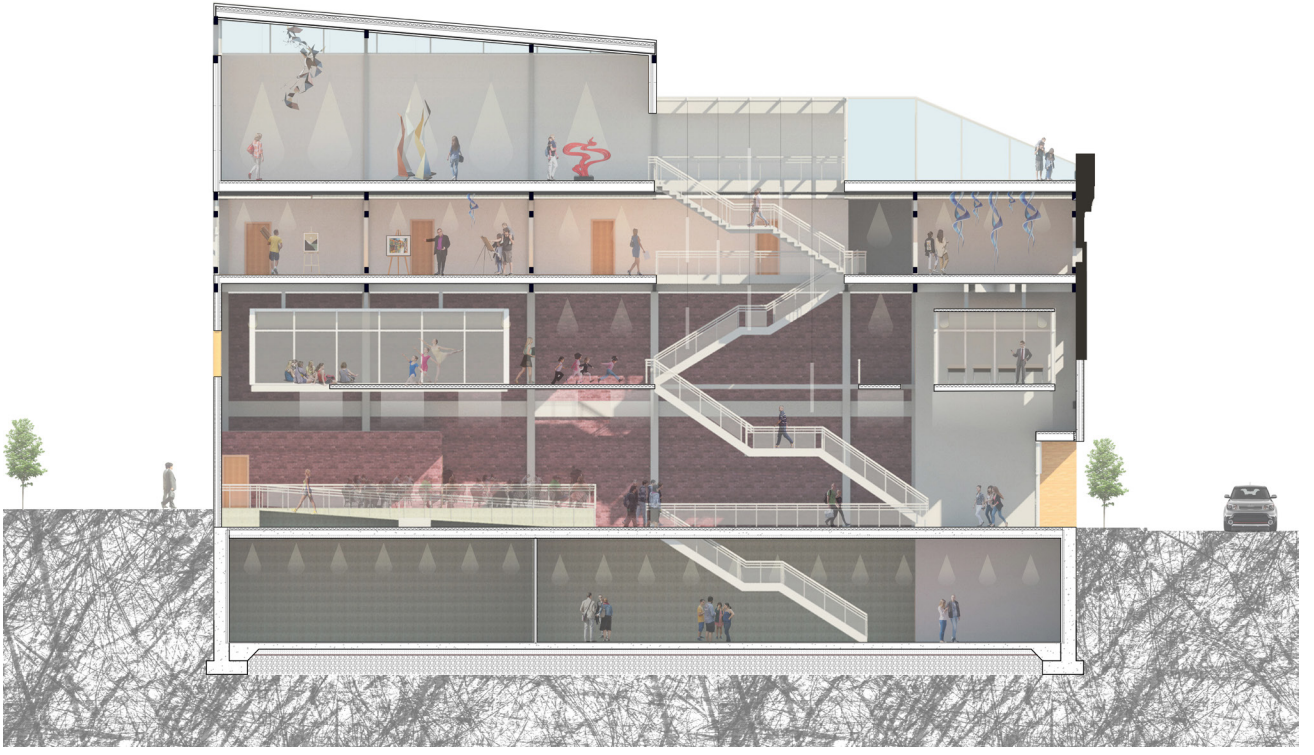


Basement Plan is a more private community event space.

Fourth Floor Plan This is the top floor with the indoor gallery and the biergarten.

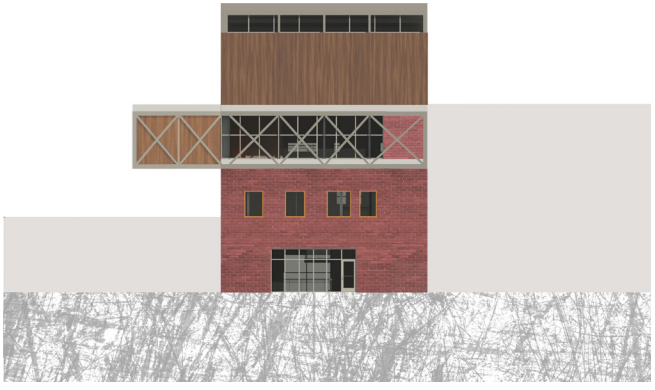
Third Floor Plan This is where community and artists come together and create arts. sThe residence spaces for in-house artists were cantilevered single story adjacent building.

Cross Section

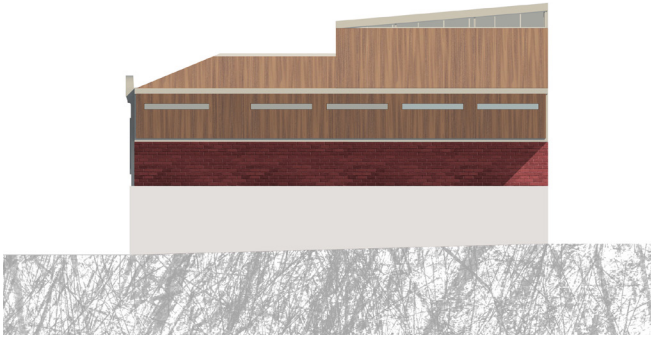


Longitudinal Section

Front Elevation



Back Elevation



Northwest Elevation

PLACE

History of Altoona

The Altoona area was originally inhabited by Native Americans of the Iroquois Confederacy. The first western settlers arrived in the mid- 1700s. A series of stockades were constructed in the region as a defense against Indian raids, including Fort Roberdeau. In 1811, iron making began at the Allegheny Furnace. The owner of the furnace built the Baker Mansion nearby.

By 1831, the Main Line of the Pennsylvania Canal was extended west to Hollidaysburg. The Canal connected to the Allegheny Portage Railroad in 1834, which hoisted boats over the Allegheny Ridge on primitive rail cars. Altoona owes its origin and growth to the Pennsylvania Railroad. While most cities were located along rivers, Altoona was located at the approach to the Horseshoe Curve.

The Pennsylvania Railroad was chartered by Pennsylvania in 1846. In 1849, the Railroad began developing the community that became Altoona - as a staging area for the construction of the rail line. By 1850, the railroad had been constructed from Harrisburg west to Altoona. The Allegheny Ridge was a major barrier to the completion of an east-west railroad across Pennsylvania. Through innovative engineering, the Horseshoe Curve was completed in 1854 west of Altoona to provide a westward passage at a grade that was gradual enough for heavy trains. The Horseshoe Curve is now designated a National Historic Landmark. Once this route was completed, the railroad was able to replace the canal as the primary means of transportation. By 1858, the travel time between Philadelphia and Pittsburgh had been reduced to 15 hours, as opposed to the three days required before the railroad was built.

The original rail yard in Altoona was centered in the vicinity of the present-day Station Mall between 9th and 10th Avenues. The west side of this rail yard became the commercial center, while the east side was primarily residential. The most prominent building was the Logan House, on the site of the present Post Office. Altoona was incorporated as a borough in 1854, when it included approximately 2,000 residents. the population grew to over 10,000 by 1870 - partly as a result of demand for rail cars during the Civil War. During the Civil War, Altoona's importance as a railroad center made it an objective

for Confederate forces, but the city was not seriously threatened. It was the site of the Altoona Conference of Union governors in 1863, which endorsed emancipation. In 1864, the first stretch of railroad using steel for the rails was built between Altoona and Pittsburgh.

Altoona was incorporated as a city in 1868. By 1880, Altoona's population had reached almost 20,000. This growth in residents was accompanied by establishment of strong churches, clubs and a range of businesses. Downtown Altoona for decades served as the commercial center for the entire surrounding region. Llyswen was a carefully planned suburban community that was laid out between 1894 and 1907 to take advantage of streetcar access.

By 1925, 14,000 of the 17,000 industrial workers in the area were employees of the Pennsylvania Railroad. The rail yards produced locomotives, other rail cars and railroad equipment. At one point, the present-day location of the Station Mall included three roundhouses and the main locomotive construction facilities. Other major industries included silk, meat-packing and clothing.

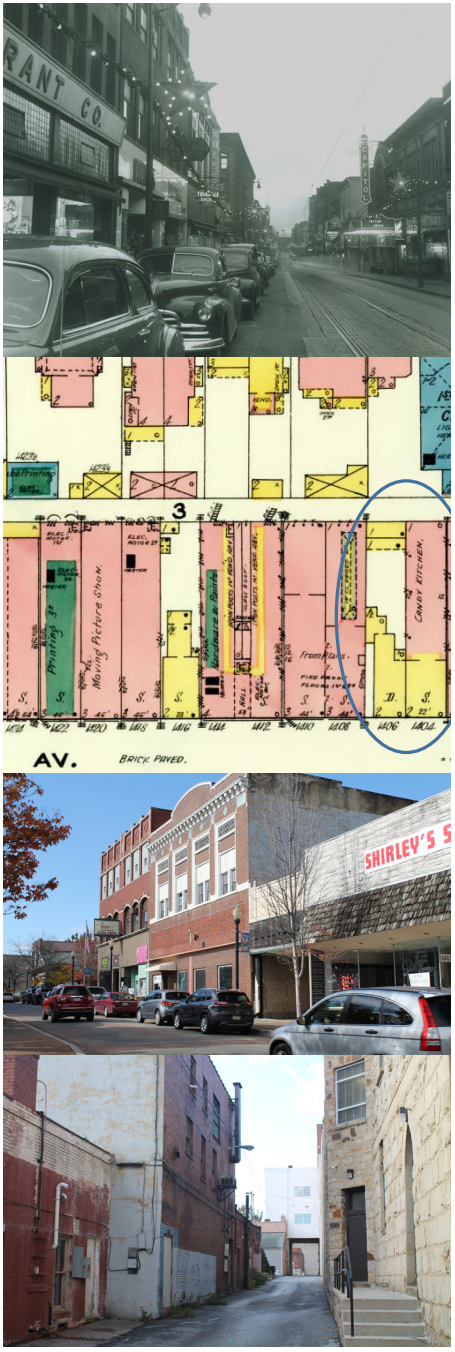
Altoona grew through new construction and annexations that almost doubled the size of the city, including the annexation of the Borough of Juniata. The development of the City was spurred by horse-drawn trolleys in the 1880s and electrified trolleys in the 1890s. These trolleys allowed residents to live further from their workplaces. Commercial development occurred along many of these trolley routes, which extended along most of major streets of present-day Altoona.

The early 1900s saw tremendous growth, from a 1900 population of almost 39,000 to an all-time peak of 82,000 residents in 1930. After World War II, the demand shifted from steam locomotives to more cost-efficient and reliable diesel and electric locomotives. As a result, the construction of new locomo tives ended in Altoona, although the repair and maintenance of locomotives continues to employ a large number of people in Altoona. This employment has continued through changes from the Pennsylvania Railroad to Penn Central to Conrail and to present-day owner Norfolk Southern.

After World War II the era of railroad ended. All business and commerce up to this time was conducted between cities and those cities were connected with railroads as the main transporter of goods. As the nation developed the interstate highway system, the corridors of commerce moved away from the cities and their rail connections. Just like the rest of the nation, the retail activity increased and relocated to the newly developing shopping districts located along the nearby highway corridors outside the City limits. The 1990s saw Altoona finally getting it's link to the interstate highway system.

As the local economy shifted away from being rail centered, local leadership established enterprise development programs under the Altoona Enterprise program. This effort diversified the area's economy and attracted new manufacturing jobs. Simultaneously, urban redevelopment activities revitalized major sections of the city and created new housing, educational and professional opportunities.

Source: http://www.altoonapa.gov/Pages/Altoona-History.aspx



History of Kress Building

Before it was the Kress building, the property had been owned by the local "Jones family" since 1851. The family rented out residences and business rooms to the public, but presumably it was also the location of their private residence.

On Wednesday, December 6th, 1922 it was announced that a new "Kress" store and warehouse would open in Altoona, replacing the residential housing that was originally present in the business district of the town. The article states that:

"Within a few days the old house went; in the months that followed the business block appeared. It is now finished and within a few days it will be occupied by the S.H. Kress & Co. store, one of a chain of 150, operating from coast to coast with headquarters in New York. The building is 50x120 feet in dimensions, two stories in height, built of stone, steel, concrete and brick and numbered 1404-06 Eleventh avenue."

At the time, such a building was unparalleled. It was architecturally planned to give the most of light, heat, convenience and durability with the least ostentation. It was re-designed by D.G Puderbaugh: "The store sales-rooms will comprise the spacious basement and the ground floor. The second story will be utilized as a stock room. The Kress company has taken a twenty-five year lease on the building."

Its completion was highly anticipated as newspapers stated it would be installed with the latest technologies in plumbing, lighting, and accessibility to the public. Just over 150 locals in Altoona were hired to work in the retail stores.

By the 1981, most Kress stores in the country had shut down and were being repurposed. Altoona's

building had been redeveloped into a residential, business, and after-school program building (dance and karate). Approximately 4 years ago, 2014, the complex was evacuated and abandoned due to violations in the building code.

Source:

https://newspaperarchive.com/george-rowles-advertisement-clipping-dec-06-1922-129586/

https://en.wikipedia.org/wiki/S._H._Kress_%26_Co.

About the chain

S.H. Kress & Co. was the trading name of a chain of "five and dime" retail department stores in the United States, established by Samuel Henry Kress, which operated from 1896 to 1981. In 1964, Genesco Inc acquired Kress and transformed a large amount of the existing stores into shopping malls, the rest were sold to McCrory Stores (which went out of business in 200) or abandoned and subsequently repurposed.

Additionally, Kress & Co locations were frequently targets for historic civil rights protests, since they excluded African Americans from their lunch counters. Forty five years after a protest in Baton Rouge, the city's Kress building was facing the possibility of demolition, but it was saved by the historic events that took place there decades earlier.

The Kress chain was particularly known for its simple yet elegant facades architecture, described by the company as art deco. "Samuel Kress...envisioned his stores as works of public art that would contribute to the cityscape." Today, several former Kress stores are architectural landmarks.

Source:

https://en.wikipedia.org/wiki/S._H._Kress_%26_Co.

Examples of Repurposed Kress Buildings:

Asheville, NC: The Kress building on Patton Avenue in Downtown Asheville was restored in the 1990s, and is now The Kress Emporium - a gallery featuring local artists, K2 Studio - a home and furniture store, as well as condominiums in the upper floors.

Biloxi, MS: The downtown Kress store was converted in 2014 into a live music venue, Kress Live.

Meridian, MS: The downtown Kress building is undergoing renovation and is slated to open in early 2016 as the new home of the Mississippi State University Meridian campus Kinesiology program.

Greensboro, NC: The former Kress building now houses TAVO Restaurant & Tavern, an office area along with a nightclub on the basement level and an entertainment area on the roof.

Hilo, HI: In Hilo, Hawaii, a former Kress store has been renovated into Kress Cinema, a downtown movie theater.

Wichita, KS: The Kress building is now called the Kress Energy Center. This Kress Building is considered the best example of neo-gothic commercial architecture in Wichita. It is listed on city, state, and national registers of historic places.

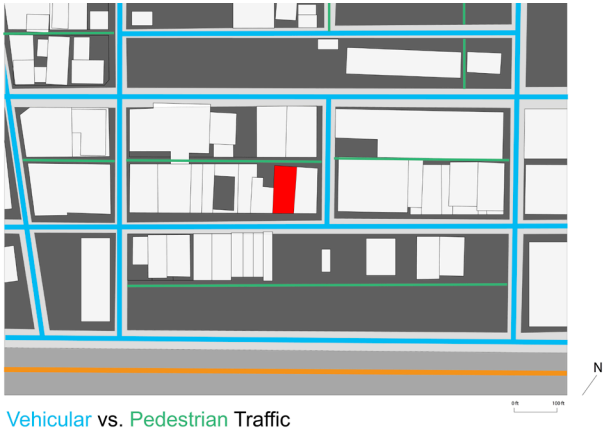
More listed examples:

https://en.wikipedia.org/wiki/S._H._Kress_%26_Co.

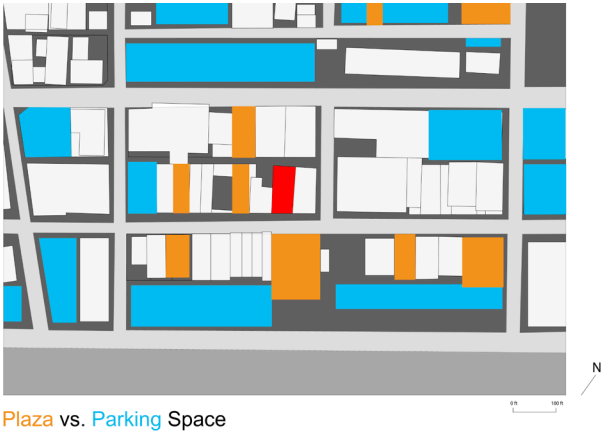
PLACE

11th Avenue Facade Facing Heritage Plaza Source: Google Maps

11th Avenue Facade Facing Project Site Source: Google Maps



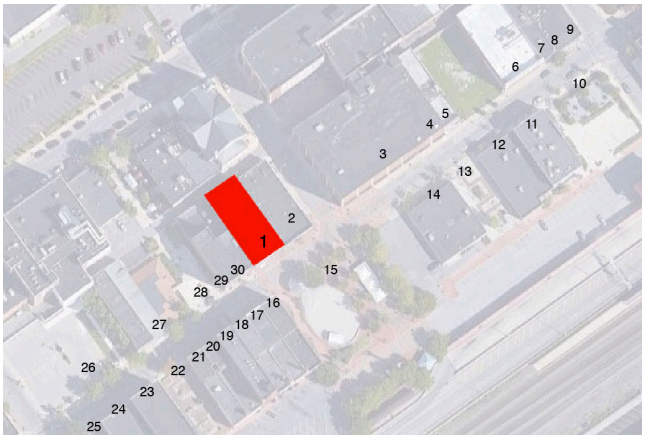
Vehicular vs. Pedestrian Traffic



Plaza vs. Parking Space

Greenery

Topography

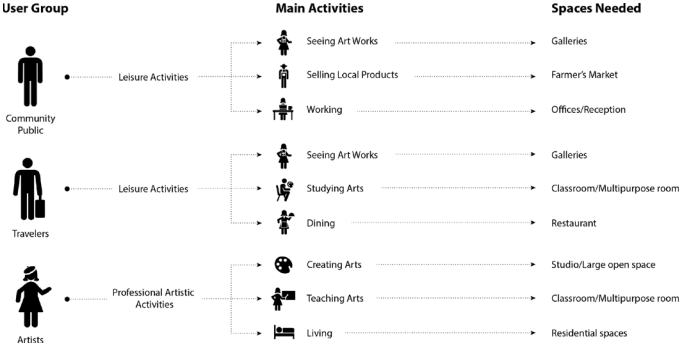


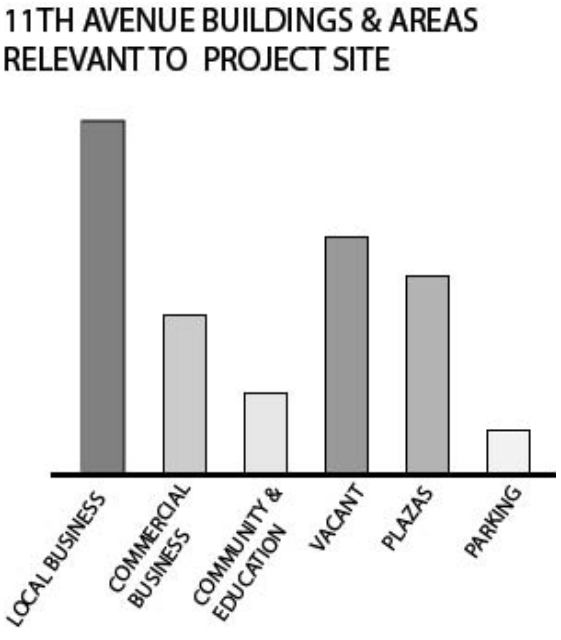
1. SITE
2. Shirley's Shoe Shoppe
3. M&T Bank
4. C.P.C.F.
5. The Flower Shoppe
6. McCrory's Commercial Property
7. Clay Cup Coffee Shop
8. Di Versity Salon
9. Resilience Tattoo
10. Plaza
11. Sheetz Center for Entrepreneurial Excellence
12. Commercial Property
13. Plaza
14. Cardiology Associates of Altoona
15. Site Plaza
16. Saleme Insurance
17. The Chalk Box
18. Bill Sell's Bold
19. Commercial Property
20. Antique Shop
21. McIntyre's Candies
22. Plaza
23. Commercial Property
24. Commercial Property
25. Commercial Property
26. Parking Lot
27. Mountain View Eye Associates
28. Plaza
29. Darlene's Kids Shop
30. Sharepower Salon

Properties on 11th Avenue

1. SITE
2. Sheetz Center for Entrepreneurial Excellence
3. Aaron Building
4. Devorris Downtown Center
5. Kazmaier Family Building

Penn State Buildings Downtown





WATER

Altoona, Pennsylvania generates, on average, 42 inches of rainfall a year. On a national scale, Altoona's rainfall rate falls roughly in the middle of the list. Thus, rainfall harvesting proves to be an appropriate method in our design.

There are three crucial elements that need to be designed effectively in order to satisfy rainwater harvesting. These are the roof, the storage tanking area, and the interior piping that feeds from one end to the other. These elements are shown in the diagram to the right.

The volume of water needed by the occupants will vary based on the number of occupants, the amount of time they spend on site, the activities they engage in, and the equipment or processes used on site.

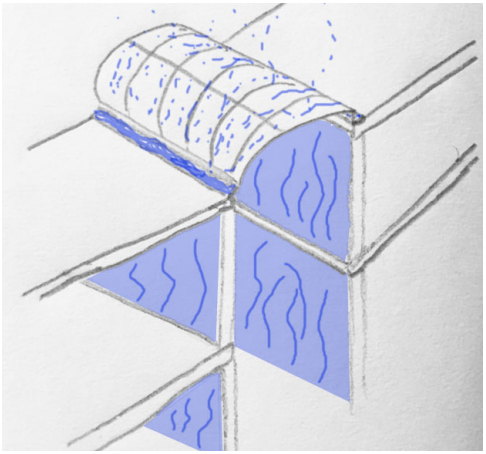
Rainwater harvesting will reduce water bills, provide an alternative supply during water restrictions and help maintain a more efficient building. In fact, depending upon tank size and climate, rainwater harvesting can reduce mains water use by 100%.

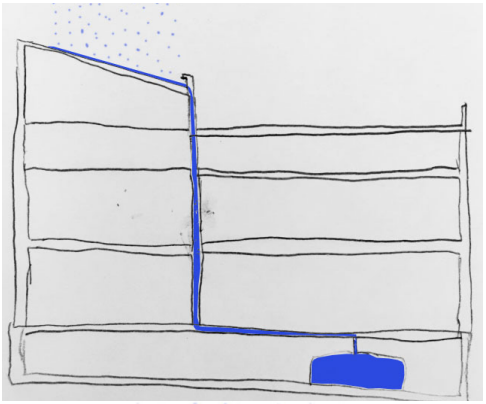
A water wall feature cohesively integrates rainwater harvesting as an architectural element of the building that can provide visual benefit to occupants.

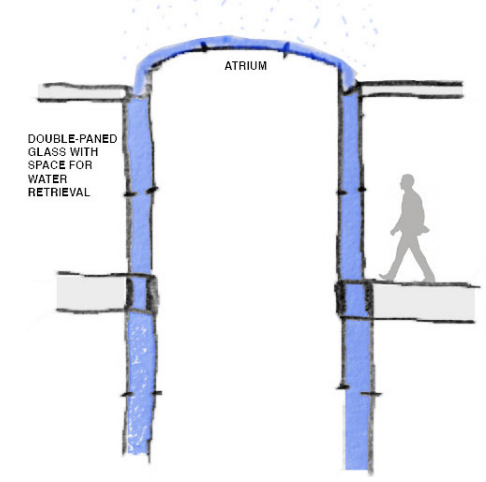
Sources:

Data, US Climate. "Temperature - Precipitation - Sunshine - Snowfall." Climate Altoona - Pennsylvania and Weather Averages Altoona, www.usclimatedata.com/climate/altoona/pennsylvania/united-states/uspa0031.

Rainwater Harvesting | Sustainability Workshop, sustainabilityworkshop.autodesk.com/buildings/rainwater-harvesting.

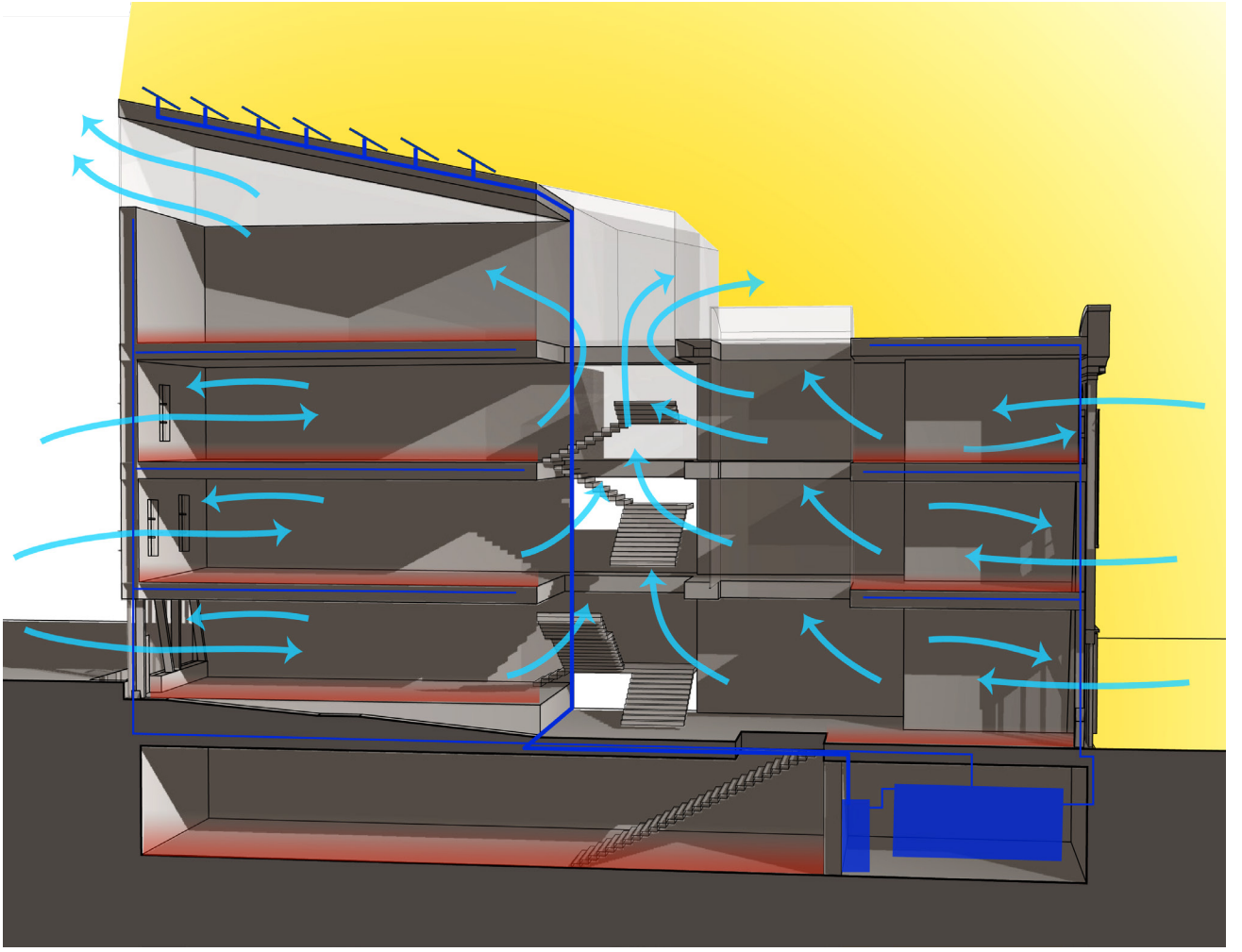


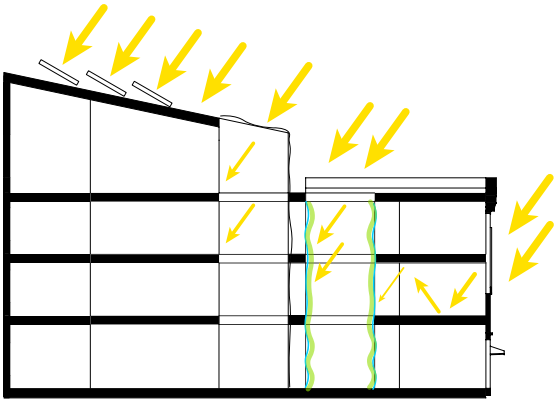



ATRIUM
DOUBLE-PANED GLASS WITH SPACE FOR WATER RETRIEVAL

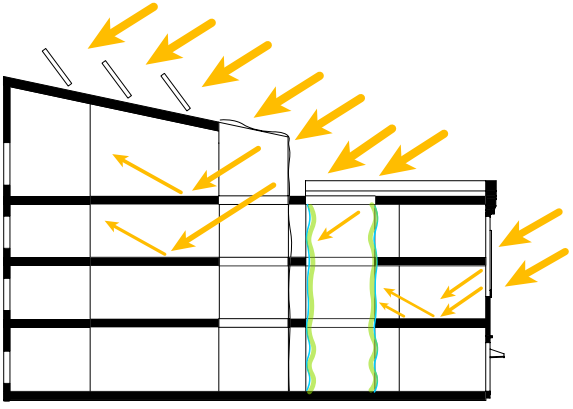
ENERGY

There is an atrium at the center of the building design that provides space for major circulation. We also used it as a vent for natural ventilation and major light source. The slanted roof helps collect rainwater and hold the solar panels. The enery provided by the solar panels could be used to compliment energy usage of the whole building. We also incorporate geothermal (ground source) heat pump system throughout the building for heating in winter and air-conditioning in summer.





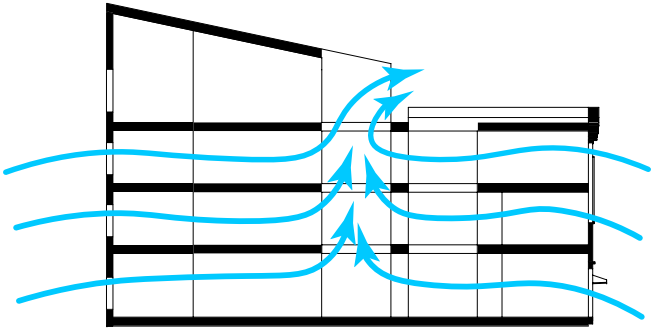
Summer



Winter

Lighting Diagram

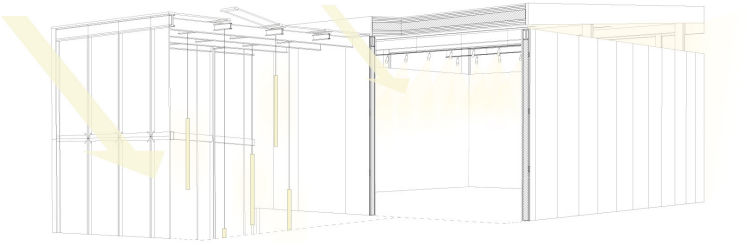
The atrium and the light well also allow for direct daylight. The part of the light well that is outside the building is facing south which has the most daylight, and the atrium has the opening on the rooftop that can also bring light in. During summer time, the solar angle is about 60-70 degrees up from the horizon. Daylight will penetrate the light well but limit the surface where it will hit the floor. Daylight will also reach the plants through the skylight on the rooftop and help the interior green walls grow. During winter time, the solar angle is about 30 degrees up from the horizon. The light well in the winter allows more daylight to penetrate and reach the studio and gallery spaces. Daylight can still reach the plants and the windows on the facade allowing more daylight to reach interior spaces to warm them up.



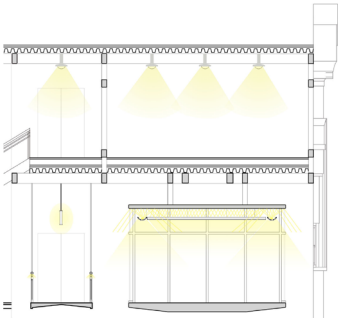
Ventilation Diagram

Natural ventilation is brought into the building through the atrium and the light well in the middle of the building. There are also windows on the facades.

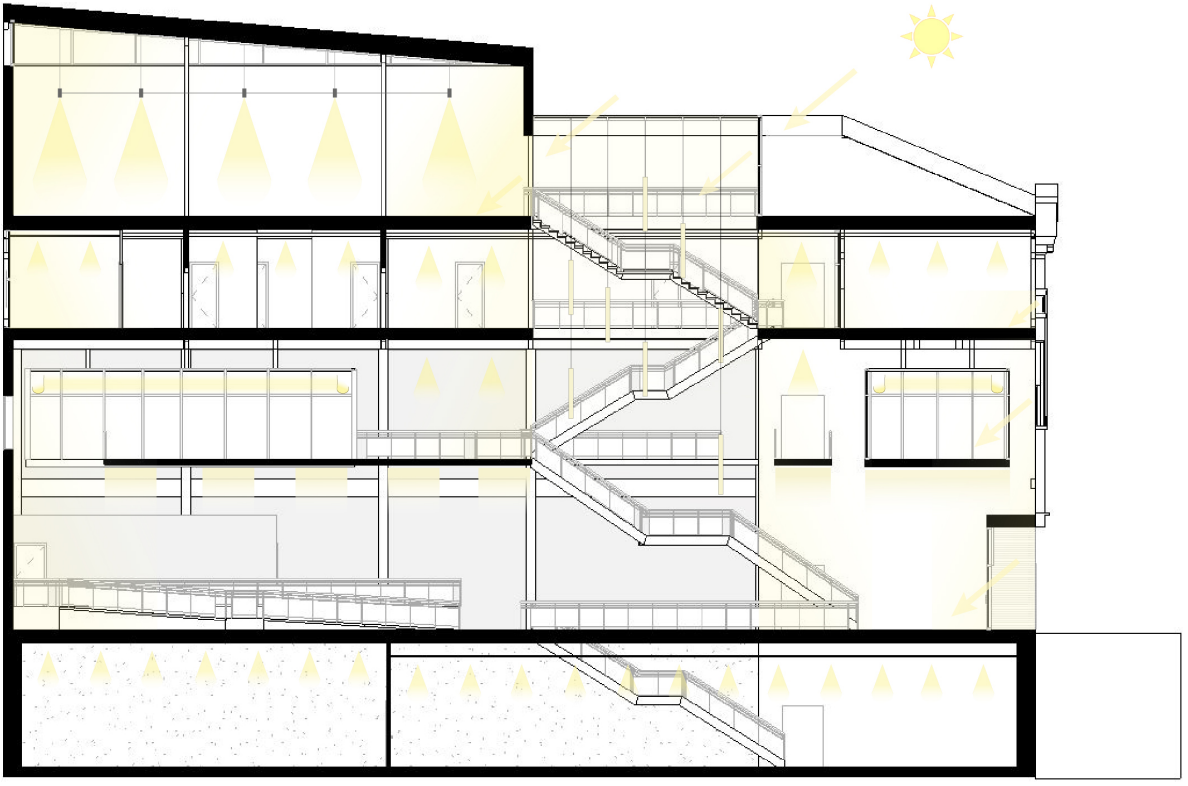
HEALTH + HAPPINESS



Natural and Electrical Lighting in the Atrium and Gallery

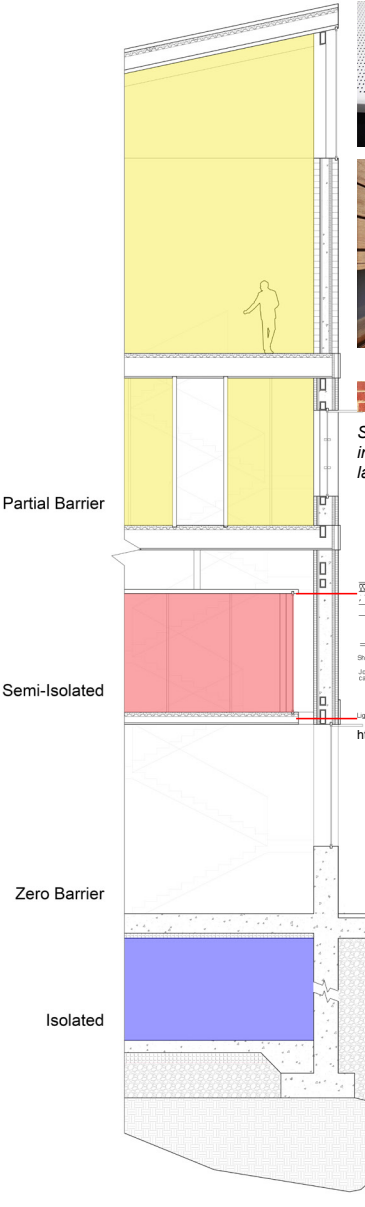


Electrical Lighting in the the Hanging Classroom



Natural & Electrical Lighting through the Building

MATERIAL

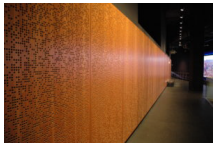


Reflective + Acoustic Ceiling Tiles

Absorbs sound from the gallery space.

Wood Paneling

Exterior Wood Panels have low noise reduction factors.

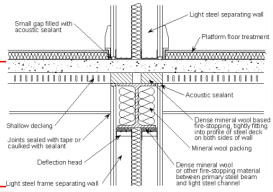


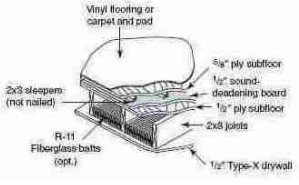
Sound proofing is not needed for the gallery space, so the layers of insulation and air space between the internal and external wood panels provide sufficient sound dampening.

Possible Option: Interior Acoustic Wood Panels

Brick

Sound proofing is not needed for the artist studios, so the layers of insulation and air space between the internal and external brick layers provide sufficient sound dampening.





https://inspectapedia.com/BestPractices/Sound_Control_in_Buildings.php

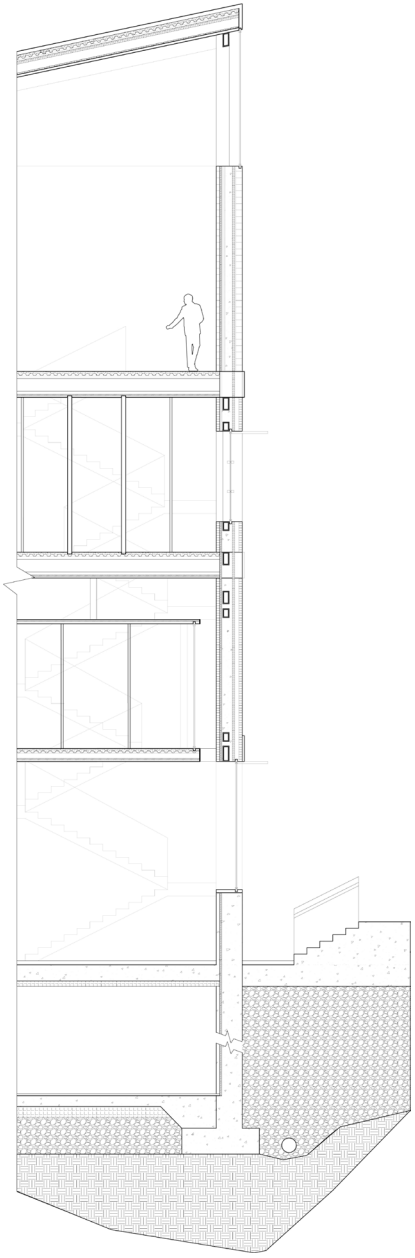
Minimal Sound-Proofing

The classroom spaces should be semi-isolated sound-wise. They are the sole enclosed spaces hanging above the completely open first floor. Sound dampening methods include using acoustic sealant at joints and 1/2" sound-deadening boards on the floor and ceiling plates.

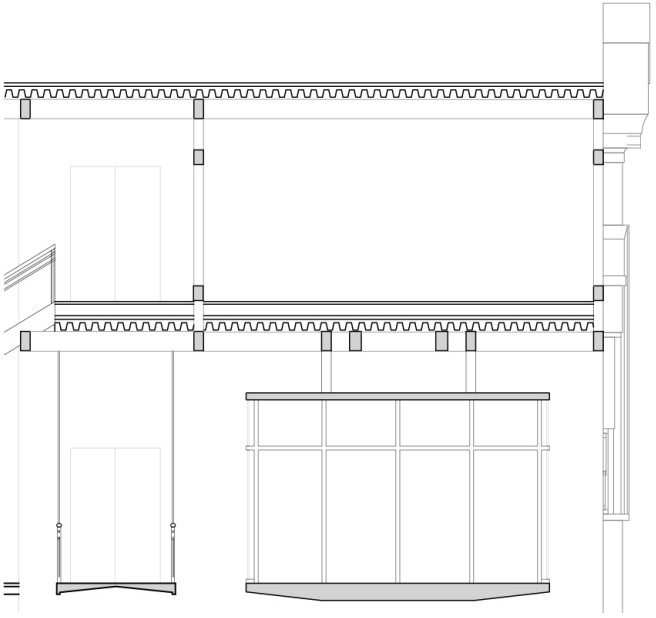
Concrete and Curtain Walls

The first floor is completely open (enclosed on the exterior by curtain walls and concrete ledges) and does not require sound proofing. It is the central HUB of the building.

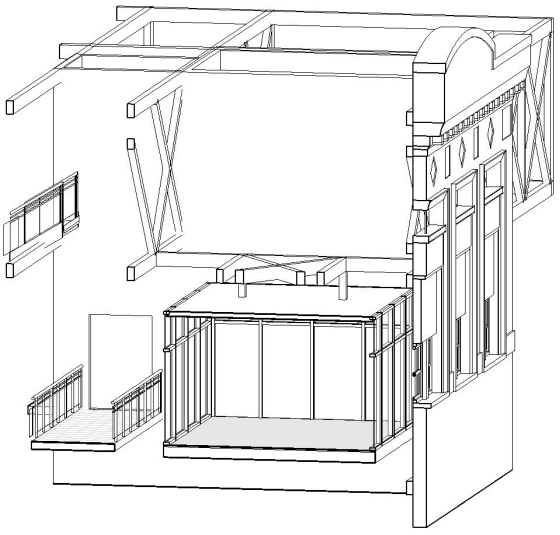
DETAILS



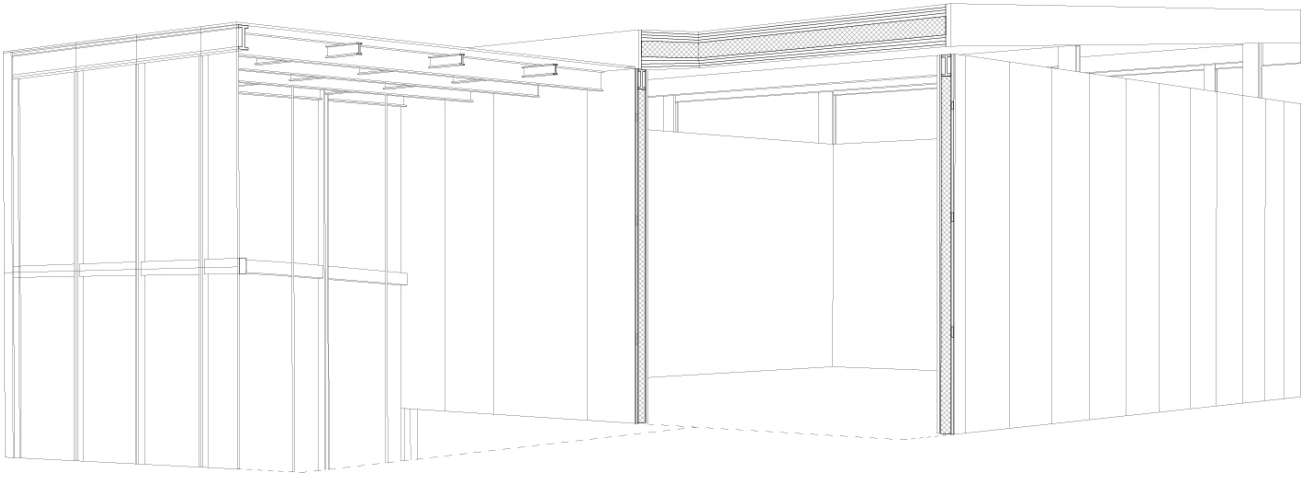
Section through Back Wall



Section through the Hanging Classroom



Perspective Section through the Hanging Classroom



Section through the Corner of the Gallery and Atrium

BEAUTY

The beauty of the Altoona Arts & Community Center is the experience. The space creates an uncanny elegance from level to level. Users are provided the opportunity to explore areas of the “Bizarre” Marketplace, restaurant, classrooms, galleries, and a roof-top biergarten. The guided journey through the Altoona Arts & Community Center is strategic.

The ground level serves as a community hub. the second level serves as an education mezzanine, the third level presents professional development, and the fourth level celebrates arts and leisure. This design captures the essence of continuing upwards through arts and education.

View From Front Entrance Looking at Markets

View From Mezzanine Looking Back at Markets and Classroom

View From Mezzanine Level Looking at Multipurpose Room

PHYSICAL MODEL

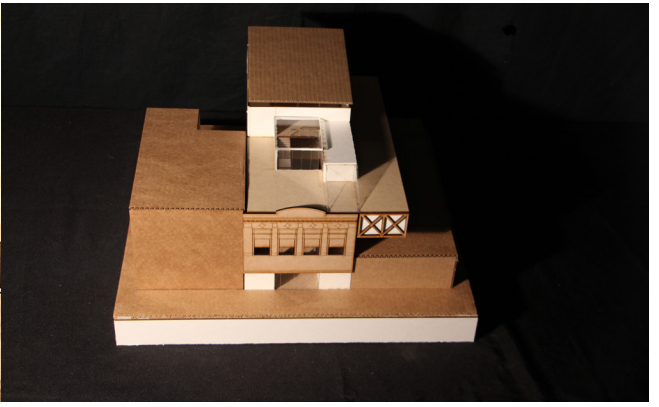
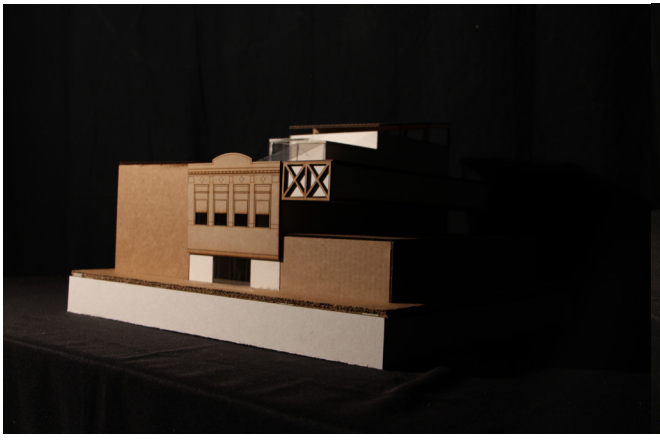
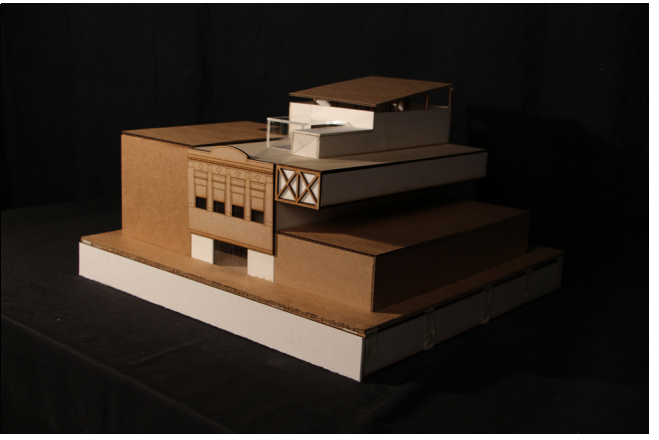
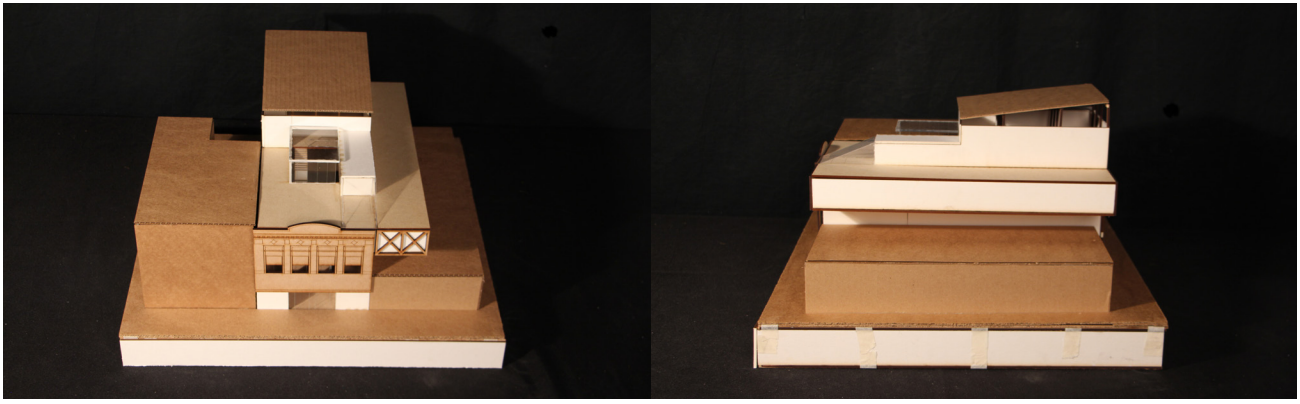
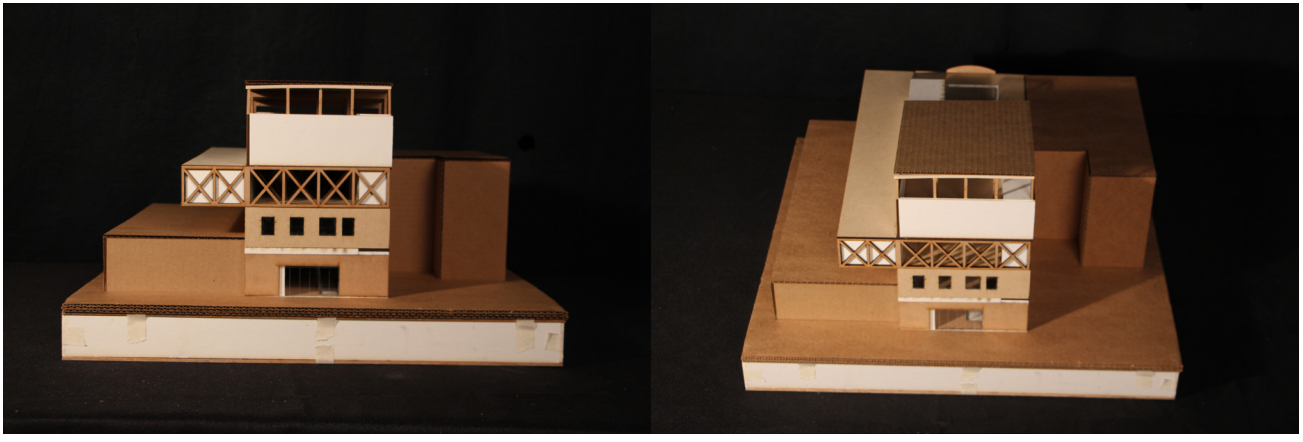


Image Credit: The Altoona Mirror, April 2018.









ARTIST MAZE

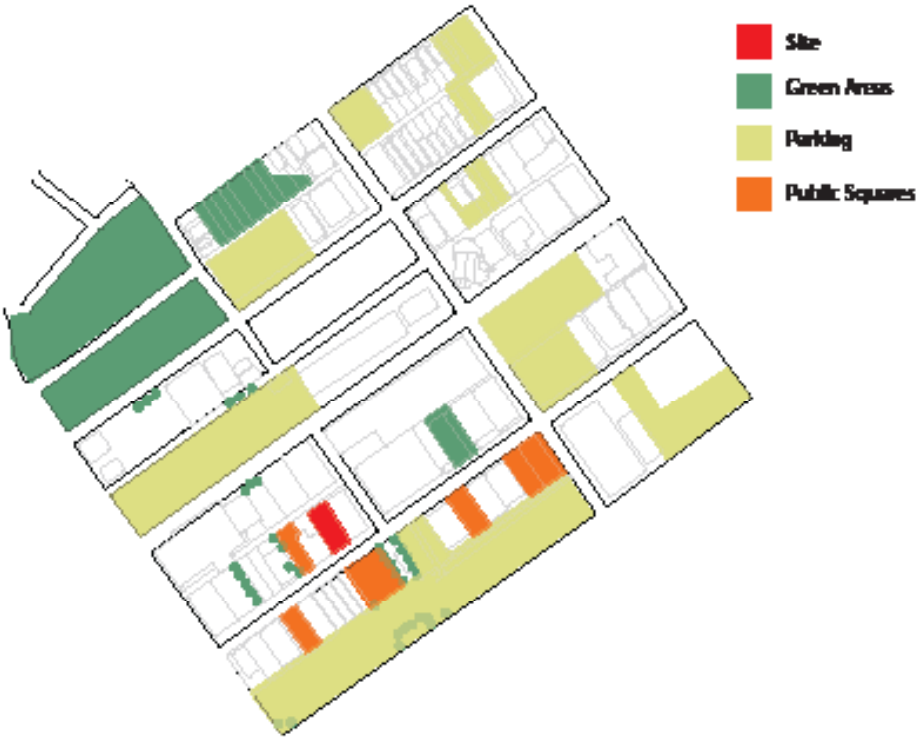
Andrea Coronel, Seo Choi

Artist Maze is a visual arts center where artists and students can foster creativity. This project is aimed to become the anchor of the Creative District of Altoona. Our goal is to reactivate and revitalize a part of a city that could become the cultural hub.

Our team focused on creating a different atmosphere in contrast to the exisisting one while preserving the history of Altoona.

PLACE

The historical facade of the building will be preserved but modified to emphasize the juxtaposition between the old and new. The Artist Maze acknowledges the history of Altoona while celebrating the distinctive features of the new building.



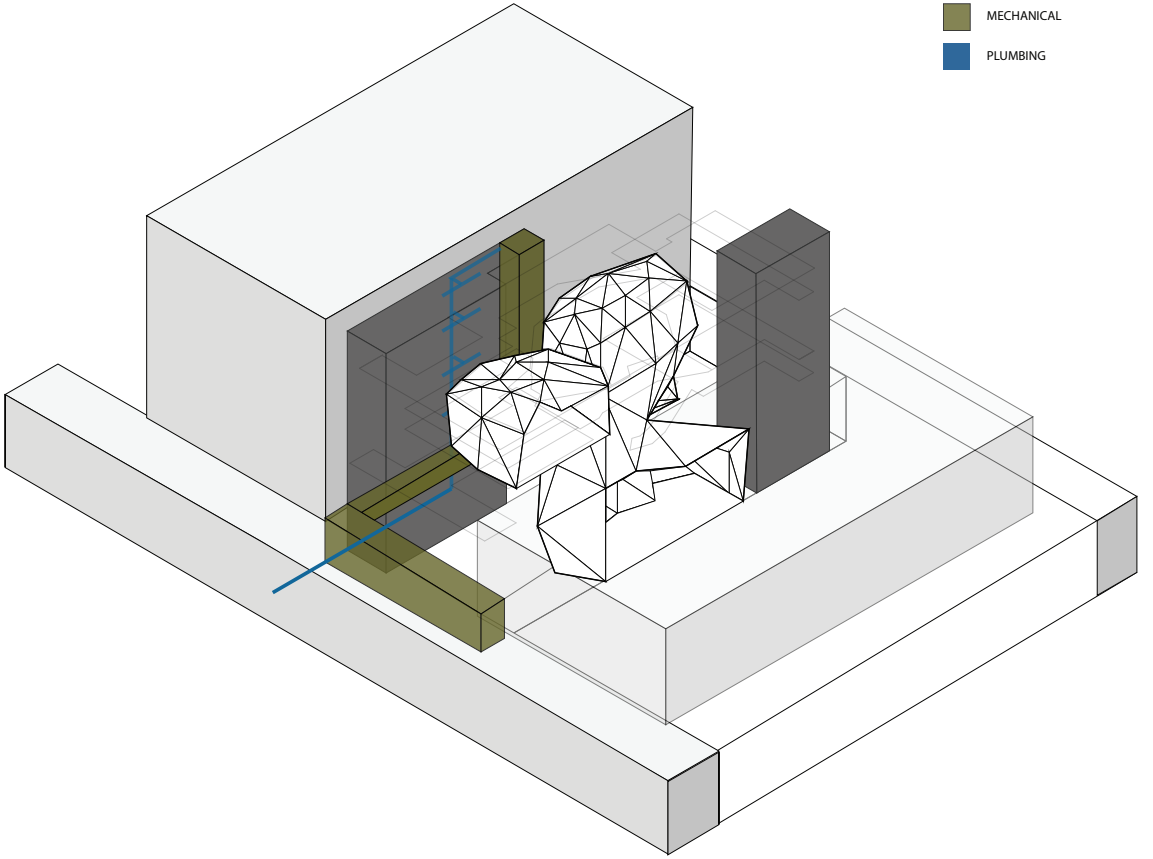
Site Context Site analysis of the existing map helped to establish a better sense of where the building should stand in a contextual sense.

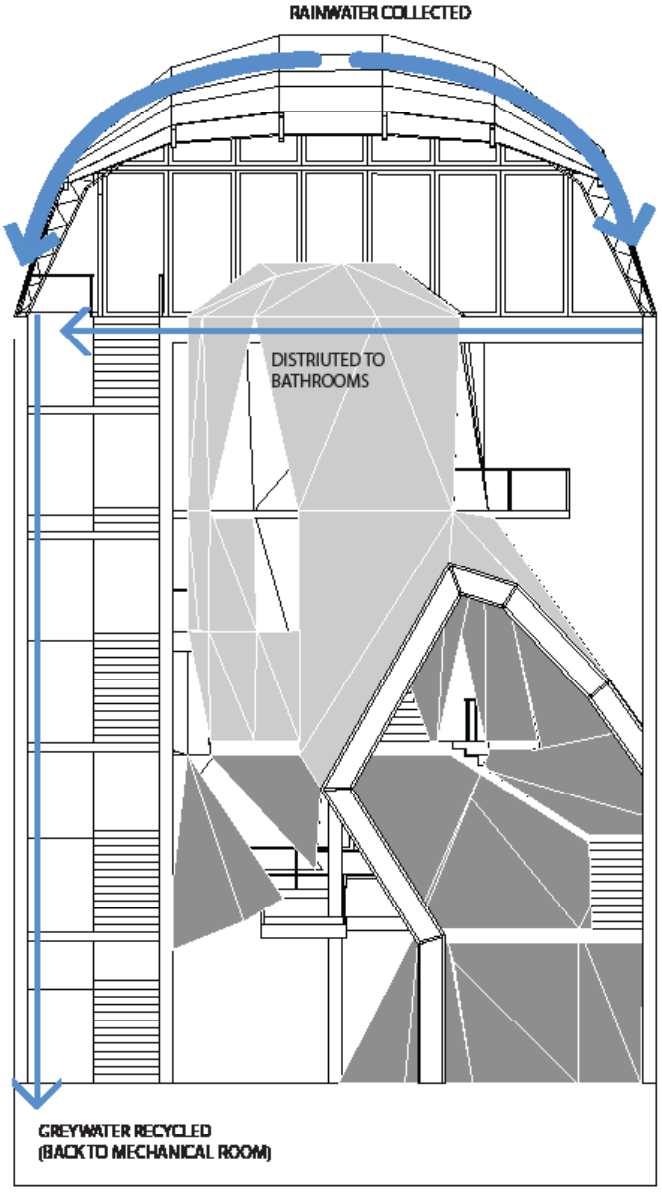
Site Plan The Artist Maze connects 11th Ave and the Artists' Alley.

WATER

Our roof is made out of polycarbonate panels set on a steel structure of arches of different sizes. Arches of varying heights creates an angle to collect rainwater at the center of the roof and then to the sides where it can then be distribted through the building. This water will be filtered and recycled for bathroom uses.

Graywater from the sinks in the kitchens and bars will be refiltered and reused, while black water will leave the building to be treated.

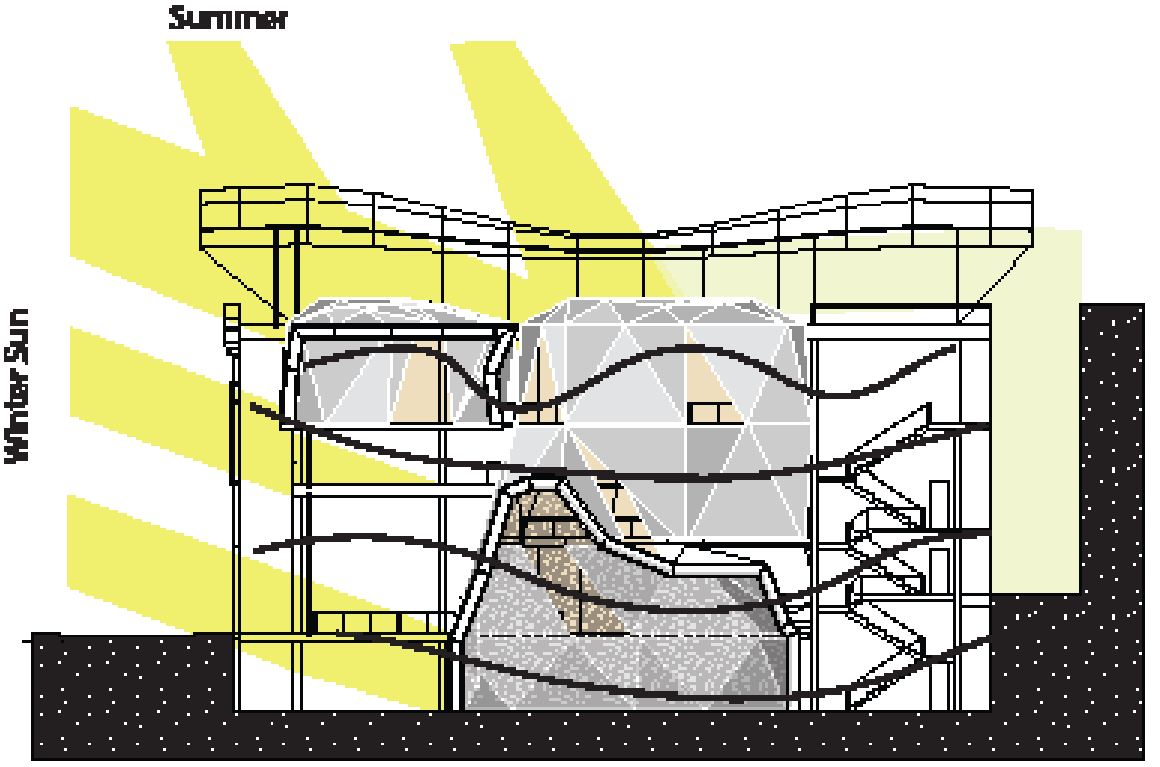



RAINWATER COLLECTED
DISTRIUTED TO
BATHROOMS
GREYWATER RECYCLED
(BACK TO MECHANICAL ROOM)

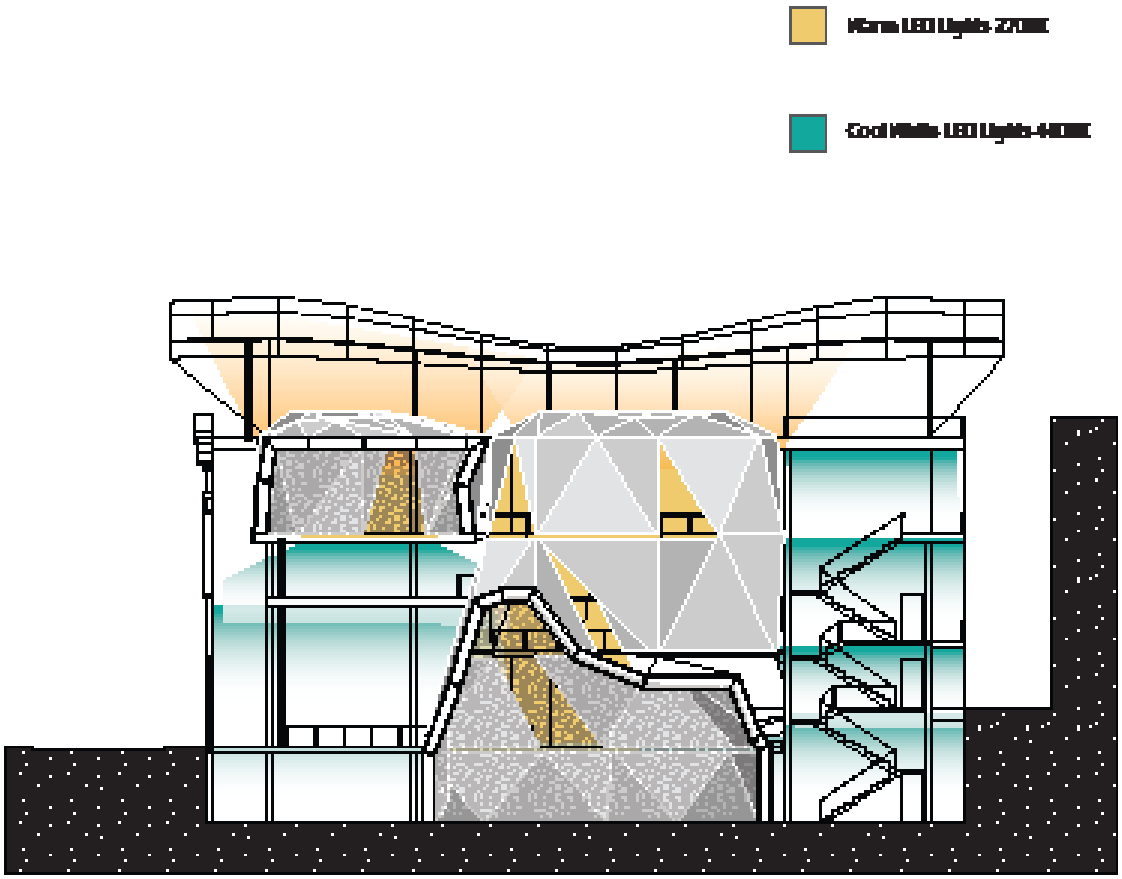
ENERGY

As part of the Living Building Challenge, our team focused on reducing the energy consumption and maximizing the use of passive and alternative energy systems. Our main focus was the usage of sunlight.

During the daytime, the vessles absorb sunlight, creating an ideal studio setting for the artists. We are implementing LED artificial lighting that illuminates the roof garden during night time.



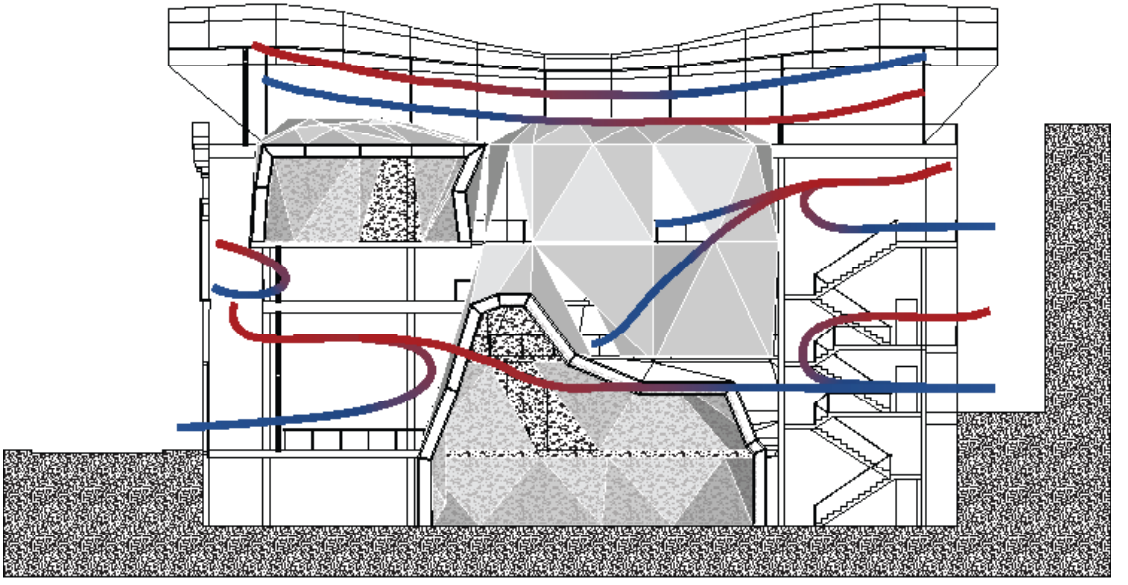
Daylightning Diagram This sectional diagram shows the ways in which daylight will reach into the building during summer and winter, The polycarbotate panels used in the objects difuse the light so that artists can get a better studio light.



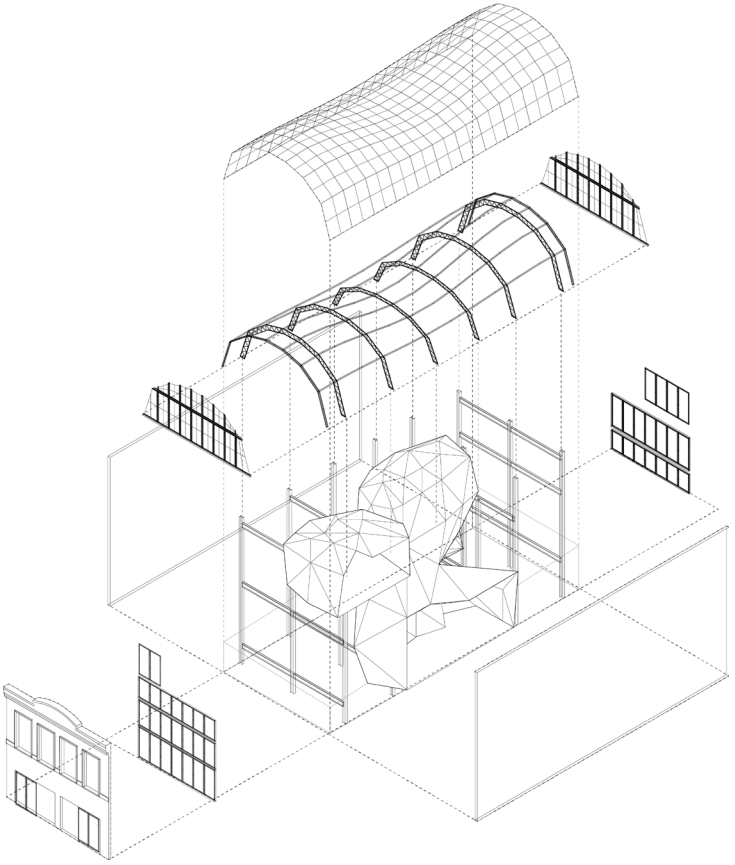
Artificial lightning diagram The stationary spaces inside the objects will be illuminated with artificial warm LED light of 2700k, while the transitional spaces outside will be illuminated by cool white LED lights of 4000k.

HEALTH + HAPPINESS

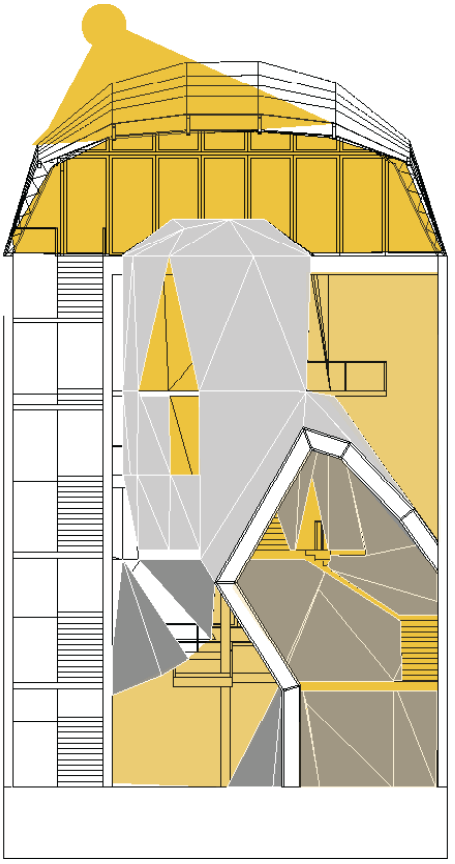
The building has many elements that promote healthy and happy lifestyle. The vessels absorb sunlight during the day, creating well lit studio spaces for the artists. By opening up the South facade and the rear facade the building invites direct and indirect light into the public spaces. The inside of the vessels is a world of its own with a warm, intimate atmosphere. The translucent shells of the vessels allow the artists to see the people pass by on the other side, but provides enough privacy to let them focus on their work during their stay. Spaces facing the Artists' Alley are designed for community participation and public activities, creating this social atmosphere that all visitors can savor.



Ventilation This diagram shows how fresh air flows through the building to mantain a high air quality at all times and therefore promote health and happiness to the building's inhabitants.



Exploded Axon This diagram shows the enclosure of the building with its different layers. Two glass walls on the facades allow plenty of natural light to enter the building. Transluscent panels allow a more controlled environment to help to control temerature and direct light entering the private areas.

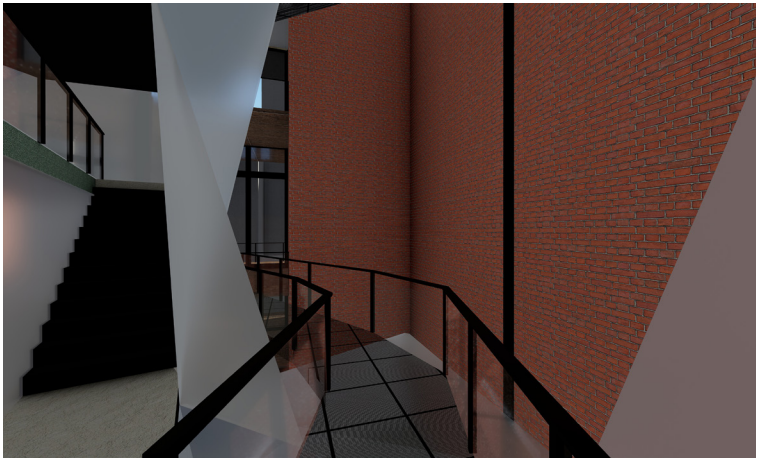


Sun Diagram Natural northern light will come in and be controlled through the polycarbonate panels to bring in indirect light into the vessel spaces. The roof garden is a completely open space with less light and temperature control, but with plenty of natural light and ventilation.

MATERIALS

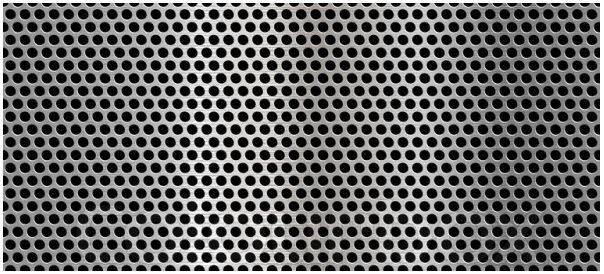
Most of the materials we are using for our building can be found locally like glass, concrete, woods, and steel. This will reduce enormously transportation costs and construction material costs, reducing the carbon footprint of the building. We are reusing the brick from the existing the building to make the two service towers to both extremes.

We are using one material that is on the red list and it is the polycarbonate panels we are using for our objects.



Interior Perspective Perspective view on the third floor hallway. You can peak inside the vessel on the left.

Night Garden Perspective The beer garden at night light up from the artificial lights installed in the vessels.



Perforated metal panels

Glazing

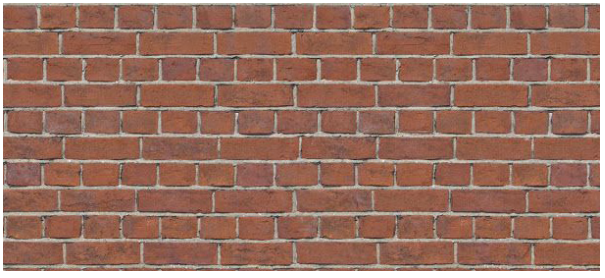
Oak

Concrete

Birch

Polycarbonate panels

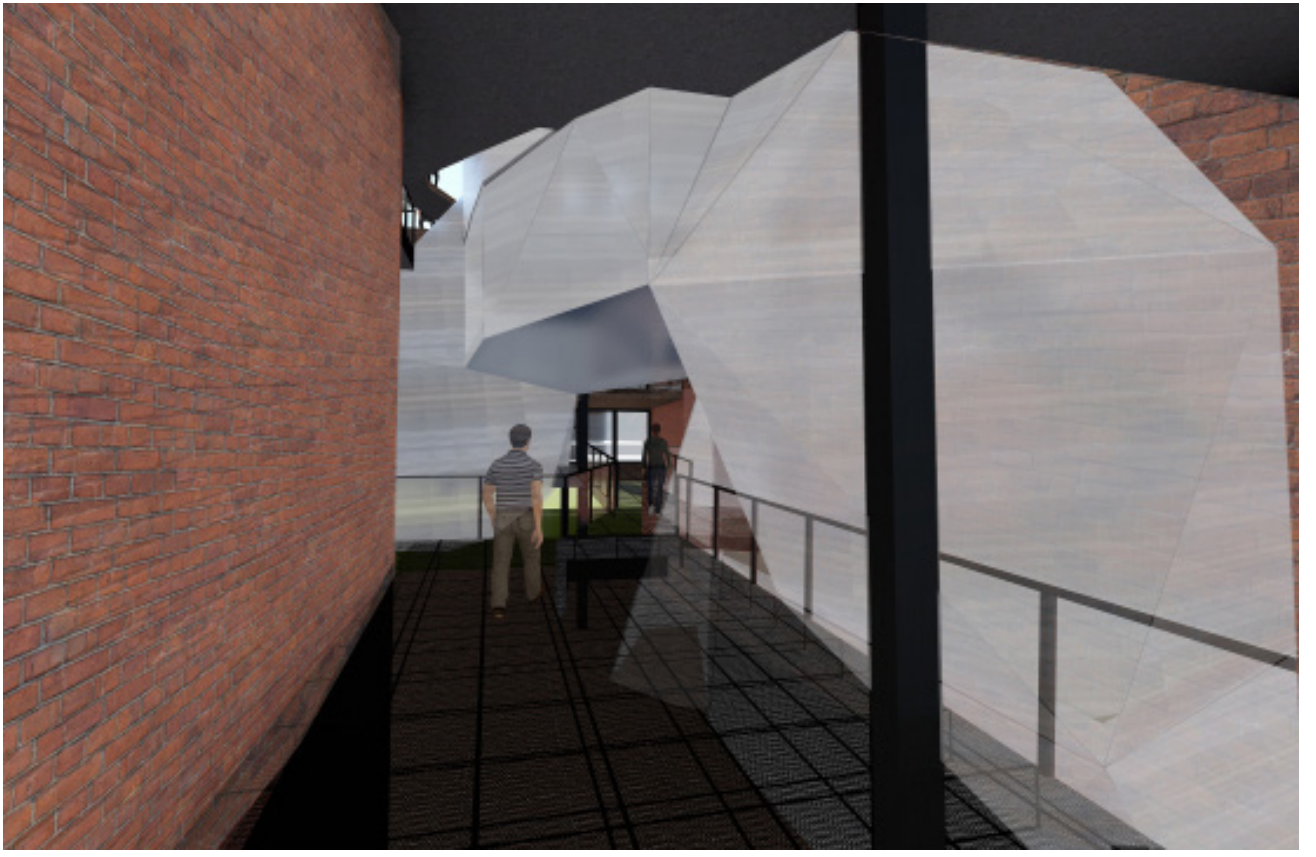
Steel Structure



Brick (reused)

EQUITY

Accessibility was one of our biggest considerations throughout the design process of the Artist Maze. We wanted to create a friendly, inviting setting where all members of the community can explore and enjoy. Accessible from the front and the rear of the building, the central ramp is connected to the elevator, allowing handicapped to access the other floors. Creating a visual connection in the alley space with the open balconies and the bleachers really embodies the community culture. Not only are we opening up the Artists' Alley, but also creating occupiable spaces merging with the alley space.



Ramp Perspective Central Ramp that connects the main street and the alley in the back. Visitors can enjoy the views of the light vessels nested inside the pre-existing structure.

BEAUTY

The Artist Maze focuses on preserving the old, while offering something new. It acknowledges the history of Altoona and the elements that celebrate it. We are leaving the side walls and exposing the brick to maintain the contextual identity of the exisitng building. The juxtapositon and the integration of the existing and the new systems create beautiful scenes inside and outside of the building. The goal is to emphasize what was there already and how the introduction of organically shaped vessels create a different atmosphere. The fluidity of the building makes it loose and comfortable. The inside of the vessels creates a new world with sunlight shining in from the roof.

Perspective View Rear perspective looking into the beer garden. This exterior space opens to the alley inviting visitors to come in.

ALTOONA ART FACTORY

Elliot Royce, Stephanie Bass

Arts Altoona is aiming to create an economic revival in Altoona by way of an arts renaissance. The former Kress Building, sitting in the heart of downtown, has the potential to act as the catalyst for this movement.

The Altoona Arts Factory is a space that can grow with the community. As the renaissance progresses and the needs of the community change, the building has the potential to adapt and change. It can be what Altoona needs it to be, when Altoona needs it.

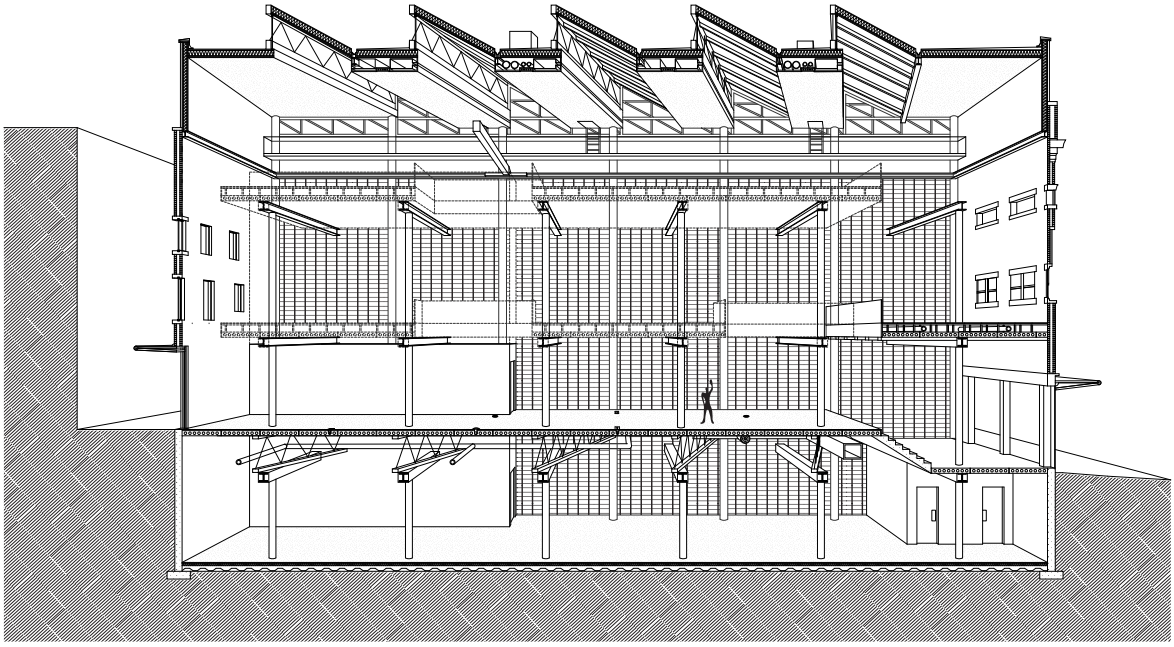
Through the construction of a new roof, a community maker space, and a reconfigurable open space, Arts Altoona can transform the Kress building and begin the renaissance quickly and affordably.

NEW ROOF

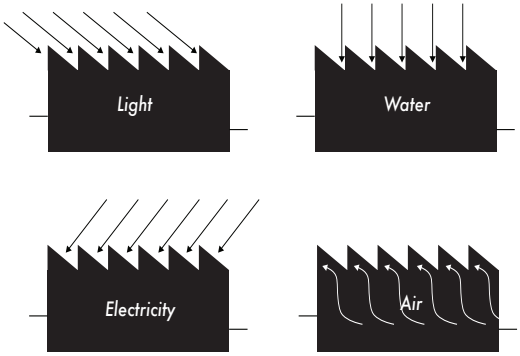
We looked to old factory and modern warehouse construction as precedents for the new roof. By combining the low cost, easy constructibility of the modern warehouse with the functionality of an old factory roof, the new roof is a practical starting point for the growth of the building and community.

The new roof acts as the engine for all of the systems in the building. It is designed so that the systems (lighting, air, electric, and water) are as passive as possible. Both passive and active systems located in the roof are transported down to the raised access flooring through columns at the perimeter of the building.

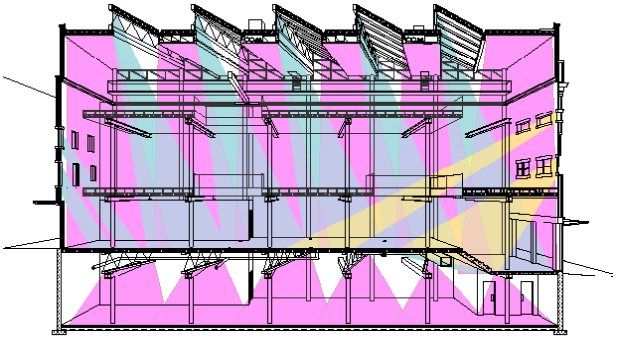
The columns, which also hold up the roof, act as the access point in which the systems from the roof can be carried throughout the building.



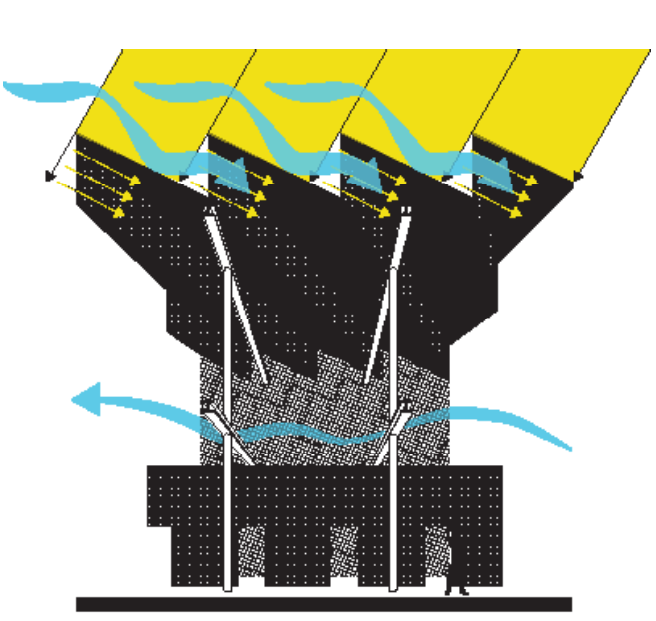
Detail Section Systems in the flat areas of the sawtooth roof are carried down through the perimeter columns.



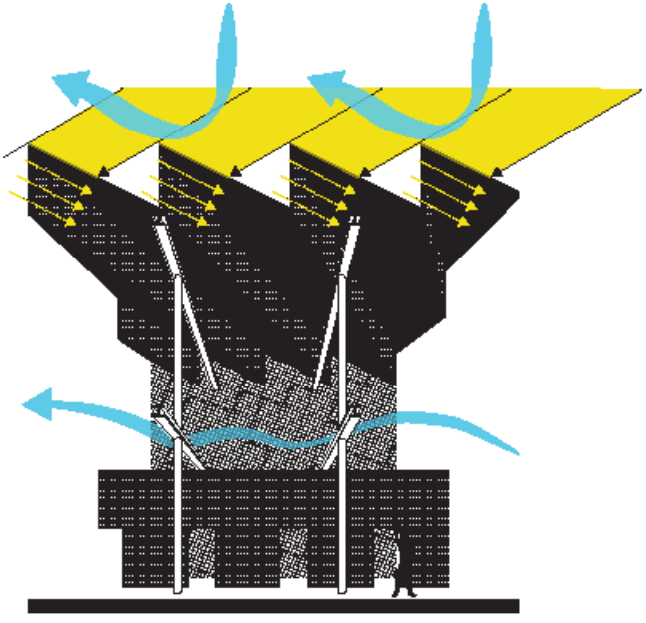
Passive System Diagram The roof form allows for North light, water collection, maximum solar gain, and natural ventilation.



Light Diagram Glazing on the north roof faces allow consistent North light into the building. Additional artificial lighting, powered by photovoltaic cells on the South sloping roof is used to supplement.



Summer



Winter

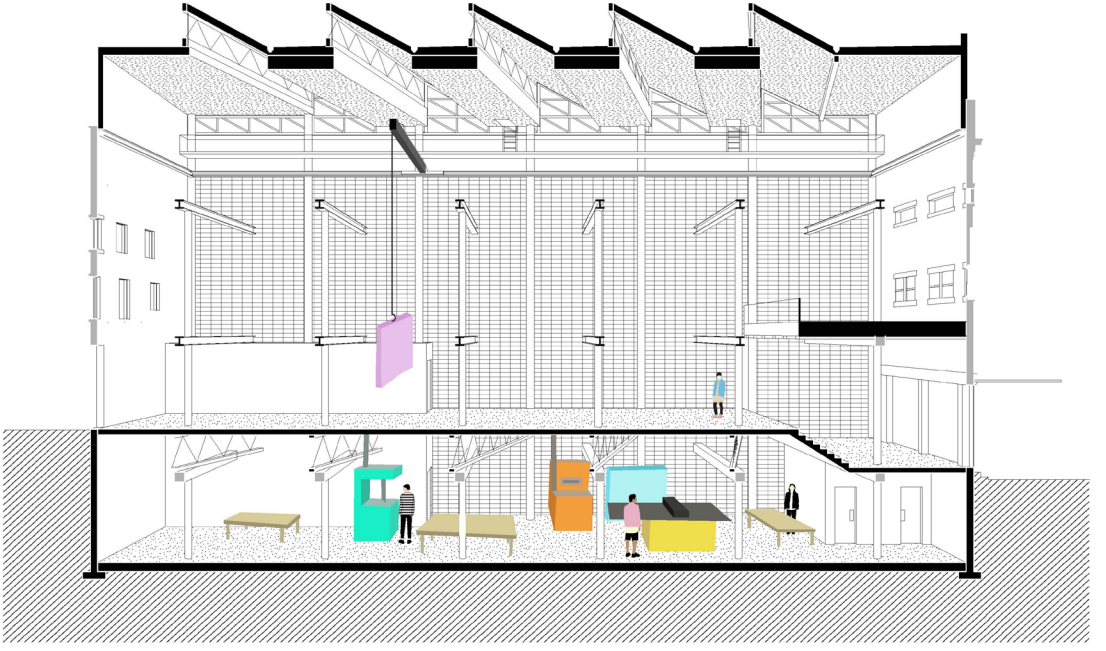
Summer and Winter Roof Conditions The roof is designed to optimize solar angles and prevailing wind conditions in the summer and winter months.

MAKER SPACE COMMUNITY

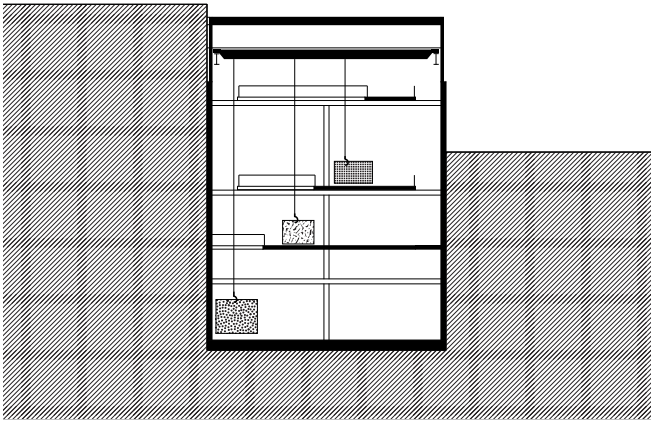
The first floor will be raised six feet to the elevation of the alley to give extra ceiling height to the basement. A community maker space will then be put into the new taller basement.

The maker space allows for people in the community to actively engage with the building, with the artists, and with Arts Altoona. This space can be used for the construction of the overall building, the production of art, and uses throughout the community.

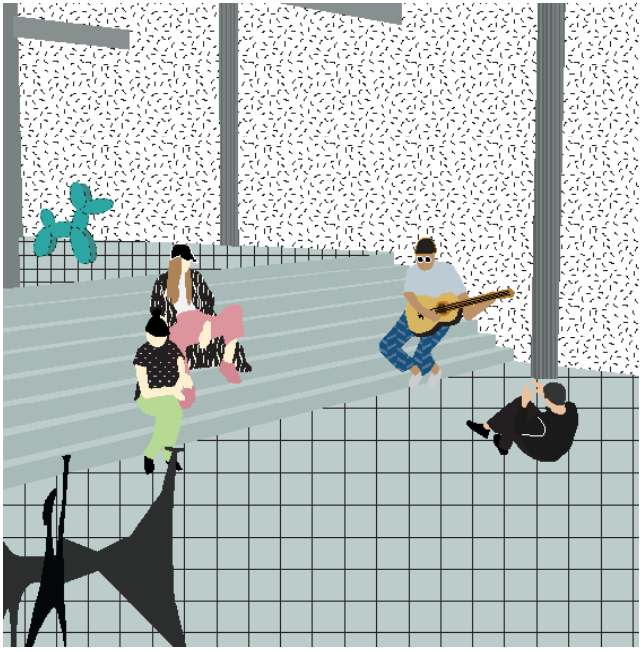
In addition to giving more room to the basement maker space, raising the floor to the alley height creates a gathering space at the lower entry towards the 11th Avenue side of the building.



Longitudinal Section The maker space in the basement interacts with the crane up above.



Bridge Crane The bridge crane allows easy moving of objects throughout the building. Openings in the floor let the crane bring things made in the shop of the maker space to be brought to the main floor of the building. The crane, built first, can also assist in constructing the new floors of the building.



Entry Stair The entry stairs can be a place where people hang out, sit for a minute, or where a presentation can be given. The front doors open up and make a public space at the front of the building with a connection to the street and Heritage Plaza.

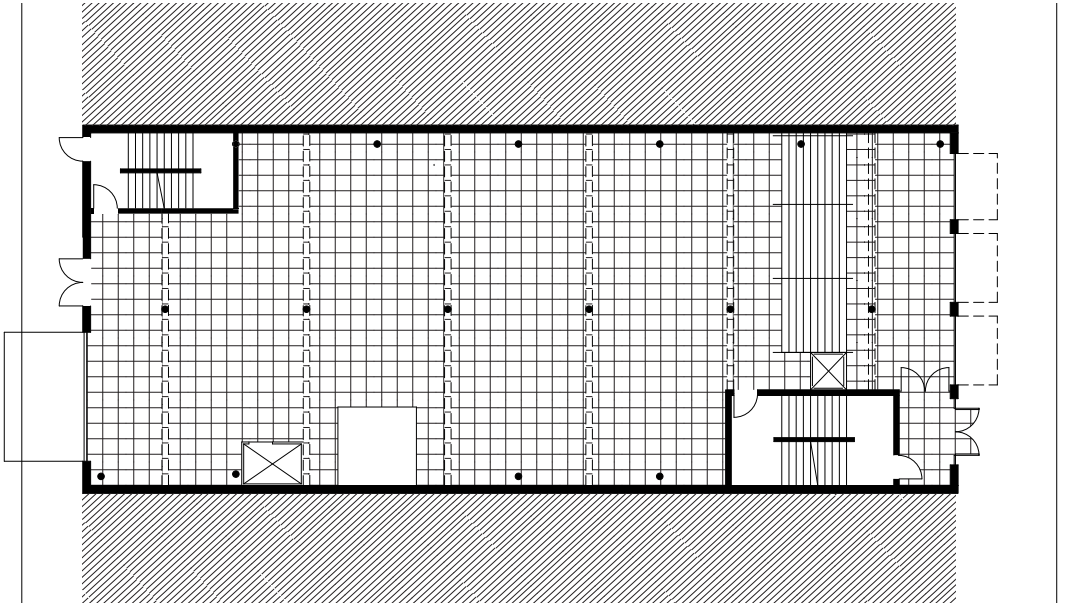
USAGE

Through a system of “micro-architectures” fabricated on site, the building is able to change and accommodate different events and programs based on the needs of the community.

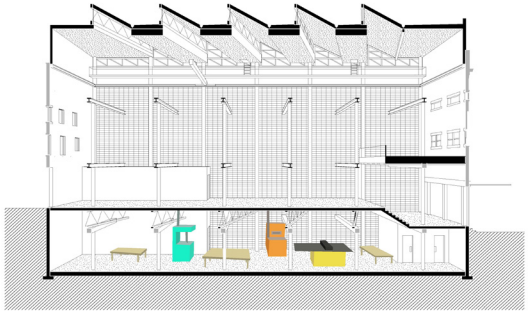
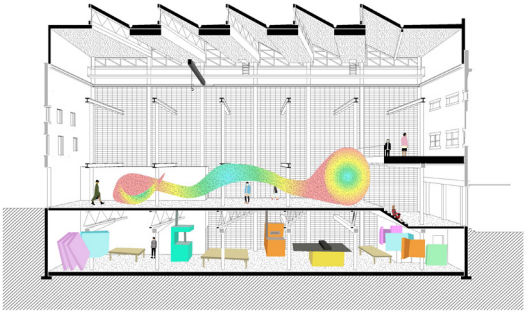
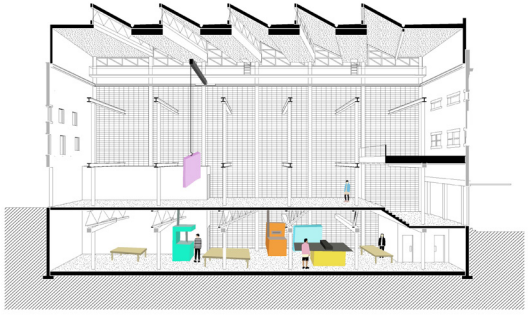
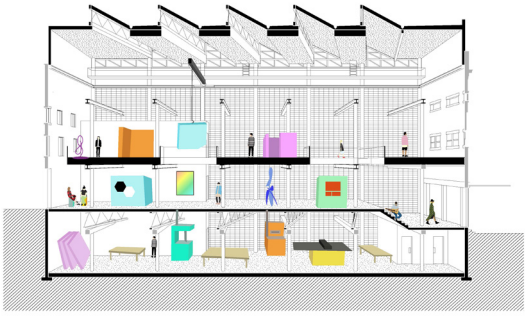
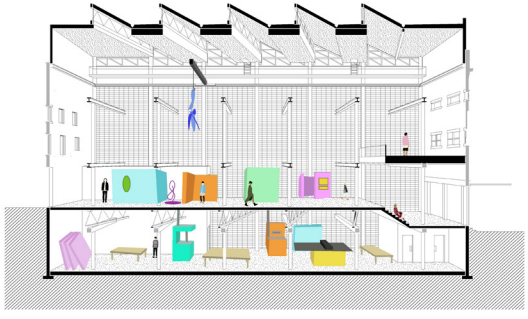
For this project, “micro-architectures” can be partition walls, pods, curtains, or anything that do what the people using the building need. The bridge crane aids in the moving of the micro-architectures from the basement maker space to the floors above.

The building accommodates the changing functions and growth of Arts Altoona by providing a large, open space equipped with outlets, fresh air, and natural lighting.

The building itself and the micro-architectures of the building allows for a fully functioning and adaptable space ready for the unexpected, exciting growth of a community.



First Floor Plan Open plans allow for a reconfigurable space.

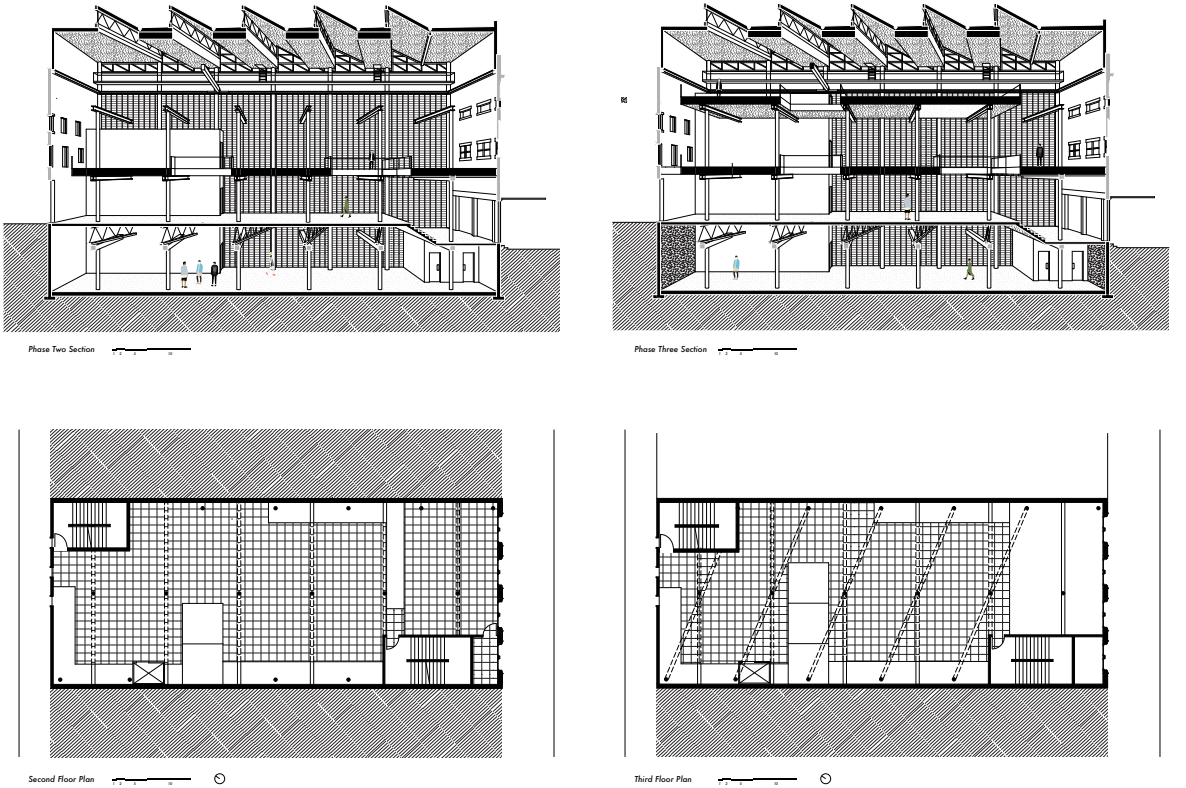

Building growth over time As the community grows and program is needed, micro-architectures can be added or taken away to fully utilize the space.

GROWTH

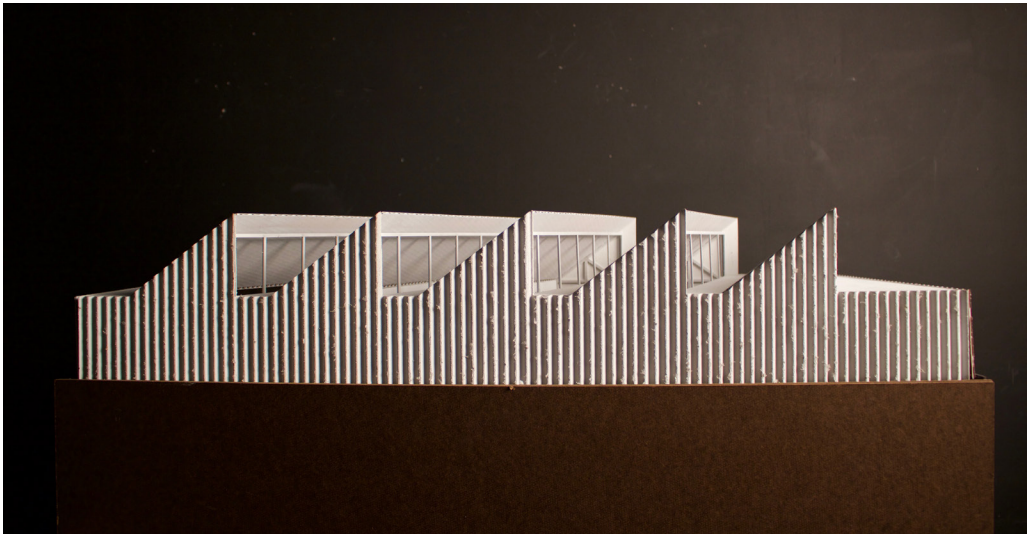
As program justifies a more permanent place, the building itself accommodates growth. New prefabricated, modular floors can be trucked in and lifted, using the bridge crane, onto the pre-existing building structure.

The new floor will be pulled back from the walls to give light to the floors below. The new floors will be raised-access flooring to maintain the flexibility of the building on the upper floors.

Raised access flooring allows the electricity produced from the photovoltaic cells on the roof to be transferred down the roof columns and distributed evenly along the new floors surface.



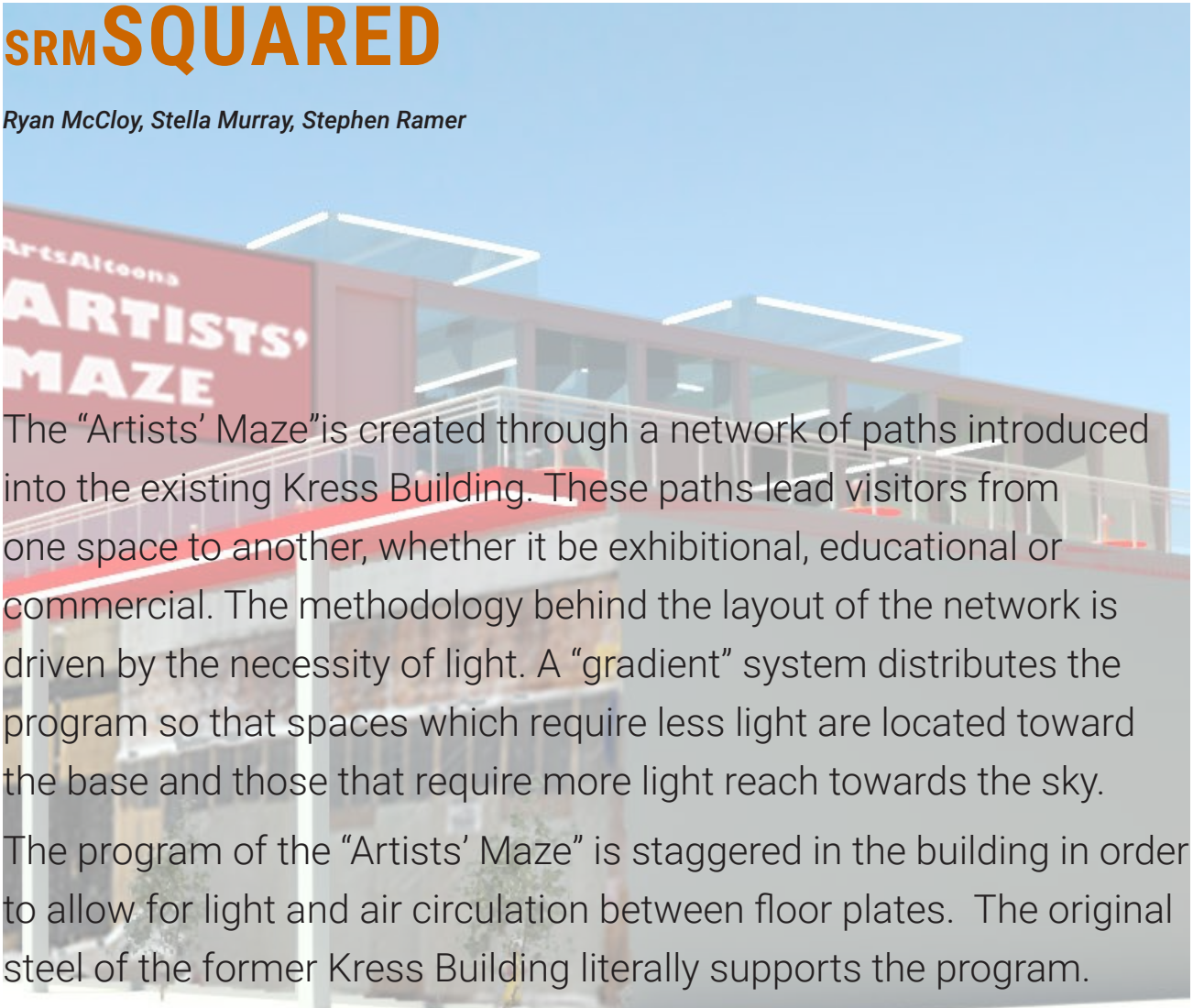
Floor Growth One or two more floors can be added to accommodate the growth of Arts Altoona.



Model Pictures and 11th Ave Streetscape

SRMSQUARED

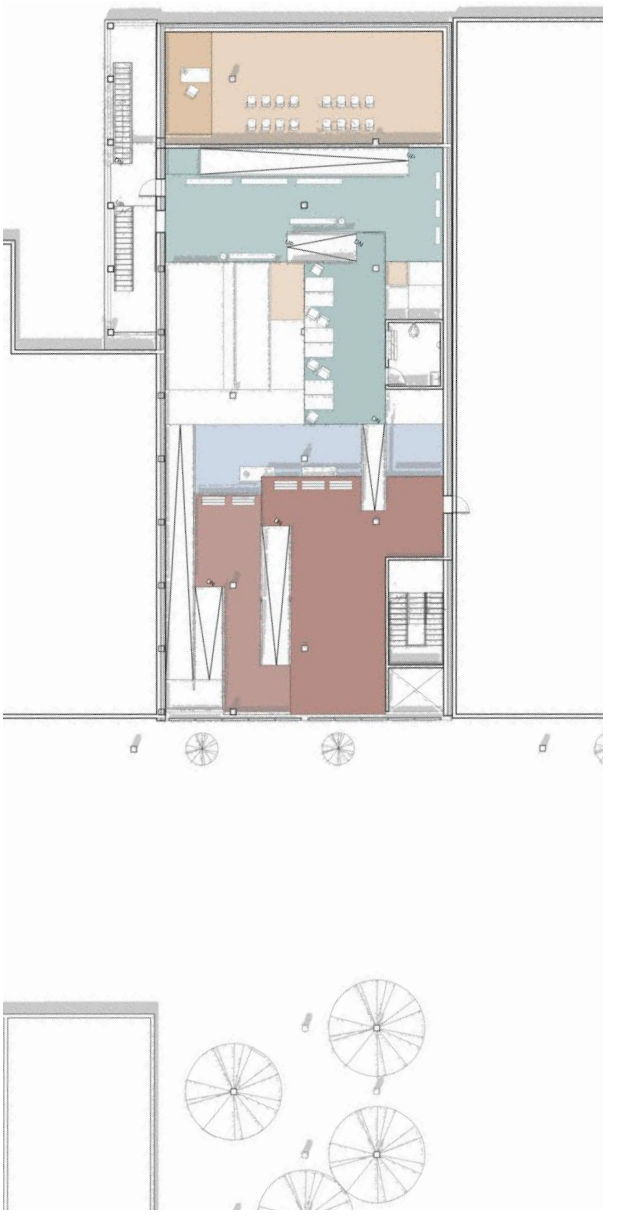
Ryan McCloy, Stella Murray, Stephen Ramer



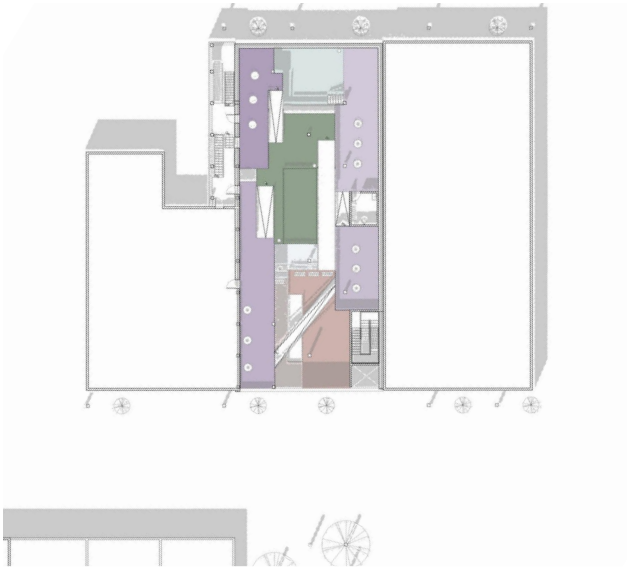
The “Artists’ Maze”is created through a network of paths introduced into the existing Kress Building. These paths lead visitors from one space to another, whether it be exhibitional, educational or commercial. The methodology behind the layout of the network is driven by the necessity of light. A “gradient” system distributes the program so that spaces which require less light are located toward the base and those that require more light reach towards the sky.

The program of the “Artists’ Maze” is staggered in the building in order to allow for light and air circulation between floor plates. The original steel of the former Kress Building literally supports the program. By having the steel and the historical facade remain intact, they will figuratively support the “Artists’ Maze” and Altoona as a constant reminder of its long-standing history as an industrial city that is now being reborn.

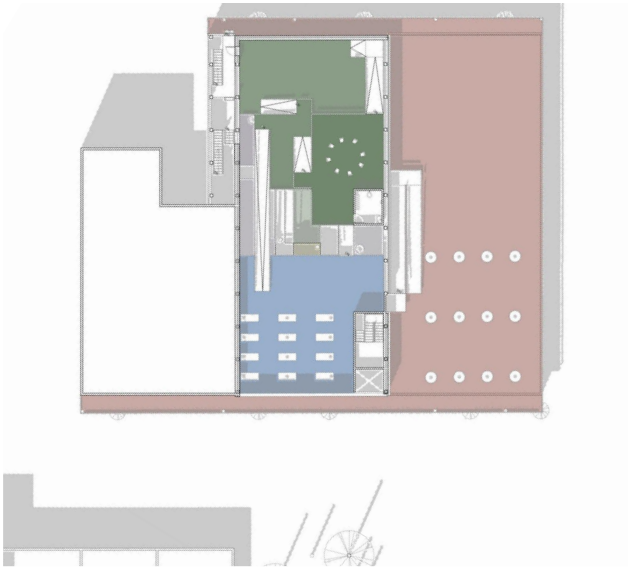
The Kress Building on 11th Avenue and 14th Street in Altoona, Pennsylvania is being retrofitted as the "Artists' Maze." As part of the ArtsAltoona initiative, its new purpose will be to serve the community in generating new commercial investment, serving as a main attraction of Altoona and introducing jobs to local and visiting artists. A network of paths lead visitors off of the streets and into the exhibitional, educational and commercial spaces. The methodology behind the layout of the network is driven by the necessity of light and of air circulation. A "gradient" system distributes the program so that spaces which require less light are toward the base and those which require more light reach towards the sky. The program is staggered within the building and is programmatically-colored to further reinforce the artistic nature of the space. In addition to natural ventilation and daylighting, solar panel-powered louvers and a green wall on the north-eastern facade of the "Artists' Maze" heavily incorporate the concept of sustainability. While the building REDUCES man-made generated power, the REUSE of the original steel of the former Kress Building also RECYCLES local material. By having the steel and the historical facade remain intact, they figuratively support the "Artists' Maze" and Altoona as a constant reminder of its long-standing history as an industrial city that is now being reborn.



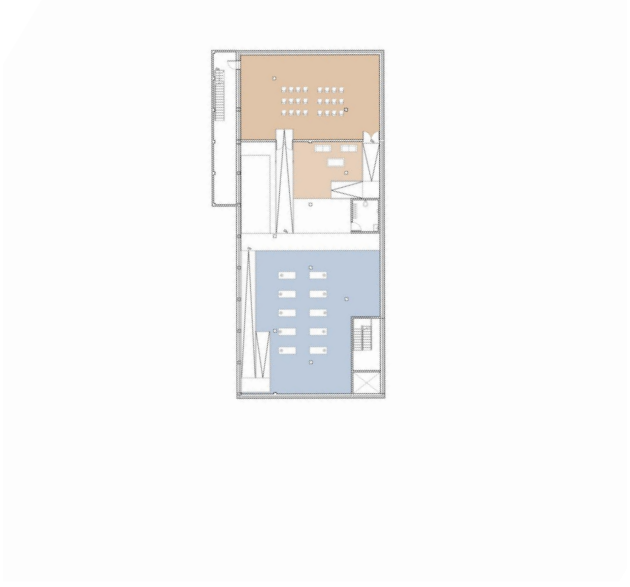
Level 1 Plan 1/16" = 1'-0"



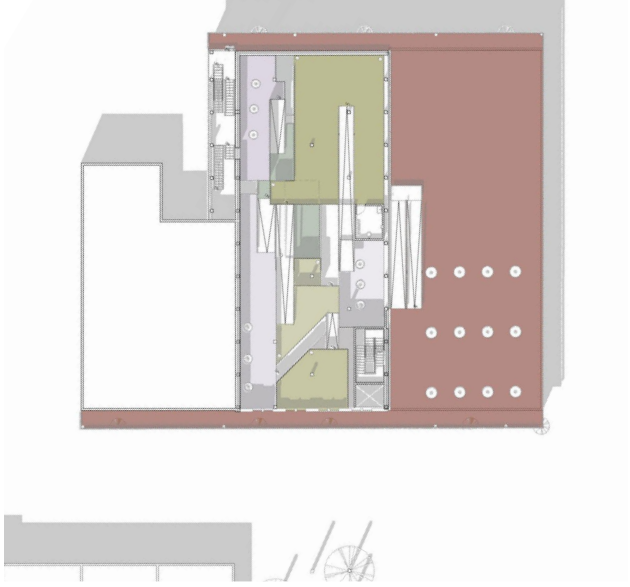
Level 2 Plan 1/32" = 1'-0"



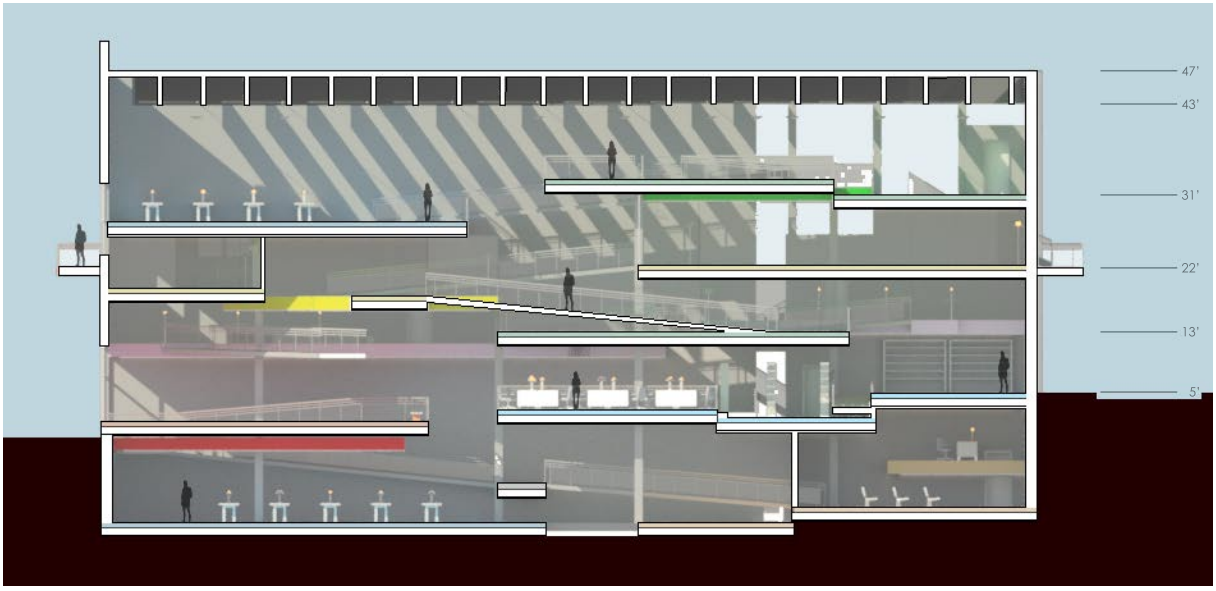
Level 4 Plan 1/32" = 1'-0"



Level 0 (Basement) Plan 1/32" = 1'-0"

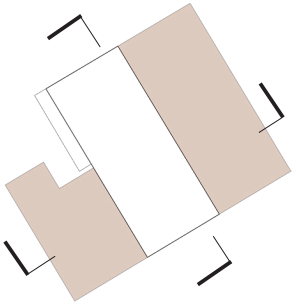


Level 3 Plan 1/32" = 1'-0"

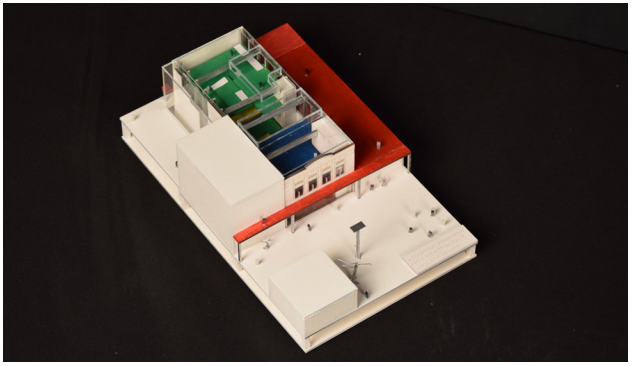


Longitudinal Section 1/16" = 1'-0"

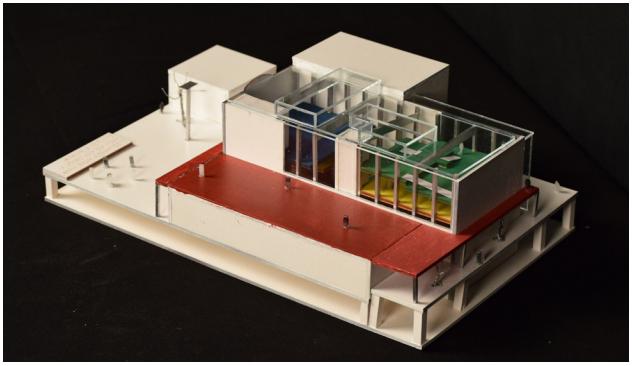
Transverse Section 1/16" = 1'-0"



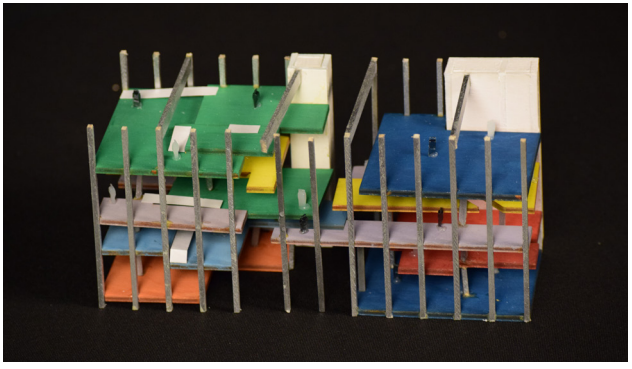
Key Plan



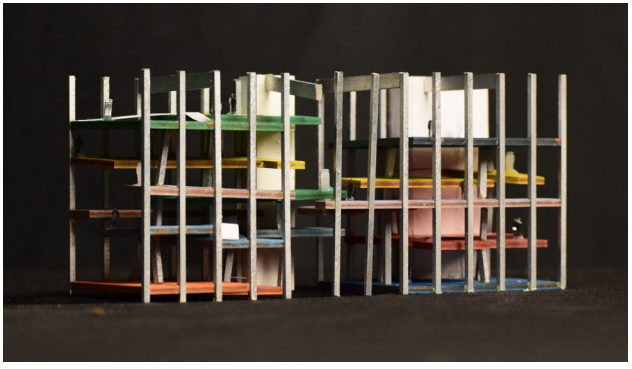
North View of Exterior 1/16" = 1'-0"



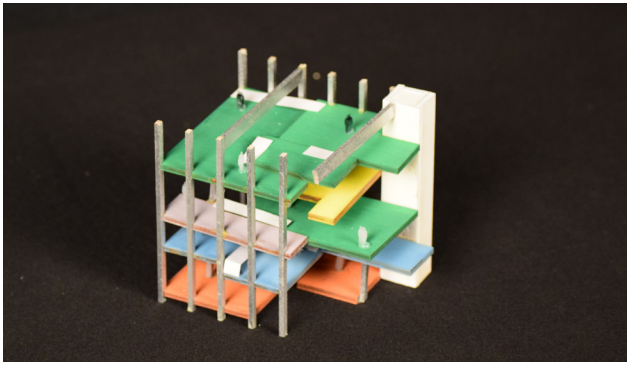
South View of Exterior 1/16" = 1'-0"



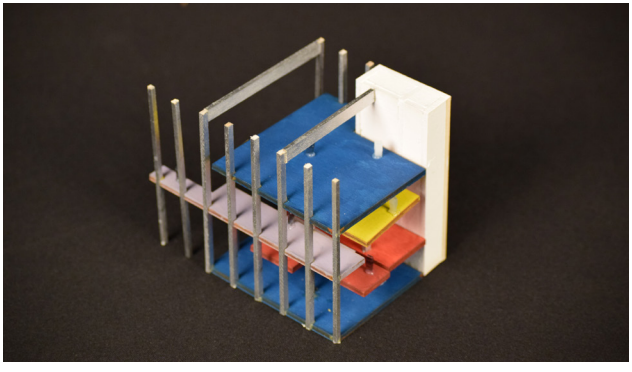
East View of Interior Elements 1/16" = 1'-0"



SE View of Interior Elements 1/16" = 1'-0"



South View of Front Int. Elements 1/16" = 1'-0"

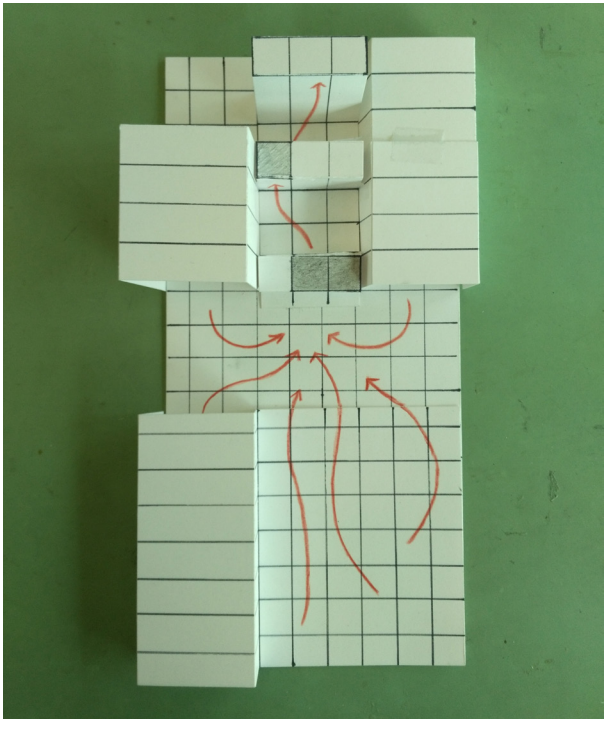


South View of Back Int. Element 1/16" = 1'-0"

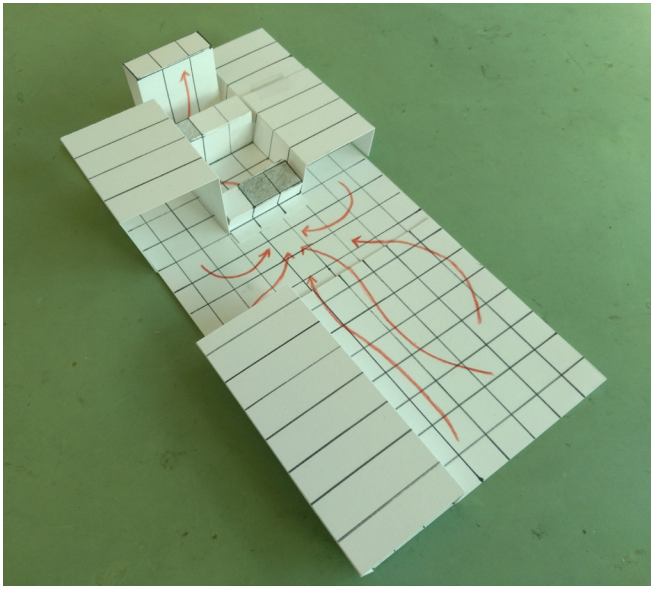
PLACE

The “Artists’ Maze” strives to be a main attraction of Downtown Altoona. Its design draws in pedestrians off the street and into the maze of self-discovery and creativity that awaits them. The Kress Building encourages all to enter and discover the space by the means of ADA-approved ramps. The historic facade of the Kress Building serves the “Artists’ Maze” well in attracting the attention of visitors and locals. SRMSQUARED’s decision to keep the front facade was based on the desire to stay true to Altoona’s past as Altoona progresses into the future.

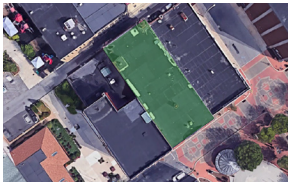
View of the Historical Facade of the Kress Building



“Urban Fabric” Model 1/32” = 1’-0”



“Urban Fabric” Model 1/32” = 1’-0”

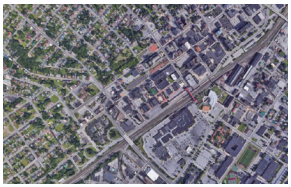


Our Site: Kress Building

1406 11th Ave. Altoona, PA

New Altoona Arts District

10th Ave. - 13th Ave., 13th - 15th St. Altoona, PA



Central Altoona

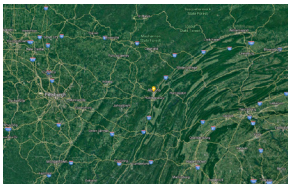
Focused around small businesses and the railroad/ bus station

Altoona, PA

Rebuilding the former railroad boom town, attempting an "Artistic Renaissance".

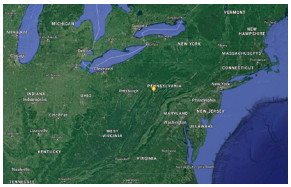
Near Surroundings

Mostly surrounded by farms, ideal for a farm-to-table establishment.



Central Pennsylvania

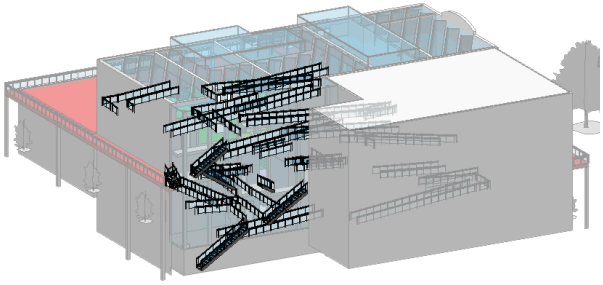
Altoona is located to the southwest of central PA (i.e. State College).



Pennsylvania

Located on the northeast coast of the United States.

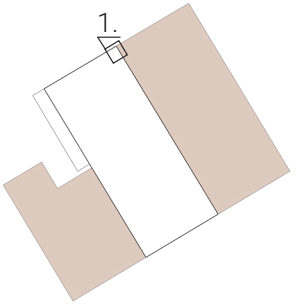
Arts Altoona Personal Tour 1. ArtsAltoona Headquarters; 2. Mishler Theatre; 3. Southern Alleghenies Museum of Art; 4. Much-Waited Bakery; 5. "Artists' Maze" (ARCH 432 Project); 6. Artist Education Center



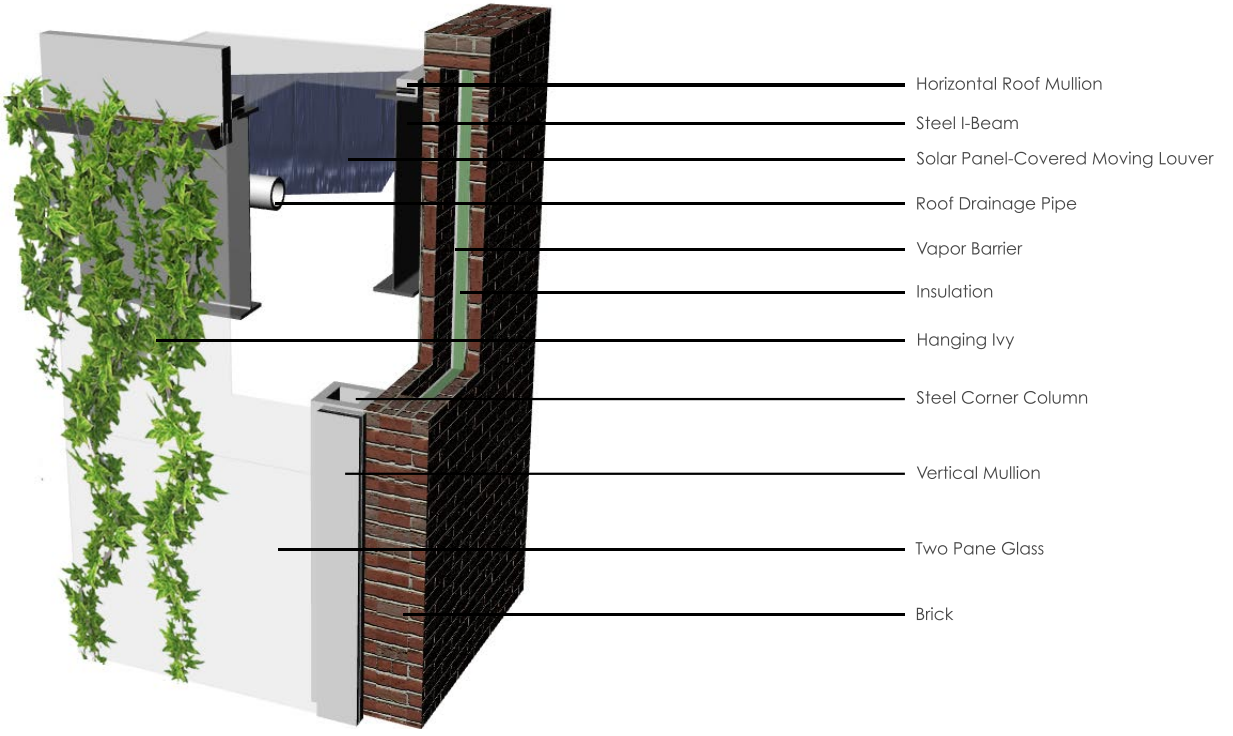
Diagonal Interior Elements Diagram The ramps between floor plates allow for all abled and disabled visitors to explore the "Artists' Maze" without being hindered in any way. Hence, the building is fully ADA-accessible.

WATER

Reusing the “natural resources” in Altoona, is an objective that is accomplished through rainwater collection. The plumbing and radiative floor heating are two such systems. Hidden-from-view drainage pipes collect rainwater and either direct it to these interior systems or to the exterior green wall. By having this system in place, the plants that serve as natural shading remain fully hydrated in the summer.

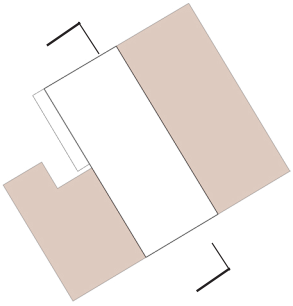


Key Plan

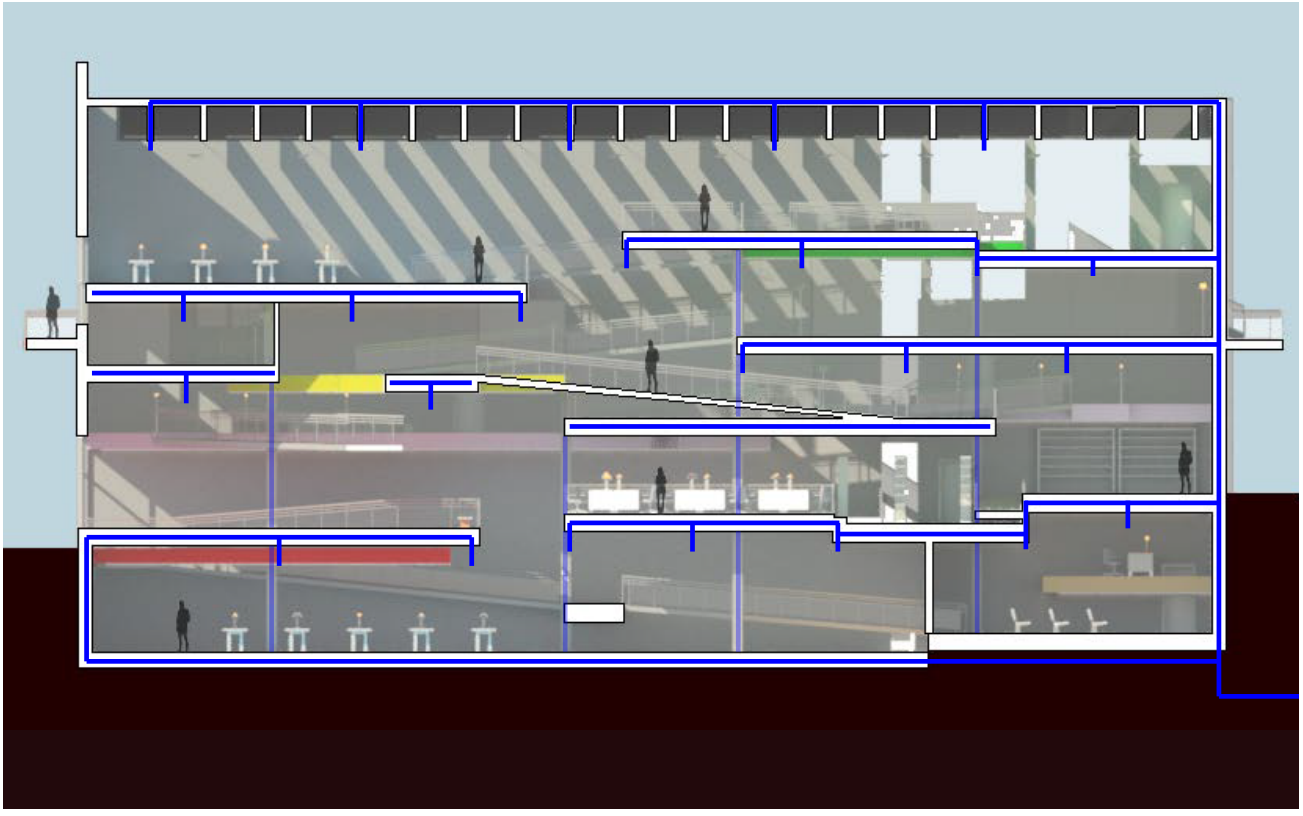


Corner Detail Axonometric The roof drainage pipe permits the rainwater to be collected and used for the sprinkler system and the radiative floor heating and cooling systems.

The sprinkler system is another interior system that Altoona's "natural resources" serve. To hide pipes from view, the sprinkler systems run vertically through the walls and columns and horizontally through a 9" air gap in each of the floorplates (see Materials).



Key Plan

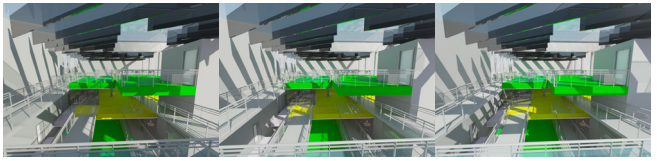


Longitudinal Section Diagram of Sprinkler System

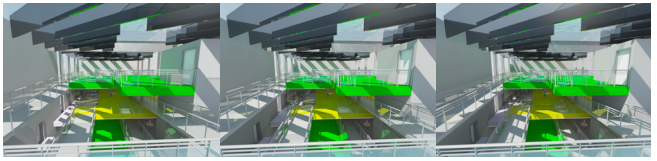
ENERGY

The research that SRMSQUARED conducted on Altoona, Pennsylvania has primarily focused on taking advantage of sunlight and natural ventilation. Through further investigation of the two, the team brainstormed a variety of methods of addressing the conditions. Related to the sun, SRMSQUARED envisions locating solar panels on steel columns in Heritage Plaza and on roof louvers. A second means of addressing the sun is daylight-sensing artificial lighting. Many companies offer affordable systems that detect the number of lumens on a surface and dim lighting fixtures to an appropriate brightness. This system saves money on the electric lighting bill and has been proven to save over 30% of energy spent annually.

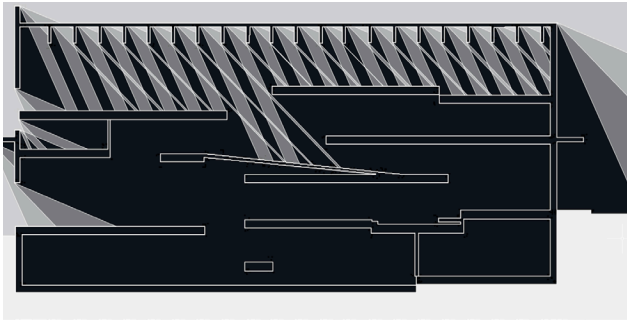
Related to natural ventilation, SRMSQUARED is proposing thermal chimneys. The non-traditional distribution of floor plates acts as an atrium that allows for a natural flow of air circulation which would then be discharged through the two chimneys indicated by raised roofs. SRMSQUARED is also incorporating direct rainwater collection for plumbing needs such as toilet flushing and climate control (see Water). Since it takes water significantly less energy than air to heat to a high temperature, running hot water through non-insulated pipes could be an efficient and effective means of heating the “Artists’ Maze” and taking advantage of sustainable energy.



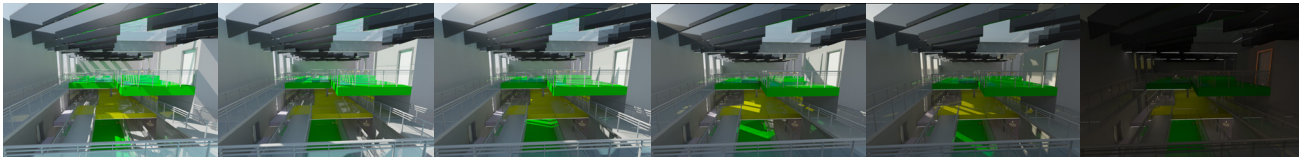
8:00am **9:00am** **10:00am**



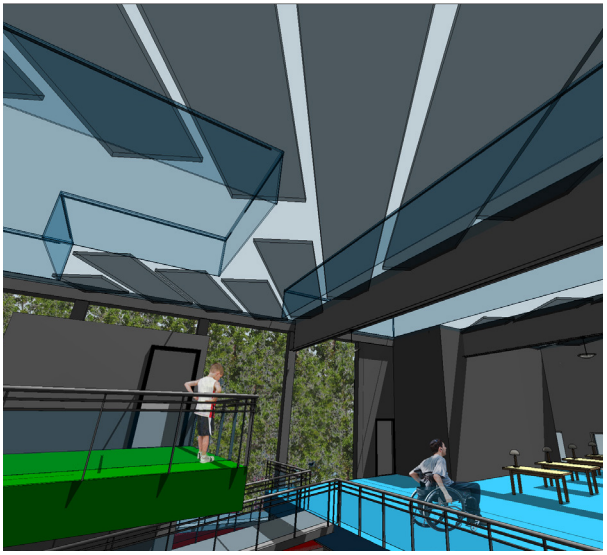
11:00am **12:00pm** **1:00pm**



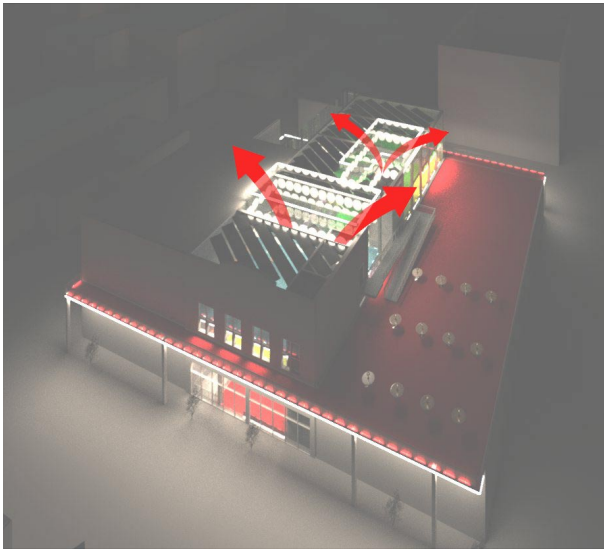
Abstract Informal Sun Study The different shades of gray demonstrate the results of one single sun angle (dark gray) and up to three overlapping angles (light gray).



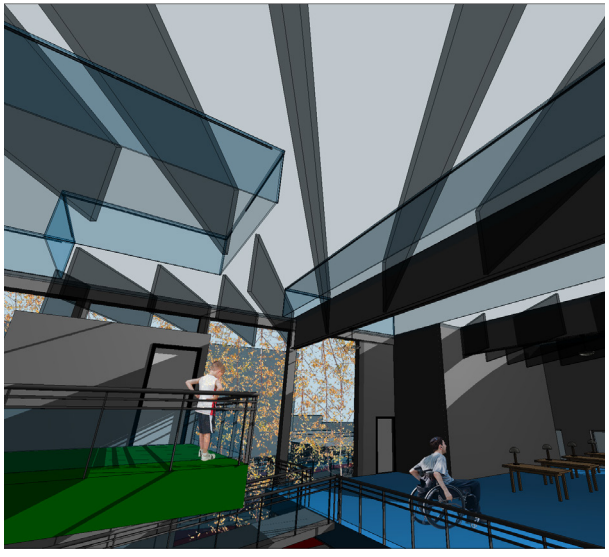
2:00pm **3:00pm** **4:00pm** **5:00pm** **6:00pm** **7:00pm**



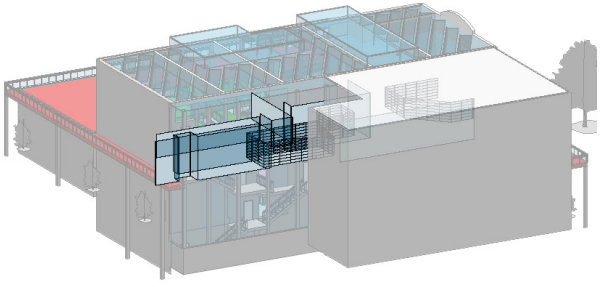
View of the Restaurant in the Summer The roof louvers are positioned up and the green wall minimizes direct sunlight.



West View of the "Artists' Maze" at Night The raised roofs indicate the location of the air chimneys.



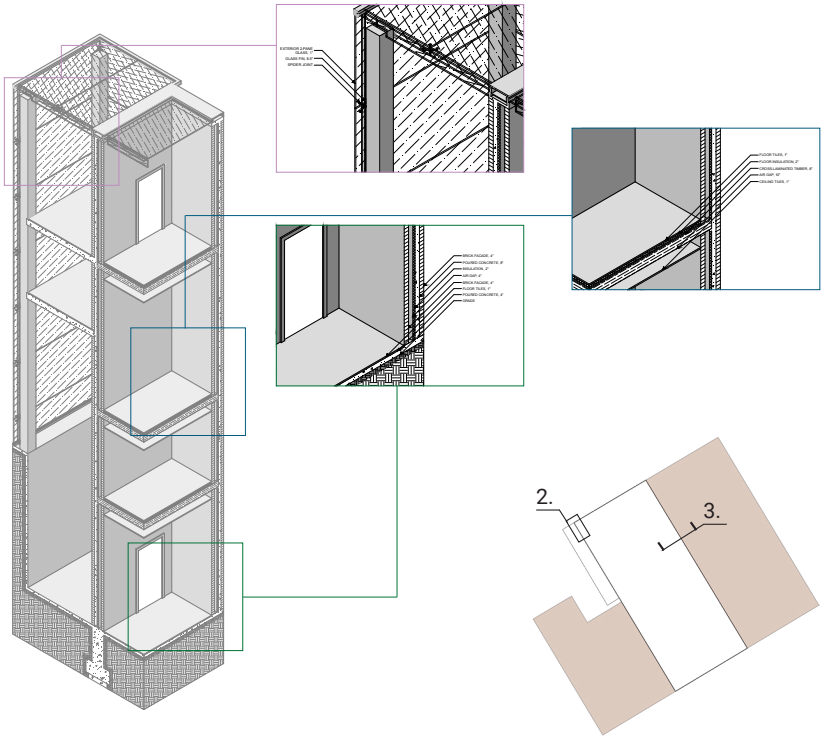
View of the Restaurant in the Winter The roof louvers are positioned down and the green wall is non-existent.



Vertical Interior Elements Diagram The lack of interior walls allow for light to travel deep into the "Artists' Maze".

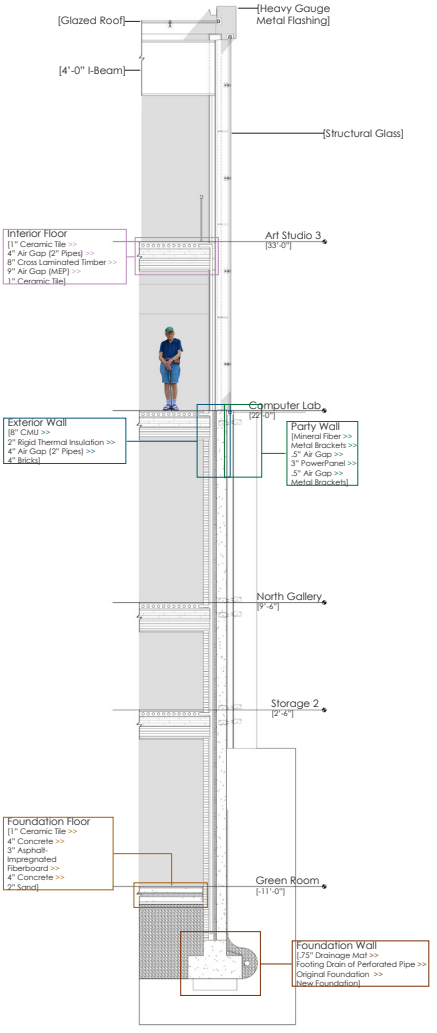
HEALTH + HAPPINESS

The design of the “Artists’ Maze” emphasizes the connection between man and nature. Natural light travels through the building effectively due to the building’s structure and enclosure systems. Despite there being interior enclosures for the sake of acoustic separation, they are transparent and soundproof. Visitors and locals can find peace in these enclosed spaces as they work on art in naturally lit environments that are naturally ventilated, too (see Energy).

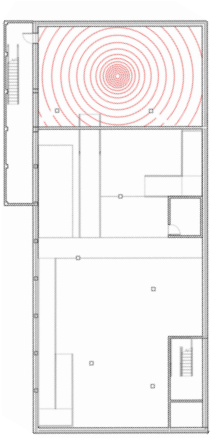


Key Plan

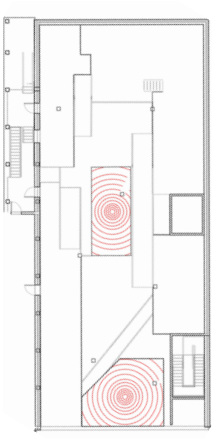
2. Special “Bay Section” The three call-outs show how the enclosure and the structure are separate entities.



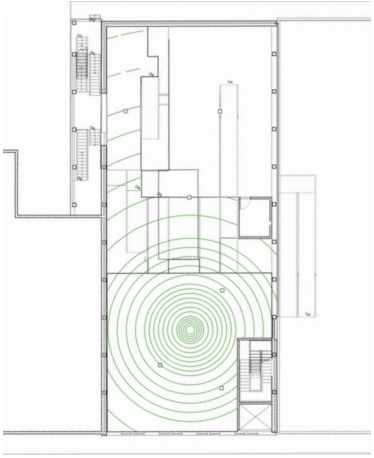
3. Foundation-to-Roof Detail



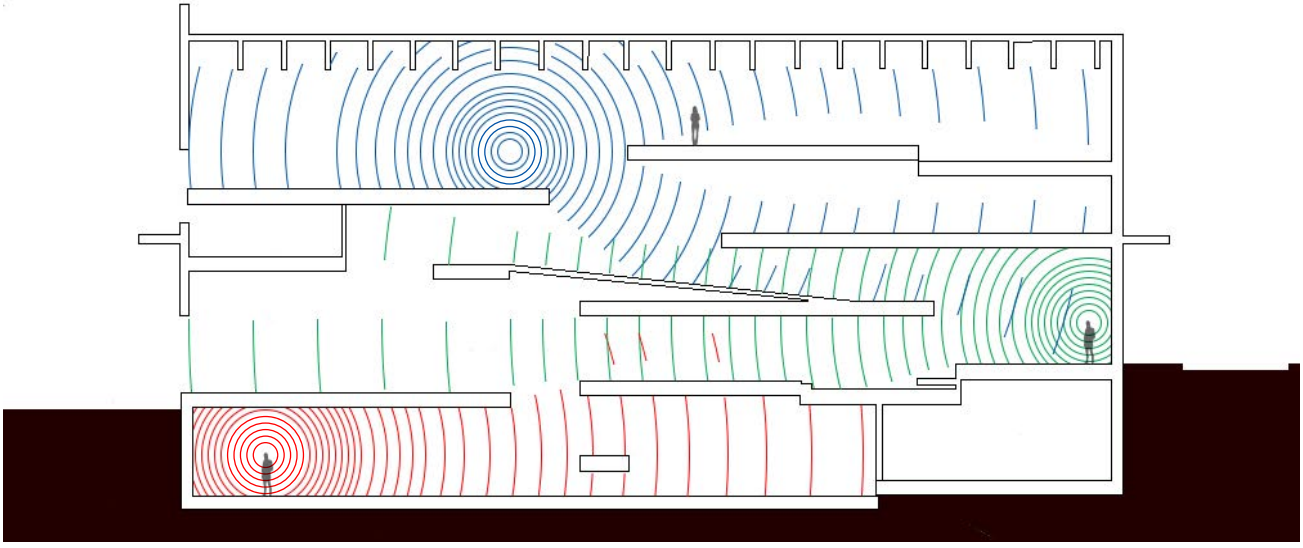
Level 0 (Basement) Plan The theatre is the only enclosed space in the subterranean levels.



Level 2 Plan The labs are noise-controlled in order to give privacy to artists.



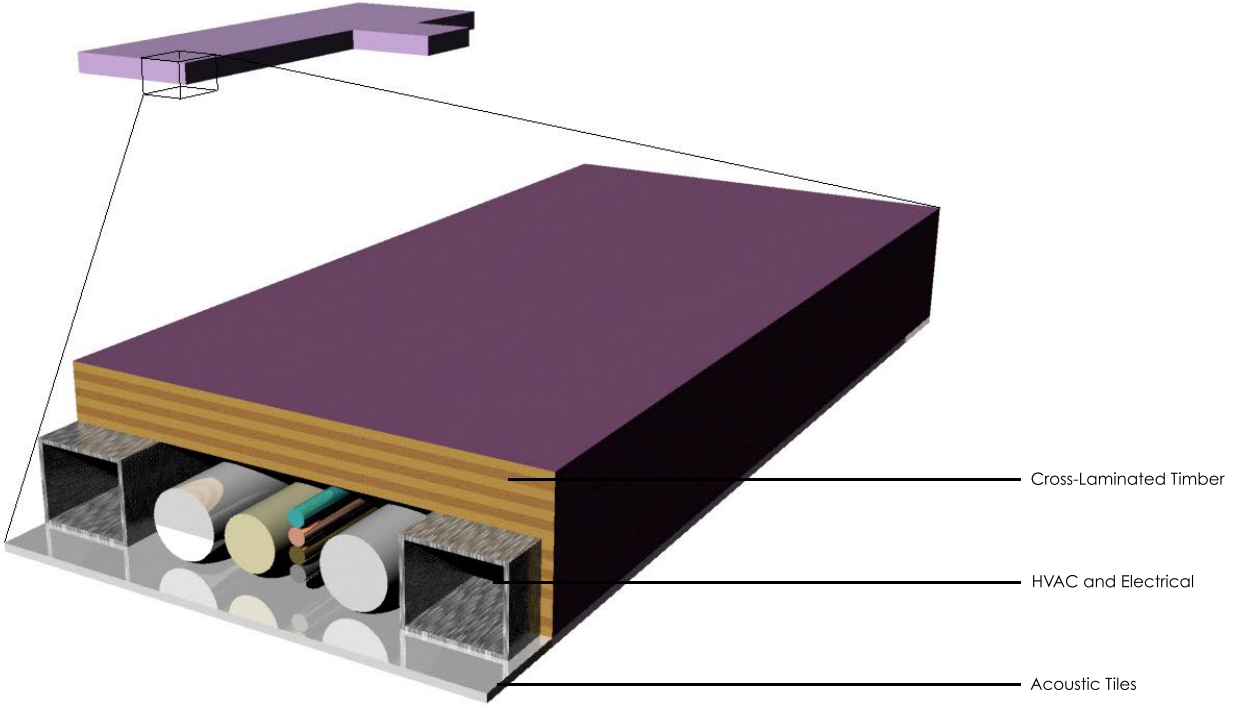
Level 3 Plan The restaurant is a completely open area that encourages interaction.



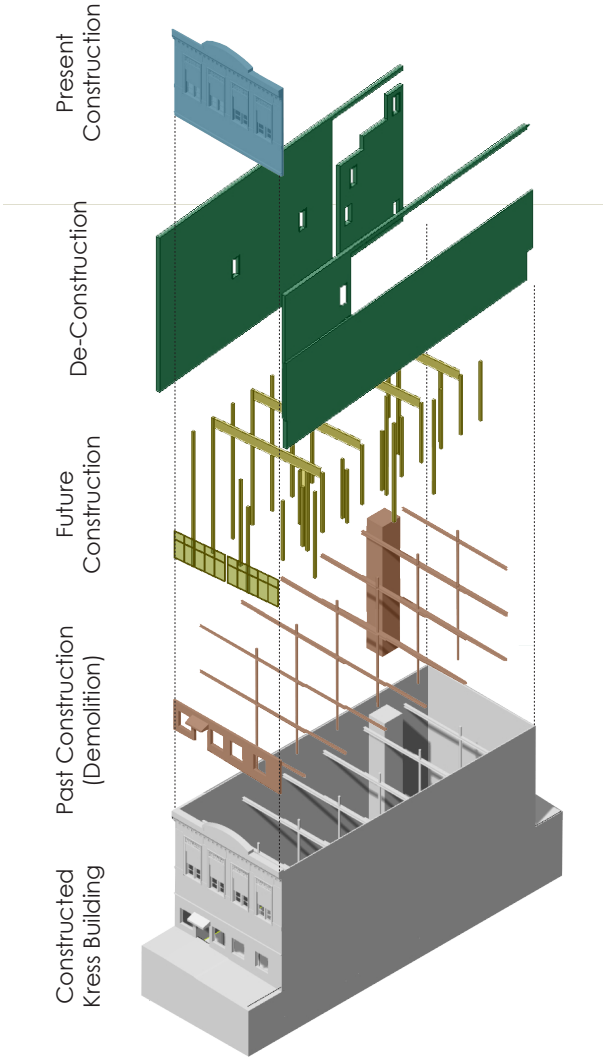
Longitudinal Section To make the "Artists' Maze" a community space, there are a limited number of walls that prevent sound from traveling from one area of the building to another.

MATERIALS

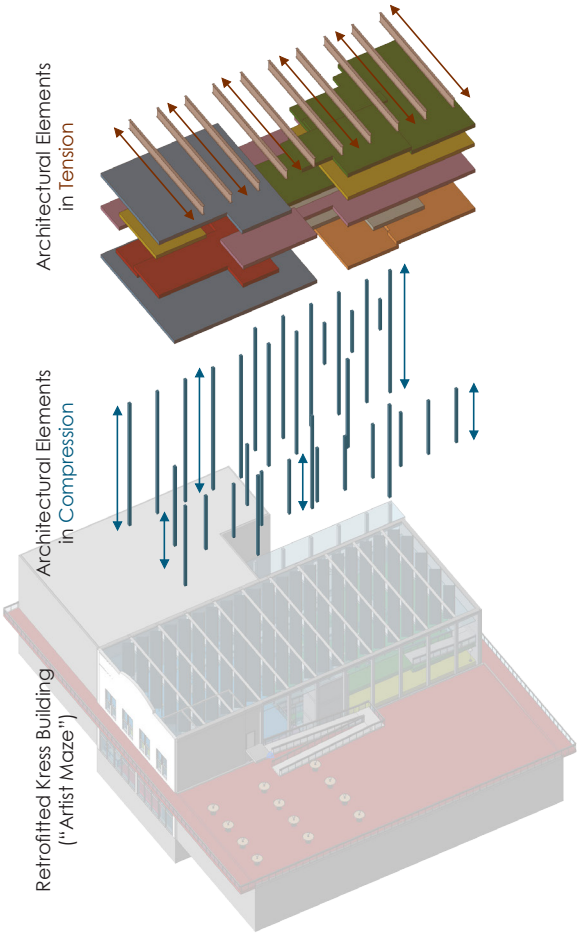
The front elevation of the "Artists' Maze" is nearly identical to the former Kress Building (see Place). SRMSQUARED sought to reuse and recycle in a way that takes part in the Renaissance of Altoona's history. The historical facade and the steel columns were important in that effort. However, SRMSQUARED found it important to focus on the third leg of sustainability as well: reducing. The materials of the "Artists' Maze" were selected according to their capability to reduce structural instability and to reduce view of exposed systems. To accomplish these technical and aesthetic tasks, cross-laminated timber (CLT) plays an important role. CLT can carry incredible weight across wide spans and is sustainable in its production (i.e. no fossil fuels are burned in the process).



"Deconstructed" Floorplate



"Deconstructed" Demolition Exploded Axonometric To remain true to the nature of the Kress Building, SRMSQUARED kept a number of its components (including its historical facade) and added others to further enhance its new nature.

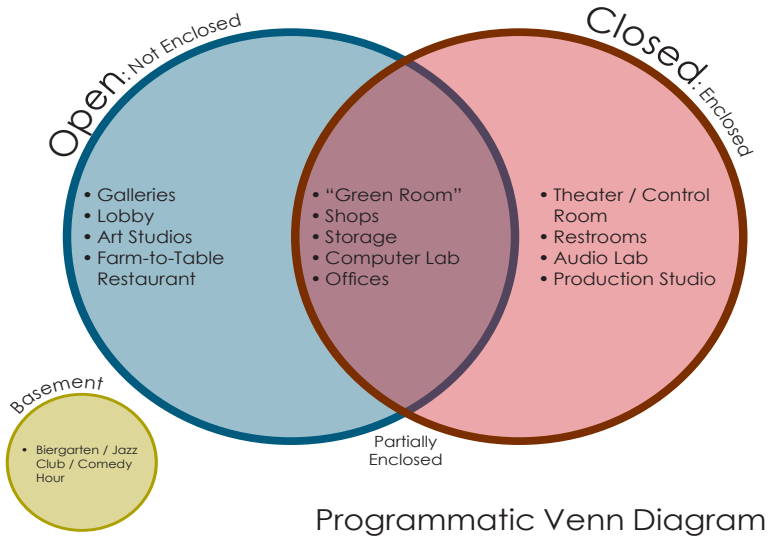


Primary Structural Elements

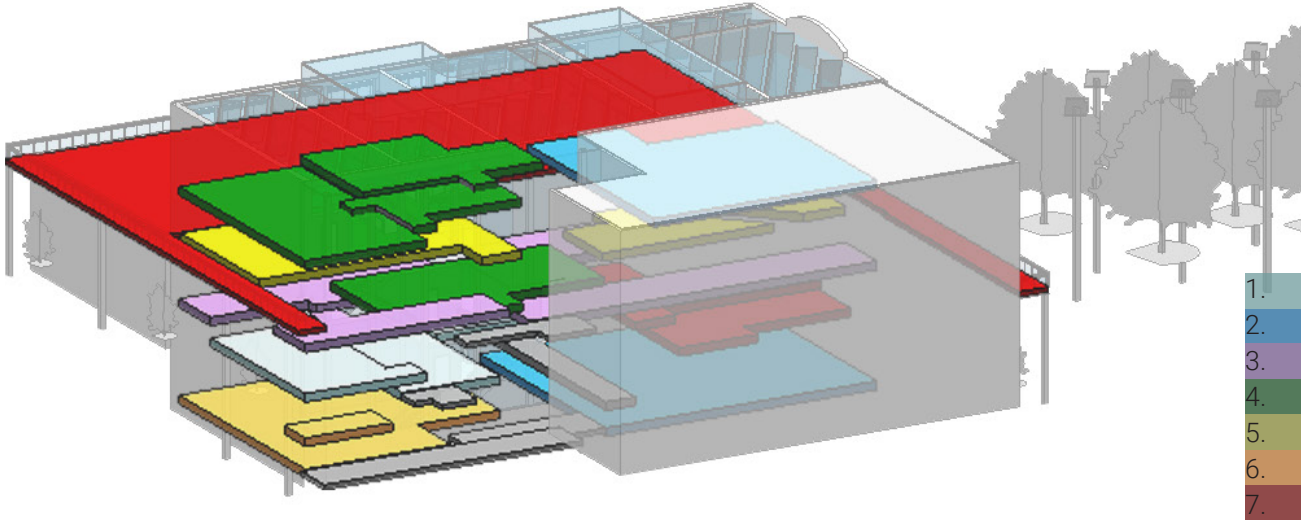
EQUITY

From the very beginning of the design process, SRMSQUARED kept the needs of all visitors in mind. The process began by brainstorming the nature of the program and its layout within the former Kress Building (see Overview). What followed was an ADA-accessible system that permits all visitors to experience the "Artists' Maze" in their own right. Due to layout of the program, no two views of the interior are the same. A vistor's experience within the space depends on location and time. Moreover, the color-coded floor plates serve as an artists' palette whose colors bounce off of each other when hit with direct sunlight. The experience within the "Artists' Maze" is one that can be had by everyone - abled or disabled, artist or not.

ArtsAltoona Challenges > SRMSQUARED Solutions SRMSQUARED investigated the needs and wants of the people of Altoona and how the "Artists' Maze" could address them in the best way possible.



Programmatic Venn Diagram In order to distribute the program throughout the building, SRMSQUARED divided the program in different categories based on the necessity of light.



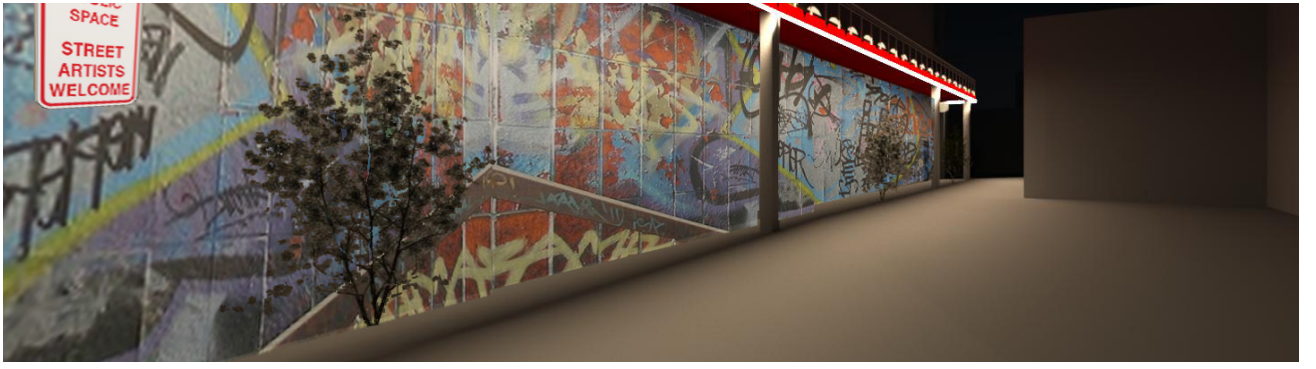
Horizontal Interior Elements Diagram 1. Services; 2. Drink/Food; 3. Galleries; 4. Studio; 5. Labs; 6. Theatre; 7. Public

BEAUTY

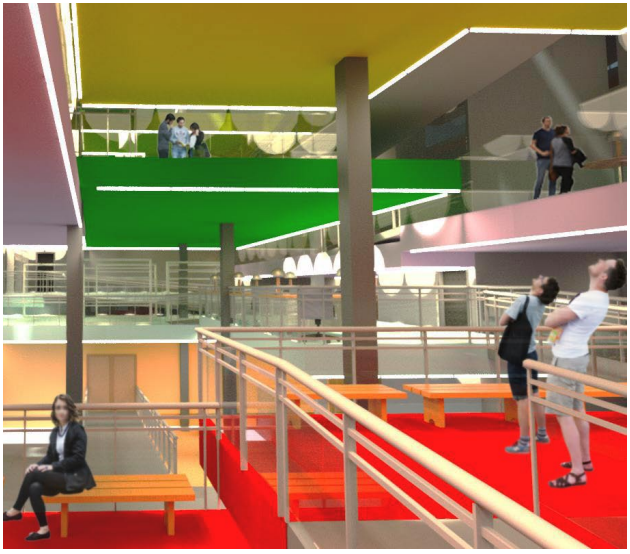
The core mission of the “Artists’ Maze” is to inspire visitors and locals to explore the space - and discover their own creative minds! Due to the lack of vertical partitions, the building successfully gives the impression of an open environment in which artists feel safe in their self-expression. In addition to the dedicated gallery spaces within the “Artists’ Maze,” the “Artists’ Alley” further encourages free expression as an outdoor outlet for their craft.

To create a sense of community and connection to the site, $_{SRM}$SQUARED literally connected the two buildings adjacent to the “Artists’ Maze” to reinforce this concept. A balcony, wrapping around three sides of the block, embraces and connects three buildings.

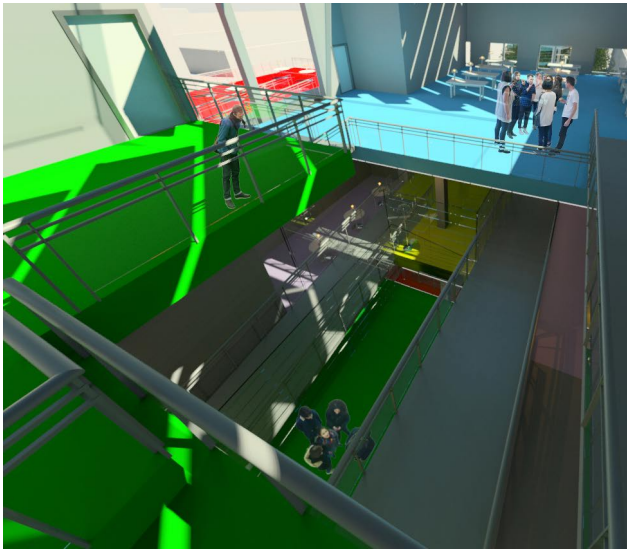
View of the “Artists’ Alley” The back alley of the “Artists’ Maze” functions as a canvas on which people can express themselves.



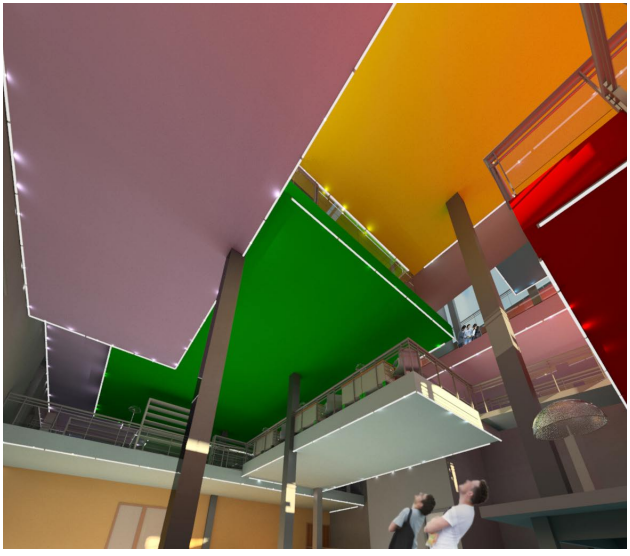
View of the “Artists’ Alley” at Night No matter the time of day, the back alley of the “Artists’ Maze” is continually in use.



2. View from Lobby This is the view upon entering the "Artists' Maze".

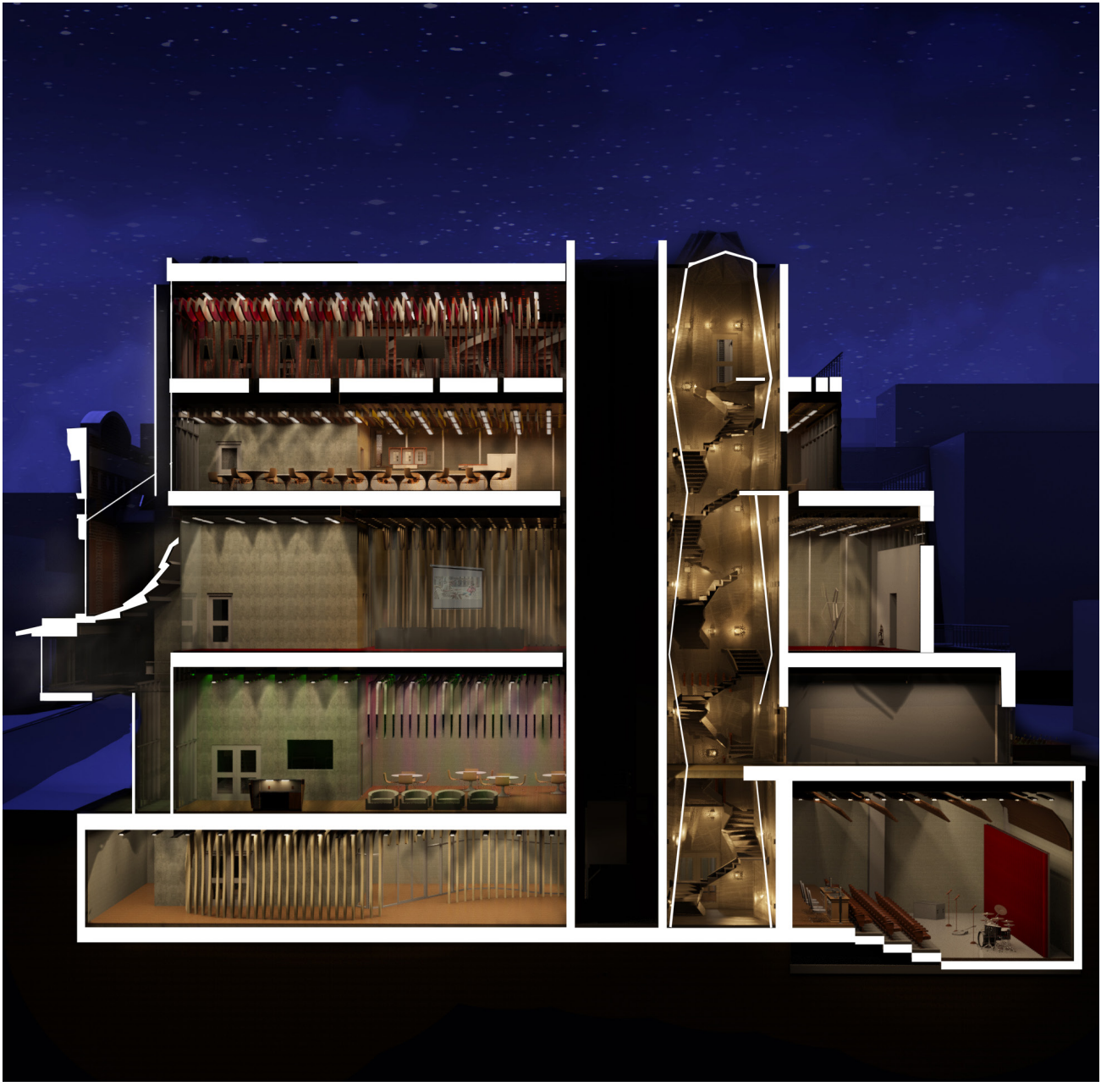


4. View from Studio The double-/triple-height space reinforces the connections between spaces.



1. View from Theatre Due to the affect of natural sunlight, colors mix in the space as though they are paint on an artist's palette.

3. View from Gallery There are enclosed spaces that allow for audio privacy as well as natural light to stream in.



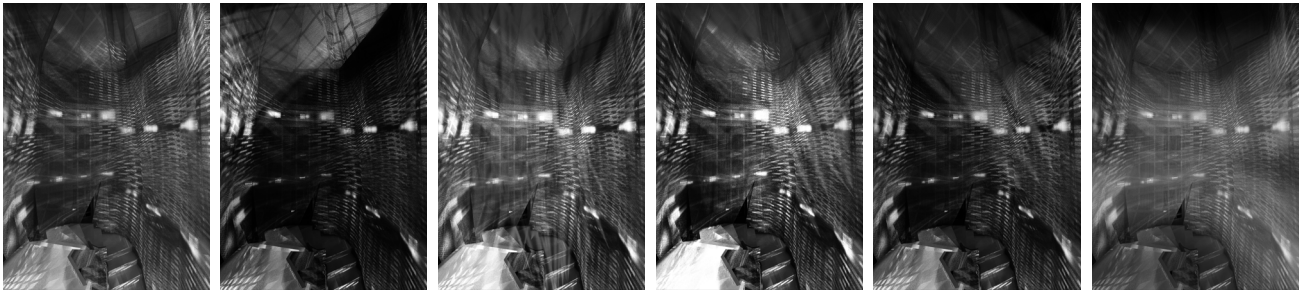
NATURAL LIGHT CITY

Katherine Abraham, In Pun, Ryan Lo

When designing for an architectural context like Altoona, it is important to maintain a balance of history and technology. Looking at examples with similar situations, such as the Millworks in Harrisburg, the Goggleworks in Reading, the Torpedo Factory Art Center in Alexandria, our group found a common characteristic: natural light. The introduction of natural light creates a welcoming environment to those who inhabited the space. In the design process, we considered lighting in every step. By different forms of manipulations, we were able to create different atmospheres that made the inhabitant feel cozy, open, or pushed along for circulation. We supplement natural lighting with artificial lighting. The manner that it is presented will always appear as though it is natural lighting. Due to location, ample natural lighting is not always present. The general layout of the building is centered around two cores that are opposite and diagonal of each other. The remainder of the floor plate is open so that the program flows from one space to another. There will be only soft boundaries so that the light can transition from one space to another.

ARTIFICIAL AND NATURAL LIGHTING

The usage of natural light is essential within our building for the atmospheric quality of spaces. The building utilize different methods to maximum the usage of natural light. For example, the light well on the sides of the building allow for light to travel down to the ground level. Each programmatic space has its own treatment of the way light comes in. For example, most art spaces require north lighting, the restaurant has more of a forest lighting allowing a certain mood to be set for dining. By the different methods of maximizing natural lighting, we can shorten the usage of artificial light to allow more energy saving but also show the visitors the phenomenon of how light changes throughout the day causing different lighting effects and moods within a space.



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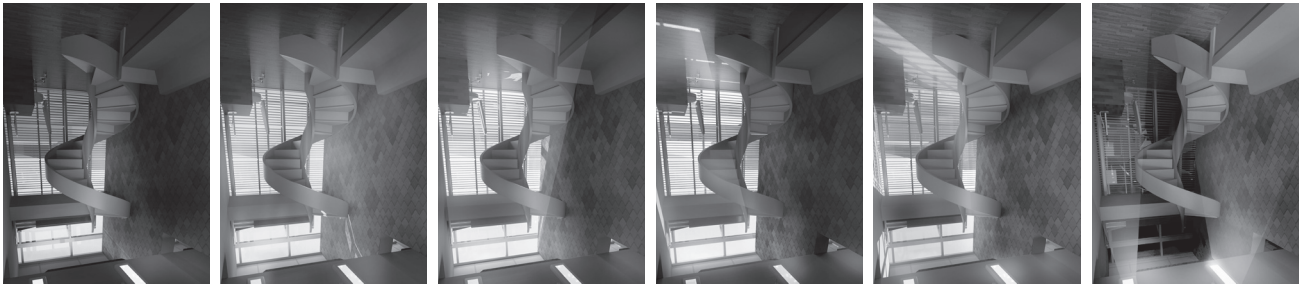

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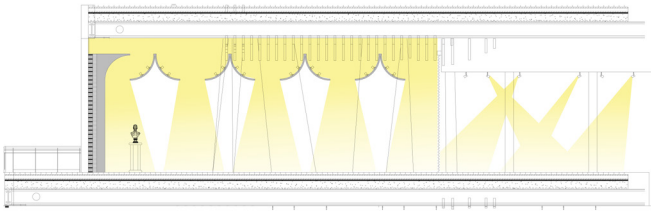
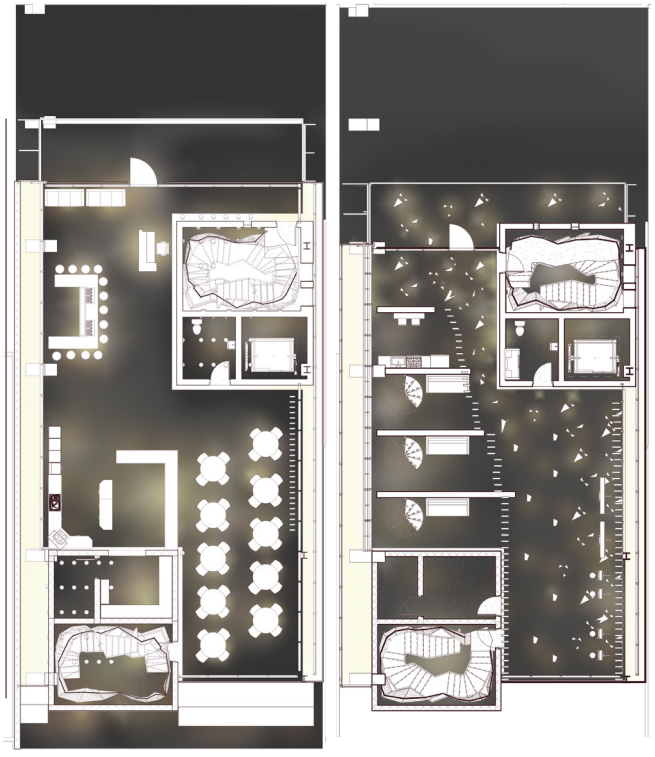
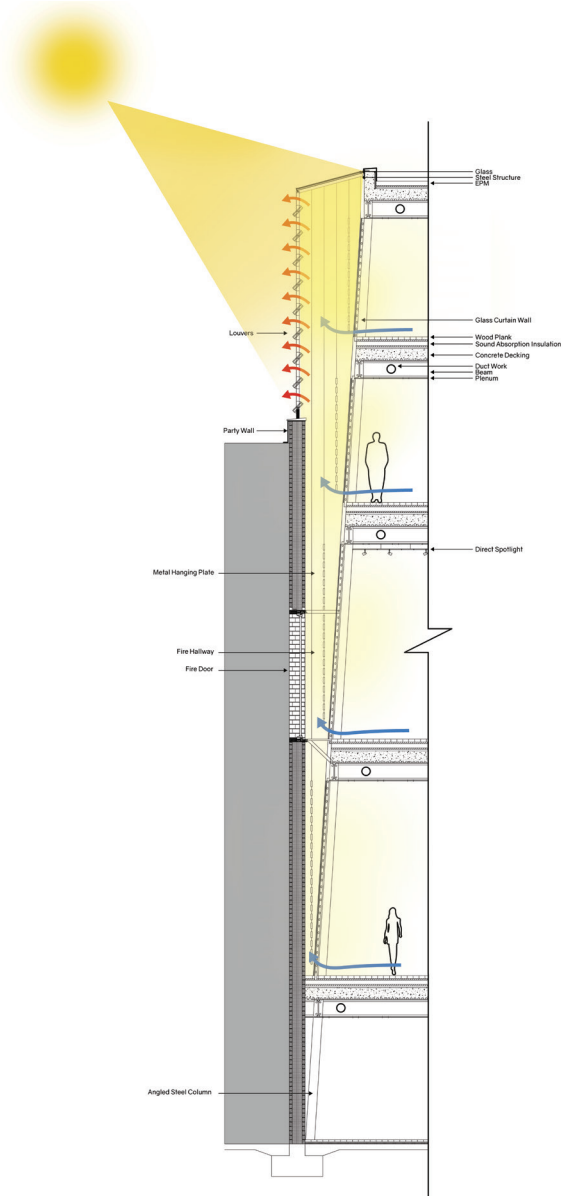
Time Lapse Renderings These are set of images showing two different places within the building during different hours of the day with changing artificial and natural lighting. The top row is showing the staircase condition. The bottom row is showing the studio living space on the top floor. Each set of images show how the atmosphere of the place change as the lighting condition change throughout the day.



Lighting Detail Lighting detail of the gallery space using reflectors to bounce off light to create a soft uniform light within the space.



Lighting Diagram Example floor plans diagramming the phenomenon of light, the effects, and feelings we intended for spaces using lighting methods.



Wall Detail

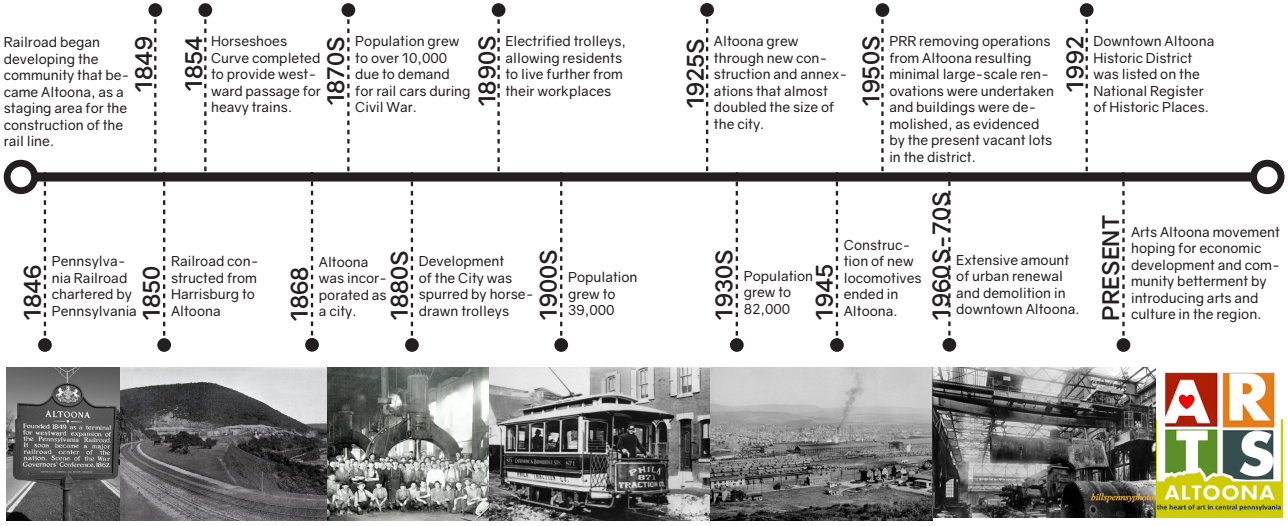
PLACE

The Altoona Creative District bridges Downtown, Center City and Logantown in Altoona, Blair County, Pennsylvania.

A multi-purpose adaptive reuse building for art activities includes art exhibitions, event spaces, studio living, artists workshop, etc.

This entire project is centered around an existing abandoned building. Old utilities and structures have been removed during the design process, but much of the facade has been retained. Existing bricks from the building are intended to be collected and reused.

Main Street Photograph The original building as existing. An abandoned building call the Kress building that had been remodeled for housing but left abandoned.

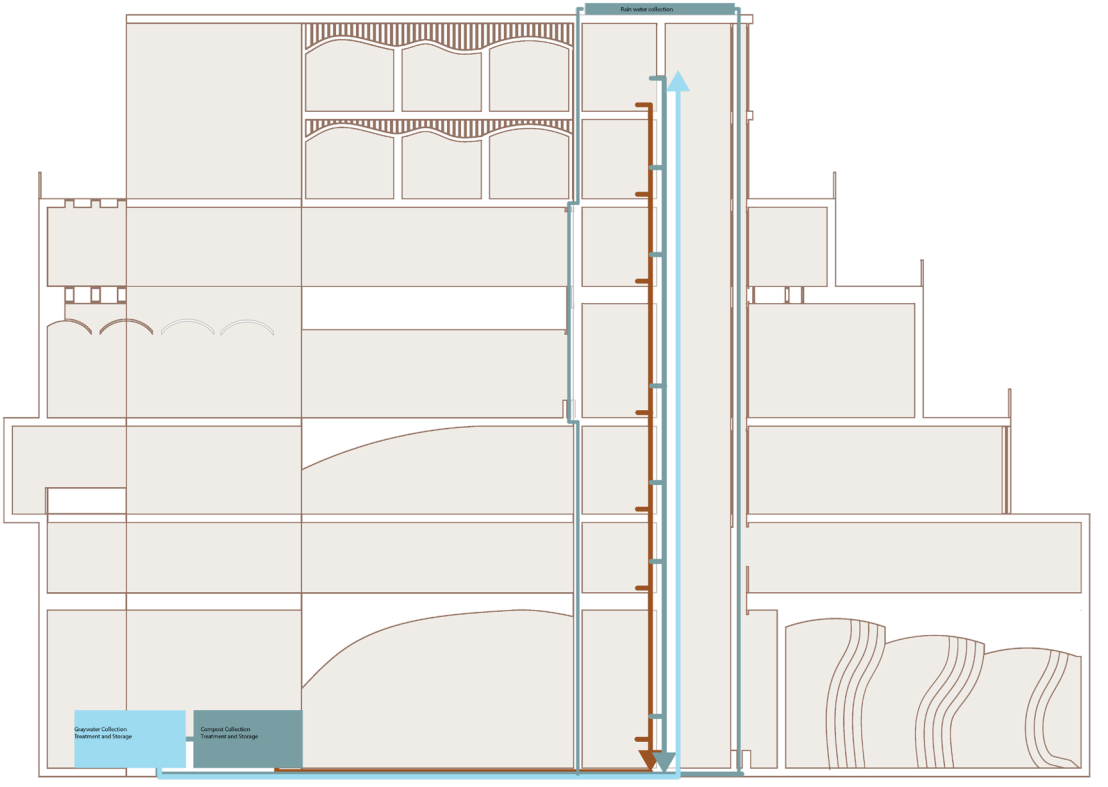


History Time line The development of Altoona and the creation of the creative district where the Kress building (project site) is located.

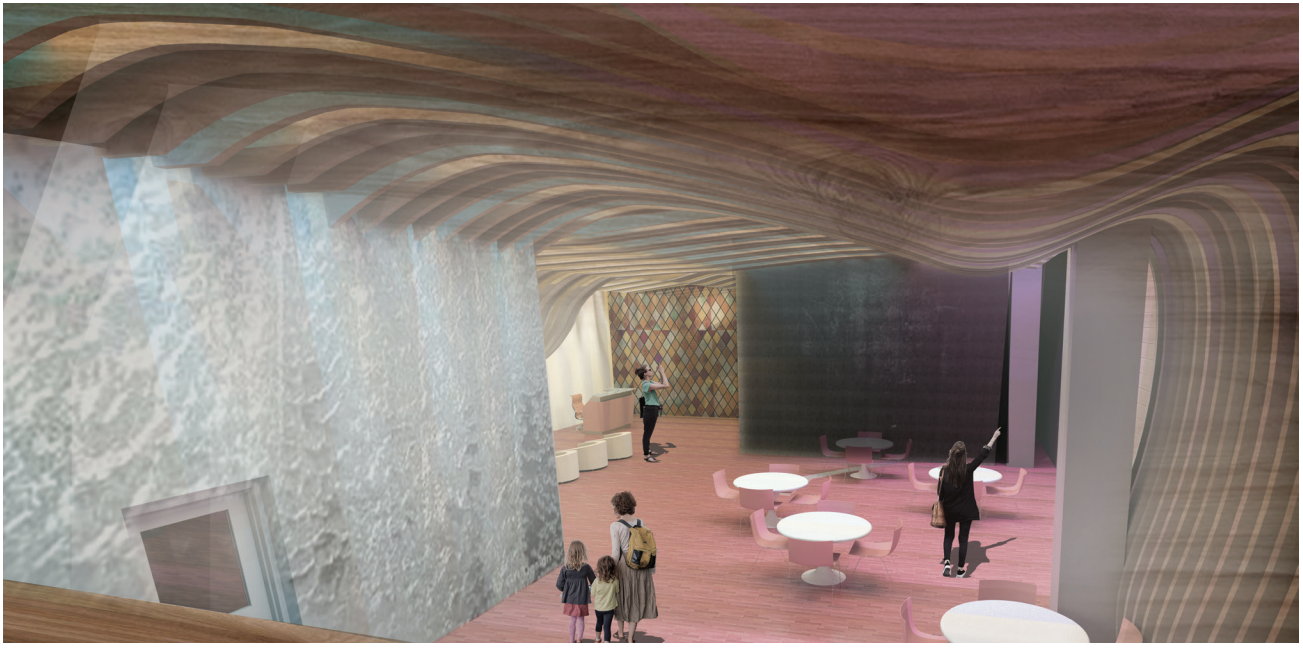
Alleyway Photography

WATER

Using the natural water flows of the site, project water use and release is celebrated within the building. There is a water wall integrated with the system of the building at the back stair core showcasing the reuse, recycling closed looped water system. The project's water is supplied by the captured precipitation and is purified in a natural closed loop water system. There is a water treatment mechanical system at the basement of the building to treat water on site enabling to reuse. The water wall celebrates the water system to interact with light to create different lighting conditions and opportunities for visitors to interact with the water. People can get a glimpse of this water loop system and understand the importance of recycling water.



Recycling Water Strategies All programs utilizing any form of water are stacked together.



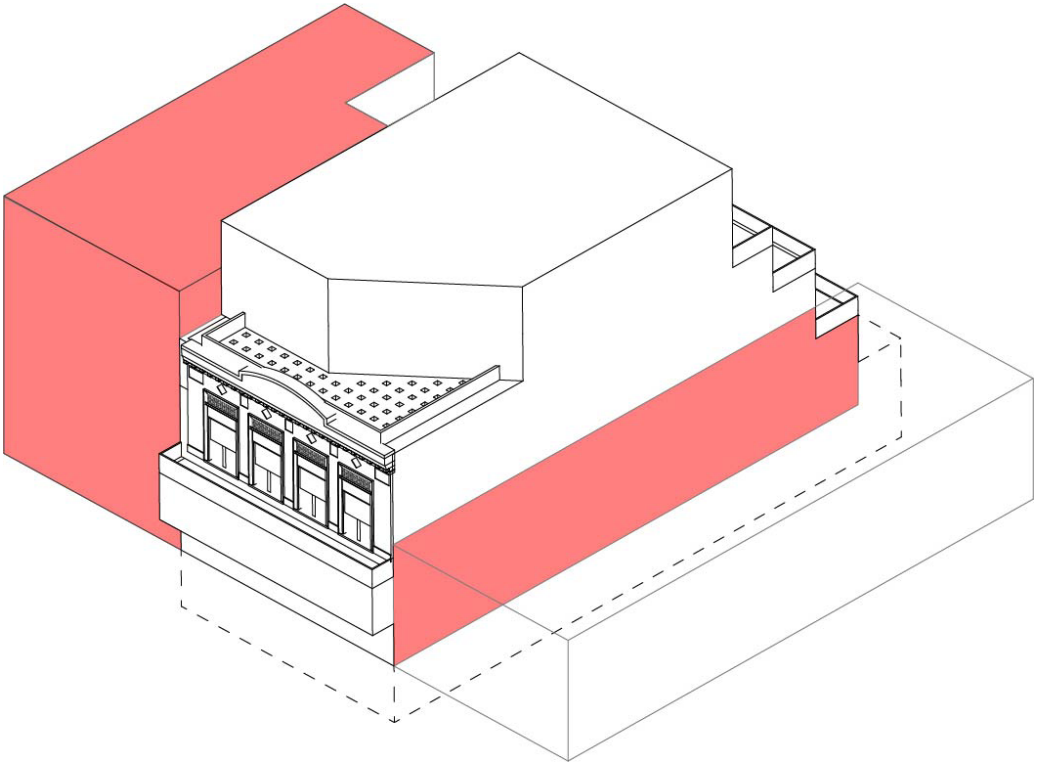
Mezzanine Looking at Lobby Water wall is on side wall of the stair core integrated with the wooden ribs. Visitors can see and touch the water and understand that all water on site is being recycled and reused in the building.

Basement Water wall travels down all the way to the basement to show how water is collected from the roof and moved throughout the building to the water treatment part of the building.

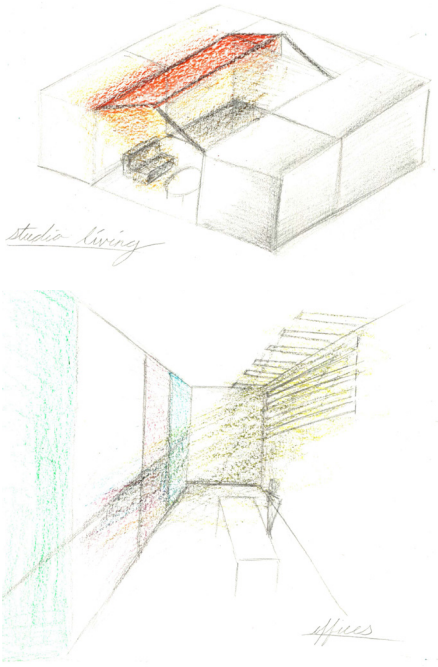
ENERGY

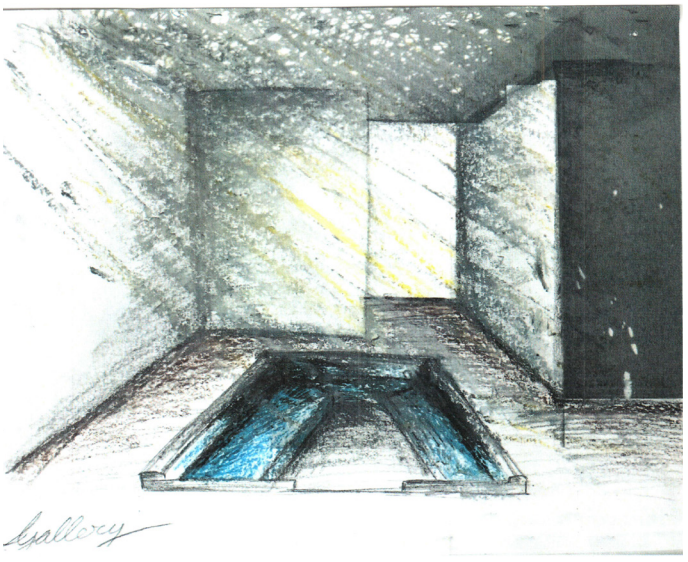
The excess heat from the two neighboring buildings can be taken advantage of. By sharing walls, there is less transfer surface from the inside to the outside. The space is heated through a radiant heating system.

Daylighting within the building is one way to save energy used by artificial lights. The openings on either side of the building maximizes the natural light throughout. The more daylight in the building, the less energy that will be used to power the artificial lights. The power for artificial lighting is also supplemented by photovoltaics on the roof of the building.

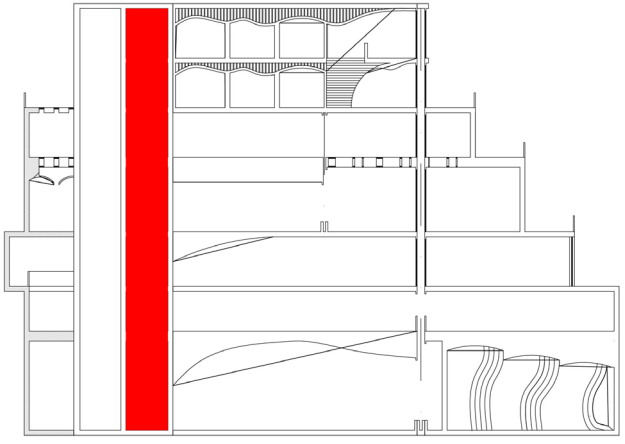


Heat Recovery During the winter months, heat recovery from parti walls helps to minimize the amount of energy used for heating.

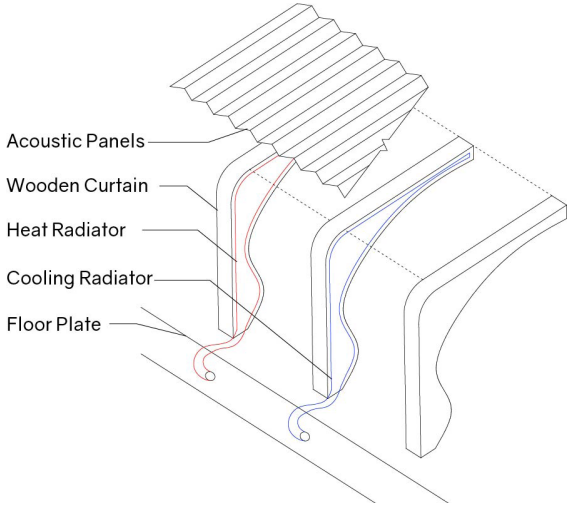




Daylighting Sketches showing the intent of the way some spaces in the building are lit. The more natural lighting in the building that can be maximized, the less energy used for artificial lighting.



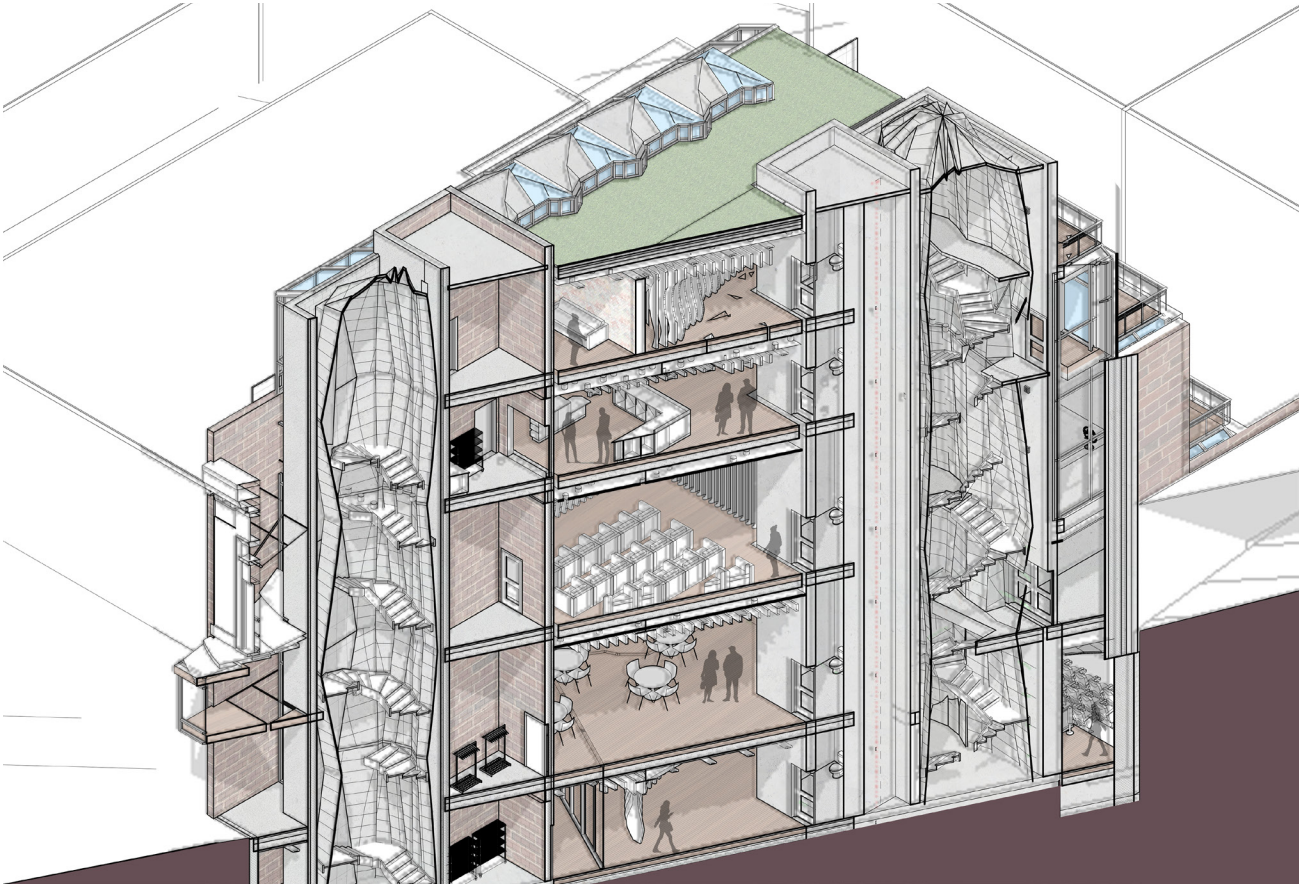
Mechanical Core



Radiant System

HEALTH + HAPPINESS

The feelings of outdoors improves the health and happiness of the people. It is best to replicate the outdoors as much as possible inside the building. Daylighting provides lighting for the interior that is similar to the outdoors. Because of the stepped rear facade, daylighting is able to access almost all of the interior spaces of the building. Health and happiness can also be increased by greenery. The green roof on the top of the building gives access for people to experience a biophilic environment. The air quality of the interior is spread through the HVAC system within the wooden curtain system. The stepped facade also provides access to the outside.

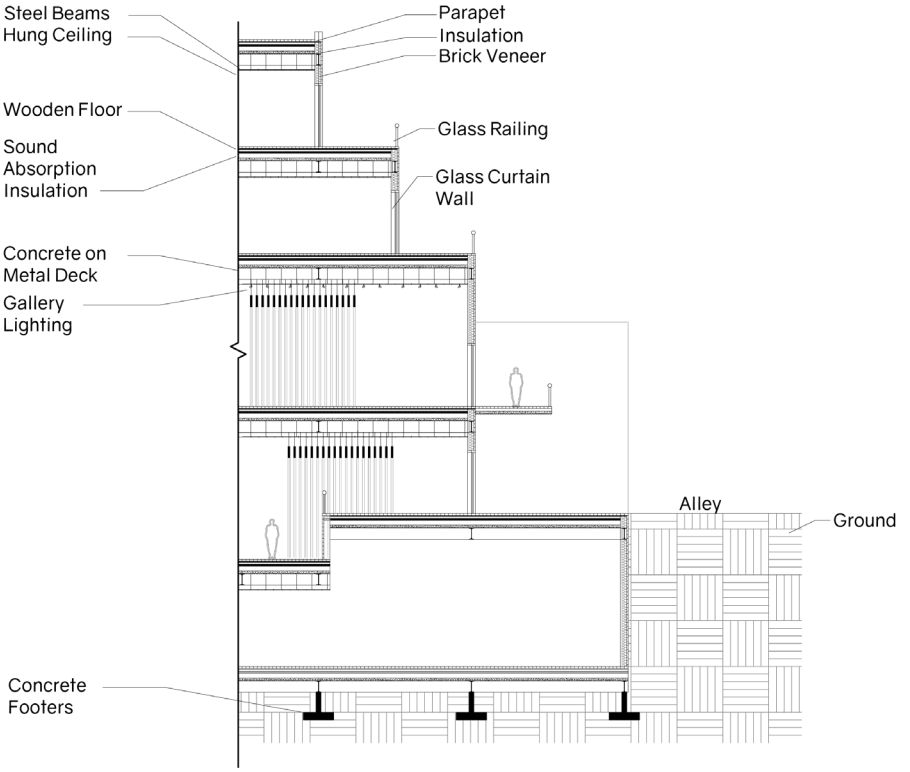


Green Roof The green roof allows an open area with greenery.

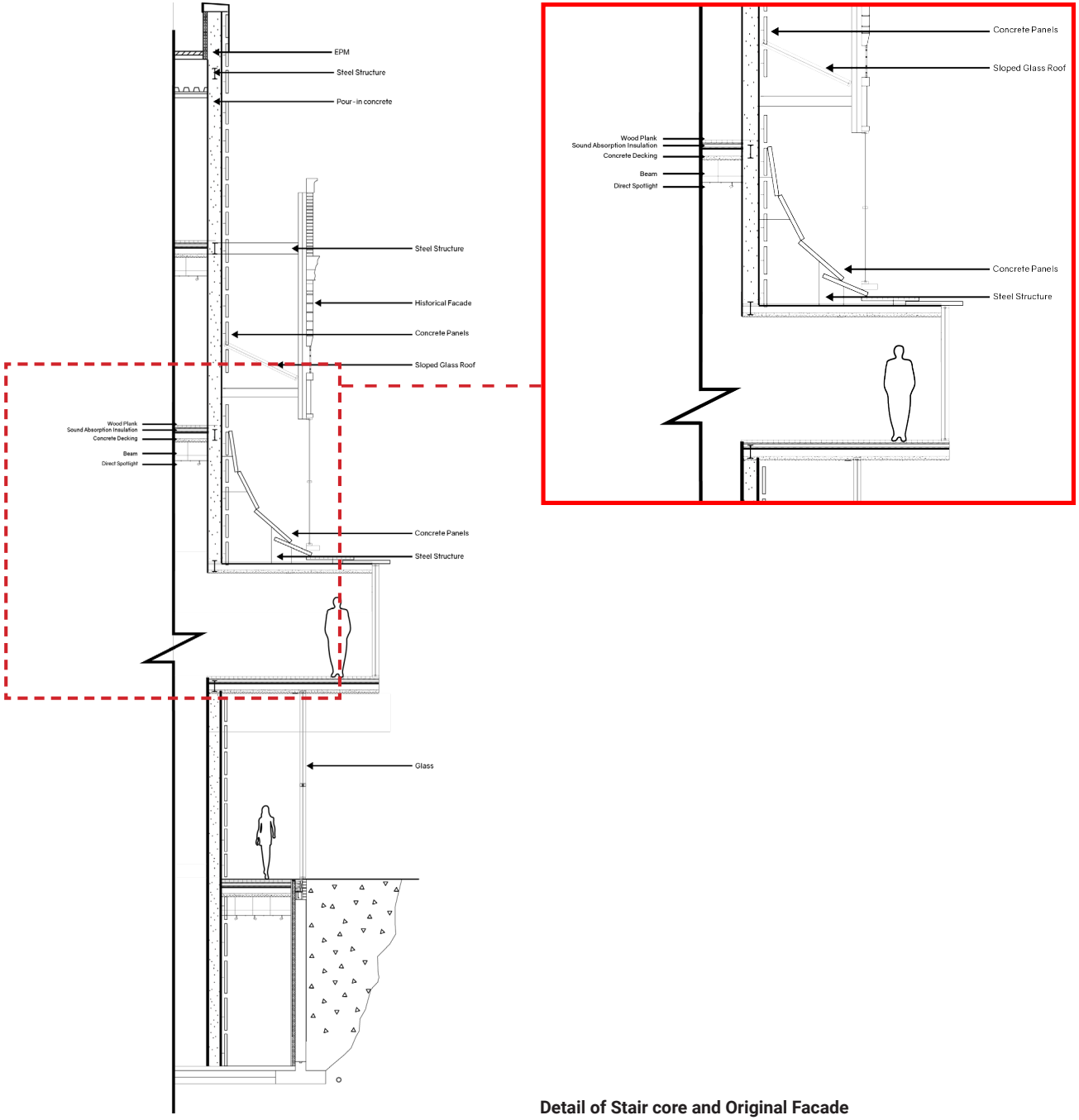
Stepped Facade The stepped facade provides access to the outside on every level. This gives the back alley a more open feeling and creates a place for congregation.

MATERIALS

The main material used within the building is concrete, steel, and wood. The choice of materials are to eliminate the use of worst-in-class materials/ chemicals with the greatest impact to human and ecosystem health. The wooden ribs and the panelings of the staircase are key component in the design and also are Zero Energy strategies. It is essential to eliminate the usage of any Red List materials. If during research or assembly, there is a discovery of any harmful materials, it is essential to develop a Red List free replacement. The materials within the building were researched to ensure there is no harm in using any of the materials in construction.



Detail Section The wooden curtain exists throughout the building and creates dynamic spaces. All the wood comes from local production and salvaged materials.

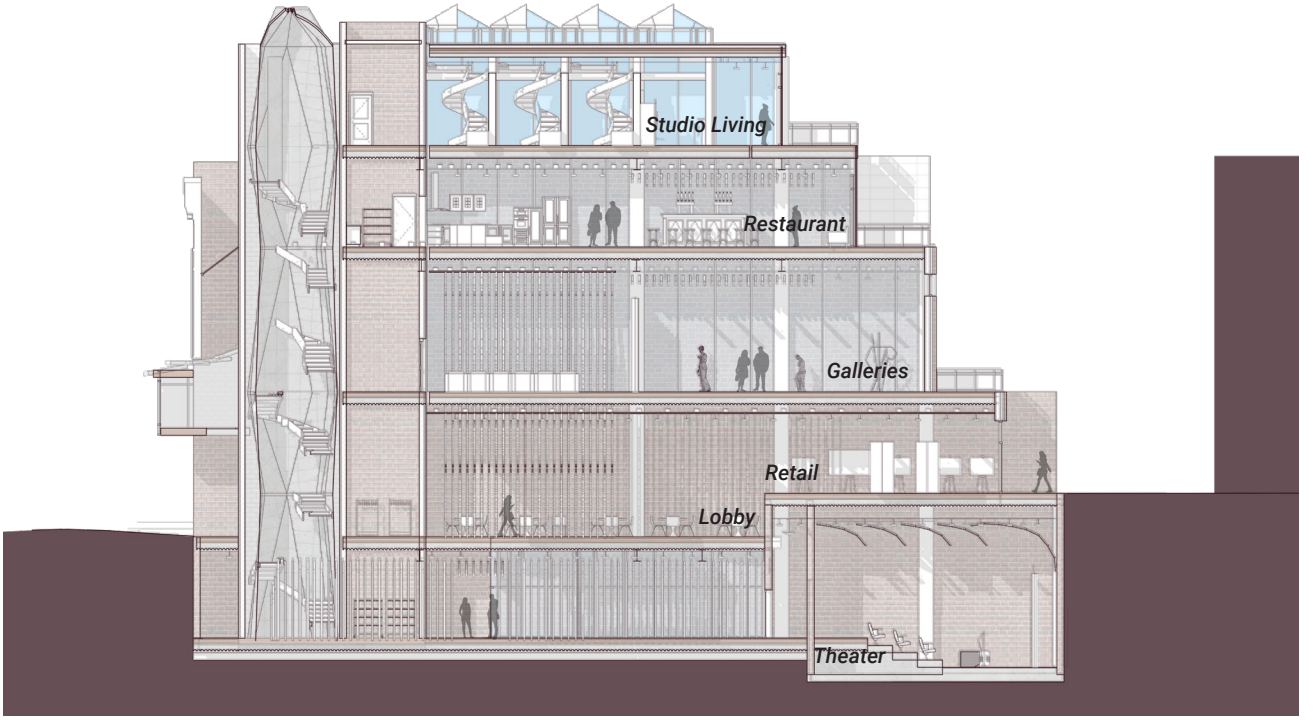


Detail of Stair core and Original Facade

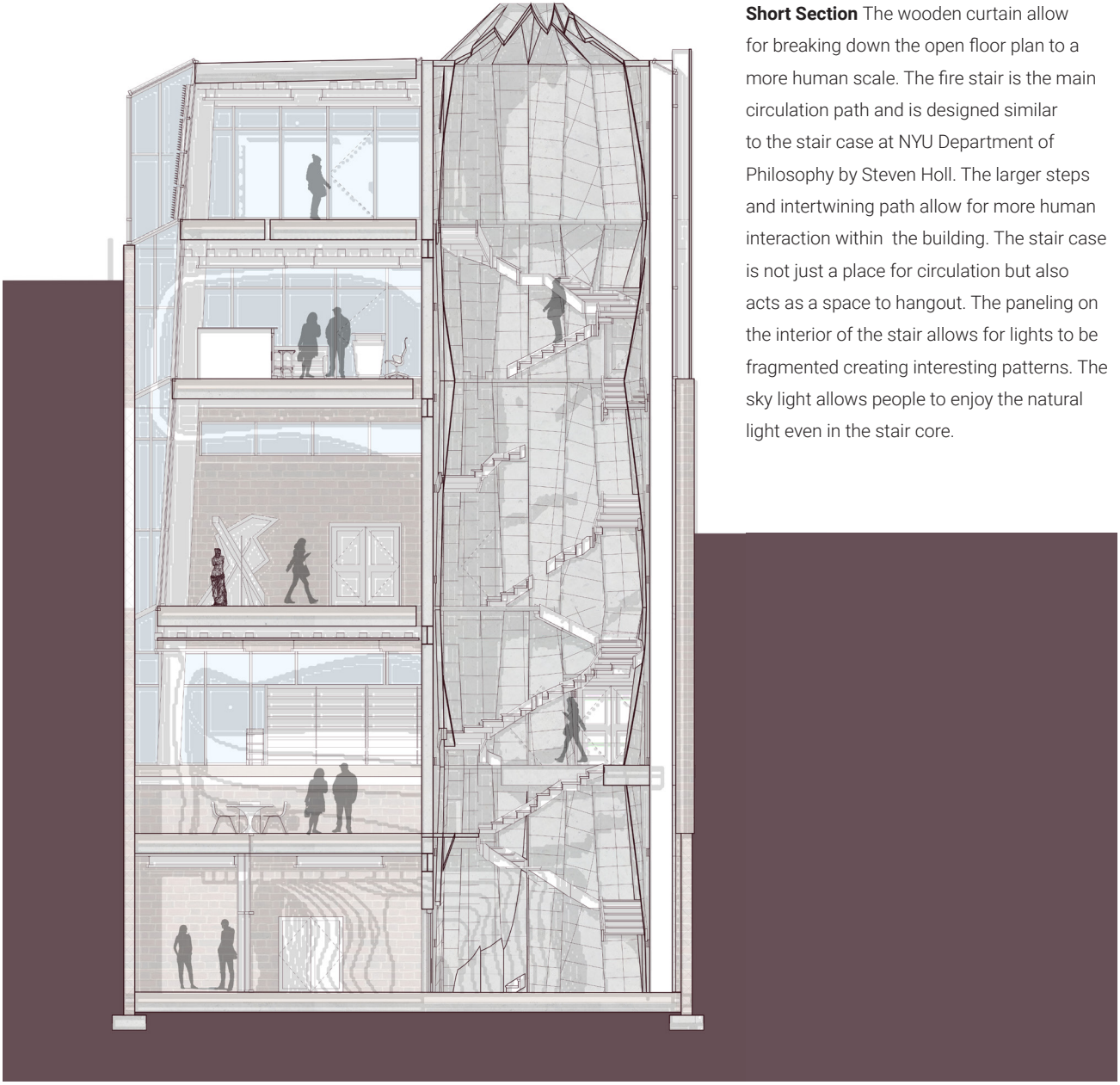
EQUITY

The existing building was modified to maximize housing. In order to create human-scaled places that promote human interaction much of the existing walls and structures were removed to create an open fluid space where soft boundaries between programs are created by lighting condition. Having an open floor plan allows for more human interaction and promotes culture within the community. The lighting allows for people to grasp for the human scale as the lighting interact with the different elements within the building.

This is a multiple use building that includes retail, art galleries, studio living, artist workspaces, and a theater. These uses allow for different occupancy groups to interact at different times within the building.



Building Section A section cutting through multiple spaces to show the different uses within the building. This is also to show fluidity of the spaces.



Short Section The wooden curtain allow for breaking down the open floor plan to a more human scale. The fire stair is the main circulation path and is designed similar to the stair case at NYU Department of Philosophy by Steven Holl. The larger steps and intertwining path allow for more human interaction within the building. The stair case is not just a place for circulation but also acts as a space to hangout. The paneling on the interior of the stair allows for lights to be fragmented creating interesting patterns. The sky light allows people to enjoy the natural light even in the stair core.

BEAUTY

The location of the Altoona Creative District bridges Downtown, Center City and Logantown in Altoona, Blair County, Pennsylvania. A multi-purpose adaptive reuse building for art activities includes art exhibitions, event spaces, studio living, artists workshop, etc. A place where local artists can display and make their works of art. It is a culture center where communities can celebrate their culture and create a sense of place within downtown Altoona.

The purpose of the building is to increase economic vitality of Downtown Altoona, strengthen the city's role as a center of education, cultural and social activities and enhance Altoona's reputation as an exciting place to live and visit by marketing the city's unique history, cultural assets and recreational opportunities.

Gallery Space The main gallery space within the building enabling the exhibitions of the artworks created by local artists. This enables communities to connect and celebrate their culture and create their own sense of place in the Creative District.

Main Street View The historical facade of the original building was kept as part of the new building. Allowing the communities to connect back to their historical root and allowing them to celebrate their culture values.

Film Gallery A film gallery showcases digital works from local artists and can be used as an event space for communities to gather for presentations and entertainment.

Artist Alley The back facade is stepped ten feet allowing more room for people to gather and showcase street sculptures. It can also be a place for local murals. The entire facade is stepped back to give an impression of a larger space and an occupied space.

THE STATION

Alex Mengers, Mark McWilliams, Taylor Conrad

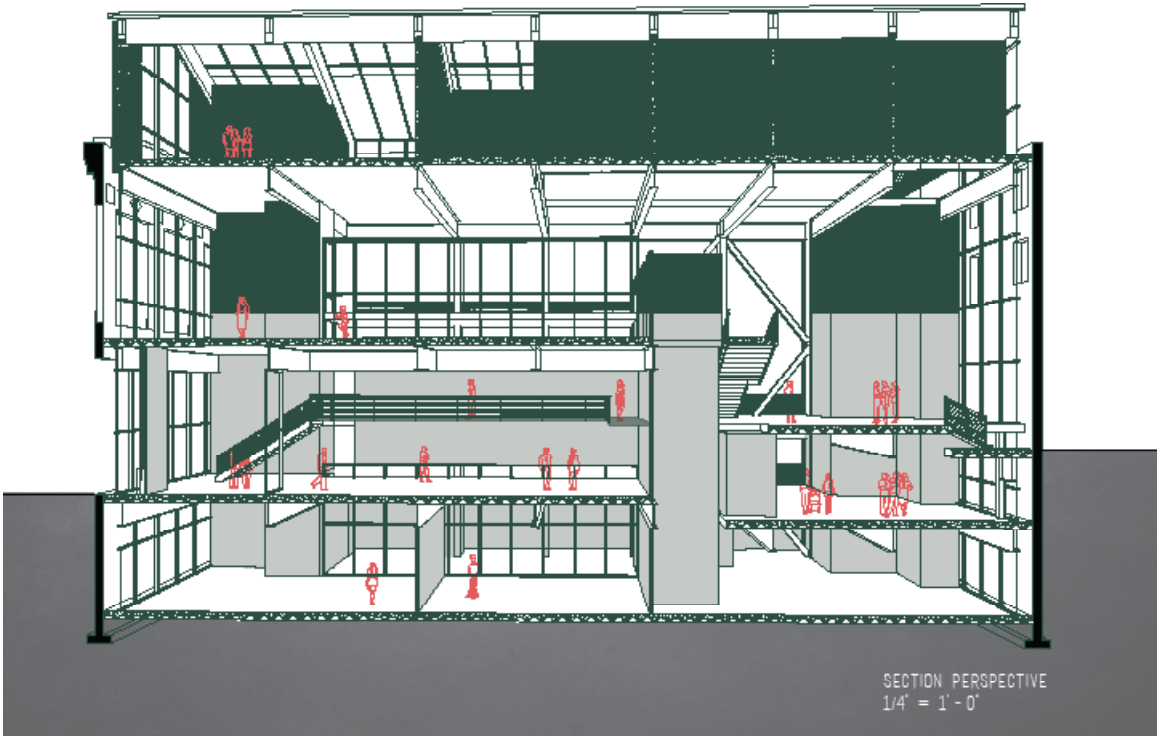
In response to the historical context of Altoona, we believe an industrial scheme would be the answer to the new renaissance of a community-centered city. The intention of this project is to have our concept taken and applied throughout the community, via occupying green and built landscapes. This directly responds to the current situation of vacant space within downtown Altoona.

We have implemented our design into the existing façade of the Kress building, therefore allowing a breathable space between the juxtaposed old and new. While keeping the historic brick exterior, we create a more modern interior design, much like an empty box with objects placed inside.

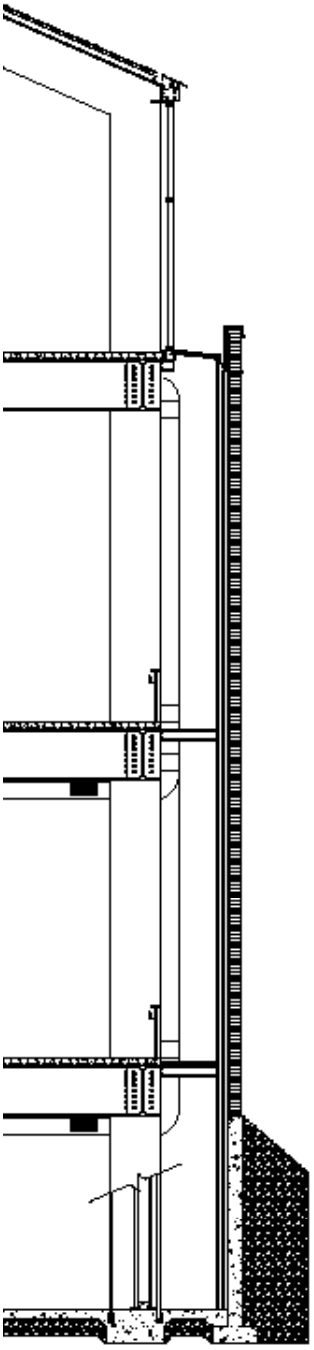
We believe that as one travels through the building, they will experience different spaces that should directly reflect the proportional needs of its program. This leaves enough room for both the impression of an “inserted building” and the allowance of natural ventilation to pull through the building, as well as the deep penetration of light.

The layout of the building was designed such that the program that requires the most heat is located on the roof and the program that required cooler spaces are located in the basement. The slope of the roof allows for both rainwater collection and photovoltaics to be implemented. Local materials will be used in the building to keep with the industrial yet sustainable theme.

Our goal is to include all walks of life from the community, under one roof through the theme of Altoona’s history being preserved in a sustainable way.



Perspective Section A sectional perspective emphasizing the layering of spaces and openness of the floor plan to suit the communities needs.

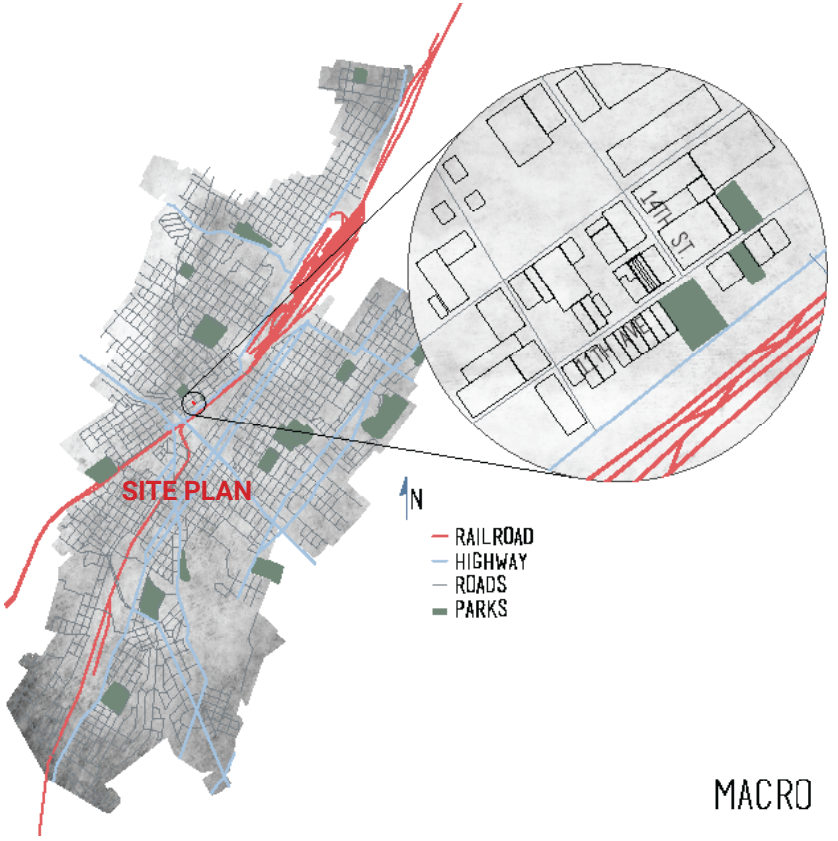


Interior Render This rendering highlights the main entrance off of 11th Avenue. It shows the front lobby where visitors can immediately see the main gallery space and displayed artwork.

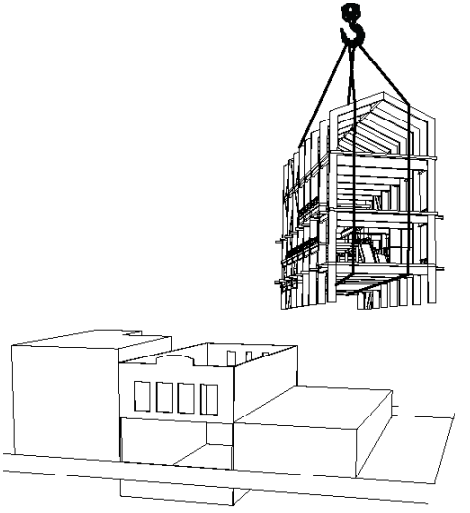
Detail Section A section cut through the wall to highlight the gap that is left between the existing party wall and the new inserted structure.

PLACE

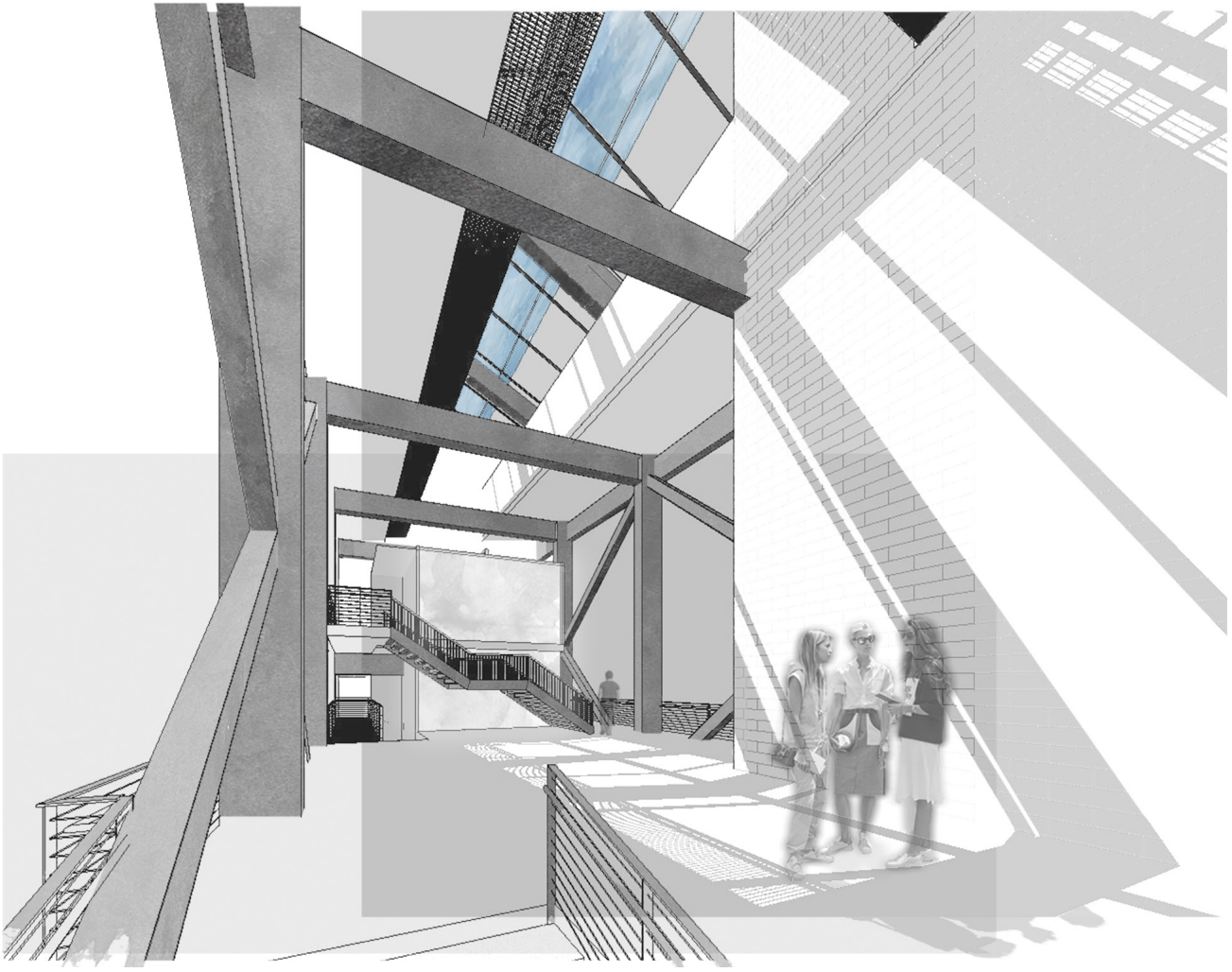
The existing historical facades of the building will be retained. So not to disrupt the exisiting building, our "insert" will be offset in order to showcase the juxtaposition of old and new. Our new insertion is based on the qualities and materiality of railroad stations to keep with the history of the place. Looking at the interior rendering, one can see the open spaces and materiality of the space, giving off an industrial feel.



Site Plan A map of Altoona emphasizing the development of the community based on the historical railroads.



Conceptual Diagram Our idea of keeping the existing facades and insert a our new buidling within to keep the history of the place while also constructing a new renaissance.

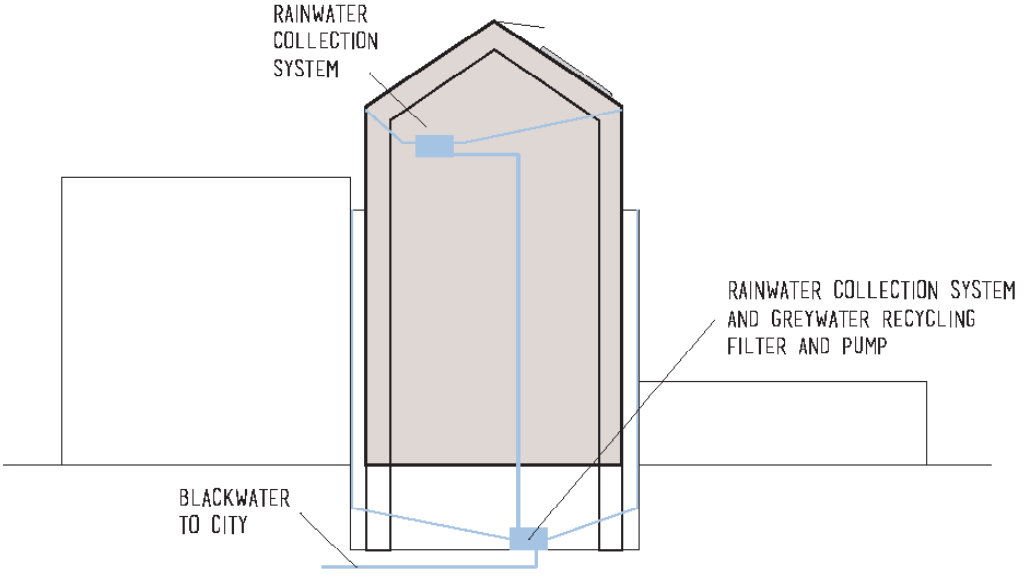


Interior Render This rendering highlights the back entrance off of the alleyway, looking toward the event space that features the main staircase. Above the peaked roof and windows allow light to flood into the space.

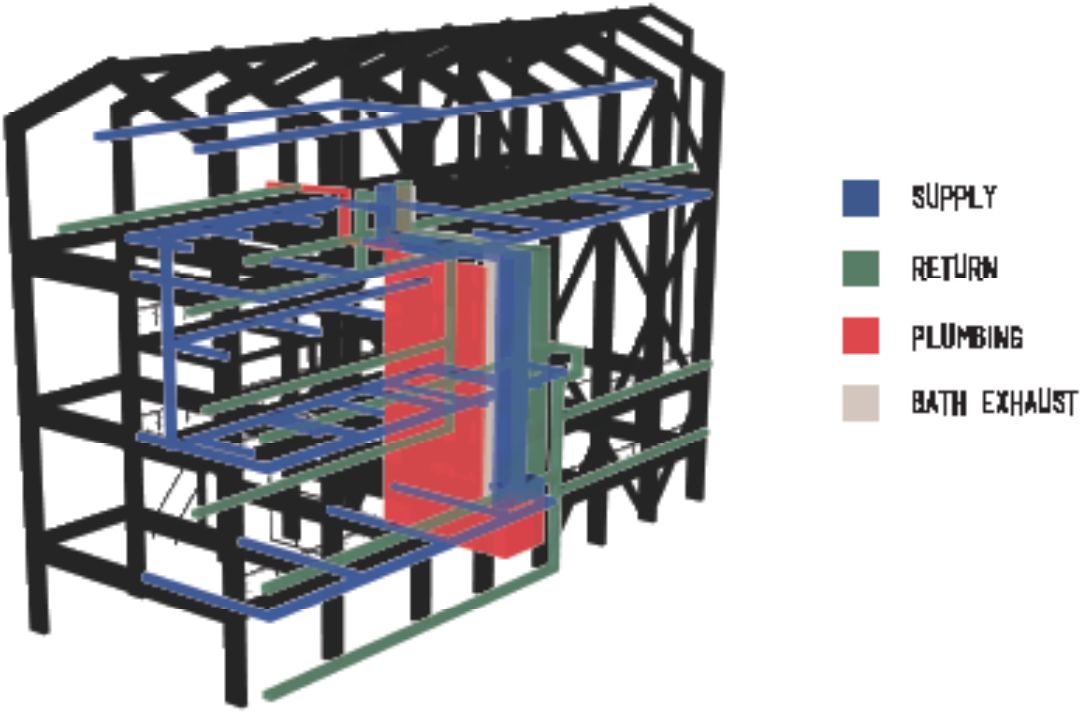
WATER

Water was an important sustainibility consideration in this project. We want to include a system that collects rainwater from the main roof and the two side channels to be used as greywater for our plumbing features. The goal was to have as small a system that we could and to use gravity to push the water through the plumbing features.

We will also use collected water to feed into our green wall at the very front of the buidling. The green wall is facing south in order to greet patrons as they enter the building and make them feel warm and at home as well as capture as much sunlight as possible.



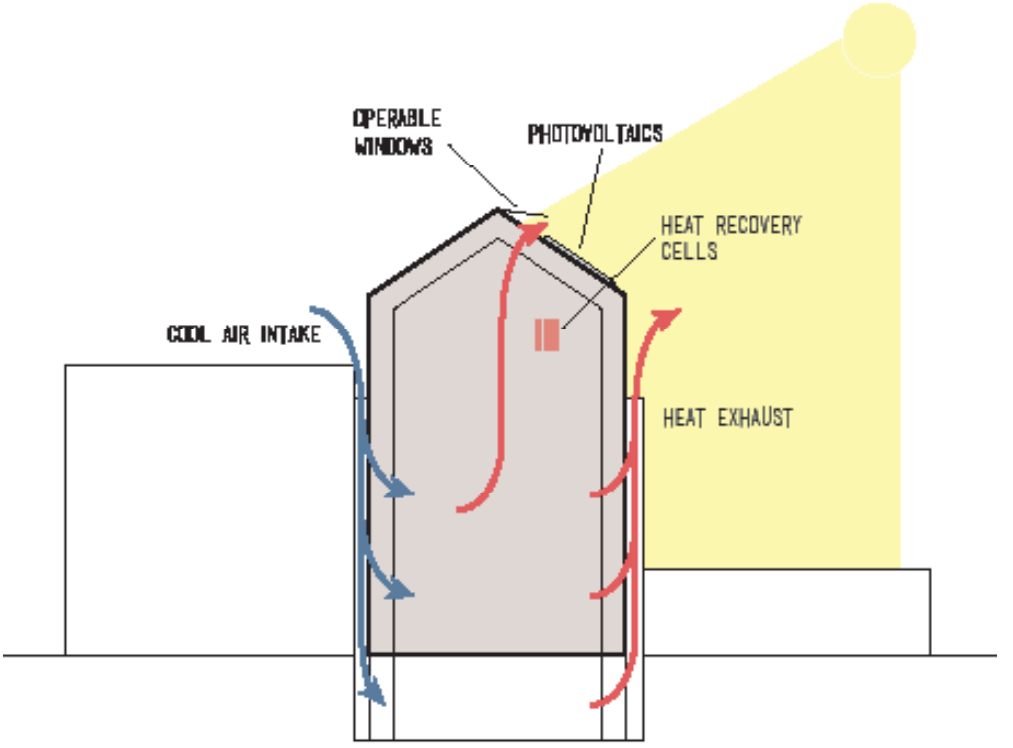
Water System A diagram showcasing our simple system of rainwater collection and distribution throughout the building.



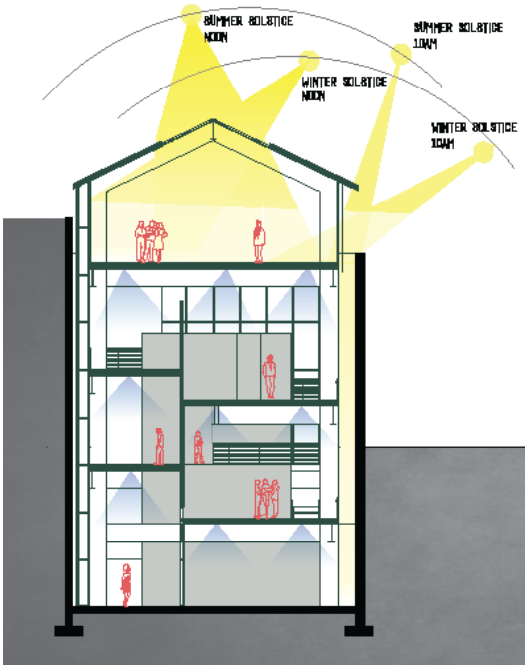
HVAC Diagram This diagram is meant to show the active systems but mainly express the simplicity of the plumbing through the central core.

ENERGY

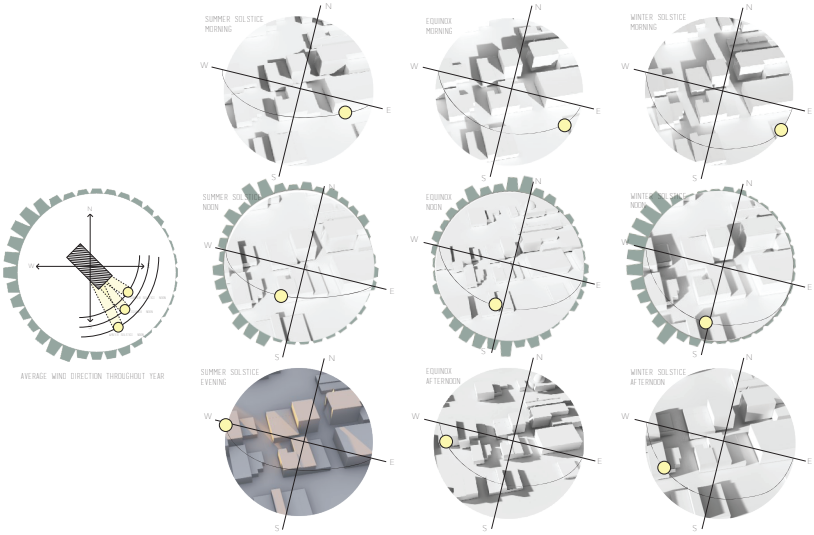
Energy for our building is through passive systems that will give it life. We have cool air intake from the west that will be pulled through each floor by heating up of the eastern and southern sides. In order to harness the energy of the sun, photovoltaics are incorporated on the roof to capture the suns rays. Heat recovery is used to capture heat and store it for when it is needed. We also wanted the human energy of the building to be bright. In order to do this, the two lightwells on the eastern and western sides will bring light down to even the darkest areas, making sure everyone can enjoy the natural light



Energy Diagram This diagram shows the passive systems we plan to use in our building. Wind mainly comes from the west so we plan to harness that by pulling it into our building to cool the interior spaces during summer months. In winter, the photovoltaics and heat recovery cells will work together to heat the concrete floors and provide warmth to the patrons.



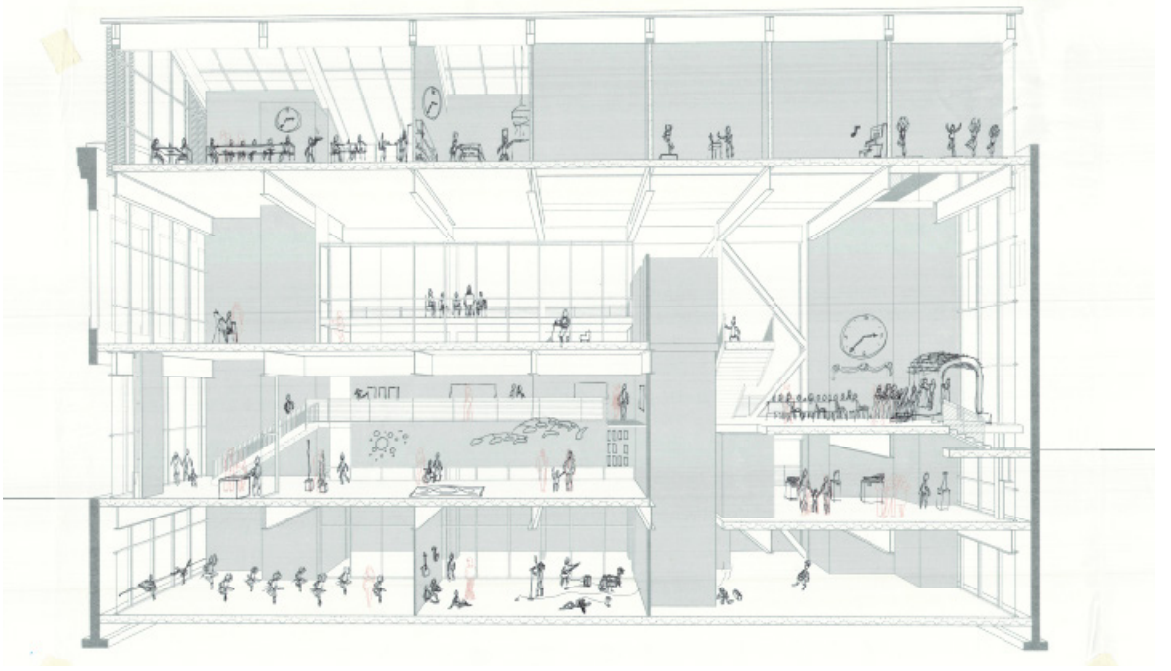
Light Light will penetrate the building for year round comfort.



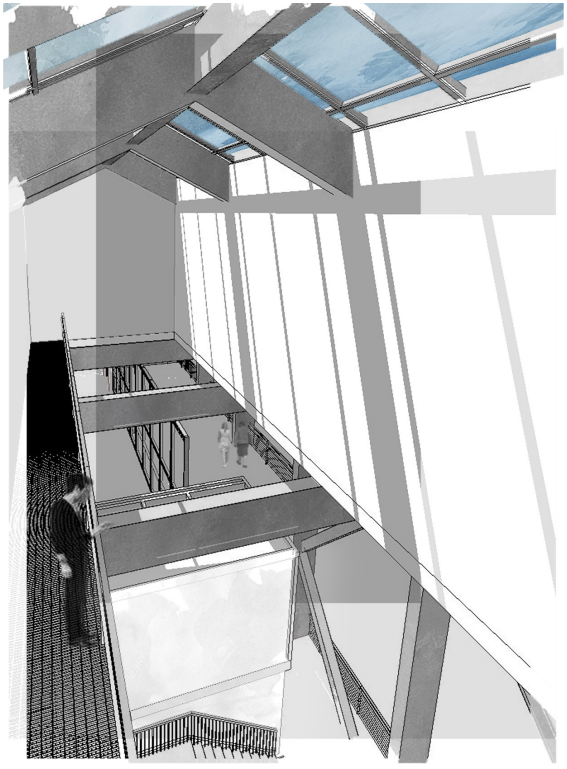
Sun and Wind This diagram is showcasing the light during peak times of the year as well as the direction of the wind.

HEALTH + HAPPINESS

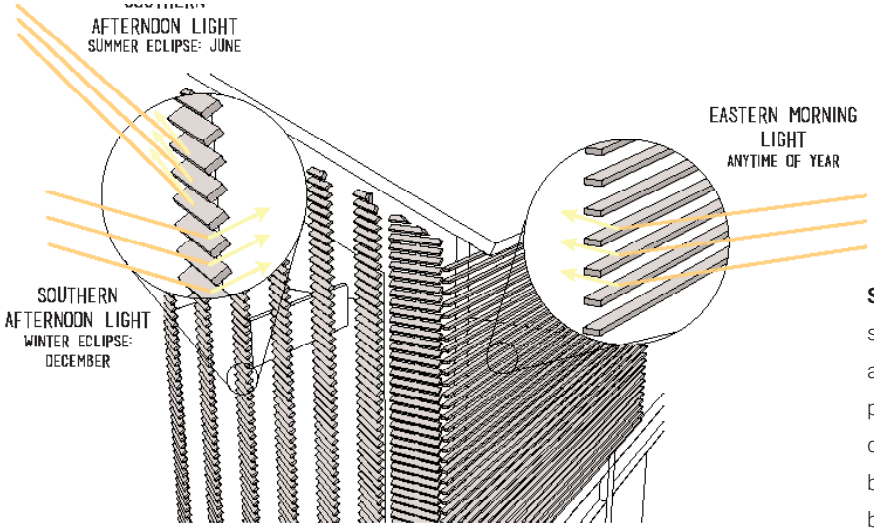
By maximizing the amount of sunlight coming into the building, we hope to inspire artists. Creativity flows in comfortable environments so we hope the canvas we give ArtsAltoona will inspire painters, dancers, singers, sculptors, designers, and many more. Large open spaces give artists the ability to think outside the box with no limitations.



Activity This diagram shows the life and activity of the building during some events we foresee happening in the building. It shows weddings, dance recitals, band practice, meetings, painting workshops, yoga classes, a private gallery as well as the main gallery, and the restaurant in full swing.



Interior Render Light floods down into the main event space giving the patrons a feeling that they aren't completely enclosed in this building. It is an artists hub so the light does not directly infiltrate the studios, rather it gives them diffracted or northern light so the artists are always comfortable.

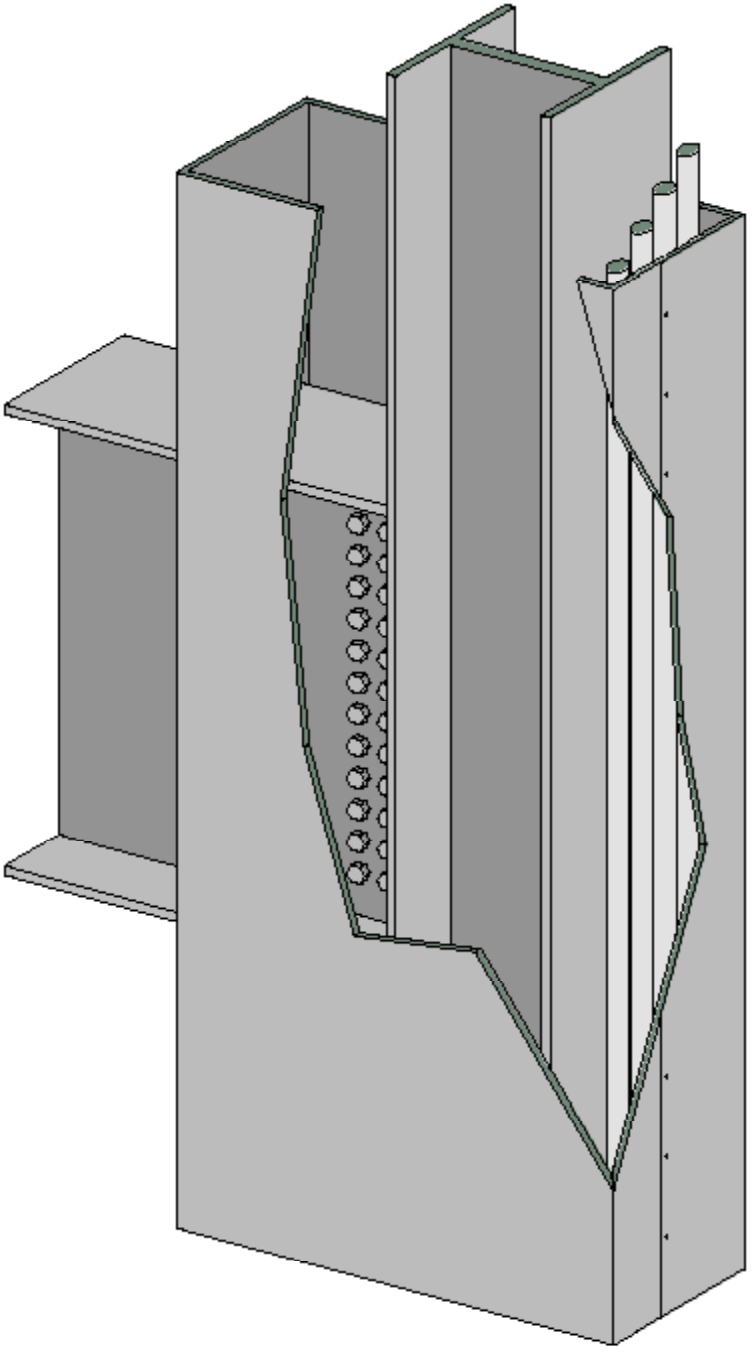


Shading Diagram This diagram shows shading for the third floor that peaks out above the exisiting facades. Shading is positioned so that in summer the light will deflect but in winter the light will sneak between the slats, entering and warming the building.

MATERIALS

We researched local fauna and materials. We want our building to produce its own energy and use as little as possible to construct. By using local materials, it is easy to make the building fit in historical downtown Altoona. Our green wall will consist of local ferns, wildflowers, vines and clobmos so that the environment inside our building matches that of the local green areas. Our structure is primarily steel which is brought from just outside Altoona.

Materials In order to keep the building cheap and sustainable, we researched and found all local materials that would be used in our building,

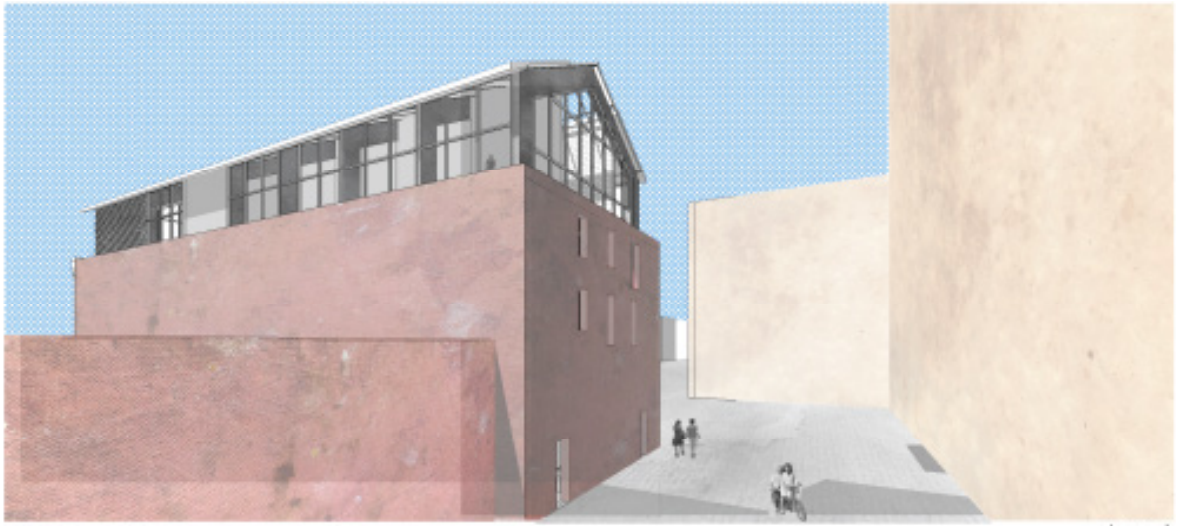


A-Frame Buildup This diagram shows the structural A-frames that line the building. The structure is steel while the floors are concrete.

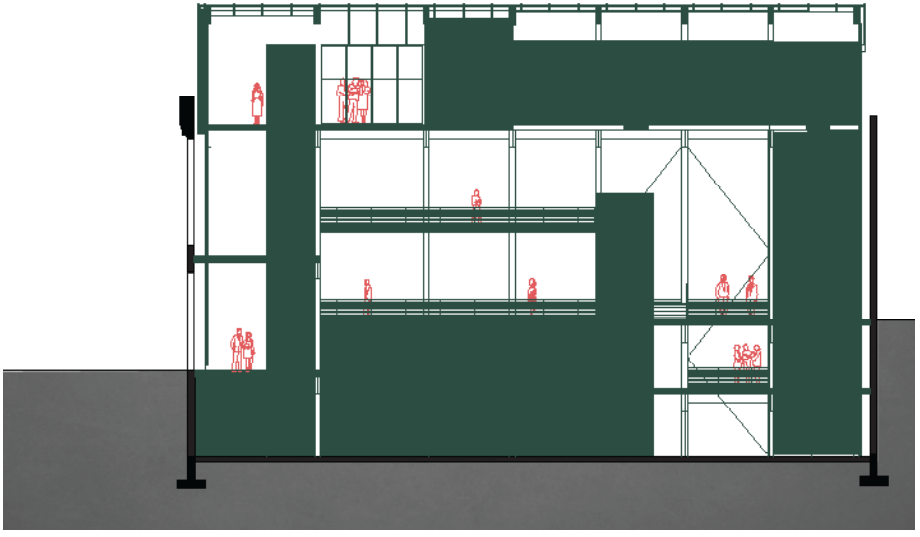
EQUITY

We wanted to help create a brand for the building and the new "hub" for ArtsAltoona. In order to do this though, they needed a product or space in which to make an income to sustain the new building. We managed to do this by making every space in our building (besides the mechanical room) rentable. Each floor including the gallery, private gallery, event space, studios, classroom, bar, and restaurant are all able to be rented for many different events.

Our Logo This logo is one we came up with in order to promote our building and give it a brand.



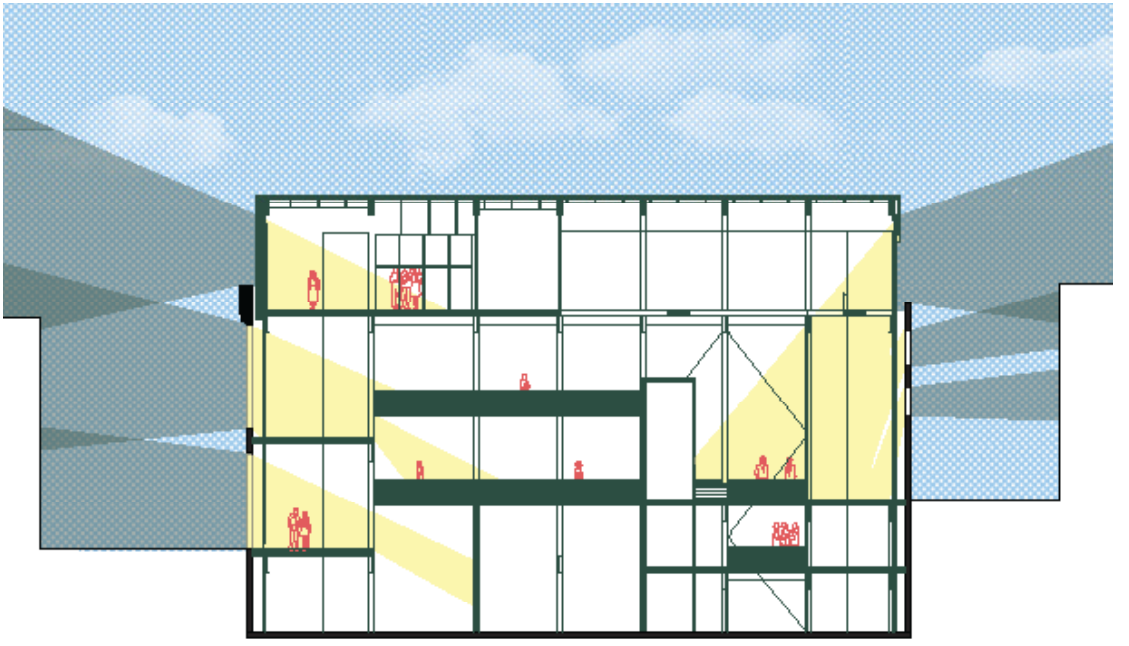
Back Elevation Pictured is the back elevation facing the alleyway with entrances for the event space and private rooftop studios.



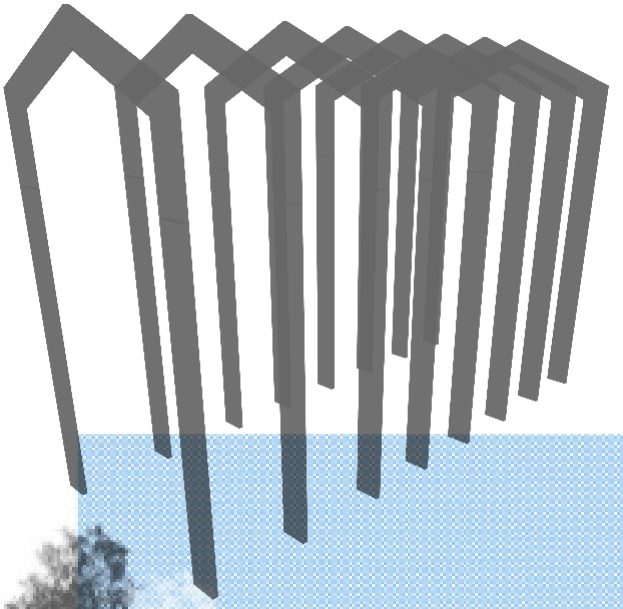
Longitudinal Section Almost every space in the building is rentable, creating an income for ArtsAltoona ir order to sustain the building.

BEAUTY

We wanted our building to reinvigorate Altoona through the arts. It's meant to be a highlight in the skyline but not impede on the historical values of Altoona. The simple approach we took blends very well with the existing structures and all of downtown. The A-frame structure, inspired by the railroading provides a simple approach while creating a new icon in downtown Altoona.



Viewpoints Diagram Our idea was to allow for maximum sunlight to enter the building while also allowing for 360 degree views of historic Altoona and the railroad.



A-Frame The simplicity and beauty of the A-frames can be seen from the interior and exterior. They were designed to mimick that of a railroad station and create large, open spaces for the patrons.

Front Elevation The protruding modern "insert" is seen here rising above the historic facades. This not only will act as the highlight from the transportation station, but attract patrons to explore the building. Seen in front is a proposed remodel of the park across the street by a fellow Pennsylvania State University student in the landscape architecture program, William Talero.


DRESS
SALE

ARTIST MAZE

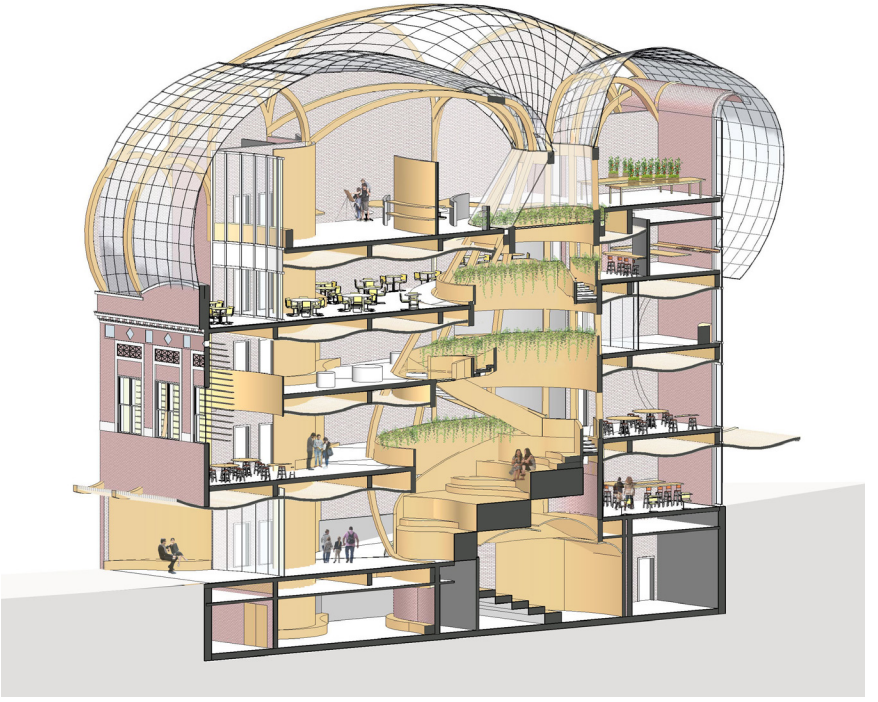
Abigail York, Anna Zaat, Berfin Evrim

The Artist Maze is a building that invites all members of the community to explore and discover through a center for the arts. Our team's goal was to restore the Kress Department Store building in a manner that would contribute to the current arts Renaissance taking place in Altoona. We wanted to design an arts center that would welcome visionaries of all ages to express their talents and continue to grow and learn.

Our team's design observes the rich history that is already present in the district of Altoona, yet also strives to continue developing the city's story as a cultural hub for the arts. Thus, the Artist Maze is a building that promotes community and city development through a center for the arts.

PROJECT OVERVIEW

The Artist Maze strives to promote community development and artistc expression through a welcoming central atrium space. This space, which will highlight discovery throughout the building, connects the public forum in the lobby on street level to the biergarten above. Studio spaces, both public and private, along with galleries wrapping around the atrium, invite artists to express themselves and visitors to experience Altoona's art scene. The building will embody discovery and education, offering spaces for art classes, cooking demonstrations, public enjoyment and relaxation, gardening, and meeting spaces including an alley cafe. Ultimately, this building provides a variety of creative spaces for the members of Altoona and visitors to enjoy while reviving local community interactions.



Section Perspective A section through the Artist Maze that emphasizes the central atrium structure extending from the basement to the top level of the building.

Forum View From Lobby An image showcasing the atrium space from the street level looking toward the ascending levels above. Each level is highlighted by greenery draped over the railings above.

South Elevation A view looking toward the 11th Avenue entrance to Artist Maze. This image highlights the entry vestibule that pulls the community in as well as the transition between the old and new facades.

PLACE

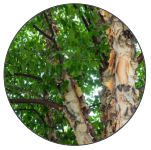
To remain contextual to the site and the history of Altoona, the existing facade will remain, as it is part of the urban fabric celebrated by many locals. To keep with the history of this building, brick is used in many places for the addition, both insdie and outside the building. With respect to the greater site, native plants will be incorporated into the design as well. The rooftop level of this design houses a greenhouse where some native plants will grow, such as geraniums and Jacob's lavender, as well as several crops and herbs to feed the biergarten and cafe. There plants will continue throughout the building, growing along the spiraling central staircase so visitors can constantly admire them. As well, to use building materials local to Pennsylvania, a limestone paving will finish the terrace of the biergarten. This material also, consequently, has good thermal properties ideal for a terrace.

NATIVE PLANTS


Christmas Fern


Maidenhair Fern


Black Gum


River Birch

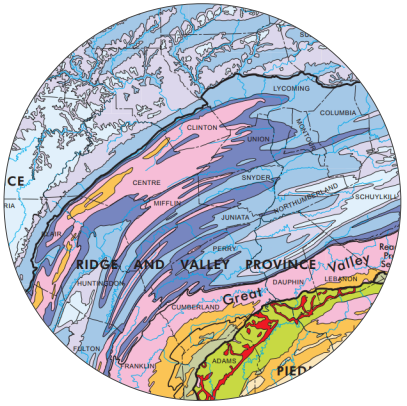

Spice Bush


Wild geranium


Highbush Blueberry


Jacob's Ladder

GEOLOGICAL MAP OF PENNSYLVANIA



Devonian (359-419 mil. years)
Flagstone, Silica sand, Clay, Lime

Silurian (419-443 mil. years)
Lime, Building Stone

Ordovician (443-485 mil. years)
Slate, Lime Stone, Zinc, Clay

Cambrian (443-485 mil. years)
Lime, Building Stone

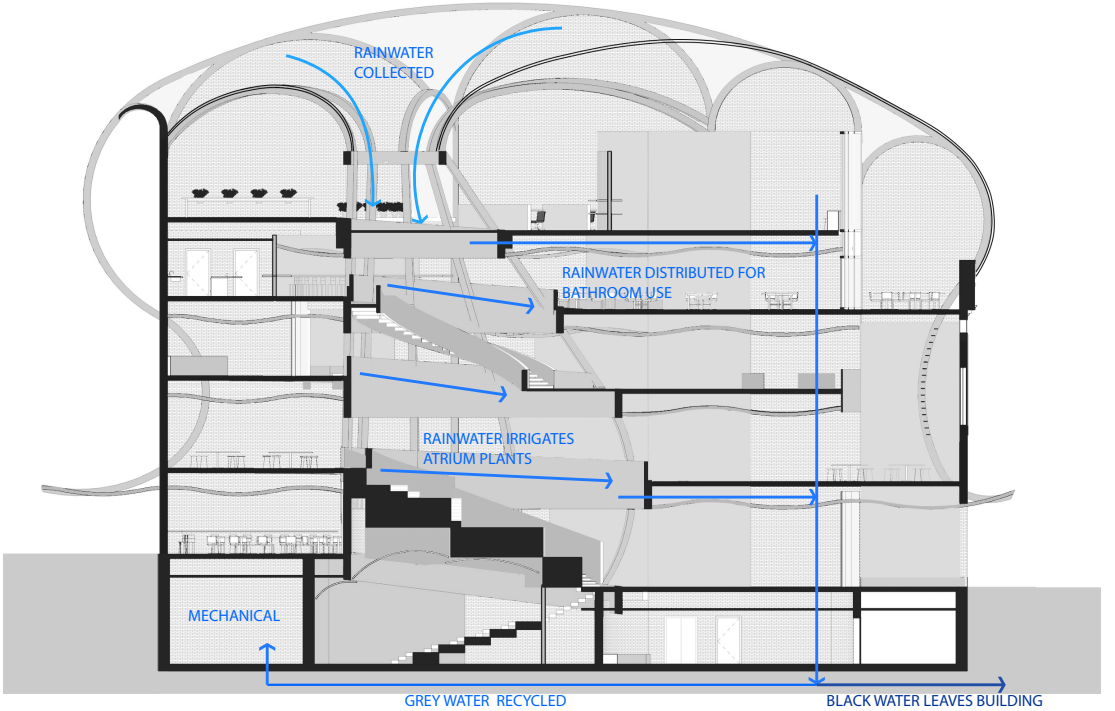
Vegetation and Geological Research This collection of information helped our team identify what types of local agriculture would be included in the green elements of the Artist Maze.

South Elevation In relationship to the story of place, the Artist Maze design respects the integrity of the historical facade in the district of Altoona, PA, yet also incorporates contemporary elements.

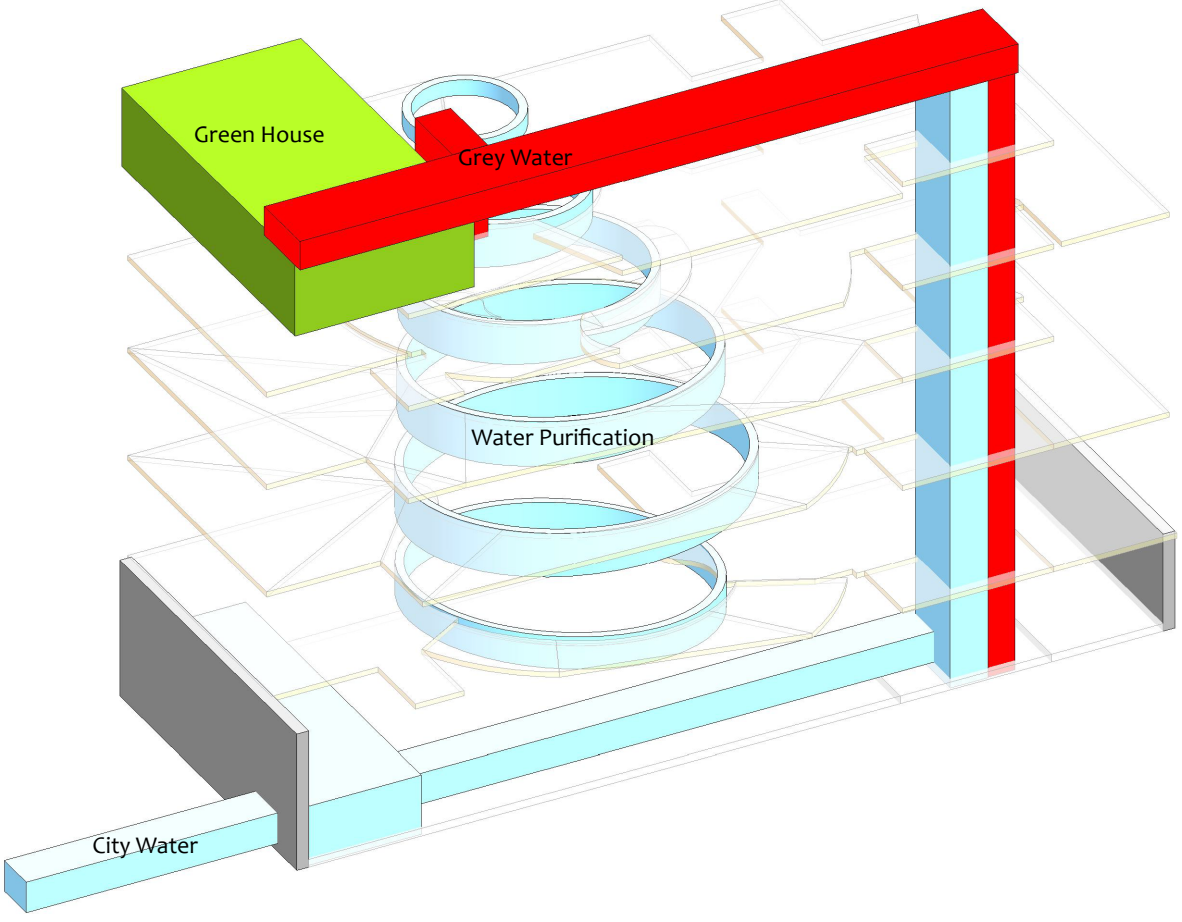
View Within the Atrium This persepctive highlights the native plants of the area that would be incorporated in the railing that winds throughout the central atrium structure.

WATER

Since the site gets a decent amount of rainfall, the building's roof collects water on site. The roof is a glass system that curves inwards towards the top of the atrium, collecting rainwater around the uppermost ring and distributing it through the building's plumbing for various uses. Some of this water will contribute to a drip irrigation system in the central stair's railing, which will water the plants growing there. Some will be recycled to be used in the bathroom sinks and toilets after being filtered. The grey water from the building's utilities will be recycled in the mechanical room, filtered, and redistributed throughout the building, while black water will be treated by the city's system. For high water usage loads, city water will also be tapped into to augment the rainwater collection.



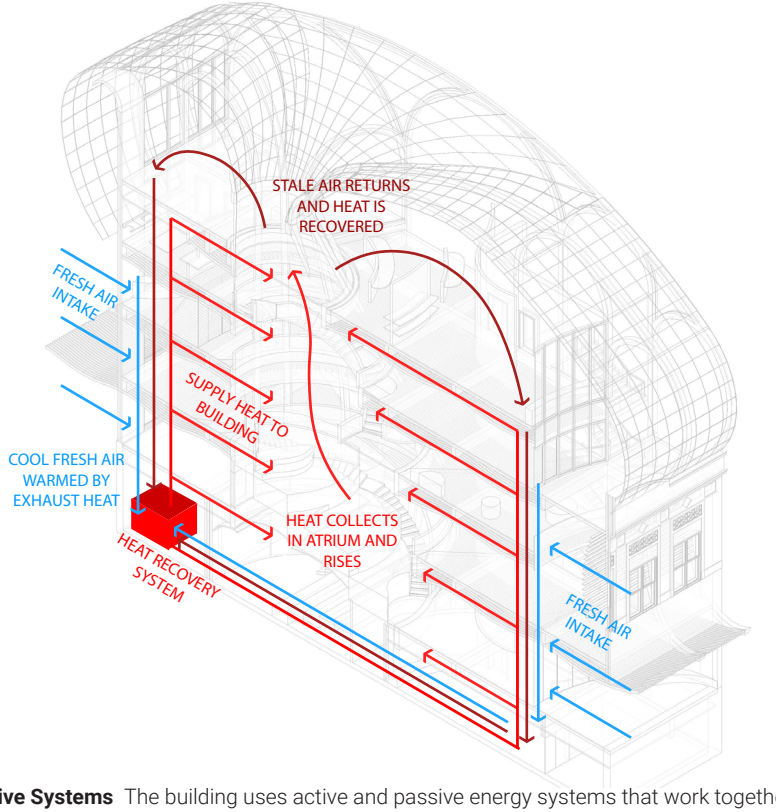
Section Diagram - Water Purification This section illustrated how rainwater is collected and distributed throughout the building. This diagram also shows how the rainwater circulates through the plants of the atrium structure and then is recycled for future use.



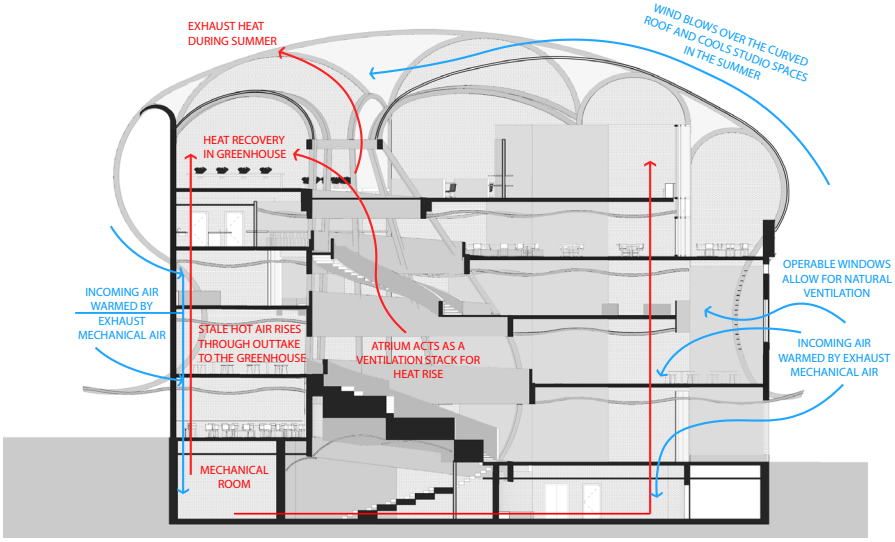
Water Purification System This diagram showcases how the grey water from the building is transported and purified to be recycled for reuse.

ENERGY

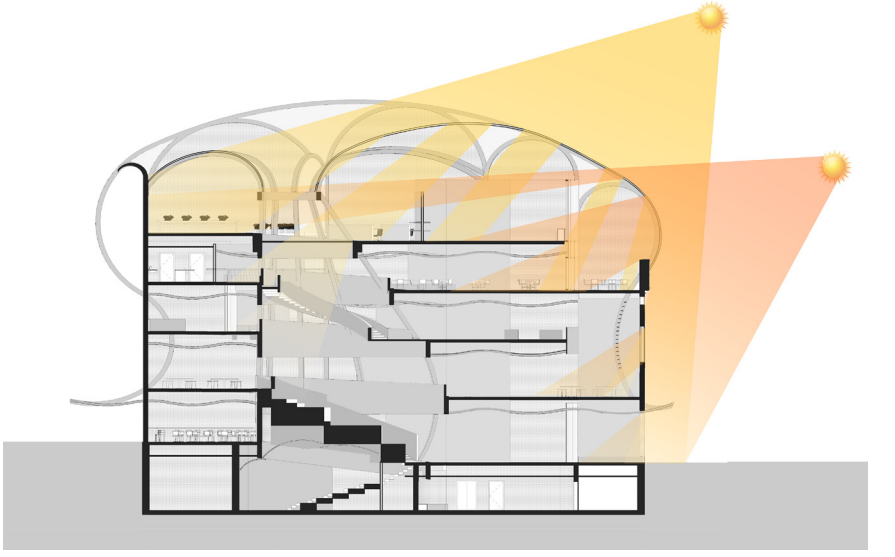
Active and passive system work together in this building to meet heating and cooling loads while saving energy, taking advantage of sunlight and wind. A heat recovery system will augment the active HVAC system for the building, warming incoming air with the heat of exhaust air leaving the building before it reaches the mechanical room. The active systems have a smaller heating load. In the summertime, the windows on the front and rear facades can be opened to allow for cross ventilation and cooling. The atrium acts as a ventilated heat stack to pull excess heat up and out of the building and encourage the natural flow of air throughout adjacent spaces. Taking advantage of sunlight, the roof is primarily glass, bringing in lots of natural daylighting to the greenhouse and studios. To control sun glare, some of these glass panels will become solar cells to collect energy and provide shading.



Axonometric Active/Passive Systems The building uses active and passive energy systems that work together to heat and cool the building. A heat recovery system takes cool outside air in and warms it through a heat exchange with hot, stale exhaust air from the building before it is circulated.



Section Diagram - Active/Passive Systems Accompanying the active cooling systems in the building during the summer months, passive systems exist to reduce cooling load. Operable windows on the front and back facades allow natural ventilation, and the atrium acts as a ventilation stack to remove stale, hot air from the building's lower spaces.

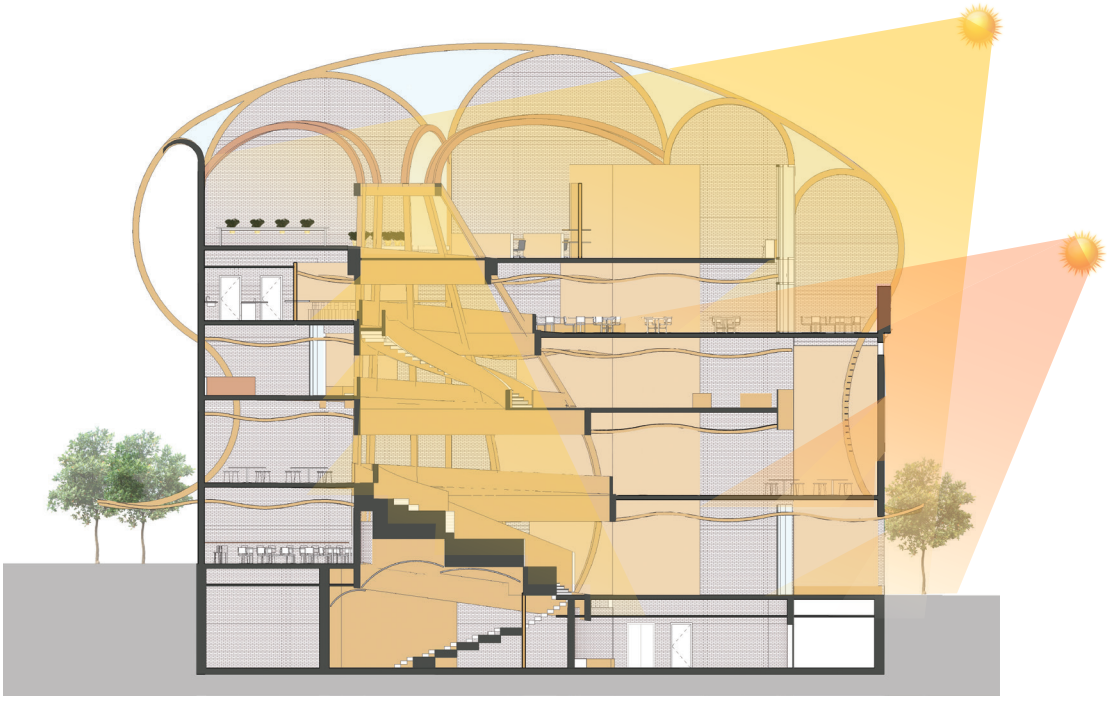


Section Diagram - Daylighting To allow nature light into the building, a central atrium distributes light from the rooftop down to the lobby. A glass roof provides ample sunlight to enter the building while controlling sun glare by replacing select panels with solar cells.

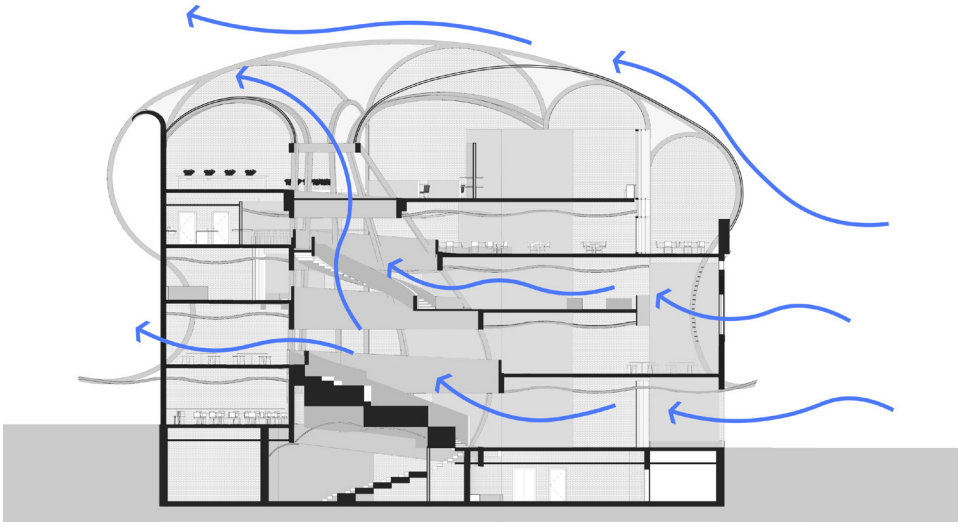
HEALTH + HAPPINESS

Materiality, open spaces, and ample daylight are all aspects of this building;'s design that contribute to the enjoyment and wellbeing of its visitors. The central atrium's curves are wrapped in a warm wood, and greenery drapes around the railings to add life and vibrance to one's discovery of the building. The wood continues in the ceiling; curved wood slats undulate above visitors' heads in a calming rhythm.

Daylight is ample in this building thanks to a central atrium and glazing on the front and rear facades. The existing windows on the front were enlarged to bring in more light to the studios there, and the studios on the top level recieve lots of warm daylight without harsh sun glare. The spaces surrounding the atrium are fairly open, as well, to encourage people to interact with the whole building as well as welcome people into any public space.



Natural Light Diagram This section demonstrates how the building allows for significant incorporation of natural daylight. Not only does this enliven the space, but it also promotes well-being for the building's users.

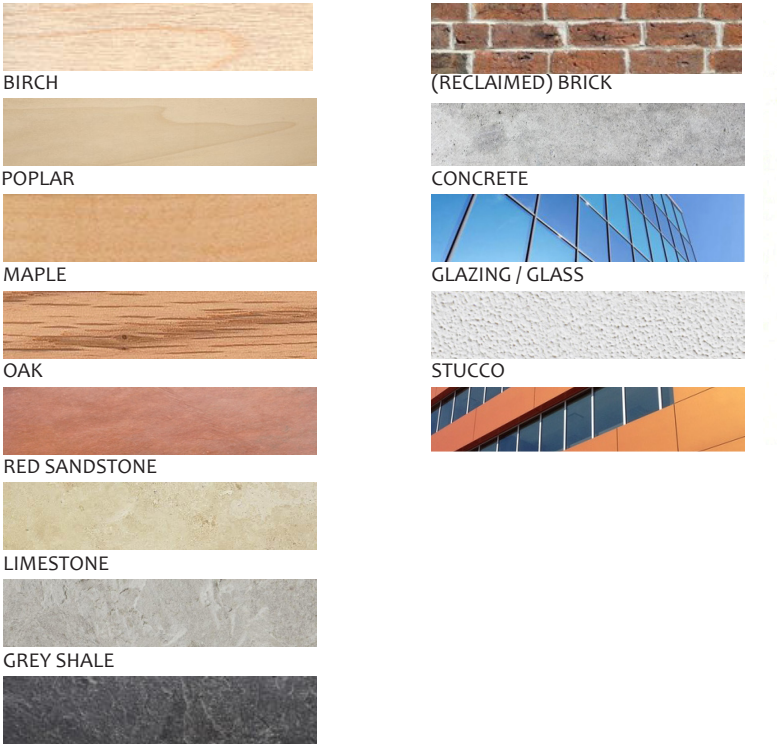


Ventilation Diagram This section diagram shows how the Artist Maze incorporates ventilation and fresh air to promote healthy and happy inhabitation of the space and exceptional indoor air quality.

Atrium Greenery View This view from within the atrium illustrates the incorporation of plants to promote health and well-being within the space.

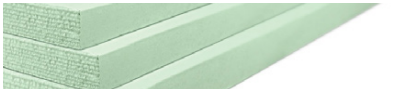
MATERIALS

Several local and sustainable building materials were identified during the research of this project. Local materials like brick and limestone were incorporated to reduce the carbon footprint of where the construction materials are coming from. The structure is made of cross laminated timber certified by the Forest Stewardship Council to come from a renewable forest. This will ensure that our building will not have a negative environmental impact and that the trees used in construction will be restored within a few decades. Red list materials were also identified and avoided. Instead of using foam insulation, the building's walls will be insulated with cellulose, which avoids the use of harsh chemicals like CFCs and PCBs used commonly in construction.



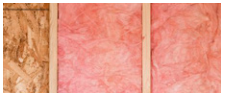
Materials The materials shown above are local to Altoona, PA, and serve as sustainable options in terms of cost and transportation.

PAINT WITH ALKYLPHENOLS



EXP / EPS INSULATION

SOLAR CELLS WITH CADMIUM



PCBS

FOAM INSULATION / AC (CFCS)

FIBERBOARD (FORMALDEHYDE)

POLYCARBONATE PLASTICS (BPA)

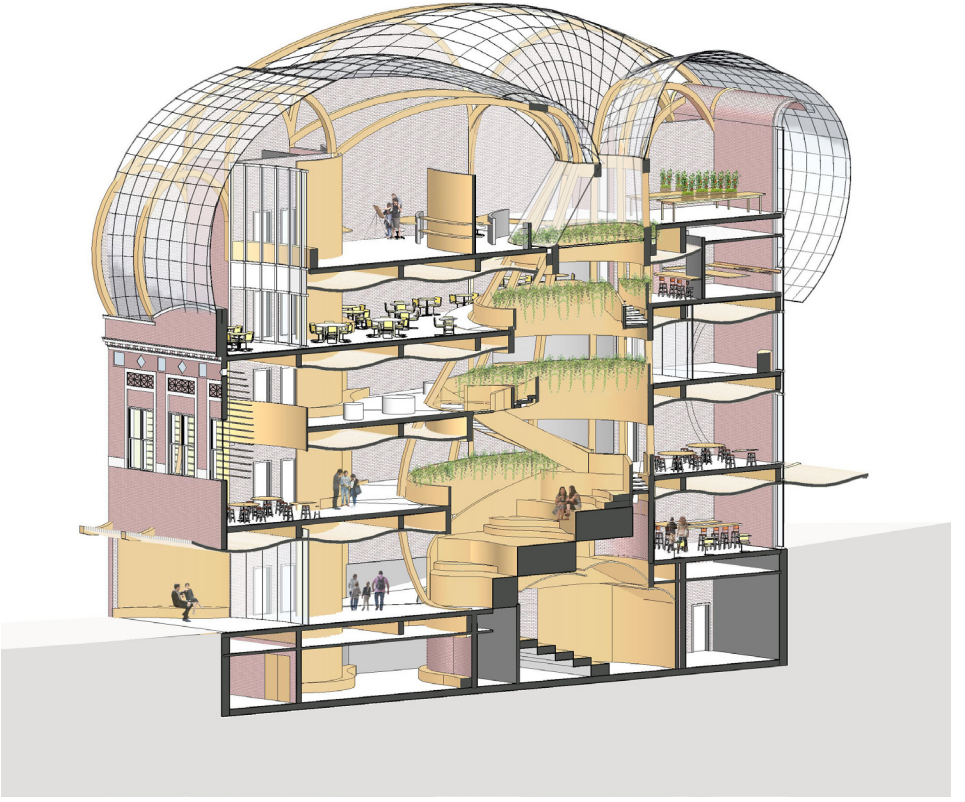
POLYVINYL CHLORIDE (PVC)

VINYL (PHTHALATES)

Red List Materials The materials shown above are several examples of what is not to be included in the Artist Maze design due to their impacts on the environment and human sustainability.

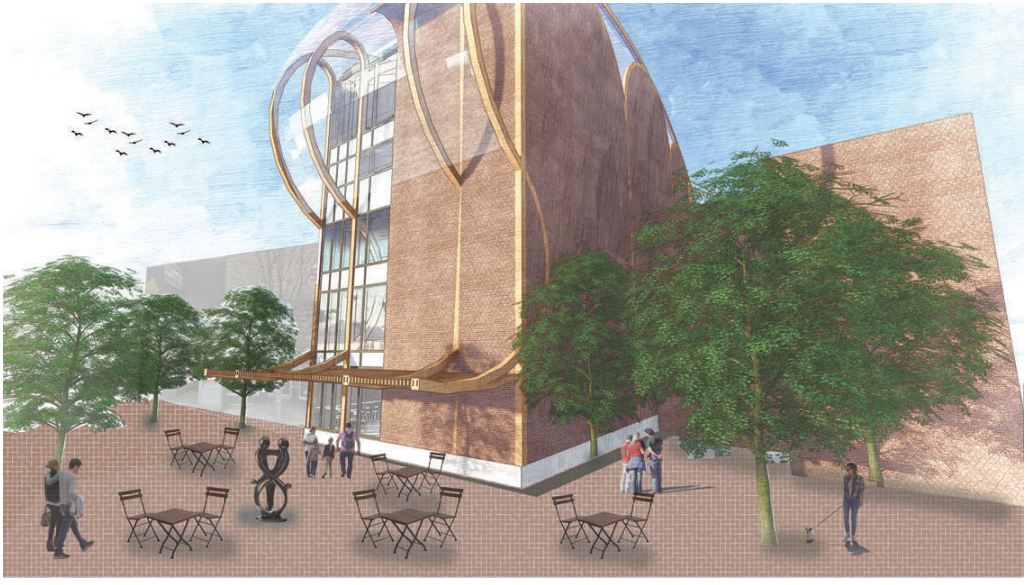
EQUITY

Accessibility was one of the most important considerations when creating a space for all of the community and visitors alike. For the winding atrium to meet this goal, it was necessary to design it so those of all abilities would be able to interact, engage, and discover within it. While there are stairs to ascend each level, there are also landings and access points from the railings for individuals to stop at, explore, and experience all the space has to offer. Visitors and community members can look above and below to all of the different art and discovery spaces, engage with the hanging plants draping over the railings, as well as interact with the materiality of the space as a whole. In addition, the atrium is designed with human interaction and scale in mind. The goal was to create a space that is not intimidatingly large, but instead one that promotes curiosity and engagement throughout the Artist Maze.



Section Perspective This image shows the accessible features of the central atrium structure. While the structure itself incorporates stair elements, there are landings and spaces around the railing for people of all abilities to engage and discover withint he space.

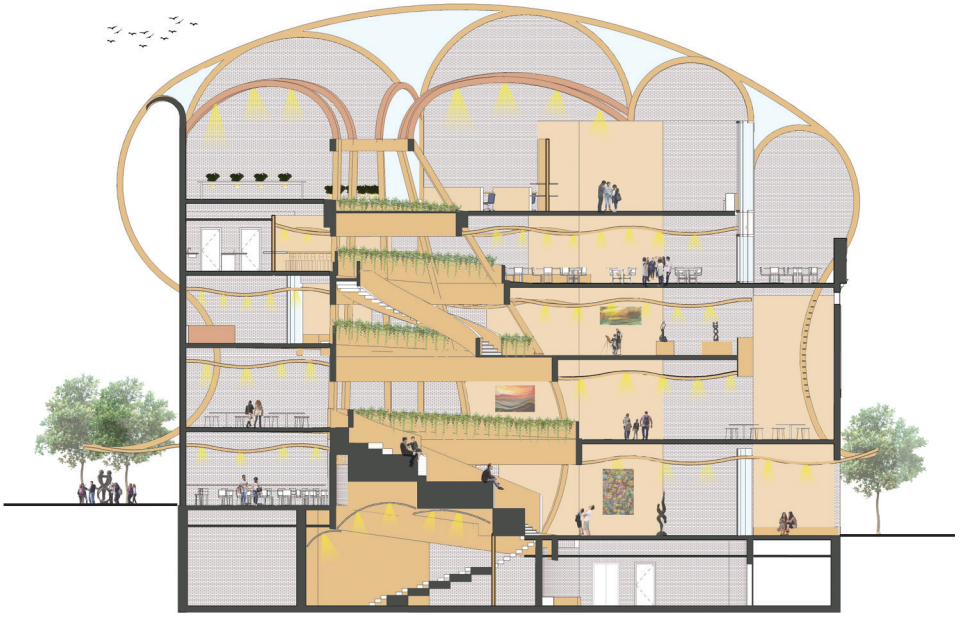
Entrance View This image shows the accessibility between 11th Avenue and the entrance of the building. The design encourages people to wander off of the path under the sweeping overhang above the entrance.



Artist Alley View This image shows the reinterpretation of Artist Alley, which will include outdoor seating for the cafe from the second level. The design of this space serves to redevelop the alley as an inhabitable portion of the landscape that promotes use and accessibility.

BEAUTY

The building contains several key elements that promote culture, spirit, human delight, and education. One of the ways in which this is done is through the incorporation of art galleries that display the work of local artists. In addition, there are spaces for public art studios in which community members and visitors can take classes and explore the arts. Moreover, while the atrium serves as an educational core to the building, it is also a dynamic sculptural feature which promotes engagement and exploration between the users of the space. In terms of education, the greenhouse and kitchen studio located in the biergarten are spaces that promote the culinary arts and and agriculture. The Artist Maze is a center for the arts that is open to all community members and visitors and encourages the development of downtown Altoona as a cultural hub.



Longitudinal Section This section highlights the use of the building, specifically characterizing the intention of the atrium as a dynamic, useable space. The design is sculptural and playful, seeking to attract community members to discover and engage within Artist Maze.

Artist Studio and Greenhouse View This image illustrates the topmost level of the building, as well as the top of the atrium. The structural pieces of the atrium spill out into the glass roof structure, illuminating the space with large amounts of natural light.

Forum View from Lobby This image shows the beginning of the atrium structure on the street level. The structure serves functionally as well as being a sculptural element for the enjoyment and use of the community.


ALTOONA ARTS CENTER
14th Street
11th Avenue
Heritage Plaza

ICON

Joshua Huang, Maxwell Dollard, Nuwee Mpolokeng

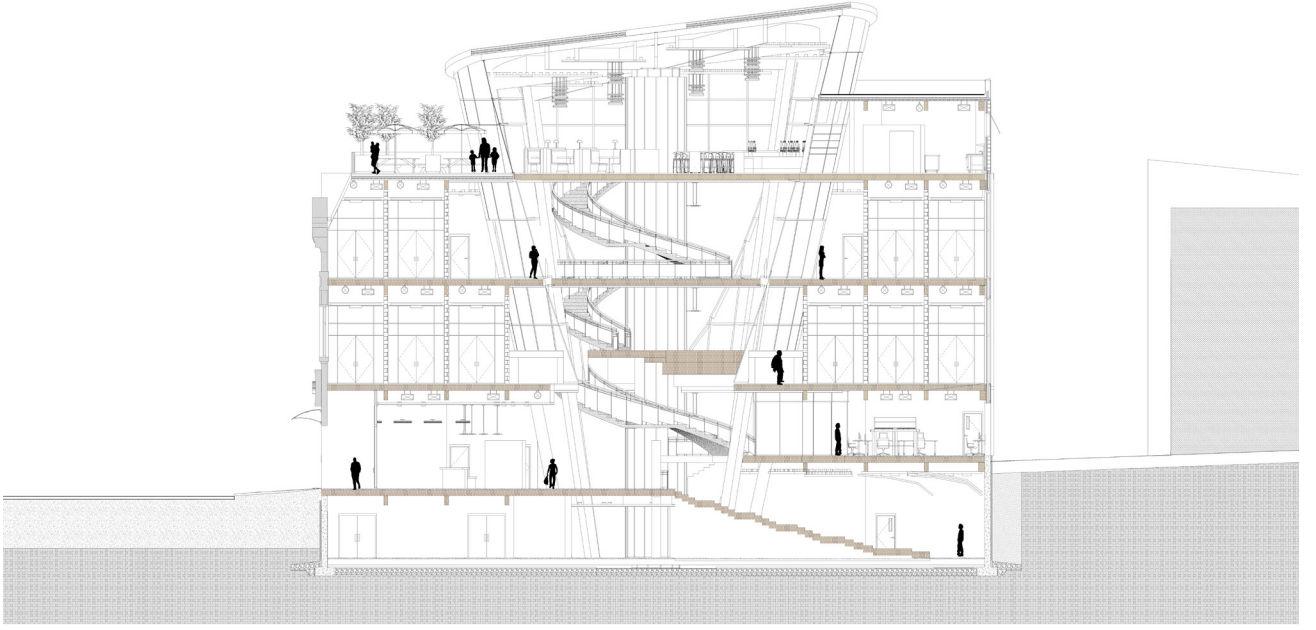
Altoona, PA was at one time one of America's most important cities. This was because of the great impact it had on the American railroad industry during the majority of America's industrial revolution and straight on through to the post World War II era. Altoona has seen a number of "renaissances" since its founding in 1849. Our site, The Kress Building came along at the height of Altoona's economic booms and acted as the icon of its respective era. It was described as Altoona's most beautiful building. Altoona has seen a decline and is in need of a new renaissance, through the introduction of the arts, a new icon can rise from the old.

This new design for the Kress Building establishes a presence in the city skyline through the addition of a new iconic form. The new form that is central in the project was inspired by the shape of old 19th century steam engine smokestacks.

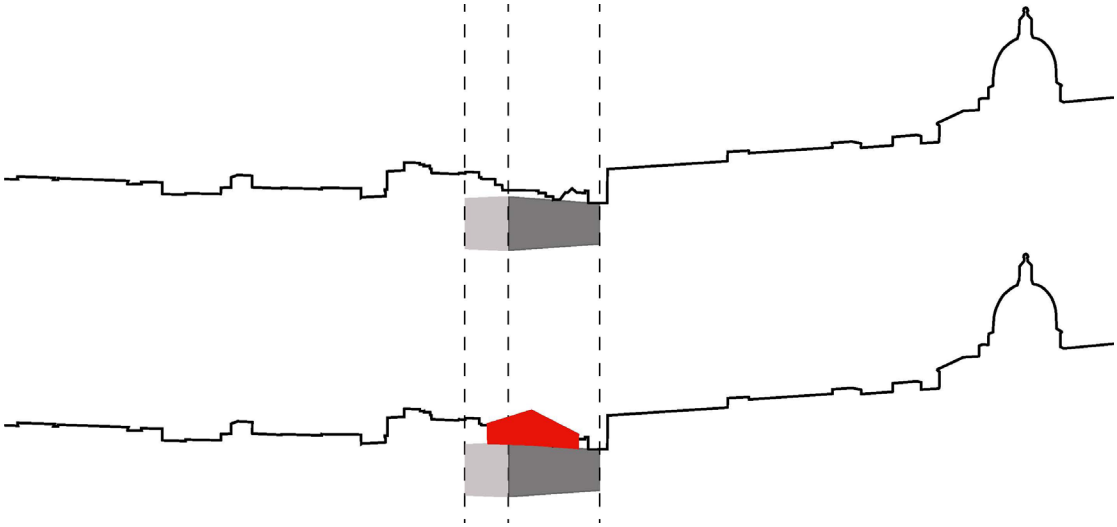
The new icon of the city was created by inserting a new form into the footprint of the old Kress Building. There were two main concerns when developing the form: to establish a presence in the city skyline and to speak to the heritage of the city of Altoona. Altoona, PA remains an important city to the American railroad industry.

The form was largely inspired by the shape of a 19th century train smokestack, which typically had a conical shape. The form was then enlarged to a scale that added two more stories on to the building. This allows it to stand above the neighboring buildings and establish a strong and visible presence within the morphology of the city.

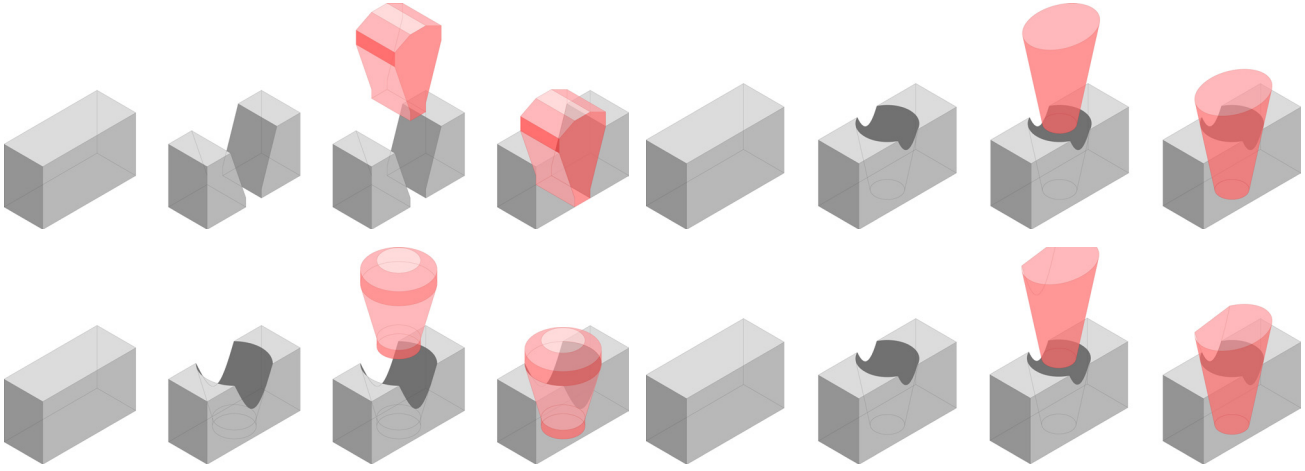
There were a number of iterations for the form, from an extrusion to a literal insertion of the smokestack. The final form is a simplification of the form which is than altered to meet climactic and site conditions.



Building Section The central volume acts as a large atrium and gallery space for the artists to display the art they create.



Skyline Parti The current Kress building does not have a presence on the city's skyline. The new Kress Building will have a presence in the skyline and assert itself as the new icon.



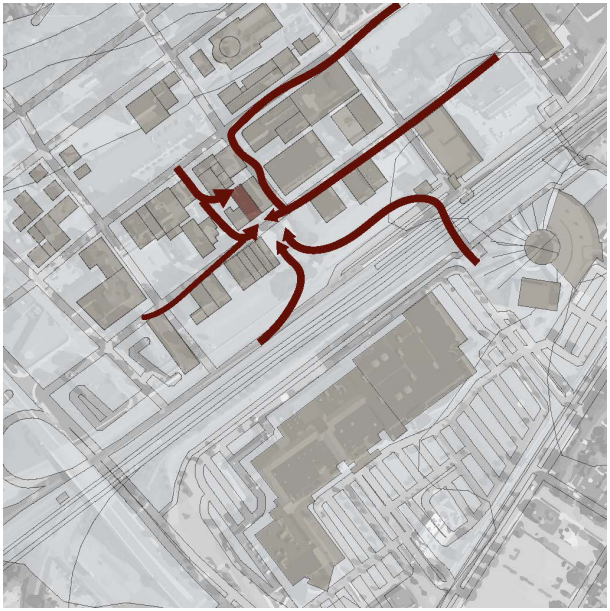
Parti Studies Top left: Study 1, bottom left: Study 2, top right: Study 3, bottom right: Study 4 (final)

PLACE

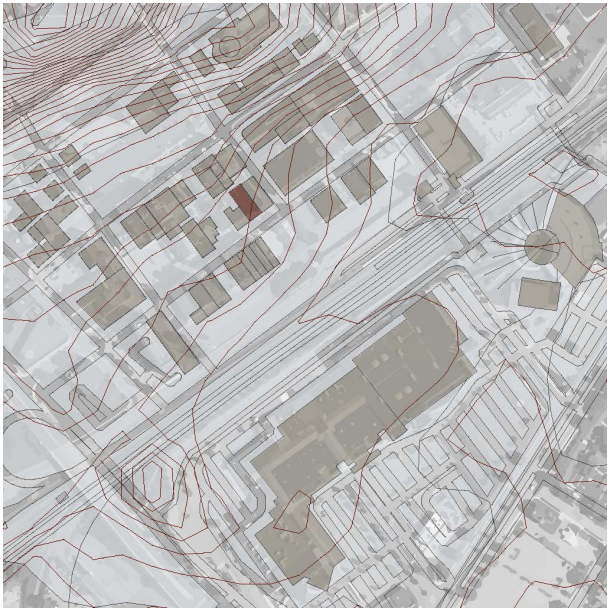
One aspect of this project that is paramount to its design is that it takes into account the importance of the Kress Building to the city of Altoona. The building was built in 1922 at the height of one of Altoona's economic booms. " The beauty of the building is unparalleled in Altoona" (The Altoona Mirror, 1922). With this in mind, the restoration of the historic facade is done to maintain Altoona's history and prestige as a great American city.

The site along 11th Avenue is already developed land and does not harm or develop any "new" land in the greater Logan Township. The site is also accessible from all directions and is as accessible for pedestrians as it is for cars and trucks.

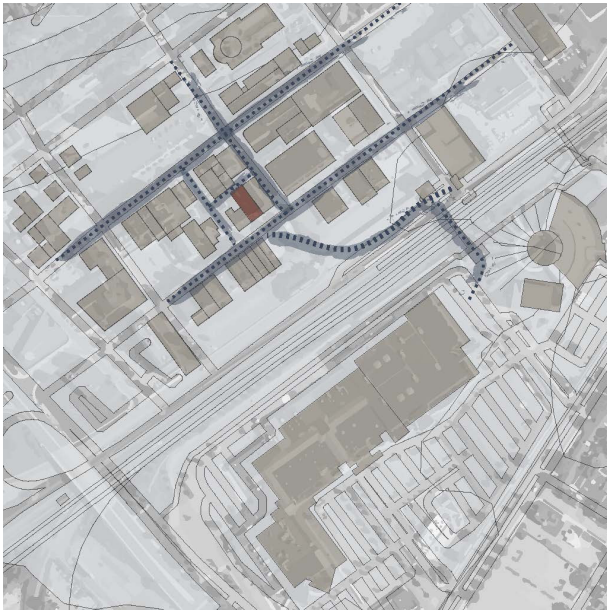
The Kress Building historic facade Altoona's old icon.



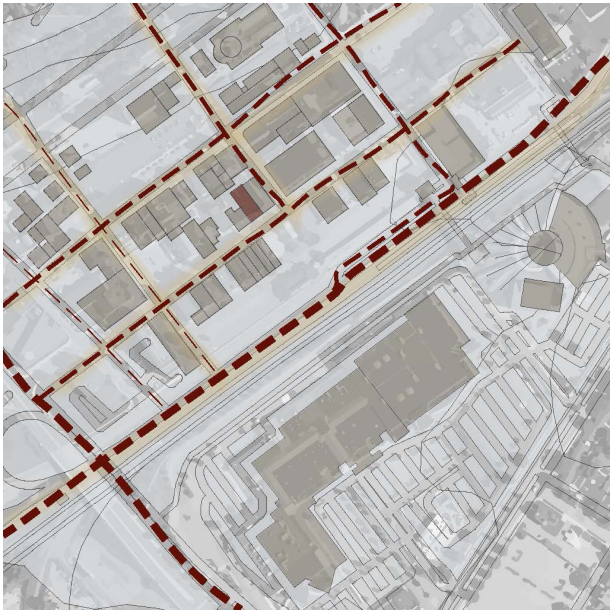
Site Accessibility



Topography



Pedestrian Circulation



Vehicular Circulation

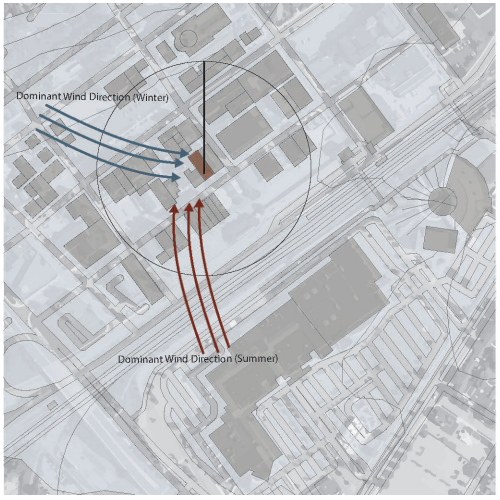
ENERGY

The new Kress Building has multiple considerations for the building's global energy footprint. The building employs multiple passive heating and cooling techniques. The form in the center of the building serves two main functions for controlling the climate of the building. The first is that it acts as a large atrium which allows light to pour down into the building, helping to warm the building during the colder months of the year. The wooden perforated panels that surround the atrium act to mitigate heat gain during hotter months.

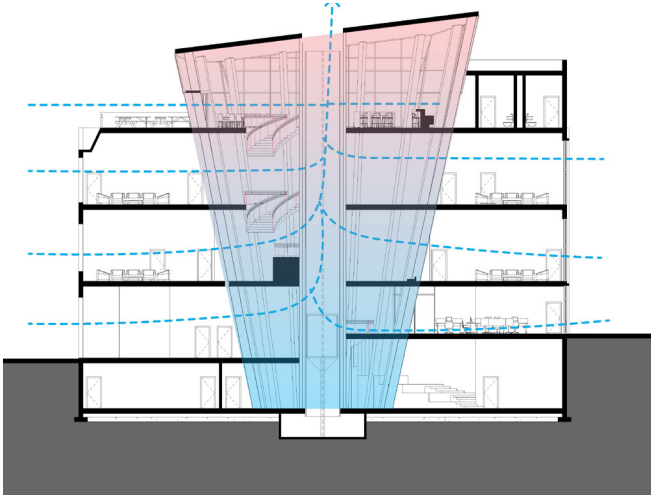
The second is that the atrium takes full advantage of the stack effect. This allows air to be pulled through the building and up through the atrium to create cross-ventilation. All windows are operable.

The roof of the building is angled to take optimal advantage of the use of solar panels to generate electricity for the building.

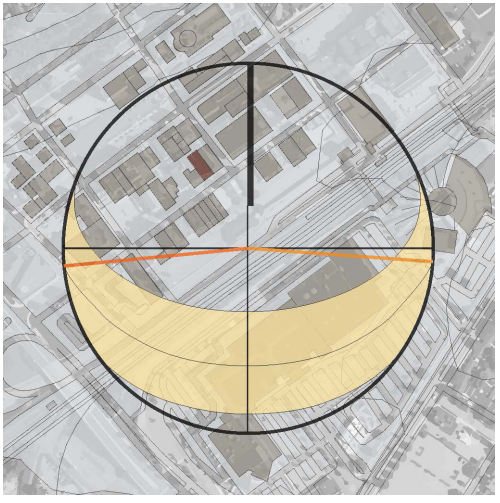
Section Perspective shows how the central volume is a clear connector of both building program and can heavily affect the climate of the building.



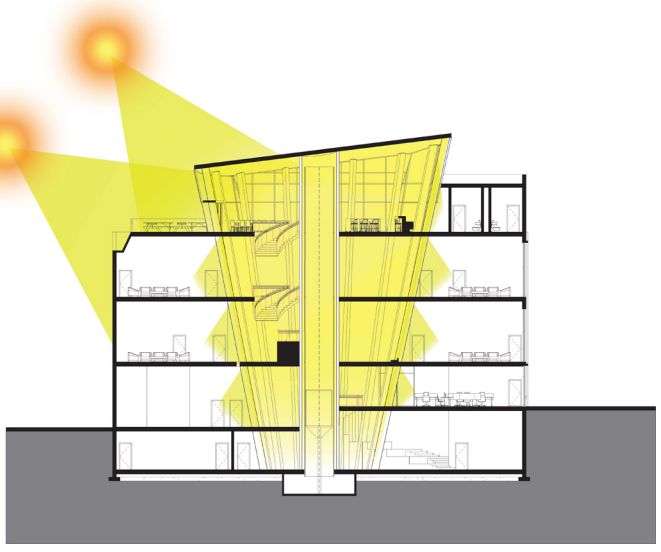
Dominant winds The post prevalent wind in Altoona come from the southwest.



Stack Effect and Airflow The stack effect pulls air through the building and releases it at the top.



Sun Path The 11th Avenue facade receives the highest exposure to natural sunlight from the south.



Daylighting The central atrium space allows natural light to pour down into the rest of the building.

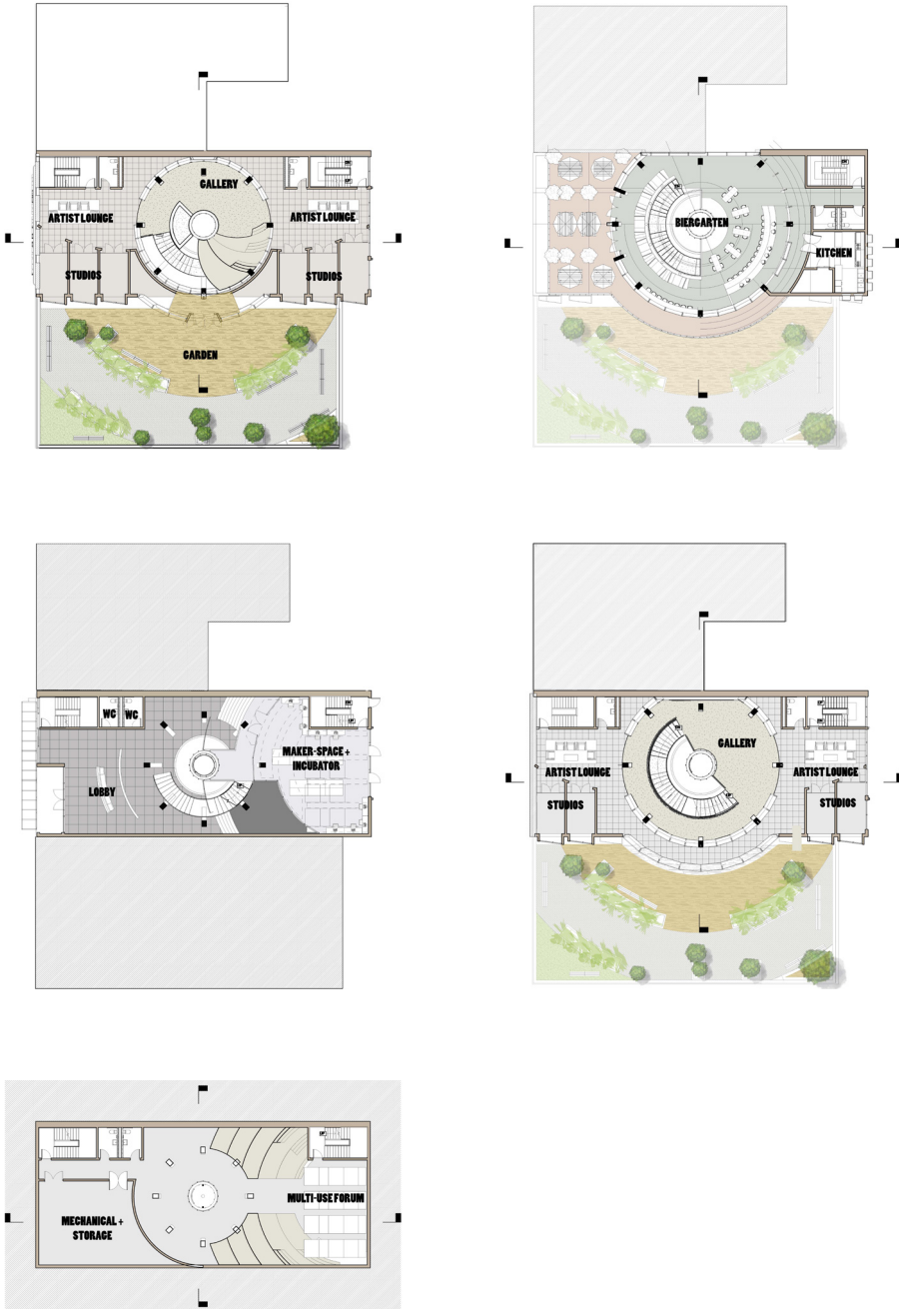
HEALTH + HAPPINESS

The interior of the building is designed to inspire happiness in everyone who walks through its doors. There is an abundance of natural light and use of natural materials, such as wood, which has been proven to make people feel more comfortable in the environment that they are in.

Every window is operable to allow for maximum airflow and cross-ventilation. The rooftop garden on the second floor allows for a connection to nature while replacing some of the green-space that was lost long ago when Altoona was founded.

The central atrium and staircase influences people to use the stairs instead of the elevator as people journey through the gallery space, interact with the artists and finish their journey at the rooftop Biergarten where they can enjoy refreshments and a nice meal from the farm-to-table kitchen.

Studio and Lounge



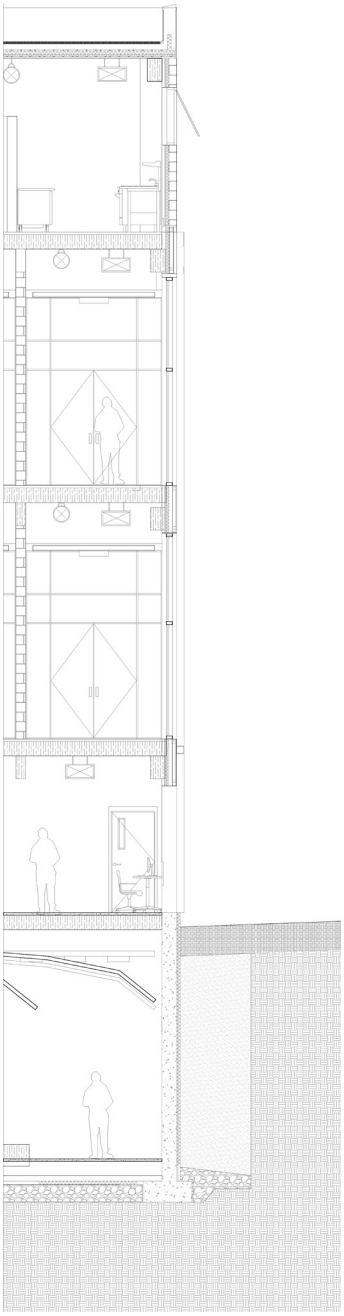
Floor Plans Bottom left: Basement, middle left: Ground Level, top left: 2nd level and Garden, middle right: 3rd Level, top right: 4th Level

MATERIALS

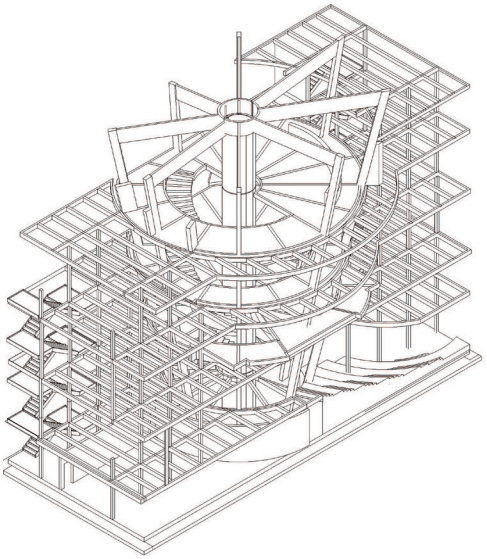
The Kress Building's old structure left very little to be desired. This new design for the building replaces all the old structure with a cross laminated timer (CLT) structure that will provide for the health of both the people and the environment.

CLT structure has a significantly smaller embedded footprint and than other structural materials, such as concrete or steel. There are plenty of benefits to CLT. First of all, it is aesthetically pleasing and wood provides a warm and inviting atmosphere to the building. Second, heavy timber and CLT construction has a comparable fire resistance to steel and concrete. Third, wood construction is known to absorb toxins and greenhouse gases out of the air which makes it a cleaner and more sustainable building material.

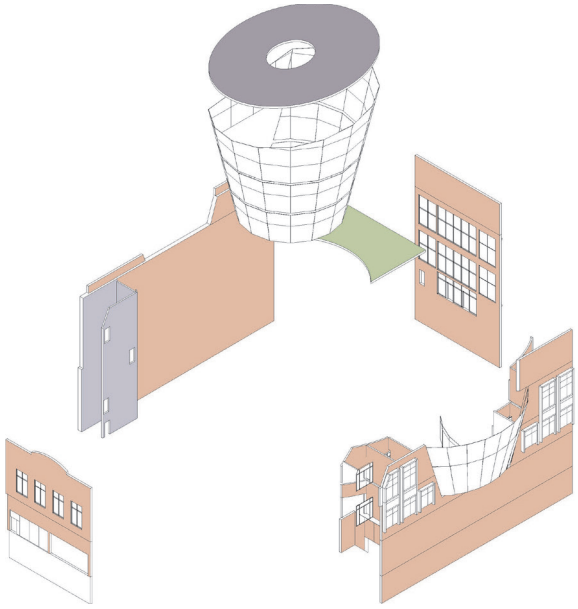
2nd Level Gallery and Forum



Detailed Wall Section



Structure The structure is built from Cross Laminated Timber (CLT) with brick egress cores.



Exterior Skin the majority of the outer skin of the building is clad in brick, glass, and wooden perforated panel.

BEAUTY

A building while needing to be functional must also be beautiful. The design for this building is intended to inspire the community of Altoona and allow for economic growth to flourish in the downtown area. This building will act as an icon to Altoona's artistic renaissance that is to come.

The natural wood structure and attractive lighting strategies will not only act to inspire the artists who will work in the rent-able studios but inspire the community to support the arts and the new growth of the city. The large well lit atrium space and gallery, the open lounges, roof garden and rooftop views from the restaurant will lift the spirits of anyone who is working in or visiting the building. The outdoor areas and gardens will provide a much needed connection to nature, and the ability to overlook 11th Avenue and the train station will provide proof to the growth of the city of Altoona, PA.

Studio and Lounge

Restaurant and Biergarten

Rooftop Dining Terrace

Rooftop Garden Above neighboring building

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ARTSALTOONA
A Project of the Arts, Business & Innovation Council

Altoona Catalyst for the Arts

The “Artist Maze” is envisioned as a community arts space where traditional, expressive, and conceptual artists come in contact with one another and the larger community of Altoona, PA. It is aimed to be a mixed-use facility combining food and beverage service with resident and local artist studios, galleries, and public event space. The existing building, formerly known as the JK Sports Building or Kress Building, located on 11th Avenue, will be renovated to serve as an anchor on one end of the proposed Altoona downtown core Creative District.

Twenty-four fourth-year architecture students worked in teams to research the community, analyze needs, and propose integrated solutions to transform an existing Altoona landmark into a cultural hub and community asset. These designs were realized through an interactive partnership with Penn State Sustainability Institute Sustainable Communities Collaborative (SCC), Penn State Altoona, and Arts Altoona, and their community partners.