



KAREN POLANCO

ARCHITECTURE PORTFOLIO | 2021

Columbia University

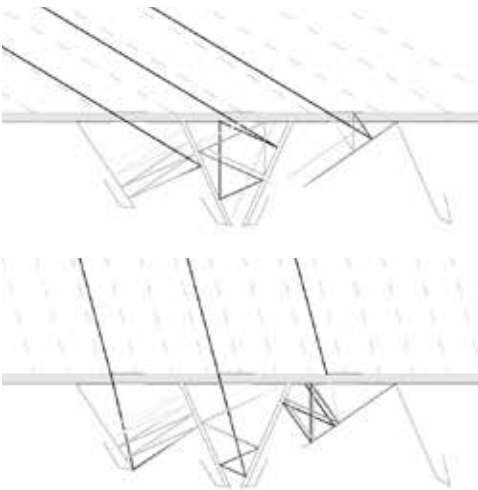
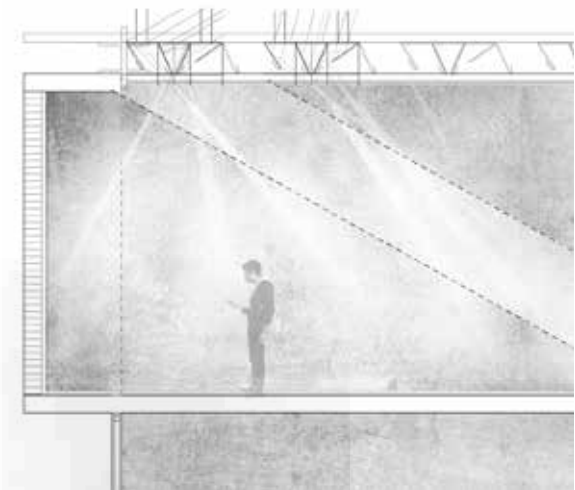


LIGHTBOX | TECTONIC ASSEMBLY | SAVANNAH, GA

SPRING 2017 | LEACH | D6 | ACADEMIC

Through the analytical investigation of Savannah and the surrounding urban context, we designed a modest scale intervention that explored **tectonics** and the **poetics of construction and materiality**. Physical models were used as process investigations of the building envelope, material, and detail.

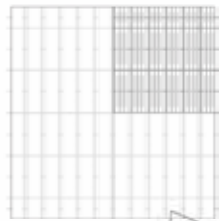
Building a tectonic roof system that worked with the summer and winter solstice, the screen creates soft diffused light that is suitable for a museum. Constructed with this goal in mind, the geometry looked at different sun positions to provide a dynamic and effective design.



Light Diagram



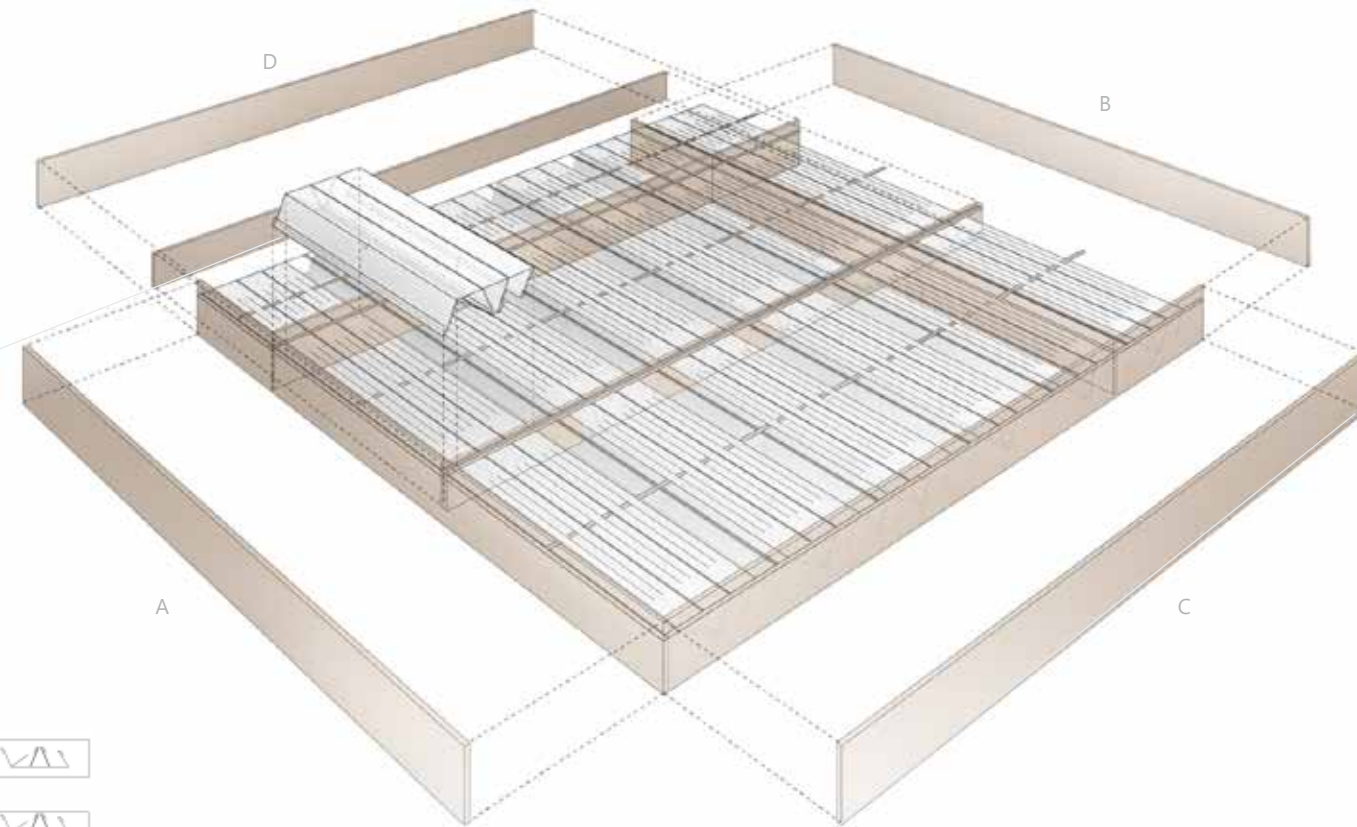
Screen System



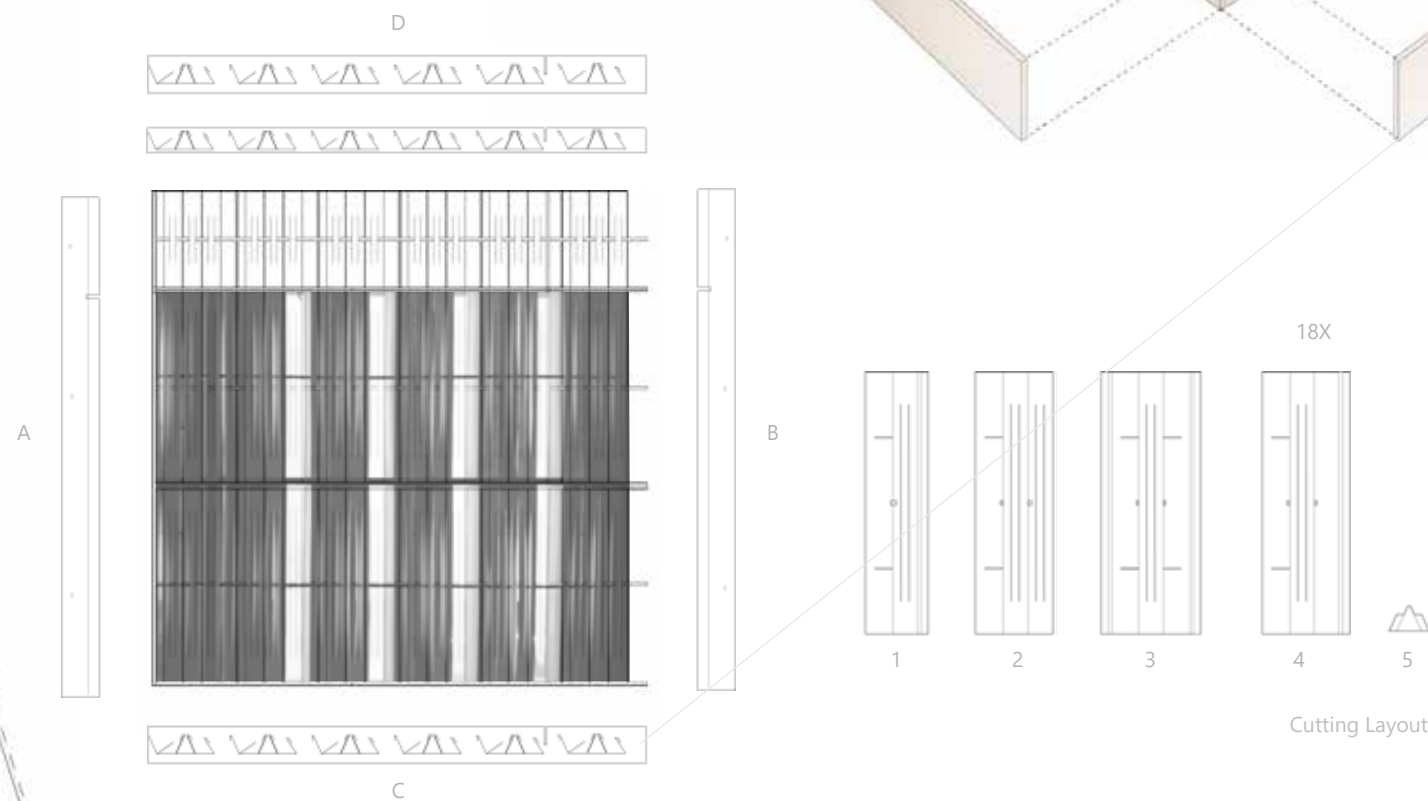
Plan View



DESIGN 6 | LIGHTBOX



Exploded Assembly

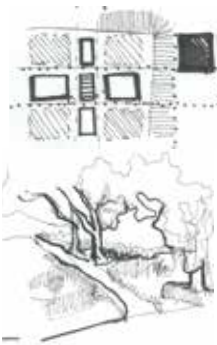


The roof components were fabricated using laser cutting technology. The complex three-dimensional geometry was broken down to flat outlines that were able to be cut and assembled to create a screen roof that diffused light.



SAVANNAH CENTER FOR CRAFT ARTS | GA

SPRING 2018 | LEACH | D6 | ACADEMIC



The Center for Craft Arts located in Savannah, Georgia supports and elevates the craft arts. The SCCA strives to preserve the craft traditions of today, while fostering the development of new techniques and emerging talents of the future.

Educating and engaging the community of Savannah and the surrounding region on fiber arts, leatherworking and wood-working. These techniques were influential in the design of the screen roof system. The museum provides visitors with permanent collections, visiting exhibits, living, and working spaces.





Exploratory Diagram



LEVEL 3

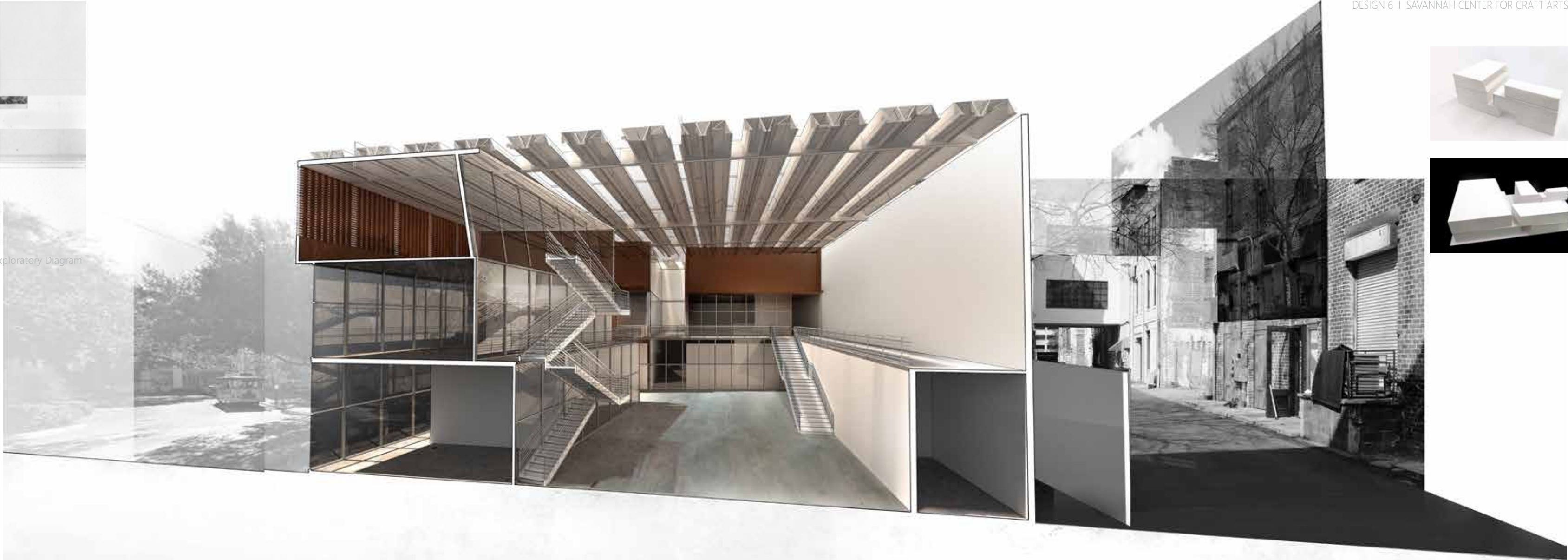
- Artist Apartments
- Reading Room

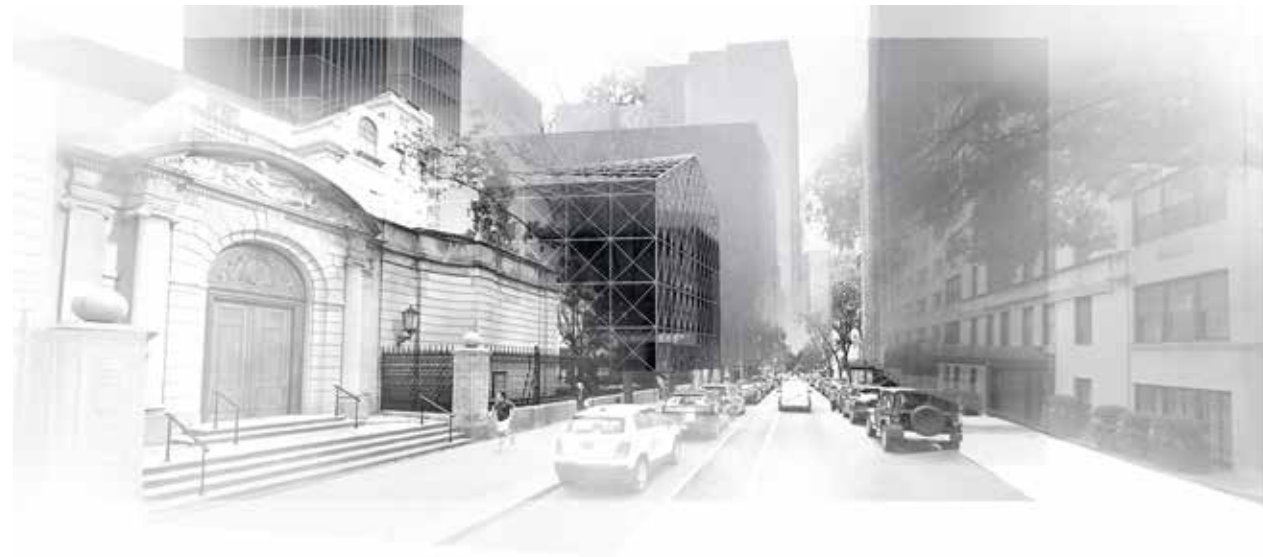
LEVEL 2

- Classrooms
- Gallery
- Administration
- Fabrication

LEVEL 1

- Temporary Collection
- Permanent Collection
- Cafe
- Storage
- Shop Gallery





FRICK MUSEUM EXPANSION | NEW YORK, NY

FALL 2018 | COHEN | D7 | ACADEMIC

The intervention respects the scale of the Frick Building, which comprise the original three-story house designed by carrere and Hastings, and the adjacent seven story high library building. The addition by design will create new spaces for the presentation of works from the collection and a special exhibition gallery .

Introducing a purpose-built **botanical park** that will allow the city dweller to have a connection with nature, while providing spaces for the study of plants. The program improves visitor circulation and better accommodates participants in education and public programs. Facilities include greenhouses, laboratories, classrooms, and administrative offices.

Solar Study



Jun 21

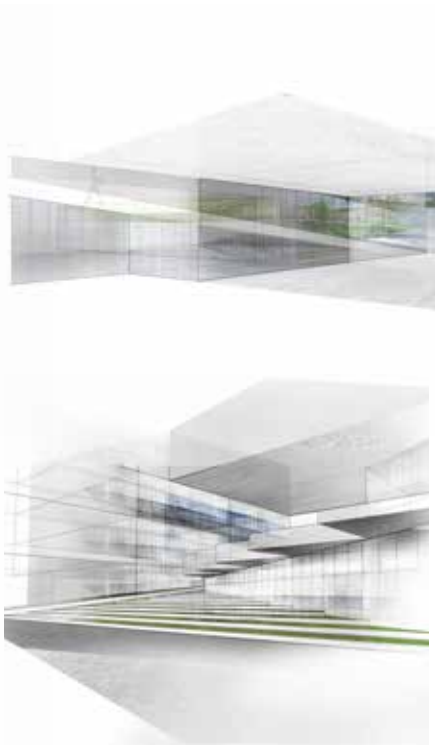
Mar 21

Sept 21

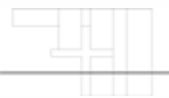
Dec 21

DESIGN 7 | FRICK EXPANSION





Concept Renders



LEVEL 1



LEVEL 2



LEVEL 3



LEVEL 1

- 1| Entrances
- 2| Lobby
- 3| Core
- 4| Galleries
- 5| Green Wall

LEVEL 2

- 6| Shop
- 7| Auditorium
- 8| Green Steps
- 9| Gallery

LEVEL 3

- 10| Laboratory
- 11| Offices
- 12| Classrooms



Tunnel Render

BRIDGING THE DIVIDE | CHICAGO, IL

FALL 2018 | UF NOMA CHAPTER COMPETITION TEAM | ACADEMIC

ROLE: PRINCIPAL DRAFTER | COLLABORATIVE WORK

RESPONSIBILITIES: CONCEPT DESIGN, RESEARCH, DRAFTING, EDITING

Woodlawn at 63rd aims to reinvigorate the commercial zone of Woodlawn with the implementation of a new commercial axis, residential towers, access to the rail line, and sculpted green landscape which is open to the public. Other facilities such as the supermarket, auditorium and gallery will also encourage the economic and social growth in the community. The proposal will become a pillar of Woodlawn, showcasing local businesses, new technology, growing student activity, and providing easy access to transit systems.

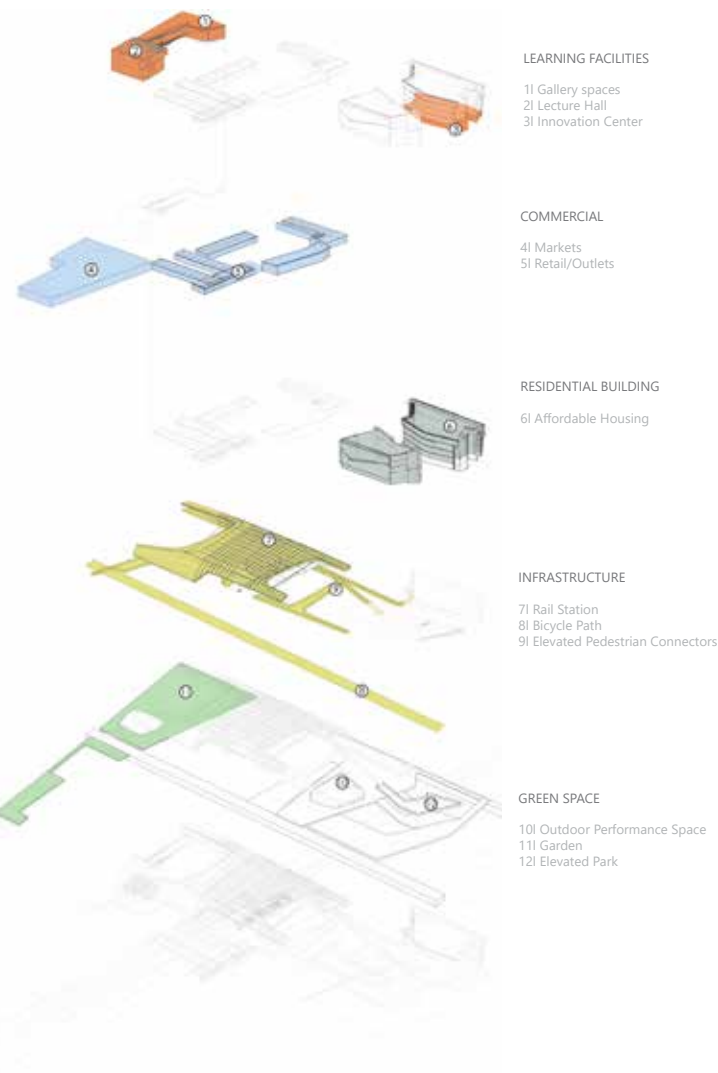
The proposal aims to act as a mediator that **knits the community** and provides current residents, students, and commuters a location to **intersect**, therefore stimulating growth in the local economy.



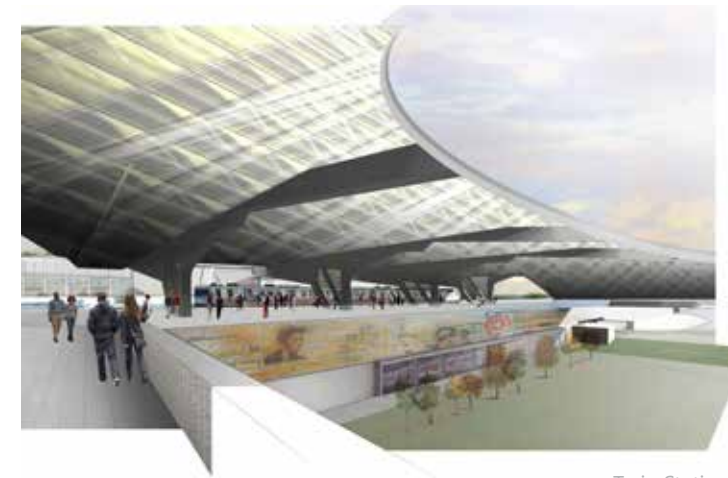
Auditorium



Section Cut



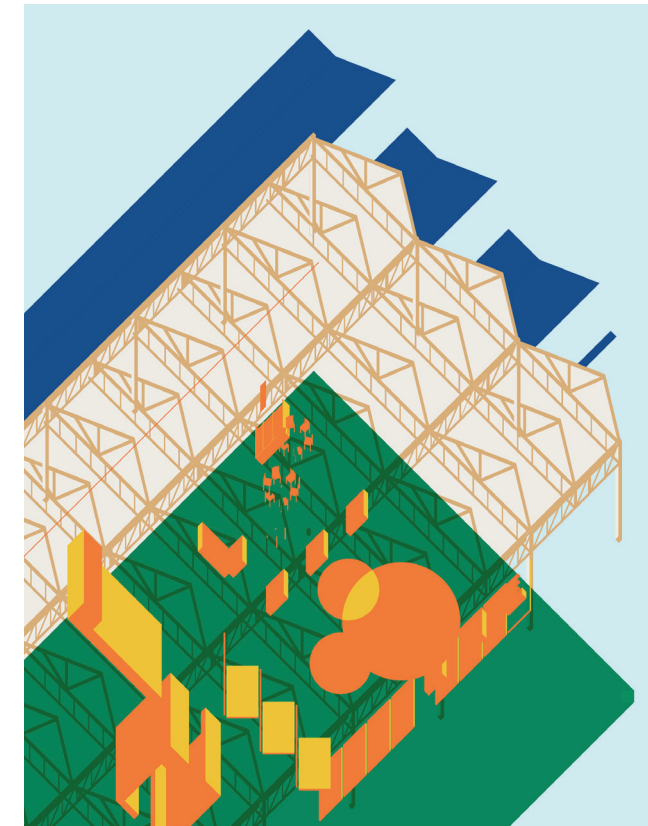
Top View Bridge



The train platform is an elevated space that not only connects the two sides of the proposal, but also the Woodlawn community. Covered by a canopy, this platform is shielded from the harsh weather conditions commonly seen during the winter. The solar panels and green roof collect heat and is a source of energy for other components of the site.

Train Station



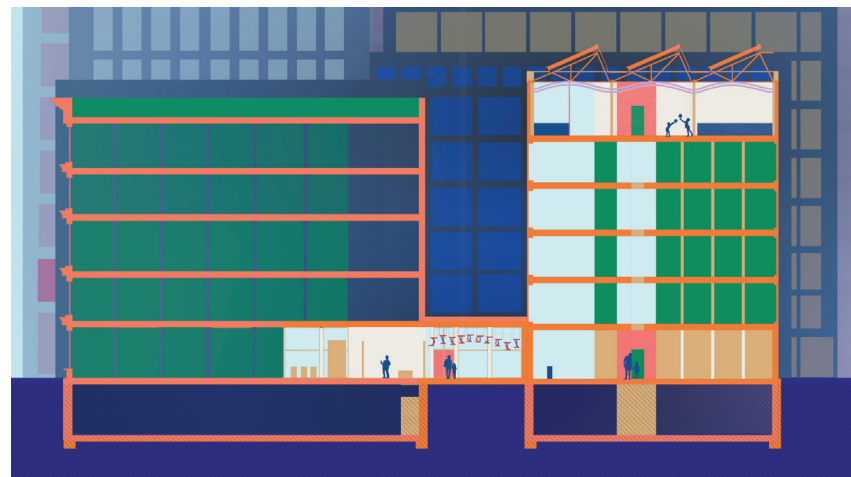
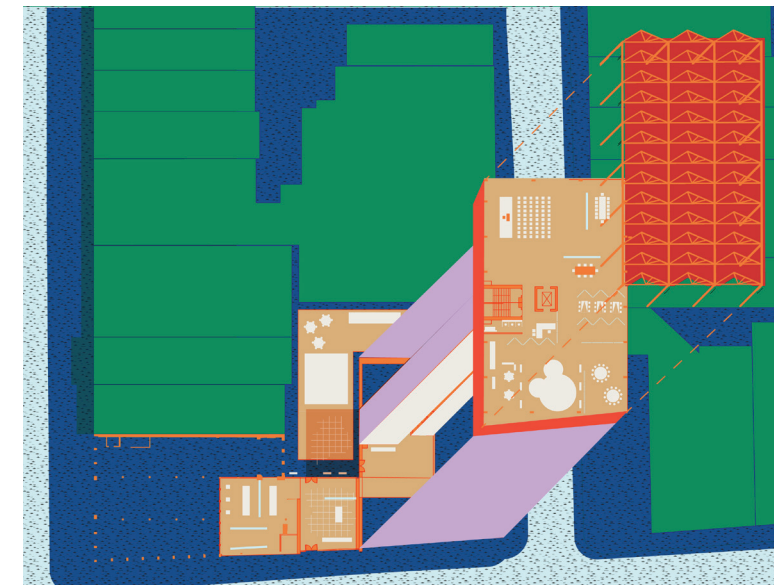


FALL 2020 | RECAST

RECASTING BROADWAY | NEW YORK, NY

FALL 2020 | WIKSTROM | CORE 1 | ACADEMIC

Recasting Broadway transforms ornament into usable space. Using building materials from the Haughwout building on Broome and Broadway, Cast Iron from the façade is removed and recast as a steel space frame that supports recreational, cultural, and academic development. The project serves as a community center and exhibition space that hosts after-school and child care services to the families of commuting downtown workers.





LOISAIDA CENTER XR SCHOOL I NEW YORK,

SPRING 2021 | KIPPING | CORE II | ACADEMIC

The Loaisaida Center is a core community space that promotes the arts and the XR school. The Timber Dome becomes a platform for the Lower East Side to exchange ideas and address prominent social issues. Exhibition galleries and green multipurpose spaces foster the creation of art and climate education for cultural organizations, workers, and students.

