

Project Name // **Retrofit Detroit**

Project Location // Detroit, Michigan

Project Category // Graduate Submission - Studio Project

Project Synopsis //



When it comes to rapid population loss, economic decline, and urban decay the City of Detroit is unprecedented. Detroit, once the nation's most industrious city, reflects an outdated industry through its collection of building stock that has been left behind by a community met with social, racial, and political tension that still reside deep within the foundations of the city. Today, Detroit has over 17% unemployment and nearly half of its 138 square miles is left vacant. Detroit has lost around 50% of their population over the past 50 years and do not anticipate growth anytime soon. This project proposes a system of construction that reimagines vacant and derelict buildings as a social, economic, and cultural asset, a challenge integral to rebuilding Detroit's urban landscape.

The site is located in Virginia Parks, a neighborhood that currently is met with over 70% vacancy and lack of any public amenities. The design proposition takes place within parts of a historically registered Albert Kahn hospital hosted in the 17.9 acres Herman Kiefer Complex. Before it's official closing in 2010, the hospital housed a community clinic, department of records, and general hospital care which served as the only yet most critical amenity within the community boundaries. Retrofit Detroit reintroduces these public services in addition to flexible programming through a public library that only occupies a strategic portion of the entire 300,000SF building. This allows for a comprehensive yet active approach to development without having to fit out the entire building therefore serving as an initial yet vibrant economic, social, and cultural incubator for future growth within the rest of the hospital building and the Virginia Parks neighborhood.



70%

Vacancy Level in Virginia Parks neighborhood

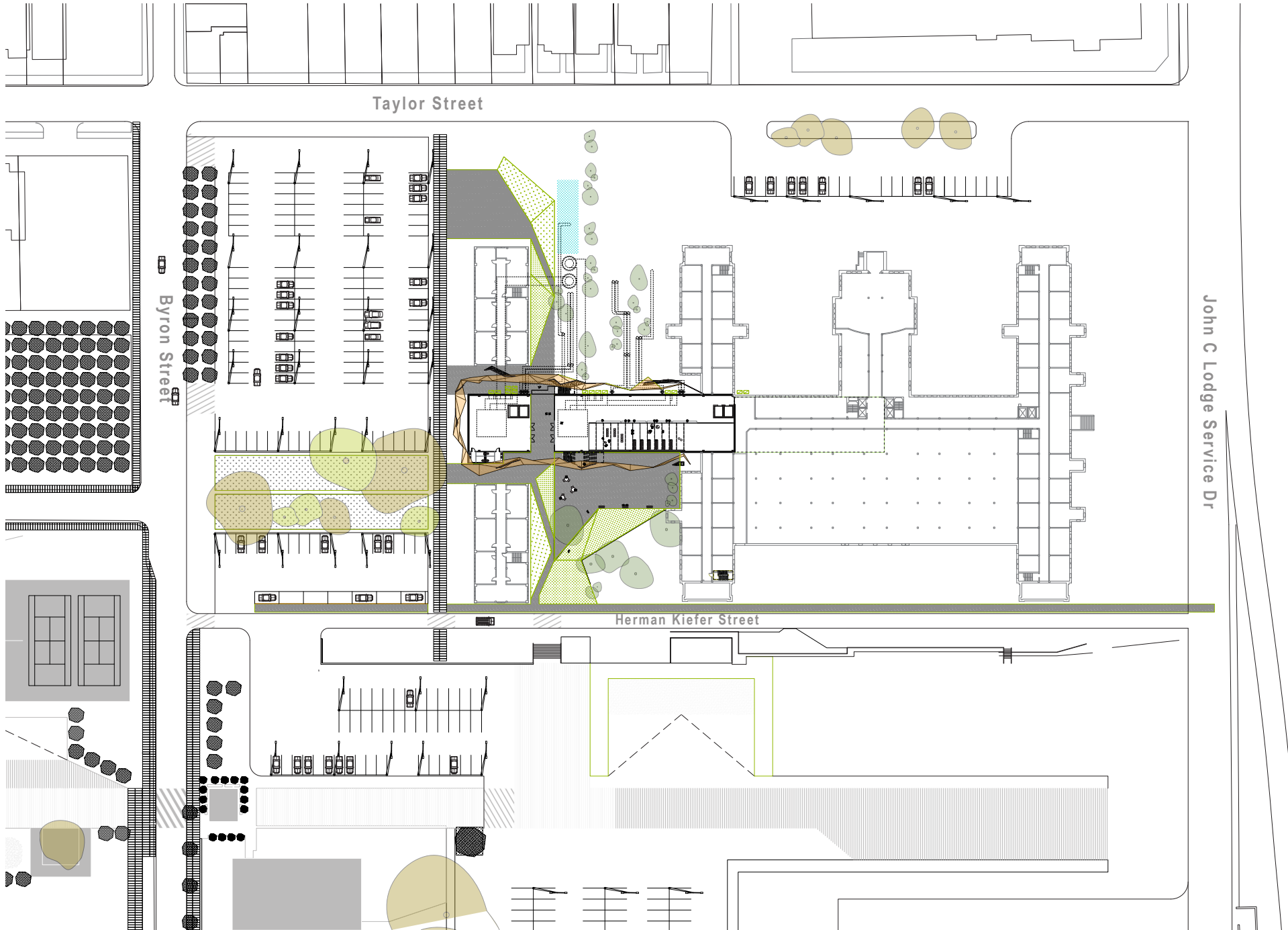
<5%

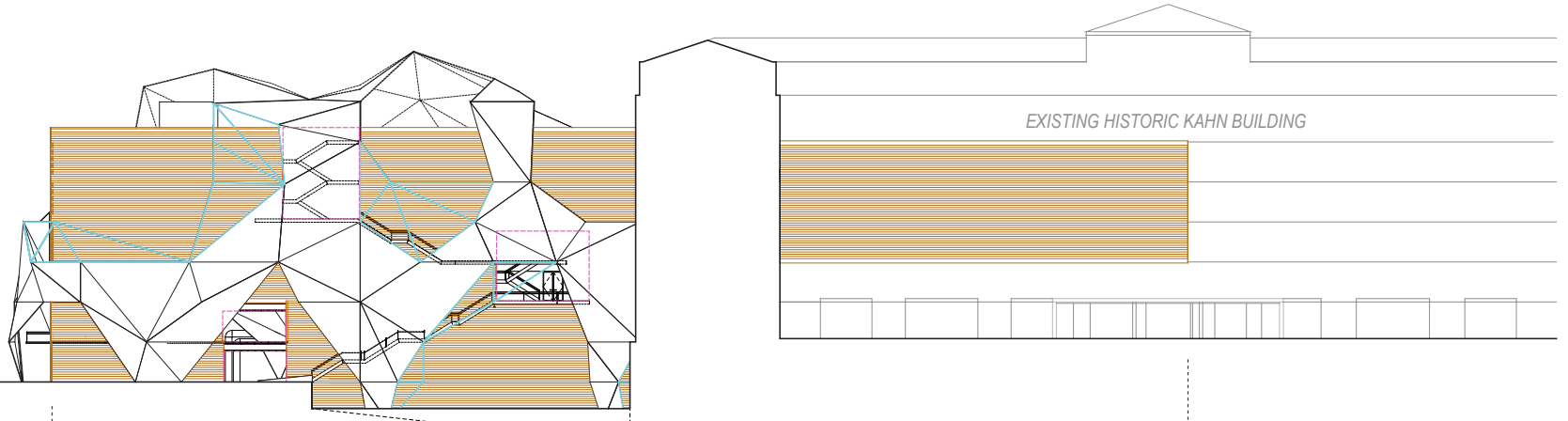
Available public amenities for current residents

Neighborhood Amenities Key

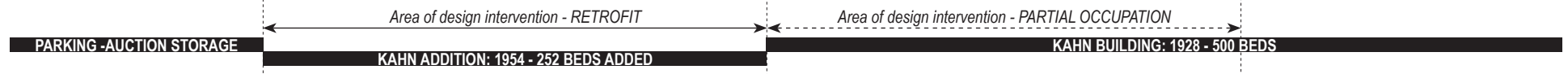
- Detroit Housing Commission
- Religious
- Pilot Programs
- Communications
- Non-profit
- Education
- Hospital
- Benevolent / Charity



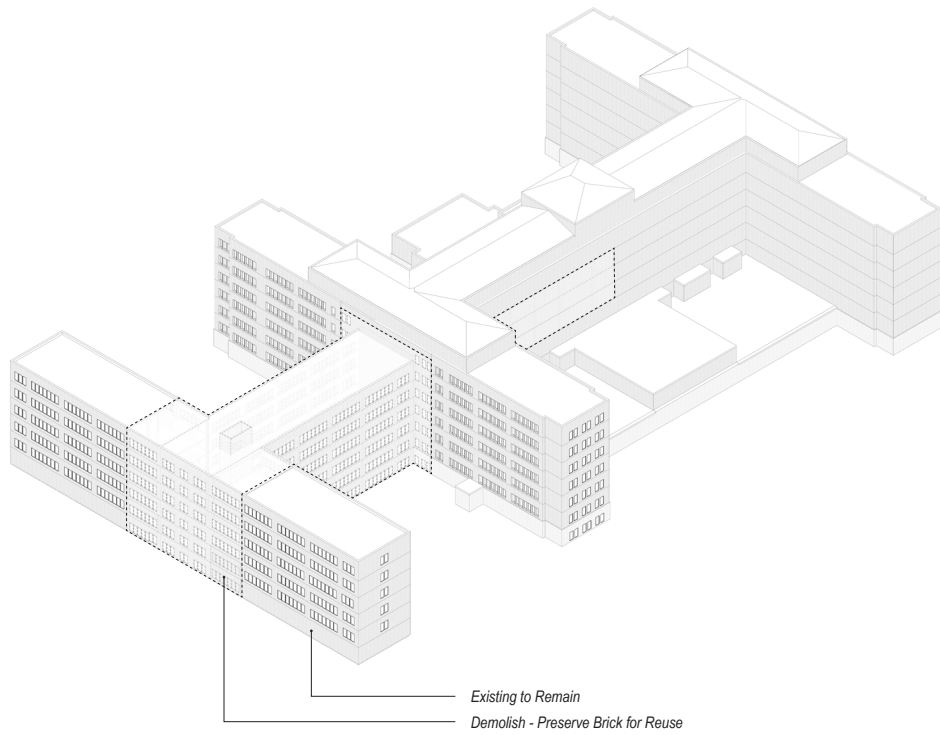




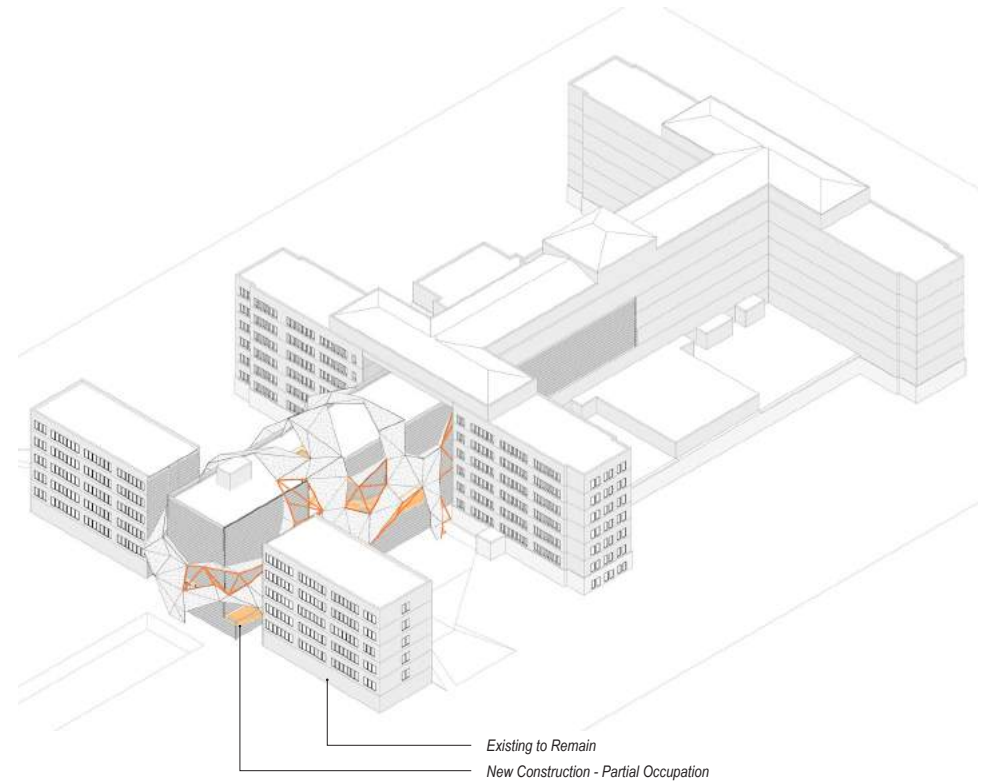
Elevation | **South Elevation - Stair + Porch Locations**



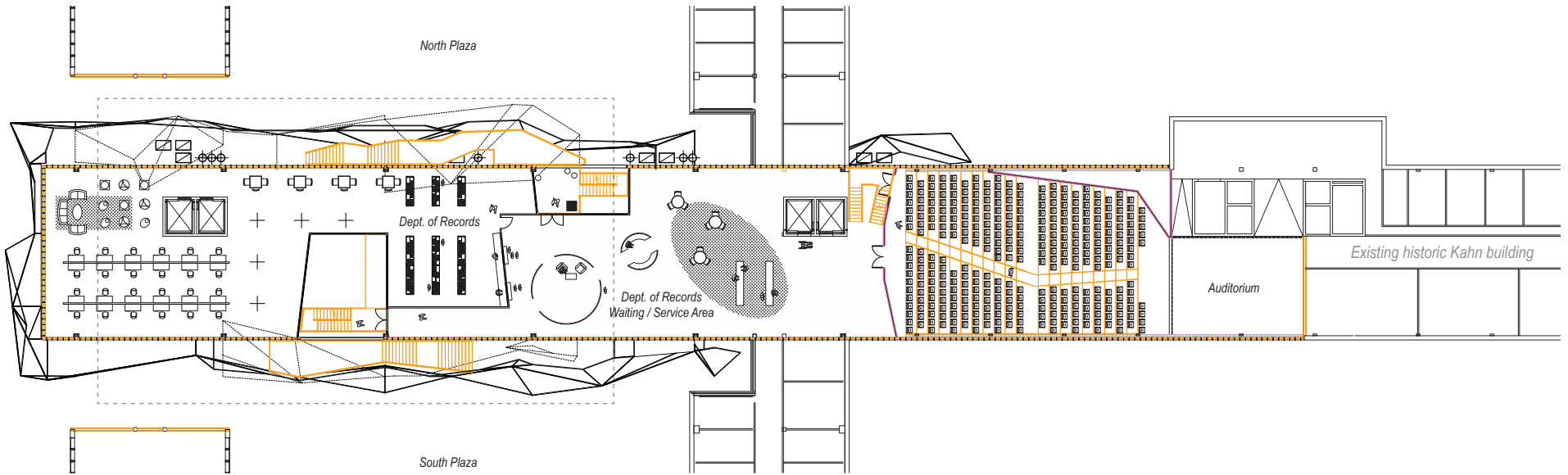
Elevation | **Existing South Elevation**



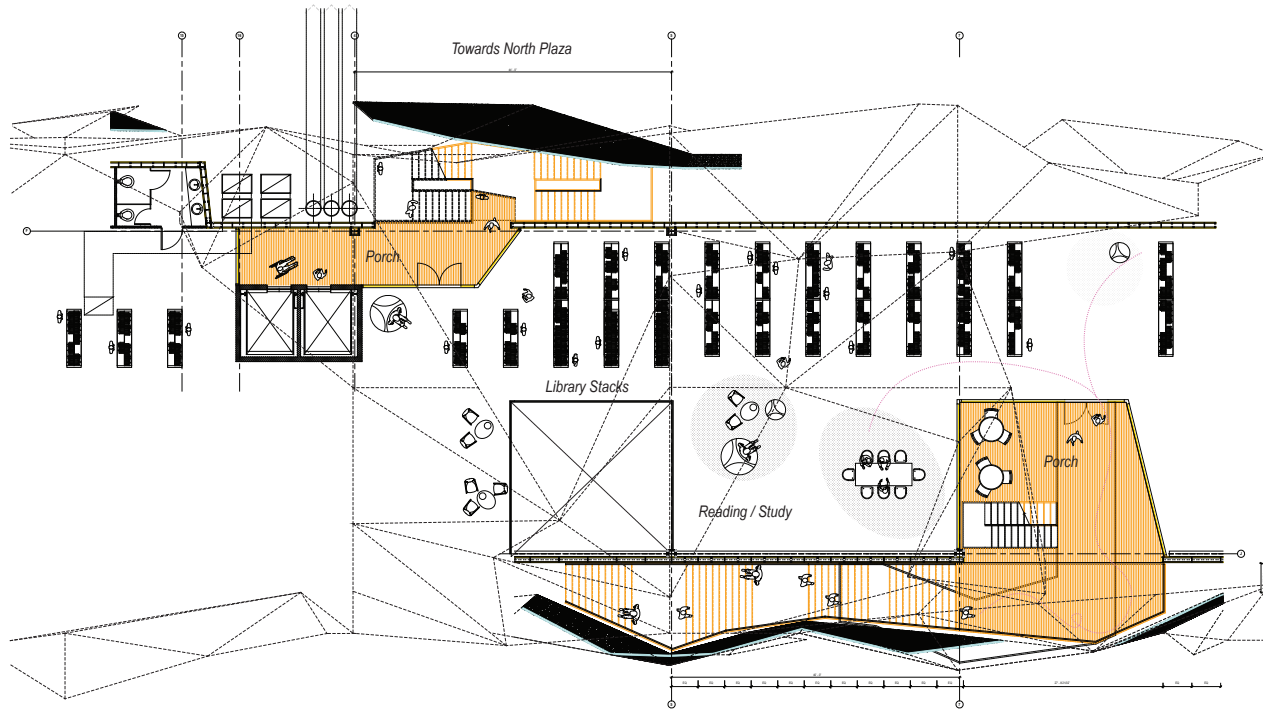
Before | Existing + Demo



After | New Construction



Floor Plan | 5th Floor - Department of Records + Auditorium



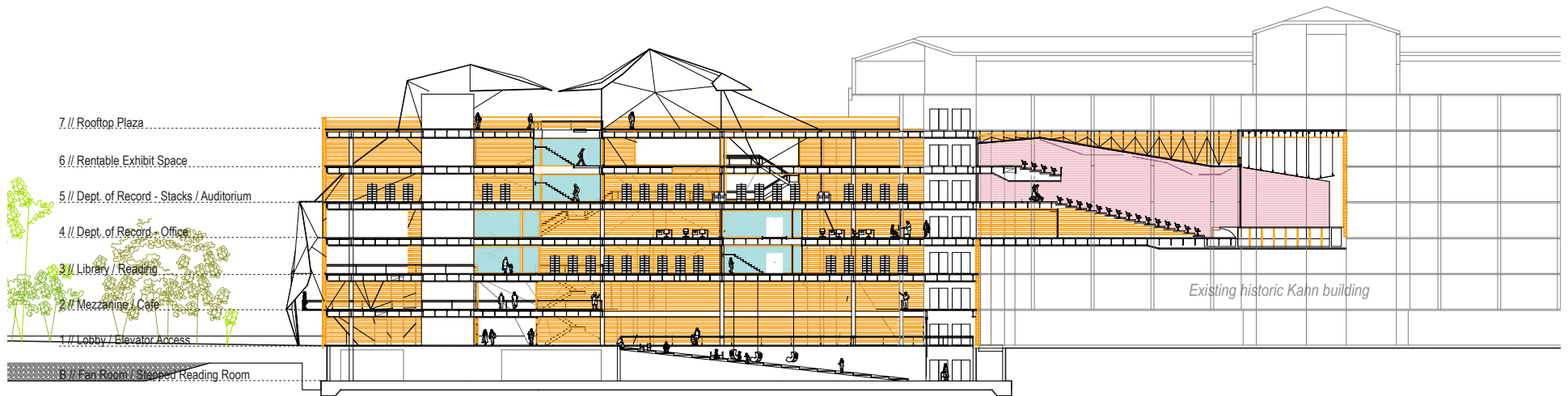
North Hall
To address greatest potential for heat loss, bathrooms, utility rooms, ducts, and service pipes are located on along the North Hall

42' wide existing bay

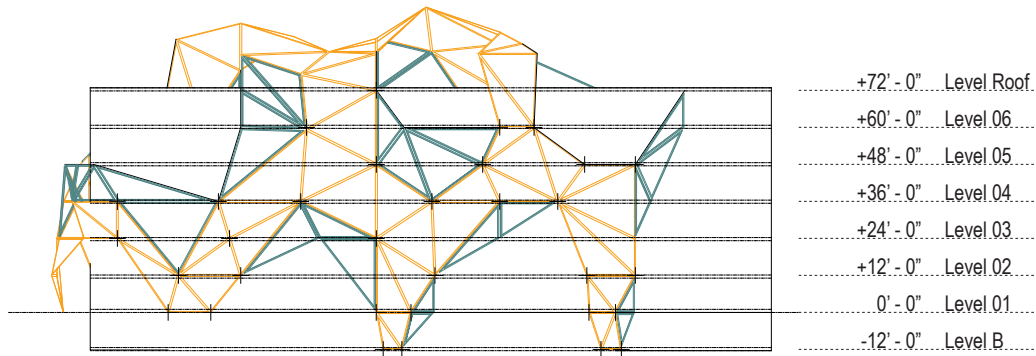
South Hall
Deeper depth for shading and public space (on the "porch") in the summer

Partial Floor Plan | 3rd Floor - Library Stacks + Study / Reading

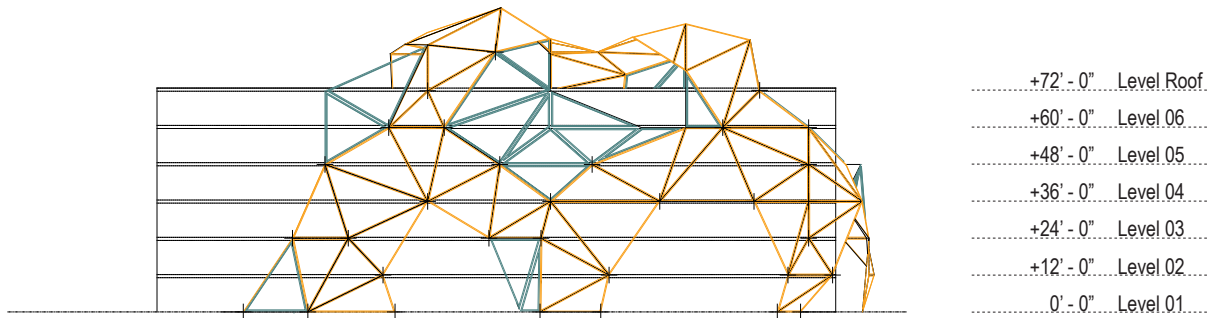




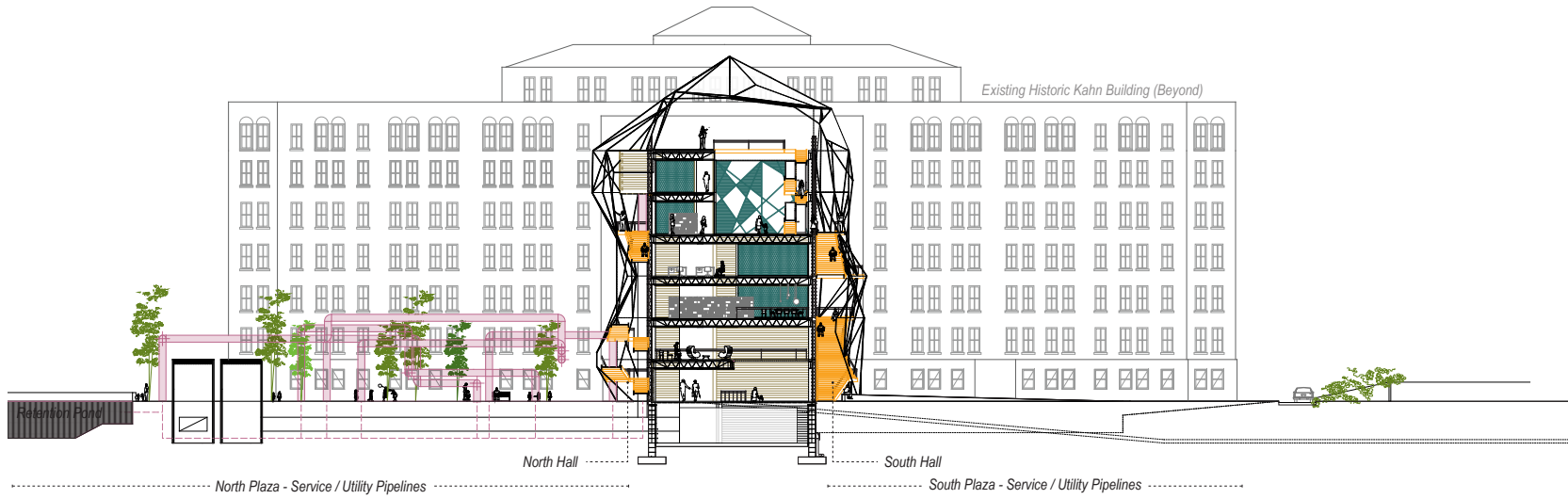
Longitudinal Section | **Partial Occupation**



Elevation | **Concrete-Brick Lateral Attachment - South**



Elevation | **Concrete-Brick Lateral Attachment - North**

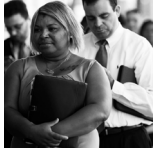


Cross Section | **Looking East**



Perspective | **2nd Floor "Porch" walk-through**

Job Seeker



requirements

a space to learn new practical skills to help get a job.



programs

community center
skills center
computer lab

Book Reader



requirements

a quiet, secluded space where one can comfortably be absorbed by his/her book.



programs

park
library
cafe
quiet space - reading room

Children



requirements

a space to play and run around in.



programs

playground
youth center
boys & girls club
library
school
soccer kickball pitch
baseball field
football field

Local Resident



requirements

a safe space to appreciate nature, talk to neighbors, close to local amenities, and park the car.



programs

community theater
center
live/make
space
library
community theater
vendor markets
supermarkets
home & kitchen
barber shop

Local Teen



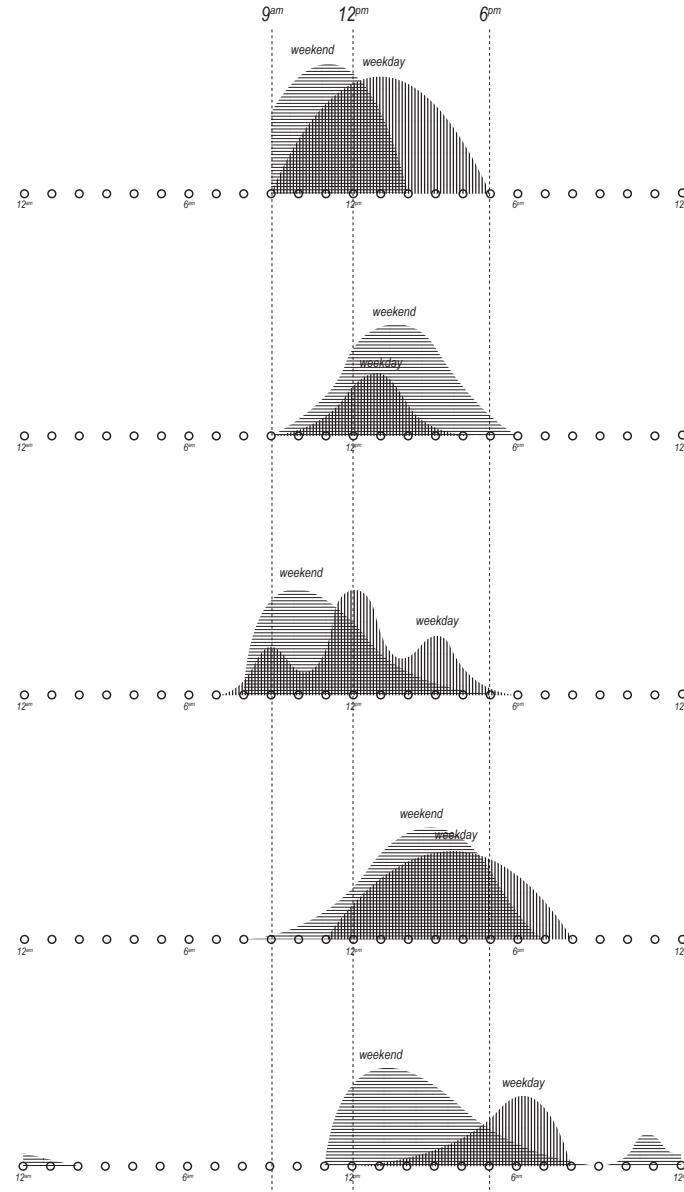
requirements

a space to hang out with friends, the freedom to move and take ownership of space, occupy informally.

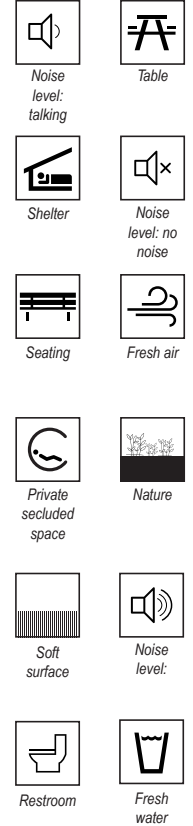


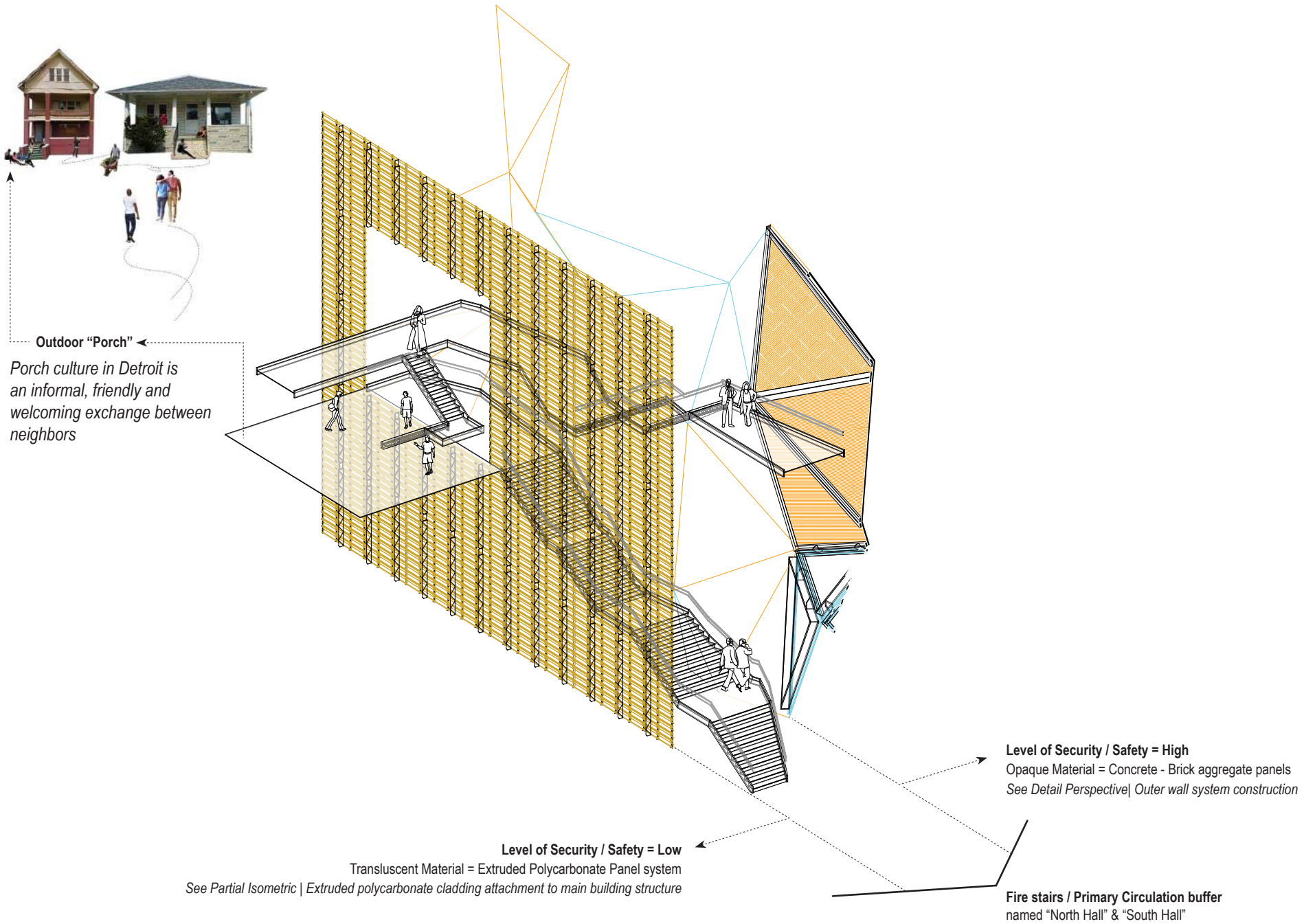
programs

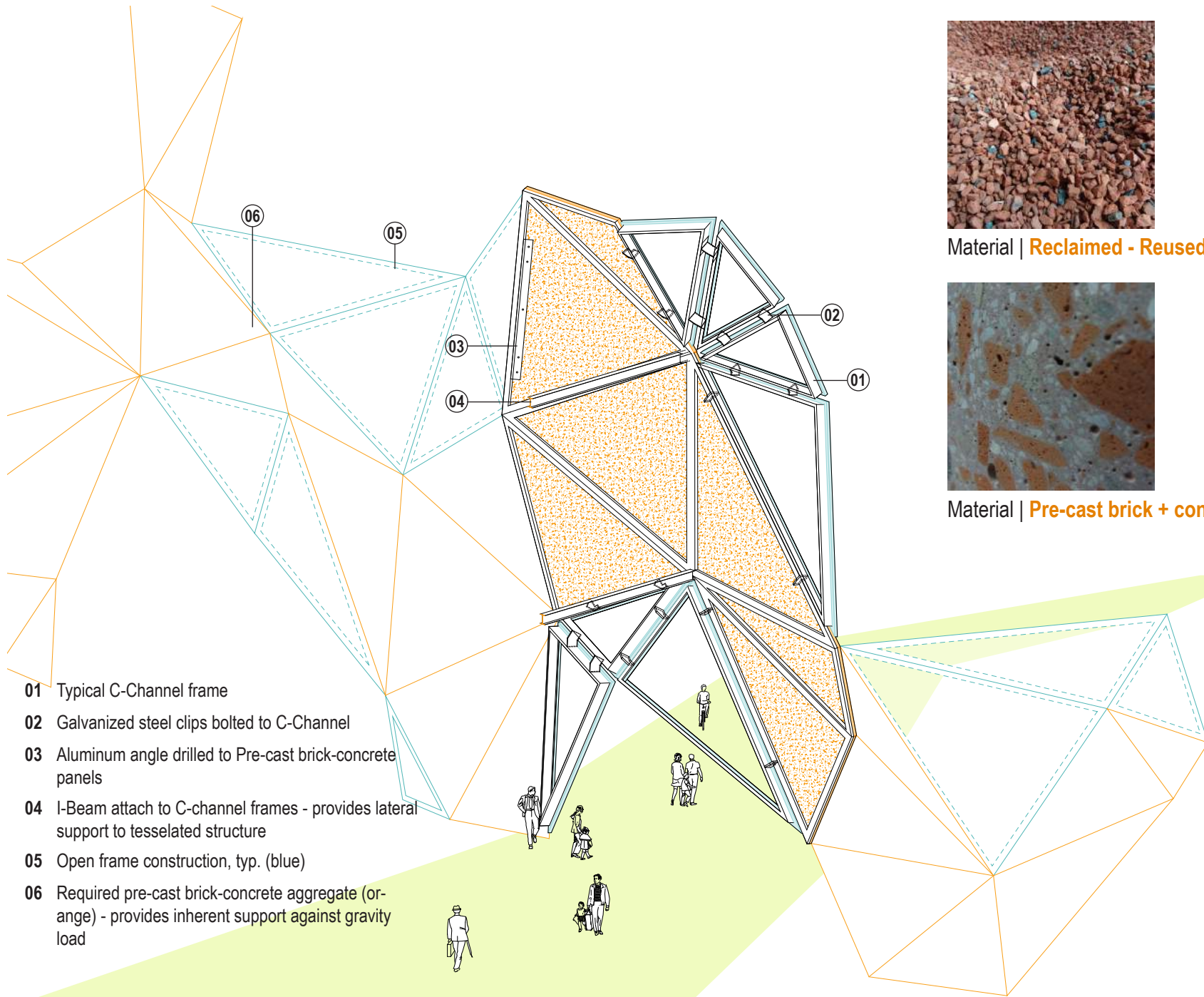
dance center
boys & girls club
community center
music festival
amphitheaters
cafe
basketball court
fitness center



needs



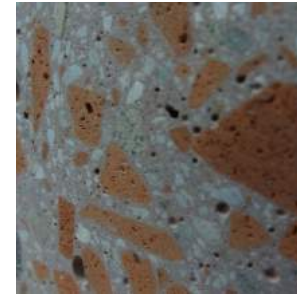




- 01 Typical C-Channel frame
- 02 Galvanized steel clips bolted to C-Channel
- 03 Aluminum angle drilled to Pre-cast brick-concrete panels
- 04 I-Beam attach to C-channel frames - provides lateral support to tessellated structure
- 05 Open frame construction, typ. (blue)
- 06 Required pre-cast brick-concrete aggregate (orange) - provides inherent support against gravity load



Material | Reclaimed - Reused Brick aggregate



Material | Pre-cast brick + concrete panel

Polycarbonate Performance

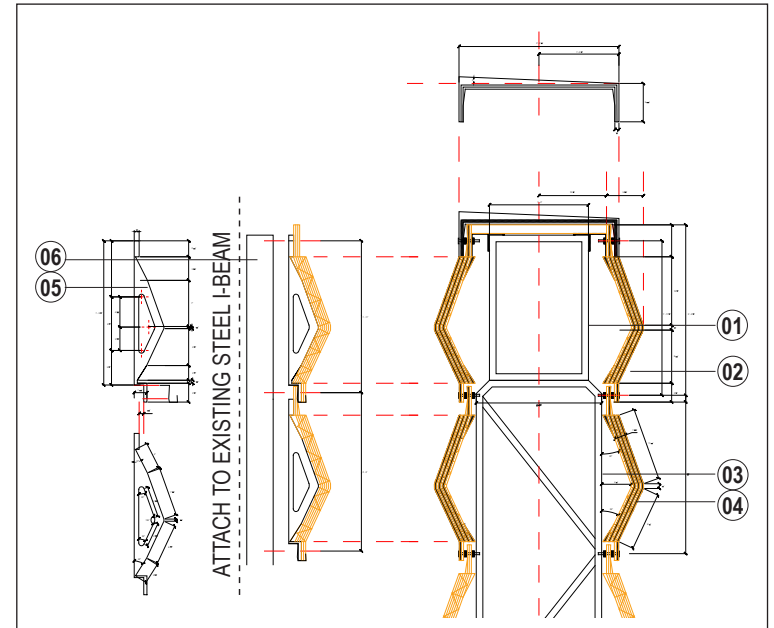
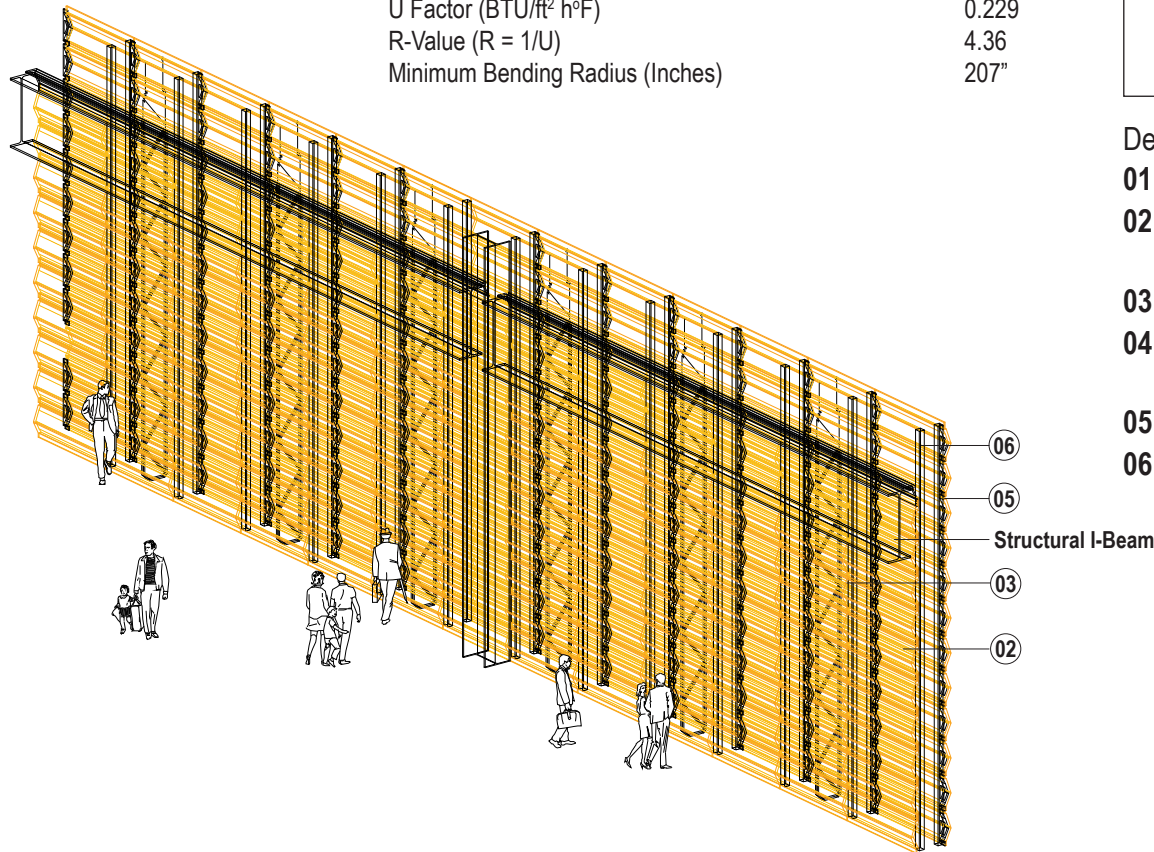
A typical 8mm panel is so strong it can withstand the impact of a 16 lb. weight, falling 25 feet onto the panel, with no breakage.

It will maintain its impact strength over a wide temperature range from -40°F to 250°F.

Provides high thermal resistance, high thermal insulating values blocks UV transmission, strong fire performance and do not give off toxic gasses

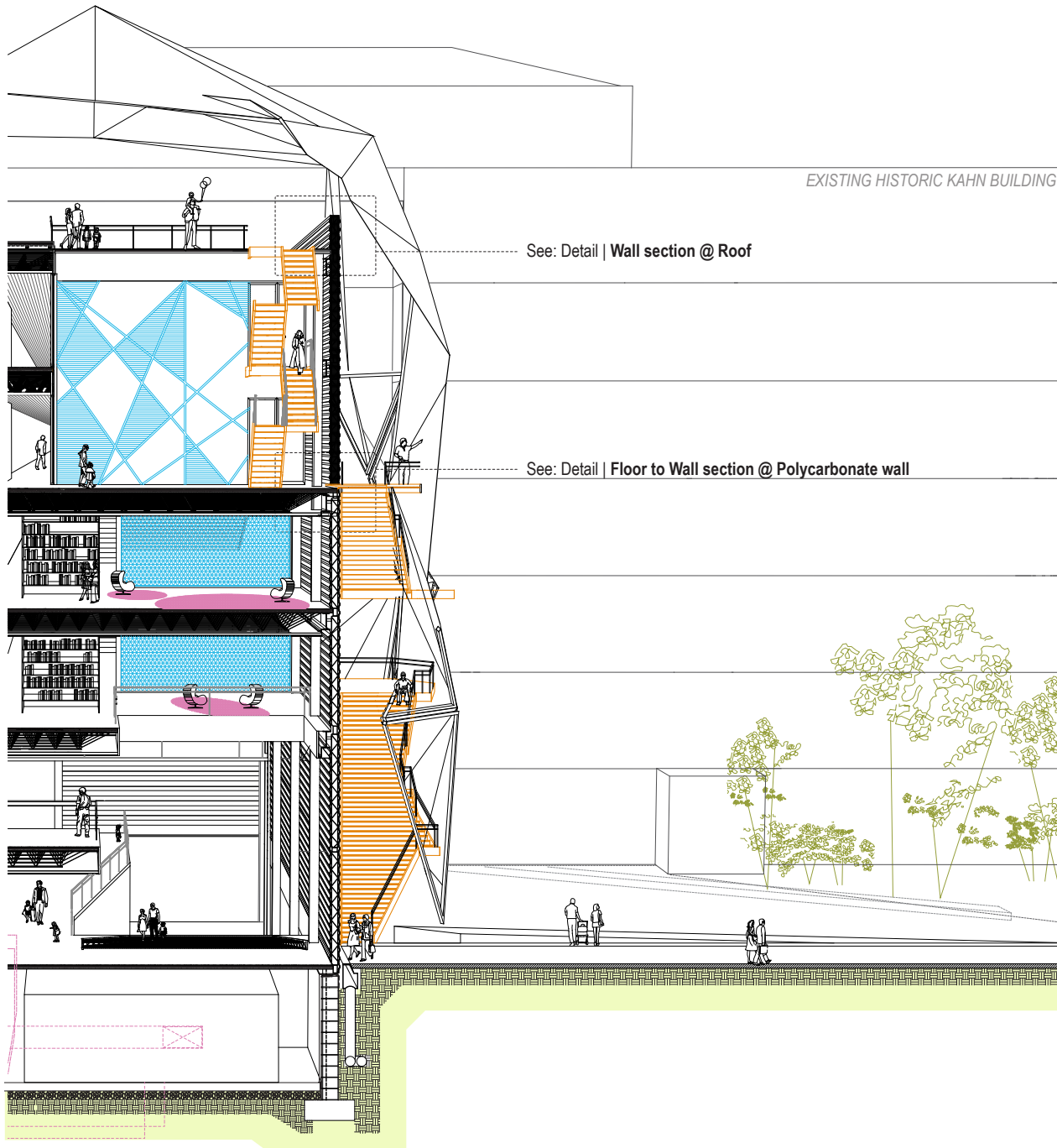
Polycarbonate Technical Data

Sheet Thickness (Inches)	1 - 3/8"
Wall Type	Five/M
Rib Spacing (Inches)	1.26"
Structure Type	Five M-Wall
Light Transmission - ASTM-D1003 (%)	60%
U Factor (BTU/ft ² h°F)	0.229
R-Value (R = 1/U)	4.36
Minimum Bending Radius (Inches)	207"



Detail | Extruded polycarbonate cladding attachment

- 01 Extruded steel tube support
- 02 Translucent extruded polycarbonate cladding sheets
- 03 Truss Shaped lateral supports
- 04 Aerogel between polycarbonate corrugation
- 05 Stainless steel attachment clip
- 06 Tube steel stud - attaches to existing I-Beam structure

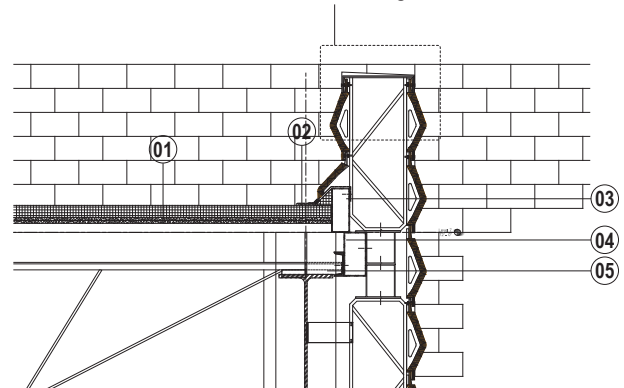


EXISTING HISTORIC KAHN BUILDING

See: Detail | Wall section @ Roof

See: Detail | Floor to Wall section @ Polycarbonate wall

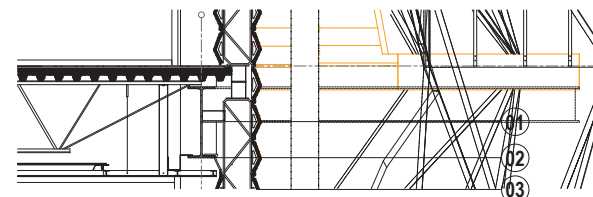
See: Detail | Extruded polycarbonate cladding attachment



Detail | Wall section @ Roof

Scale: 0 - 3" = 1' - 0"

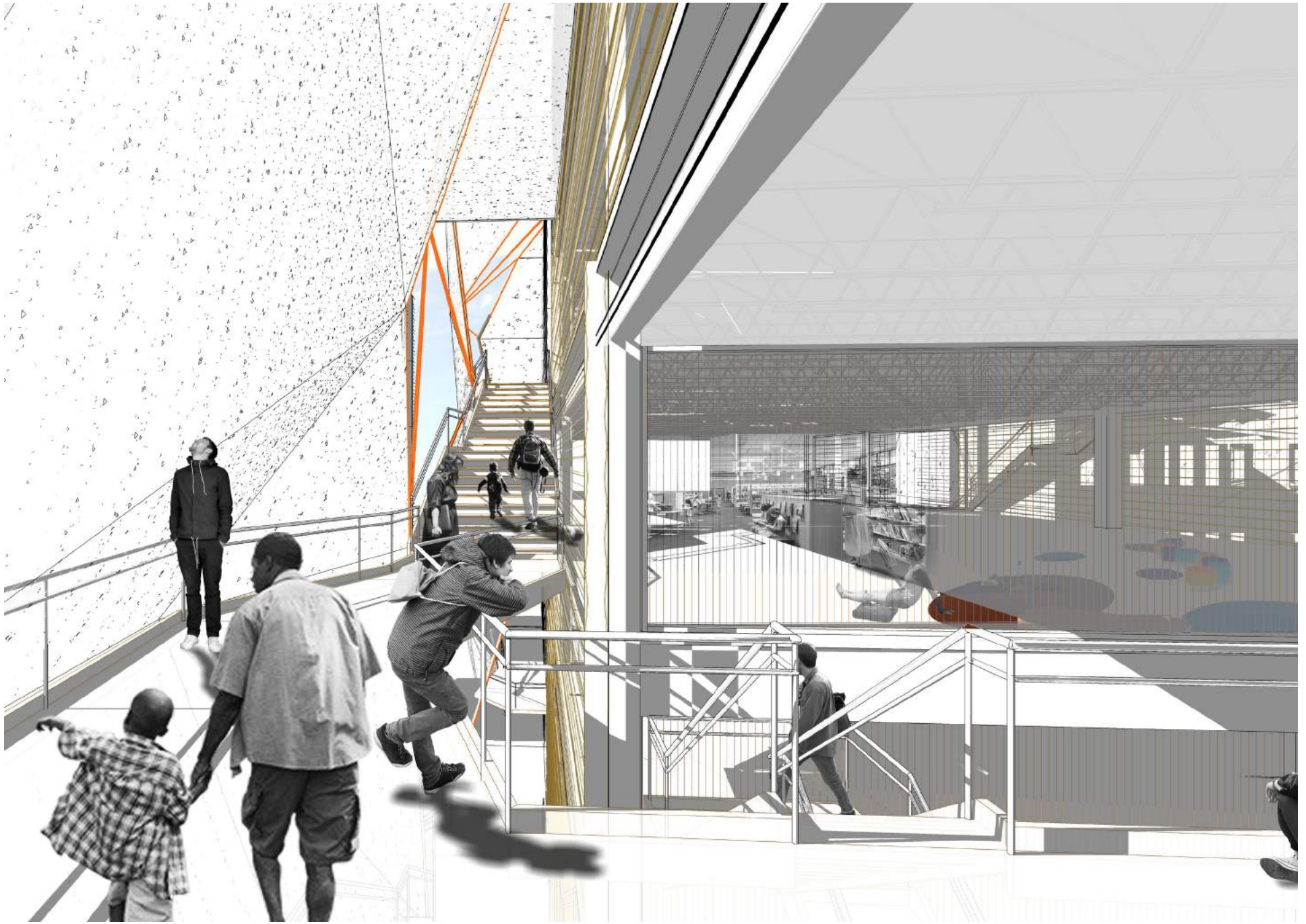
- 01 New adhered EPDM roof assembly over 4" insulation over metal deck
- 02 Membrane extended over Aluminum and secured
- 03 Aluminum Extrusion
- 04 Continuous C-Channel Aluminum
- 05 Joist chord extension



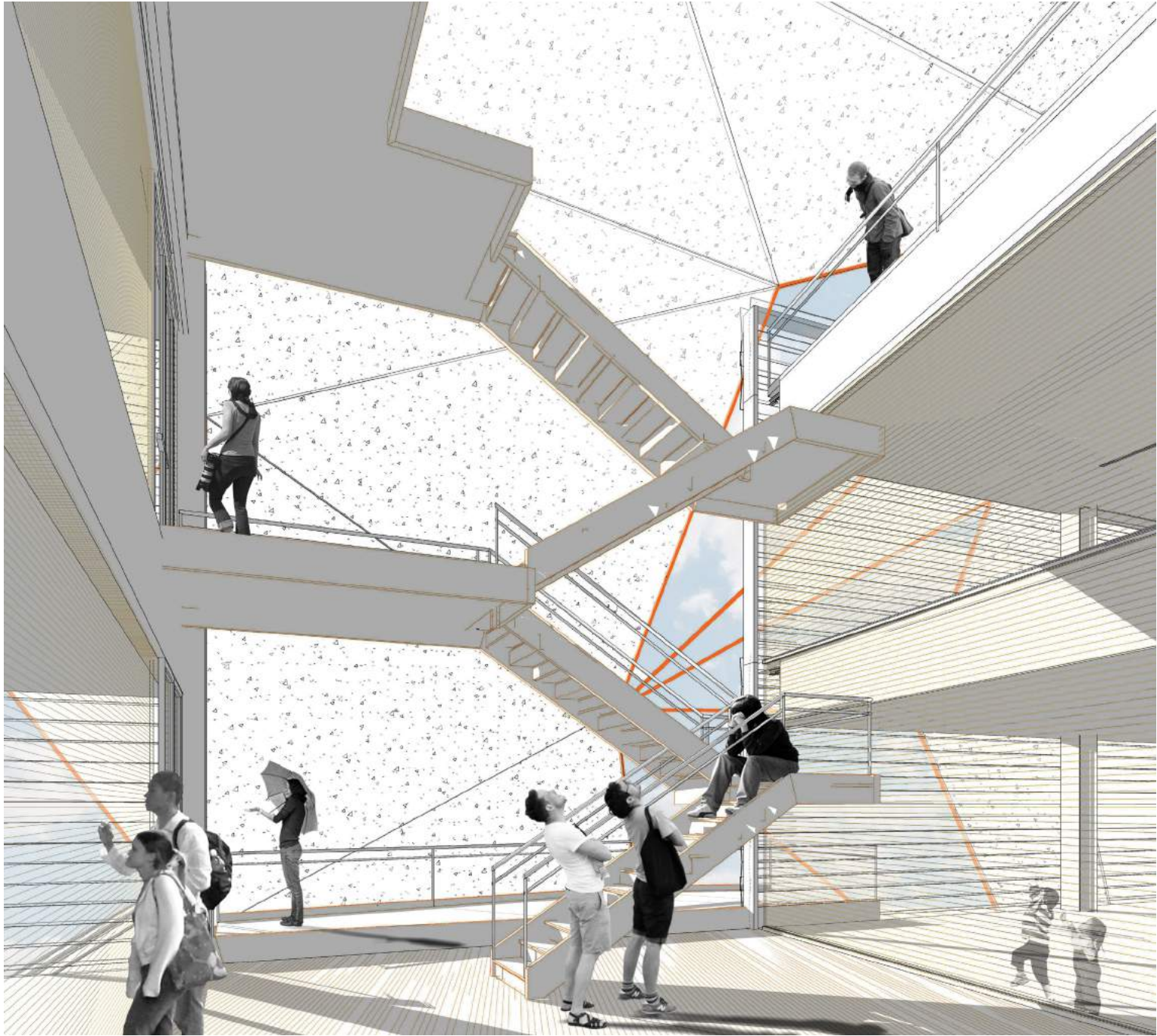
Detail | Floor to Wall section @ Polycarbonate wall

Scale: 1 - 1/2" = 1' - 0"

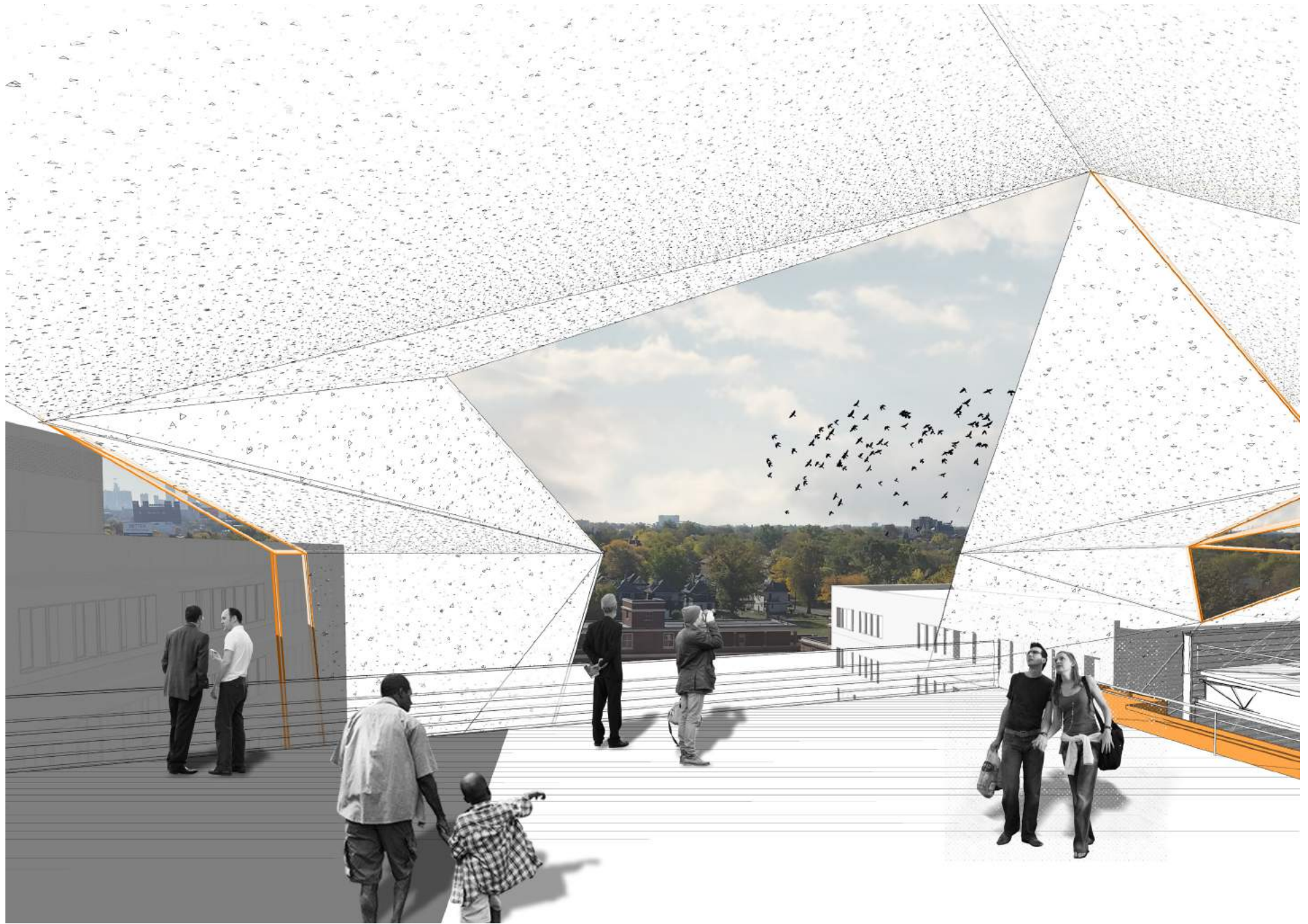
- 01 Steel tie welded to I-Beam girder
- 02 Aluminum clip with sealant and backer rod
- 03 1-sheet Polycarbonate (orange) bolted to support structure



Perspective | **Walking within "South Hall"**



Perspective | 5th Floor Exterior "Porch"



Perspective | **Rooftop Plaza**