KEEPER OF KNOWLEDGE

The future public library of Beirut



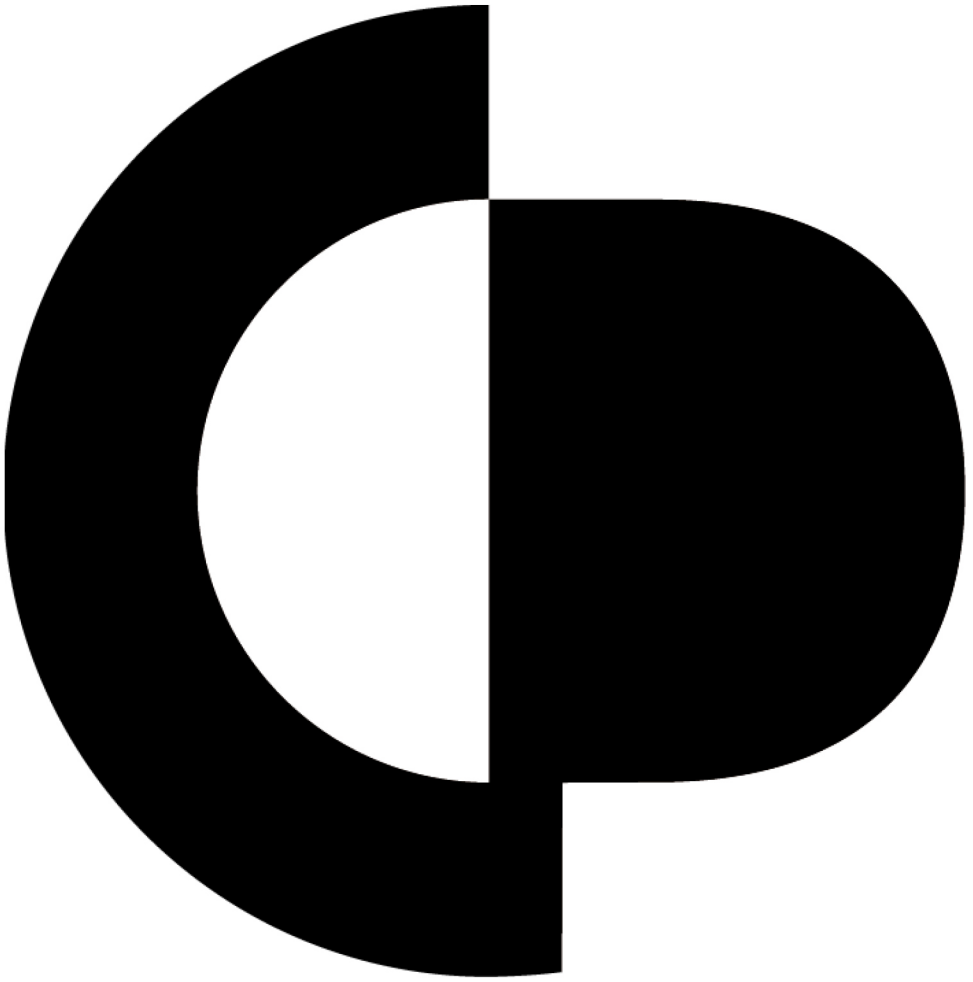
complex projects

11/01/2022

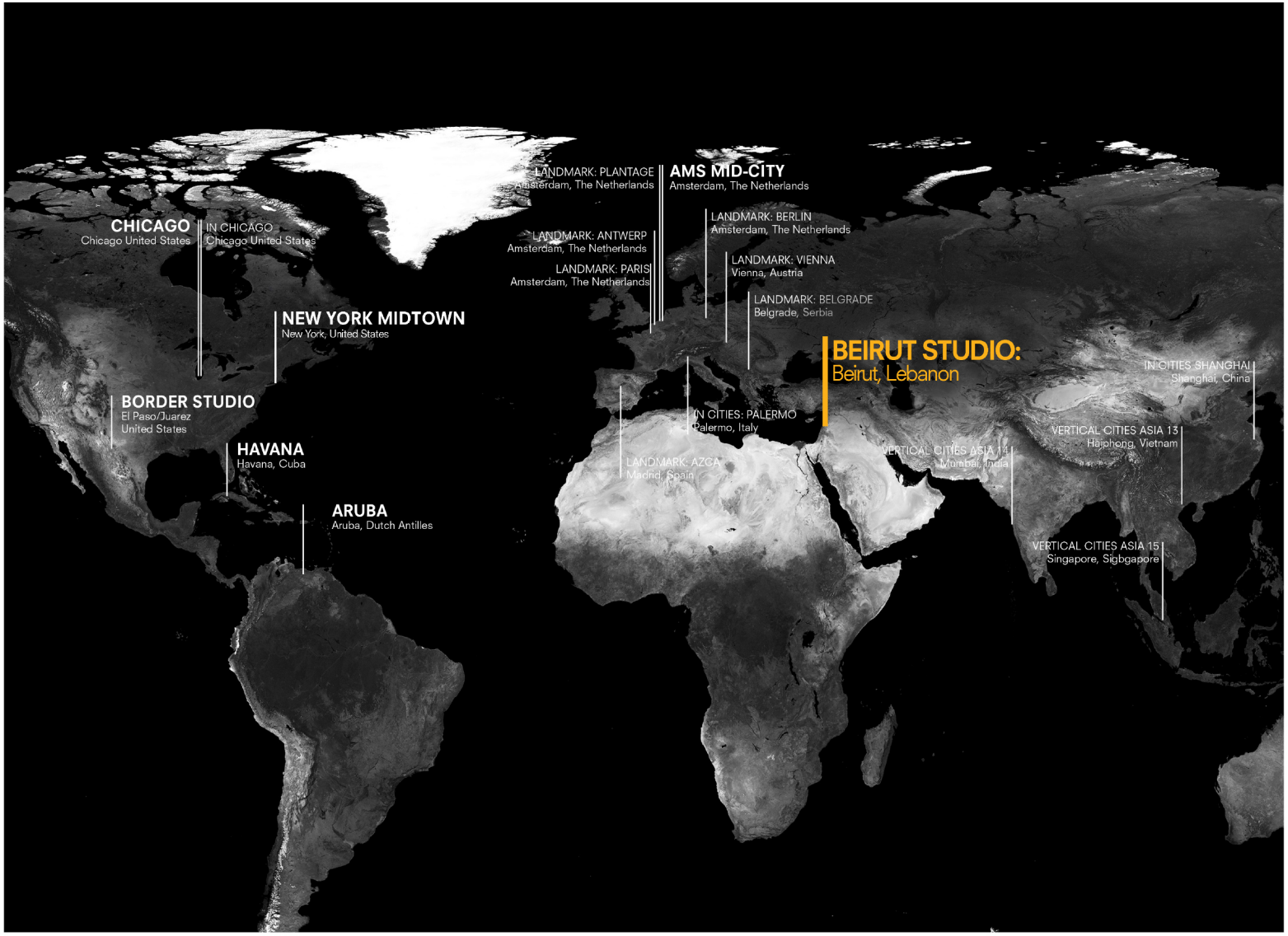
fall semester

WHO ARE WE?

COMPLEX PROJECTS STUDIO



STUDIO LOCATIONS



IMPETUS FOR CHANGE







WHAT IS NEXT?



THE TEAM



Lûte Biesheuvel



Bethel Lemma



Wan Huang



Jan Panhuis



Martijn van Aurich

THE TEAM



Infrastructure



Education



Housing



Culture



Commerce

Introduction

Research

Design brief

Concept

Implementation

Development

Conclusion

INDEX

INTRODUCTION

LOCATION



LOCATION



MARITIME ORIGIN



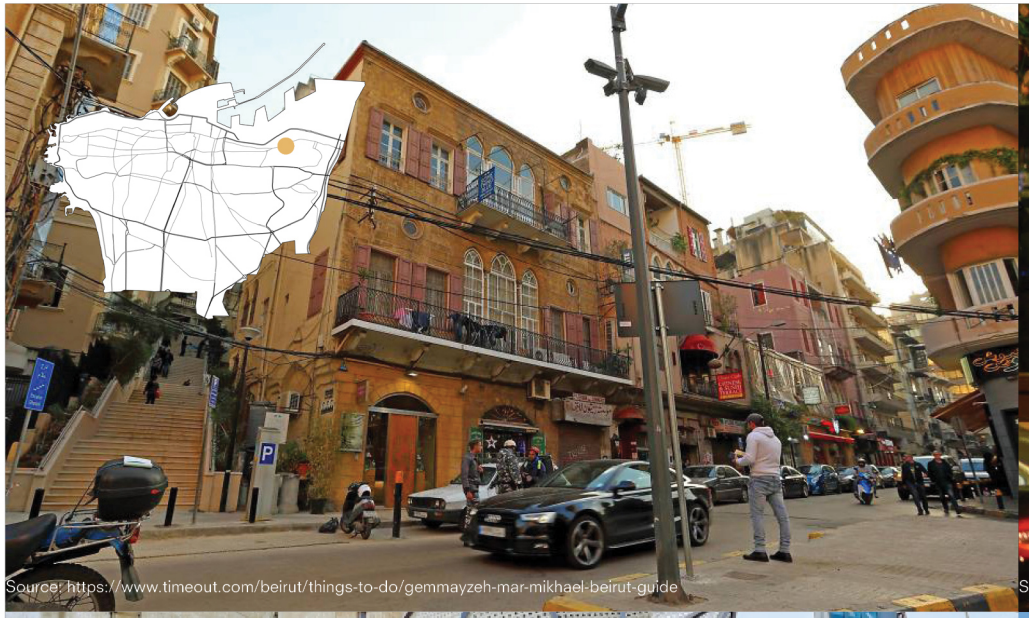
PARIS OF THE MIDDLE EAST



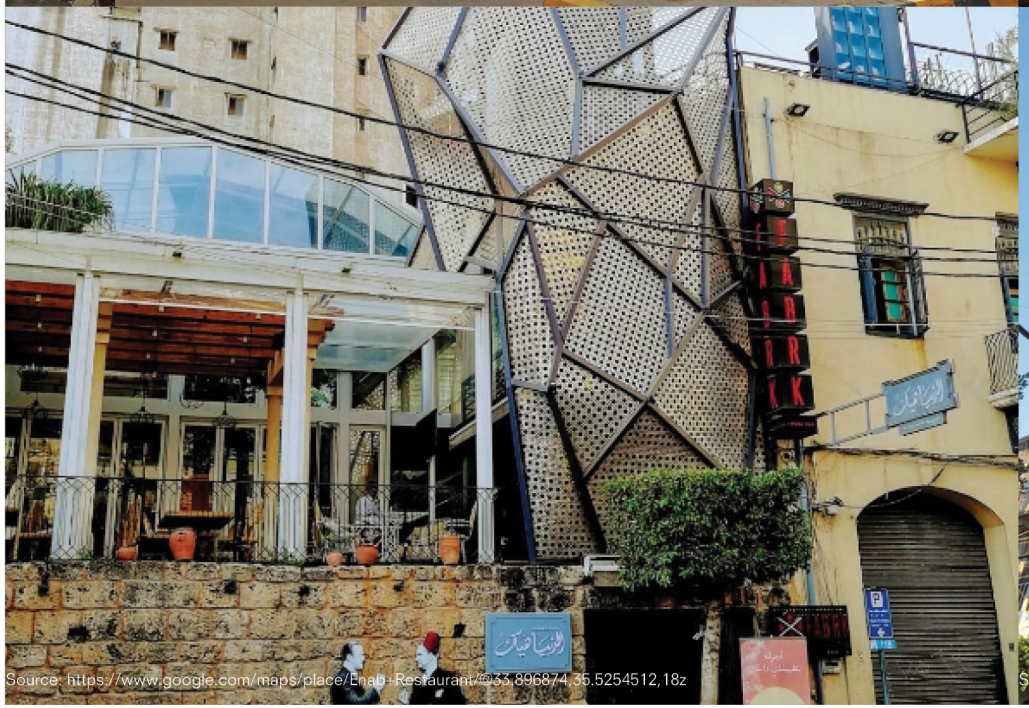
NEW BUILDINGS



HISTORICAL BUILDINGS


Source: https://www.timeout.com/beirut/things-to-do/gemmayzeh-mar-mikhael-beirut-guide


Source: https://www.france24.com/en/20201007-video-two-months-after-explosion-beirut-nightlife-scene-struggles-to-return


Source: https://www.google.com/maps/place/Enab+Restaurant/@33.896874,35.5254512,18z



Source: https://www.executive-magazine.com/business-finance/society/mar-mkhayel-beirut

NATIONAL LIBRARY



ANECDOTE



ANECDOTE



ANECDOTE



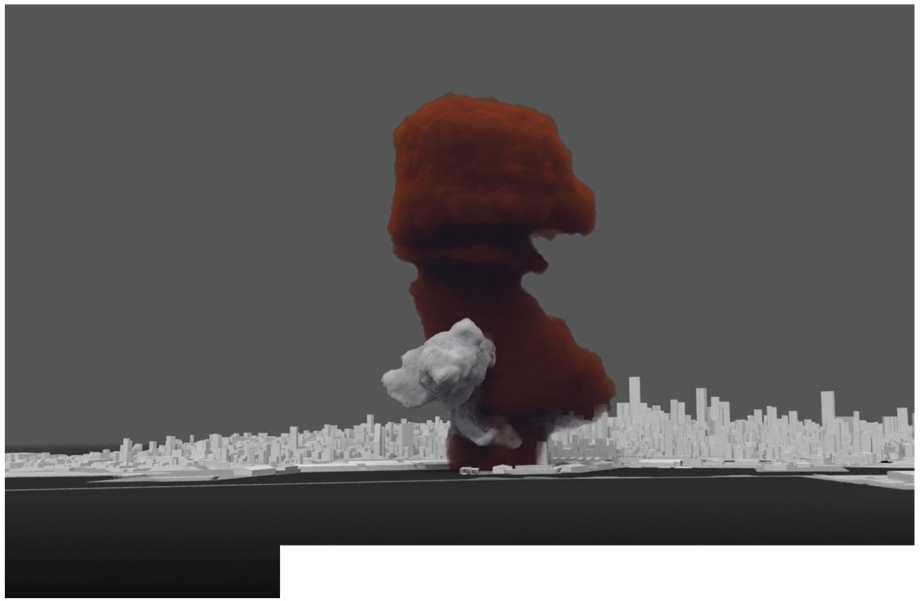
ANECDOTE

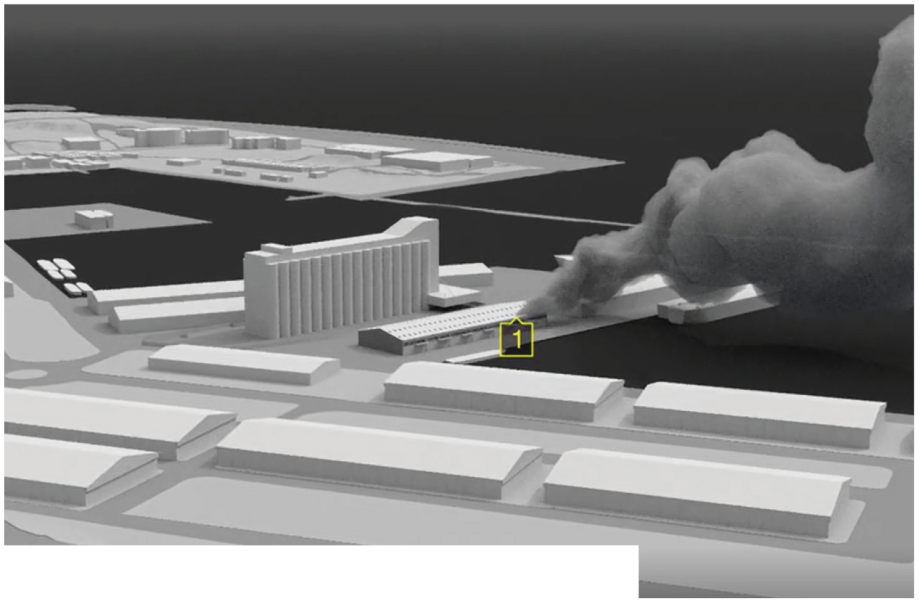


LACK OF PUBLIC SPACES

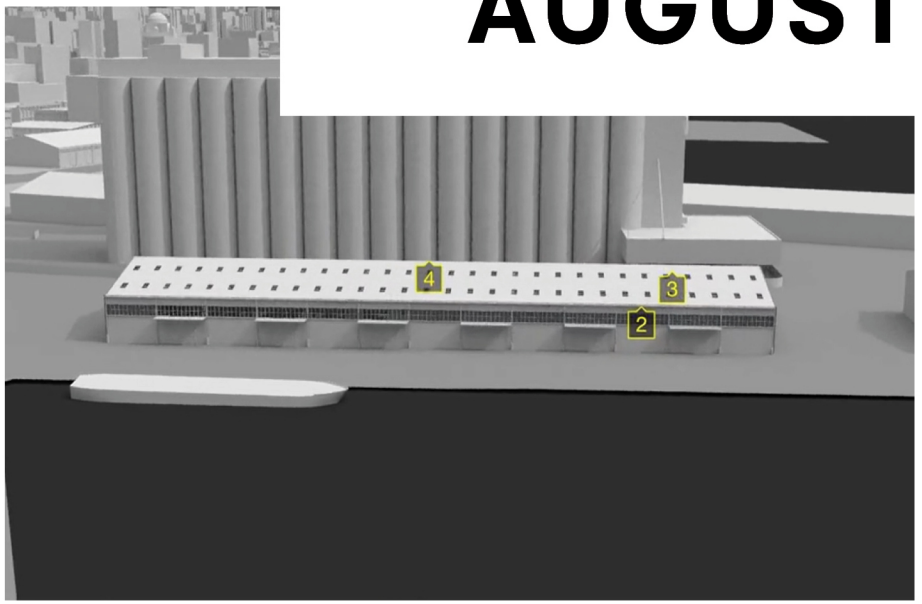


PORT BLAST





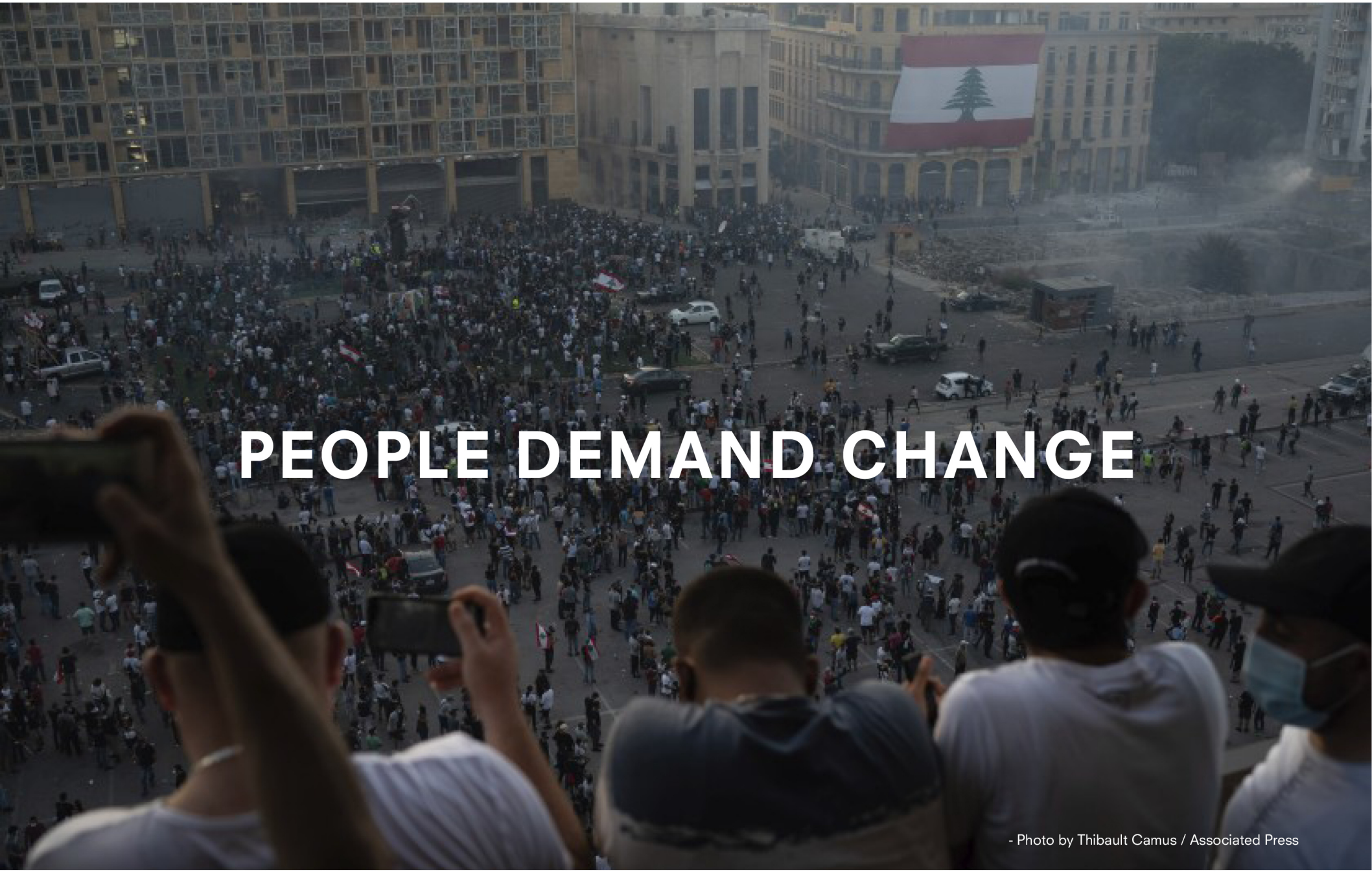
AUGUST 4TH 2020





Illustrations by Forensic Architecture

SOCIAL REVOLUTION



- Photo by Thibault Camus / Associated Press

SOCIAL REVOLUTION



- Photo by Nicholas Frakes

EDUCATION CRISIS

AL-MONITOR

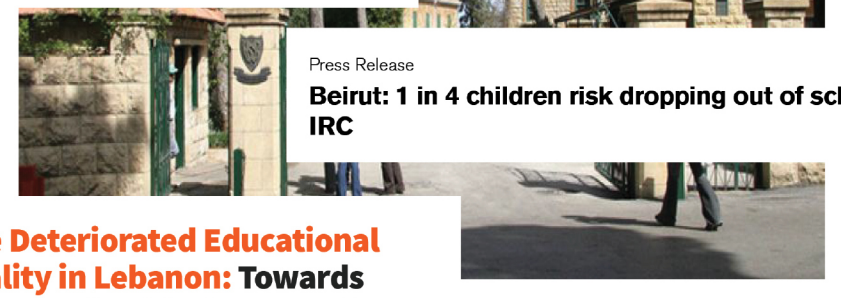
In Lebanon, even private schools caught in education crisis



Middle East

Lebanon Faces Brain Drain in Wake of Beirut Disaster

Understanding Lebanon's Deepening Education Crisis



Press Release

Beirut: 1 in 4 children risk dropping out of school warns IRC

The Deteriorated Educational Reality in Lebanon: Towards "Another" Critical Approach

TUITION FEE



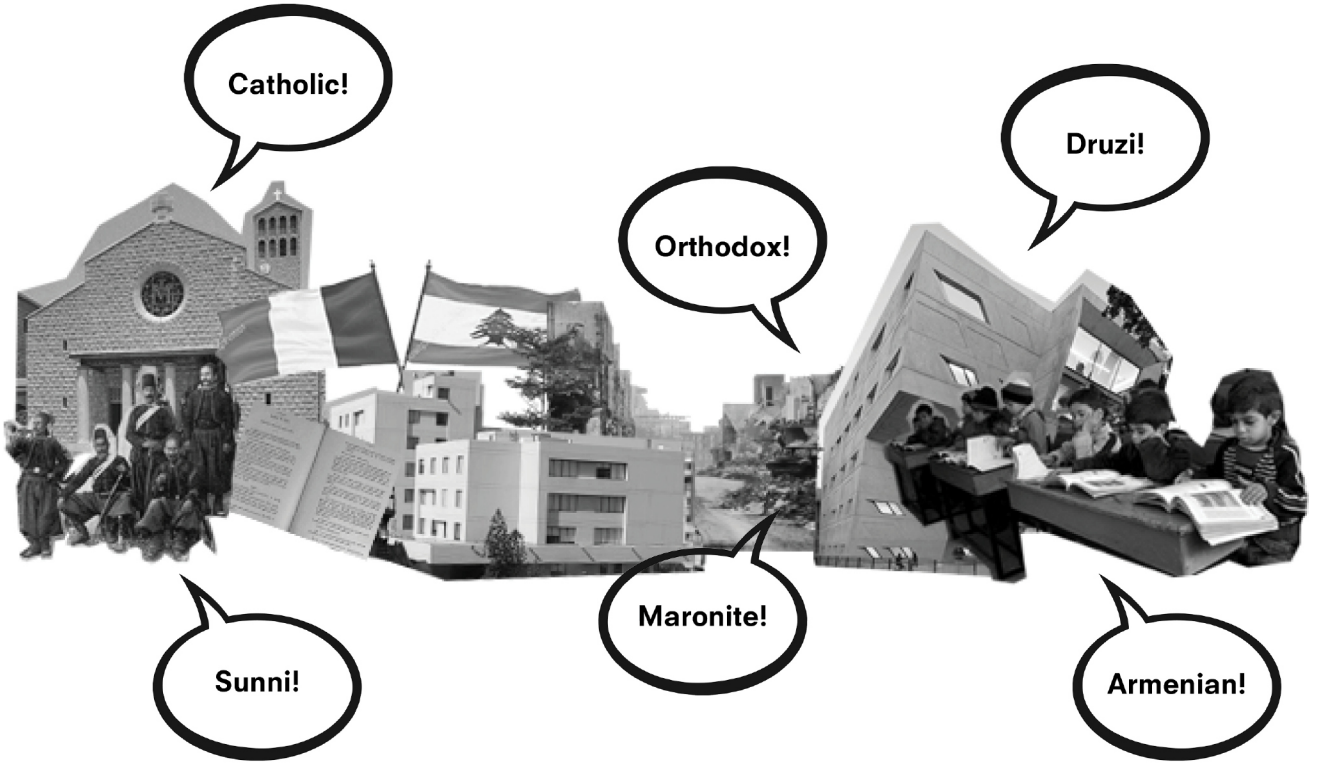
TUITION FEE



INEQUALITY



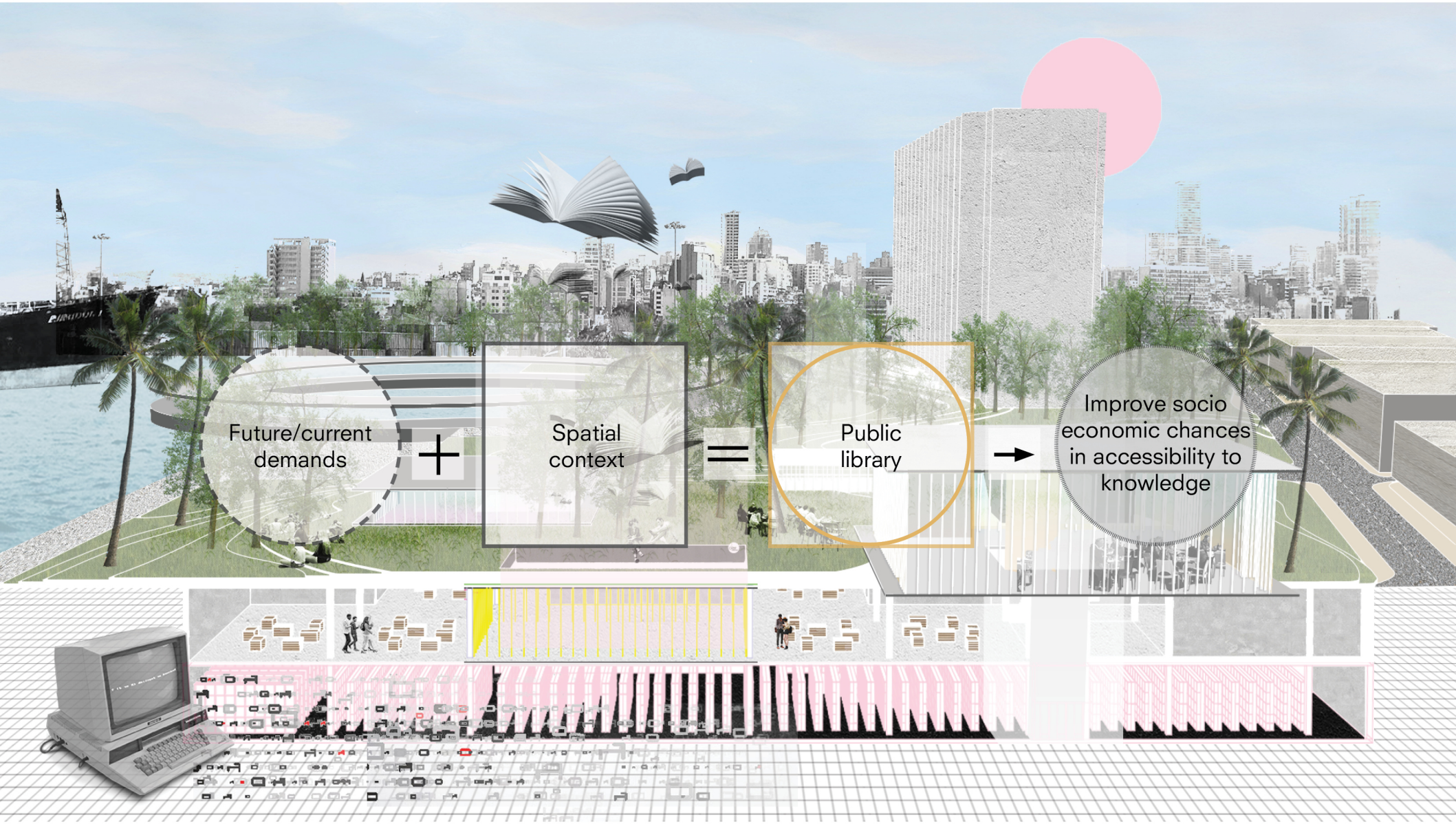
FRAGMENTED EDUCATION SYSTEM



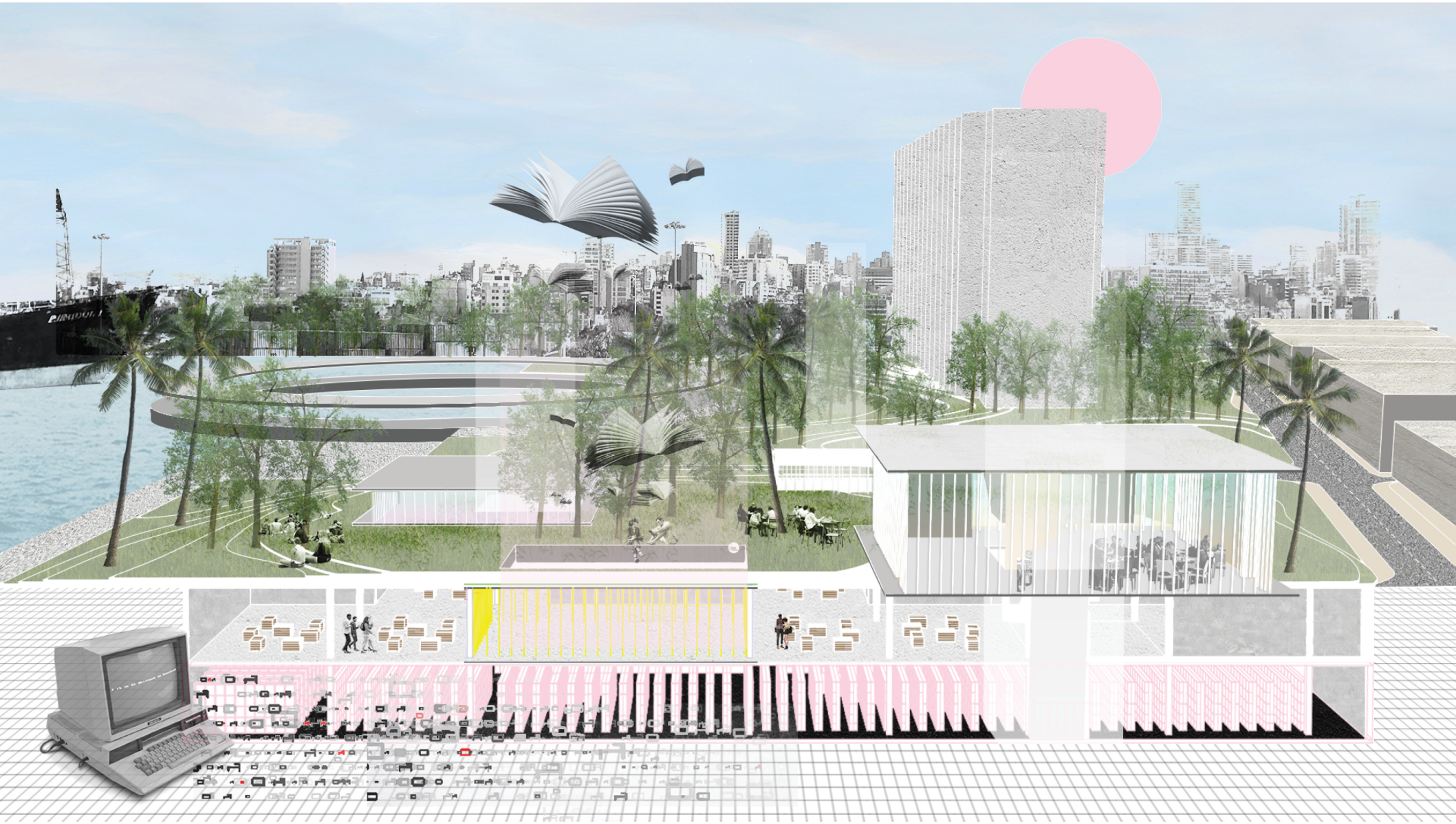
PROJECT AMBITION

Bring people **together** and facilitate **equal** accessibility to **information** through a **public learning** space, by creating **synergy** between people, architecture and **technology**.

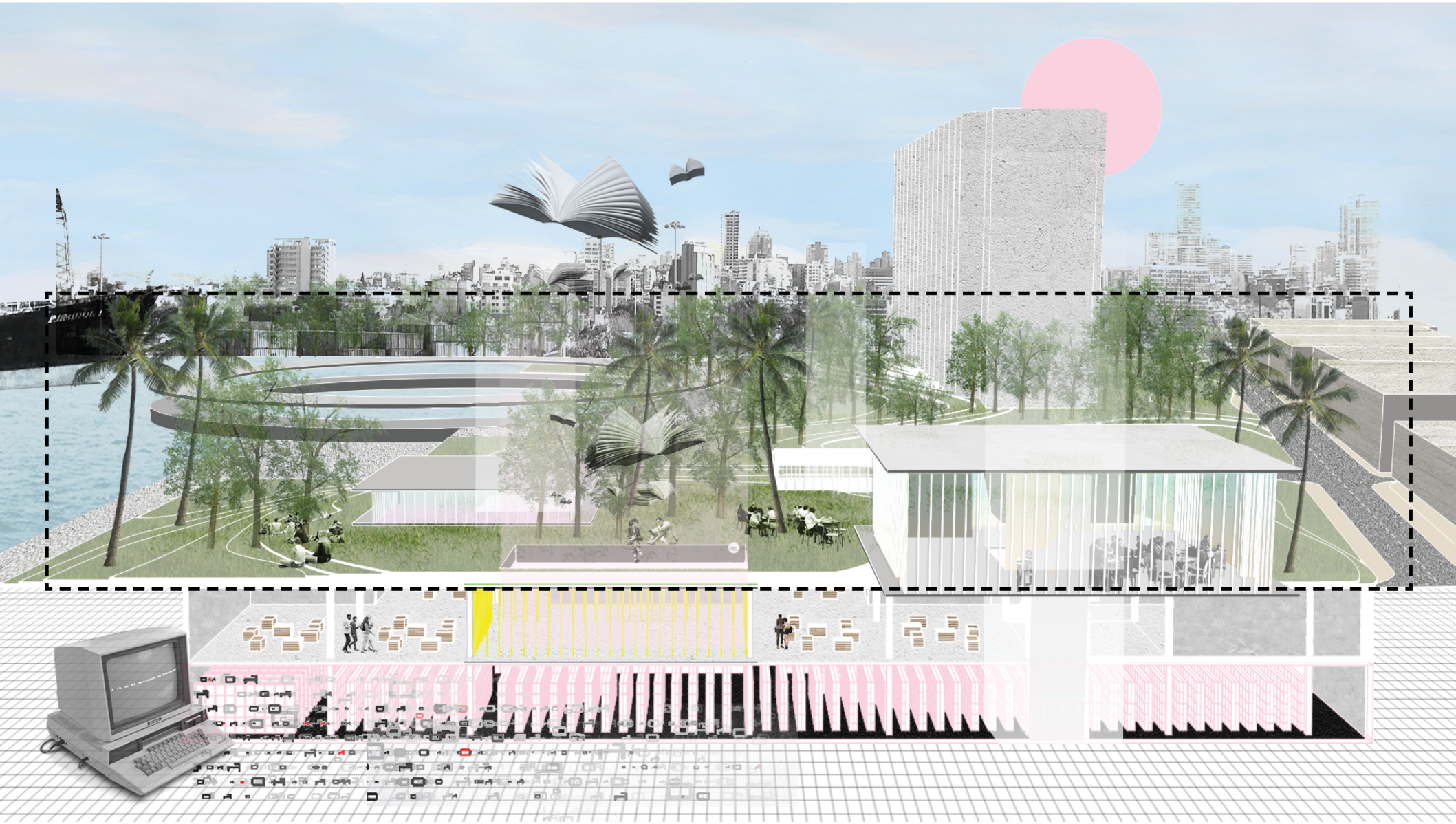
PROJECT AMBITION SUMMARY



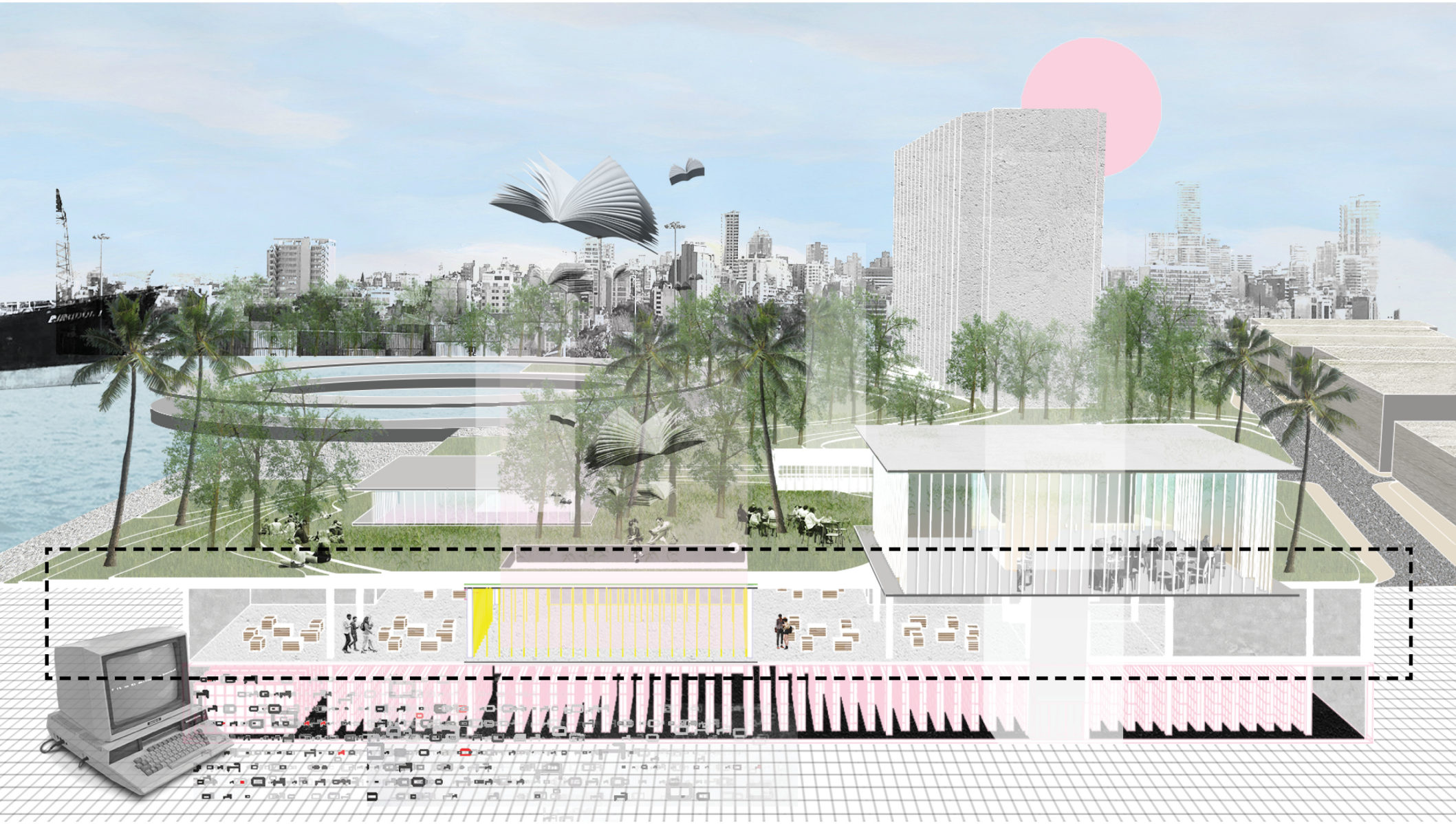
PROJECT AMBITION SUMMARY



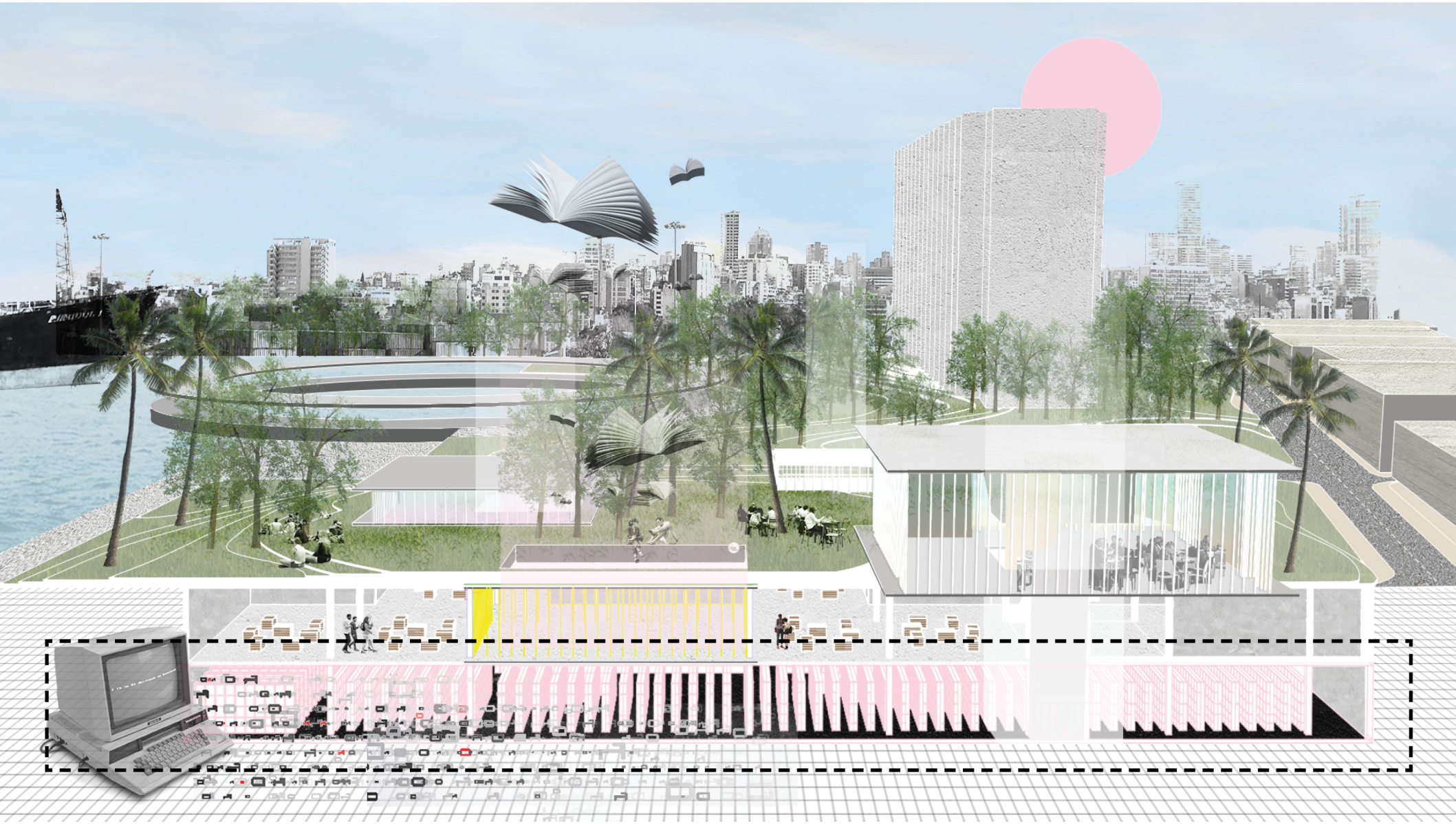
PROJECT AMBITION SUMMARY



PROJECT AMBITION SUMMARY



PROJECT AMBITION SUMMARY



RESEARCH AND RELEVANCE

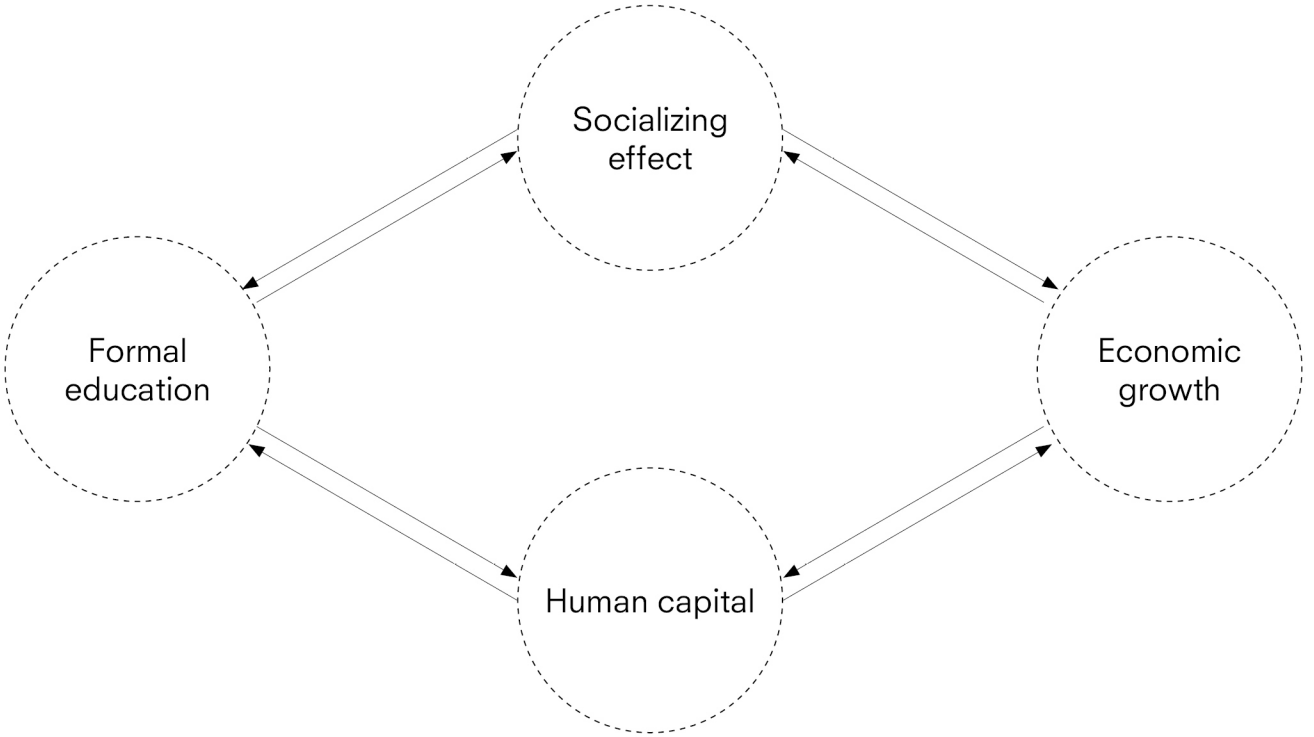
RESEARCH TOPIC

Why education?

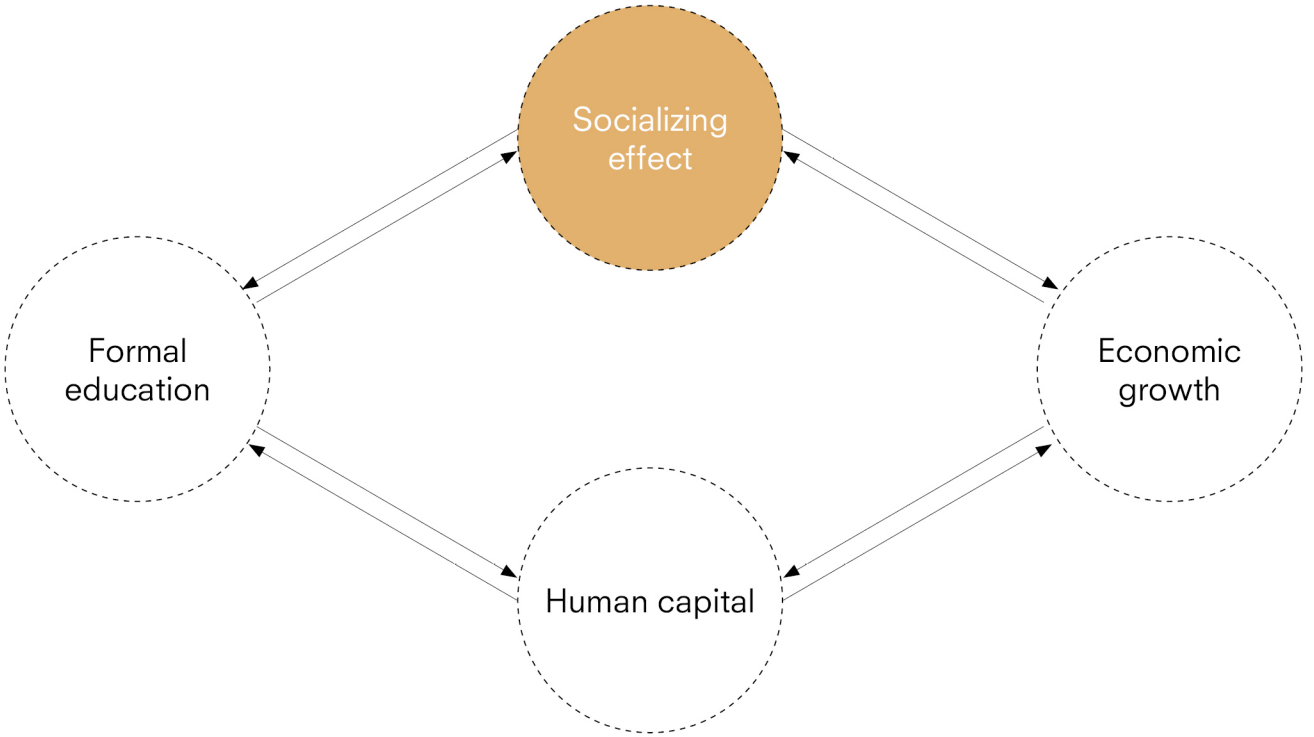
EFFECTIVE SOCIETY



ECONOMIC GROWTH



SOCIALIZING EFFECT

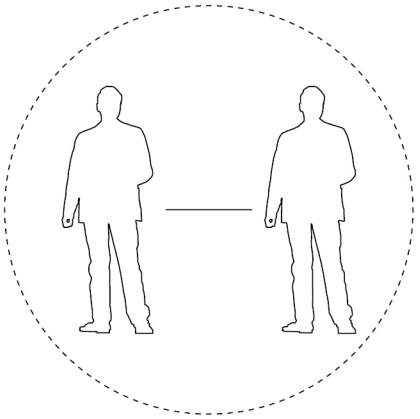


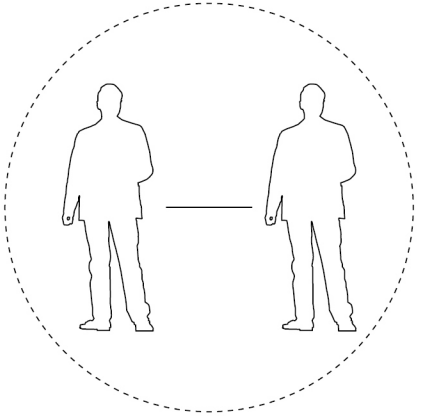
SOCIAL COHESION

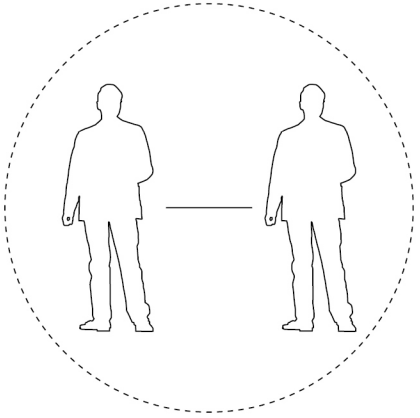
Public educational institutions are an **important** source of **trust** and **social cohesion**

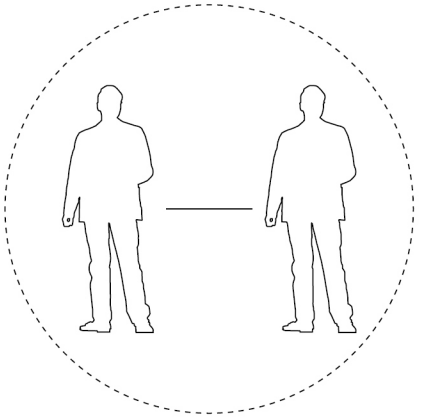
Source: Abdalhadi Alijla. *Between inequality and sectarianism:who destroys generalised trust?The case of Lebanon.* October 2017

PLURALISTIC SOCIALIZING EFFECT

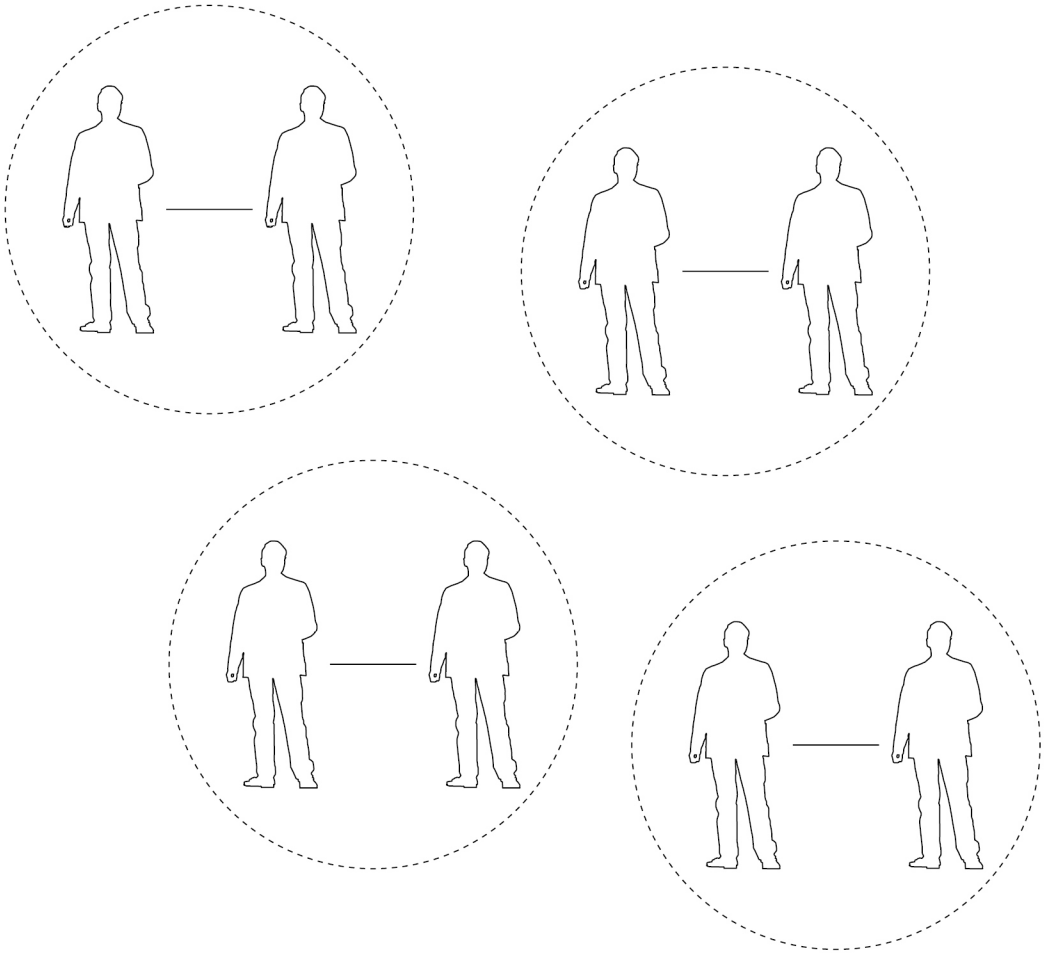




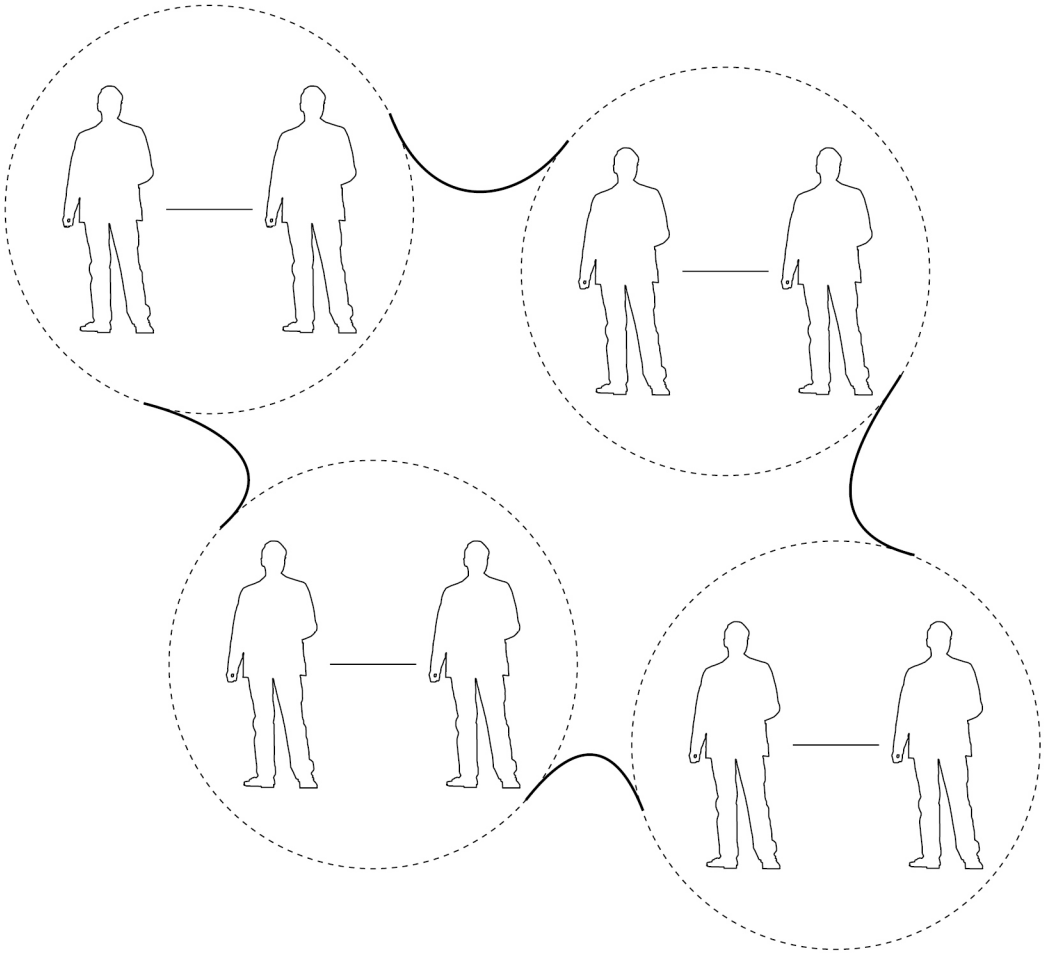




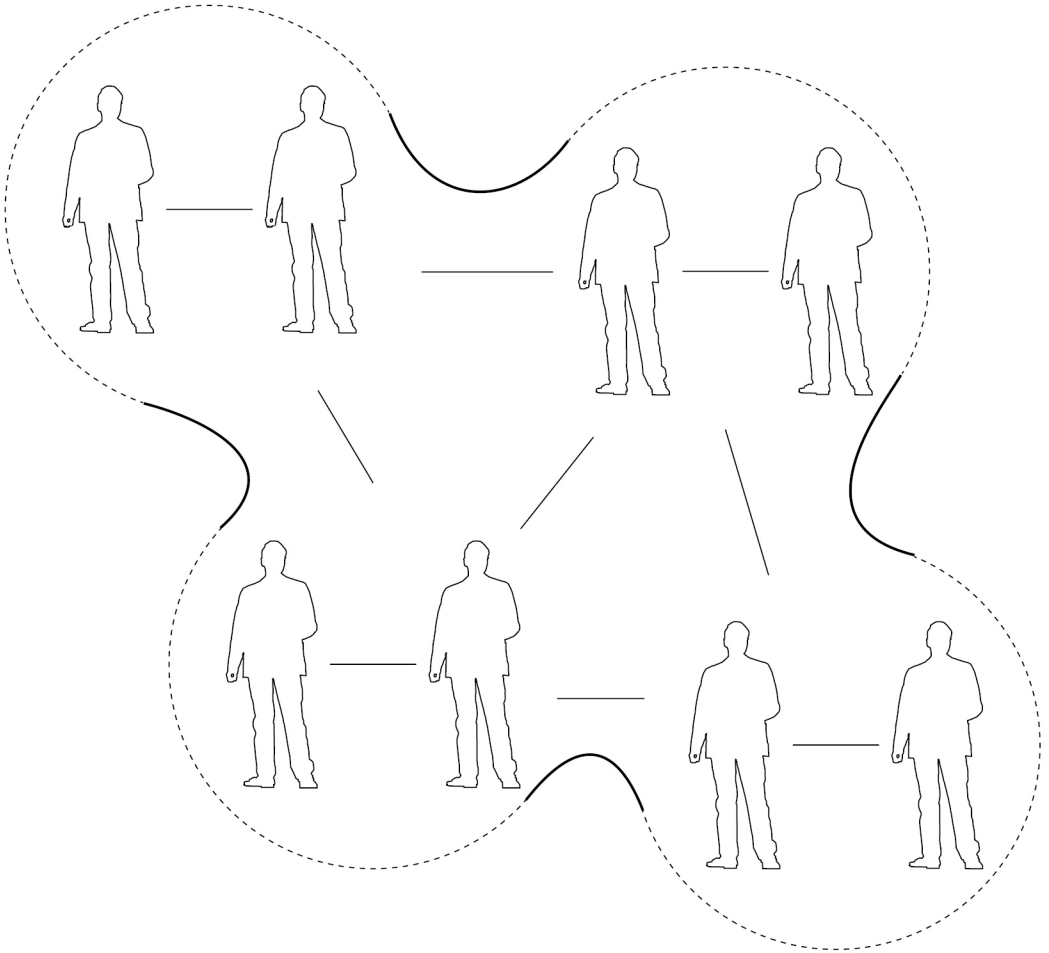
PLURALISTIC SOCIALIZING EFFECT



PLURALISTIC SOCIALIZING EFFECT



PLURALISTIC SOCIALIZING EFFECT



OUT-GROUP INTERACTION

Interaction with **diverse** out-groups confers **benefits** from **innovation** and **exploration** greater than that arise from interacting exclusively with a **homogeneous** in-group.

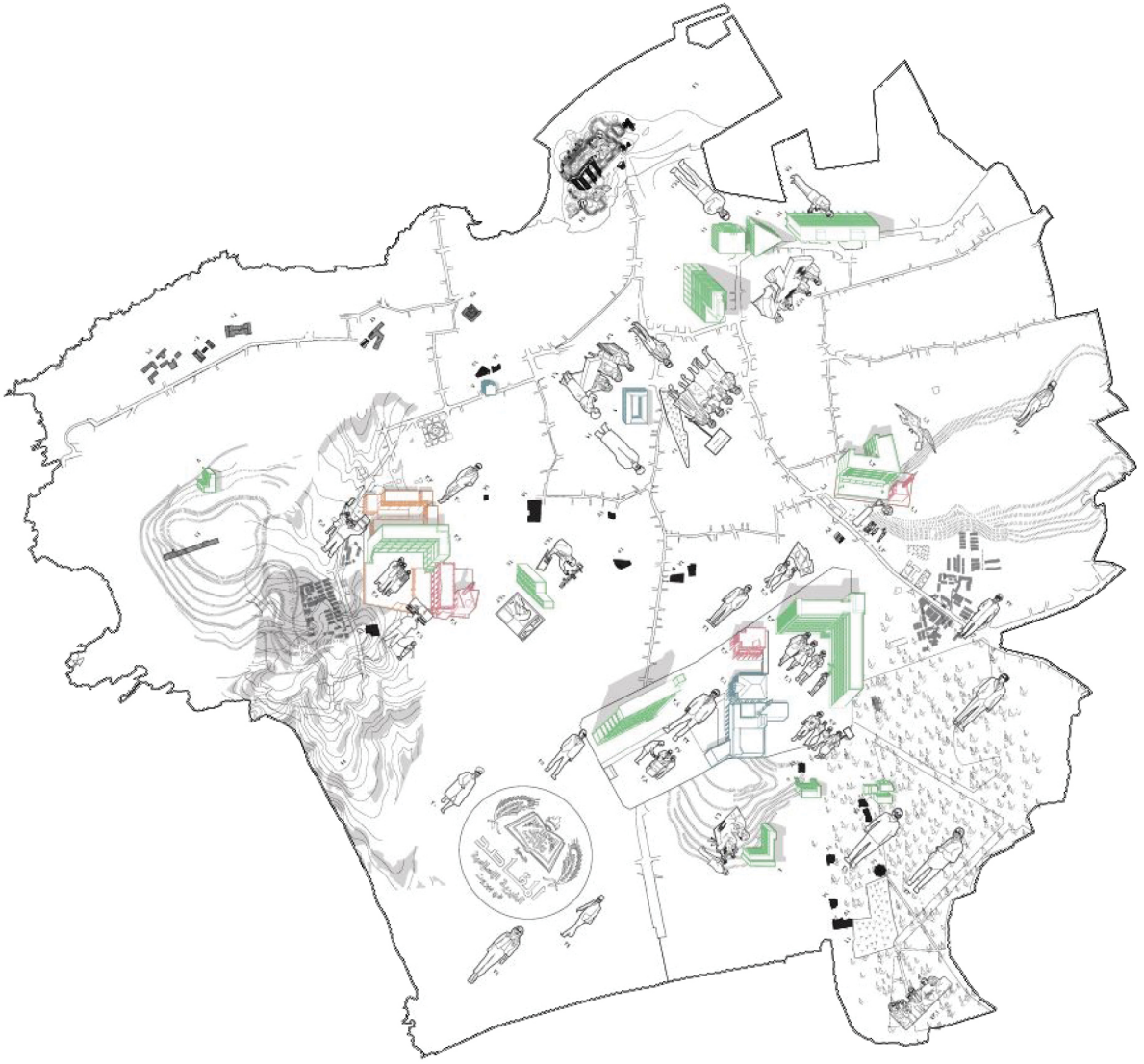
Source: Alexander Stewart, Nolan McCarty and Joanna Bryson.
Polarization under rising inequality and economic decline.
December 2020


BEIRUT

CULTURAL DIVERSITY



SCHOOL DIVERSITY



INTELLECTUAL REPUTATION





DEBATES AND SOCIALIZING AT CAFE



HAKAWATI TRADITION





EDUCATION HISTORY



OTTOMAN PERIOD | FRENCH MANDATE | POSTINDEPENDENCE | POST CIVIL WAR | CONTEMPORARY | SYRIAN REFUGEE CRISIS

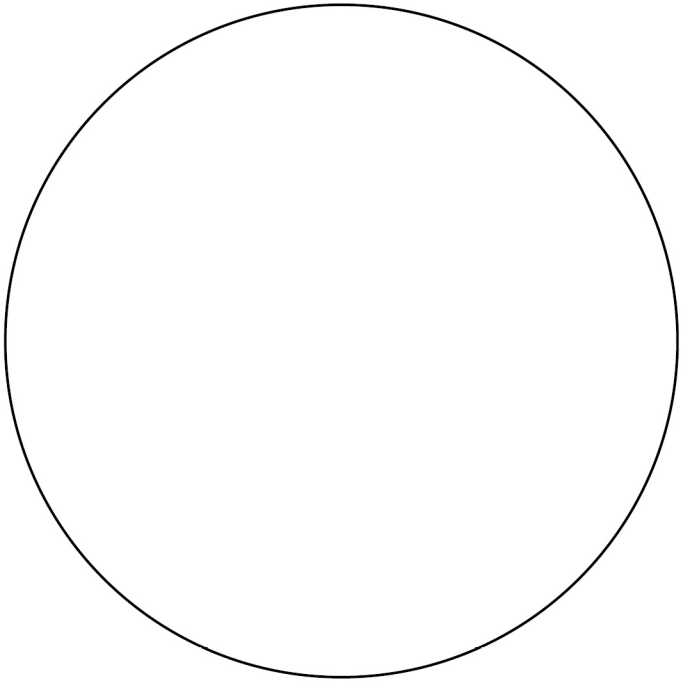
1962 CONSTITUTION



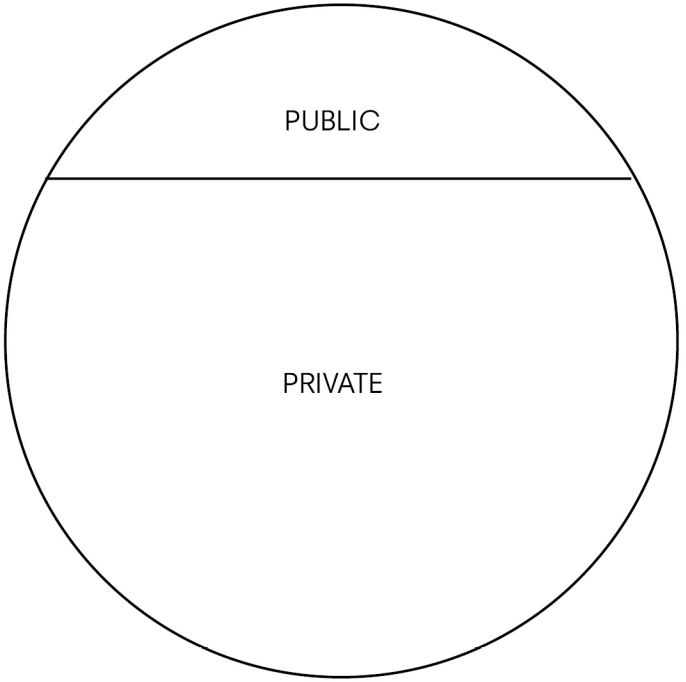
1962 CONSTITUTION

The 1926 Constitution, article 10 emphasizes the **freedom** of **private** education providers and the **protection** of the **various communities** through the possibilities of establishing their **own schools.**

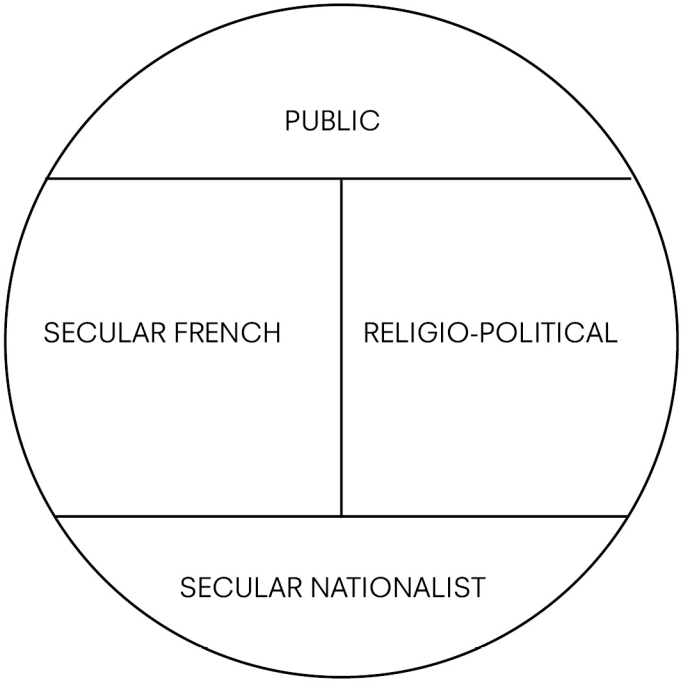
EDUCATION



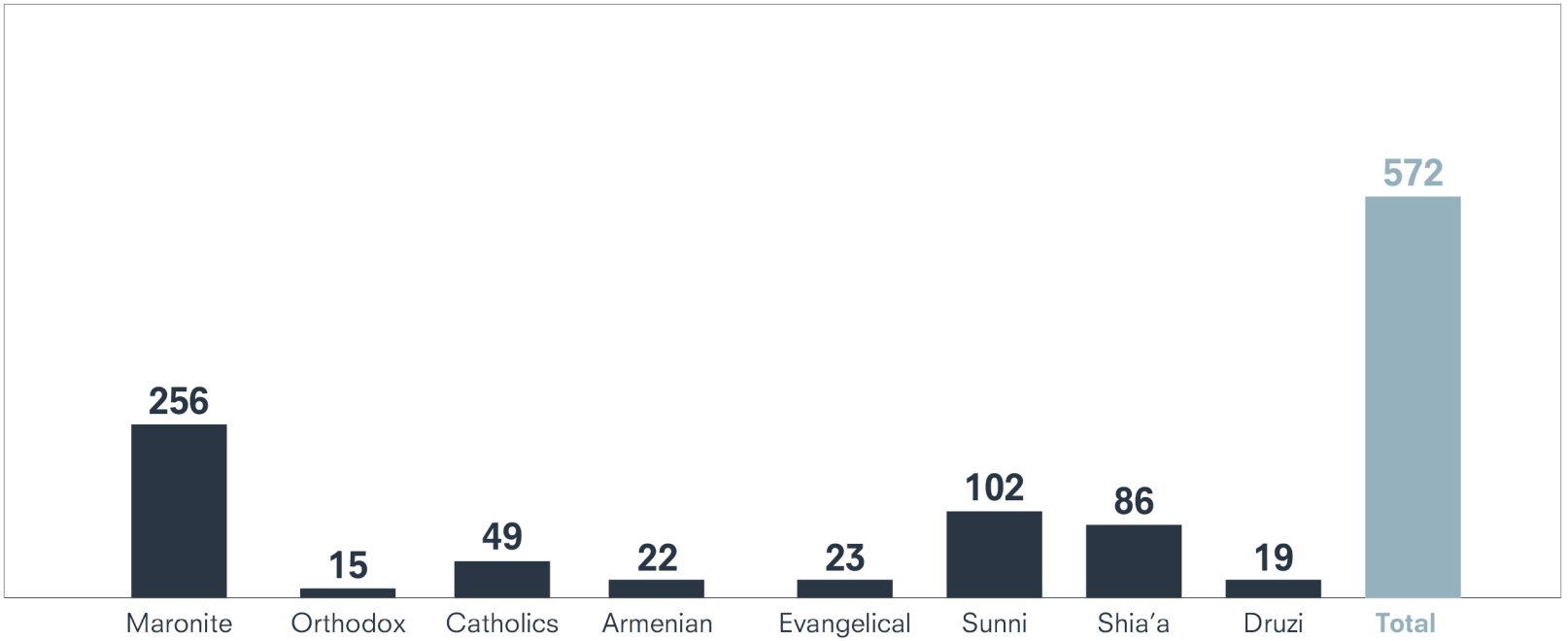
PUBLIC VS PRIVATE



SECTARIAN DIVISION

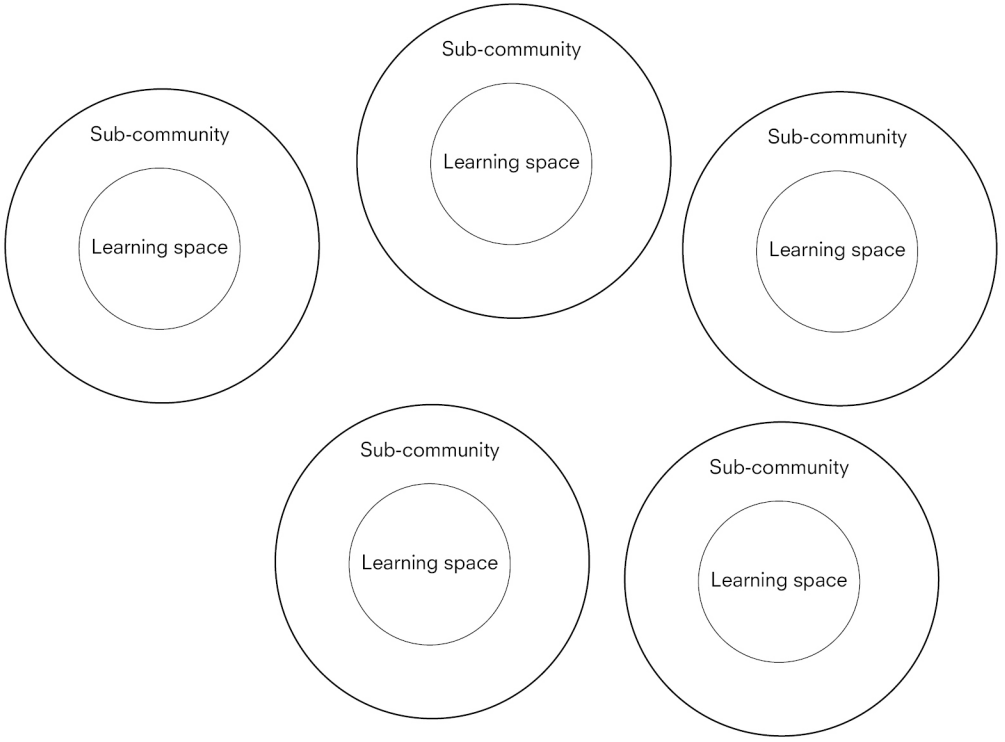


CONFESSIONAL SCHOOLS

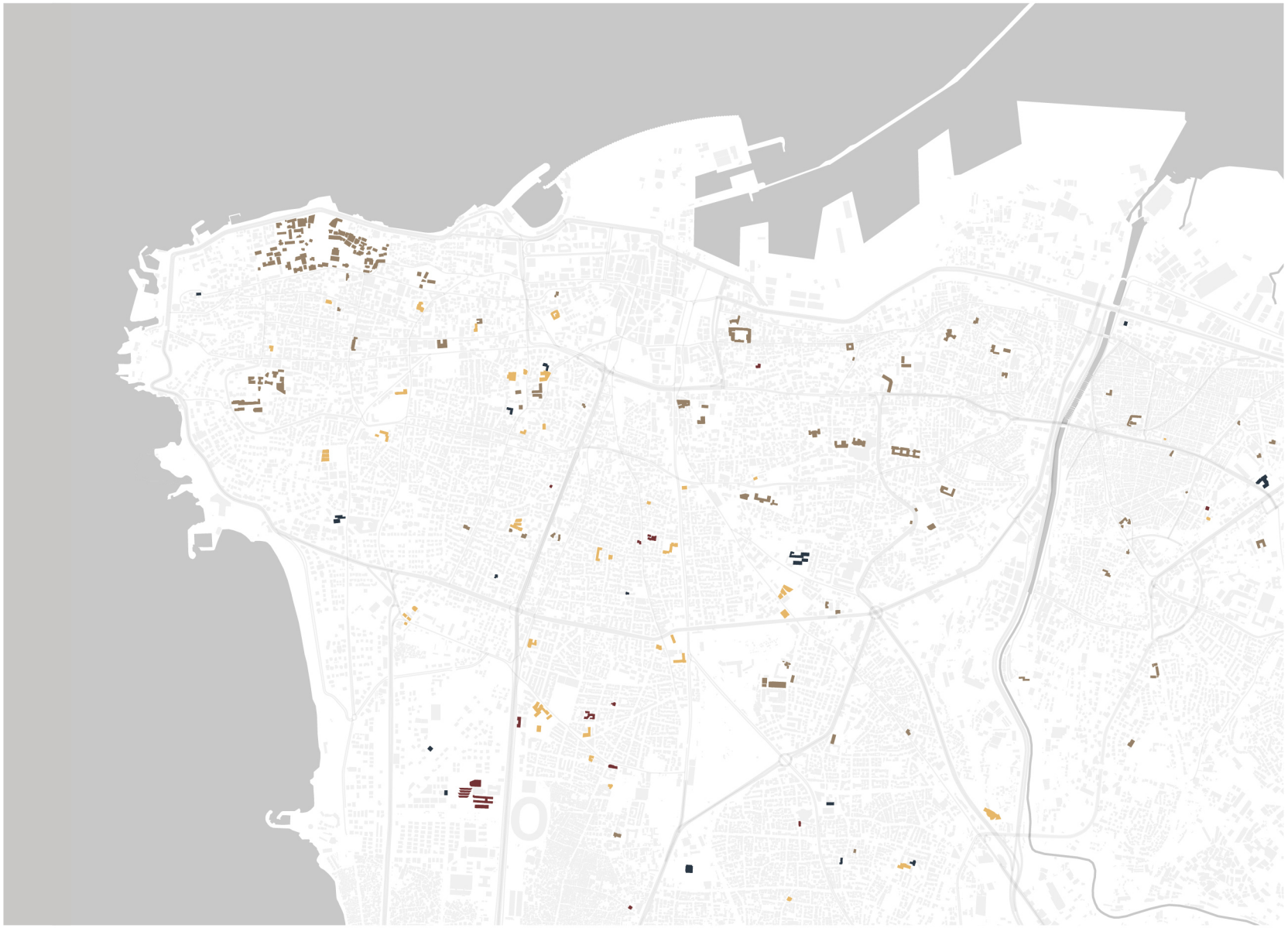


Source: Center for Education Research and Development 2005-2006

FRAGMENTED SOCIETY AND EDUCATION



EDUCATIONAL LOCATIONS



SCHOOL TERRITORY









EXTRACURRICULAR SPACES



EXTRACURRICULAR SPACES

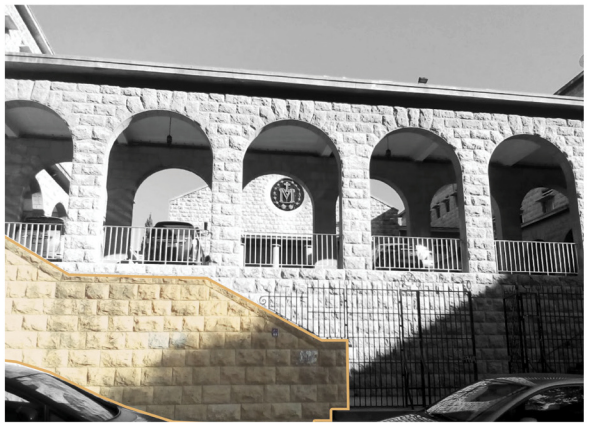


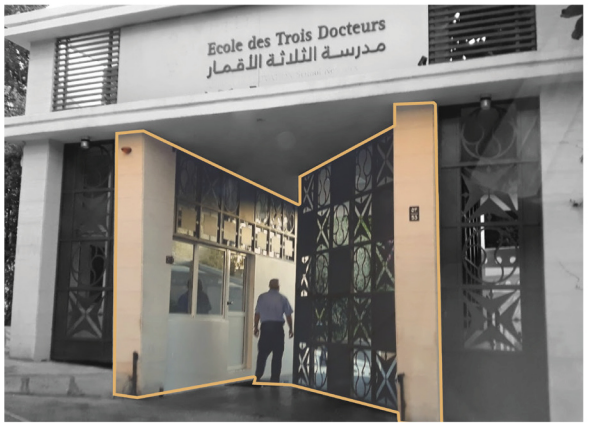
SECURITY AND INTROVERTED





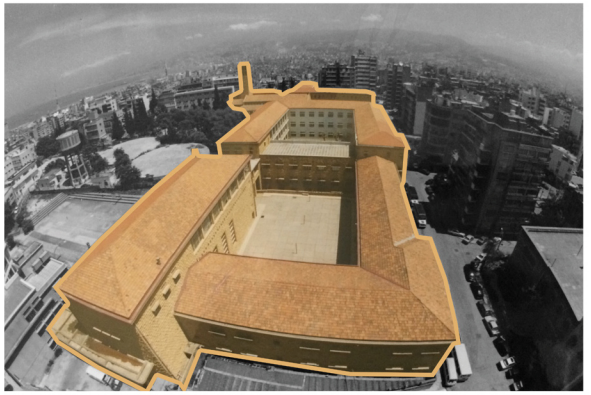














WHAT ABOUT PUBLIC LEARNING?

PUBLIC LIBRARIES



ASSABIL ASSOCIATION



Assabil Geitawi



Assabil Monnot



Assabil Bachoura

PUBLIC LIBRARY BUILDING TYPES



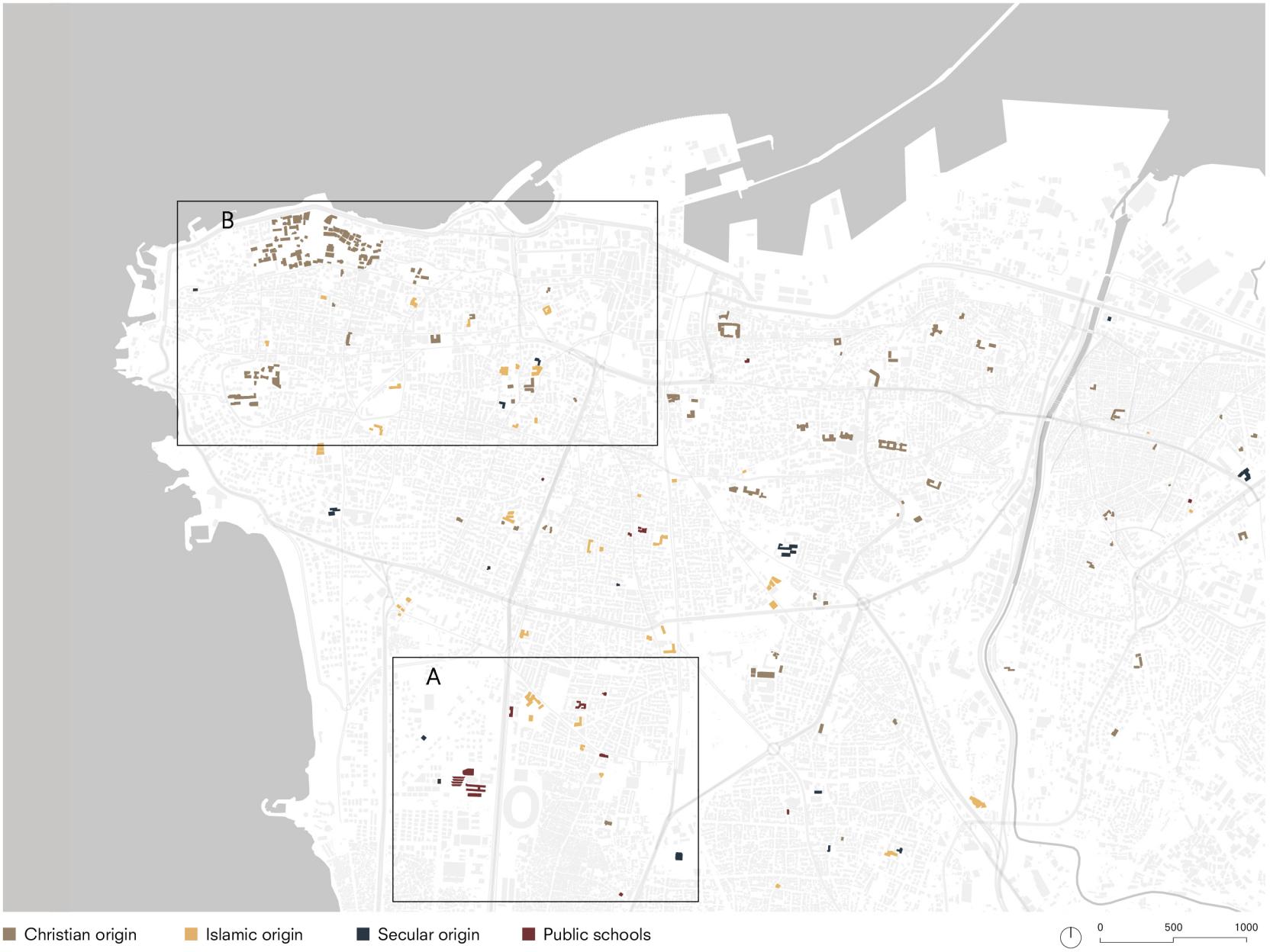
PUBLIC LIBRARY BUILDING TYPES



PRIVATIZATION OF EDUCATION



IMPRESSIONS



IMPRESSIONS A









IMPRESSIONS B

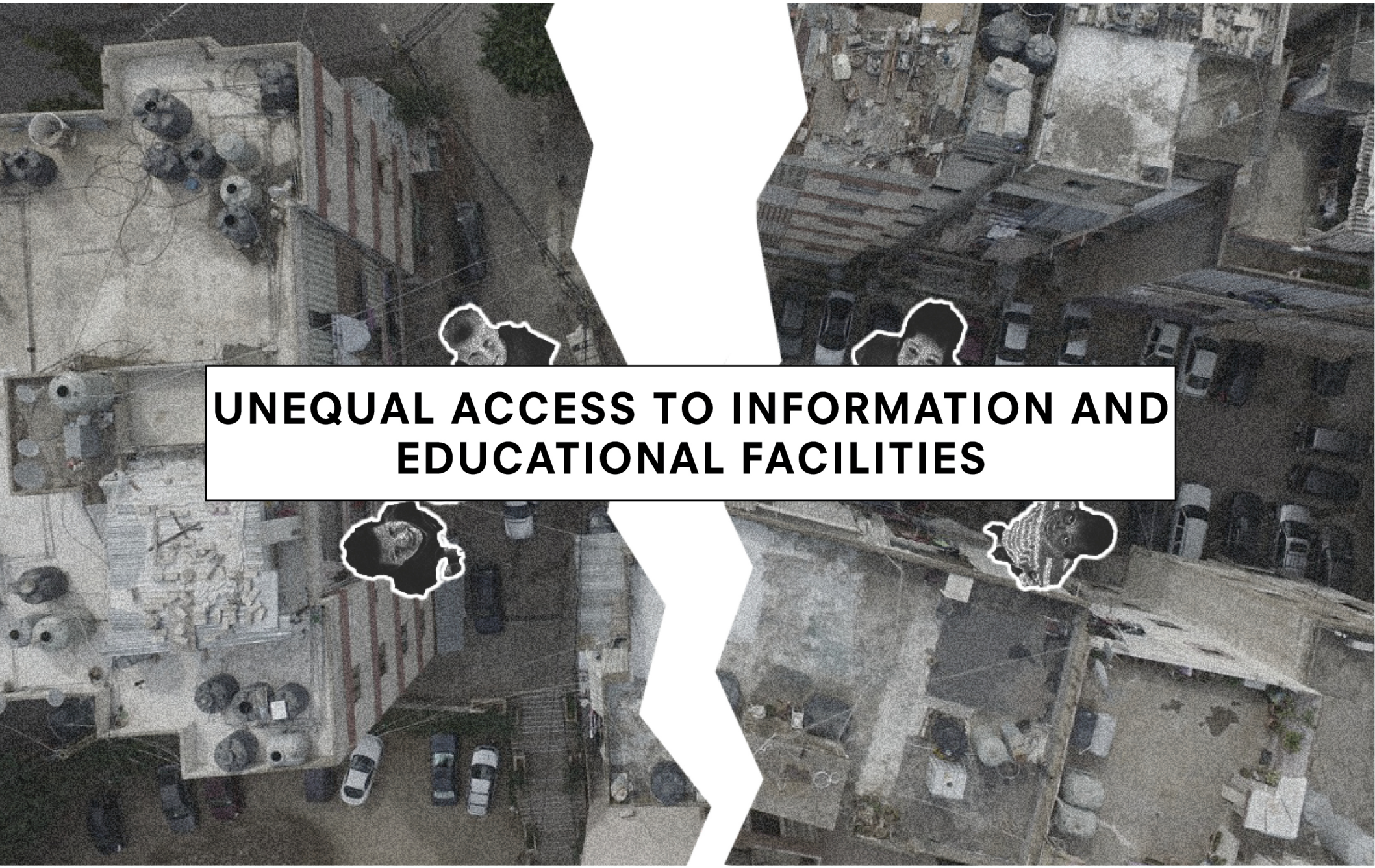








INEQUALITY



UNEQUAL ACCESS TO INFORMATION AND EDUCATIONAL FACILITIES

MORE PUBLIC SCHOOLERS

LA LETTRE DE L'ÉCO

COMMERCE
Le magazine de l'économie et des affaires DU LEVANT

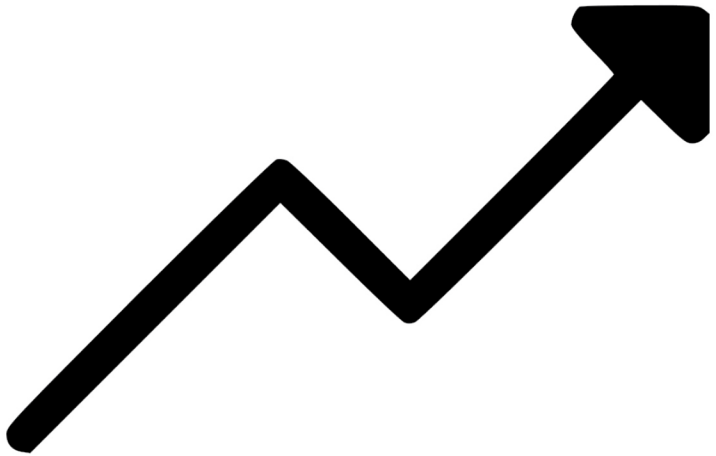
Économie Finance Immobilier Tourisme Tech Vos droits In English

The economic crisis has pushed 40,000 students to join public schools

par Justine Babin



PUBLIC LIBRARY NEEDED



An increase of desire and need for public library

LEBANON FUTURE



RESEARCH QUESTION

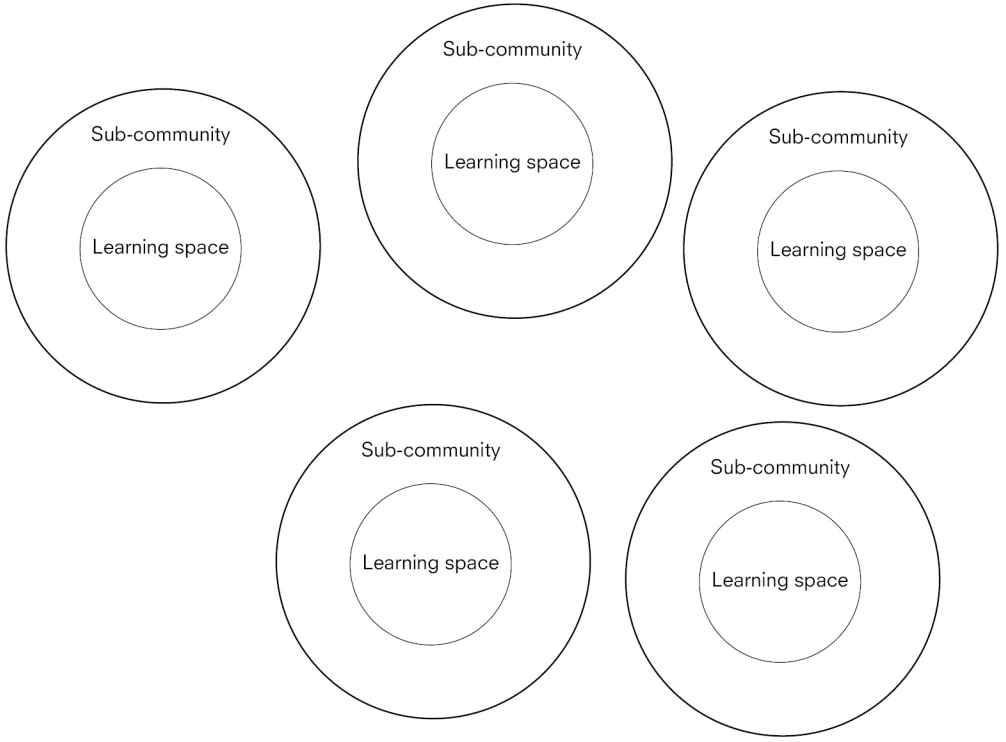
What role can a **public library** play in the **reconstruction** of Beirut?

How can it spatially facilitate the local and global **digitalization** of **information** and make education accessible and **interactive** for the **locals** of Beirut?

DESIGN BRIEF

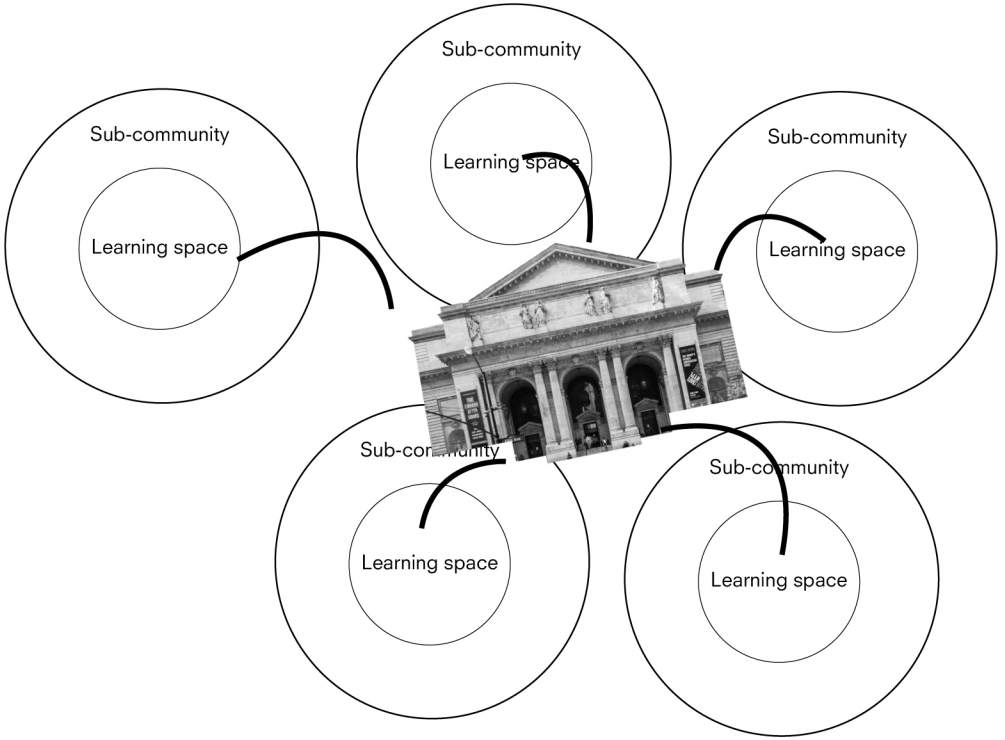
Design Brief

EDUCATION FRAGMENTATION

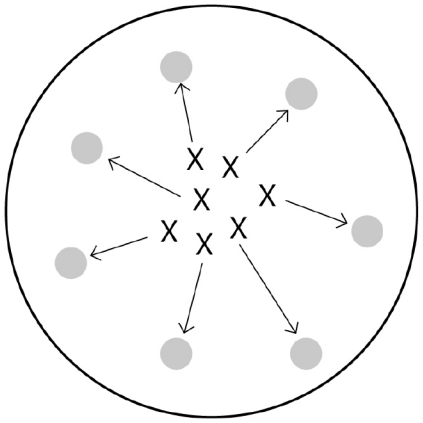


Design Brief

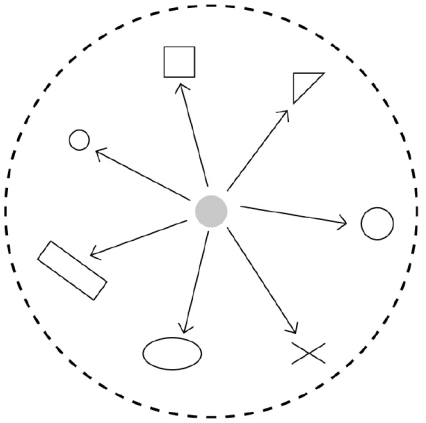
PUBLIC LIBRARY RESPONSE



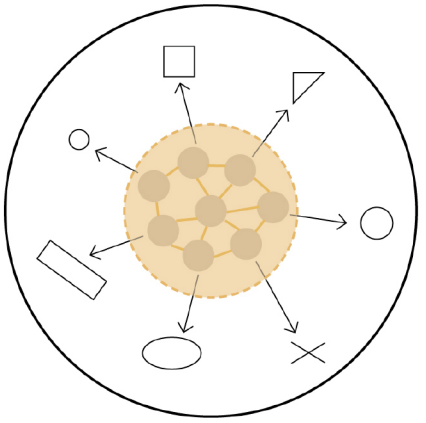
LIBRARY TYPOLOGY



Traditional library



Internet



New library





Design Brief

LIBRARY TYPOLOGY



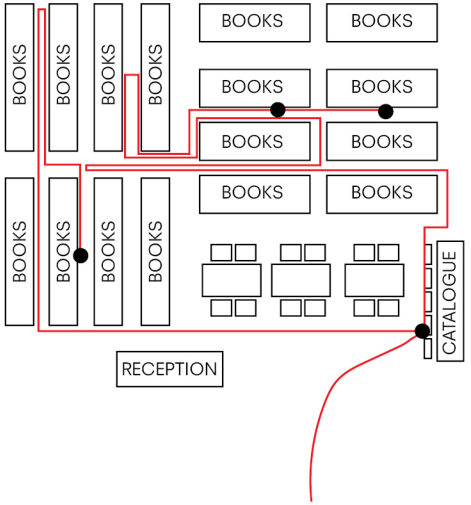


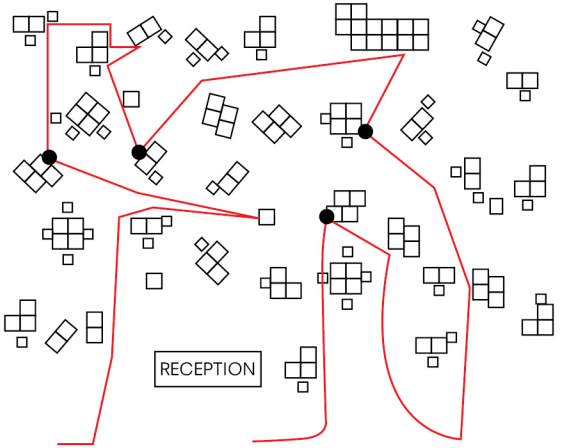
https://www.behance.net/gallery/67953135/The-Fabulous-Super-Library

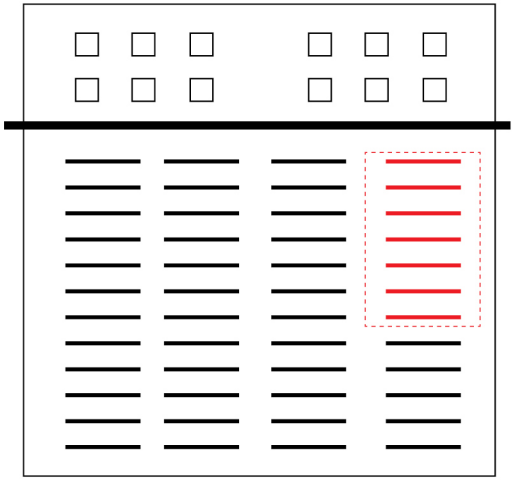
COLLECTION CENTRED → USER EXPERIENCE

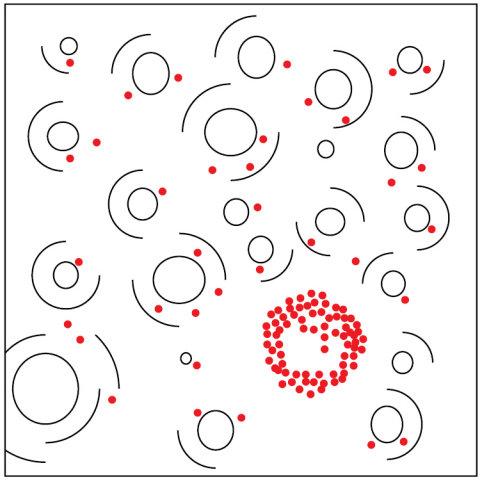
Design Brief

LIBRARY TYPOLOGY



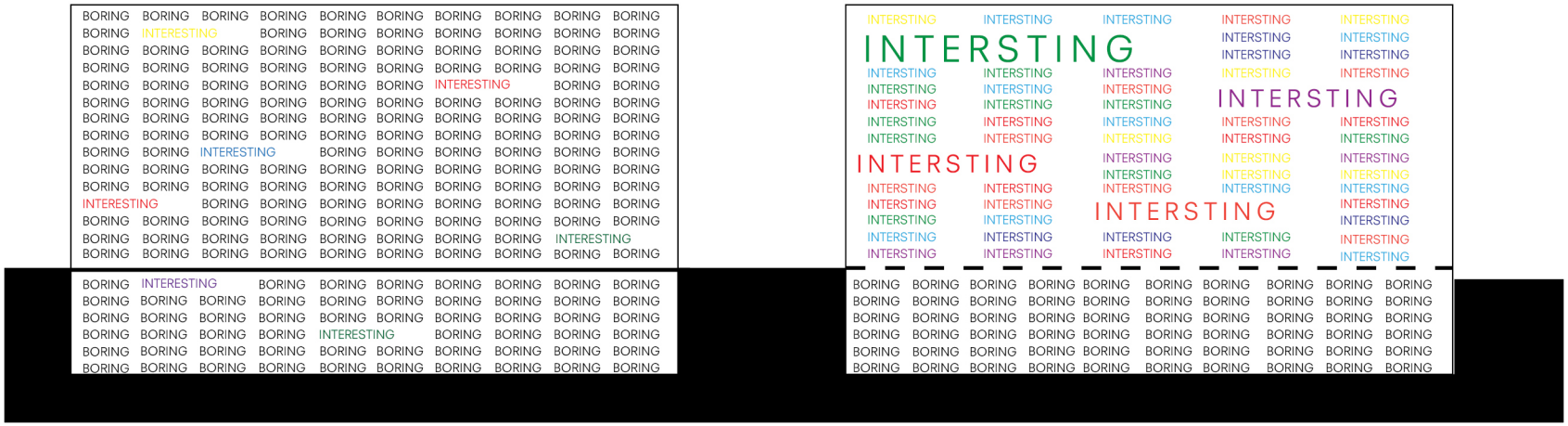






Design Brief

LIBRARY TYPOLOGY



Design Brief

THE FUTURE LIBRARY



https://www.behance.net/gallery/67953135/The-Fabulous-Super-Library

Keeper of Knowledge Bethel Lemma

Design Brief

THE FUTURE LIBRARY





https://www.behance.net/gallery/67953135/The-Fabulous-Super-Library

AMBITIONS

ACCESSIBLE EDUCATION

STIMULATE SOCIAL COHESION

FUTURISTIC QUALITIES

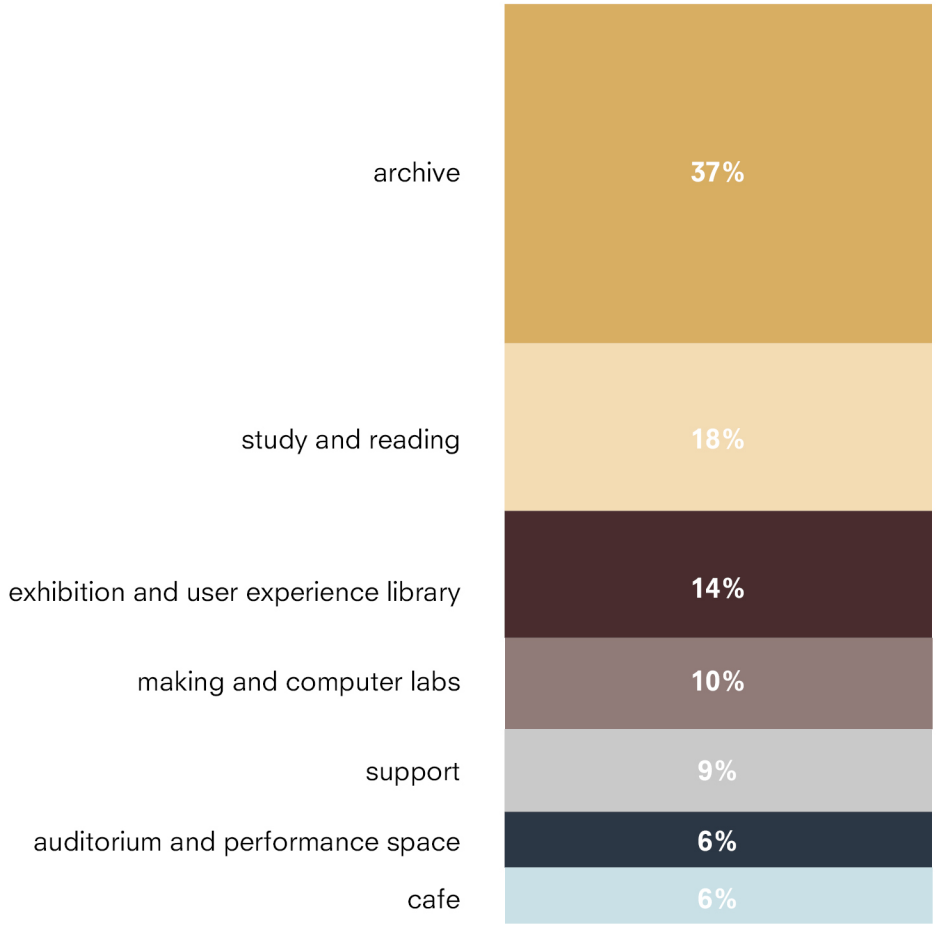
FACILITATE RESURFACING TRADITIONS

LOCAL MODEST ARCHITECTURE

SPATIAL TRANSLATIONS

ACCESSIBLE EDUCATION	INTERACTIVE ARCHITECTURE
STIMULATE SOCIAL COHESION	PUBLIC PARK WITH EXTROVERT BUILDING
FUTURISTIC QUALITIES	USER EXPERIENCE SPACE: THE LABYRINTH
FACILITATE REBIRTH OF HAKAWATI	OPEN AIR PERFORMANCE SPACE
LOCAL MODEST ARCHITECTURE	SMALL PAVILIONS AND TRADITIONAL

PROGRAM


archive
37%
study and reading
18%
exhibition and user experience library
14%
making and computer labs
10%
support
9%
auditorium and performance space
6%
cafe
6%

SITE

GROUP SITE



SITE BEFORE BLAST



0 250 500

SITE BEFORE BLAST



SITE BEFORE BLAST



SITE BEFORE BLAST



SITE BEFORE BLAST



SITE BEFORE BLAST



SITE BEFORE BLAST



0 250 500

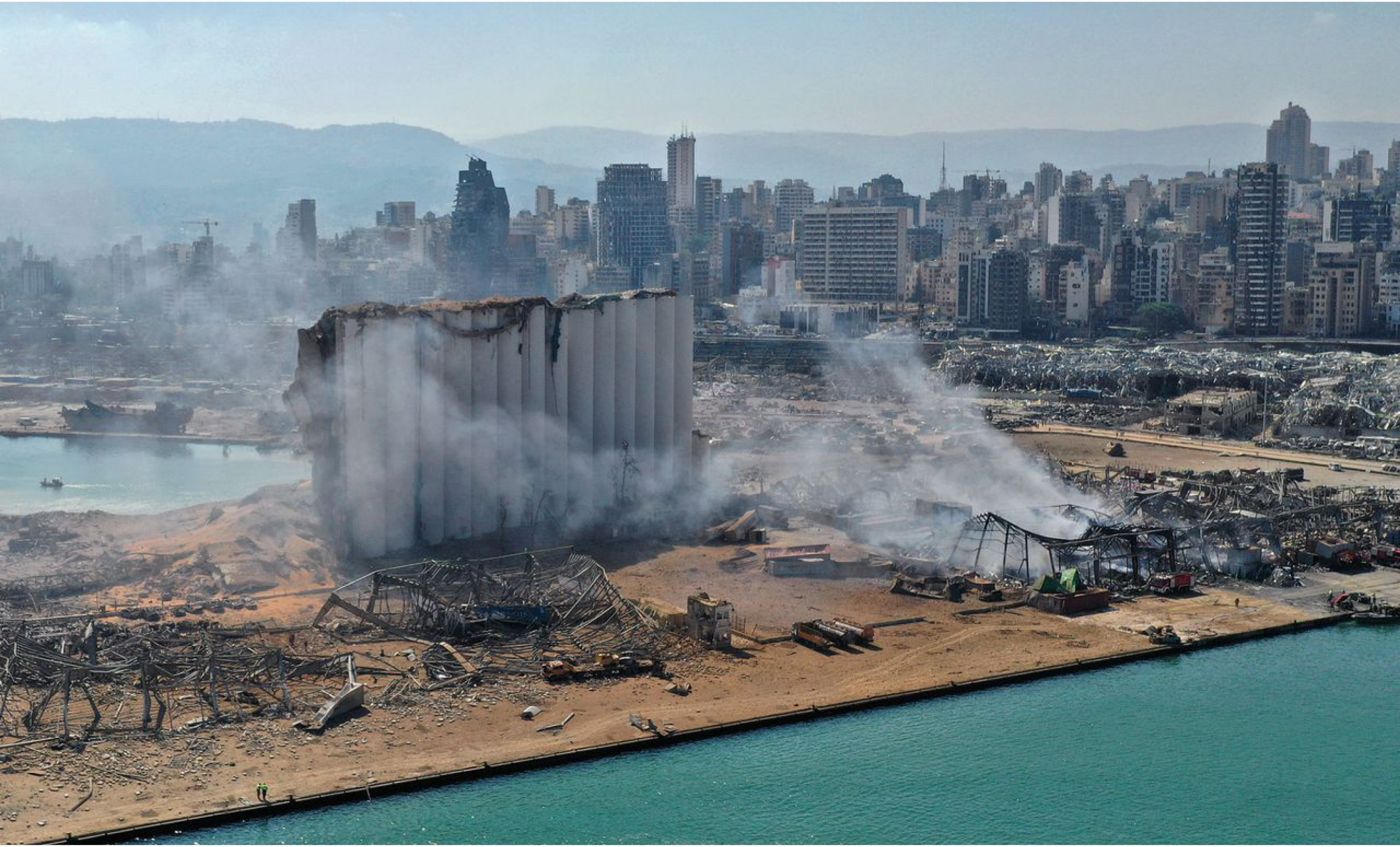
SITE AFTER BLAST



FOCUS AREA



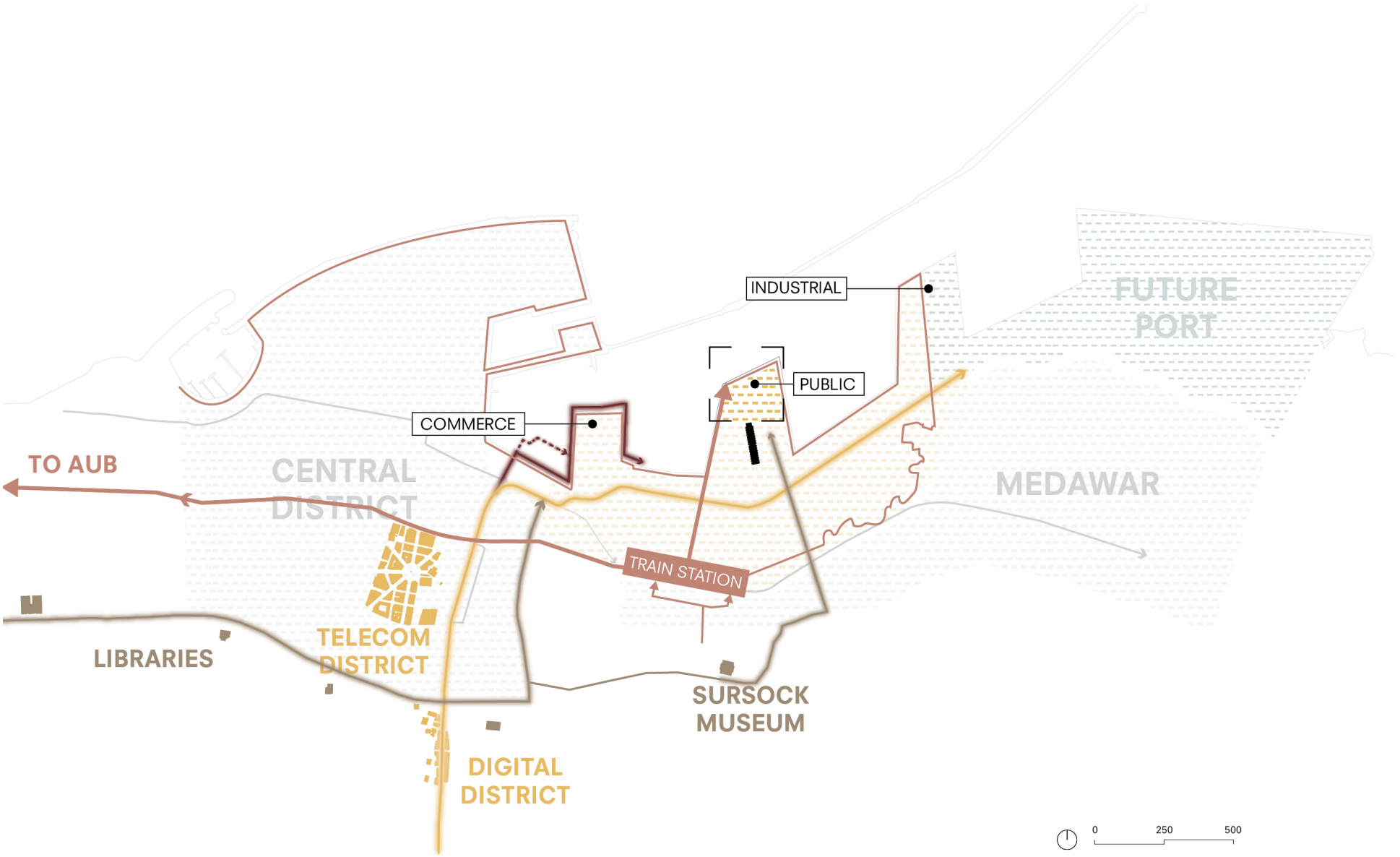
FOCUS AREA



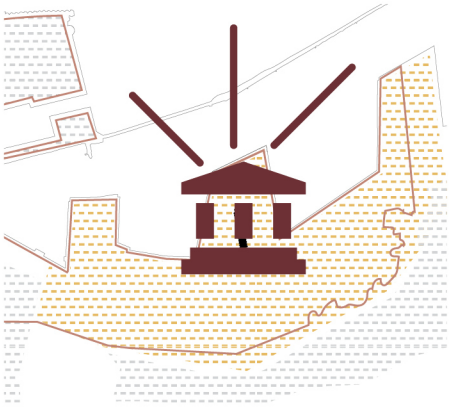
FOCUS AREA



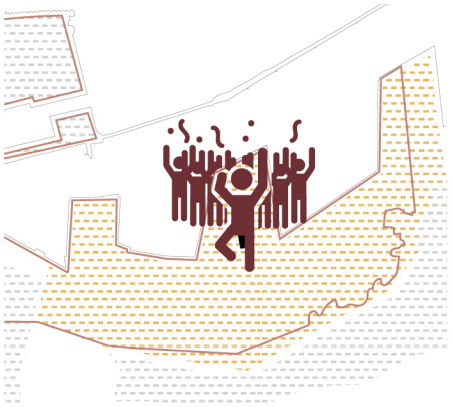
PROJECT LOCATION



LOCATION ARGUMENTATION

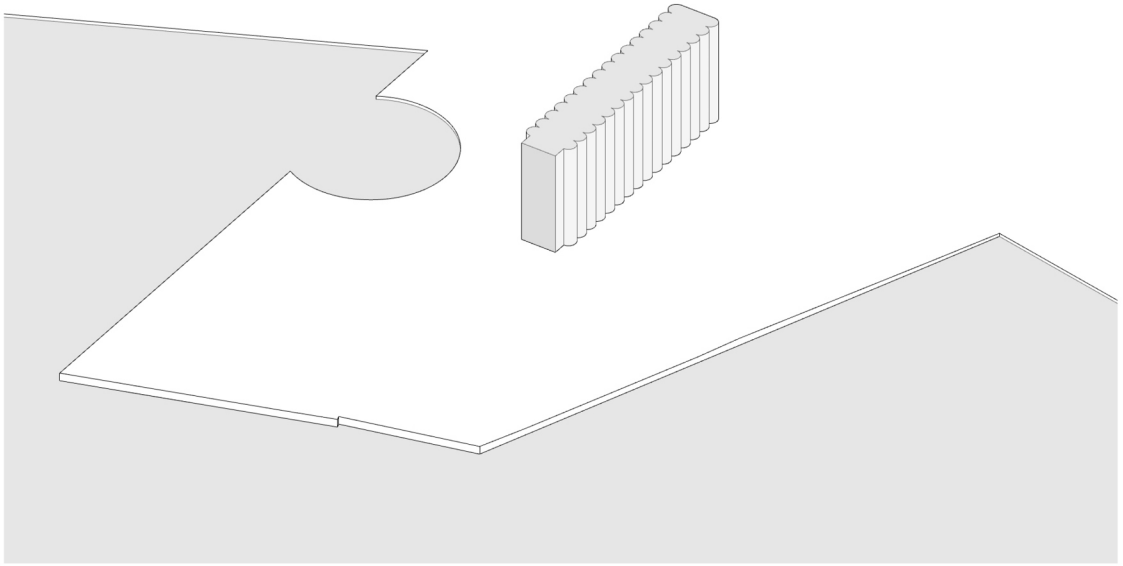


Gateway and central location of new neighbourhood



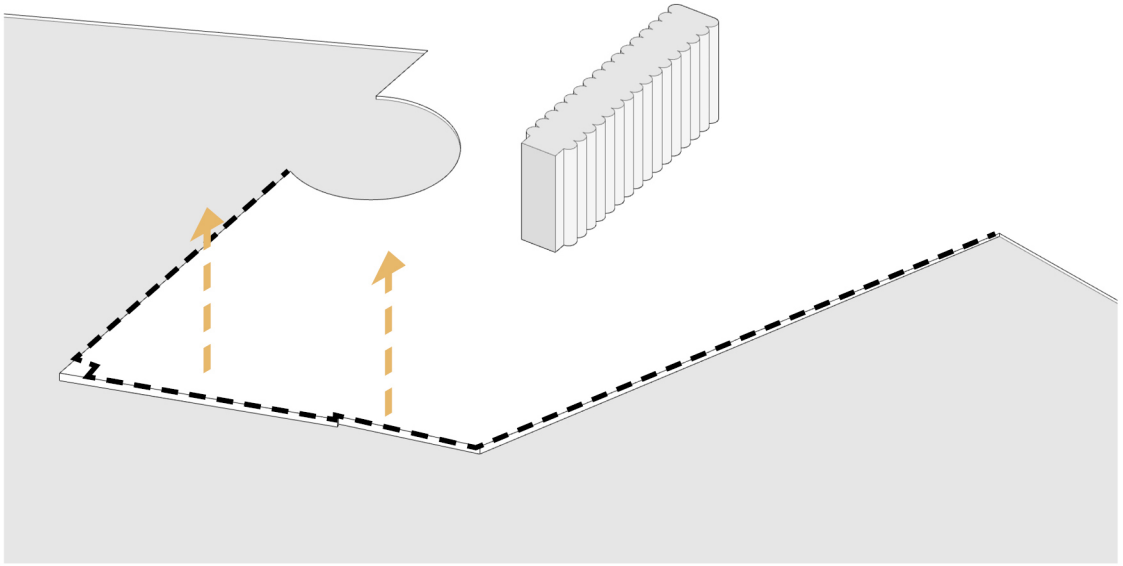
Activating waterfront with public program

BUILDING SITE



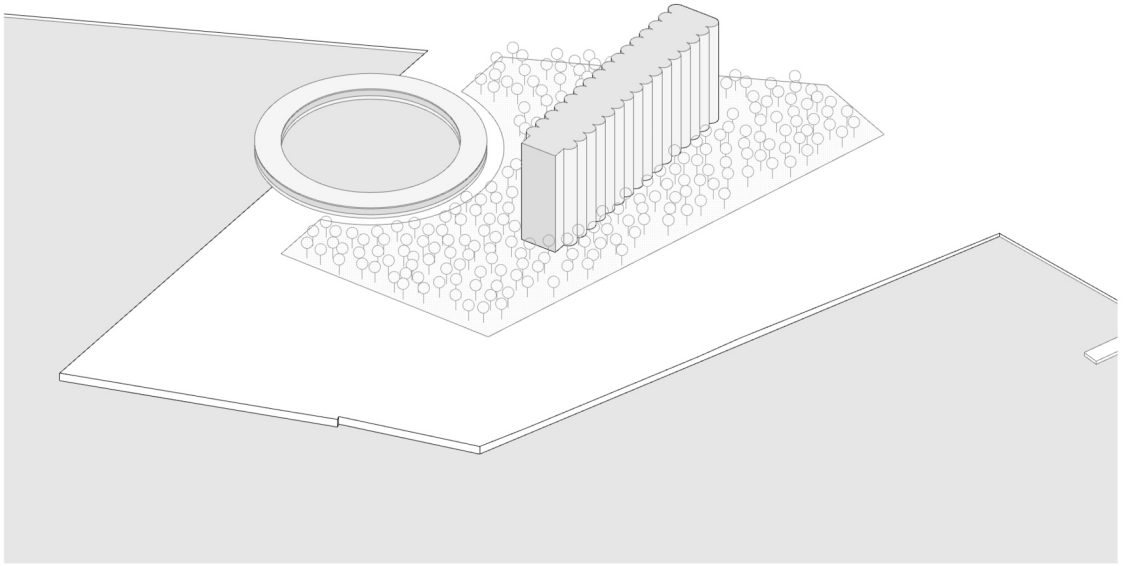
Current state

BUILDING SITE



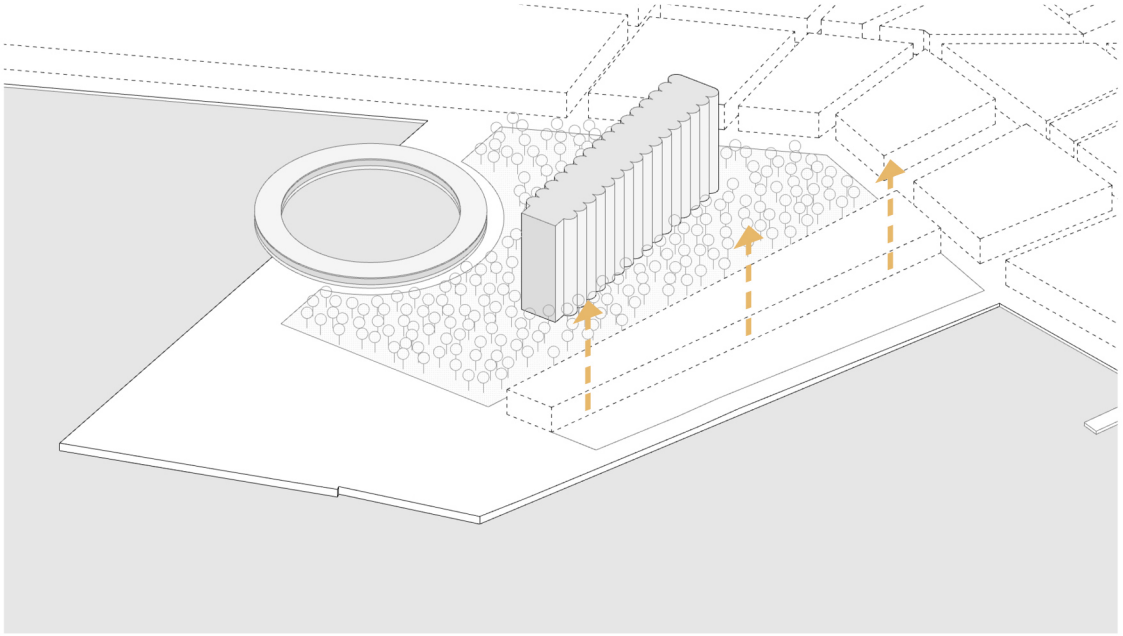
Water front

BUILDING SITE



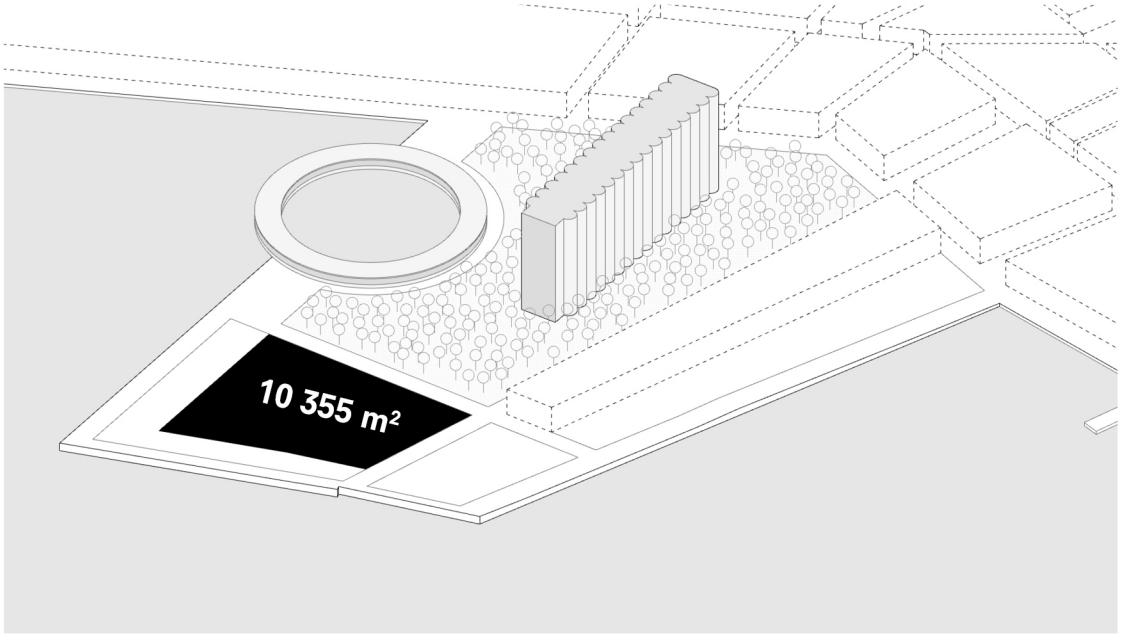
Memorial park

BUILDING SITE



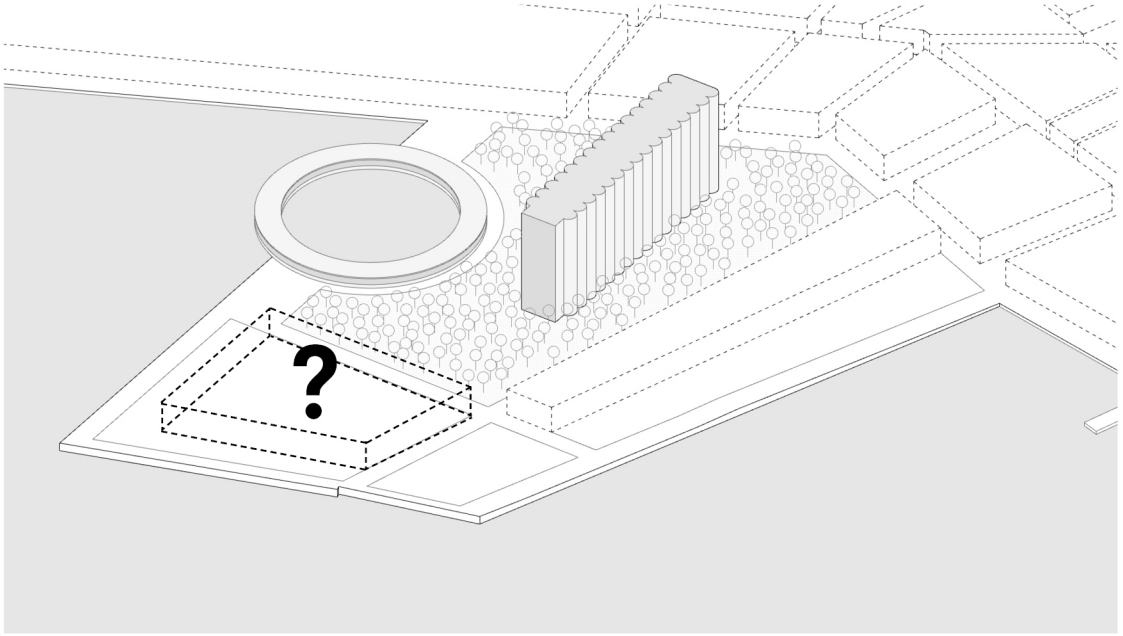
Densify neighbourhood

BUILDING SITE



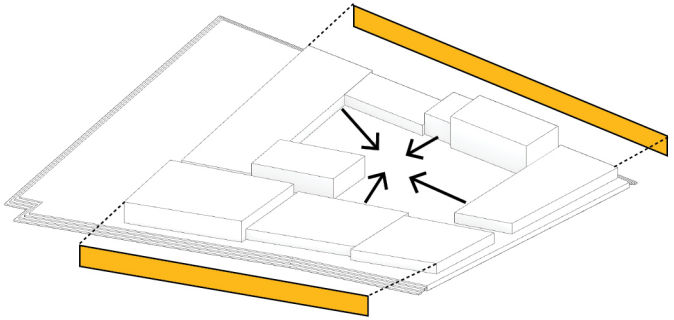
Buildable area

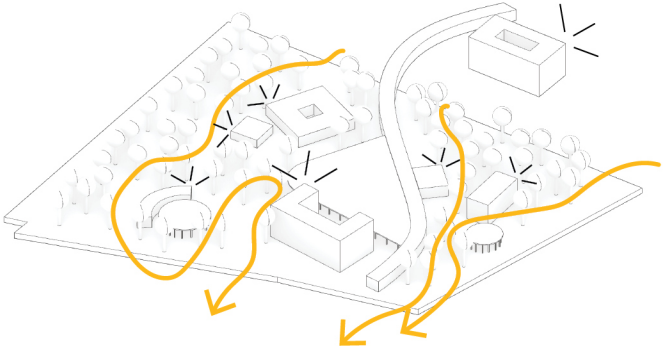
BUILDING SITE

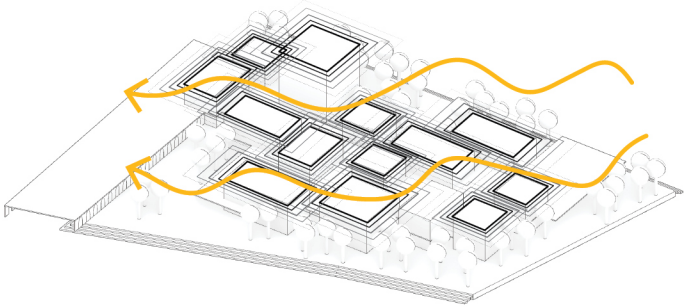


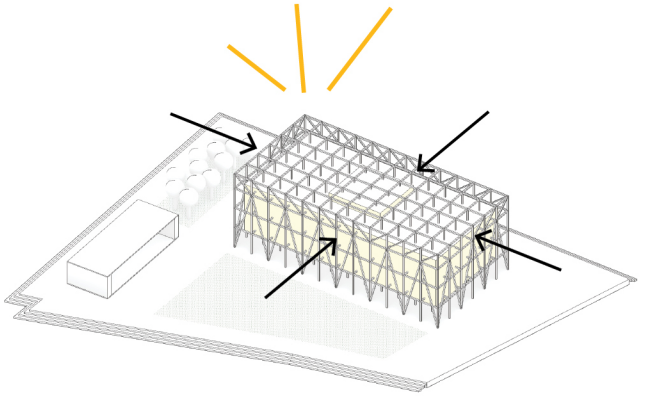
MASSING CONCEPT

MASSING CONCEPT

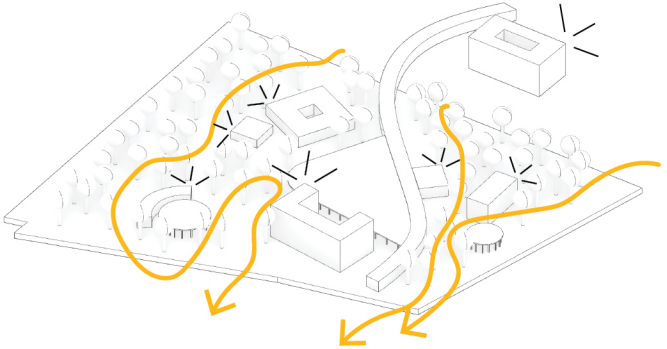




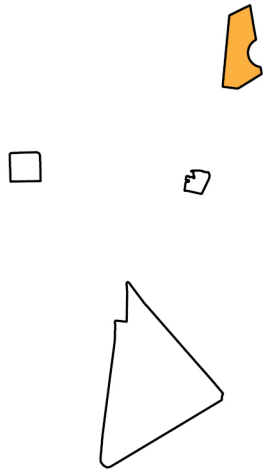




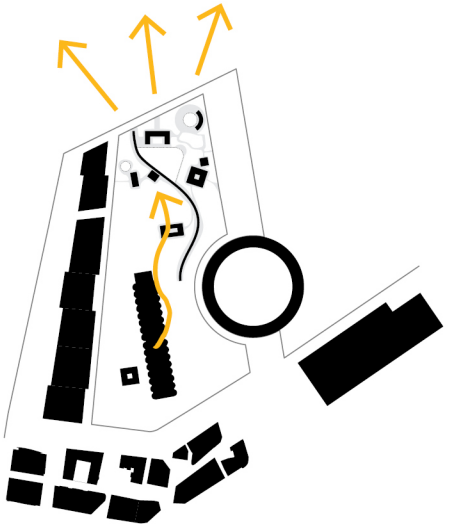
MASSING CONCEPT



CHOSEN MASSING CONCEPT



Respond to lack of public space



Library blends with visitors of public park



Integral park that continuous to waterfront

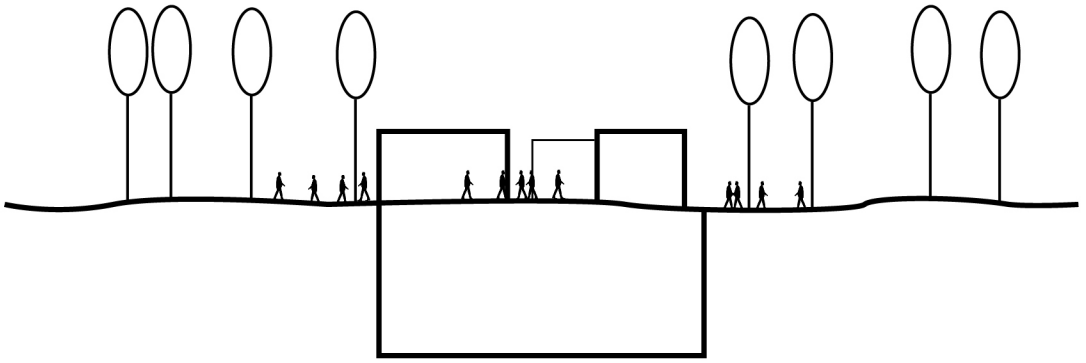
Concept

BEIRUTIAN PUBLIC LIBRARY

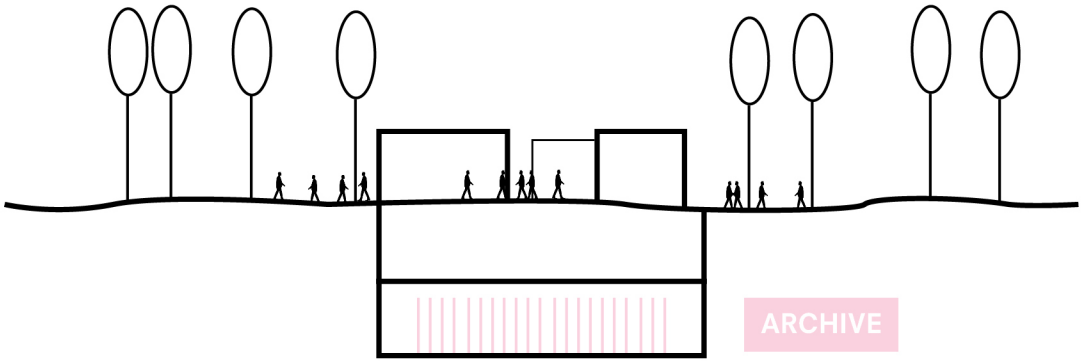


Concept

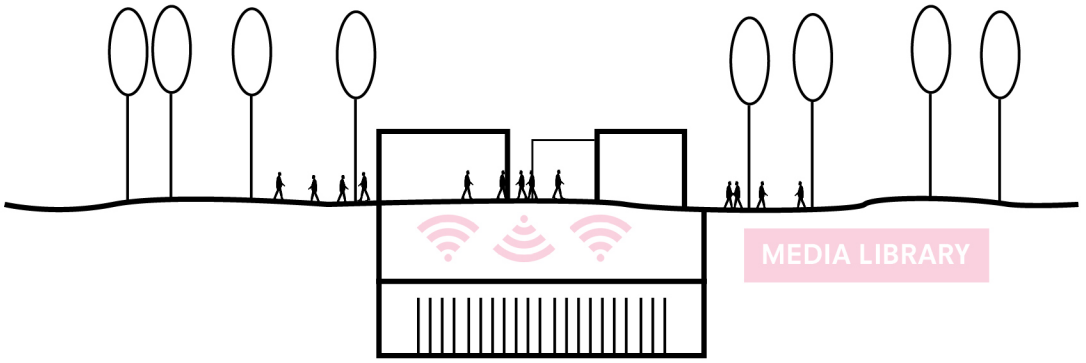
EXTROVERTED VOLUME



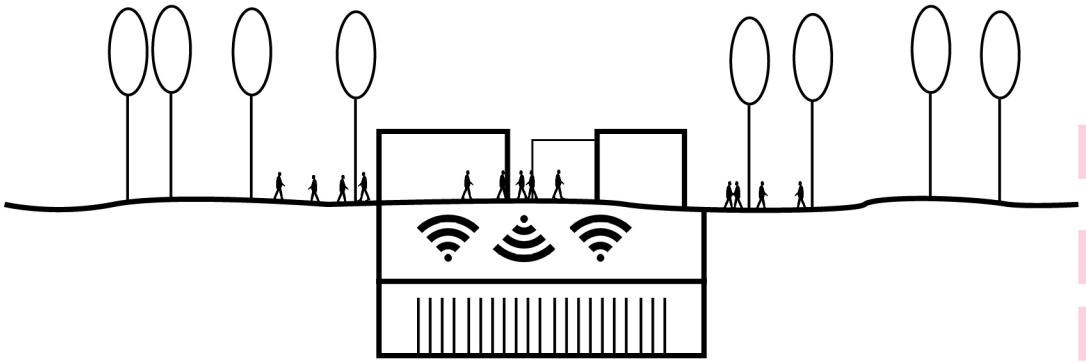
BUILDING CONCEPT



BUILDING CONCEPT



BUILDING CONCEPT



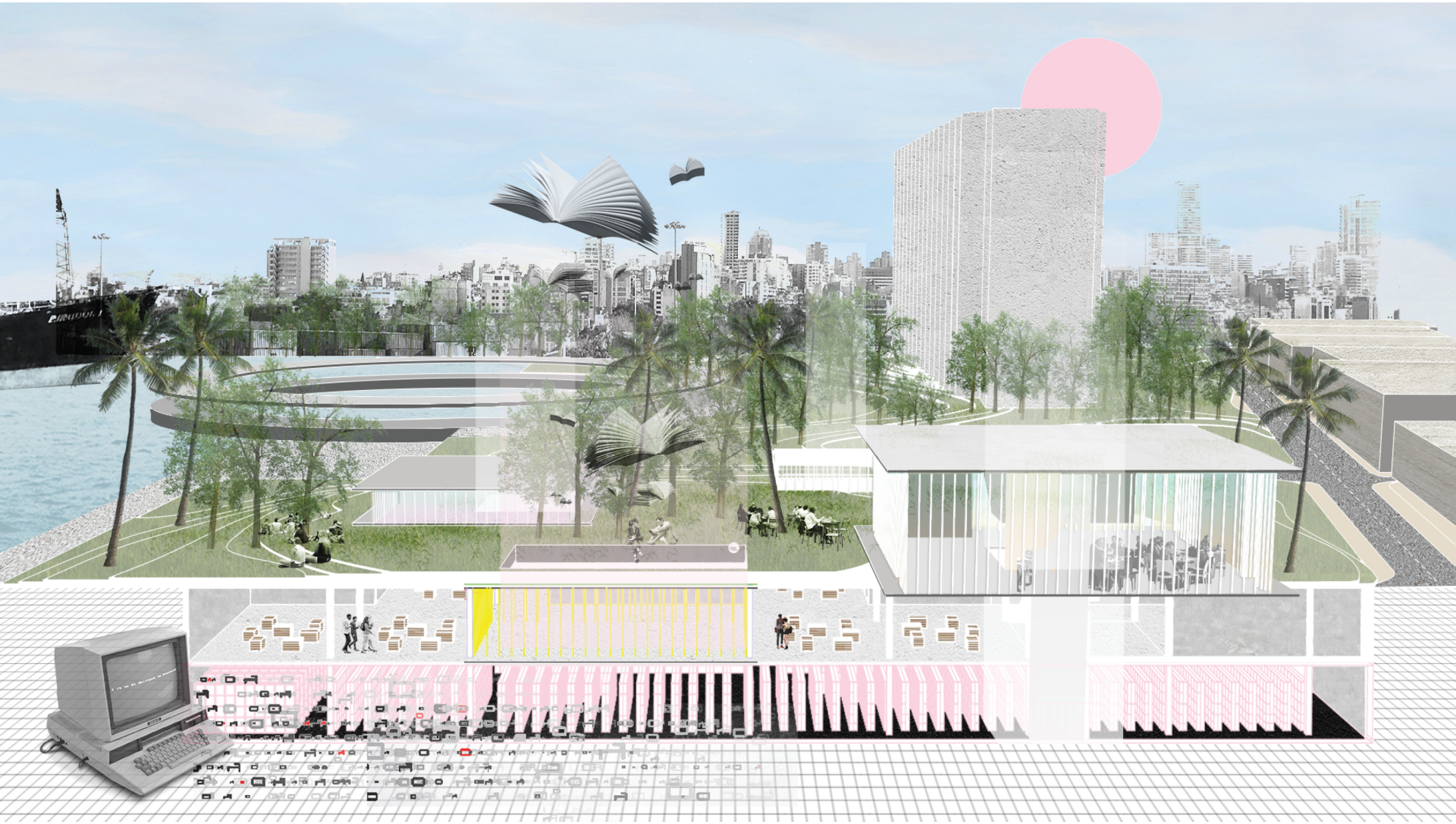
CONSUMER

PROSUMER

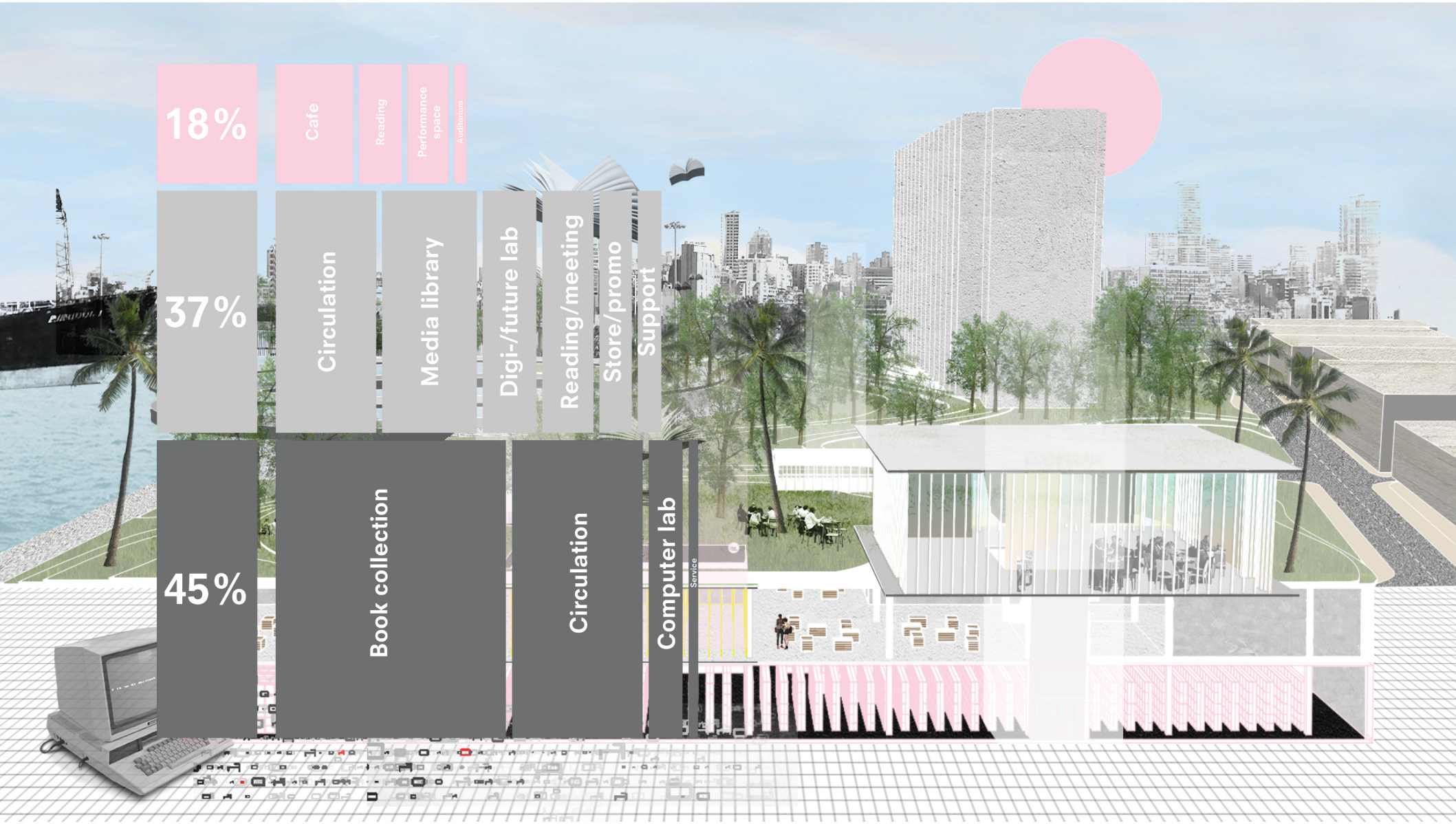
STORAGE

Concept

BUILDING CONCEPT

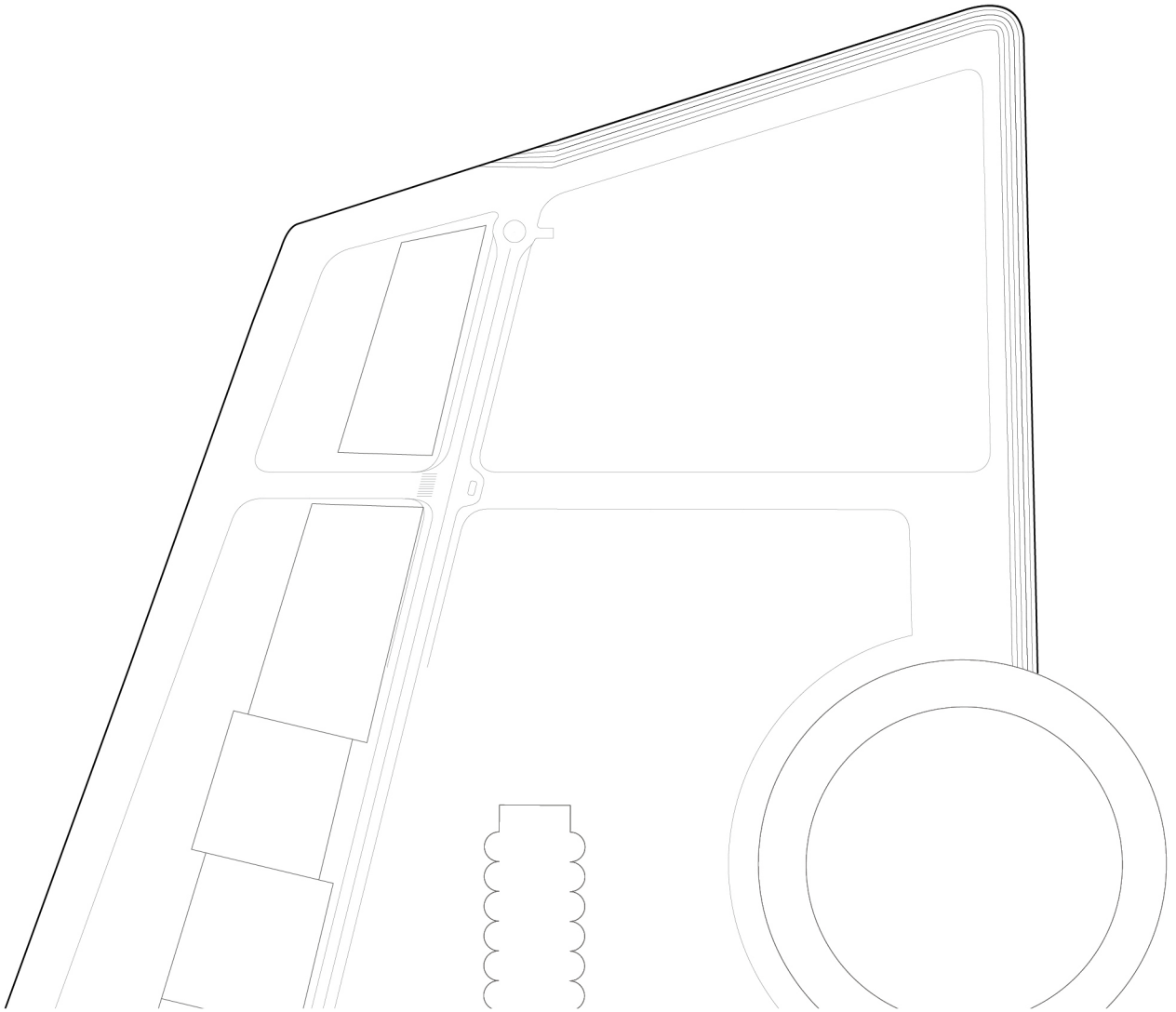


BUILDING CONCEPT

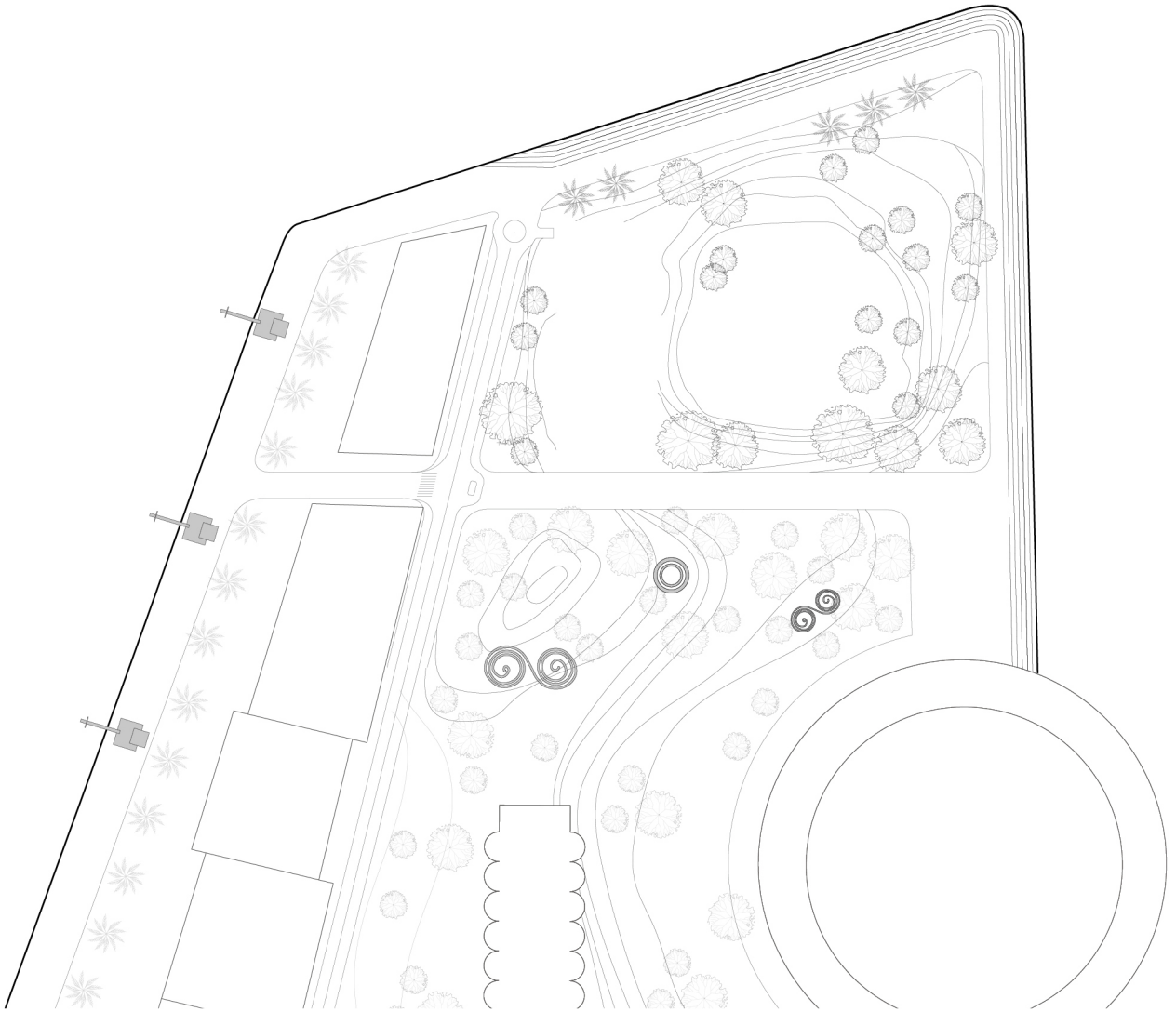


URBAN IMPLEMENTATION

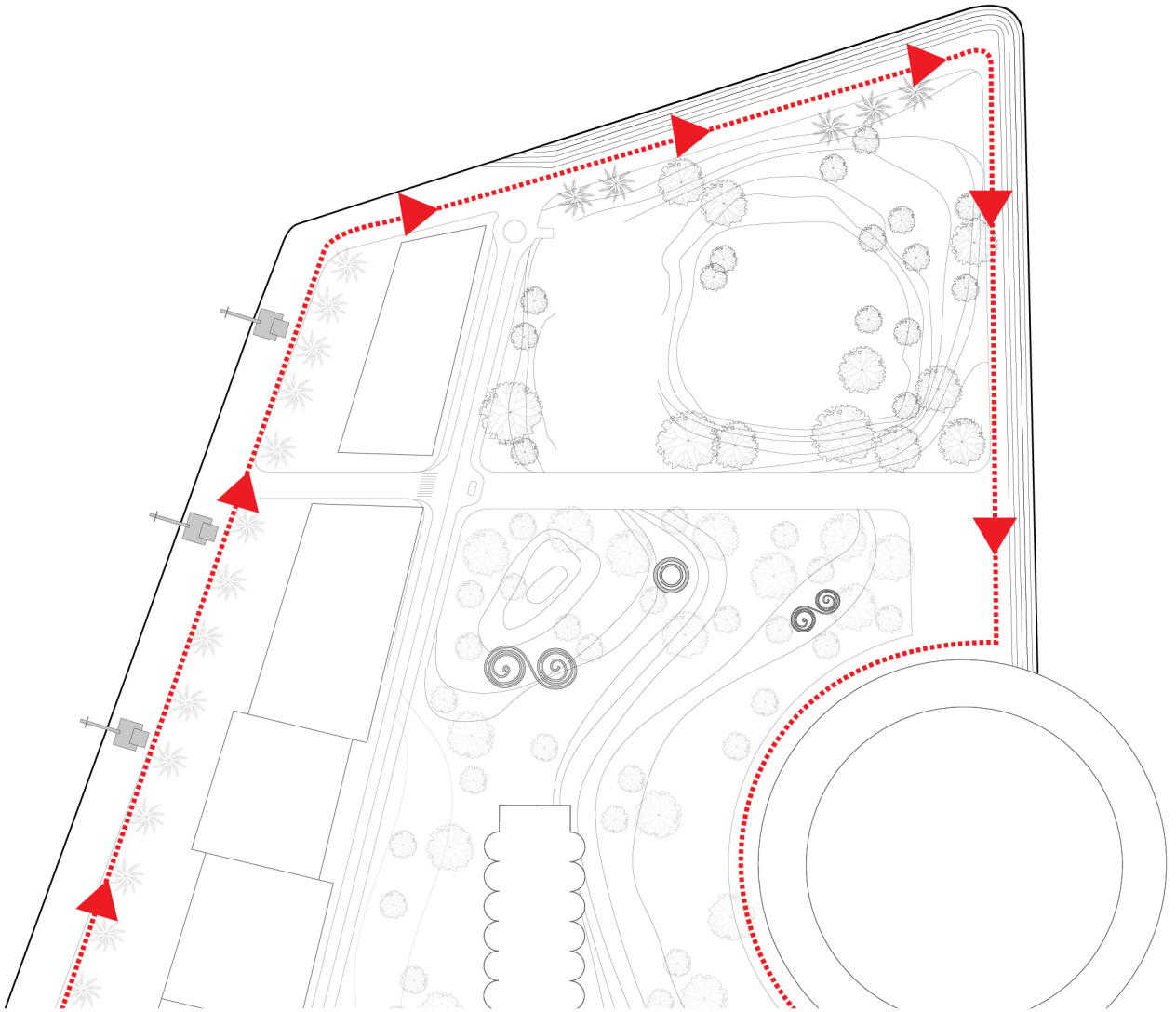
STARTING SITUATION



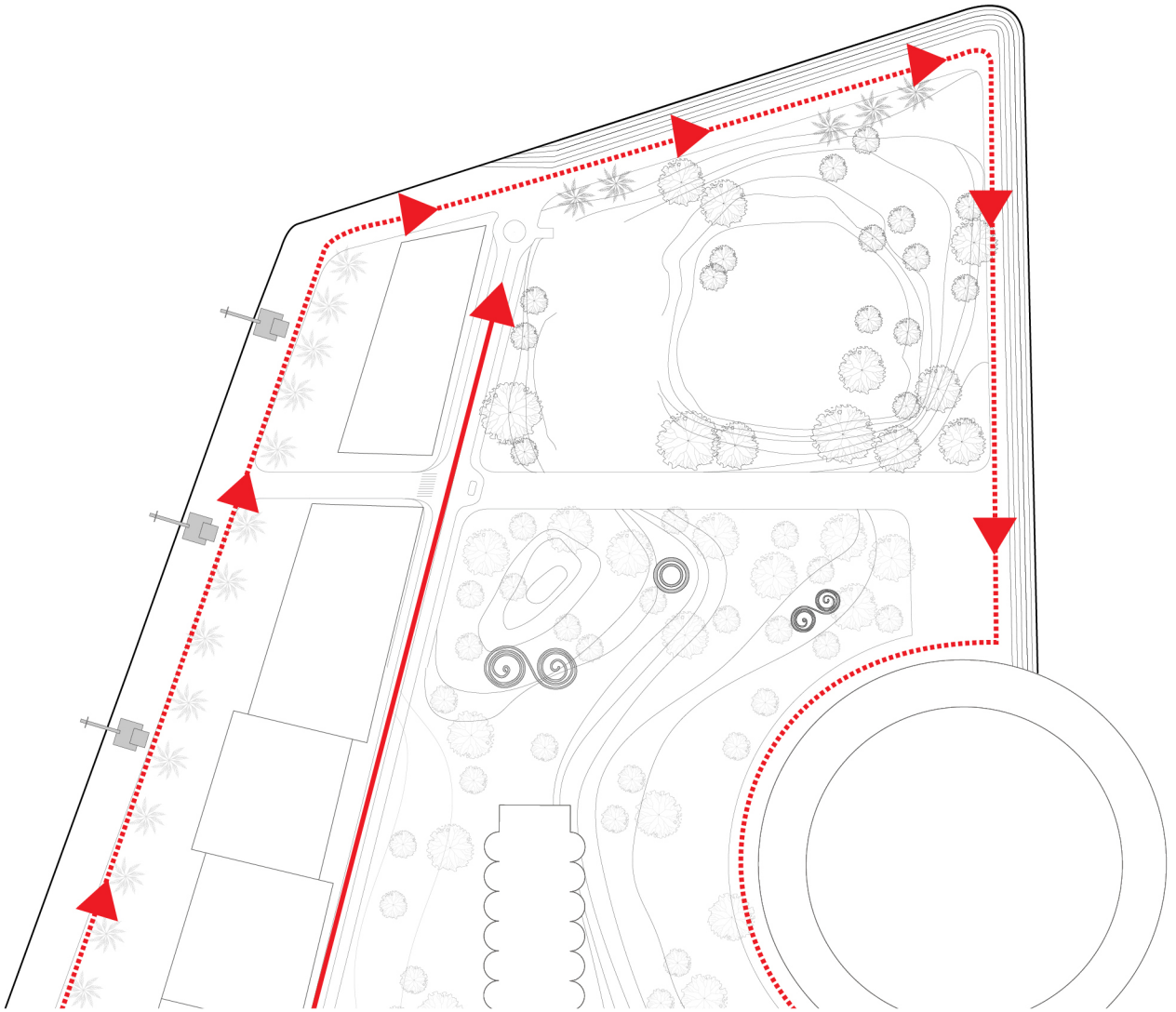
LANDSCAPING



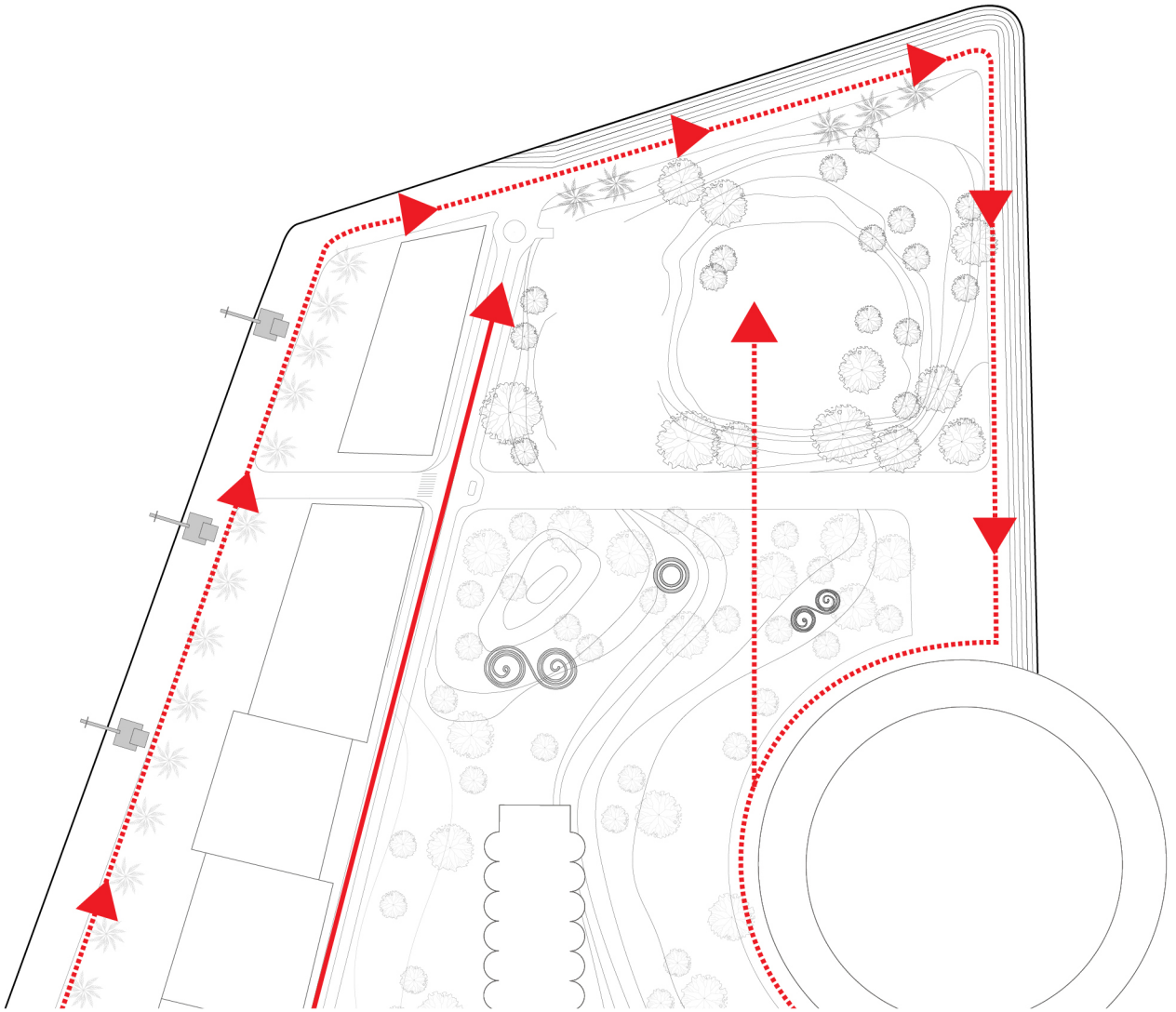
LEISURE ACCESS



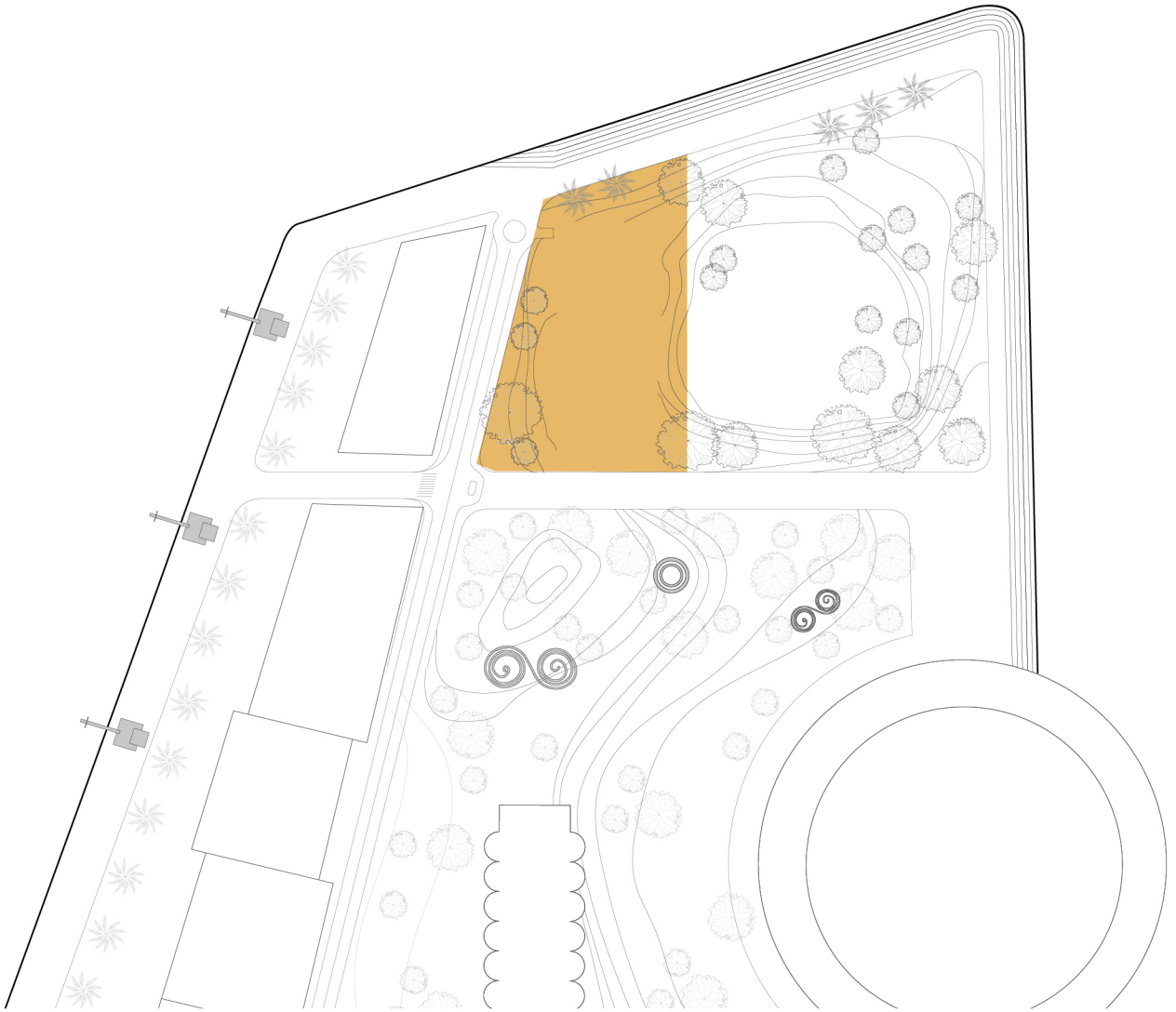
MAIN APPROACH FROM TRAIN STATION



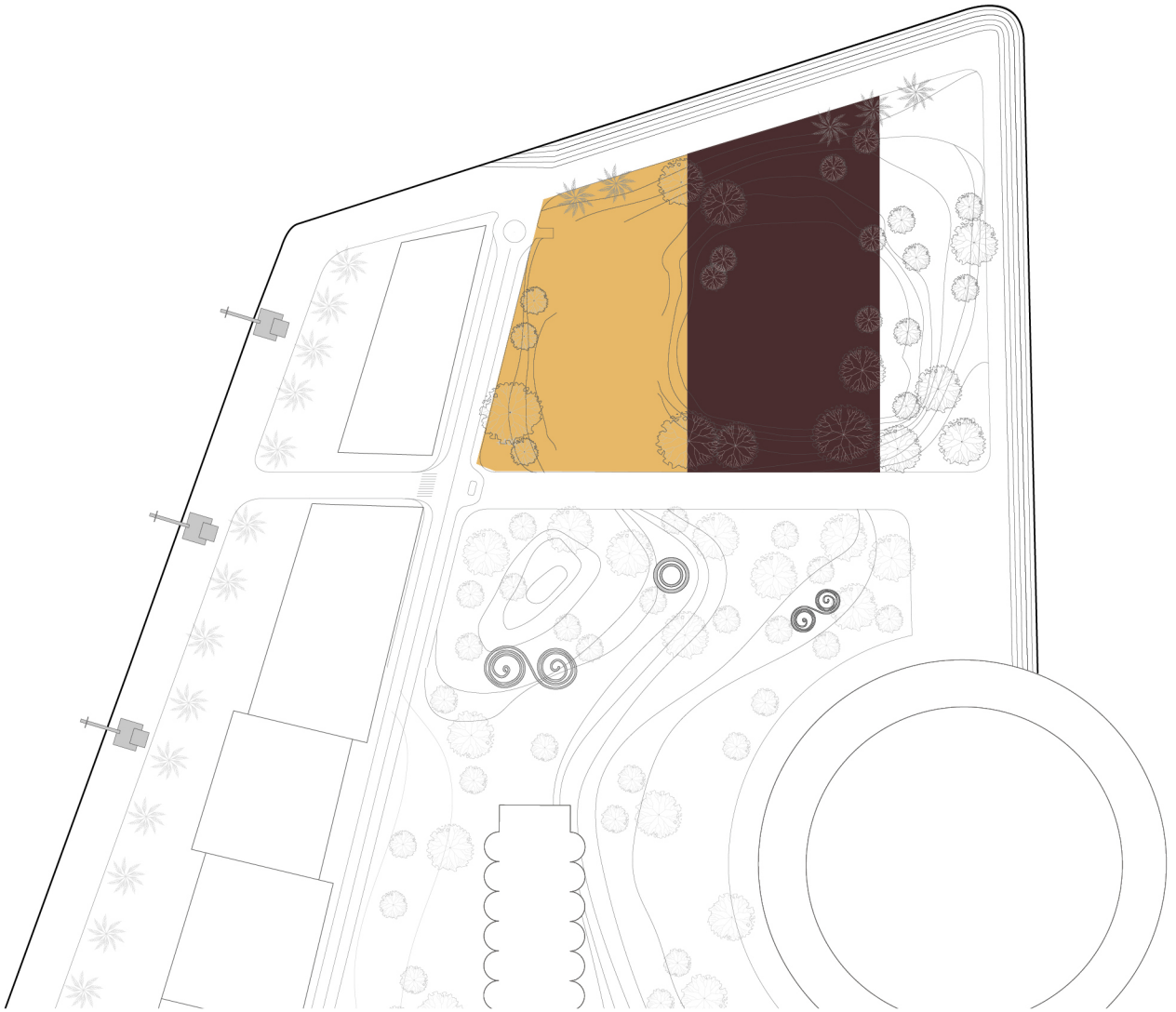
MAIN APPROACH FROM MEMORIAL PARK



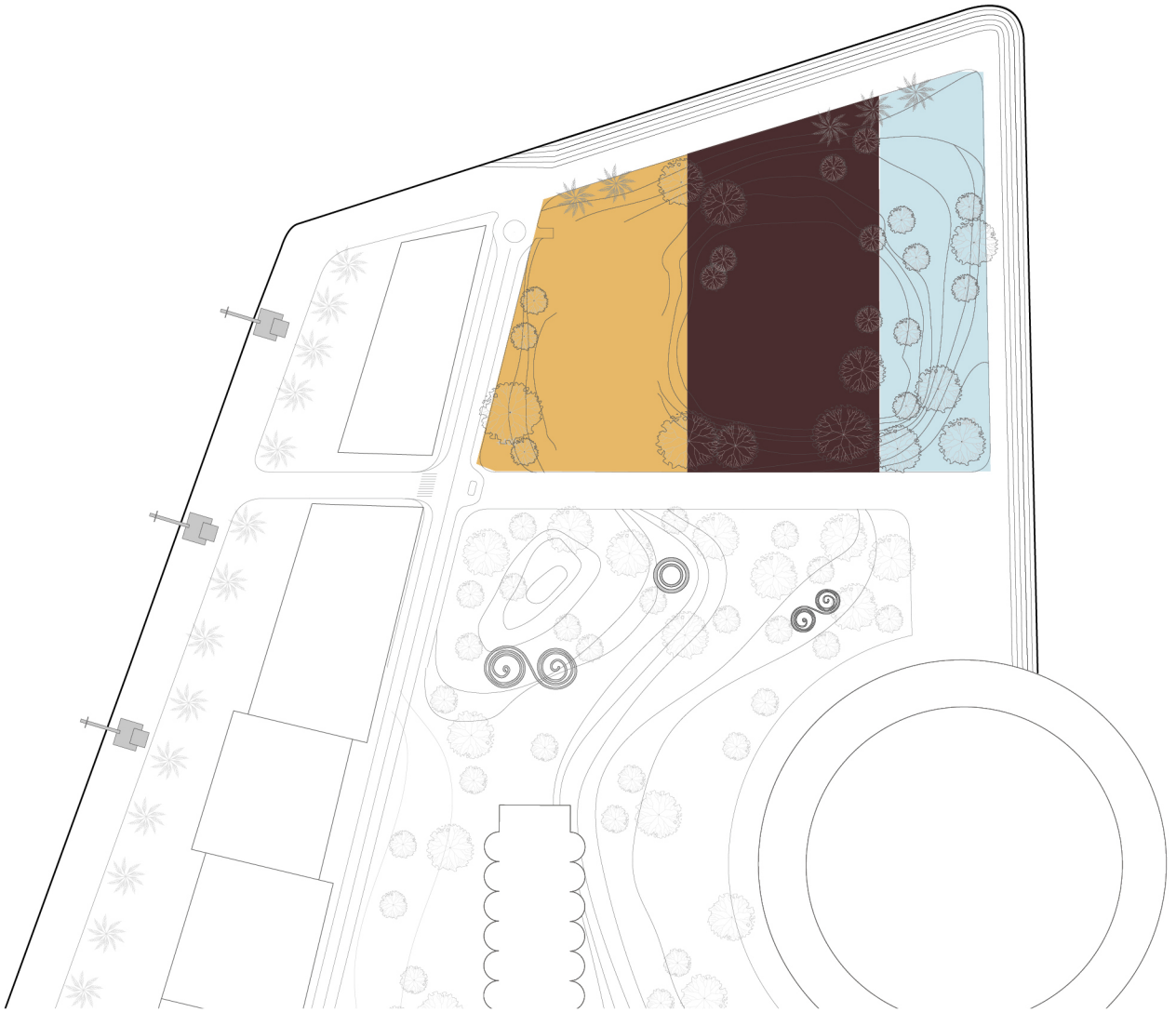
PUBLIC ZONE



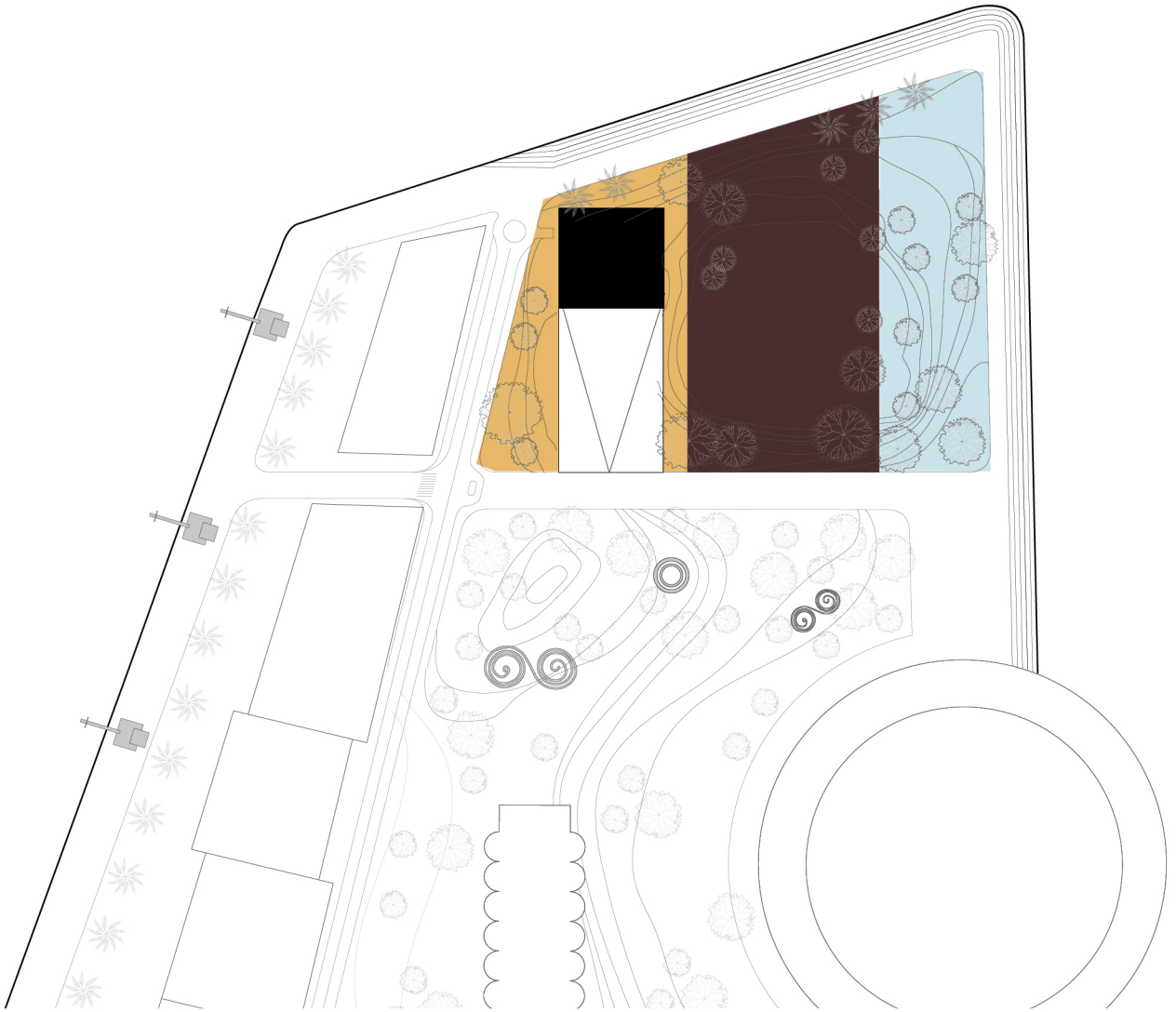
SERENE (READING) ZONE



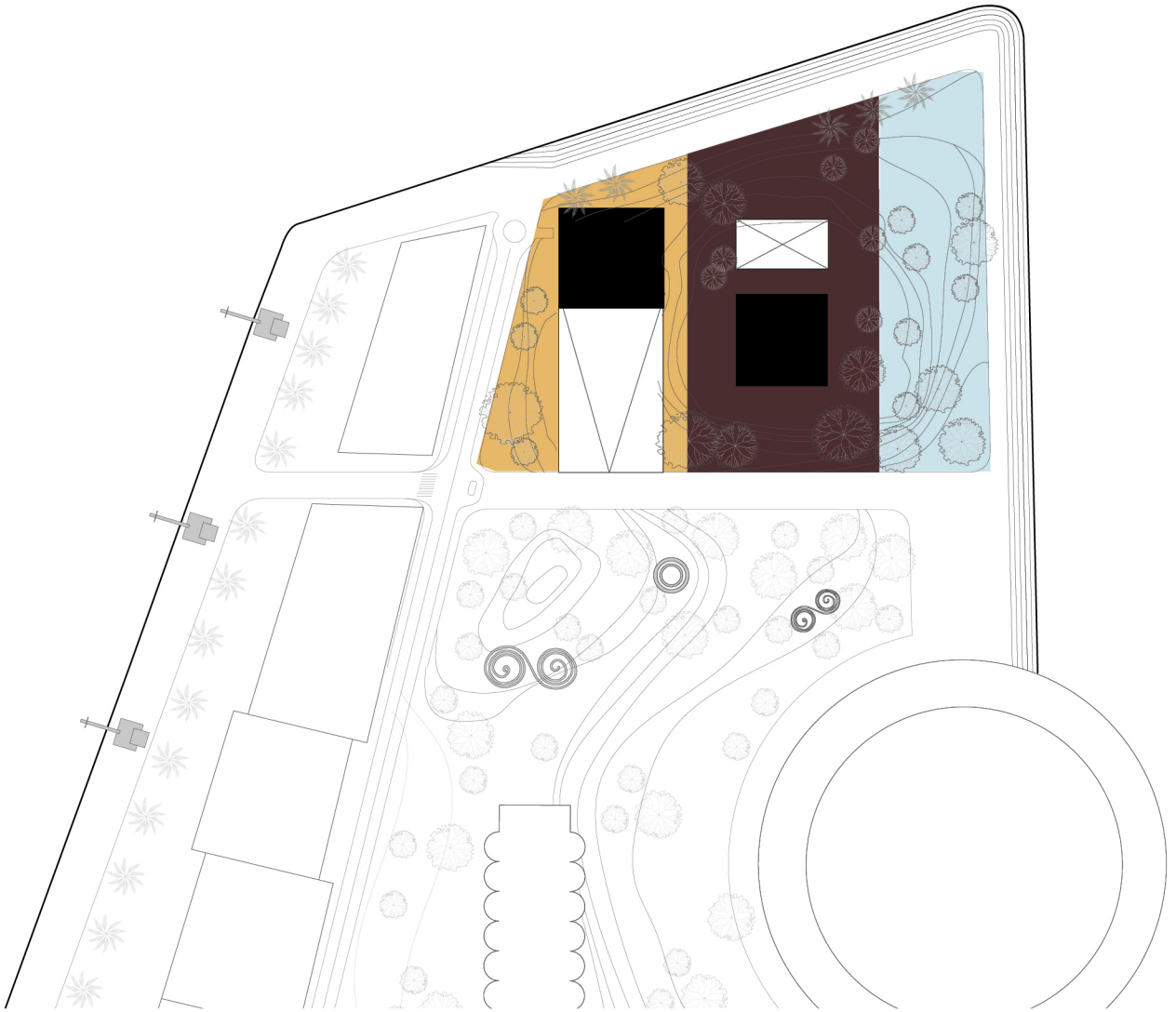
LEISURE ZONE



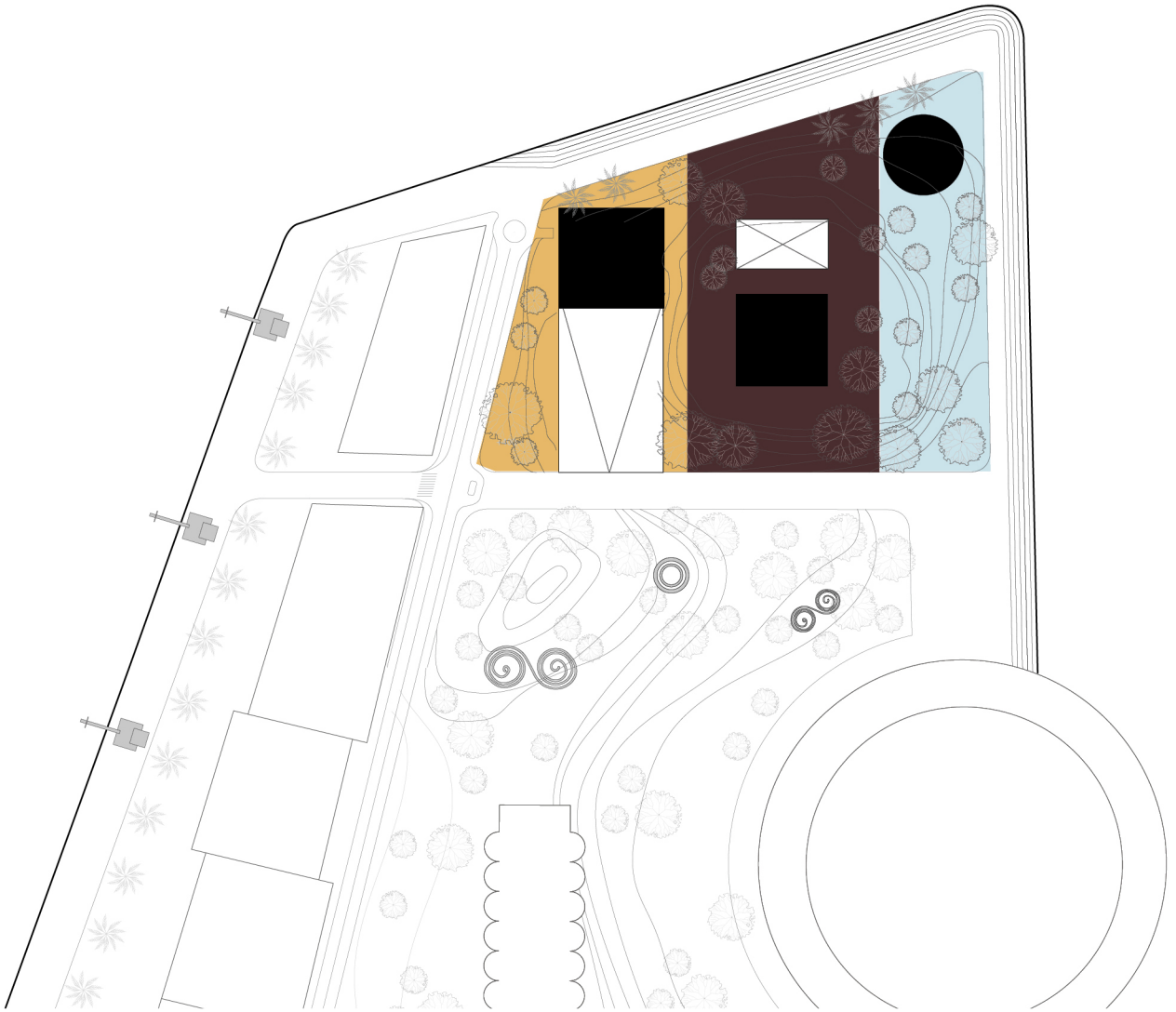
CAFE AND MAIN ENTRANCE



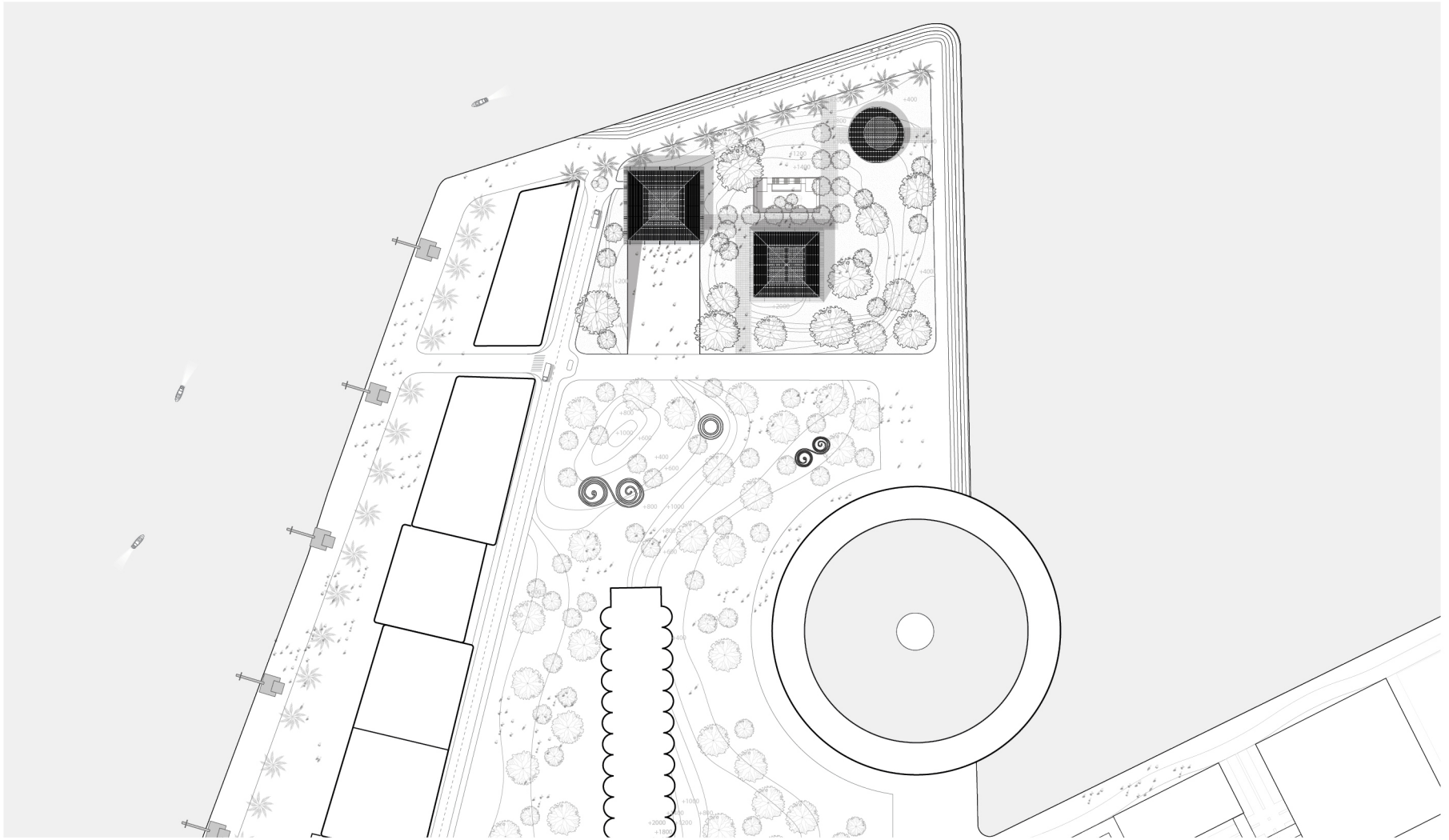
READING PAVILION



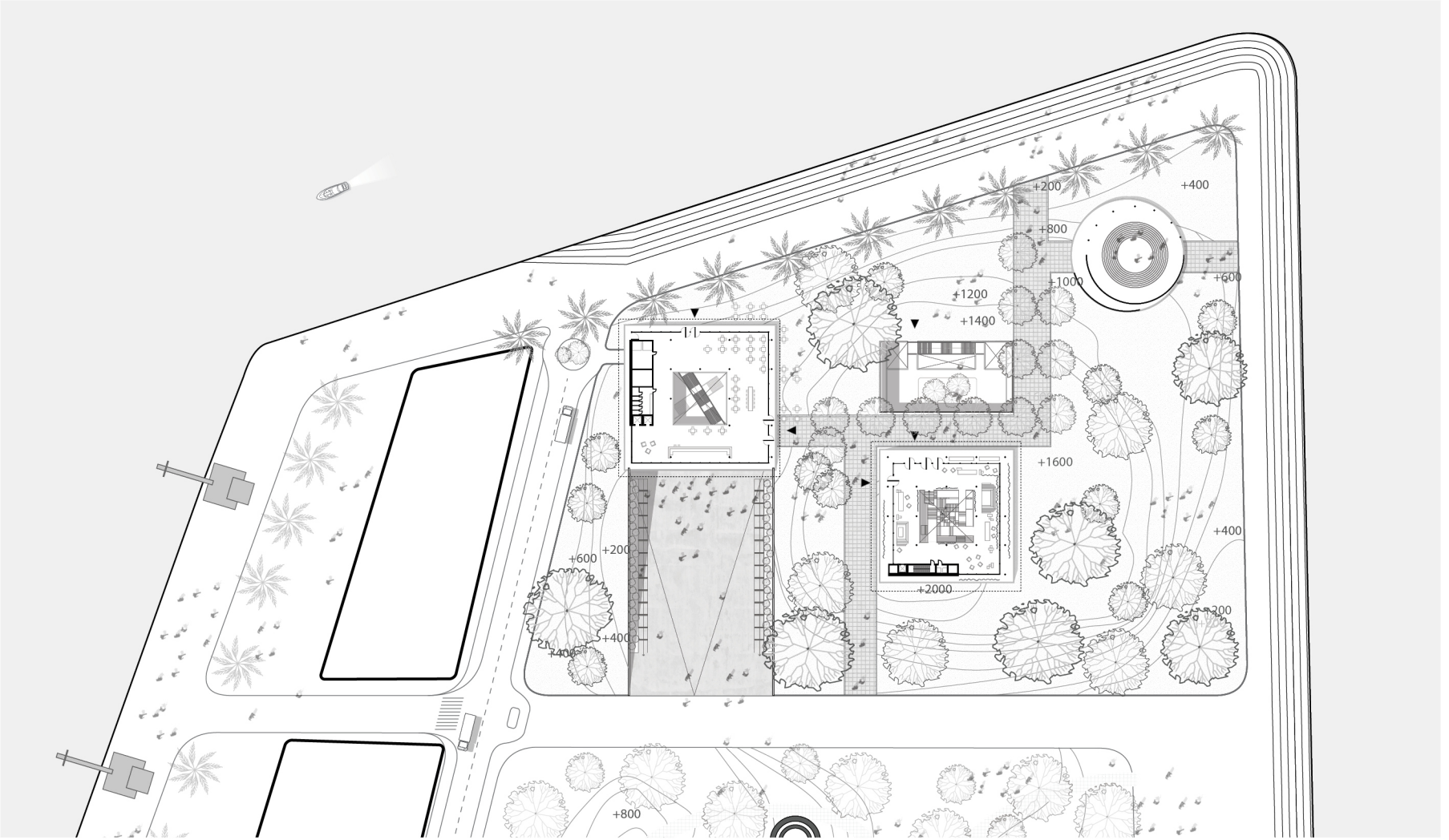
HAKAWATI CORNER



URBAN SITUATION



GROUND LEVEL

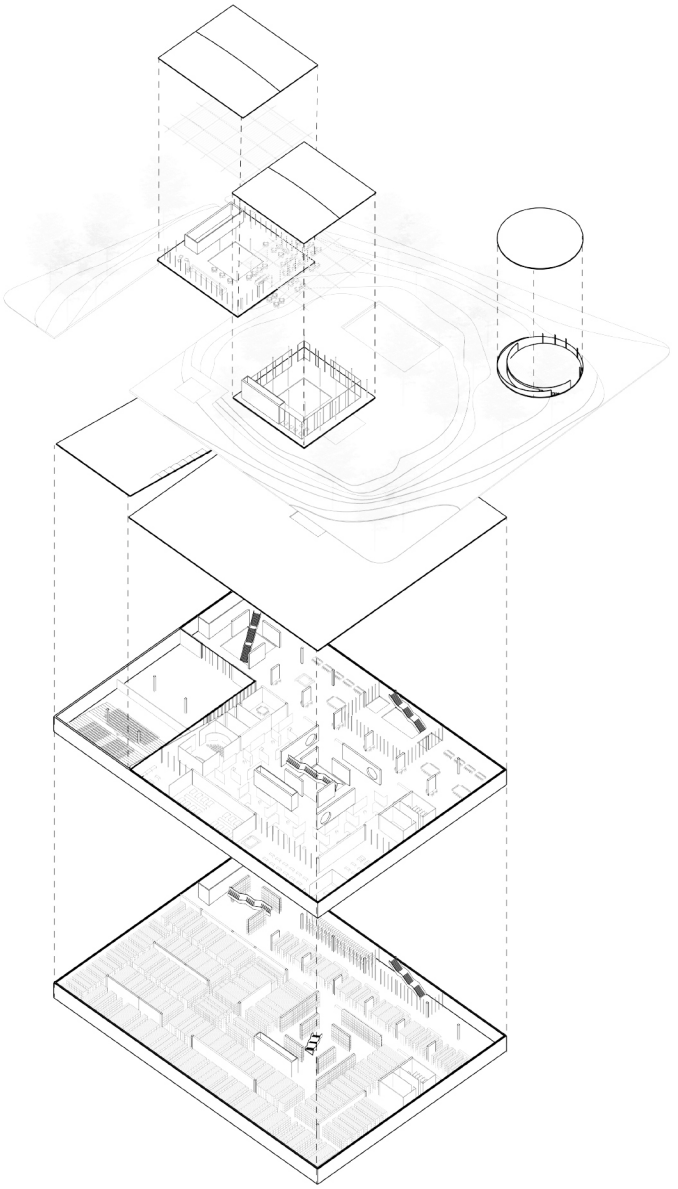


PROGRAM CONCEPT

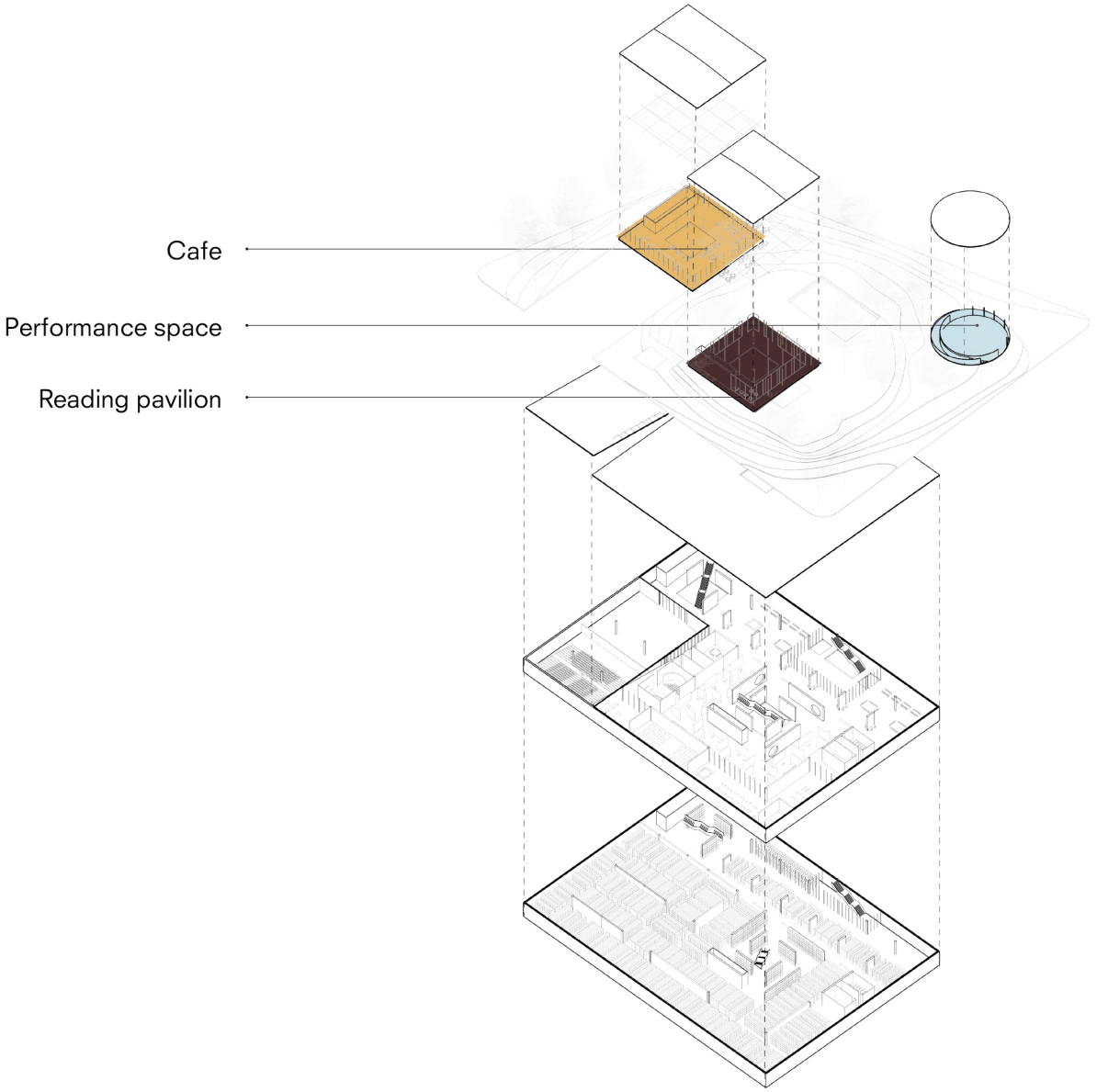
THE PARK

THE BOOK HUNT

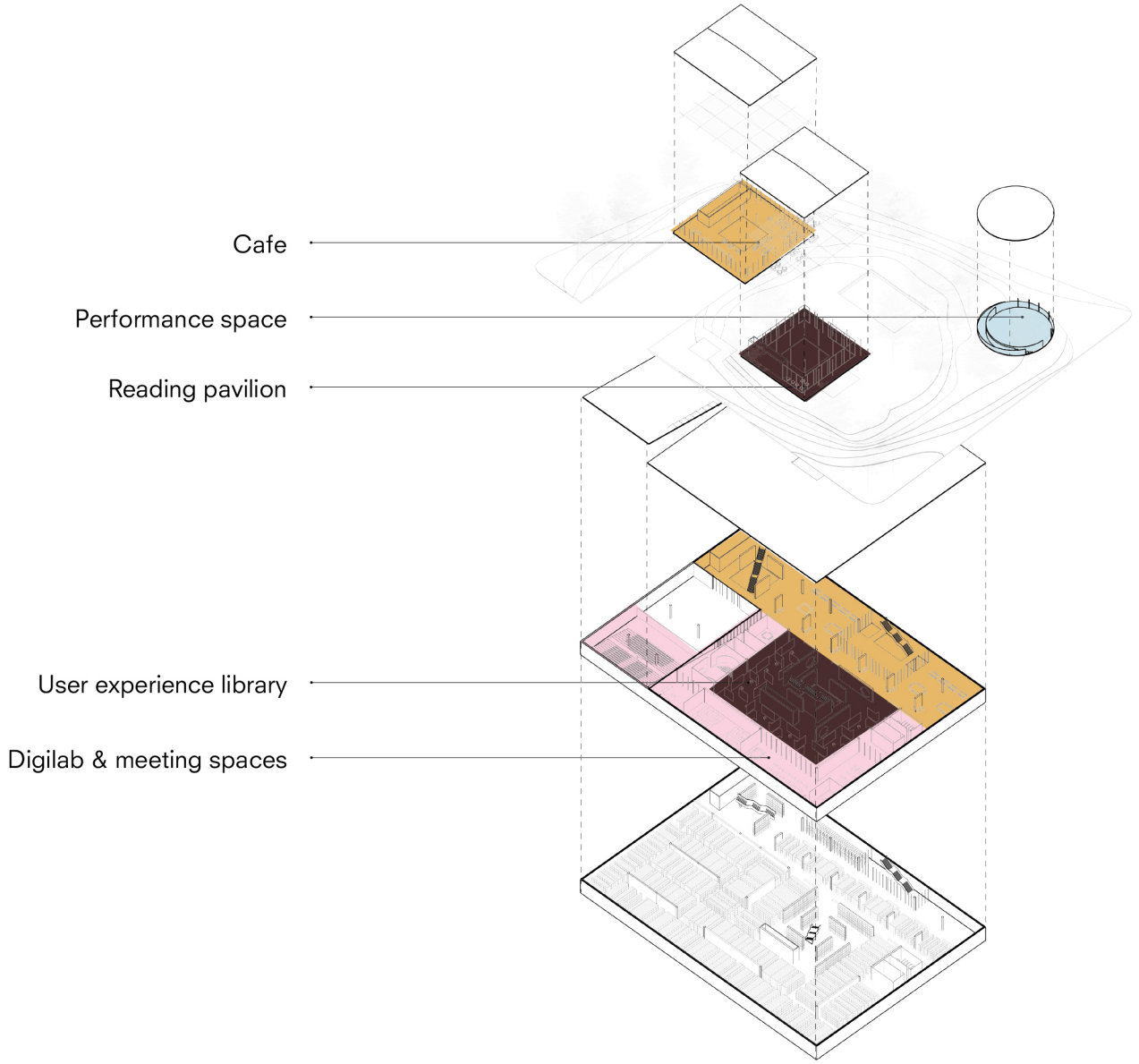
THE ARCHIVE



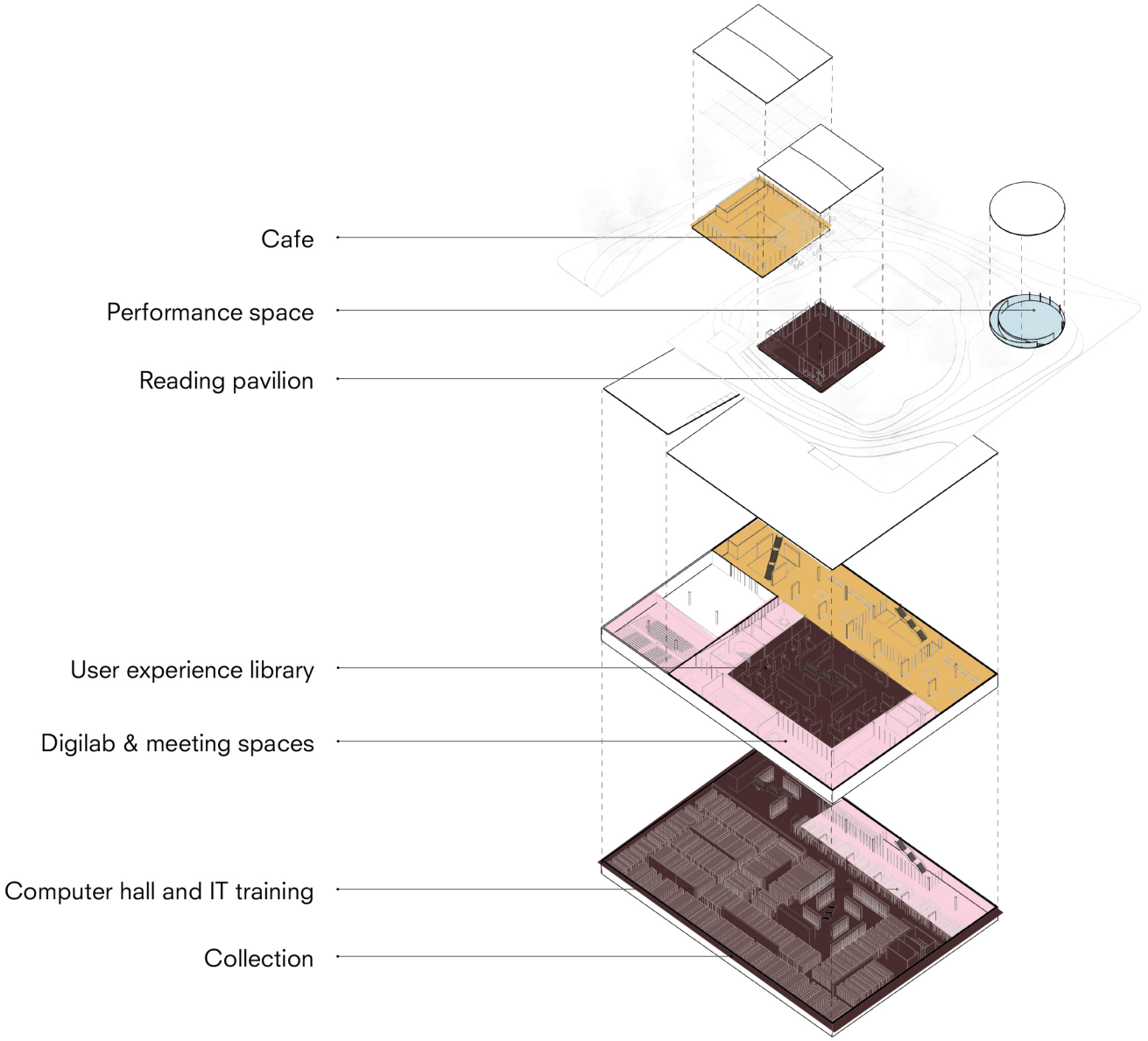
PROGRAM CONCEPT



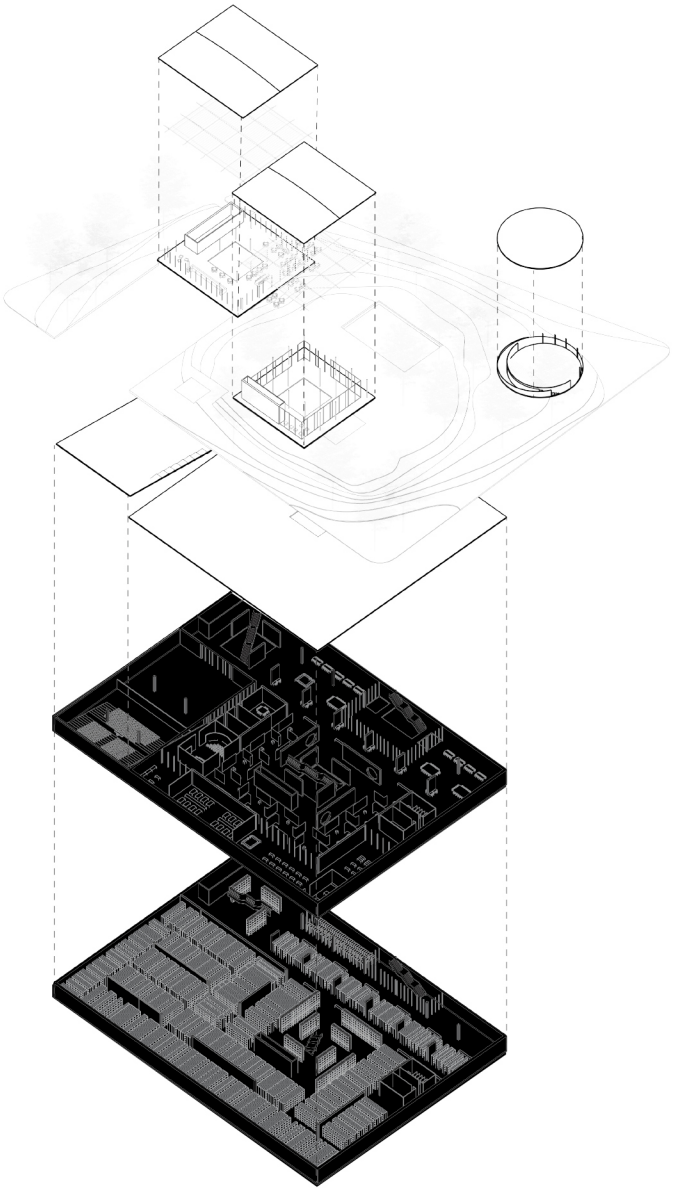
PROGRAM CONCEPT



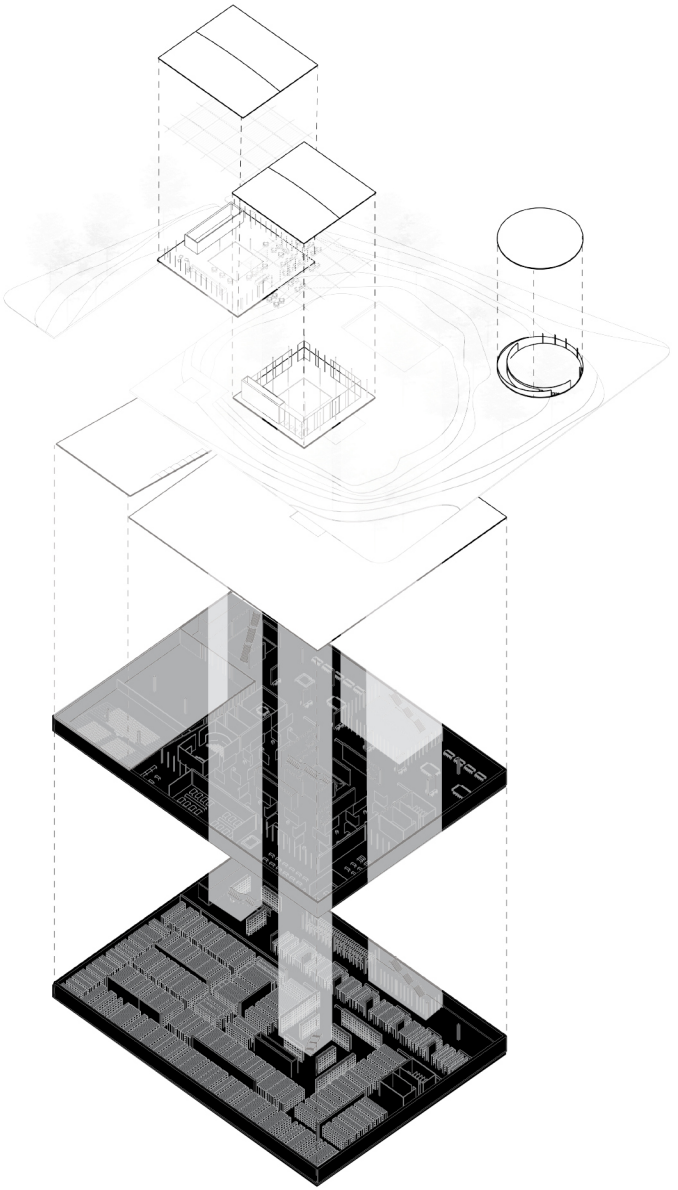
PROGRAM CONCEPT



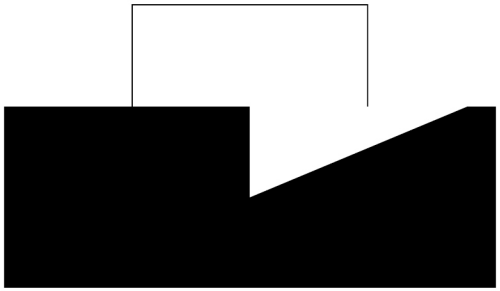
SPATIAL CONCEPT



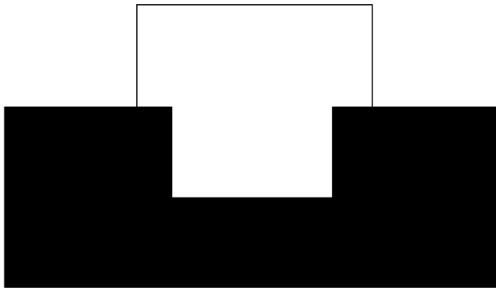
VERTICAL CONNECTIONS



VERTICAL CONNECTIONS



RAMP

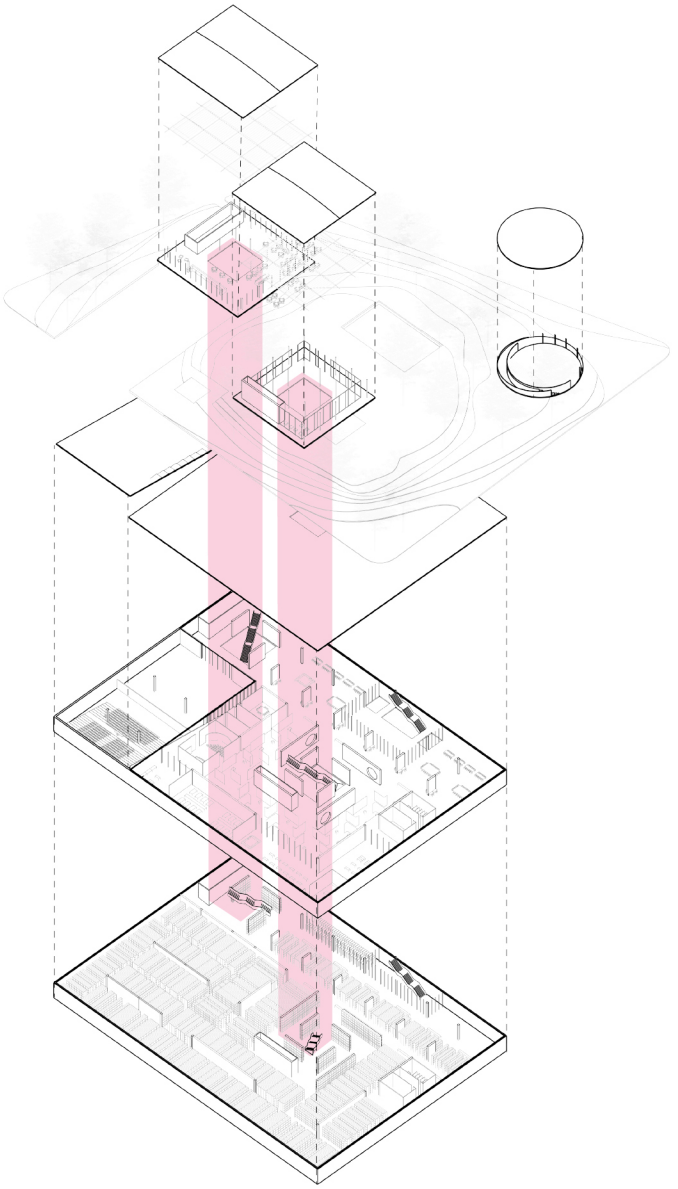


VOID

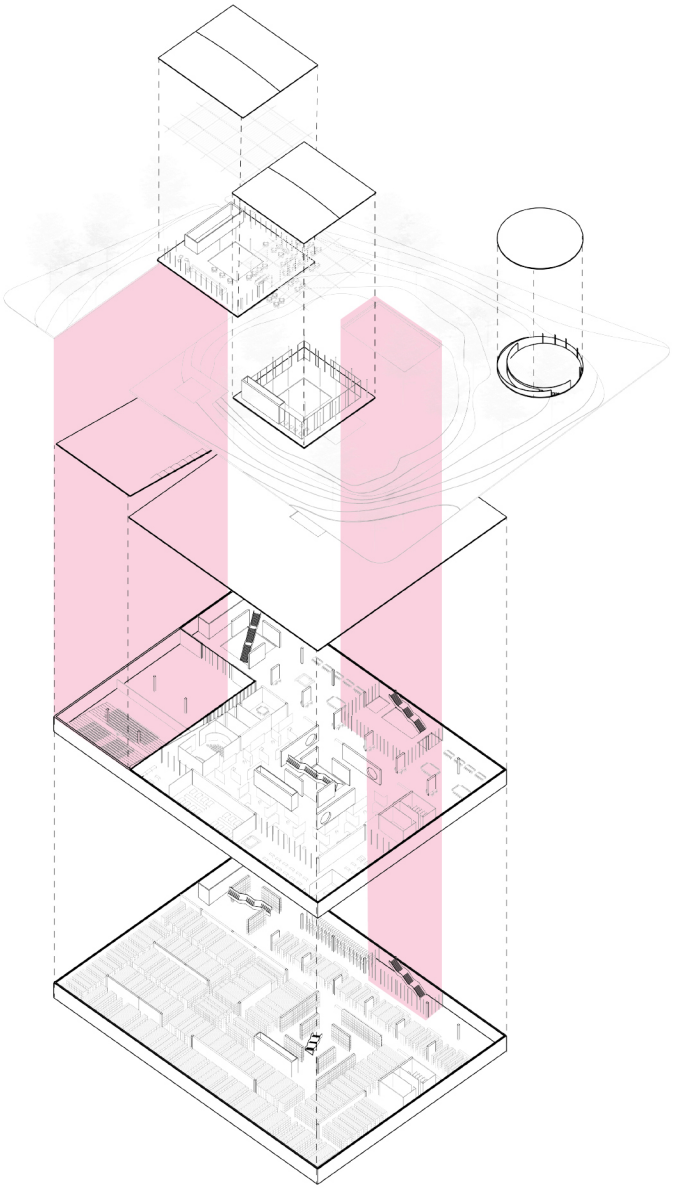


ATRIUM

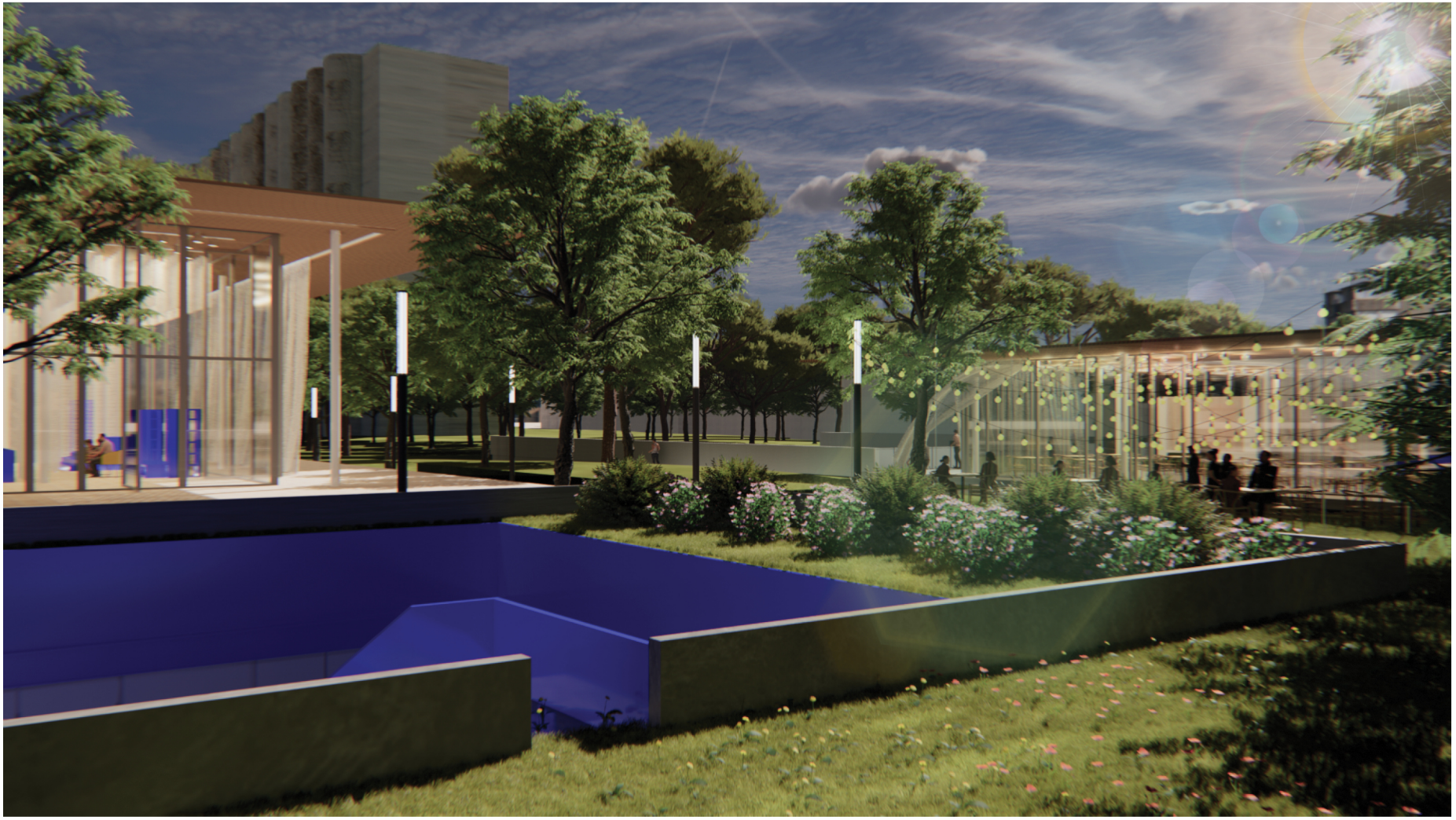
VERTICAL CONNECTIONS



VERTICAL CONNECTIONS



PARK AND SILOS VIEW

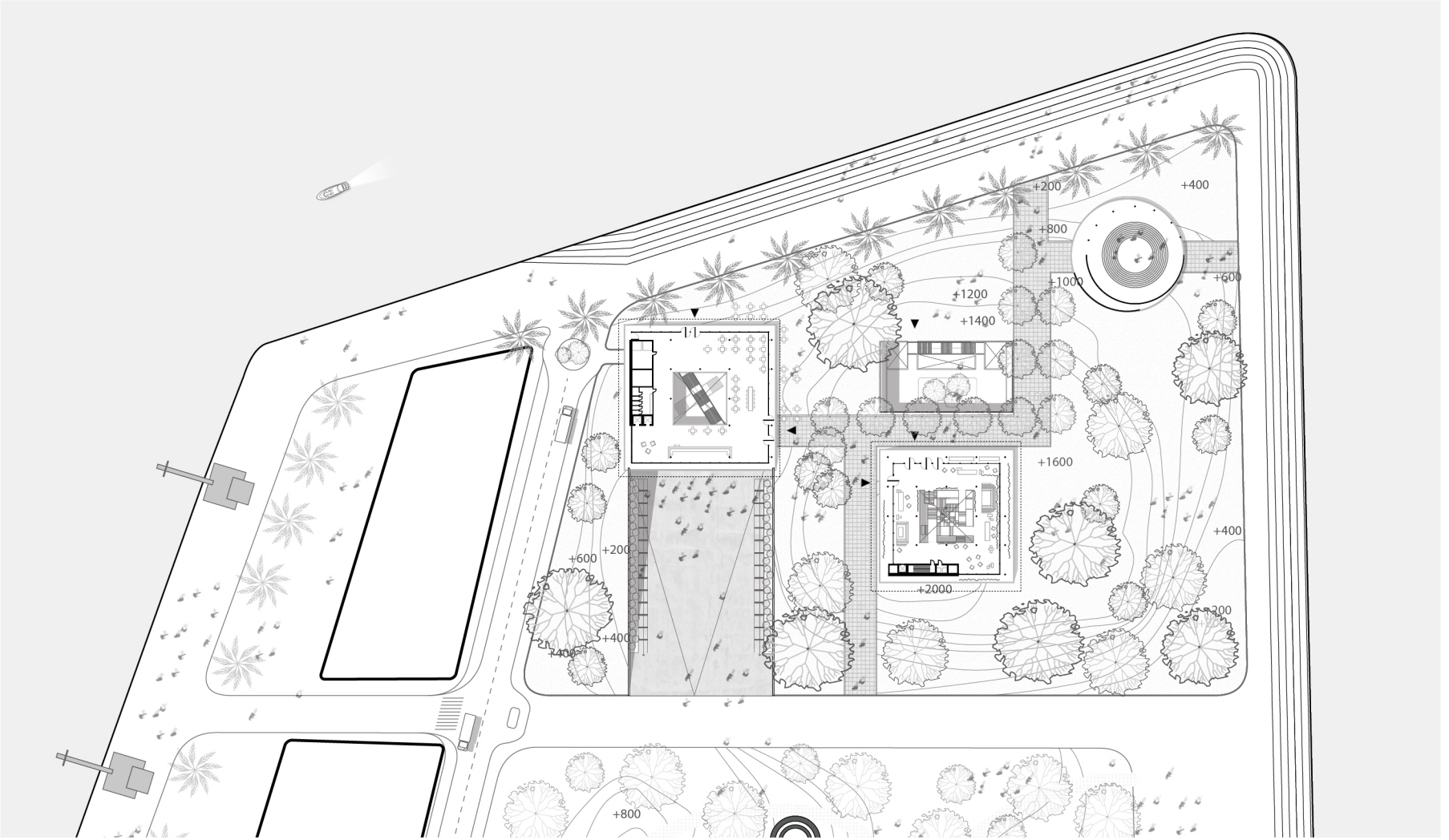


WATERFRONT WALK



SPATIAL IMPLEMENTATION

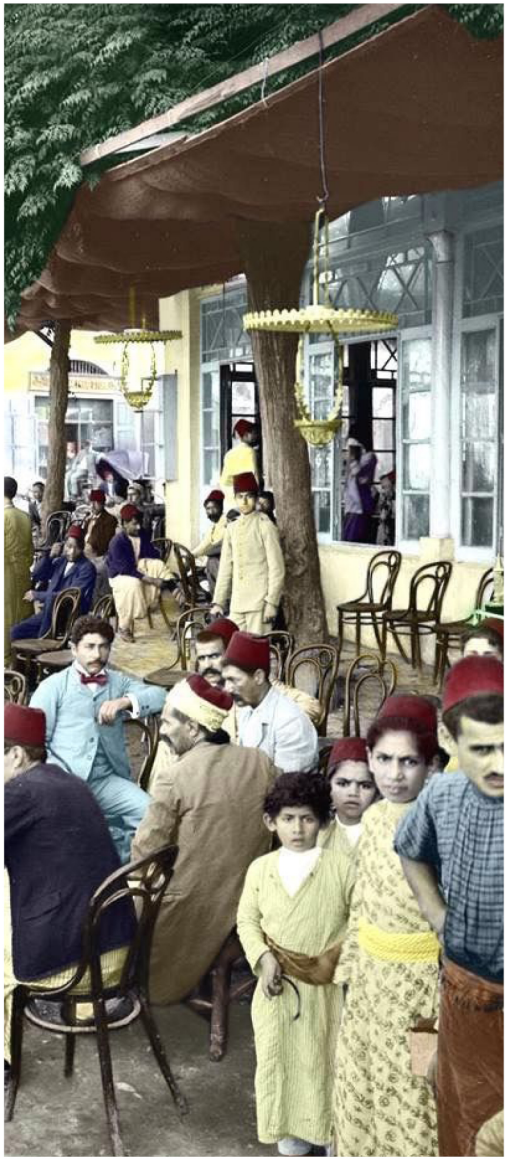
GROUND LEVEL



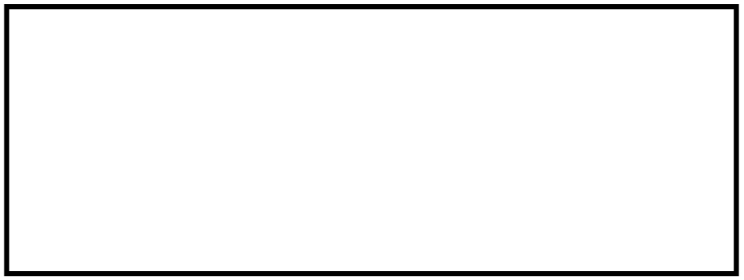
ARCHITECTURAL ELEMENTS



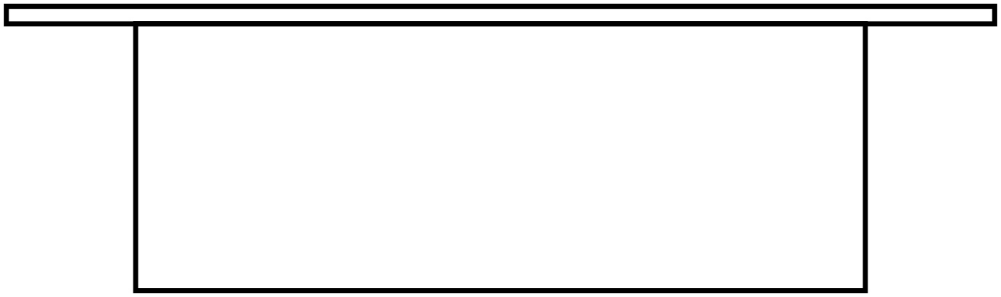




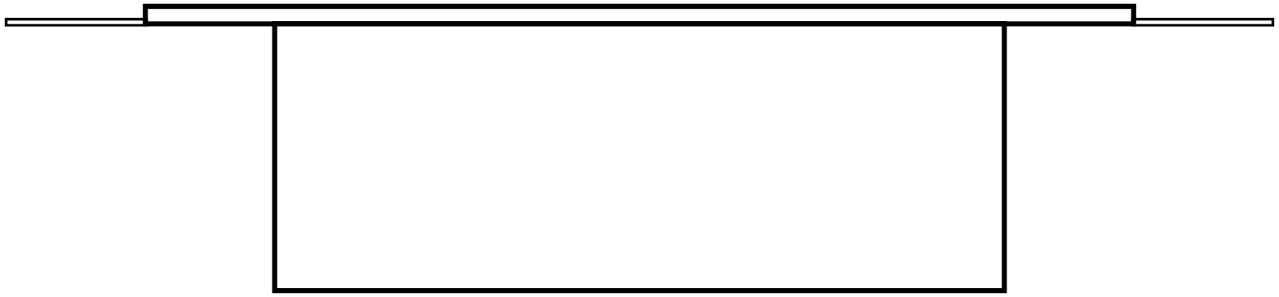
FACADES PAVILIONS



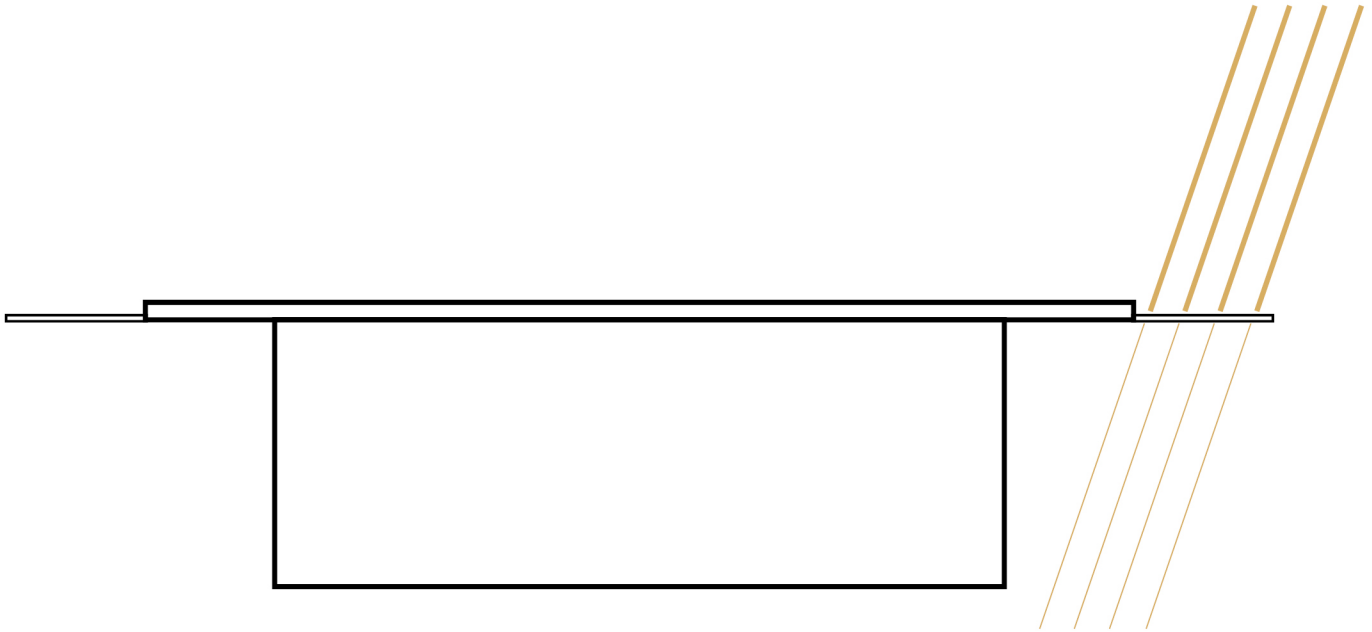
THIN ROOF



SUN SHADING CANOPY



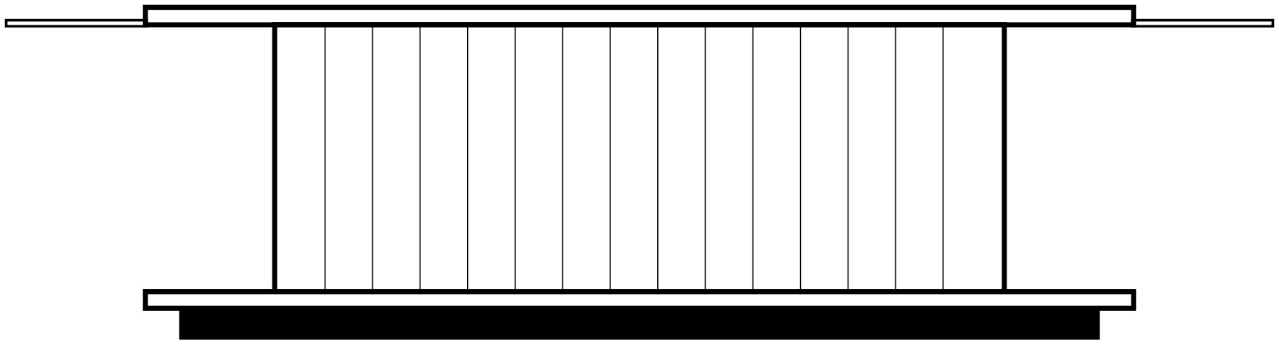
SUN SHADING CANOPY



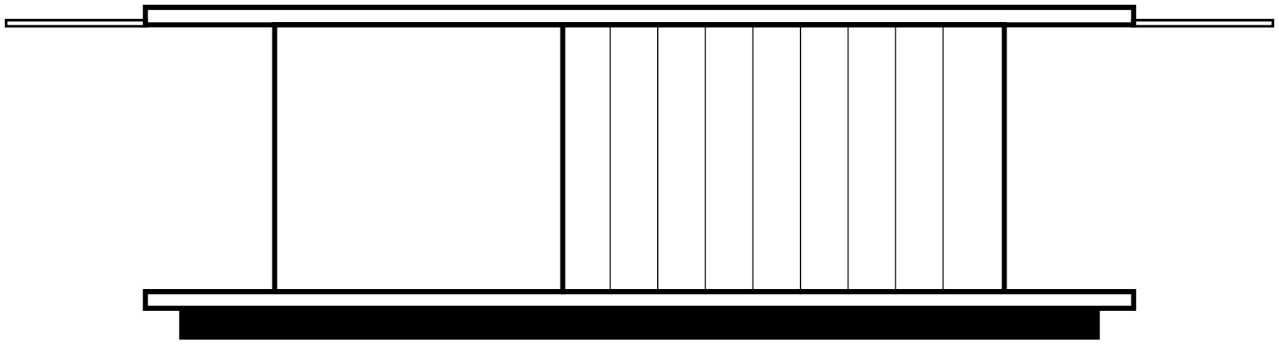
FLOATING



TRANSPARENT



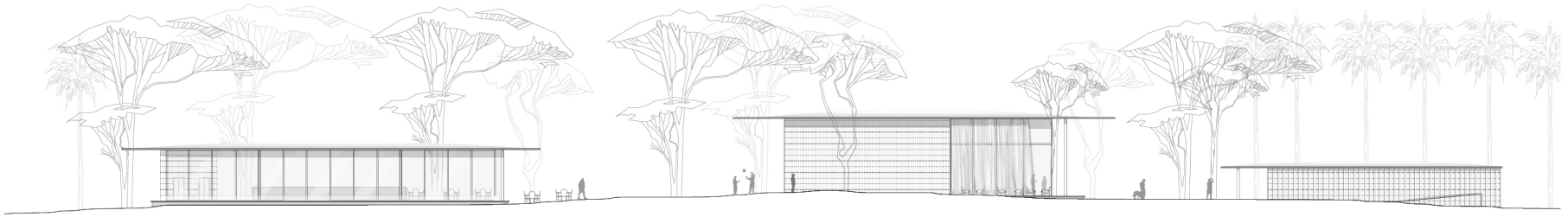
SOLID WALL

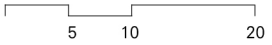


CURTAINS



SOUTHERN ELEVATION



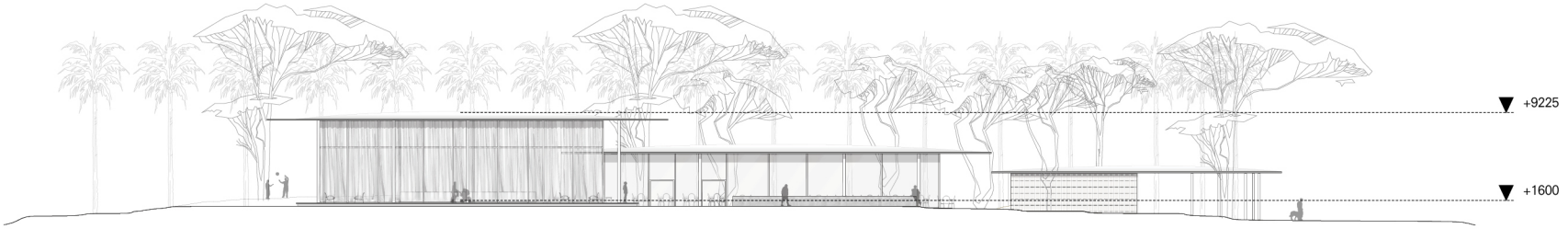


NORTHERN ELEVATION



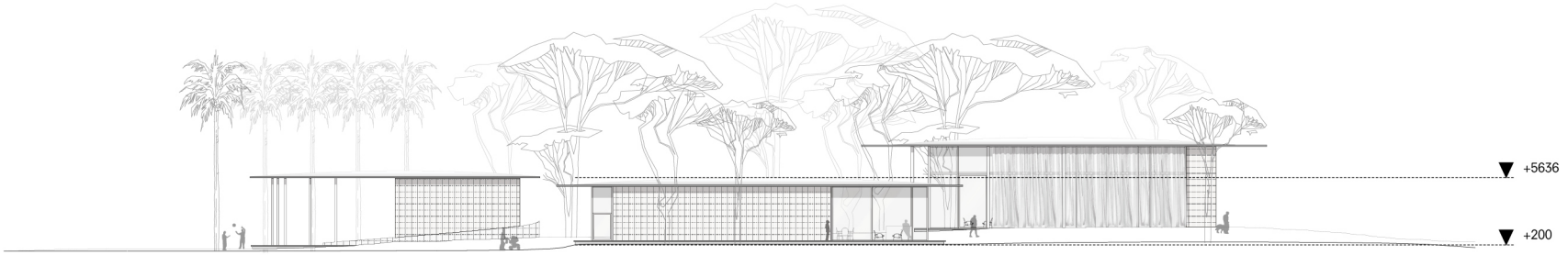
5 10 20

EASTERN ELEVATION



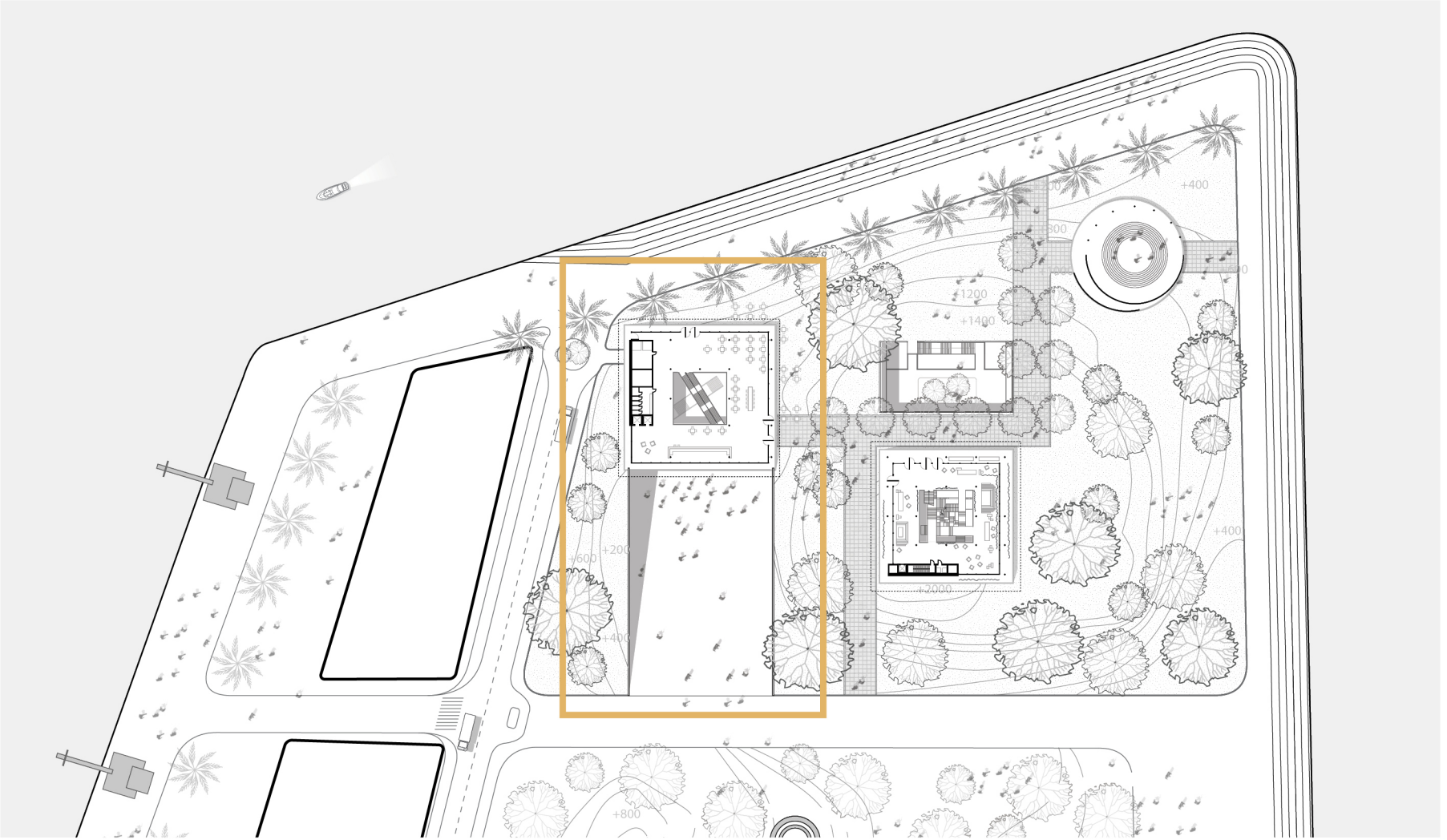
5 10 20

WESTERN ELEVATION

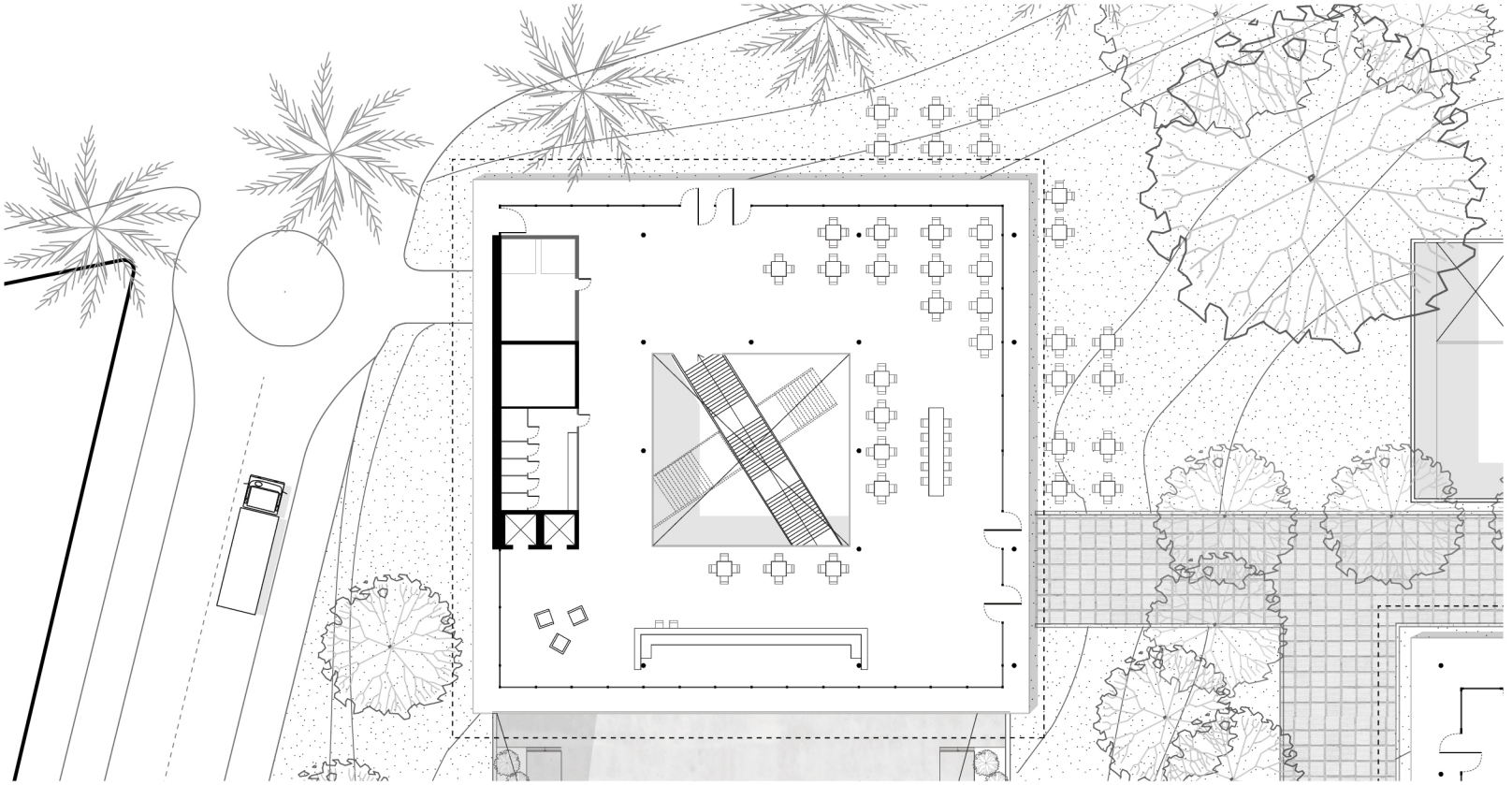


5 10 20

GROUND LEVEL



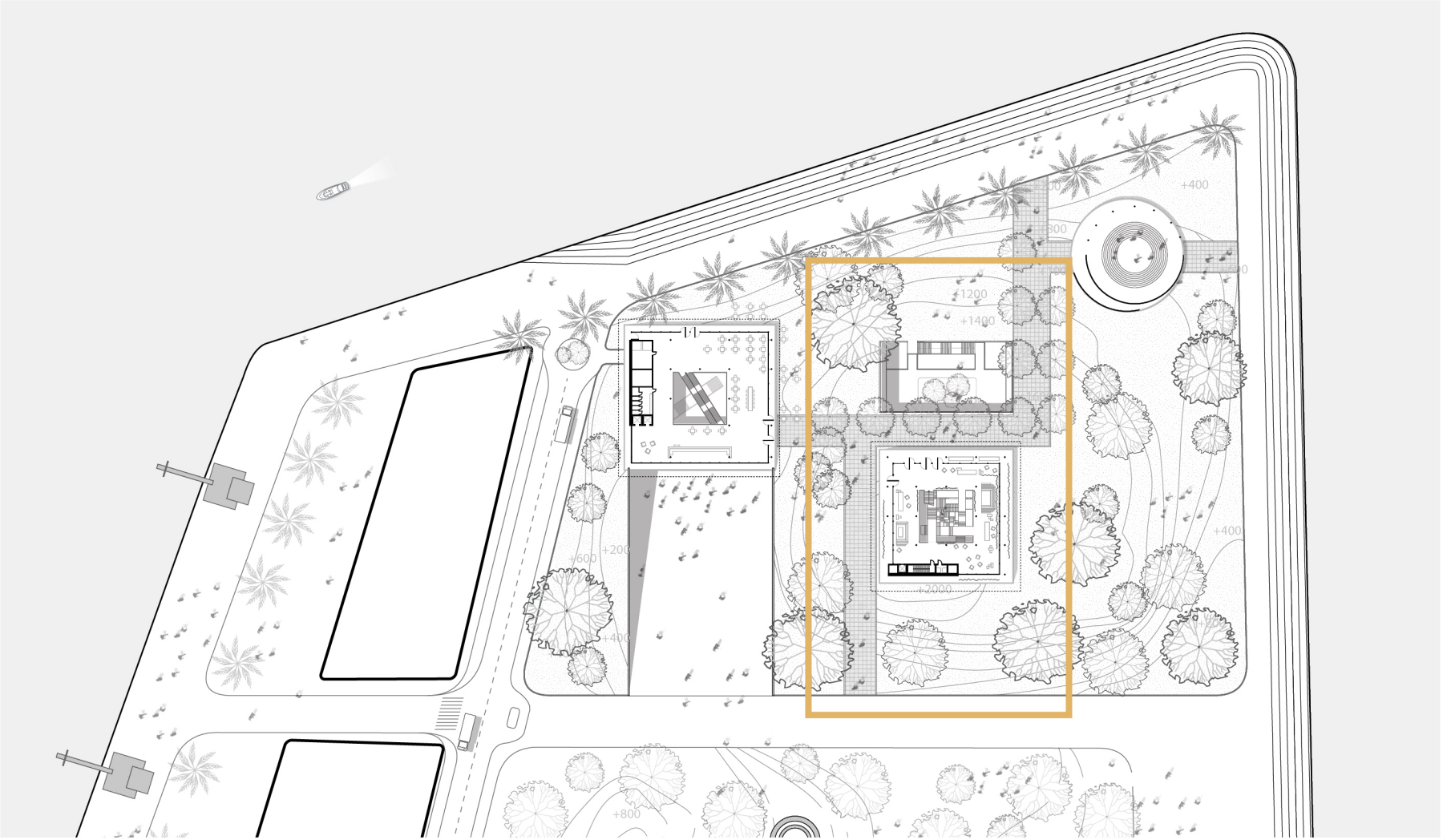
CAFE



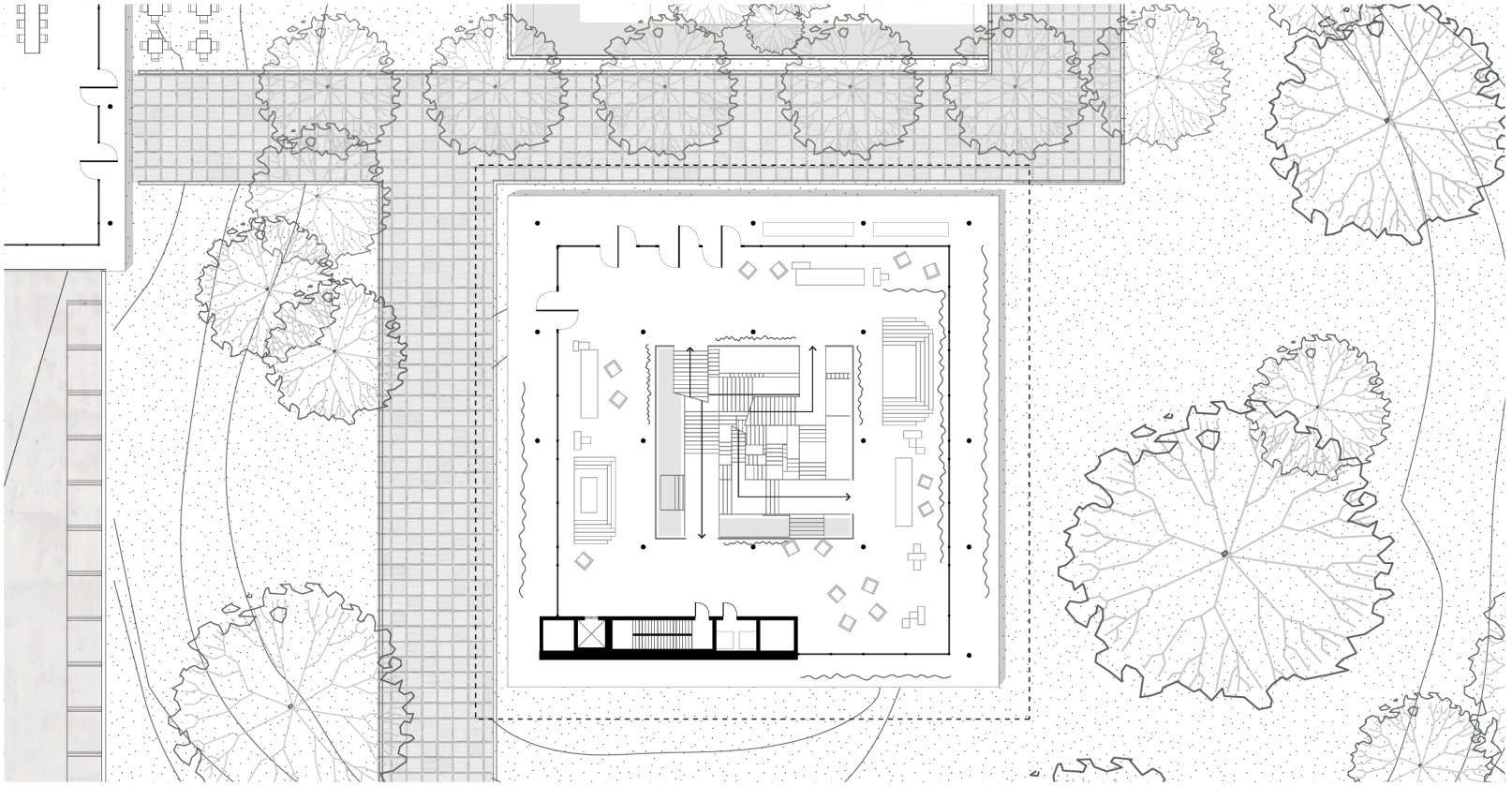
CAFE AND MAIN ENTRANCE



GROUND LEVEL



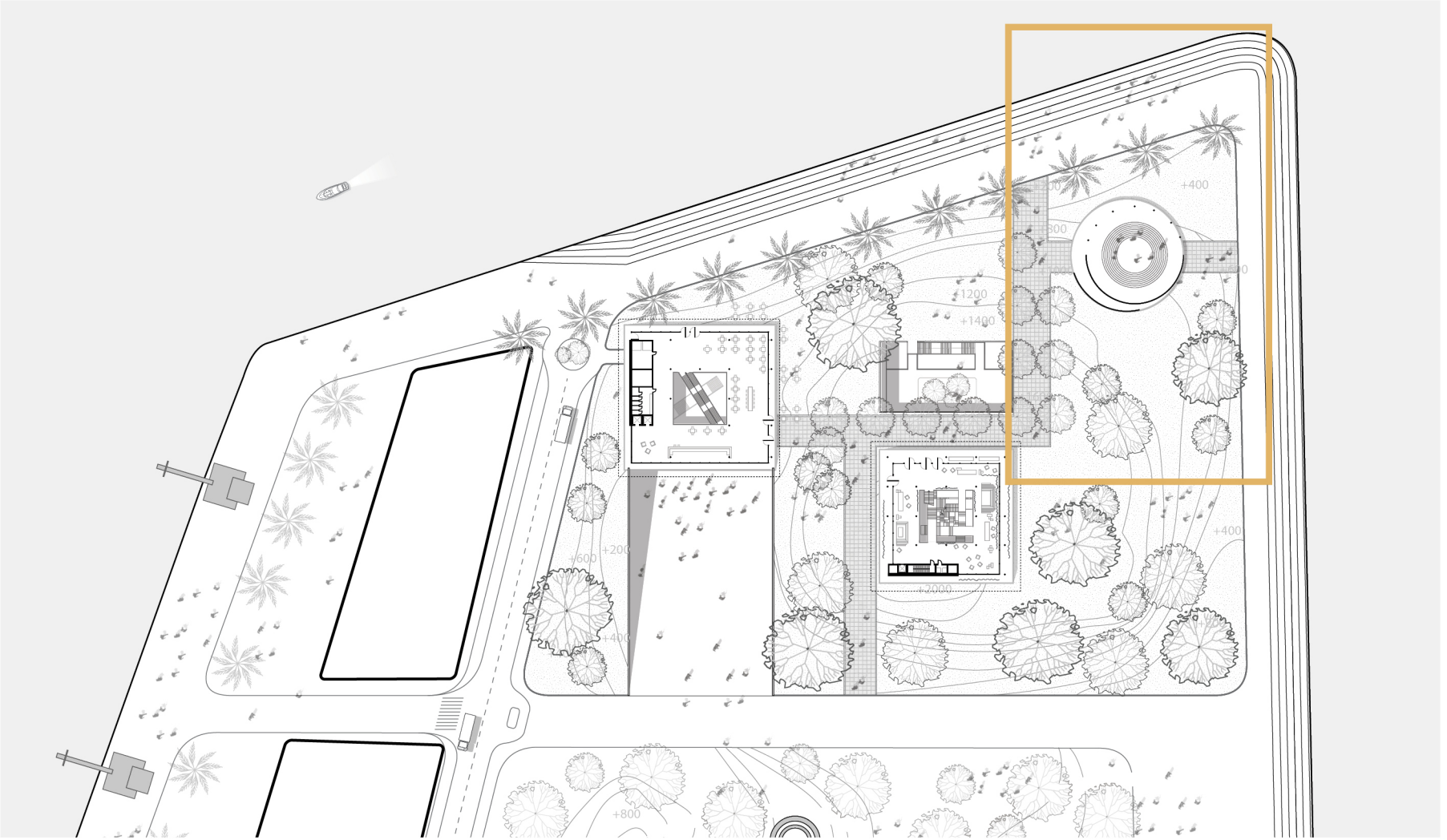
READING PAVILION



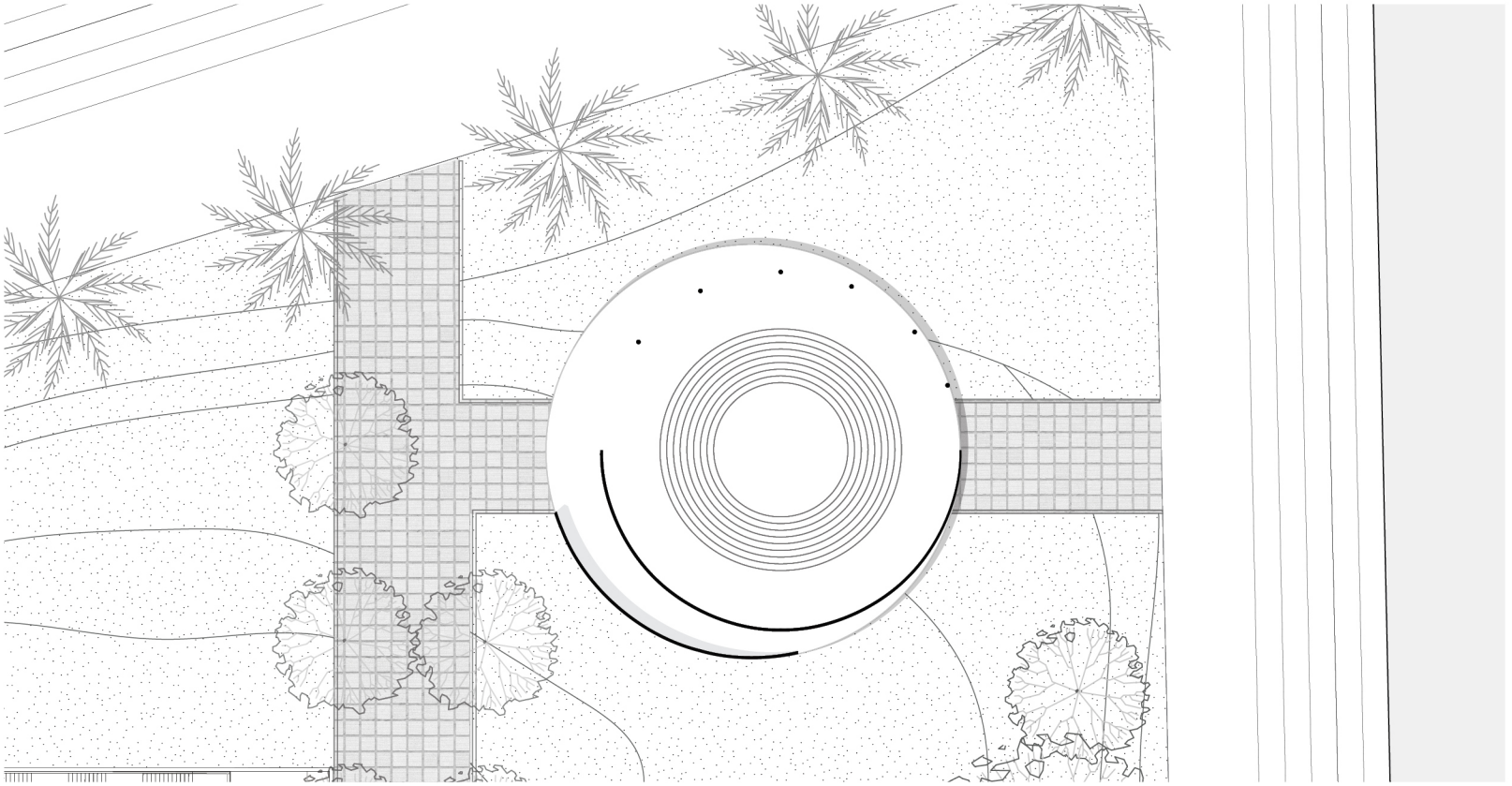
READING PAVILION



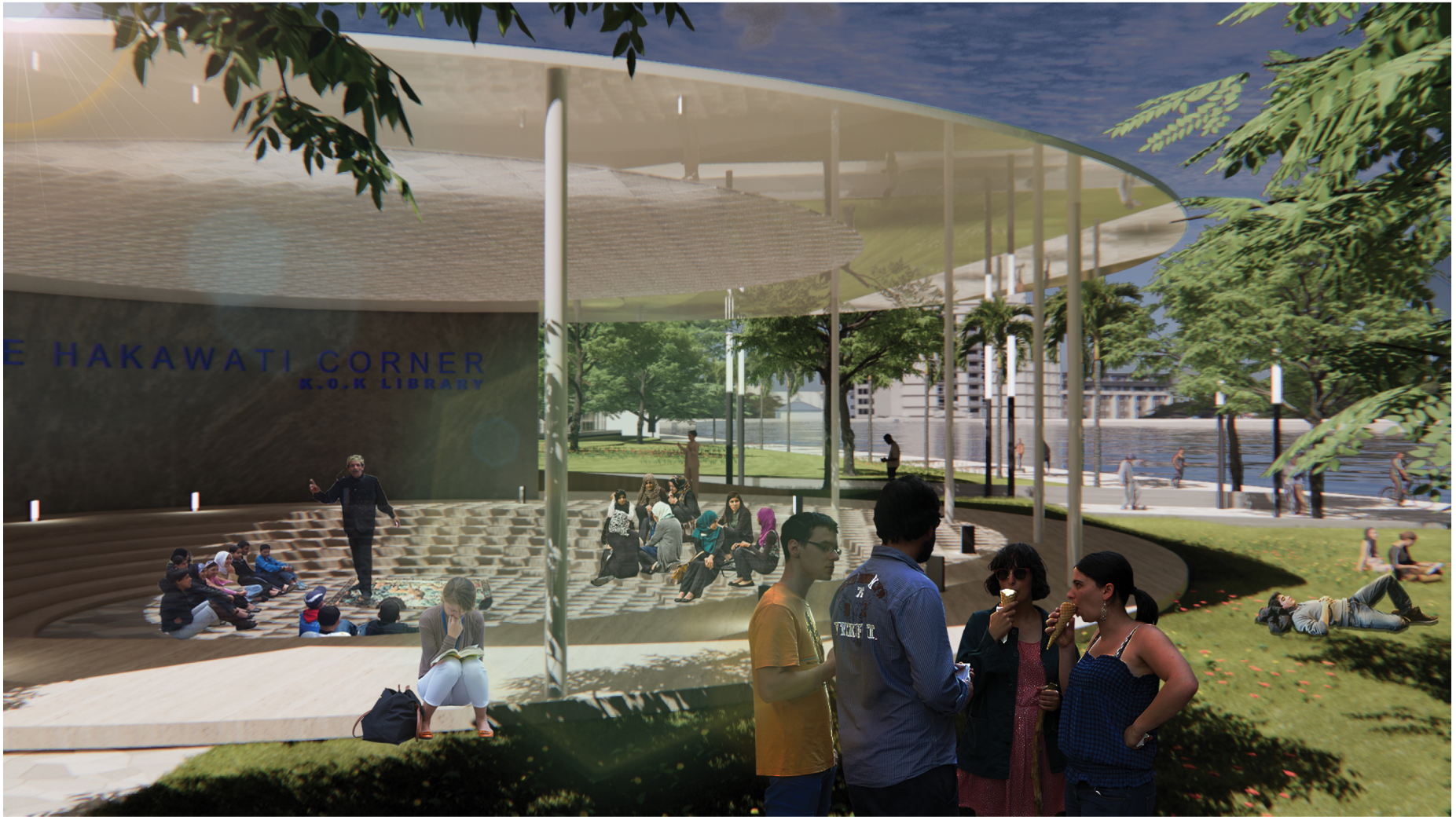
GROUND LEVEL



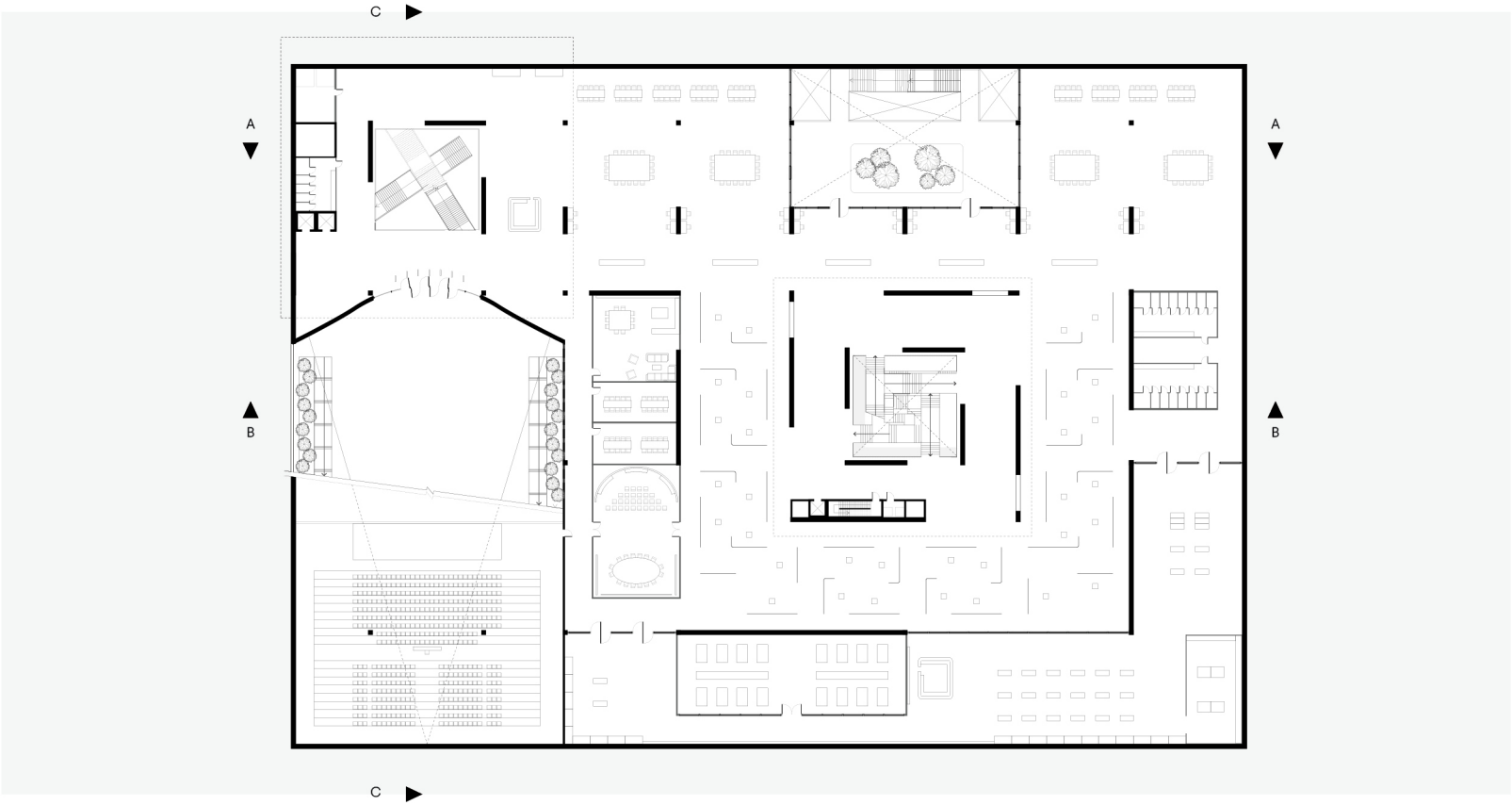
CANOPY



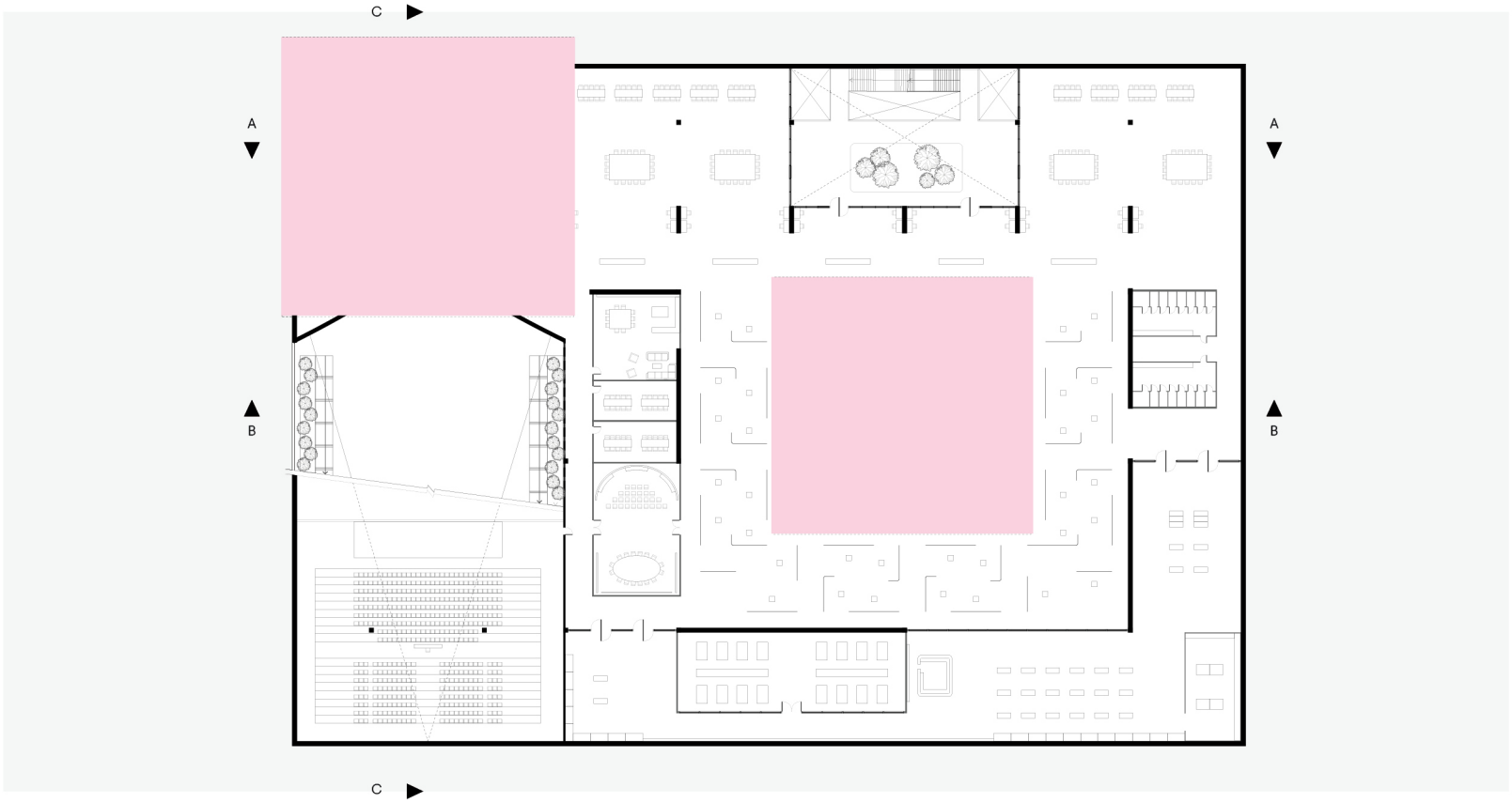
HAKAWATI CORNER



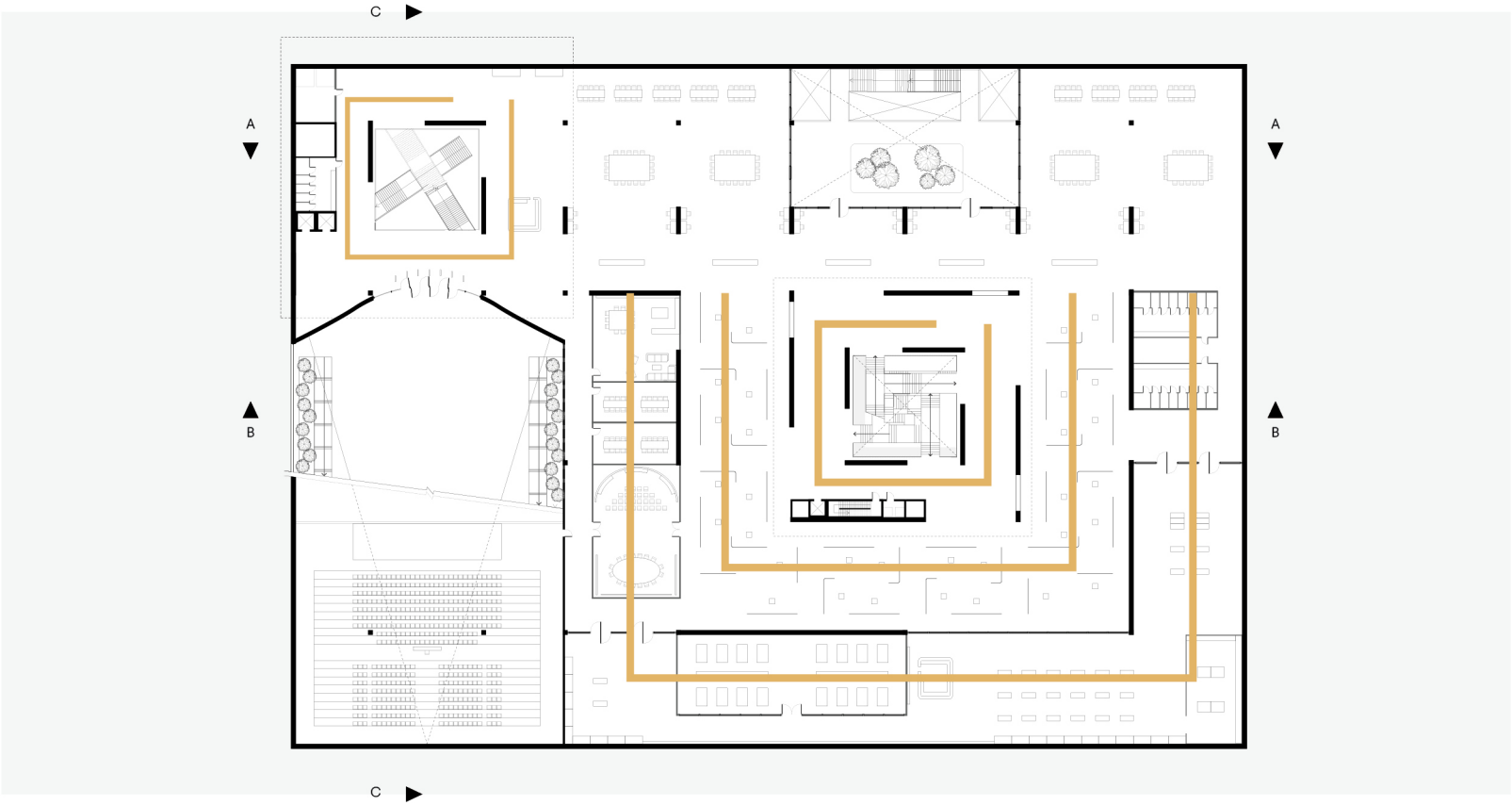
GROUND LEVEL -1



GROUND LEVEL -1



GROUND LEVEL -1



INSPIRATION

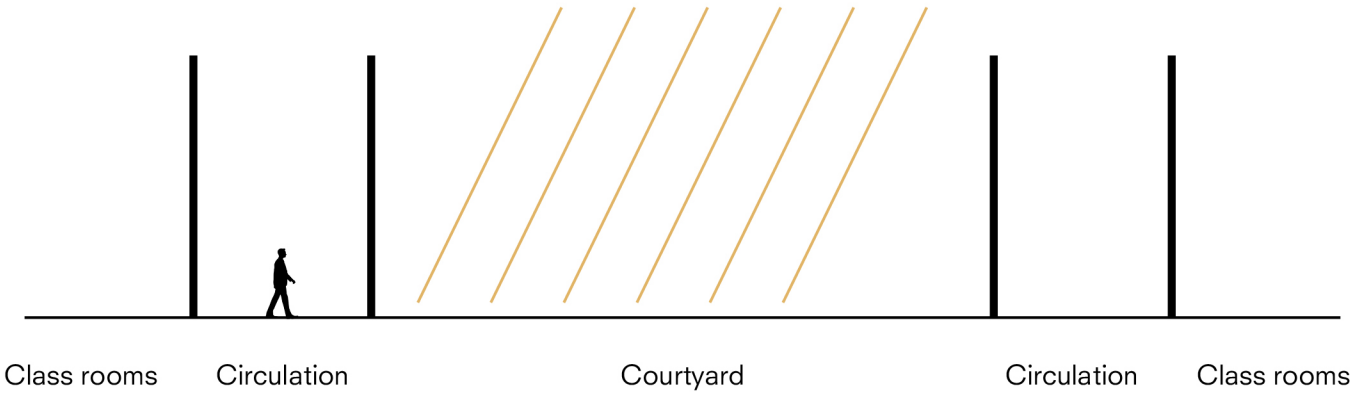




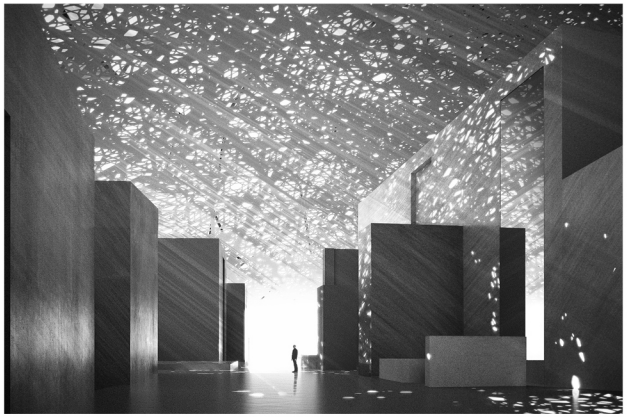




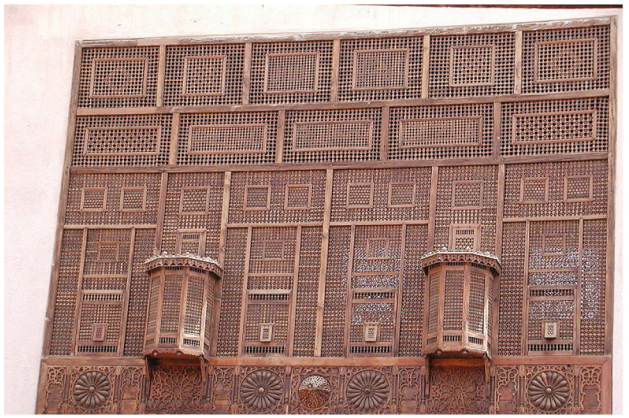
INSPIRATION



MASHRABIYA

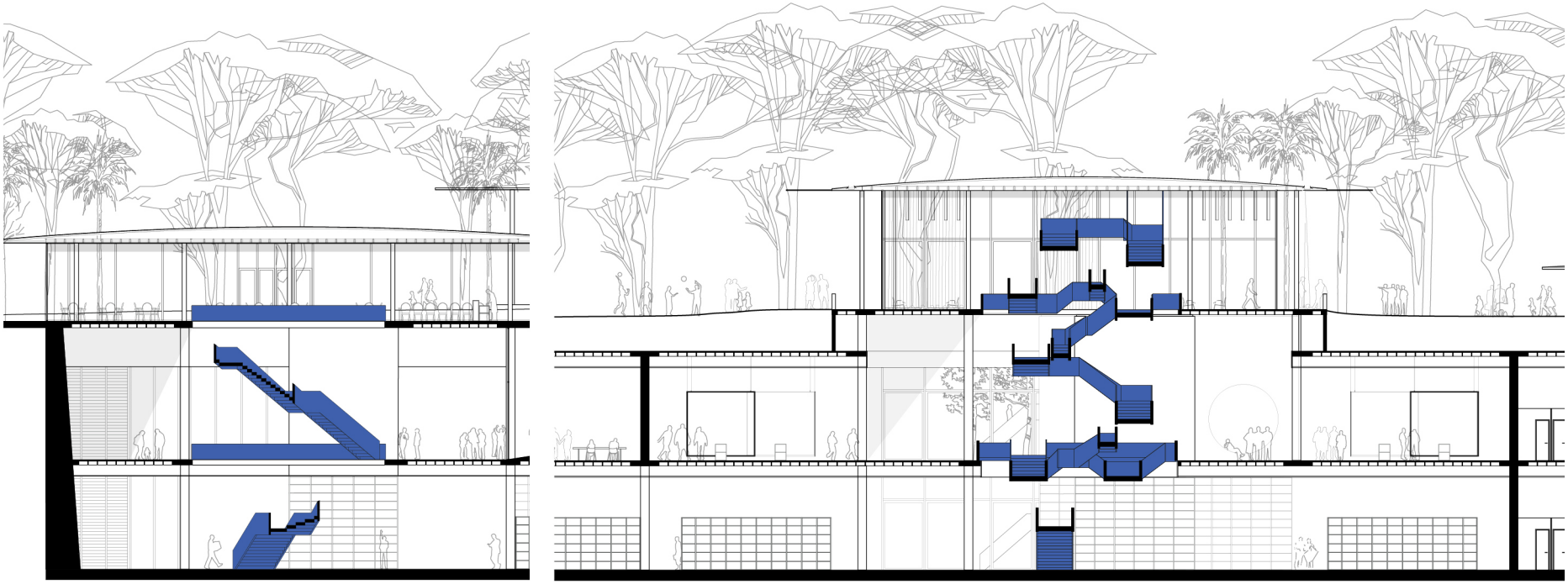




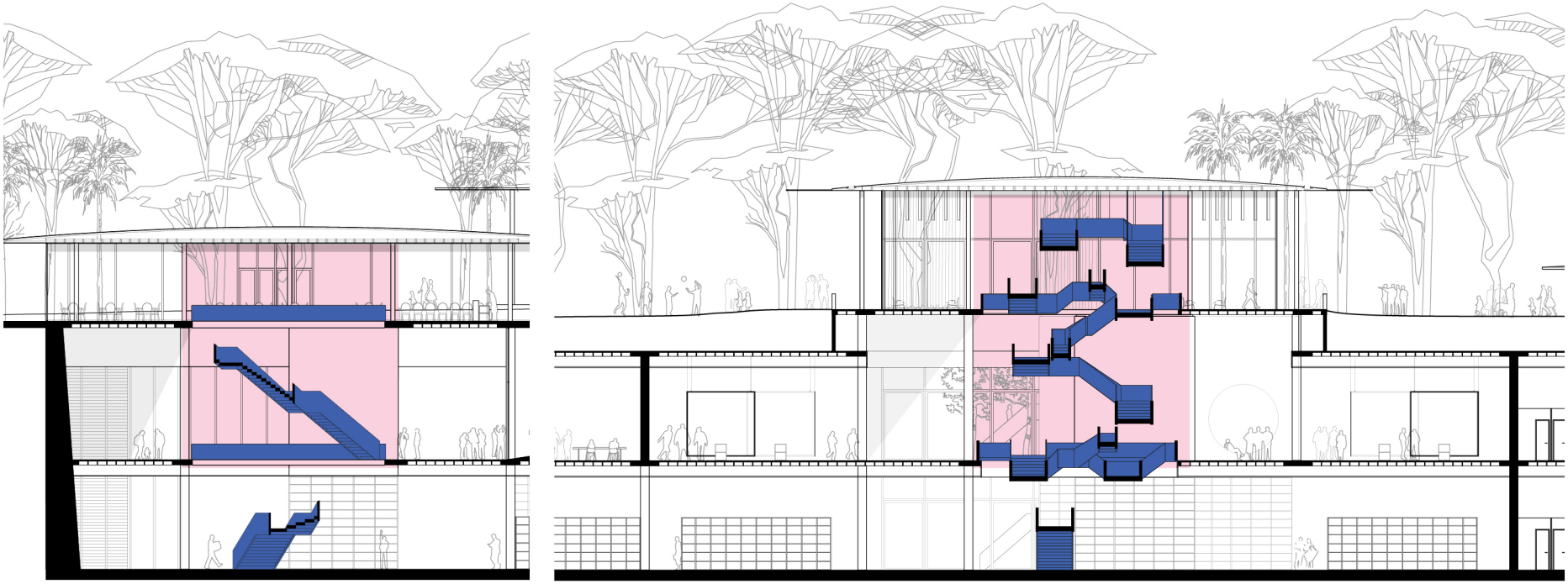




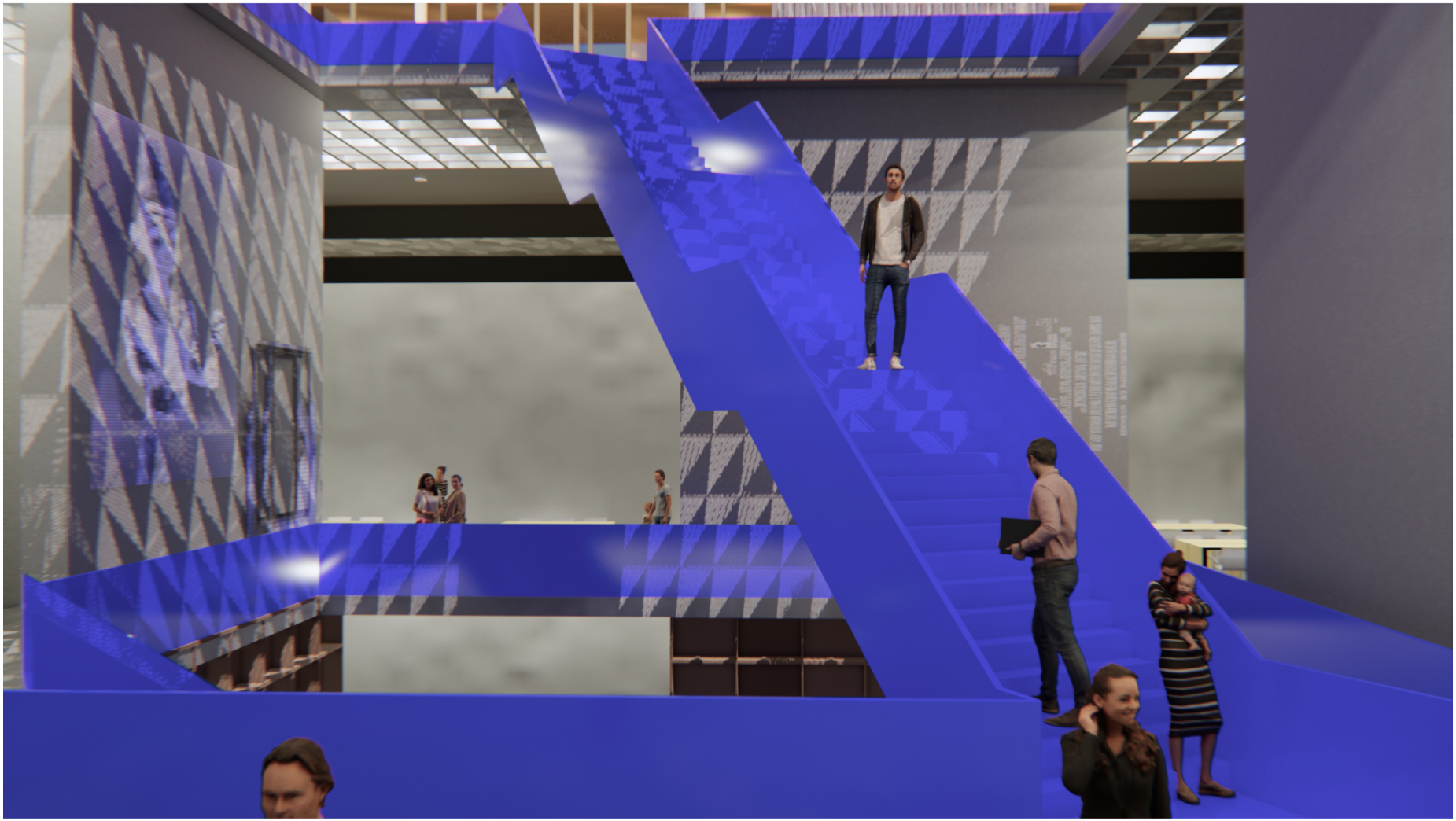
SKYLIGHT



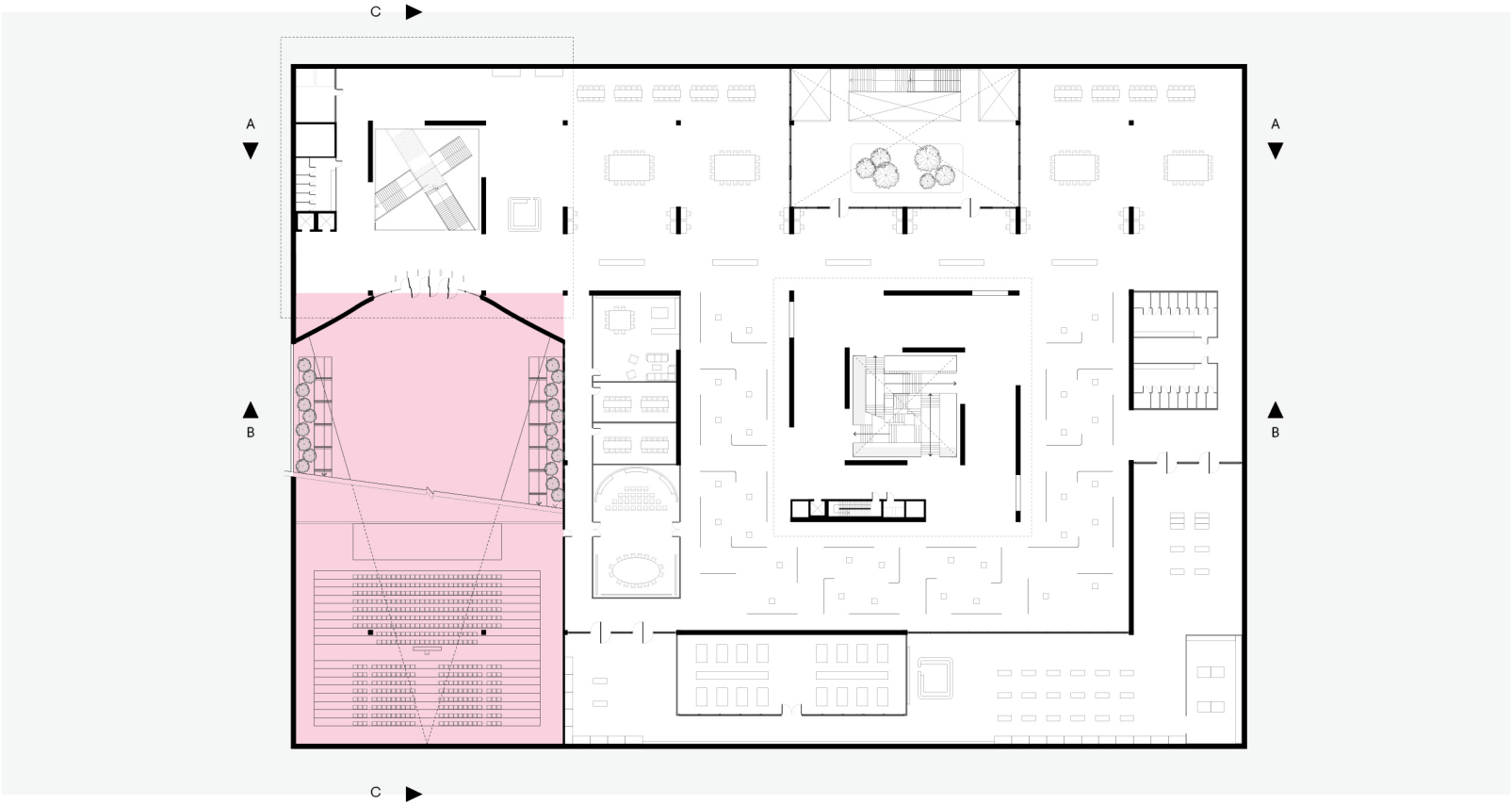
SKYLIGHT



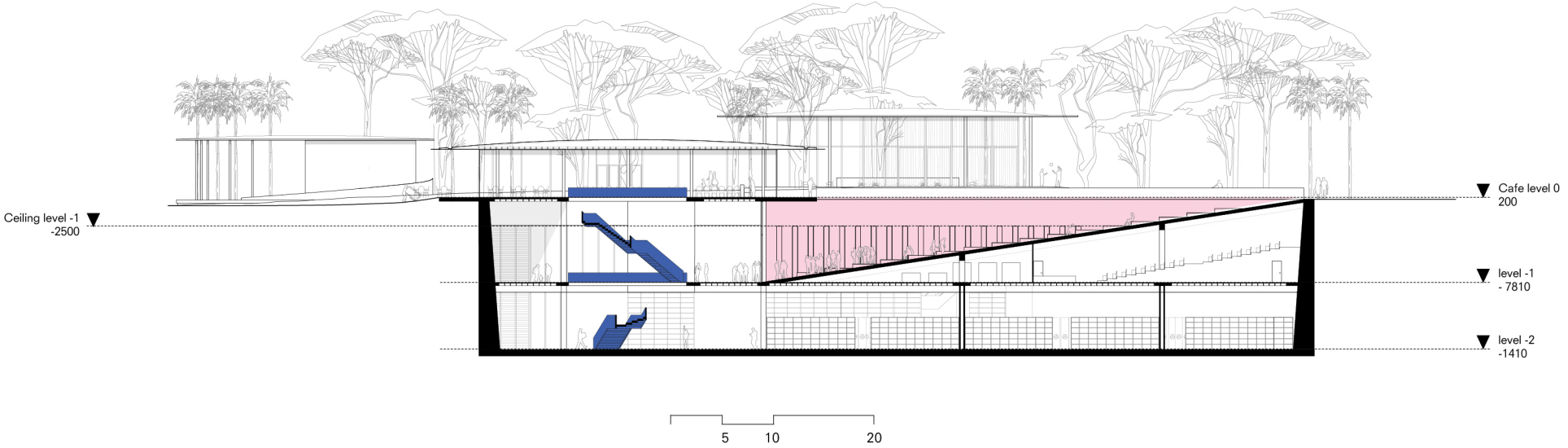
CAFE STAIRCASES



MAIN ENTRANCE



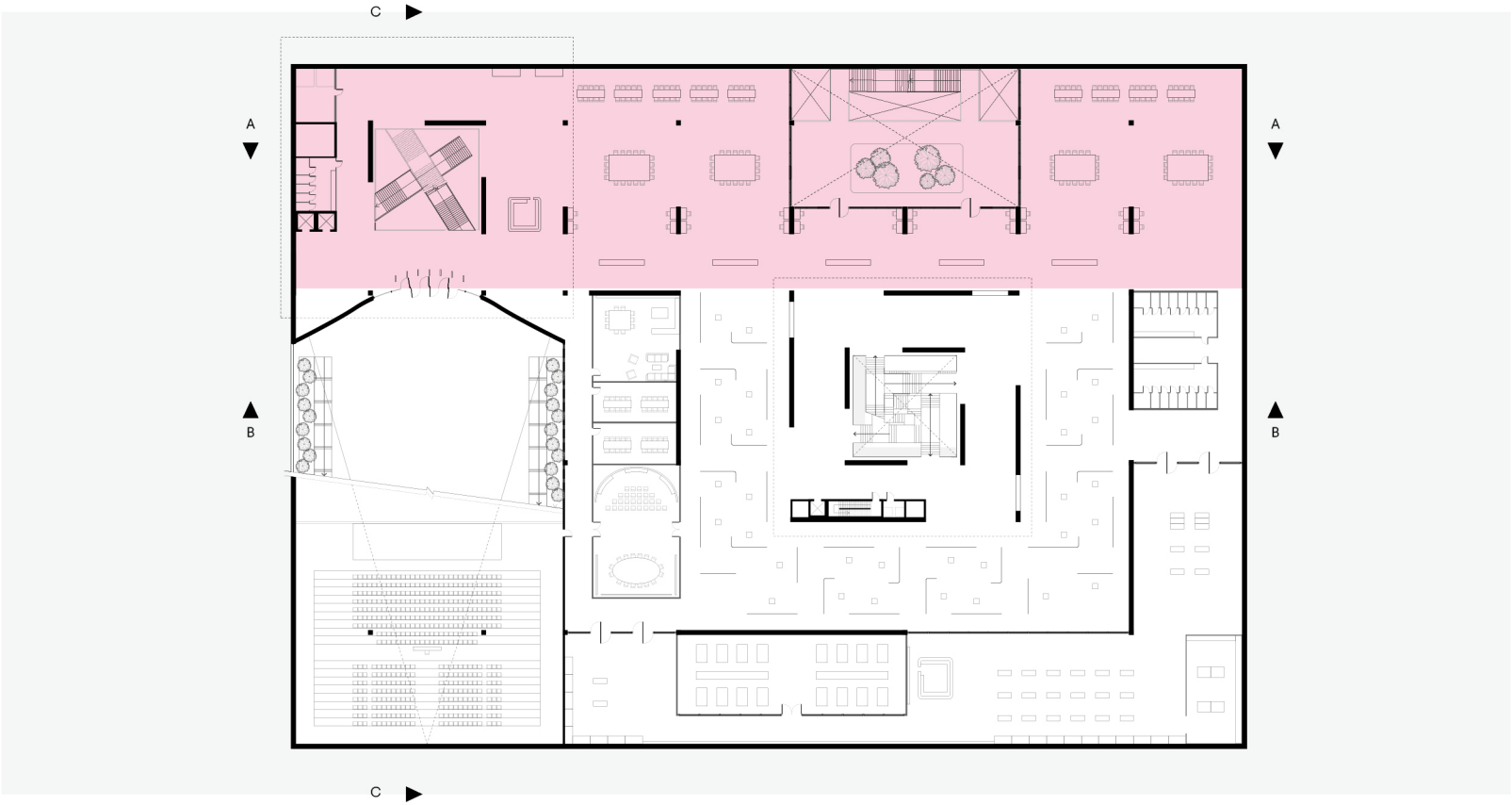
MAIN ENTRANCE



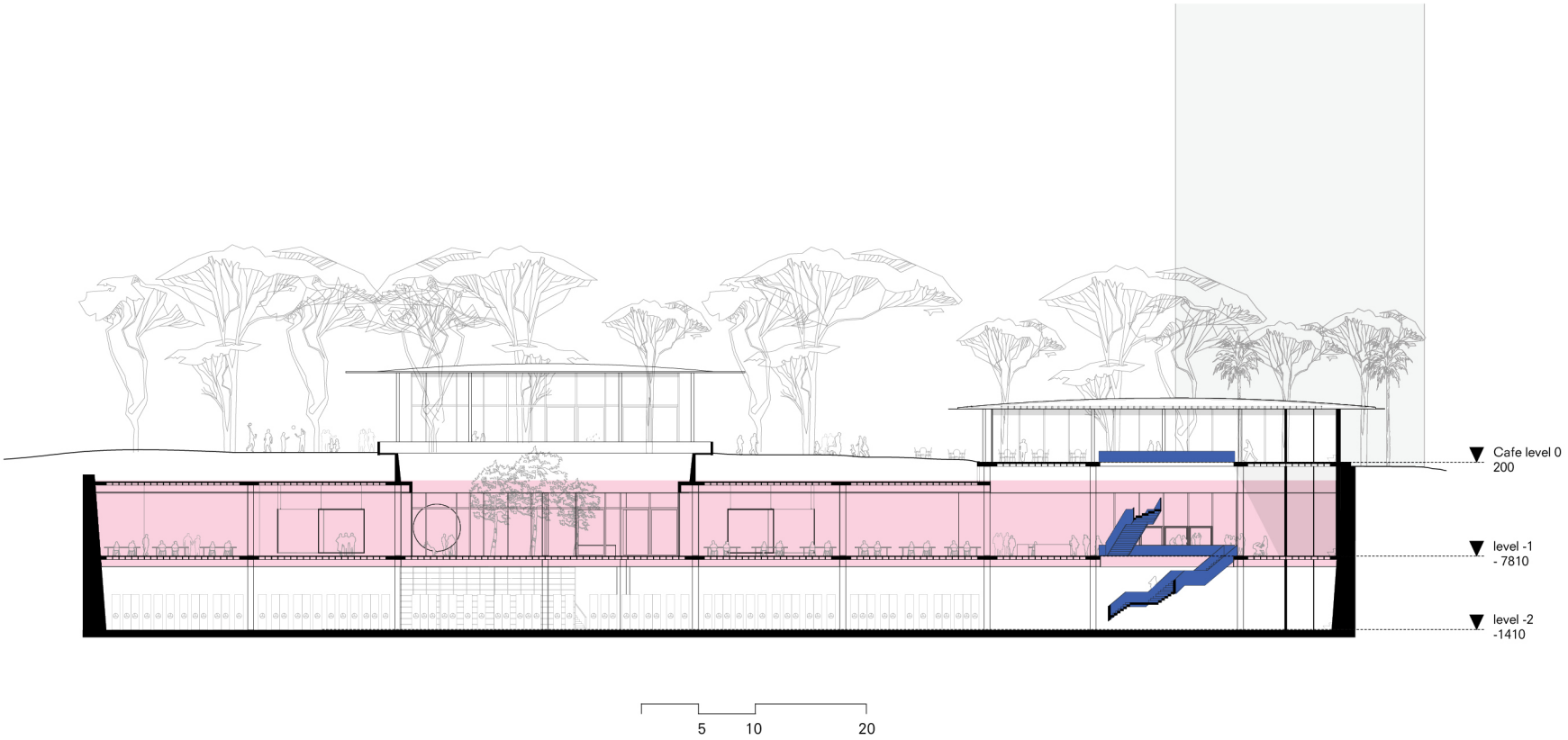
MAIN ENTRANCE



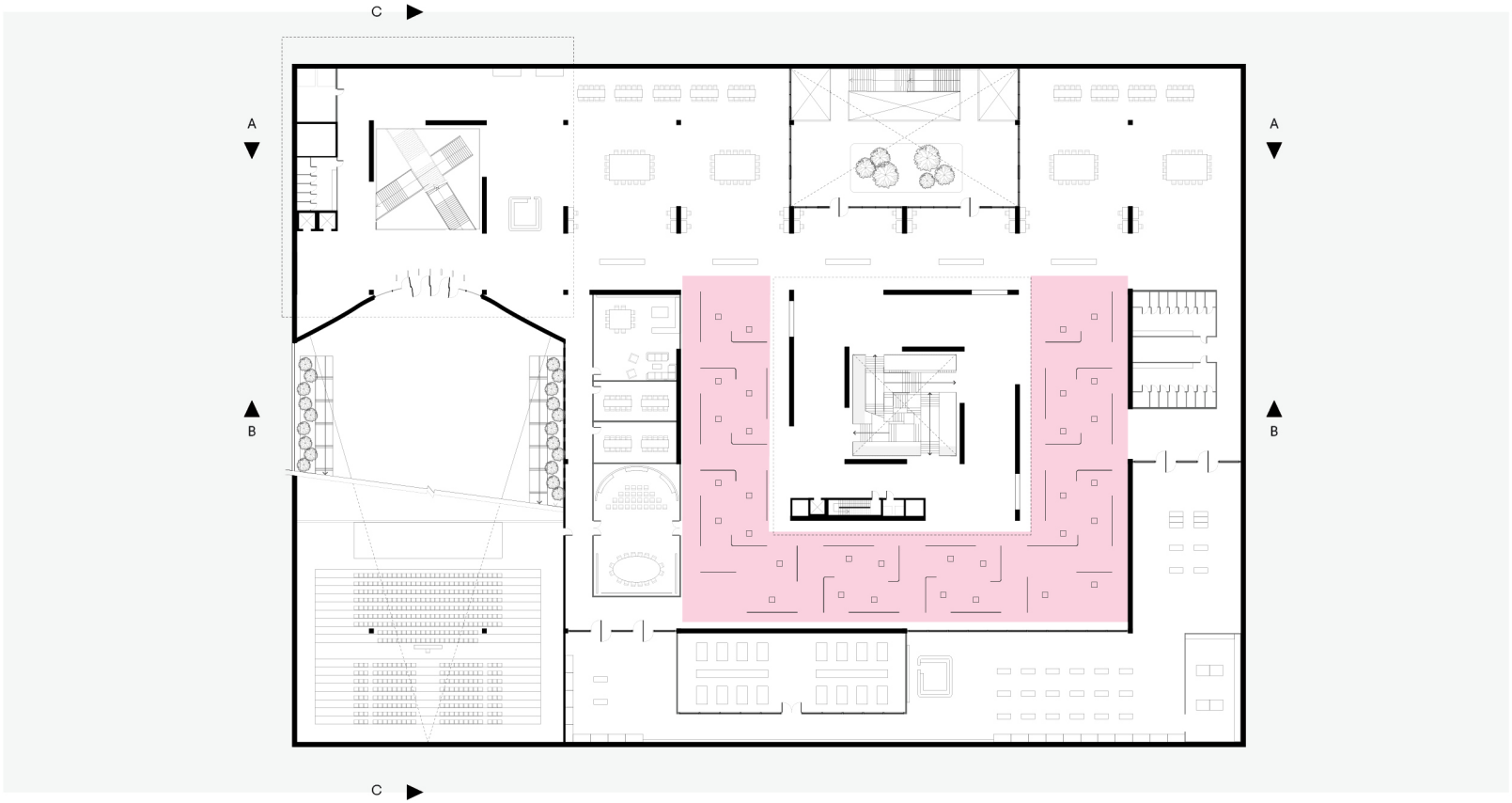
ORIENTATION SPACE



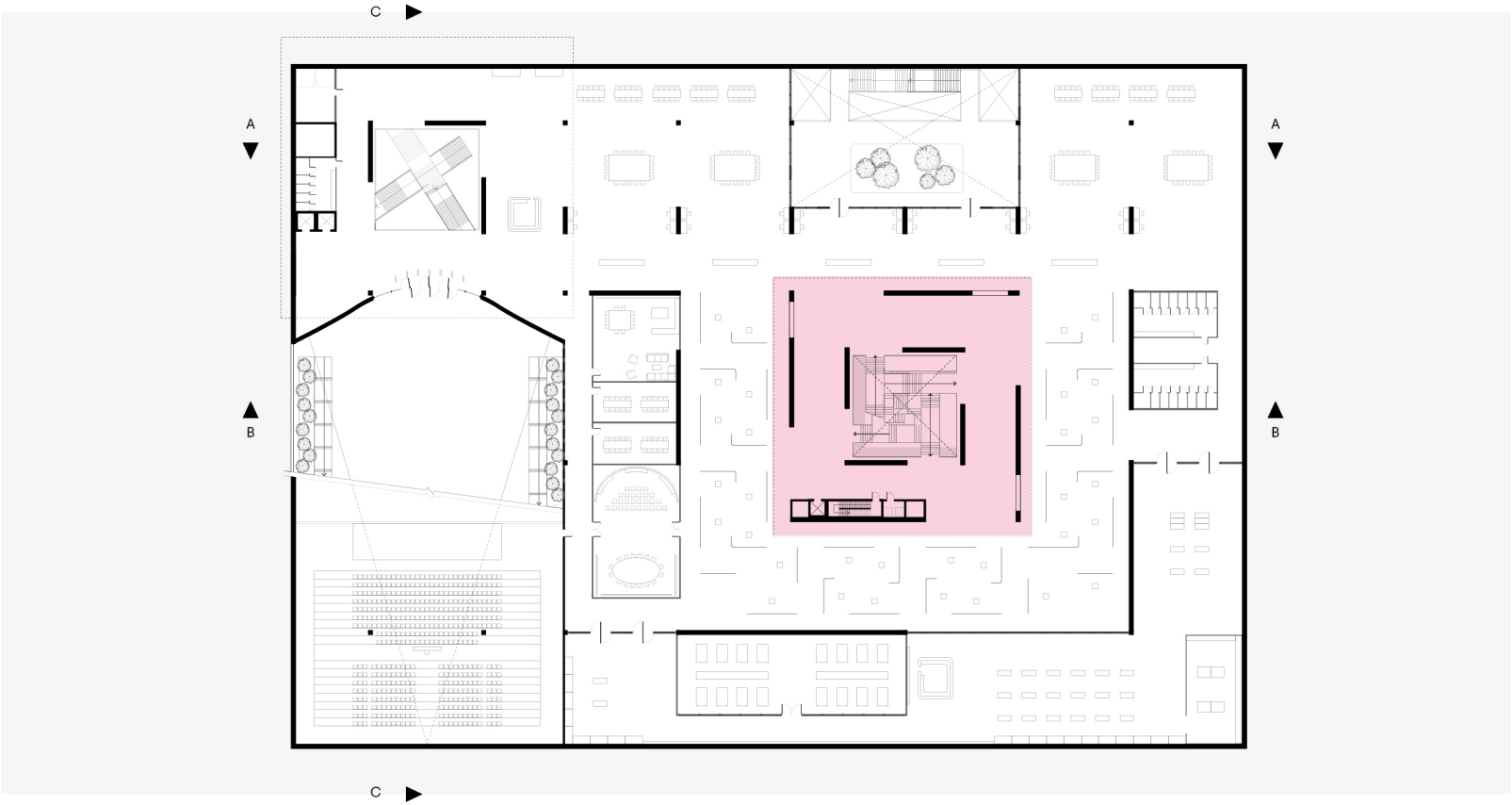
ORIENTATION SPACE



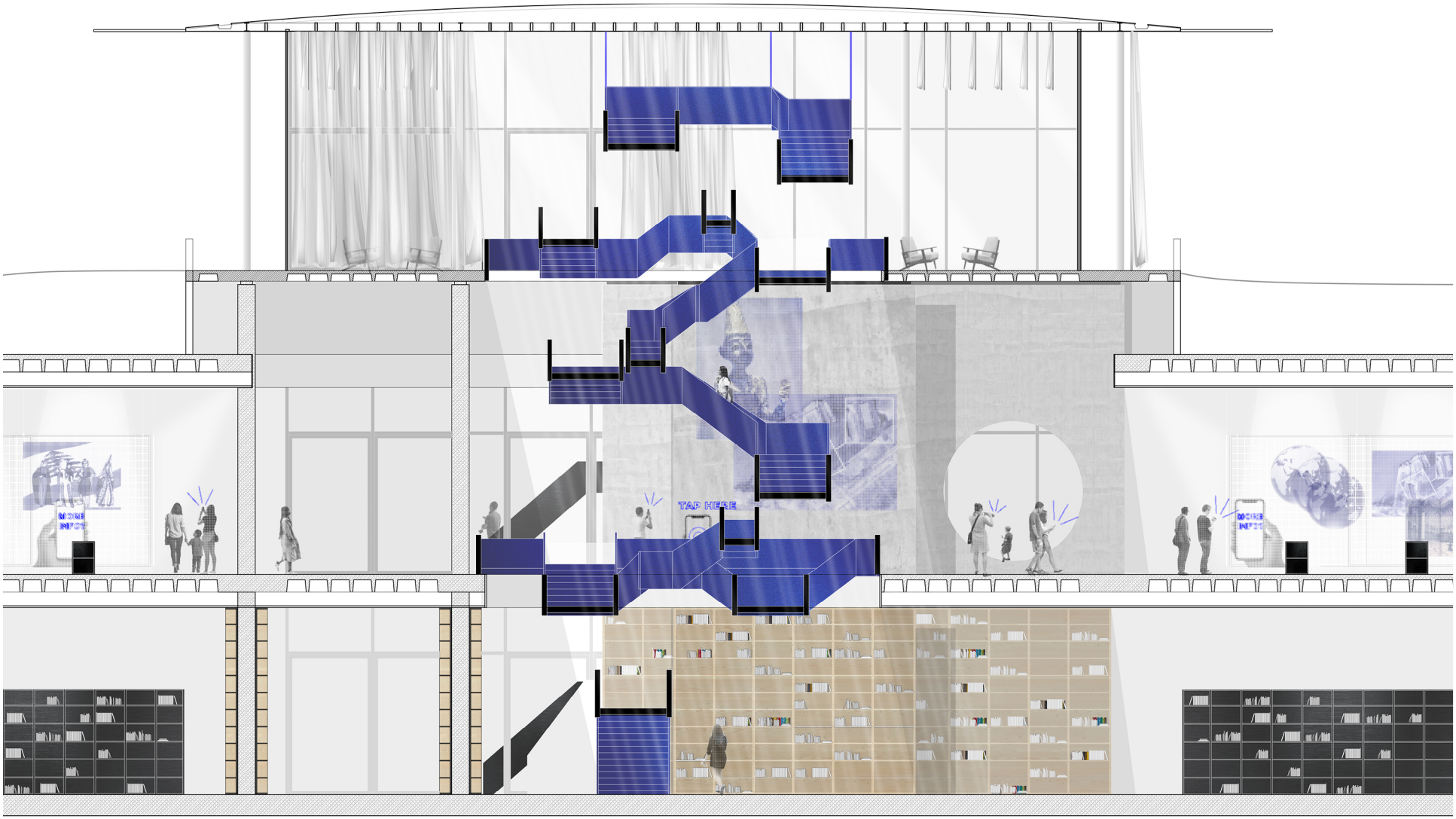
BOOK HUNT MAZE



CIRCULATION



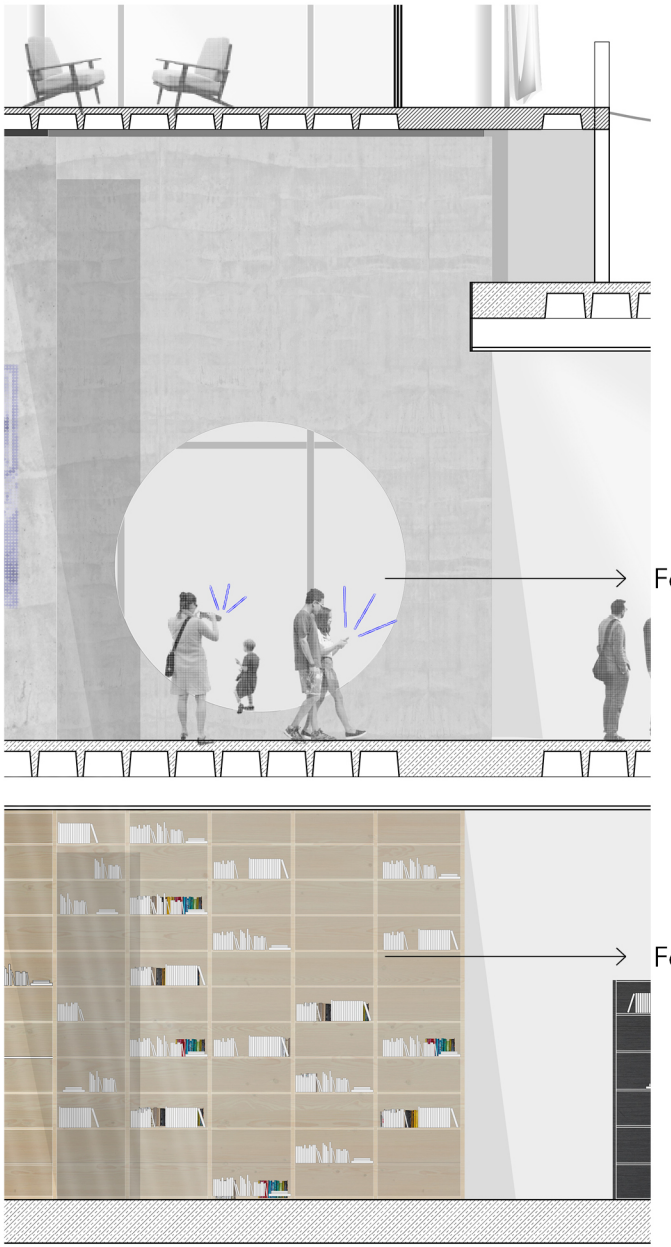
CENTRAL CIRCULATION



CENTRAL CIRCULATION

Use for projections





For social gathering

For book shelf support

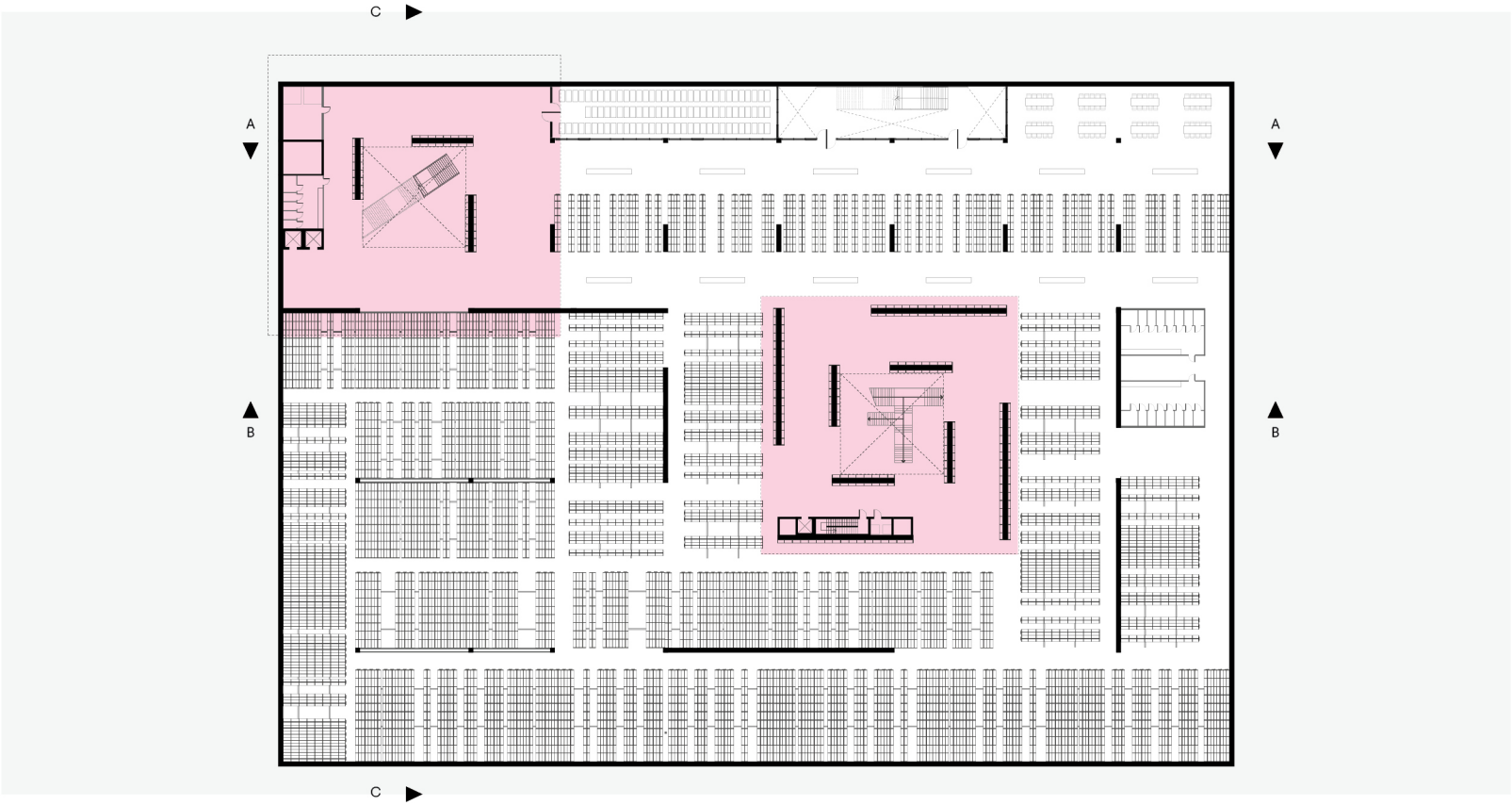
BOOK HUNT MAZE



CENTRAL CIRCULATION SPACE



SPECIAL COLLECTION



DEVELOPMENT

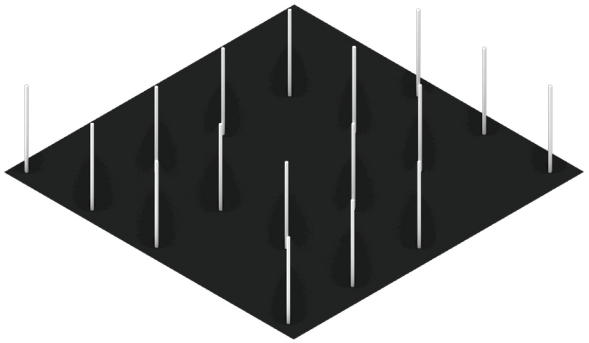
MATERIALS

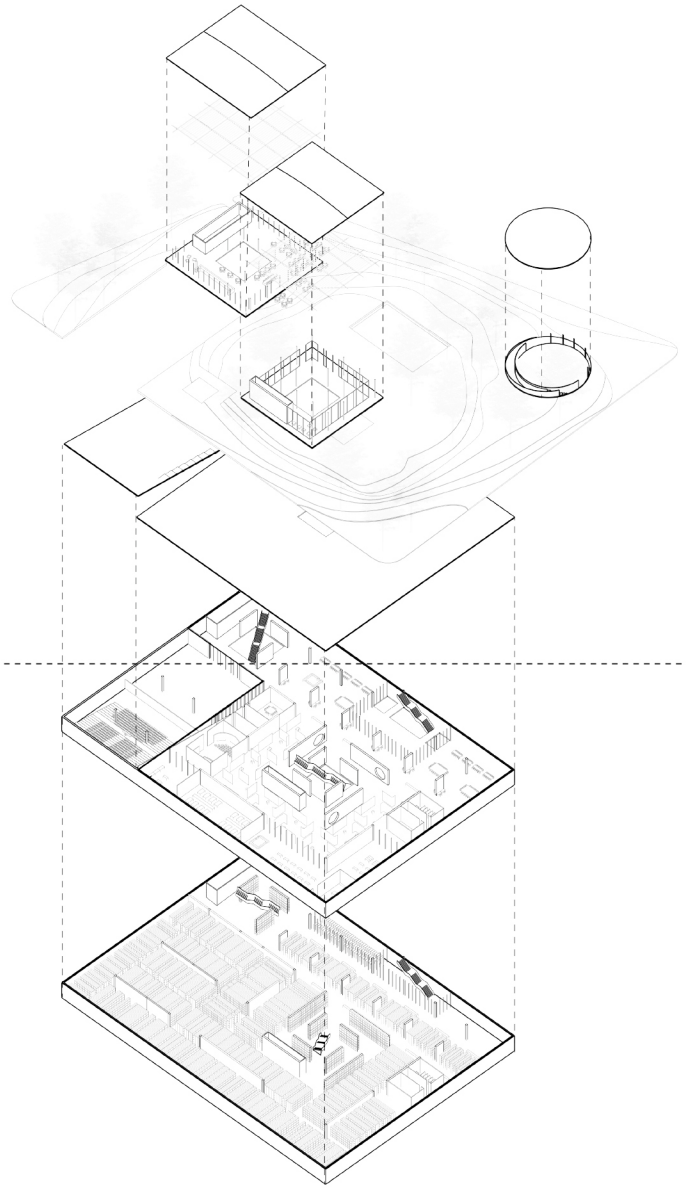






STRUCTURAL CONCEPT

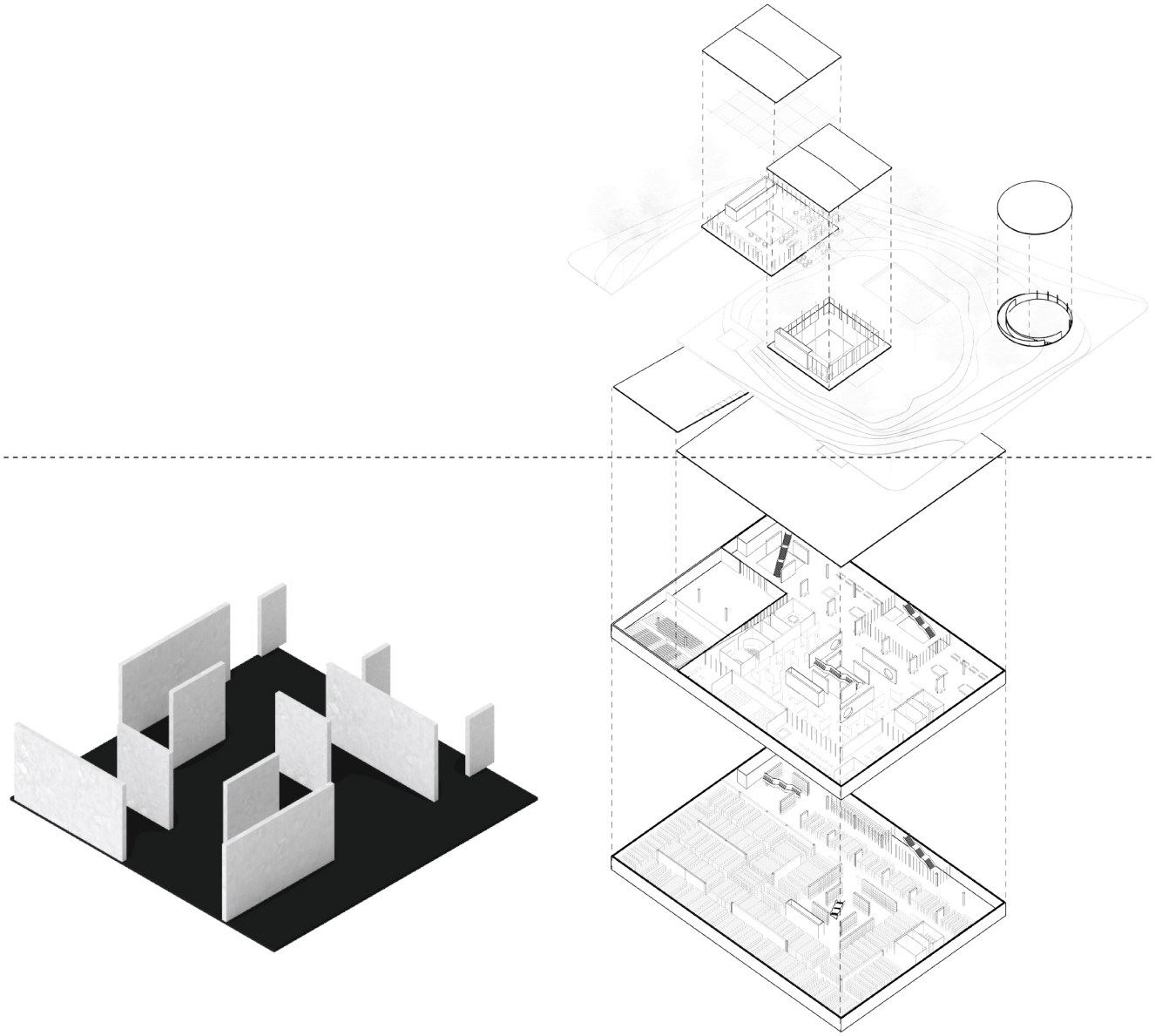






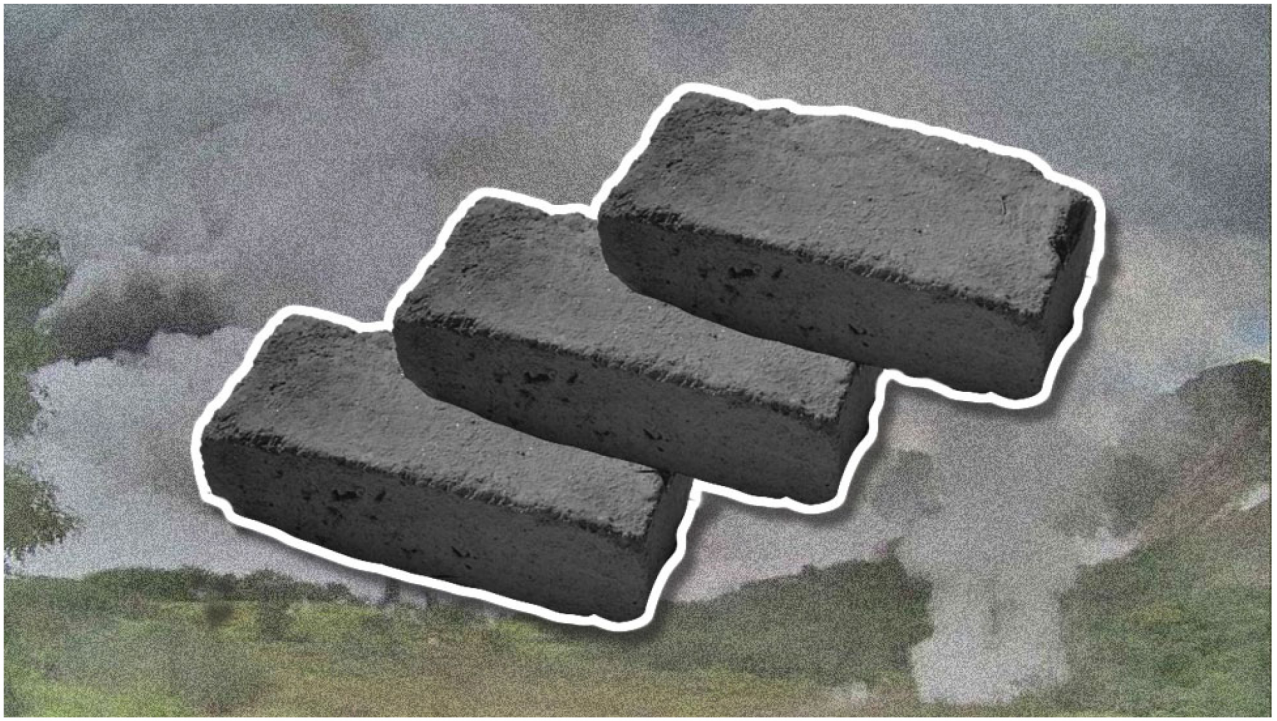


STRUCTURAL CONCEPT





STRUCTURAL MATERIAL CONCEPT



STRUCTURAL MATERIAL CONCEPT



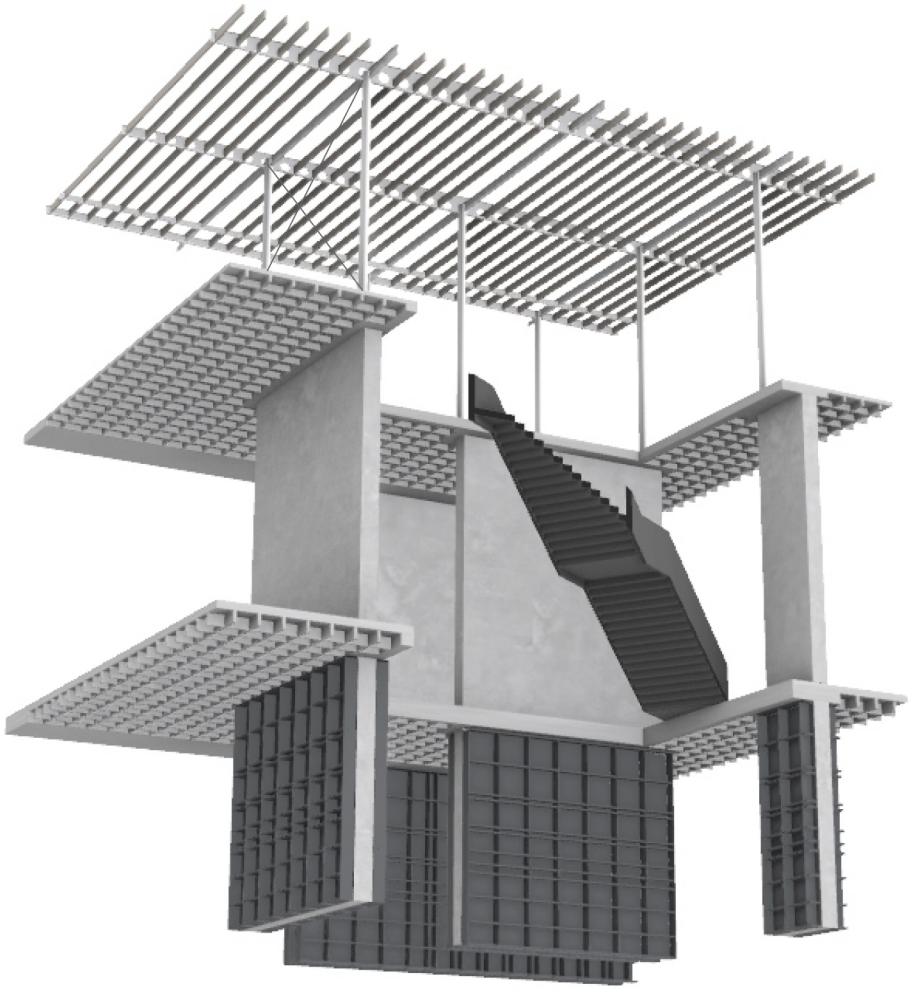
STRUCTURAL MATERIAL CONCEPT



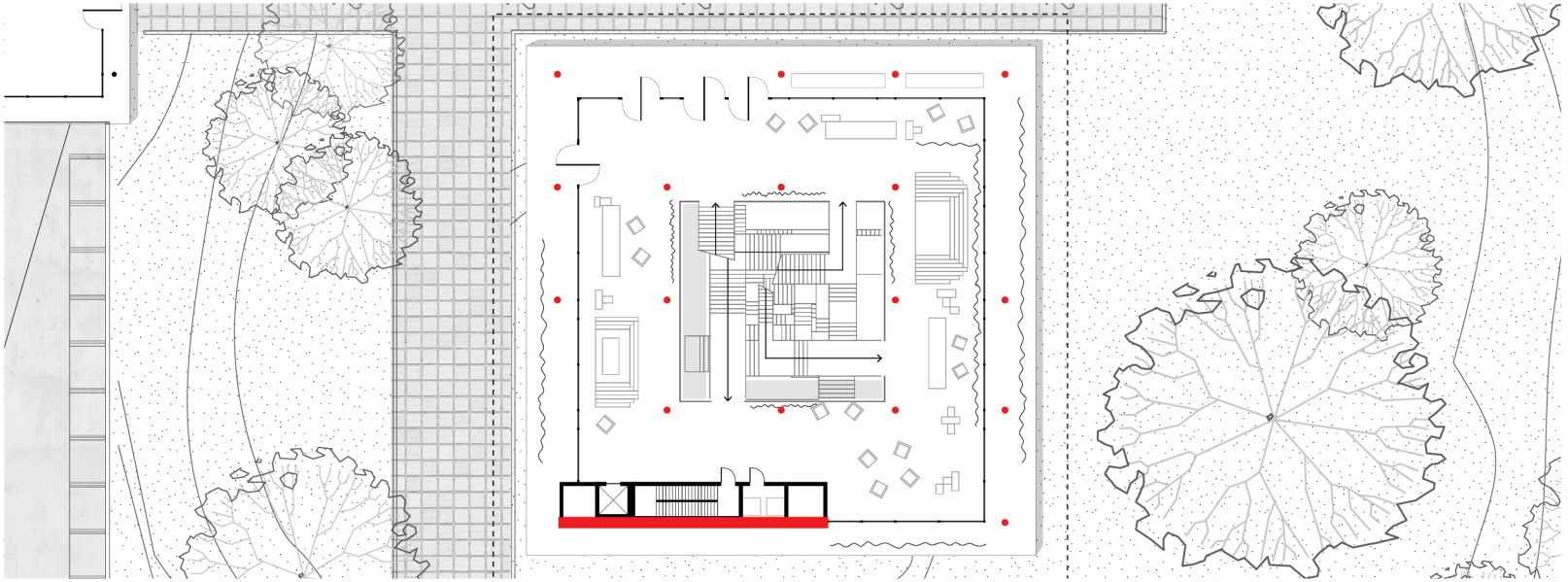
MATERIAL VIEW

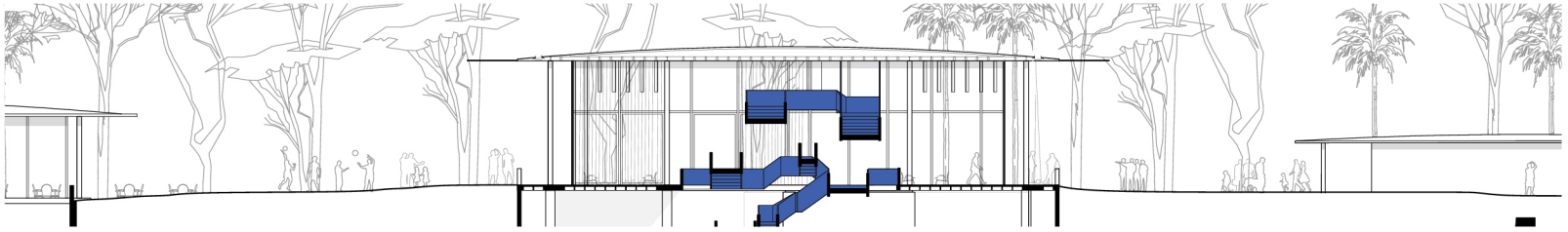


STRUCTURAL CONCEPT

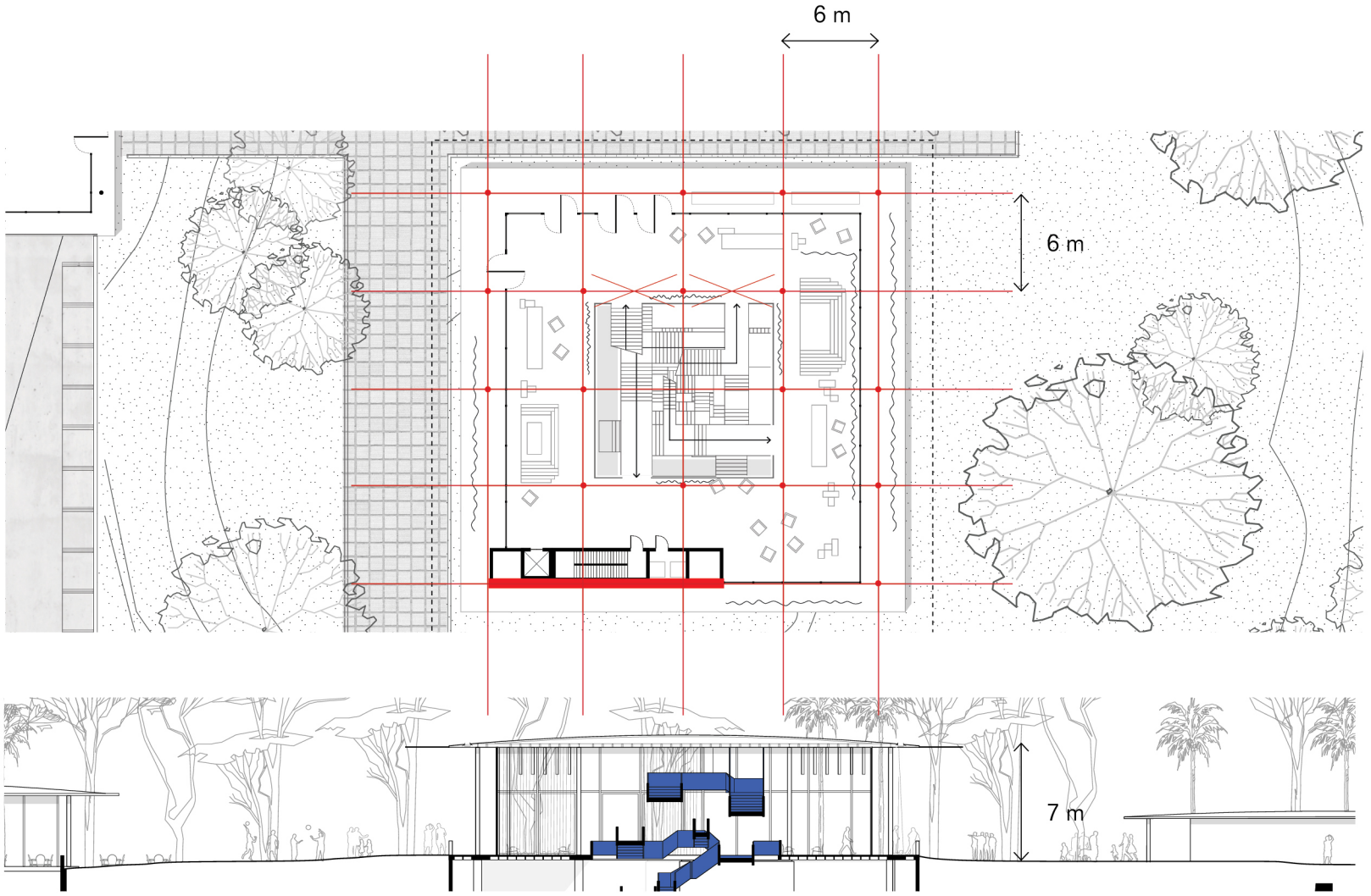


GRID STRUCTURE

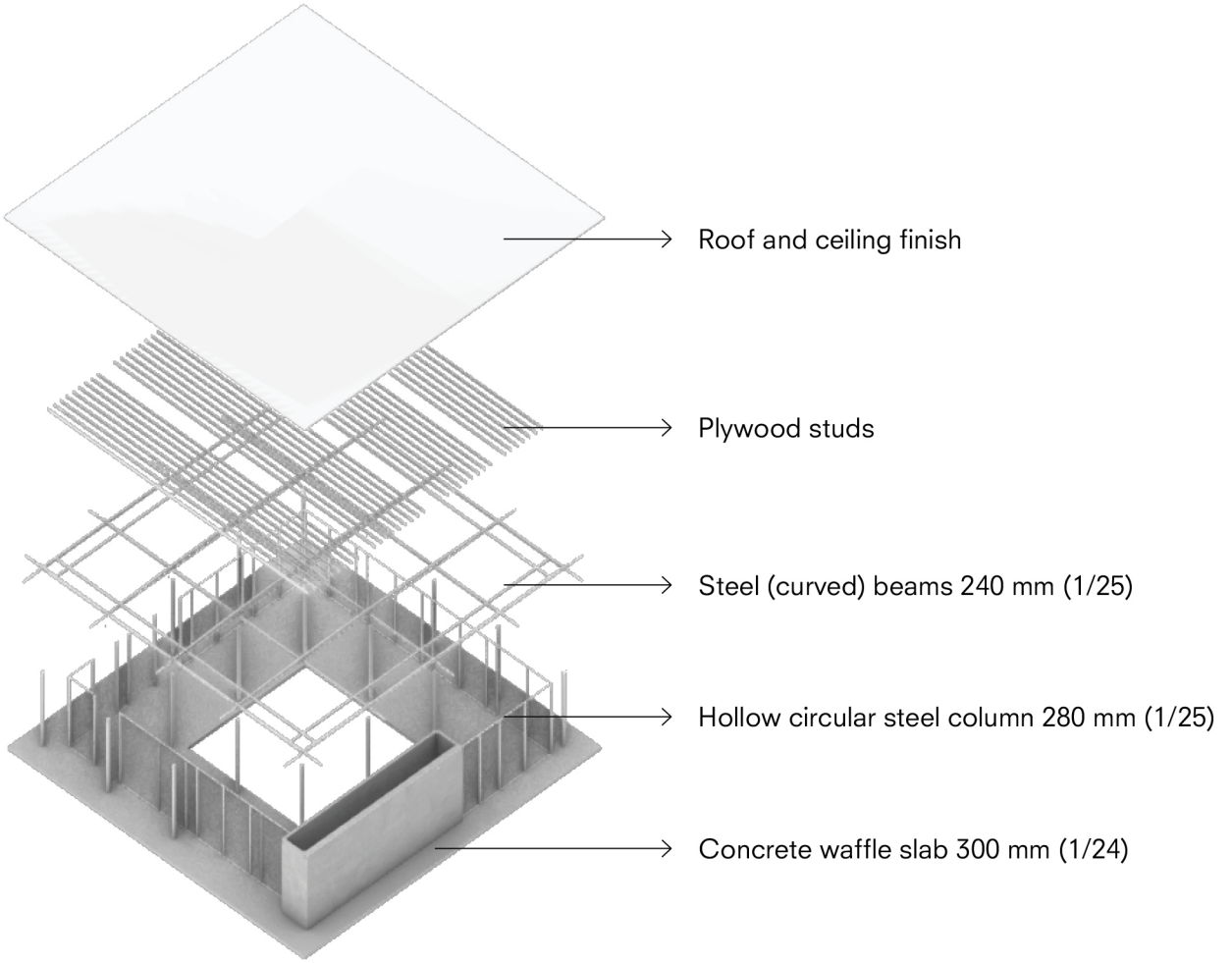




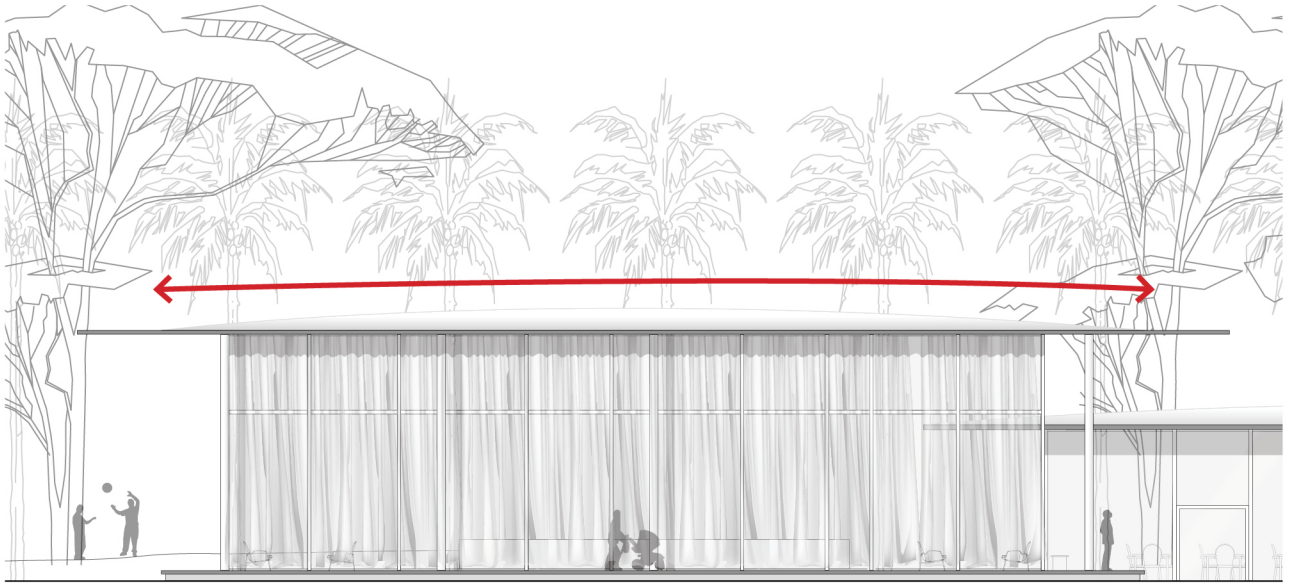
GRID STRUCTURE

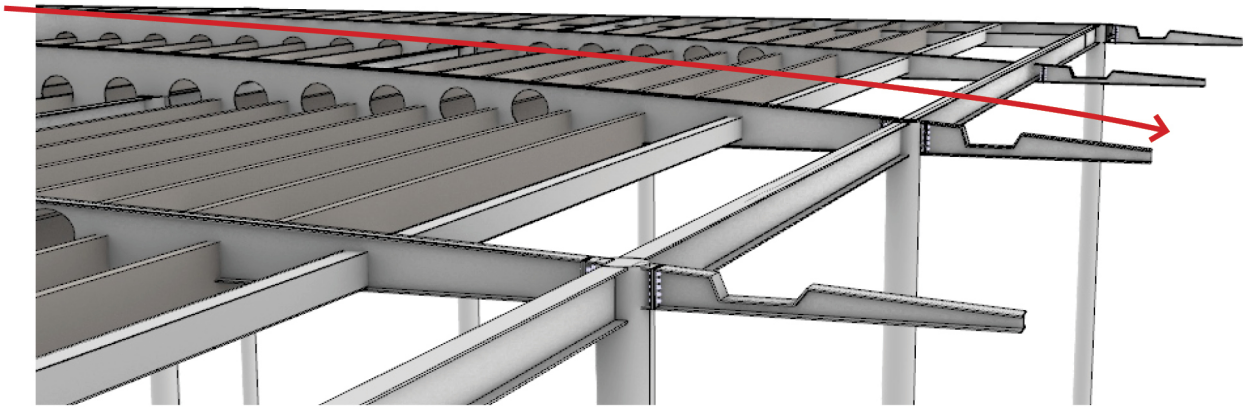


PAVILION ELEMENTS

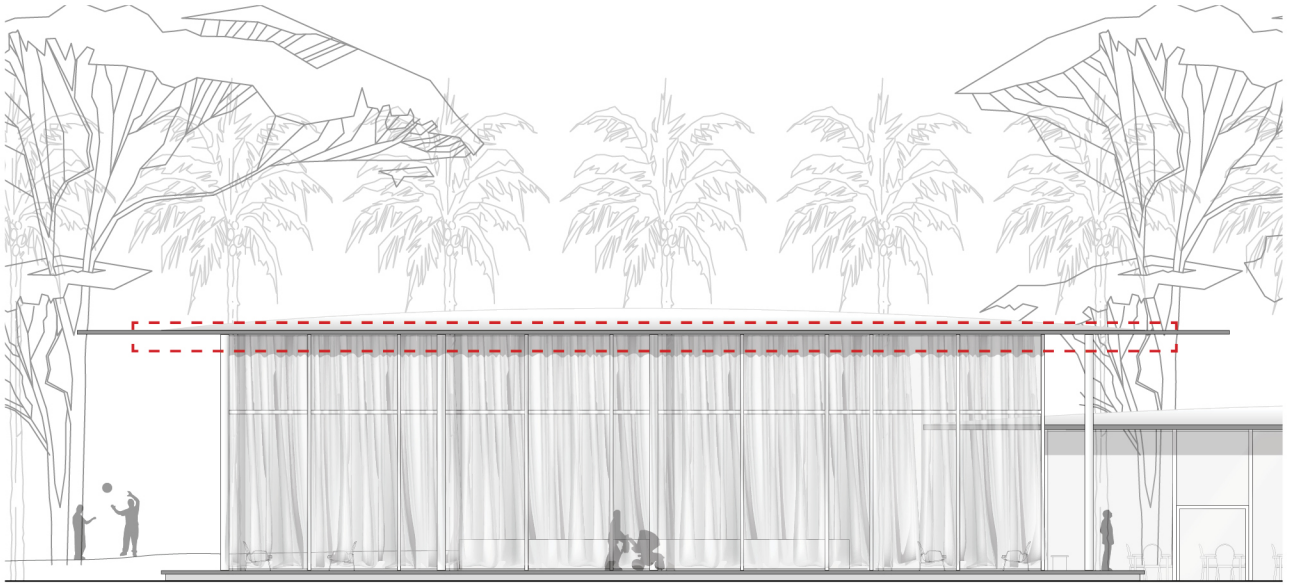


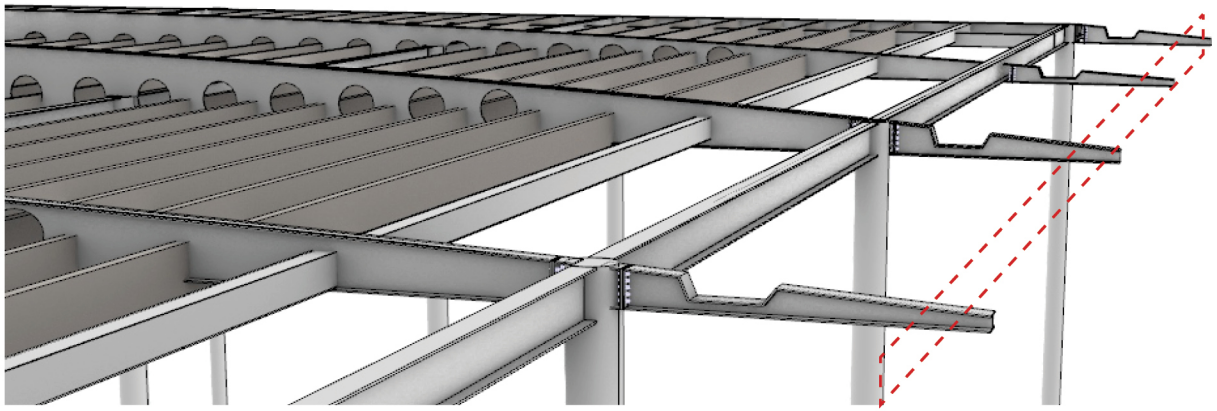
CURVED ROOF



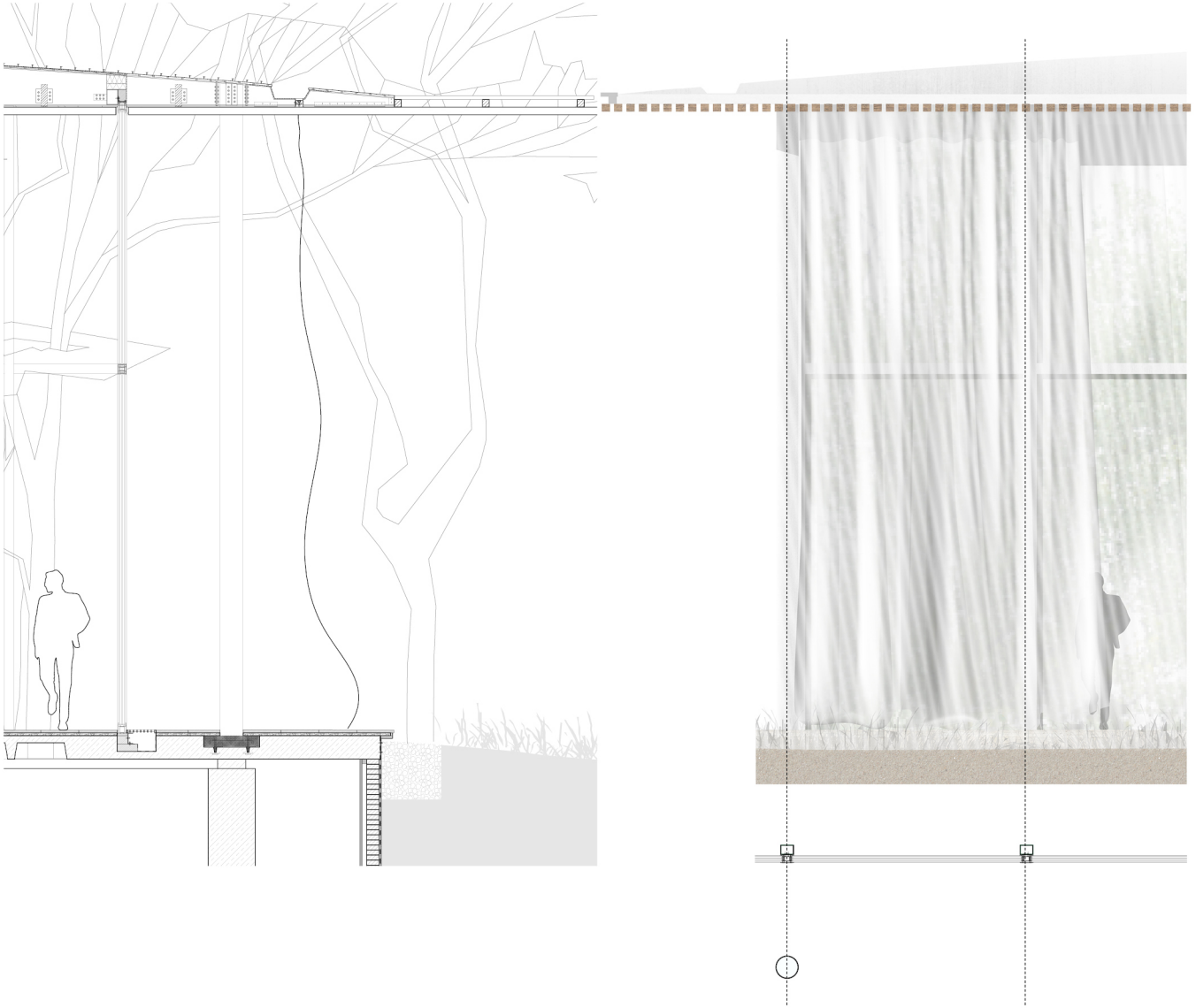


THIN EDGE





ENVELOPE FRAGMENT



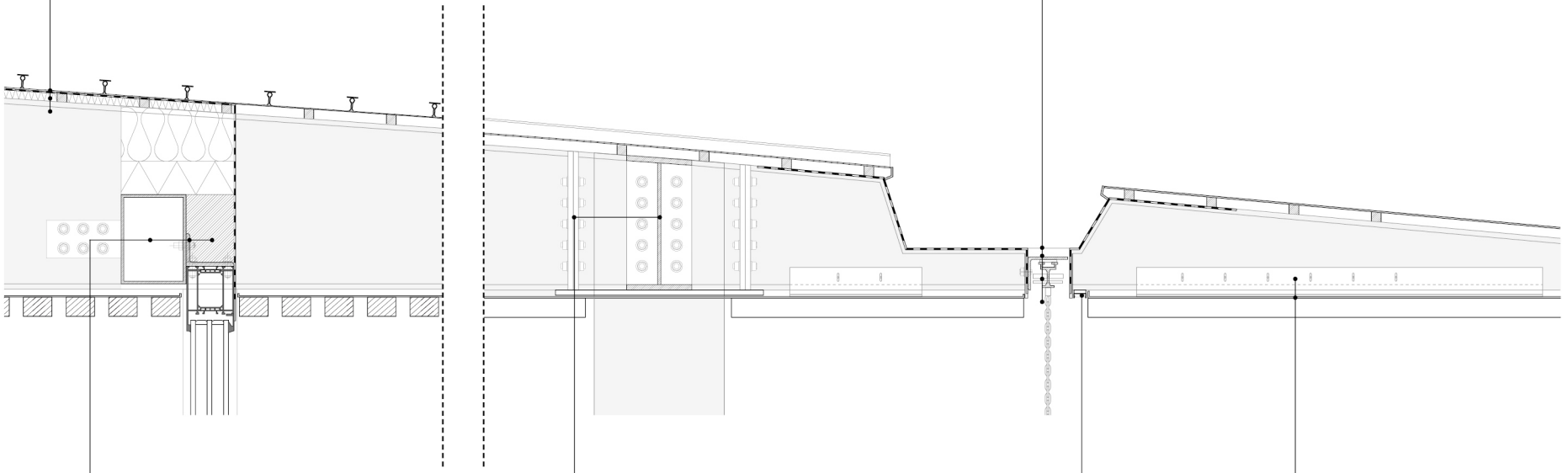
PAVILION ROOF DETAILS

Roof

2 mm metal standing seam roof (25 mm)
KÖSTER TPO waterproofing membrane
20 mm acoustic insulation plywood studs
welded steel profile

Gutter

2 mm stainless steel
KÖSTER TPO waterproofing membrane drainage lining
curtain railing
light metal mesh curtain



Window structure

plywood with window profile Air-Lux
L steel profile 88 mm
steel edge beam 120x165 mm

Column head

IPE 240 steel beam
welded beams bolted to IPE 240

Light

6.6 x 20 mm
aluminium LED profile

Ceiling

aluminum L-profile
Teak wood louver finish

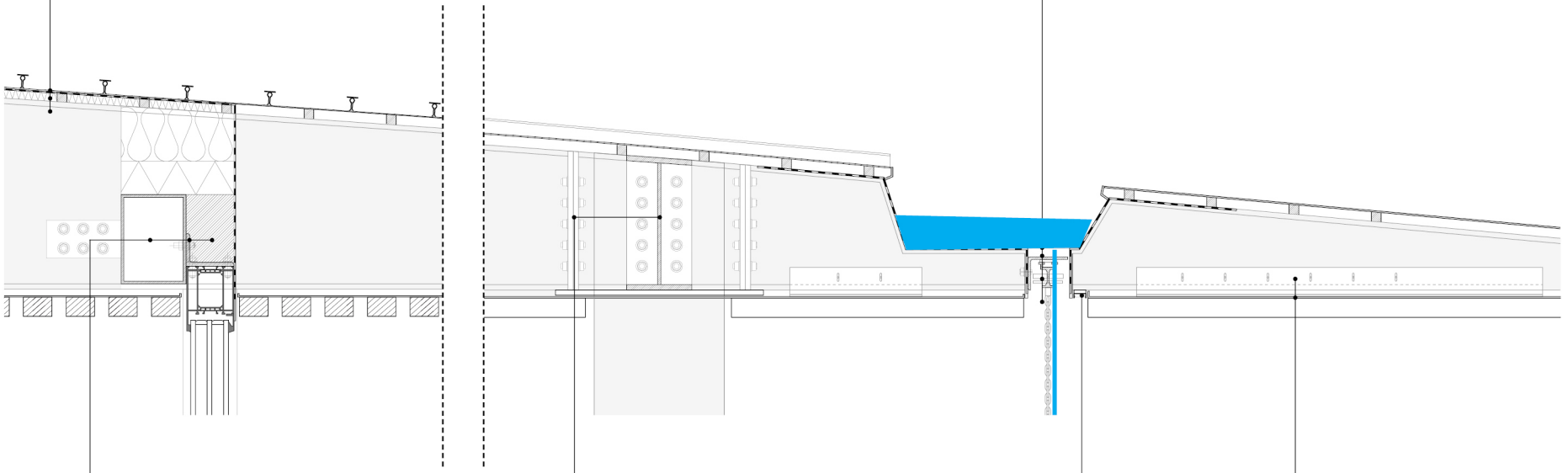
PAVILION ROOF DETAILS

Roof

2 mm metal standing seam roof (25 mm)
KÖSTER TPO waterproofing membrane
20 mm acoustic insulation plywood studs
welded steel profile

Gutter

2 mm stainless steel
KÖSTER TPO waterproofing membrane drainage lining
curtain railing
light metal mesh curtain



Window structure

plywood with window profile Air-Lux
L steel profile 88 mm
steel edge beam 120x165 mm

Column head

IPE 240 steel beam
welded beams bolted to IPE 240

Light

6.6 x 20 mm
aluminium LED profile

Ceiling

aluminum L-profile
Teak wood louver finish

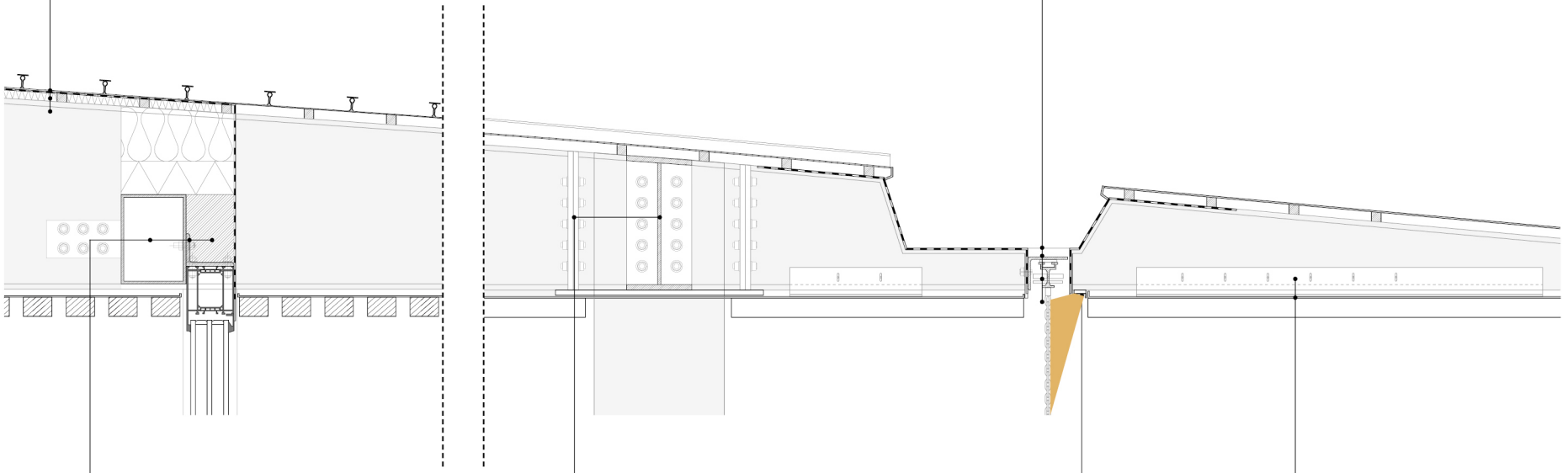
PAVILION ROOF DETAILS

Roof

2 mm metal standing seam roof (25 mm)
KÖSTER TPO waterproofing membrane
20 mm acoustic insulation plywood studs
welded steel profile

Gutter

2 mm stainless steel
KÖSTER TPO waterproofing membrane drainage lining
curtain railing
light metal mesh curtain



Window structure

plywood with window profile Air-Lux
L steel profile 88 mm
steel edge beam 120x165 mm

Column head

IPE 240 steel beam
welded beams bolted to IPE 240

Light

6.6 x 20 mm
aluminium LED profile

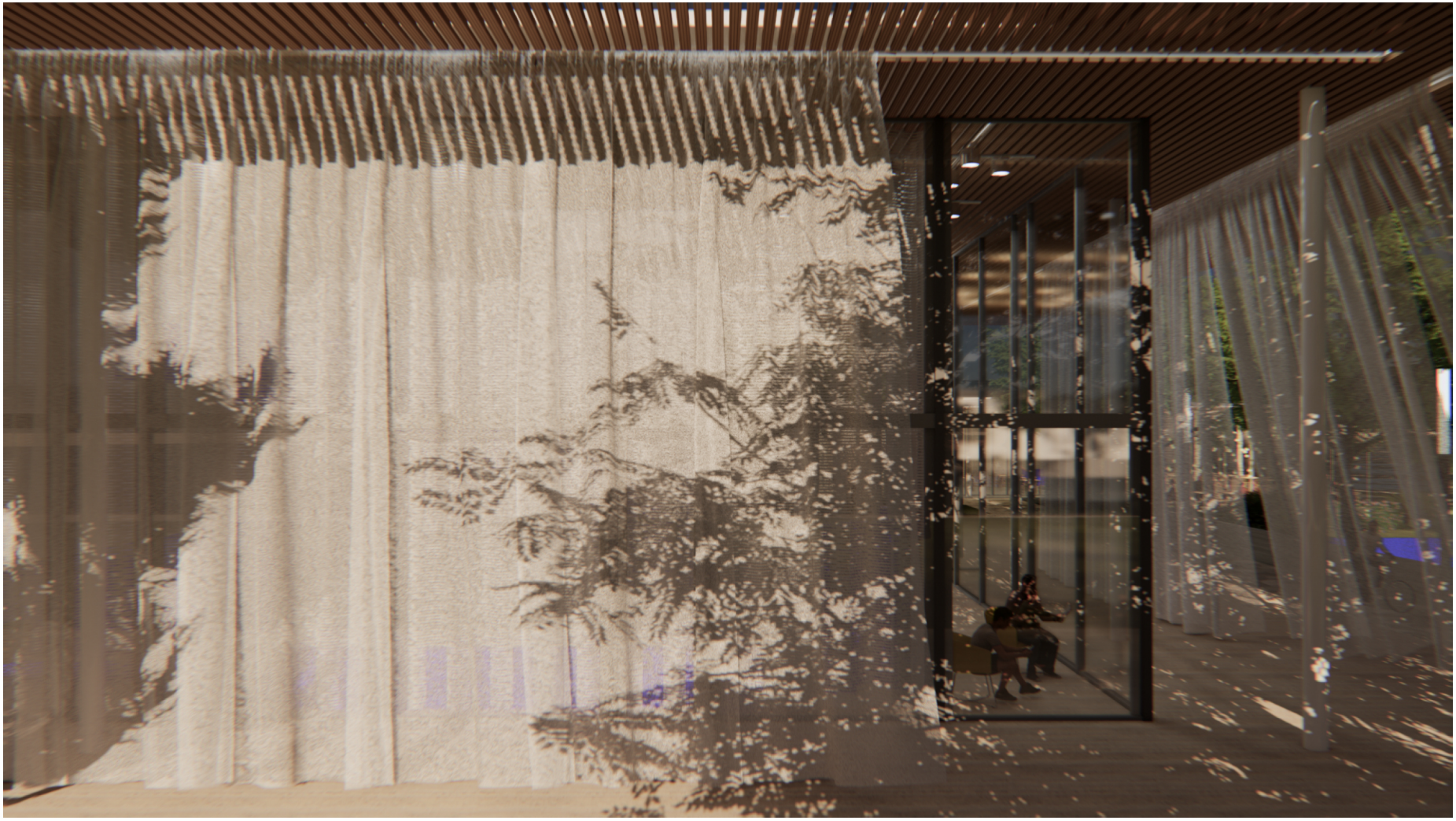
Ceiling

aluminum L-profile
Teak wood louver finish

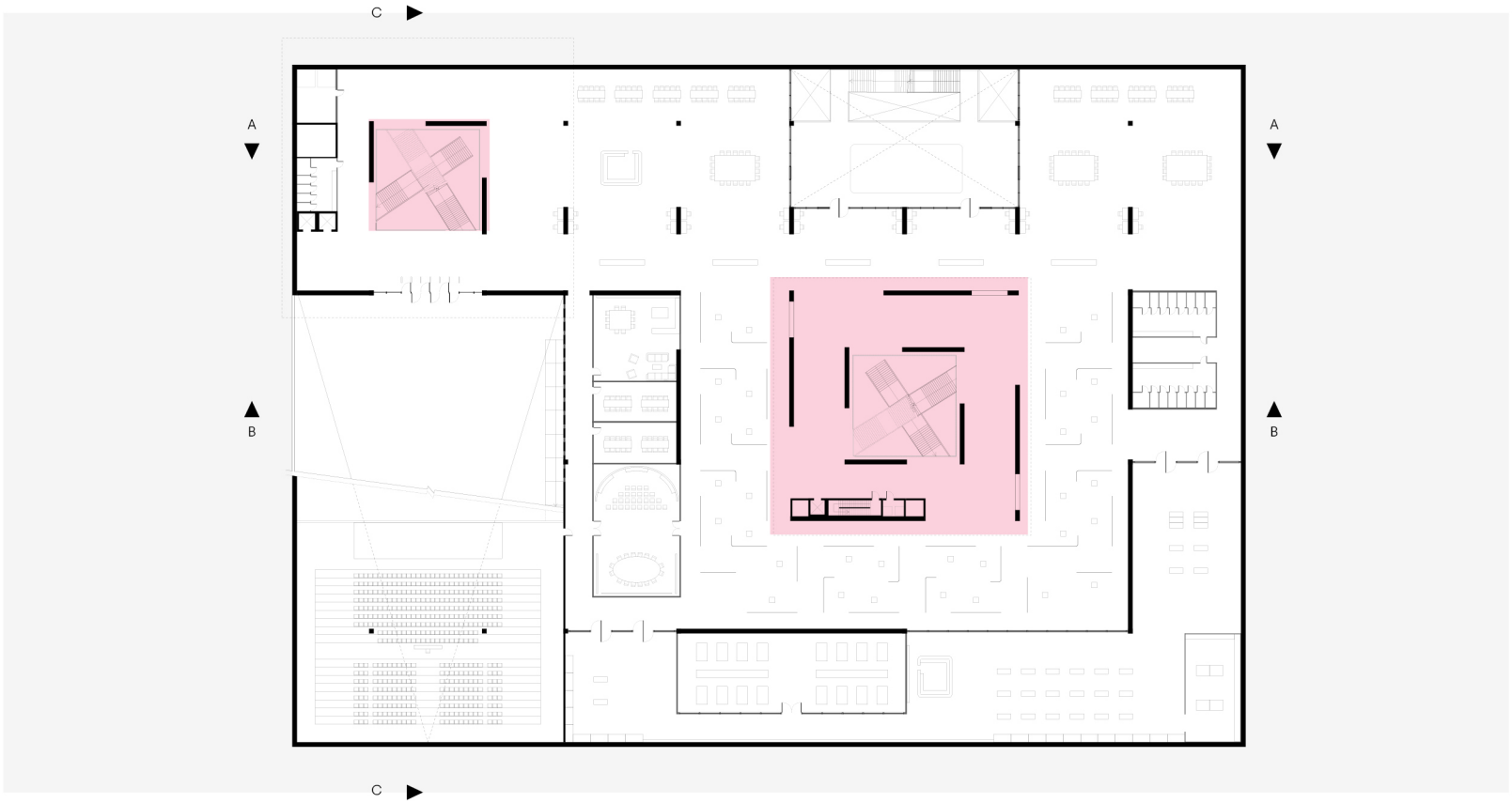
CURTAIN ELEMENT



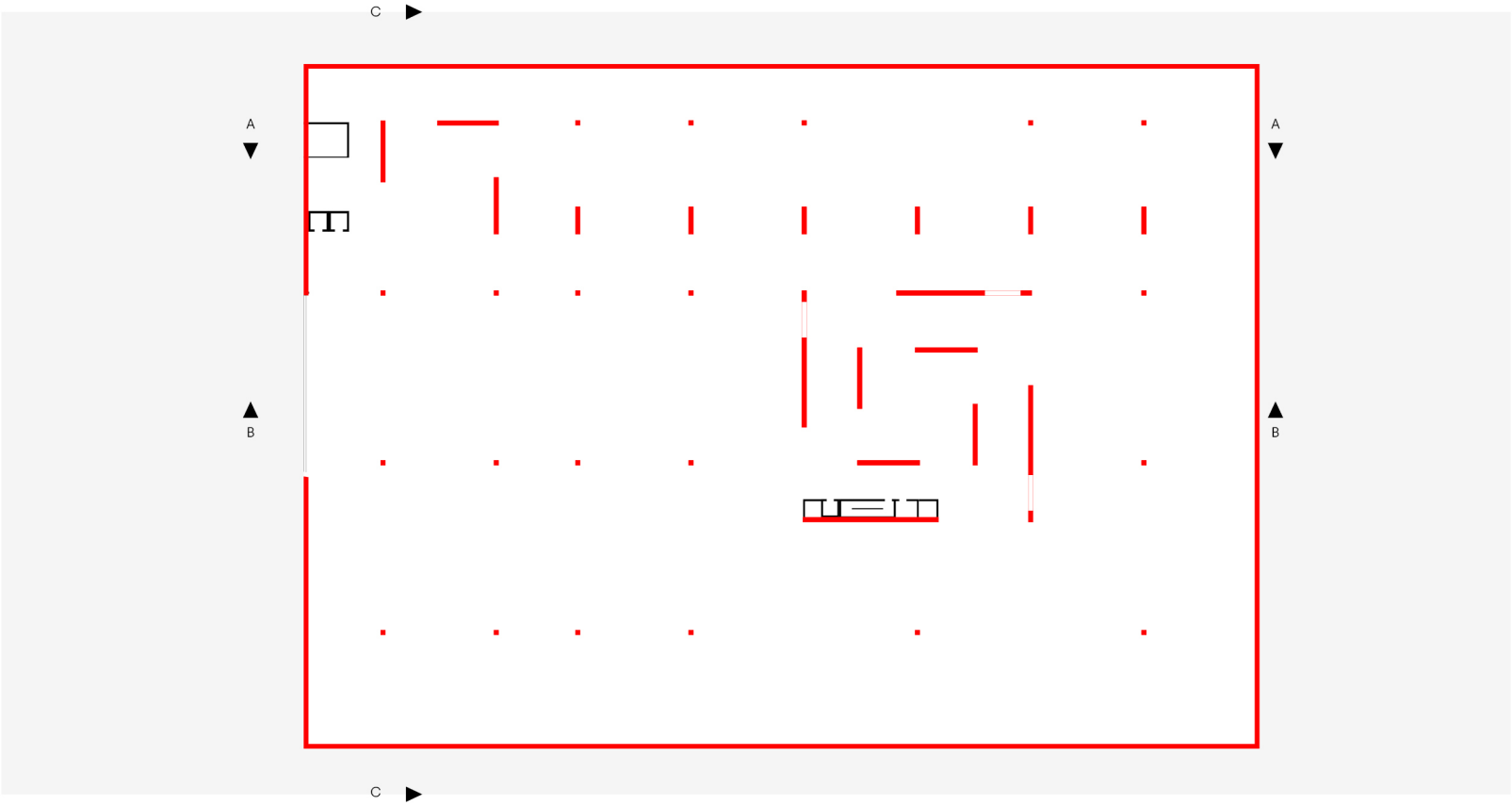
CURTAIN ELEMENT



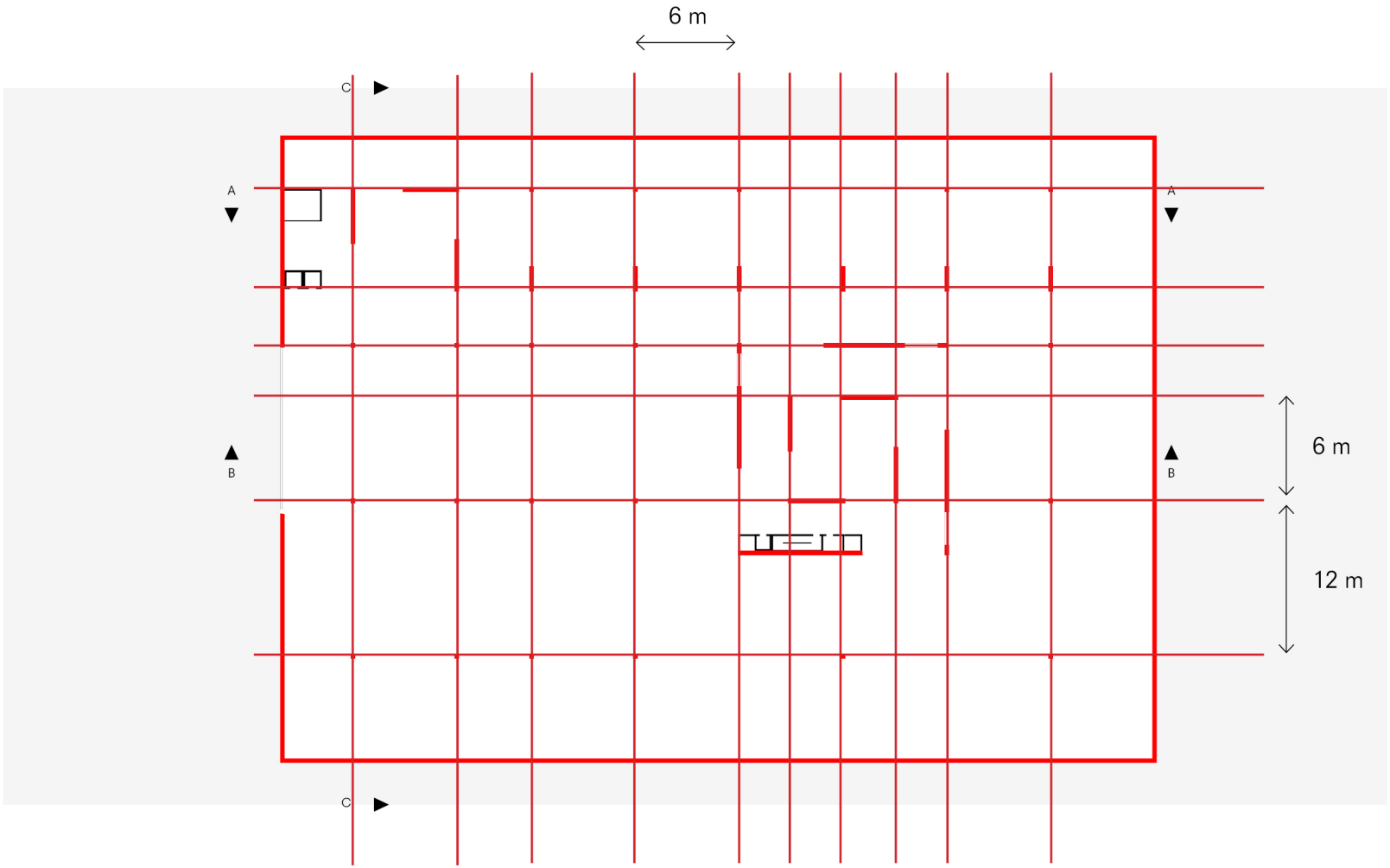
CONCRETE SLABS STRUCTURE



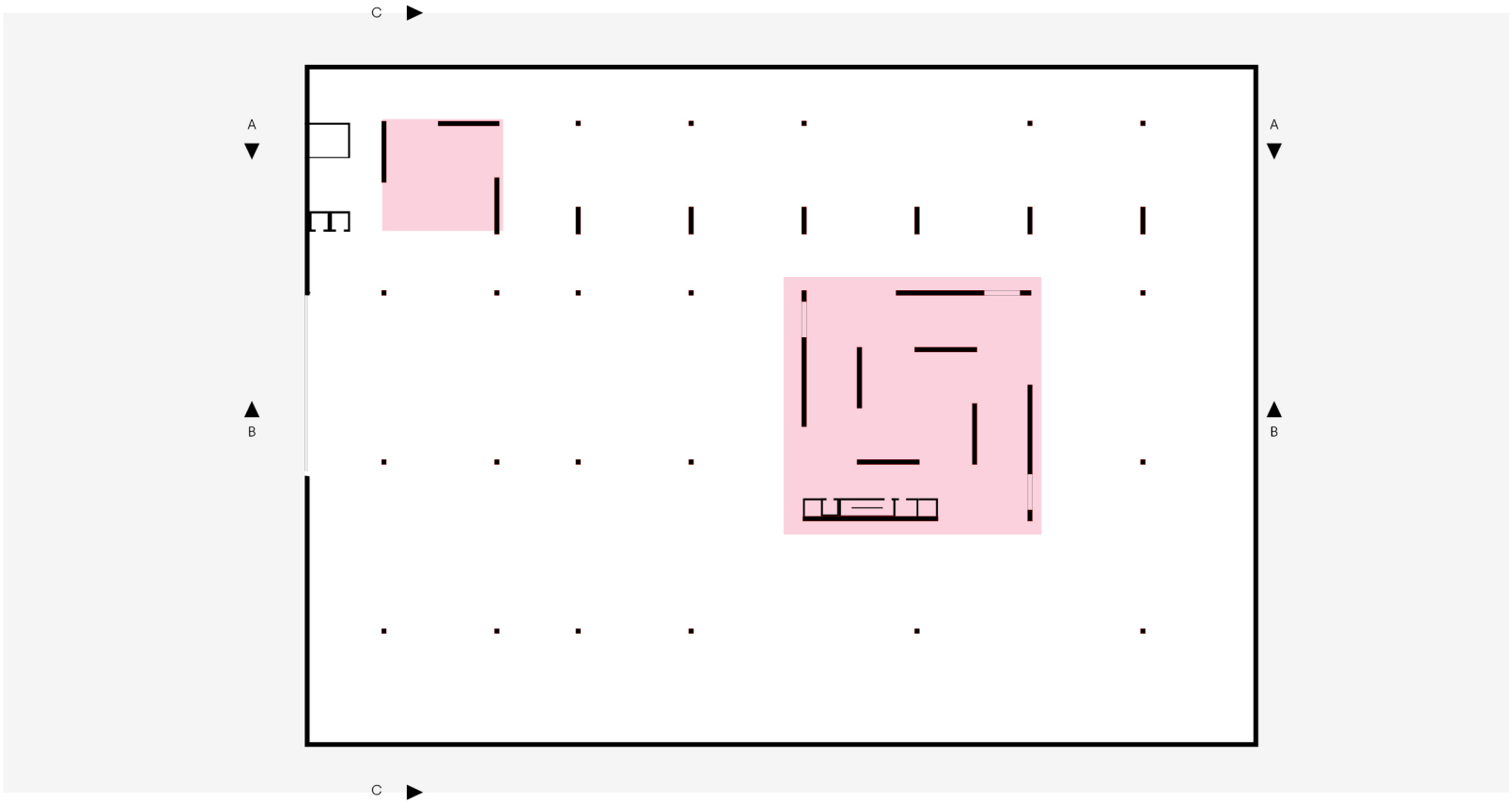
LOAD BEARING



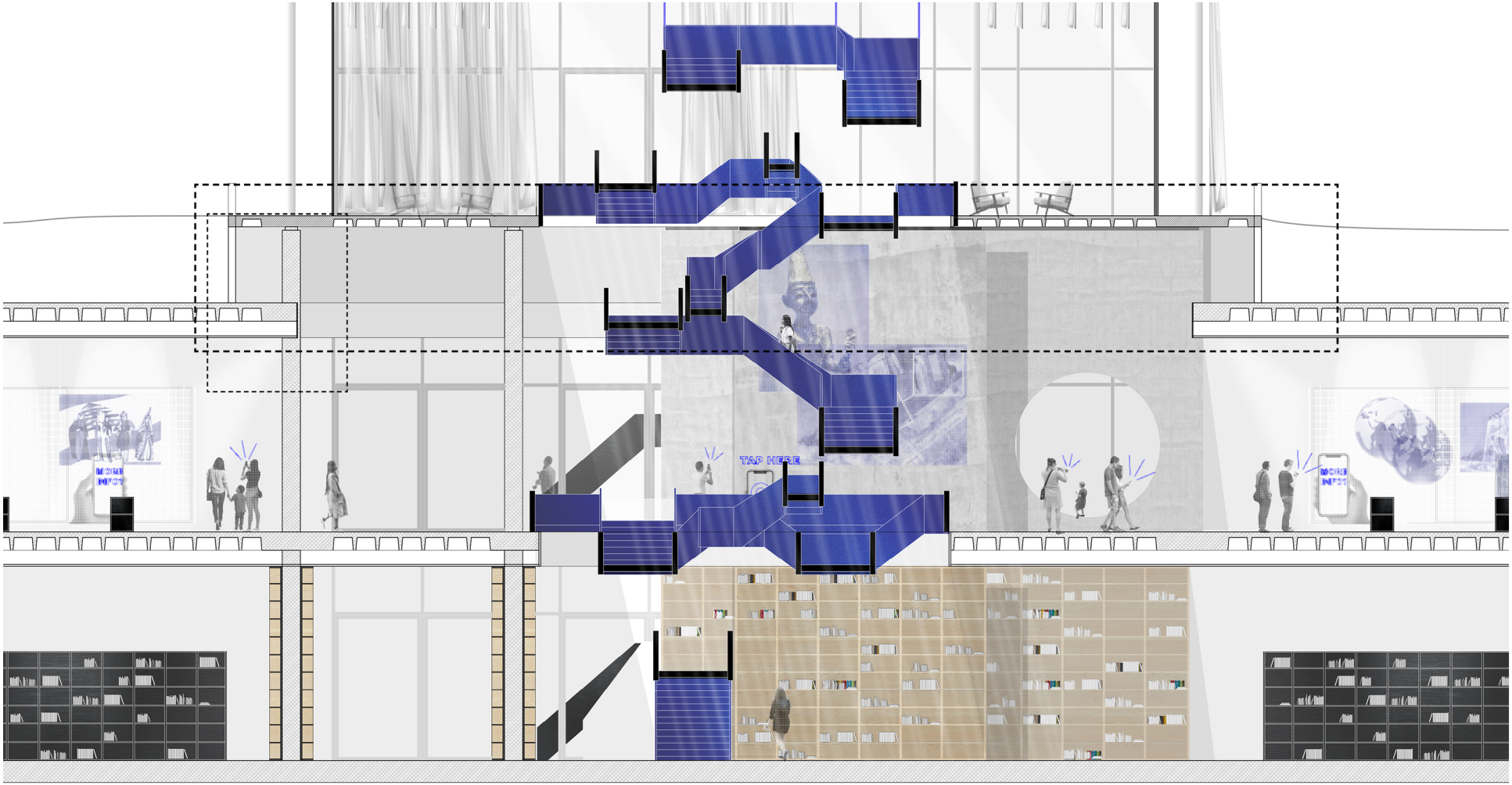
LOAD BEARING



CONCRETE SLABS STRUCTURE



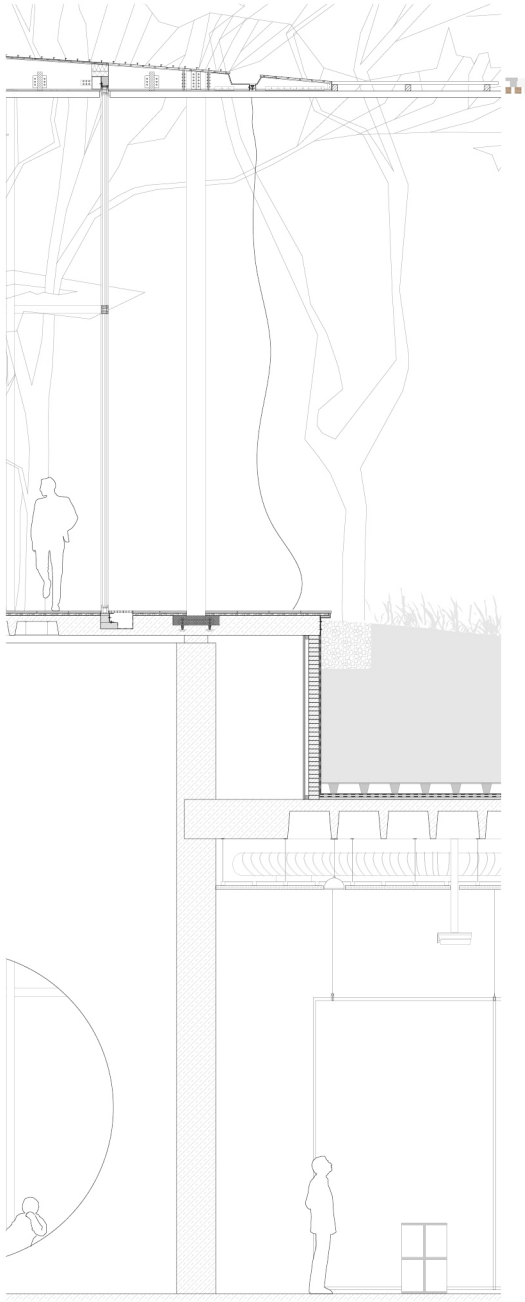
CONCRETE SLABS STRUCTURE



HEIGHT DIFFERENCES



FACADE AND INTERIOR FRAGMENT





PAVILION FLOOR DETAILS

Window

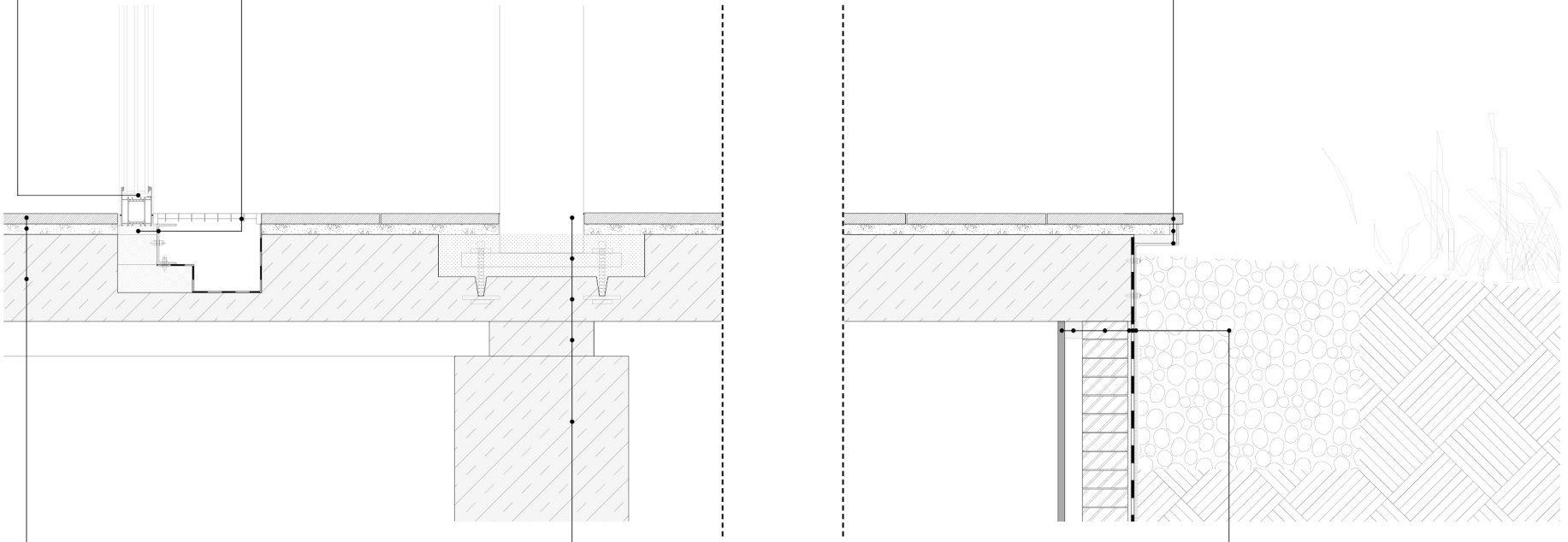
window profile Air-Lux
triple glazing

Gutter

steel press- locked grating
support UNP 100
KÖSTER TPO waterproofing membrane
100 mm plywood

Floor corner

30 mm travertine tile
20 mm plywood
steel Z-profile with paint finish RAL 9005



Floor

30 mm travertine tile
mortar and bonding agent
250 mm volcanic ash concrete waffle slab

Load bearing

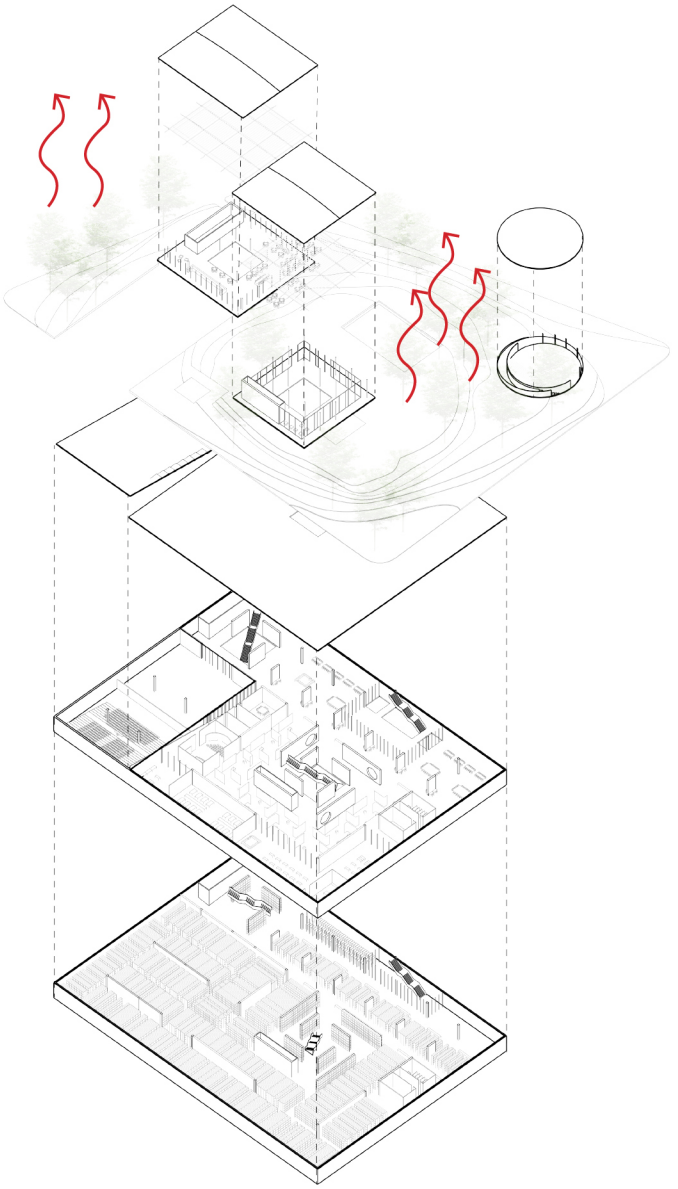
240 CHS circular hollow whitened steel column
base plate in cement
250 mm volcanic ash concrete waffle slab
concrete recess with paint finish RAL 9005
500 mm in situ volcanic ash concrete wall

Wall

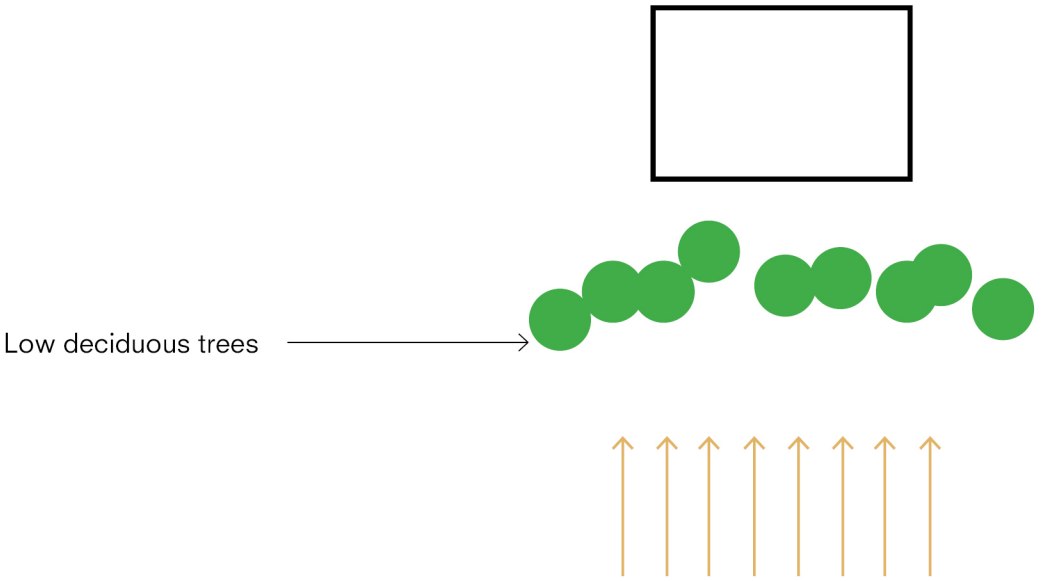
reflective metal sheet panel
20 mm drywall
plywood studs
limestone brickwork
10 mm insulation
KÖSTER TPO waterproofing membrane
protection geotextile HPS 2.5
gravel

CLIMATE CONTROL

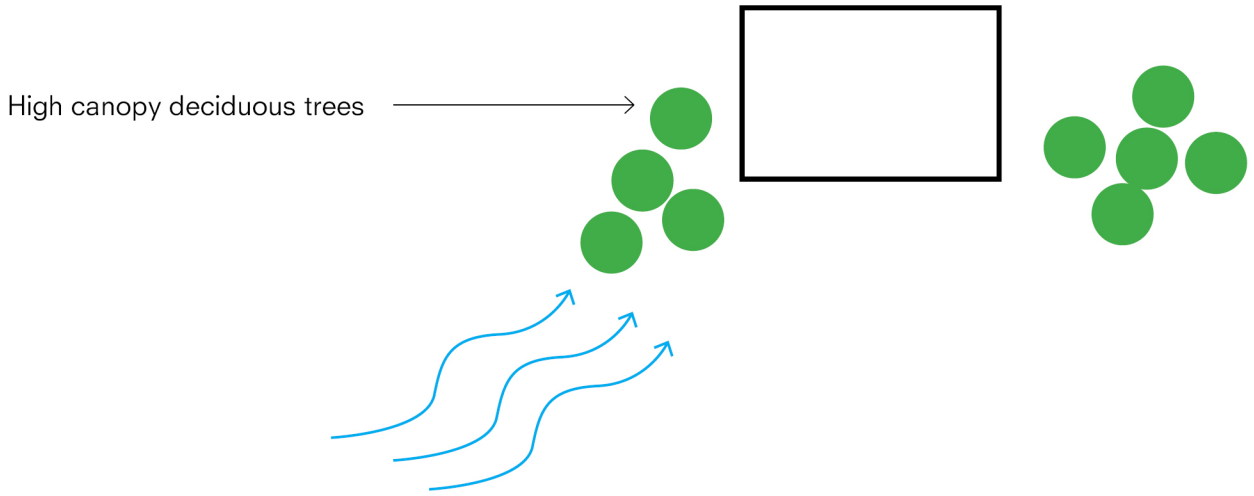
CLIMATE CONCEPT



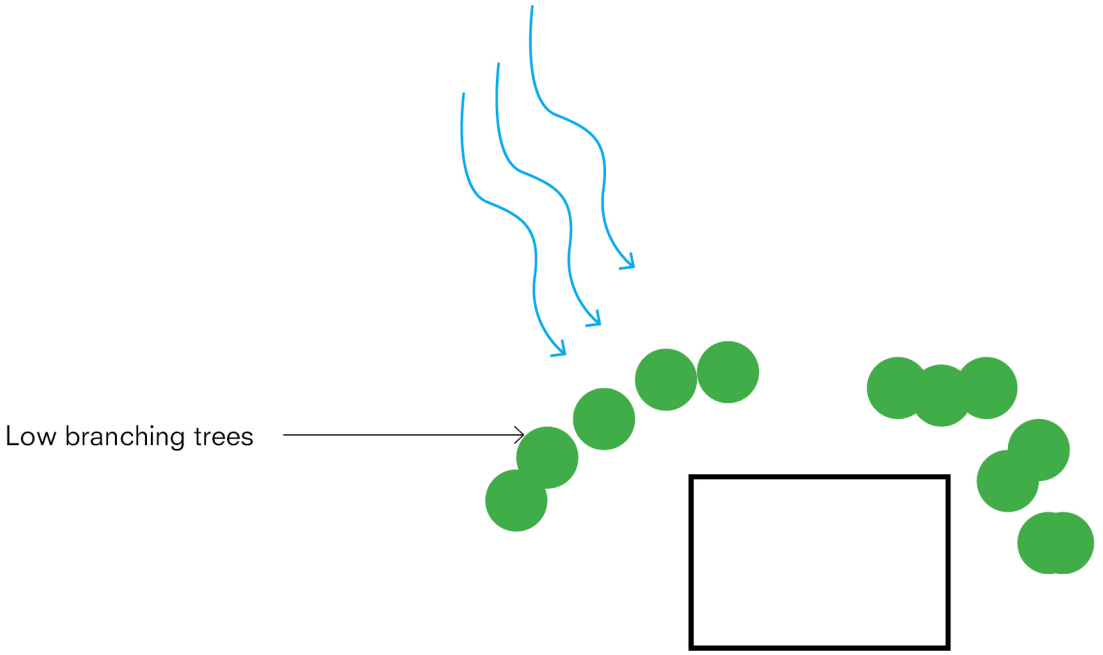
MICROCLIMATE TREES



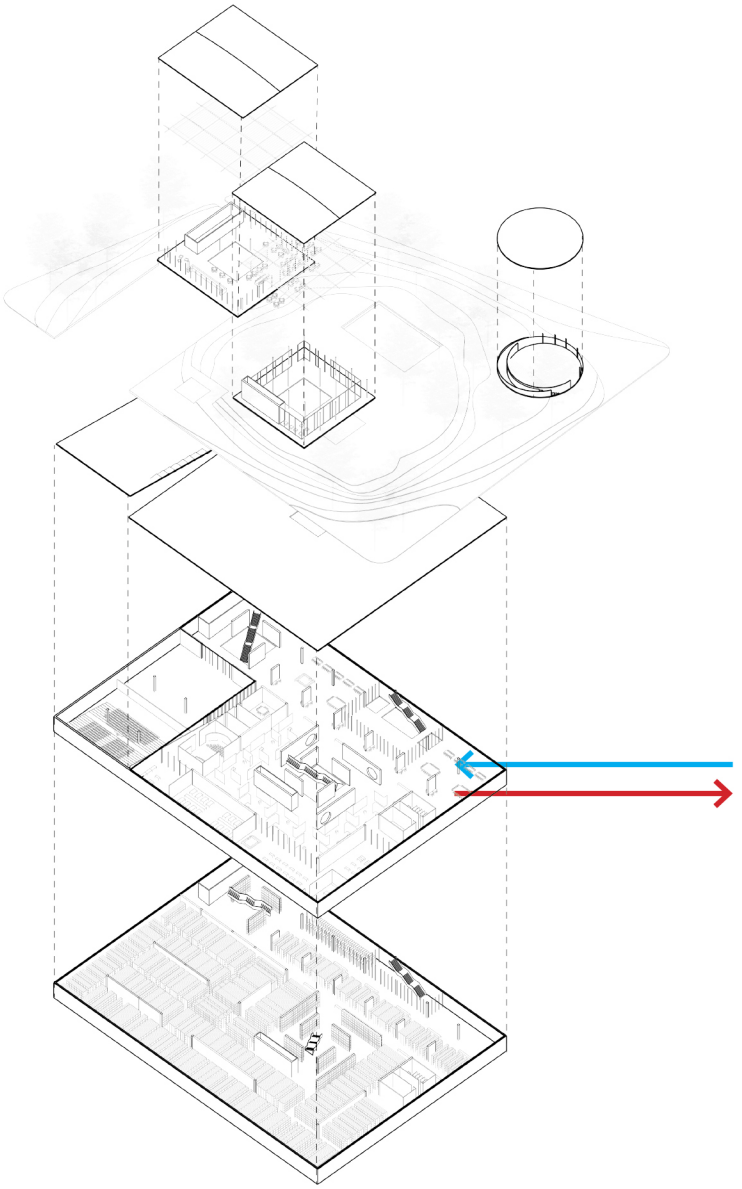
MICROCLIMATE TREES



MICROCLIMATE TREES



CLIMATE CONCEPT

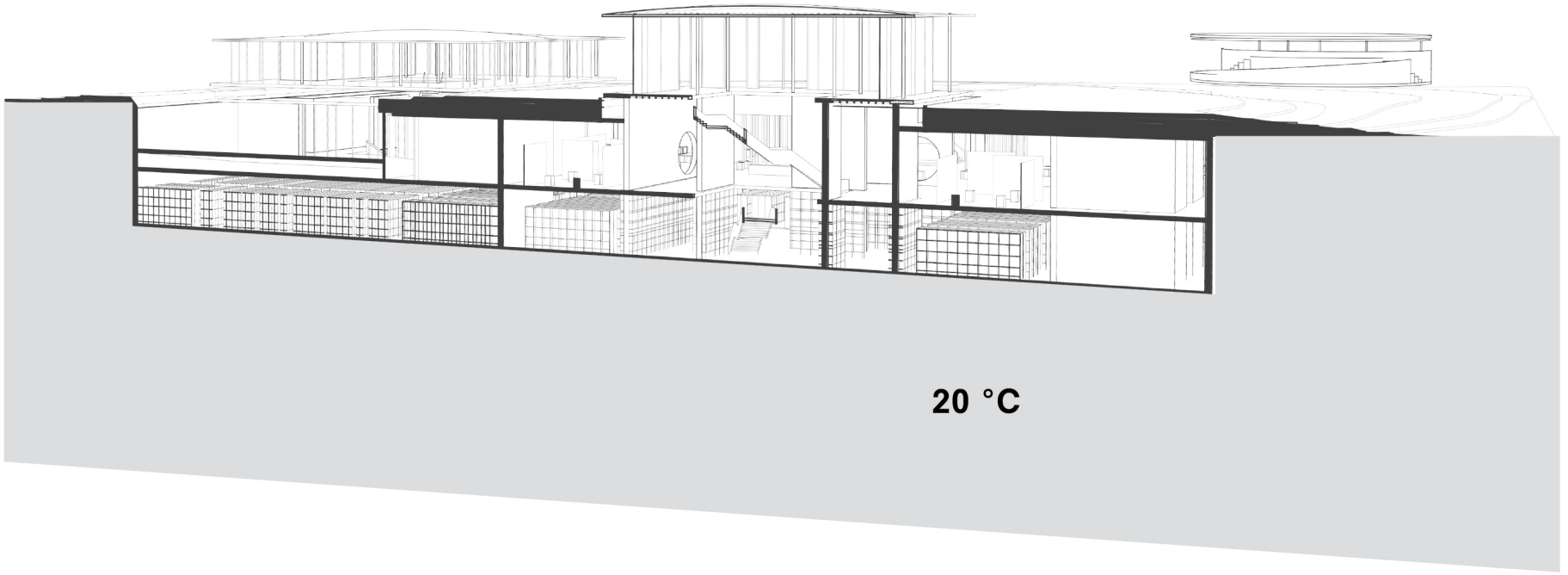


CLIMATE CONTROL



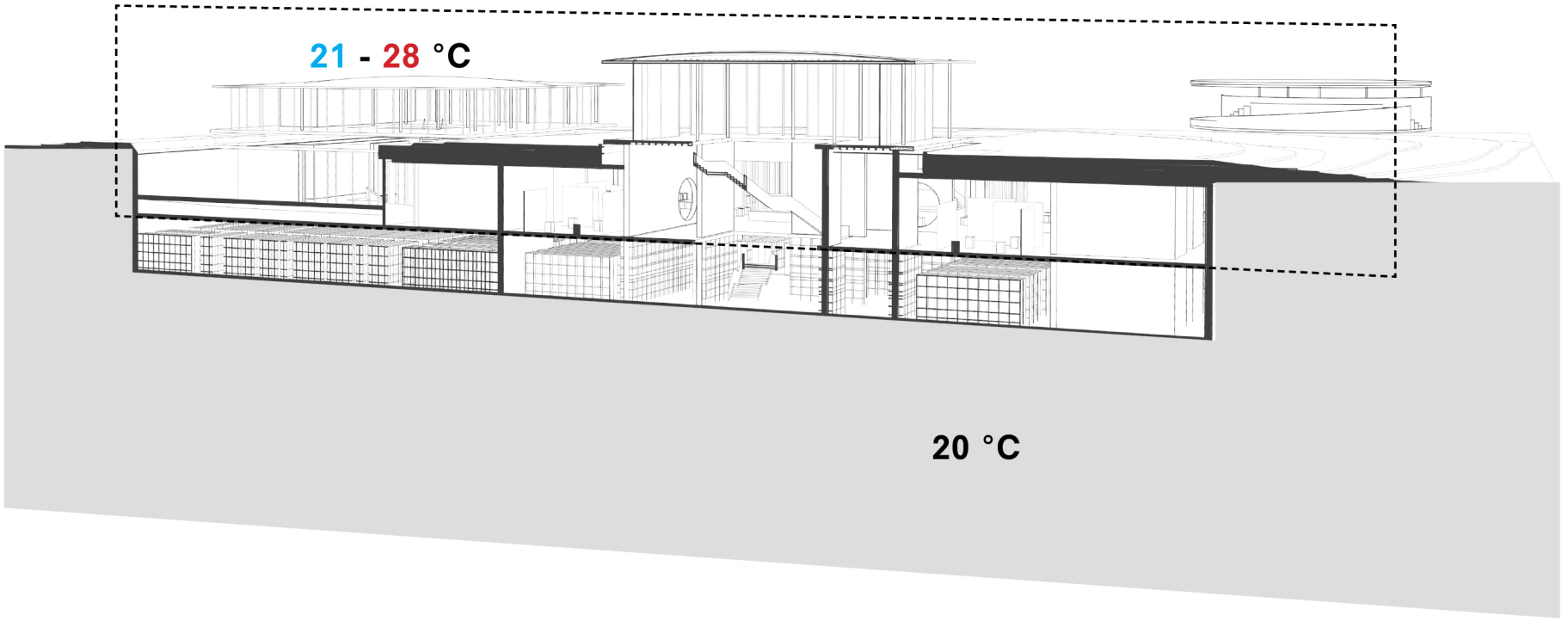
TEMPERATURES

17 - 31 °C



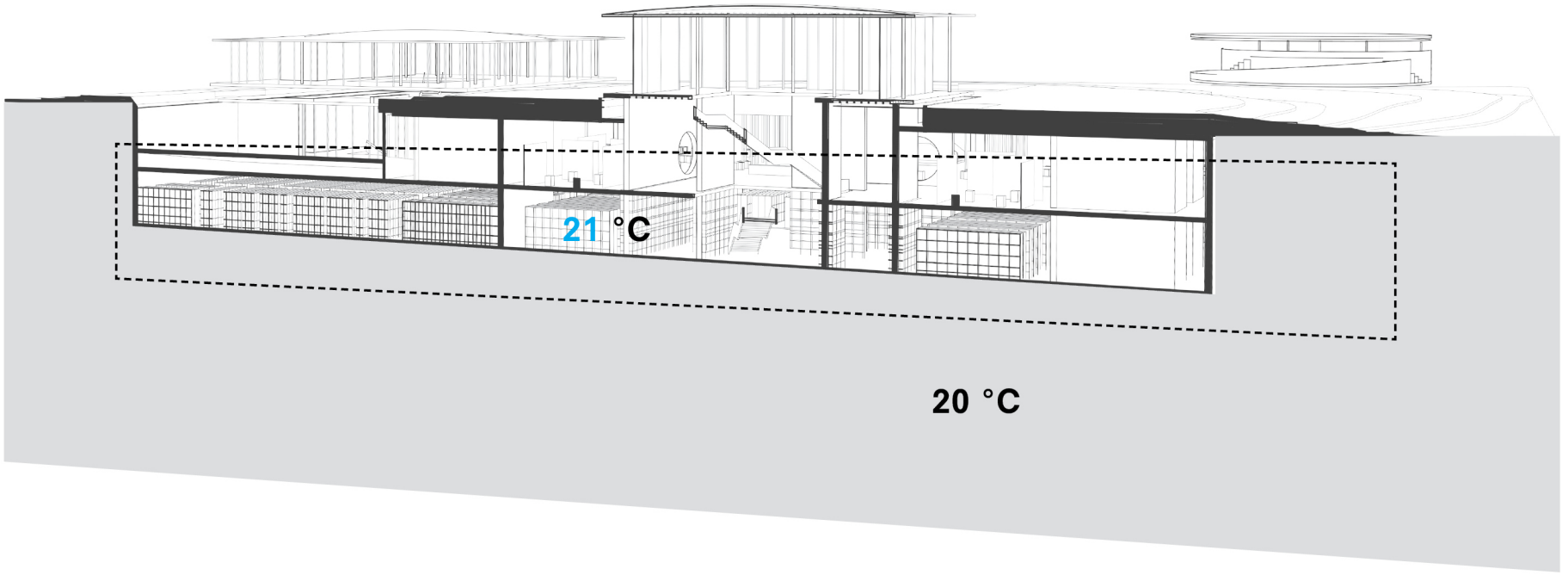
INDOOR TEMPERATURE

17 - 31 °C



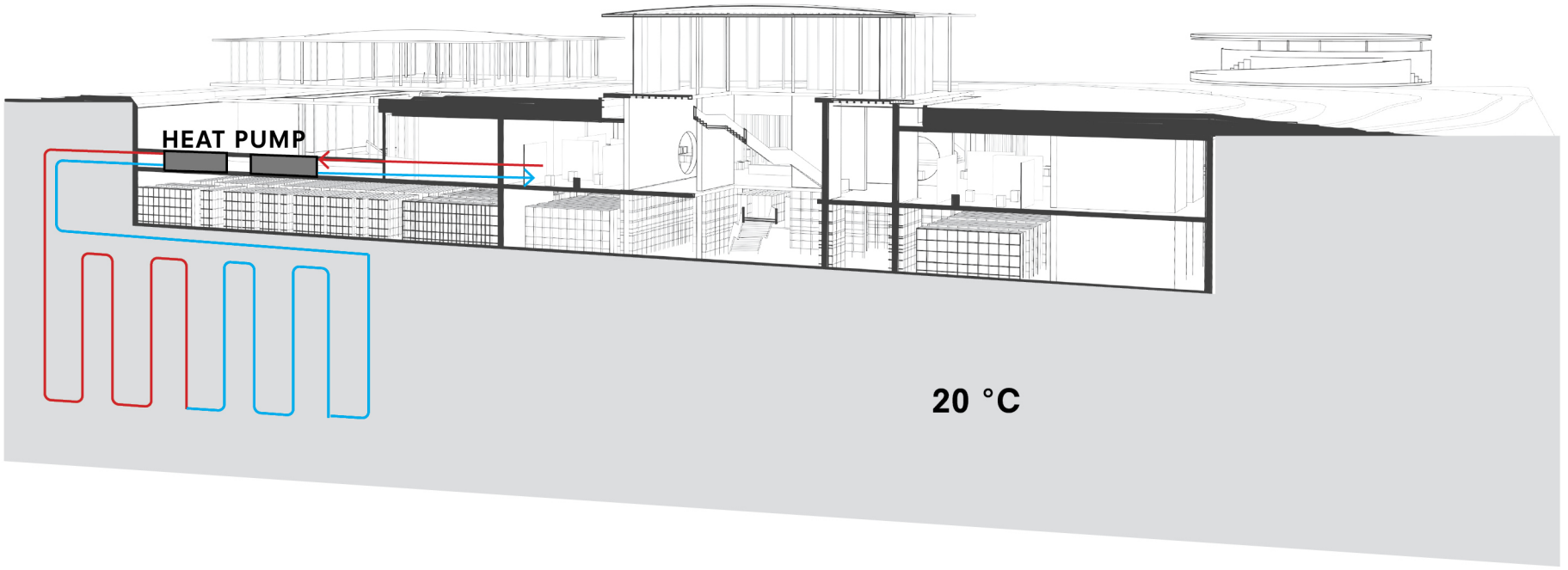
INDOOR TEMPERATURE

17 - 31 °C

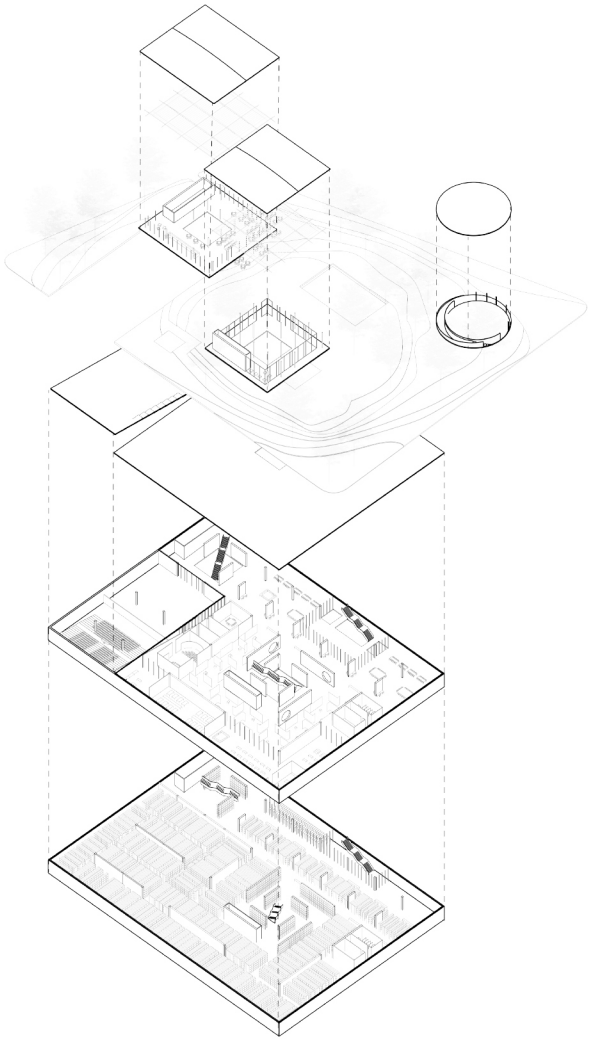


GEOTHERMAL HEAT PUMP

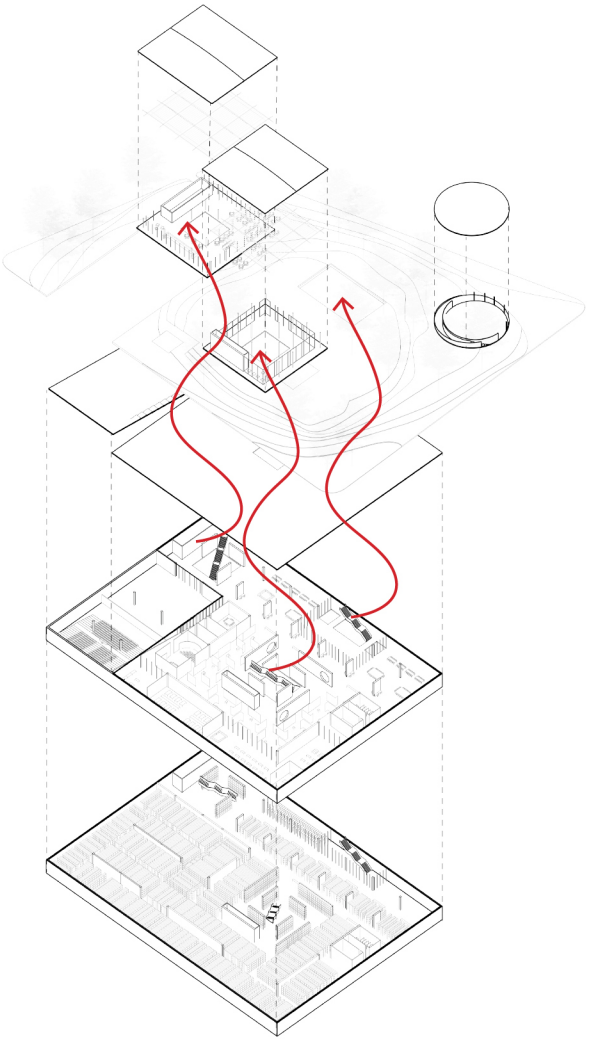
17 - 31 °C



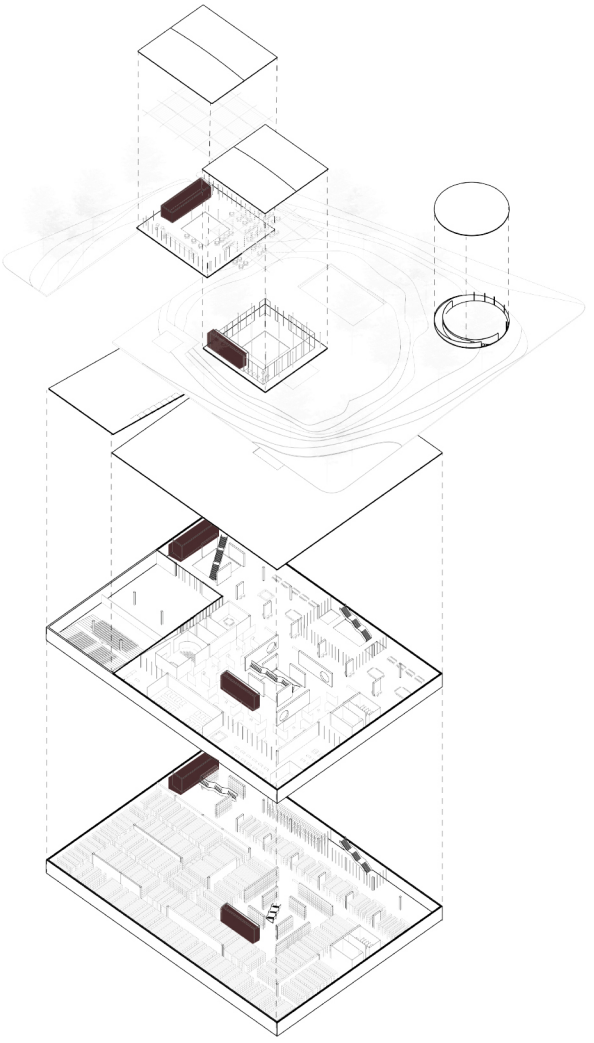
VENTILATION AIR DISTRIBUTION



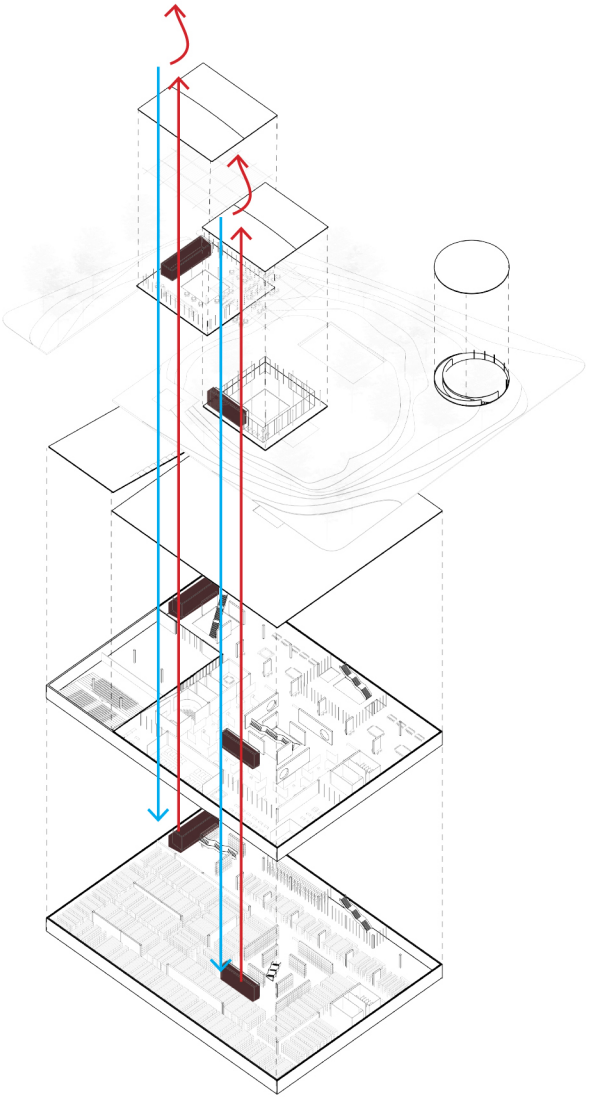
NATURAL VENTILATION



VENTILATION AIR DISTRIBUTION

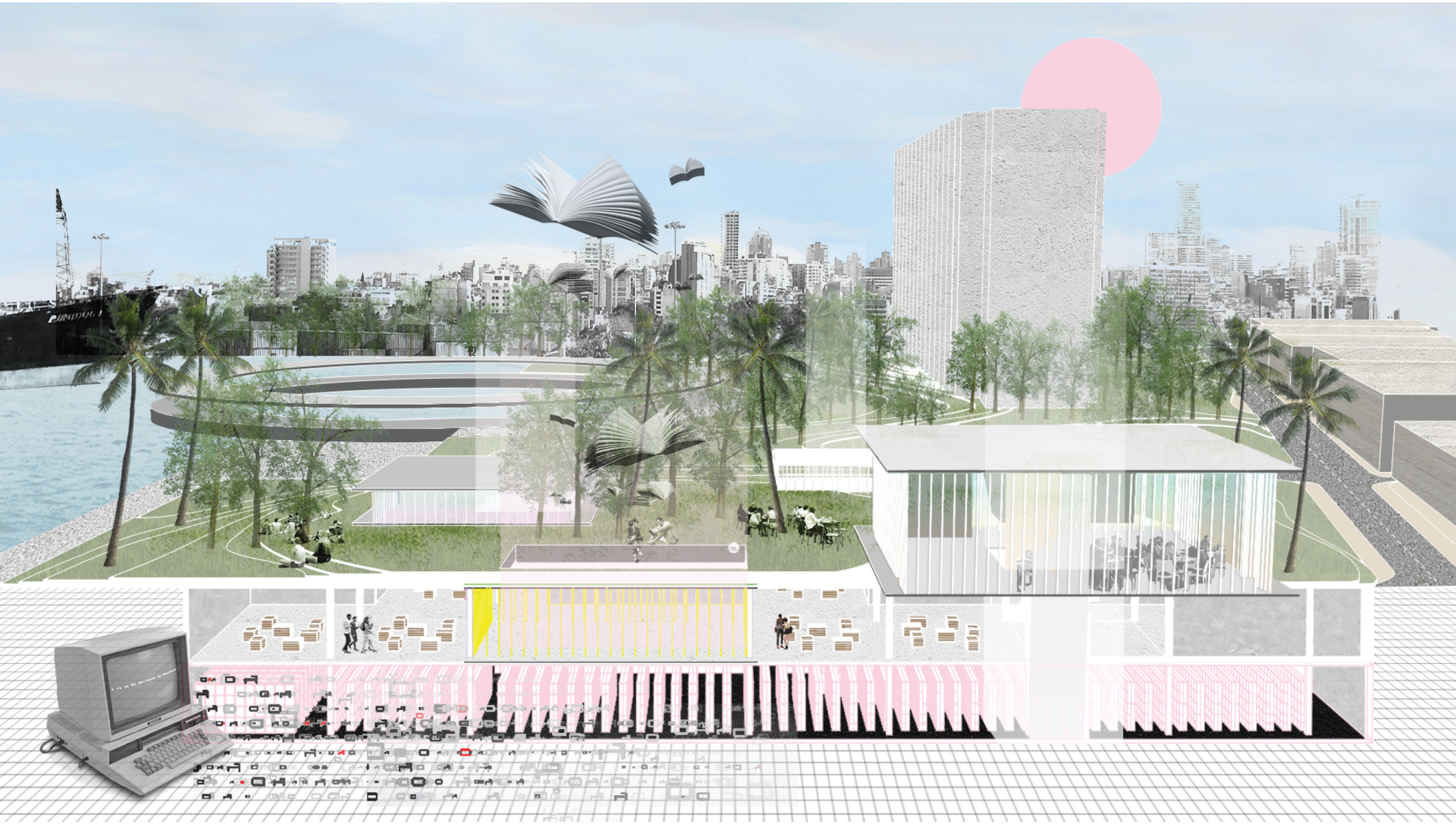


VENTILATION AIR DISTRIBUTION



CONCLUSION

KEEPER OF KNOWLEDGE



GROUP SITE



GROUP SITE



GROUP SITE

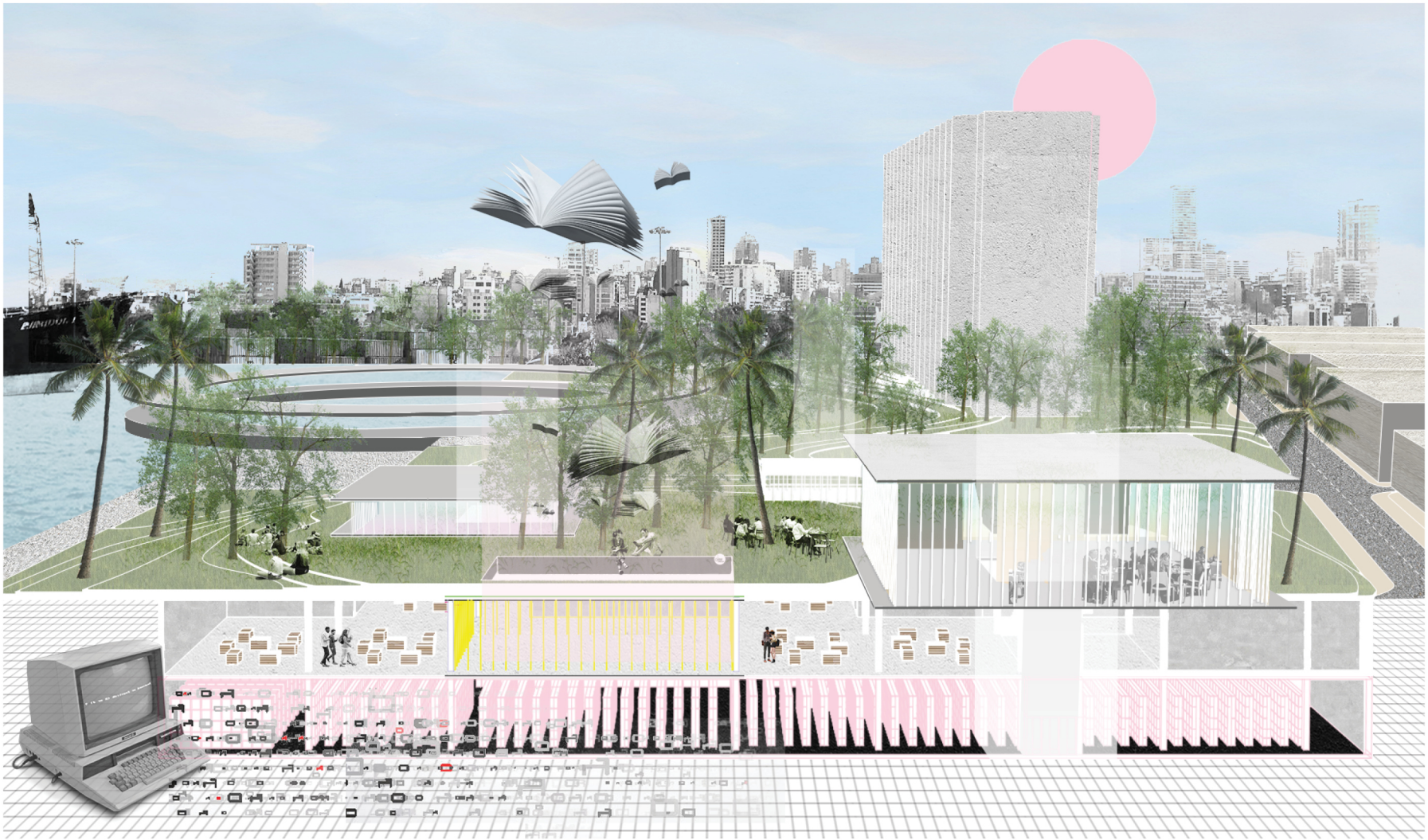


TRAIN STATION AND LIBRARY





BROADER SOCIAL CONTEXT

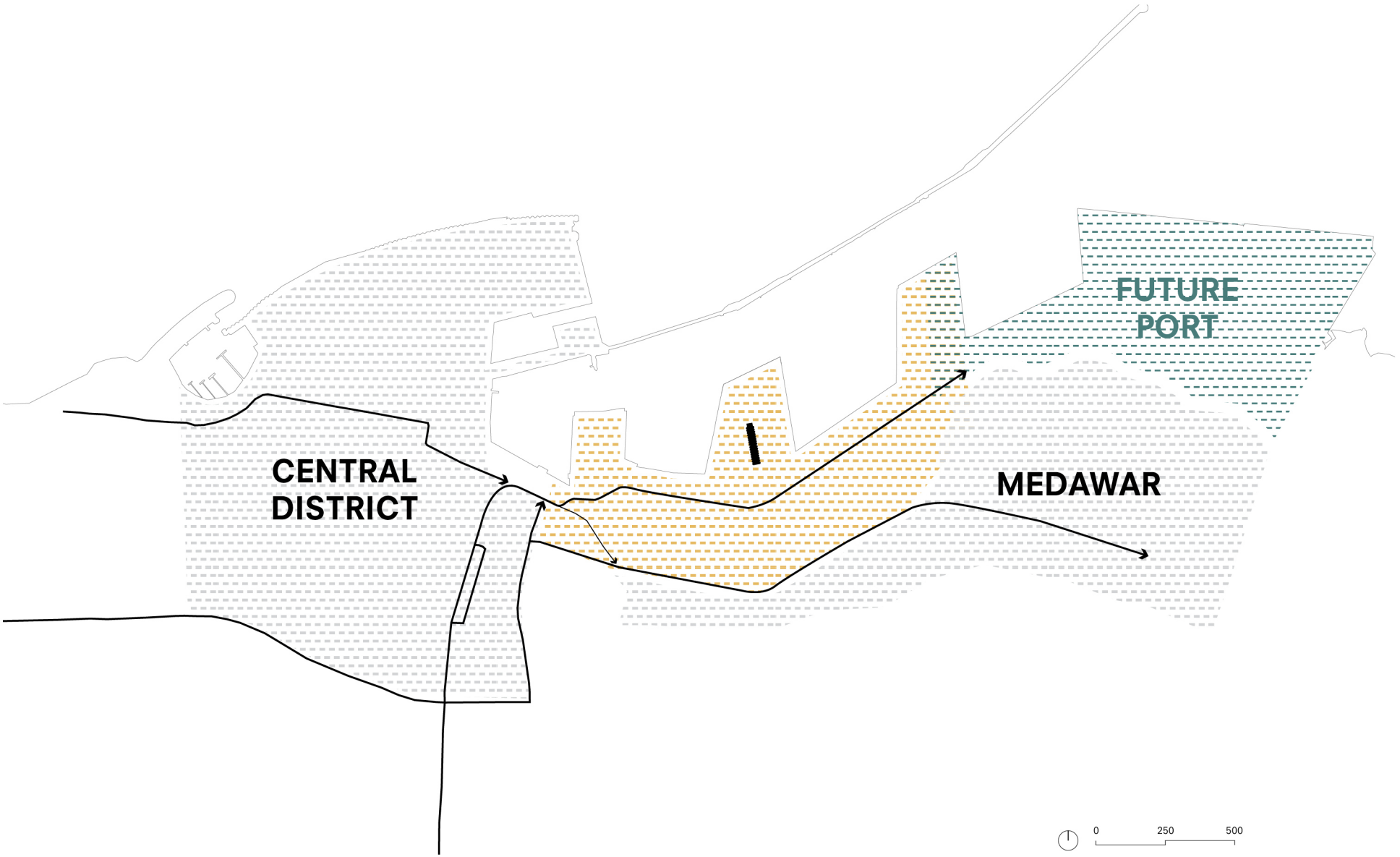


THE FUTURE LIBRARY

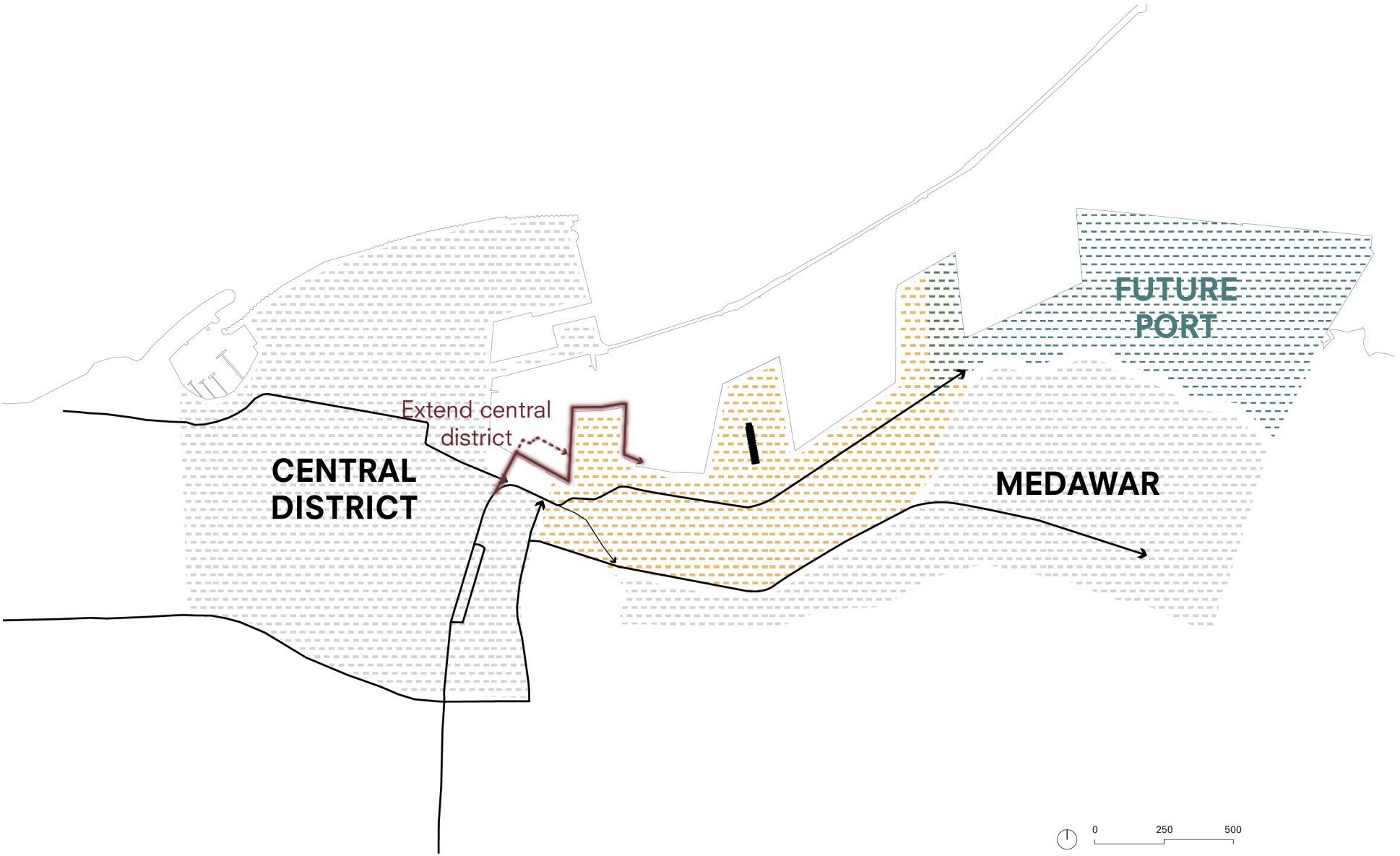

THANK YOU.

APPENDIX

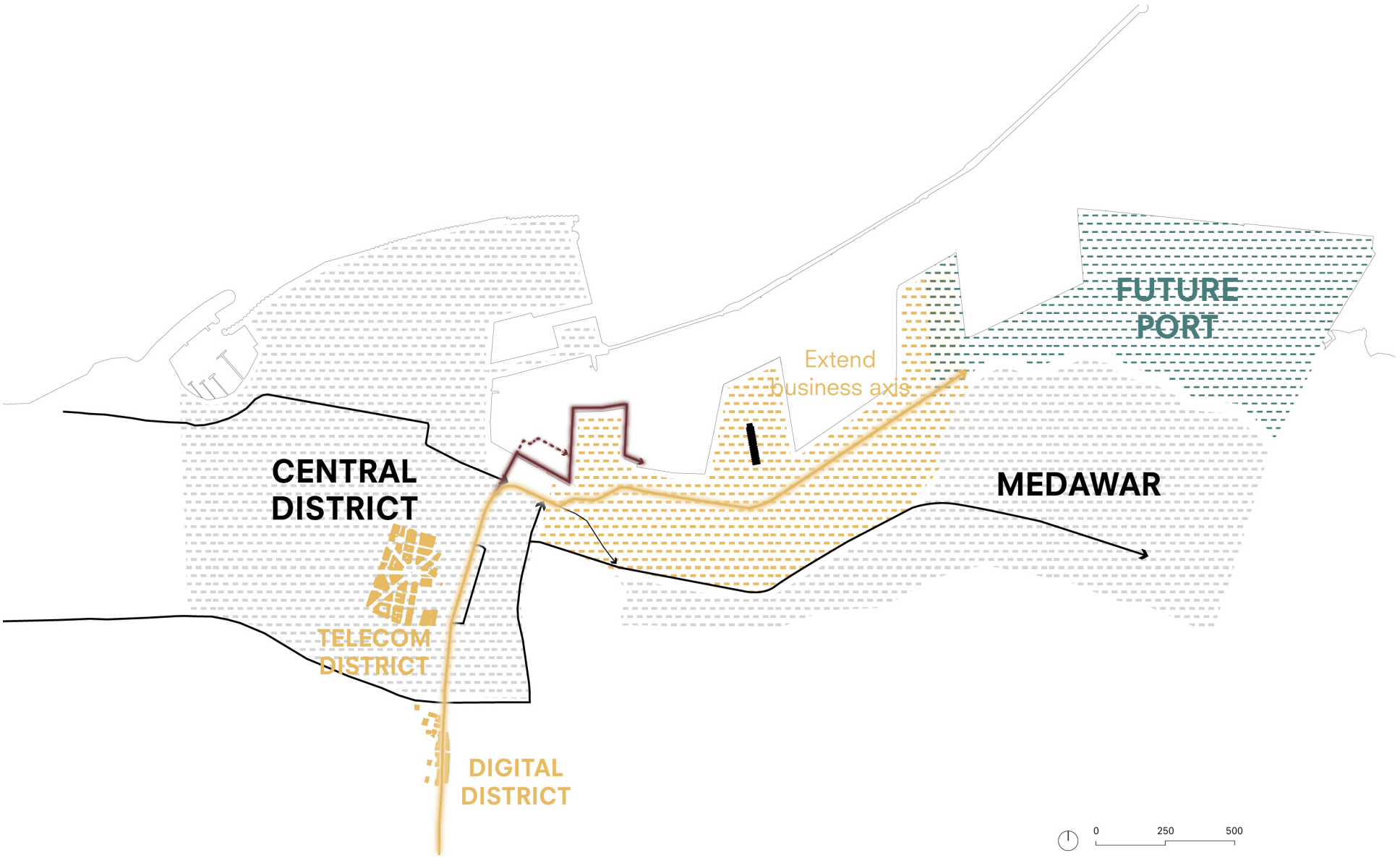
DENSIFYING STRATEGY



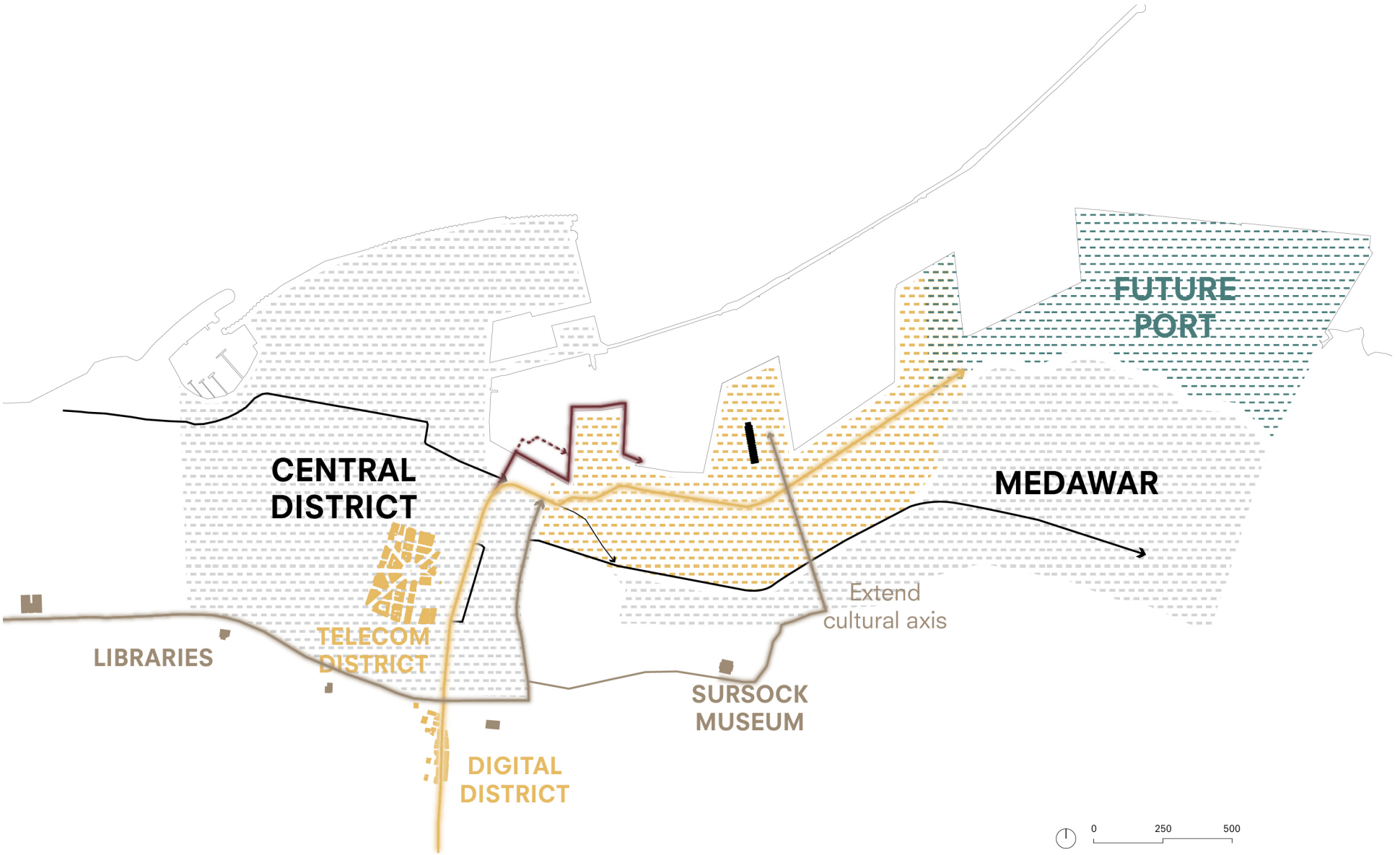
DENSIFYING STRATEGY



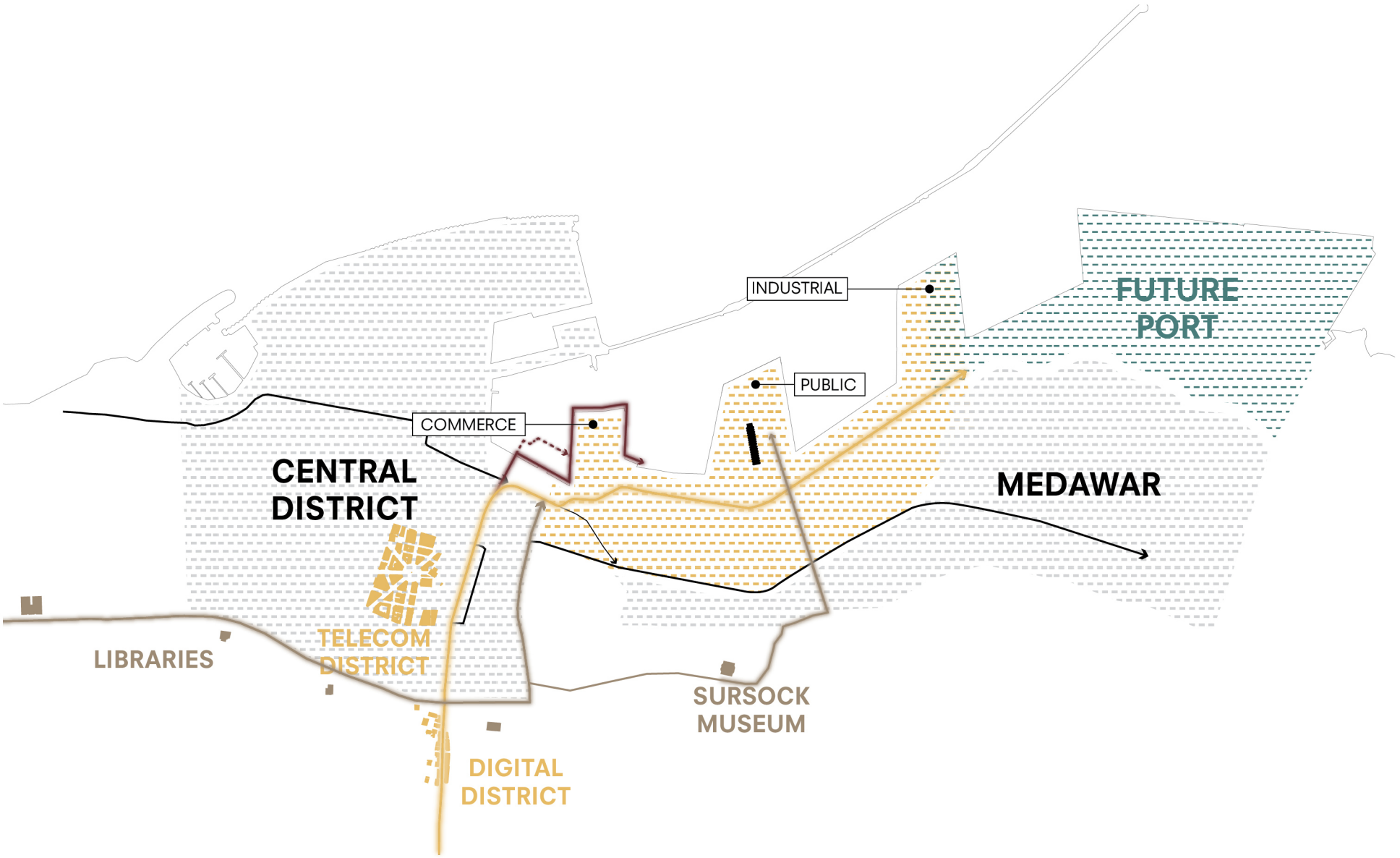
DENSIFYING STRATEGY



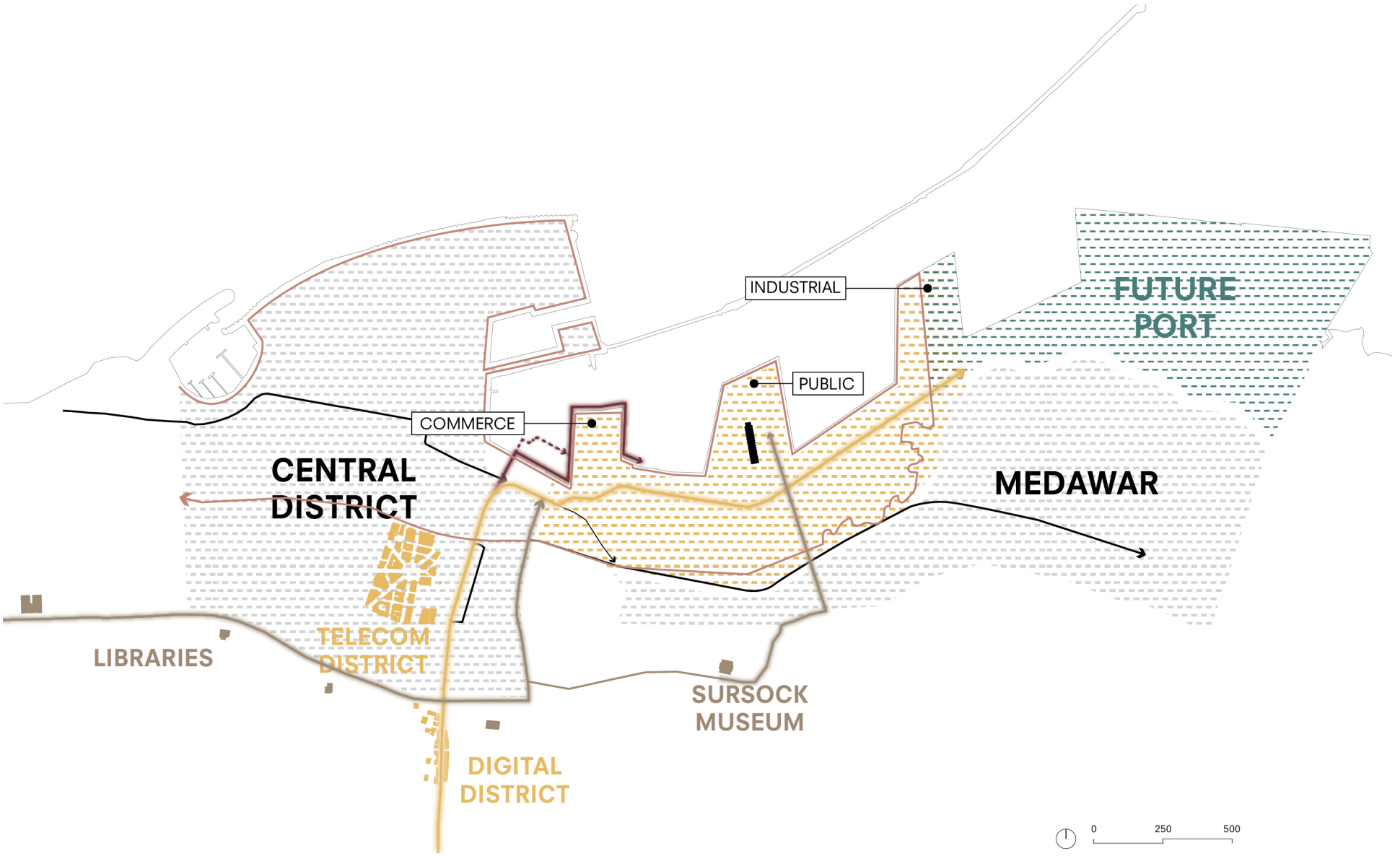
DENSIFYING STRATEGY



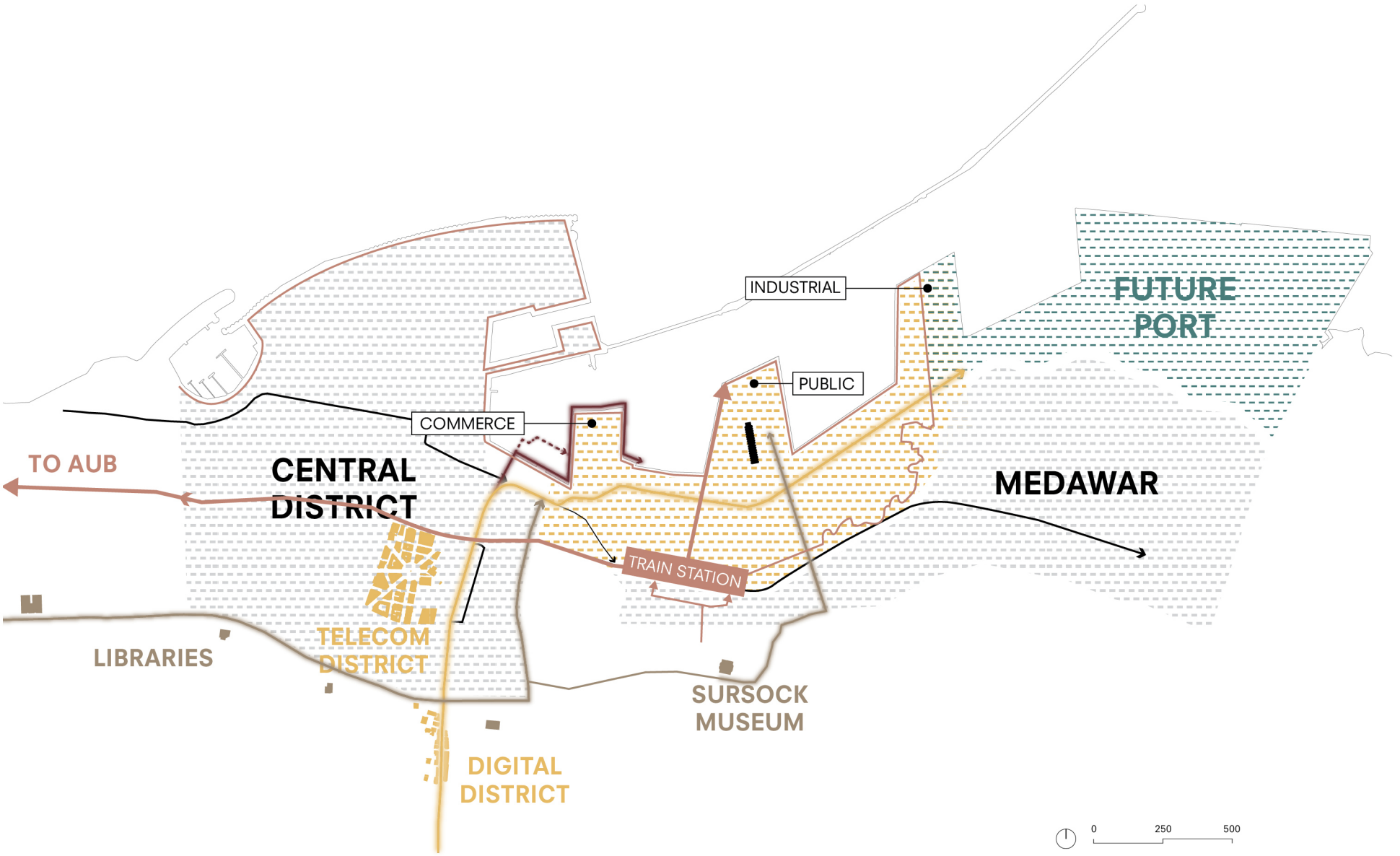
DENSIFYING STRATEGY



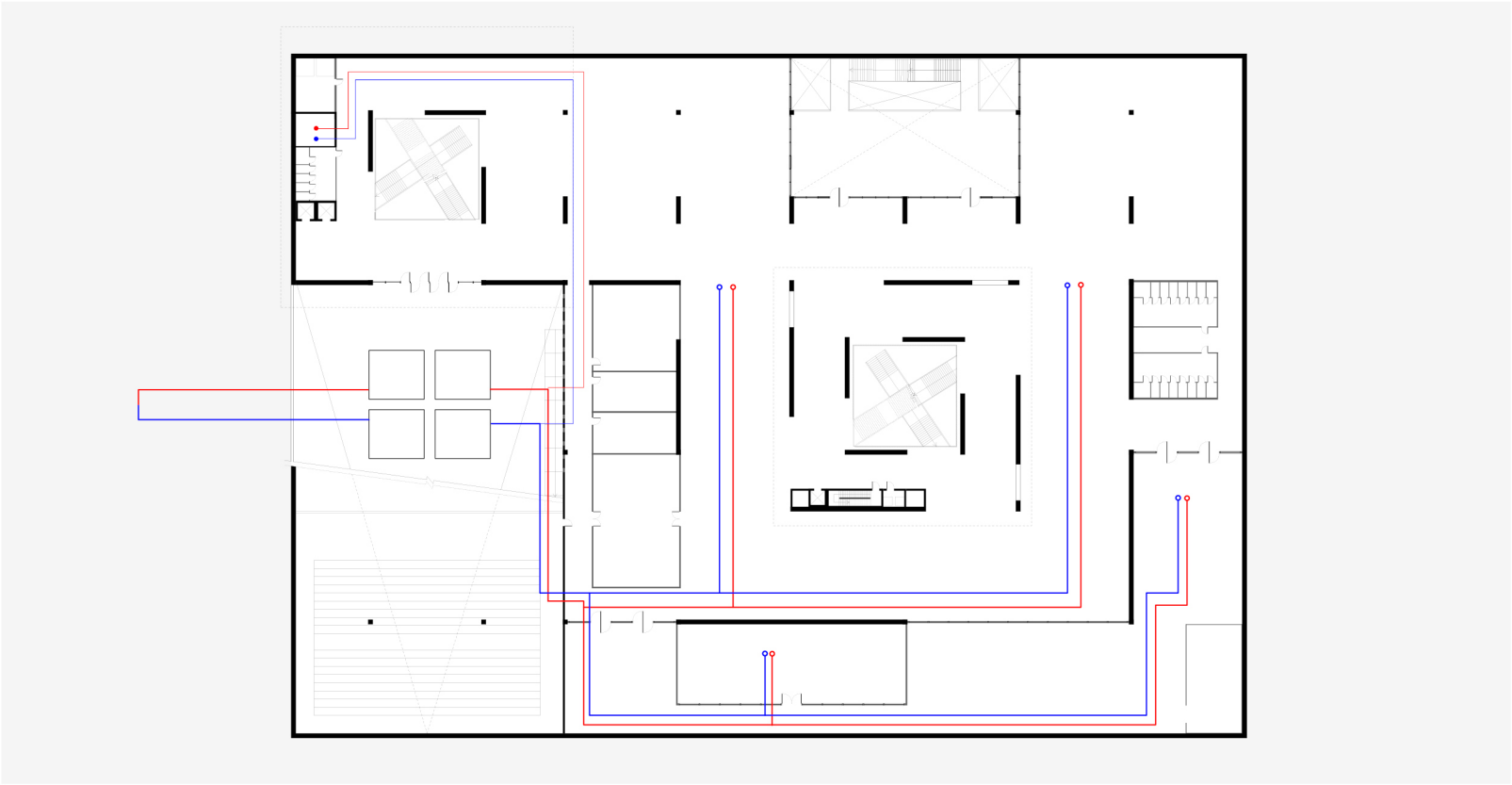
DENSIFYING STRATEGY



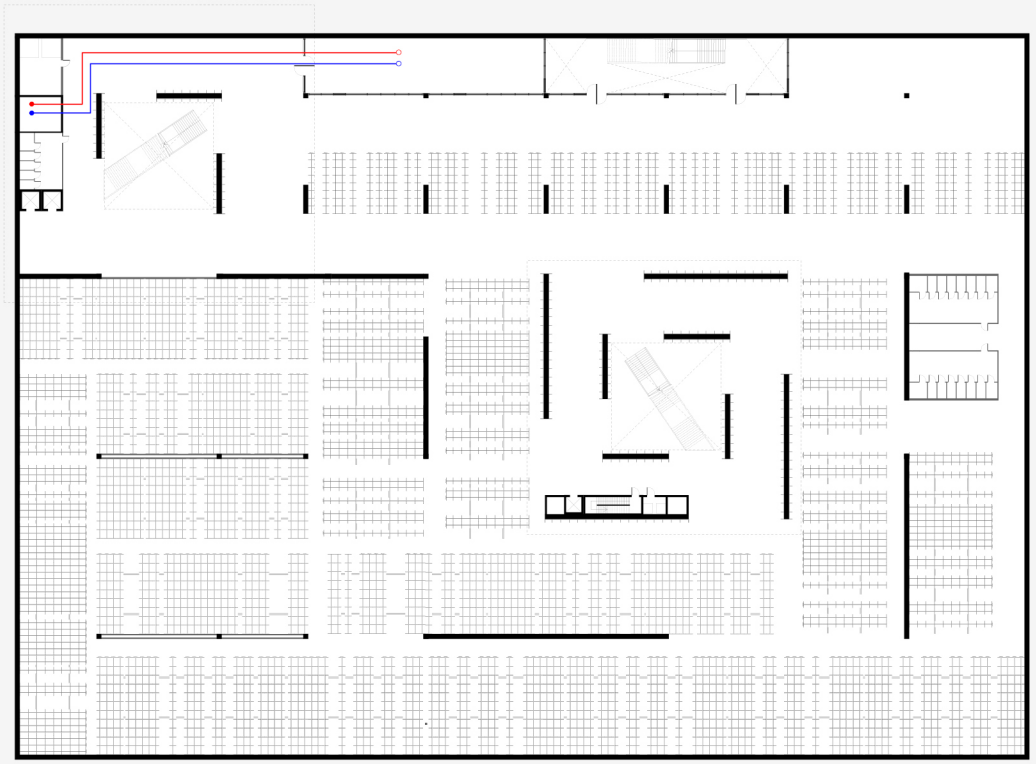
DENSIFYING STRATEGY



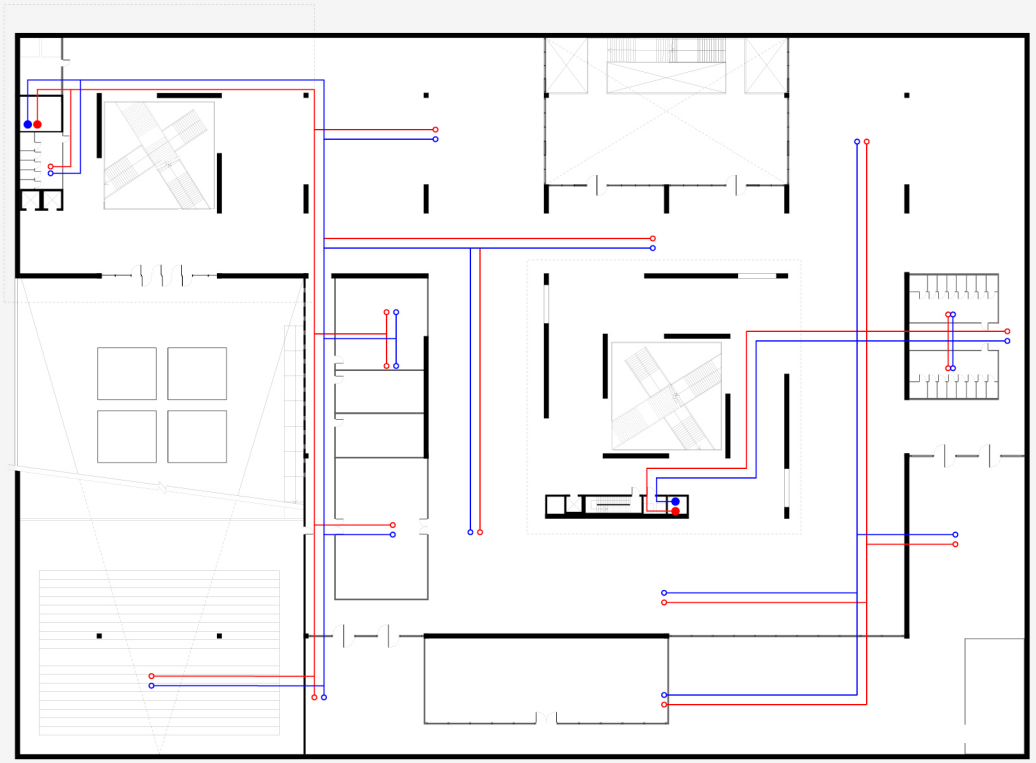
HEAT RECOVERY



HEAT RECOVERY



VENTILATION PLAN

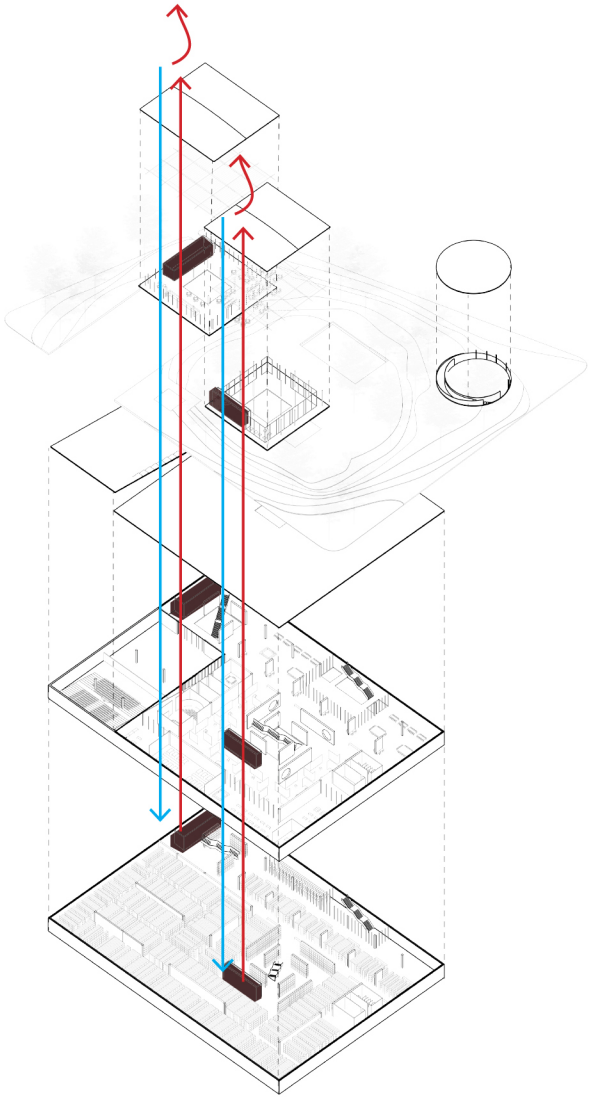


VENTILATION AIR DISTRIBUTION

Estimate 2000 people a day

Estimate 1000 people a day

3 Air treatment unit of 2x2x4 m



Estimate 750 people a day

2 Air treatment unit of 2x2x4 m

Estimate 250 people a day

1 Air treatment unit of 2x2x4 m