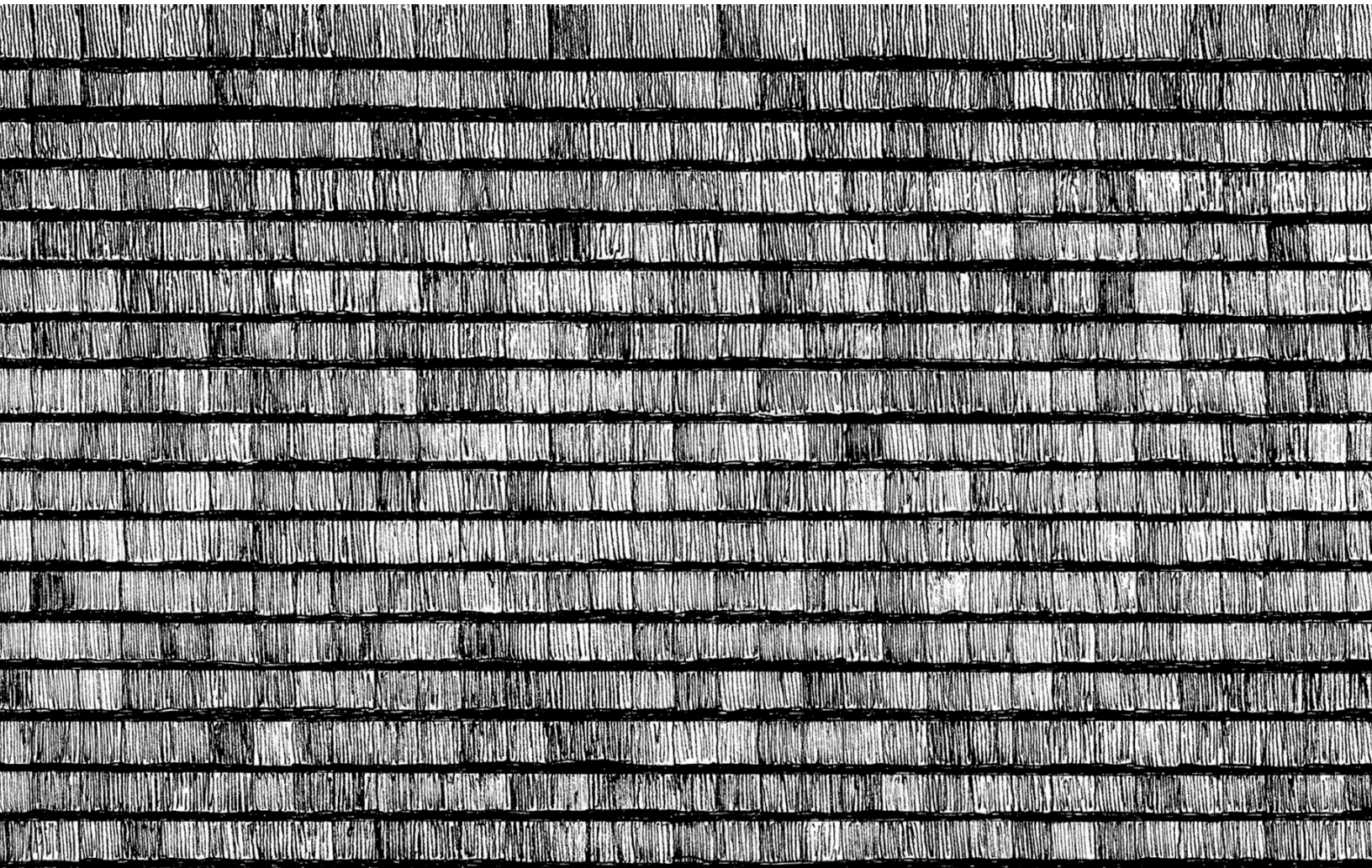
Mark Schwandt

Selected Works 2024



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Mark Schwandt

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Education

Bachelor of Architecture

Illinois Institute of Technology College of Architecture

2024

Overview

I am a hard-working individual who's motivation and dedicated work ethic can be maintained during stressful situations. I can quickly syrchronize into a team environment and hope to learn from other team members to become a valuable member myself.

Experience

Krueck Sexton Partners Architectural Intern *June 2024- Current*

-With a focus on commercial and government buildings, I assist on design and representation material.

Jahn/ Architectural Intern *June - August 2023*

- Worked on domestic and international high-profile projects, aiding in design, representation, and presentation material. This work was primarily done using Rhino, Revit, and Photoshop.

AIAS Professional Development Chair *May 2022 - August 2023*

- Performed the outreach, hosting, and concepting for student events with the primary focus of introducing the student body to professional architectural practice.

Skills / Tools

-Rhino
-Enscape
-Revit
-Adobe Ps
-Adobe Ai
-Adobe Id
-Autocad
-Climate Studio
-Grasshopper / Ladybug
-Model making

Honors

AIA Chicago Student Wing Mentee

2021-22

IIT College of Architecture Leadership Award

2022-23

George Danforth Traveling Fellowship Honorable Mention

2023-24

AIA Chicago Foundation Chicago Award in Architecture Nominee

2023-24

The Schiff Foundation Fellowship for Architecture Nominee

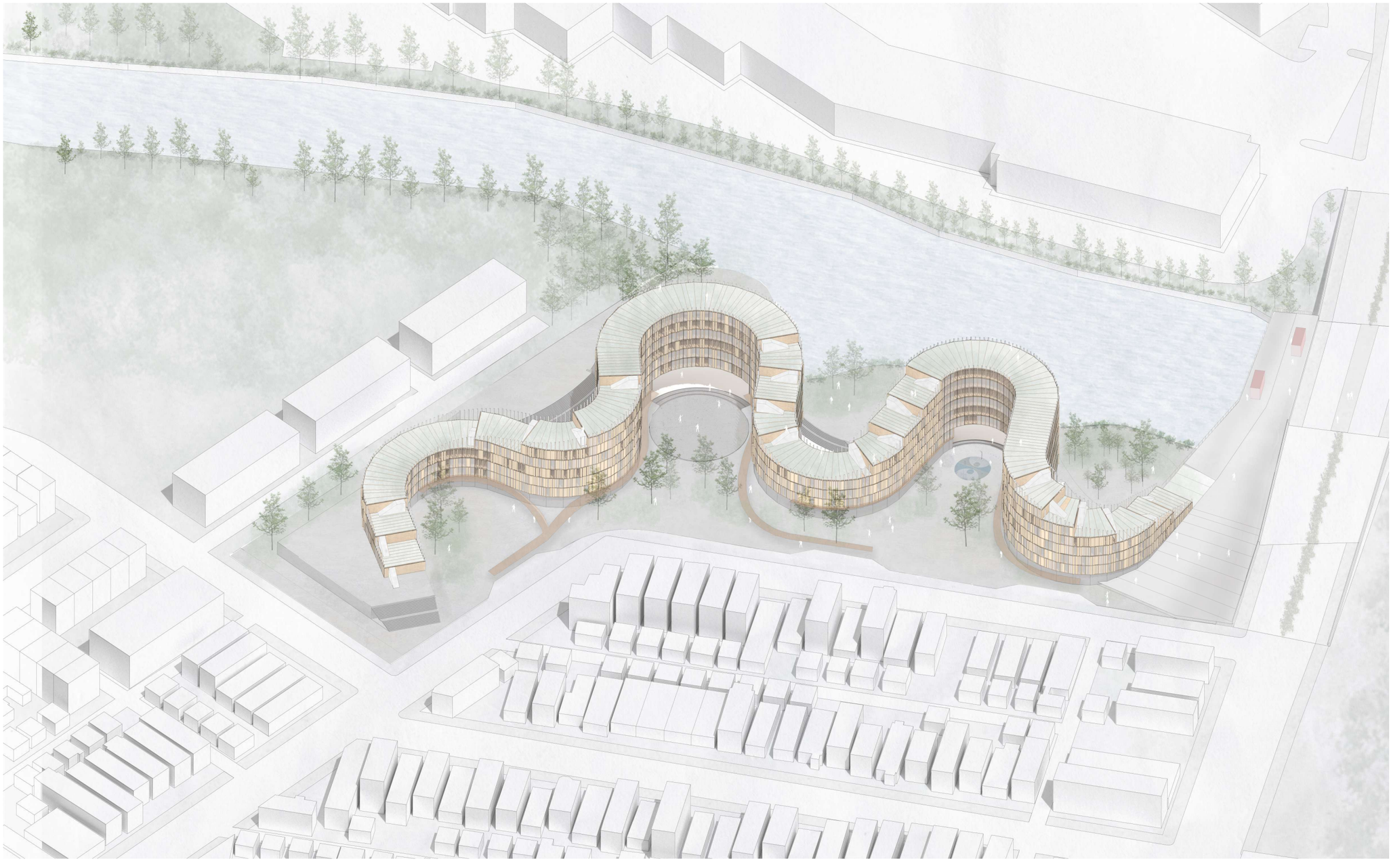
2023-24

Not My *Type*

Housing typology study in Bridgeport, Chicago

In Collaboration with Sam Kastan and Yun Woo Kim

Located on the cusp of Bridgeport and Mckinley Park next to an orange line CTA station, the site is positioned to become a transit and community hub. Consisting of community, administration, and housing programs the proposal aims to serve the growing needs of the Chinese American Service League to help house the large population of seniors in need. In doing so, the project strives to not provide a typical solution, but one catered to the needs of the seniors and overall Bridgeport community. The "Mile Long Living Room" found it's genesis in research based on unit and material precedent studies that aim to challenge what could be provided.



Mile Long Living Room situated on the site of S Archer ave. and S Pitney Ct.

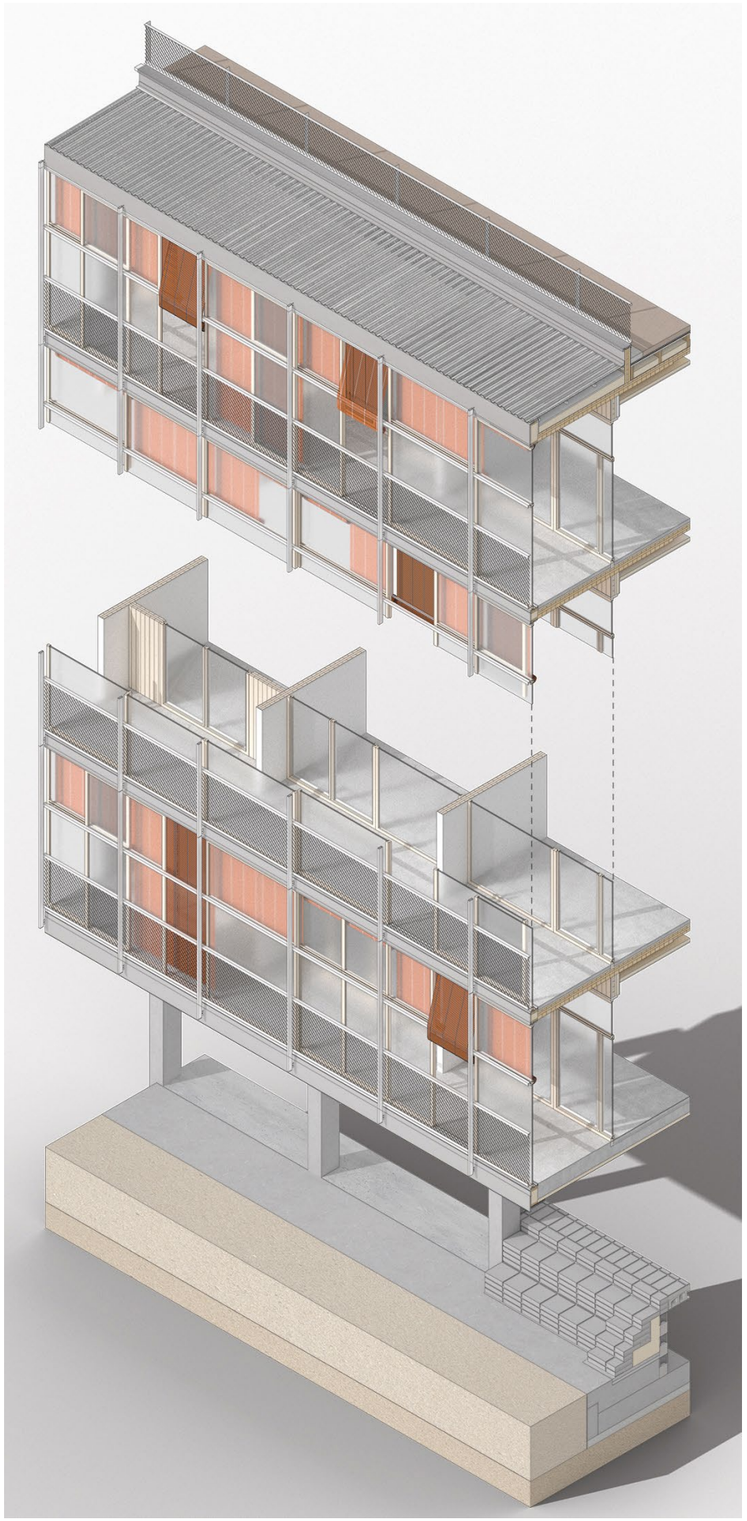
CLT Research

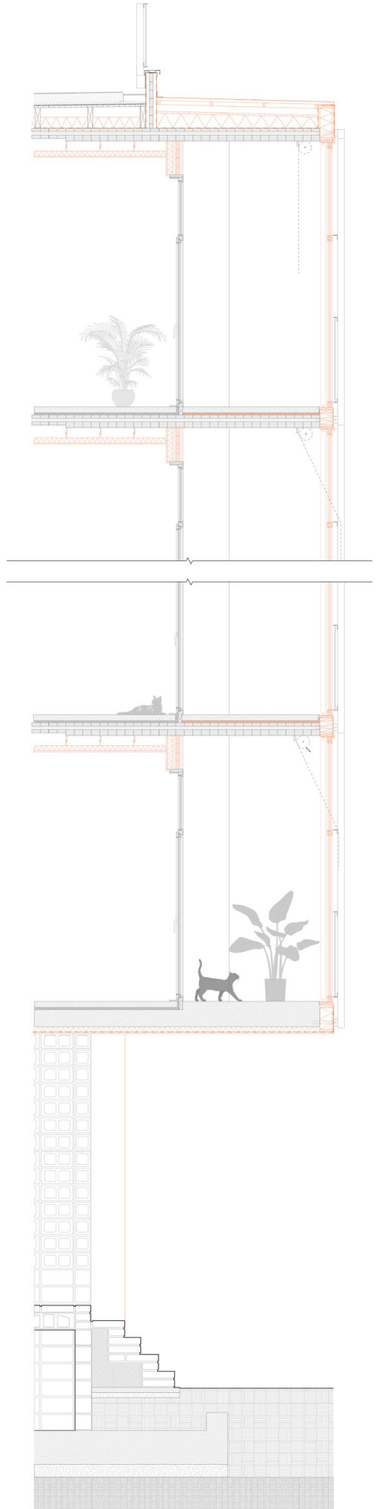
Precedent Study of Mass Timber Residential Construction

La Borda, Lacol

Barcelona, Spain

The Cohousing project, La Borda by architecture collaborative Lacol utilizes Cross-Laminated Timber as a structural system with open balconies facing out from the units. Built in Barcelona, the building has an openness allowed by the warmer climate.





How do we retrofit a Barcelonian building to fit Chicago's climate?

Performance

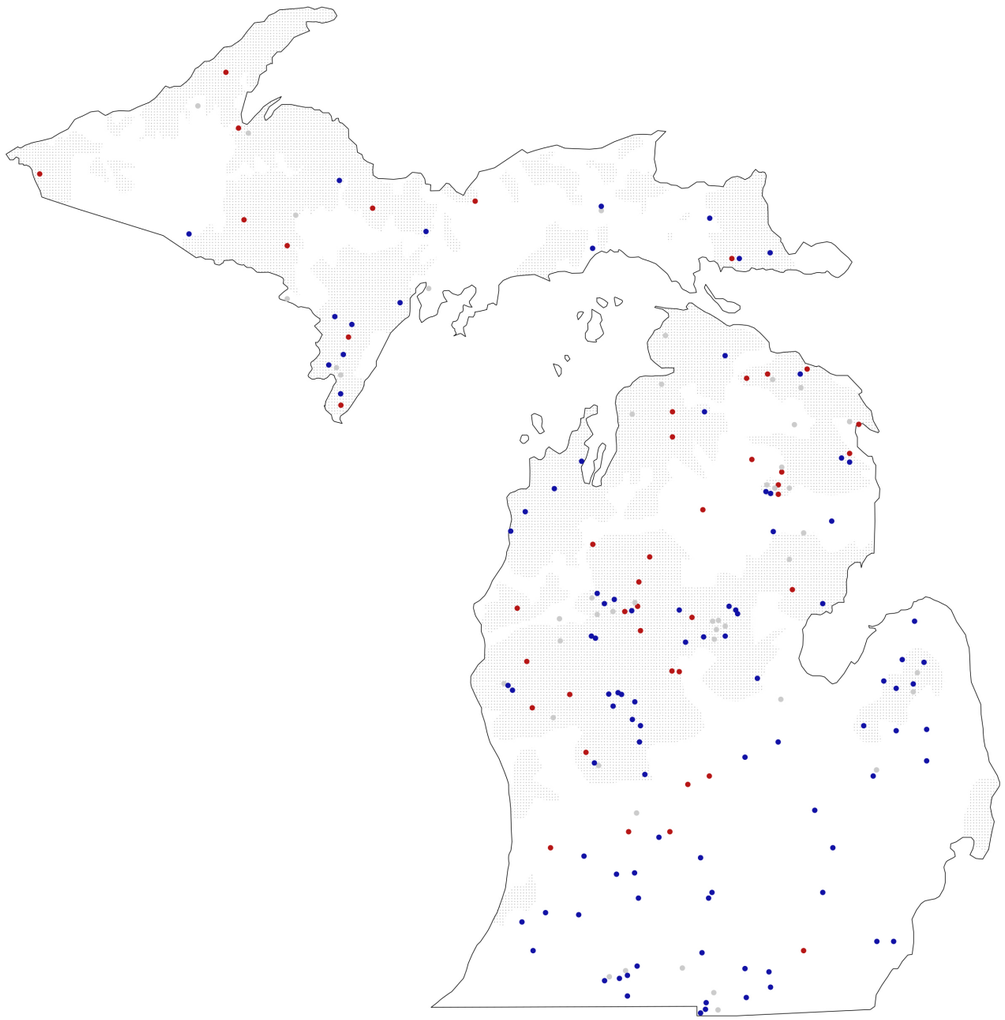
Chicago's colder climate means a much greater need to further insulate the buildings enclosure, particularly throughout the CLT floors, walls, and roof to prevent thermal bridging. The use of CLT allows for a reduction in energy consumption and emissions while maintaining a comfortable space.

Atmosphere

CLT floors and wall panels can be precisely CNC milled to exact tolerances, allowing seamless integration of plumbing pipes and conduits. This precision ensures that these elements fit flush against the CLT surfaces, effectively concealing them from residents. Thus, a raw and unobtrusive aesthetic for interior spaces is, while also allowing for the exposed beauty of CLT walls and roofs without the need for additional furring or drop ceilings.

Form

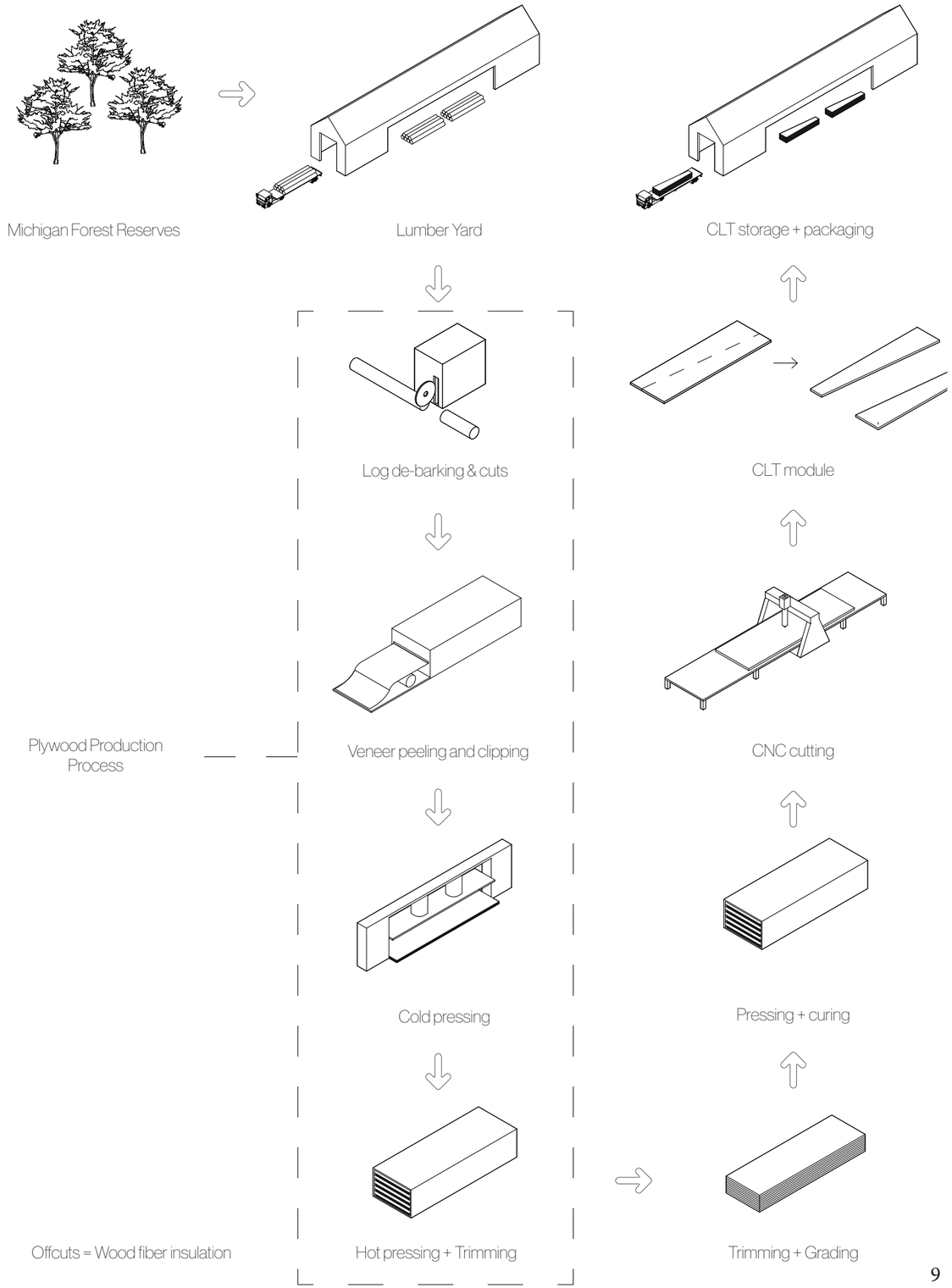
By introducing an additional facade and sliding doors on balconies, residents can effectively shield themselves from the harsh natural elements, particularly during Chicago's cold winters. The buffer space created between this additional facade and the interior walls serves as a barrier to heat loss. Moreover, this design allows the sun-heated air trapped in the cavity to warm the areas of the balconies, thereby lowering the need for indoor heating systems.



- Large Saw Mill
- Medium Saw Mill
- Small Saw Mill
- Private-Owned Soft-Wood Forest

Michigan Timber Production

When considering using CLT In the American Midwest the timber is widely transported from either the west or east coasts creating expensive transportation and environmental costs. To further reduce emissions from the transportation of the material to the site we wanted to explore a more local source of the material. Michigan is the closest consistent source of softwood in the Midwest region, with an established timber industry already in place. The existing infrastructure makes the opportunity for Michigan to become a feasible source of CLT for Chicago and the Midwest with the added economic and financial benefits.

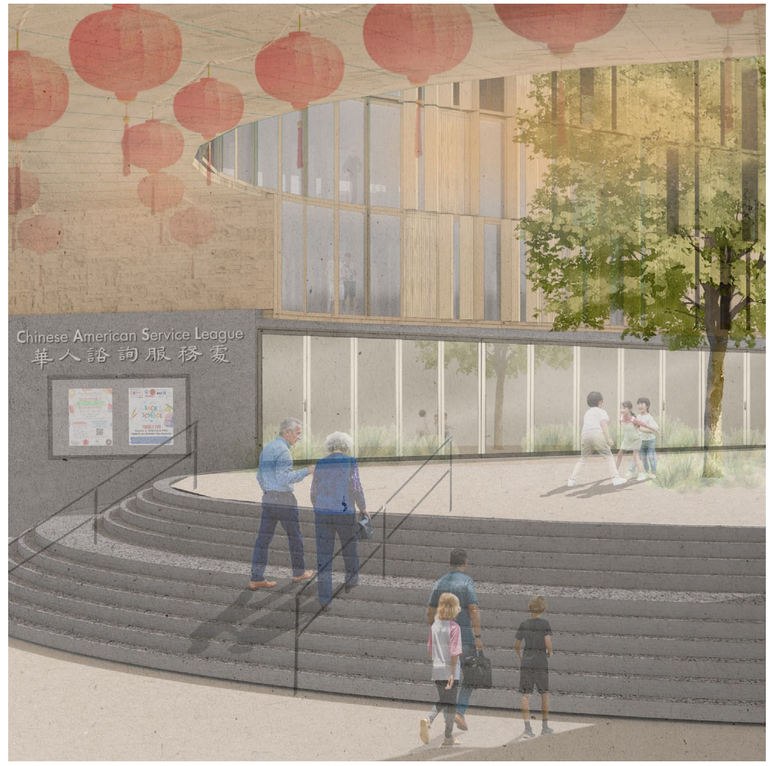


Mile Long Living Room

Senior and Market-rate housing in Bridgeport, Chicago

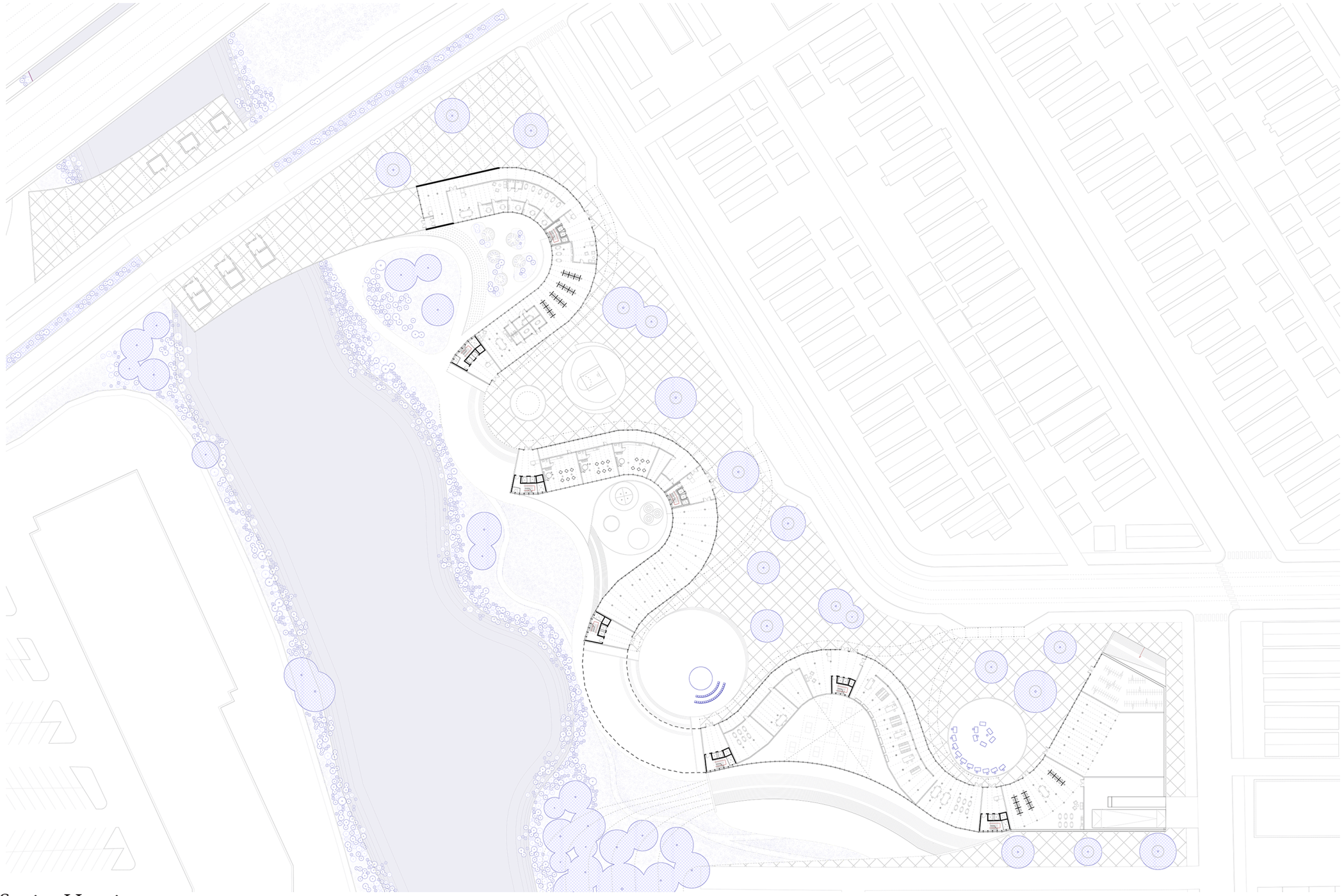
River's Edge

The resident's and community enjoy the softened edge of Bubbly Creek. Fishing and afternoon strolls among the reeds are a common occurrence.



Portal

The overhang's of the building provide a portal from the urban street to the river's edge and landscaping. Children playing outside the daycare programs and seniors returning from their Tai Chi class often cross paths under the exposed wood overhang.

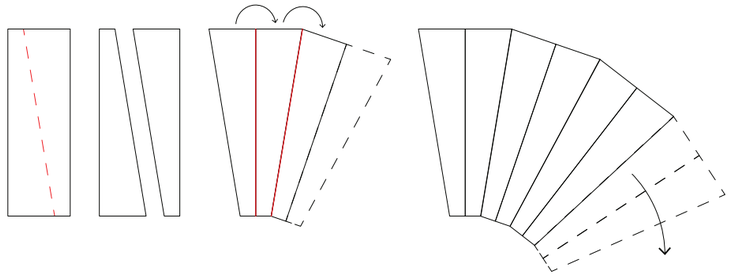


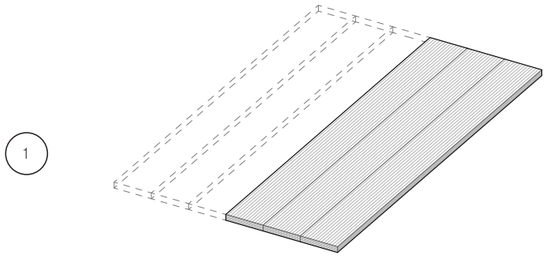
More than Senior Housing

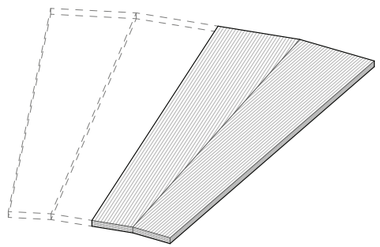
The ground floor meets the needs asked for by CASL while splitting the site into a naturalized eged and urban street-scape. A connection via landbridge connects the site to the CTA and road alterations increase saftety.

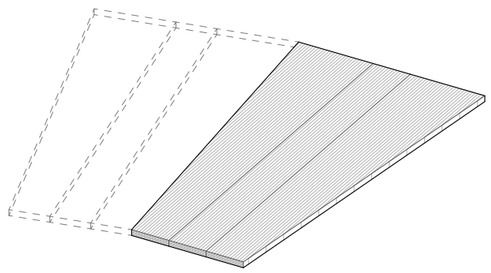
Curved CLT module

Cross-laminated timber (CLT) is selected for its durable, lightweight properties, and appealing natural appereance. To achieve the curvature of the serpentine geometry, CLT panels are precisely cut using CNC technology to create trapezoidal modules, allowing them to be arranged in a manner that realizes the building's curving form.







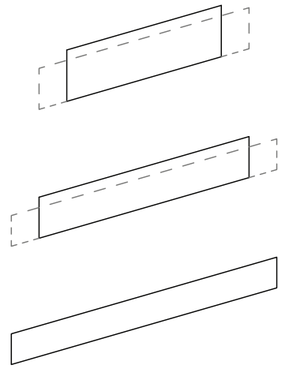


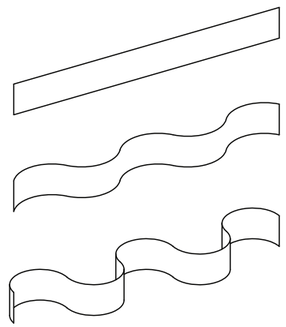
Modular CLT Panels

Three modules were used to generate the straight and two different radii sections.

Increasing FAR, maintaining Neighborhood

By introducing curves to a straight line the length of the line is increased, subsequently allowing for an increase in FAR without having to build as tall. This use of the long-building typology alllows for maintaining Bridgeport's established height of mostly single-family homes.





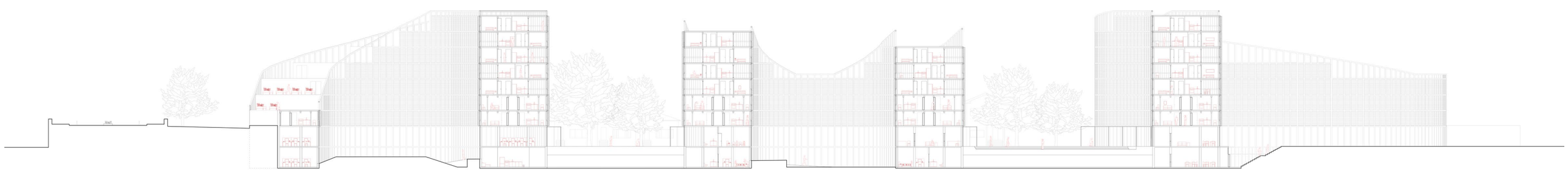
Iterations of curved building and podium base.

Typical Plan

The quadrants of cohousing units are arranged so that the hallway becomes an extension of the living spaces. Residents walk past and are invited to interact with their neighbors via the smells of dinner or sound of laughter down the hall.

Atypical Plan

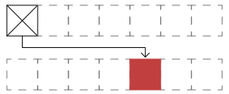
Units are arranged in blocks with community spaces and cores on either end to meet code requirements. The building steps up allowing access to exterior space on two sides of the hallways.



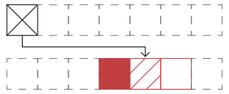
Senior Living Unit Layout

It is important to make sure seniors are staying connected and able to socialize. To encourage this a cohousing model is used, while maintaining private spaces for comfort.

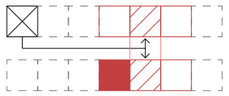
Typical Single Unit

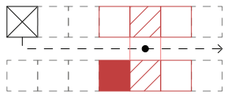


Typical Shared Space



Hallway becomes shared space by allowing unit to open up in the communal areas.

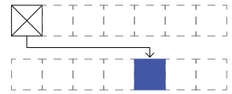




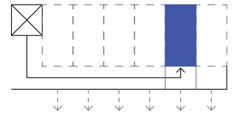
Market Rate Unit Layout

To maximize the views from the units the single-loaded corridor is placed on the interior of the curve. A genorousity is provided to the hallway to encourage community between neighbors.

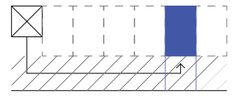
Typical Single Unit Double -Loaded Corridor

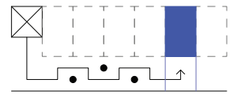


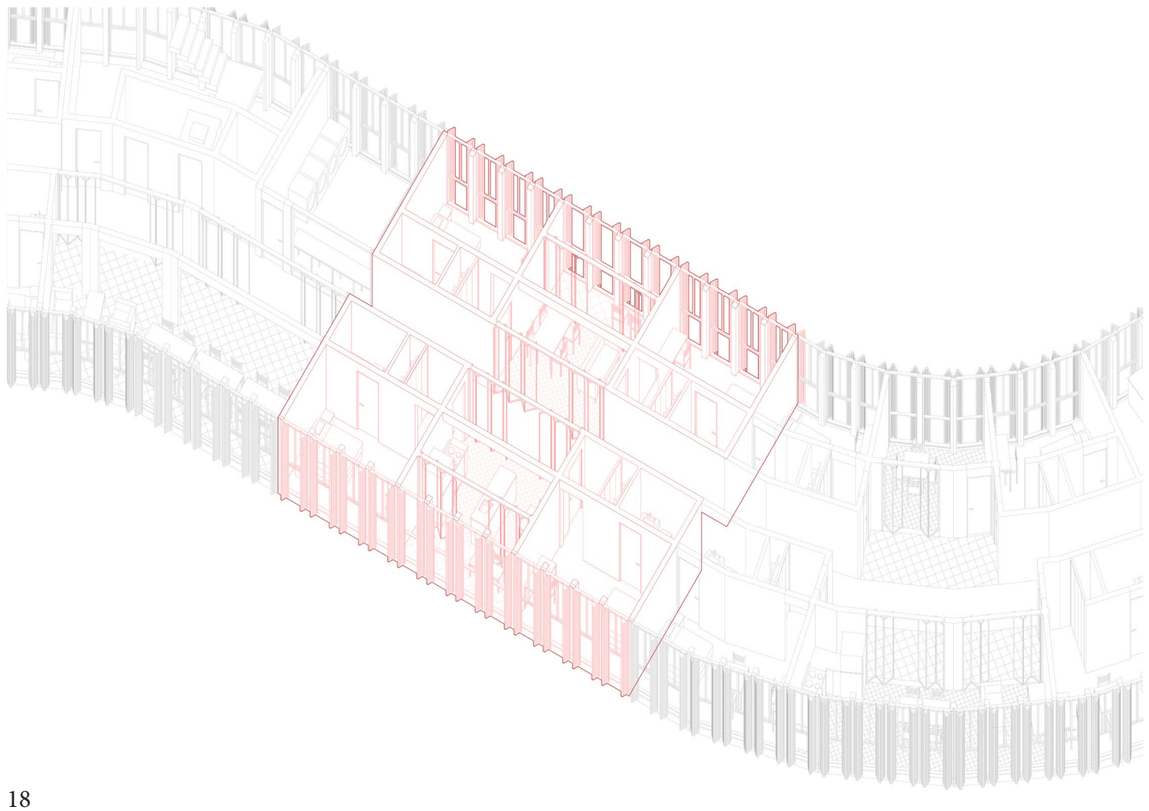
Single-Loaded Corridor allows for larger unit and exterior facing hallway.

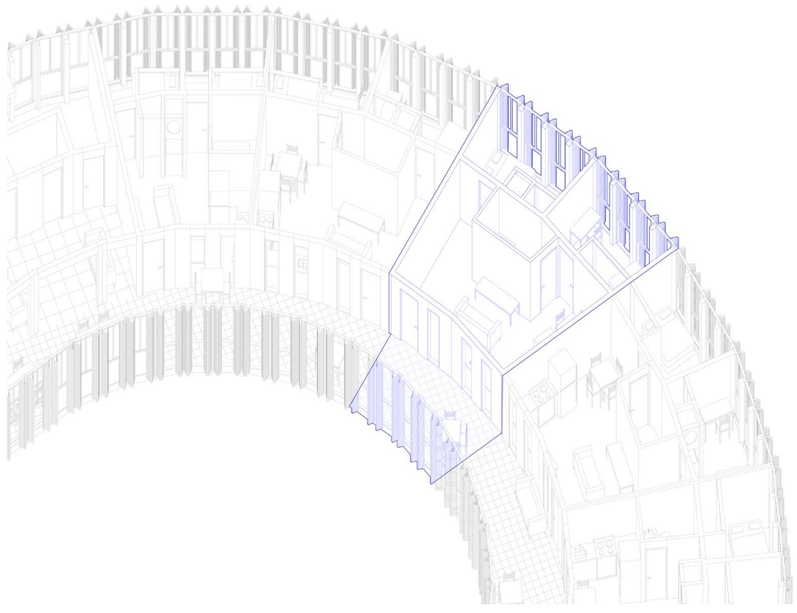


Hallway becomes shared space to encourage socializing.









Senior Resident Unit during the *day*

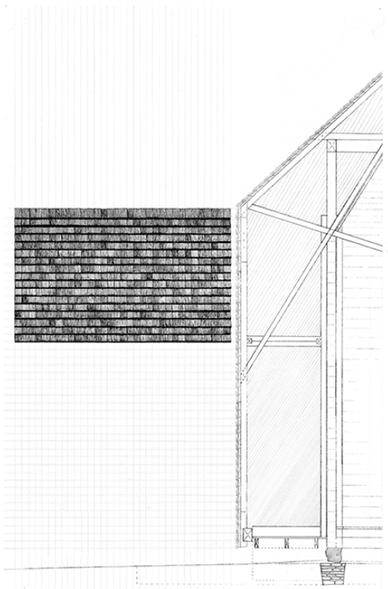
Senior Resident Unit during the *night*

Facade

To bring a human scale to the building the facade utilizes manually-operated shades. This also brings a certain rhythm to the ever changing arrangements of the shades.

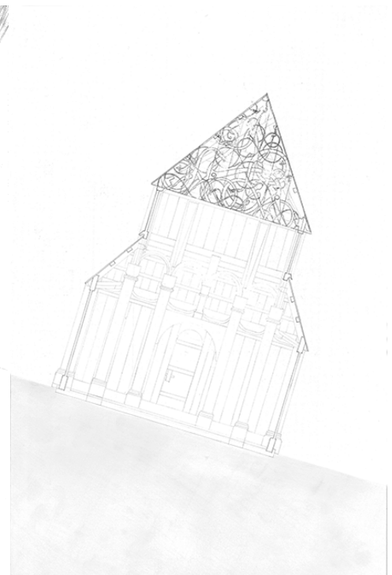
Nordic Assembly

Studying the technical assemblies exemplified by Nordic design
2023



Kärsämäki Kirke
Kärsämäki, Finland
2004

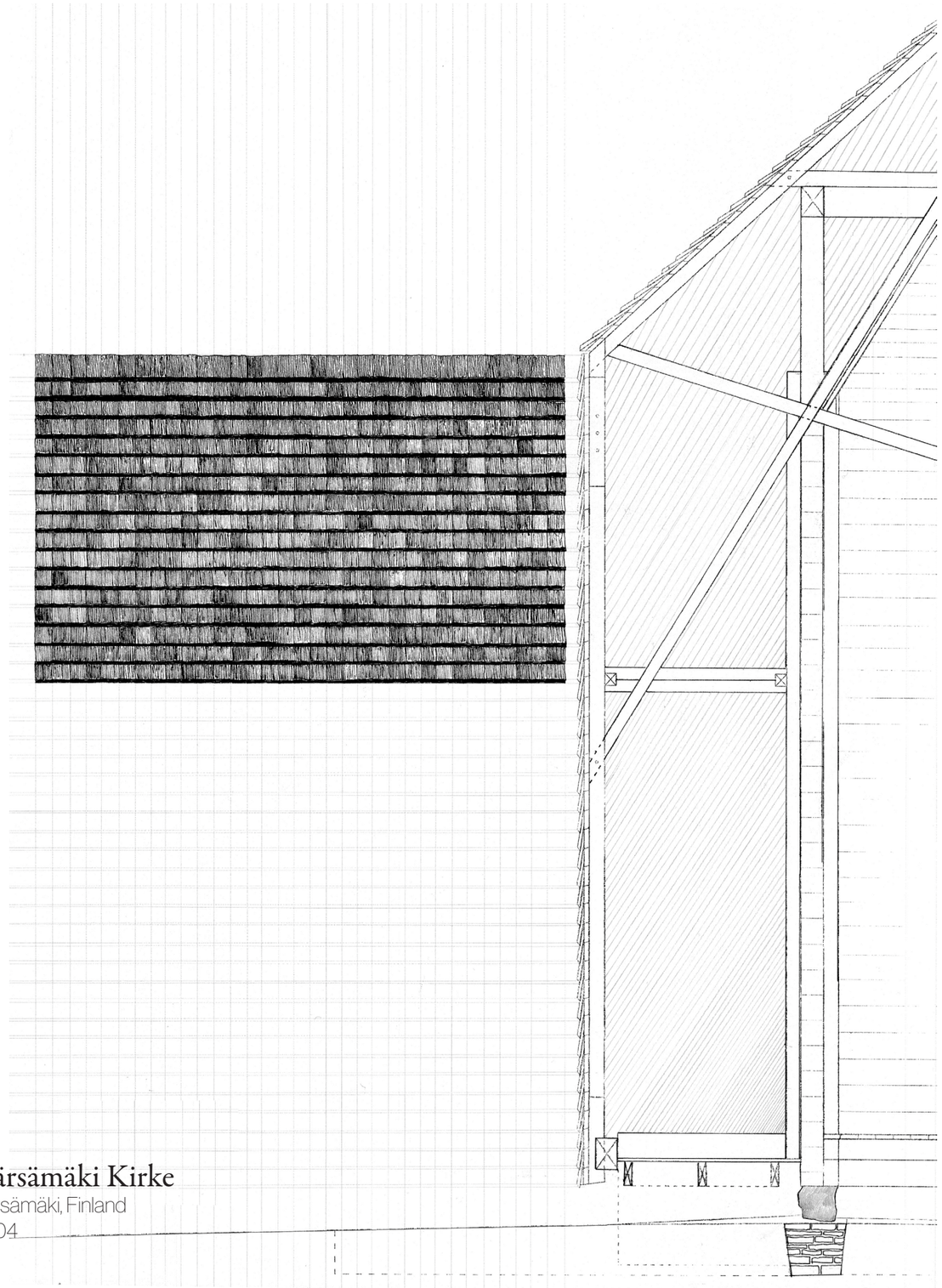
Gokstad Ship
Sandar, Sanderfjord, Vestfold, Norway
9th Century



Urnes Stave Kirke
Ornes, Sogn Og Fjordane Norway
12th Century

Triptych

A historic material in Nordic history is the timber lapping used in many traditional façade systems. Starting with the shiplap used to prevent water from leaking onto Viking ships to the weather protection on the façades of churches. The Gokstad Ship is one of the best-preserved Viking ships and has provided a substantial amount of what we know about the technology of Viking vessels. For example, the planks of the ship being radially split, following the grain of the wood to increase the strength of the timber. The Stave churches were a progression of these building techniques on land. Held up by large posts, often whole tree trunks, precisely wood carved ornamentation decorated these spaces. The lapping on these buildings utilized burned tar to create a rain barrier. Karsamki is a contemporary continuation of these traditions.



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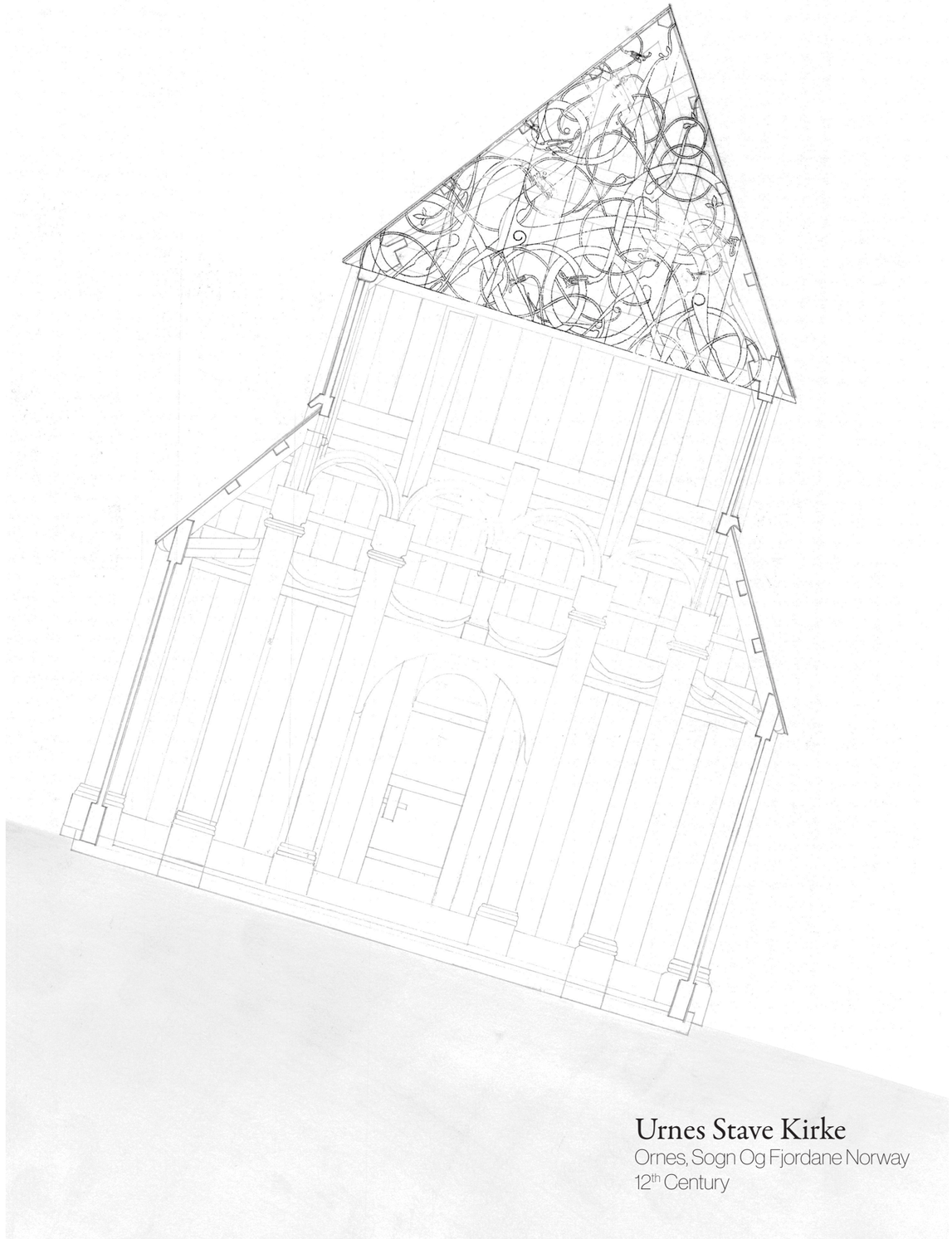


Urnes Stave Kirke
Ornes, Sogn Og Fjordane Norway
12th Century

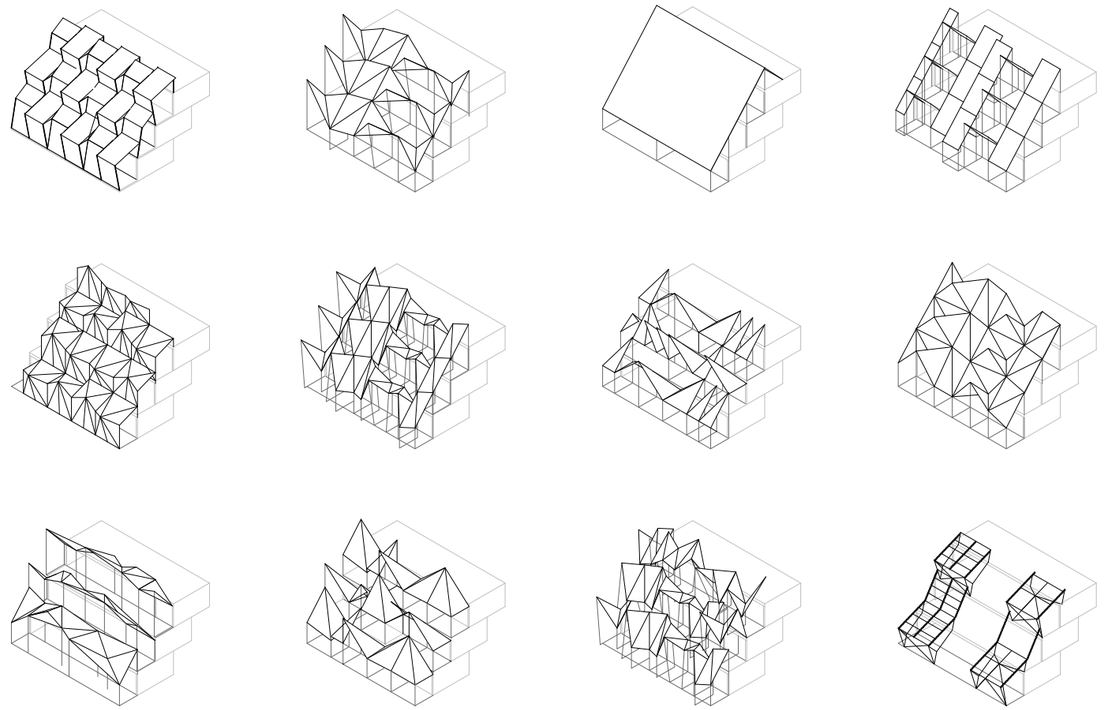
Montessori School of Bronzeville

Bronzeville, Chicago
2022-23
In collaboration with Madeline Kondic

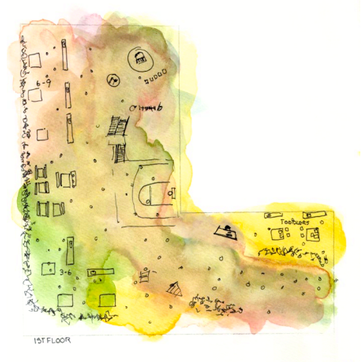
Montessori is a pedagogical concept of the child having the same respect awarded to adults. The spaces that foster this environment encourage self-learning and exploration of concepts appropriate for that age range. A part of this learning is understanding responsibility and trust; our idea is that this can be aided with the help of nature. Bringing nature to the classrooms with greenhouses means the students can use the space year-round in Chicago's cold climate.

Network of Play

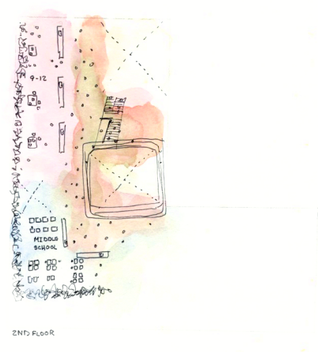
The role of play in a child's development can not be stressed enough. To understand the context in which "play" takes place in Bronzeville we investigated surrounding schools, parks, and playgrounds. From these locations we took a 10 min walk radius to visualize the connections. The orange path is what results.



Iterations of greenhouse west-facade structure



Ground plan mapped activity

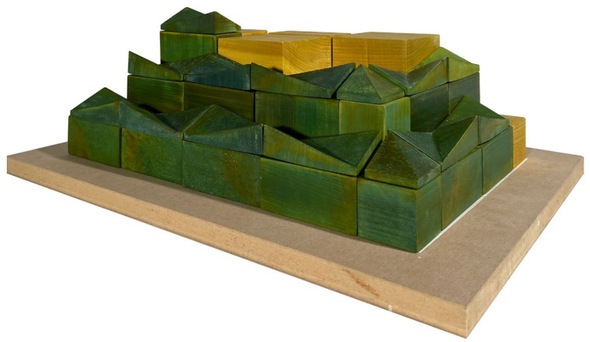


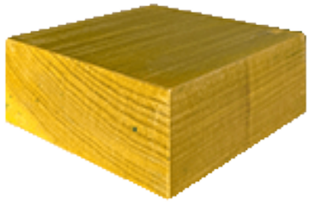
First floor plan mapped activity

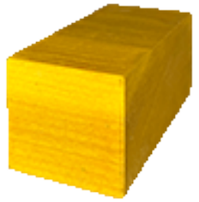
Second floor plan mapped activity

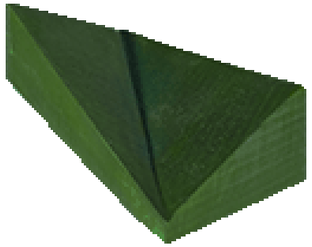
Montessori Blocks

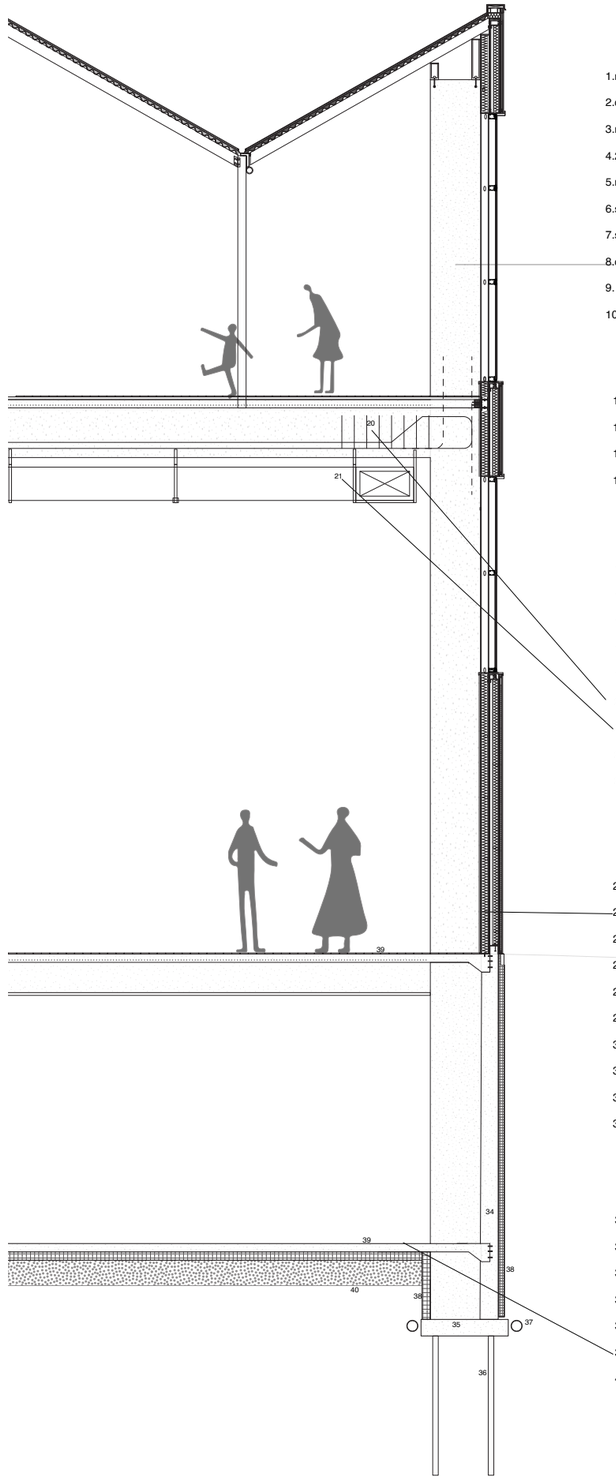
Buildings blocks are an essential tool to teach scale, proportion, and creativity. Our building takes on the form of the classic Montessori tool to allow for children to develop their own Montessori School of Bronzeville.











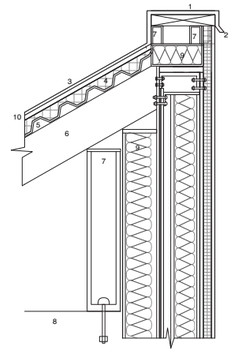
1.metal cap
2.downspout
3.roof membrane
4.2 inch rigid insulation
5.metal deck roofing
6.steel beam
7.steel strut
8.concrete column
9. R19 batt insulation
10.waterproofing

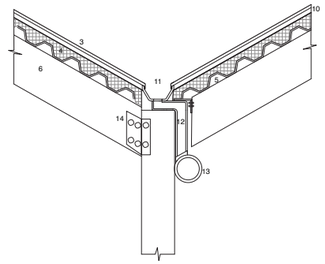
11. 6 inch gutter
12. downspout
13. rainwater collection pipe
14. steel connection bolts

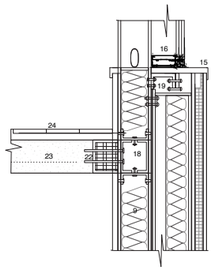
15. metal sill cap
16. curtain wall mullions -Kawneer screw spline
17. double pane glass
18. steel brackets
19. connection bolts
20. 3' deep reinforced concrete beam
21. hvac vent
22. slab insulation
23. radiant heat line

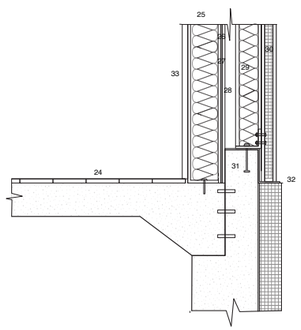
24. hardwood floor finish
25. steel stud
26. vapor barrier
27. airtightness barrier
28. 4 inch rain screen
29. R15 batt insulation
30. 2 sheet metal panel with rigid insulation
31.6 inch foundation wall step
32. flashing
33. interior drywall finish

34. 12 inch concrete foundation wall
35. strip footing
36. steel piles
37. foundation drainage
38. foundation rigid insulation
39. 6 inch structural slab
40. crushed gravel









Classroom

The classroom provides the environment in which students can best be on the path to self-learning. Moveable furniture and Montessori tools can be used found to aid the children in their education.

Greenhouse

The greenhouse is a place of growth for the plants and the students. The older children are tasked by taking care of more challenging plants, while the younger students are taught responsibility through easier to maintain vegetation.

Illinois Institute of Technology College of Architecture

Mark Schwandt *Selected Works 2024*