



Yuli Wang*

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Youyuan Footbridge

Role:

Core Design Team Member for Christian Kerez

- developed variation options for footbridge and landscape;
- prepared precedent studies and option analysis for internal discussion;
- cooperated with all stakeholders (engineer, construction, client);
- managed digital and physical models, which are presentable.

Others Involved

christian kerez (lead architect)

jorge de jorge

chiao yang

ece duran (model maker)

joseph schwartz team (engineer)

Project Info:

Year

06. 2022 - 08. 2022

Status

concept design, schematic design

Area

footbridge	558	ft
park	3,640,000	ft ²

Location

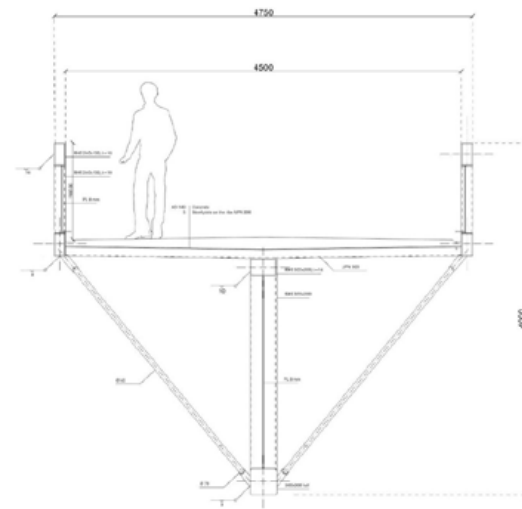
nanjing, jiangsu, china



Image: responsible for rhino and gh modelling

Legend

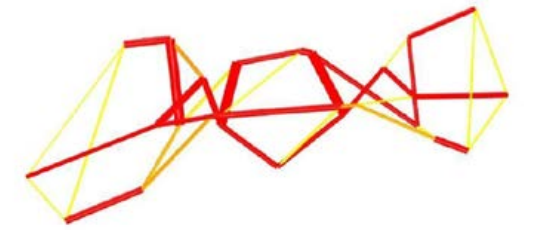
- River
- Wetland
- Beach
- Site



Factors concerned in structural design

-

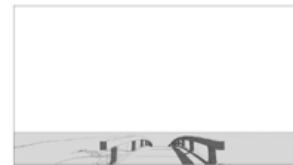
MOMENTS



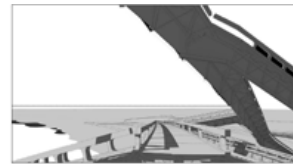
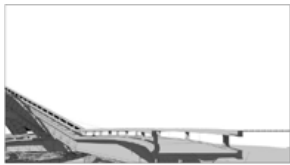
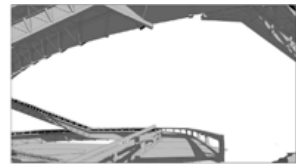
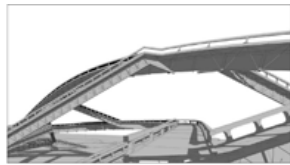
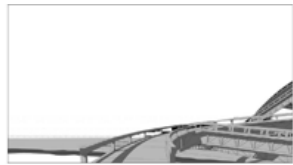
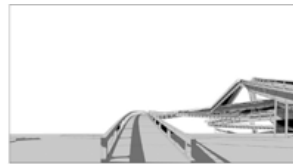
USE OF PROFILE

The bridge is a composition of different paths cross a river The study of these paths was done with a series of visualizations to research how to bundle these crossings, how they could hold together, and how these separate walk ways could become - in a structural way - one entire bridge. In this research, the understanding of the connections between the singular elements was crucial.

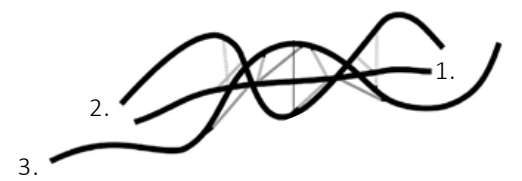
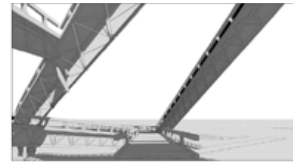
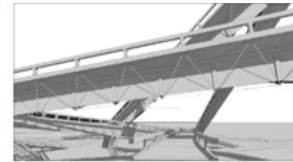
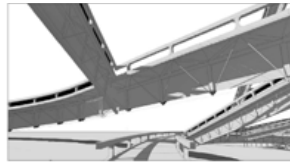
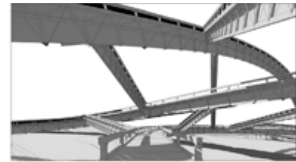
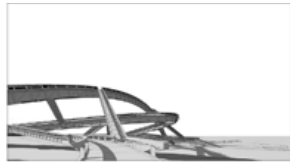
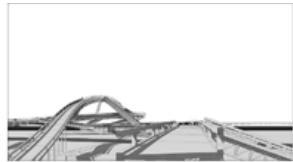
1.



2.

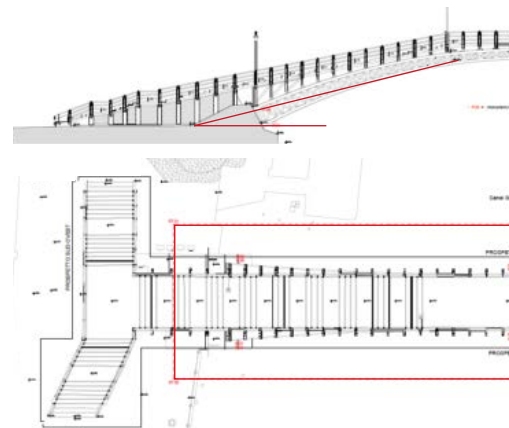
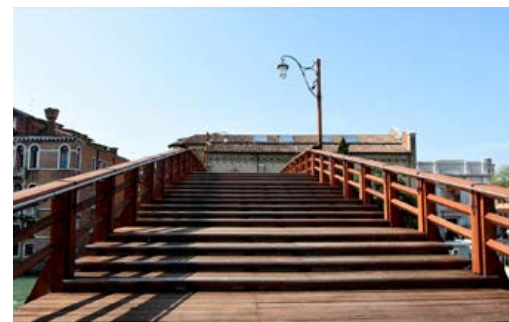
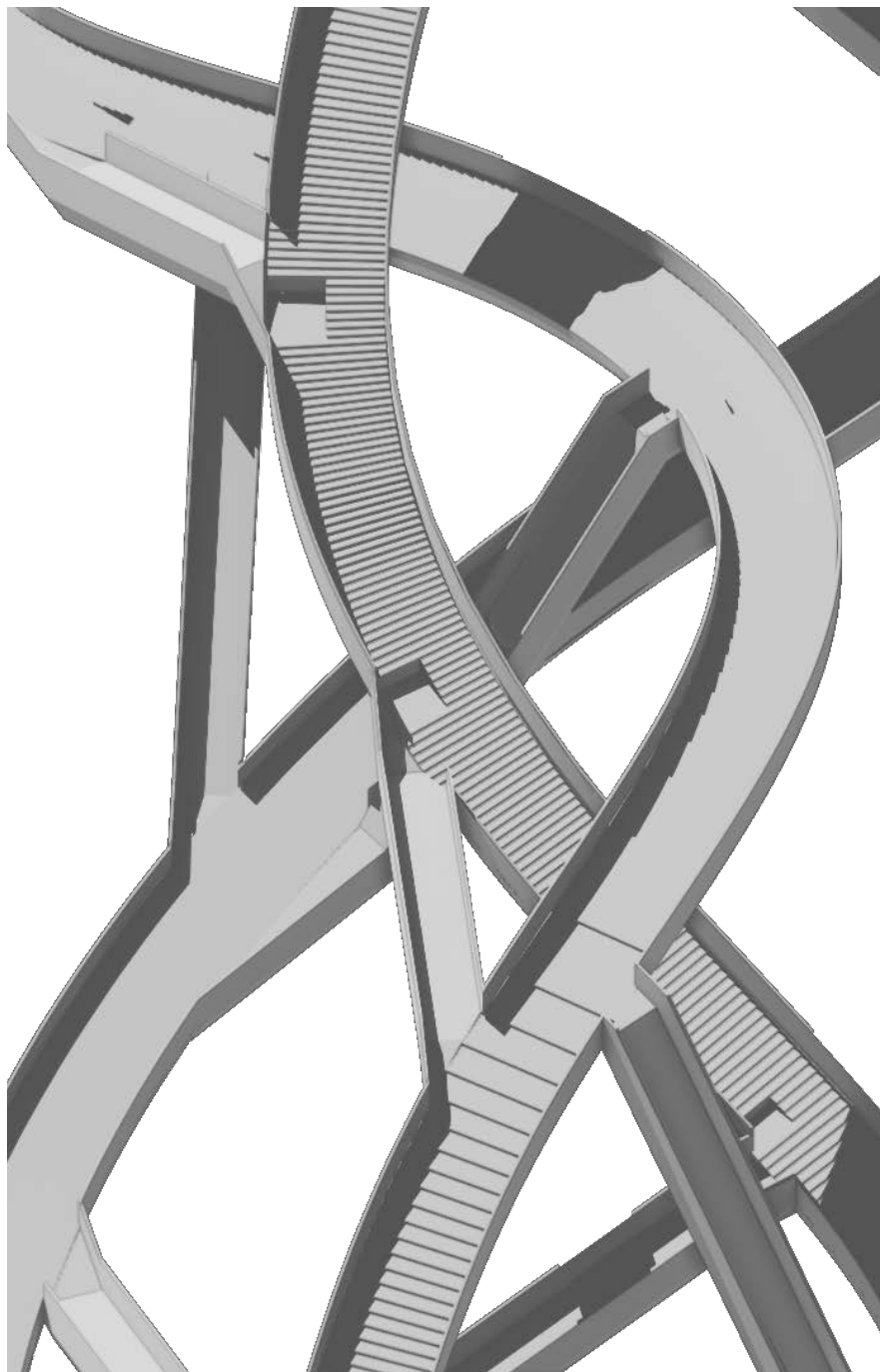


3.



THREE WAYS TO CROSS THE RIVER

BRIDGE STEP DESIGN



Documentation of bridges in Venice before developing design for steps of Youyuan footbridge.

Ponte dell'Accademia is found to have the similar inclination to that of Youyuan footbridge.

As bridge inclination changes as it goes up and down, it is critical to find a consistent step width and height in consideration of safety and comfort.

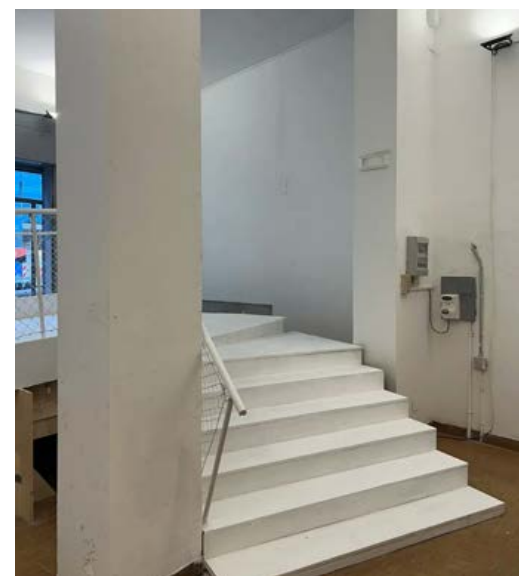
MODEL AS STUDY AND PRESENTATION



EXHIBITION AT ZAZA', MILANO



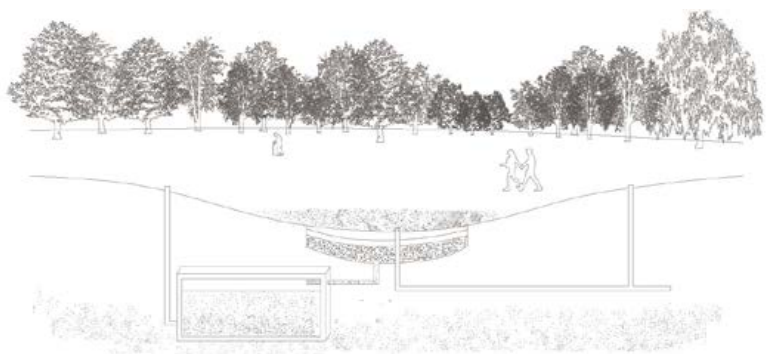
SECTION PROFILE MODEL 1:1



STEP MODEL 1:1

LANDSCAPE

Continuing from the bridges, the path in landscape connects all important elements on site.



POND SYSTEM TECHNOLOGY



FOREST MEADOW



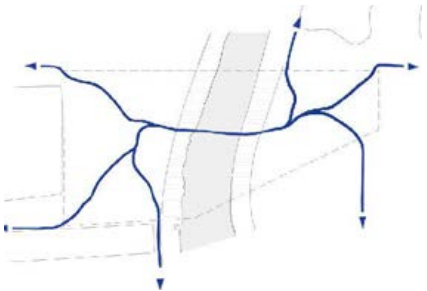
NATURAL SOIL GROUND



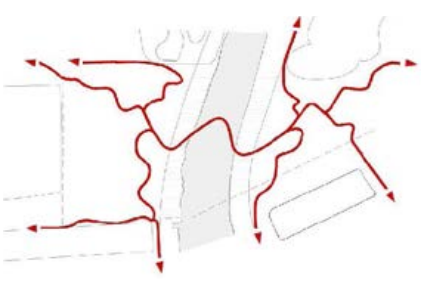
WETLAND POND



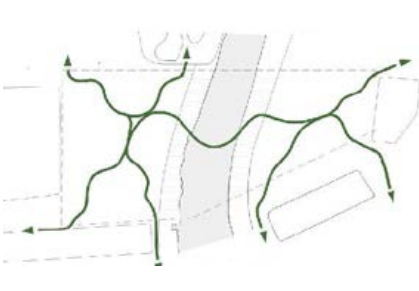
WALKABLE LAWN



HIGHER PEDESTRIAN PATHWAY



PEDESTRIAN PATHWAY



BIKE AND PEDESTRIAN

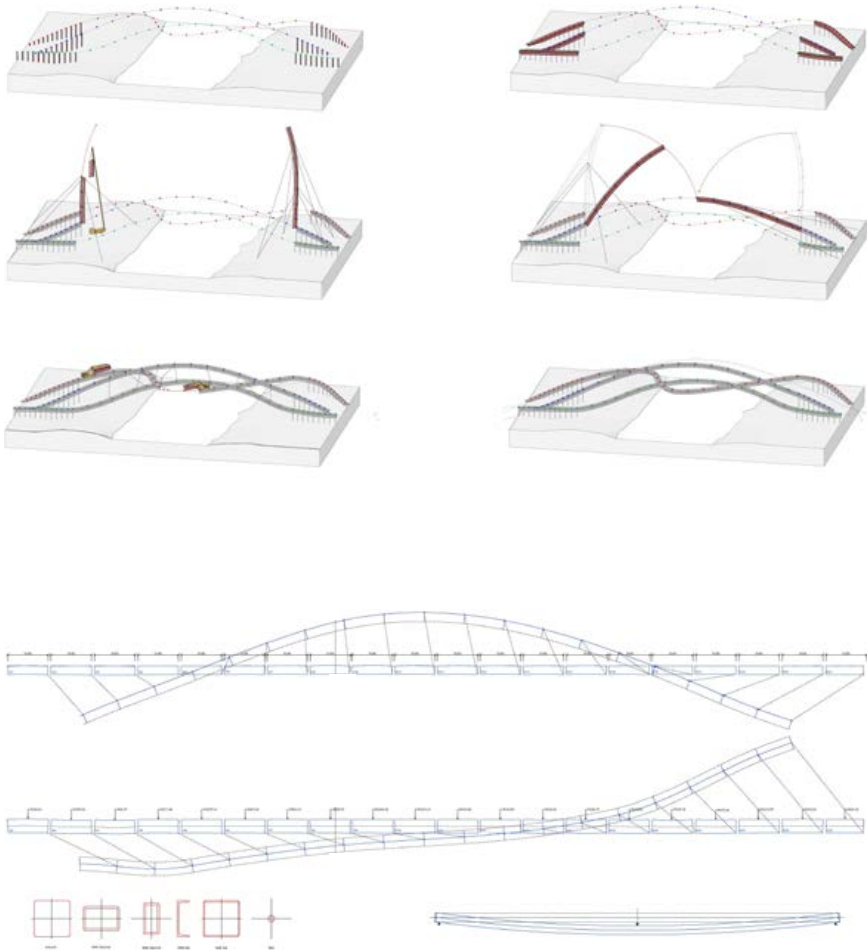
MASTER PLAN

Proposed facilities in this project

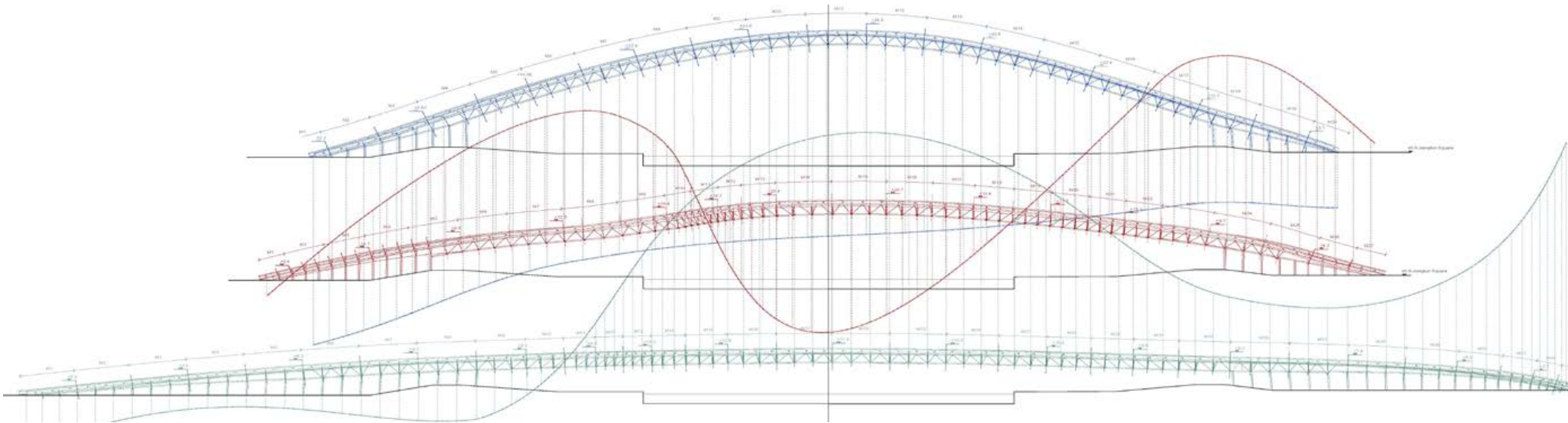
- | | |
|---------------------|-----------------|
| 1. Observation Deck | 4. River Park |
| 2. Park Plaza | 5. Sport Fields |
| 3. Parking | 6. Tram Hub |

CONSTRUCTION METHOD

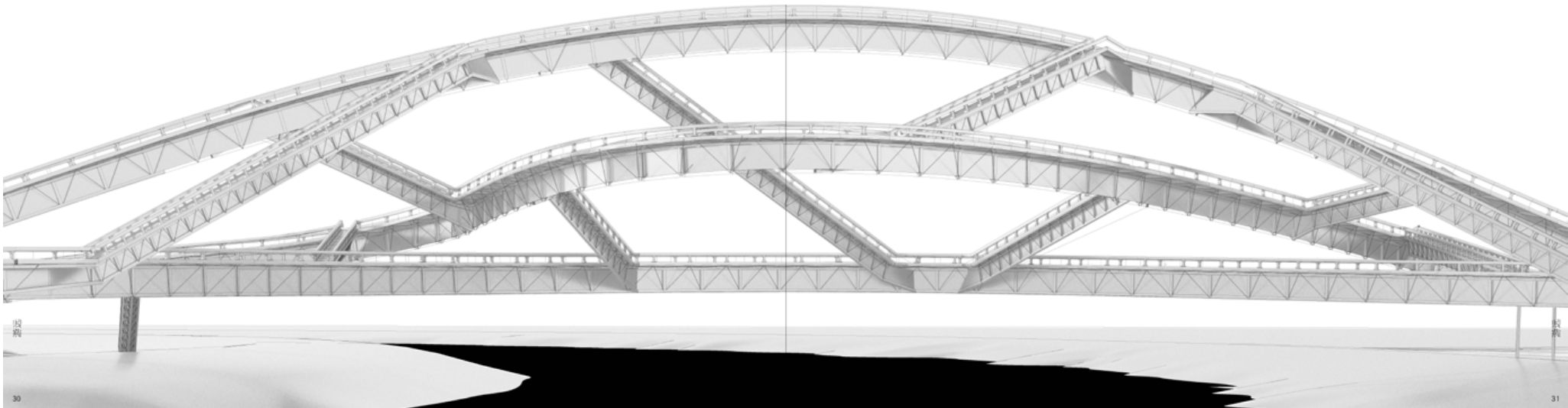
The construction method of the bridge is one of the core issues during the design process. The bridge structure is designed in a module to achieve a complex geometry using repetitive elements and economical construction.



MODULARITY



TECHNICAL DRAWING 01 25CE



ELEVATION 25CE



Nantou Community Center

Role:

Architectural Intern for Atelier FCJZ

- prepared site analysis and presentation files for client;
- developed the design of basement floor, central hallways and room organizations;
- researched materials and available products, developed detail design accordingly;
- managed facade brick arrangement and prepared construction documents.

Others Involved

yungho chang (lead architect)

zelin he

Project Info:

Year

06. 2021 - 09. 2021

Status

in construction (design development)

Area

31,130 ft²

Location

shenzhen, guangdong, china



Image: responsible for sketchup modelling

THE HISTORIC VILLAGE OF NANTOU

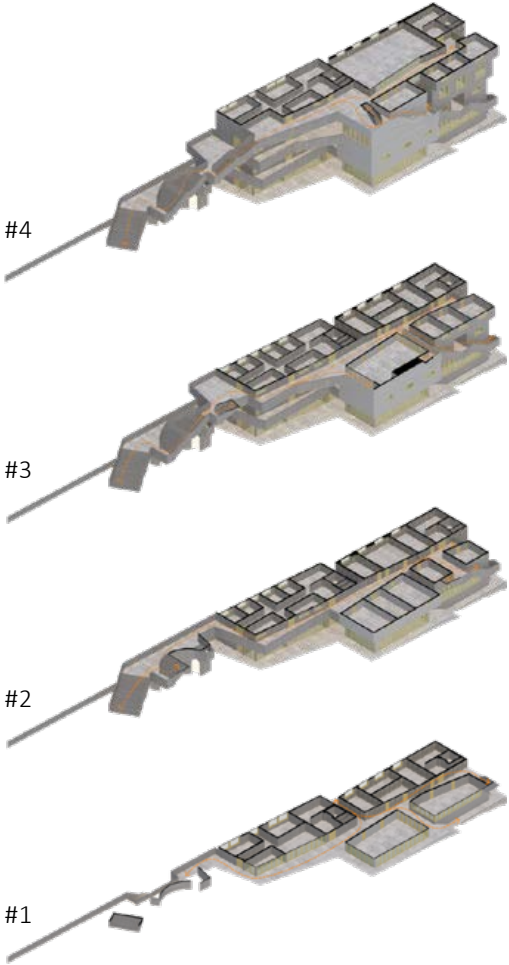
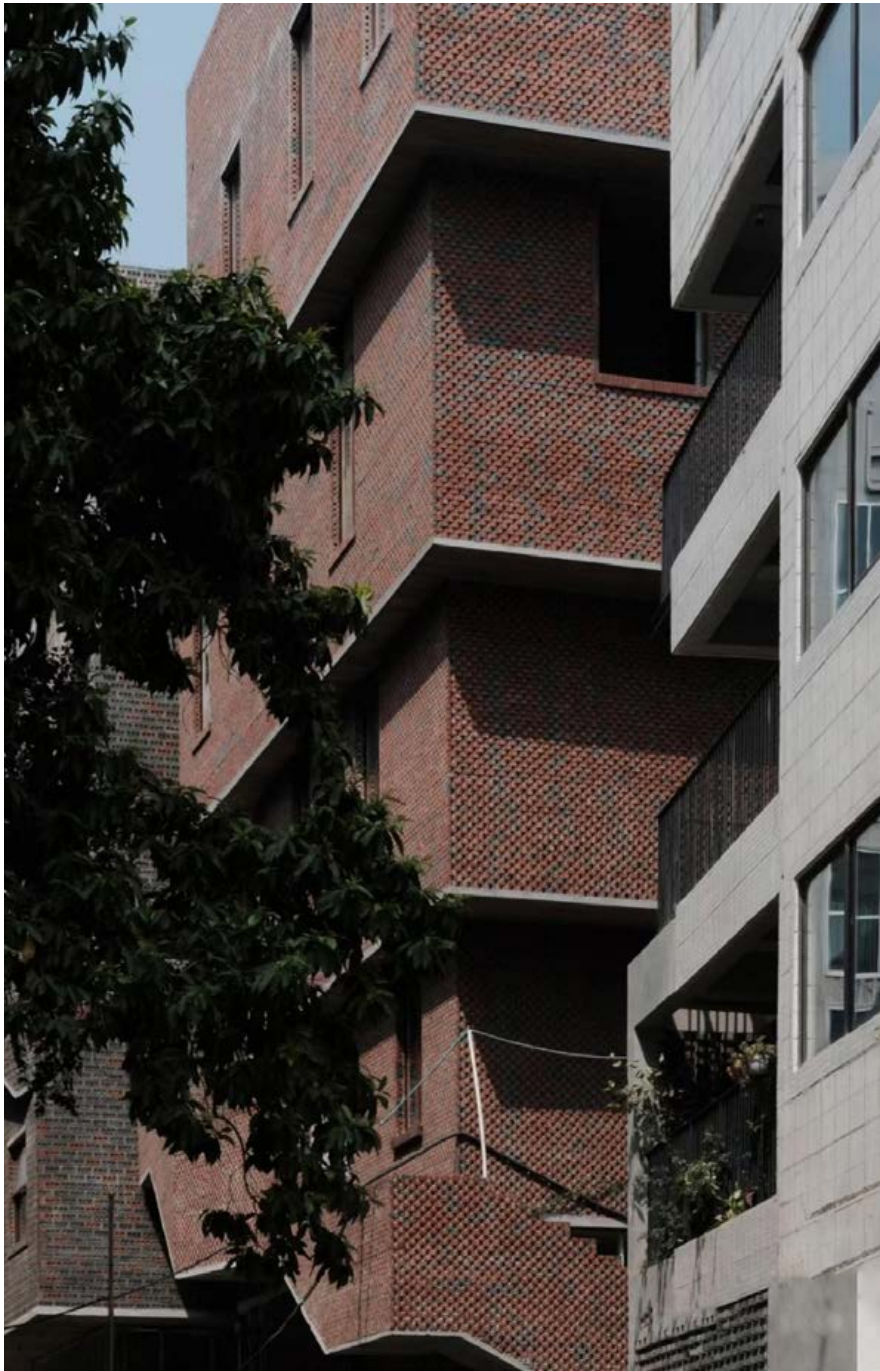
Located in Shenzhen, China, Nantou Historical Village is well-known for its long history over two thousands of years. The area's lack of clear urban planning results in its vibrant and diverse characteristics. Along the streets in the village, diverse activities enriching civic life, including chessing, hair-cutting, chatting, marketing...

In order to blend in with the surroundings, the scale and the material of traditional Southern Chinese buildings in the area were taken into consideration.

In order to reduce the construction cost and time, the building was designed with low-cost material such as brick and concrete. Facade patterns are designated with rules rather than specific drawings to ease the construction.

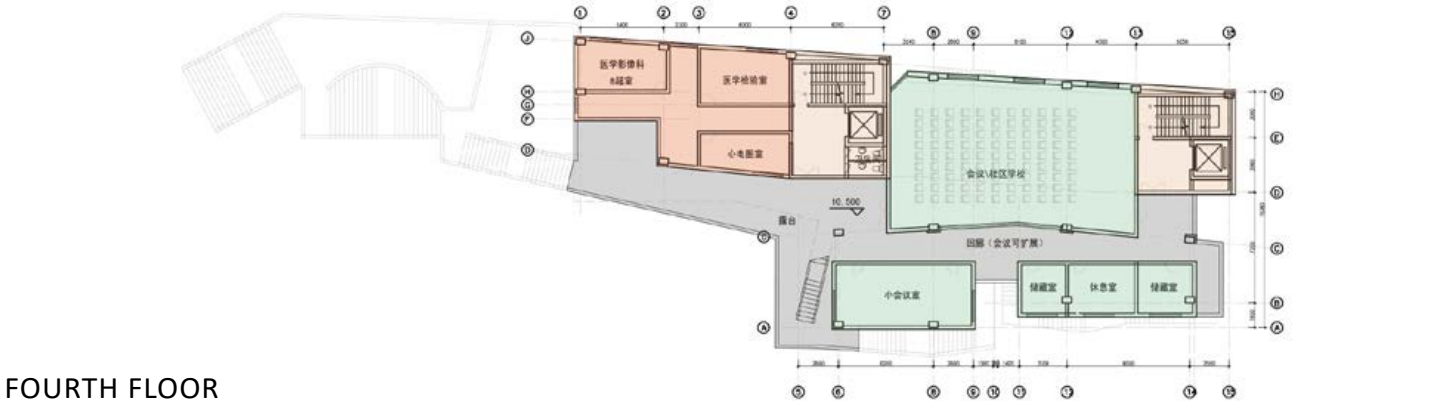


Legend
Existing Proposed Site



BUILDING CIRCULATION

The public spaces develops vertically from the ground. Vertical traffic connects the square with the adjacent road on the east. Ground floor opens to the context. Internal hallways open to the surrounding environment as streets.



FOURTH FLOOR



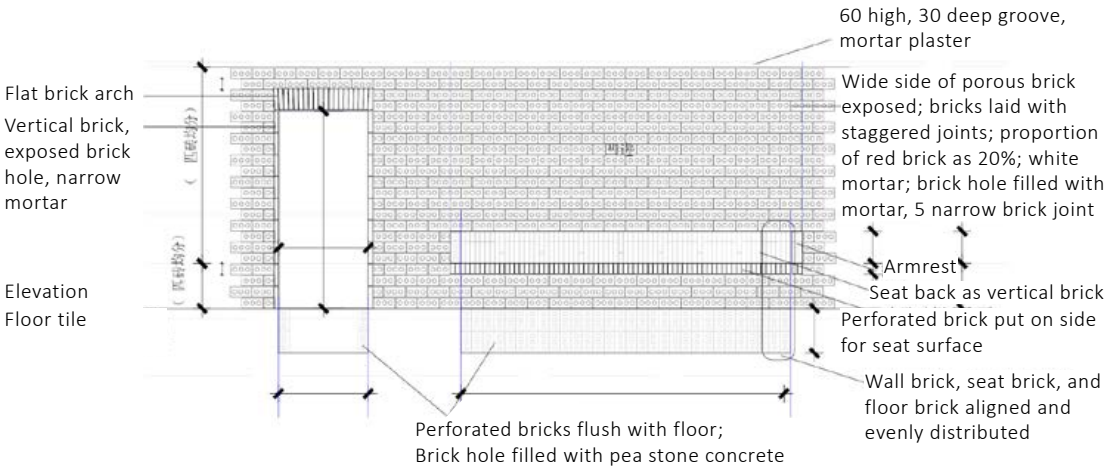
GROUND FLOOR

Legend
Clinic Community Workstation Civic Center Police Station Wanke Office Village Office Open Space Stairs/ Elevator

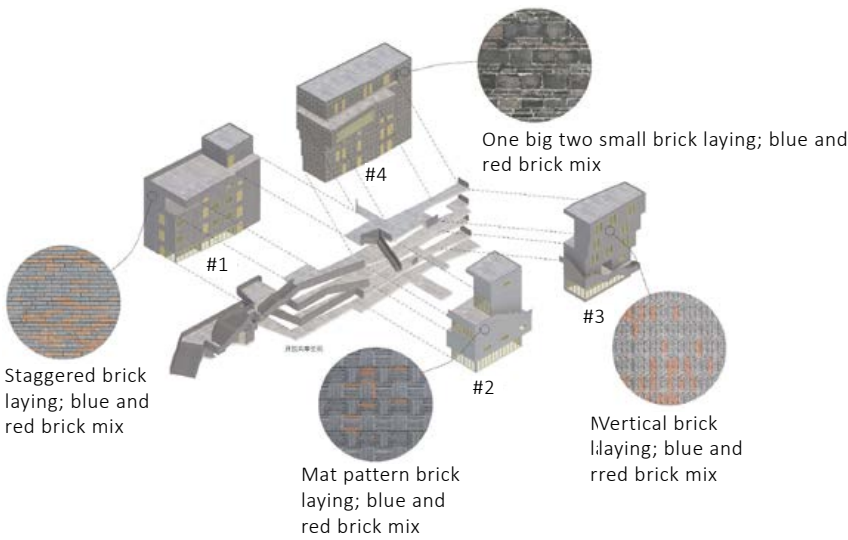
BRICK FACADE

To embed the newly-built building into the context of the historical village, brick, which is common in the area, is chosen for the facade material. Each of four volumes in the community center project has its own unique brick type and pattern to indicate varied programs held in the building.

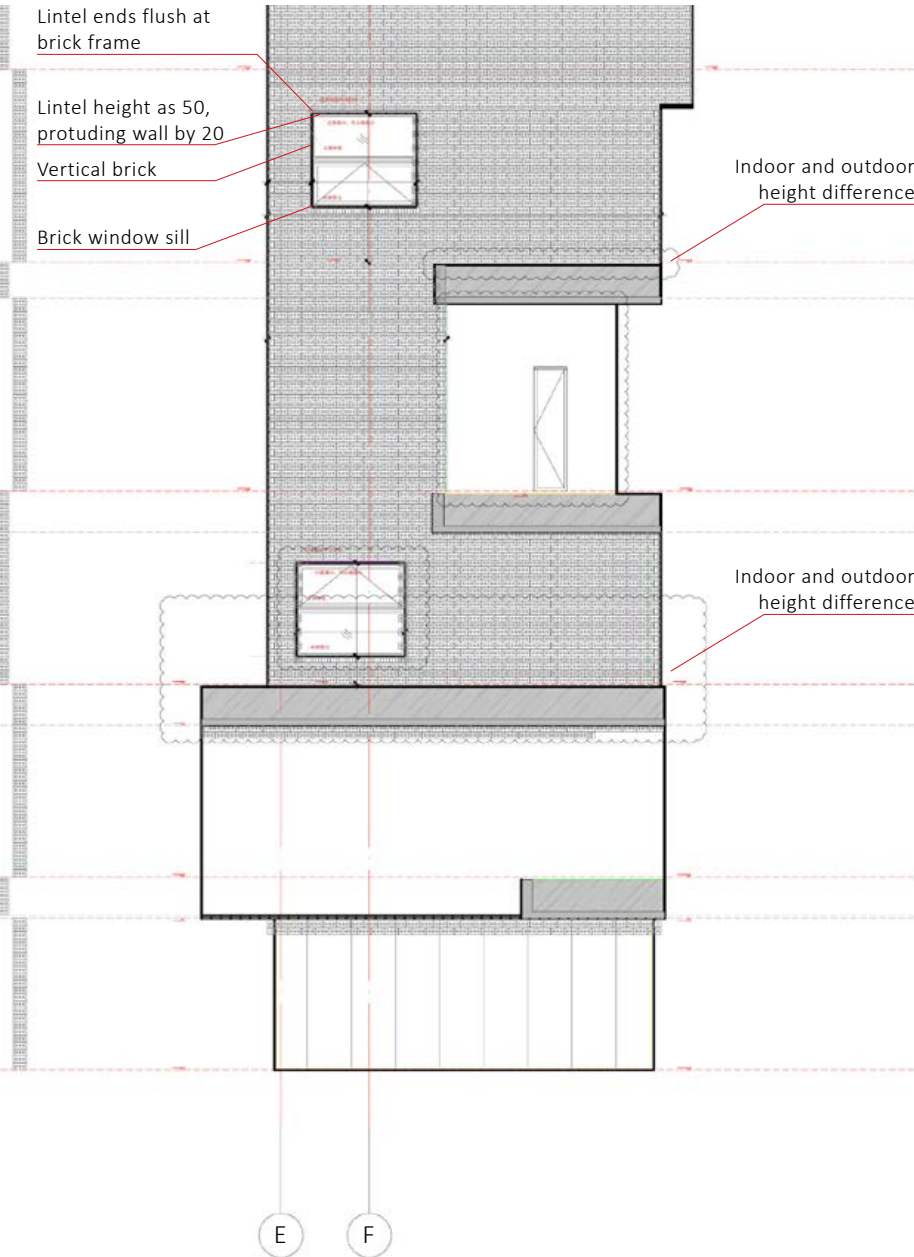
To reduce the complexity of construction, the facade drawings are drafted without indicating brick pattern in detail. A set of regulations regarding the ratio of different bricks and location are given to the construction workers to secure the overall look of the facades. The rest are given to the workers to decide.



BRICK PATTERN DIAGRAM FOR CORRIDOR (OPENINGS AND SEATS)



#2 BUILDING EAST ELEVATION



#4 BUILDING EAST ELEVATION

Two House and Two Studios

Role:

Architectural Intern for Atelier FCJZ

- drafted drawings and models, and made subsequent adjustments based on client's and principal's feedback;
- analyzed project and produced documents for costing;
- built SD package with floor and roof plans, elevations, facade details, and structural sections.

Others Involved

yungho chang (lead architect)

zelin he

Project Info:

Year

06. 2021 - 09. 2021

Status

schematic design

Area

11,150 ft²

Location

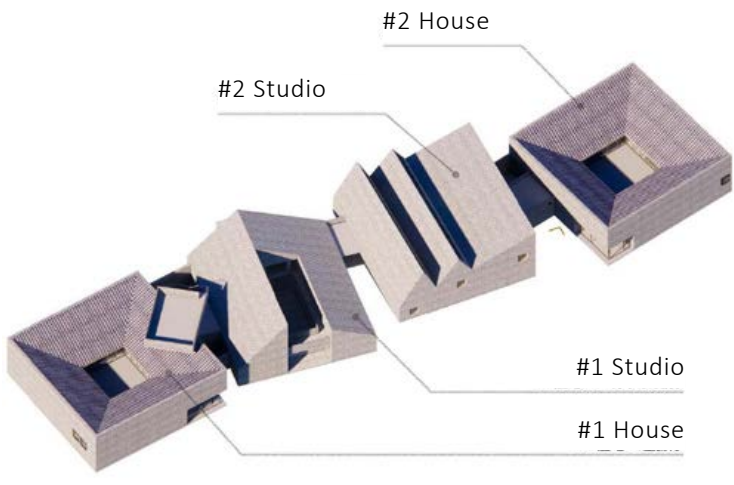
yixin, zhejiang, china



Image: responsible for sketchup modelling

THE SITE

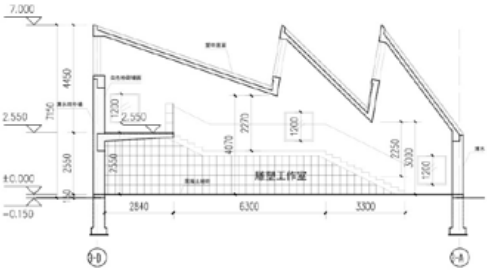
The new buildings are proposed on the site of an open space next to a village in Yixin, China. With four buildings connected, this is a private residential project for two families, one sculptor's and one architect's, each with one own house and studio.



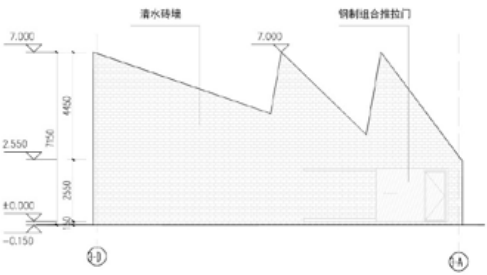
#1 STUDIO



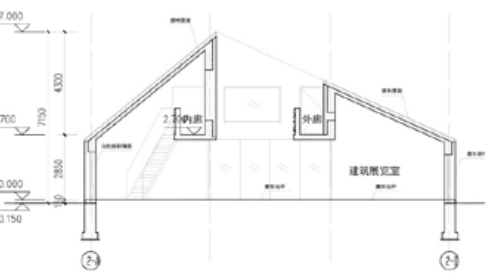
#2 STUDIO



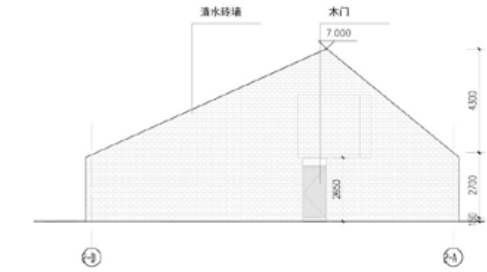
#1 SECTION



#1 SOUTH ELEVATION



#2 SECTION



#2 SOUTH ELEVATION

Legend

- 1. Brick exterior wall
- 2. White-washed interior wall
- 3. Brick roof
- 4. Concrete floor tile
- 5. Blue tile roof
- 6. Water-brushed stone floor
- 7. Steel sliding door
- 8. Glass sliding door
- 9. Wood door



GROUND FLOOR

The form of the houses originates from the traditional Chinese courtyard house. Courtyard is designed as the center with living spaces surrounding for integration of indoor and outdoor. Such room organization also improves air ventilation, making the project net-zero.



Unfolding Trailscape

Pilgrimage x Ecological Restoration

M. Arch Studio
Columbia University GSAPP

Project Info:

Year
01. 2022- 04. 2022
Status
academic project

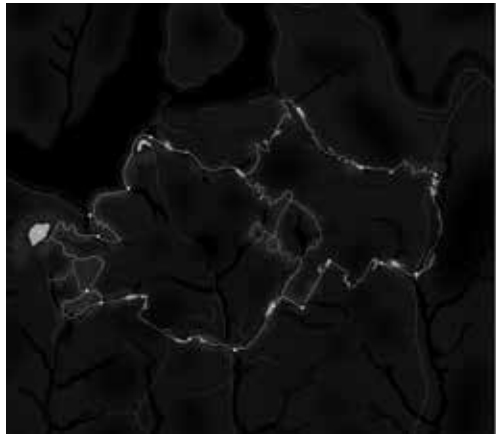
Area		
bathhouse	936	ft ²
nursery	3,750	ft ²
mosque	1650	ft ²
shrine	430	ft ²
rest stop	200	ft ²
bridge	35	ft
trail	30	mil

Location
islamberg, new york, united states



PILGRIMAGE AND ECOLOGICAL RESTORATION

The project is a backyard pilgrimage that is for both pilgrims and hikers. By wayfaring from one point to the next, people take part in the act of trail-making. The trajectory of the trail is determined by the ecological issues along the way, passing through the quarry, erosion, flood, invasive species overgrown, creek and road crossings.



SITE

MASTER PLAN



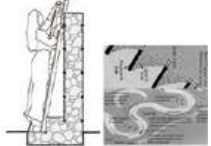
A. QUARRY

Pick up small rock from quarry waste, where rock waste can account for 60-90% of the whole excavation activity.



B. EROSION

Put rock into the gabion wall that mitigates erosion; plant seedlings in the nursery built up by gabion walls.



D. FLOODED AREA

Put rock into gabion walls as foundation at the sharp turn of the creek to mitigate the flood.



E. INVASIVE SPECIES

Cut and dehydrate knotweed from overgrown. Dried knotweed are then used as architectural material.



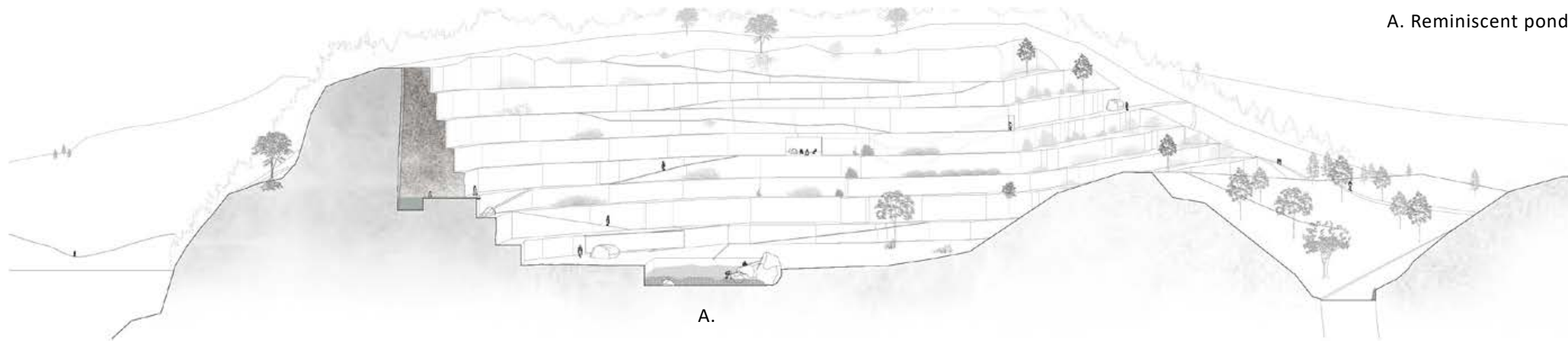
F. PROPERTY LINE

Through Easements and Rights of Way, linear gabion walls become inhabitable and shared at stops for hikers and owners.

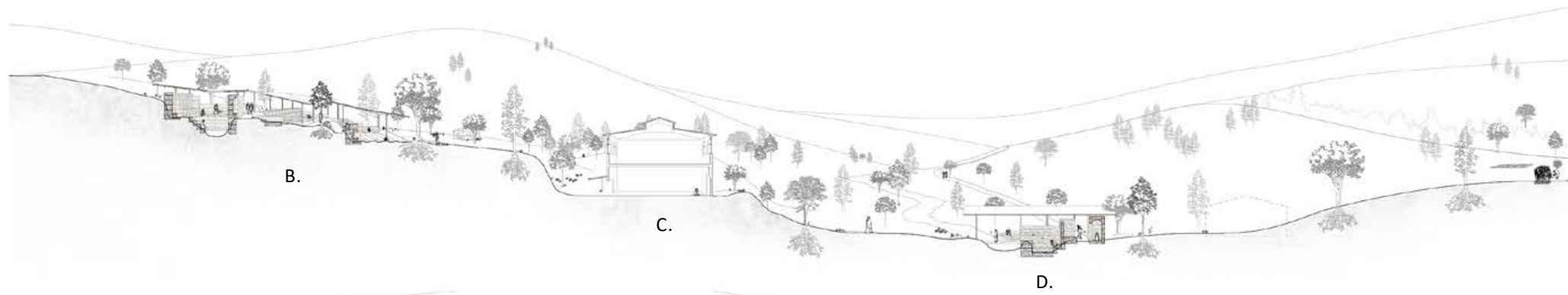


G. ROAD CREEK CROSSING

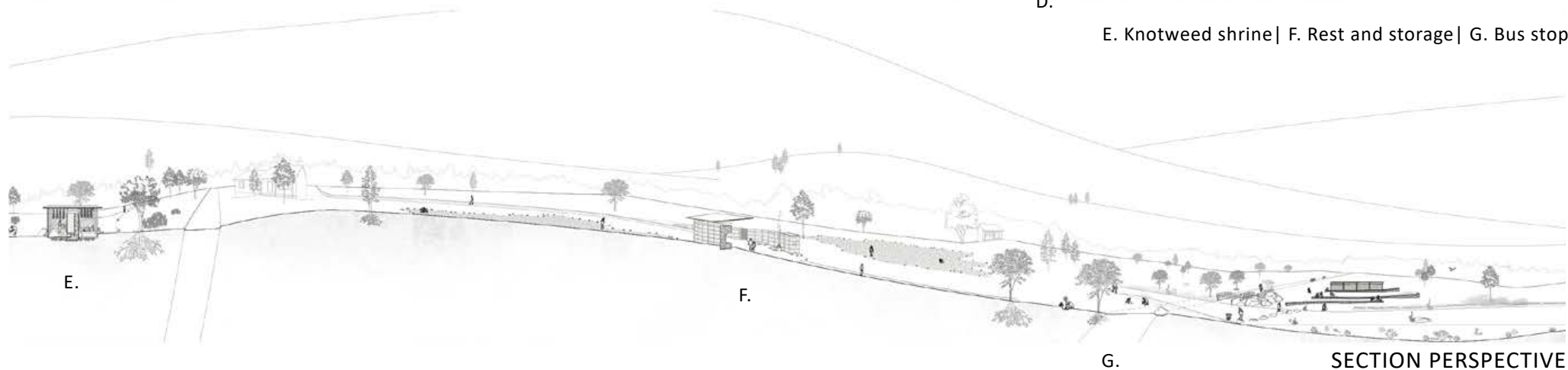
Replace the culvert with bridge; plant seedling on the eroded ground at the triangular area of road-creek crossing.



A. Reminiscent pond

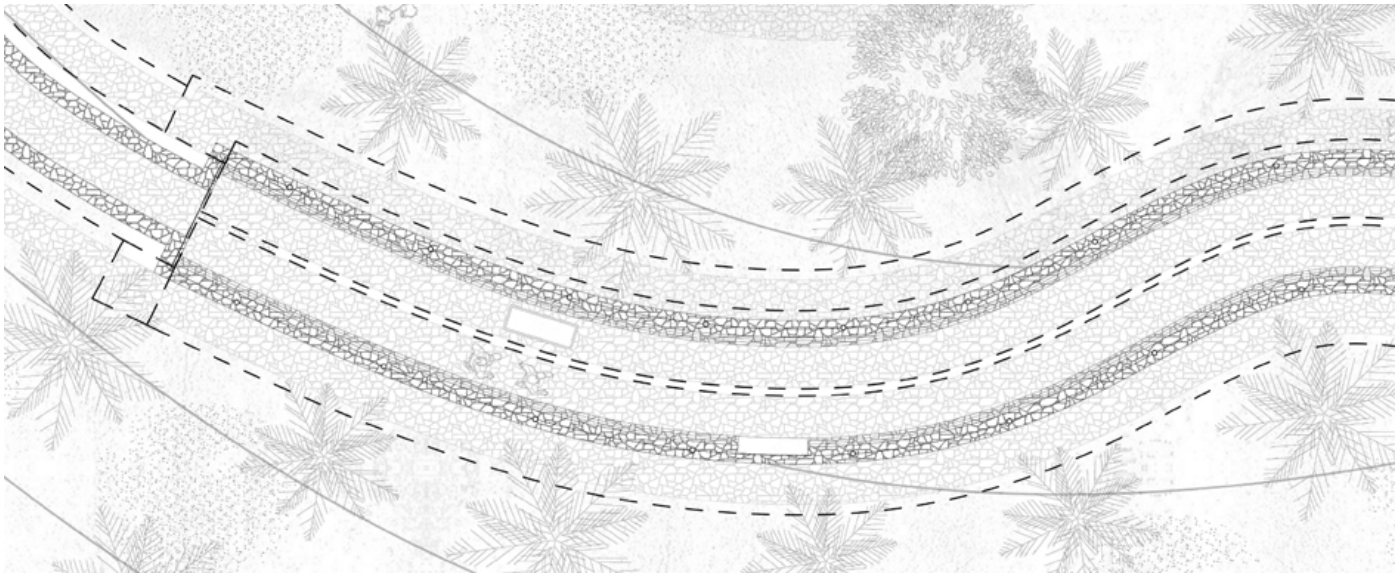


B. Nursery | C. Existing mosque | D. Bathhouse



E. Knotweed shrine | F. Rest and storage | G. Bus stop

SECTION PERSPECTIVE



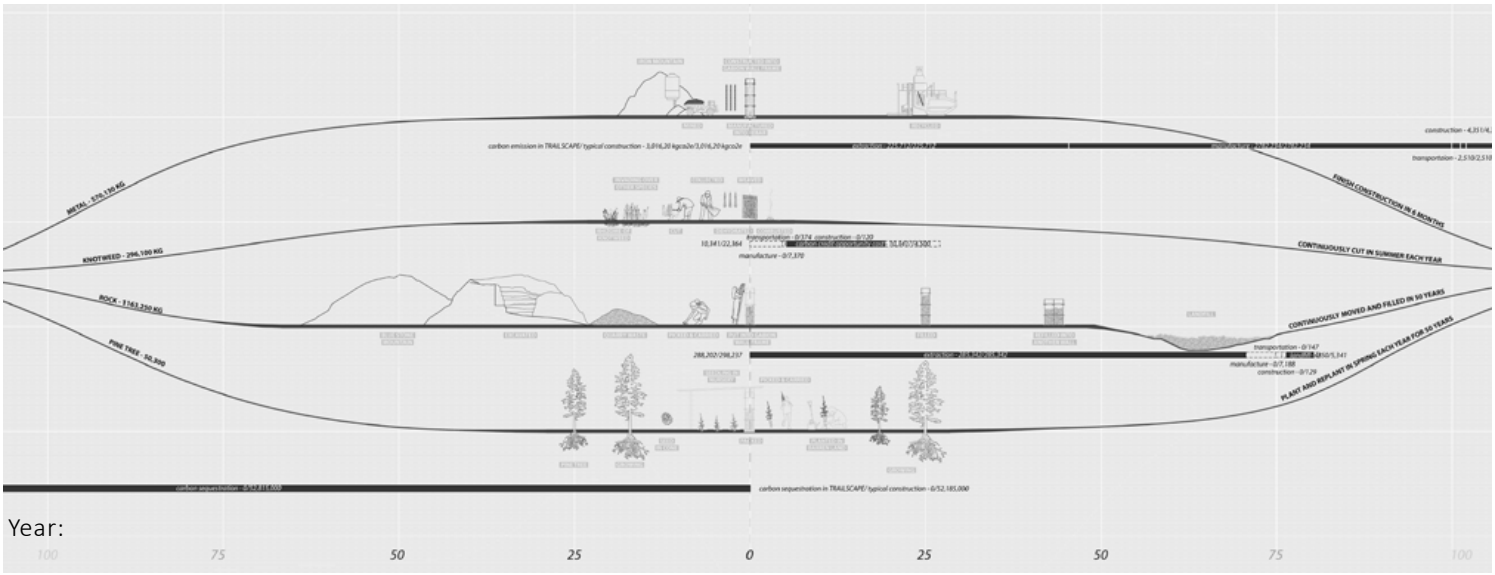
WALKWAY PLAN



WALKWAY PATTERN TYPE

WALKWAY

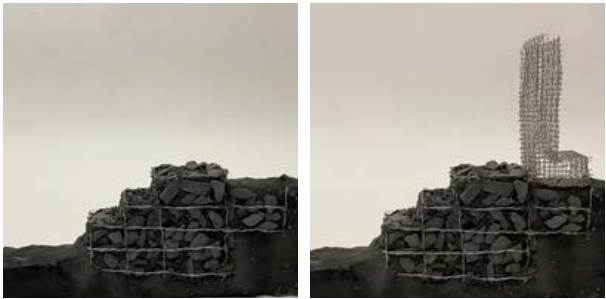
People and nature heal each other.



Use of material: metal (570,130kg), knotweed (296,100kg), rock (1,163,250kg), pine tree (50,300)

CYCLE OF MATERIAL AND LABOR

In consideration of sustainability, the entire life of the trail is designed. All of the materials are local and most of them are waste. As pilgrims and hikers build as they walk, it decreases the affect that construction team may have on the environment otherwise.



MATERIAL EXPRESSION

ISLAMBERG

Islamberg, a rural hamlet located in Delaware County NY, serves a primarily African American Muslim community. The 200-person hamley can be understaood as what geographer Louise Meijering defines as religious "intentional community". In leaving the city, this "counter-urbanist" community desired an escape from economic decline and the consumerism, pollution, and criminality of urban sliving, seeking instead a monastic "simple life" and closeness to an "idyllic" nature.

The settlement, which occupies a small valley, adjacent to a creek, consists of a few dozen vernacular houses, a modest unfinished mosque, a schoolhouse, and a farm, all scattered across the landscape.

Proposed facilities in Islamberg

1. Reminiscent pond 2. Nursery 3. Renovated mosque 4. Bathhouse



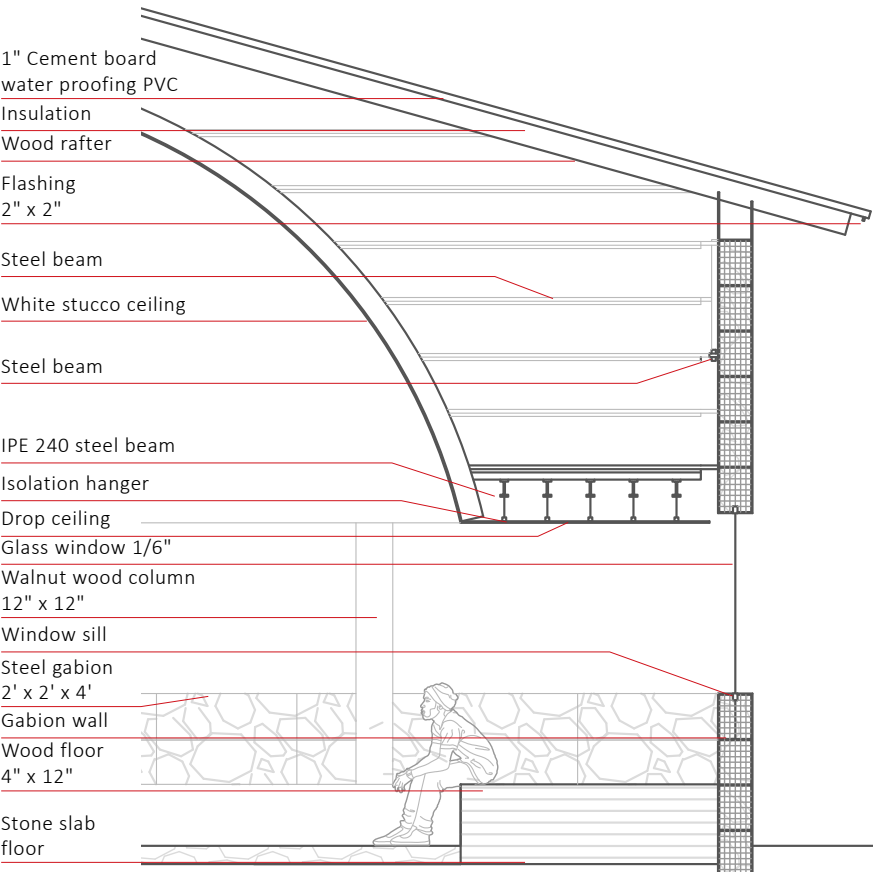
MASTER PLAN

Legend

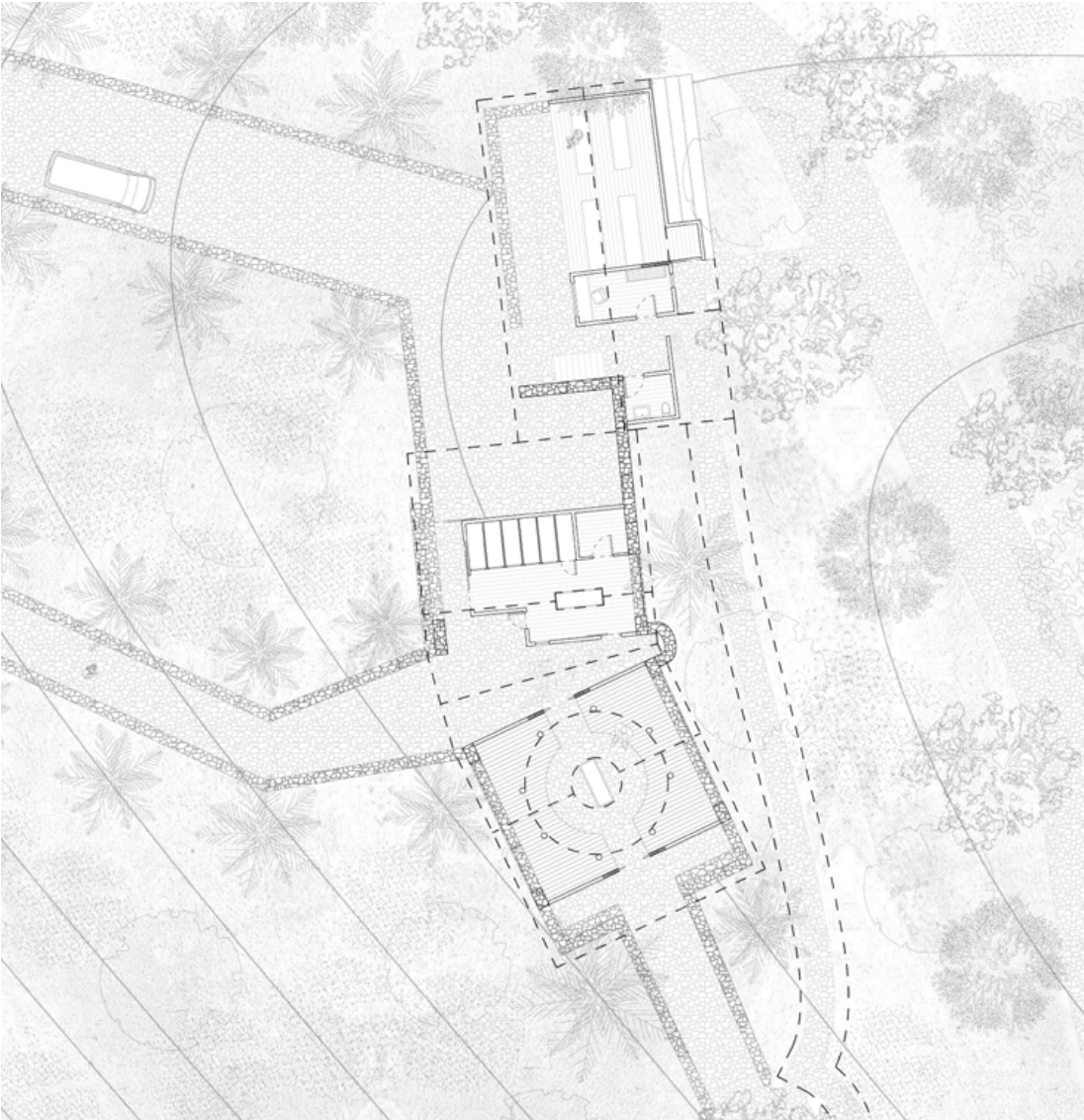
1. Nursery 2. Mosque 3. Bathhouse

MOSQUE

In 2010, Islamberg built a mosque for them own. However, the construction of the dome was never finished. In this project, a dome is proposed for the mosque with the rest of the building renovated according to needs and hope of Islambergers.



MOSQUE SECTION



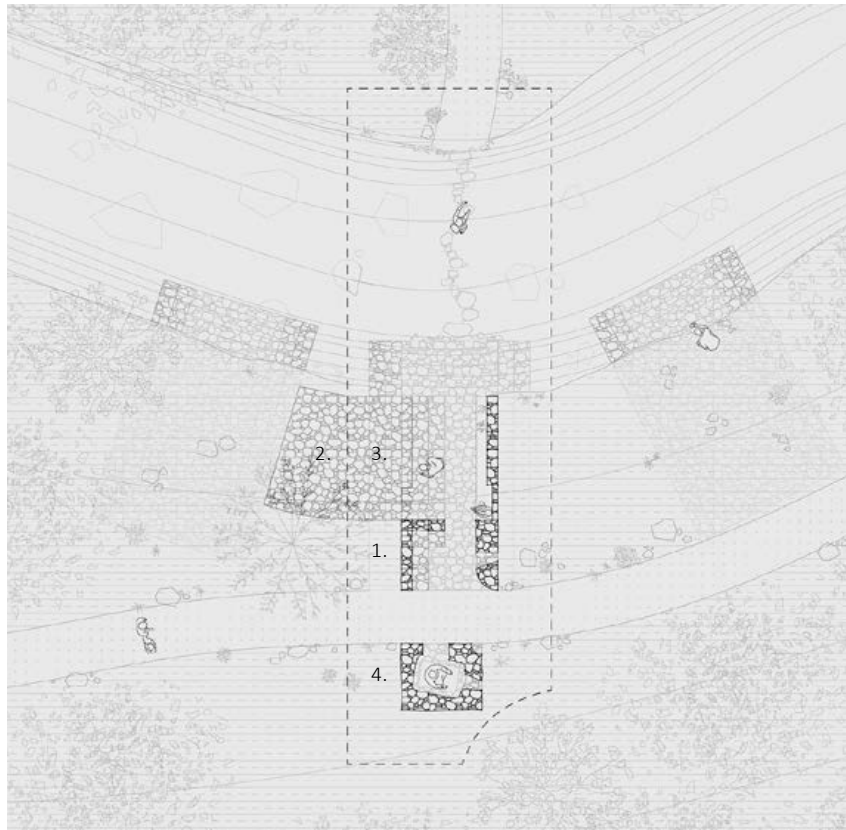
MOSQUE GROUND FLOOR





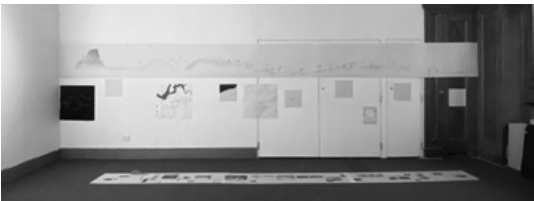
BATHHOUSE

Composed of gabion walls, the groins intrude into river, perpendicular to the bank, reducing river movement. The stepped gabions in the ground allow water to flow into the structure and form a basin where people could abluere and prepare for the pilgrimage.



Legend

- 1. Seating
- 2. Basin
- 3. Abluere area
- 4. Prayer room
- 5. Storage



COLUMBIA GSAPP EOYS



NURSERY

In between the gabion walls that mitigate erosion, there encloses the nursery with inhabitable spaces for prayer to rest and store. Islamberg will take charge of growing seedlings in the nursery, and planting them in the barren lands.



The pilgrimage starts from the quarry and goes through stops



PLUG IN HOME

Collective housing for multi-generation

M. Arch Studio

Columbia University GSAPP

Project Info:

Year

09. 2021 - 12. 2021

Status

academic project

Area

110,400 ft²

Location

bronx, new york, united states



MELROSE IN BRONX

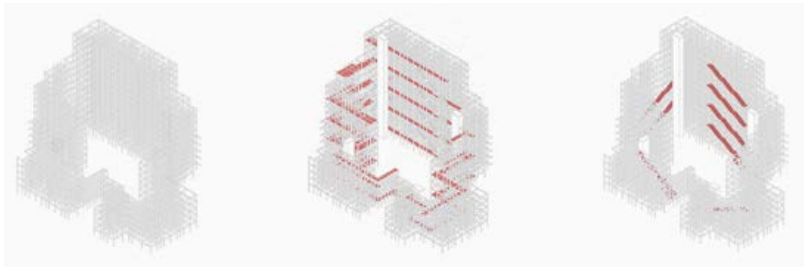
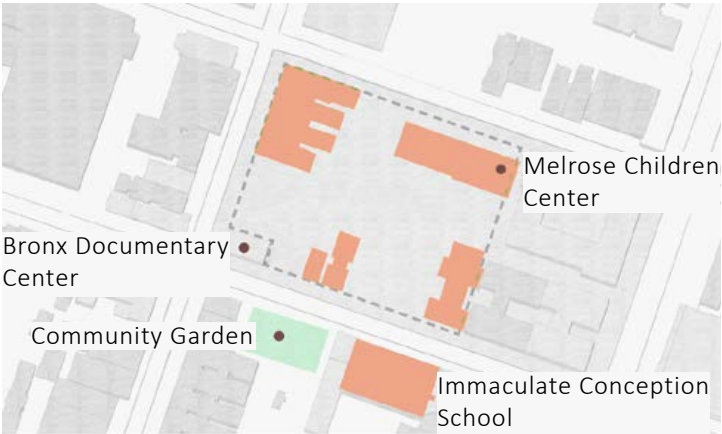
The project is located in Hub, the center of Bronx. On the site, there are a senior housing, apartment buildings, and the Bronx Document Center. It houses more than 100 families.

Bronx receives many immigrant and migrant groups, first from European countries, and later from the Caribbean.

The neighborhood has the lowest average. It contains the poorest congressional district in the United States.



SITE

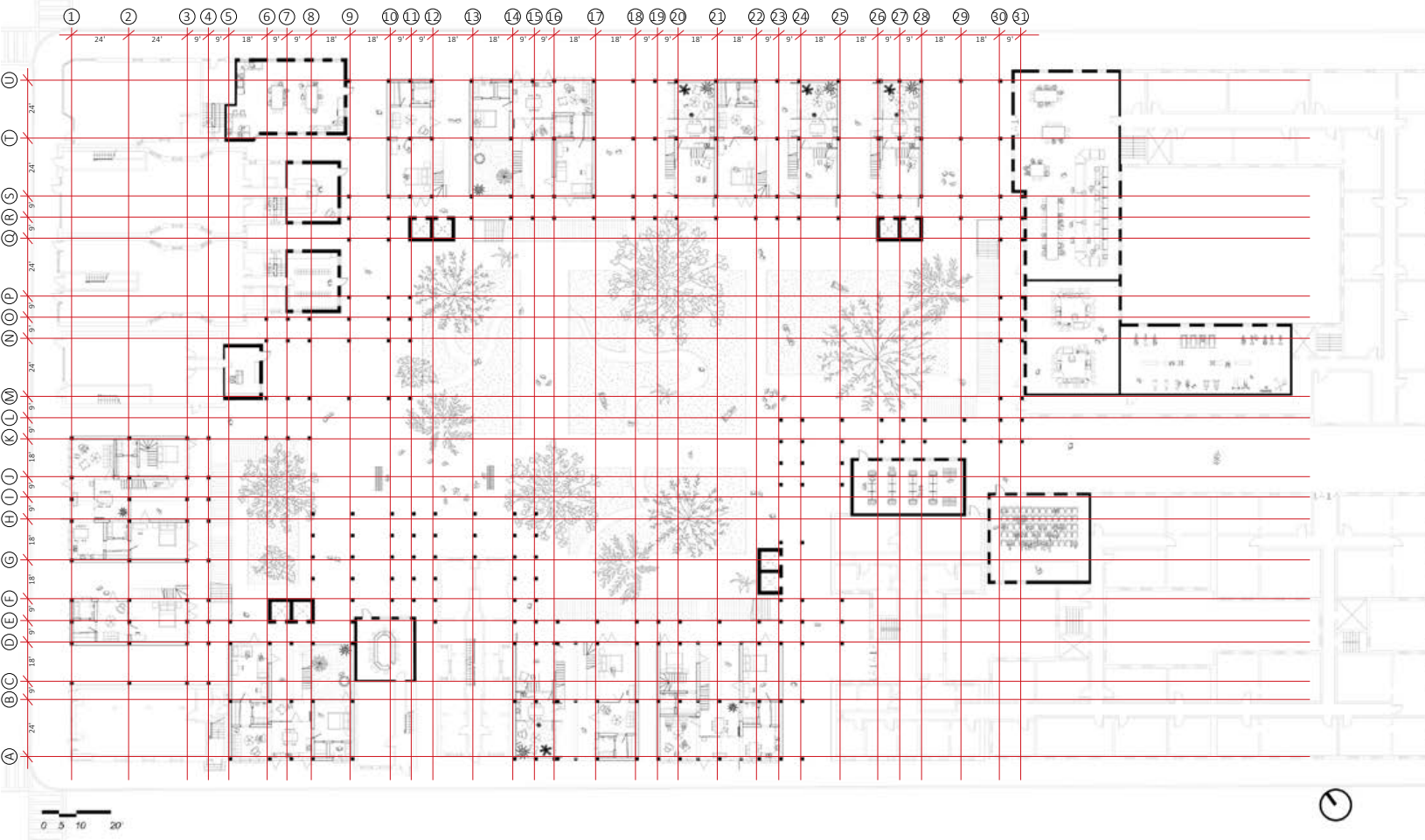


ARCHITECTURAL ELEMENT

- 1. Grid
- 2. Floor
- 3. Stair
- 4. Walkway
- 5. Elevator
- 6. Melrose collective housing

MIXED USED GROUND FLOOR

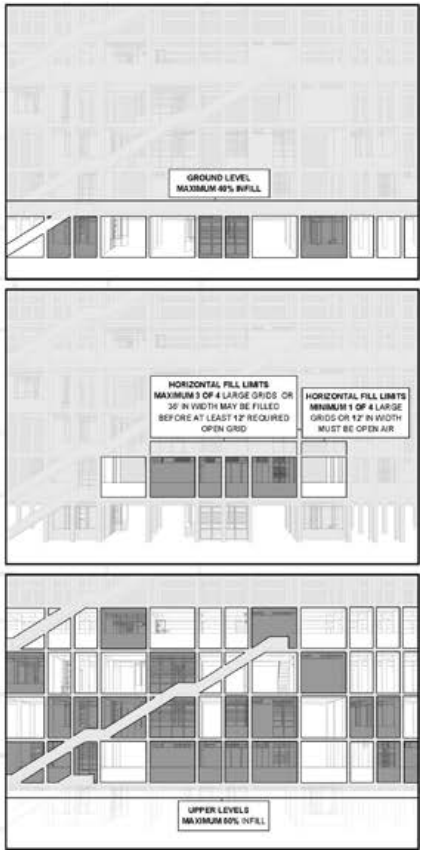
On the ground floor, while all the existing residences are kept, newly proposed commercial programs are inserted in between. To engage the locals into a stronger connected community and offer them with better facilities, shop, market, office and other public programs are introduced.



GROUND FLOOR

Legend

- 1. Apartment (165 units)
- 2. Commercial space
- 3. Office
- 4. Gym
- 5. Cafe & Restaurant
- 6. Library
- 7. Garden
- 8. Walkway



VERTICAL ZONING REGULATION

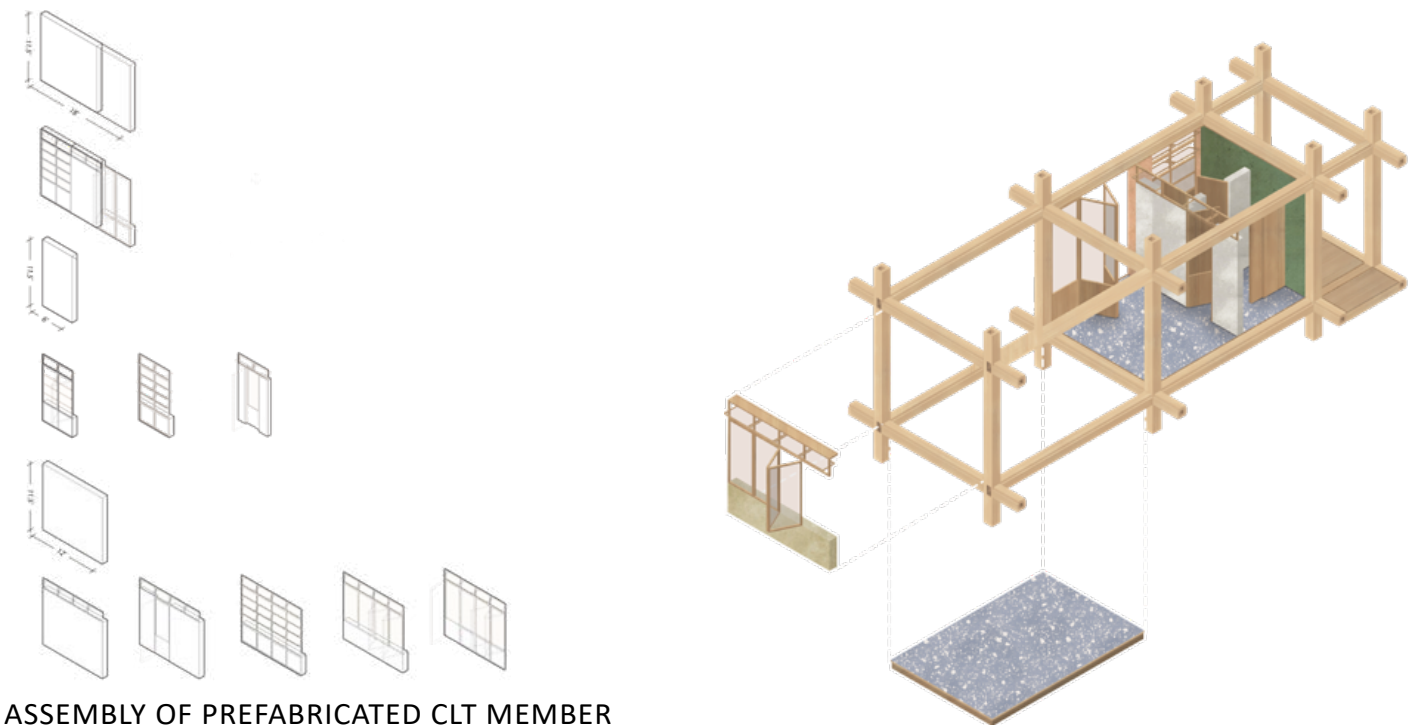
- 1. Ground level- maximum 40% infill
- 2. Horizontal fill units - maximum 3 of 4 large grids
- 3. Upper level- maximum 60% infill

FLEXIBILITY

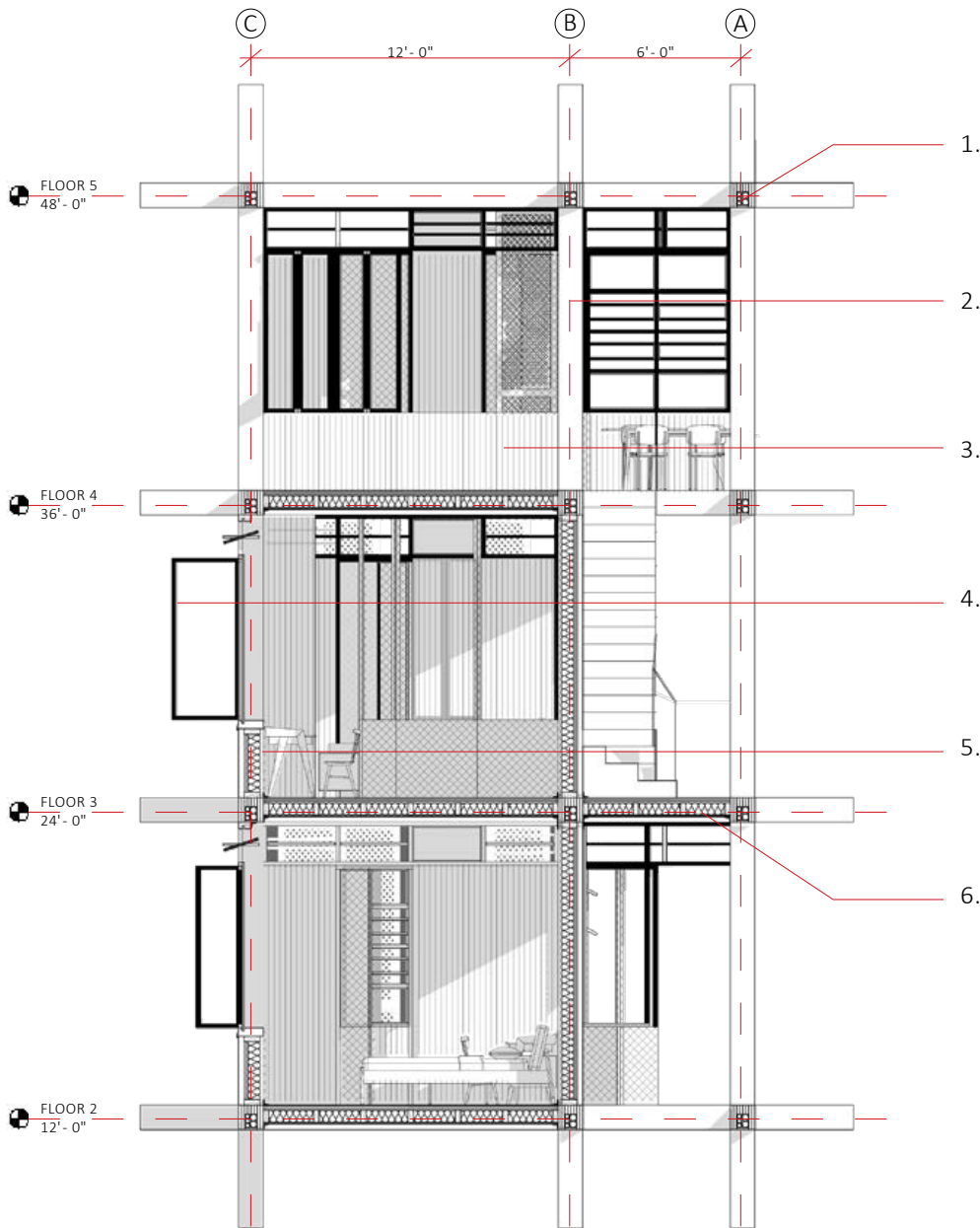
The rigidity of the grid, together with the set of the prefabricated clt members give the collective housing flexibility to change and grow.

Pipe, the element that usually confines the apartment arrangement, is moved from wall into hollow grids. This gives the full freedom for residents to develop their home.

With only the grids constructed, residents could choose from the assembly and design units based on their own needs.



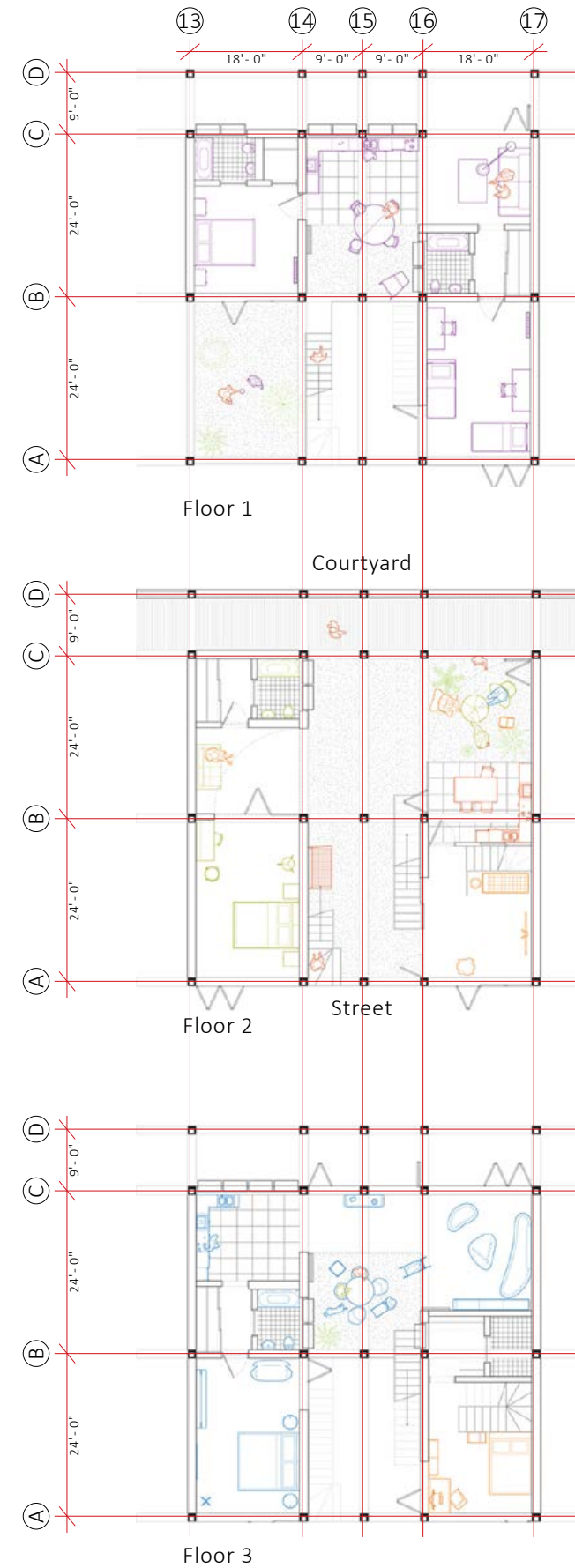
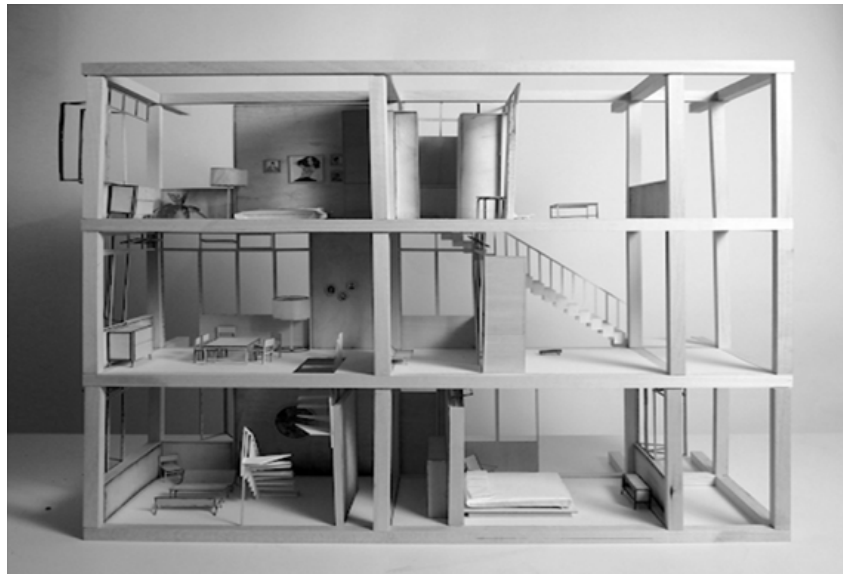
ASSEMBLY OF PREFABRICATED CLT MEMBER



BUILDING SECTION

Legend

- 1. 3' x 3' pipe
- 2. 12" x 12" composite wood column
- 3. 12" x 12' clt wood wall
- 4. 3' x 3' window frame
- 5. XPS foam insulation
- 6. 12" x 12' clt wood floor



Legend

- One-bedroom
- Two-bedroom
- Studio
- Loft



MULTI-GENERATIONAL HOUSING

The rigidity of the grid, together with the set of the prefabricated clt members give the collective housing flexibility to change and grow.

Pipe, the element that usually confines the apartment arrangement, is moved from wall into hollow grids. This gives the full freedom for residents to develop their home.

With only the grids constructed, residents could choose from the assembly and design units based on their own needs.

UNDER CANOPY

Gym for St. Michael Indian School

B. Arch Studio
University of Notre Dame

Project Info:

Year

01. 2019 - 04. 2019

Status

academic project

Area

school campus	58,600	ft ²
gym	7,320	ft ²

Location

st michaels, arizona, united states



ST MICHAEL INDIAN SCHOOL

The site of the project is in Navajo Nation, the largest land area held by a Native American tribe in the US. The project was commissioned by the actual client, which is a local catholic school. The project consists of a master plan and a gym design for the school.

EXISTING
CAMPUS ENTRY



GYM

For the inigenous Indian population, basketball playing is not only valued as a relaxation of body and mind in the monotonous life, but also given a sense of spirituality for the community. To celebrate this moment, design for the gym stems from the myth of the traditional Navajo community. The gigantic building breaks down into a series of small hubs, which together build up a roof that covers the main court and connects all spaces together.

Proposed facilities in gym

1. Lobby

2. Lounge

3. Classroom

4. Family hall

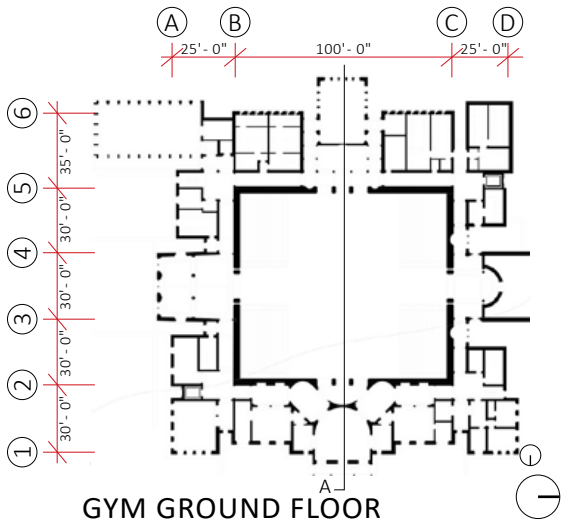
5. Meditation garden
6. Dance room

7. Storage

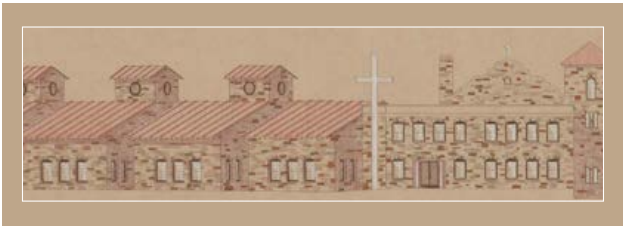
8. Changing room

9. Restroom

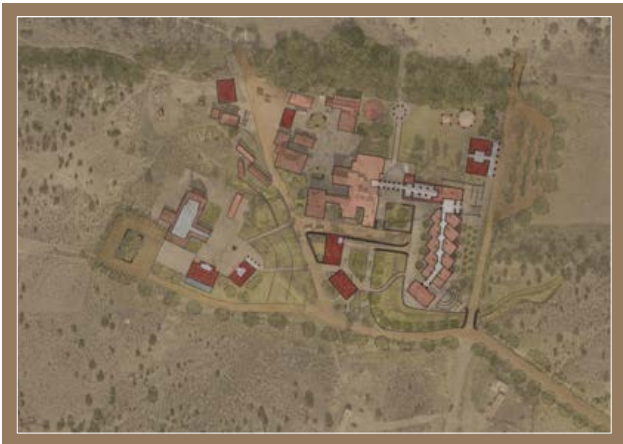
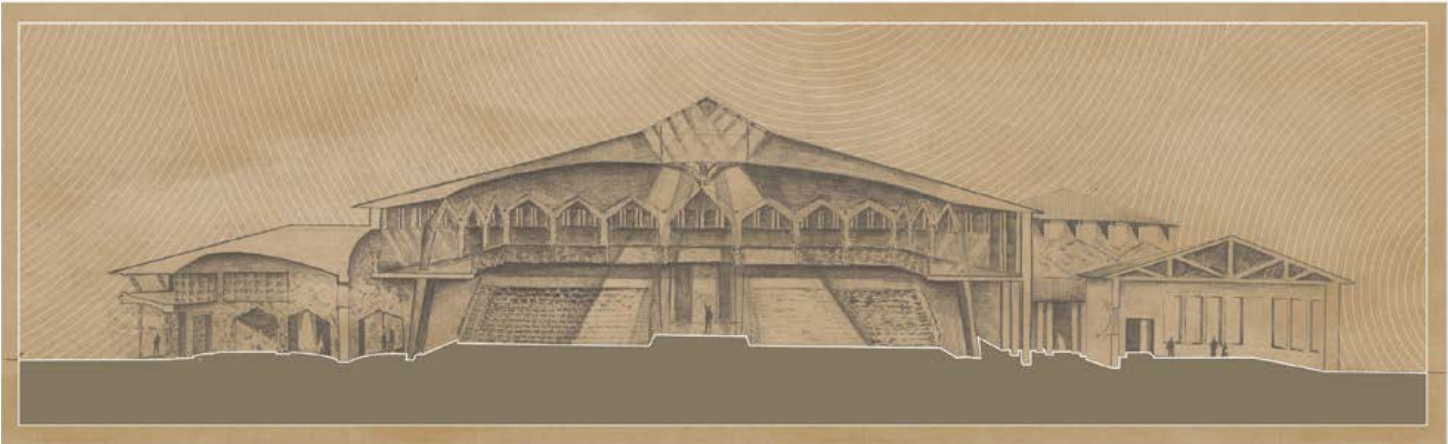
10. Office



CAMPUS SECTION



CLASSROOM FACADE



Proposed facilities in this project

1. Classroom

2. Chapel

3. Faculty Room

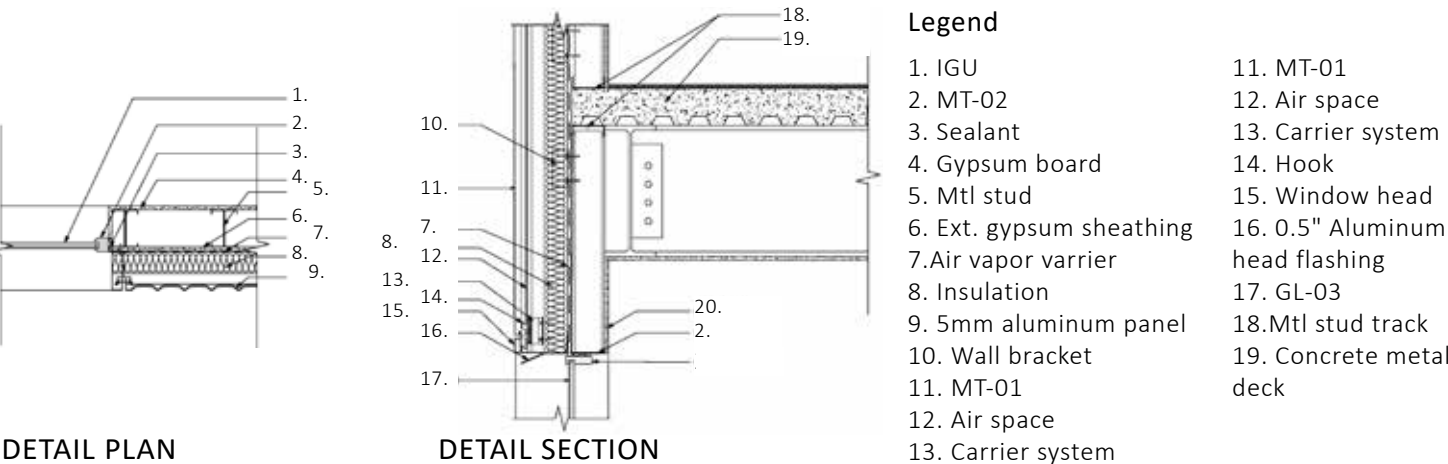
4. Auditorium

5. Cafe & Canteen
6. Gym

7. Storage

8. Playground

9. Parking





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