



# ALMEN KINDERGARTEN

PROJECTS 06 Lottie Wild

# GENDER GAP



- 1ST
- 2ND
- 3RD
- 5TH
- 15TH



# BRIEF SUMMARY

## NEIGHBOURHOOD MOTHERS



WOMEN'S ORG. IN COPENHAGEN

**45%**

of women in denmark have experienced gender violence by their partner higher than the EU average of 31.8%



- challenging gender stereotypes from early years
- equal parental leave
- successful women's refuge: less isolating approach



in the last 20 years, the amount of women (having experienced domestic violence) returning to their perpetrator decreased by

**53%**

with currently only 11% of women return



**47%**

of immigrant children have weak danish language skills when starting school



## THE HJALLI MODEL

The Hjalli method was founded by Margrét Pála Ólafssóttir in 1989, Iceland. This curriculum focuses less on imparting knowledge, but instead, shaping confident, compassionate individuals to thrive in a diverse world. central to the model is the deliberate creation of small, single-sex groups within the classroom environment with the aim to liberate children from traditional gender roles and stereotypes, ensuring that both boys and girls receive equal attention and opportunities to thrive.

**EQUALITY**  
**CREATIVITY**  
**DEMOCRACY**



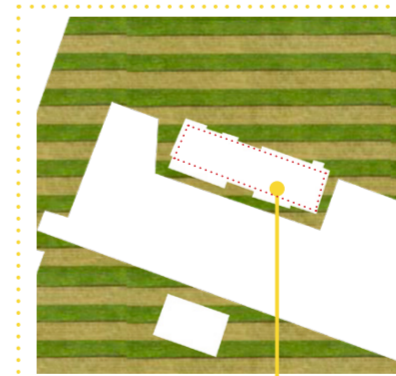
**10%**

of danish preschools operate in nature forest settings where children are outside all day

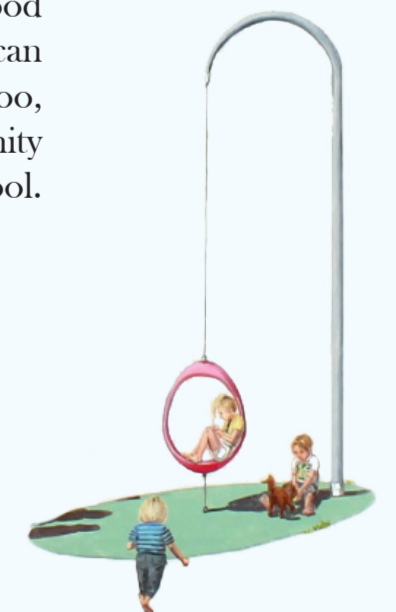
## MY INTERVENTION



A kindergarten that runs by Hjalli methods and community values that teaches life skills. To follow icelandic models of women supporting women through refuges the "life skills" can be taught by women who have started a new life due to gender violence or loneliness. The school is linked with neighbourhood mothers, the space can be used after-hours too, creating a community hub within the school.



COPENHAGEN INTERNATIONAL SCHOOL



# SITE ANALYSIS

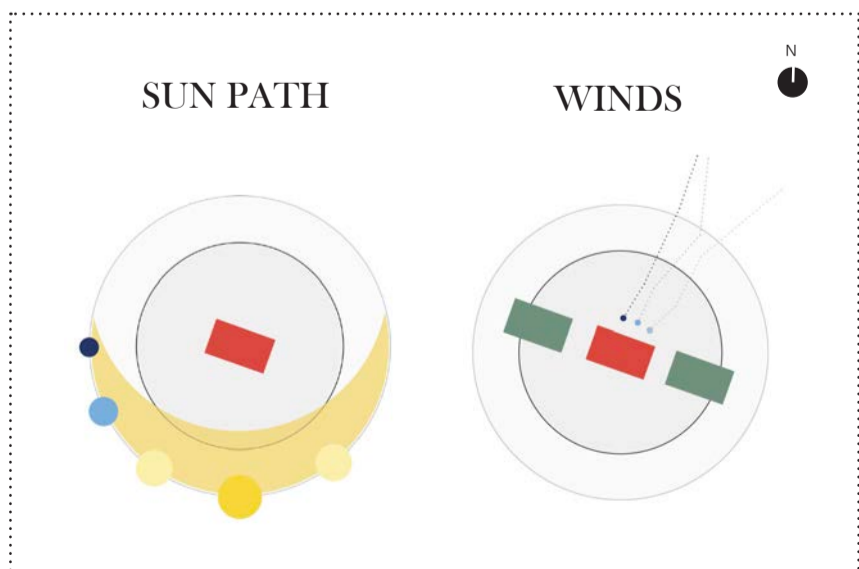


1:10000



## KEY

- |   |  |
|---|--|
|  SITE              |  LIBRARY    |
|  GREEN SPACES      |  NORDHAVN   |
|  EDUCATION         |  PATH TAKEN |
|  COMMUNITY CENTRES |  |



## SPACIAL ADJENCIES

- ▣ PUBLIC
- ▣ PRIVATE
- ▣ SEMI-PUBLIC



**AUDITORIUM**  
300m<sup>2</sup>



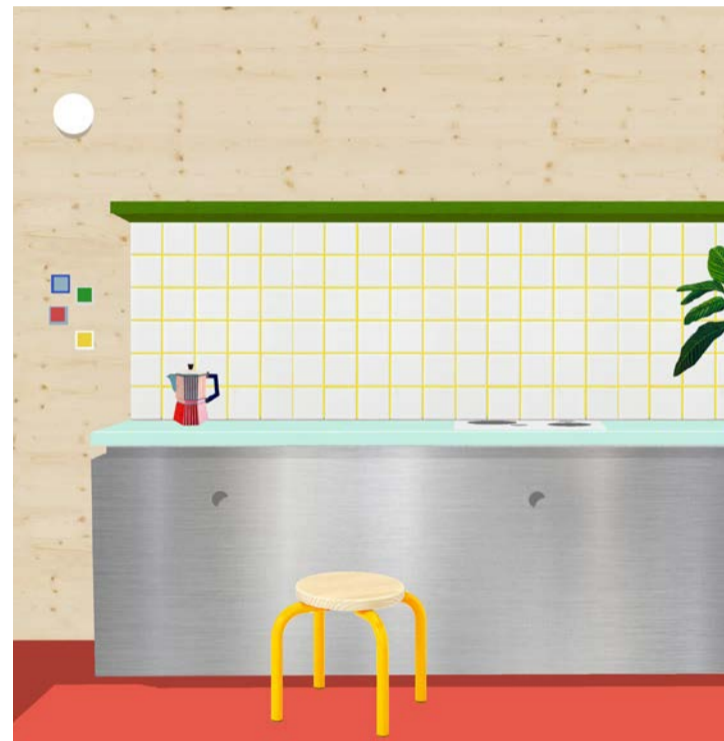
**YOGA ROOM**  
150m<sup>2</sup>



**SPORTS PITCH**  
300m<sup>2</sup>



**CARPET ROOM**  
80m<sup>2</sup>



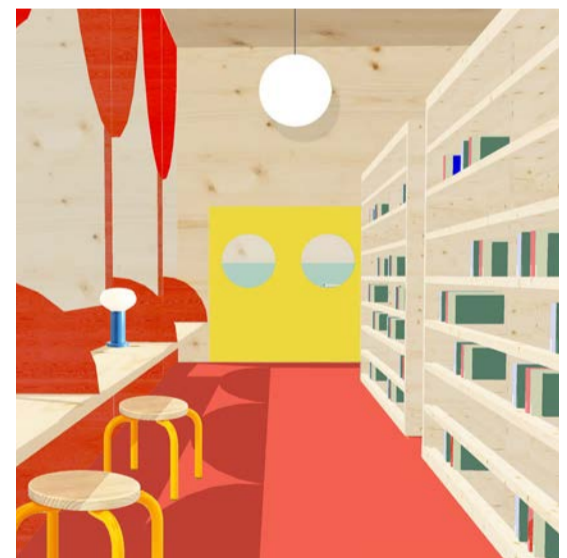
**COMMUNAL KITCHEN**  
300m<sup>2</sup>



**GENDERED ROOMS**  
45m<sup>2</sup>



**GARDENING TERRACE**  
600m<sup>2</sup>



**CHILDREN'S LIBRARY**  
150m<sup>2</sup>



**WOMEN'S SPACES**  
30m<sup>2</sup>

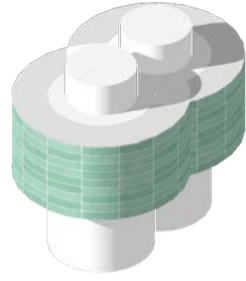
Arranging the key spaces of the building into public/private to understand how they will connect and “crossover” with each other. Each space has an approximate size of which they will should be to accomodate the needed activities.

# DESIGN DEVELOPMENT

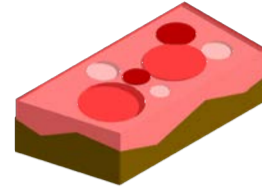


## CIRCULAR FORMS

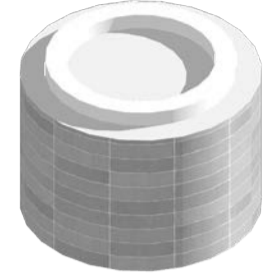
These buildings in Nordhavn, situated walking distance from the site, are built with circular forms that inspired the kindergarten design.



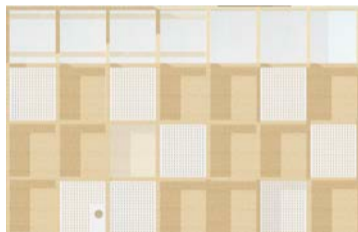
Miljømærkning Danmark



Konditaget Liders



Copenhagen Infrastructure Partners



## “GREENHOUSE” STRUCTURE

Ensuring the kindergarten fits the design of the International School.



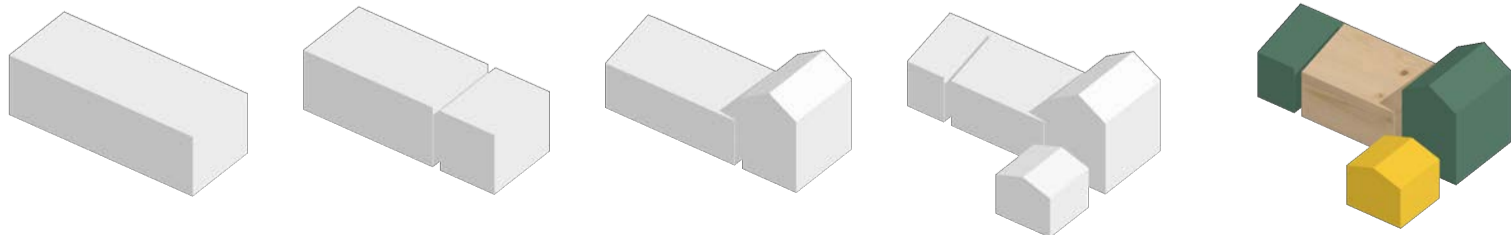
Copenhagen International School

## HEIGHT

For the building to fit into the street typology the height is balanced with the neighbouring warehouses.



## MASSING PROCESS



## PRECEDENTS

### MONTESSORI KINDERGARTEN Mjölkk Architekti

The Montessori Kindergarten extension by Mjölkk Architekti is a building where children develop fundamental relationships with the world. The architects believe that kindergartens should be extraordinary buildings whose primary function is to give children a sense that the world is a wonderful place to live in. A kindergarten is the first place a child is on their own outside the safety of family and where one makes individual connections with people and the environment.

The architects believe they did not take to the pressure of boredom and have created a building in which children are free to develop casually and that the architecture will meet their needs.



### KONDITAGET LÜDERS JAJA Architects

Konditaget Lüdgers AKA “Park ‘N’ Play” is a car park with a play area on the roof in Nordhavn, only 450m from site. The handrailing from the stairs up to the playground runs through the whole roof, creating play structures and a path for the children to take. The recreational area is 24 metres above ground creating a view of the horizon. The play structures consist of climbing nets, swings, monkey bars and trampolines. Additionally, areas are provided for spaces for the community to use like working out on the roof. This is a useful precedent for the roof playground in the kindergarten as the design encourages independence and creativity.



### SANYA JINMAO FARM LAB CLOU Architects

The Farm Lab is an cultural and educational building located in Sanya, Hainan Island, China. The building was designed by CLOU Architects and was completed in 2021. CLOU Architects is a team of architects and designers based in Shanghai, Beijing, Hong Kong and Lisbon.

The pavilion integrates exhibition spaces and indoor vertical farming. The focus of the design was to maximize the opportunities for encounters between researchers, visitors, and tourists within the building. This project is a precedent due to it's similar timber grid form facade.



### HACKNEY SCHOOL OF FOOD Surman Weston

Hackney School of Food is part of an initiative to teach children how to grow, cook and eat healthy food. The scheme was designed to deliver maximum social value within a limited budget . Flexible programming enables schools across the borough to access cooking workshops, with around 4,000 children visiting each year. Outside school hours and during holidays, the kitchen and gardens are used by local community groups as part of an adult food programme. This is a useful precedent for the kindergarten as the communal kitchen becomes a hub for the area encouraging teaching to the children about healthy and sustainable eating.



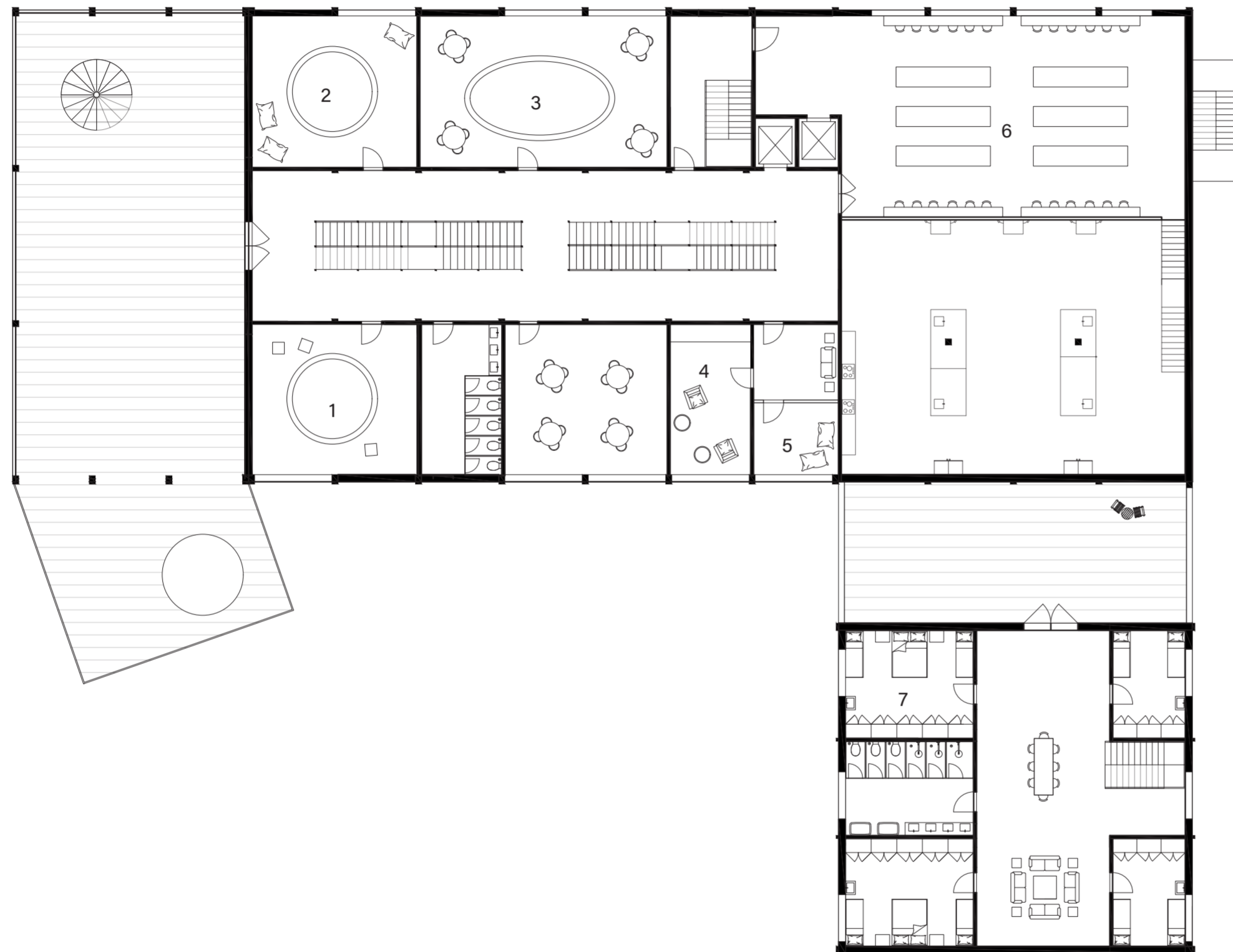


- 1 reception
- 2 carpet/communal room
- 3 "bold" activity room
- 4 "nurturing" activity room
- 5 nap room
- 6 communal kitchen
- 7 outdoor terrace
  
- 8 women's kitchen
- 9 social space

1:200 ground floor plan

0m 10m



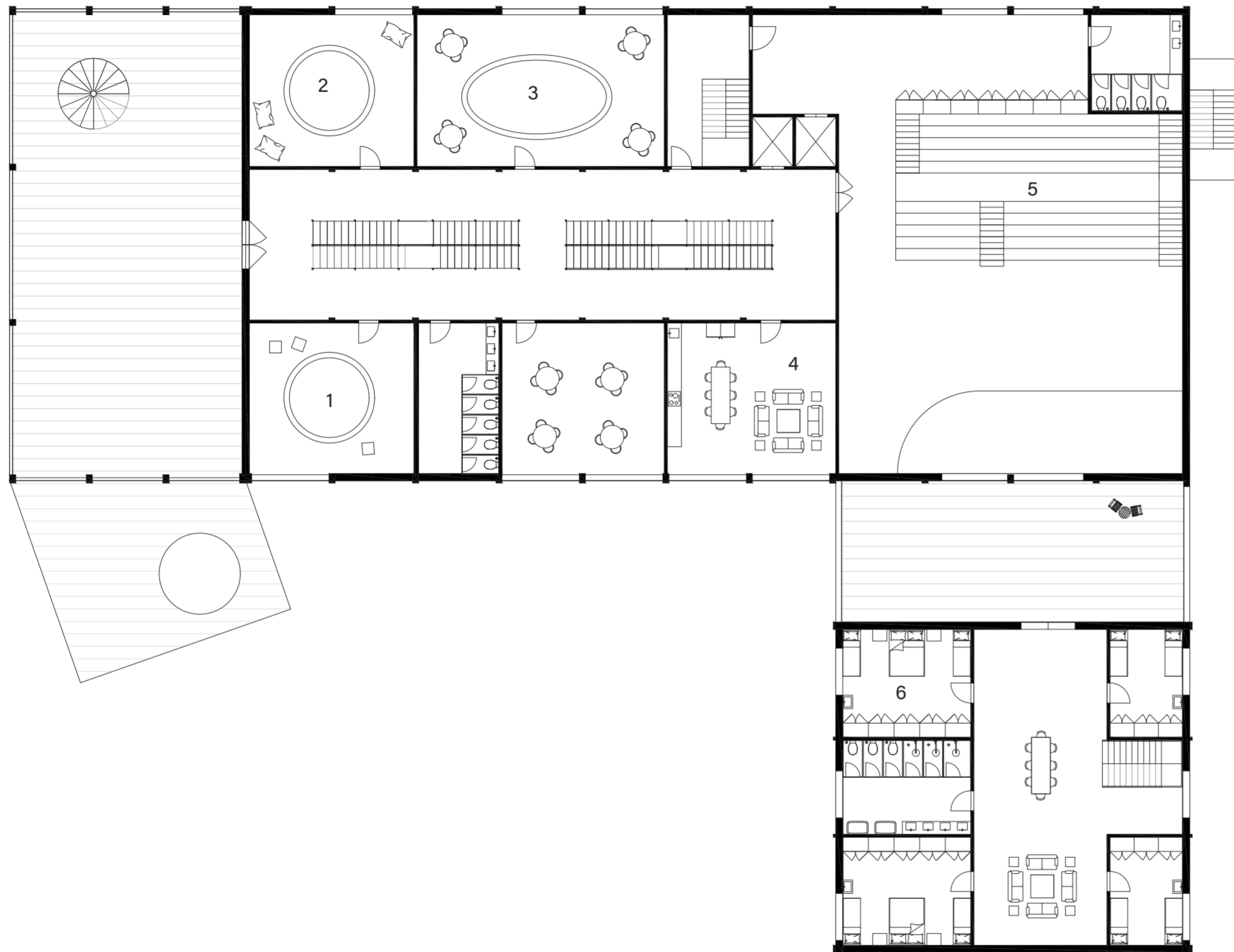


- 1 "bold" activity room
- 2 "nurturing" activity room
- 3 carpet/communal room
- 4 counselling room
- 5 reading room
- 6 library
- 7 women's room

N

1:200 first floor plan

0m 10m

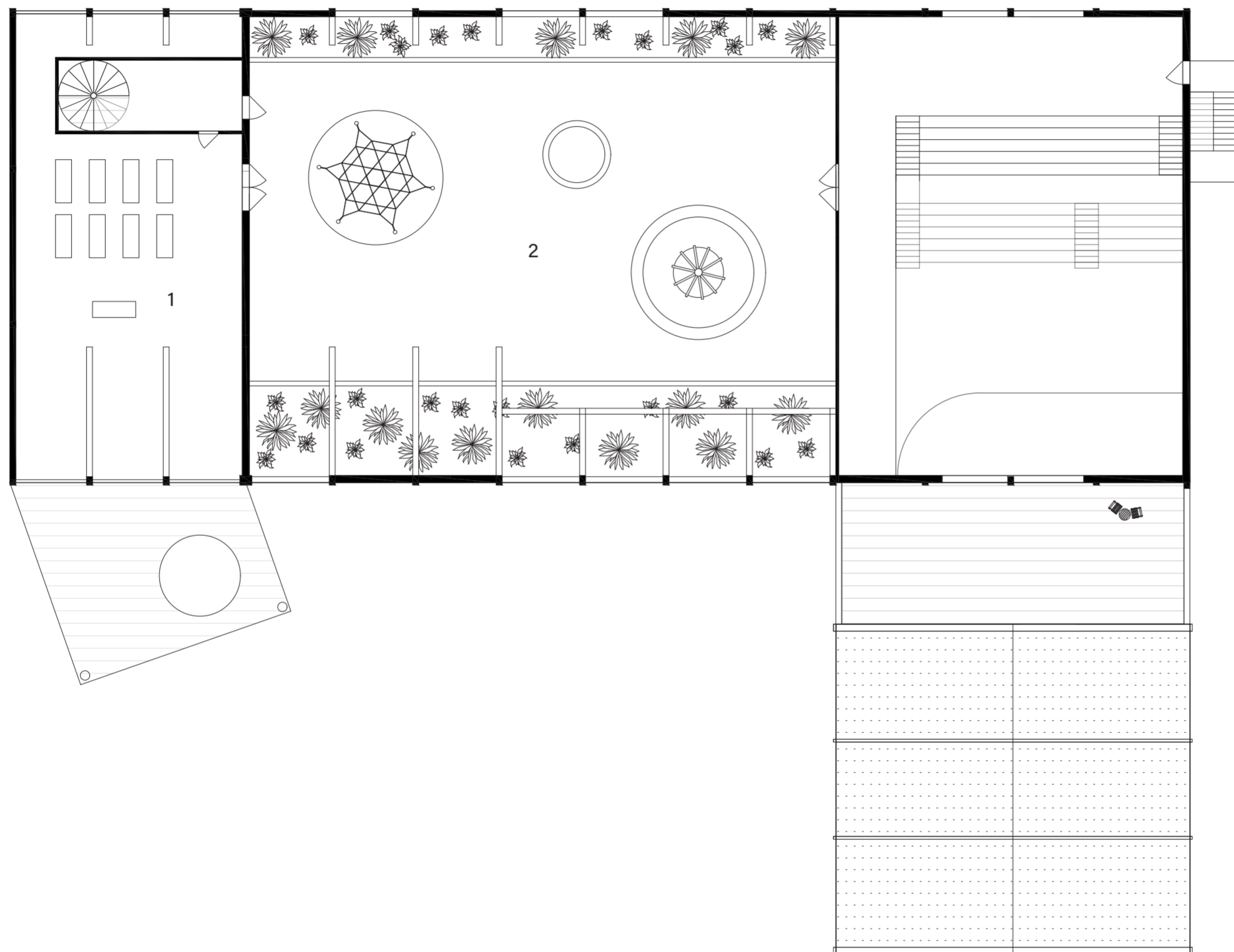


- 1 "bold" activity room
- 2 "nurturing" activity room
- 3 carpet/communal room
- 4 staff room
- 5 auditorium
- 6 women's room

N

1:200 second floor plan

0m 10m

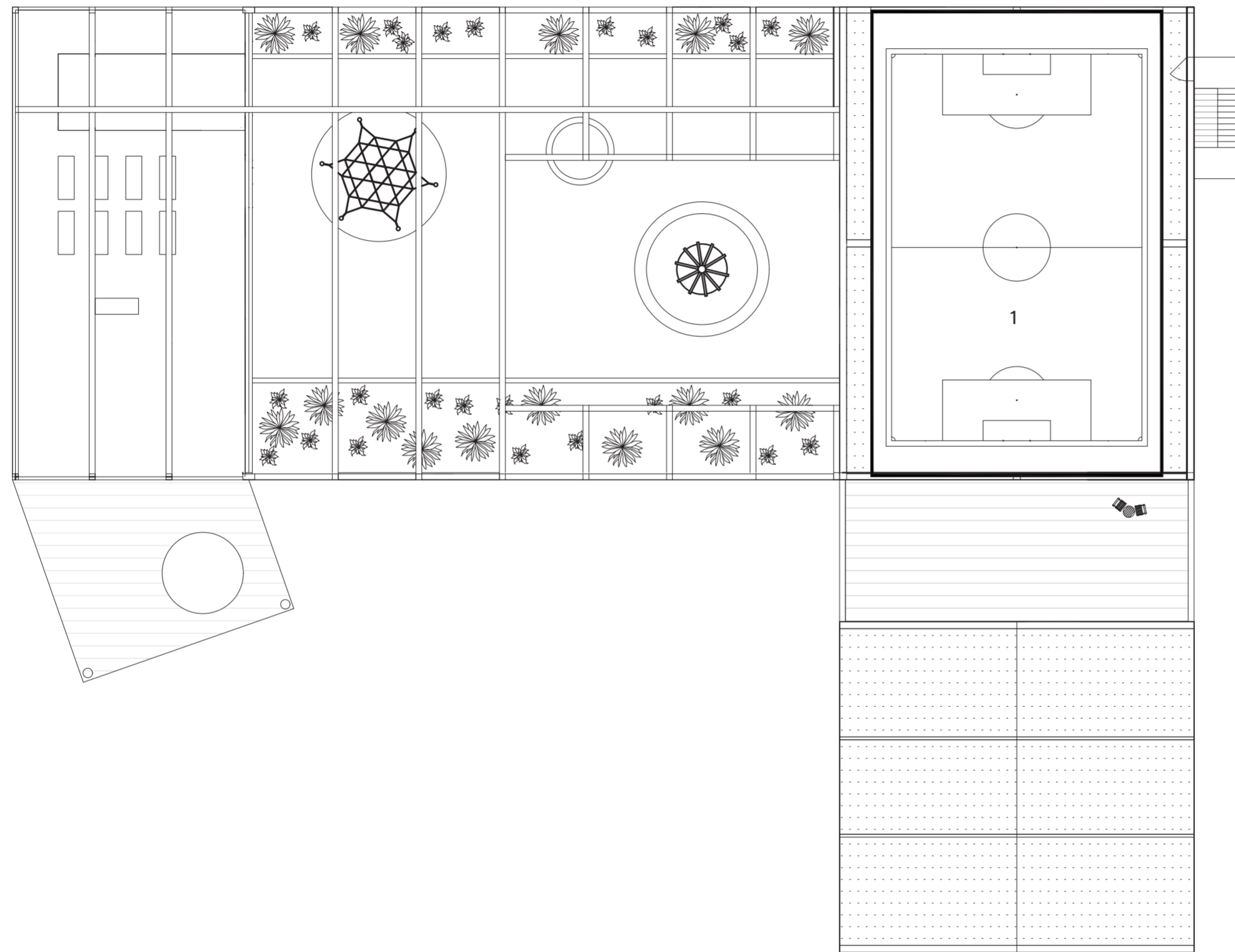


- 1 yoga room
- 2 roof playground

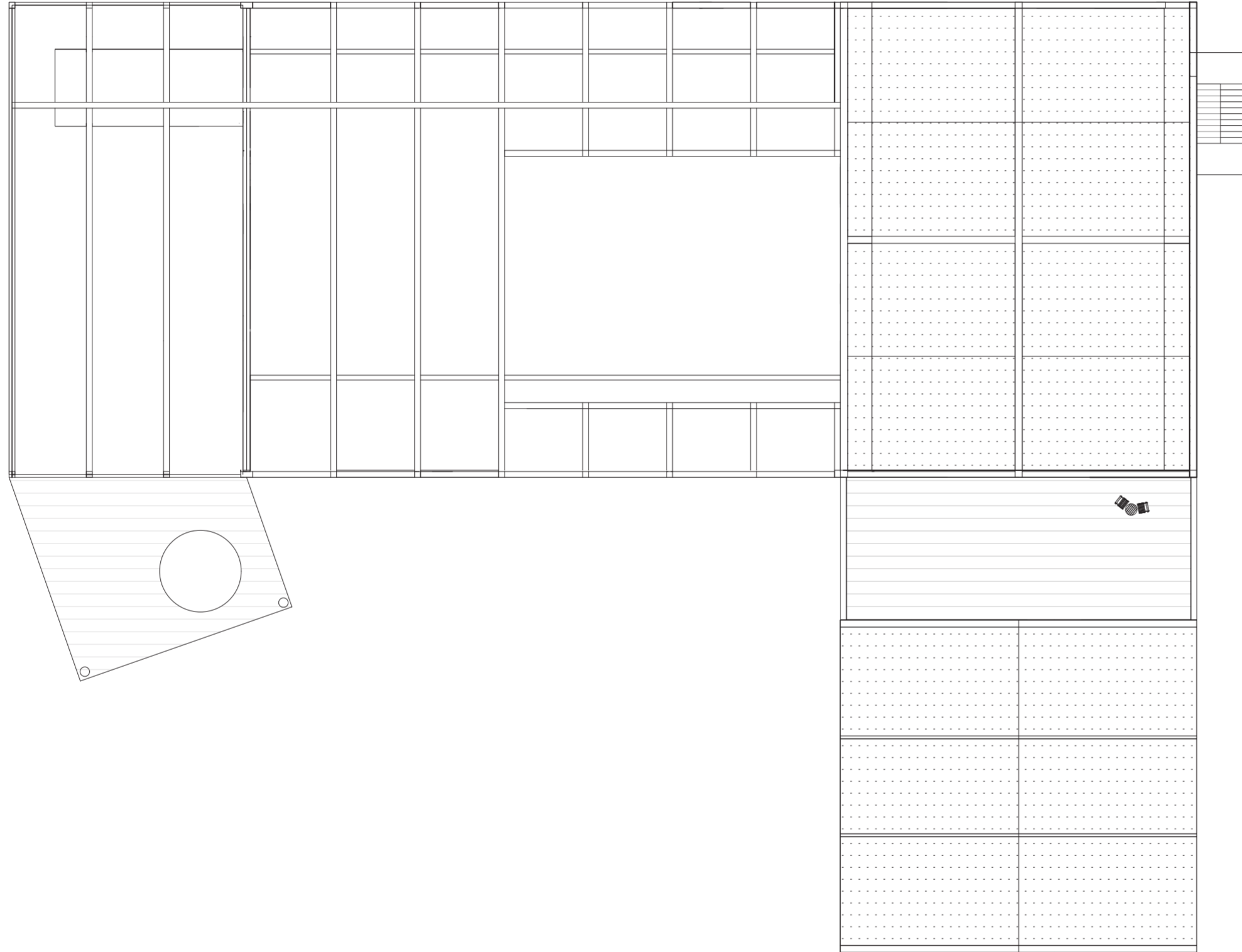
N

1:200 third floor plan

0m 10m



1 MUGA pitch (multi-use game pitch)



N

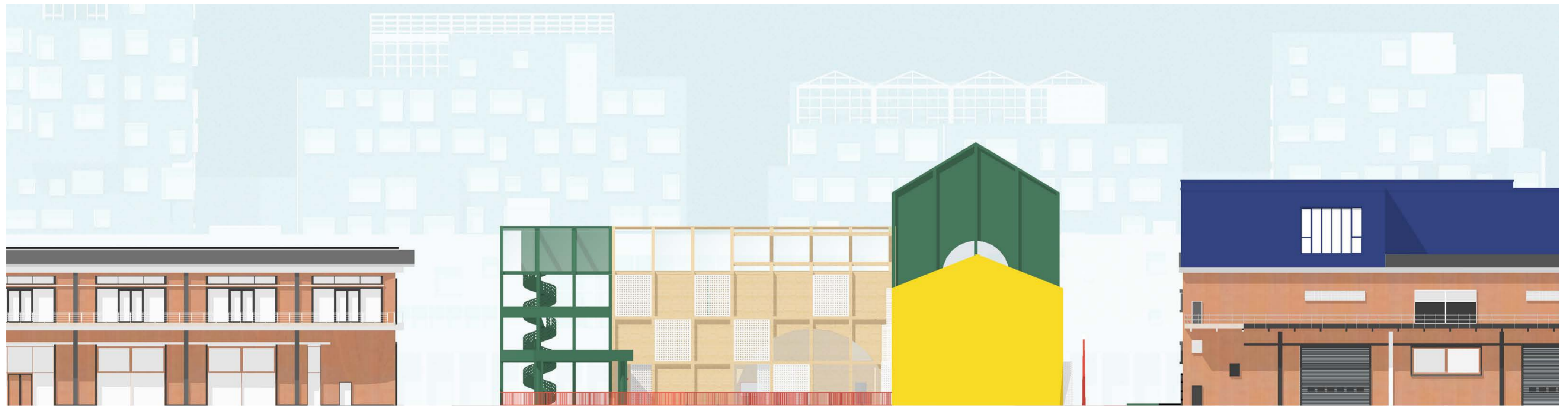
1:200 roof plan

0m 10m



ORIENTKAJ ELEVATION  
1:250 @ A2

0m \_\_\_\_\_ 12.5m



KLUBIENSVEJ ELEVATION  
1:250 @ A2

0m 12.5m



PERSPECTIVE SECTION  
1:100 @ A2

0m  5m

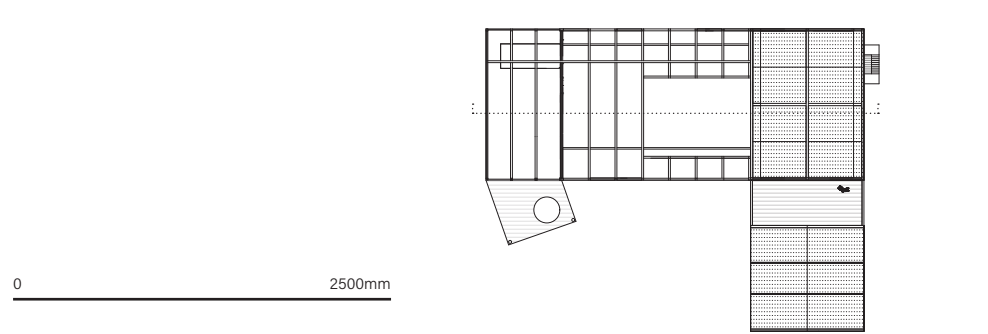


PERSPECTIVE SECTION  
1:250 @ A2

0m 12.5m

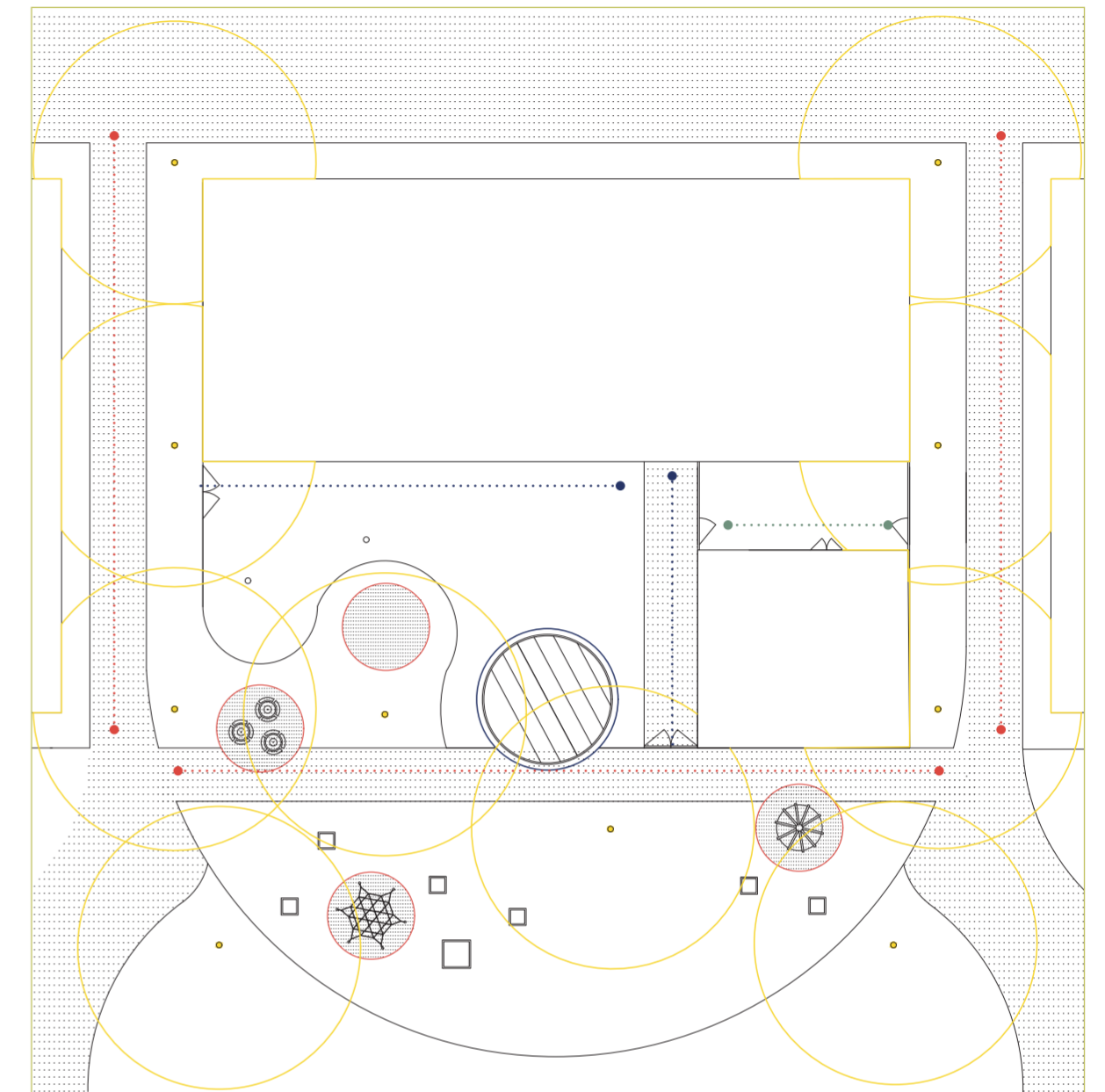


1:50 SECTION @ A0








## LANDSCAPE STRATEGY



### KEY

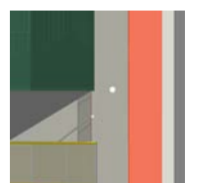
- LIGHT PATH
- PEDESTRIAN/CYCLIST ACCESS
- - - - KINDERGARTEN ACCESS
- · - · - · WOMEN ACCESS

### MATERIALS

-  **RECYCLED RUBBER PLAYGROUND FLOORING**  
Used for a soft, safe and colourful playground on the roof and on ground floor.
-  **VEGETATION**  
Designed green spaces that increase the biodiversity of the site and encourage the community to gather in.
-  **BIOGENIC ASPHALT**  
Sustainable, low-carbon road surfacing material that replaces traditional fossil-fuel-based bitumen with plant-based binders. This is used on the roads and pavement on site.

### LAMPPOST POSITIONING

To ensure women coming in/out of the women's shelter feel safe walking at night to/from the shelter there are street lights placed accordingly.



### PUBLIC/PRIVATE PLAYGROUND

#### PUBLIC

Playground equipment on the ground floor is open to the community and the kindergarten encouraging the sense of community within the site.



#### PRIVATE/CIVIC

The outdoor auditorium provides a space for planned events that are able open to the community. On a day-to-day basis the space is only open to the kindergarten/women's shelter.

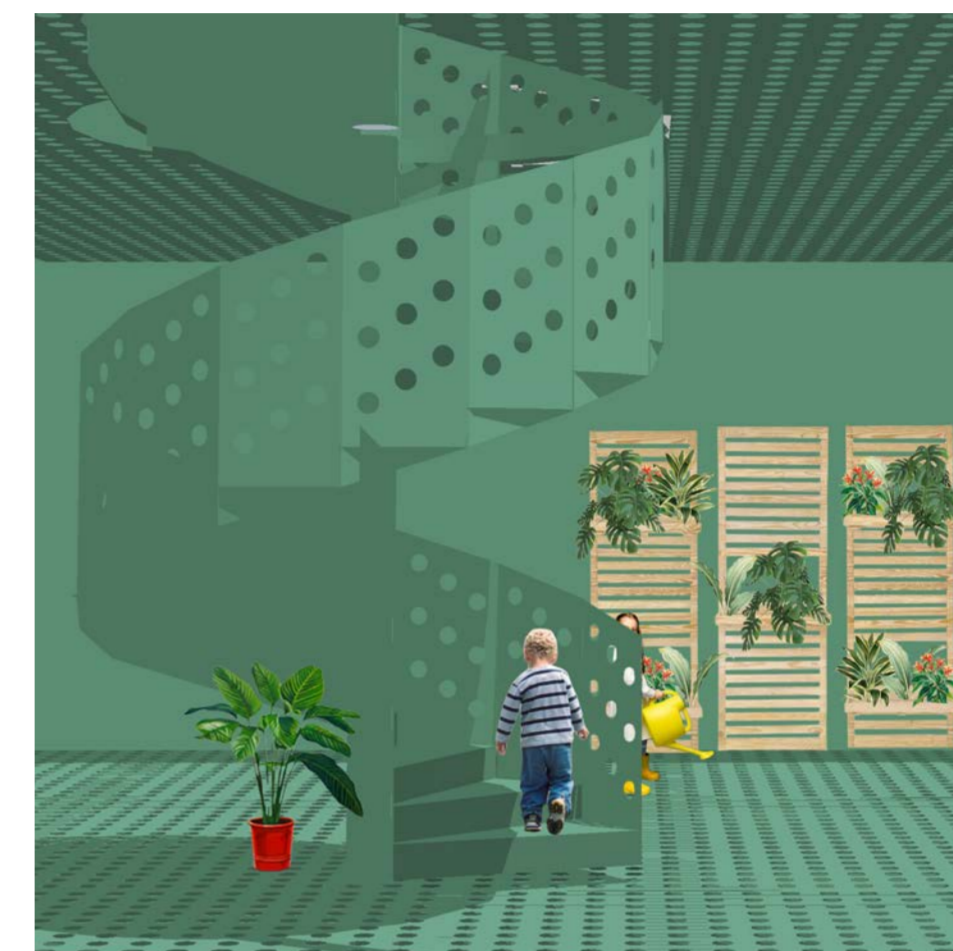
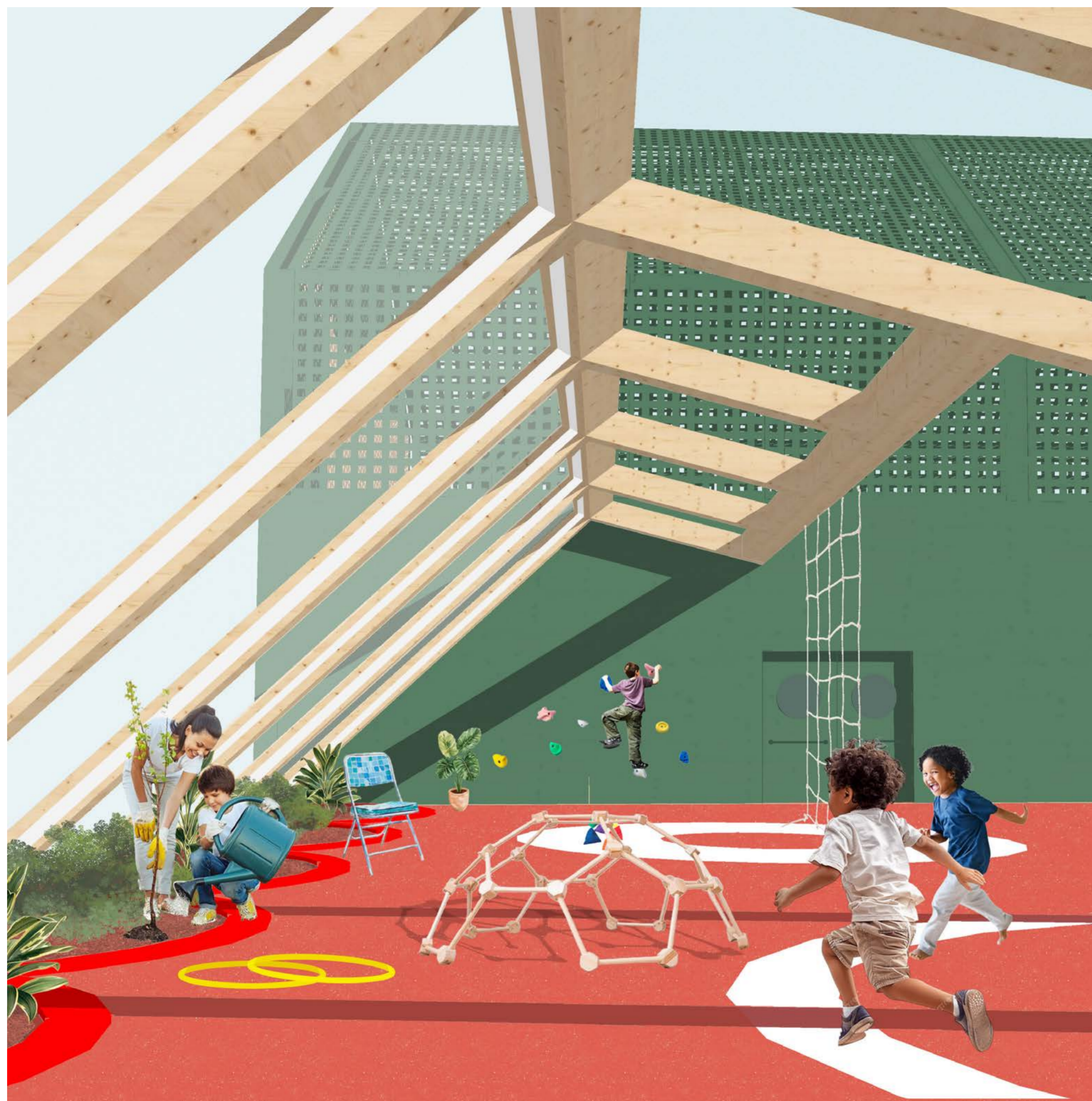




## COMMUNAL KITCHEN

The kitchen space encourages children and community members, including women in the shelter, to teach the children in the kindergarten fine motor skills and independence through aiding in the kitchen.

The large, double-height space has a semi-circle window facing the International School opposite. The large window is to encourage any residents walking past to come in and cook.



## OUTDOOR LEARNING

Outdoor learning is a foundational element of Danish early education. Ensuring the kindergarten has the appropriate spaces to explore this curriculum is essential.

The roof playground is where planting, play and exercise may happen - with a wind block from glazing on the north side of the terrace. The perforated metal terraces encourage planting and connectivity to the classrooms.



## HJALLI CLASSROOMS

To deter gender stereotype from early years the children are separated into classrooms to follow the Hjalli model. Shown in the views the girls are testing who can climb the fastest to the top of the ladder - teaching strength and the act supporting others to the girls.

In the neighbouring room the boys are caring for dolls and reading to each other, teaching nurture and sensitivity to the boys.



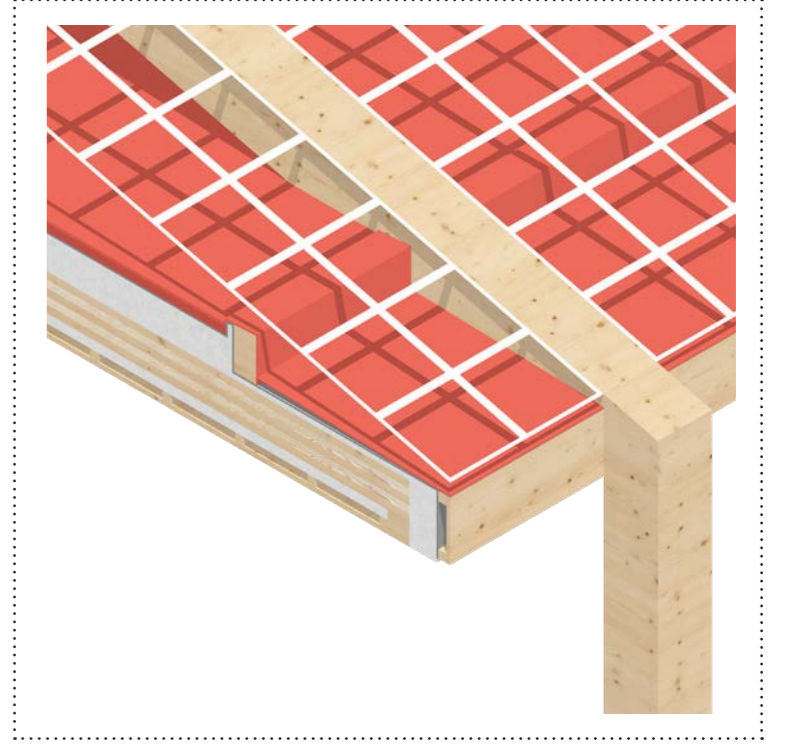
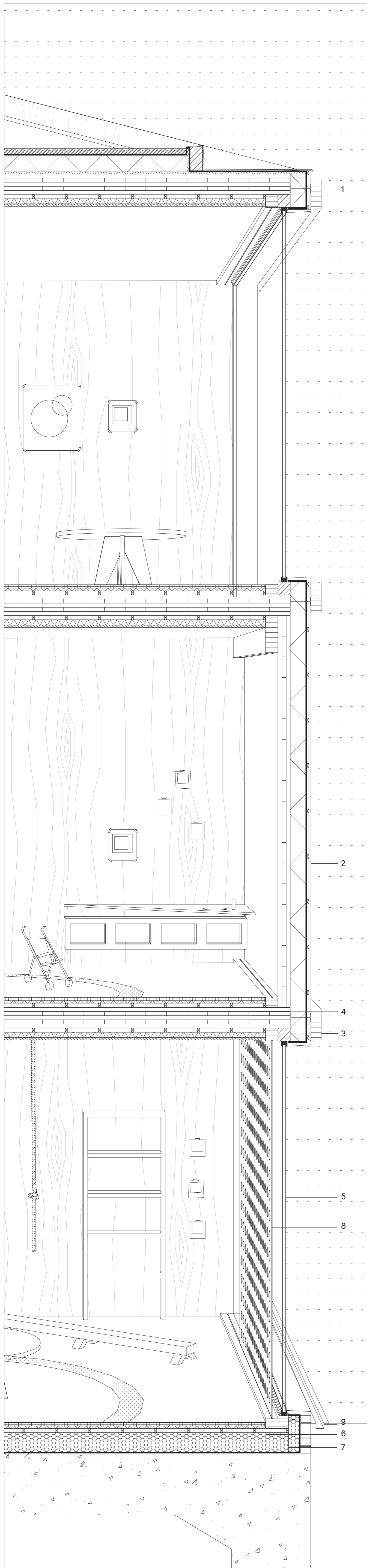
## SCHOOL RUN

Once the school day has ended, parents gather to pick up the students in the green communal space in the front of the kindergarten. The view shows how the women's shelter links to the kindergarten, ensuring it allows convenience for the women within the building.



## WOMEN'S SHELTER

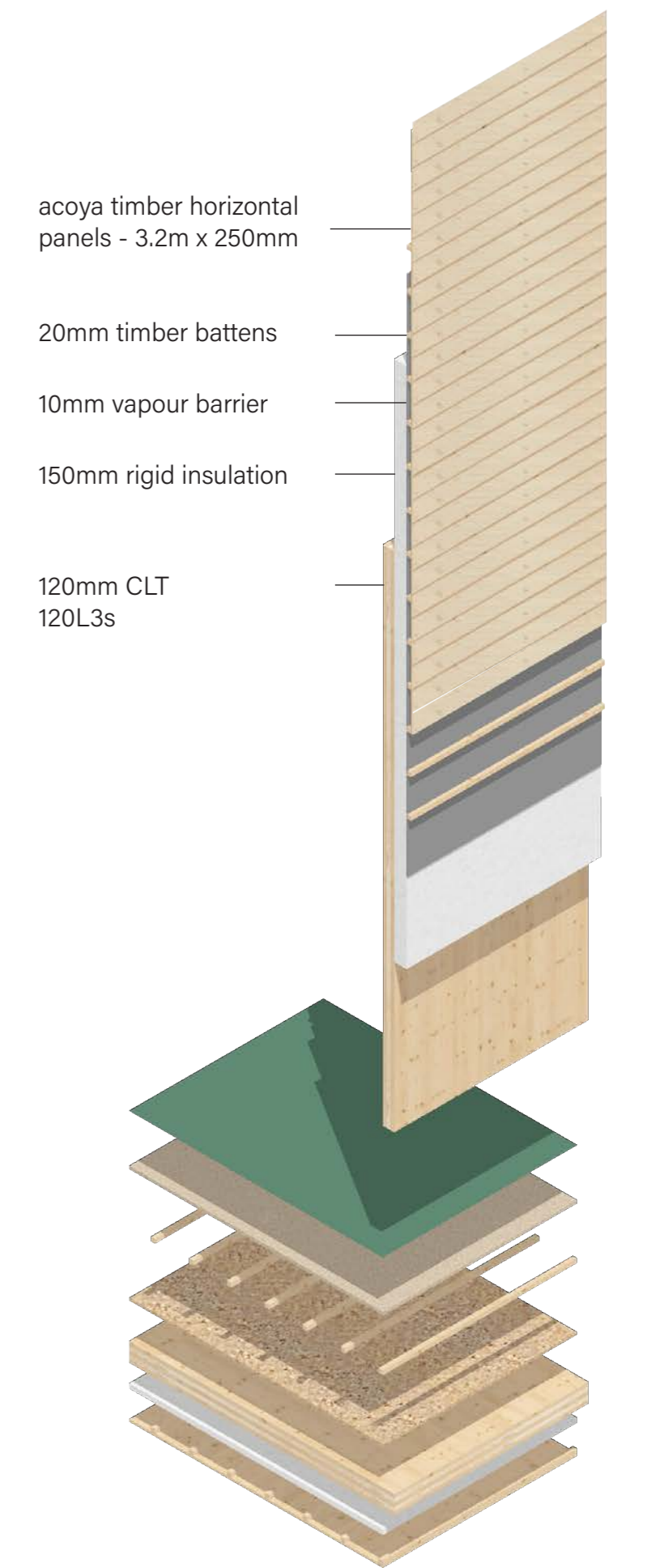
Within the women's shelter there is a communal cooking, dining and living area to encourage community between the women and children. In the bedrooms, there are bunkbeds for children and double beds for the women, with their own sinks and storage.



junction a. roof construction



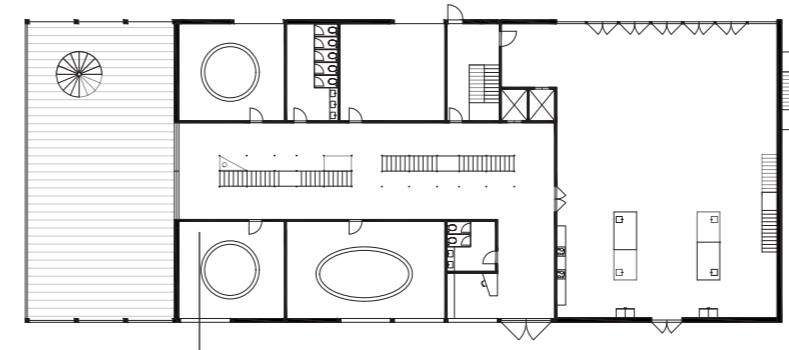
junction b. classroom construction



- |   |   |
|---|---|
| <p>1 roof construction:<br/>15mm recycled rubber (PIP) wear layer<br/>40mm recycled rubber cushion layer<br/>10mm drainage layer<br/>150mm rigid insulation<br/>10mm vapour barrier<br/>200mm CLT<br/>40mm timber battens<br/>25mm wood fibre panels<br/>see junction a.</p> <p>2 classroom wall construction:<br/>120mm CLT<br/>150mm insulation<br/>10mm vapour barrier<br/>20mm timber battens<br/>20mm timber cladding</p> <p>3 100 x 300mm timber beam steel tie</p> <p>4 classroom floor construction:<br/>2.5mm linoleum<br/>2 x 16mm glued chipboard<br/>25mm sound impact sound insulation<br/>40mm timber battens<br/>200mm CLT<br/>50mm wool insulation<br/>40mm timber battens<br/>25mm wood fibre panels<br/>see junction b.</p> | <p>5 windows with safety railing integrated into frame</p> <p>6 ground floor construction:<br/>2.5mm linoleum<br/>2x 16mm glued chipboard<br/>25mm sound impact sound<br/>40mm timber battens<br/>200mm rigid insulation<br/>10mm vapour barrier<br/>250mm stone layer</p> <p>7 foundation construction:<br/>brick plinth finish to external leaf of foundation wall<br/>reinforced concrete footing</p> <p>8 perforated metal sun shading stainless steel track</p> <p>9 ground gutter</p> |
|---|---|

1:20 BAY STUDY @ A1

0m 2.5m



## STRUCTURAL + MATERIAL STRATEGY

### CLT PRIMARY LOAD

The kindergarten and women's shelter have repetitive and consistent designs enabling the structure to be CLT. Due to its low embodied carbon and the aesthetics of timber it is a sustainable choice, using less materials to cover the CLT - exposing it throughout the building.

### RECYCLED RUBBER

To create a safe and fun roof terrace playground the floor is made out of pour-in-place recycled rubber flooring to allow for soft landings while remaining sustainable.

### PERFORATED METAL

Perforated metal is used for sunshading and terraced areas to allow light to come through for planting.

### SLAMFÄRG PAINT

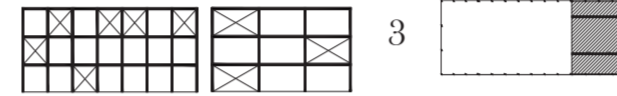
Using Scandinavian methods on timber colouring to achieve a traditional and vibrant Danish finish. Slamfärg paint is a sustainable paint as it's natural made of mostly renewable and raw materials.

### FIRE AXO

- MAIN STAIRS
- EXT. FIRE STAIRS
- INT. FIRE STAIRS

### + STEEL SECONDARY LOAD

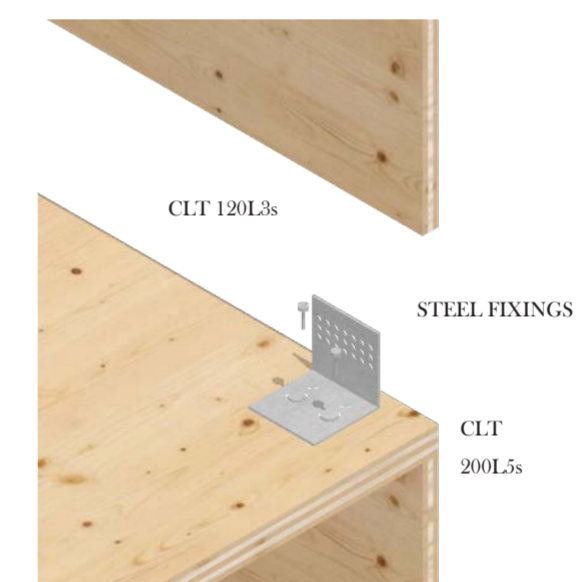
Underneath the auditorium there is need for a steel beam to hold up the auditorium above it due to the double height spaces on top of each other.



### STEEL BEAM

750mm x 300mm  
 Depth = Span/20  
 15m/20 = 750mm

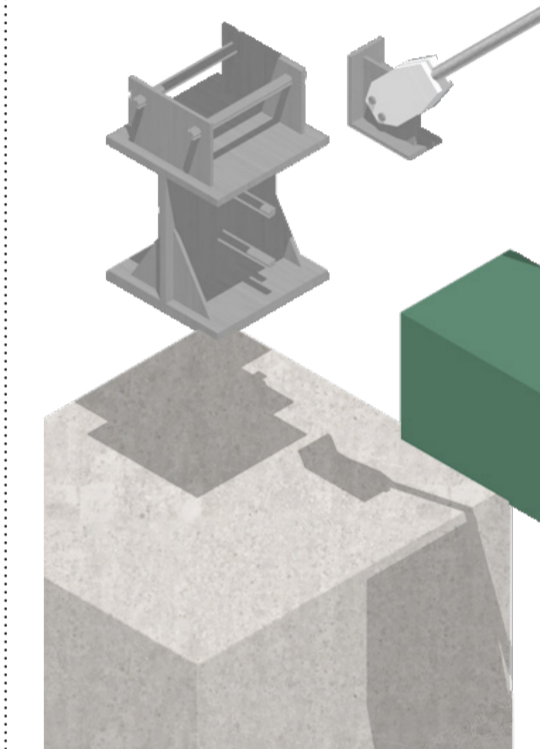
### CLT PRIMARY LOAD



Using span tables to calculate the amount of laminations needed for a maximum span:  
 Load (1.00gK), max. span 6.5/7m = 2005Ls  
 Max span (without a steel beam) 7m.  
 The CLT wall is attached to the floor with steel fixings.

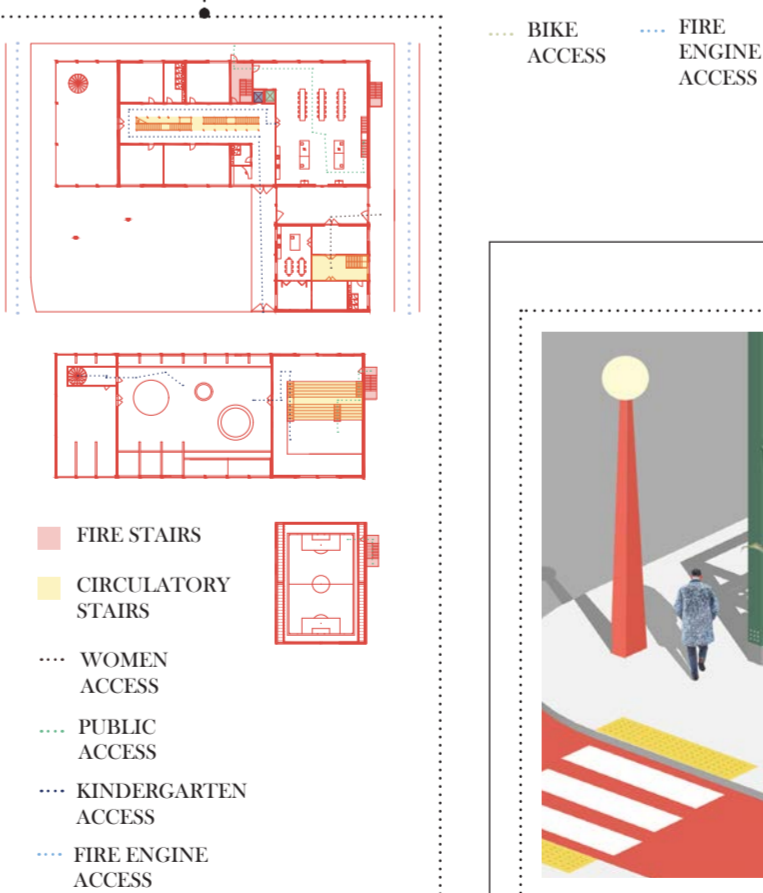
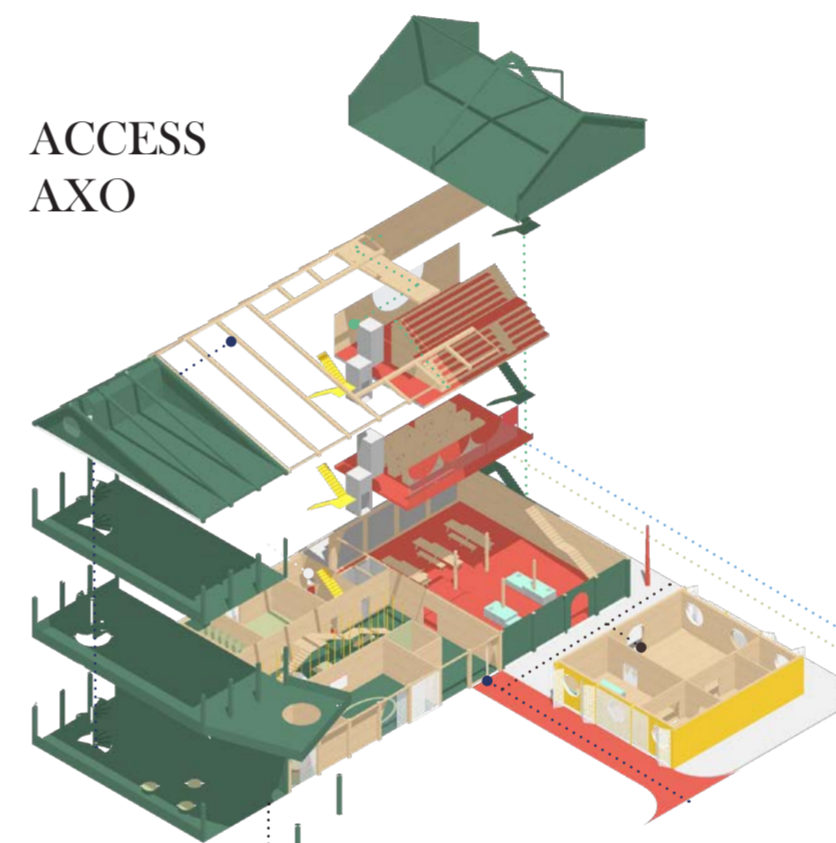
### STEEL BRACE + GLULAM

GLULAM COLUMN  
 SLAMFÄRG PAINT  
 PRIMARY LOAD  
 STEEL BRACING  
 STEEL JOINERY  
 SECONDARY LOAD



An exploded axonometric showing how the glulam columns connect to concrete footings and steel bracing. The 10mm steel joint connects to the timber through 10mm steel rods.

### ACCESS AXO



### POST-CONSTRUCTION (IN-USE)

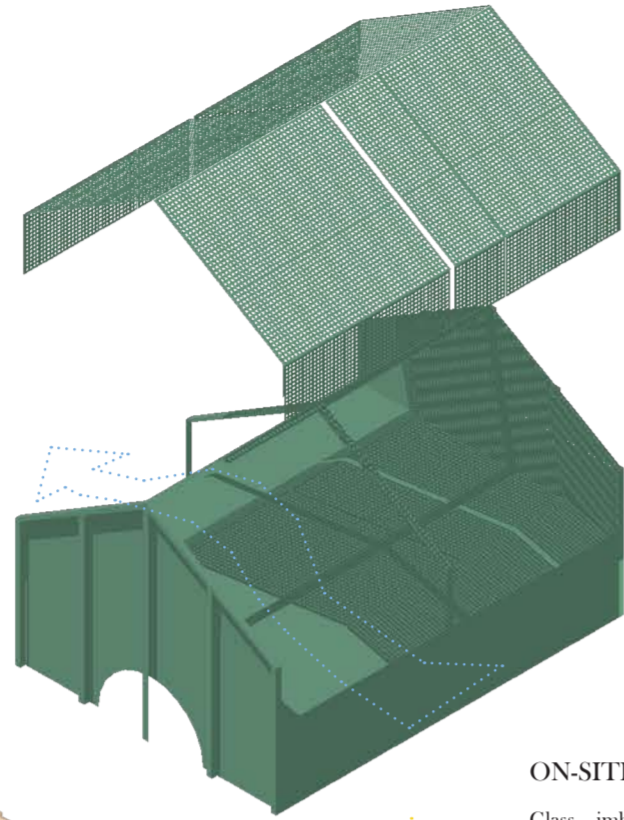


Glulam columns are weather-proofed and painted with slamfärg paint in the djurgårdsgrön colour.  
 CLT is used for the walls and floors where in the in-use stage the walls are exposed in every room, ceiling and floors are covered with timber or linoleum.

# ENVIRONMENTAL STRATEGY

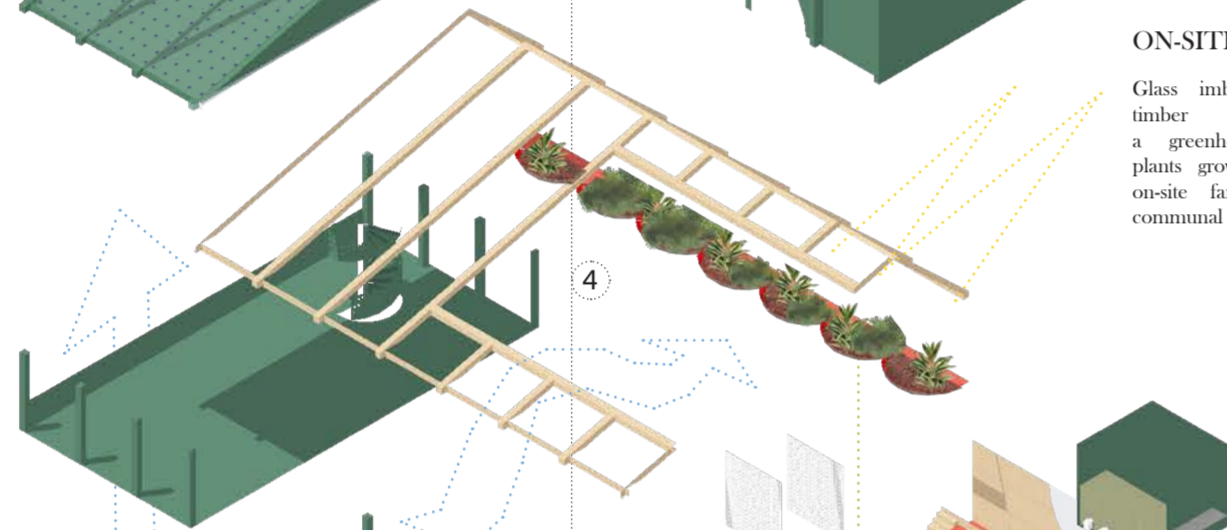


**PV GLASS**  
Solar glass on the south facing roof/window to maximise electricity generation.



## VENTILATION

Perforated metal terraces allow for ventilation through the full length of the building.



**ON-SITE FARMING**  
Glass imbedded in the timber frame create a greenhouse for the plants growing - enabling on-site farming for the communal kitchen

## HEATING

South facing windows allow for natural heating throughout the day.



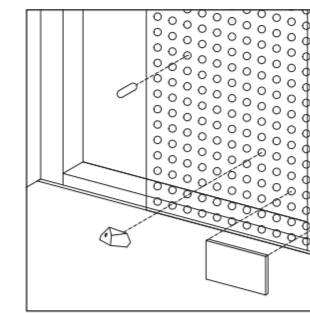
**AIR SOURCE HEAT PUMP**  
Denmark's electricity grid is heavily powered by wind power, making a air source heat pump a sustainable, low carbon heating choice for site.

EXPLODED AXO  
1:500 @ A2

## 1. SOLAR SHADING FACADE

To avoid overheating sliding solar-shades are designed to shade classrooms while multifunctioning as a pegboard - enabling students to learn through the facade.

The facade of the women's refuge is mechanical and is designed to provide additional privacy to the building.



## 2. AIR SOURCE HEAT PUMP

## 3. RAINWATER HARVESTING

Due to heavy rainfall in Copenhagen, Denmark a sustainable strategy for the kindergarten is re-using rainwater for non-potable use like gardening and toilet flushing. This is helpful for the building specifically due to the roof garden.

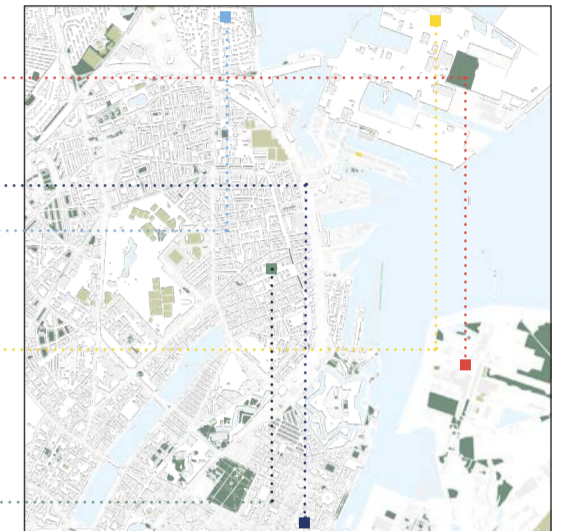
## 4. BIODIVERSITY



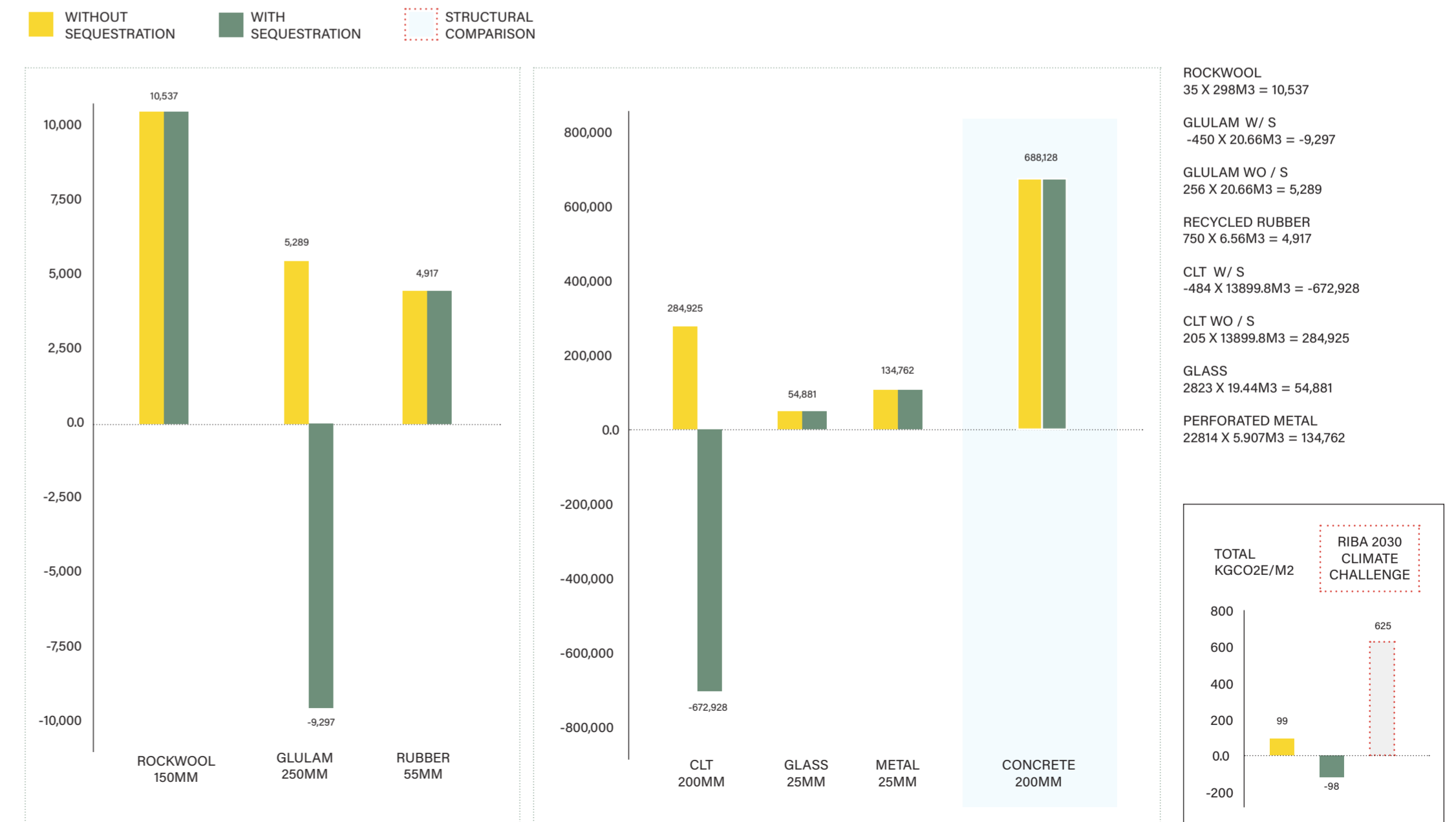
Terraces on each floor encourage students to grow plants that increase biodiversity.

## 5. LOCALLY SOURCED

- **ROCKWOOL**  
Havens Hænder, Refshalevej 165 c, 1432 København
- **CLT**  
CLT Denmark, Borgergade 20, 1300 København
- **RECYCLED RUBBER**  
PlanLeg, Bemstorffsvej 161, 2920 Charlottenlund
- **PERFORATED METAL**  
Nordhavn Global Trade Group, Kattegatvej 38, 2100
- **GLASS**  
Glarmester Kim Andersen, Randersgade 2, 4, 2100



## 7. CARBON CALCULATION





# MODEL PHOTOS

1:200 SITE MODEL  
1:50 SECTIONAL  
M O D E L

