

PORTFOLIO

Lara Montani

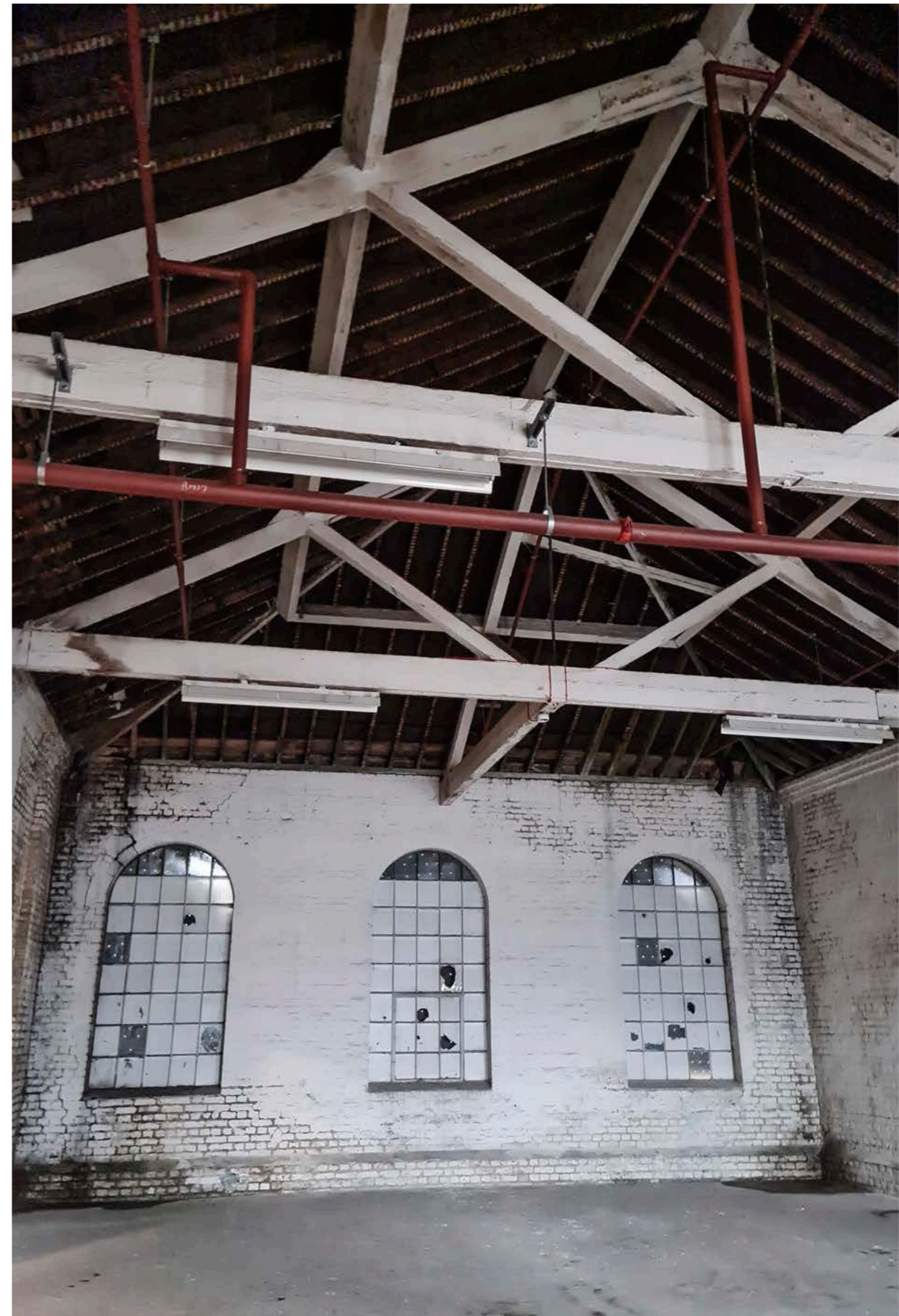
super REUSE

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COMPRESSION ARTIEACT

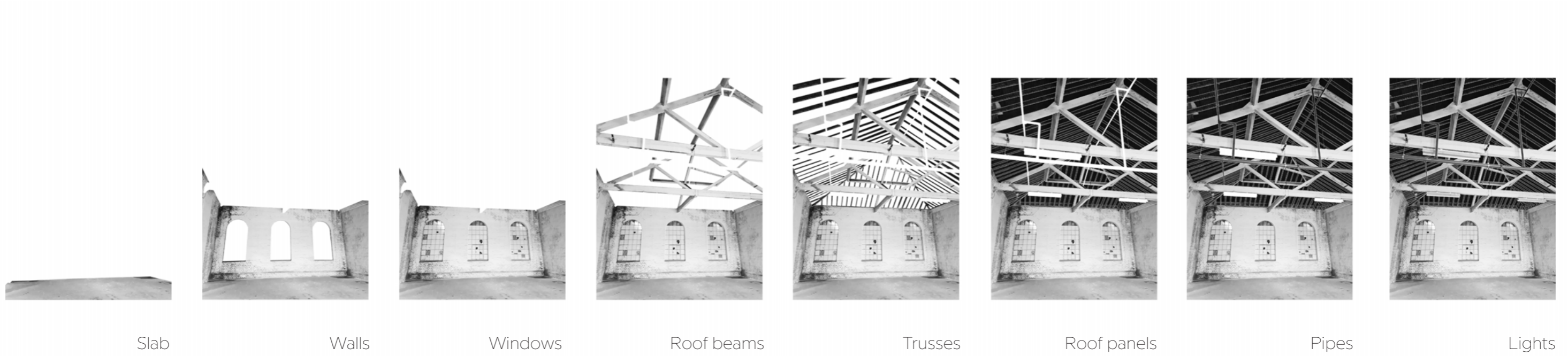
23-24 GILLENDER STREET

In the Victorian warehouse at 23 Gillender Street the elements that make up the space are visible from the interior: walls, windows, trusses, rafters and roof. Even though there is order and structural sense in how they are stacked, the effect on the spatiality is most interesting when these elements visually interact.



STACKING

Structural and non-structural elements



Slab

Walls

Windows

Roof beams

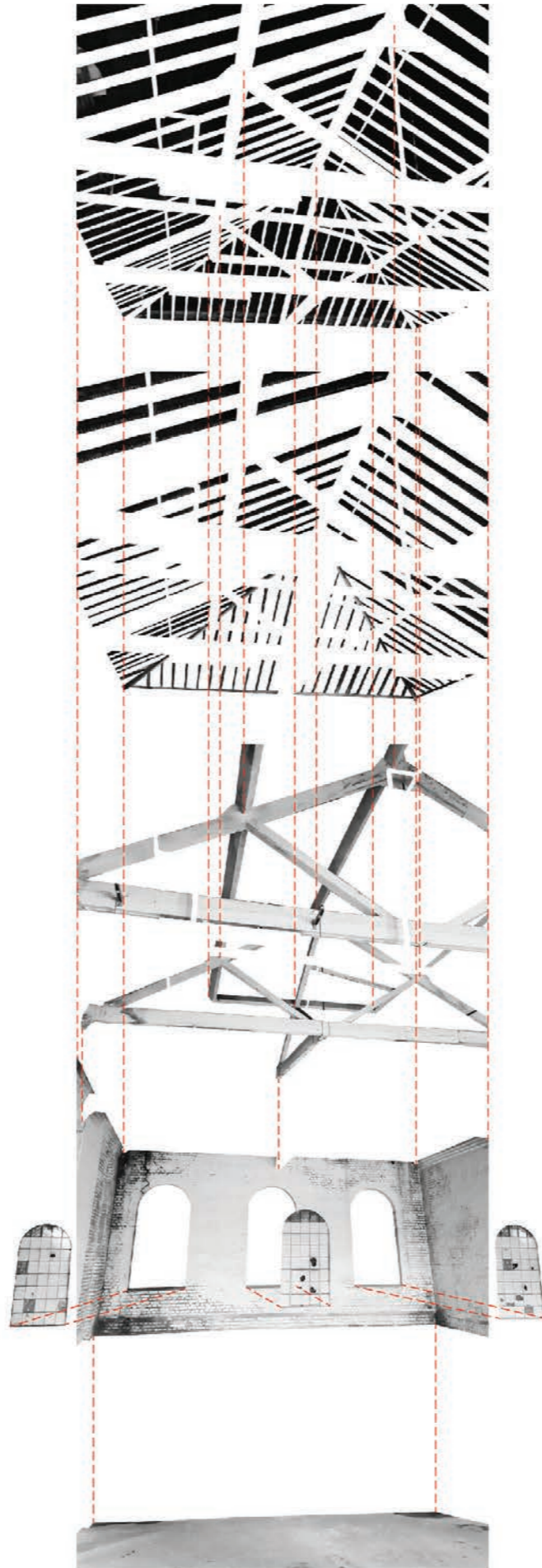
Trusses

Roof panels

Pipes

Lights

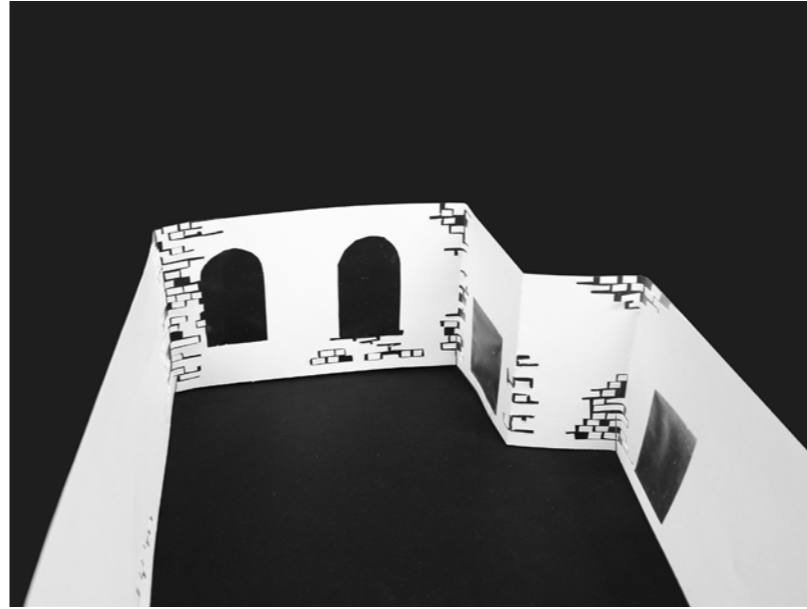
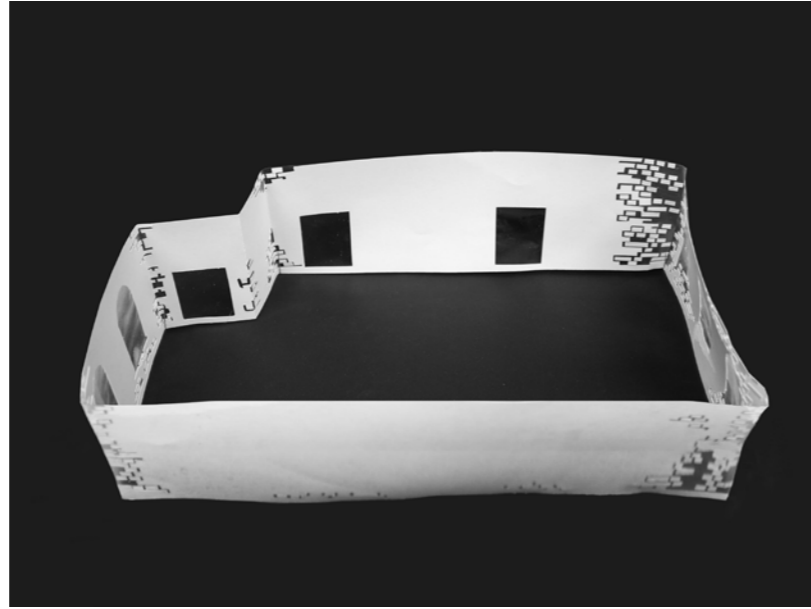
EXPLODED STACKING



IMPLODED STACKING



DEVELOPMENT



Process model of layer of paint over brick wall

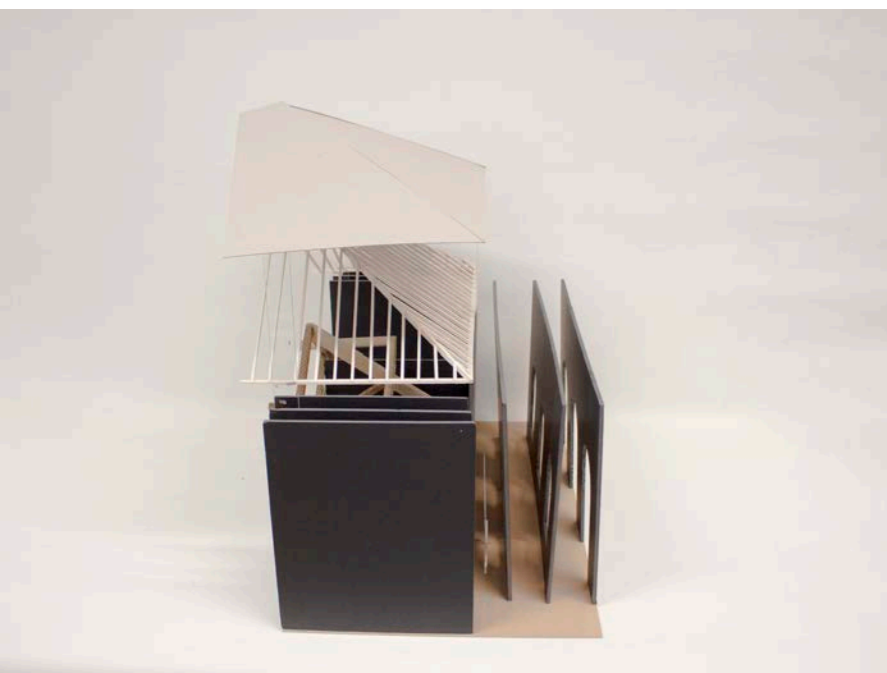


Process model of elements seen from interior

IMPLO EXPLO | SION



The compression artifact shows the exploded and imploded stacking of the structural elements and their spatial relationship by isolating the stacked elements and repositioning them in a more interactive way to create new spatial conditions in between them.





THE CLUB HUB

THE CLUB HUB: project brief

The Club Hub aims to provide a space where children can come together and have access to multiple activities condensed in one site.

The densely populated Tower Hamlets has the youngest population of all London boroughs, with around 20% aged 14 or under, which is reflected in the mostly residential area and the large number of schools. However, spaces of play outside the classroom are scarce: there are some green areas that have playground equipment and ball courts, but almost no venues for indoor activities apart from the Bromley by Bow Centre, which is mostly focused on the younger adult demographic.

The only spaces that have multiple activities are school clubs. These are often set in classrooms that are organized according to a traditional and hierarchical notion of education and learning in which the teacher imparts knowledge and the children absorb it. This is reflected in the space organization: four walls, a board and rows of desks.

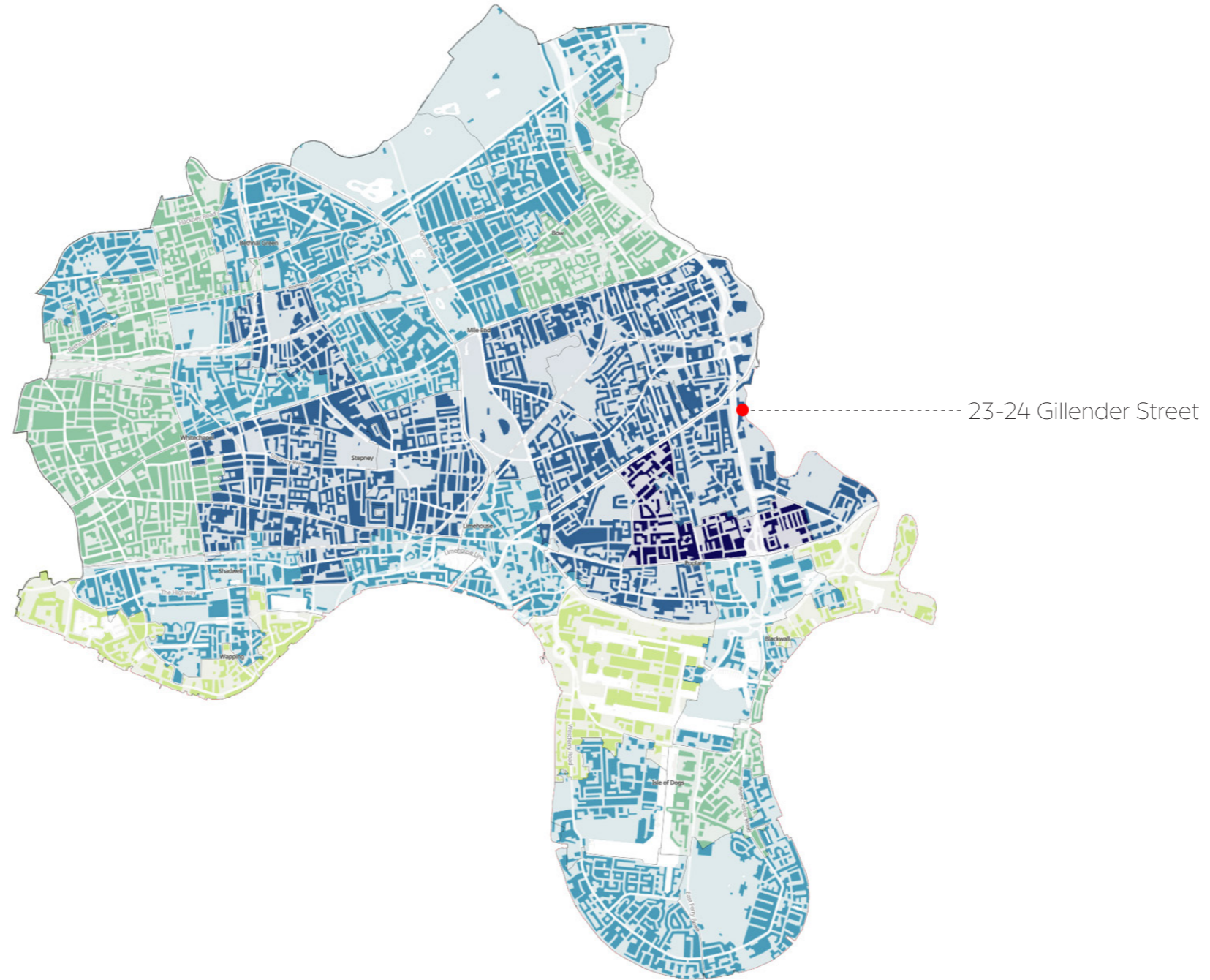
The Club Hub is situated in 23-24 Gillender Street, which used to be a warehouse complex. It is comprised of two very different buildings. The first, an old Victorian warehouse, has a traditional load-bearing wall structure, while the other building, a 20th century warehouse, is organized in a frame grid structure.

The project aims to make the most of the visual and physical qualities of these structures to enhance the interior organization of the children's activities to provide a fluid playground-like building where children can roam around by themselves and explore a wide variety of activities to develop a more hands on approach to learning complementary to the more rigid educational system at schools.

SITE ANALYSIS

TOWER HAMLETS

Population - 2021 UK Census



Population aged 15 years and younger



TOWER HAMLETS

Schools and after school activities



PLAY SPACES IN TOWER HAMLETS



Bartlett Park soccer field



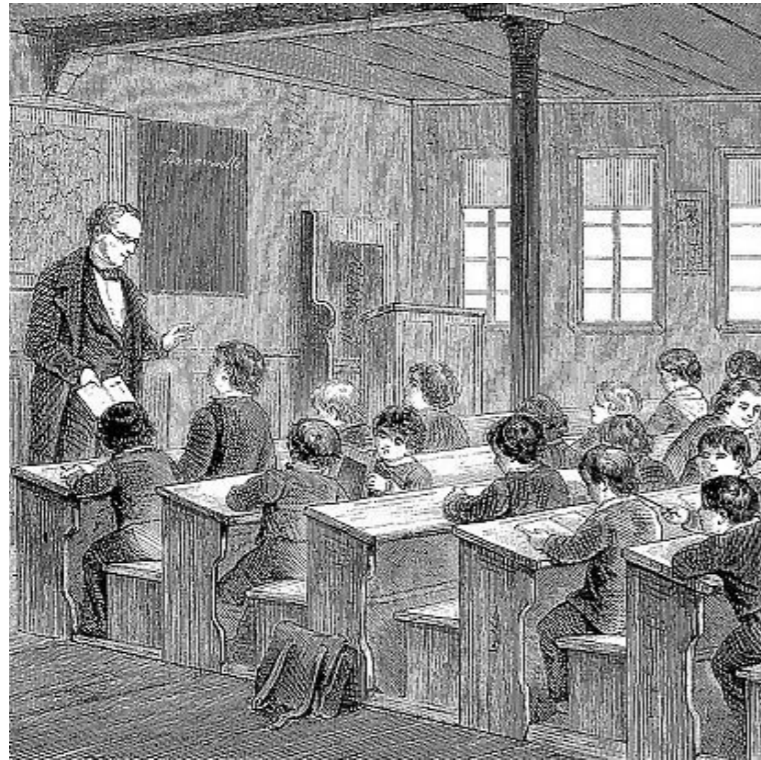
Bartlett Park playground



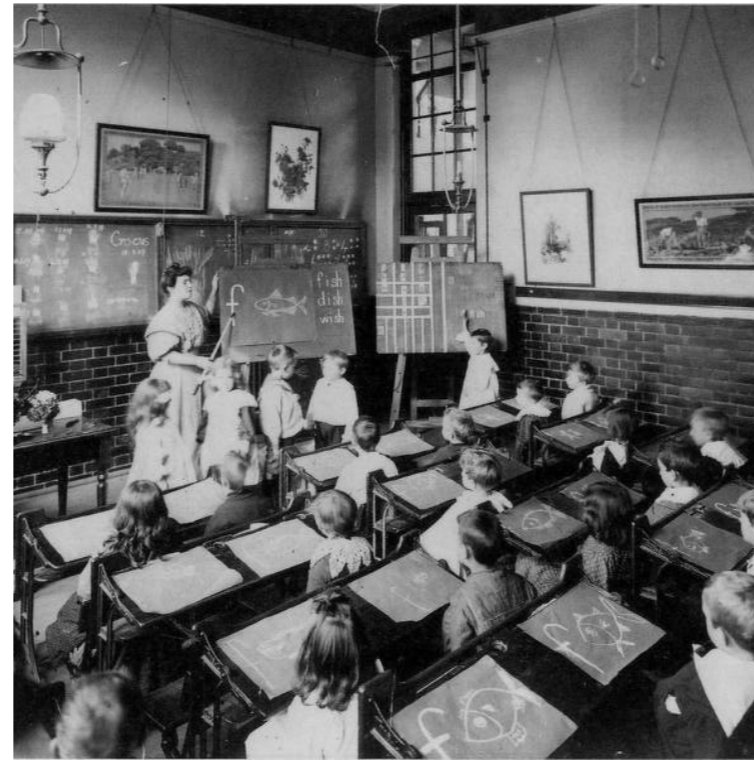
Manorfield Primary School art club

Outdoor play areas in Tower Hamlets are mostly green parks, with some playground structures and ball courts, but otherwise no specific urban spaces are deliberately planned for other activities. On the other hand, indoor activities take place almost exclusively in schools that have after-class clubs.

CLASSROOM STRUCTURE



Germany, late 1800s



Southfields Infants School
Wandsworth, London, 1907



St Ambrose Barlow Catholic Primary School
Birmingham, 2018

Traditional classrooms are composed of four walls that enclose the space, with a front wall where the teacher gives the lecture, which reinforces the traditional hierarchical view of education in which the teacher imparts knowledge and the students absorb it quietly. This strict view of education and the learning process is reflected in the rigid space, and when they are used as the setting for after school clubs, they condition the interactions during the activities.

NEW EDUCATION MODEL

Saunalahti School, Finland



Main study and cafeteria area



Main study and cafeteria area



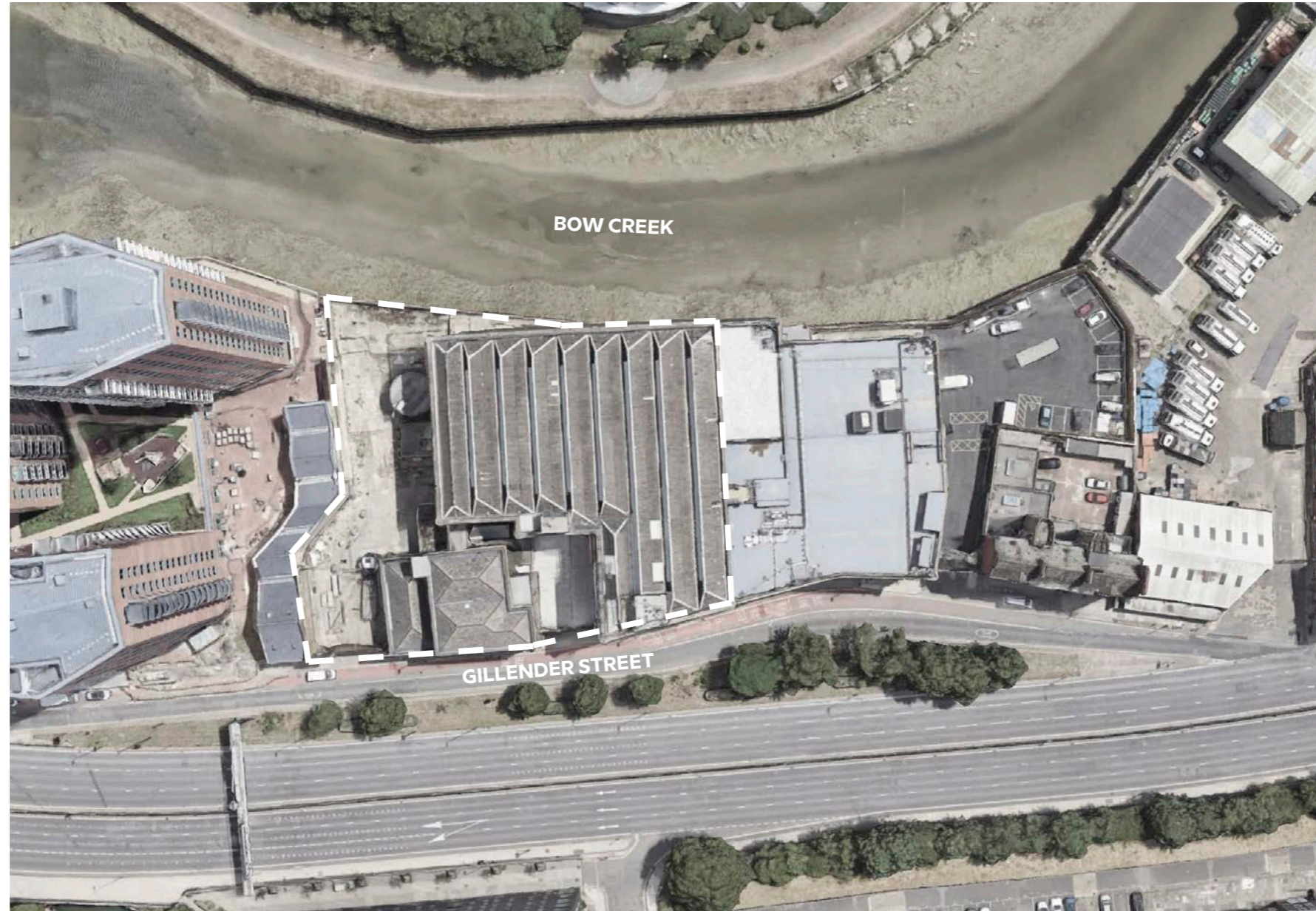
Classroom

In the past few years some Nordic countries started taking a different approach to the education system, which focuses more on learning by making and the hierarchical teacher-student structure is more lax: the teacher becomes a guide figure. There is also more focus on learning from peers of all age groups and developing autonomy, social skills and emotional intelligence. This is reflected in the space: there is a lot of physical and visual connection between the spaces, which are designed to be flexible to allow for these interactions.

23-24 GILLENDER STREET



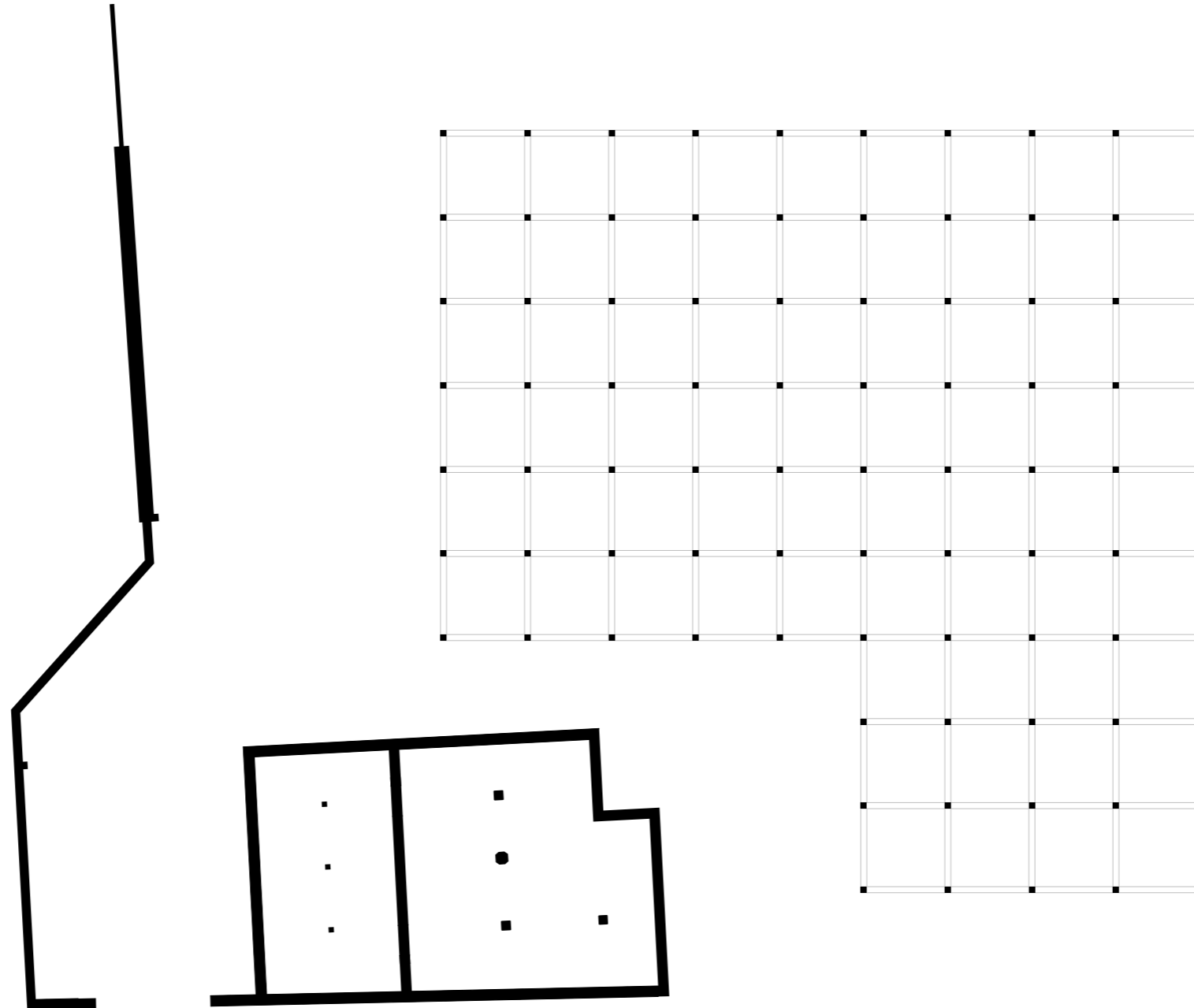
23-24 GILLENDER STREET



STRUCTURE

Victorian warehouse building

- Structure composed of load-bearing brick walls
- Perimeter structure encloses spaces
- Large section in plan, rigid composition of spaces
- Perimeter is load-bearing, any openings require lintel beams

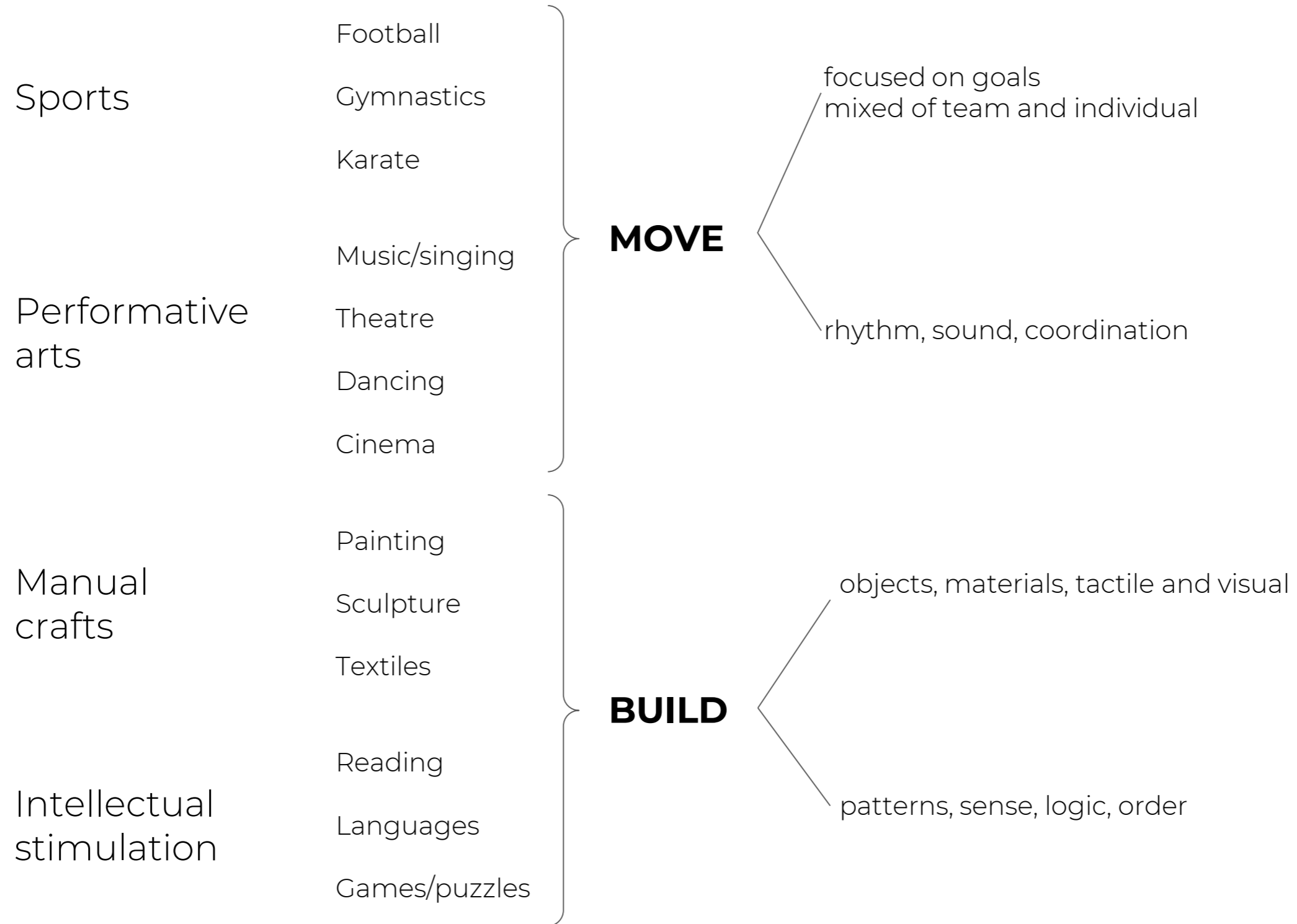


20th century warehouse building

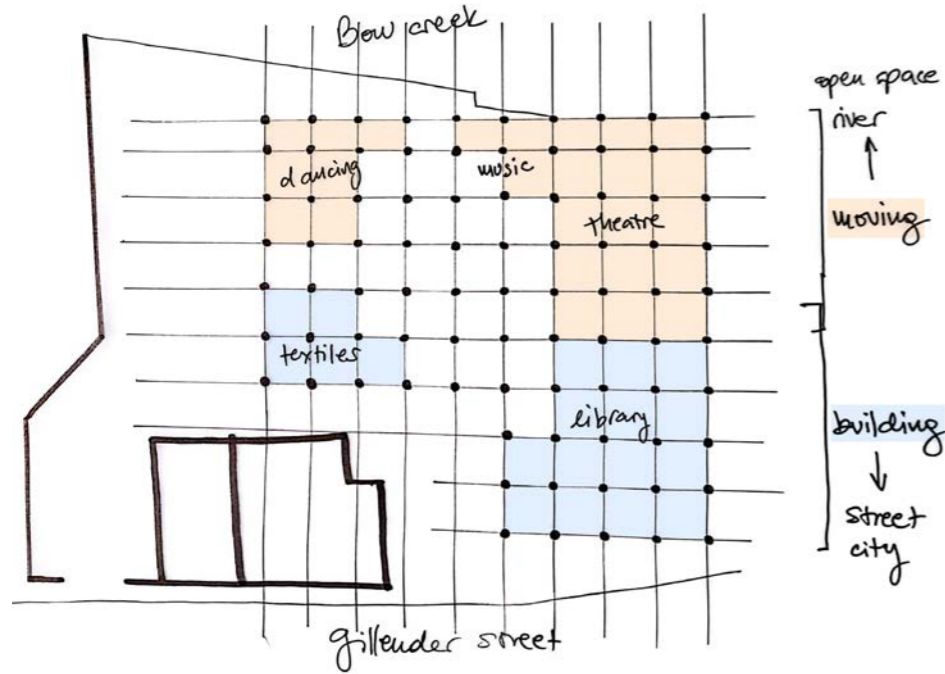
- Frame structure composed of columns and beams that transfer concentrated loads
- Grid organization for flexible organization
- Small section in plan allow large open spaces
- Perimeter is not load bearing and can be opened easily

DESIGN DEVELOPMENT

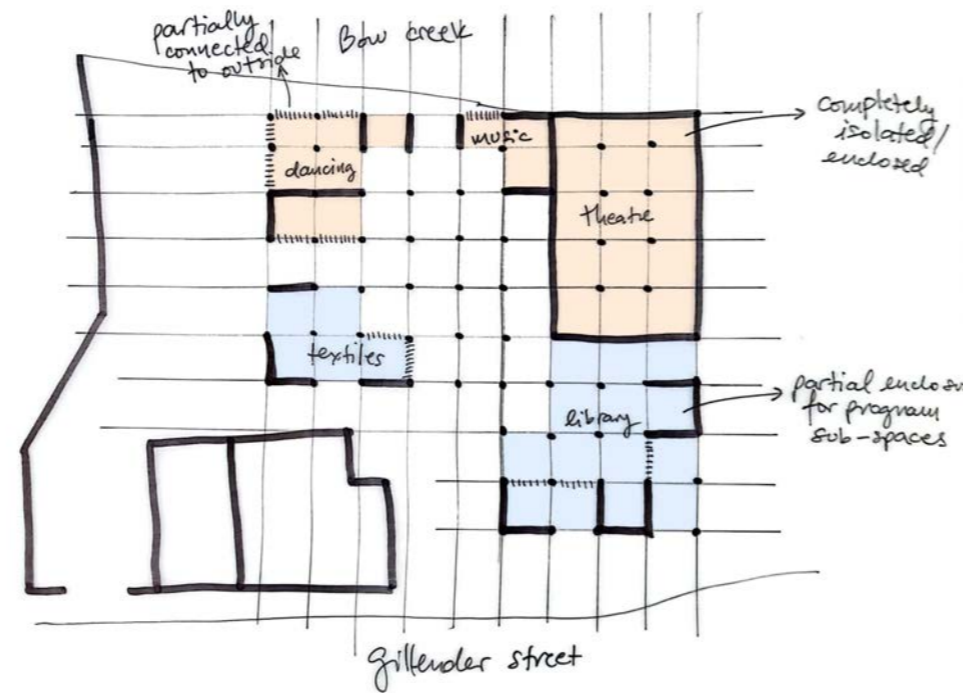
AFTER SCHOOL ACTIVITIES



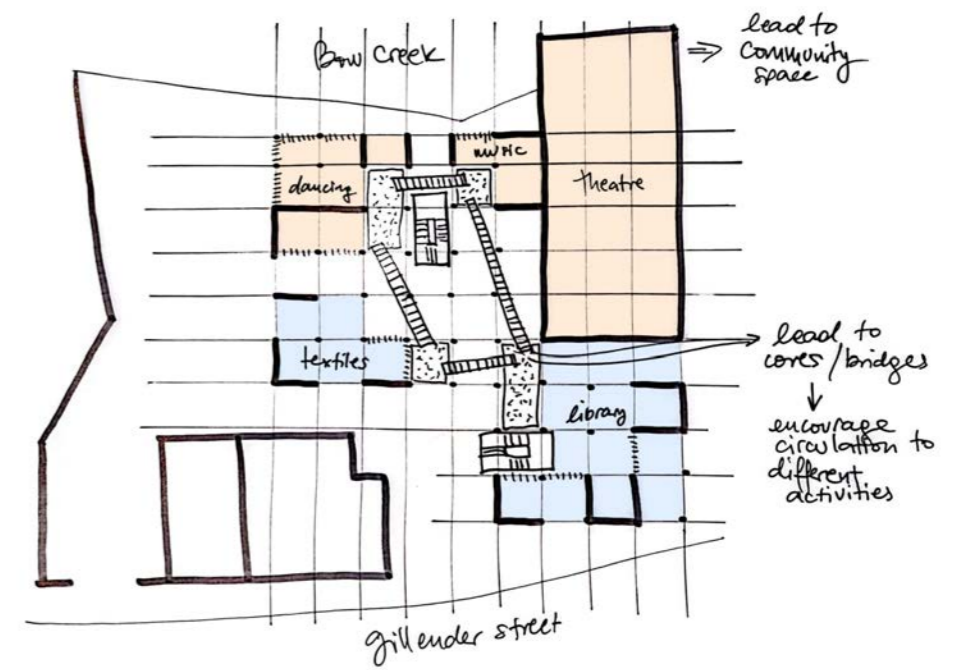
GRID STRATEGY



IN



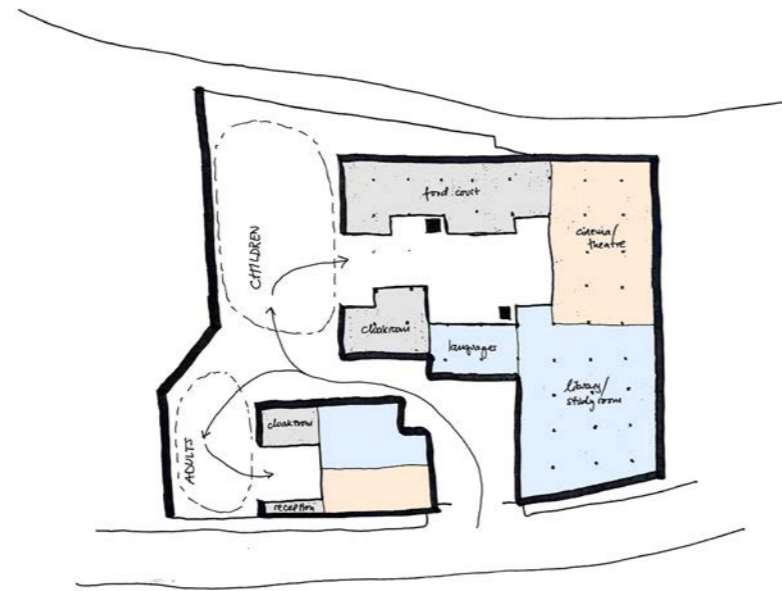
EDGE



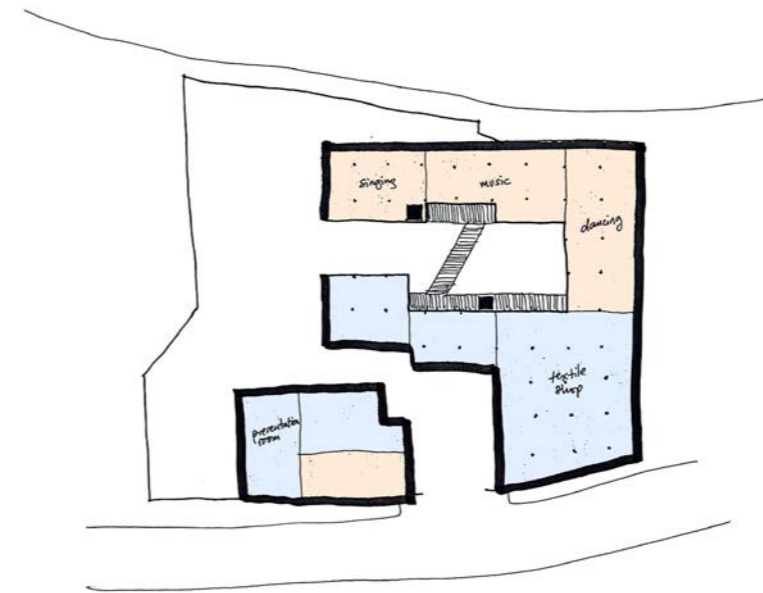
OUT

The strategies for introducing the activities in the site respond to the three aspects of the grid organization: the inside, the edge and the outside. The inside determines the program of each grid module. The edge determines the level of physical and visual connection between the spaces and between the interior and exterior. The outside creates moments where spaces break away from the grid to emphasize community spaces and encourage circulation.

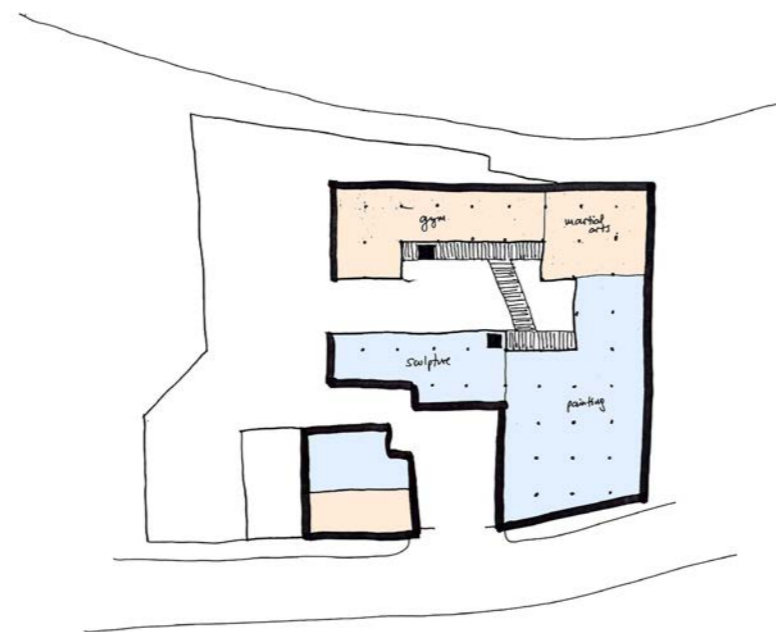
SPATIAL ORGANIZATION: inside the grid



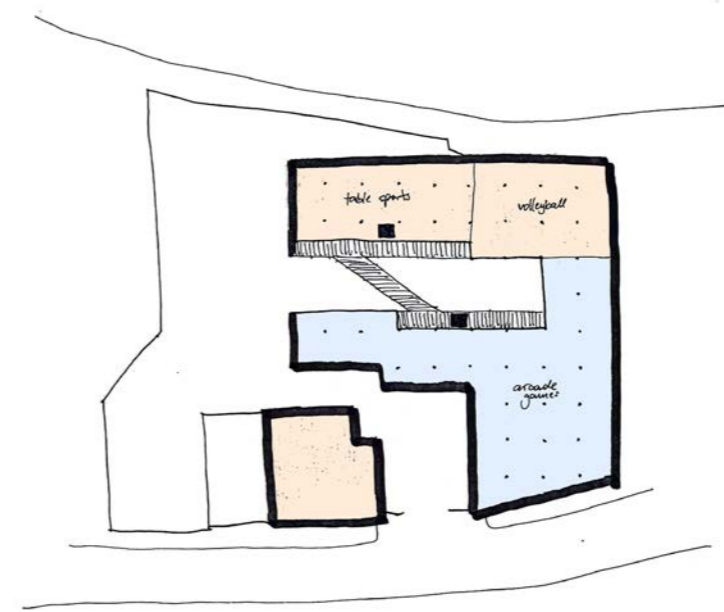
Ground floor



First floor



Second floor

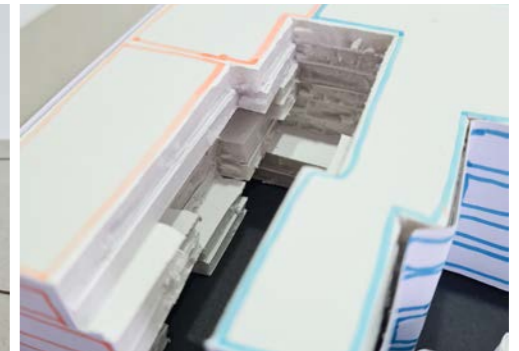
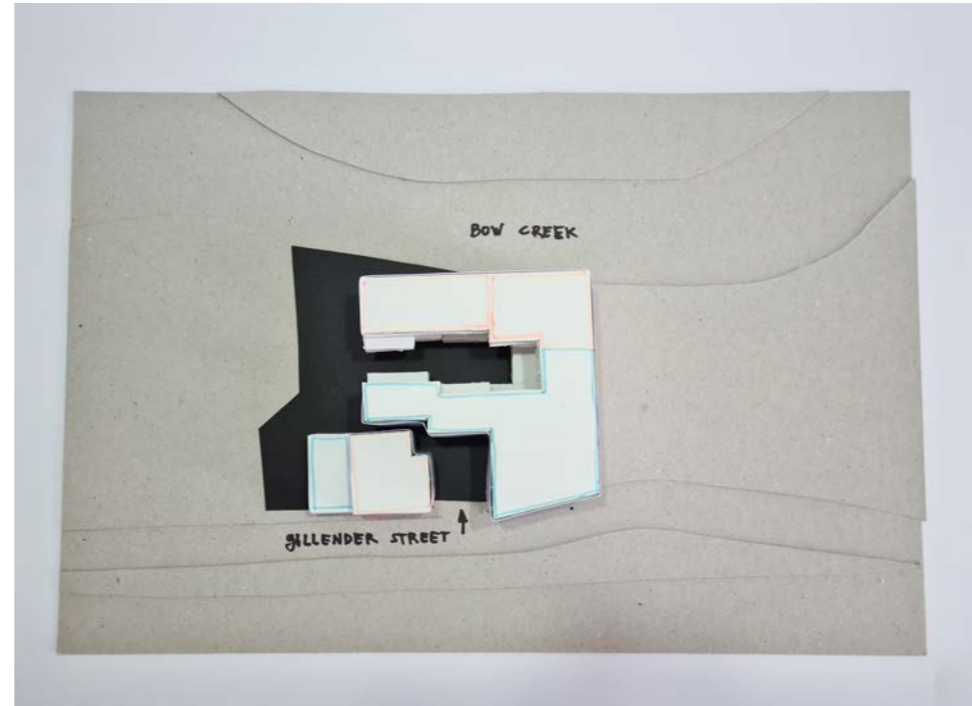
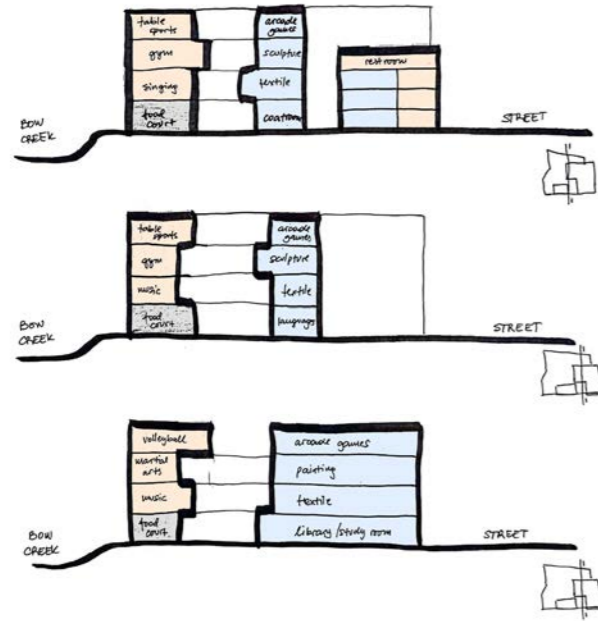


Third floor

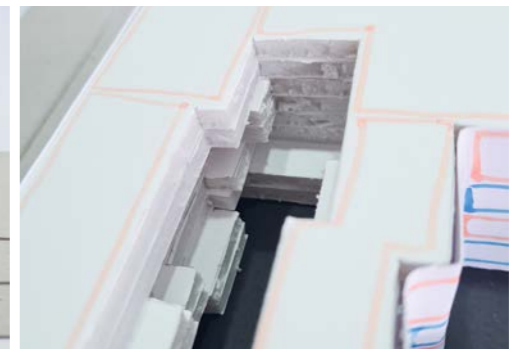
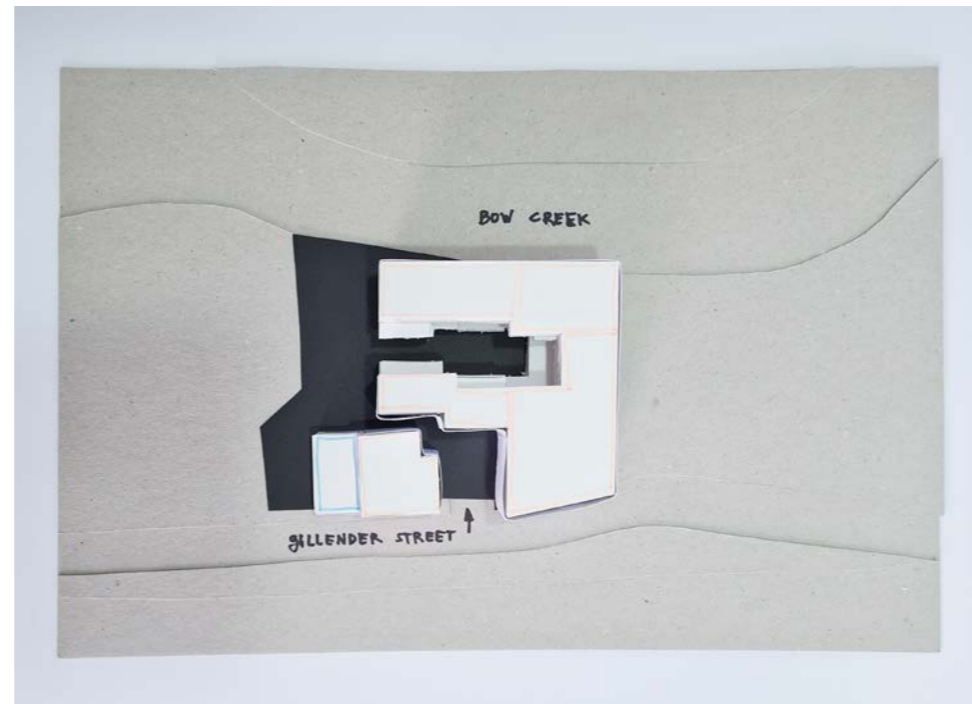
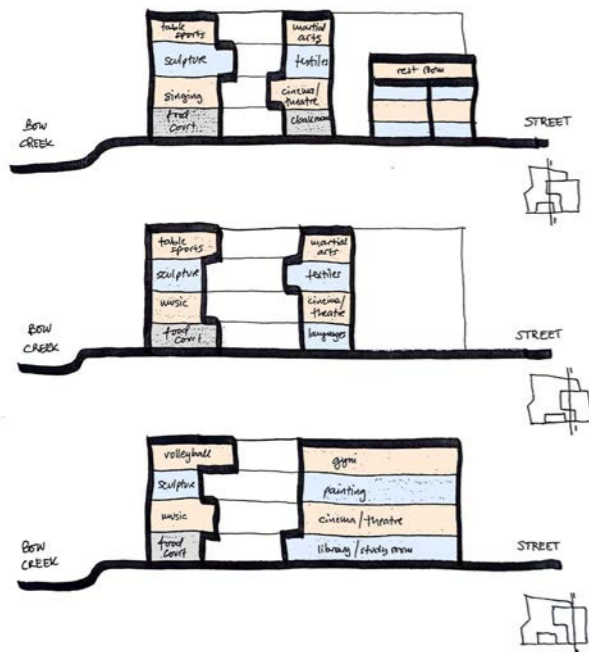
The entrance from Gillender Street is placed between both buildings and draws people to the centre of the site. From there the circulation splits into two: towards the PLAY building for after school activities, or towards the WORK building for co-working spaces.

In the PLAY building, activities are stacked vertically around a courtyard. MOVE activities are placed towards the river for more connection to open space, while BUILD activities are placed towards the interior of the site for more isolation. Bridges on each floor cross the courtyard to connect MOVE and BUILD activities.

SPATIAL ORGANIZATION

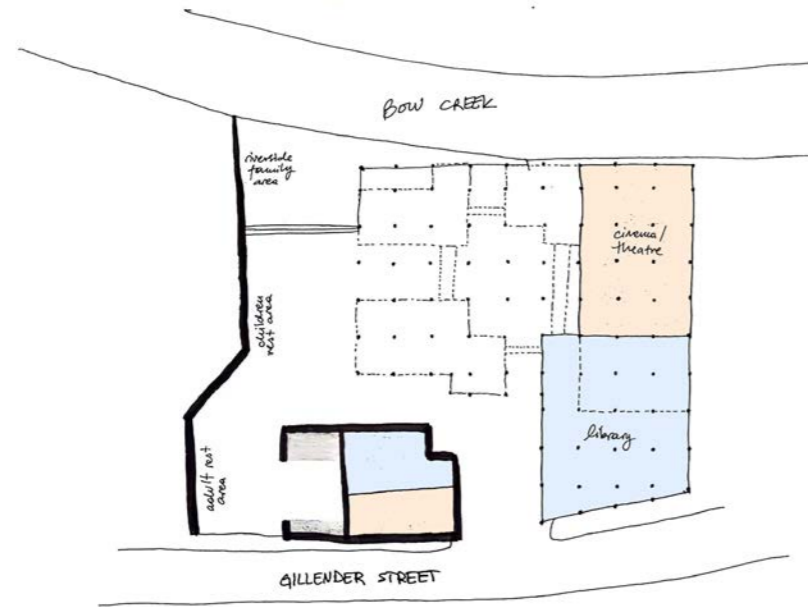


Option 1: MOVE and BUILDING activities are stacked vertically around the courtyard, the former relating to Bow Creek and the latter to Gillender Street.

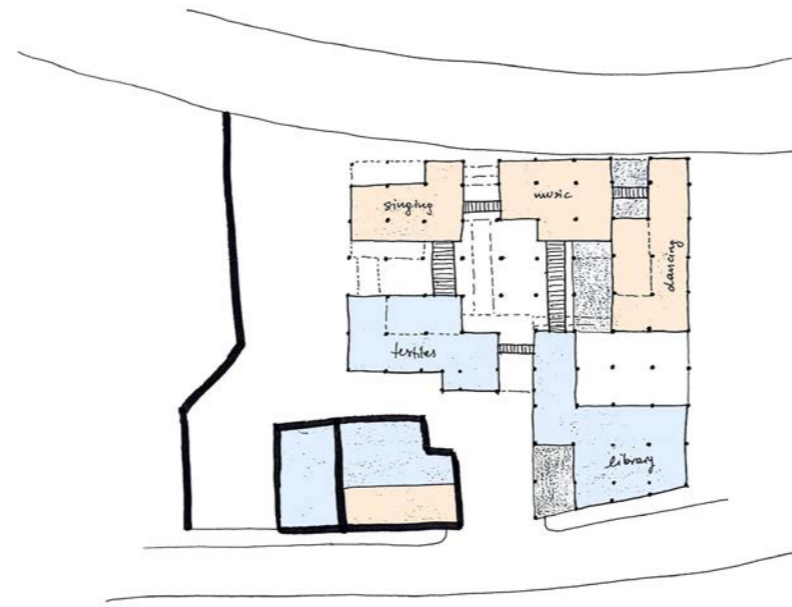


Option 2: MOVE and BUILDING activities are stacked horizontally per floor.

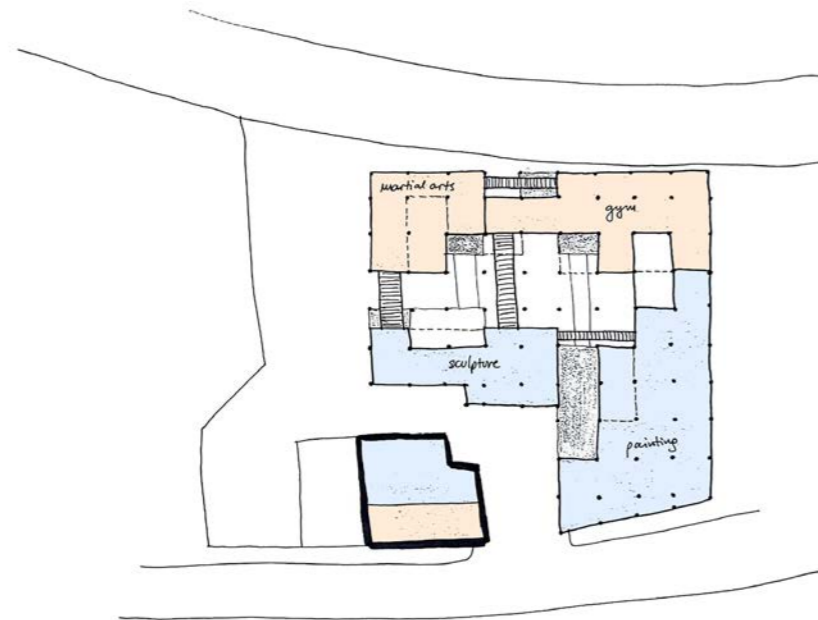
SPATIAL ORGANIZATION



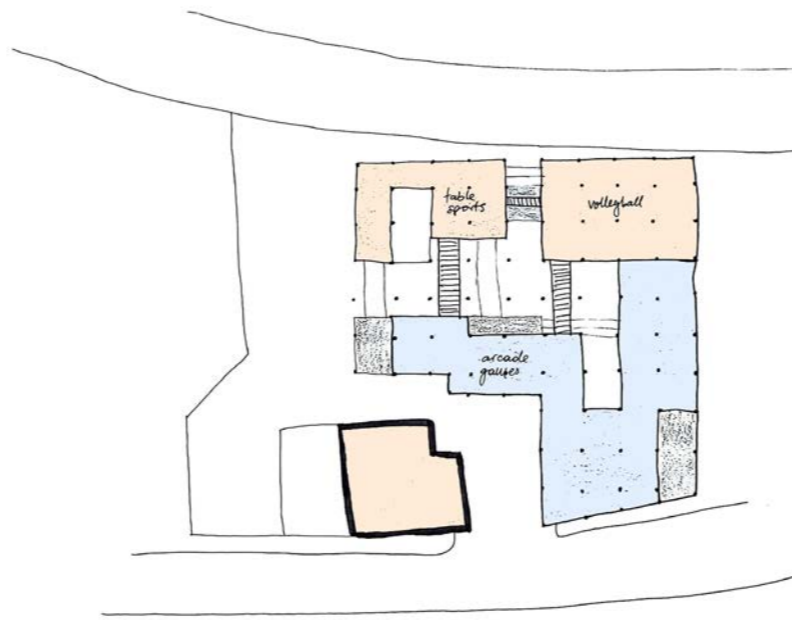
Ground floor



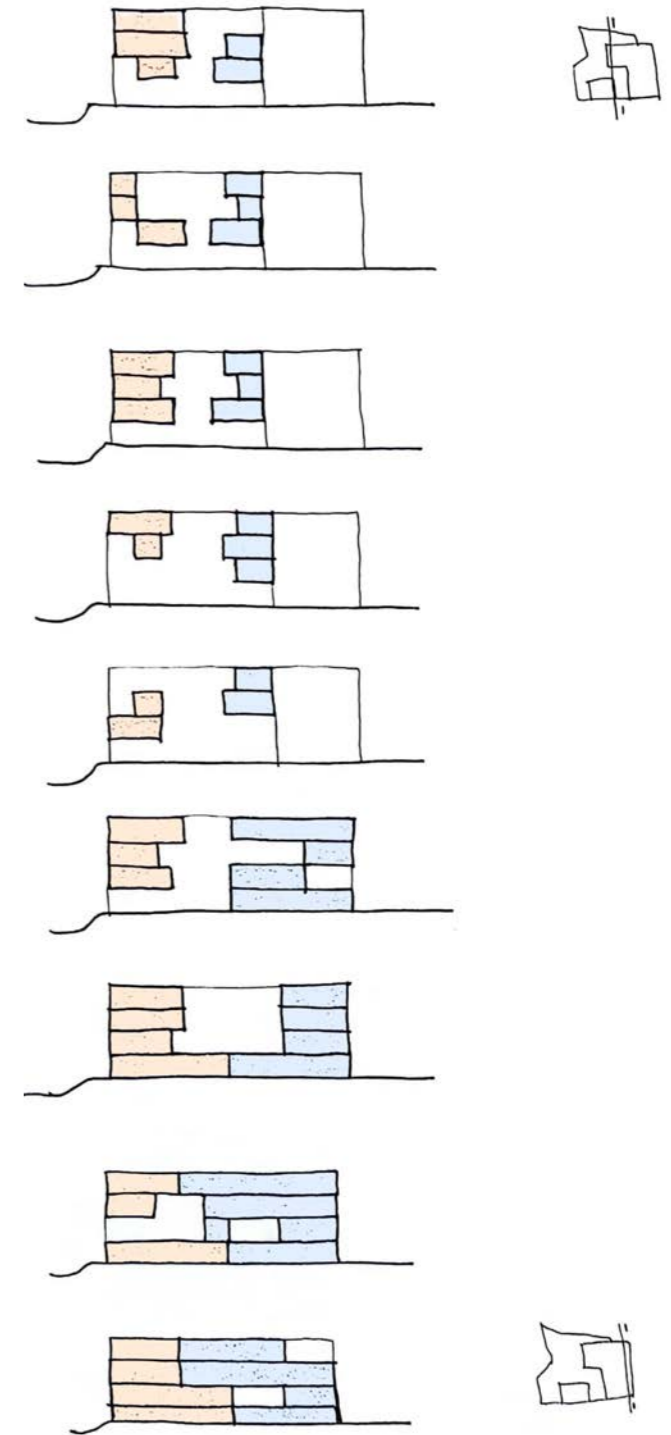
First floor



Second floor

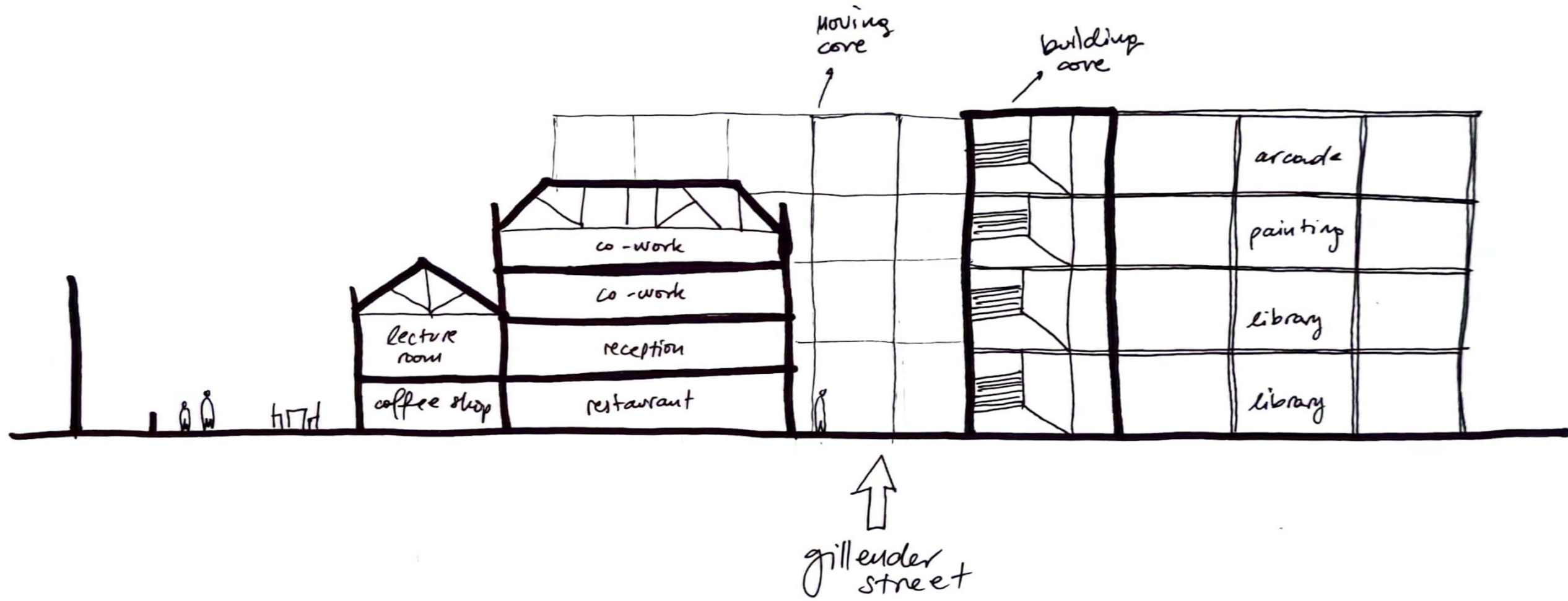


Third floor

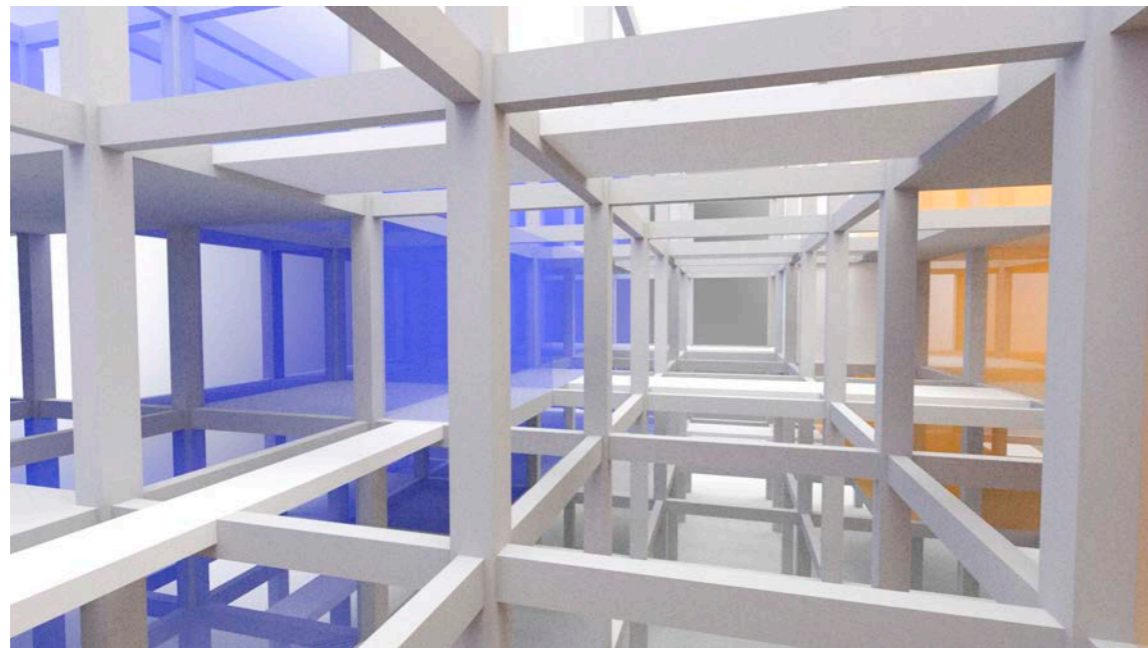


Section sequence

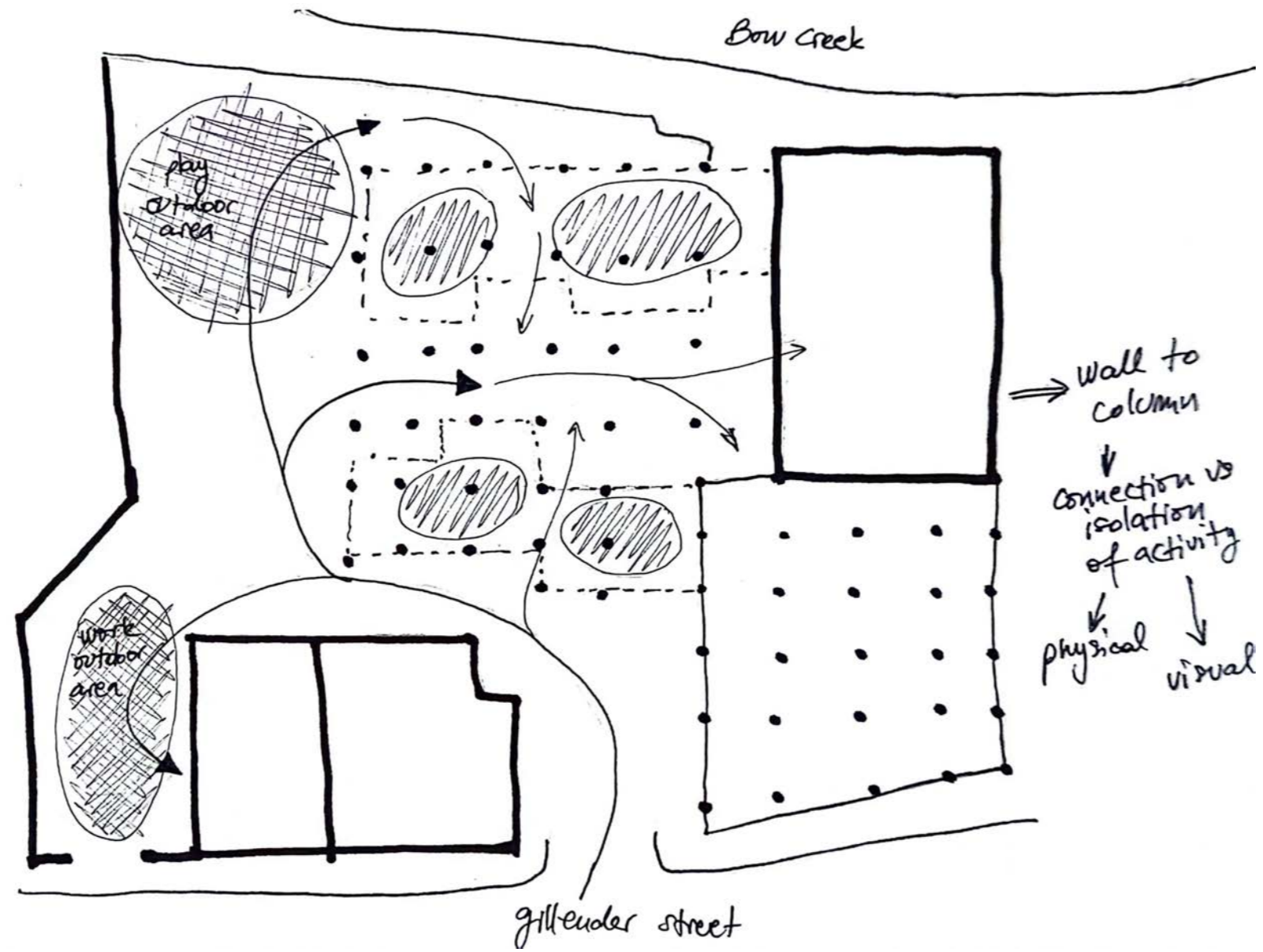
SPATIAL ORGANIZATION



INTERIOR SPATIALITY



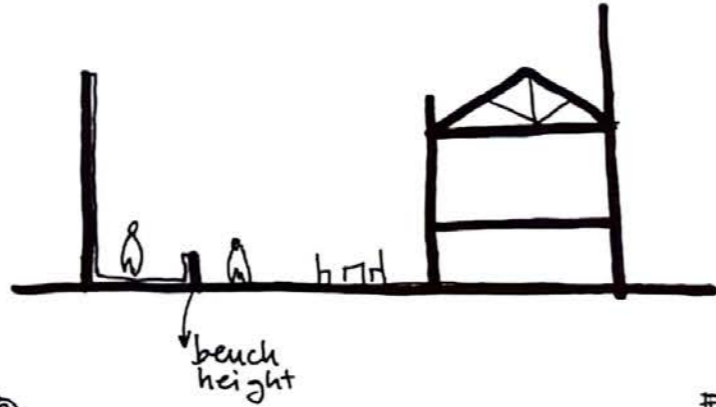
ACCESS AND CIRCULATION



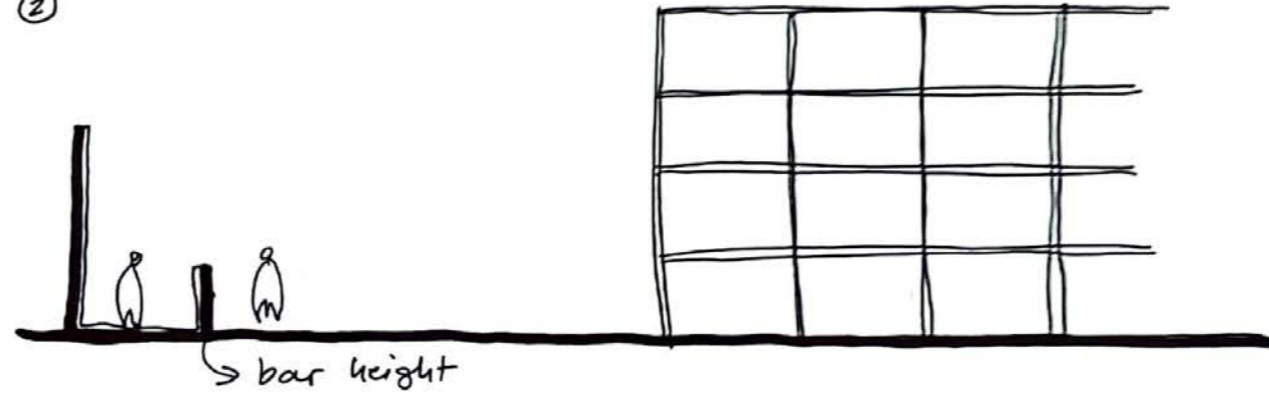
Ground floor

LANDSCAPE ALONG NORTH WALL

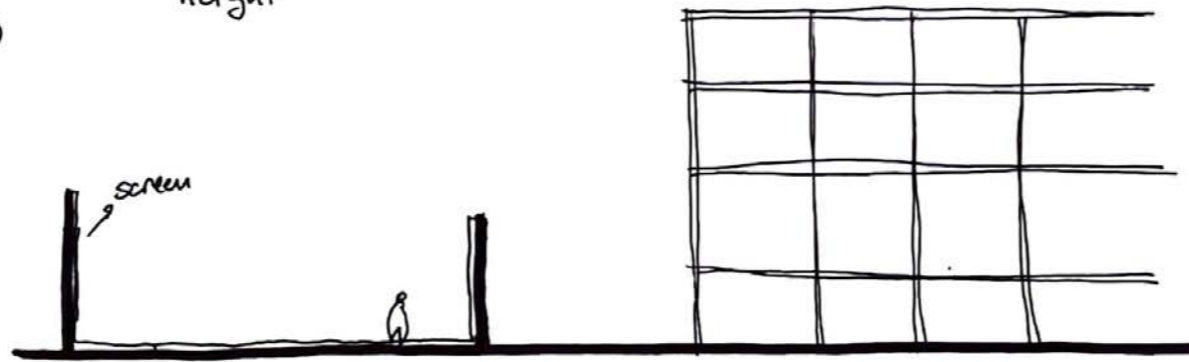
① - Gillender street



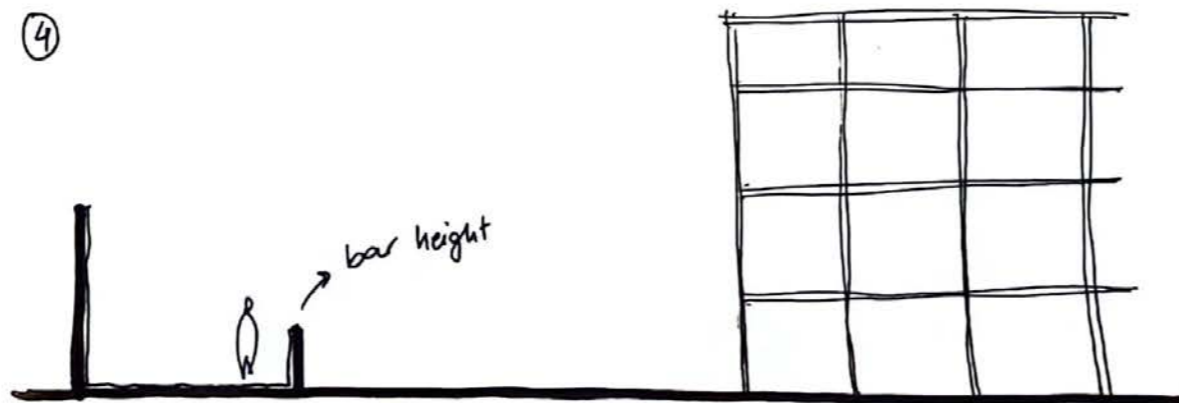
②



③



④

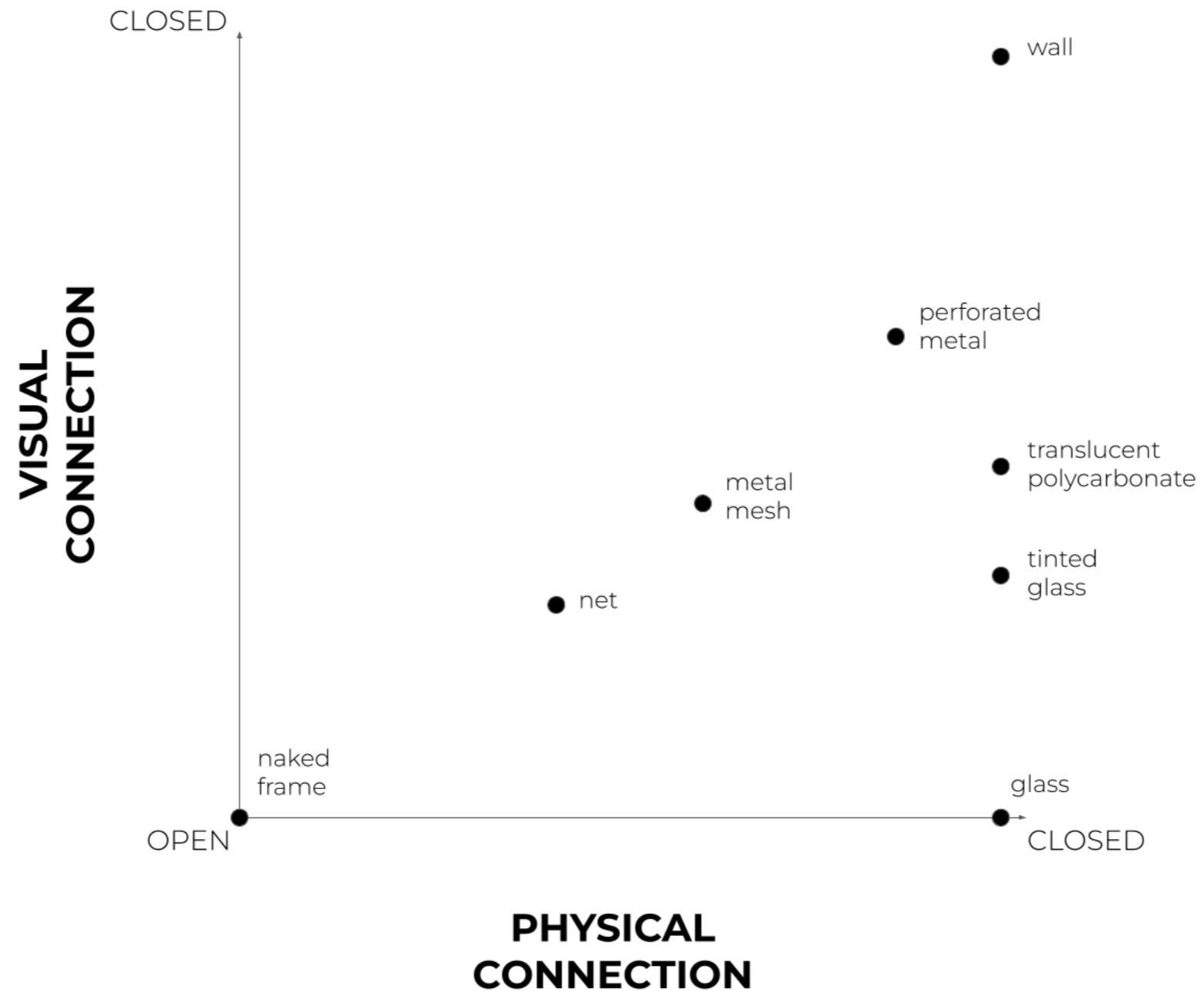


③ - Bow creek

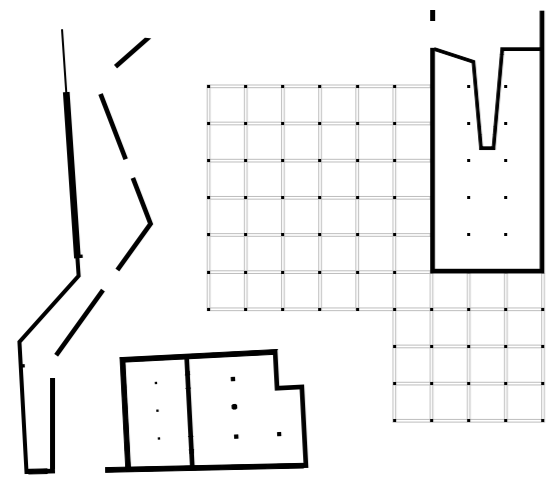


PHYSICAL AND VISUAL CONNECTION: edge of the grid

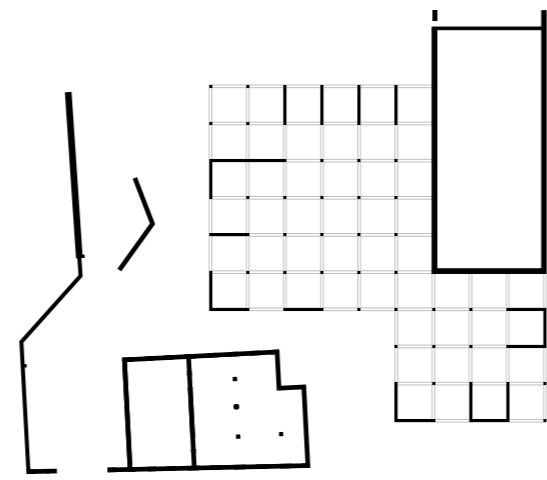
Edge types and qualities



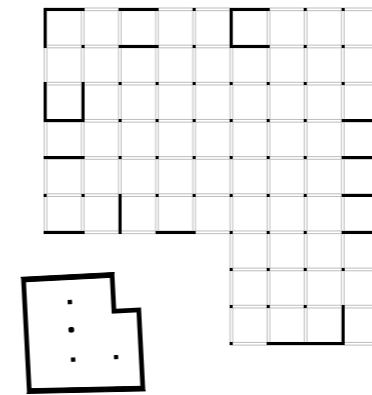
PHYSICAL AND VISUAL CONNECTION



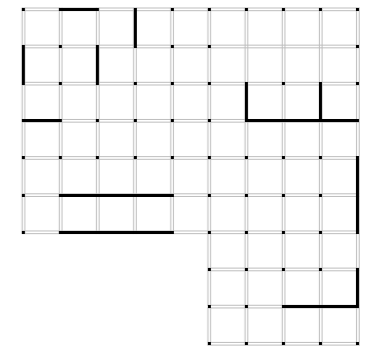
Ground floor



First floor



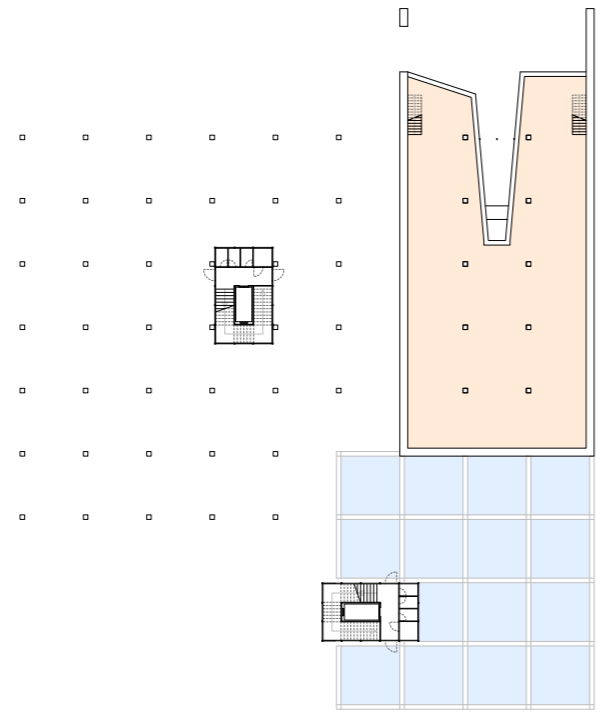
Second floor



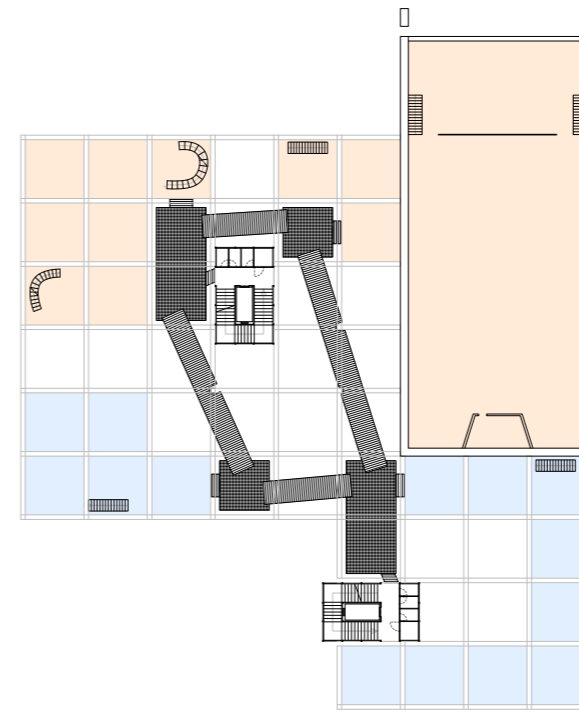
Third floor

The strategy aims to make the most of the qualities of the traditional and frame structures in terms of visual and physical communication in each program. The load-bearing walls create more rigid, isolated spaces, with little visual communication with the rest of the site. This is better suited to programs that require silence or concentration, like co-working rooms and performance spaces, and also serves to block views and create subdivisions in more flexible programs. On the other hand, the frame structure allows for the most physical and visual connection, which is why most of the interior of the 20th century warehouse keeps this structure, so that multiple programs can be visible across the space.

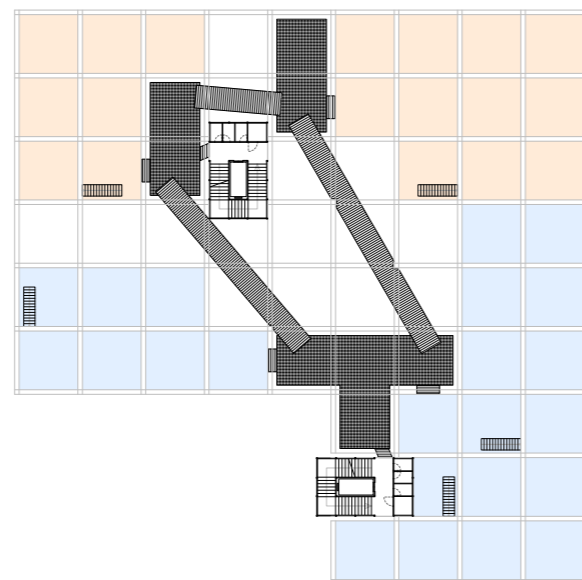
CIRCULATION: outside the grid



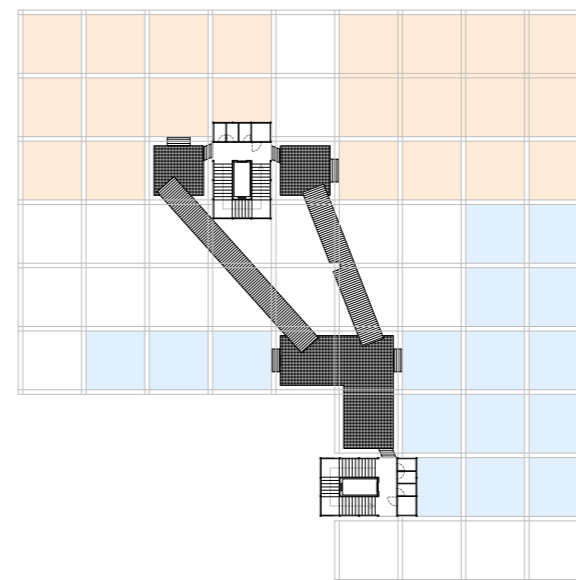
Ground floor



First floor



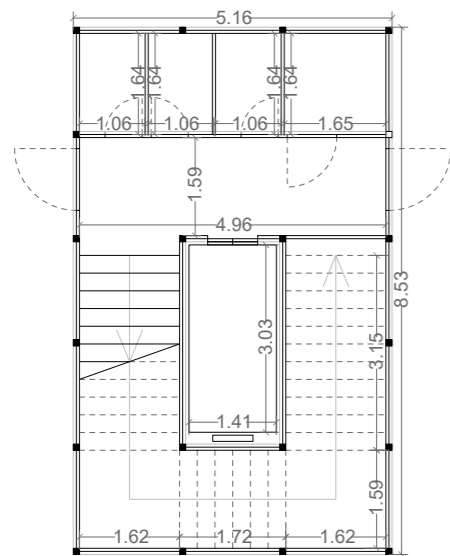
Second floor



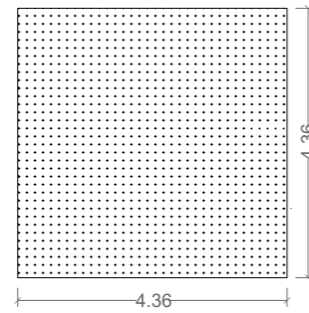
Third floor

CIRCULATION

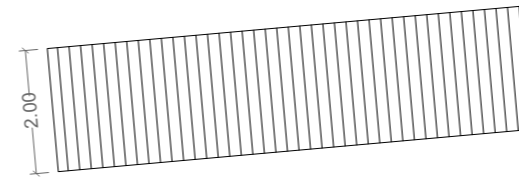
Components



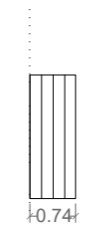
1. Vertical core connects MOVE or BUILD floors



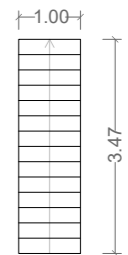
2. Platforms serve as buffers between circulation and activities



3. Primary bridges connect between MOVE and BUILD activities

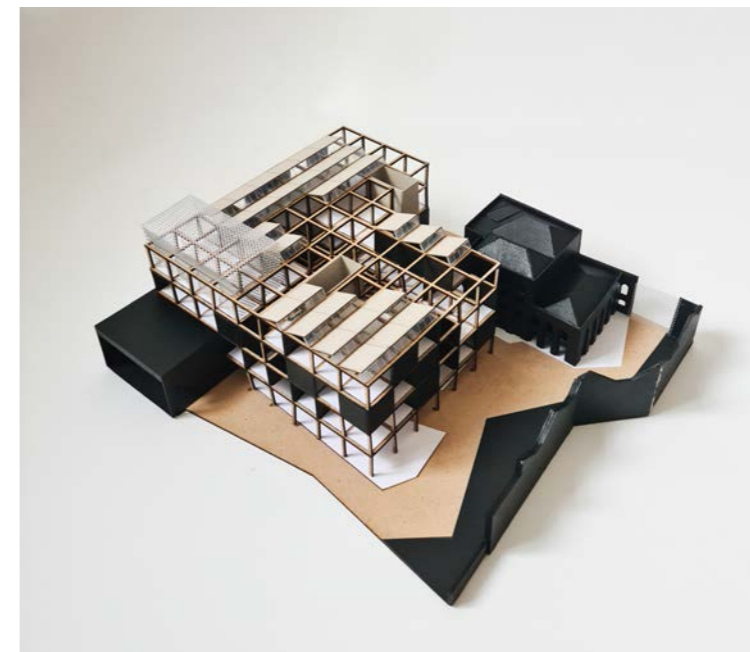
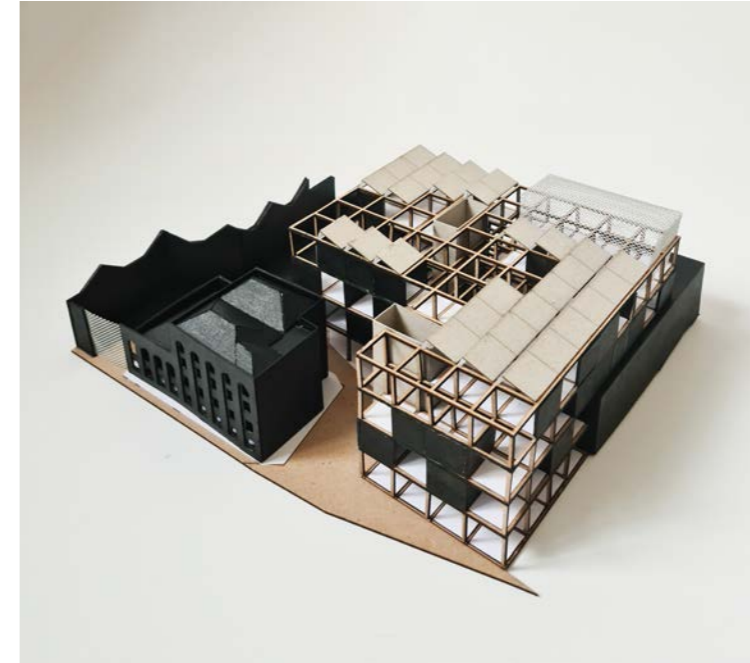


4. Secondary bridges connect platforms with activities



5. Stairs module connect activities with mezzanine levels

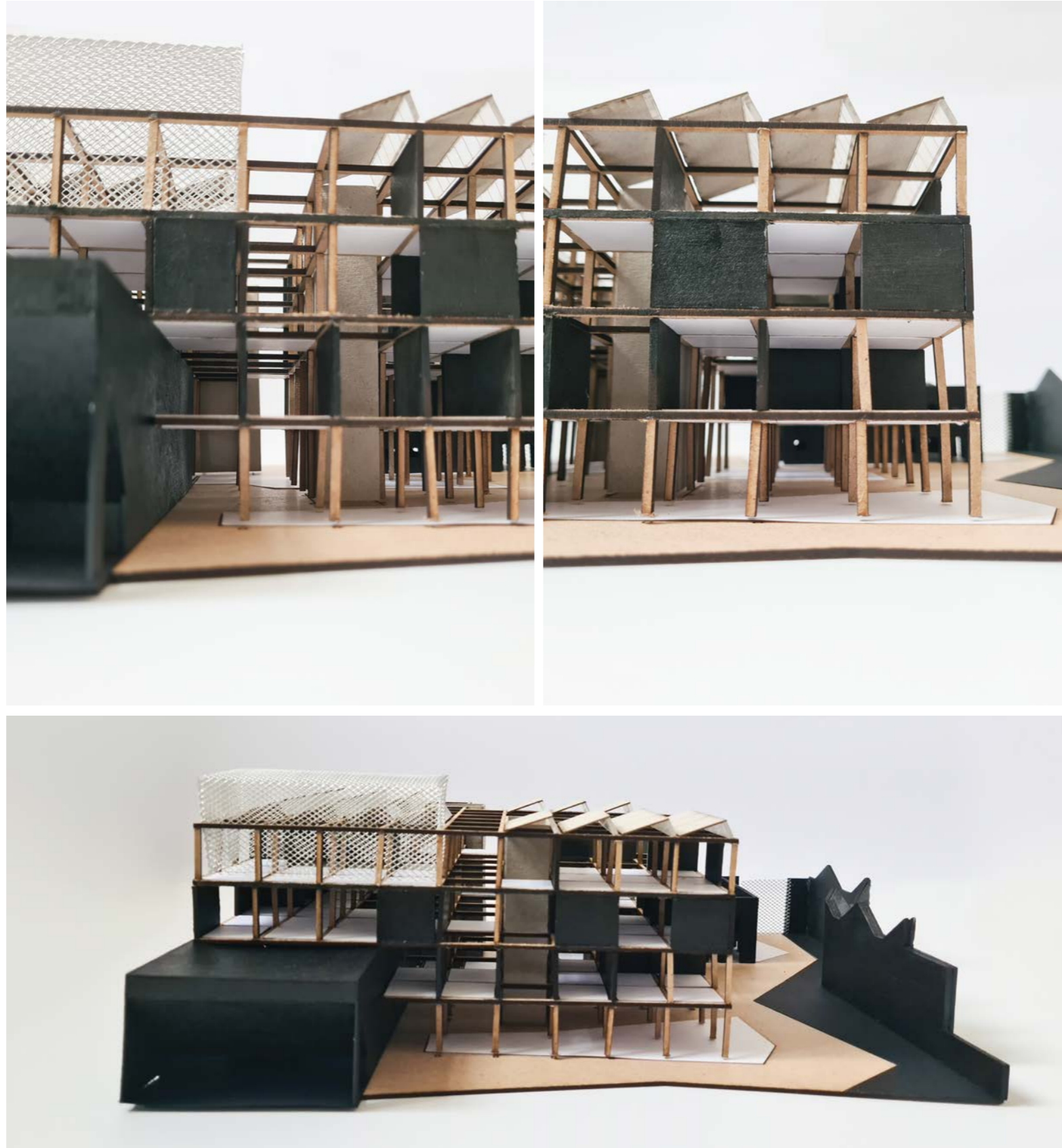
MODEL



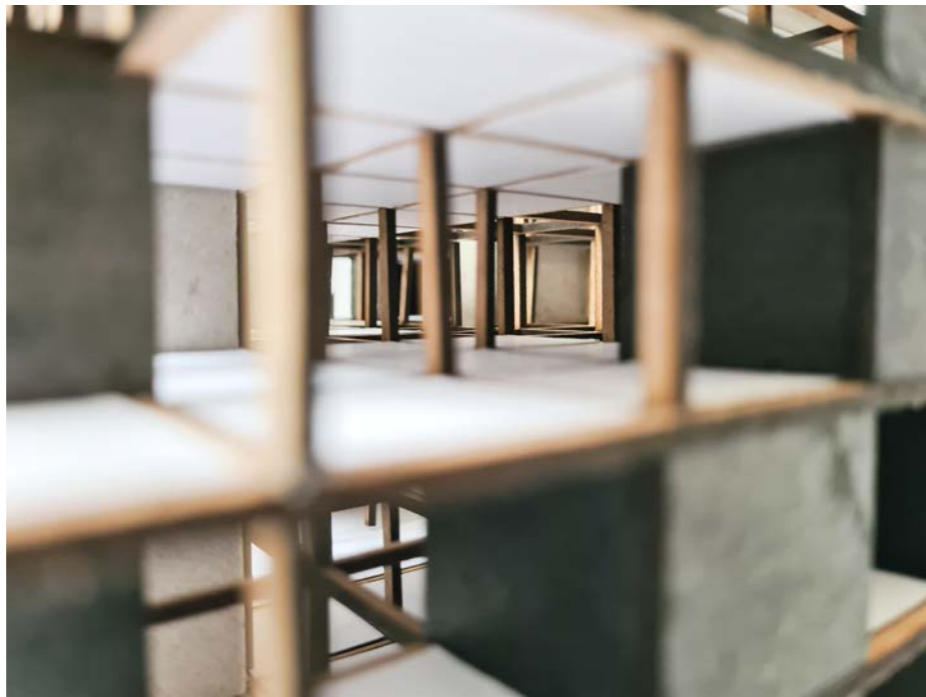
West view and entrance from Gillender Street



East view from Bow Creek

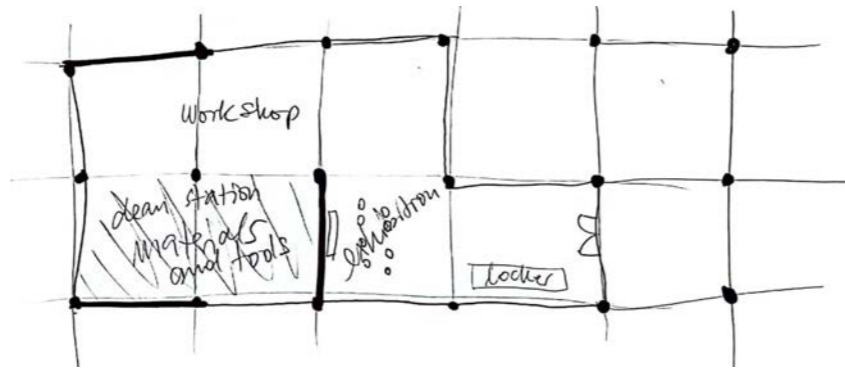


Interior views across spaces

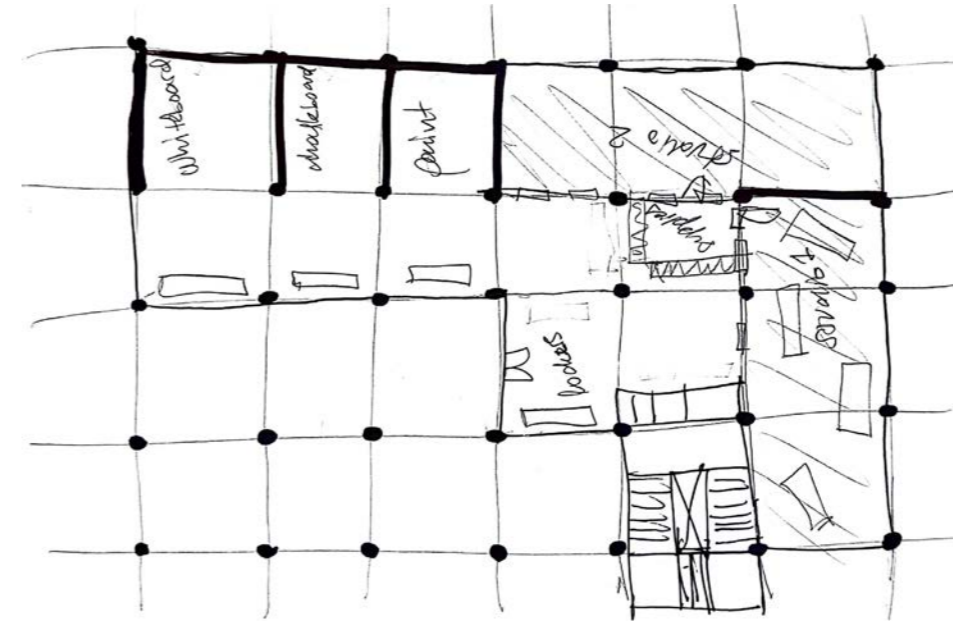


INTERIOR PROGRAM ORGANIZATION

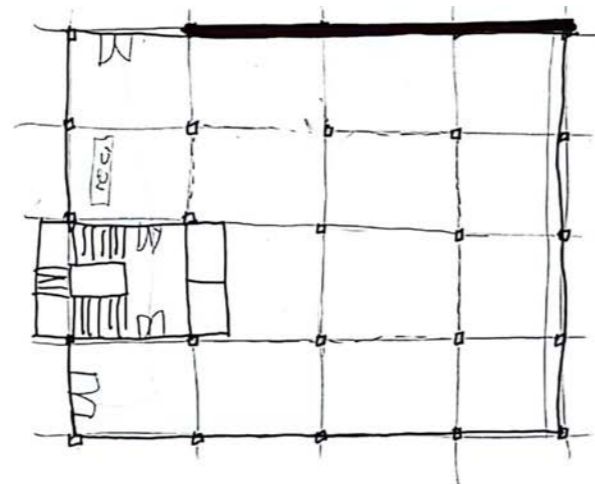
BUILD activities - development sketches



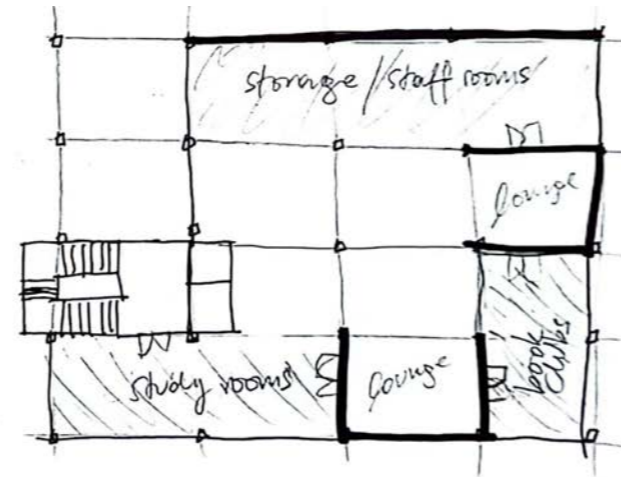
Sculpture



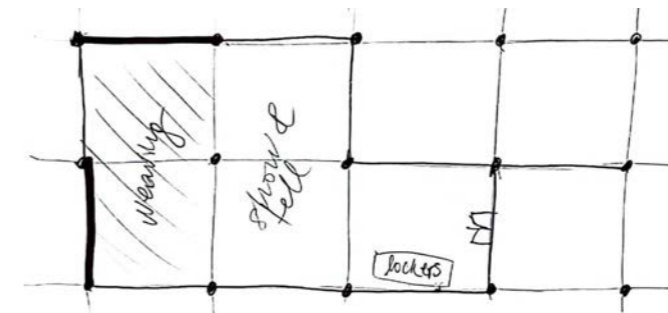
Painting



Library - Ground floor



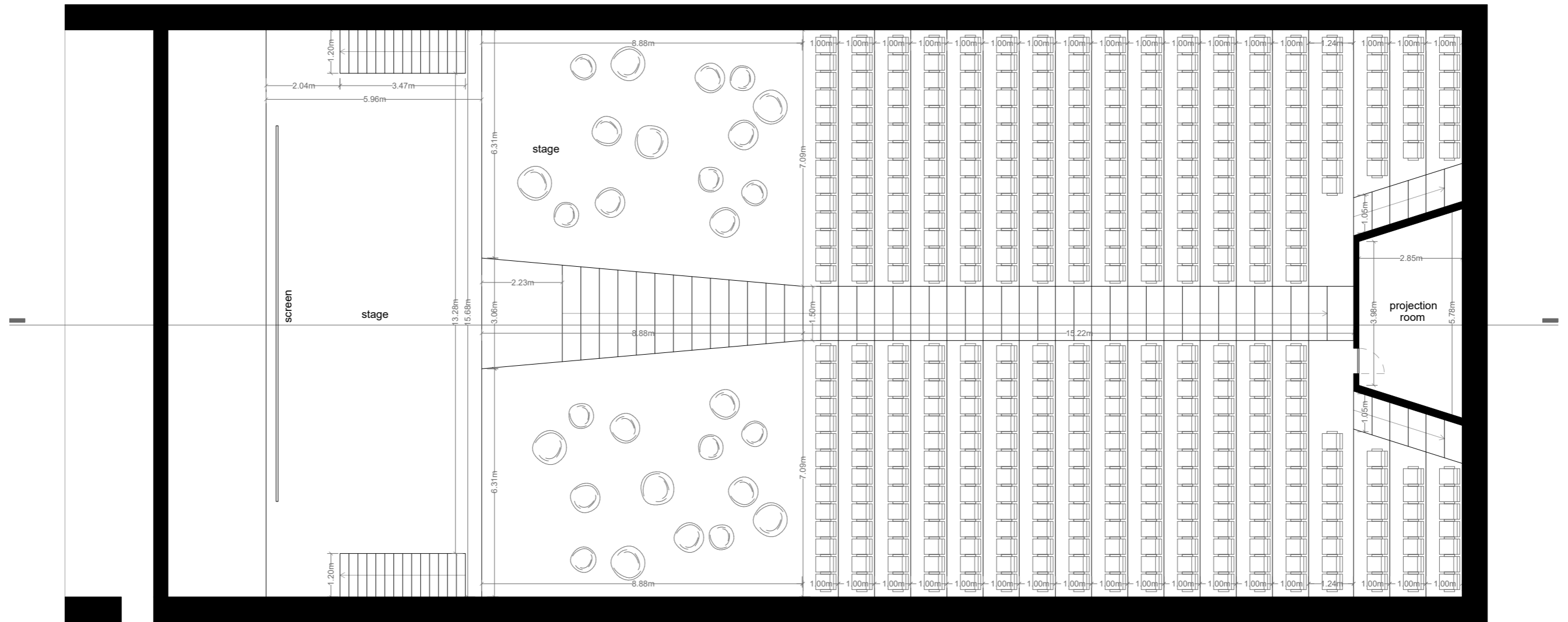
Library - First floor



Textiles

THEATRE

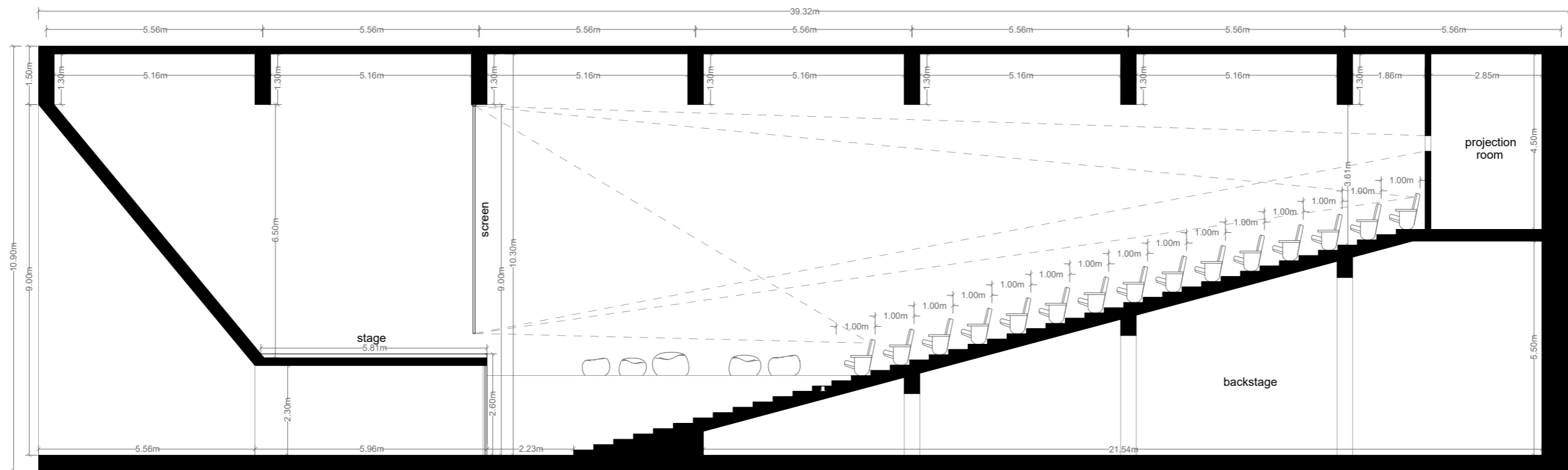
Interior organization



First Floor

THEATRE

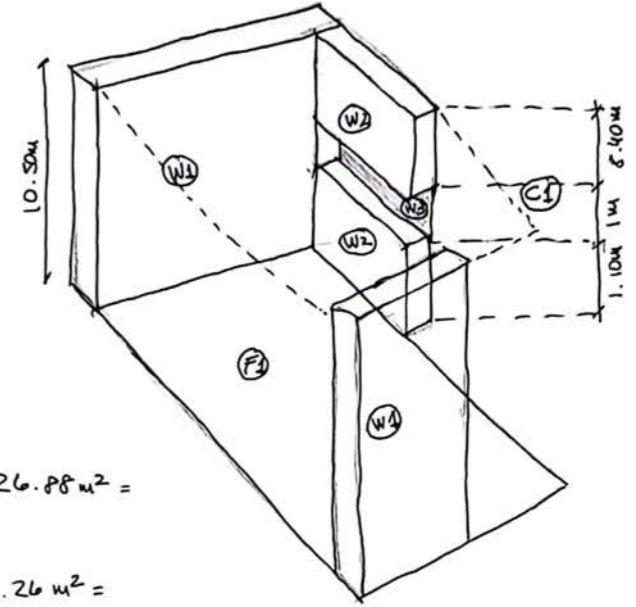
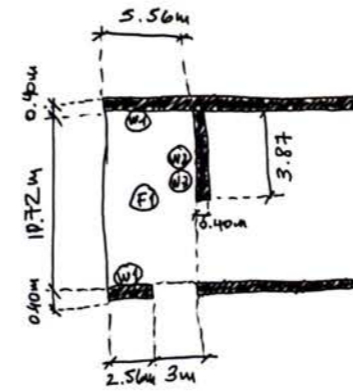
Interior organization



Section

MATERIAL ANALYSIS

Embodied carbon



- (F1) clay brick 59.60 m^2
- (W1) clay brick $58.38 \text{ m}^2 + 26.88 \text{ m}^2 = 85.26 \text{ m}^2$
- (W2) concrete (GRC) $32.51 \text{ m}^2 + 4.26 \text{ m}^2 = 36.77 \text{ m}^2$
- (W3) glass 3.87 m^2

- clay brick (Wienerberg)

$$\begin{aligned} \text{GWP} &\rightarrow 0.213 \text{ kg CO}_2 \text{ equiv./kg} \\ &\rightarrow 24.92 \text{ kg CO}_2 \text{ equiv./m}^2 \end{aligned}$$

$$\begin{aligned} \text{EC per m}^2 &= \text{EC per kg} \times \text{mass (kg)} \\ &= \text{EC per kg} \times \text{density (kg/m}^2) \times \text{Volume (m}^2) \\ &= 0.213 \text{ kg CO}_2 \text{ eq./kg} \times 1000 \frac{\text{kg}}{\text{m}^2} \times 0.0113 \text{ m} \\ &= 24.92 \text{ kg/m}^2 \end{aligned}$$

$$(F1) \rightarrow 24.92 \text{ kg CO}_2 \text{ equiv./m}^2 \times 59.60 \text{ m}^2 = 1470.99 \text{ kg CO}_2 \text{ eq.}$$

$$(W2) \rightarrow 24.92 \text{ kg CO}_2 \text{ equiv./m}^2 \times 85.26 \text{ m}^2 = 2124.68 \text{ kg CO}_2 \text{ eq.}$$

$$\text{TOTAL} = 3615.67 \text{ kg CO}_2 \text{ eq.}$$

- GRC (Aieder) 13mm

$$\begin{aligned} \text{GWP} &\rightarrow 0.724 \text{ kg CO}_2 \text{ equiv./kg} \\ &\rightarrow 16.94 \text{ kg CO}_2 \text{ equiv./m}^2 \end{aligned}$$

$$\begin{aligned} \text{EC per m}^2 &= \text{EC per kg} \times \text{density (kg/m}^3) \times \text{Volume (m}^3) \\ &= 0.724 \text{ kg CO}_2 \text{ eq./kg} \times 1800 \frac{\text{kg}}{\text{m}^3} \times 0.0113 \text{ m} \\ &= 16.94 \text{ kg/m}^2 \end{aligned}$$

$$(W2) \rightarrow 16.94 \text{ kg CO}_2 \text{ equiv./m}^2 \times 36.77 \text{ m}^2 = 622.88 \text{ kg CO}_2 \text{ eq.}$$

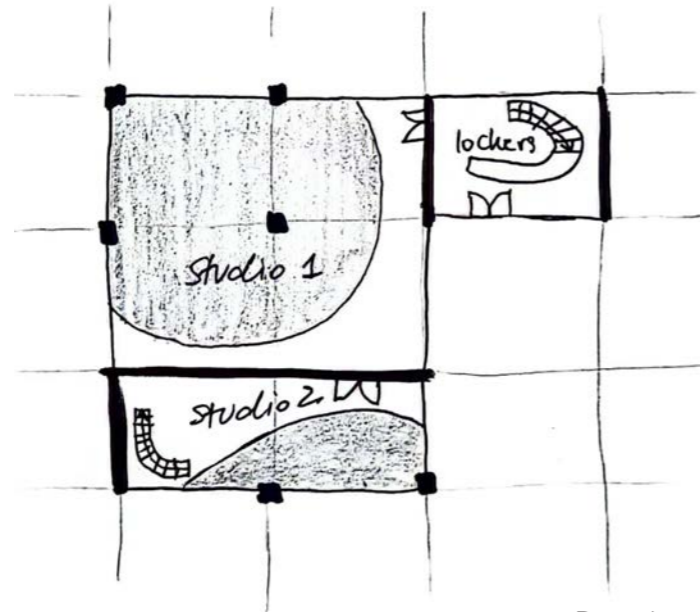
- glass (Pilkinton) 4mm

$$\text{GWP} \rightarrow 17.76 \text{ kg CO}_2 \text{ equiv./m}^2$$

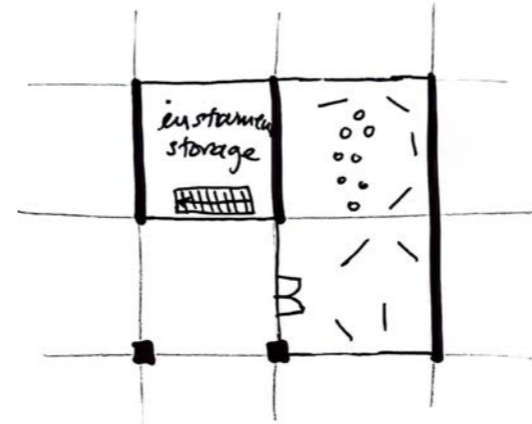
$$(W3) \rightarrow 17.76 \text{ kg CO}_2 \text{ equiv./m}^2 \times 3.87 \text{ m}^2 = 68.73 \text{ kg CO}_2 \text{ eq.}$$

INTERIOR PROGRAM ORGANIZATION

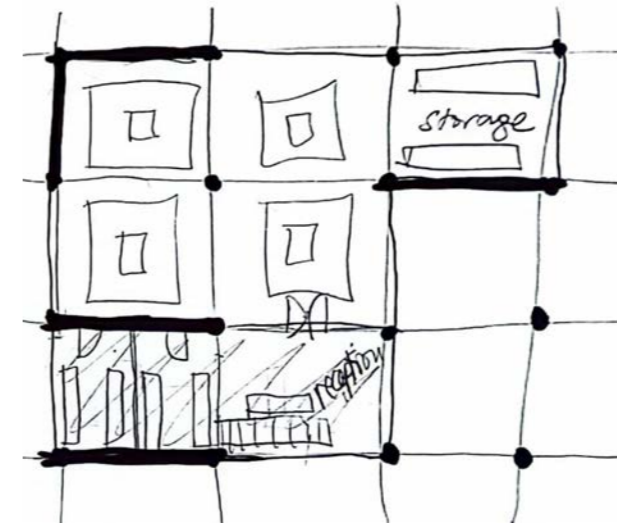
MOVE activities - development sketches



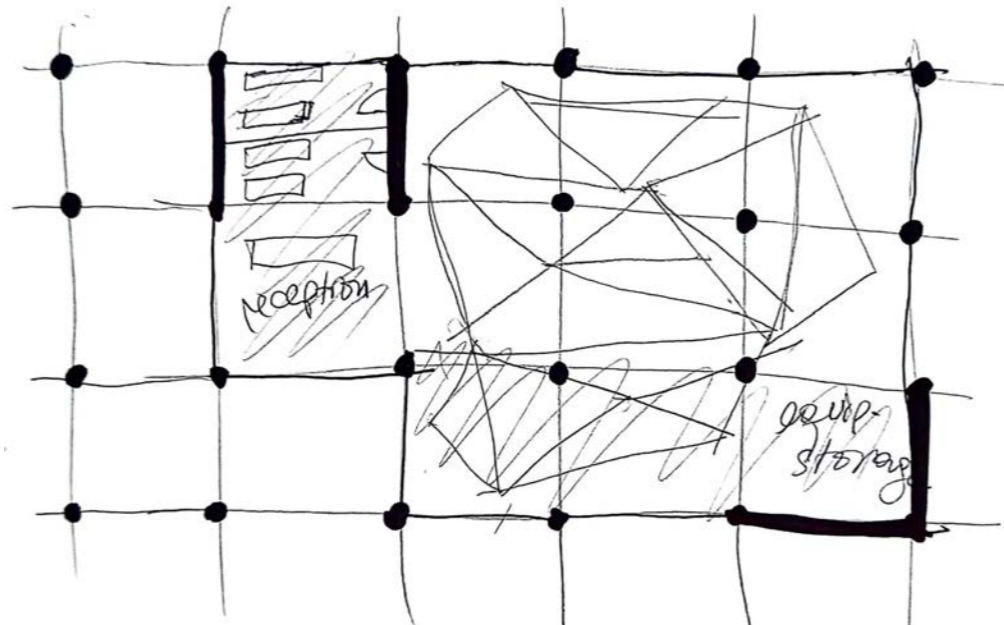
Dancing



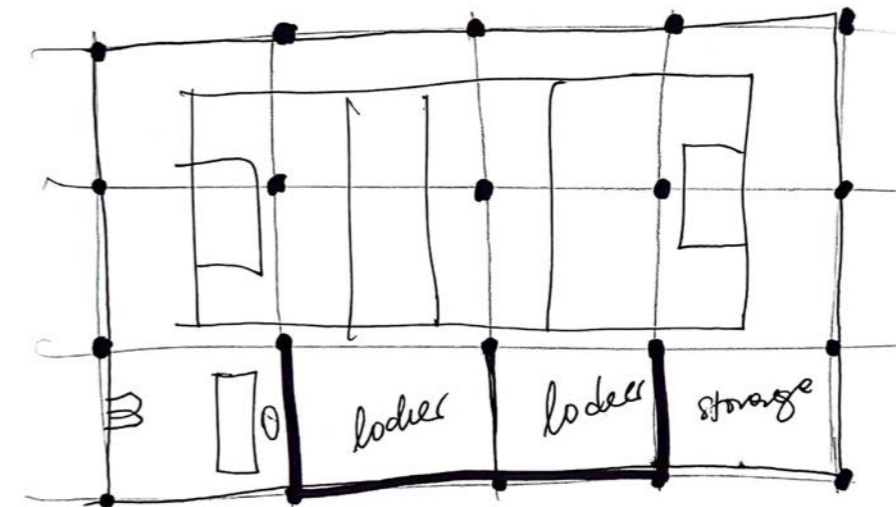
Music



Martial arts



Gymnastics



Ball court

PROJECT DOCUMENTATION

GROUND FLOOR

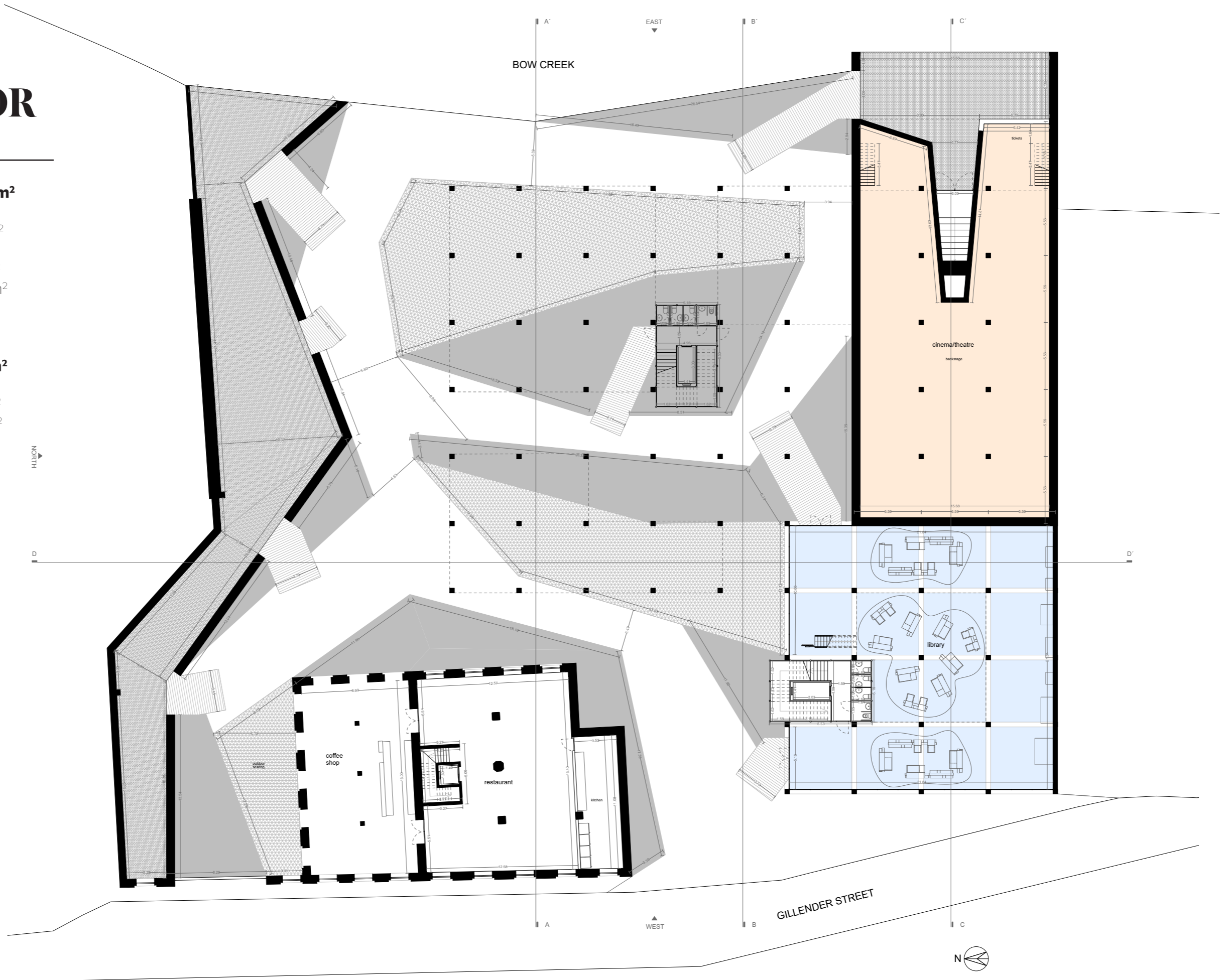
23-24 Gillender Street

PLAY BUILDING 1018.60 m²

Library	436.10 m ²
Theatre	
Entrance	113.80 m ²
Backstage	453.00 m ²
Toilets	15.70 m ²

WORK BUILDING 367.50 m²

Coffee shop	141.30 m ²
Restaurant	187.40 m ²
Kitchen	38.80 m ²



GROUND FLOOR MEZZANINE

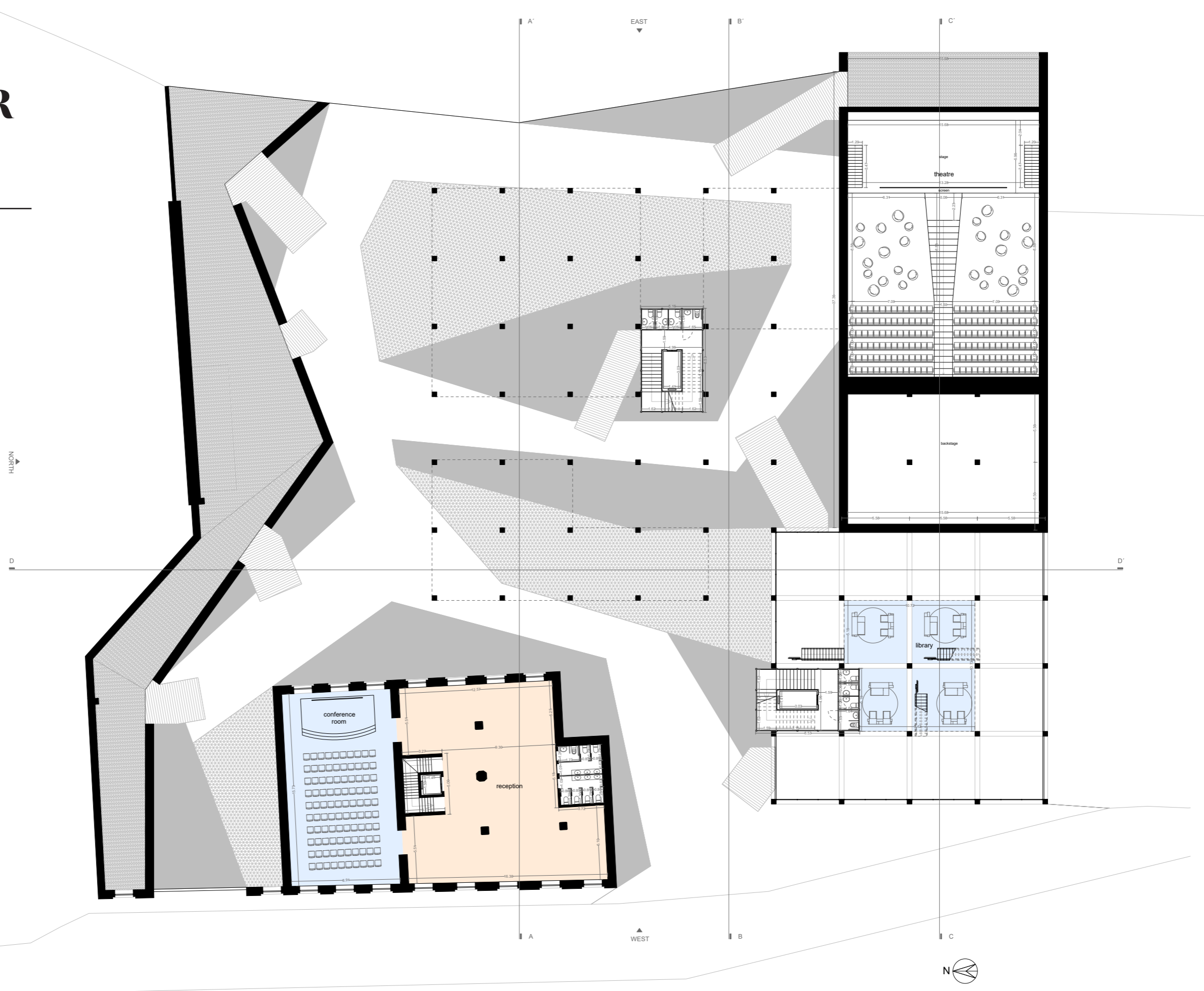
23-24 Gillender Street

PLAY BUILDING 108.30 m²

Library 108.30 m²

WORK BUILDING 369.00 m²

Reception 142.70 m²
 Conference room 209.40 m²
 Toilets 16.90 m²

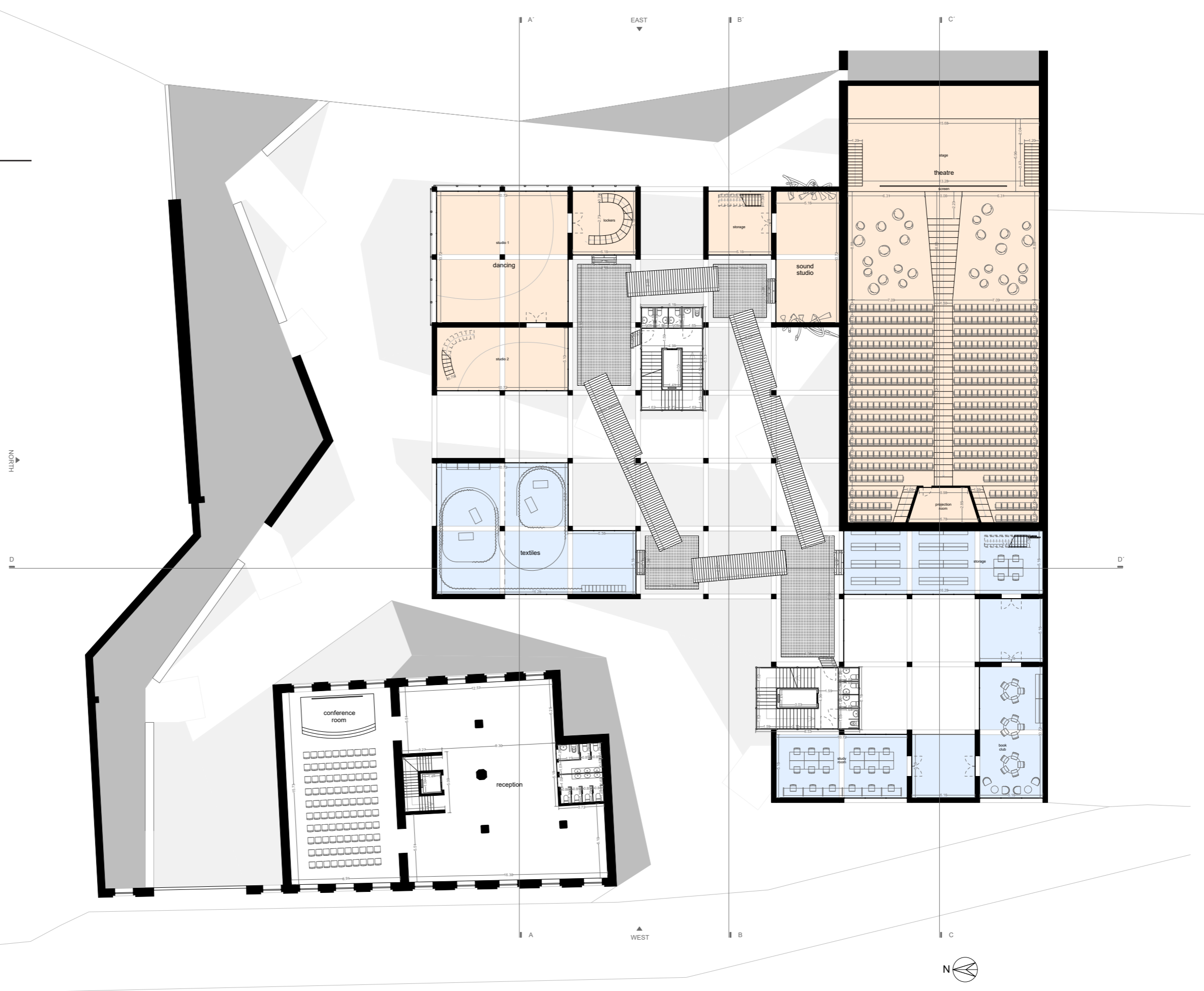


FIRST FLOOR

23-24 Gillender Street

PLAY BUILDING 1206.90 m²

Library	
Study room	84.00 m ²
Book club	84.00 m ²
Storage	84.00 m ²
Textiles	143.30 m ²
Theatre	
Stage	93.50 m ²
Seating	411.00 m ²
Projection room	13.90 m ²
Dancing	
Studio 1	114.90 m ²
Studio 2	54.70 m ²
Locker room	26.60 m ²
Music	
Studio	54.70 m ²
Storage	26.60 m ²
Toilets	15.70 m ²



FIRST FLOOR MEZZANINE

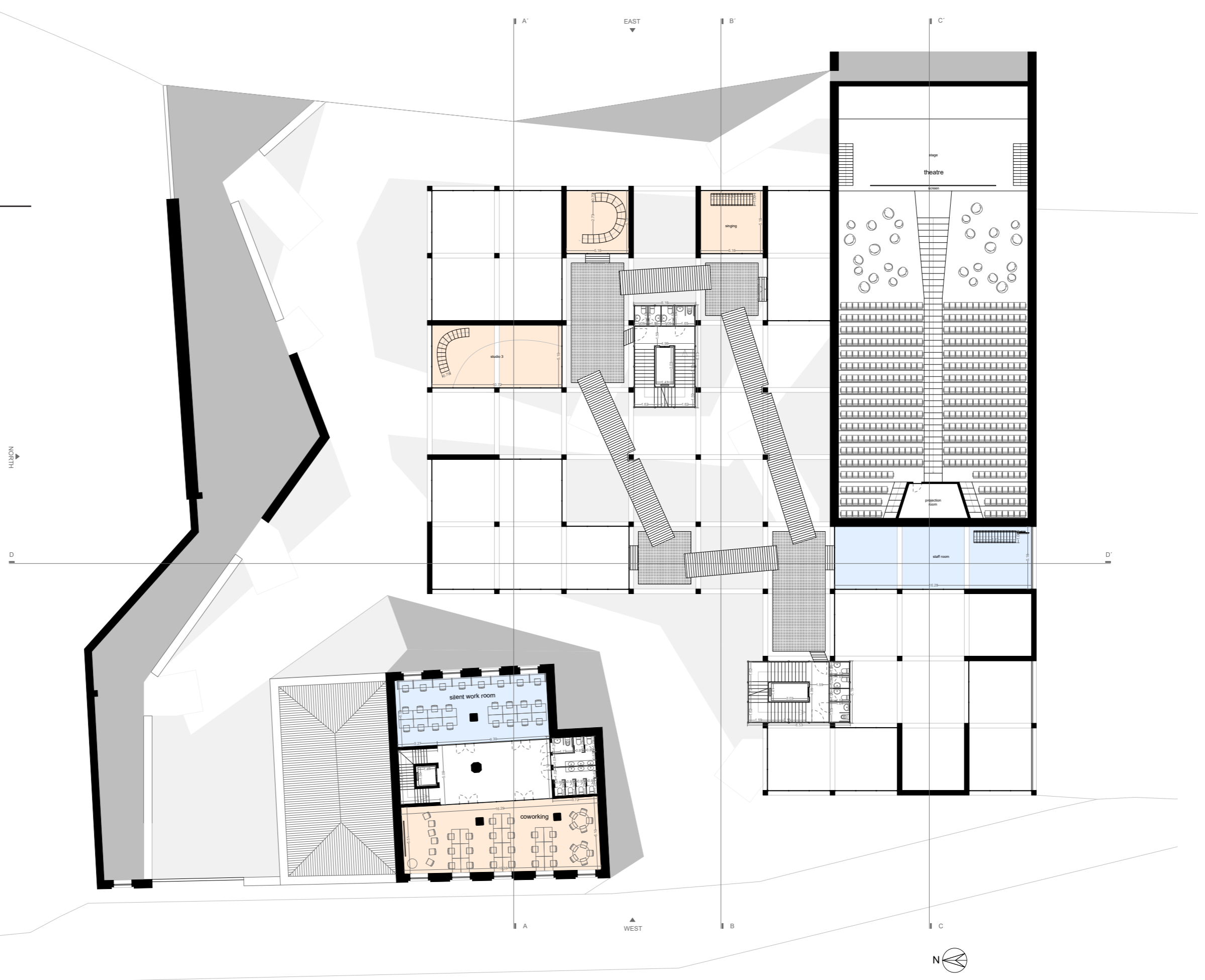
23-24 Gillender Street

PLAY BUILDING 246.60 m²

Library	
Staff room	84.00 m ²
Textiles	
Workshop	54.70 m ²
Dancing	
Studio 3	54.70 m ²
Locker room	26.60 m ²
Music	
Singing studio	26.60 m ²

WORK BUILDING 179.10 m²

Silent room	68.50 m ²
Co-work room	93.70 m ²
Toilets	16.90 m ²



SECOND FLOOR

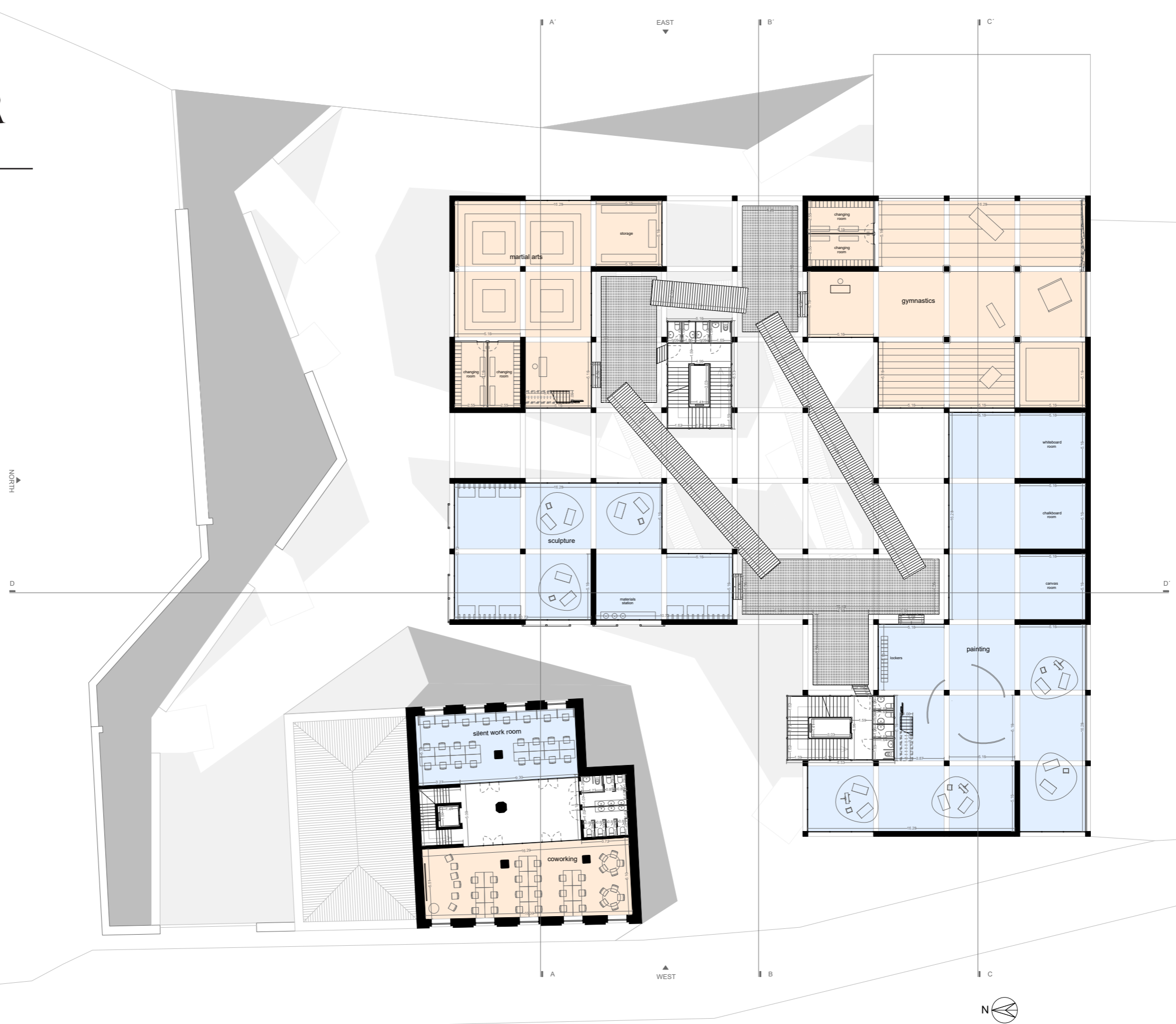
23-24 Gillender Street

PLAY BUILDING 1183.80 m²

Painting	
Workshops	372.30 m ²
Whiteboard room	26.60 m ²
Chalkboard room	26.60 m ²
Canvas room	26.60 m ²
Sculpture	
Workshops	148.50 m ²
Storage	54.70 m ²
Gymnastics	
Mat floor	262.80 m ²
Locker room	26.60 m ²
Storage	26.60 m ²
Martial arts	
Mat floor	143.60 m ²
Locker room	26.60 m ²
Storage	26.60 m ²
Toilets	15.70 m ²

WORK BUILDING 179.10 m²

Silent room	68.50 m ²
Co-work room	93.70 m ²
Toilets	16.90 m ²

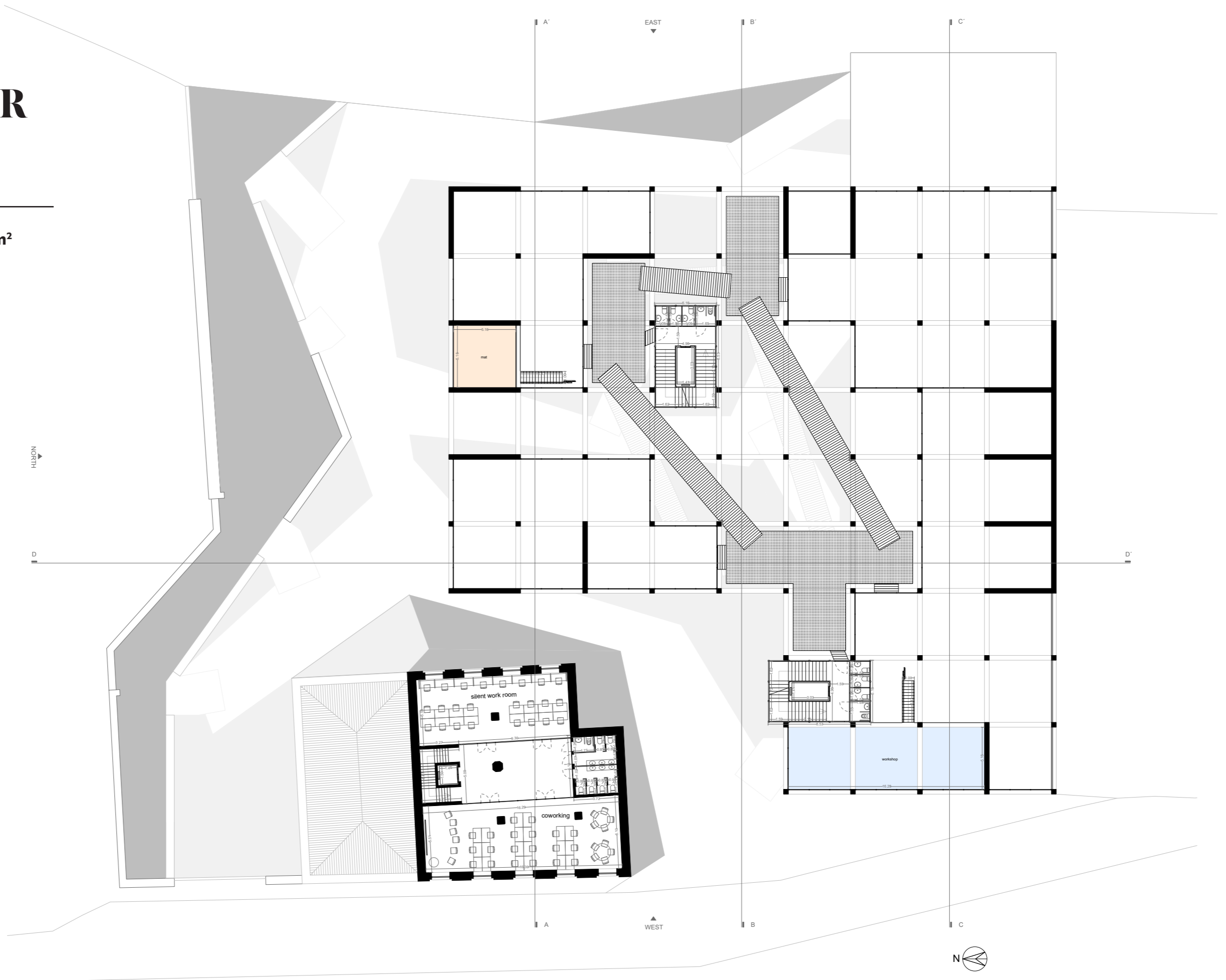


SECOND FLOOR MEZZANINE

23-24 Gillender Street

PLAY BUILDING 304.00 m²

Painting	
Workshop 1	84.00 m ²
Workshop 2	84.00 m ²
Sculpture	
Workshops	54.70 m ²
Gymnastics	
Mat floor	54.70 m ²
Martial arts	
Mat floor	26.60 m ²

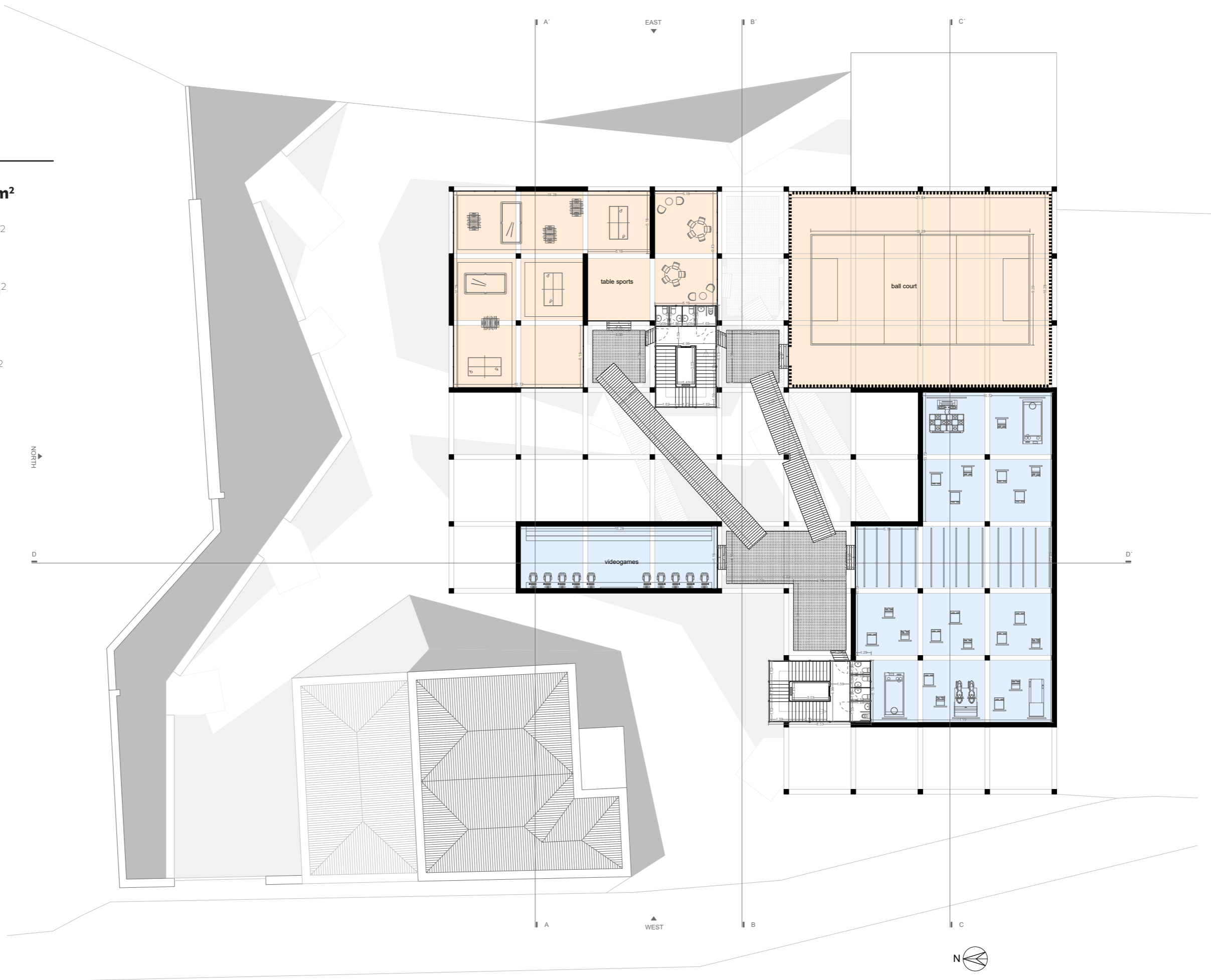


THIRD FLOOR

23-24 Gillender Street

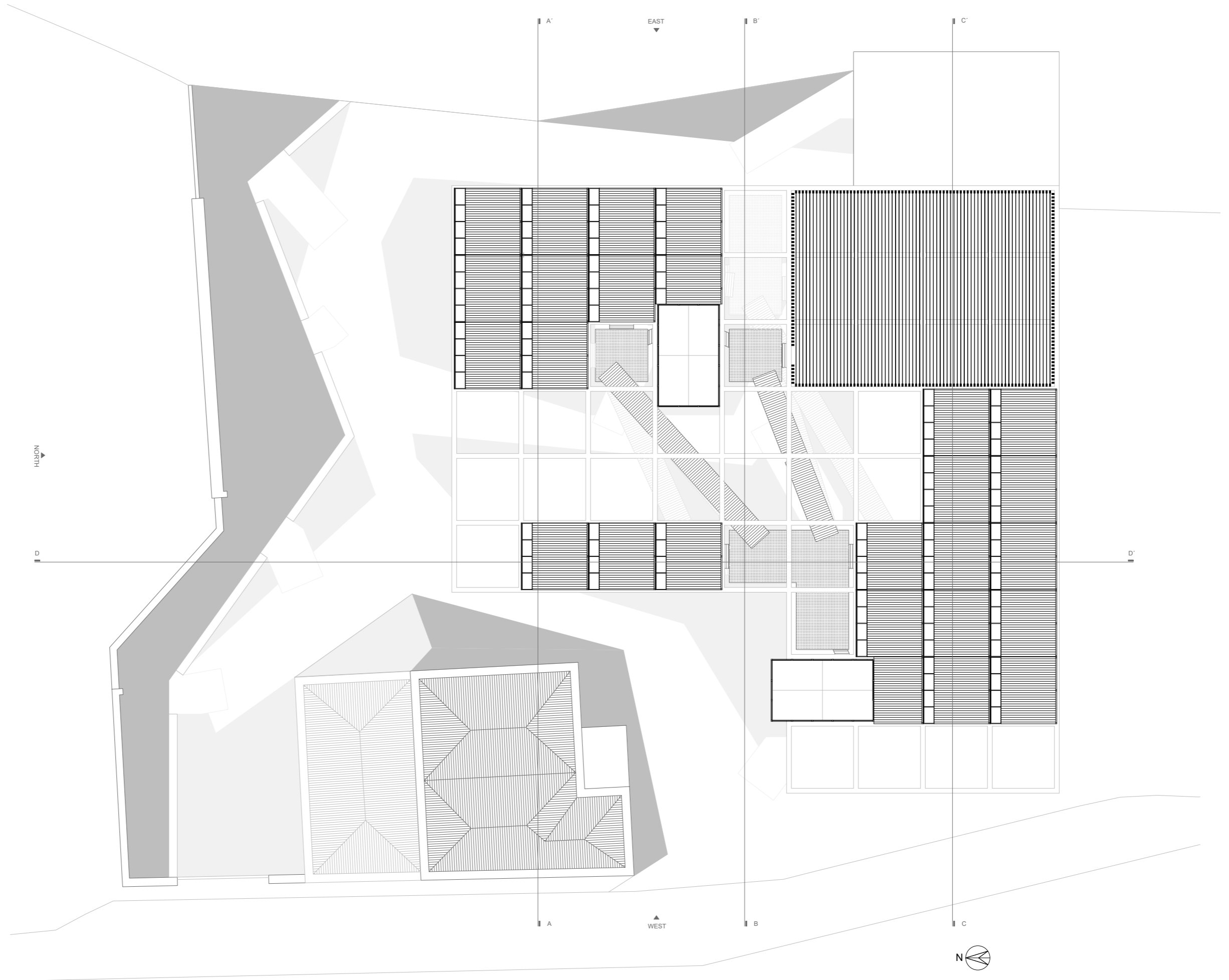
PLAY BUILDING 1102.30 m²

Arcade	377.00 m ²
Videogames	83.00 m ²
Ball court	
Court	262.80 m ²
Changing room	54.70 m ²
Storage	26.60 m ²
Table sports	
Game floor	234.10 m ²
Rest area	48.40 m ²
Toilets	15.70 m ²



ROOF PLAN

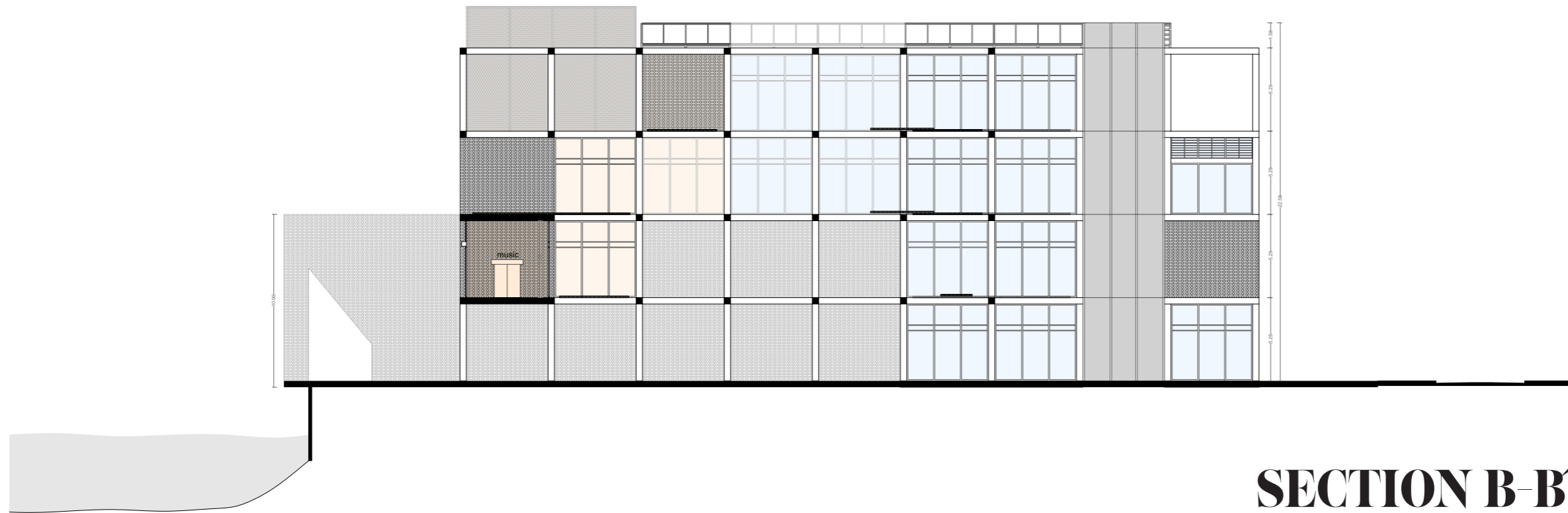
23-24 Gillender Street





SECTION A-A'

23-24 Gillender Street



SECTION B-B'

23-24 Gillender Street



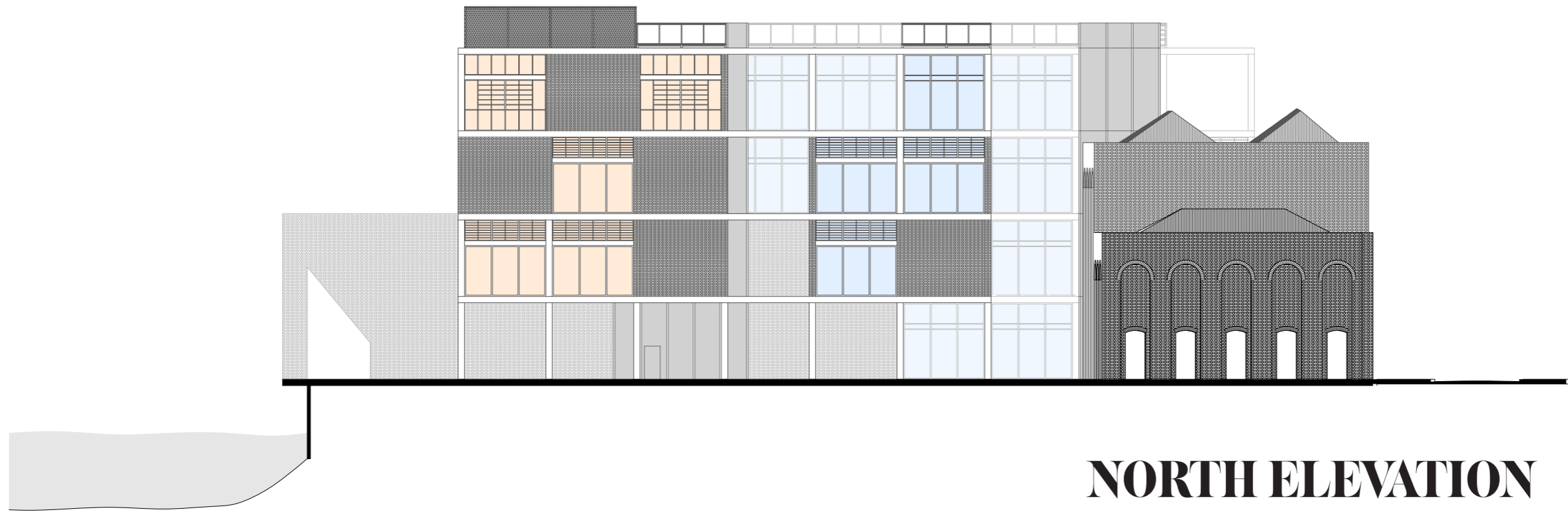
SECTION C-C'

23-24 Gillender Street



SECTION D-D'

23-24 Gillender Street



NORTH ELEVATION

21-22 Gillender Street



WEST ELEVATION

Gillender Street

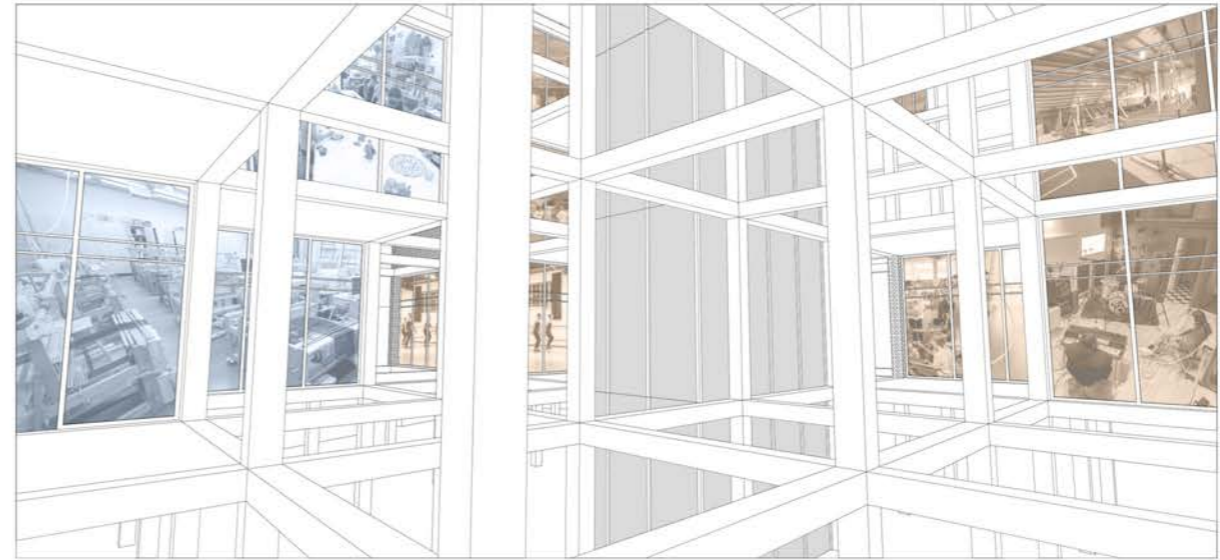


EAST ELEVATION

Bow Creek

INTERIOR VIEWS

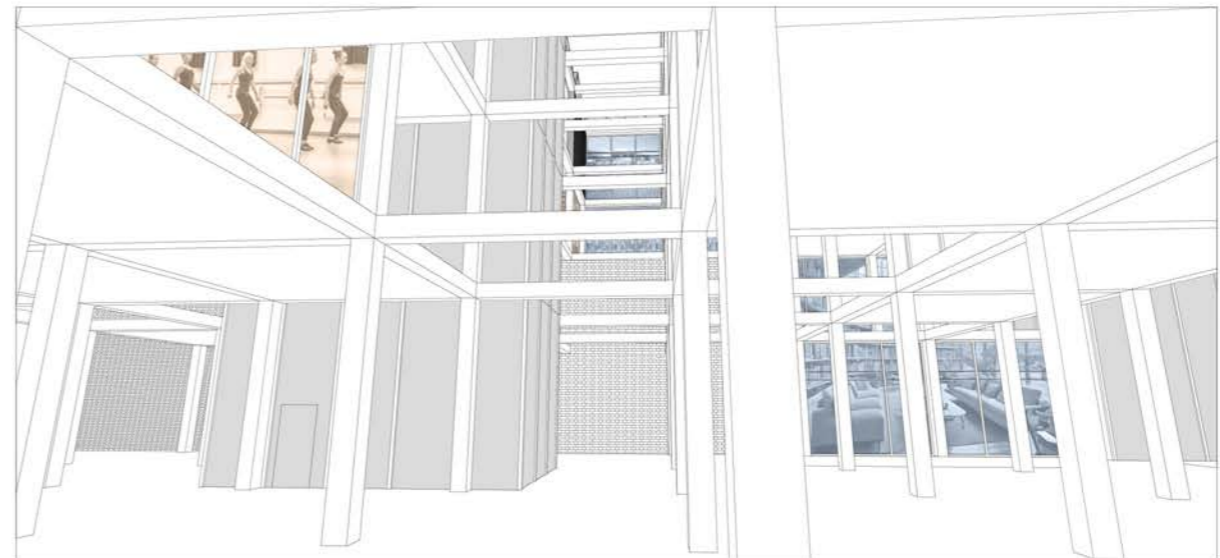
23-24 Gillender Street



Interior view from library (first floor)



View from sculpture (second floor)



View from courtyard (ground floor)

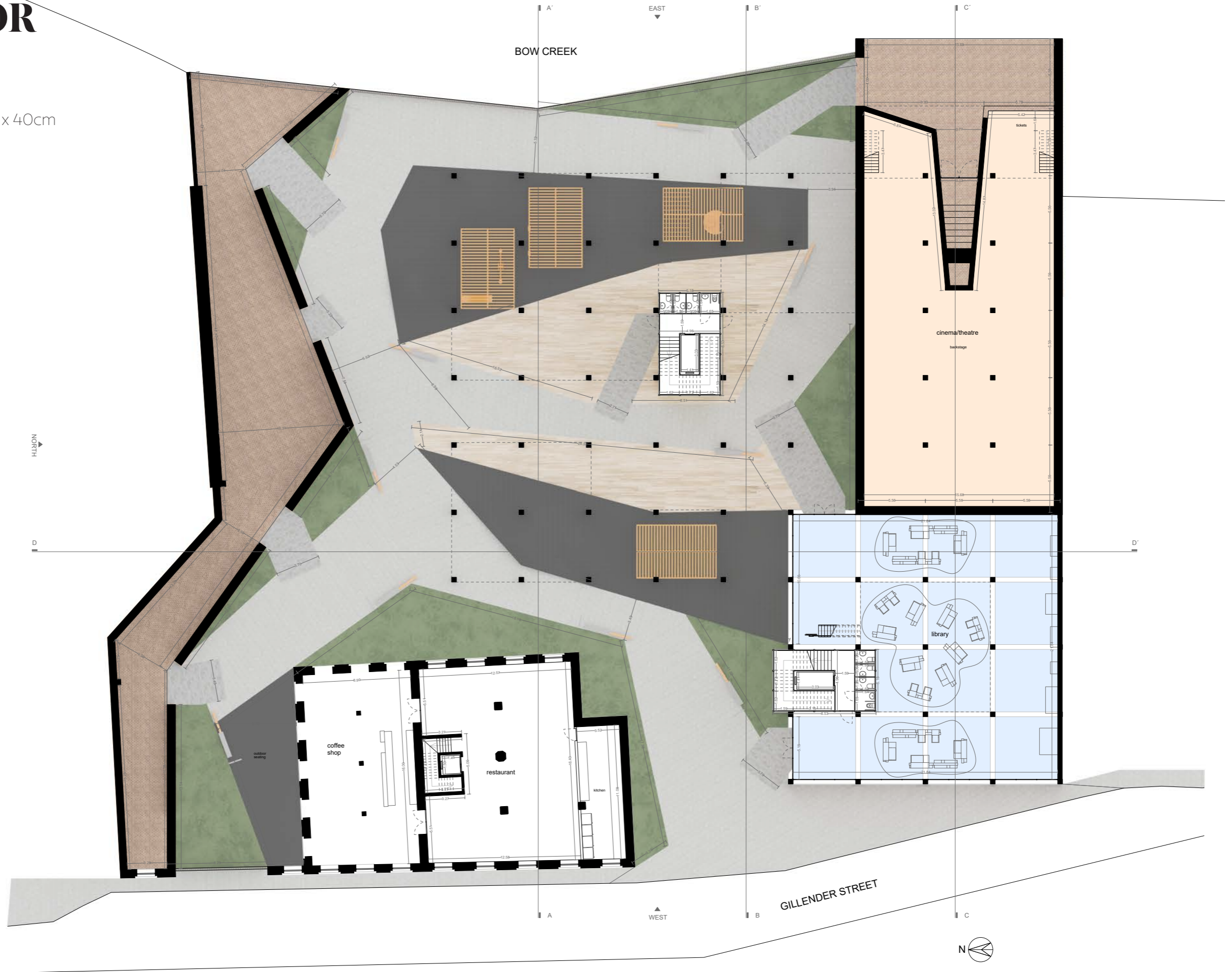




GROUND FLOOR

23-24 Gillender Street

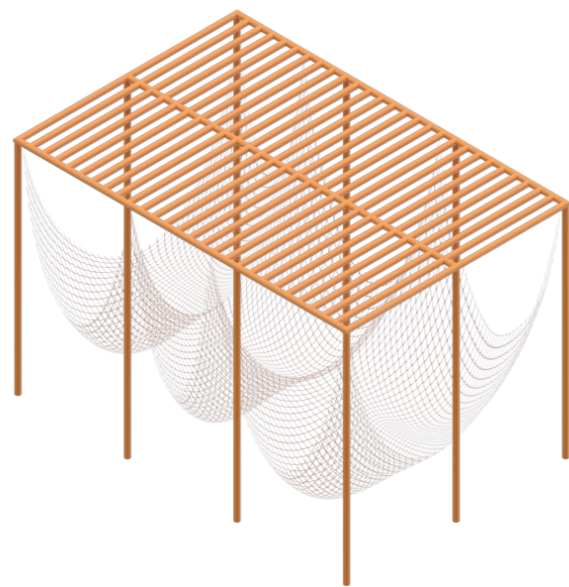
- Sidewalk concrete tiles 40cm x 40cm
- Concrete tiles 10cm x 50cm
- Wood deck
- Outdoor rubber flooring
- Red brick



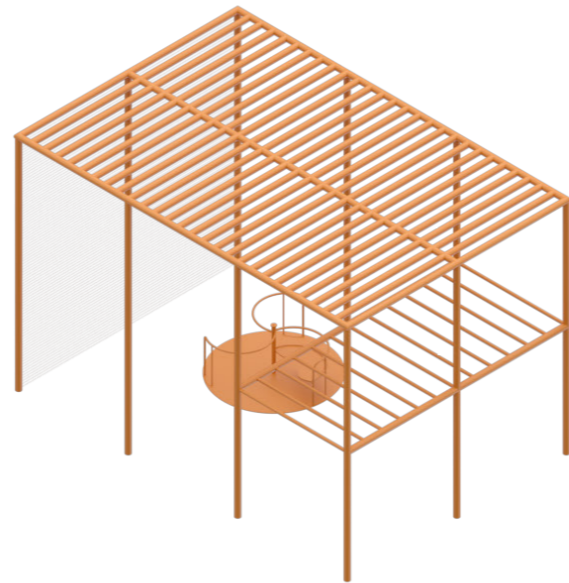
PLAY AREAS



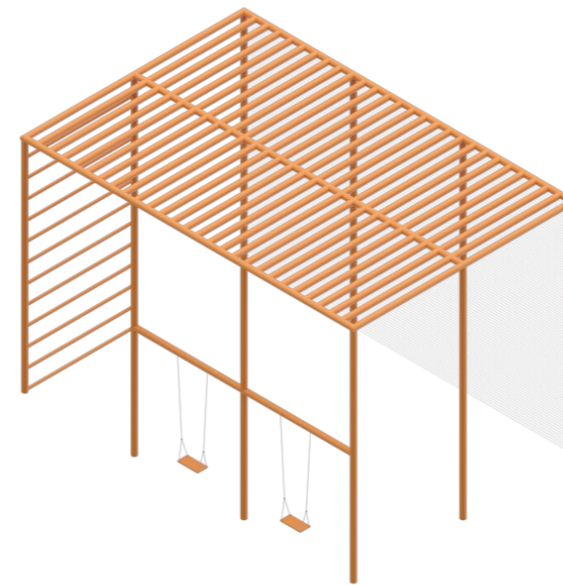
PLAY EQUIPMENT



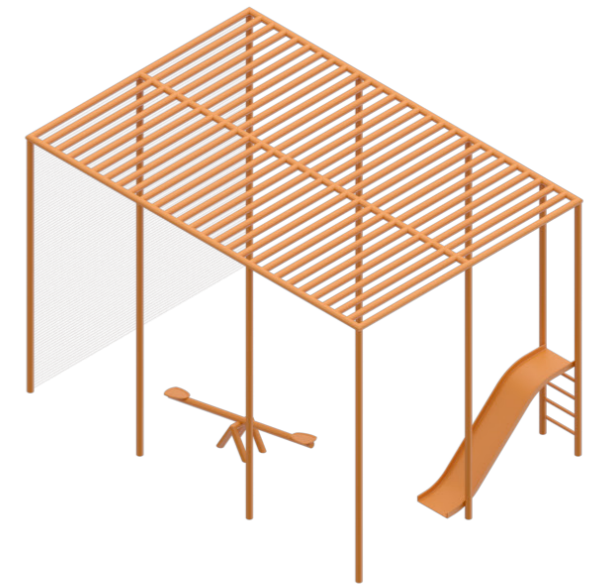
Play structure 1: Climbing, jumping



Play structure 2: Climbing, spinning



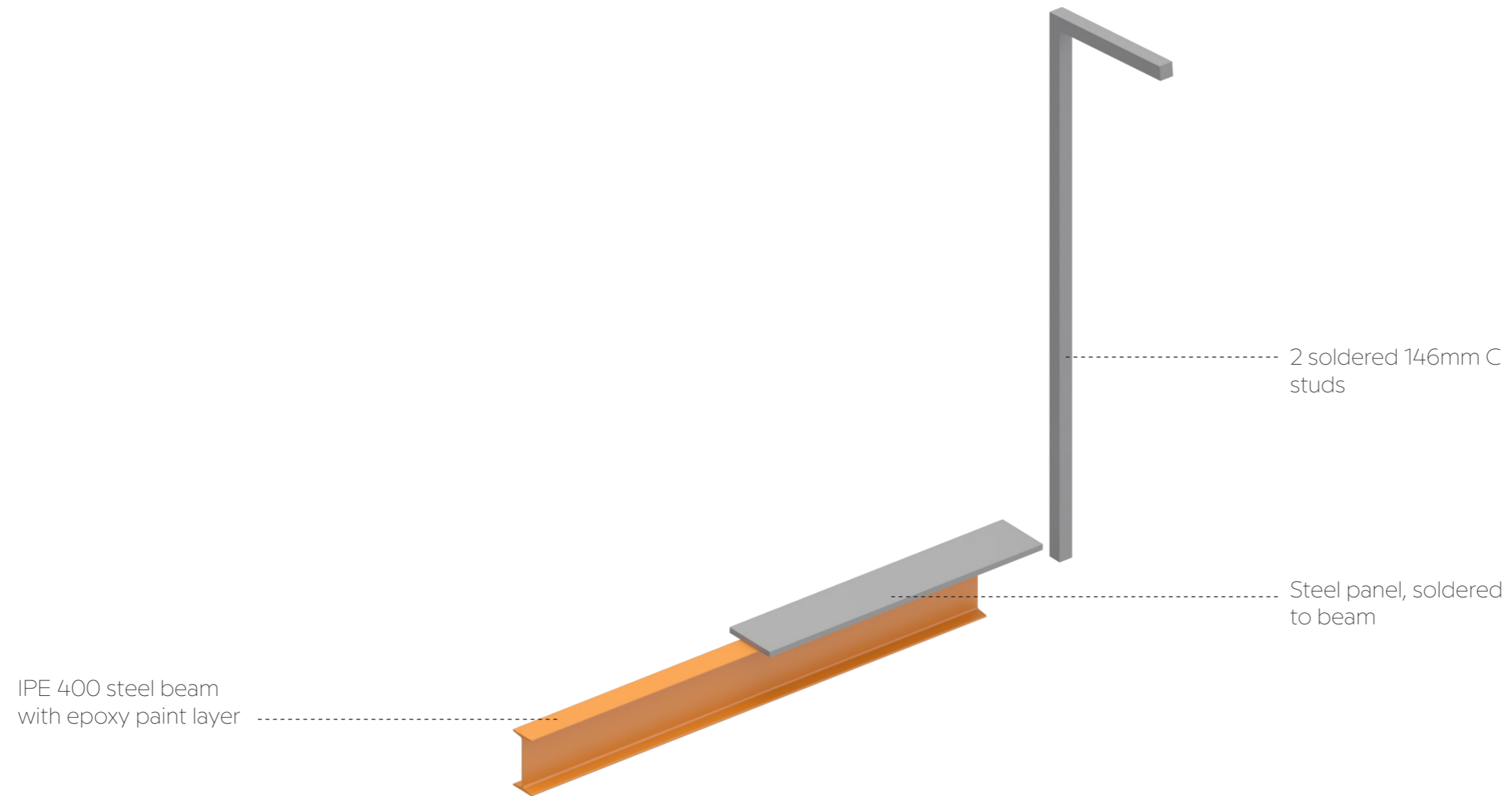
Play structure 2: Climbing, swinging



Play structure 2: Climbing, sliding, jumping

Play equipment modules are distributed on the ground floor level that strip back the traditional playground equipment to the bare bones that allow for the activities of climbing, swinging, sliding, jumping and spinning. These, as well as the seating and lighting elements, are made from reused metal elements from site 's disassembled mezzanines and roof.

SEATING and LIGHTING



Bench and lighting post made of reused IPE500 and C studs

THEATRE ENTRANCE



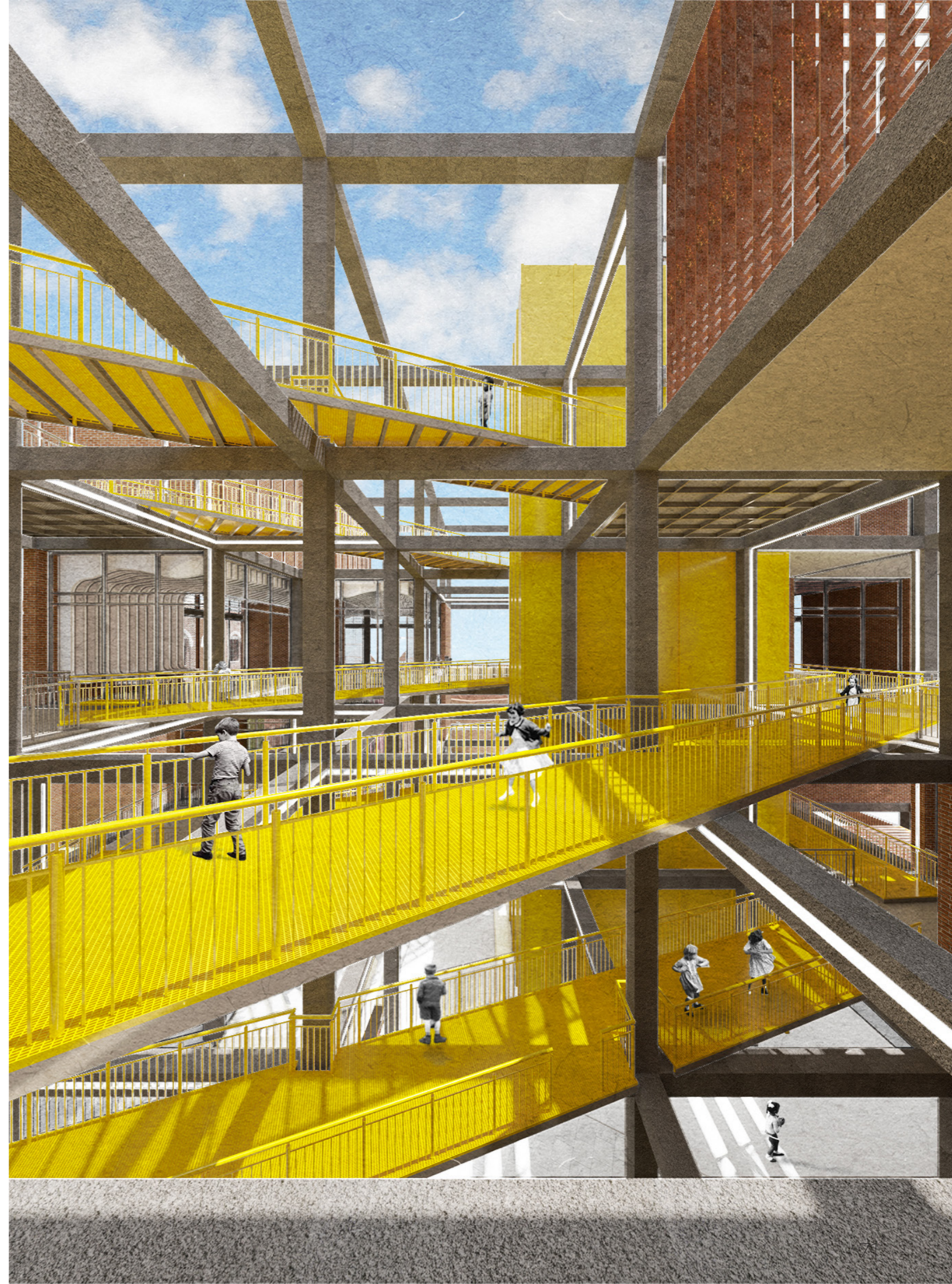
NORTH ELEVATION



INTERIOR



INTERIOR

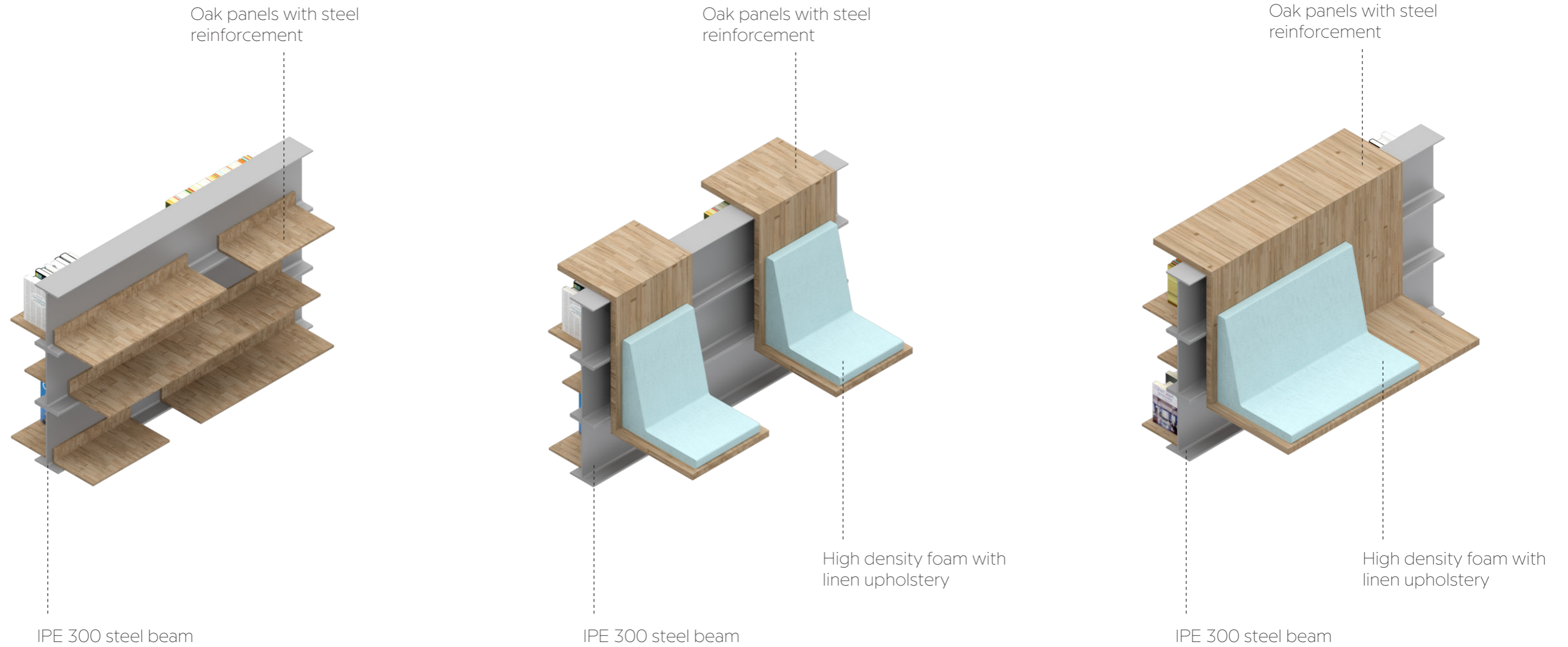




LIBRARY



LIBRARY: seating and bookshelves



Bookshelves and seating are combined into modules made with reused IPE 300 beams. The oak wood and seating linen fabric in soft pastel colours brings warmth into the calmer atmosphere of the BUILDING activities.

PAINTING



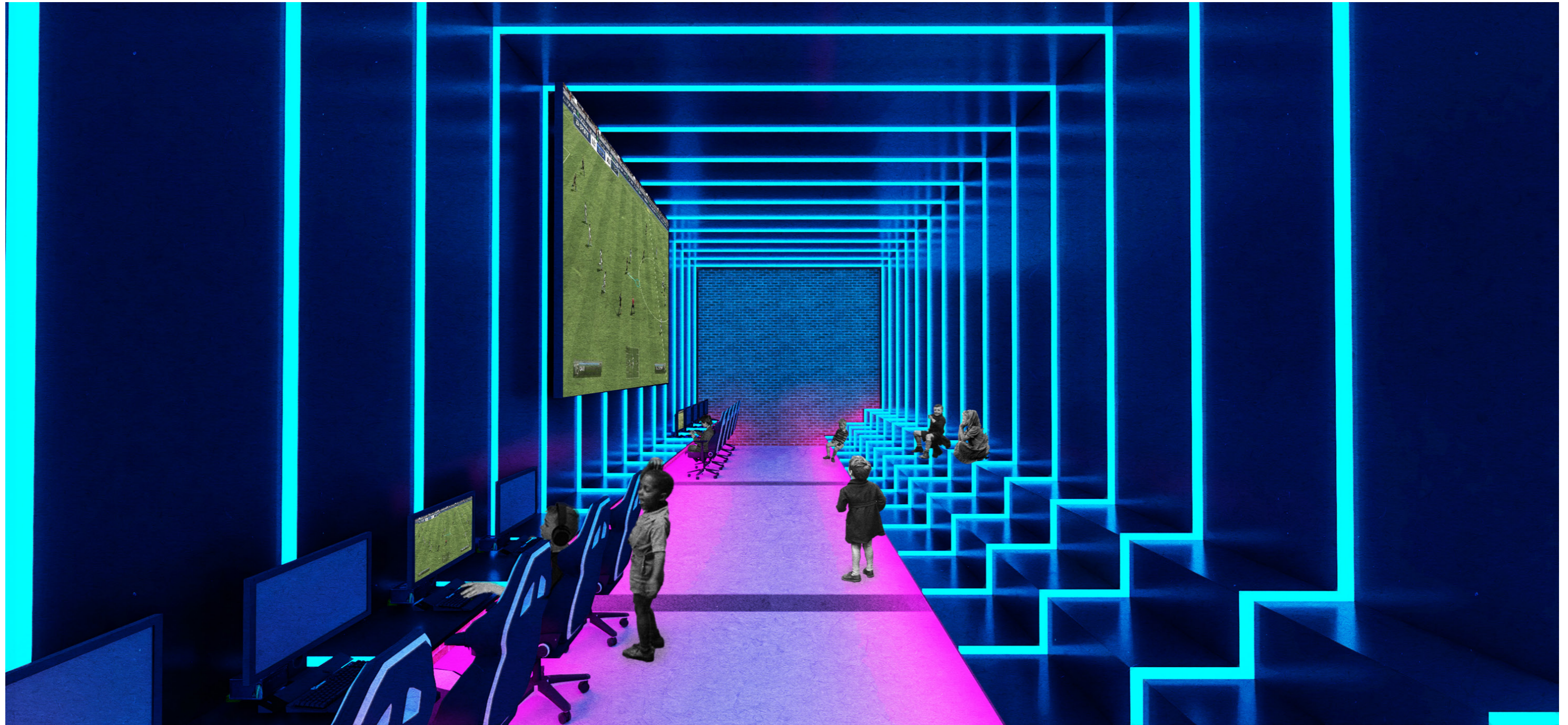
SCULPTURE



ARCADE



VIDEOGAMES



GYM



BALL COURT

