

COMPLEX PROJECTS

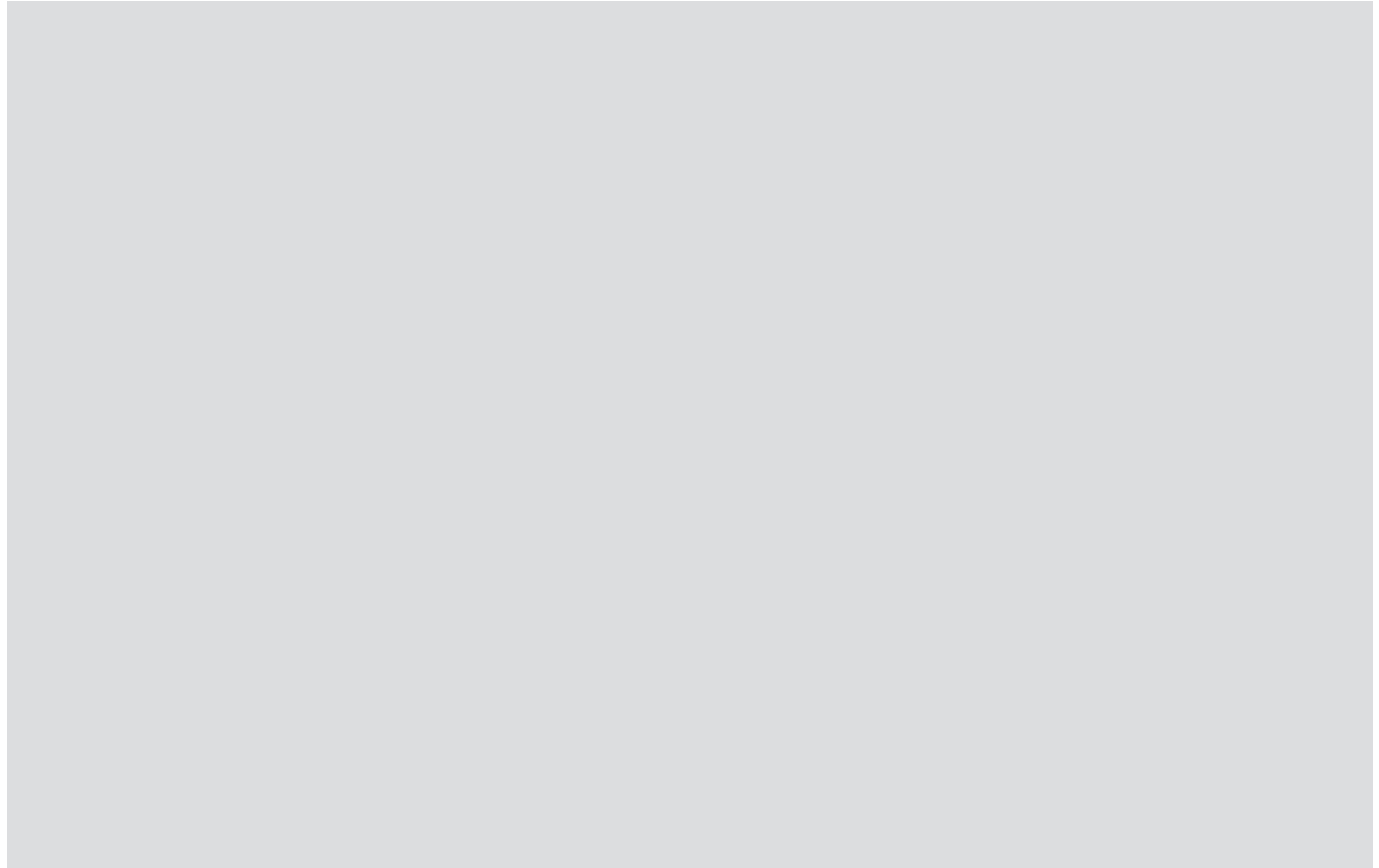
TITLETITLE

subtitle subtitle

student name

month/dd/yyyy

SLIDE TITLE



SLIDE TITLE

text
text

chapter title

SLIDE TITLE



complex projects
08/11/2022
Graduation studio
Lisa van Vliet

JNAH PUBLIC SCHOOL



CP TEAM BEIRUT



CP TEAM
BEIRUT

**PUBLIC EDUCATION
MASTER
€184,- MONTHLY**





QS Arab Region University Rankings 2022






Year
2022

University Search

Region

Location
Lebanon

	↓ University	↓ Overall Score
4	 American University of Beirut (AUB) Beirut, Lebanon	97.2
17	 Lebanese American University Beirut, Lebanon	65.1
19	 Saint Joseph University of Beirut (USJ) Beirut, Lebanon	64

QS Arab Region University Rankings 2022



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**MONTHLY AVERAGE
TUITION FOR MASTER:**

€5.163,-

€4.417,-

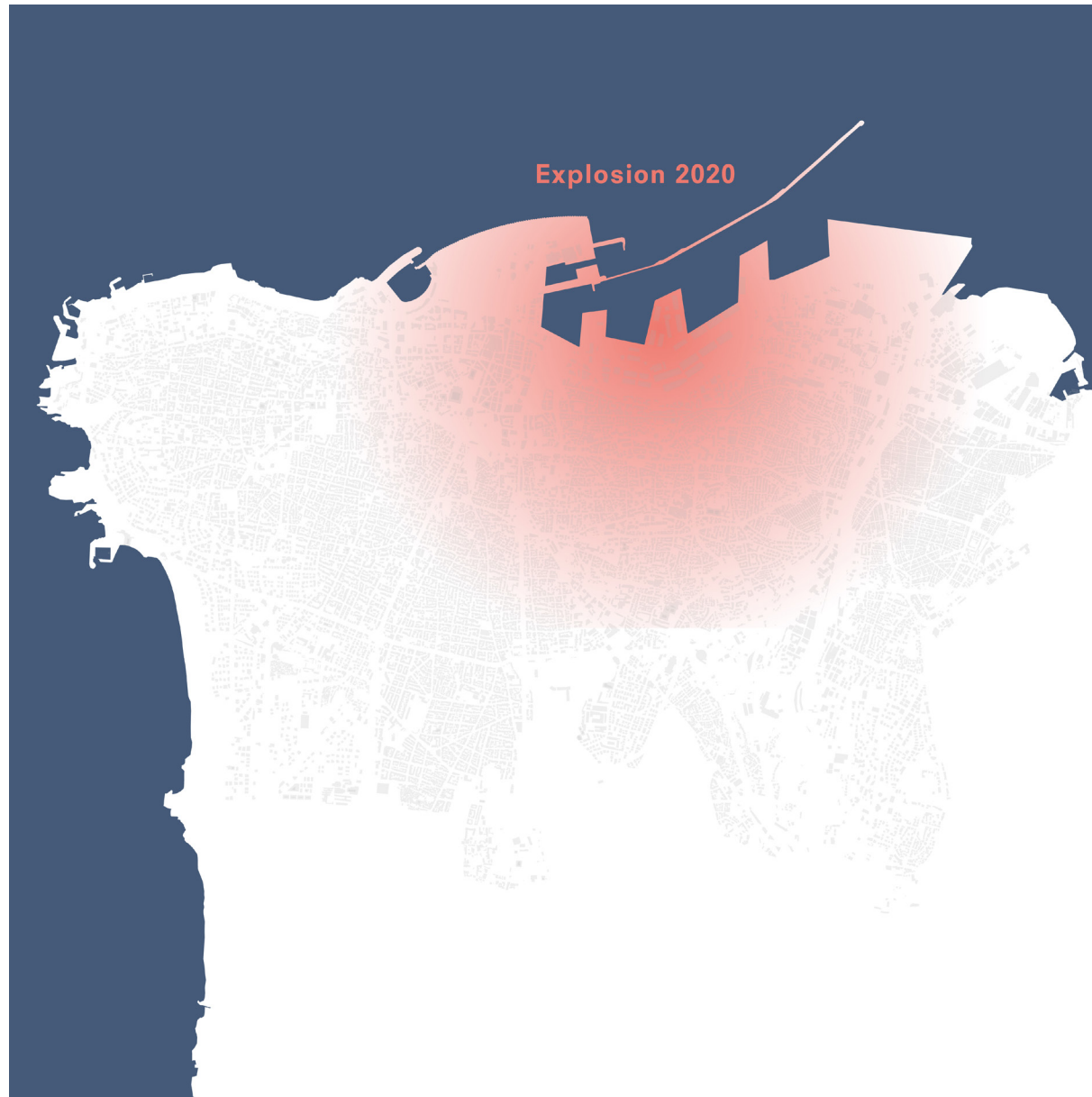
€4.191,-





HOW CAN THERE BE MORE EDUCATION OPPORTUNITIES FOR ALL IN BEIRUT?

**INTRO
RESEARCH
DESIGN BRIEF
CONCEPT
IMPLEMENTATION
DEVELOPMENT
CONCLUSION**



BEIRUT 2022



Lasting damage of the port explosion



Anti-government protests

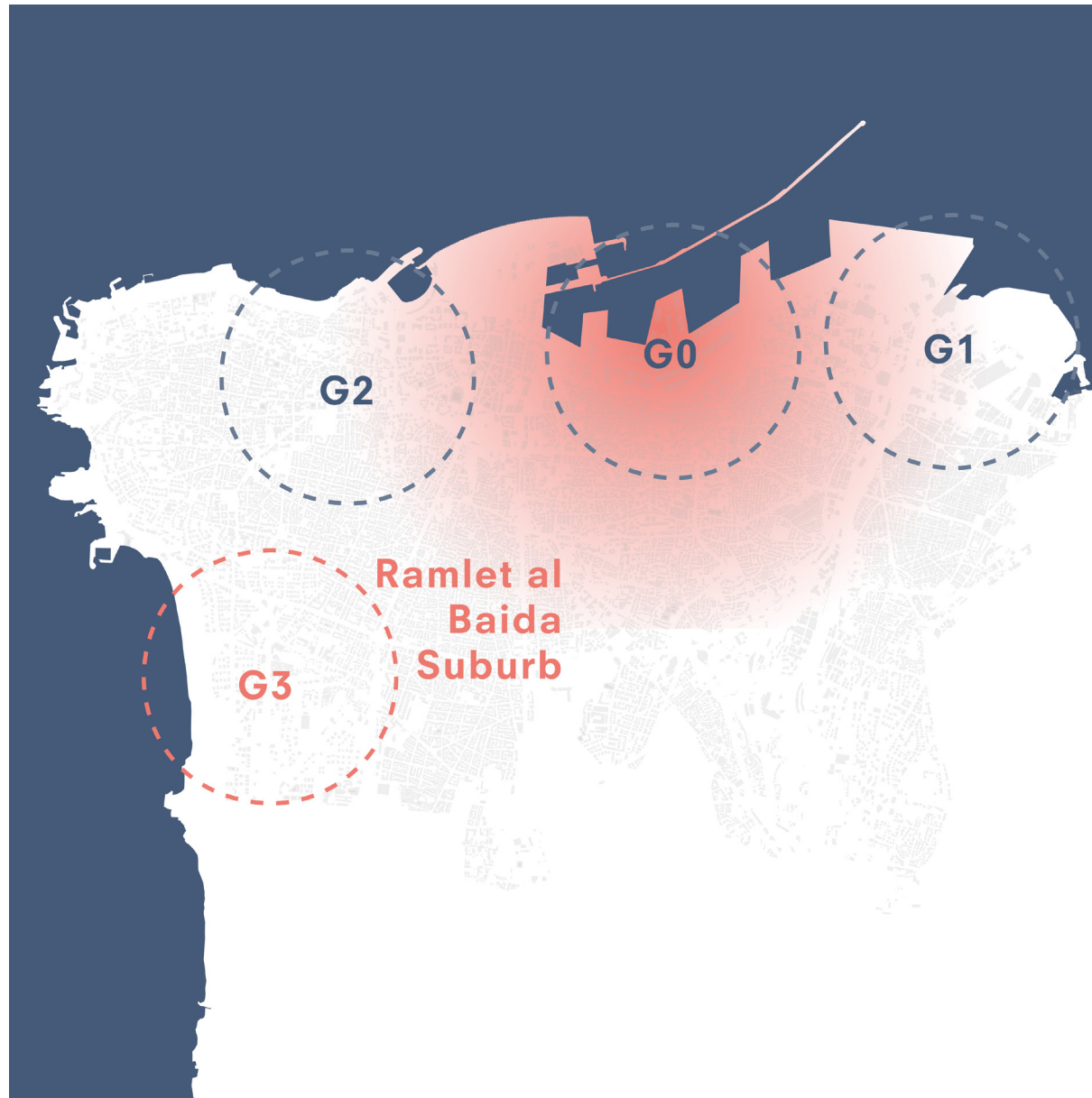


COVID-19

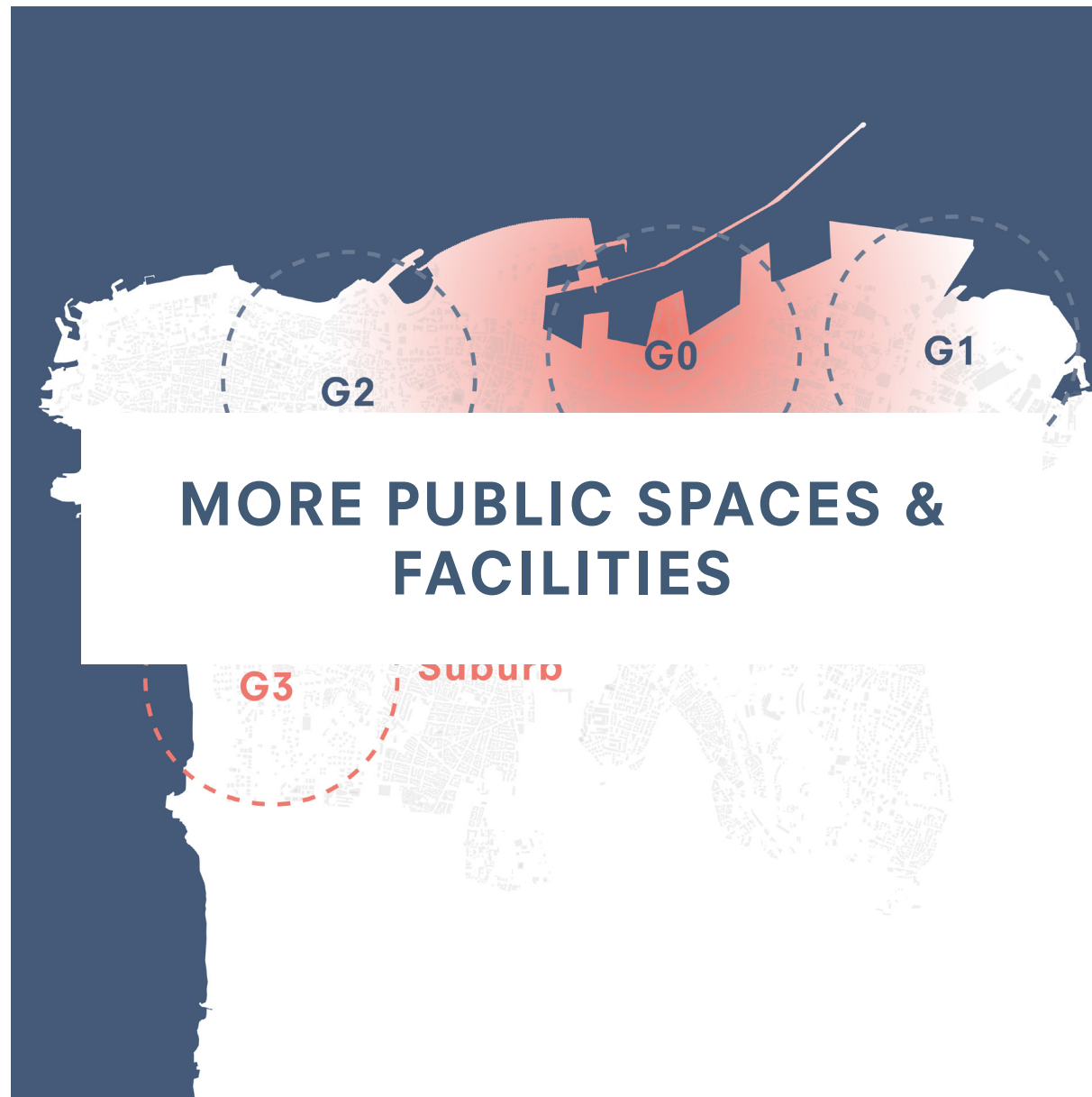
BEIRUT COMPLEX PROJECT



BEIRUT COMPLEX PROJECT



BEIRUT COMPLEX PROJECT

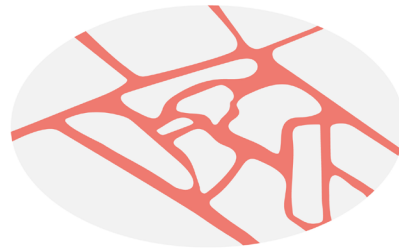


**MORE PUBLIC SPACES &
FACILITIES**

BEIRUT MOSAIC



Enhance
mosaic character



Create
pedestrian friendly
connections



Develop
two key public spaces



Add
affordable housing &
education

BEIRUT MOSAIC



Enhance
mosaic character



Create
pedestrian friendly
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two key public spaces



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BEIRUT MOSAIC



BEIRUT MOSAIC



EDUCATION BEIRUT 2020

**1/3 OF CHILDREN ARE NOT
ENROLLED**

AND THE OTHER

**70% OF ENROLLED CHILDREN
IN LEBANON GO TO PRIVATE
SCHOOLS**

WEALTH DIFFERENCE



WEALTH DIFFERENCE



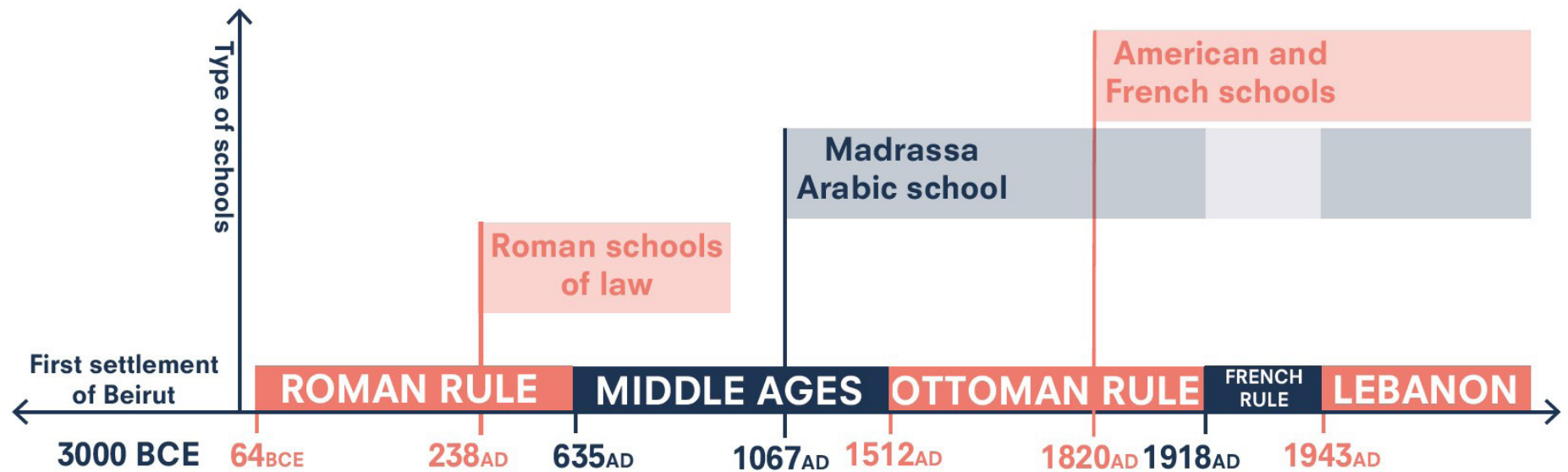
**“THE EDUCATION SYSTEM
IN LEBANON IS AT RISK OF
COLLAPSE, WITH DEVASTATING
CONSEQUENCES FOR
CHILDREN...”**

(HUMAN RIGHTS WATCH, 11/10/2021)

EDUCATION HISTORY



EDUCATION HISTORY



EDUCATION HISTORY

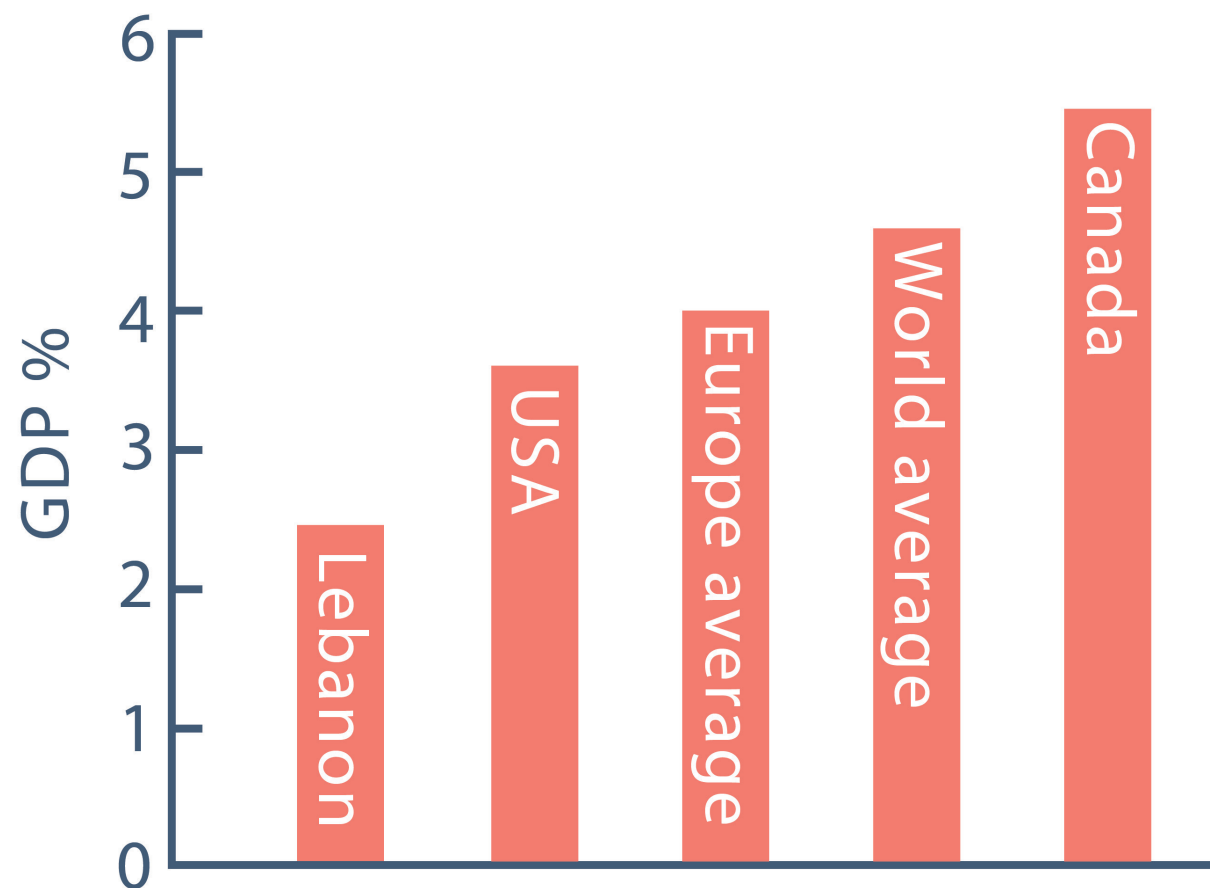
**“KNOWLEDGE IS BETTER THAN
WEALTH, BECAUSE YOU MUST
TAKE CARE OF WEALTH BUT
KNOWLEDGE TAKES CARE OF
YOU”**

NIZAM AL-MULK FOUNDER OF ONE OF THE FIRST PRIMARY
SCHOOL IN BEIRUT
1045 AD

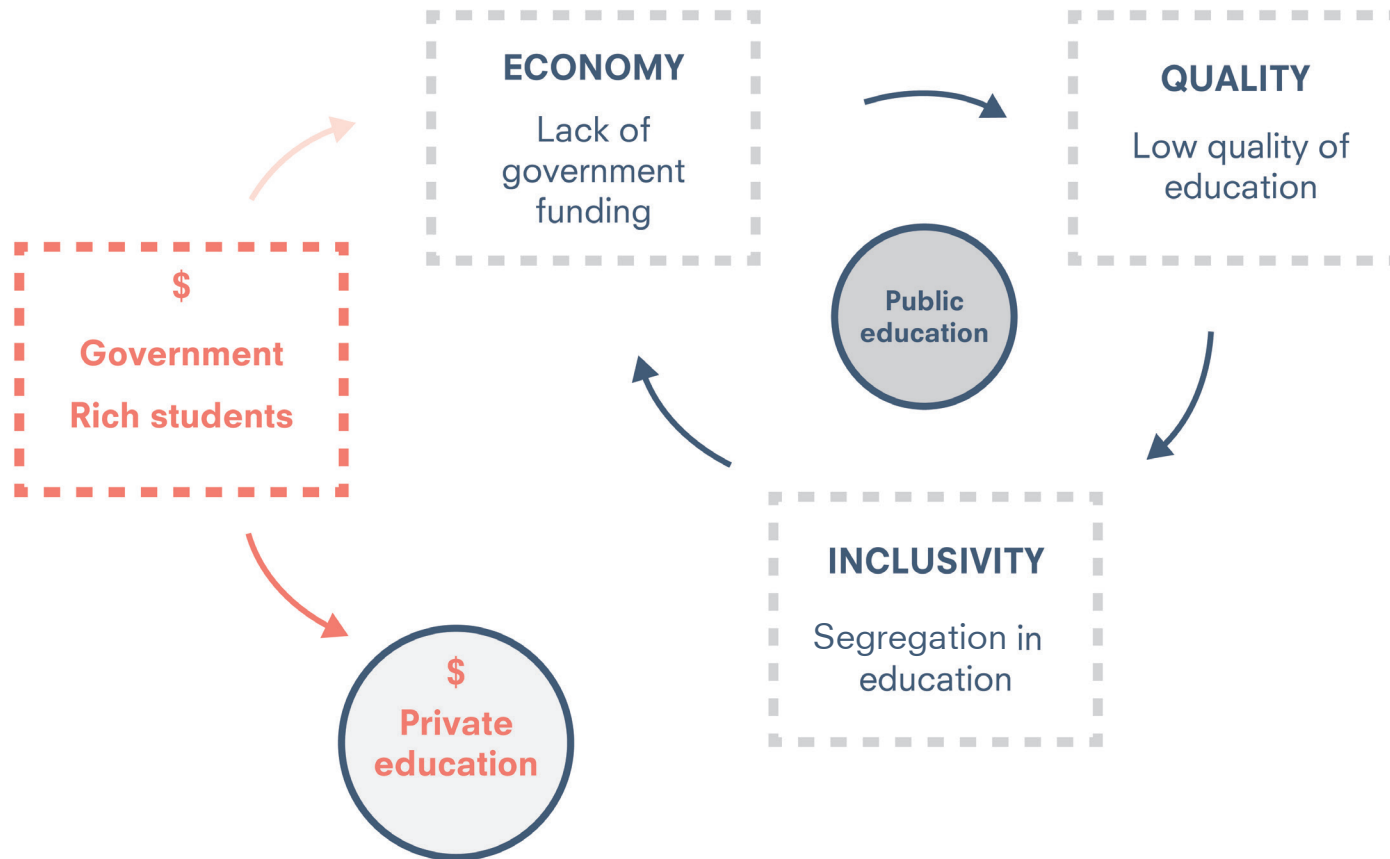
PRIVATE EDUCATION



PUBLIC EDUCATION

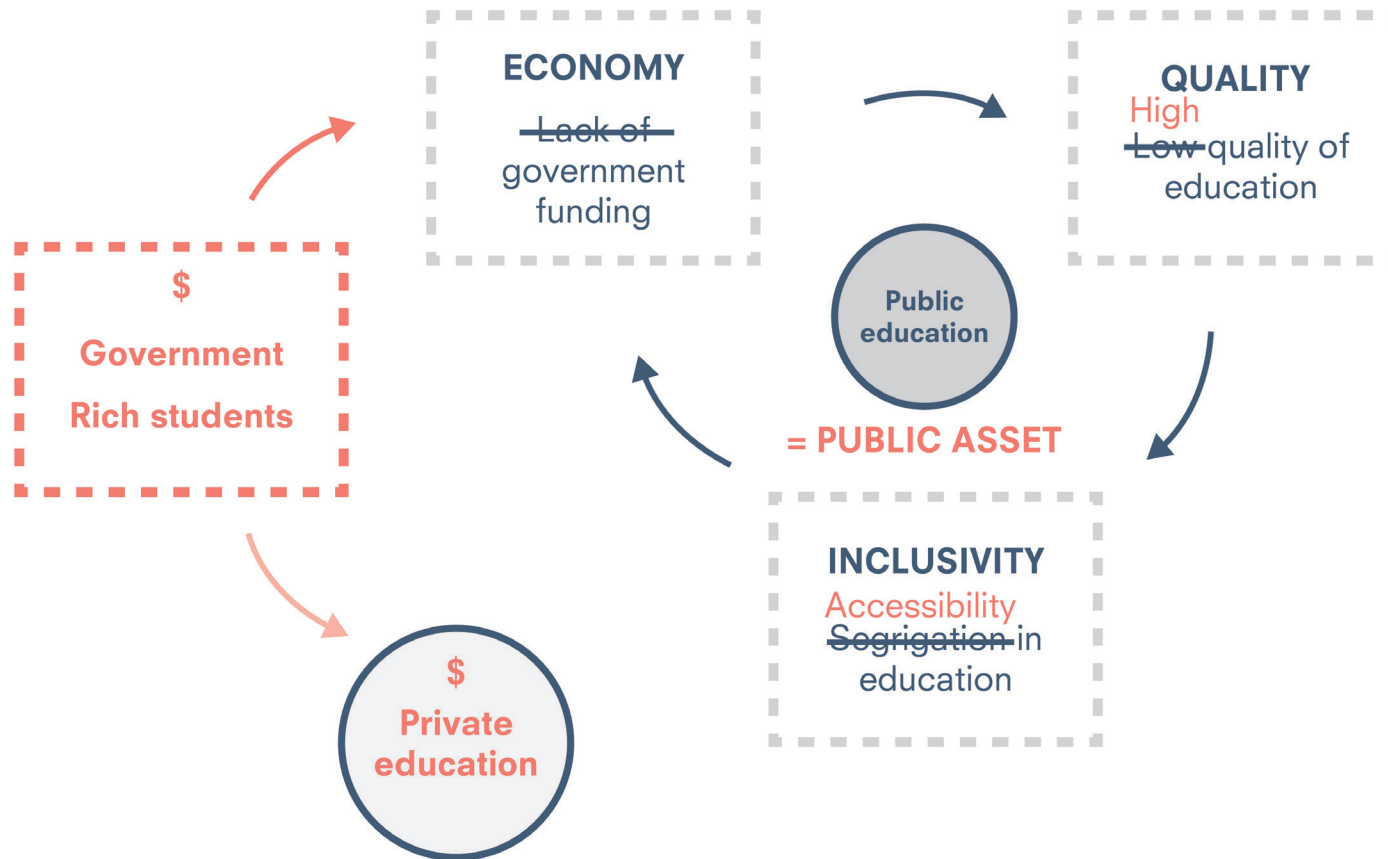


CHALLENGES



**PUBLIC
EDUCATION =
PUBLIC ASSET**

HANDELING THE CHALLENGES



RESEARCH QUESTION

How to design a **new public school** in a way that it becomes a **public asset**?

JNAH PUBLIC SCHOOL



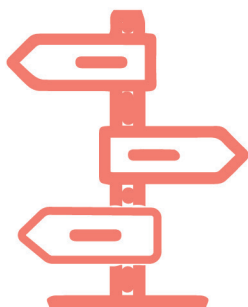
JNAH PUBLIC SCHOOL



JNAH PUBLIC SCHOOL



Safe space
to play



Campus
area

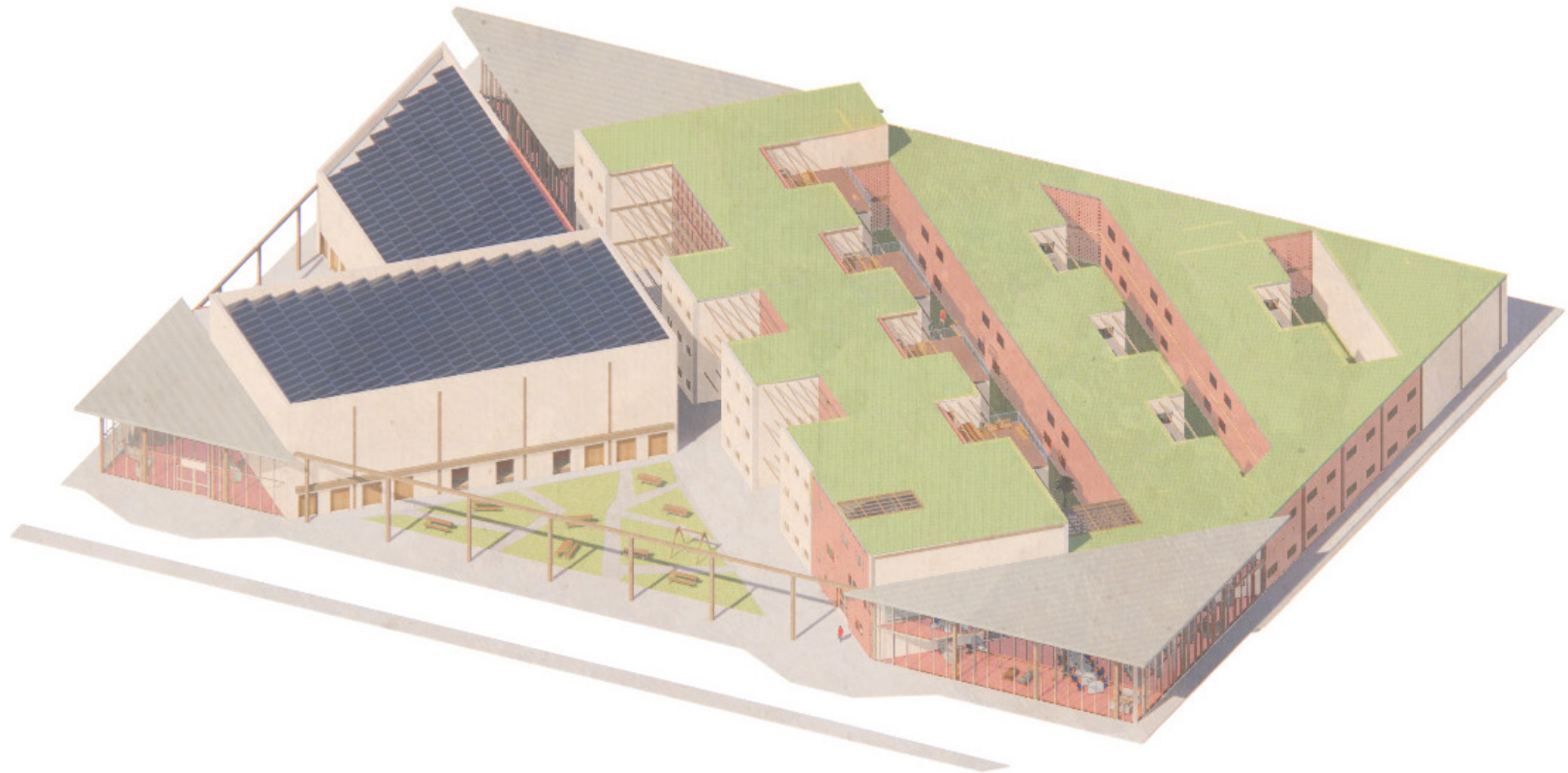


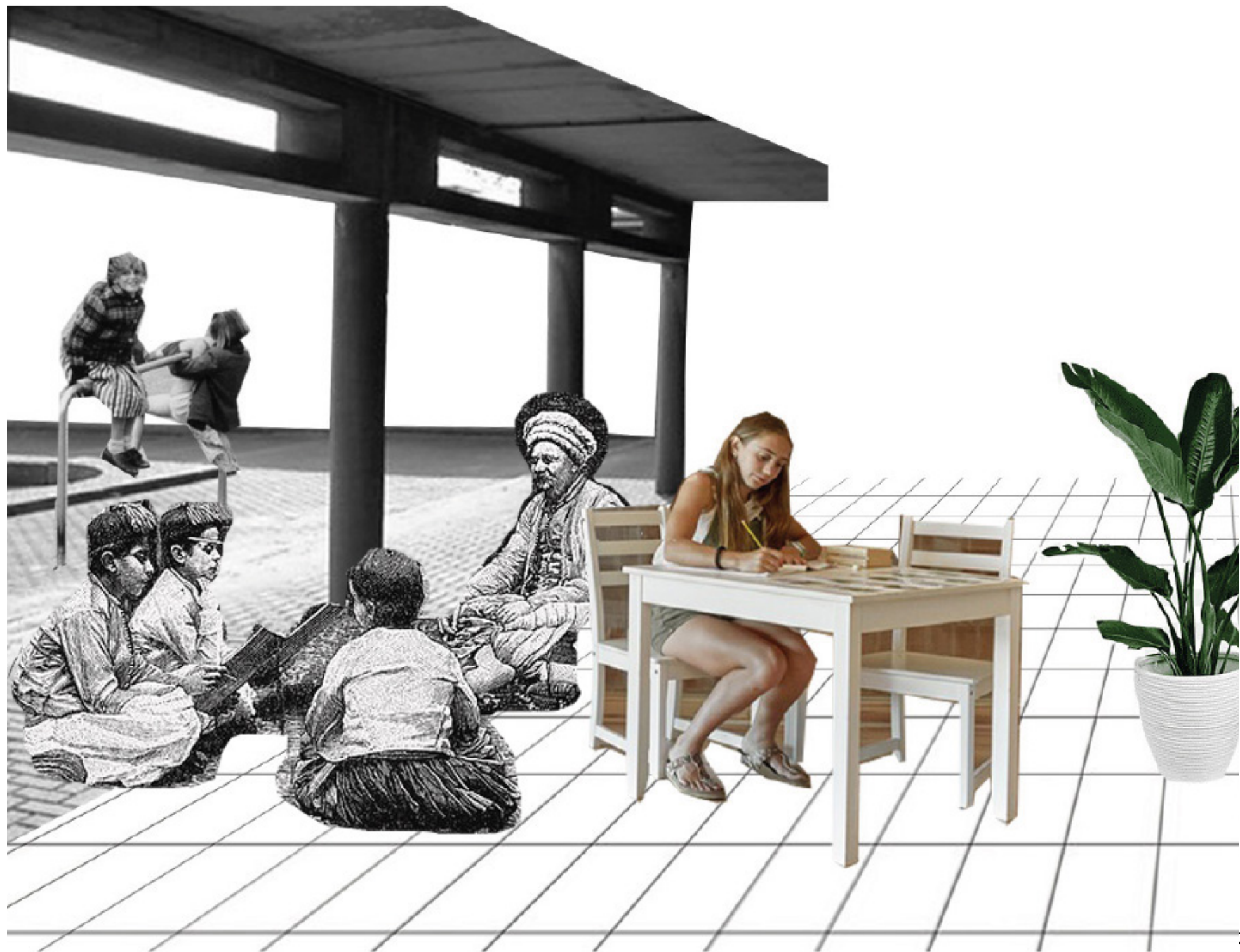
Second
home



Comfortable
climate

JNAH PUBLIC SCHOOL



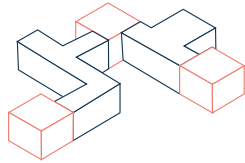




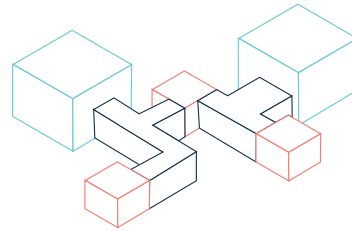
SCHOOL TYPOLOGIES



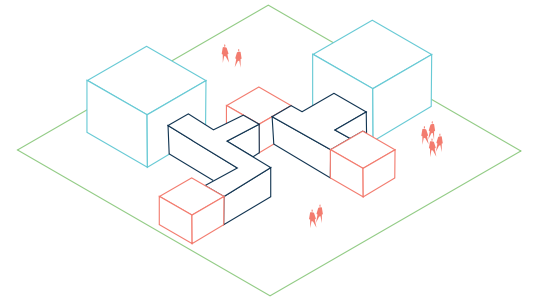
Classroom



Routing



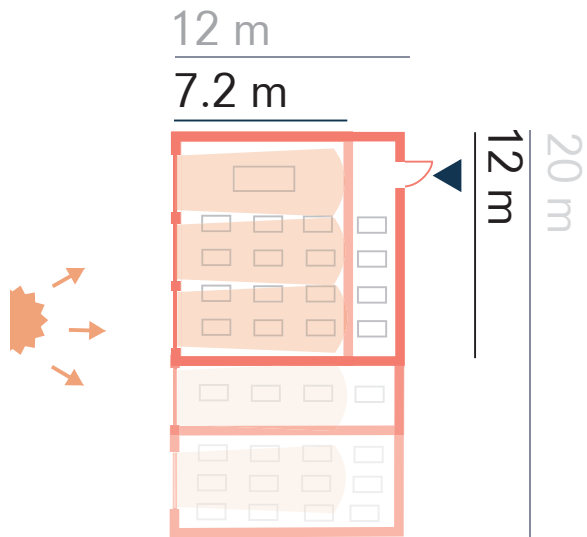
Collective functions



School

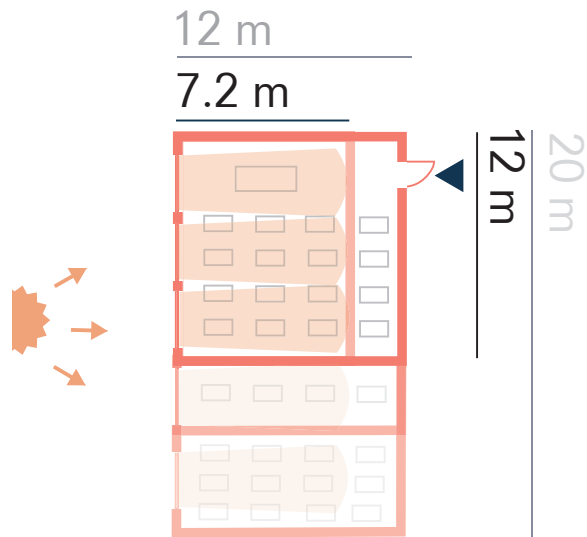
CLASSROOMS

Basic Classroom

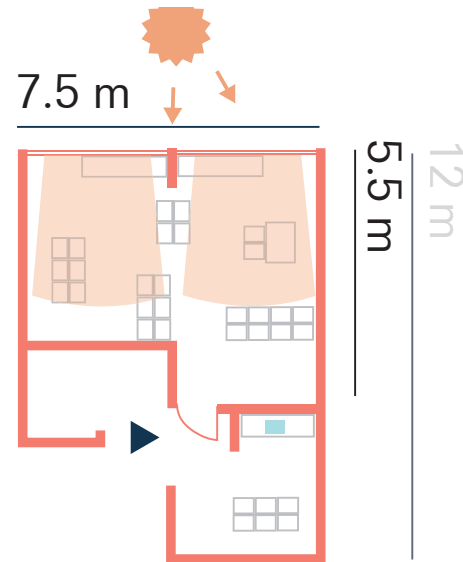


CLASSROOMS

Basic Classroom

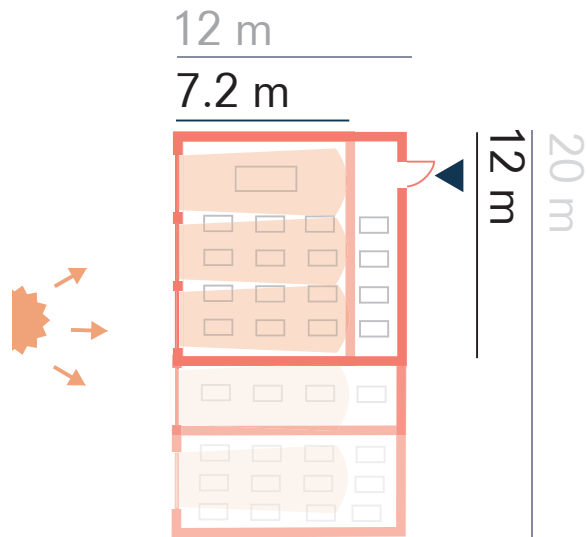


Learning squares
Delftse Montessorischool

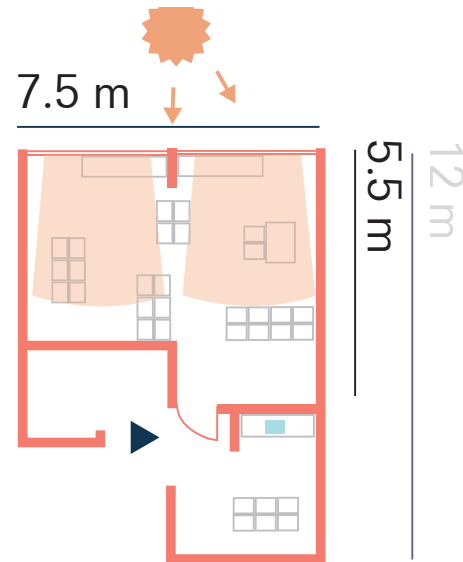


CLASSROOMS

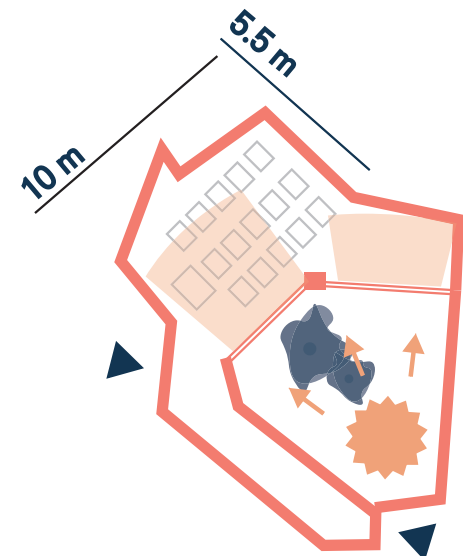
Basic Classroom



Learning squares
Delftse Montessorischool



Outside learning
Geschwister-Scholl



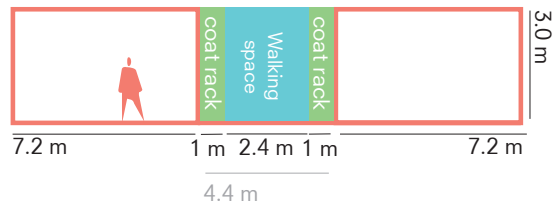
ROUTING

Basic Hallway

SINGLE



DOUBLE



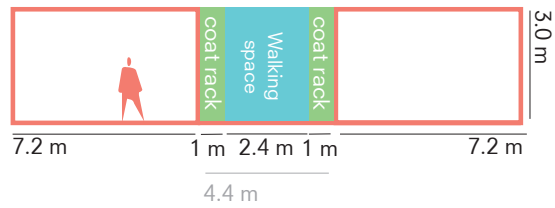
ROUTING

Basic Hallway

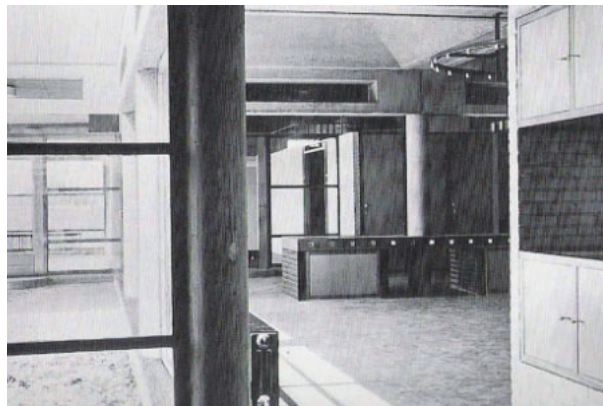
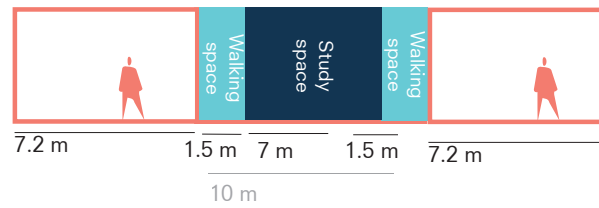
SINGLE



DOUBLE



Learning street Amsterdam orphanage



ROUTING

Basic Hallway

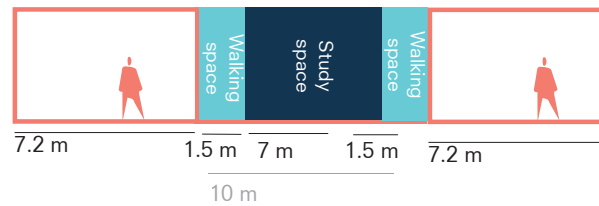
SINGLE



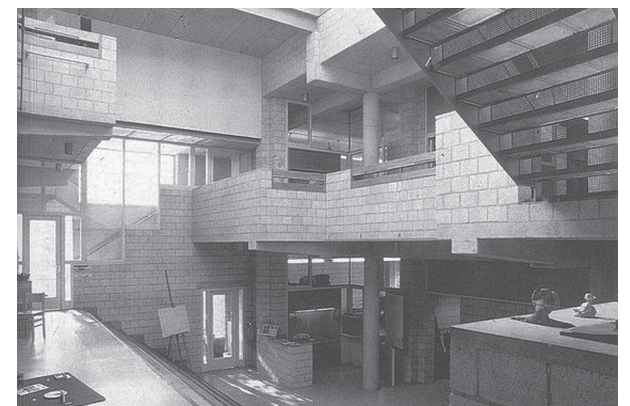
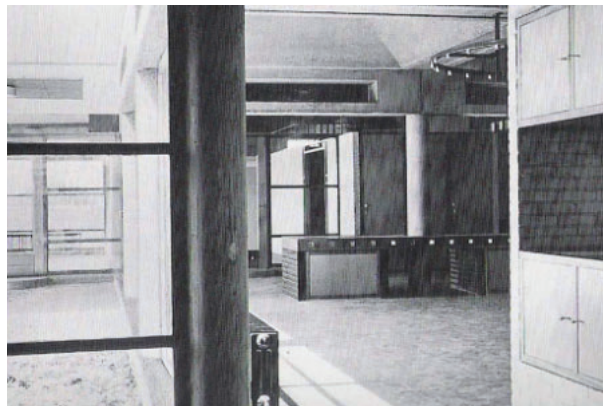
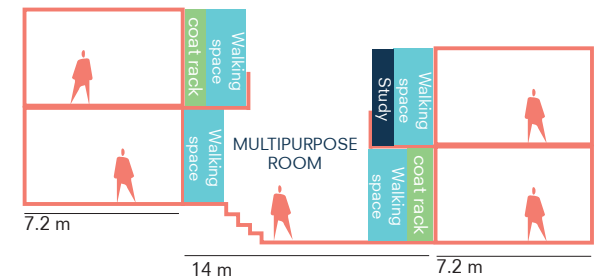
DOUBLE



Learning street Amsterdam orphanage

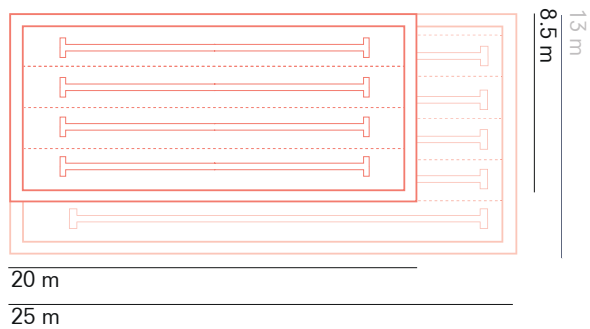


Multipurpose room Apollo school

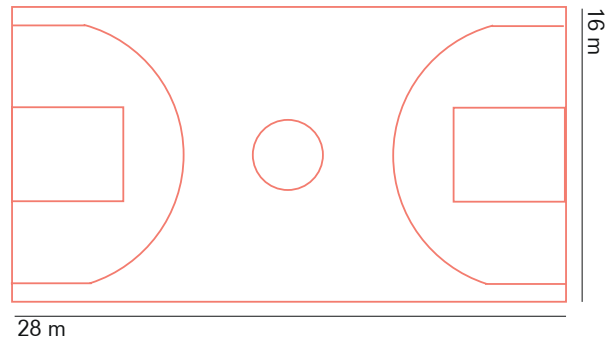


COLLECTIVE FUNCTIONS

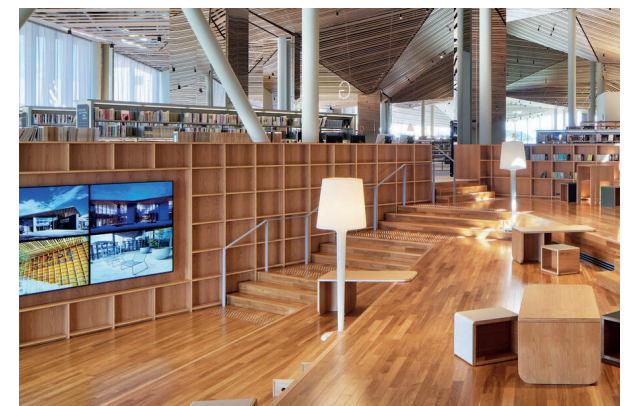
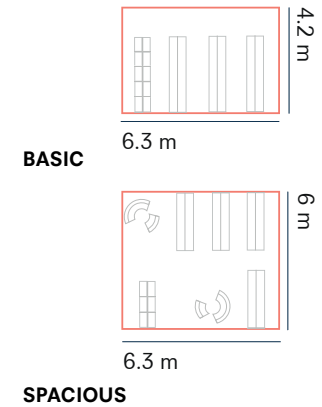
Community swimmingpool
Collège protestant français



Sport hall
Brighton College



Library
Nasushiobara City Library

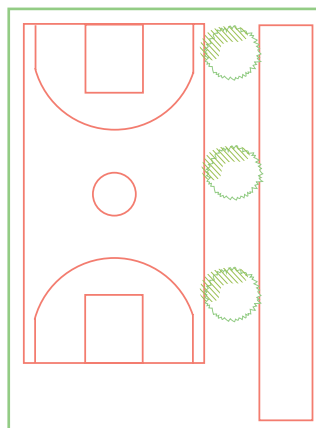


COLLECTIVE FUNCTIONS

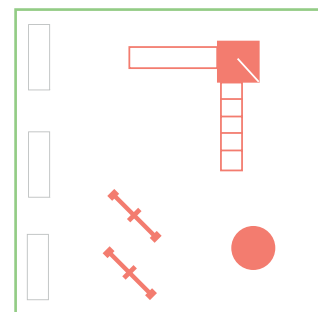
Park school yard



Sport school yard
Evelyn Grace Academy



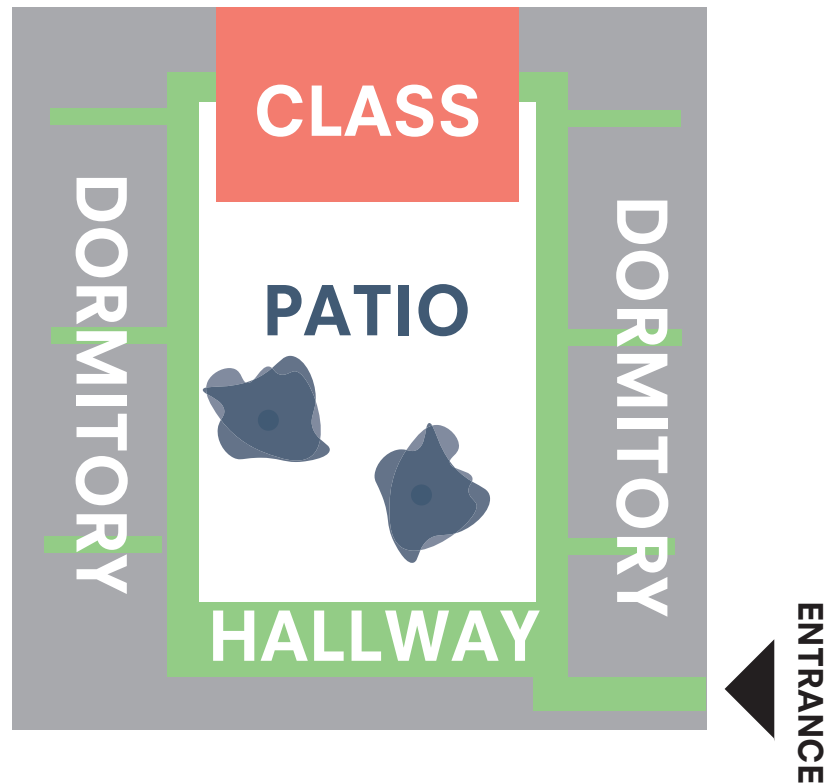
Play school yard



SCHOOL



Ben Youssef Madrasa
Primary school + secondary school
1570 Marrakesh

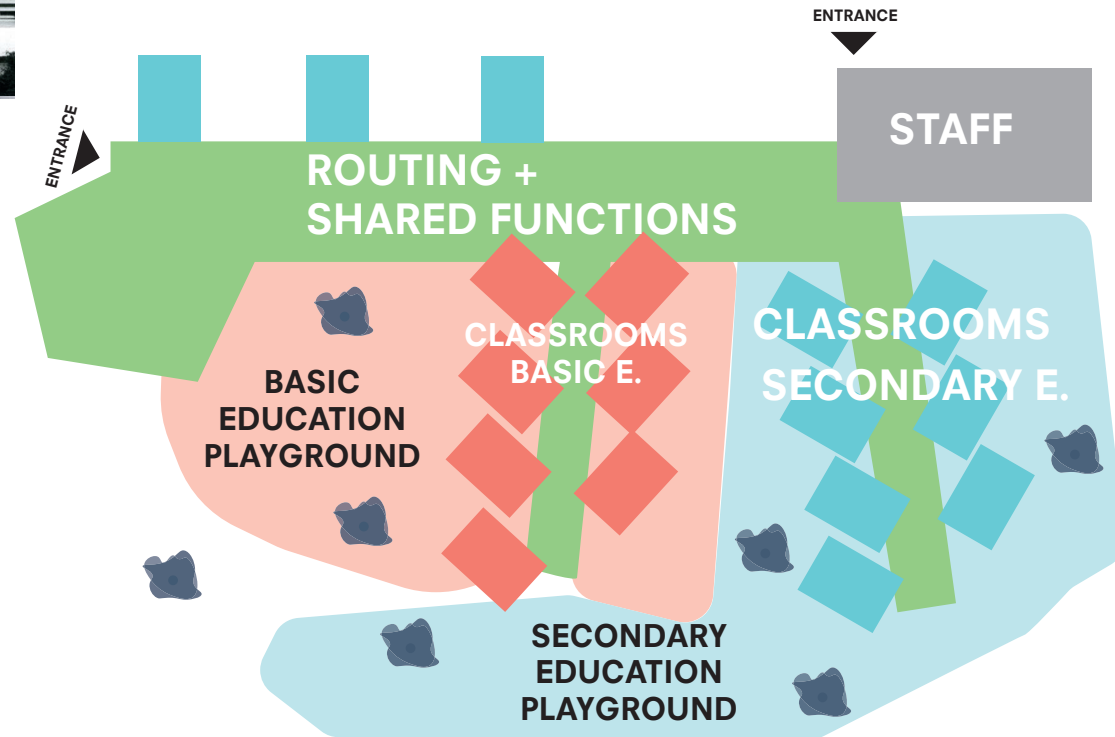


Floorplan program diagram

SCHOOL



Geschwister-Scholl
Secondary school
1962 Lünen
Hans Scharoun



Floorplan program diagram

SCHOOL



Collège protestant français
Primary school + secondary school
1955 Beirut
Michel Ecochard



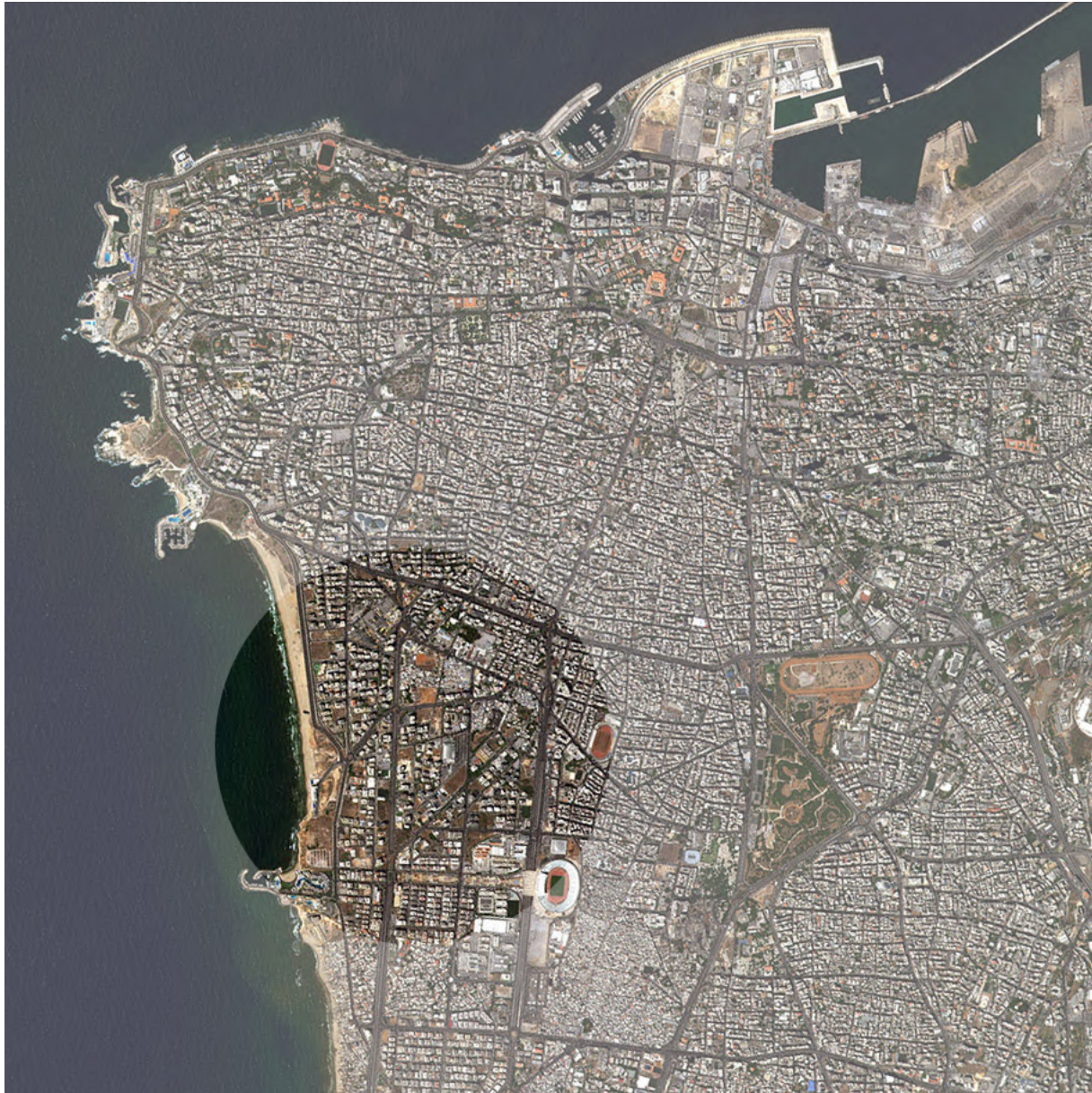
Section program diagram





DESIGN BRIEF



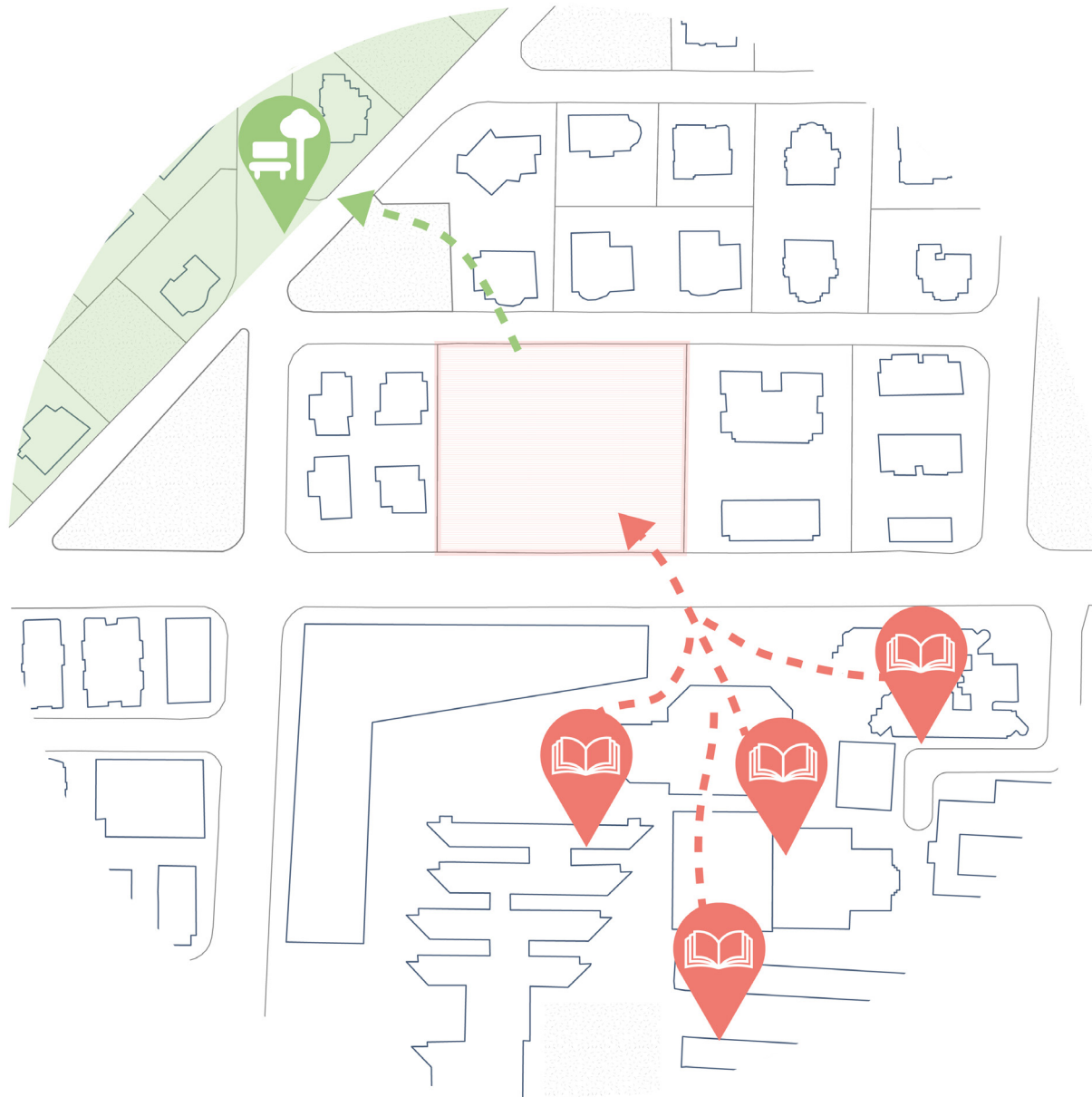








SITE



Next to pre-existing **schools** and new **park**

SITE

**GYMBO School
of Gymnastics**



**Emily Sursock
Public School
500 students**



**Allama Sobhi
Mahmassani
High School
300 students**



**Omar Al-Ansi
Kindergarten
50 students**






**Zahia Salman
High School
700 students**



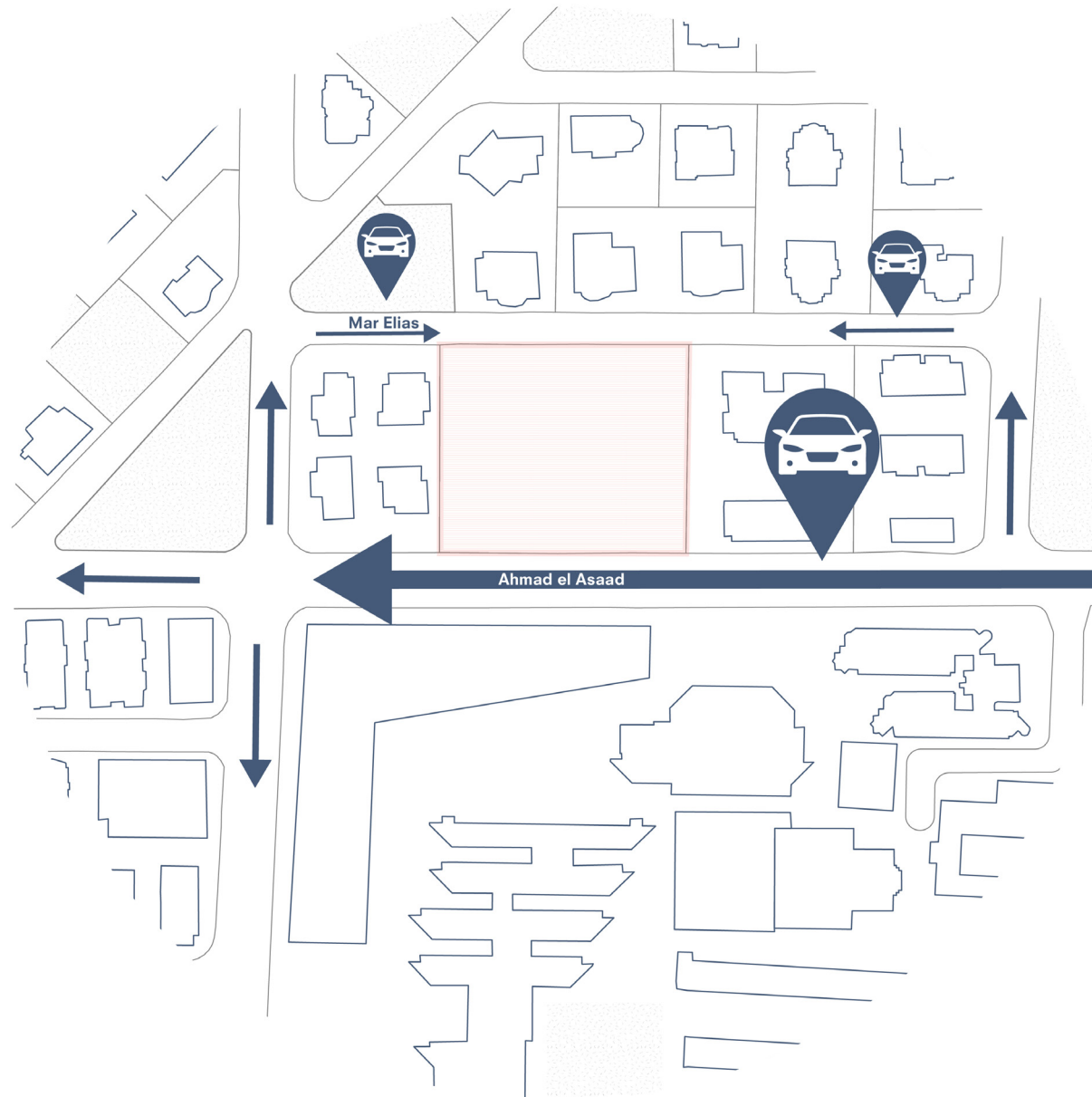
**Allama Sobhi
the Pious School
3.000 students**



KEY

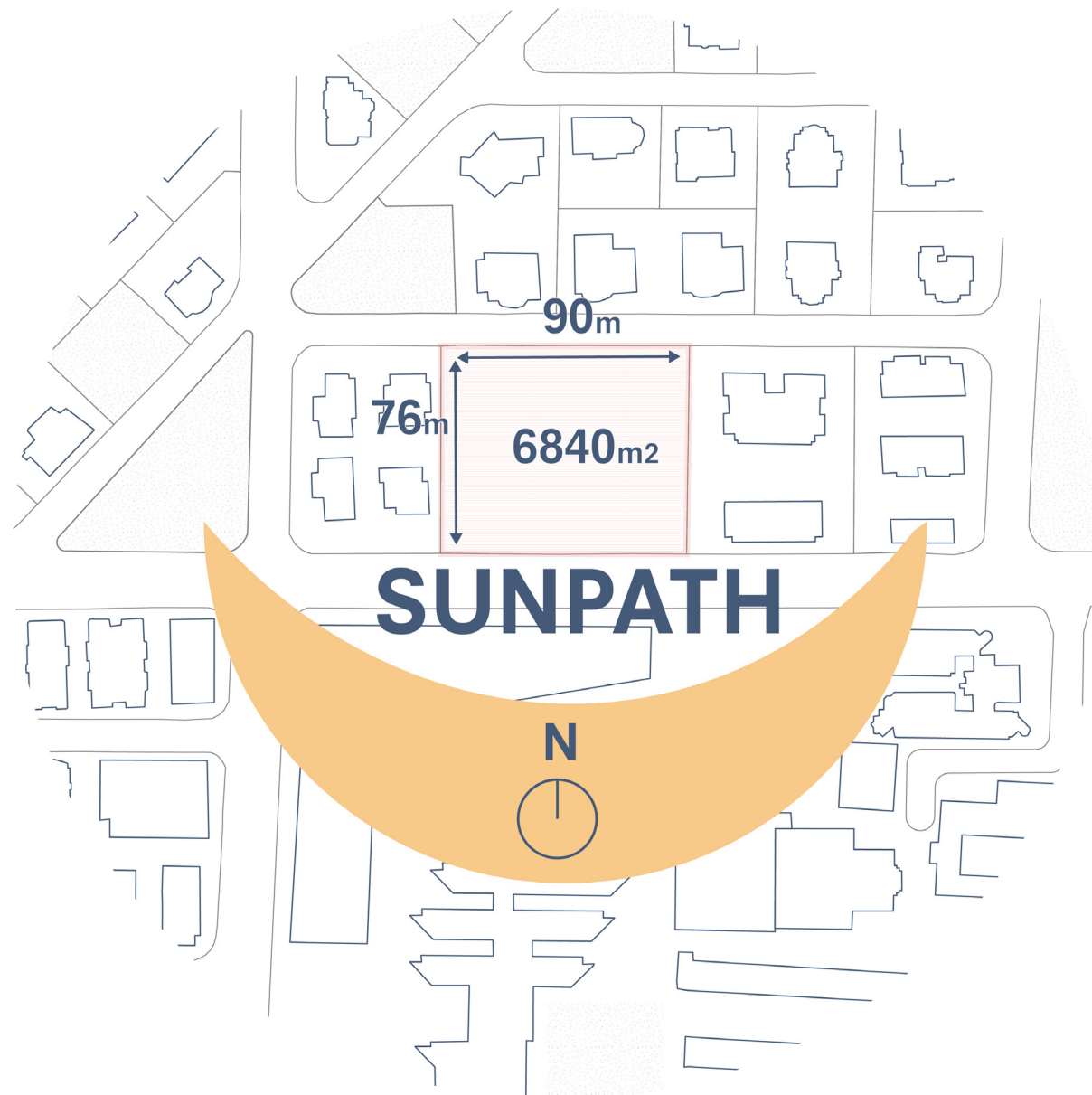
-  Islamic school
-  Christian school
-  Sport school

SITE



Easily **accessible** by car

SITE



A lot of space on the ground floor and enough possibilities for shade

CLIENT



Lebanese goverment
Education Minister Abbas Halibi



Municipality of Beirut

CLIENT



Lebanese goverment
Education Minister Abbas Halibi



Municipality of Beirut

GOALS



Safe space
to play



Campus
area



Second
home



Comfortable
climate

SAFE SPACE TO PLAY?



Public park / Dump



Marble factory



Polluted beach

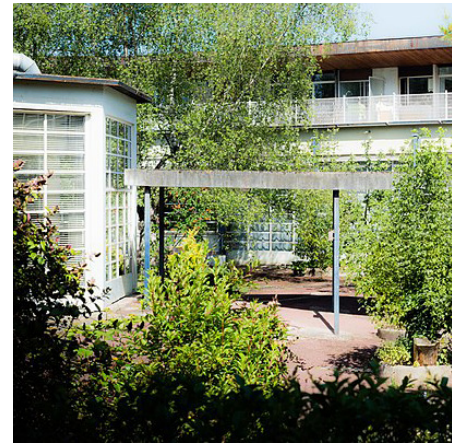
SAFE SPACE TO PLAY



Car free
Kids' City - Kopenhagen



Shaded
Karantina Park - Beirut



Green
Ecole en plein air - Near Paris

CAMPUS AREA?



Gates around each school



Streets unsafe for pedestrians



No public facilities

CAMPUS AREA



Pedestrian routes & wayfinding



Free public facilities
Library



Retail and Catering
N'5 project Beirut

SECOND HOME



Breakfast, lunch and diner



After school activities



Private spaces

COMFORTABLE CLIMATE



Shading



Thick and light coloured materials



Enhanced air flow

CLIENT



Lebanese government
Education Minister Abbas Halibi



Municipality of Beirut

ACTIVITIES



Provide accesible
knowledge and
education



Sport, swim and
play

GOALS



Safe space
to play



Campus
area



Second
home



Comfortable
climate

USERS



Students Basic Education Age: 6-14

Elementary level

grade 1-6

cycle 2&3

50% of student body

Intermediate level

grade 7-9

cycle 4

25% of student body



Students Secondary school Age: 14-18

grade 10-12

cycle 5

25% of student body



Staff

Teachers
Bus drivers
Janitor



Students from Jnah school complex & General public

Not allowed to leave
their school premises

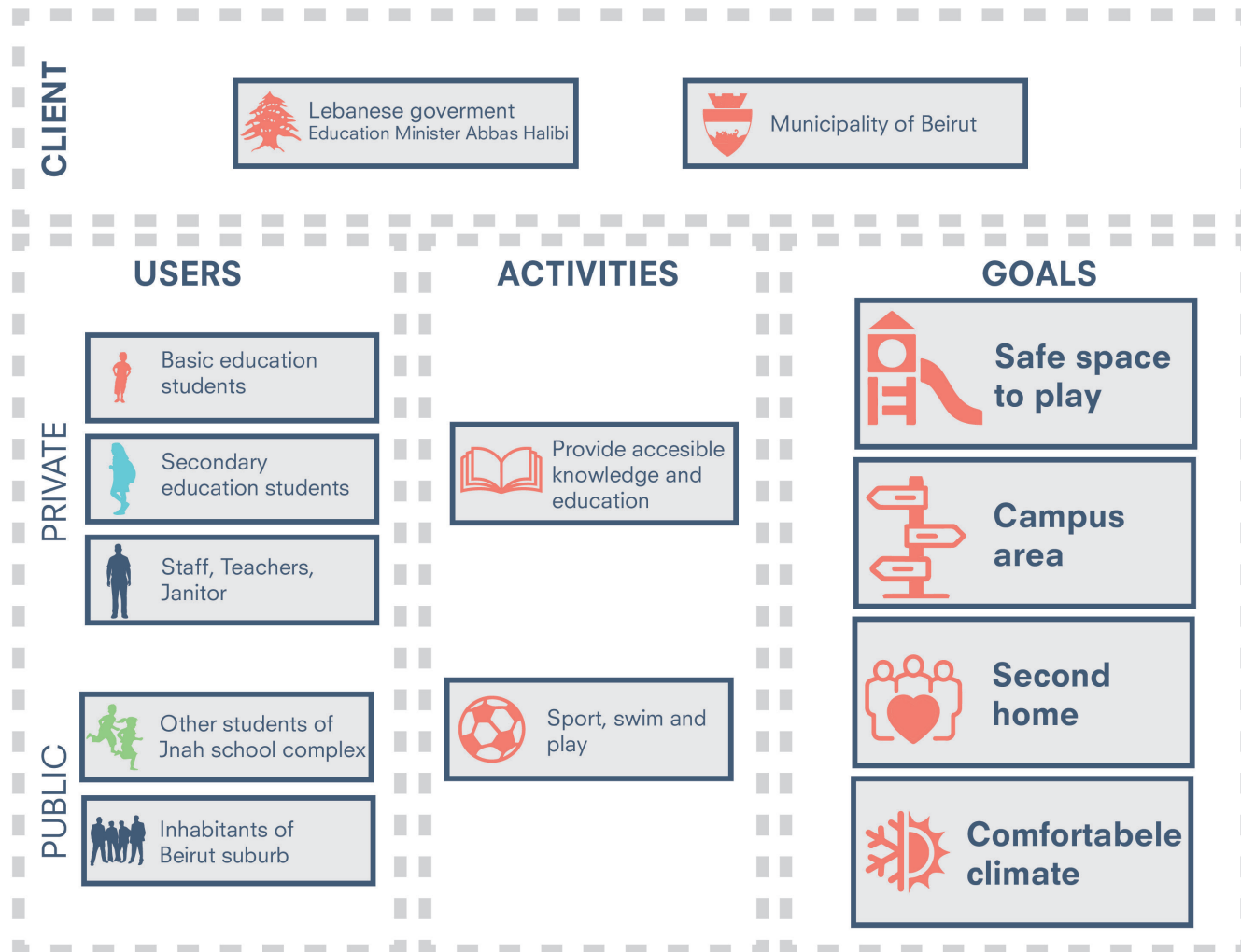
1.700 basic

education students 35%

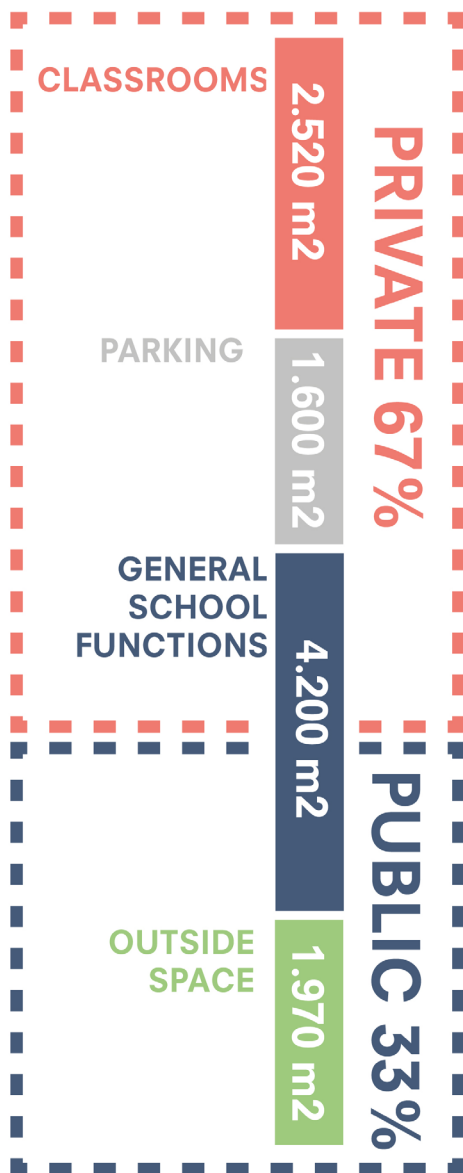
Allowed to leave school
premises

3.200 secondary

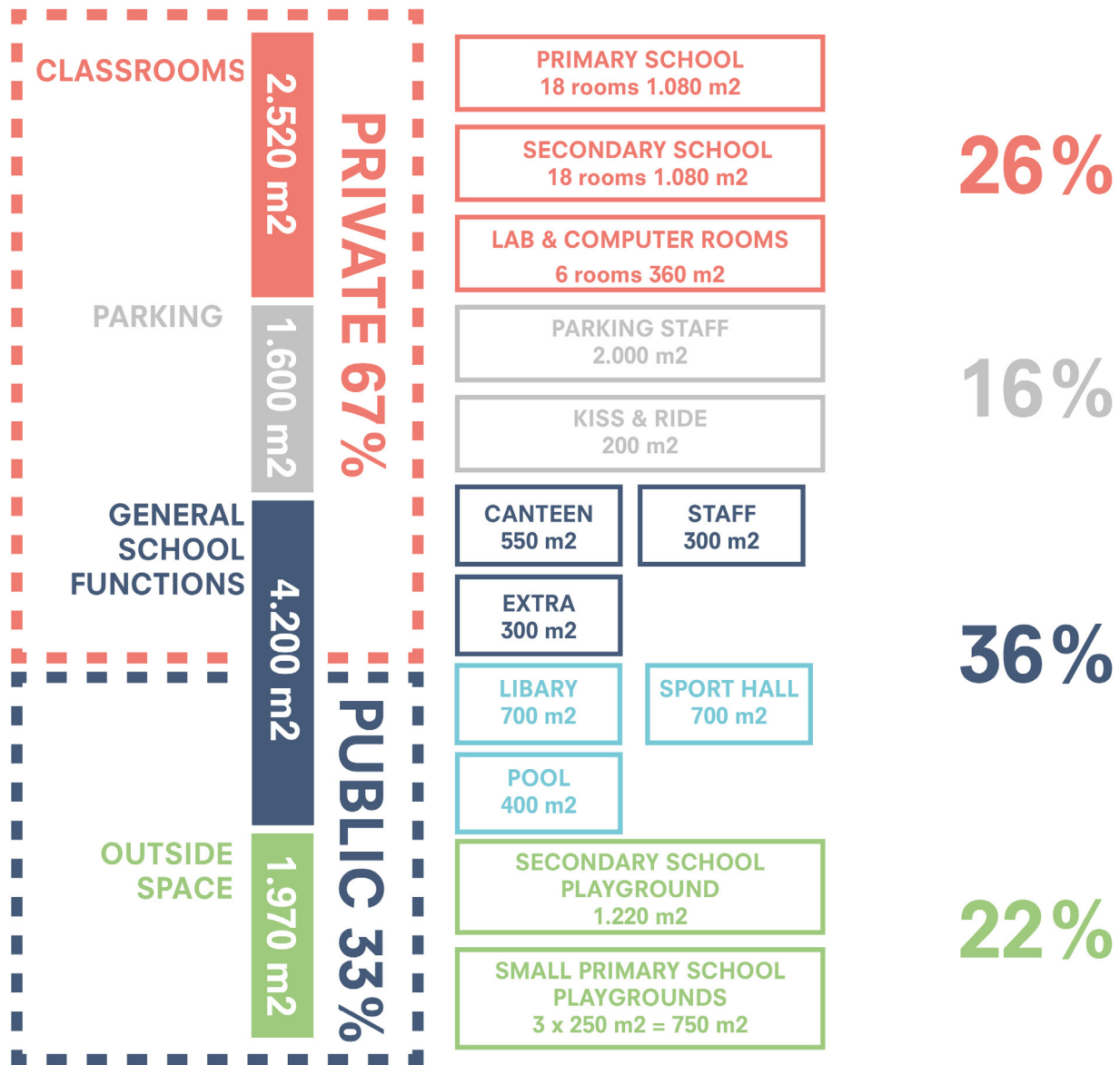
education students 65%



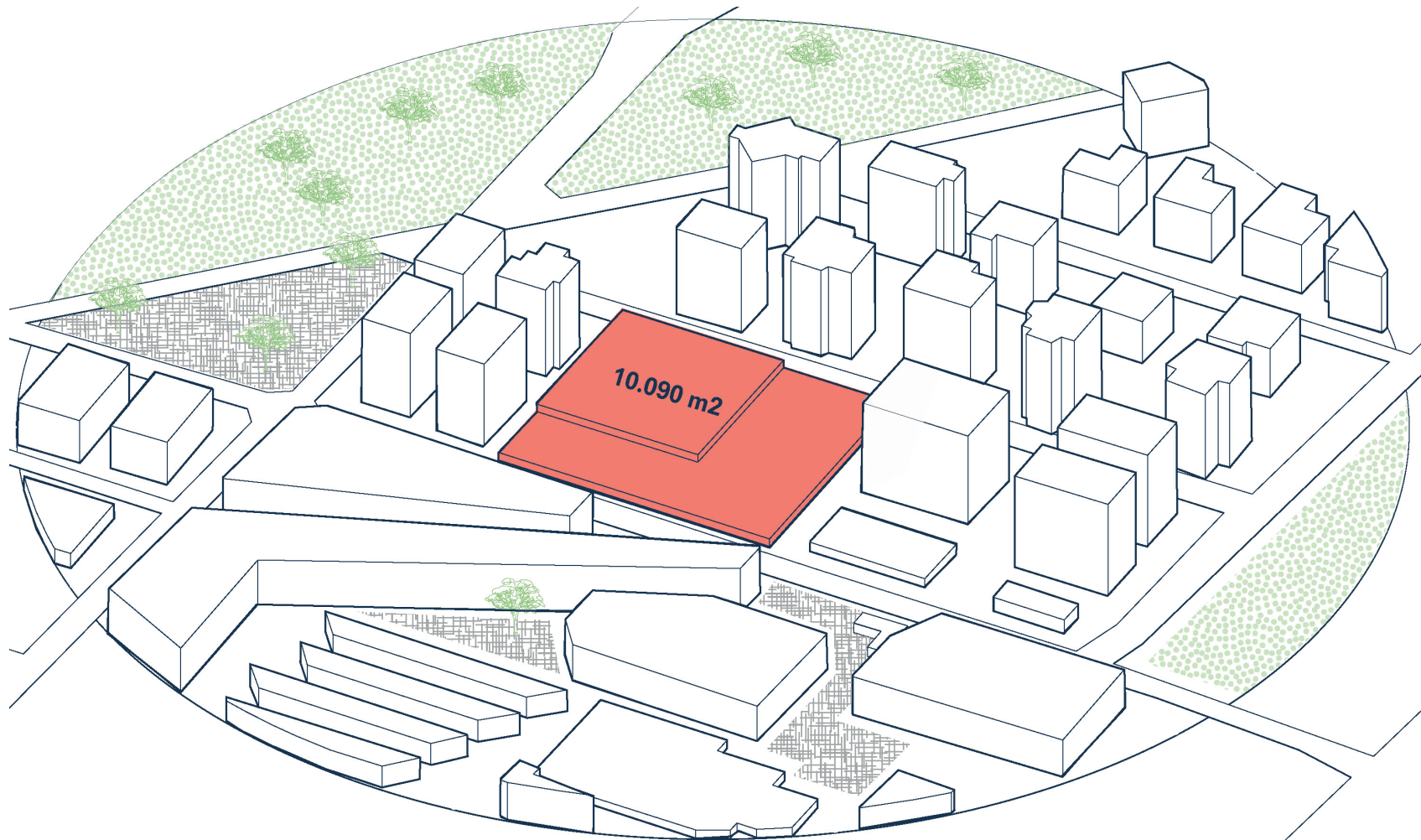
PROGRAM



PROGRAM



PROGRAM



Total program:
10.090 m2
Total build:
6.020 m2

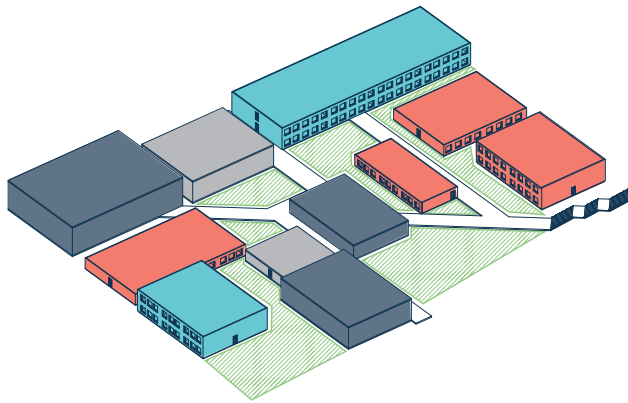
Minimum height:
6,4 m
Maximum height:
40 m

FAR'
82%

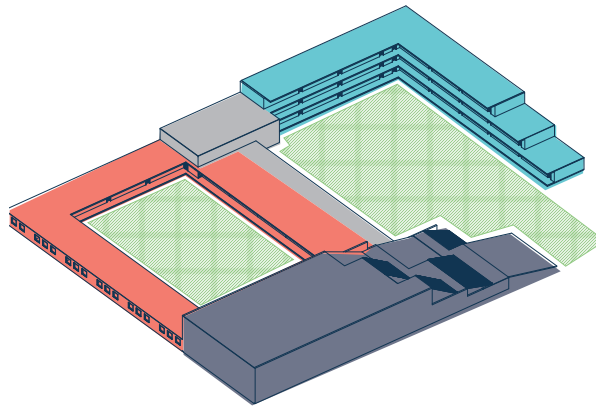
VOLUME



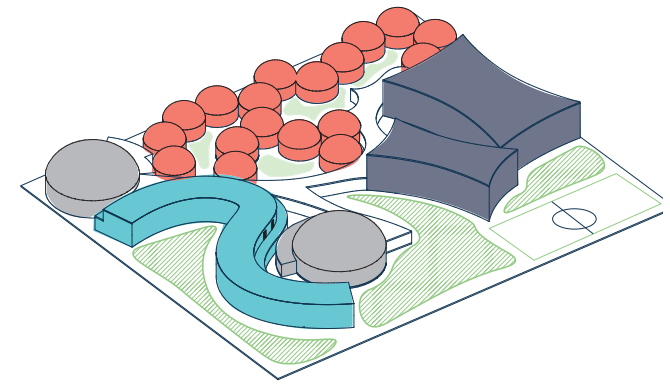
VOLUME



Street



Homes



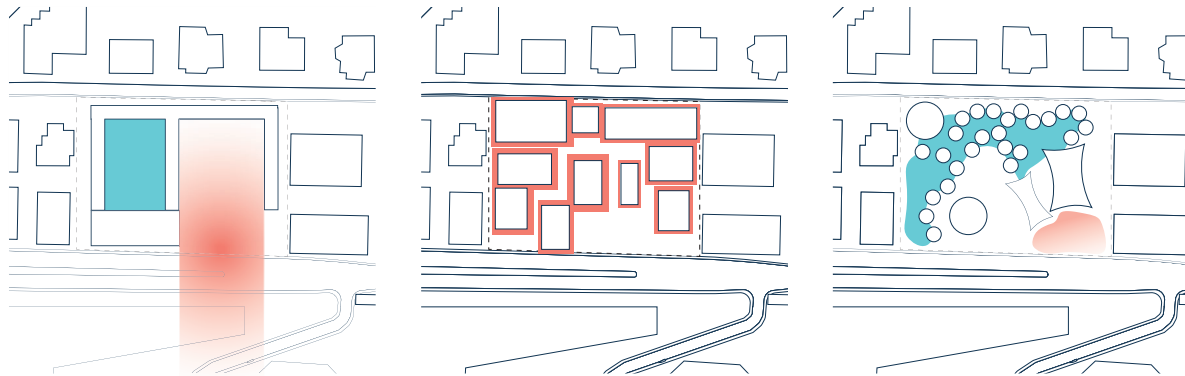
Cells

VOLUME

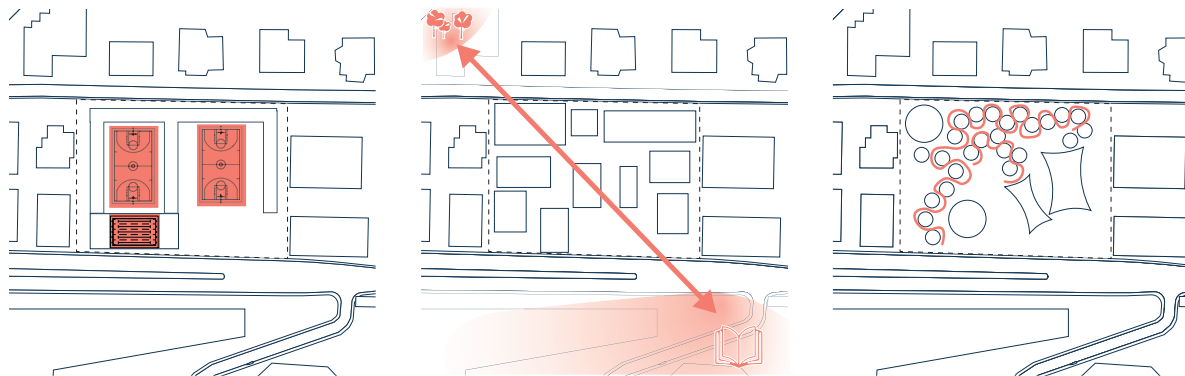
Rhythm & Unity



Introvert vs
extrovert

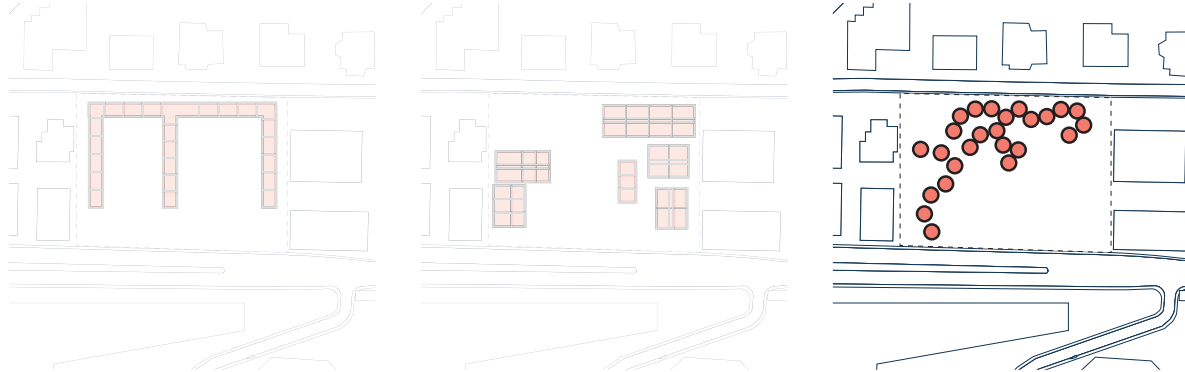


Landscape

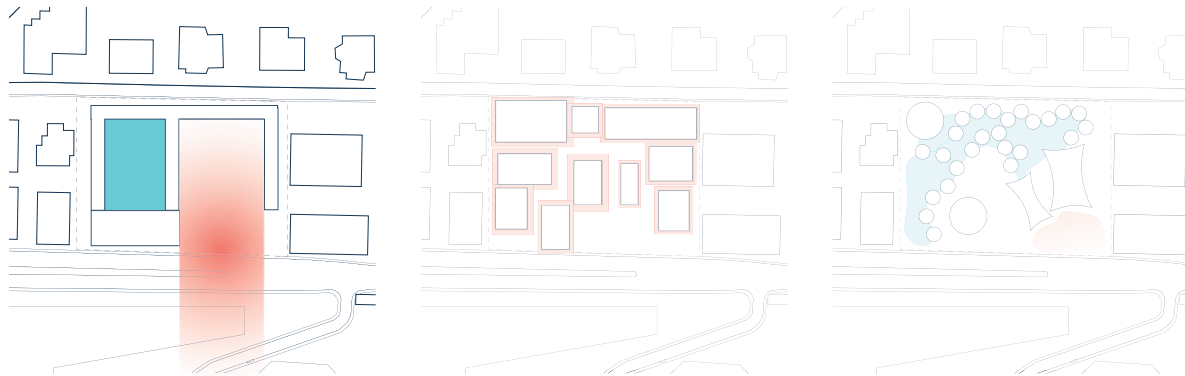


VOLUME

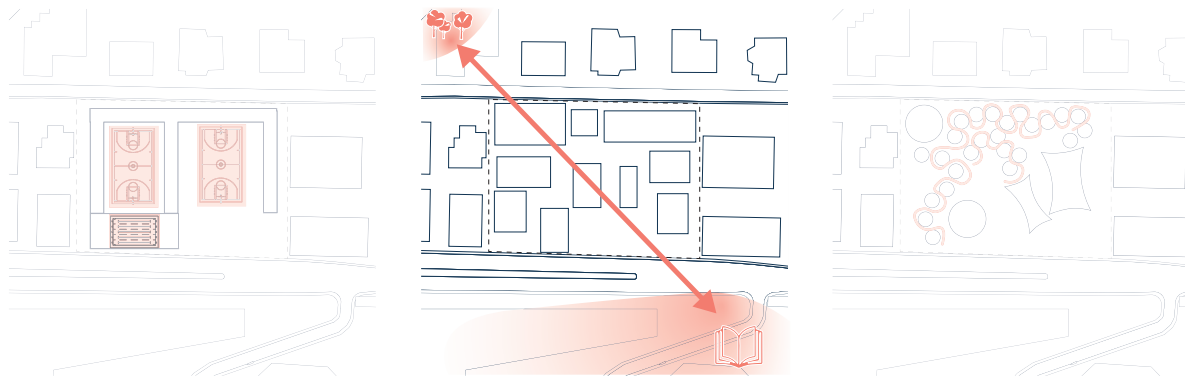
Rhythm & Unity



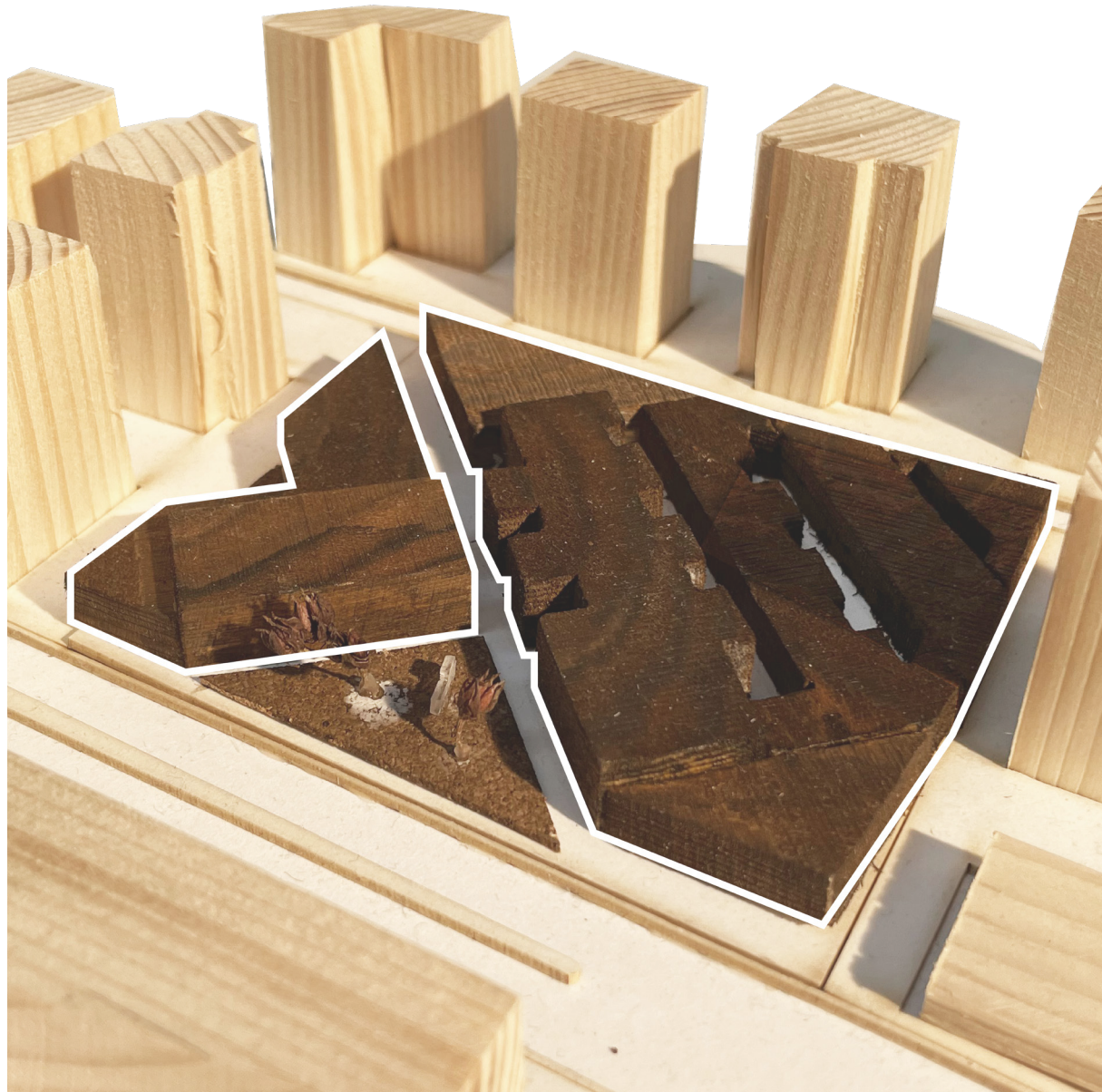
Introvert vs
extrovert



Landscape



VOLUME



CONCEPT

COURTS



CLASS HUB

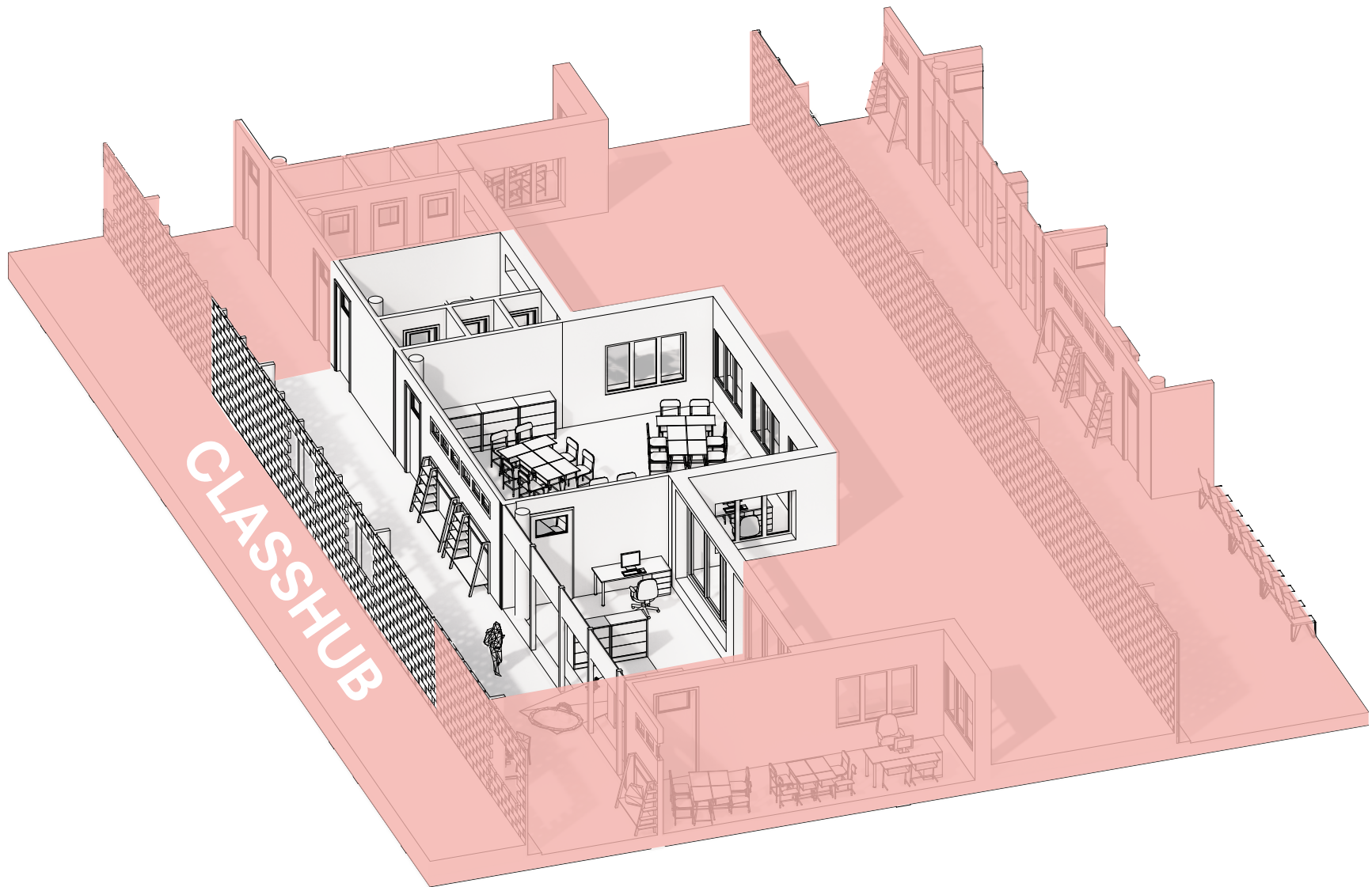


CONCEPT



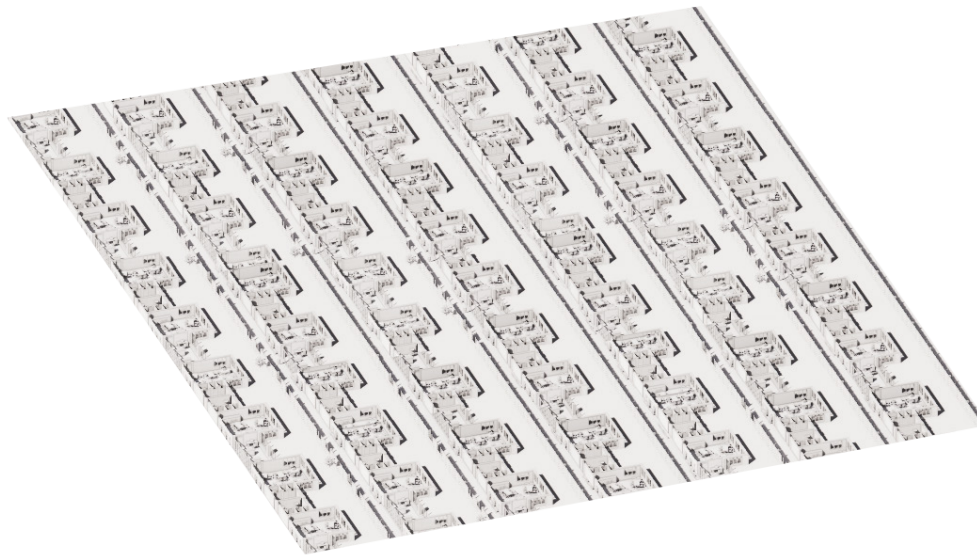
Attaching playrooms, class gardens and sanitary to each classroom for more privacy and safety for the students.

CONCEPT



Then repeating this classhub forming rows along hallways

CONCEPT



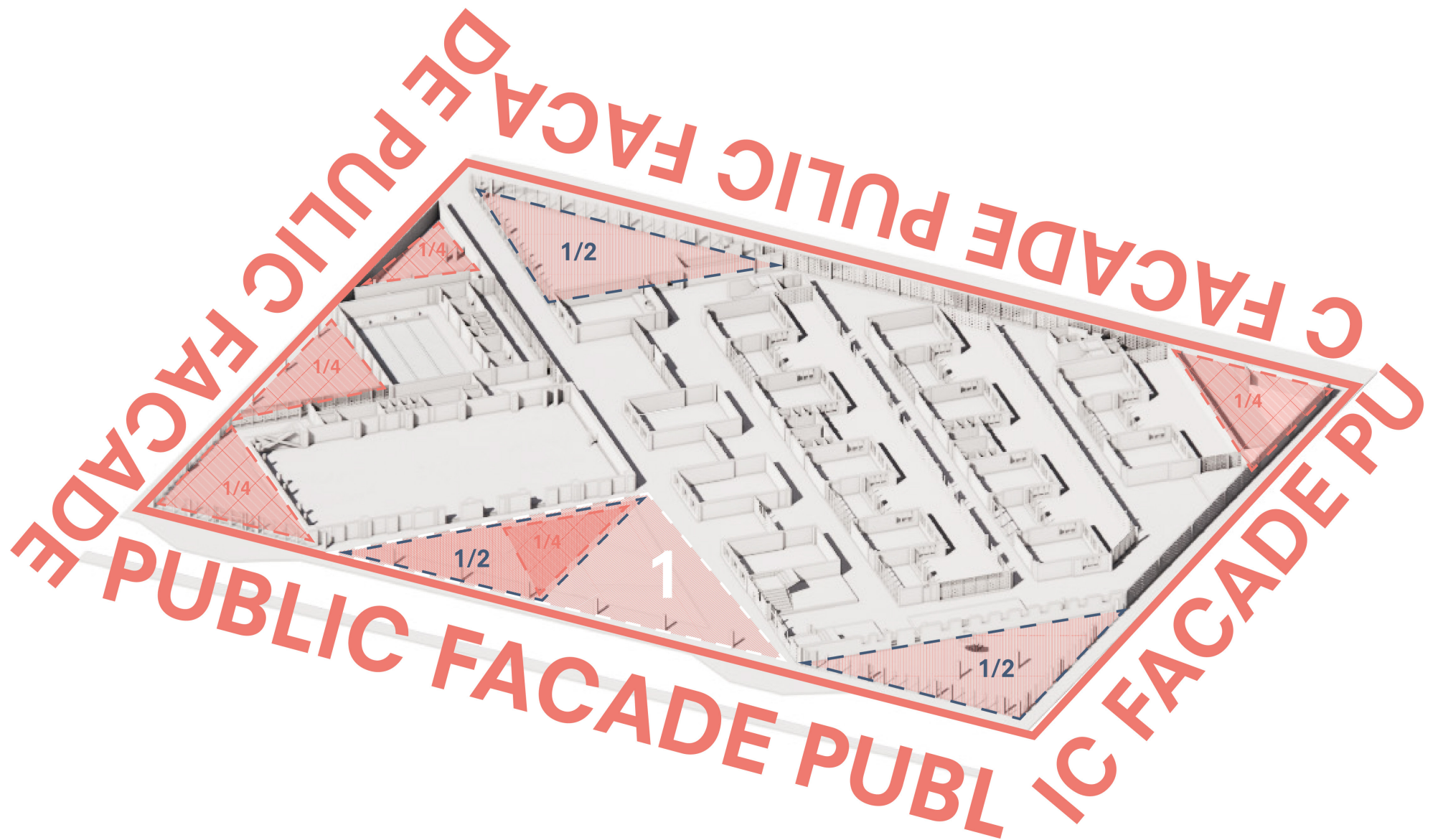
Rotating the classrooms to allow for a public route connecting two destinations for the users as well as dividing school from sport.

CONCEPT



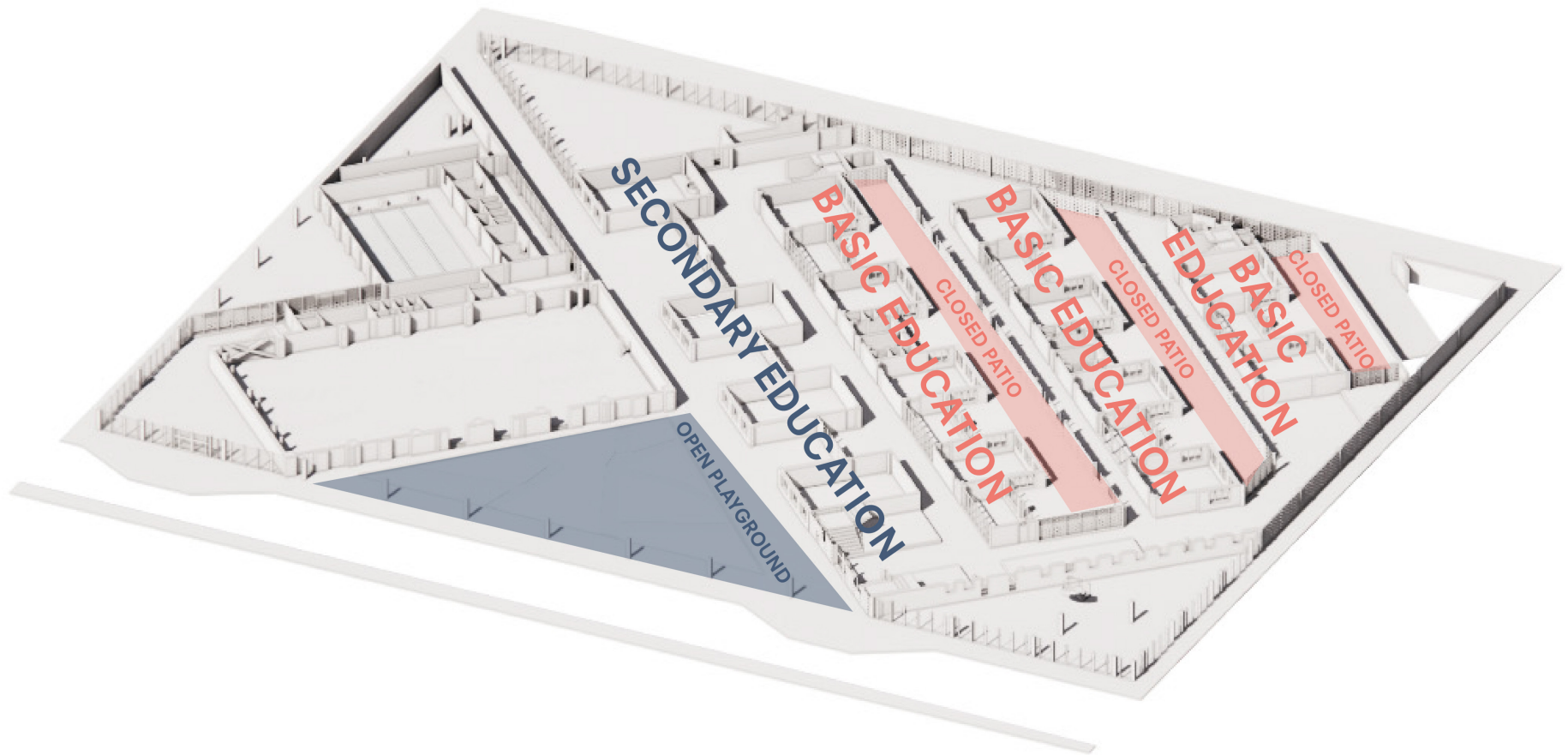
Rotating the classrooms to allow for a public route connecting two destinations for the users as well as dividing school from sport.

CONCEPT



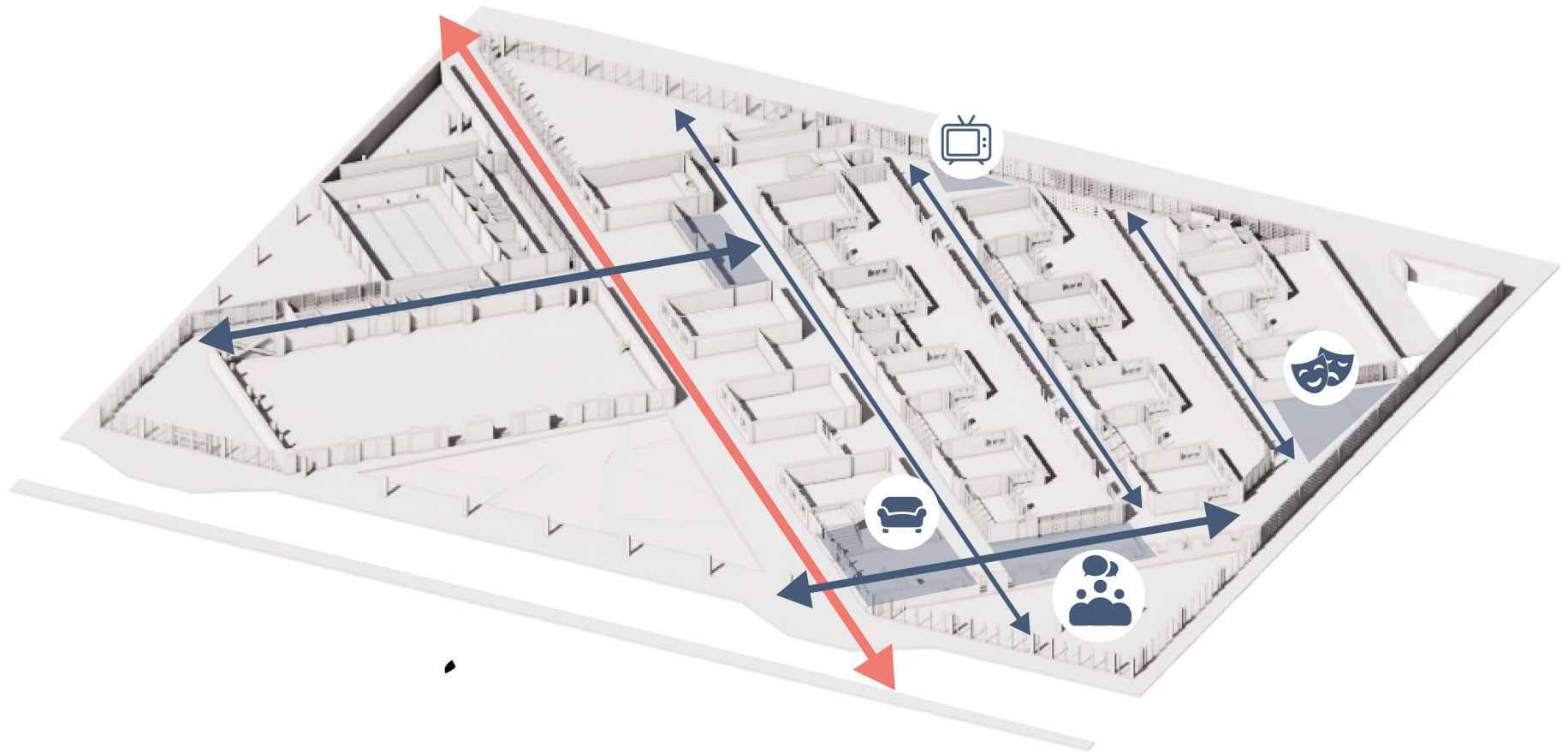
All public and non-residing spaces are emphasized by their shape, also unifying the whole building with a public facade going around.

CONCEPT



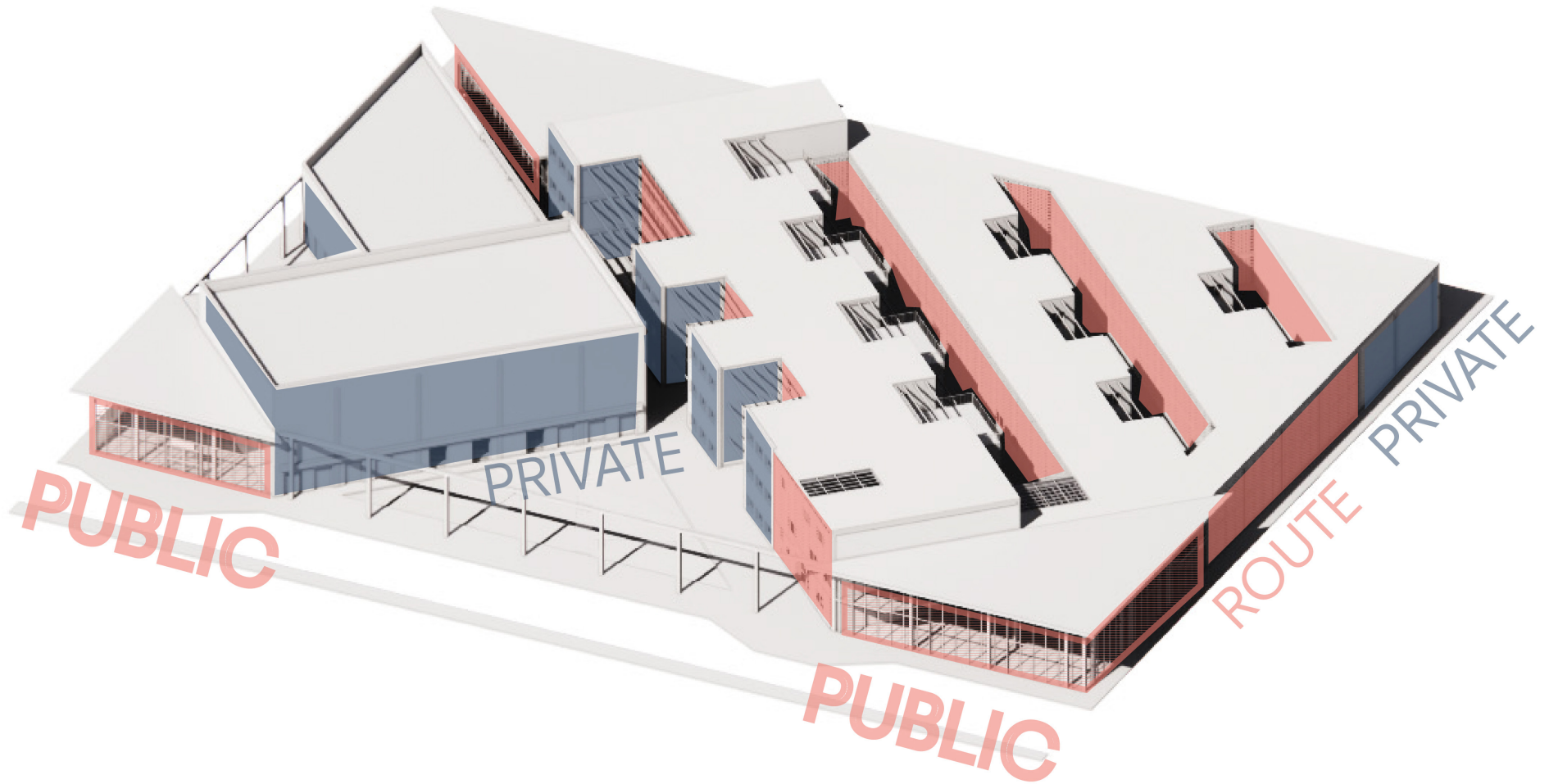
The high school is next to the public street and uses the open playground while the younger students have more privacy.

CONCEPT



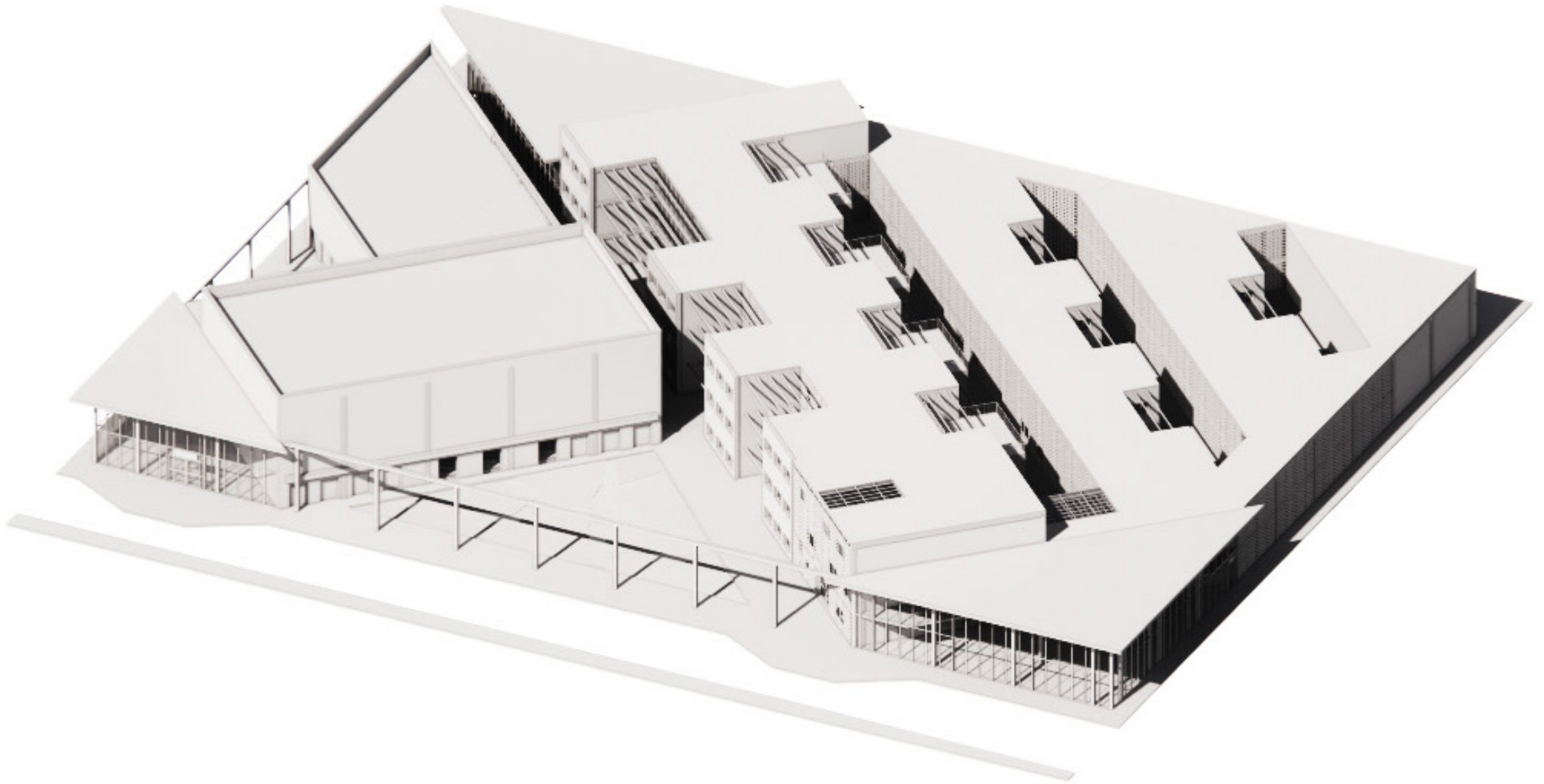
The main routes inside the building are perpendicular to the public route. All secondary routes follow this principle.

CONCEPT

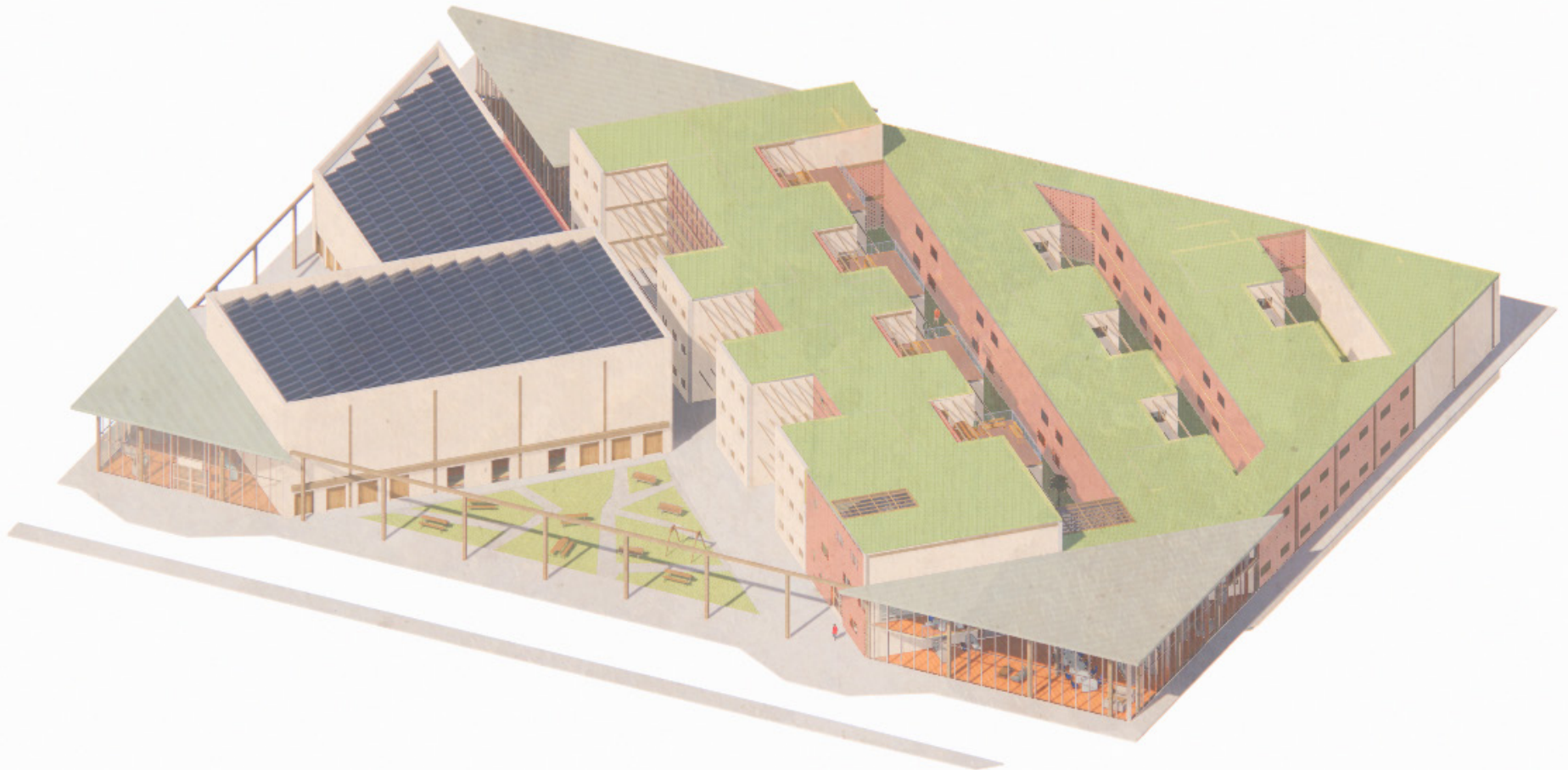


Three facade types that match the different functions will be used in the design to make the building cohesive yet readable.

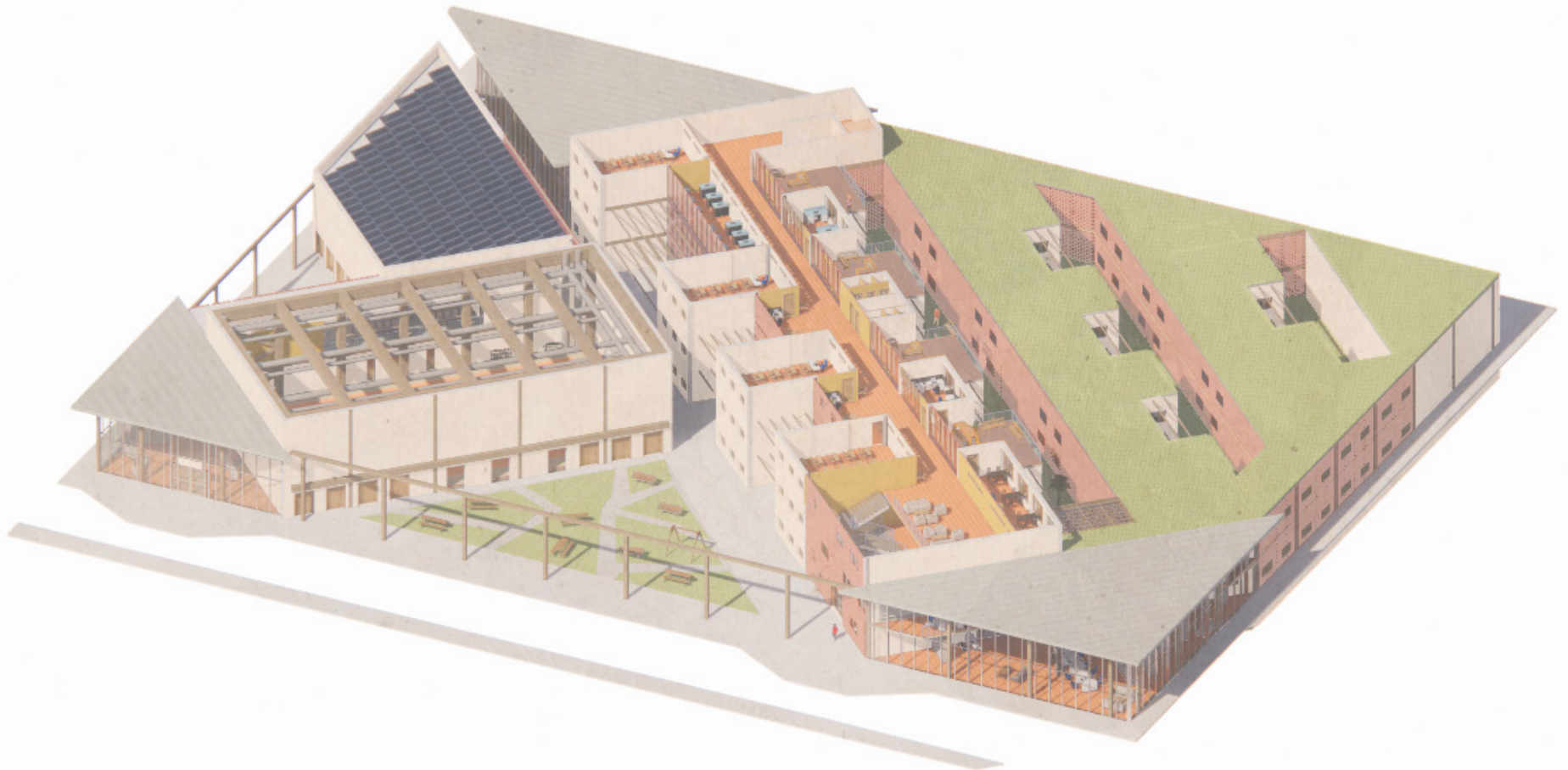
CONCEPT



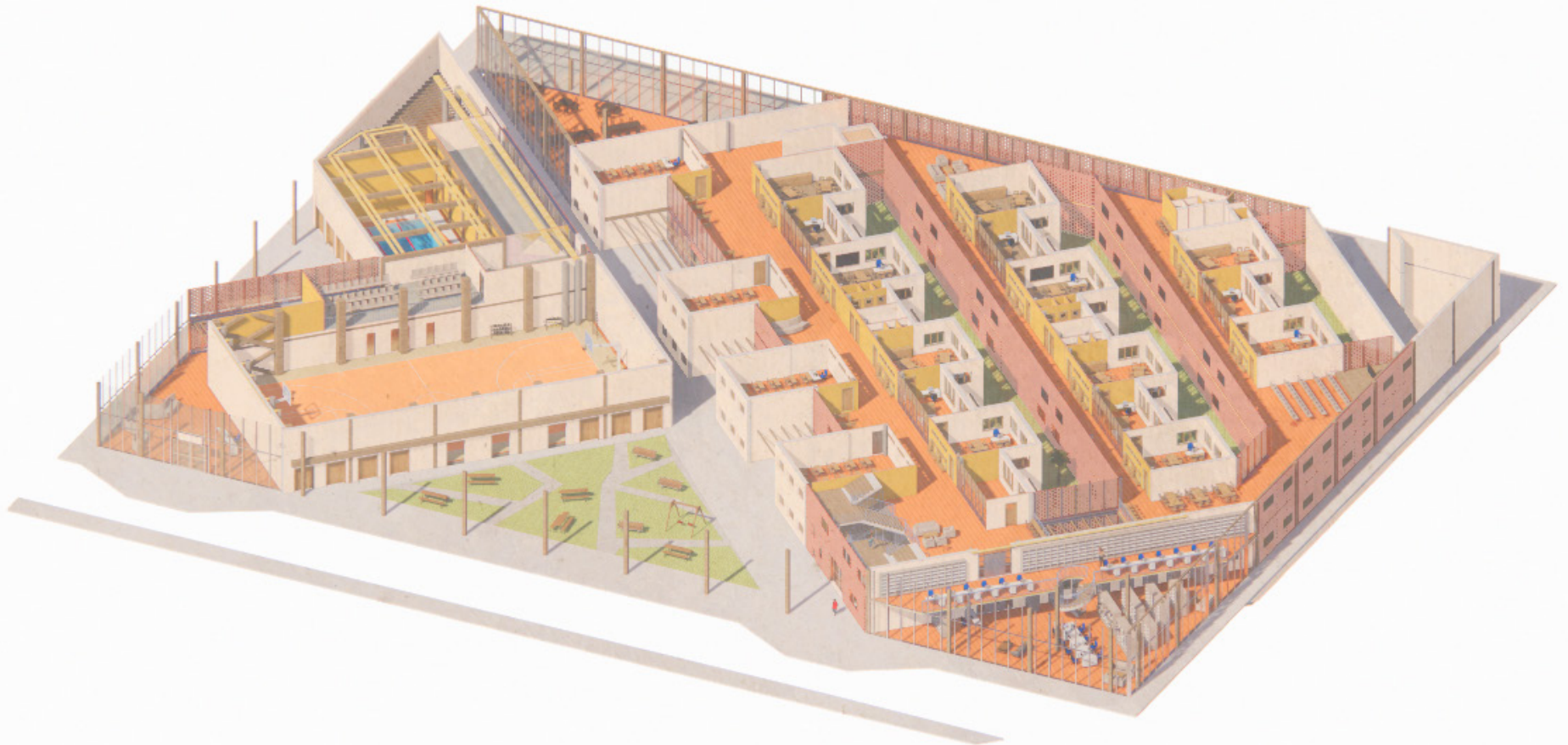
JNAH PUBLIC SCHOOL



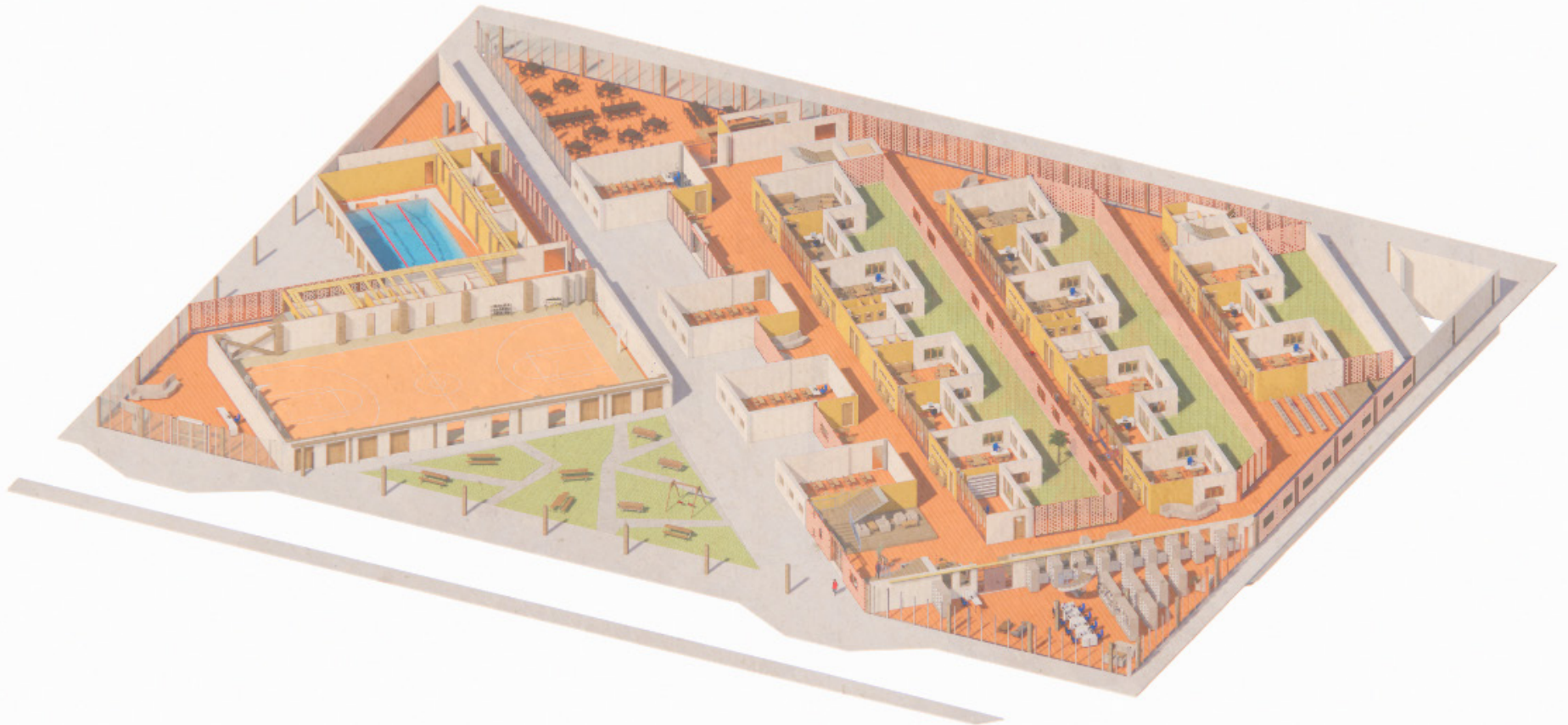
JNAH PUBLIC SCHOOL



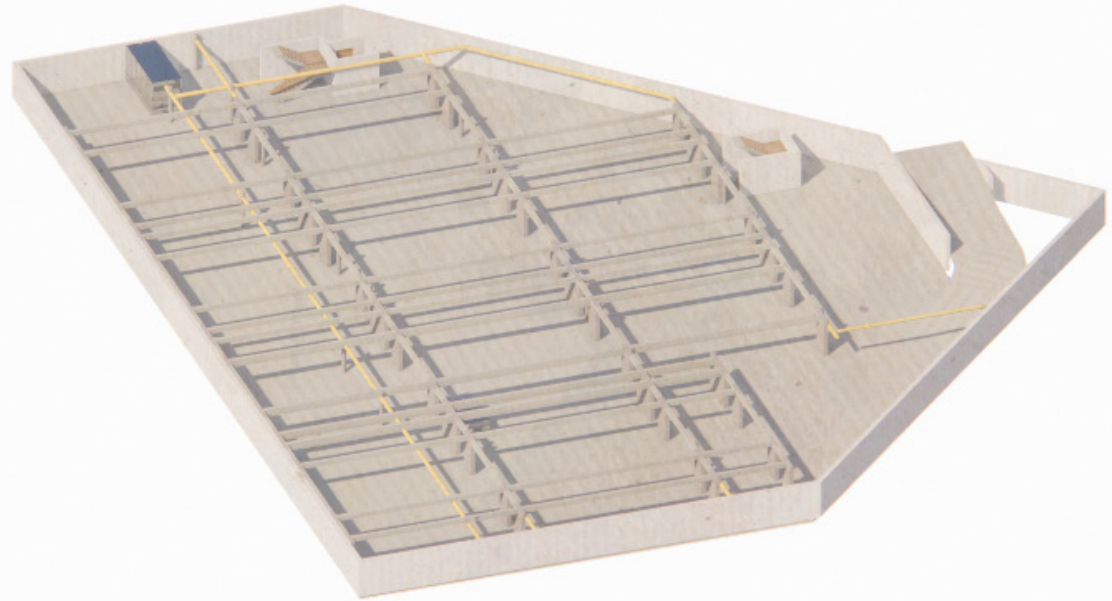
JNAH PUBLIC SCHOOL



JNAH PUBLIC SCHOOL

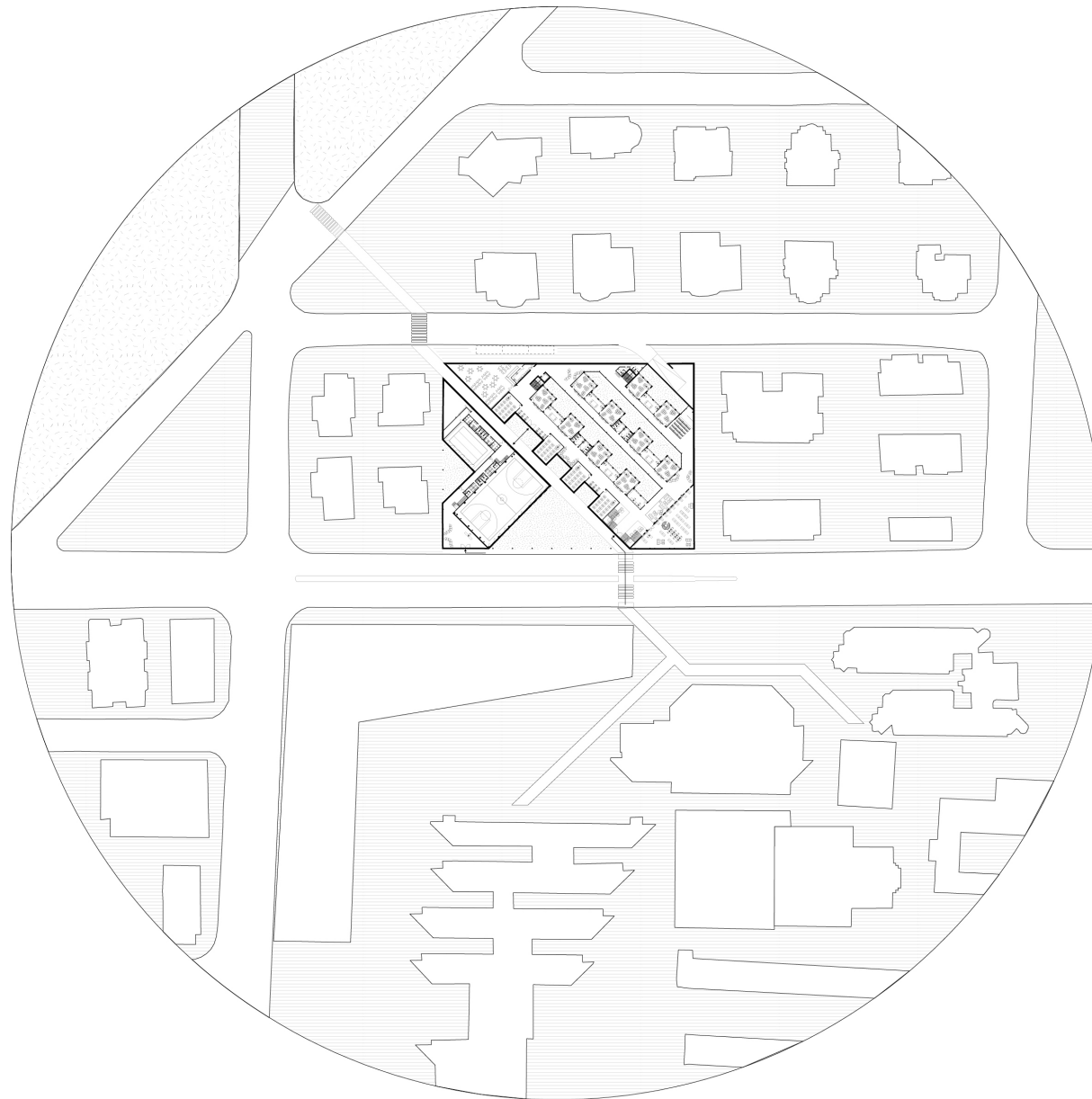


JNAH PUBLIC SCHOOL

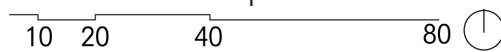


IMPLEMENTATION

JNAH PUBLIC SCHOOL



Site plan



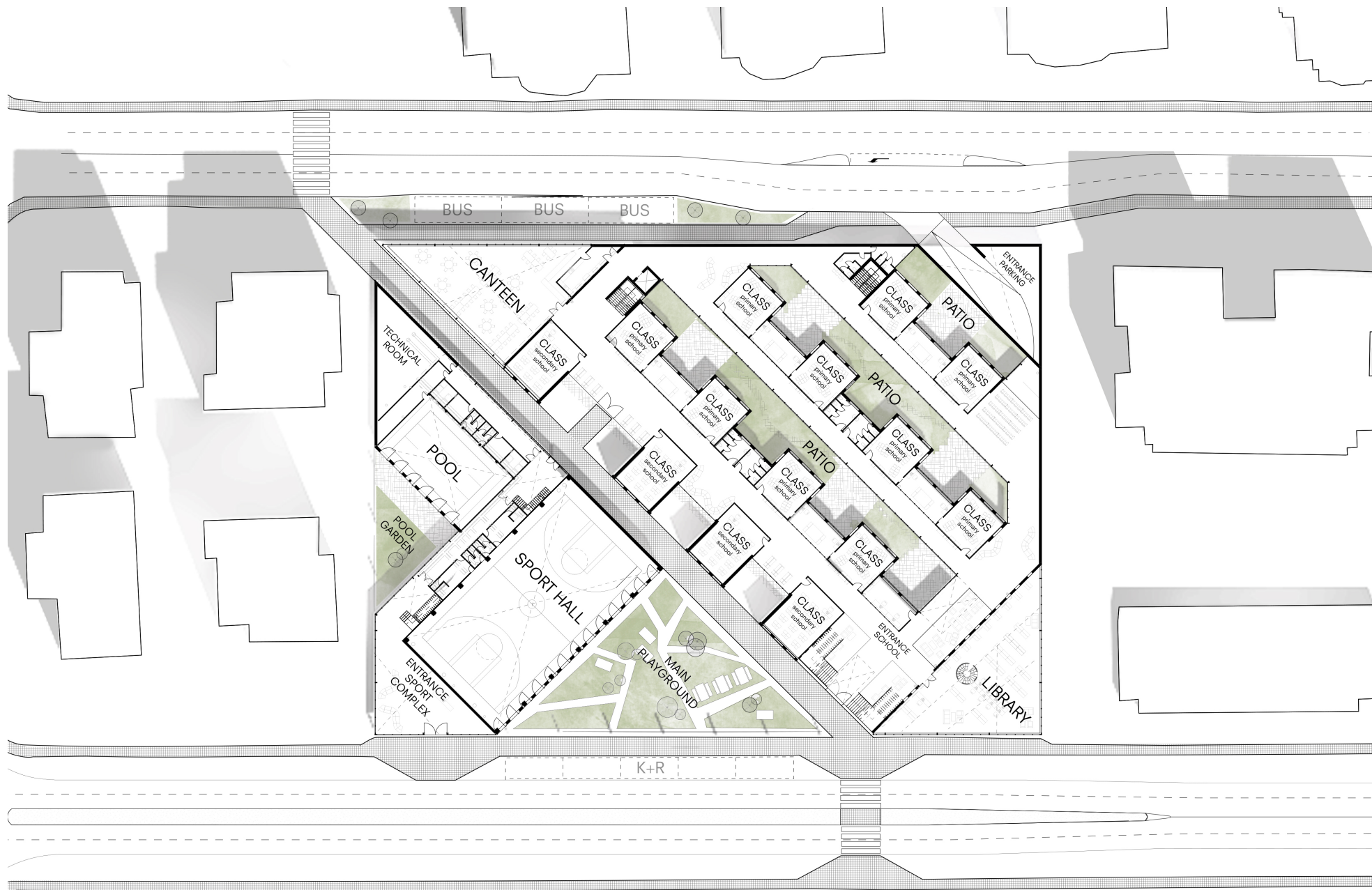
JNAH PUBLIC SCHOOL



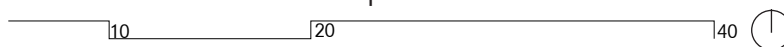
JNAH PUBLIC SCHOOL



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Urban implementation



USERS



Primary
school
student



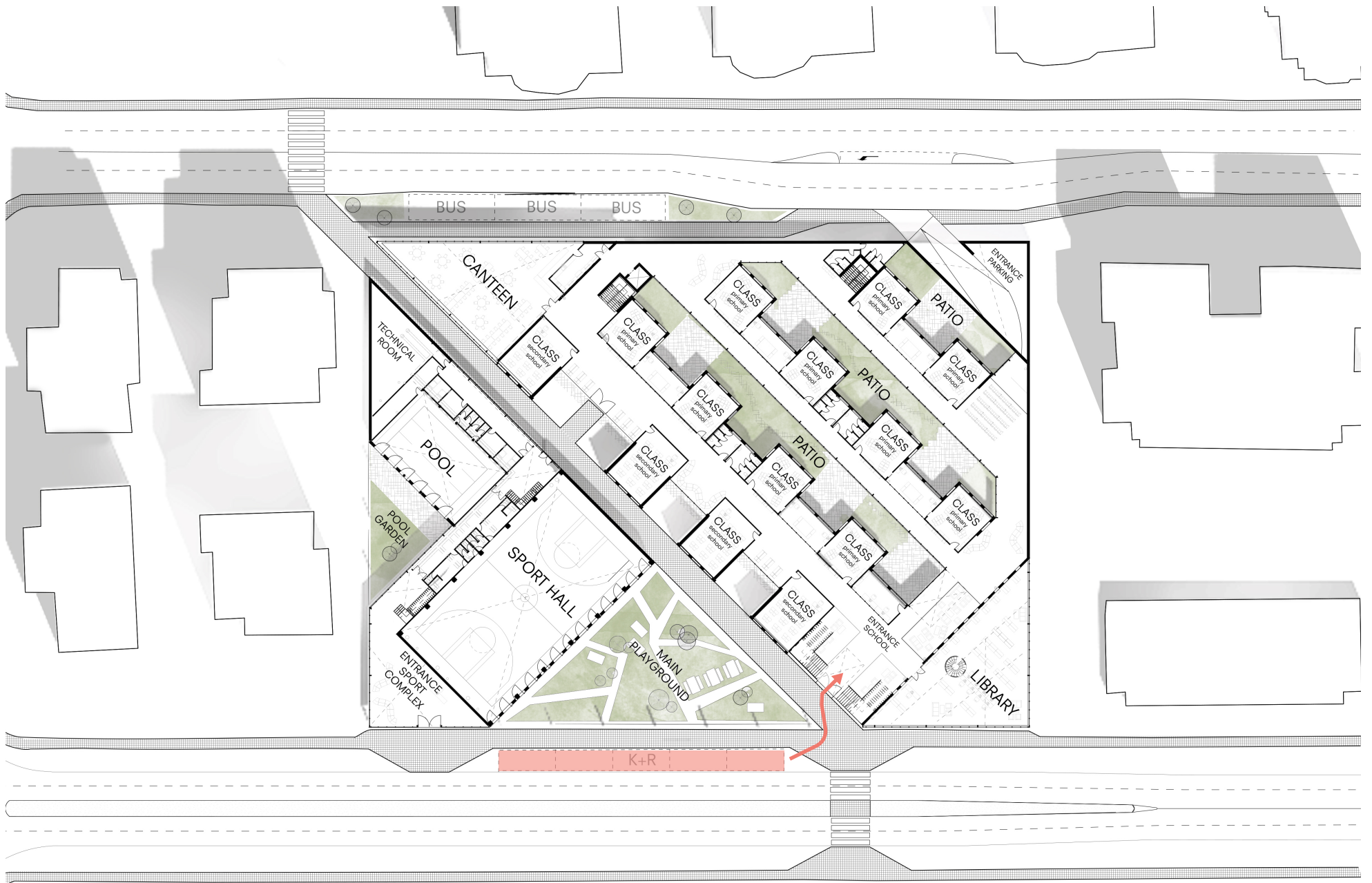
Secondary
school
student



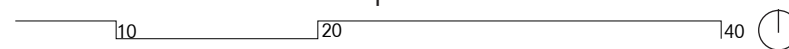
Head of a
school



Primary school student being dropped
off by their parents visiting the library and
going to class.

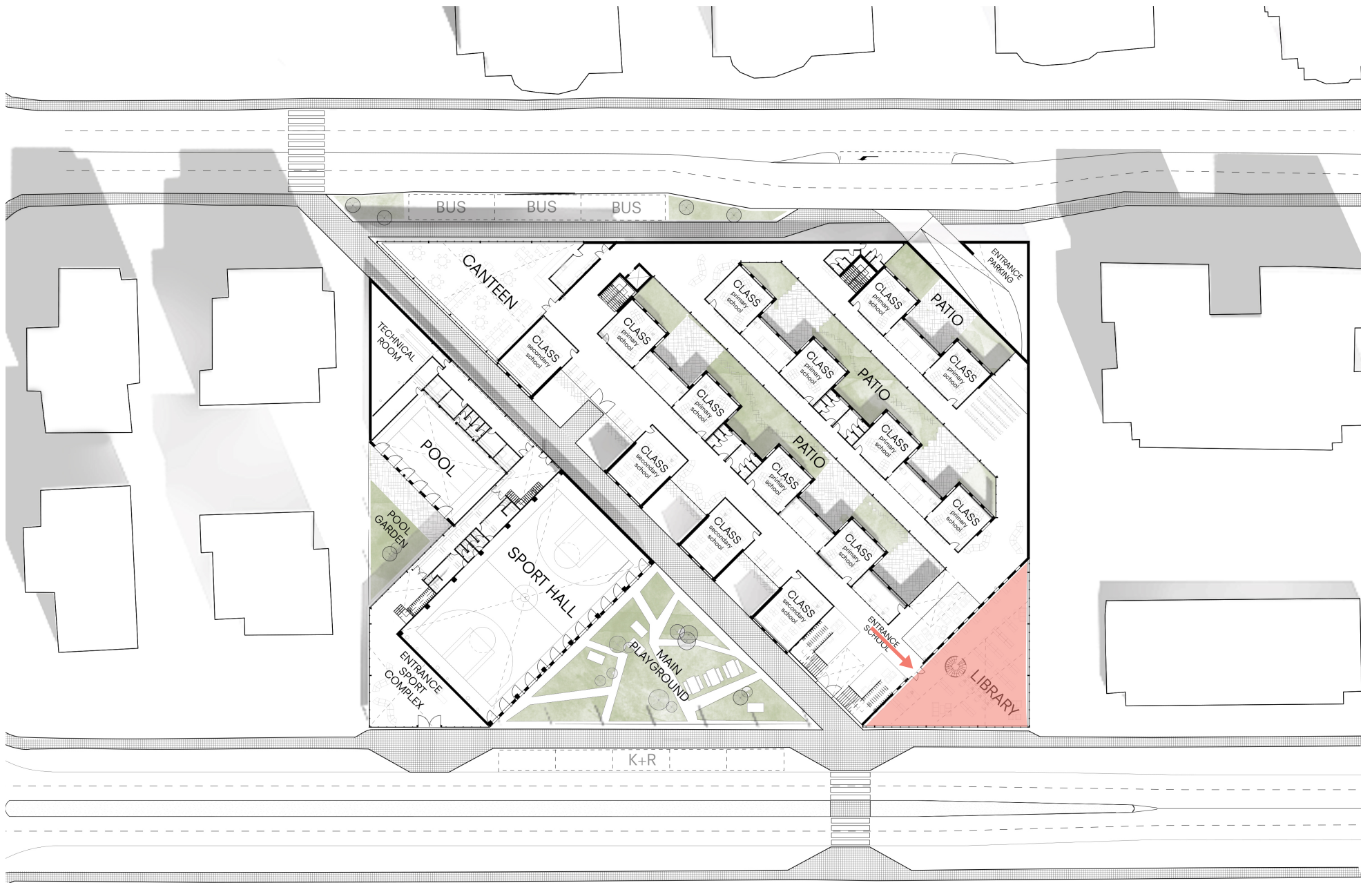


Urban implementation

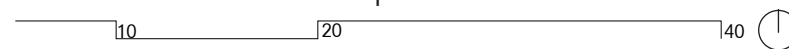


ENTRANCE SCHOOL





Urban implementation

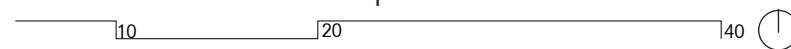


LIBRARY



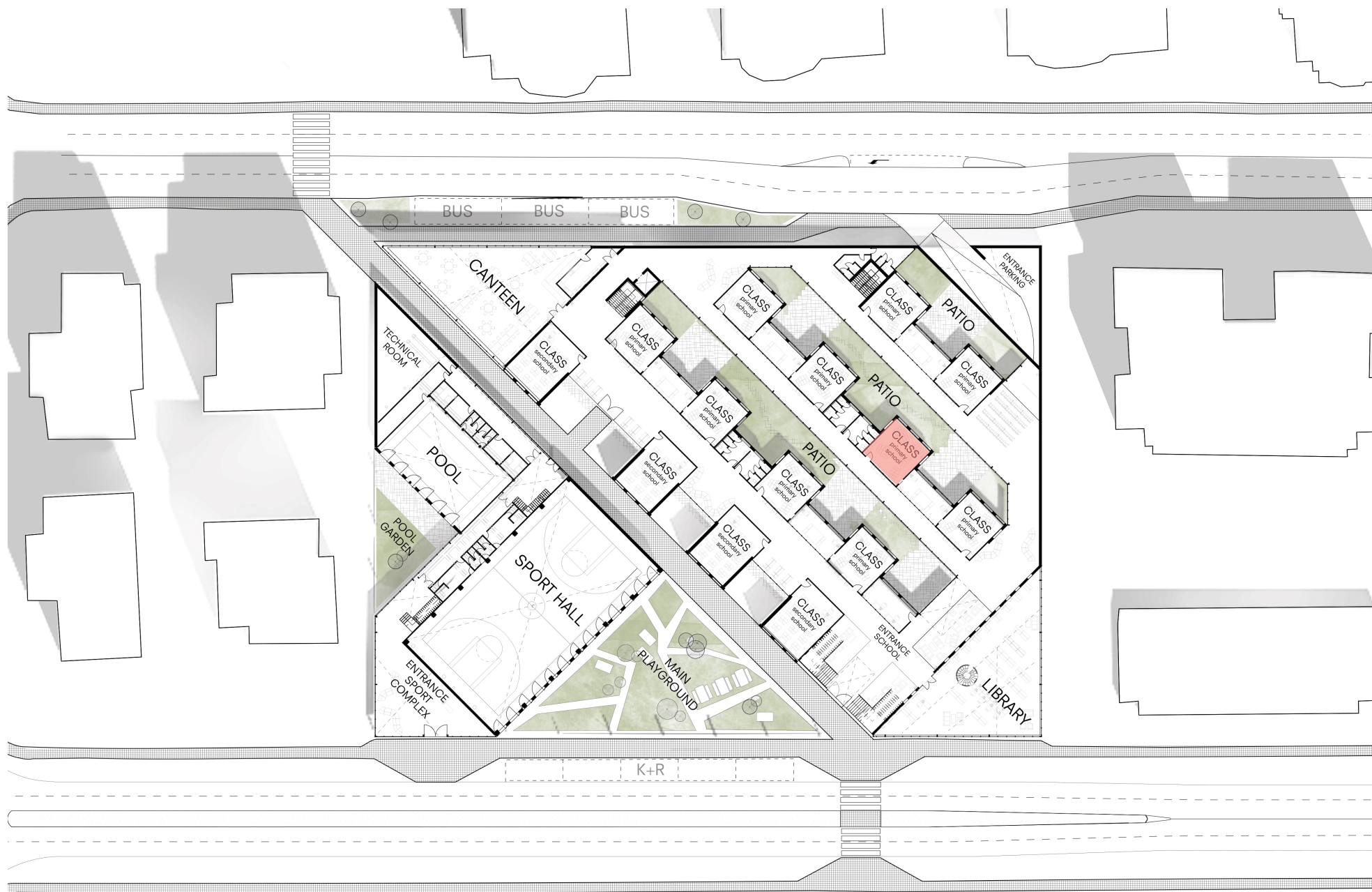


Urban implementation

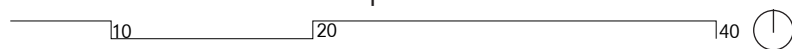


HALLWAY





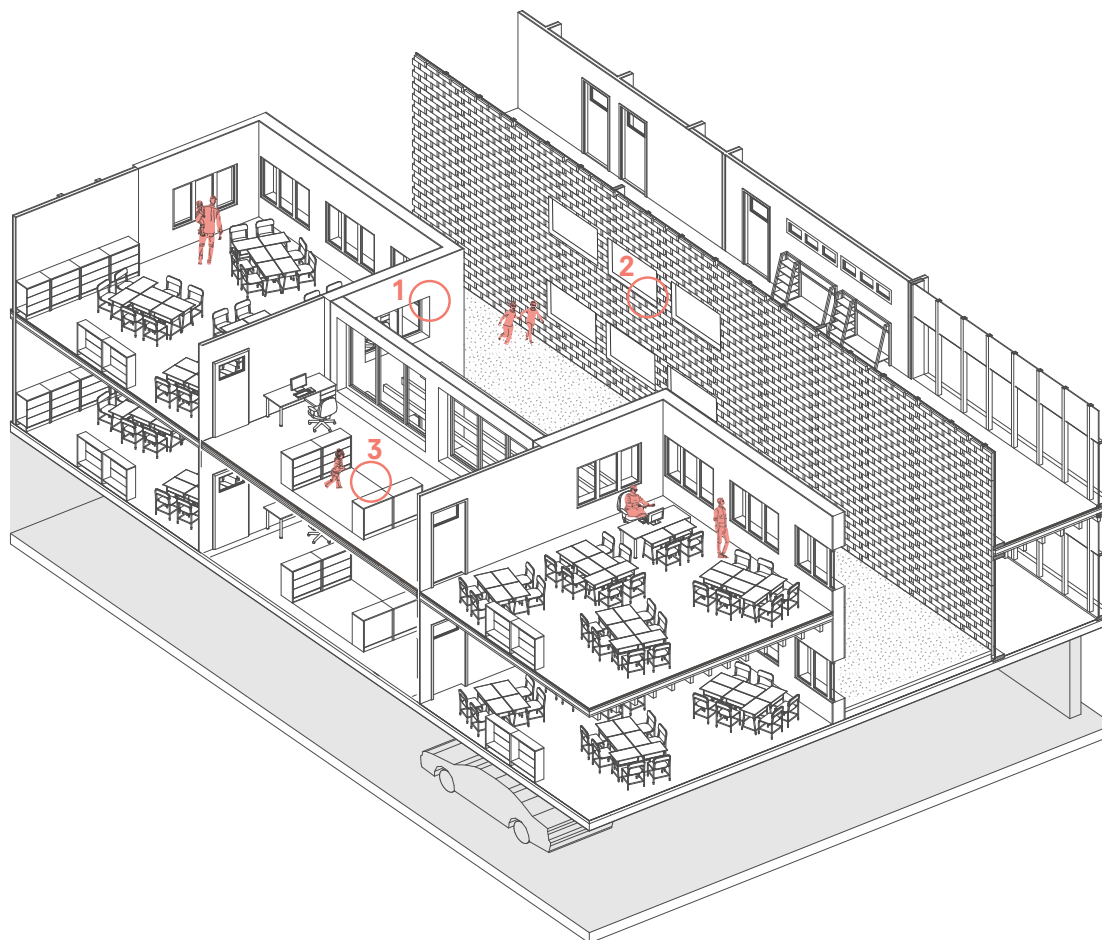
Urban implementation



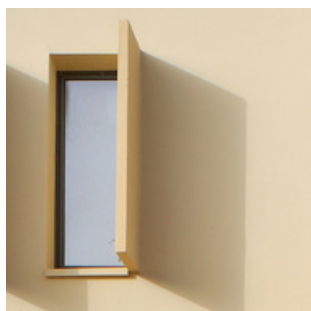
CLASSROOM



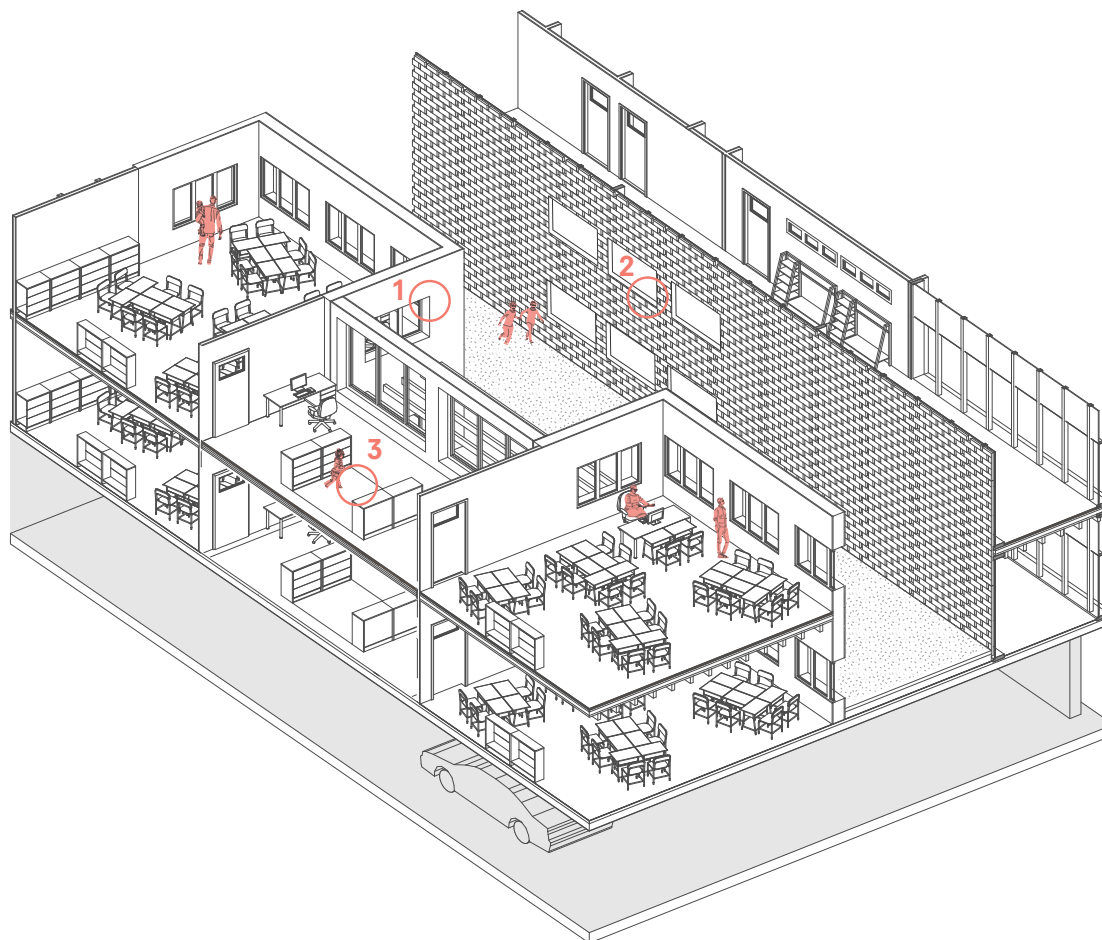
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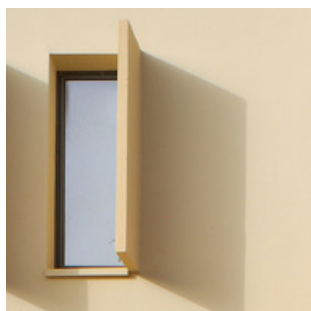
1



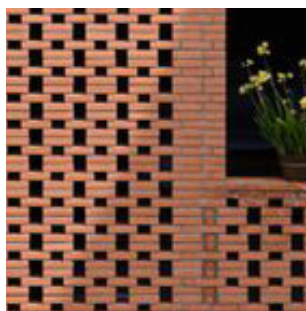
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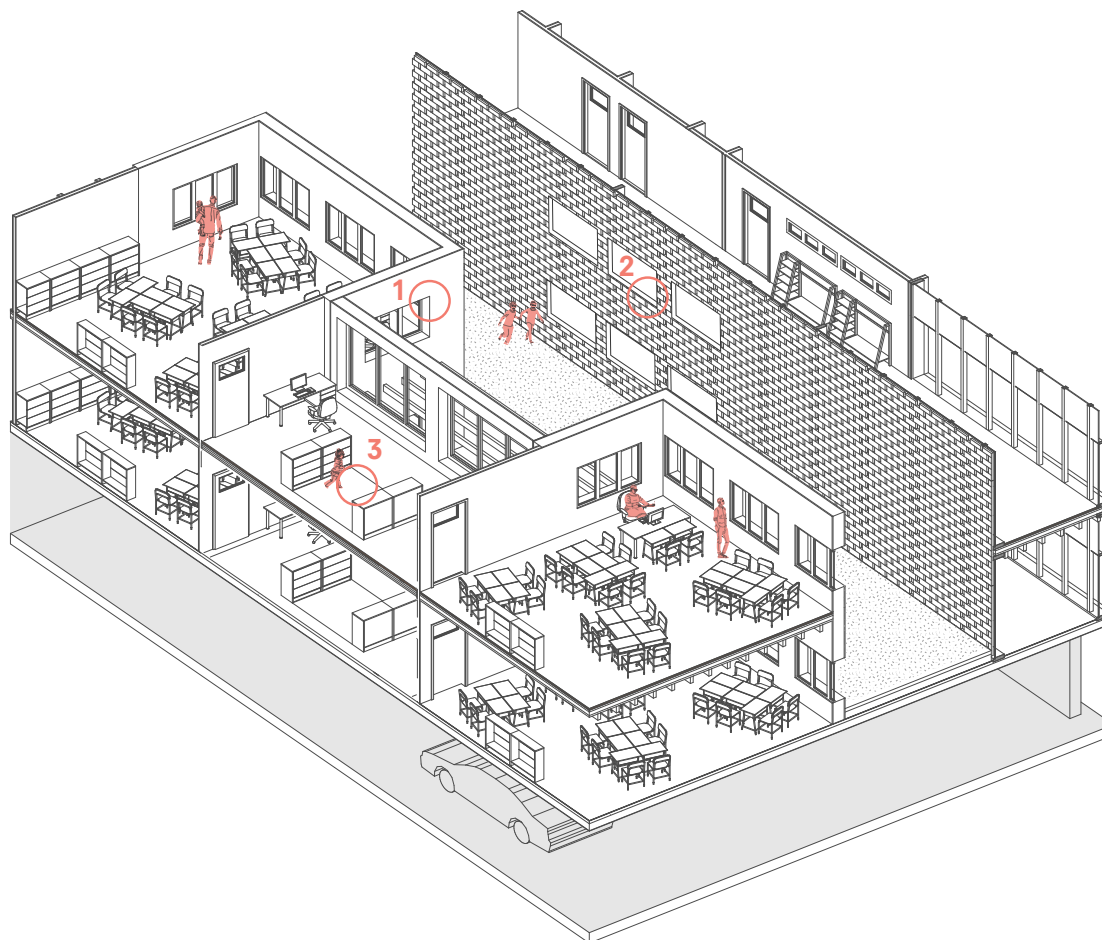
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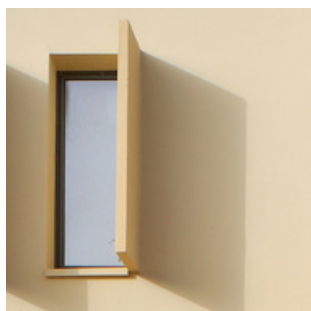
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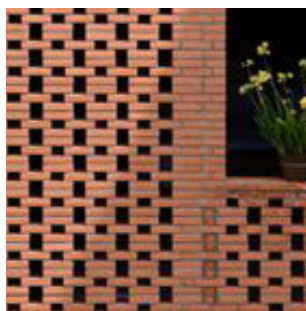
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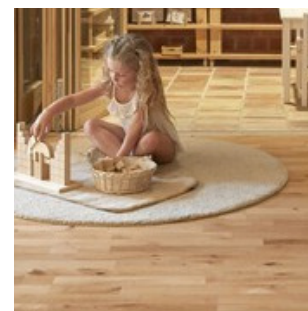
1



2



3

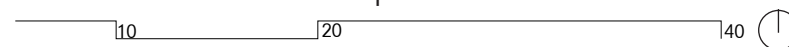




Secondary school student going from
the main playground through the sport hall
back to class.

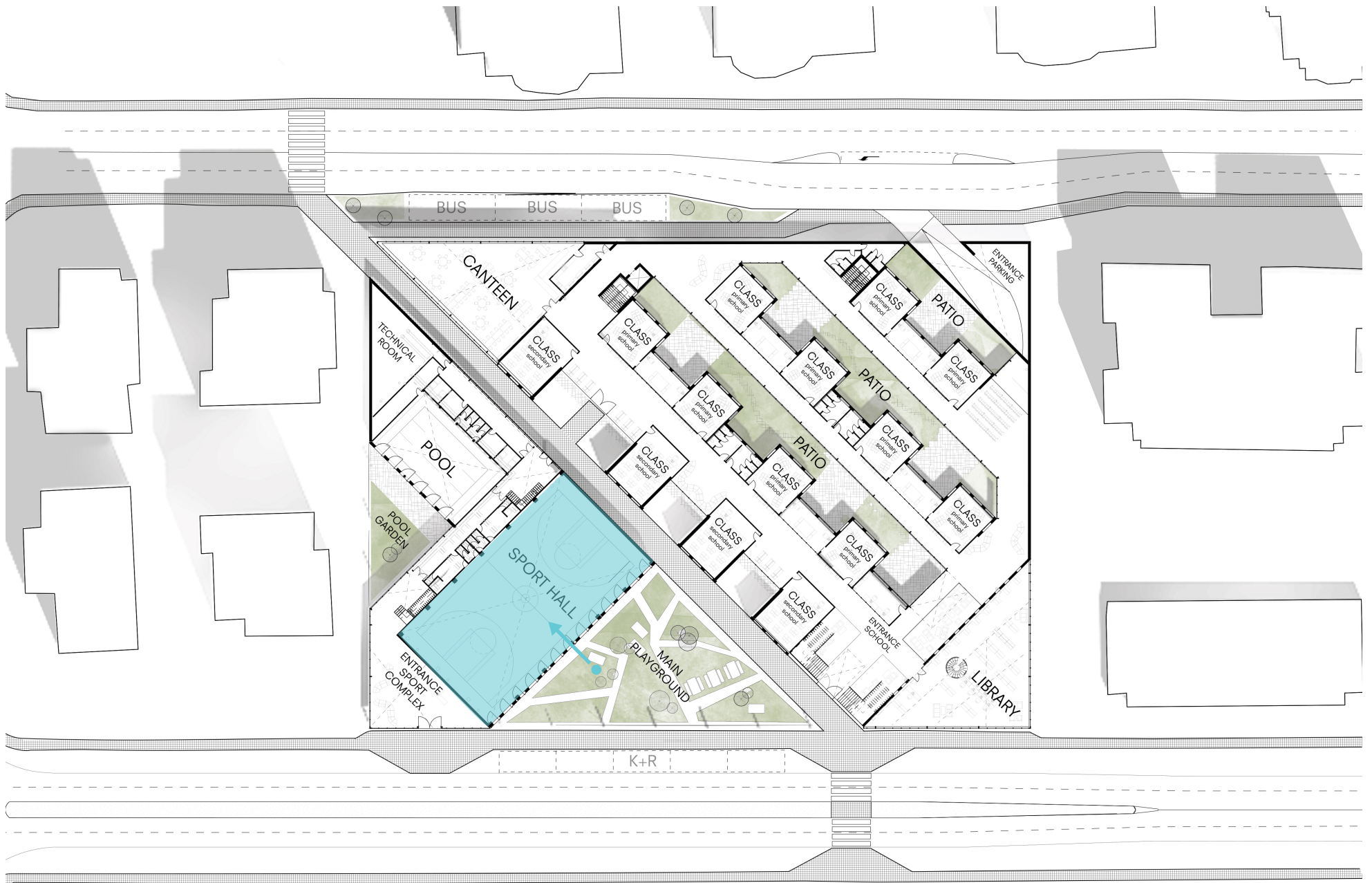


Urban implementation

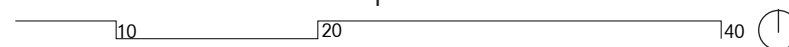


MAIN PLAYGROUND





Urban implementation

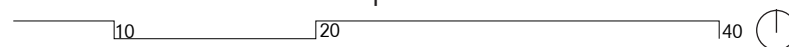


SPORT HALL



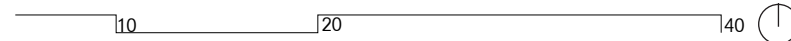


Urban implementation

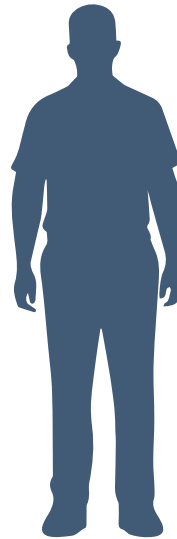




First floor



JNAH PUBLIC SCHOOL

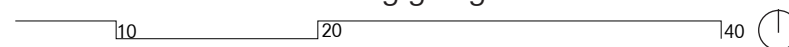


Head of the school going to his office.

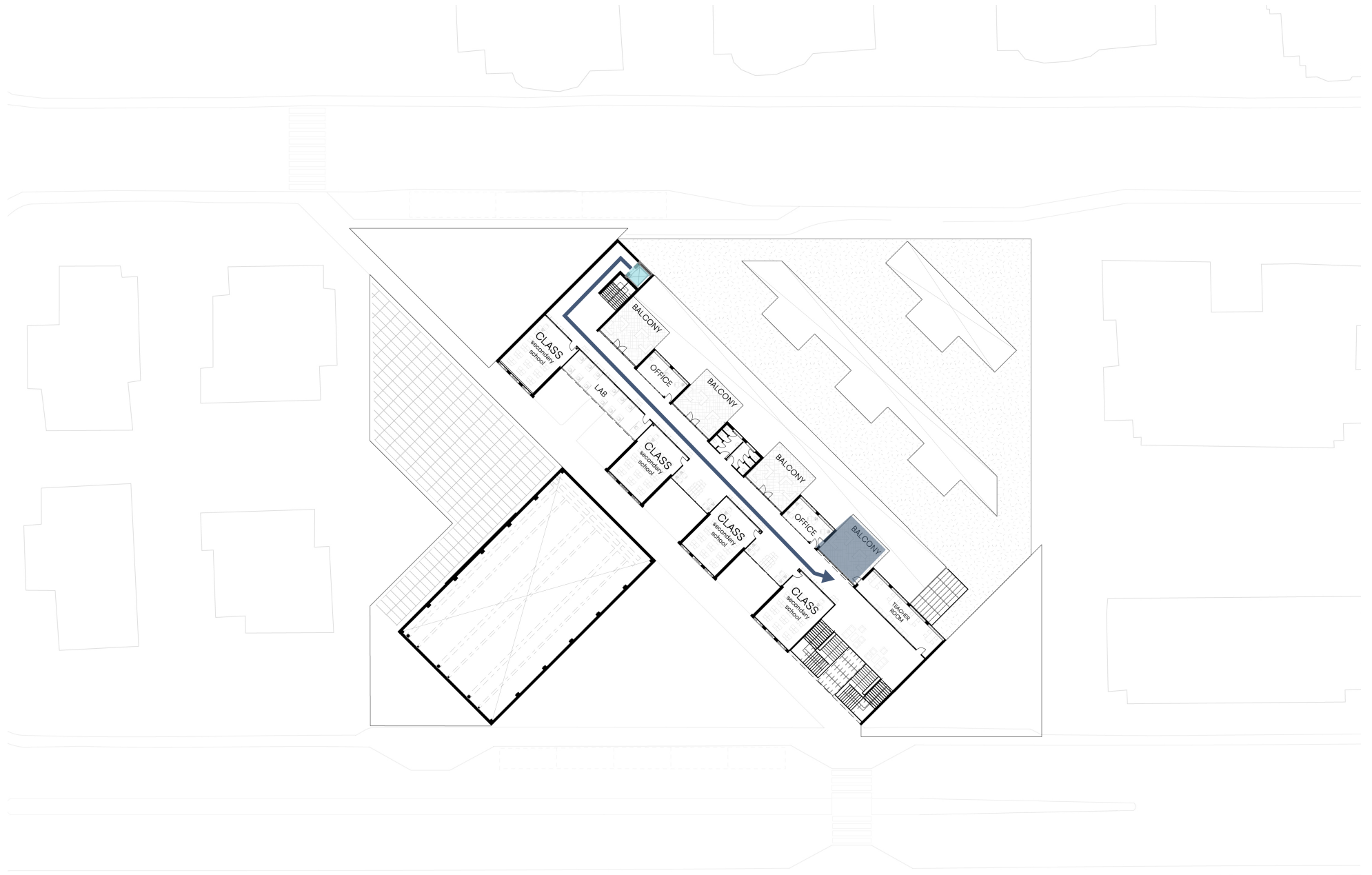
JNAH PUBLIC SCHOOL



Parking garage



JNAH PUBLIC SCHOOL

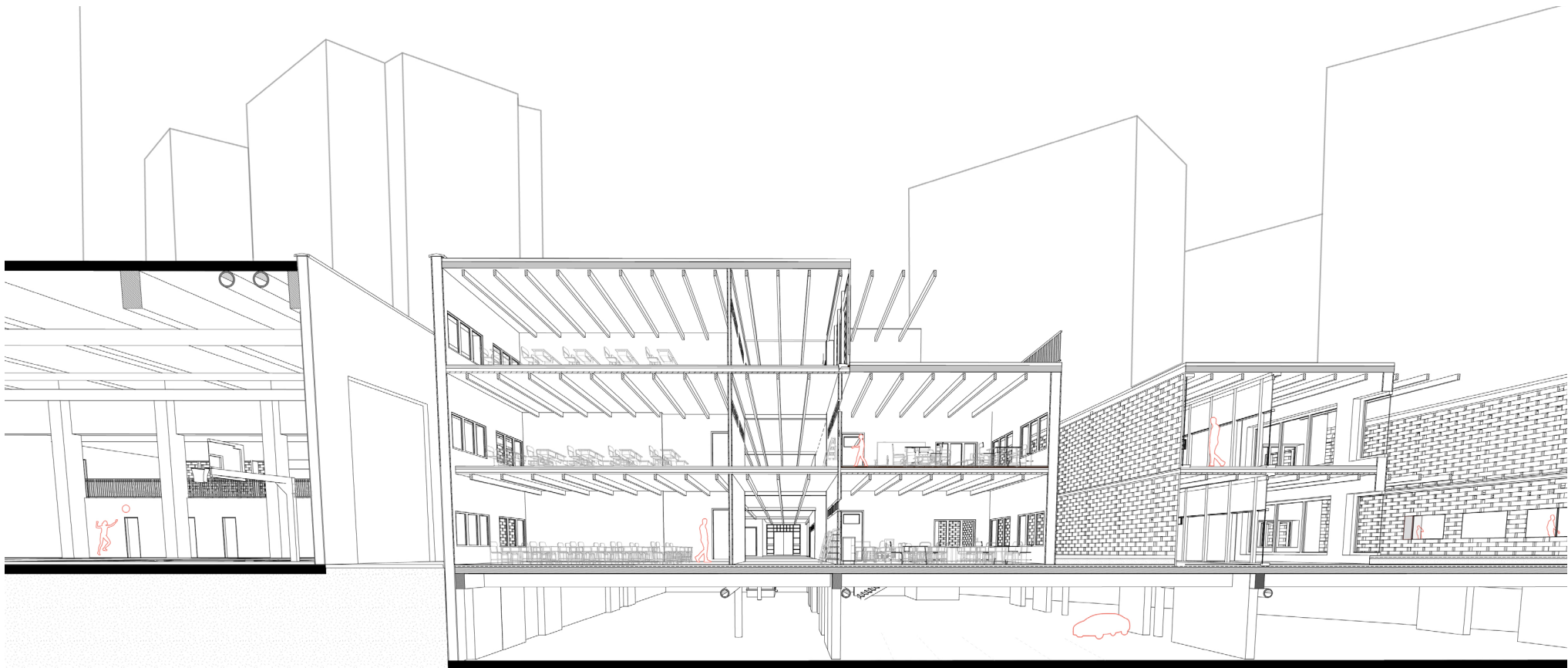


Second floor



TEACHERS' BALCONY LOUNGE





DEVELOPMENT

CLIMATE DESIGN

Passive & mechanical
techniques



Window size & depth



Overhang



Second facade



Plants for evaporative
cooling



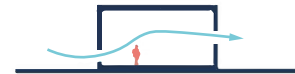
Light coloured materials with
thermal mass



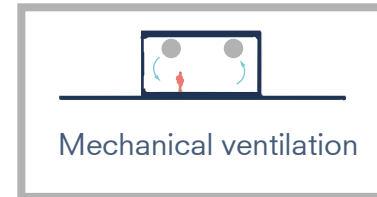
Waterborne floor cooling
& heating



Warm air escape near ceiling



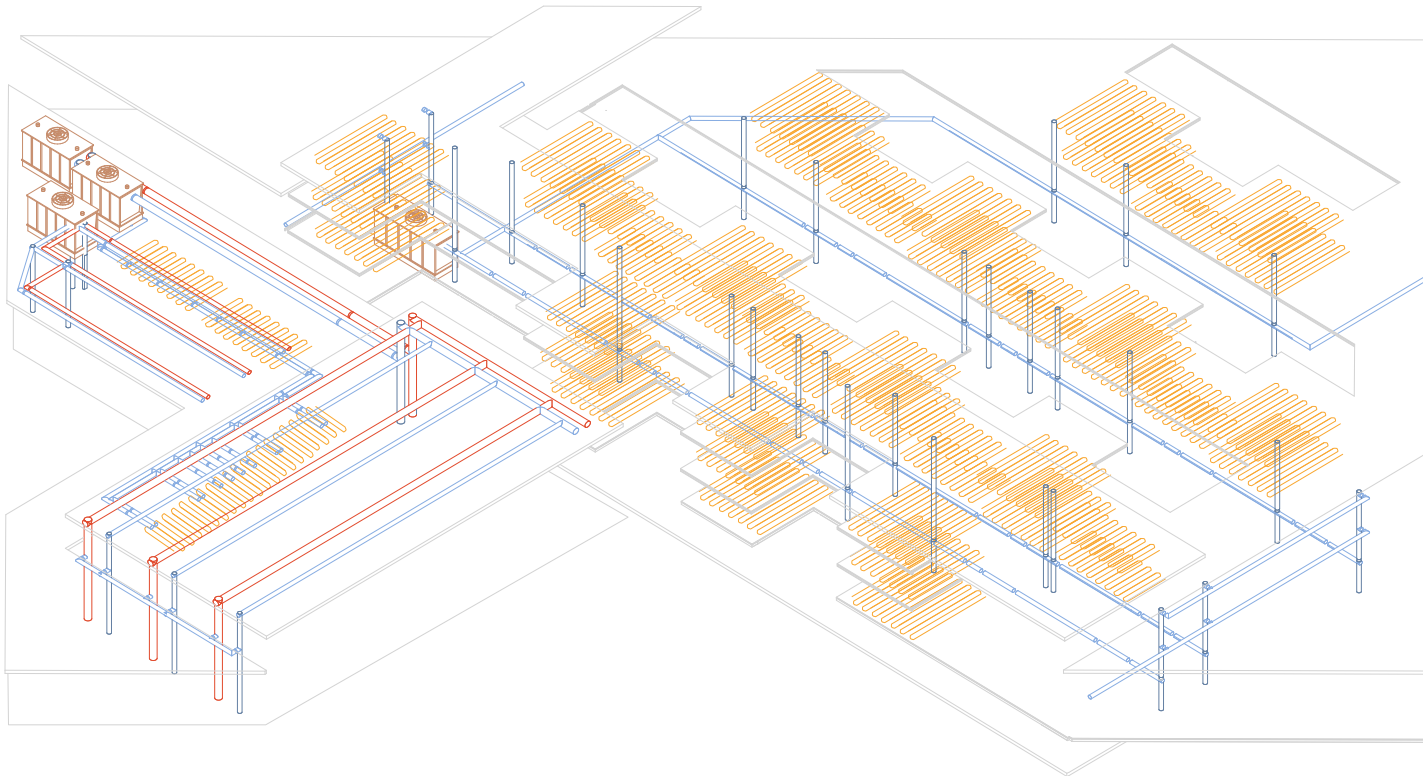
Cross ventilation



Mechanical ventilation

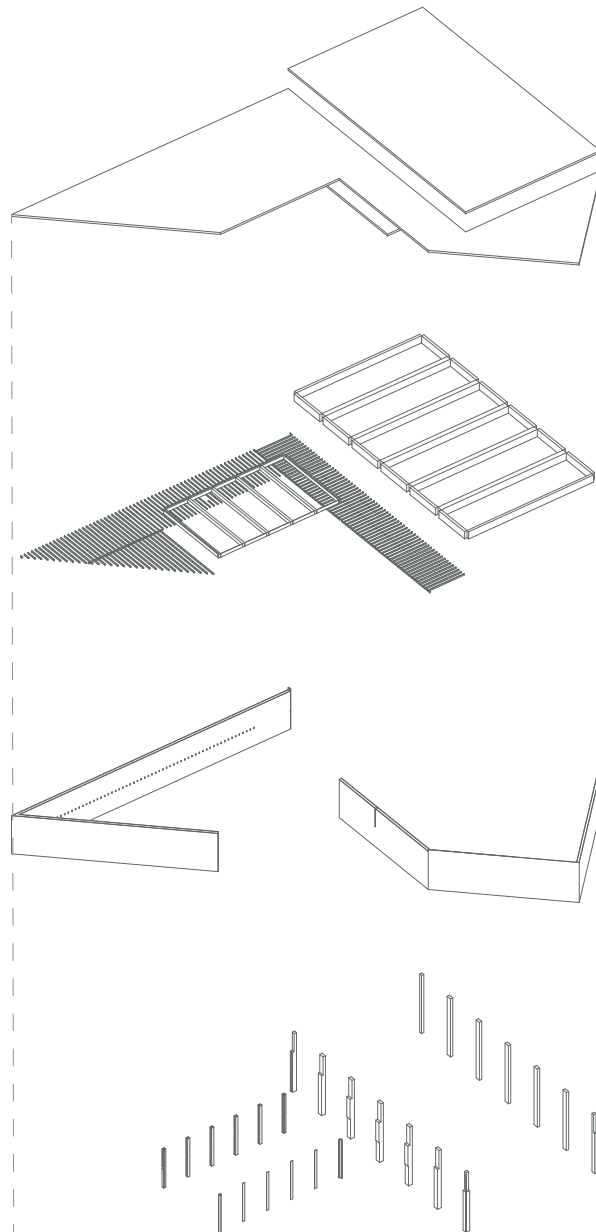
CLIMATE DESIGN

All mechanical supporting
elements



- Extraction with horizontal vents
- Extraction with vertical vents
- Supply with vents
- Air treatment system
- Waterborne floor cooling & heating

CONSTRUCTION DESIGN



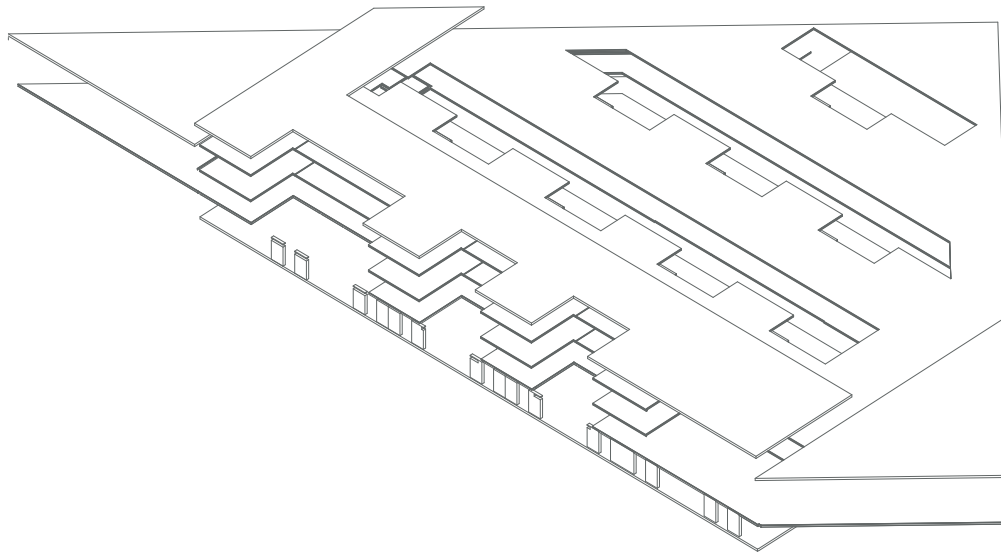
Hollow-core slab floor

Glulam beam sport hall 1200x600 18 m span
Glulam beam pool 600x300 10 m span
Wood beam 180x76 other 7 m

Load-bearing walls , lime stone 300 mm

Glulam column sport hall 600x600
Glulam column pool 300x300

CONSTRUCTION DESIGN

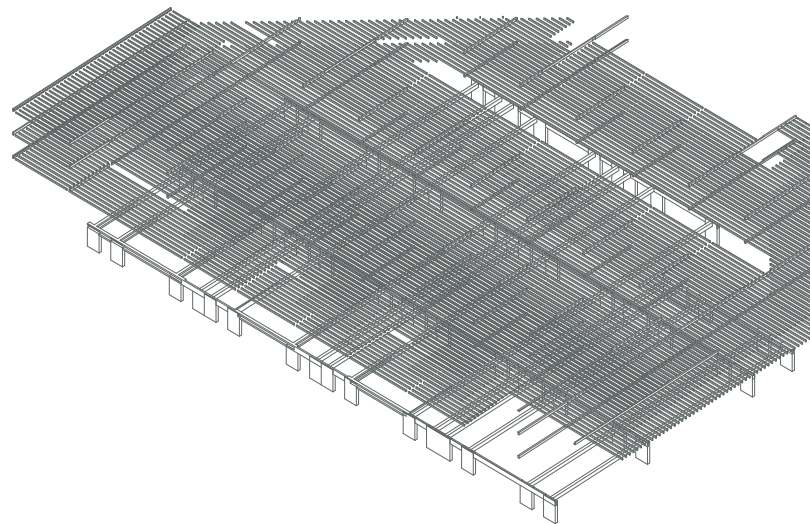


Green roof

All upper floors: wooden floor boards

Ground floor : Hollow-core slab

Parking floor : Concrete slab



Wooden beams 400x70

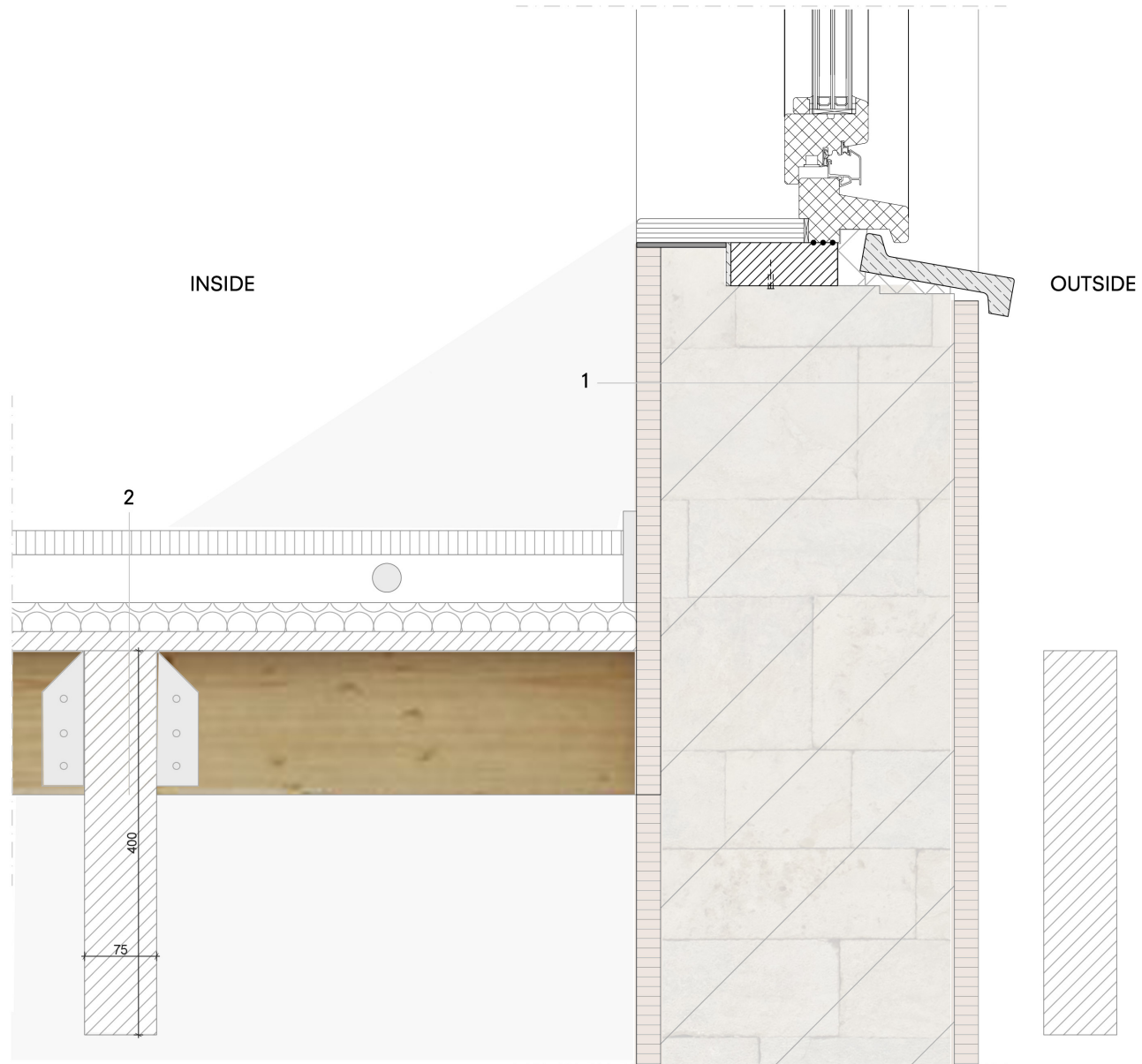
Wooden column+Limestone walls

Concrete collums 1500x400

FRAGMENT



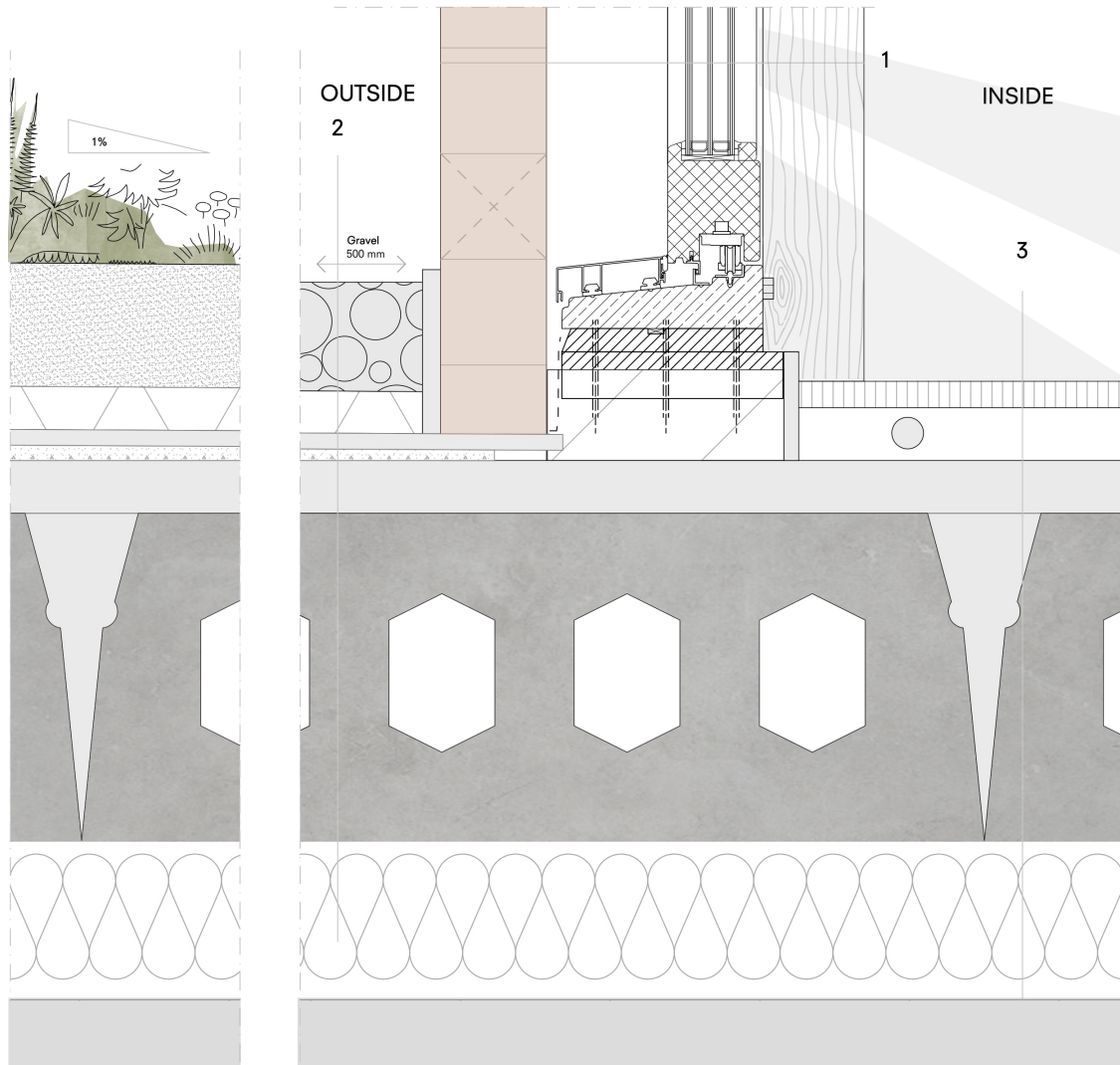
DETAIL 1 FIRST FLOOR



FRAGMENT

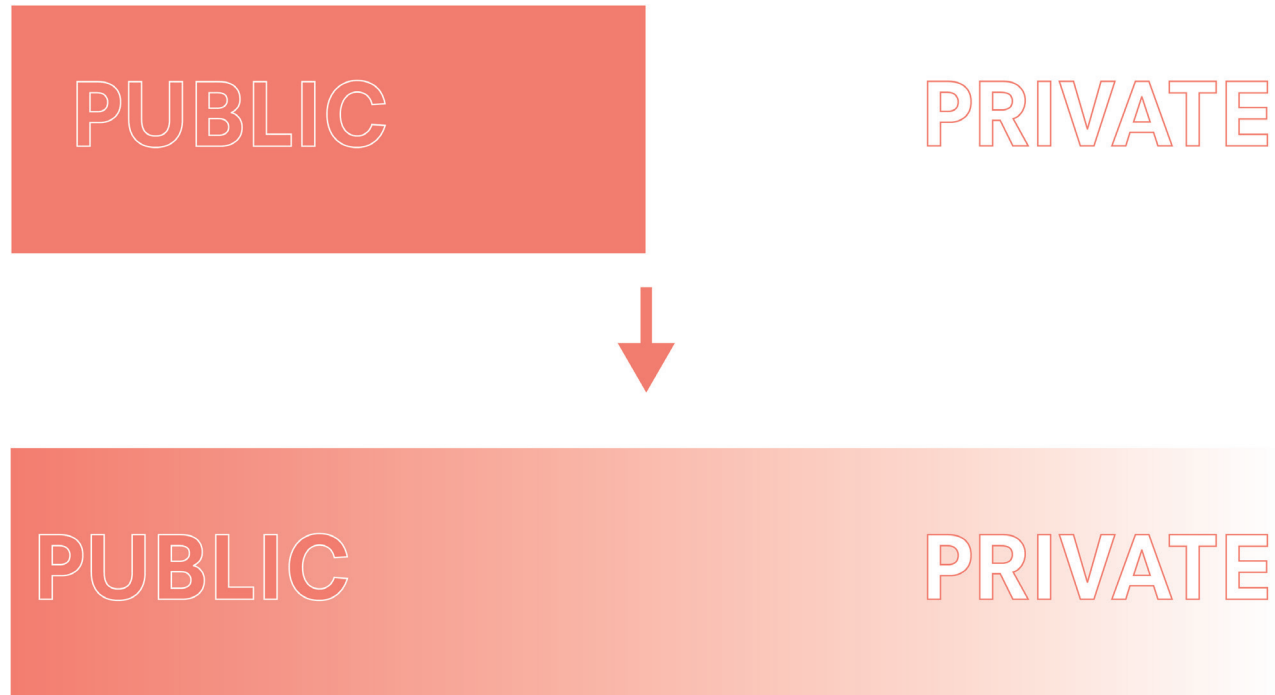


DETAIL 2 GROUND FLOOR



CONCLUSION

How to design a **new public school** in a way that it becomes a **public asset**?



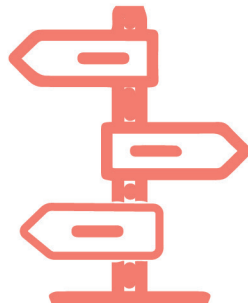


THANK YOU





Safe space
to play



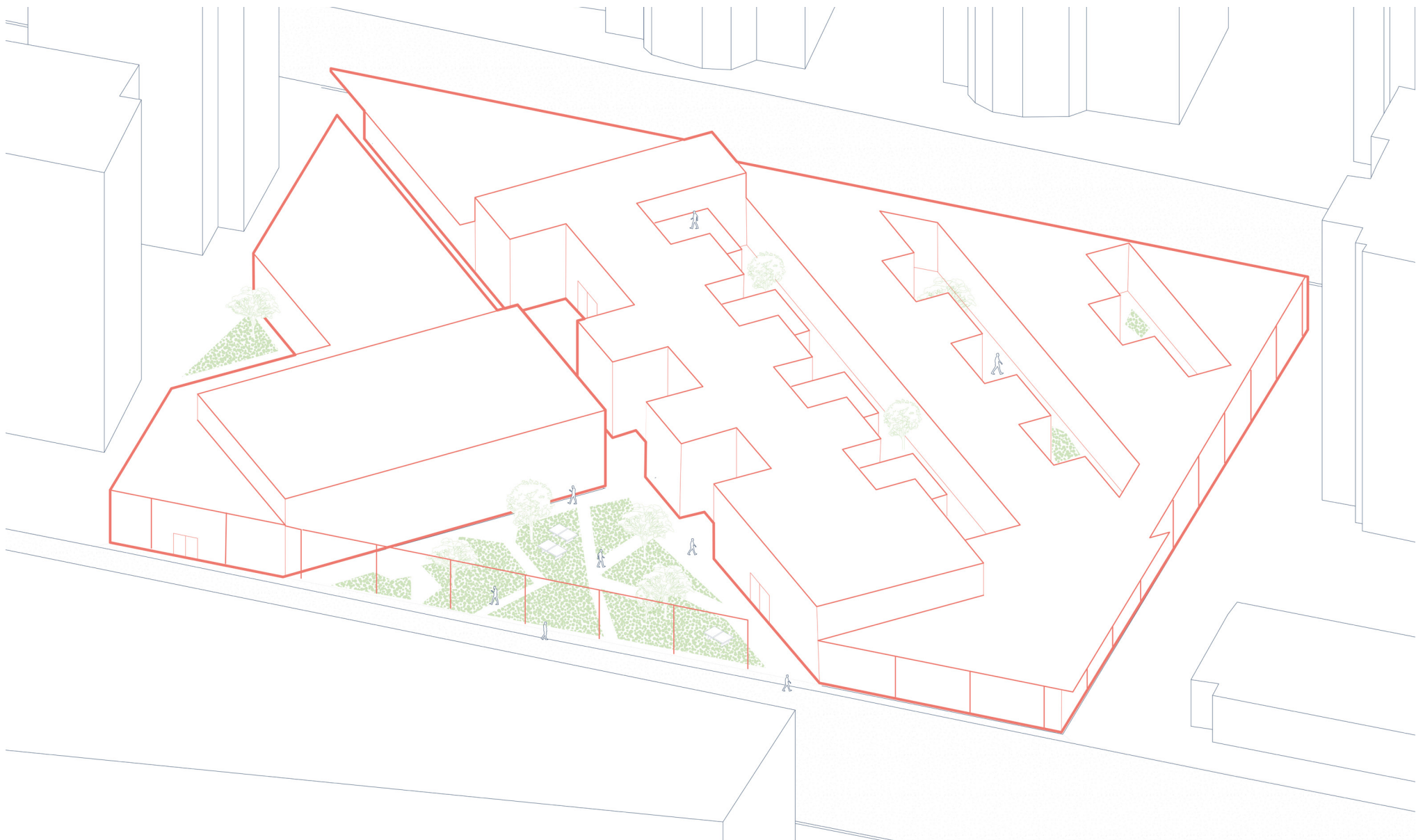
Campus
area



Second
home



Comfortable
climate

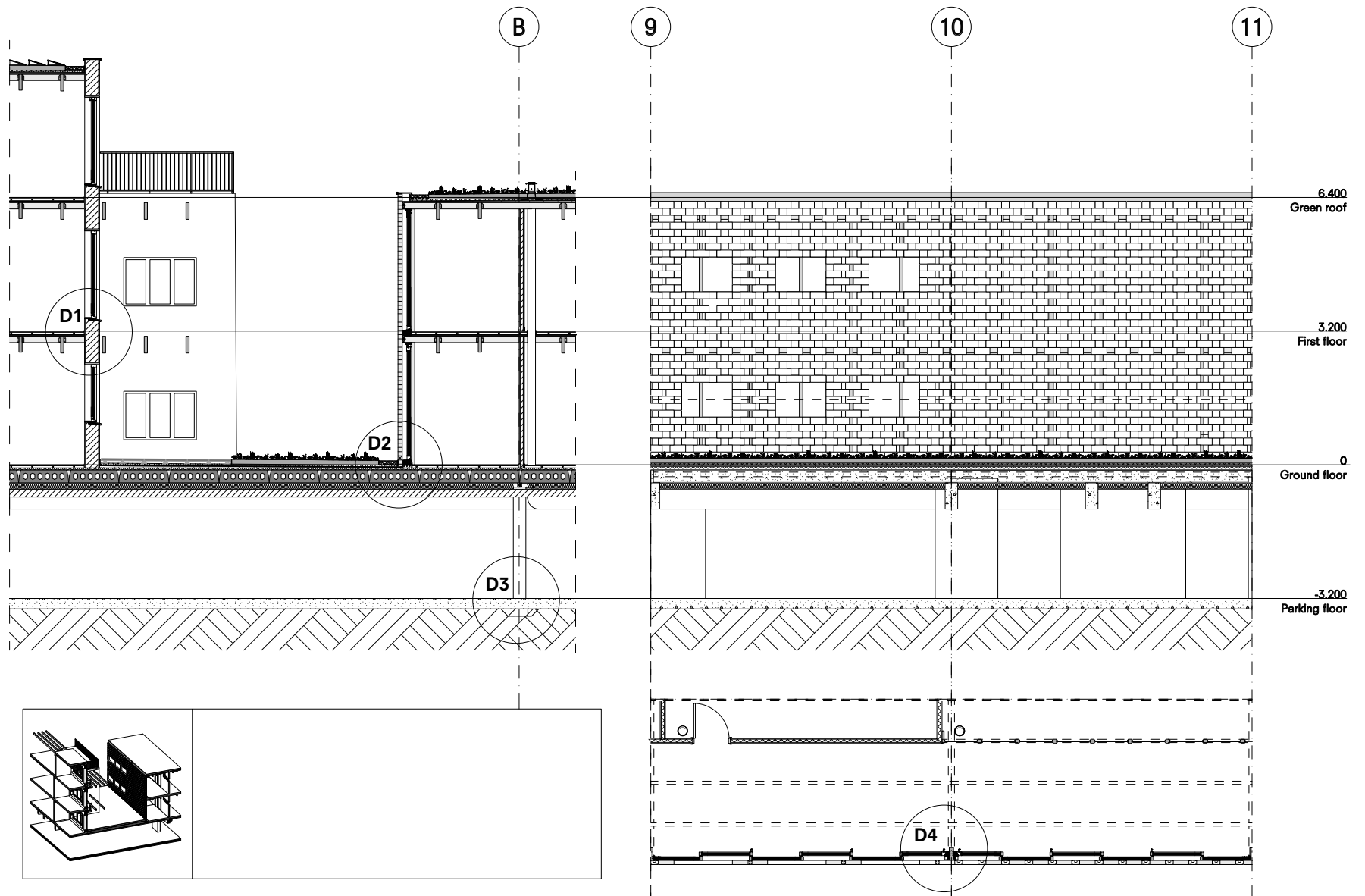


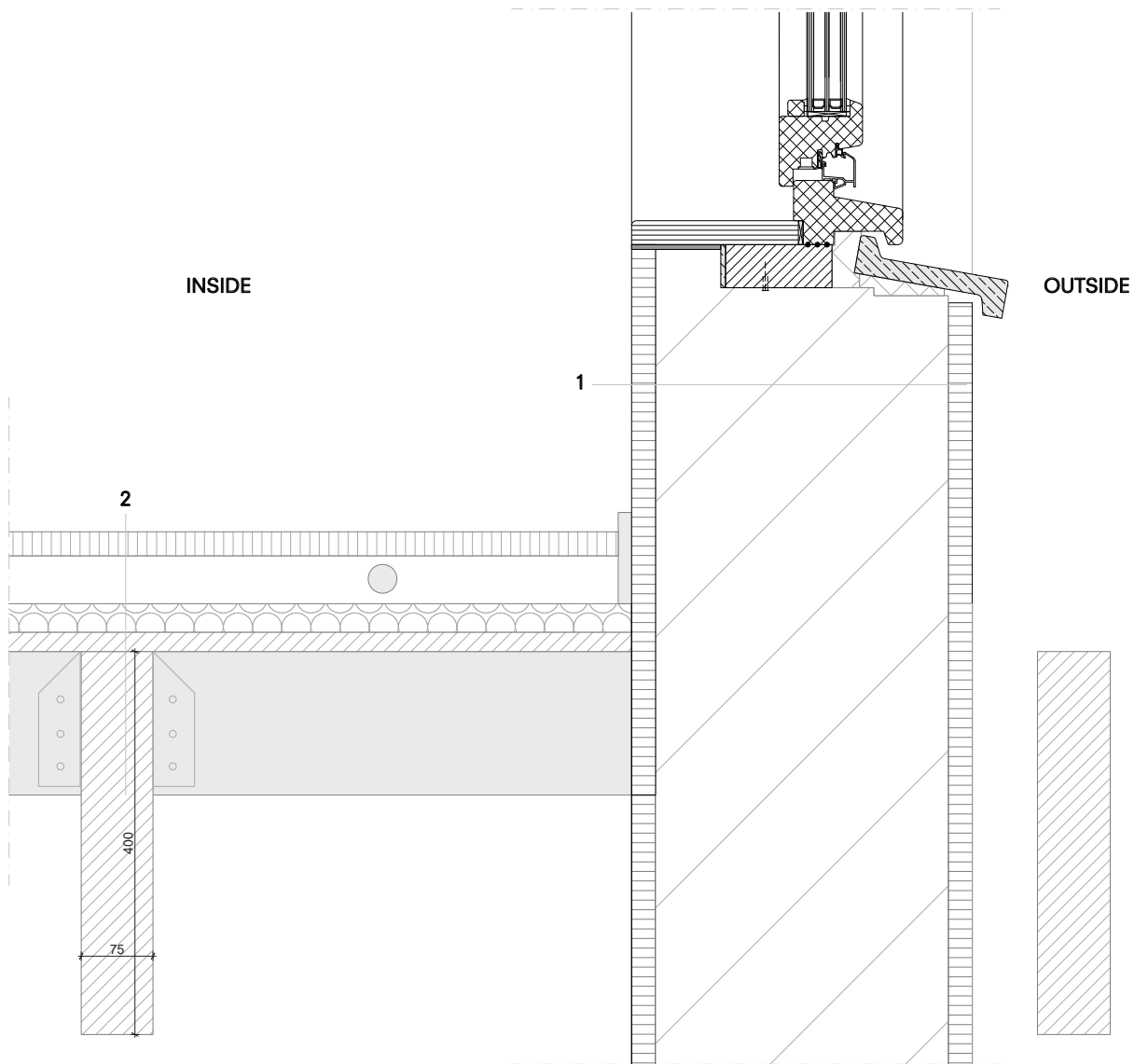
JNAH PUBLIC SCHOOL

Graduation studio
Lisa van Vliet

30/09/2022

complex projects





Detail 1 First floor Classroom 1:5

1. Classroom facade w=350 mm

- Plaster w=25 mm
- Lime stone w= 300 mm
- Plaster w=25 mm

2. First floor h= 525 mm (without beams 125 mm)

- Tile finish h= 25 mm
- Powder tile adhesive
- Fabric tape
- Sand cement floor with floor heating h= 50mm
- Insulation hard pressing for acoustics h= 30 mm
- Wooden floor boards h=20 mm
- Wooden beams h=400mm w=75 mm , 7 m

