

UN CITY HUB BEIRUT

a metro station in the city centre of beirut

complex projects - studio beirut

pepijn francissen

06/15/2022

introduction

LEBANON



introduction

POPULATION



introduction

'PARIS OF THE MIDDLE EAST'



introduction

ECONOMICAL DISASTER



introduction

BEIRUT BLAST



introduction

VISITING BEIRUT



introduction

VISITING BEIRUT'S CENTRE



CURRENT TRANSPORT MODES



car



taxi



bus

introduction
(IM)MOBILITY



introduction CHALLENGES

Traffic congestion adds to Lebanon's many woes

Samar Kadi

Beirut

One would think that Lebanon's main problems stem from the raging war next door in Syria or the more than 1 million Syrian refugees flooding its villages and towns or from a corrupt public administration and dysfunctional governments, but no. Spending hours stranded in traffic jams, precarious road conditions and erratic driving causing high numbers of casualties and adverse effects on the economy are as problematic.

Traffic congestion in Lebanon has developed into a transportation crisis that is worsening due to bad roads, an increasing number of cars and a quasi-absent public transportation system. Excessive reliance on private cars and a very low occupancy rate of vehicles – estimated at 1.2 people per vehicle – are key factors for congestion. People in Lebanon spend 720 hours on average out of 4,380 day hours on the roads annually – more than 16% of the individual

is chaos on the road. Systematic violations of the road laws and lack of proper enforcement make traffic much worse," Helou added.

An estimated 500,000-600,000 vehicles enter and exit Beirut daily, adding to the large number of cars in the city. This, combined with chaotic driving, double parking and bad roads, makes commuting in the traffic-clogged capital a nightmarish adventure.

■ Traffic congestion in Lebanon is causing economic loss of 8-10% of GDP, an estimated \$3 billion.

Police officer Major Khalil Moukarrzel of the Traffic Management Centre (TMC) in Beirut underlined what he called "seasonal traffic", which is predictable compared to "accident

The with th tries; the stre holiday Year an demic r

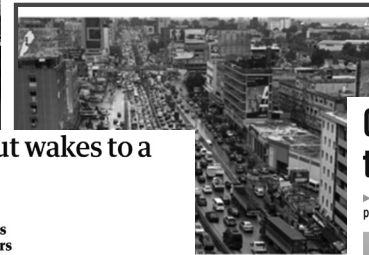
Fear and traffic jams - Beirut wakes to a familiar nightmare

- Airport, roads and bridges hit as blockade tightens
- Jubilation over Hizbullah capture of Israeli soldiers



Independence Day parade drills paralyze Beirut traffic

(What's up ?) 3 years ago



The Lebanese Army's preparations for next week's Independence Day military parade caused choking traffic Friday morning after a number of main roads were closed at the entrance to Beirut. Several drivers interviewed by local TV

Coronavirus lockdown causes Beirut smog to lift

► Traffic has significantly dropped, contributing to 70% drop in nitrogen dioxide, but experts say generators remain problem



Beirut on September 27, 2019. (AFP)

Energy and fuel crises sees more people in Beirut opting for the bicycle

For years, government policies made Lebanese cap

© Sun, Nov 14, 2021, 17:13



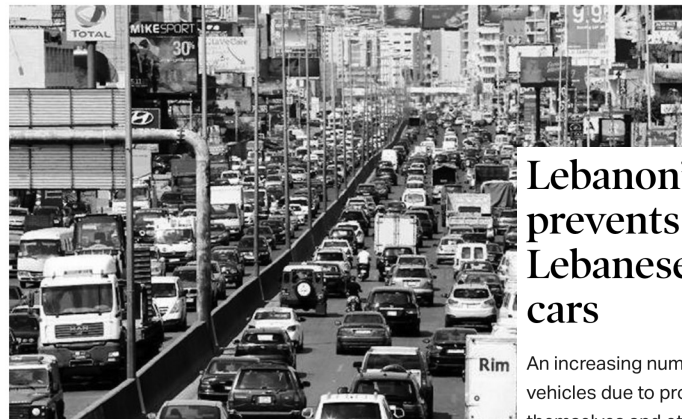
Dan Griffin in Beirut



A traffic jam of vehicles queued up to refuel from a petrol station in Beirut. (Tahtah/Getty)

Why We Spend Two Hours in Traffic

By Tamara Saade - December 5, 2017



Lebanon's crushing crisis prevents more and more Lebanese from maintaining their cars

An increasing number of motorists are finding it hard to maintain their vehicles due to prohibitively expensive spare parts, putting themselves and other road users at risk.

"...the cost of road congestion is estimated at \$2 billion/year (nearly 4% of GDP)."

Home / Lebanese drivers queue for hours as fuel crisis worsens

Lebanese drivers queue for hours as fuel crisis worsens

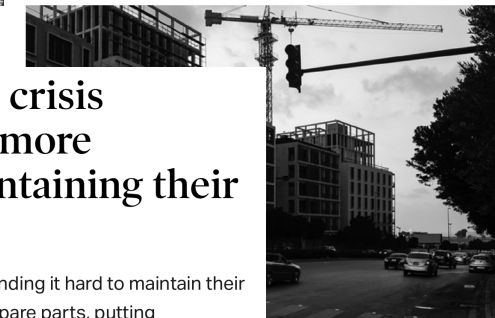


Beirut on September 27, 2019. (AFP)

Economy | Corruption

Dying of the light: Lebanon's crisis and failing traffic signals

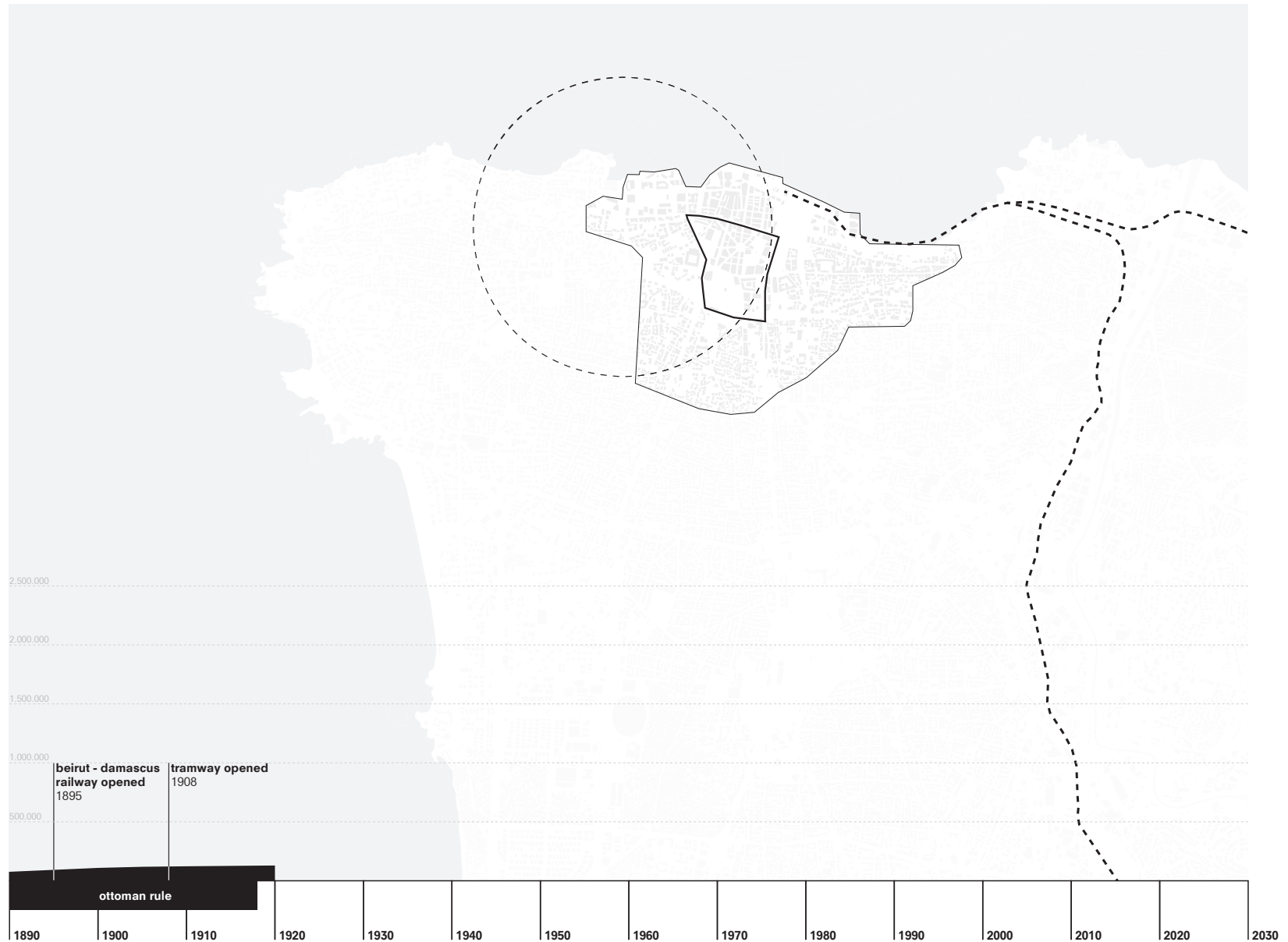
Beirut's traffic lights helped create a sense of normality after the civil war – now they too have stopped working.



Why did this happen?

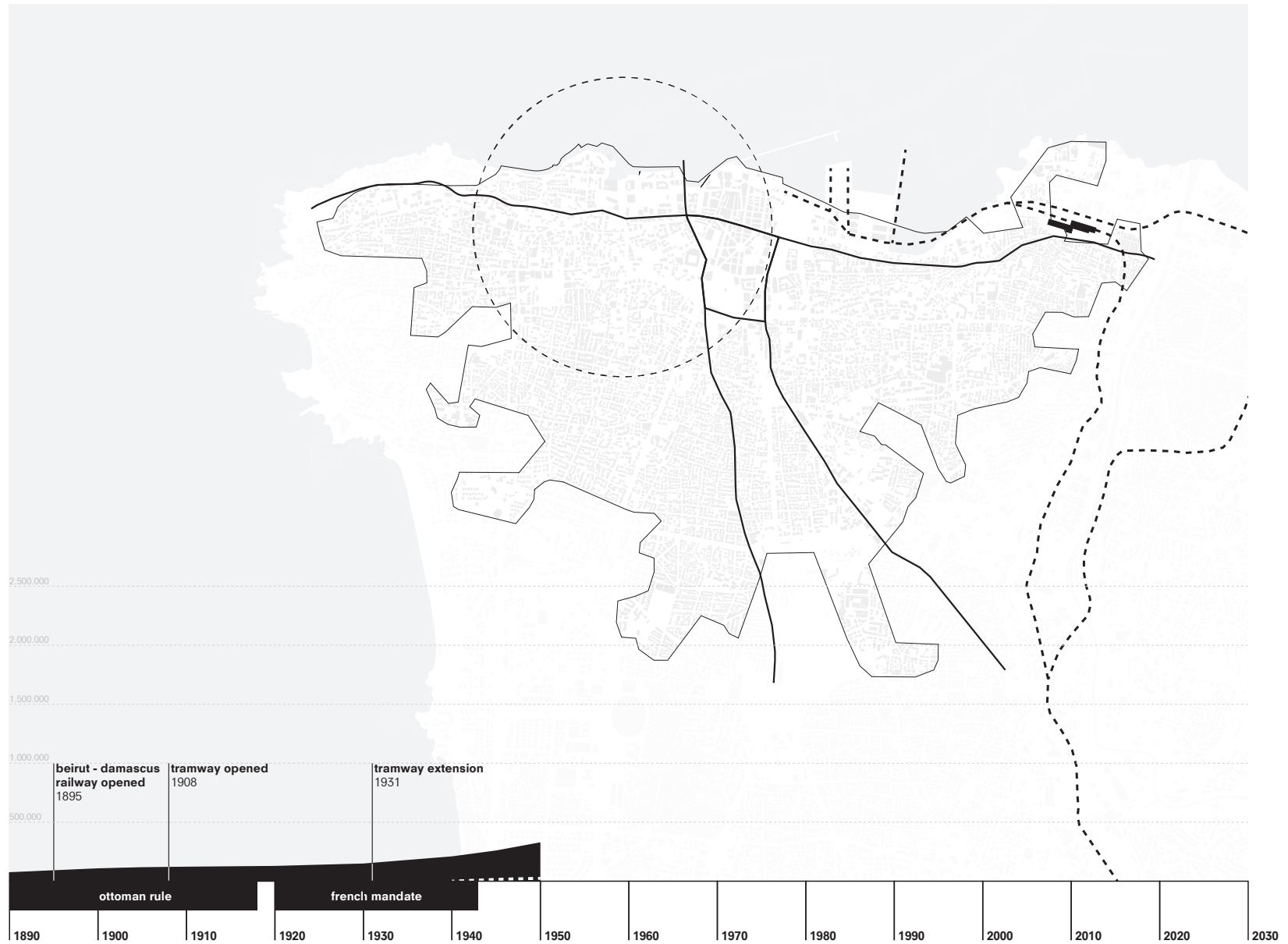
introduction

OTTOMAN RULE

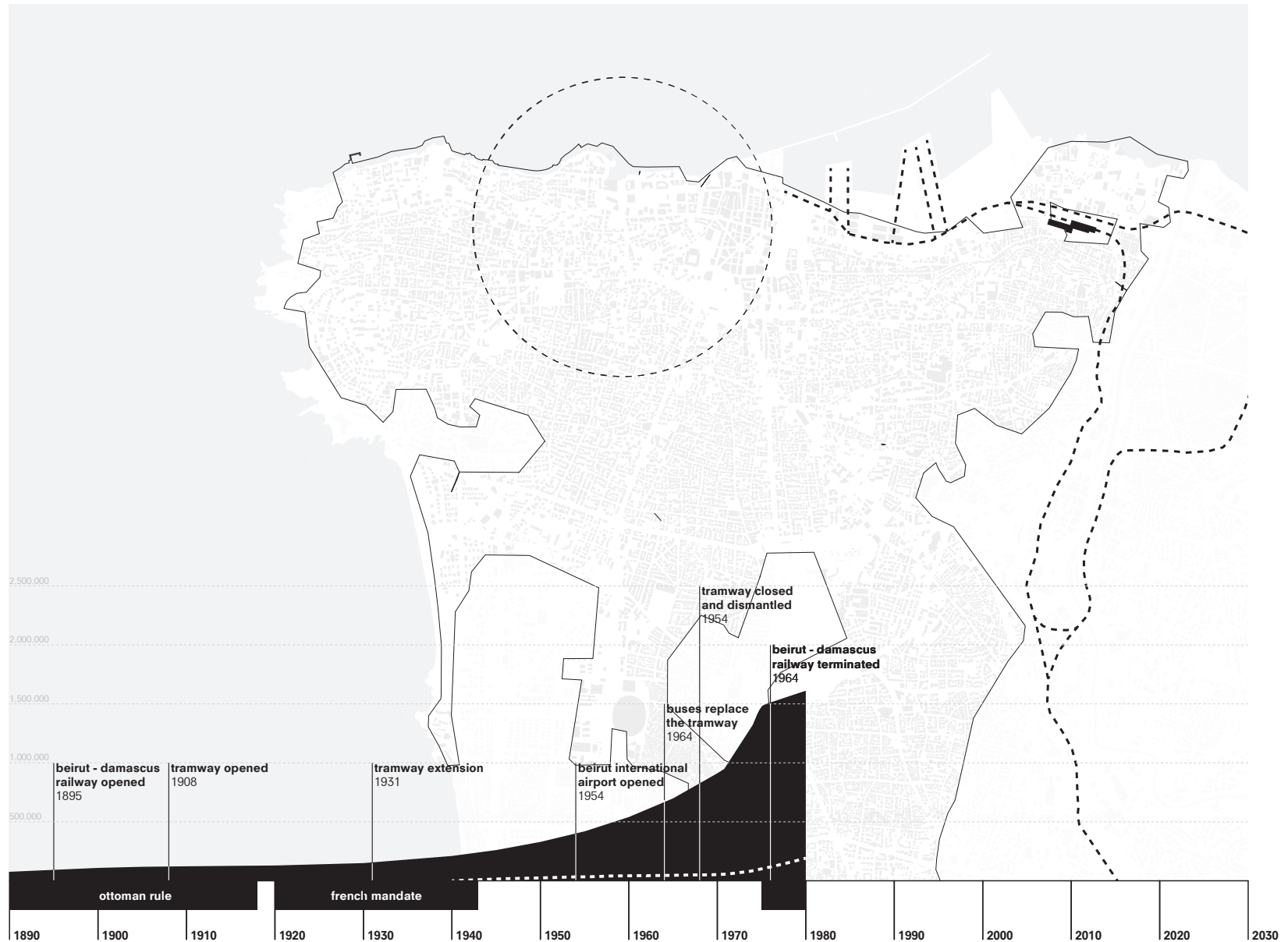


introduction

FRENCH MANDATE

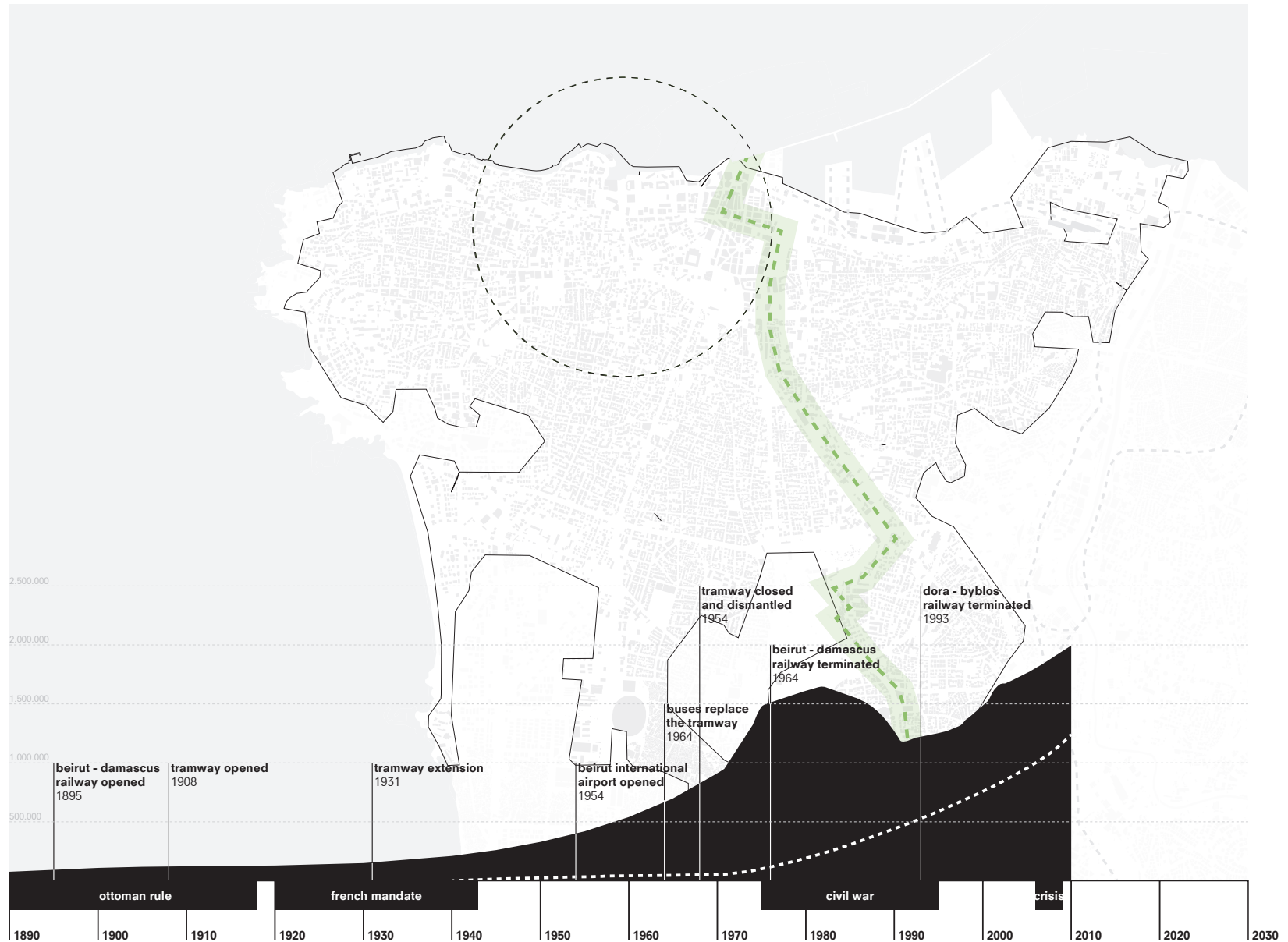


introduction
THE CAR



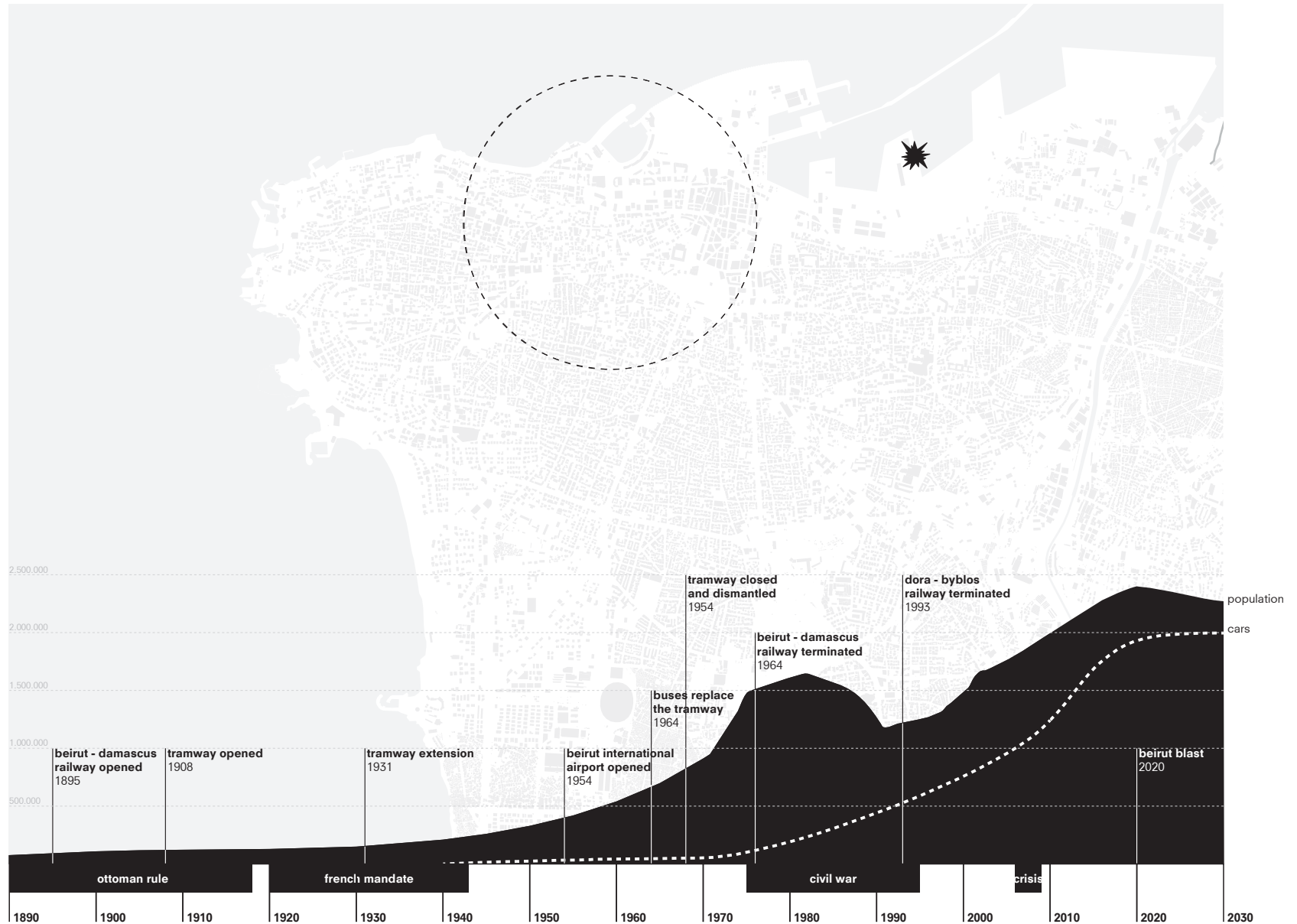
introduction

CONFLICTS



introduction

THE BLAST



introduction

CAR IS KING



introduction

MORE SPACE FOR CARS

1943

expanding around centre



1967

new infrastructure (Ecochard's master plan)



2021


after the introducing of highways in 1997




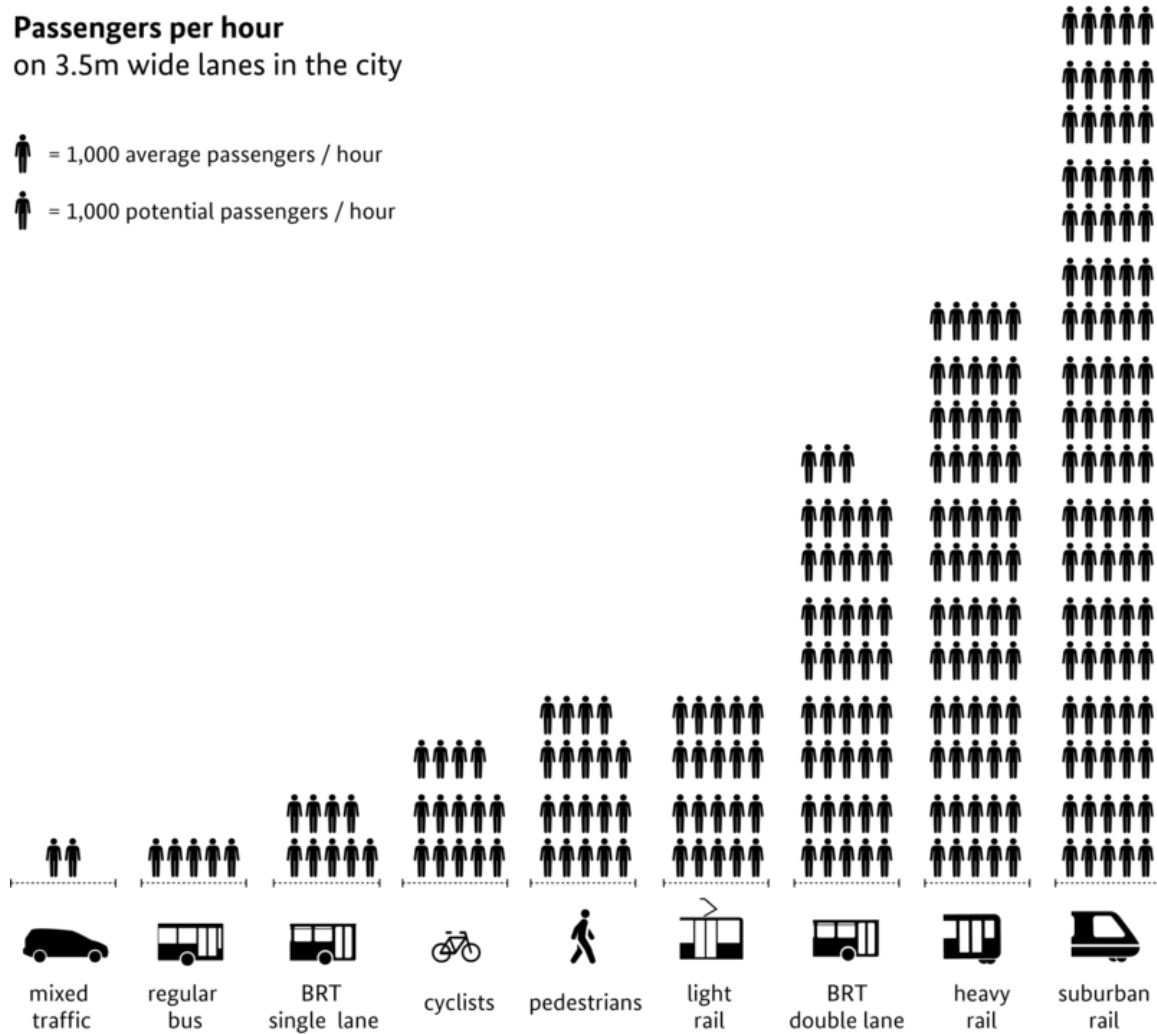
introduction

INEFFICIENT

Passengers per hour
on 3.5m wide lanes in the city

 = 1,000 average passengers / hour

 = 1,000 potential passengers / hour



introduction

CHALLENGES



congestion



pollution



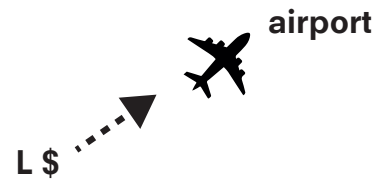
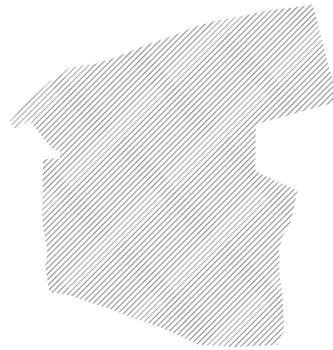
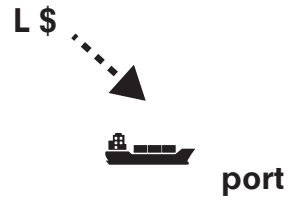
space consuming

introduction

CLOSED GATEWAY

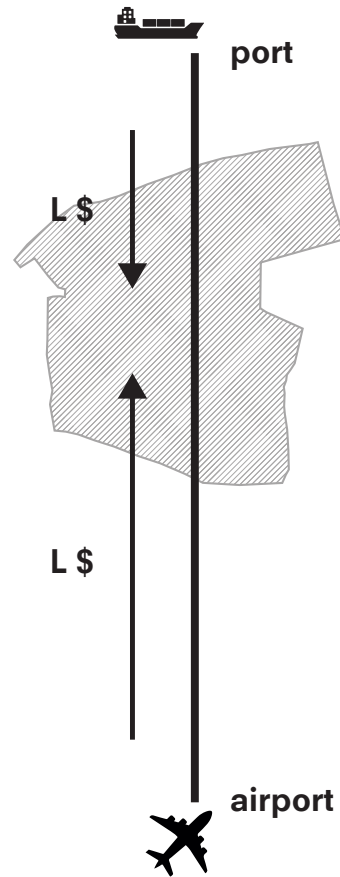


GATEWAYS TO LEBANON



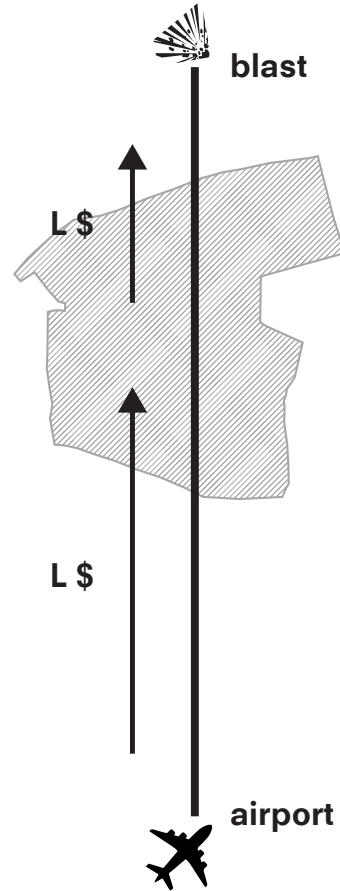
research

FININCIAL FLOWS



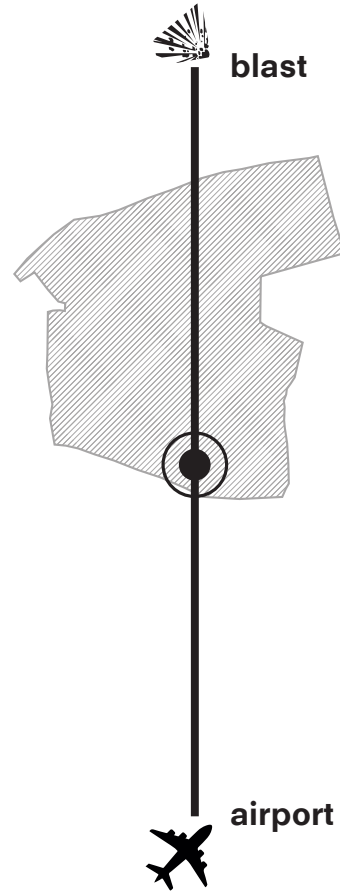
introduction

FININCIAL (AID) FLOWS



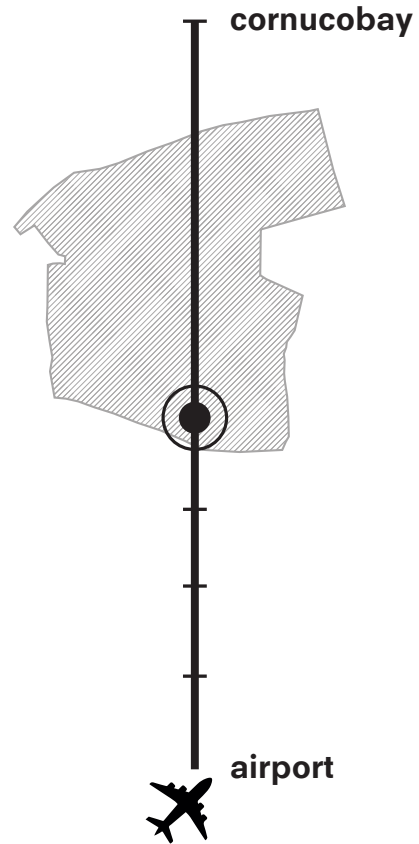
introduction

FININCIAL CENTRE



introduction

OPPORTUNITY FOR A METRO LINE



MODES OF TRANSPORT

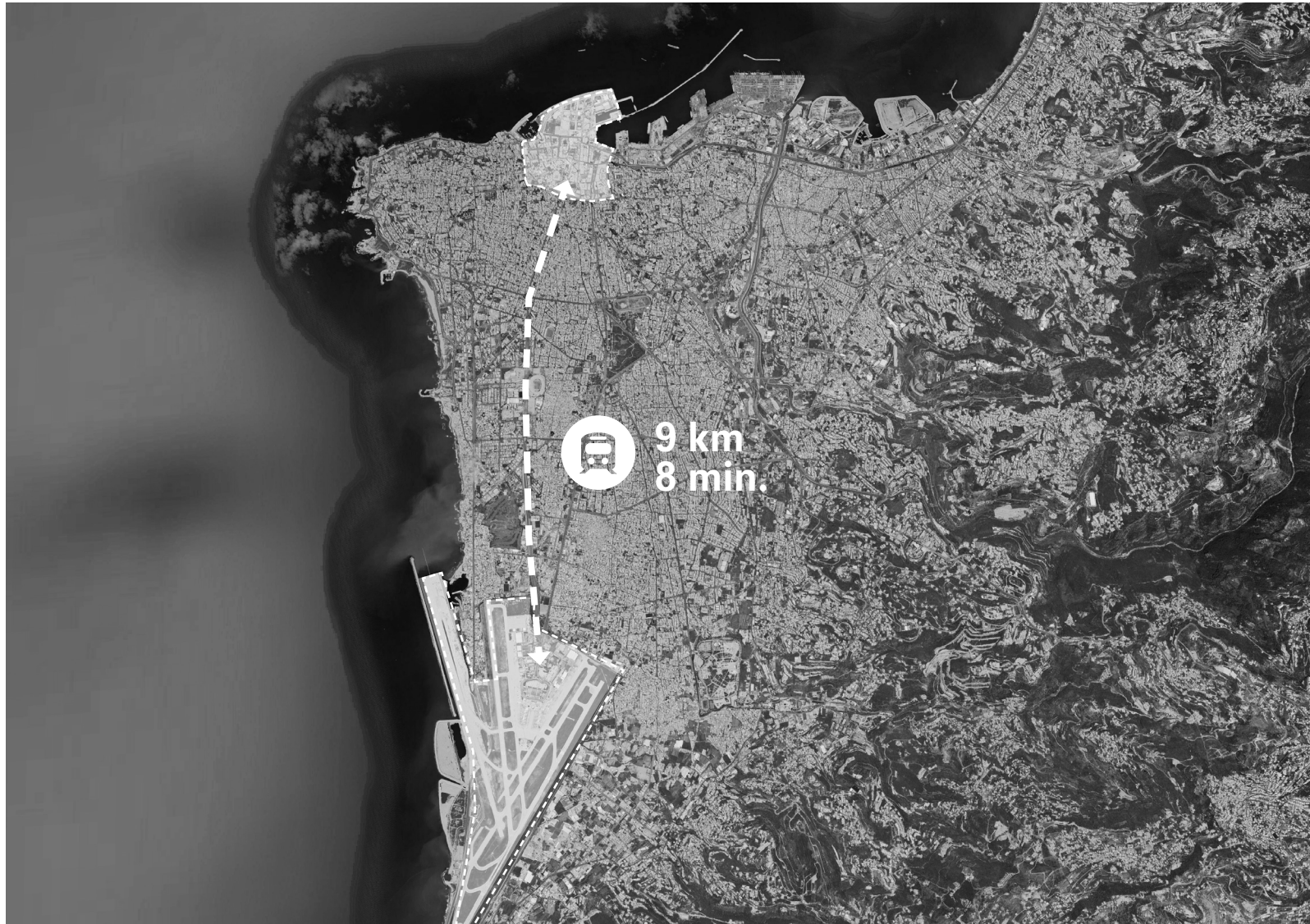
		from airport
	avg. speed	8,4 km
		65 m. up / 84 m down
walking		1 h 47 min.
bike	20 km/h	25 min.
car		12 min. (18 min.)
bus	20 - 25 km/h	20 min.
tram	20 - 25 km/h	20 min.
metro	60 - 70 km/h	8 min.
cable car	10 - 20 km/h	25 min.

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introduction

VISITING BEIRUT'S CENTRE



introduction

CLIENT & USER

municipality of beirut

government of lebanon

solidere s.a.l.

finance

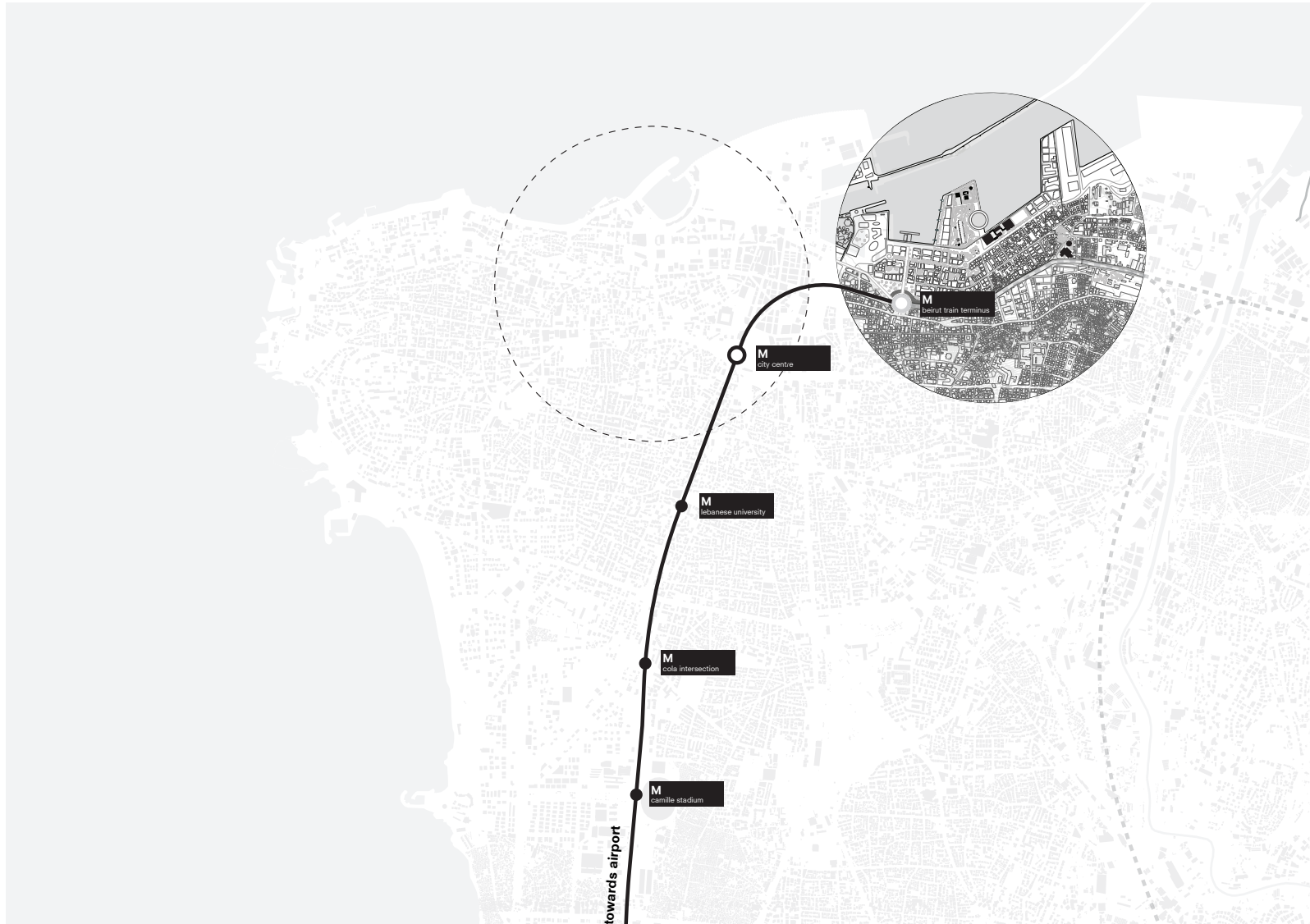
**railway and public
transportation
authority**

exploitation

commuters
locals
tourists

users

introduction
METRO LINE



RESEARCH QUESTION

How can the metro line support the further development of the now secluded Central District and overcome the social-spatial barrier?

location

3 LAYERED FRAGMENTATION

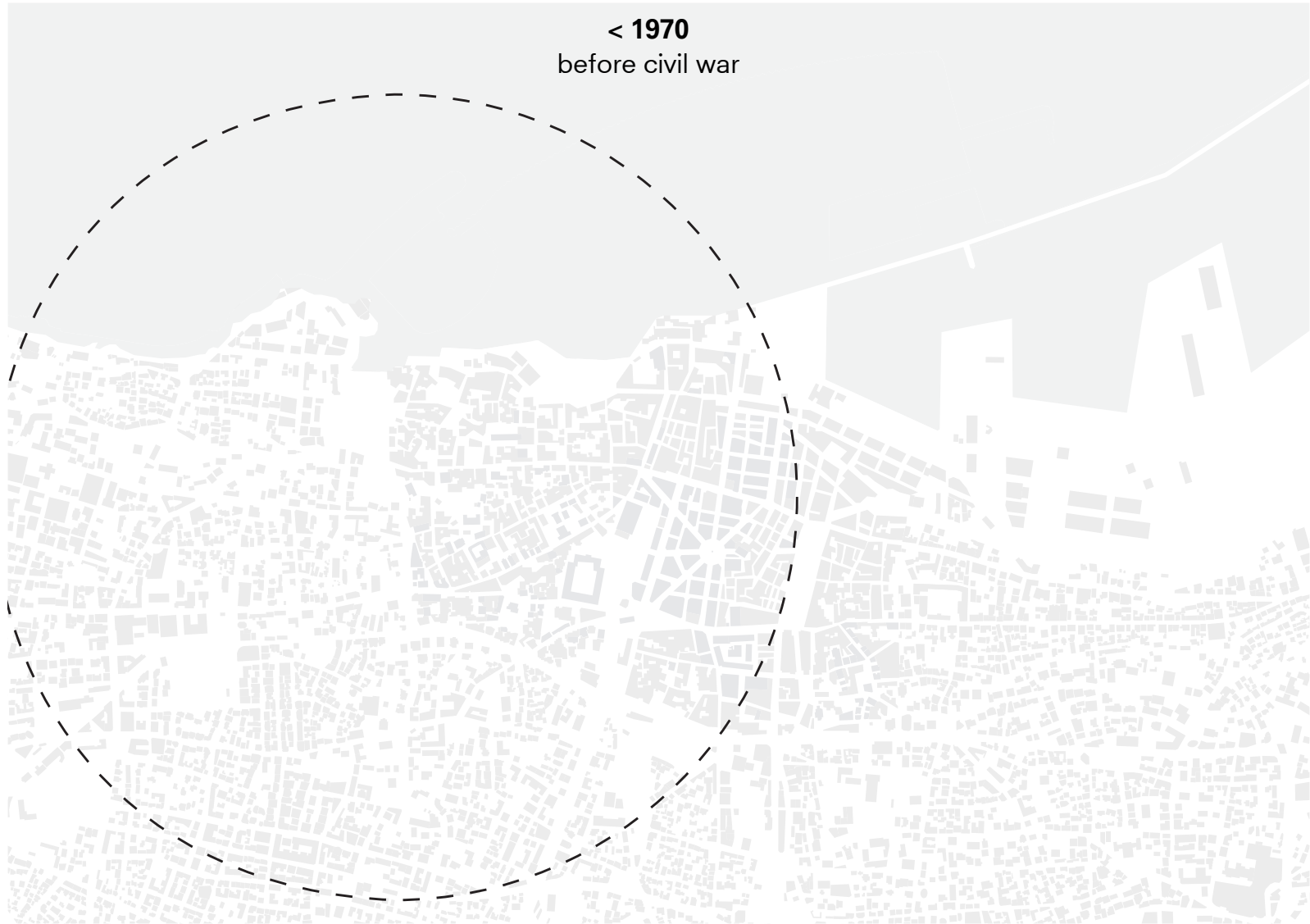
historical

infrastructural

social

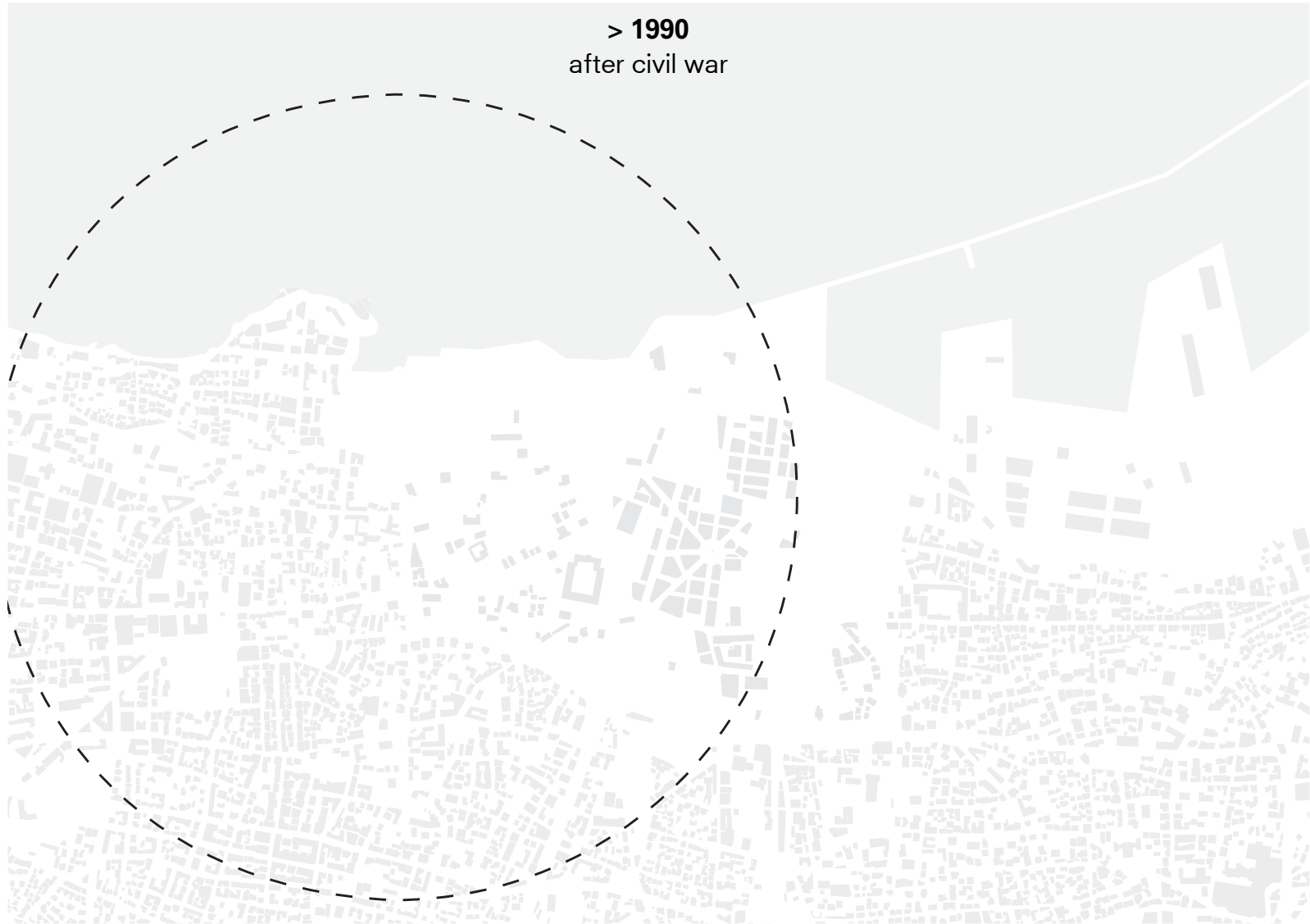
location

HISTORICAL LAYER



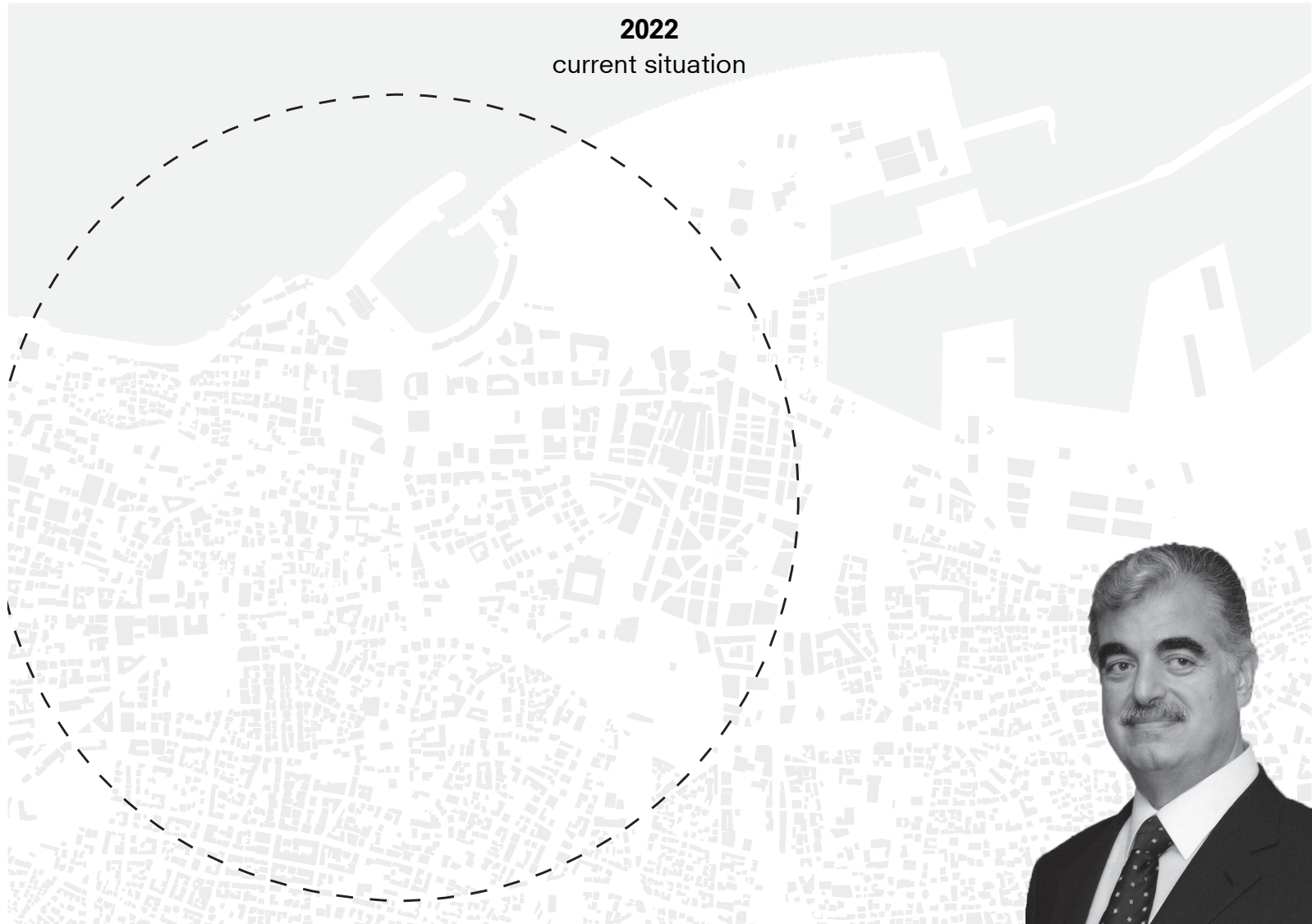
location

HISTORICAL LAYER



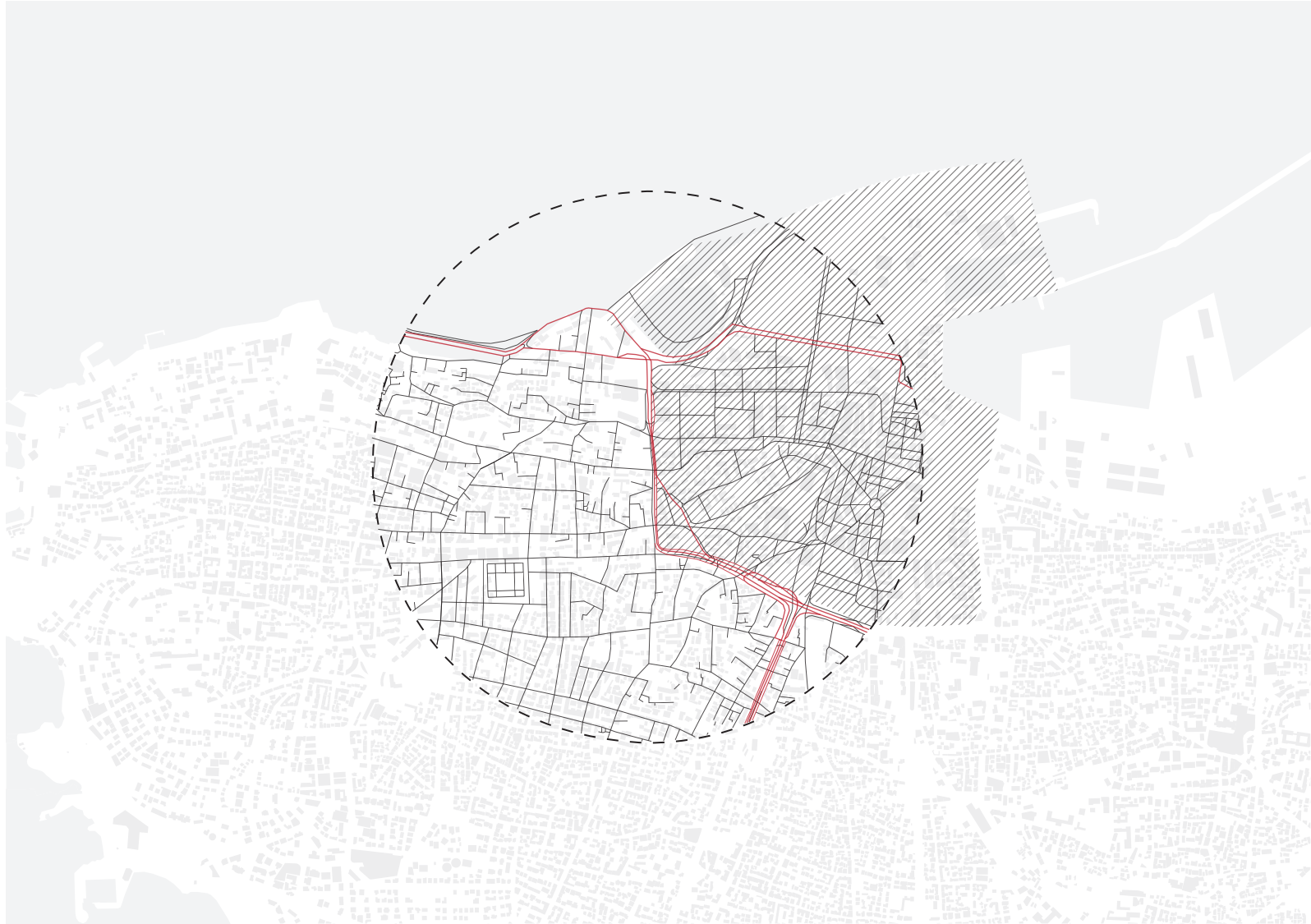
location

HISTORICAL LAYER



location

INFRASTRUCTURAL LAYER



location

SOCIAL LAYER



VS



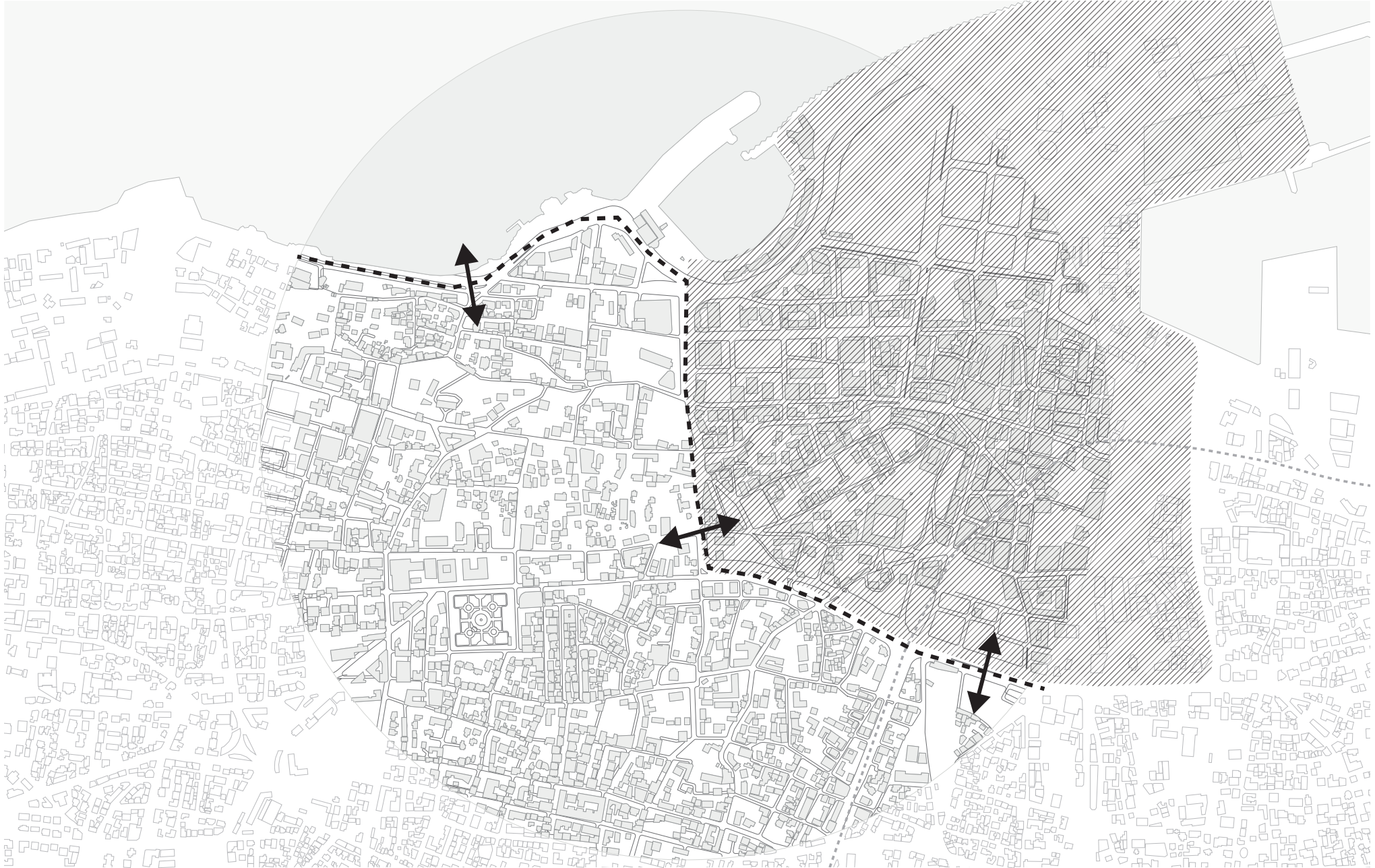
site

METRO LINE AS PART OF A STRATEGY



site

OVERCOME THE SPATIAL BARRIER



site

ARCHITECTURAL INTERVENTIONS



site

UN AS CATALYST



site

METRO AS GATEWAY TO CENTRE



site

BIDHARA'L BEIRUT



site

ATTRACTION NODES



site

ATTRACTION NODES



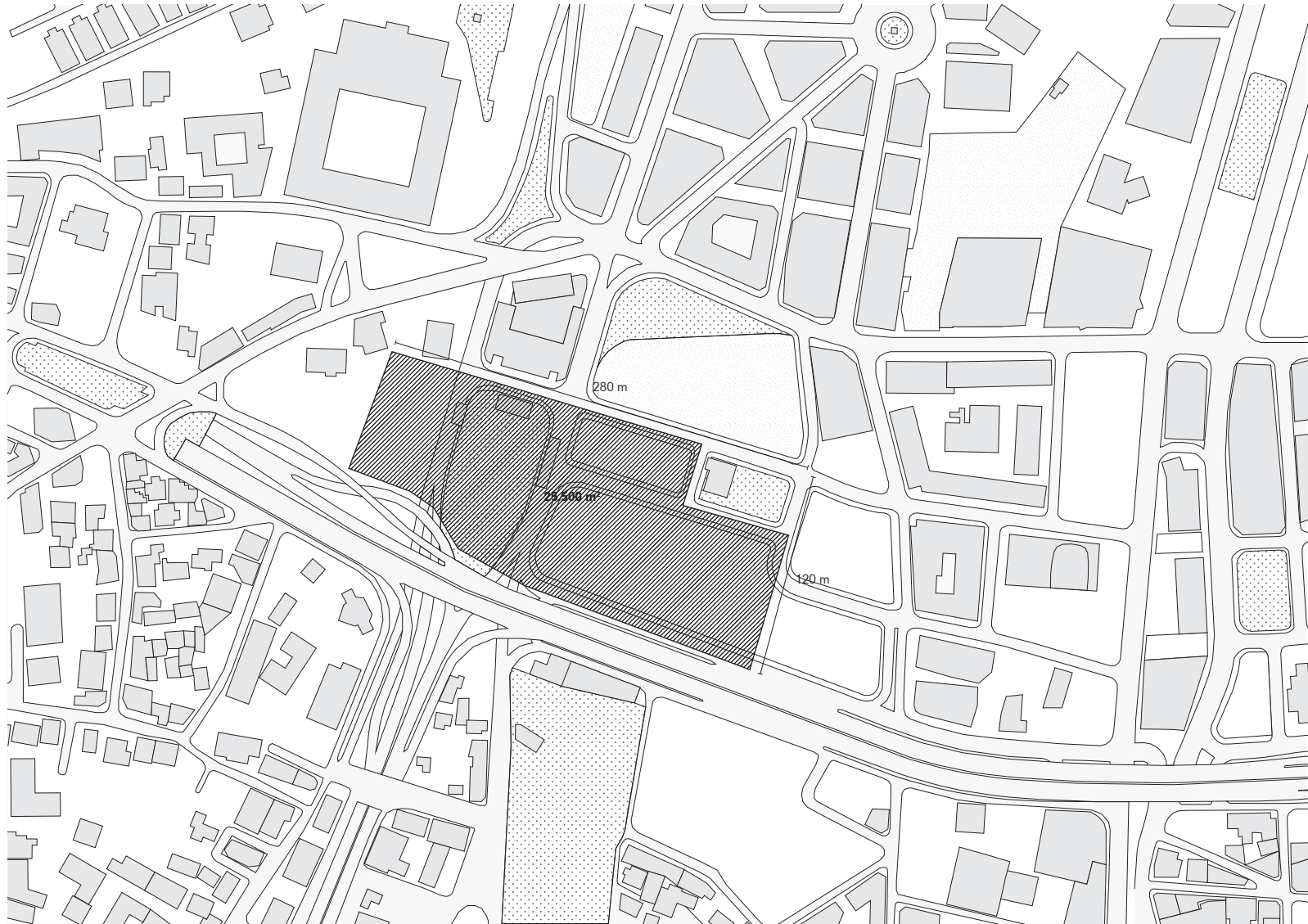
site

NEW CONNECTION



site

SITE LOCATION



site

CURRENT CHALLENGES

**obstruction in
infrastructure**

**obstruction in
topgraphy**

**obstruction in
security**

site

INFRASTRUCTURAL OBSTRUCTION



site

INFRASTRUCTURAL OBSTRUCTION



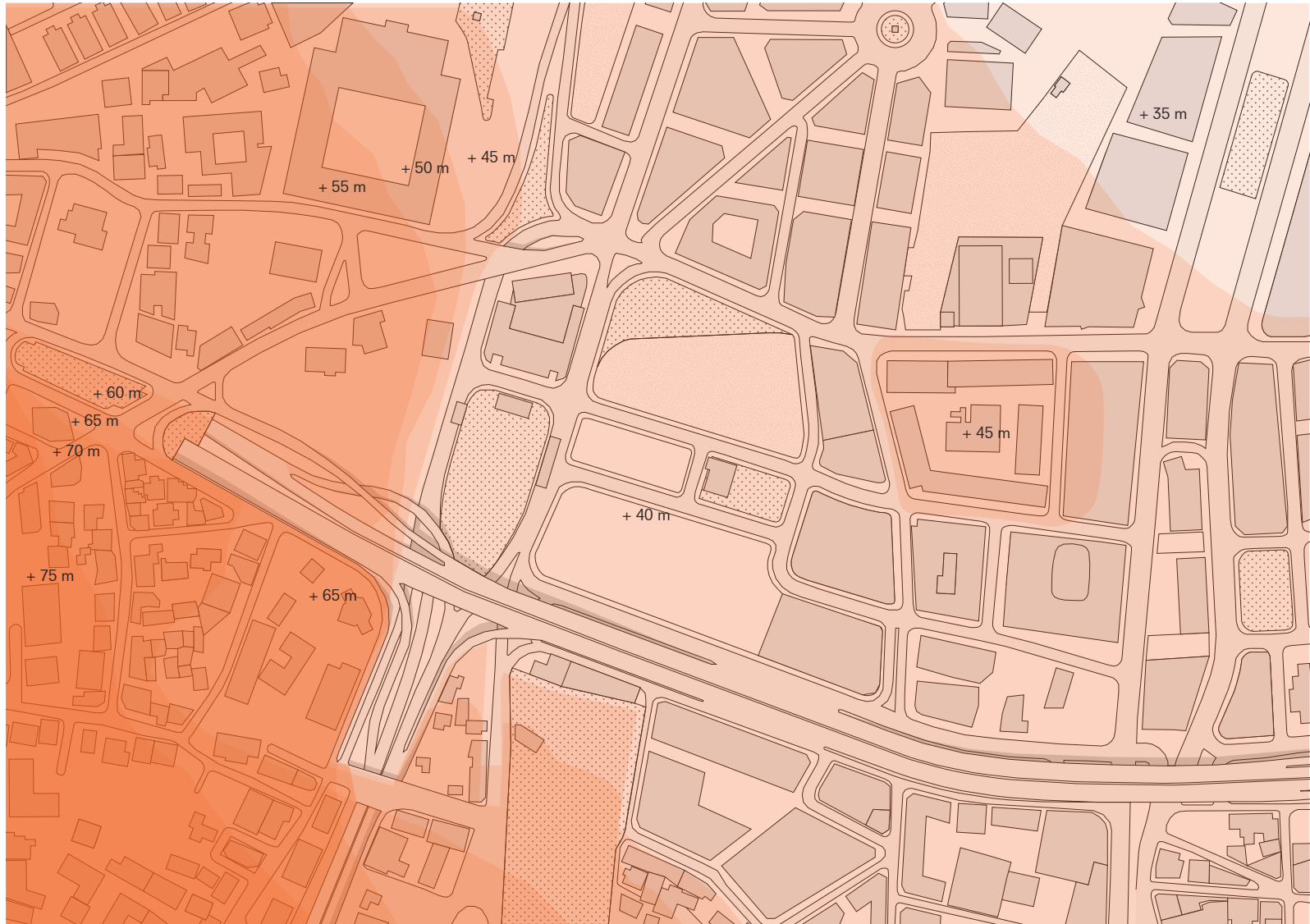
site

TOPOGRAPHICAL OBSTRUCTION



site

TOPOGRAPHICAL OBSTRUCTION



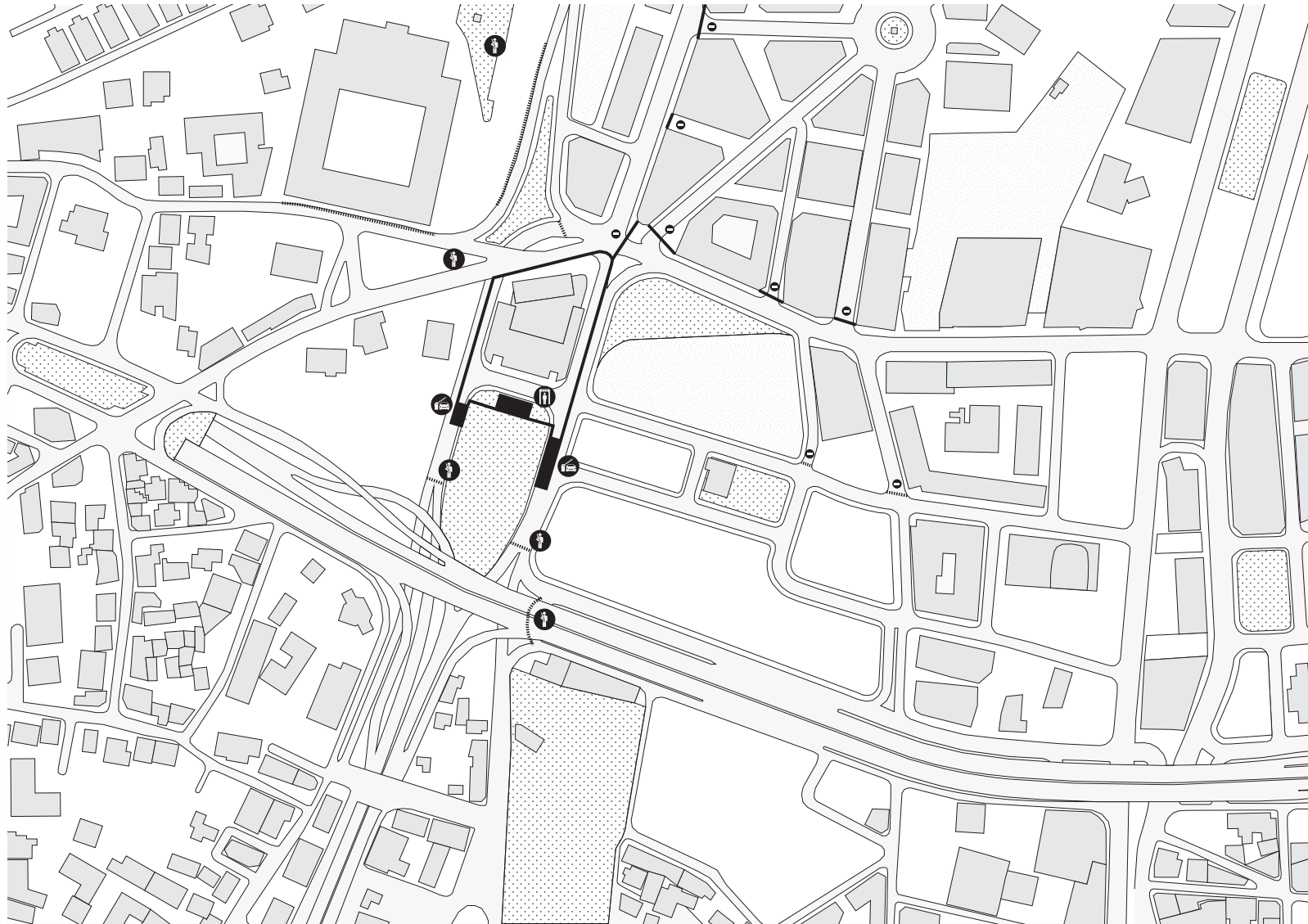
site

SECURITY OBSTRUCTION



site

SECURITY OBSTRUCTION



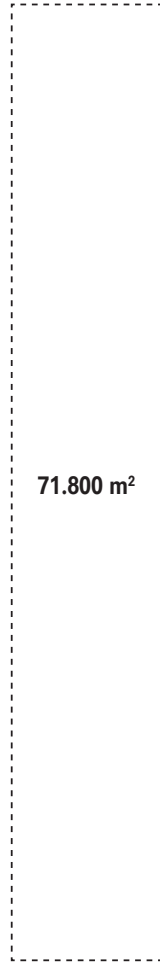
site

UN SECURITY OBSTRUCTION



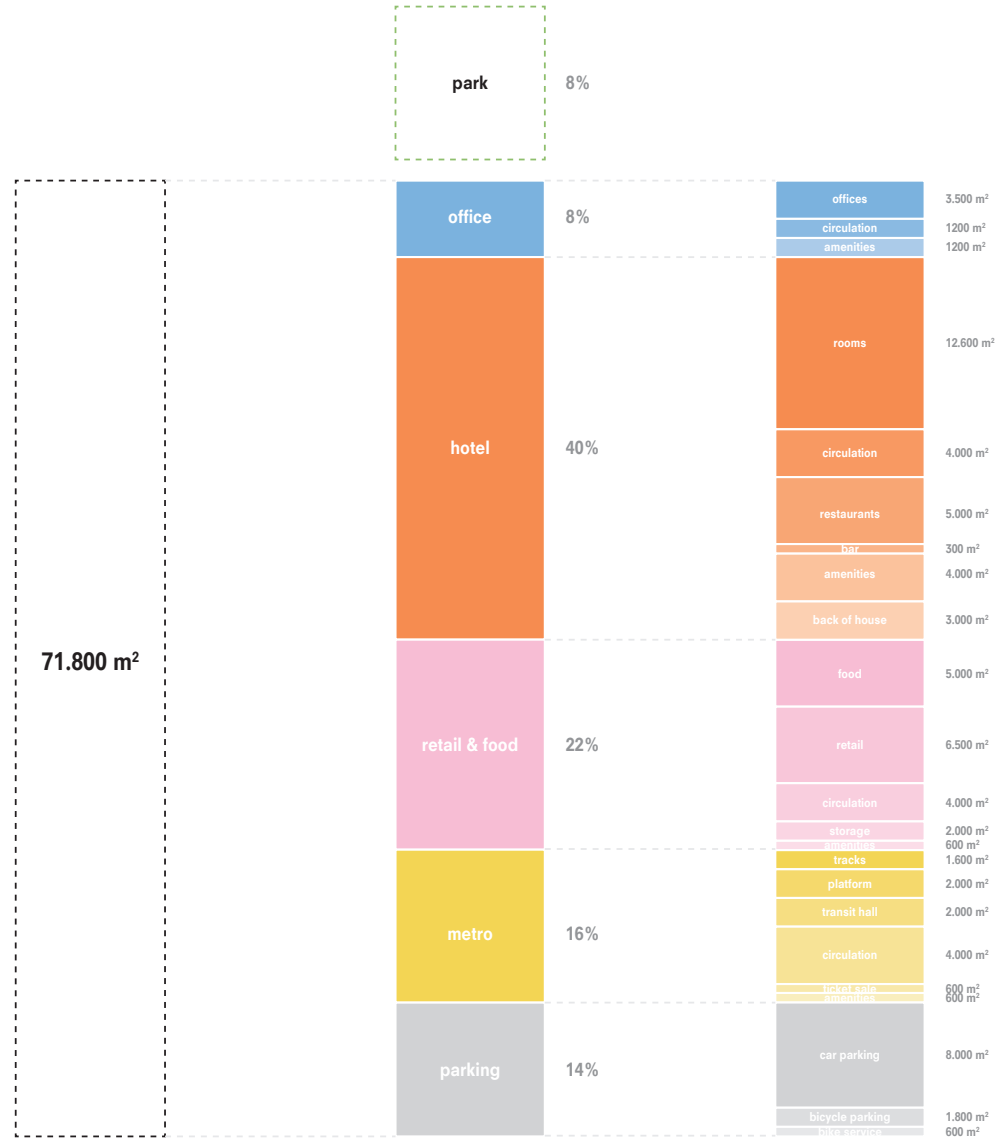
design concept

PROGRAM BAR



design concept

PROGRAM BAR



design concept

AMBITIONS

accessibility

connectivity

visibility

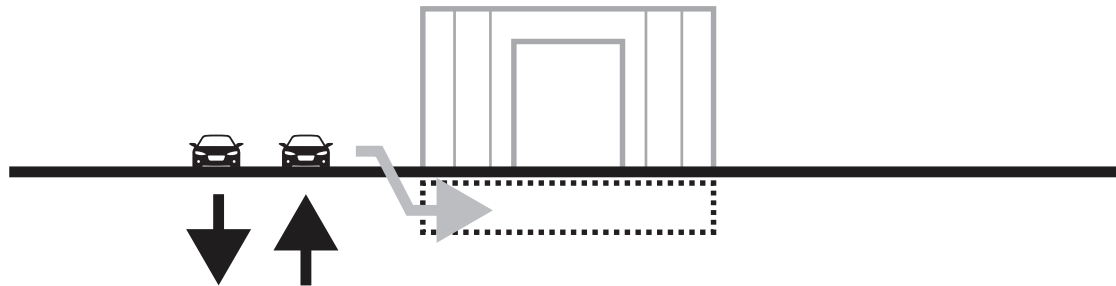
design concept

ACCESSIBILITY



design concept

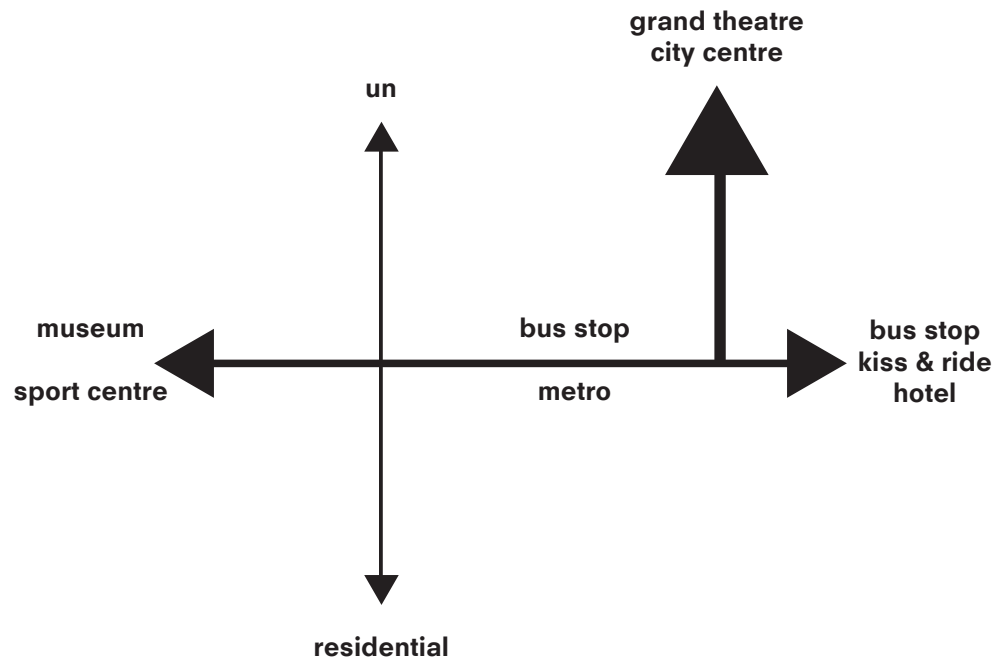
ACCESSIBILITY



UN security will be situated underground, and road layout will be situated only at one side of the aprk

design concept

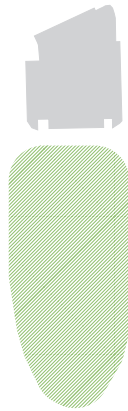
ACCESSIBILITY



building acts as a connector
between city parts and the
different transport modes

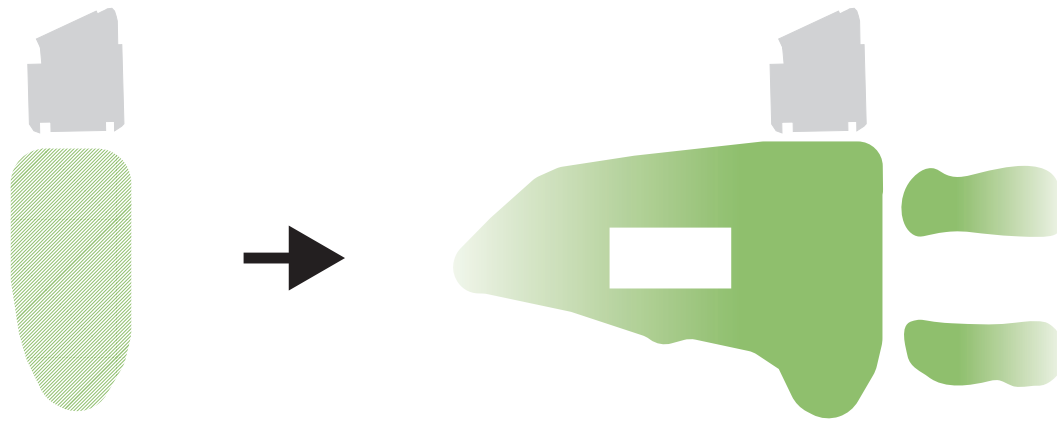
design concept

CONNECTIVITY



design concept

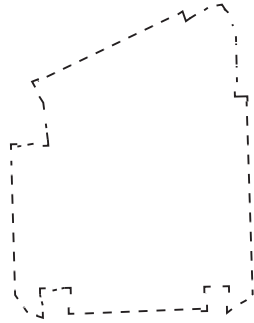
CONNECTIVITY



In contrast of the theatre square, the park will be green and used by the un employees

design concept

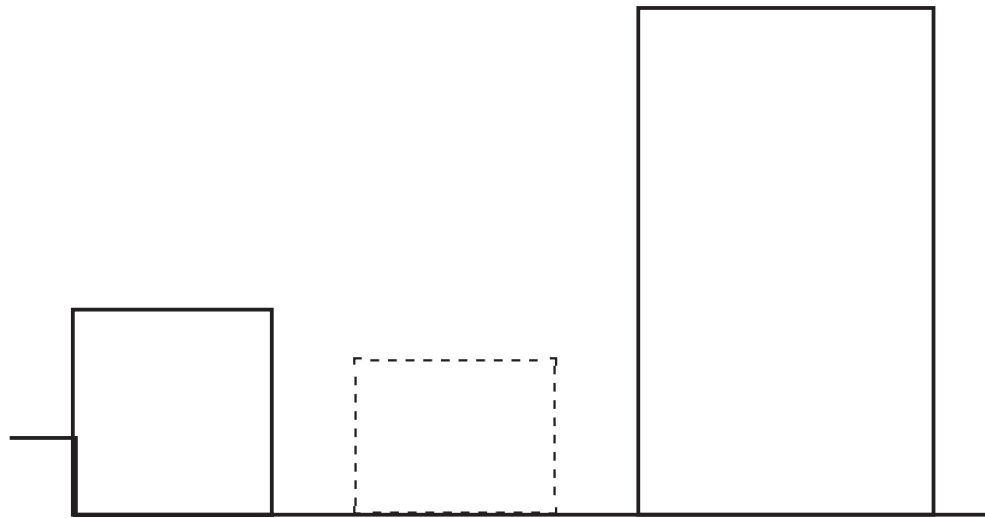
VISIBILITY



the axis of the un-building
should be kept and reinforced

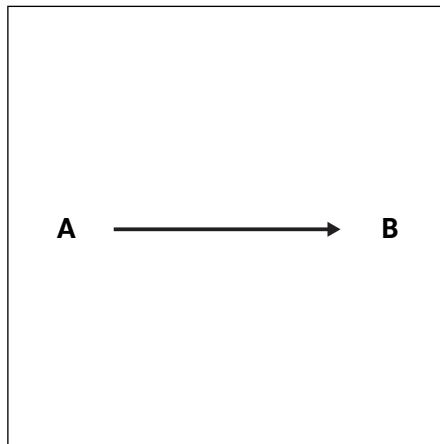
design concept

VISIBILITY



the buildings act as a
monumental trio and defines
the gateway of the city centre

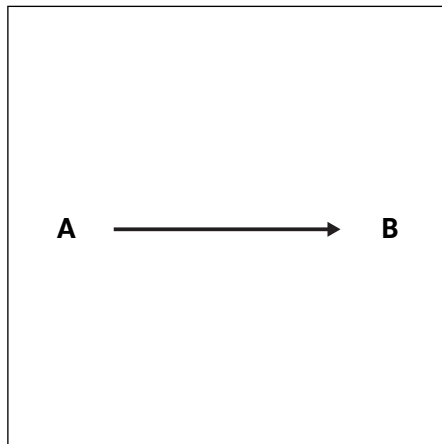
MOBILITY AMBITIONS



clear transit flows

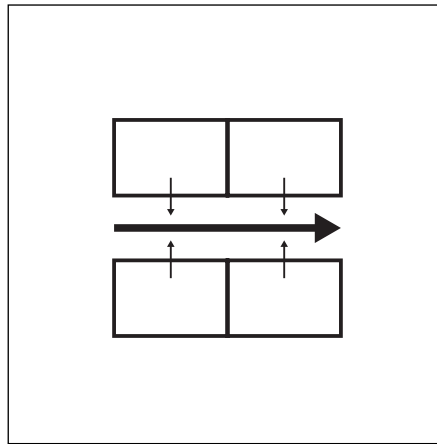
the building should be clear
and readable for the different
users

MOBILITY AMBITIONS



clear transit flows

the building should be clear and readable for the different users

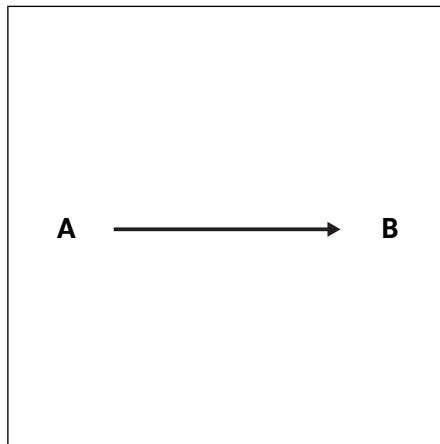


commercial activity

the main transit flows should be supported by commercial activities

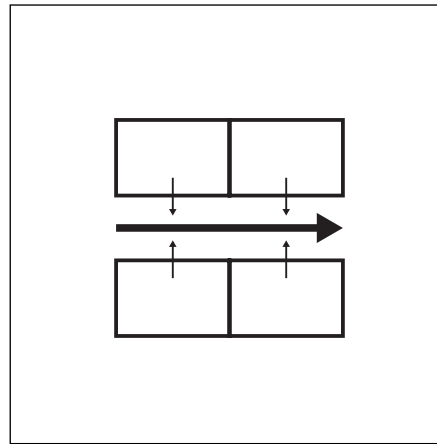
design concept

MOBILITY AMBITIONS



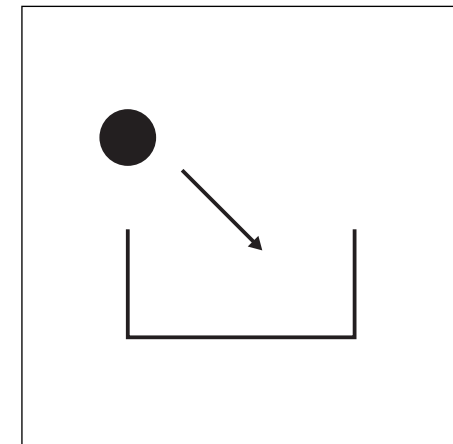
clear transit flows

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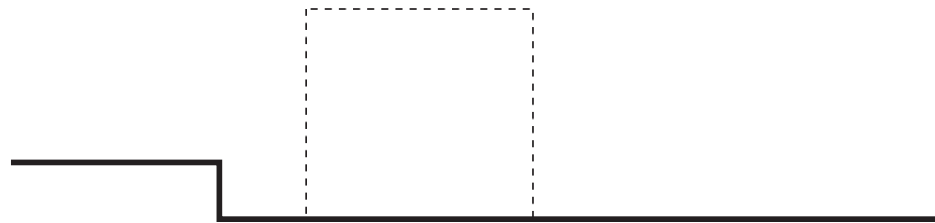


daylight

the underground building should receive daylight to help the users in wayfinding

design concept

PROGRAM CONCEPT



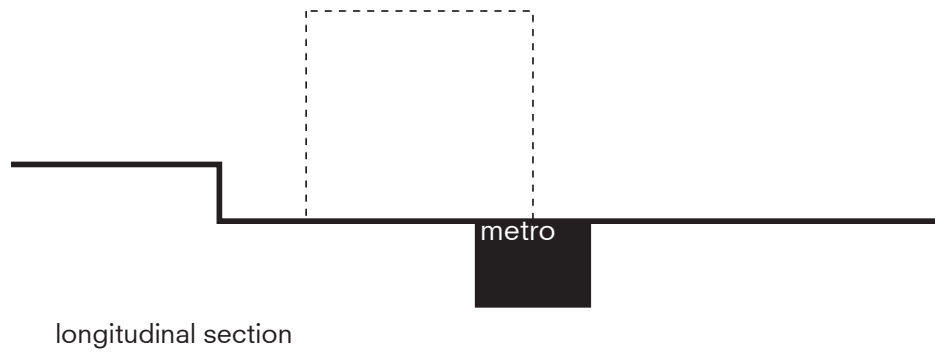
longitudinal section



cross section

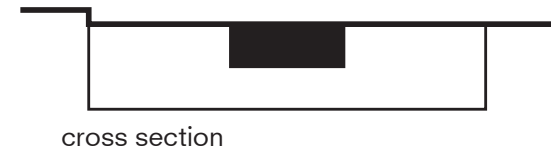
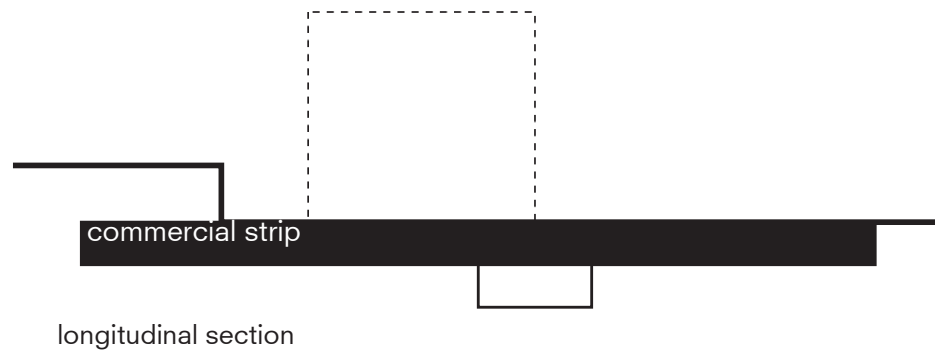
design concept

PROGRAM CONCEPT



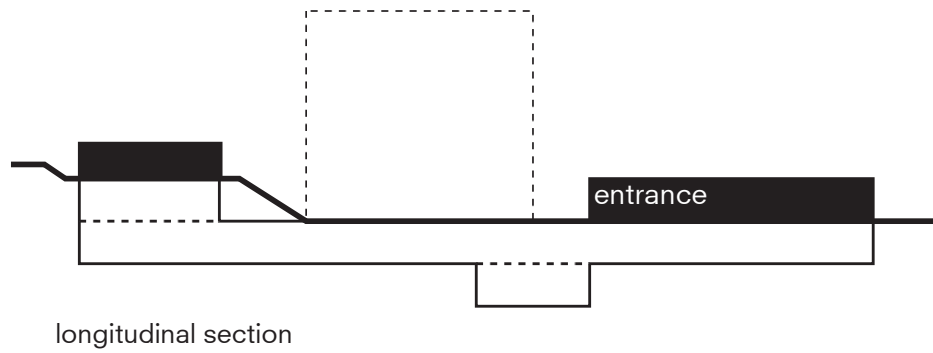
design concept

PROGRAM CONCEPT



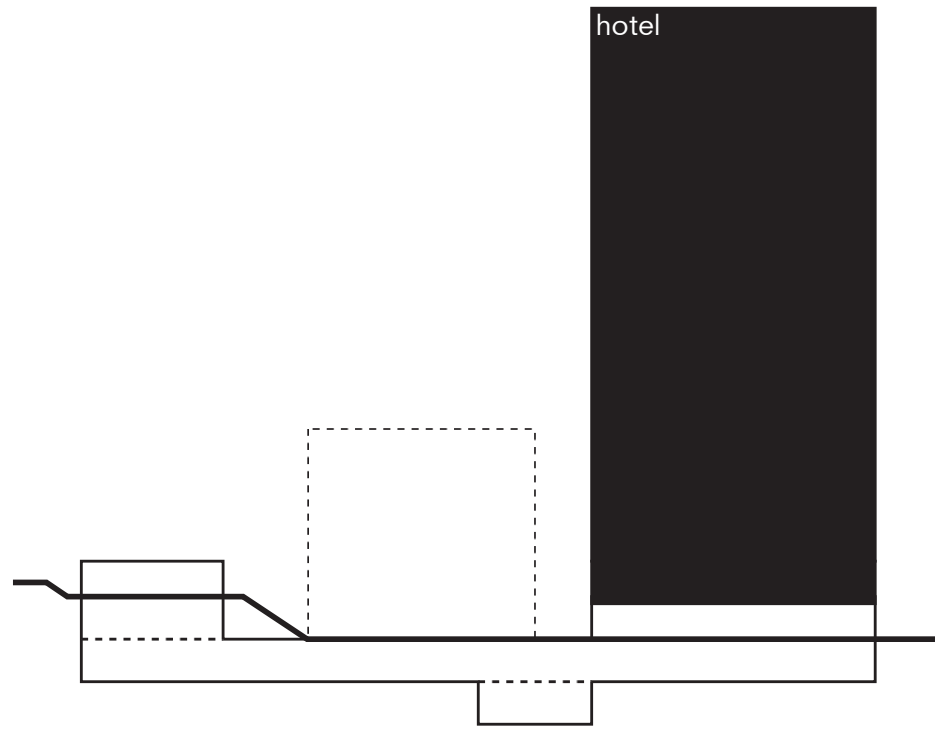
design concept

PROGRAM CONCEPT



design concept

PROGRAM CONCEPT



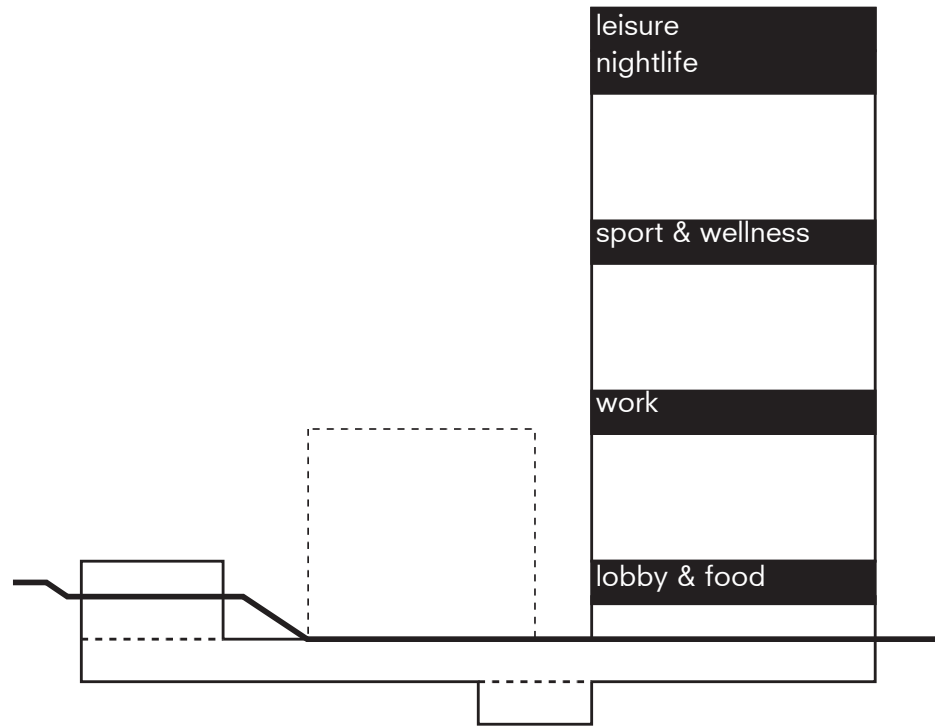
longitudinal section



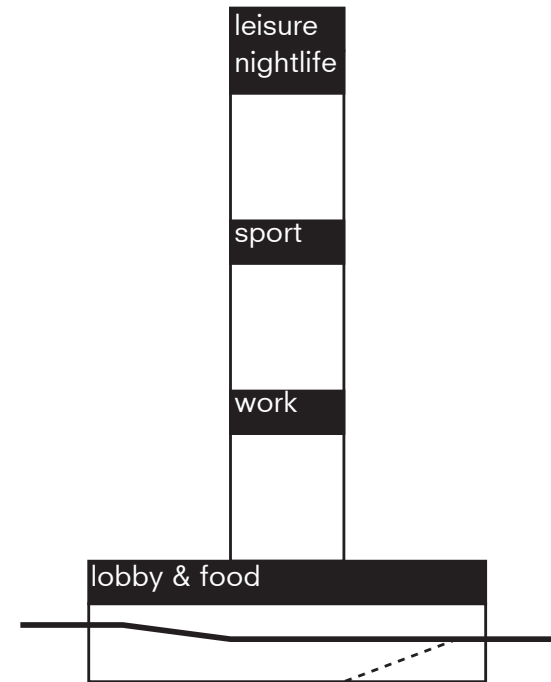
cross section

design concept

PROGRAM CONCEPT



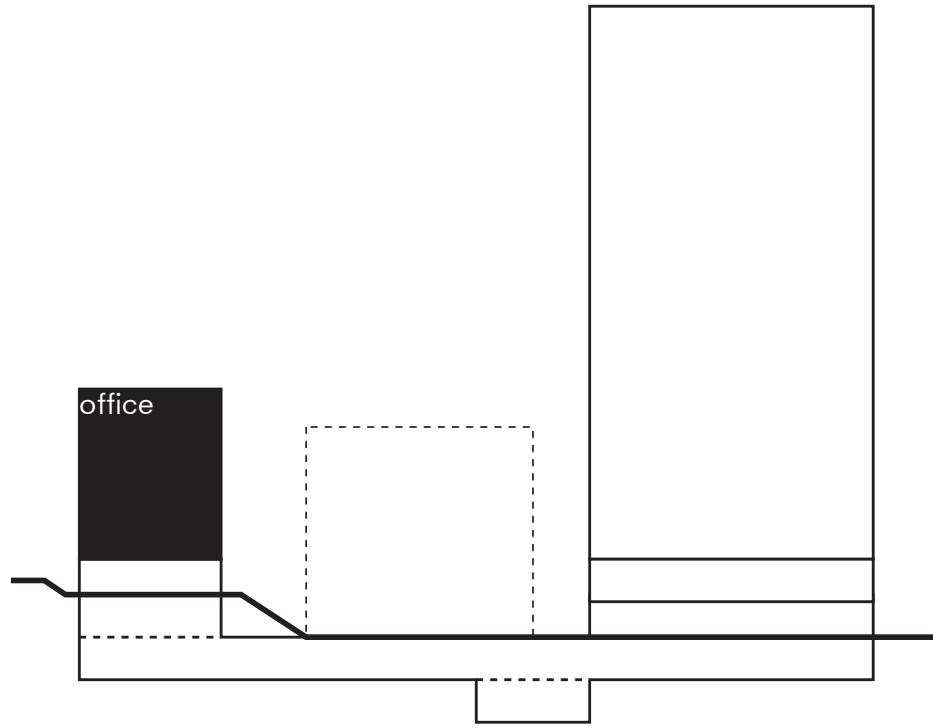
longitudinal section



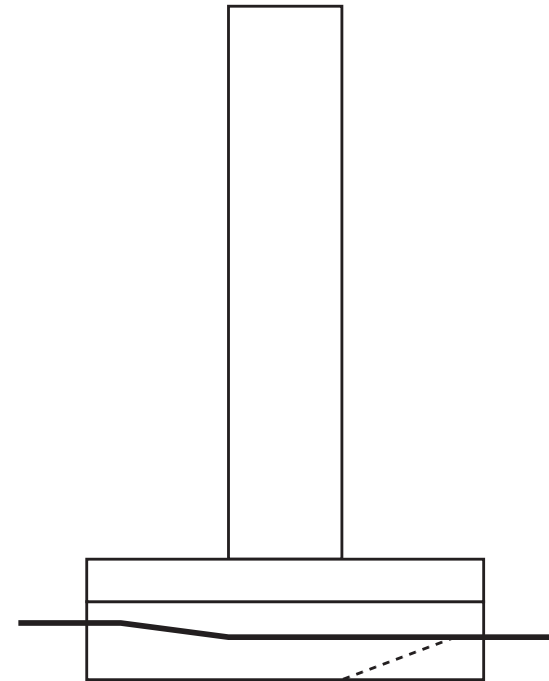
cross section

design concept

PROGRAM CONCEPT



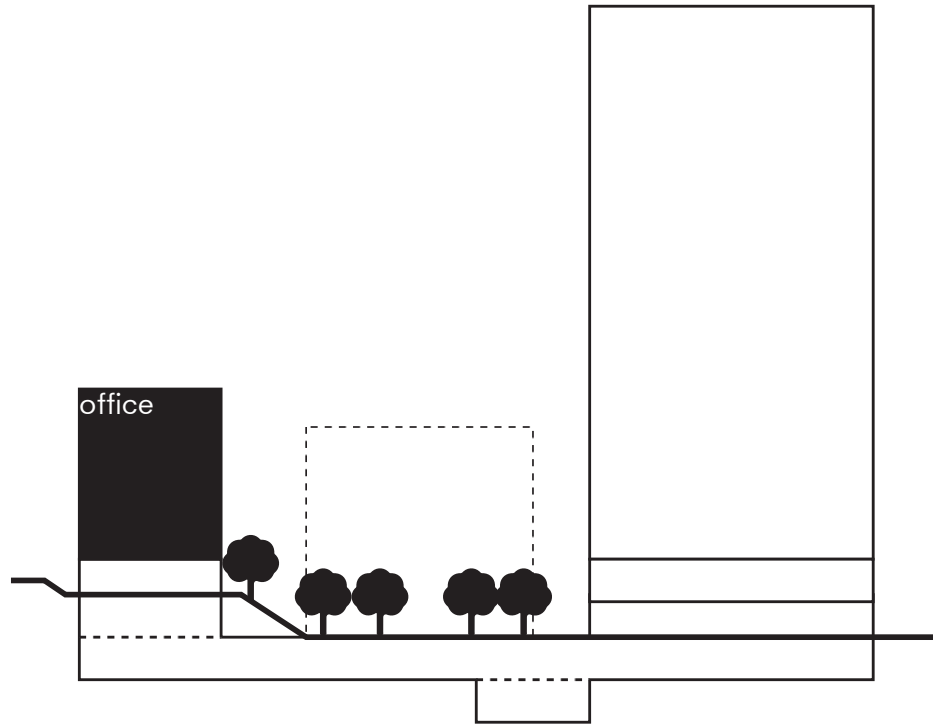
longitudinal section



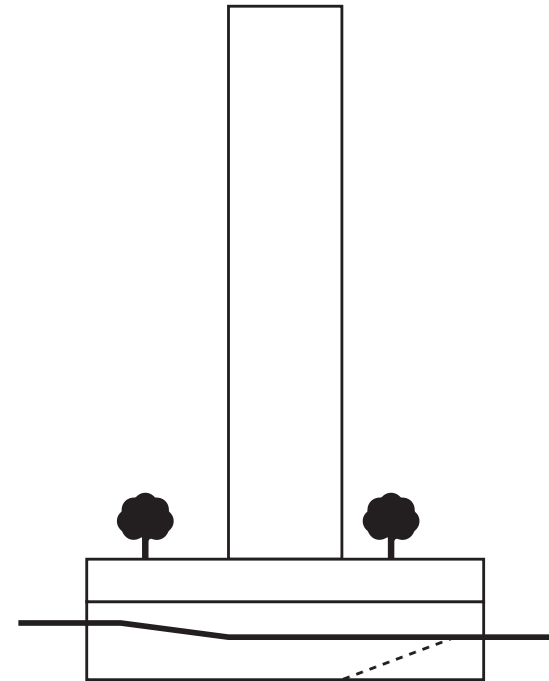
cross section

design concept

PROGRAM CONCEPT

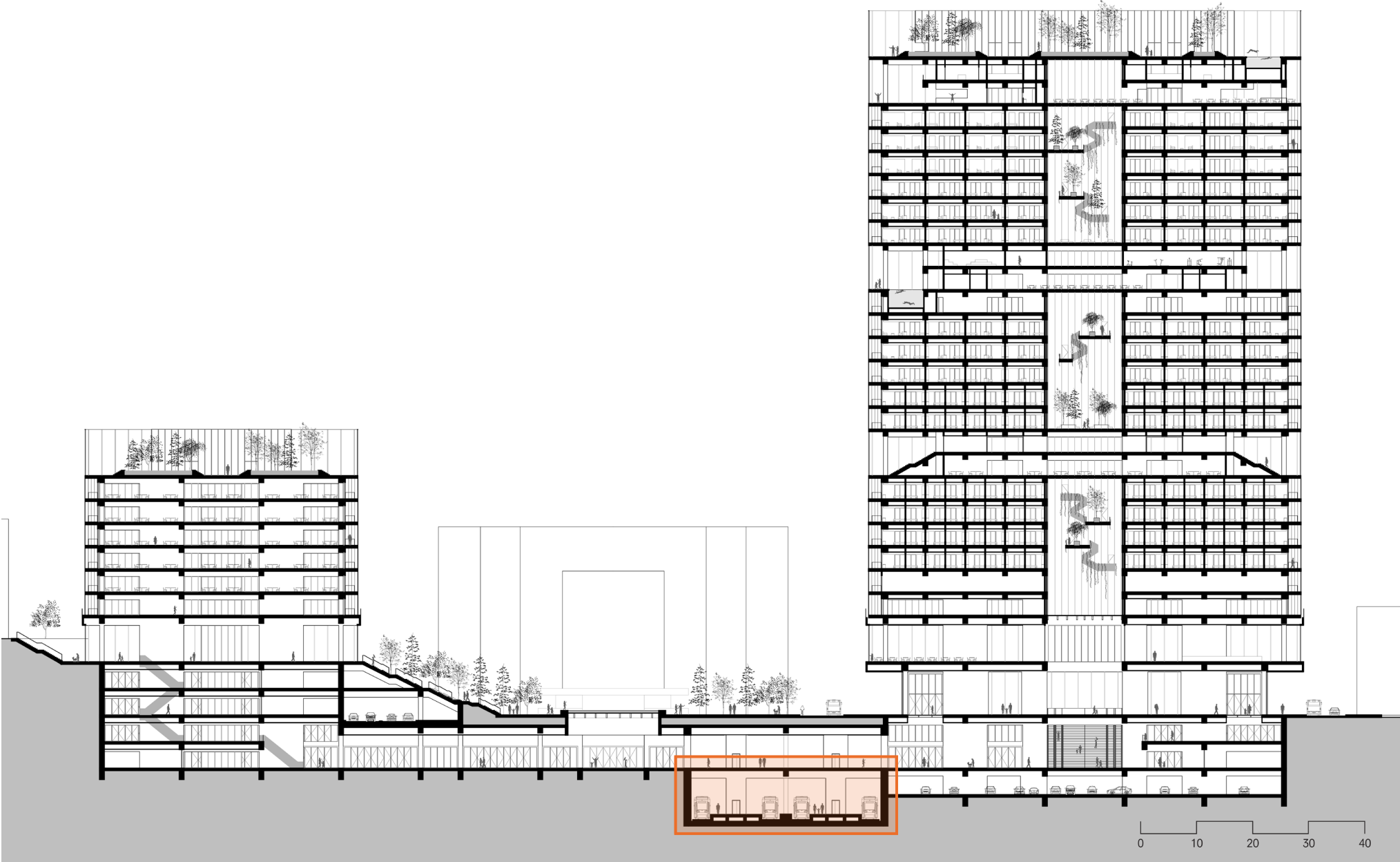


longitudinal section

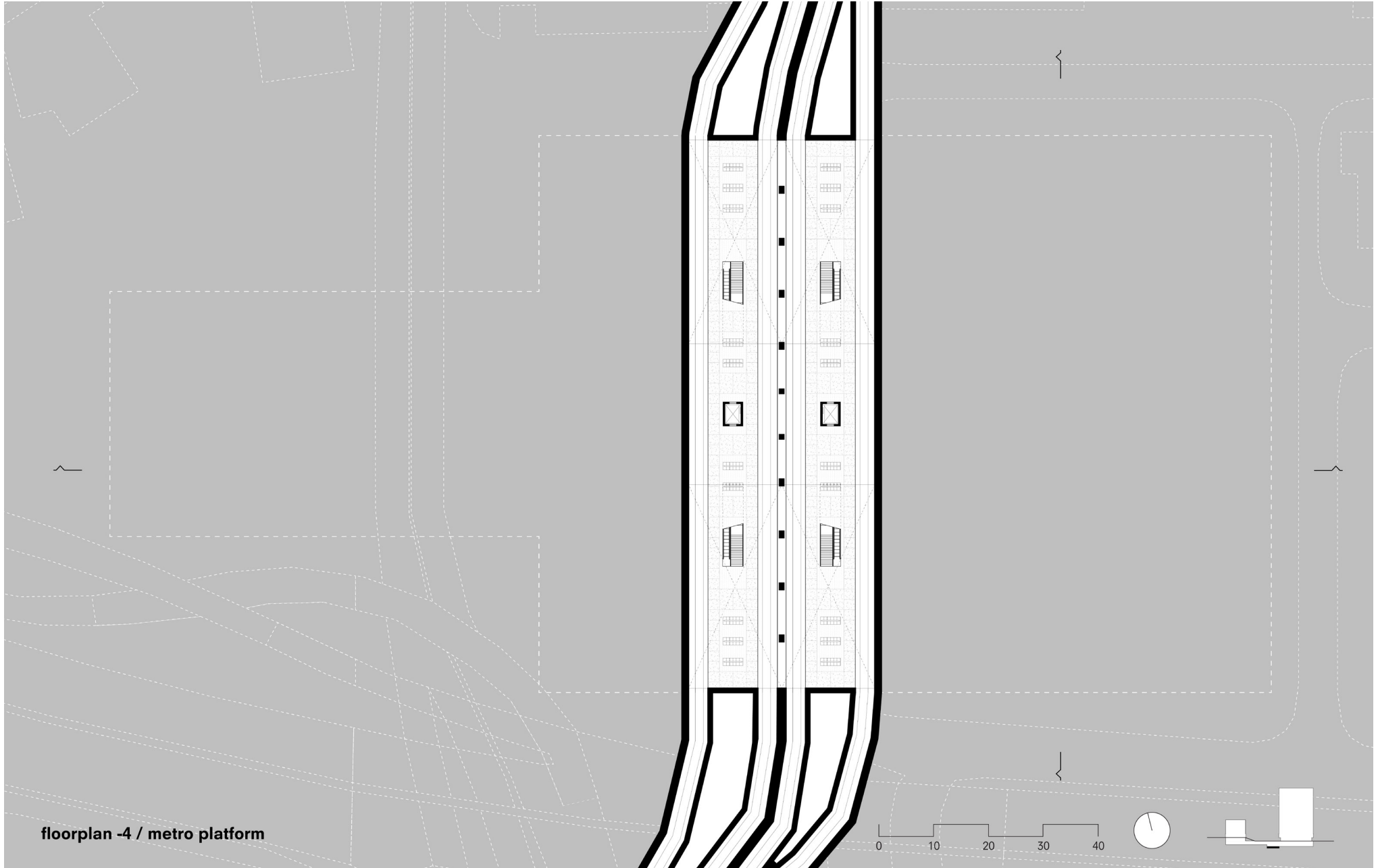


cross section

implementation
LONGITUDINAL SECTION



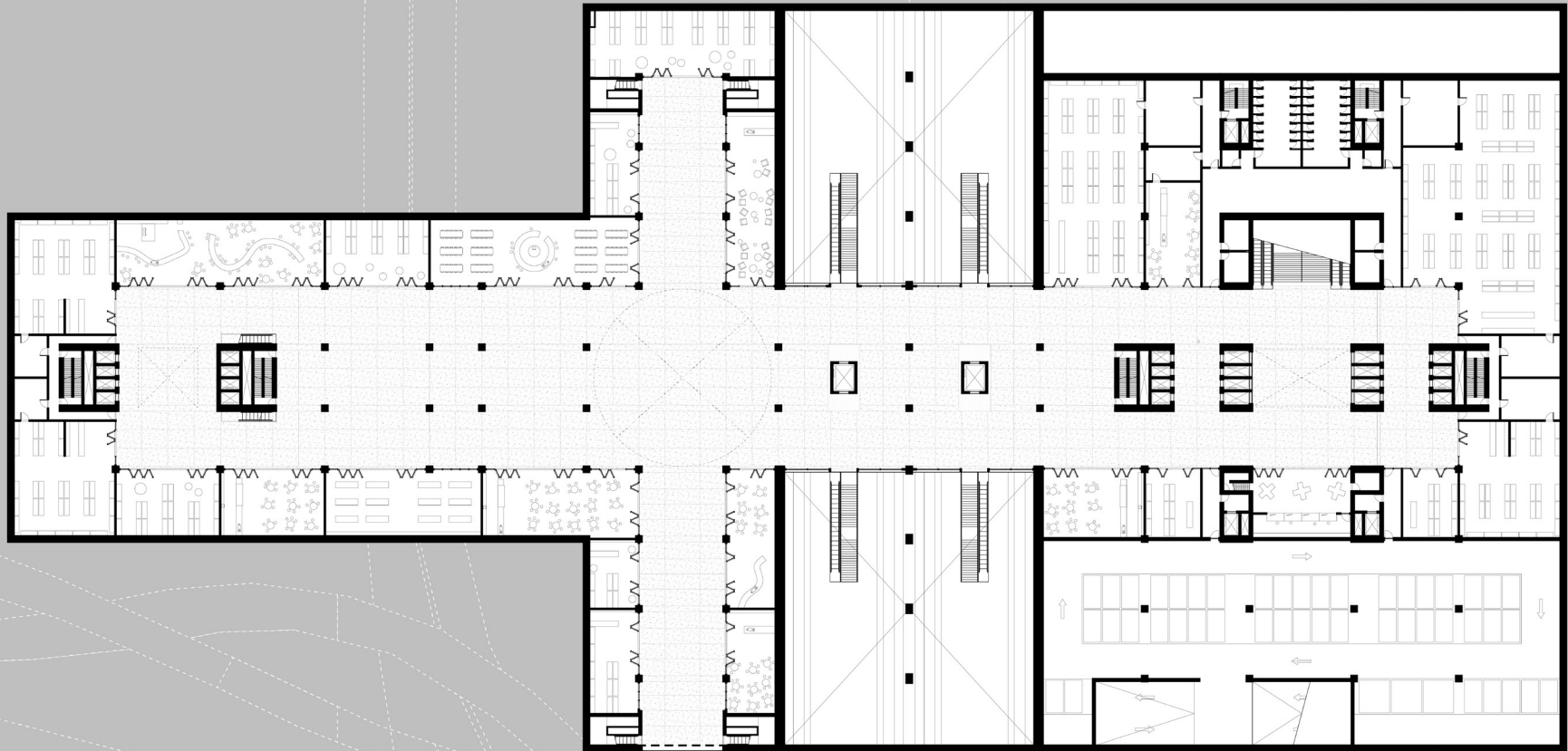
implementation
FLOORPLAN -4



implementation
PLATFORM



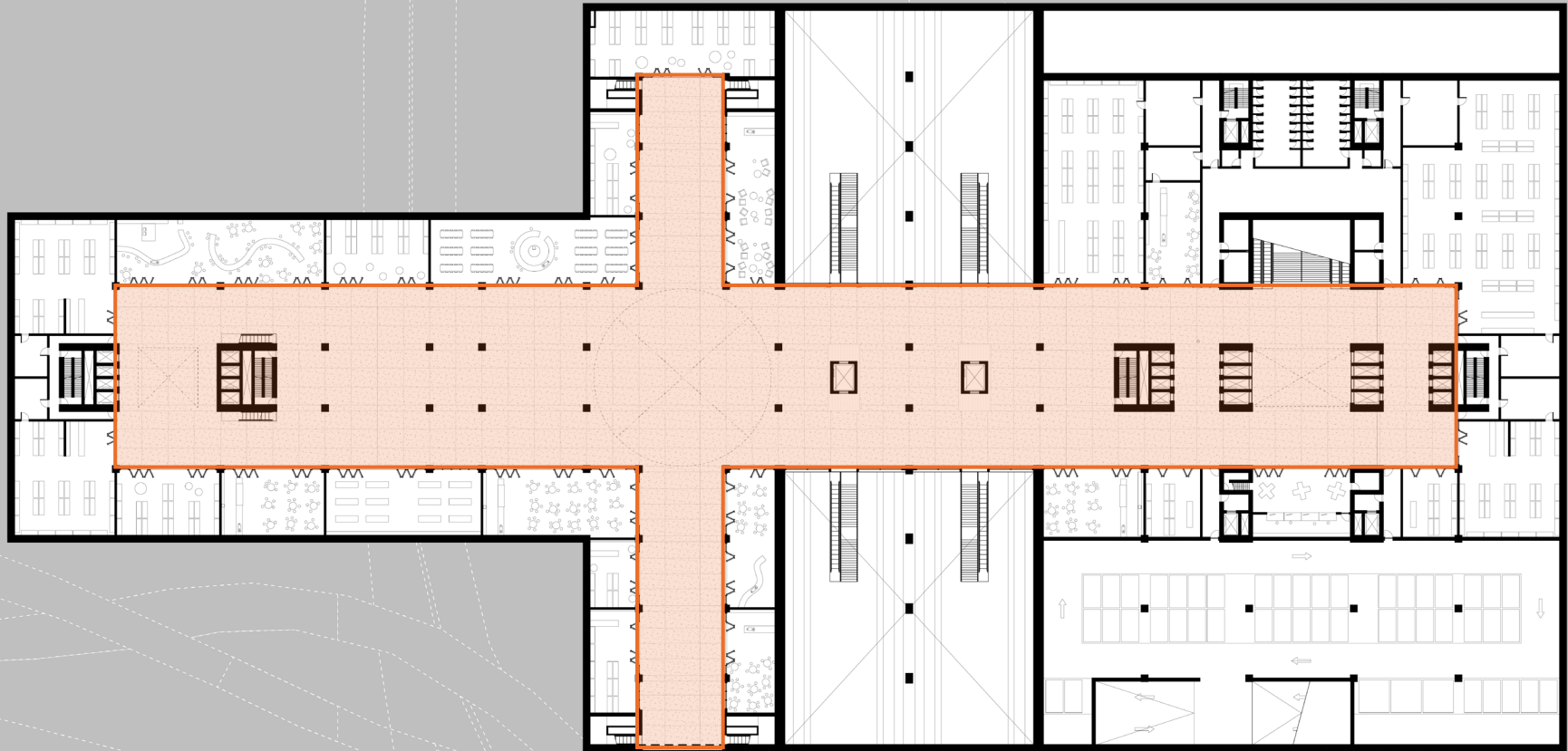
implementation
FLOORPLAN -2



floorplan -2 / concourse level



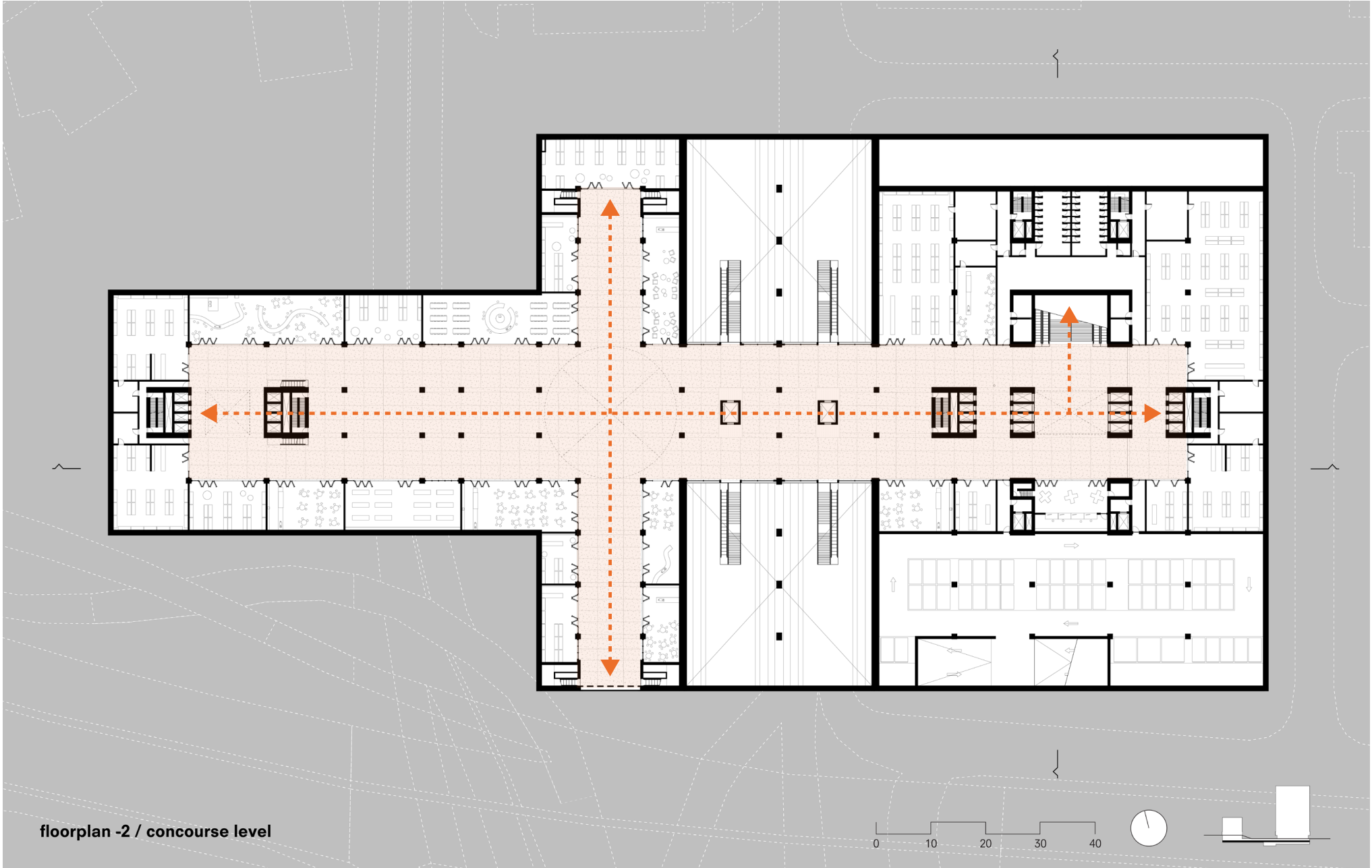
implementation CONCOURSE



floorplan -2 / concourse level

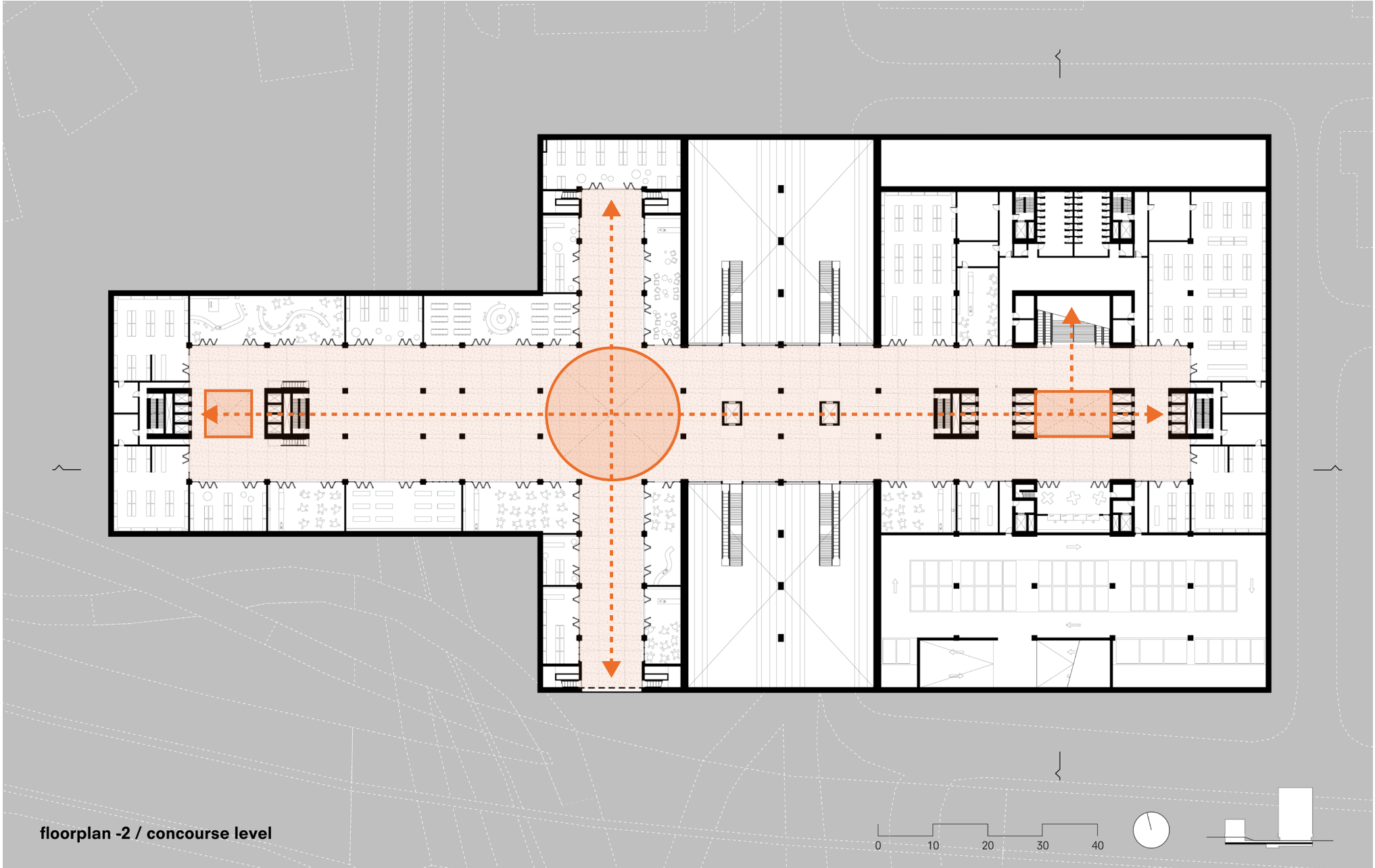


CONNECTOR TO NEIGHBOURHOOD



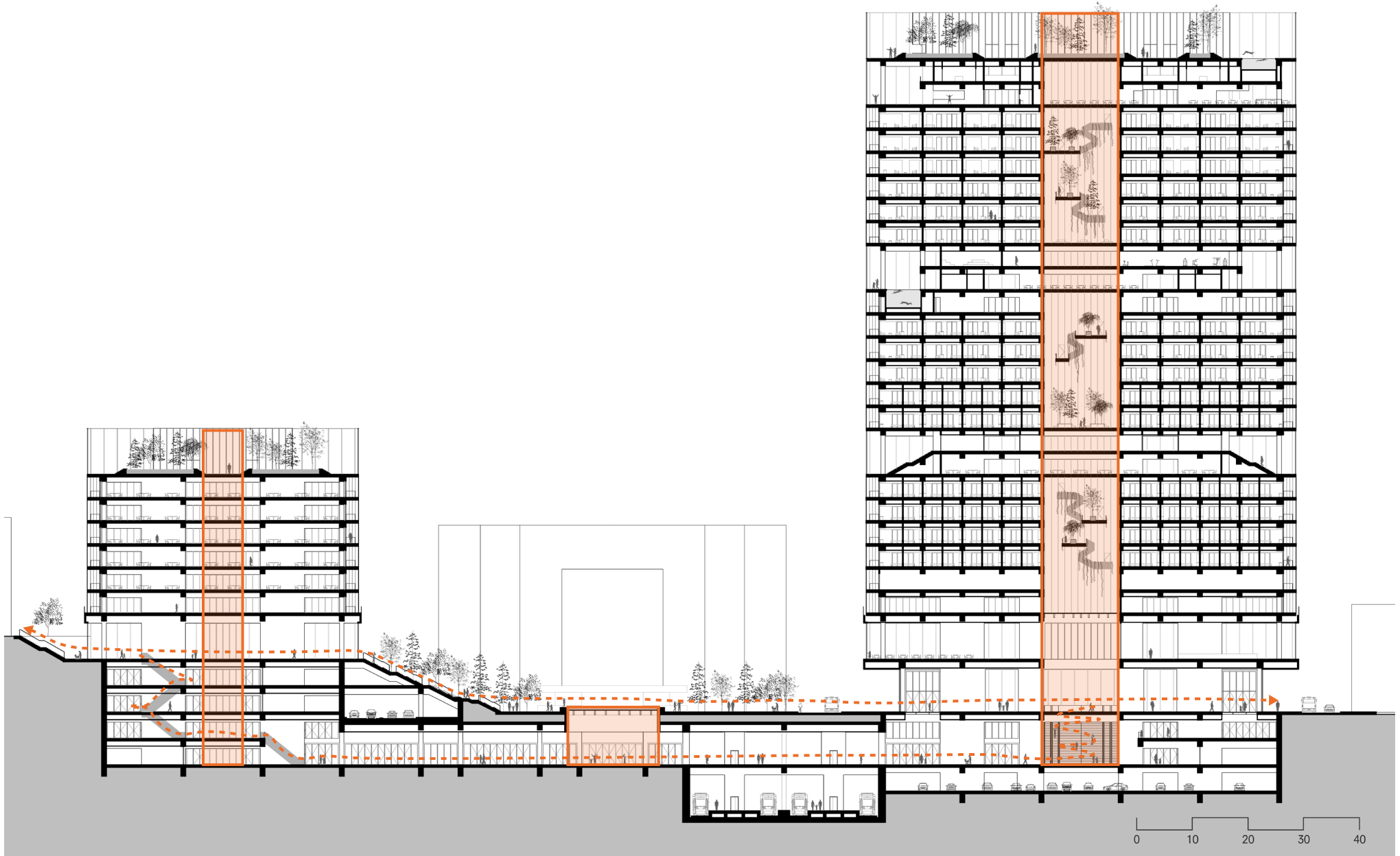
floorplan -2 / concourse level

implementation
CROSSING POINTS 2D

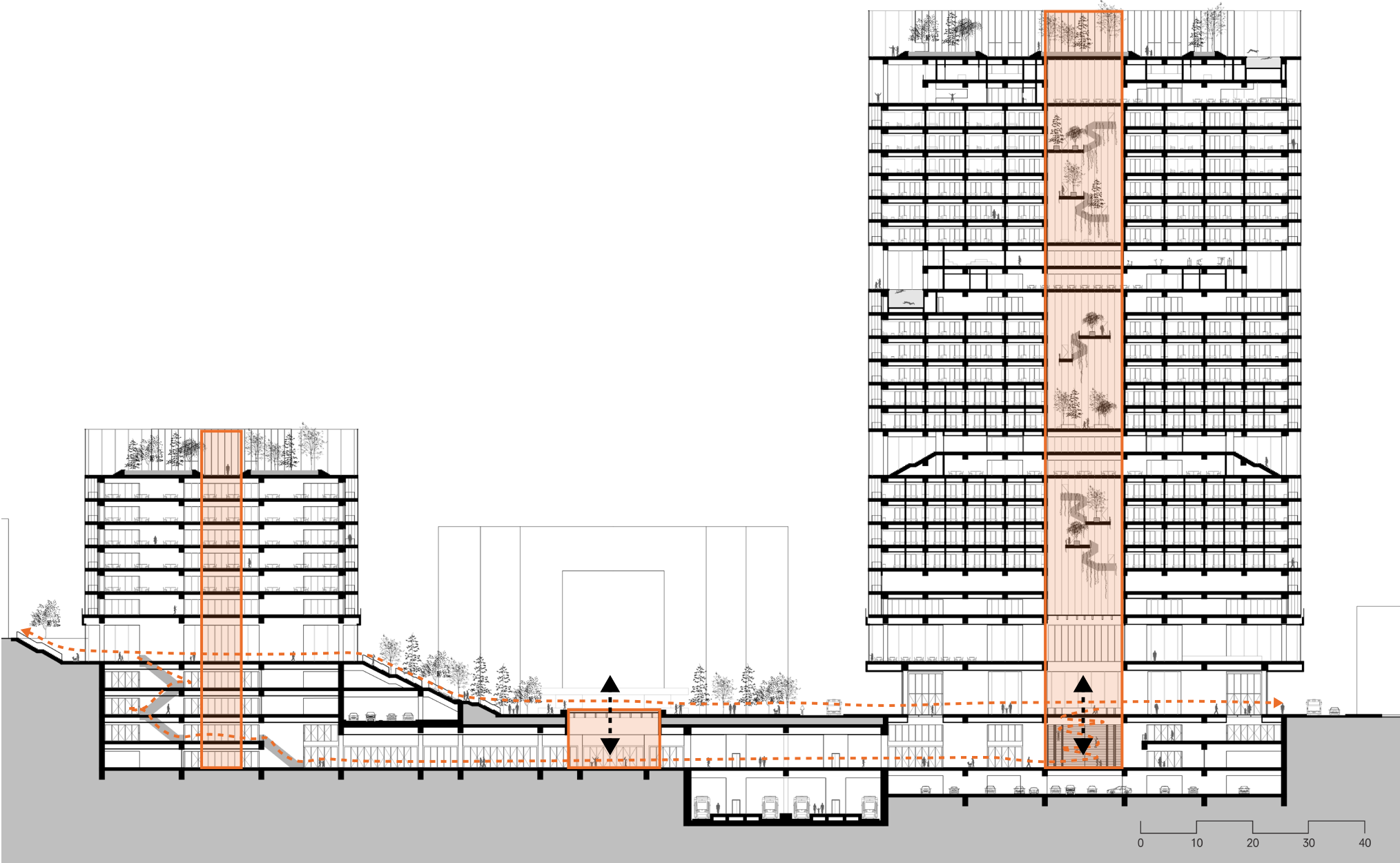


floorplan -2 / concourse level

implementation
CROSSING POINTS 3D



implementation
INTERACTION



implementation
CROSSING POINT



implementation

CROSSING POINT

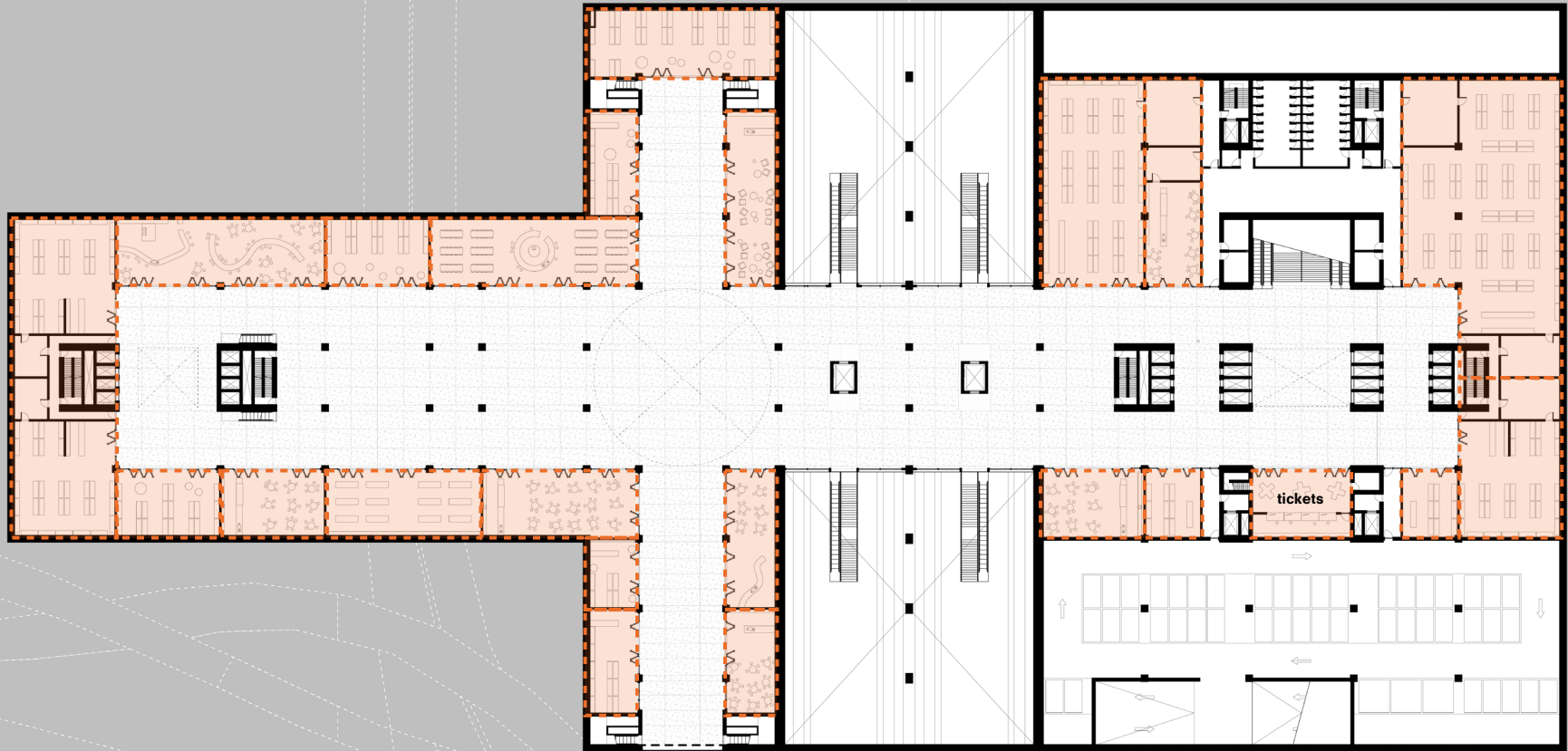


implementation

CROSSING POINT



implementation
COMMERCIAL ACTIVITY



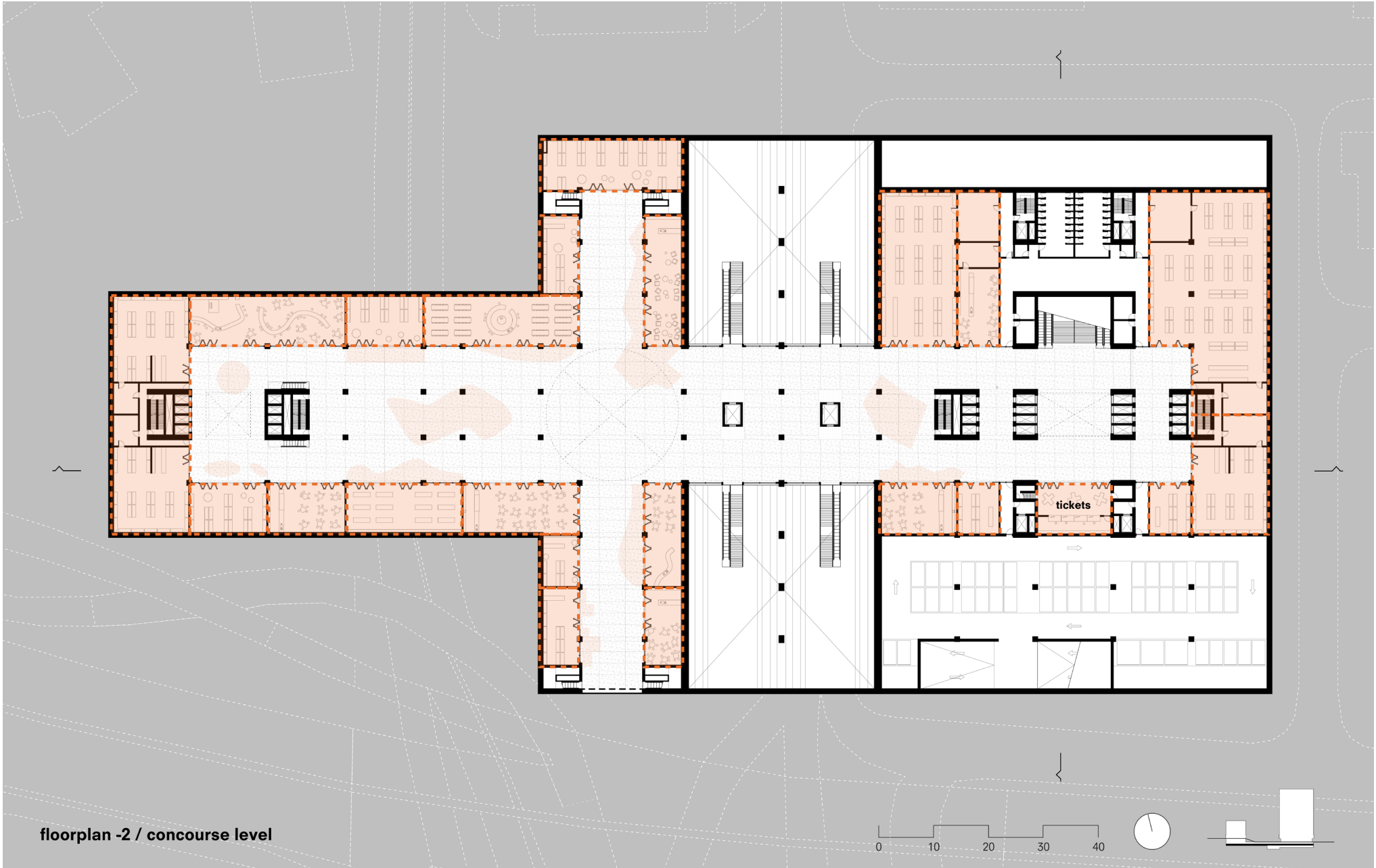
floorplan -2 / concourse level



implementation
THE STREET



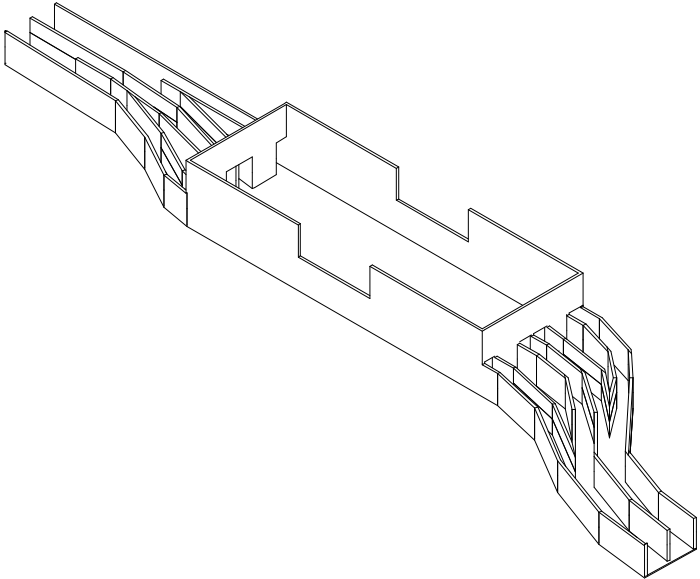
implementation
SPACE FOR VISIBILITY



floorplan -2 / concourse level

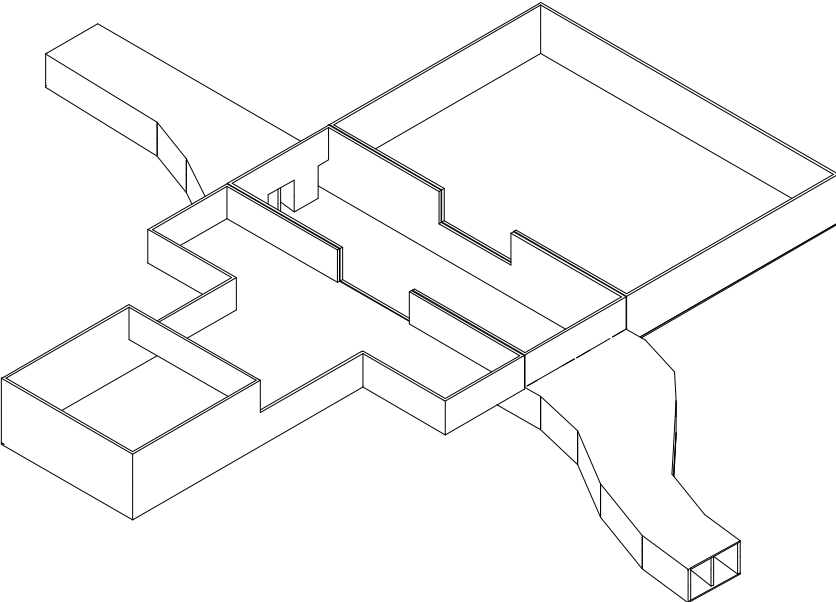
implementation

CONSTRUCTION



metro tunnel is joined to the concrete cut-and-over tunnel

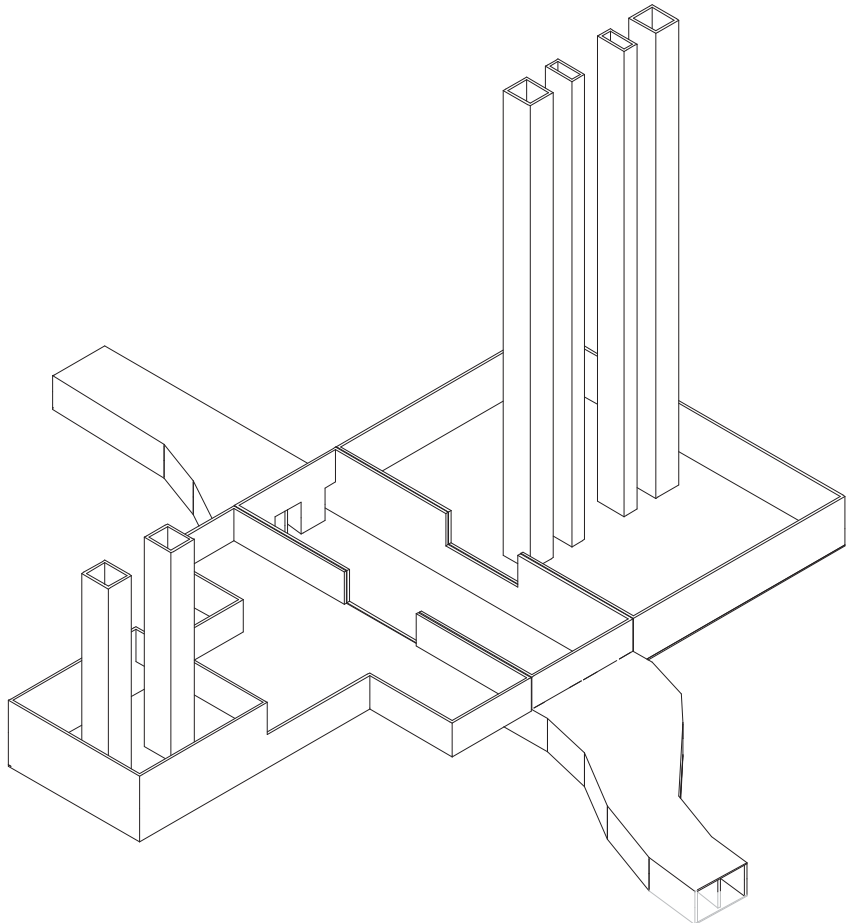
implementation
CONSTRUCTION



concrete basement next to the metro tunnel

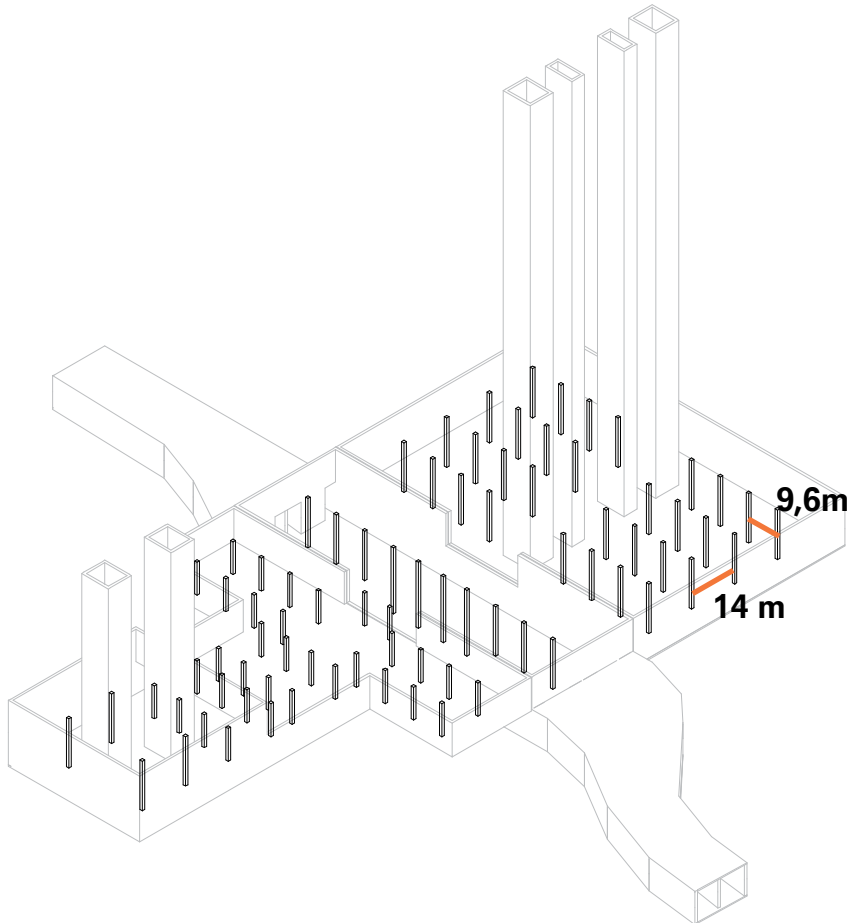
implementation

CONSTRUCTION



concrete cores for the towers

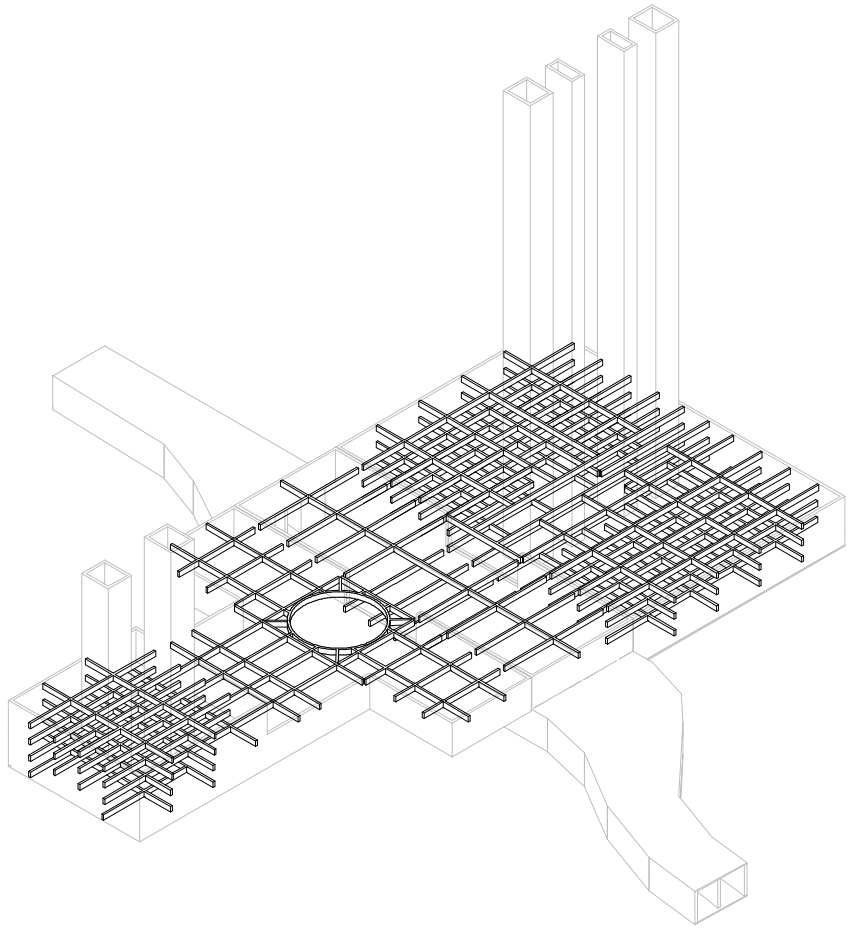
implementation
CONSTRUCTION



columns 800 x 800 mm

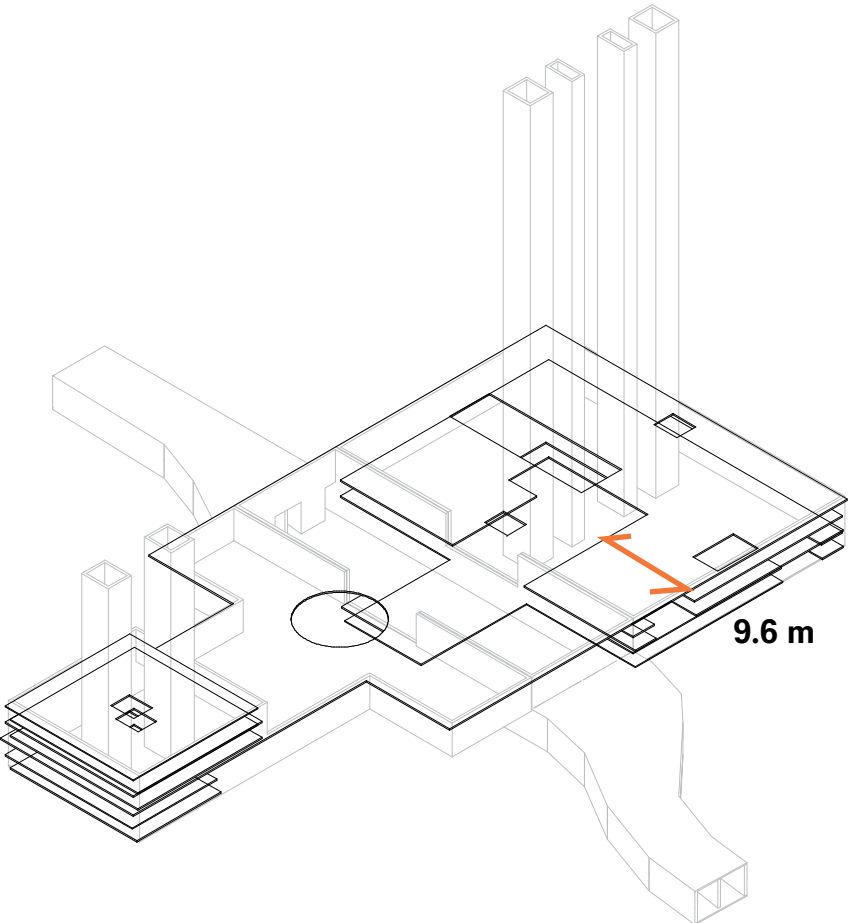
implementation

CONSTRUCTION



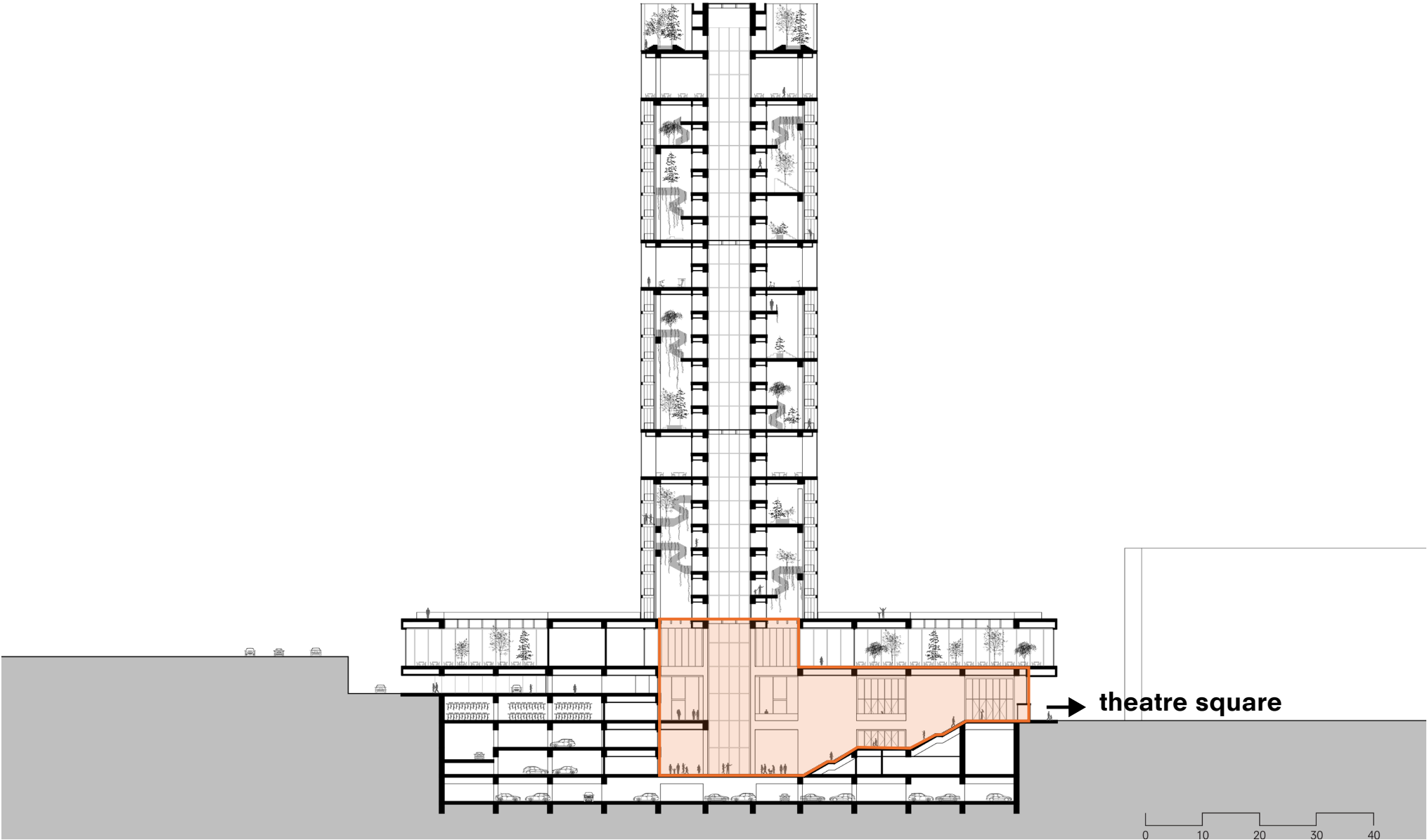
beams 600 x 1800 mm

implementation
CONSTRUCTION



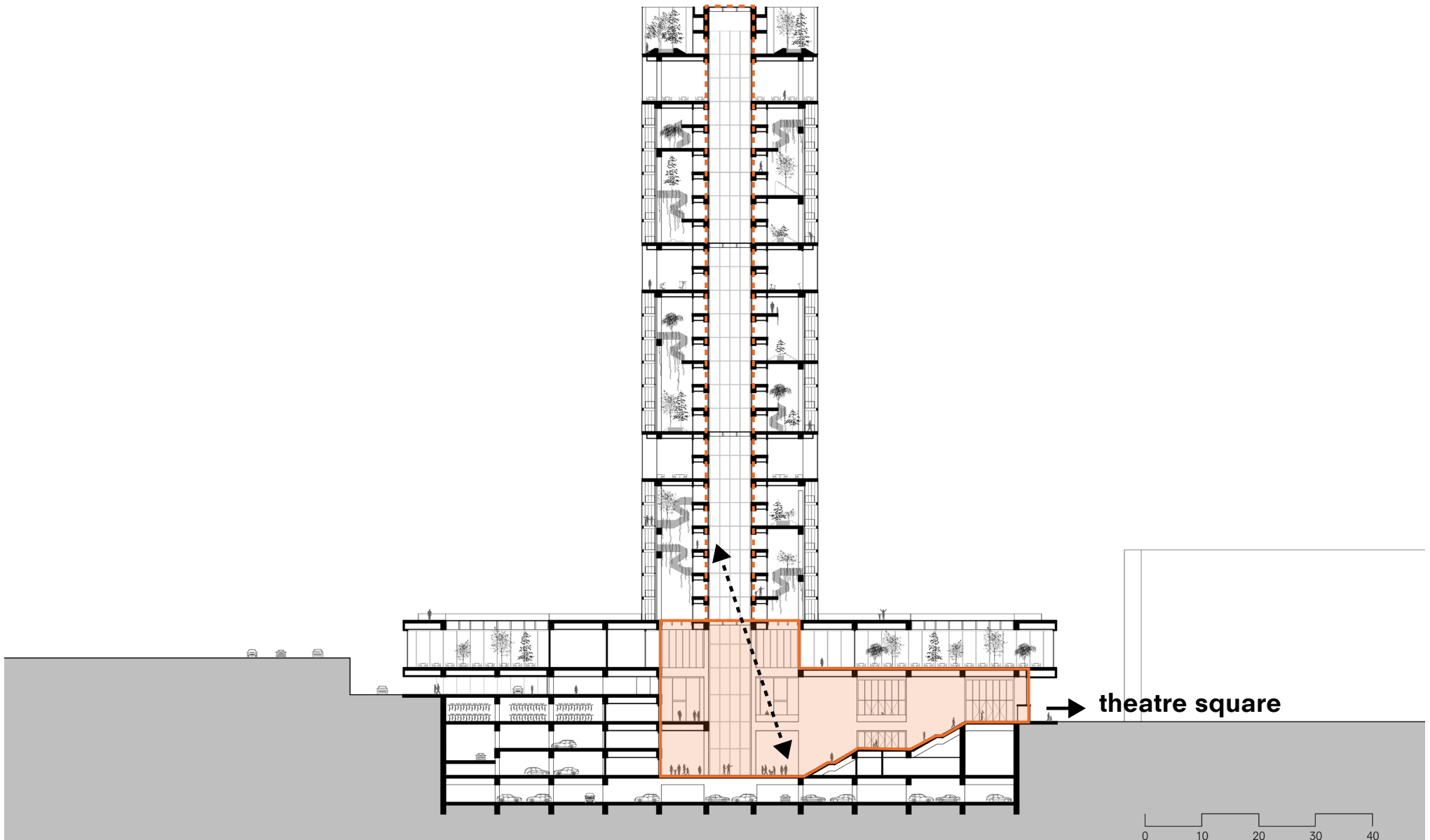
concrete floor slabs

implementation
CROSS SECTION



implementation

THEATRICAL SPACE



implementation

THEATRICAL SPACE

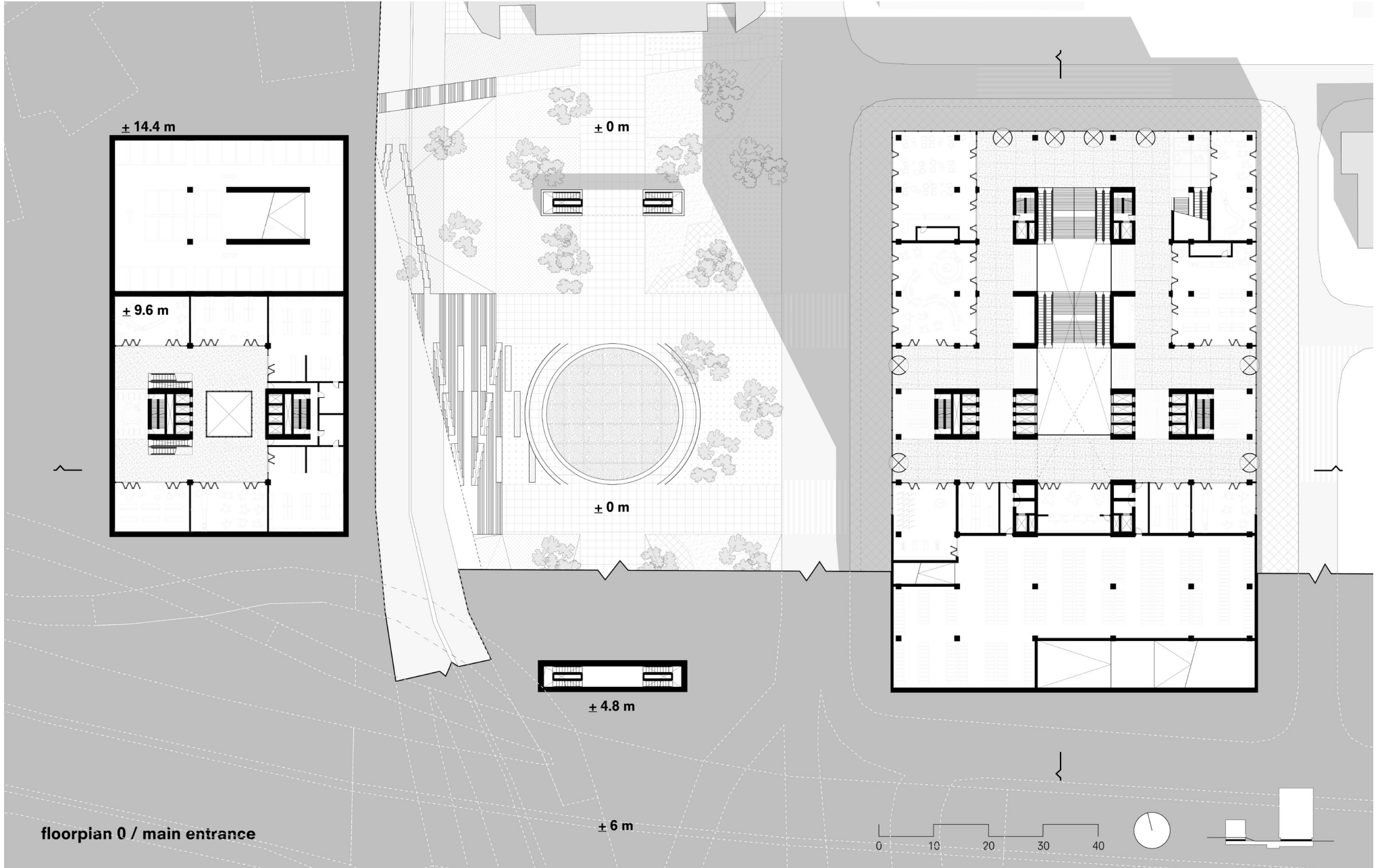


implementation

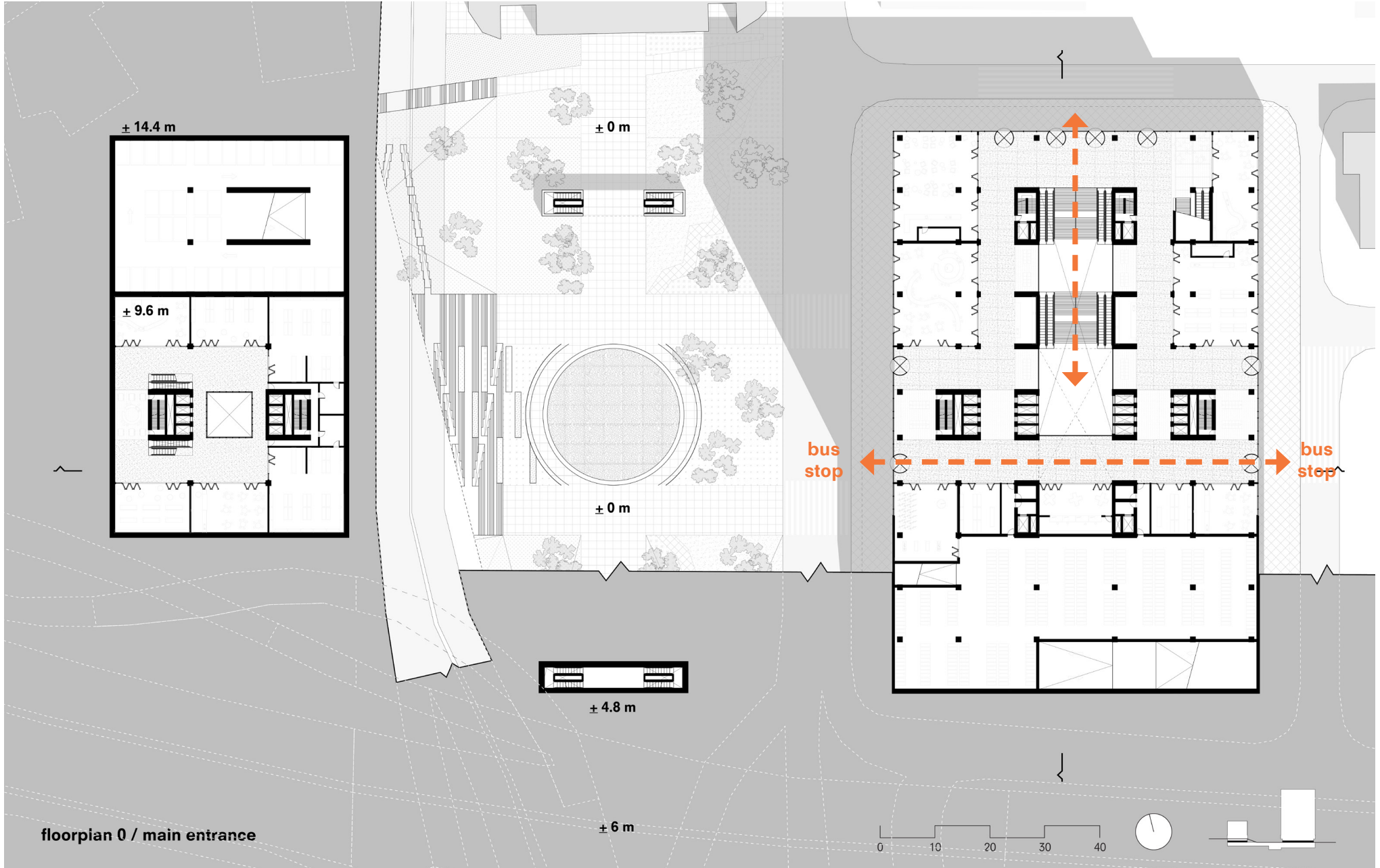
THEATRICAL SPACE



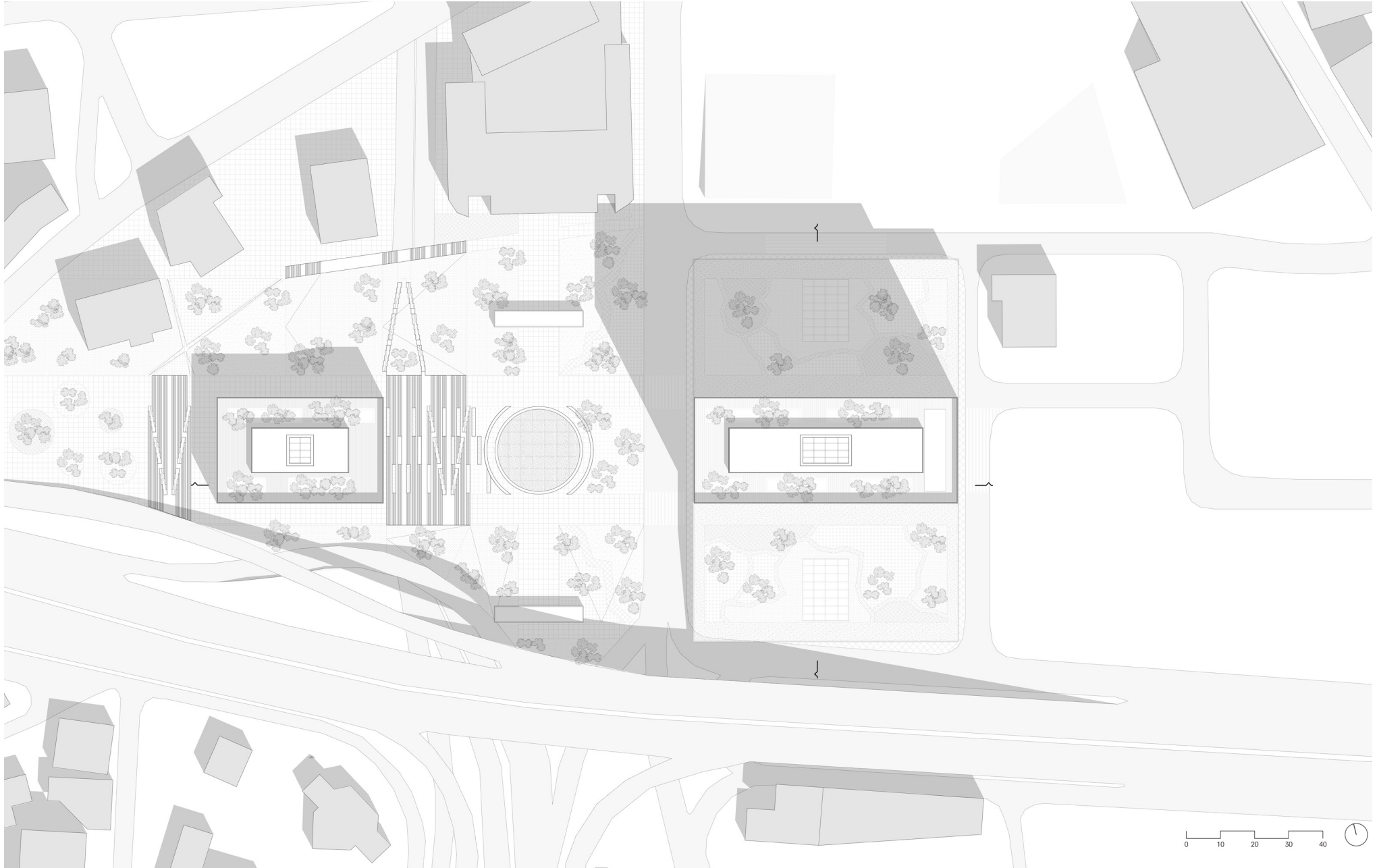
implementation
GROUND FLOOR



implementation BUS STOP

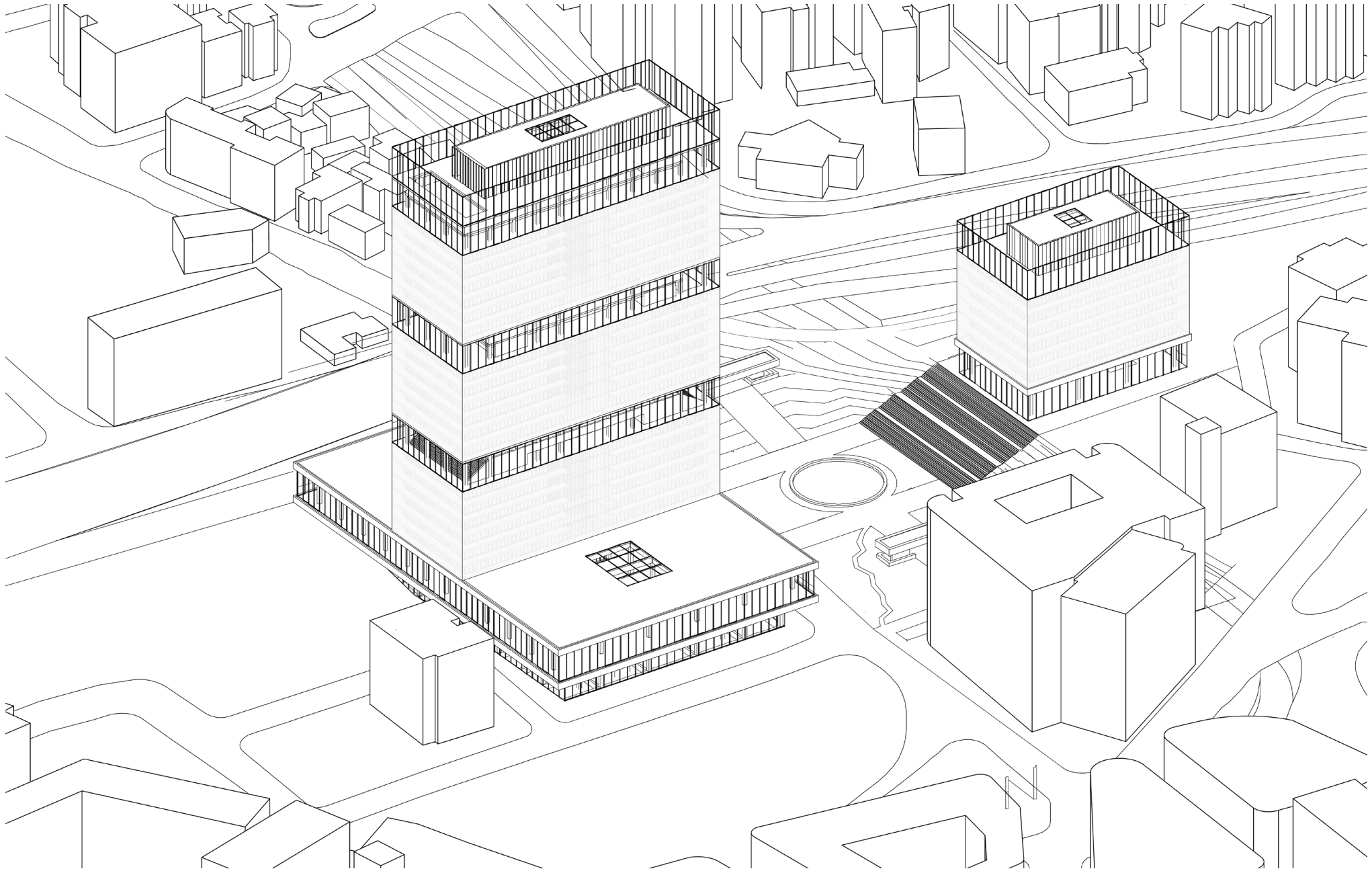


implementation
CONTEXT



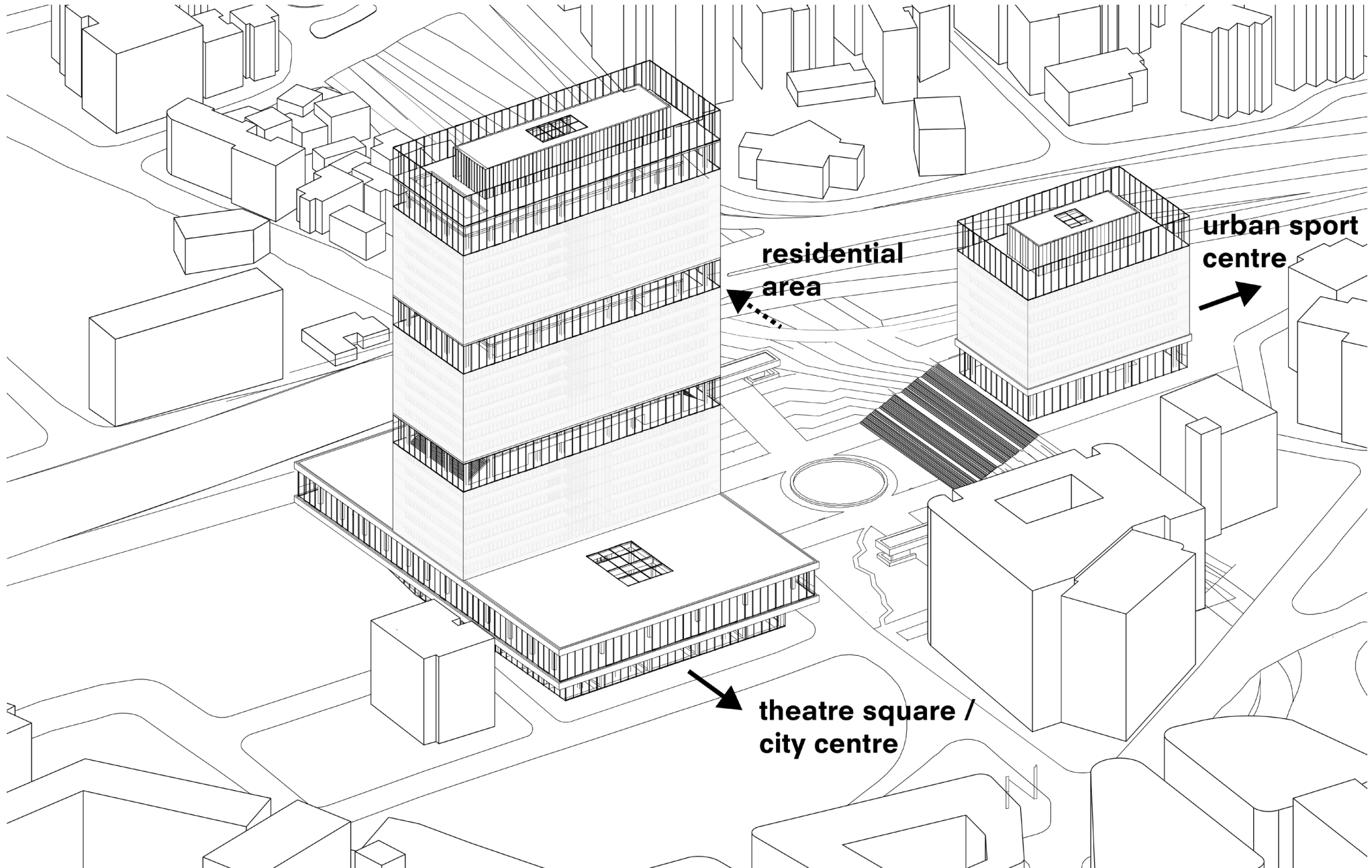
implementation

GROUND FLOOR



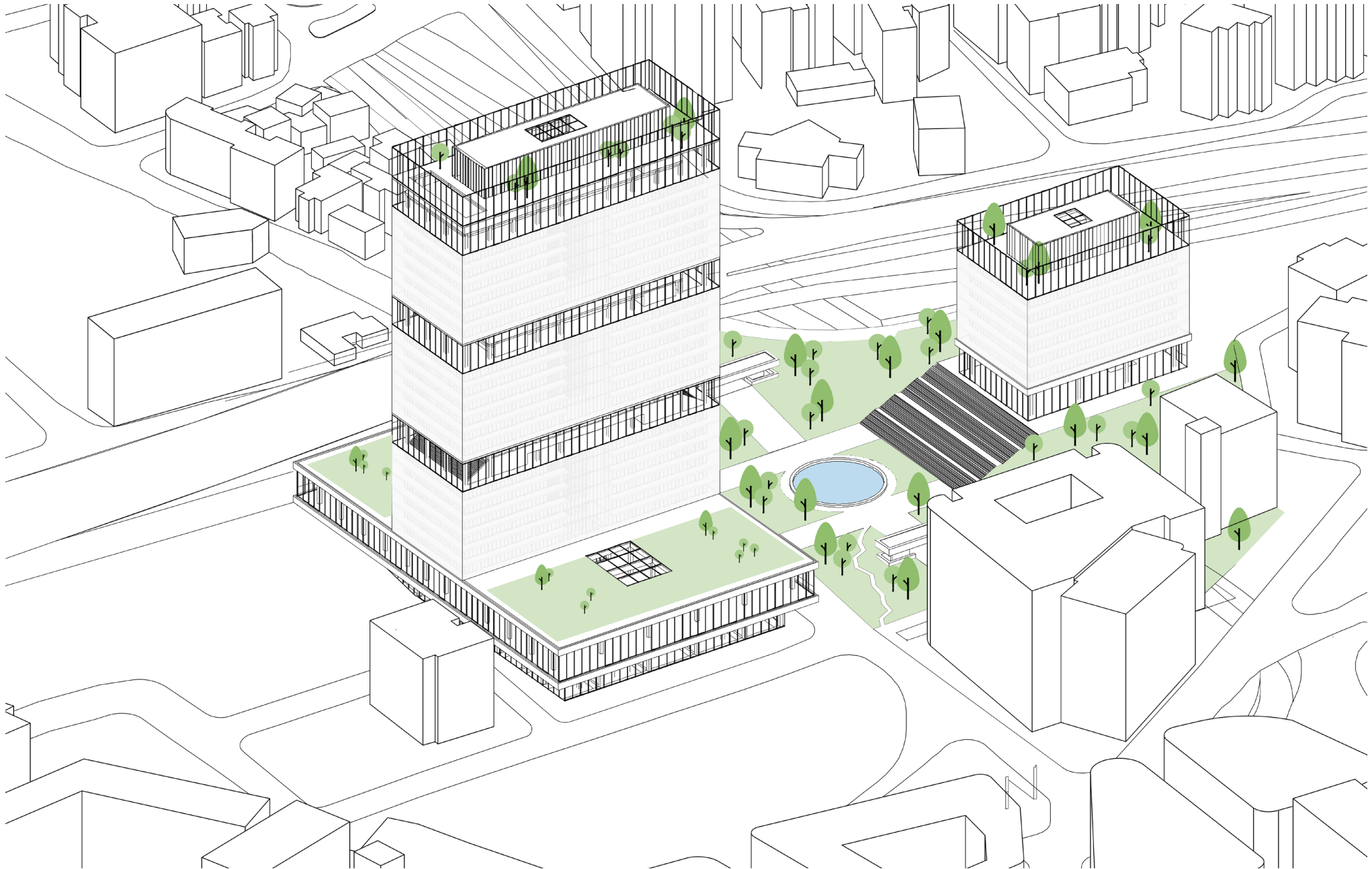
implementation

EXITS

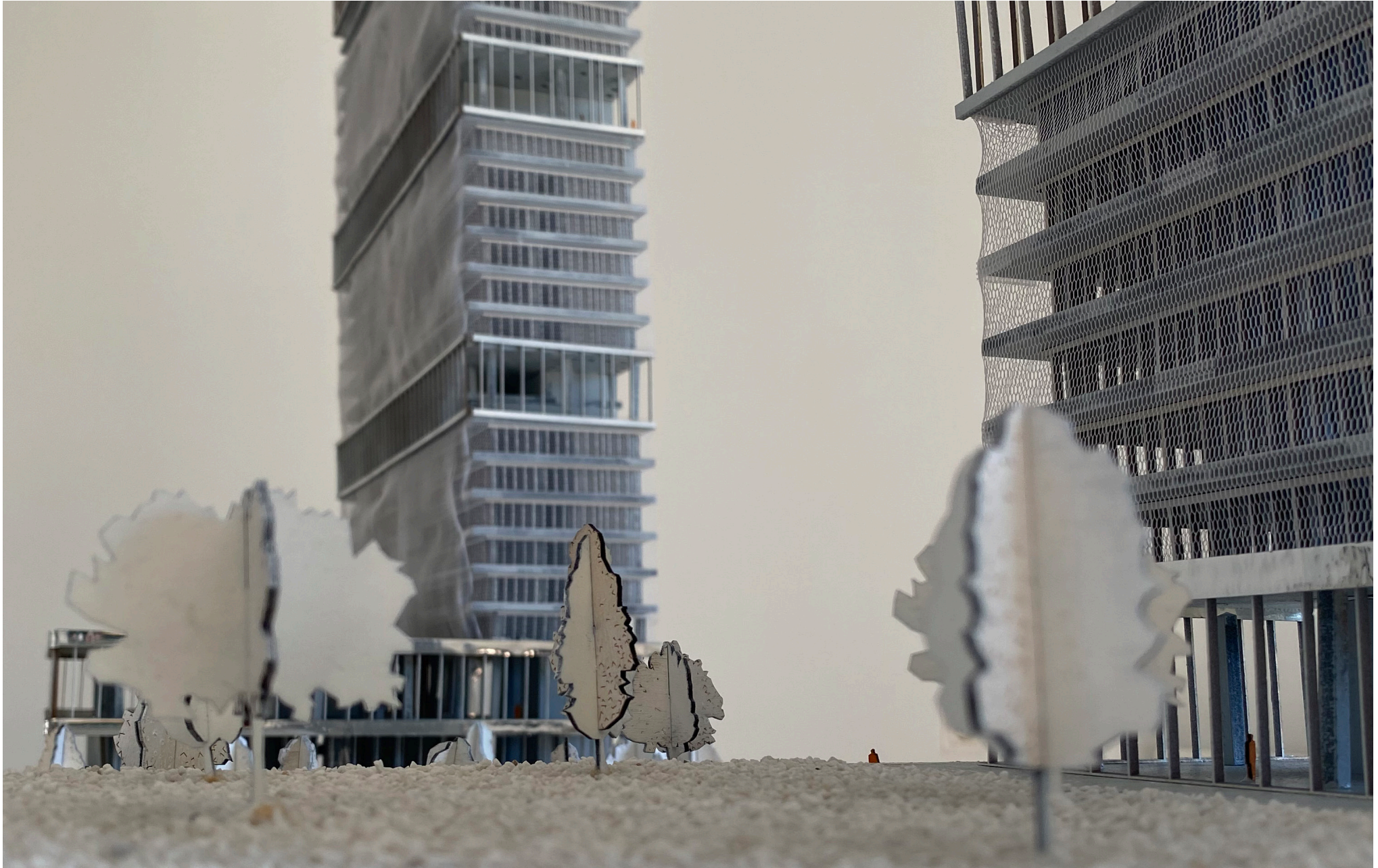


implementation

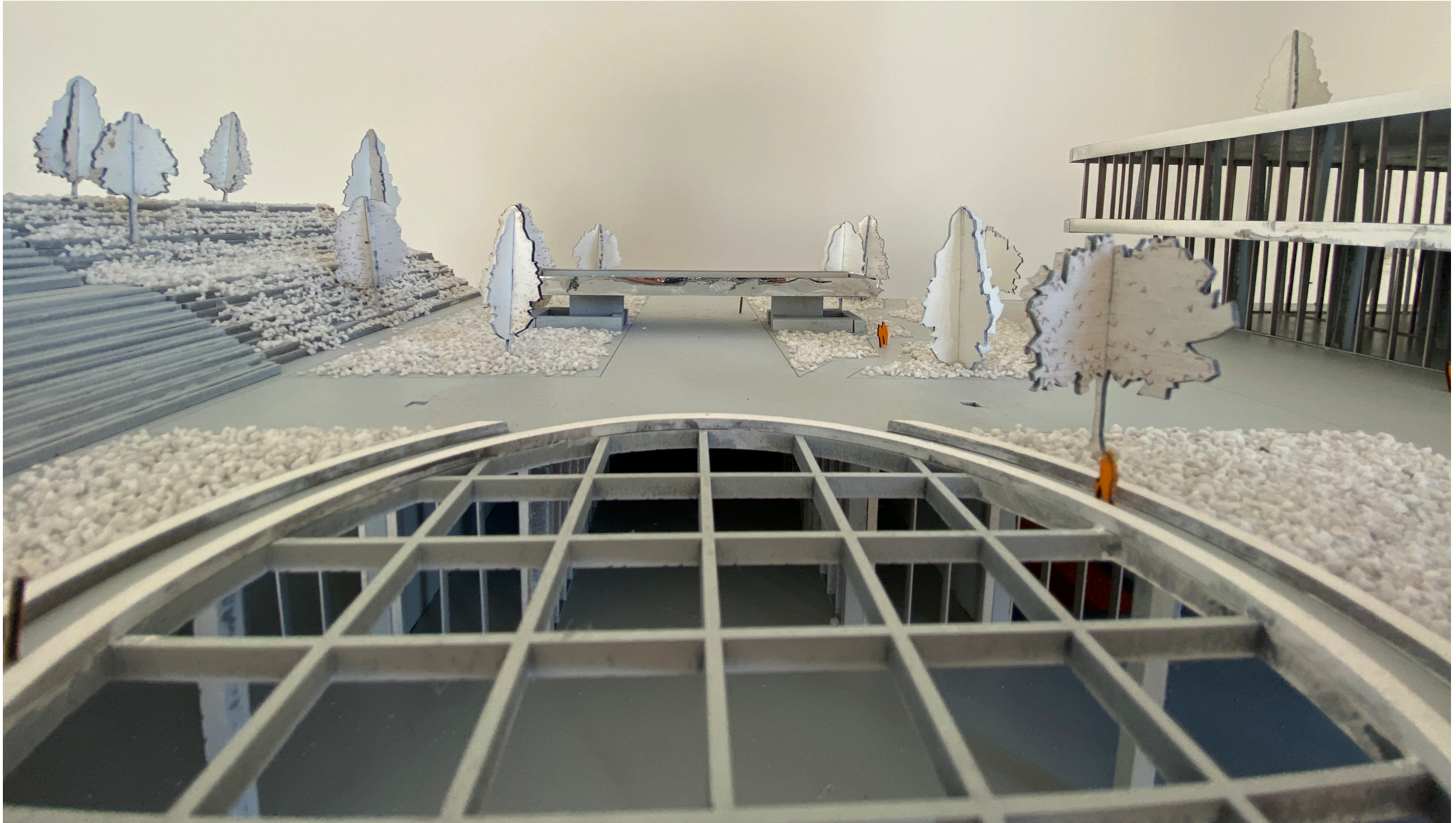
PARK



implementation
PARK



implementation
PARK



implementation
HOTEL LOBBY



floorplan 2 / hotel lobby, entrance

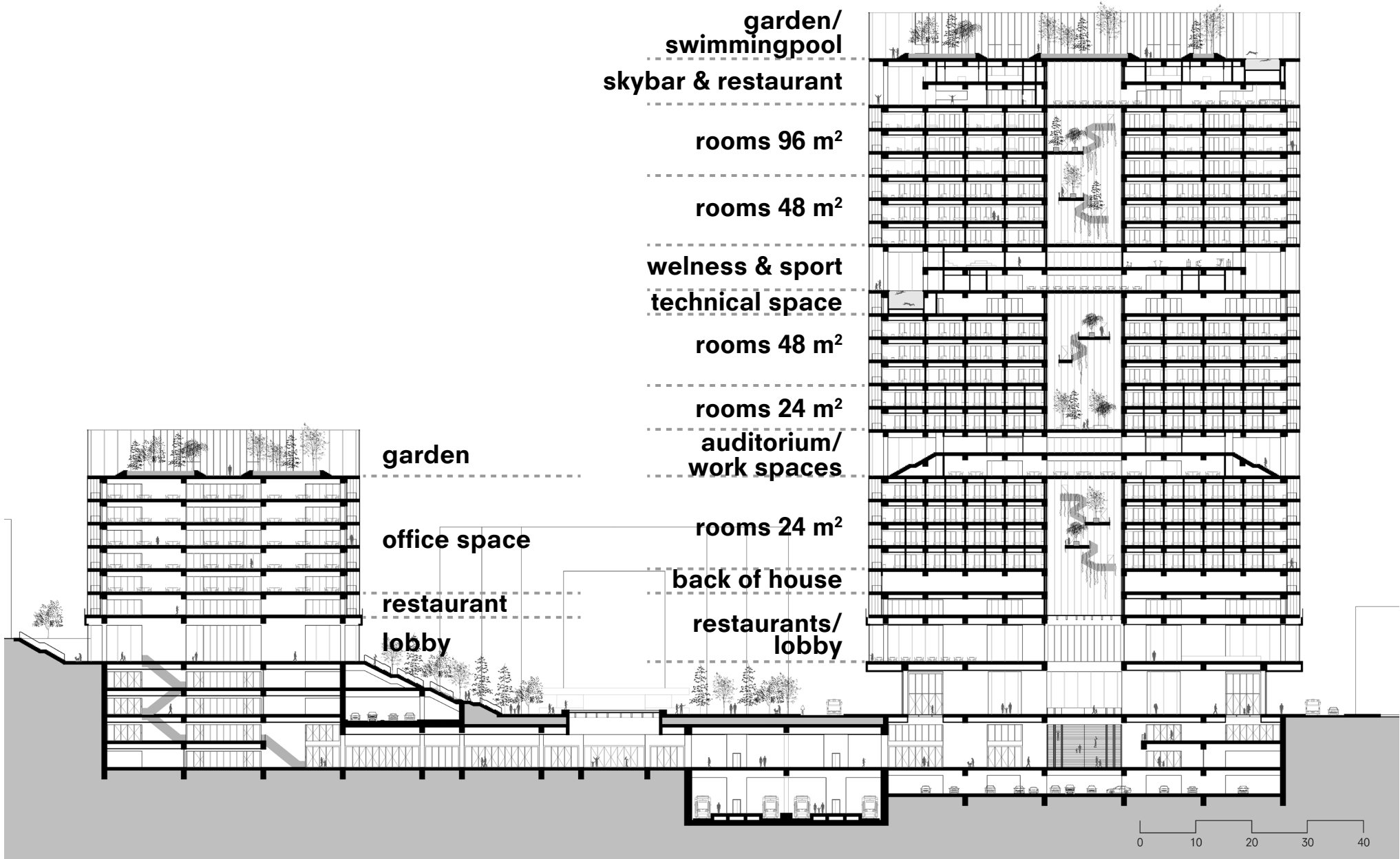
implementation
HOTEL LOBBY



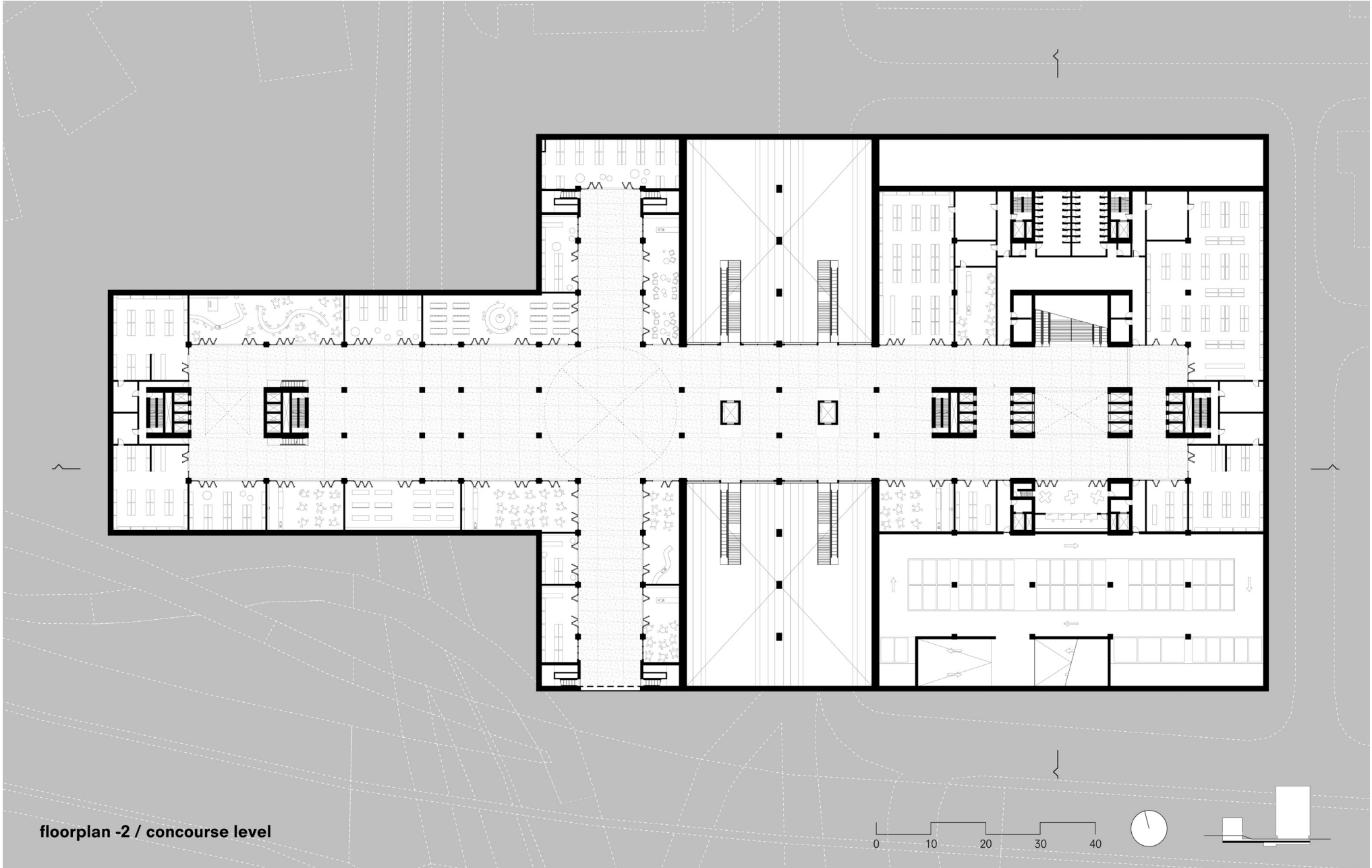
floorplan 2 / hotel lobby, entrance

implementation

LONGITUDINAL SECTION



SITE



floorplan -2 / concourse level



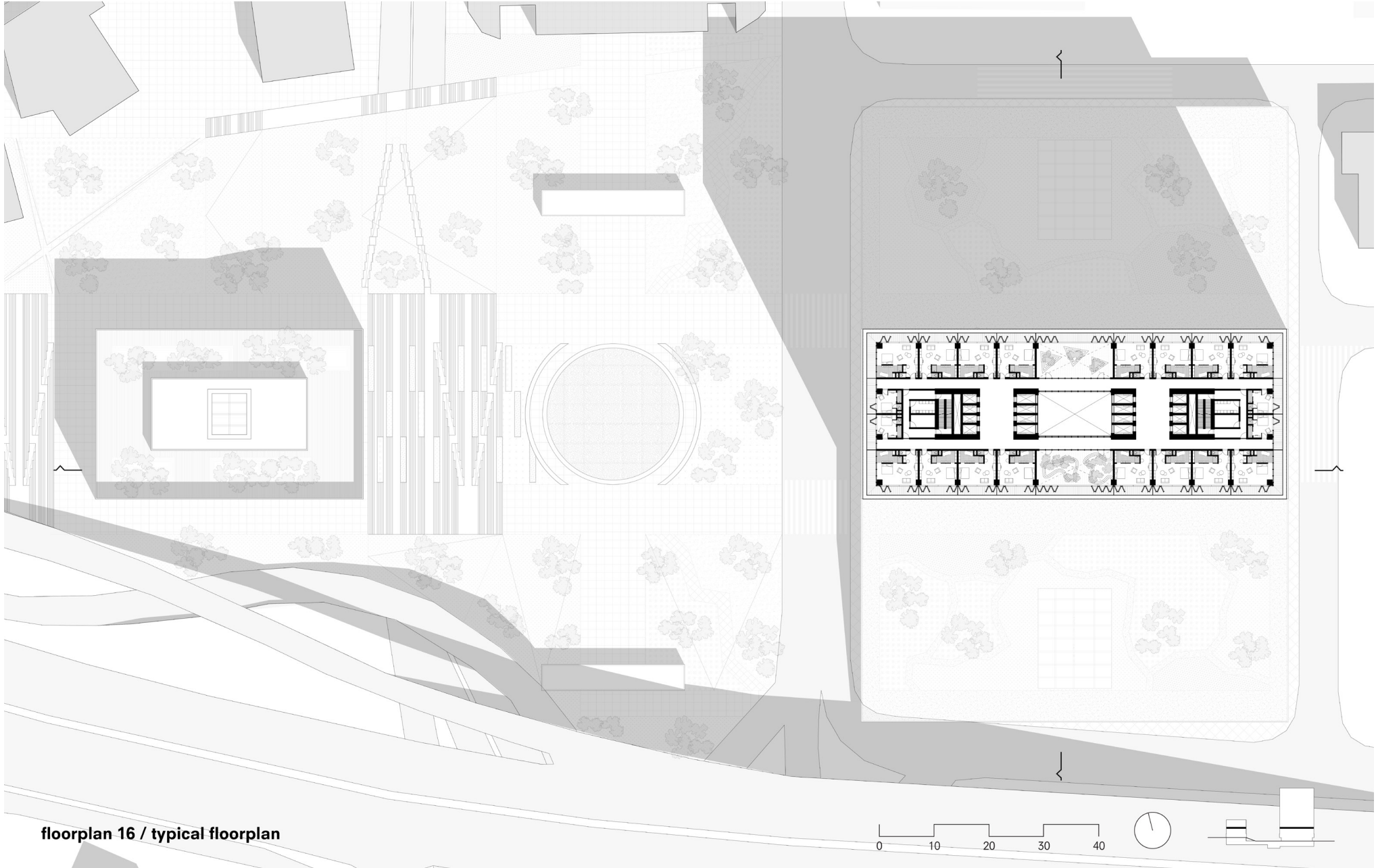
implementation

FLOORPLAN HOTEL 24M²



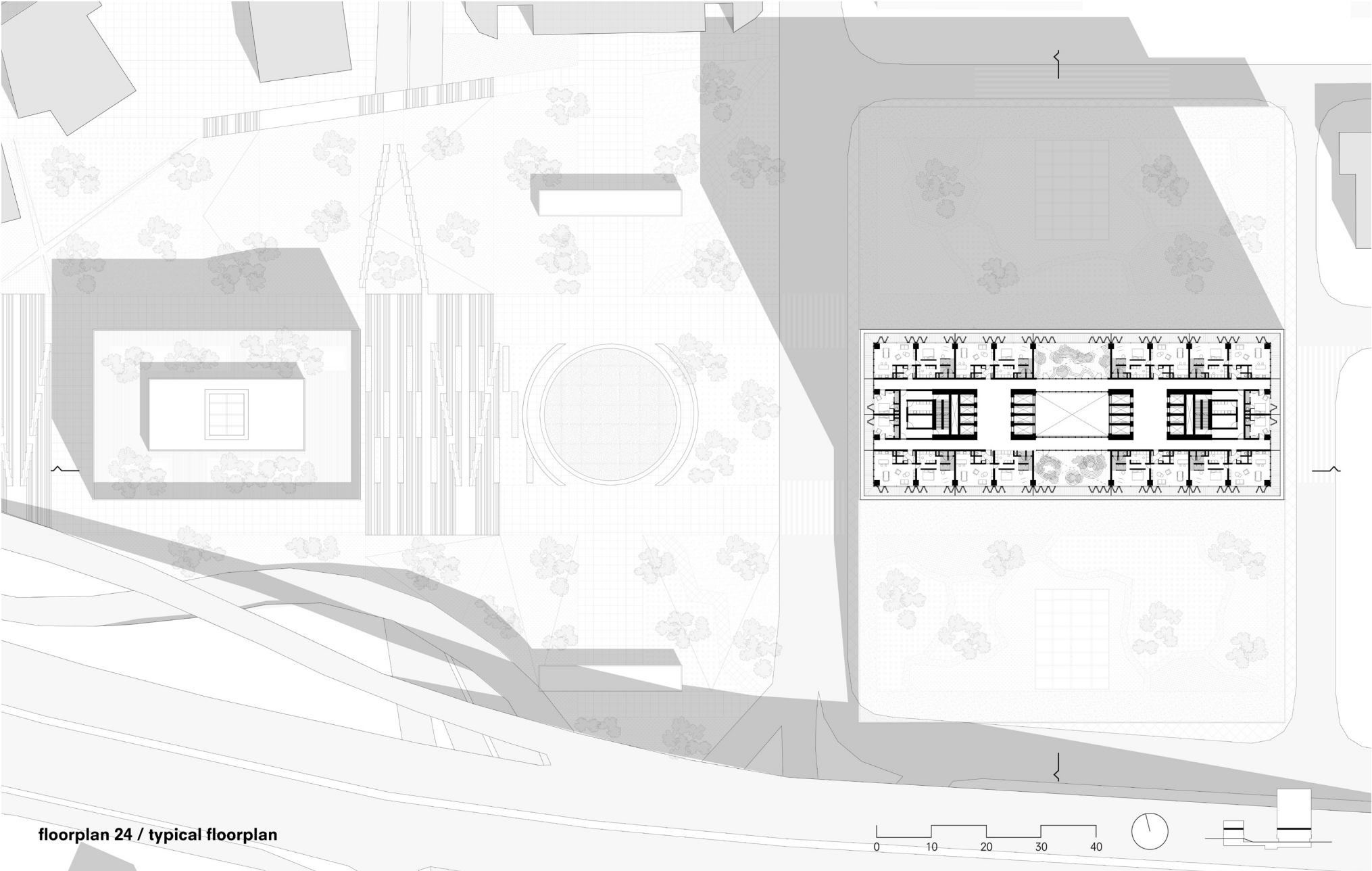
floorplan 8 / typical floorplan

implementation
FLOORPLAN HOTEL 48M²



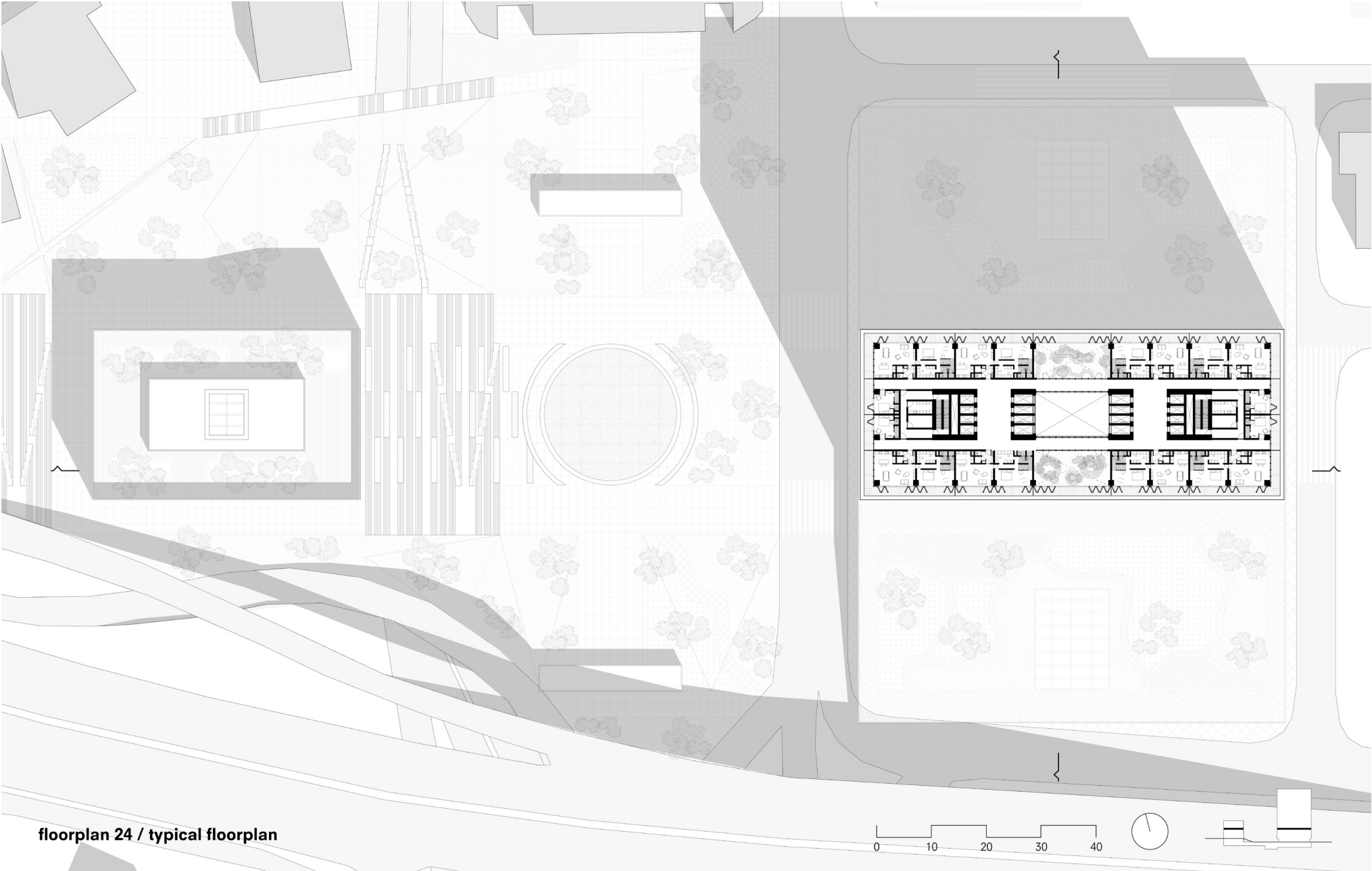
floorplan 16 / typical floorplan

implementation
FLOORPLAN HOTEL 96M²



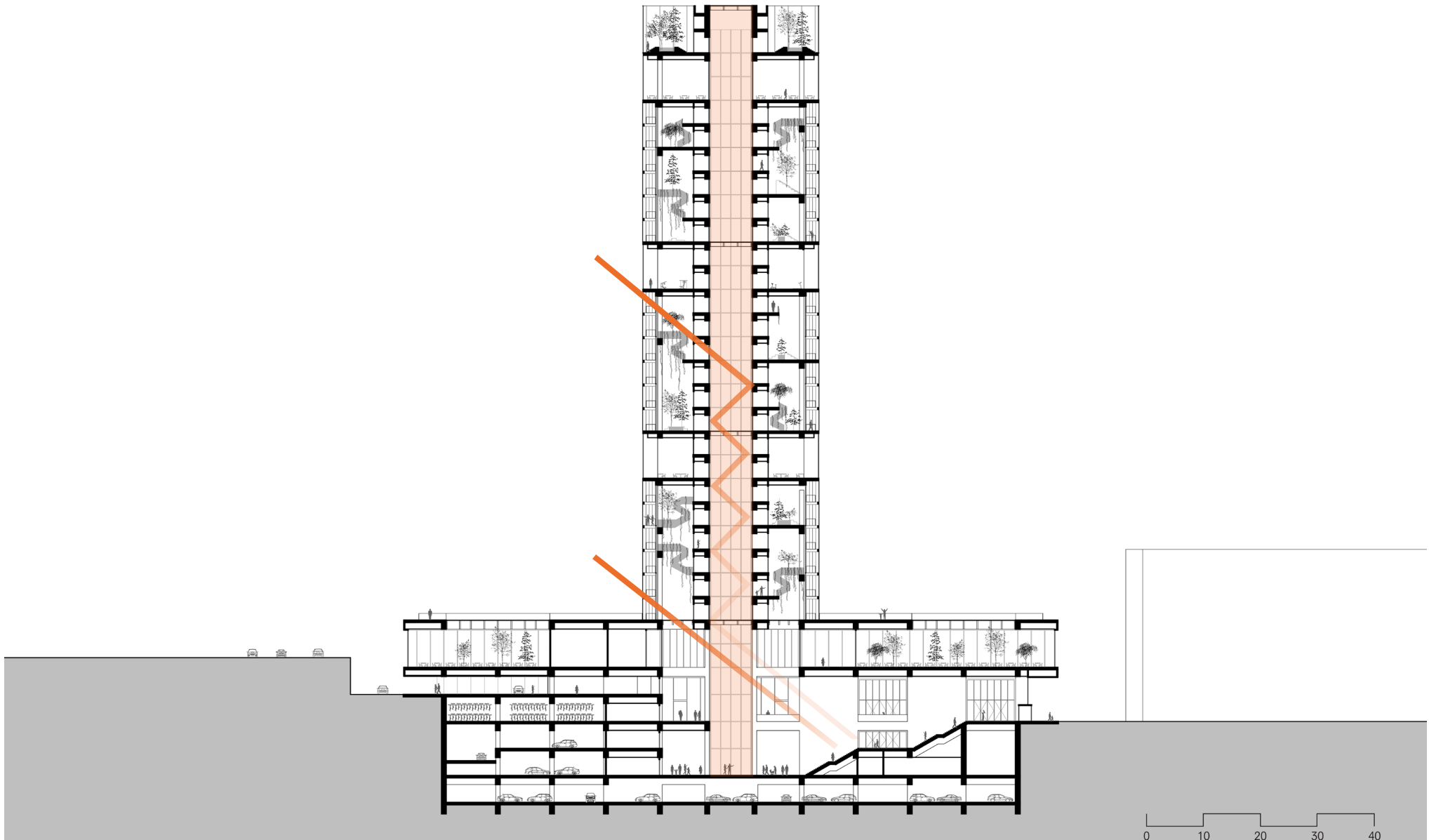
floorplan 24 / typical floorplan

implementation
FLOORPLAN HOTEL 96M²



floorplan 24 / typical floorplan

implementation
ATRIUM



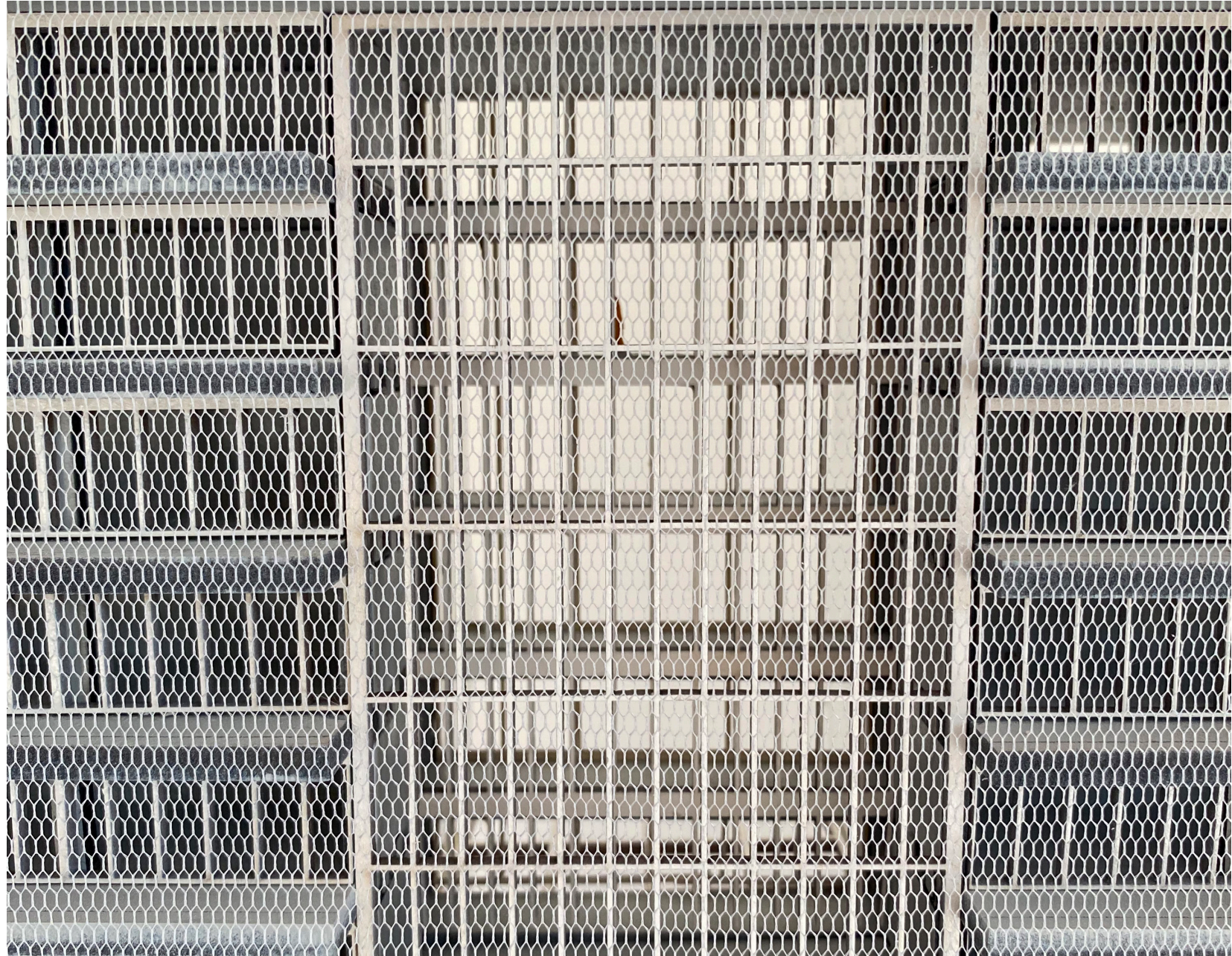
implementation

ATRIUM AS HEART



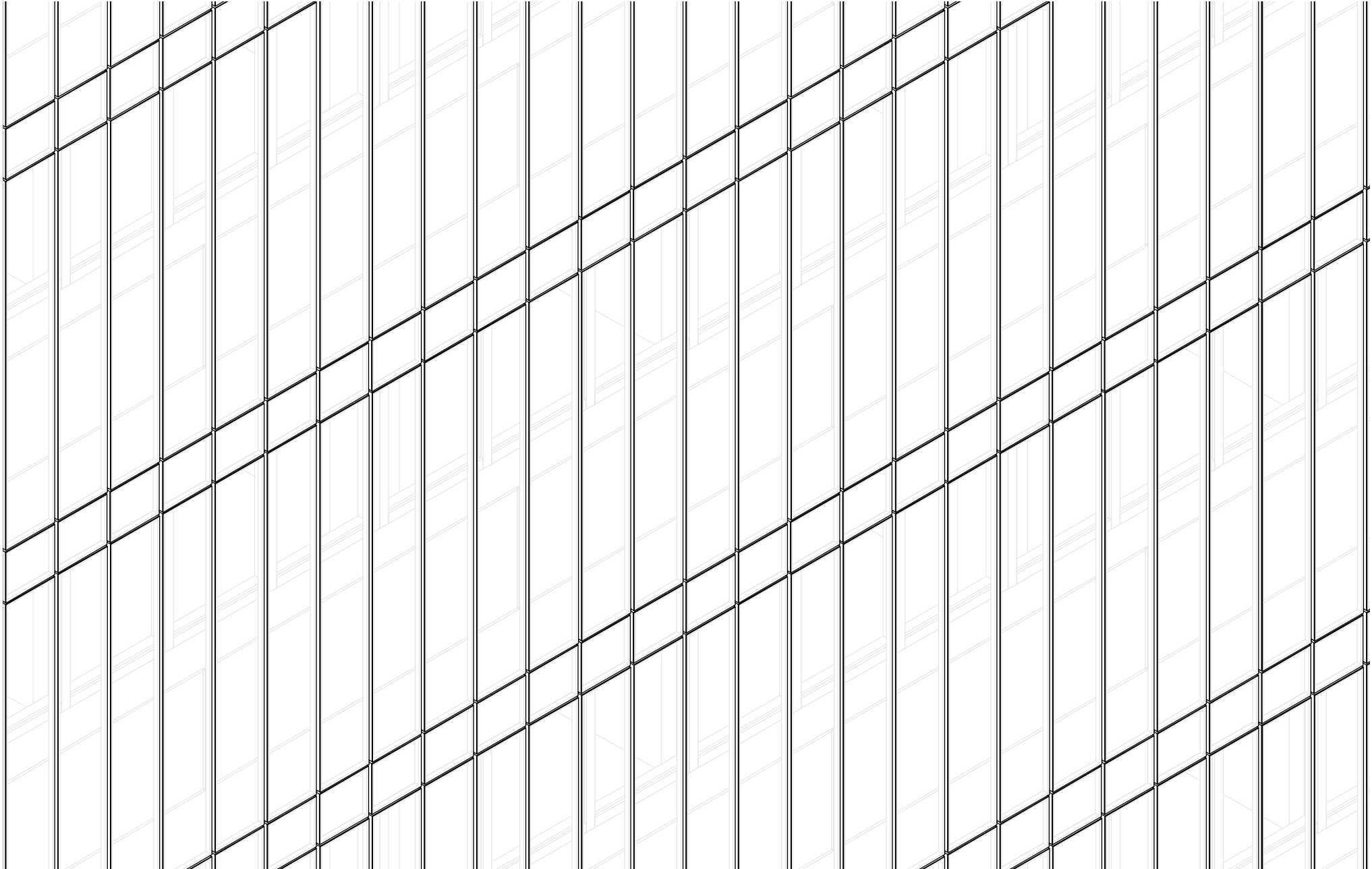
implementation

ATRIUM AS HEART



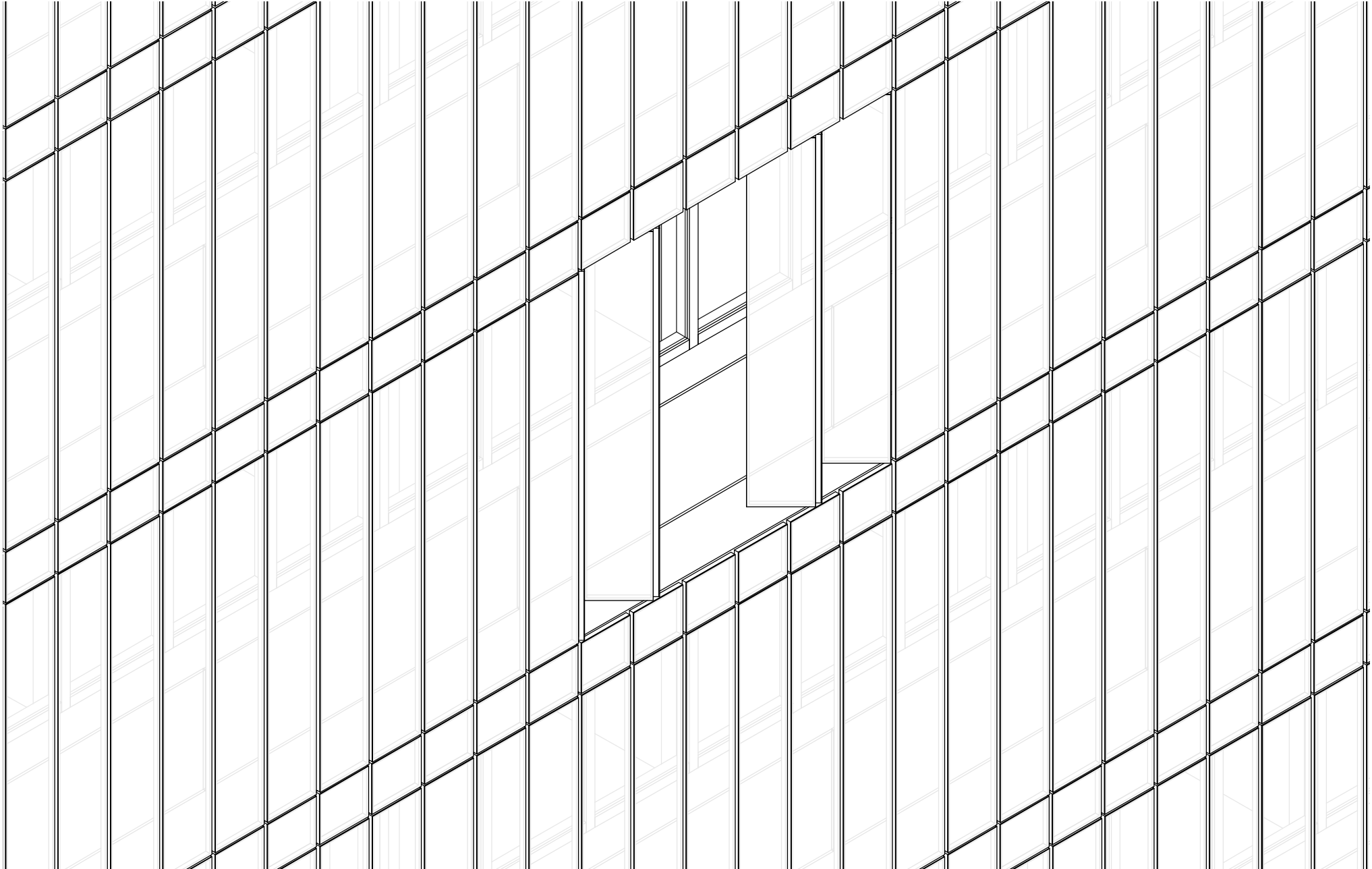
implementation

HOTEL FACADE



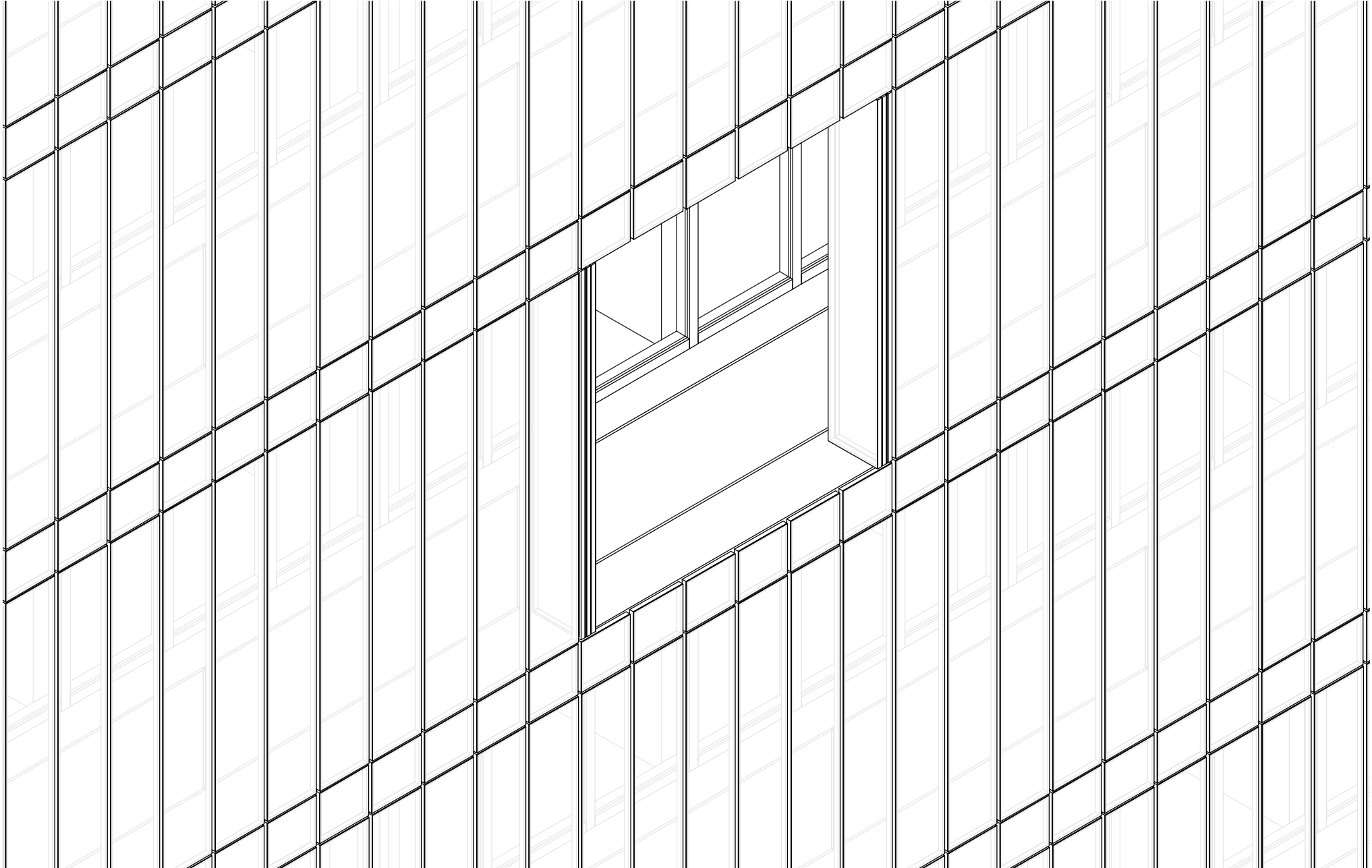
implementation

HOTEL FACADE



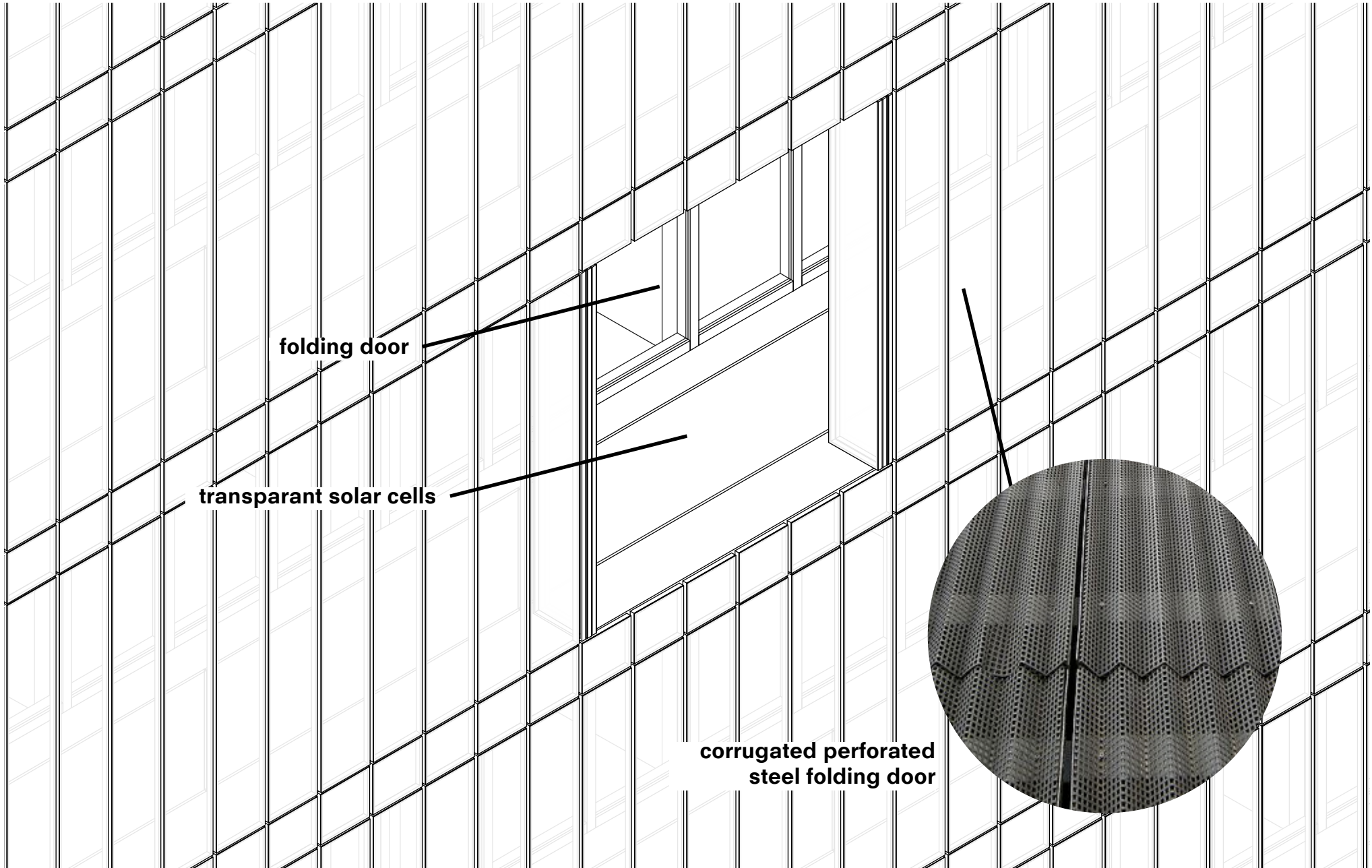
implementation

HOTEL FACADE



implementation

HOTEL FACADE

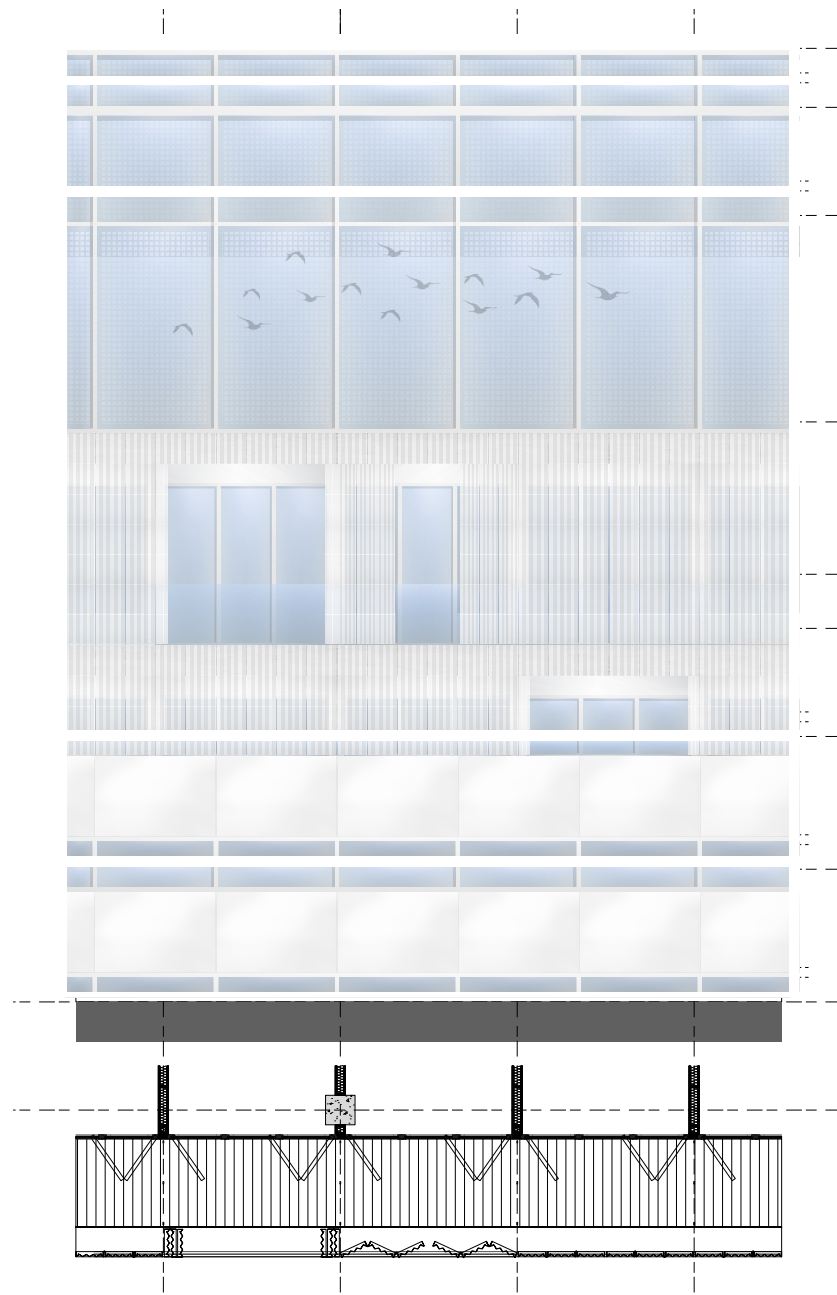
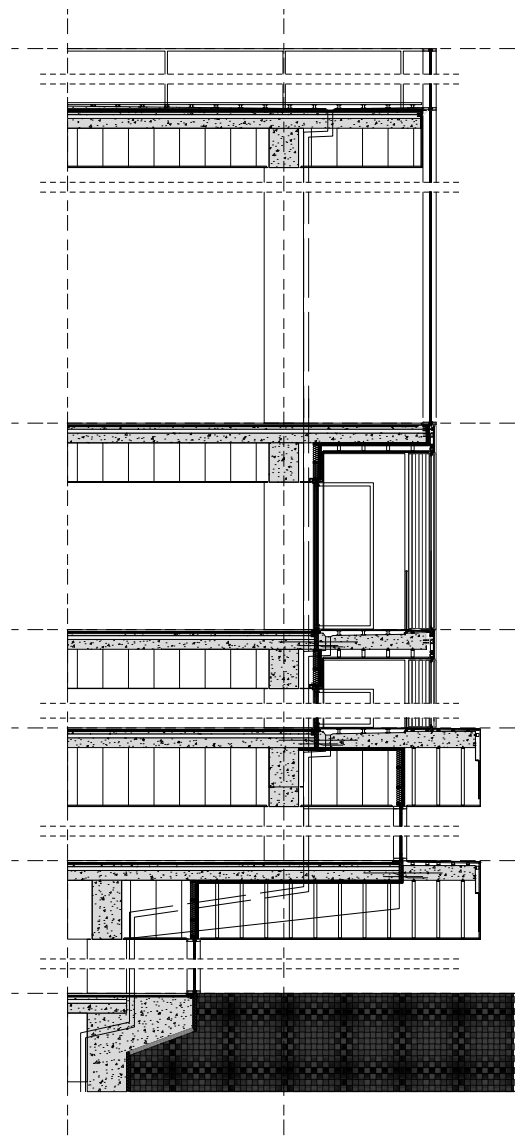


folding door

transparent solar cells

**corrugated perforated
steel folding door**

implementation
FRAGMENT

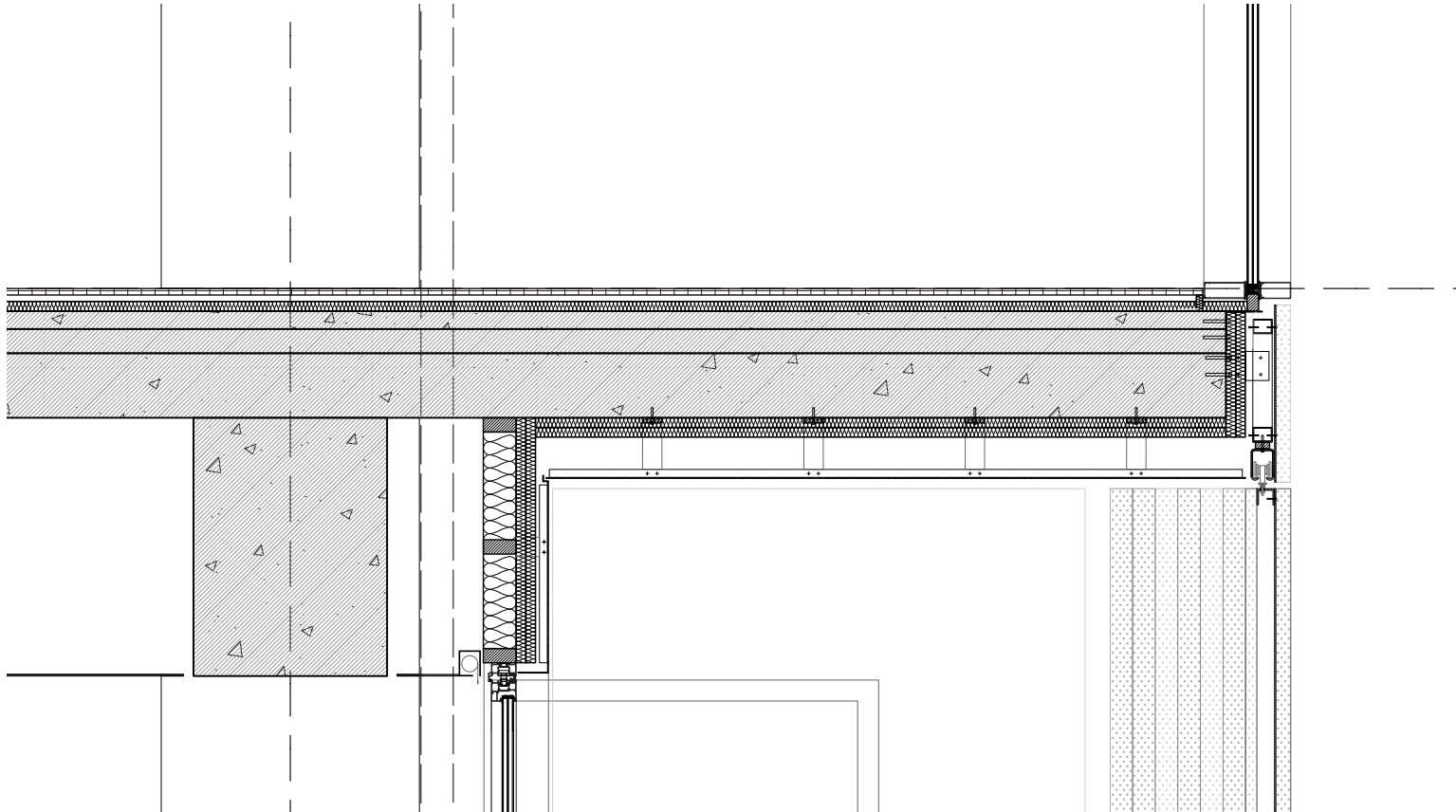


implementation

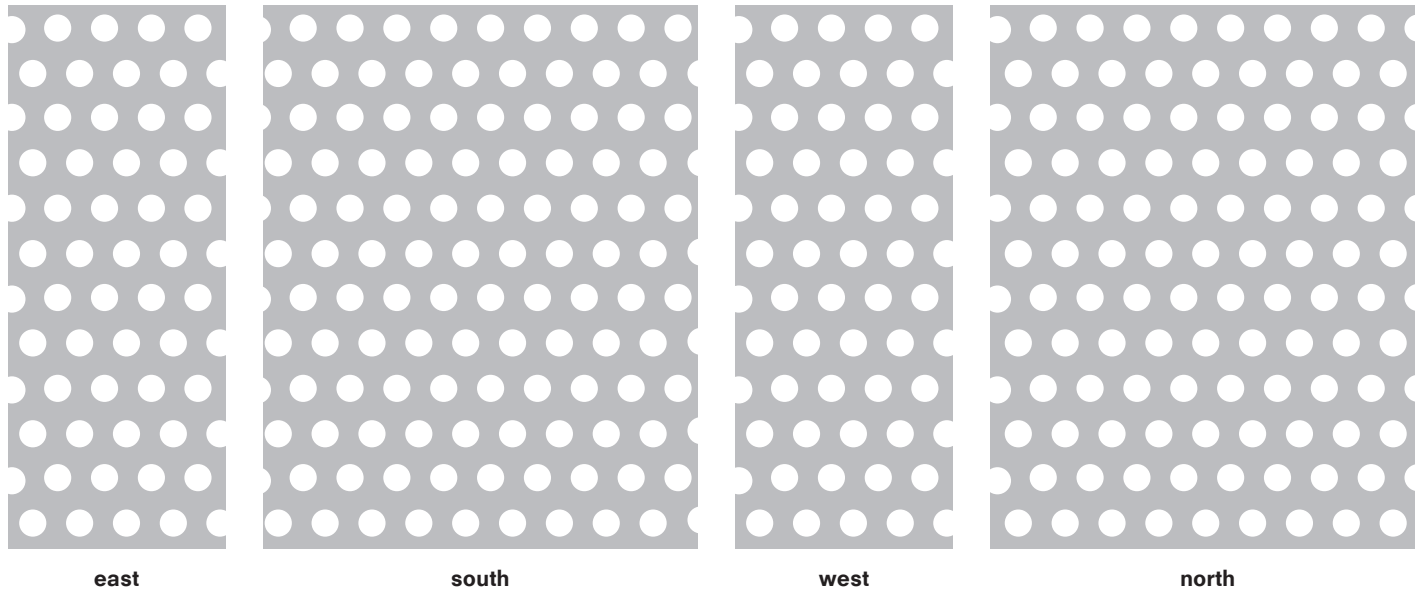
HOTEL FACADE



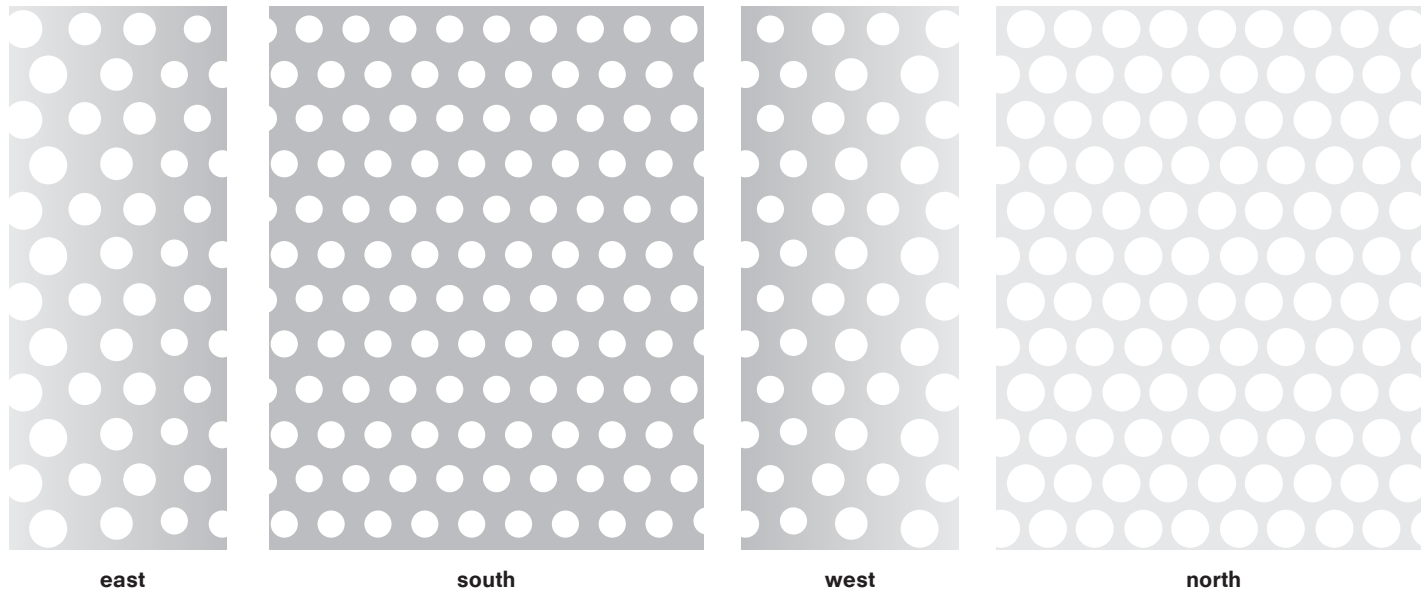
implementation
DETAIL C



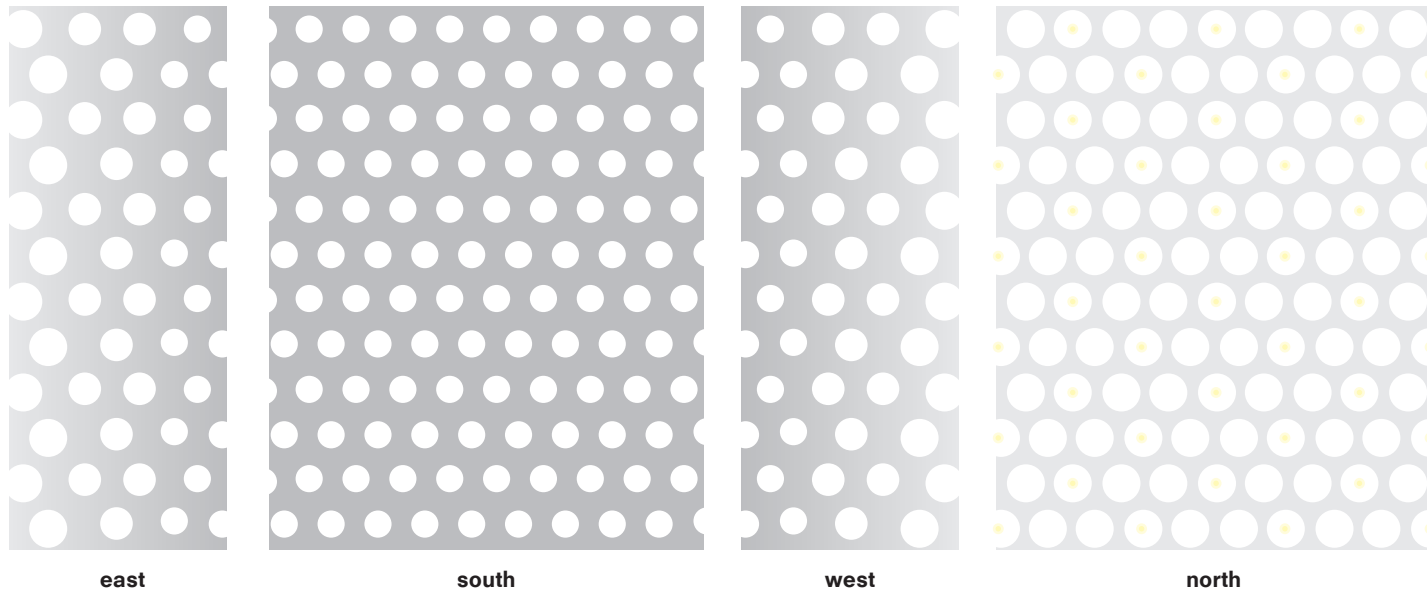
implementation
FACADE



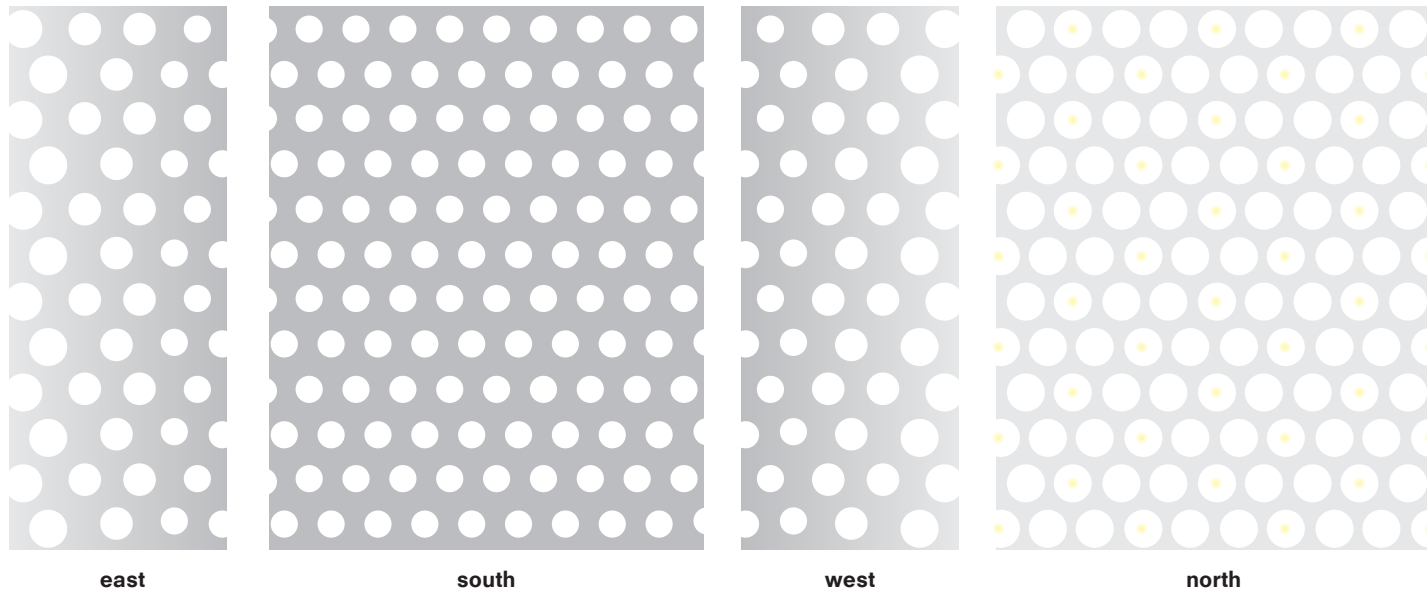
implementation
FACADE



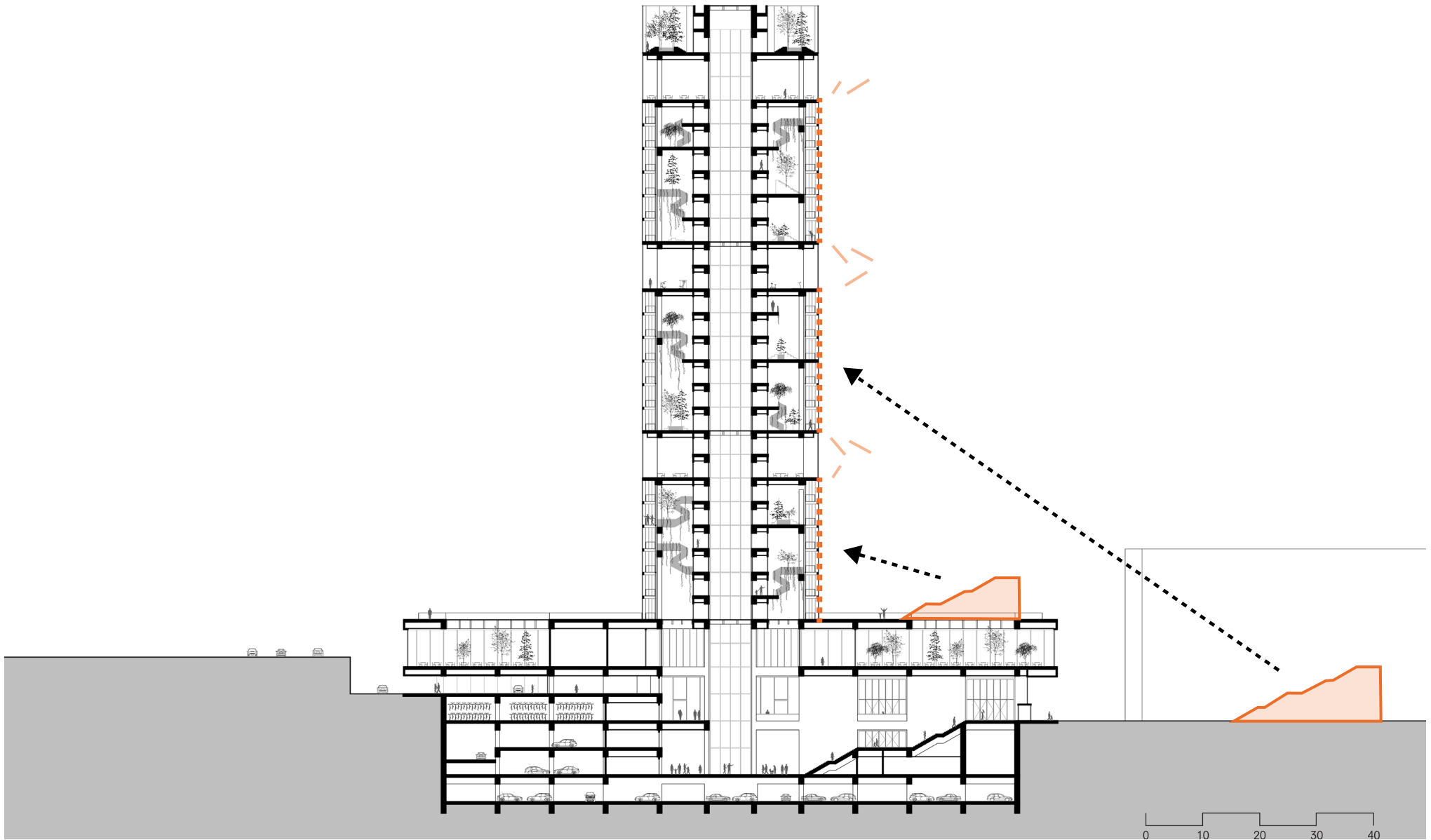
implementation
FACADE



implementation
FACADE

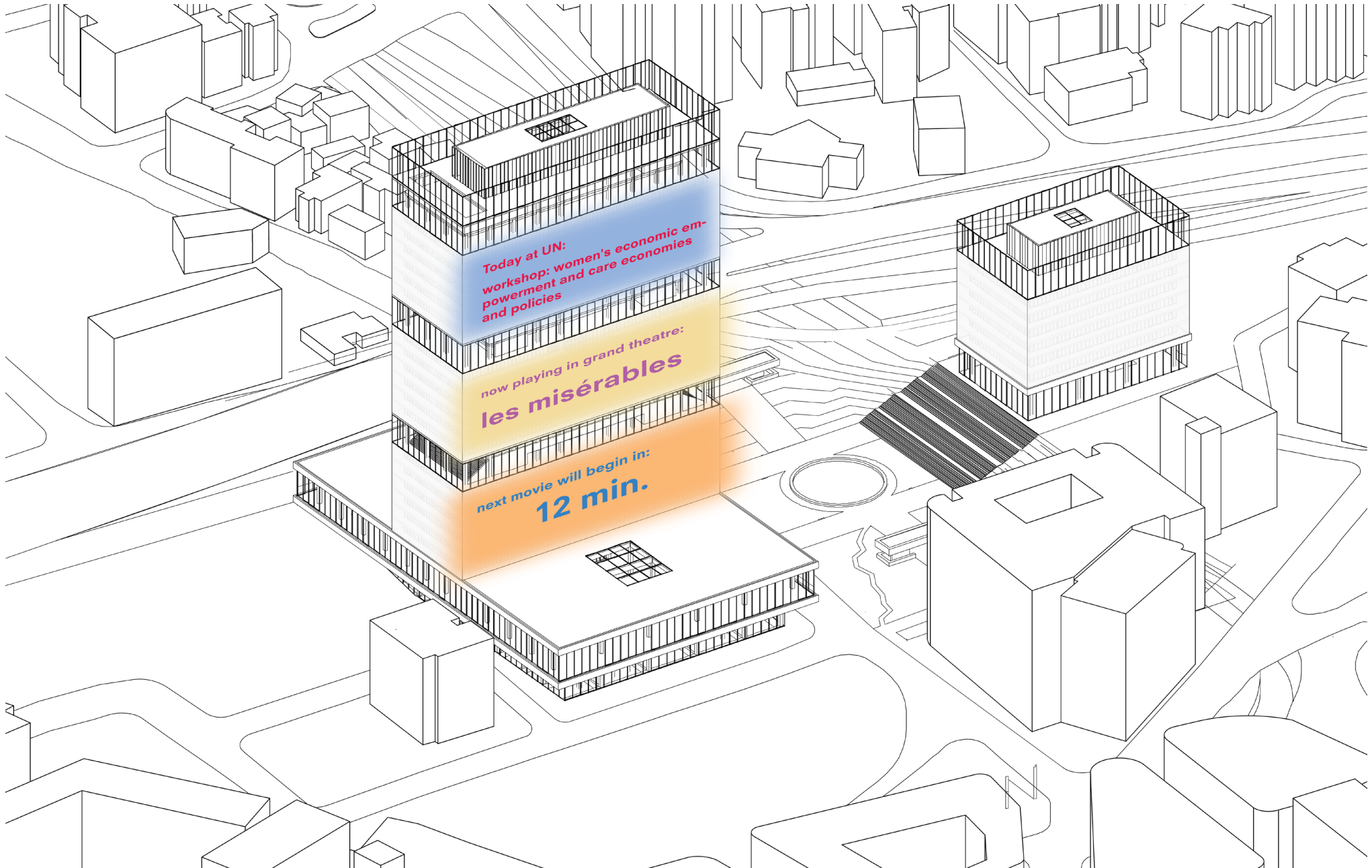


implementation
BILLBOARD



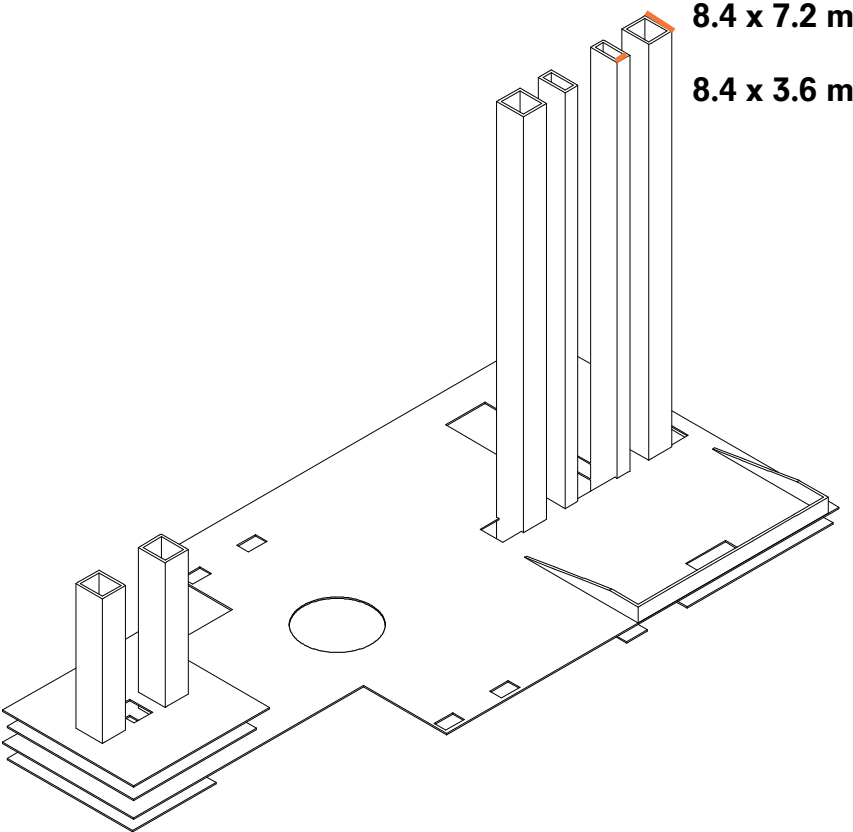
implementation

PARK



implementation

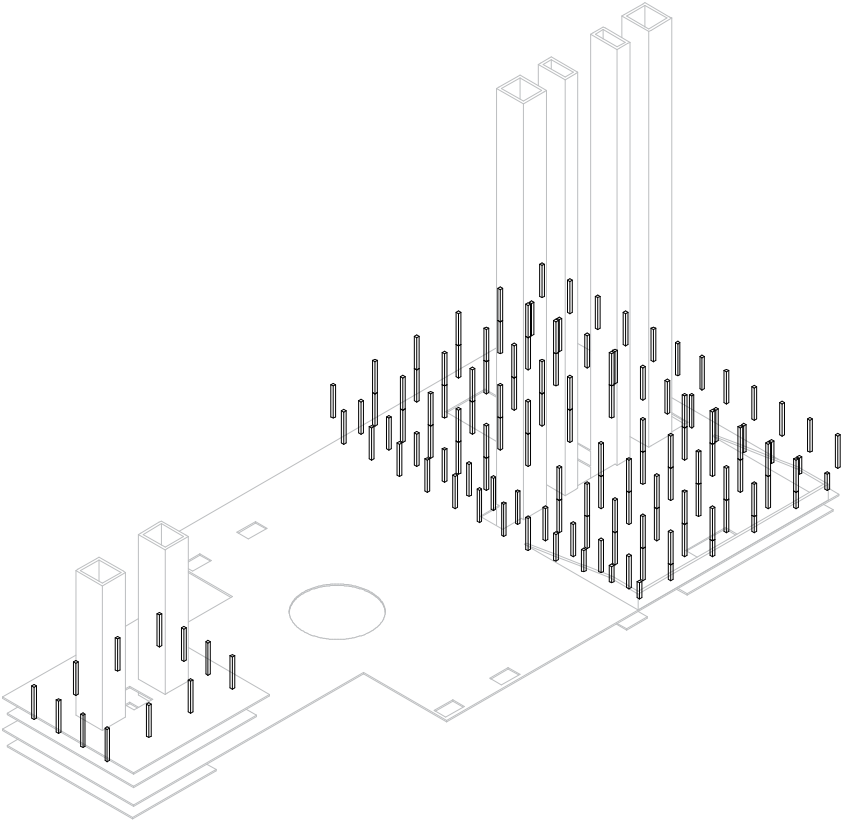
CONSTRUCTION



concrete cores 800 mm

implementation

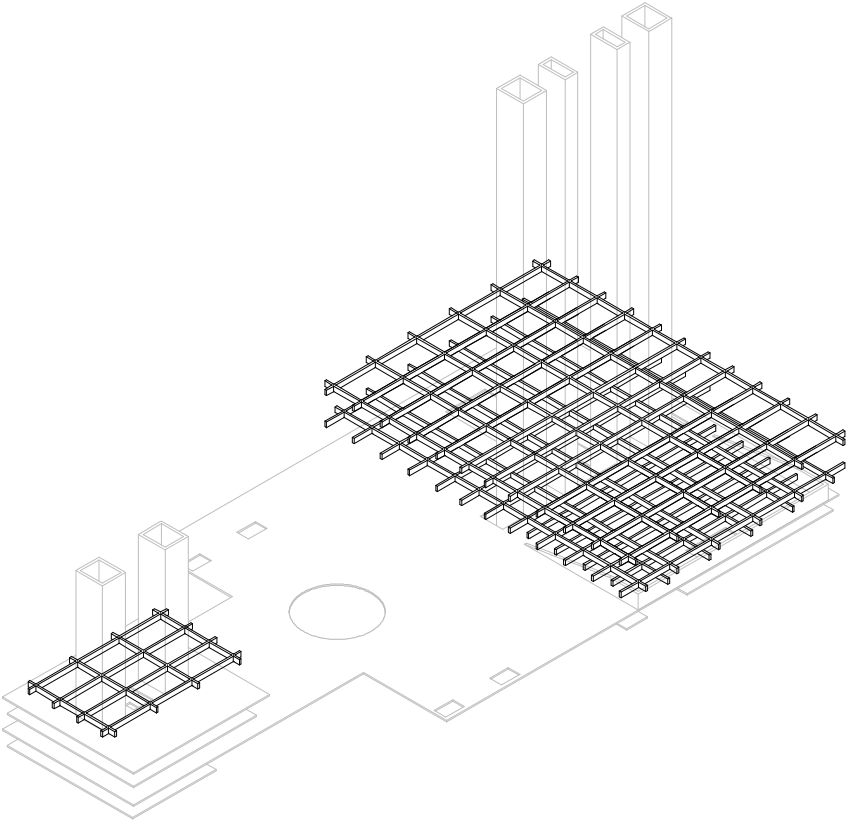
CONSTRUCTION



concrete columns 800 x 800 mm

implementation

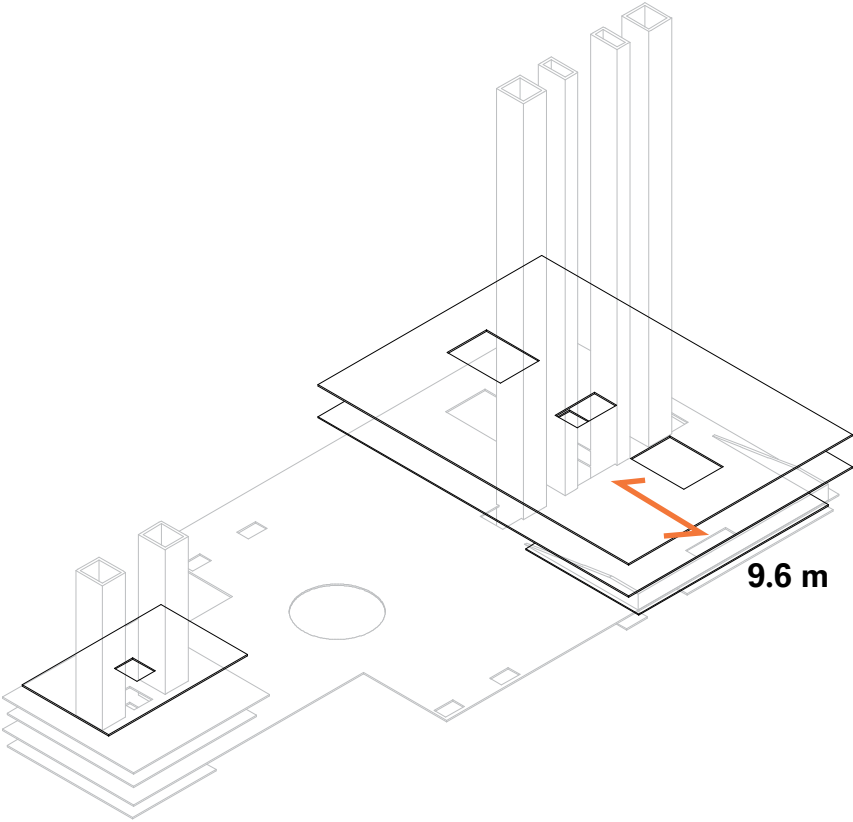
CONSTRUCTION



concrete beams 600 x 1800 mm

implementation

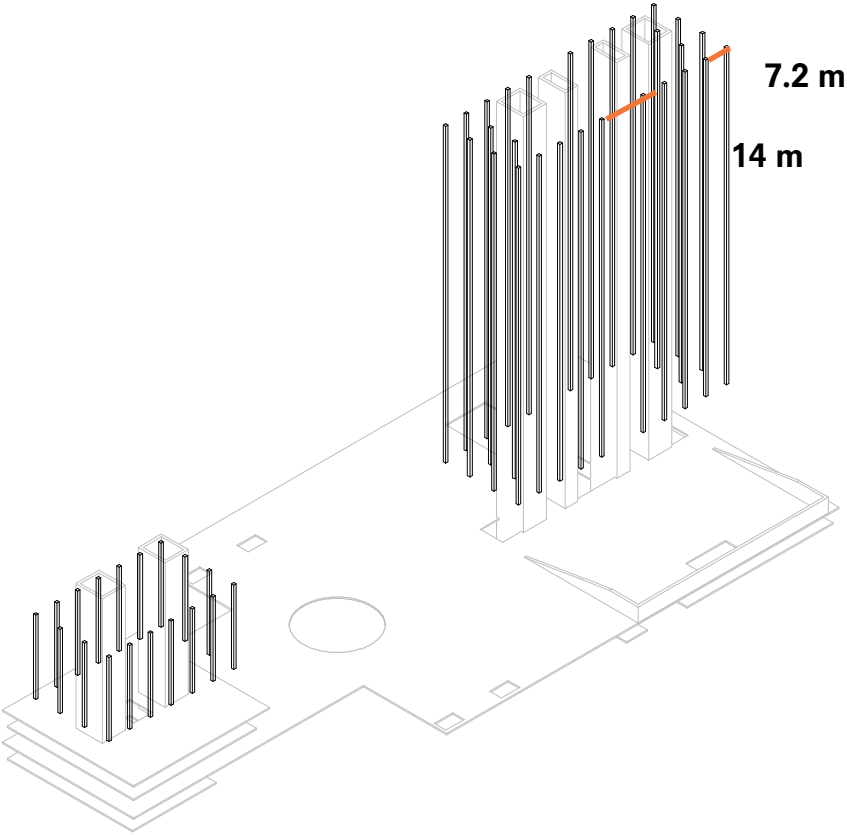
CONSTRUCTION



**hollow core concrete floor
slabs 400 mm**

implementation

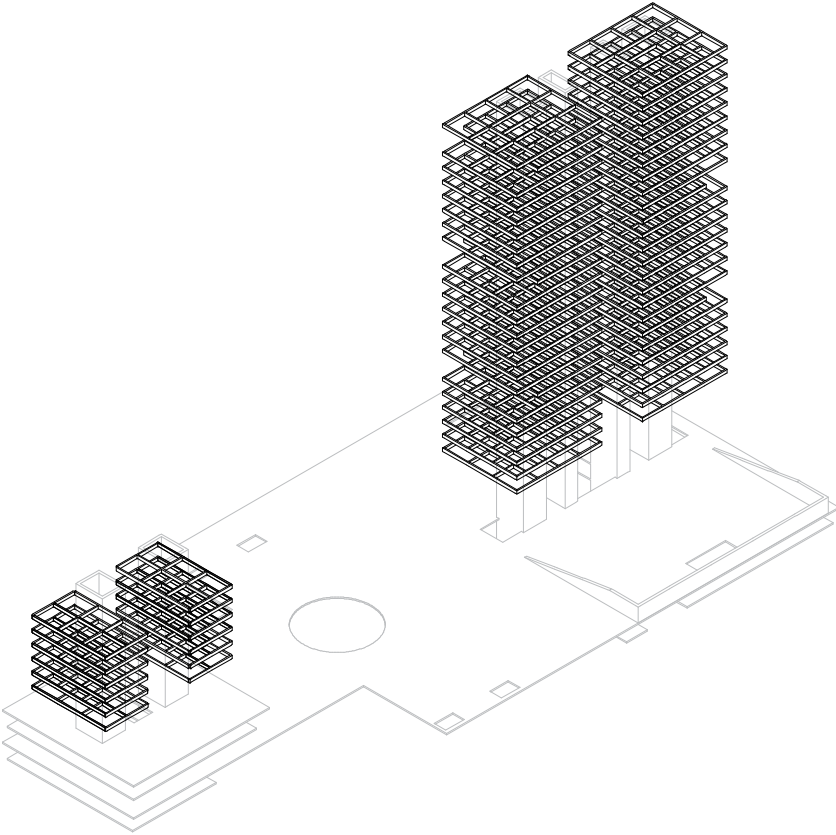
CONSTRUCTION



concrete columns 600 x 600 mm

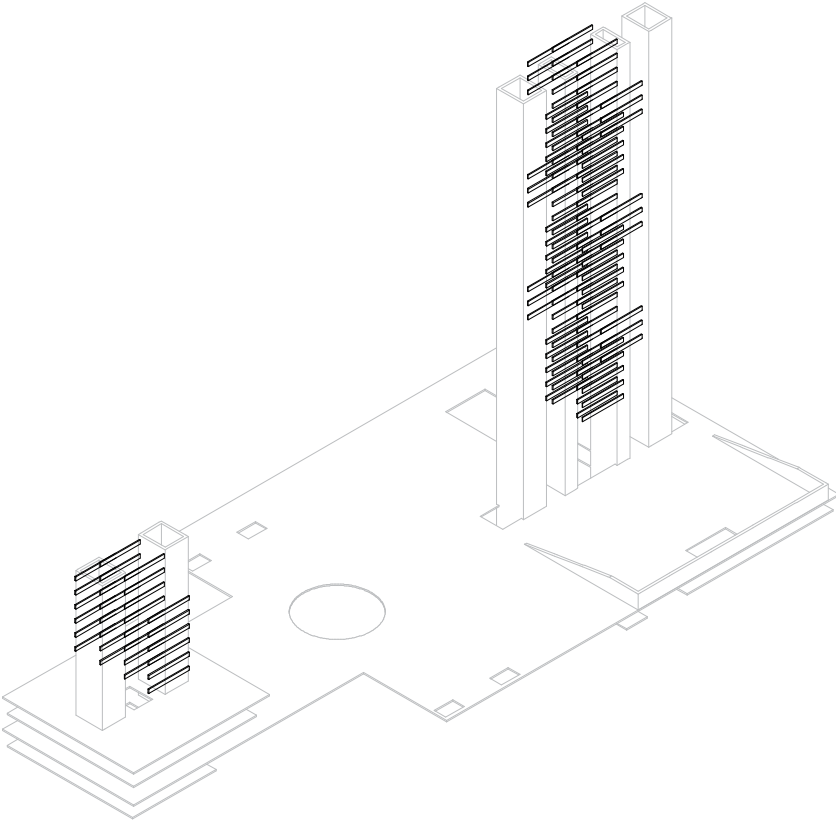
implementation

CONSTRUCTION



concrete beams 400 x 800 mm

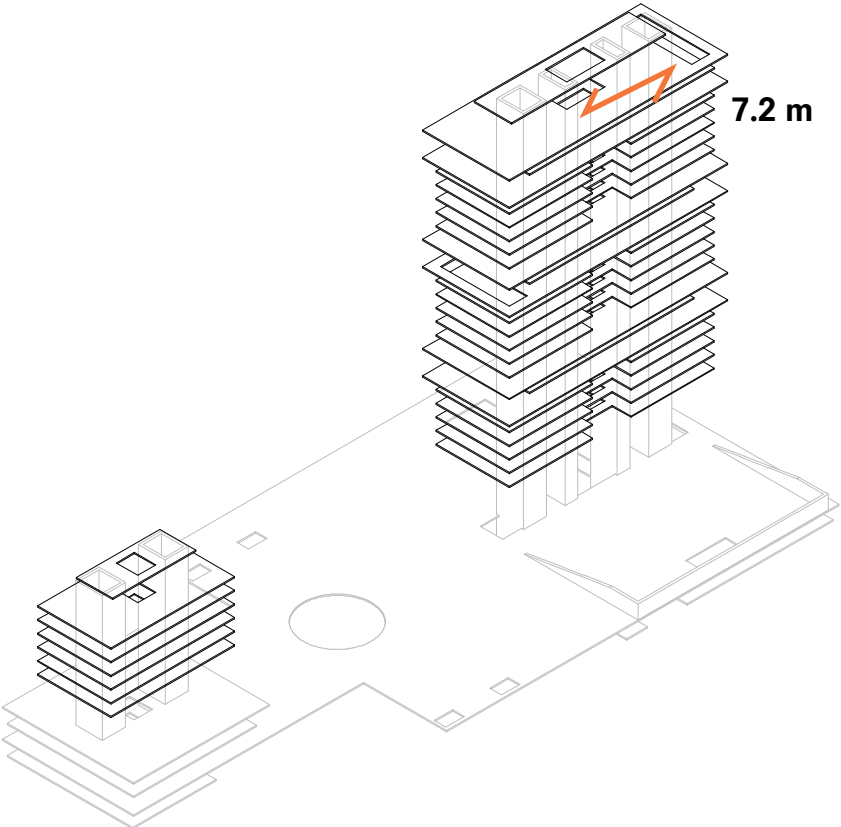
implementation
CONSTRUCTION



HEA 400 beams

implementation

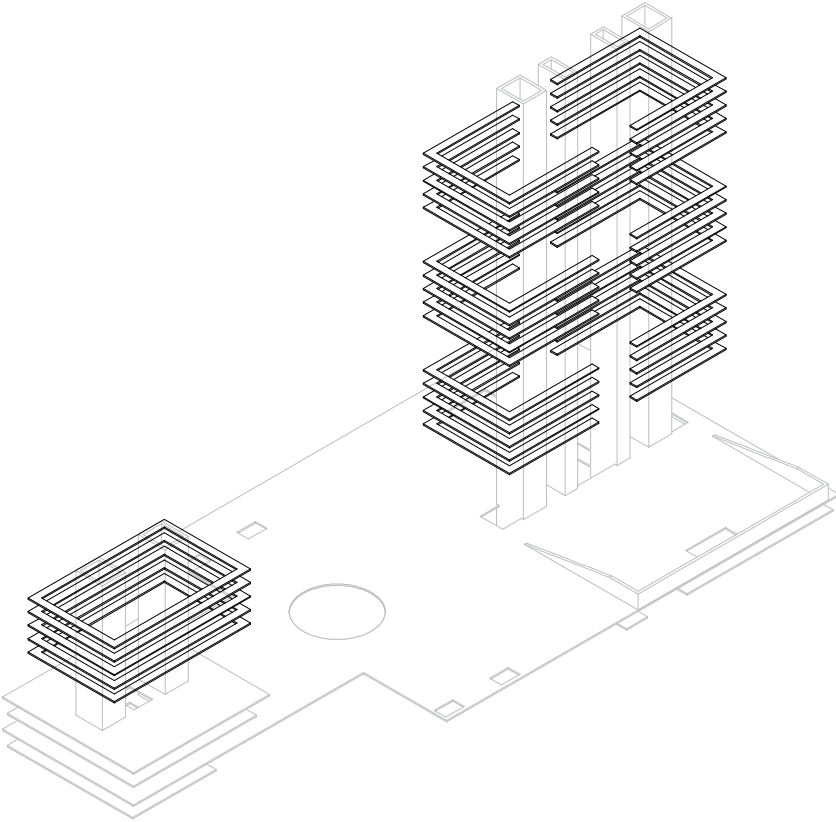
CONSTRUCTION



**hollow core concrete floor
slabs 400 mm**

implementation

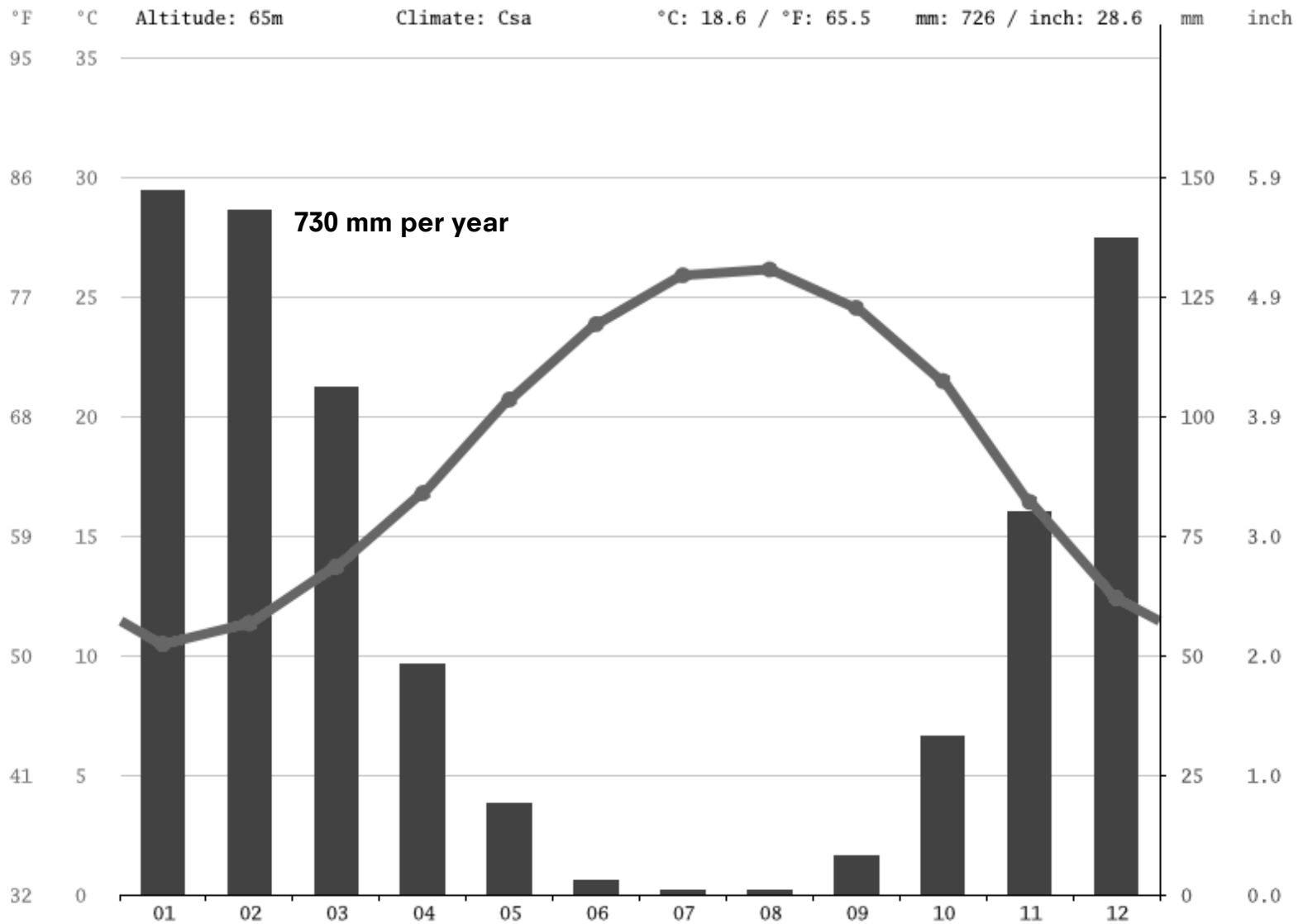
CONSTRUCTION



concrete balcony

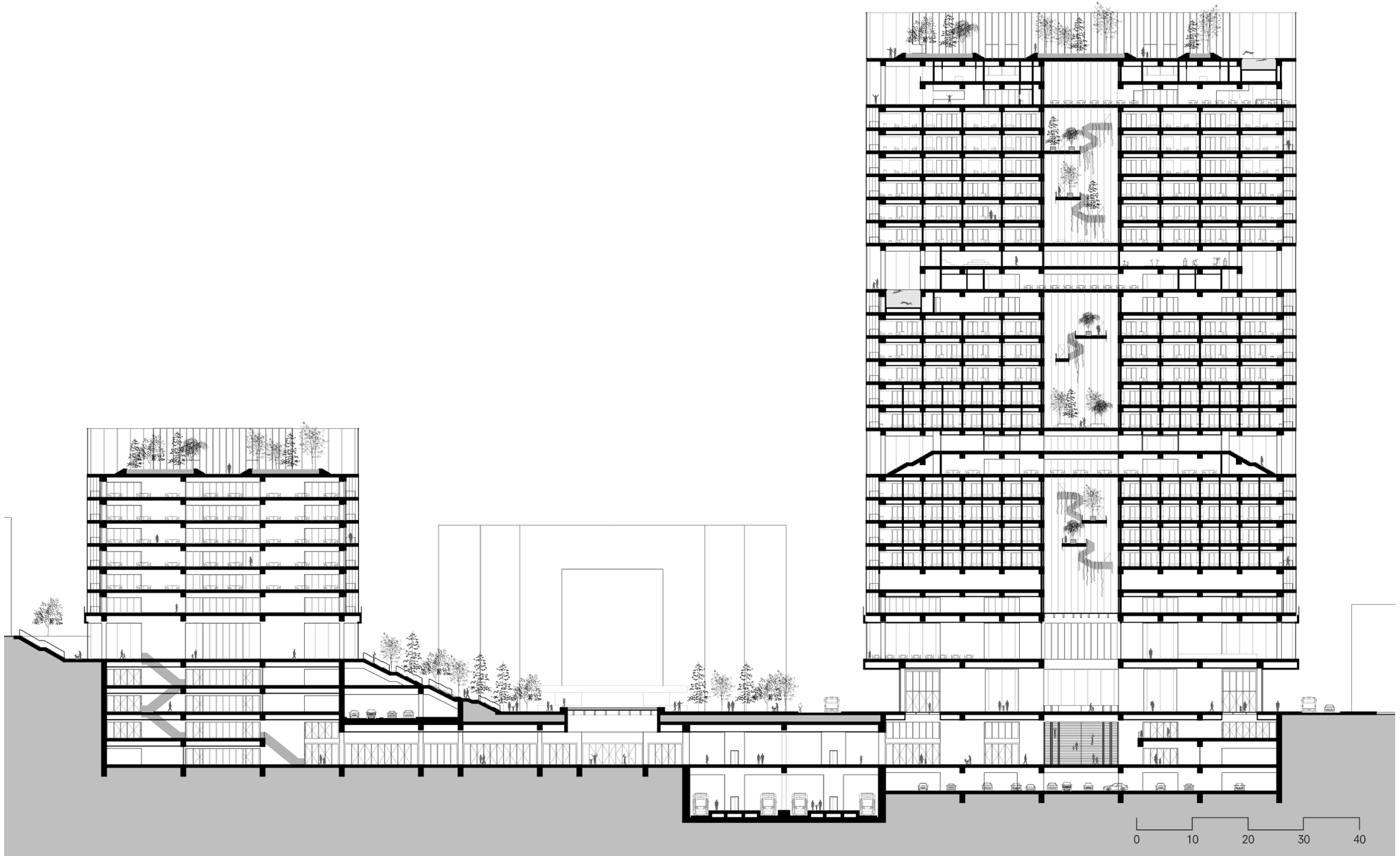
implementation

ANNUAL RAINWATER



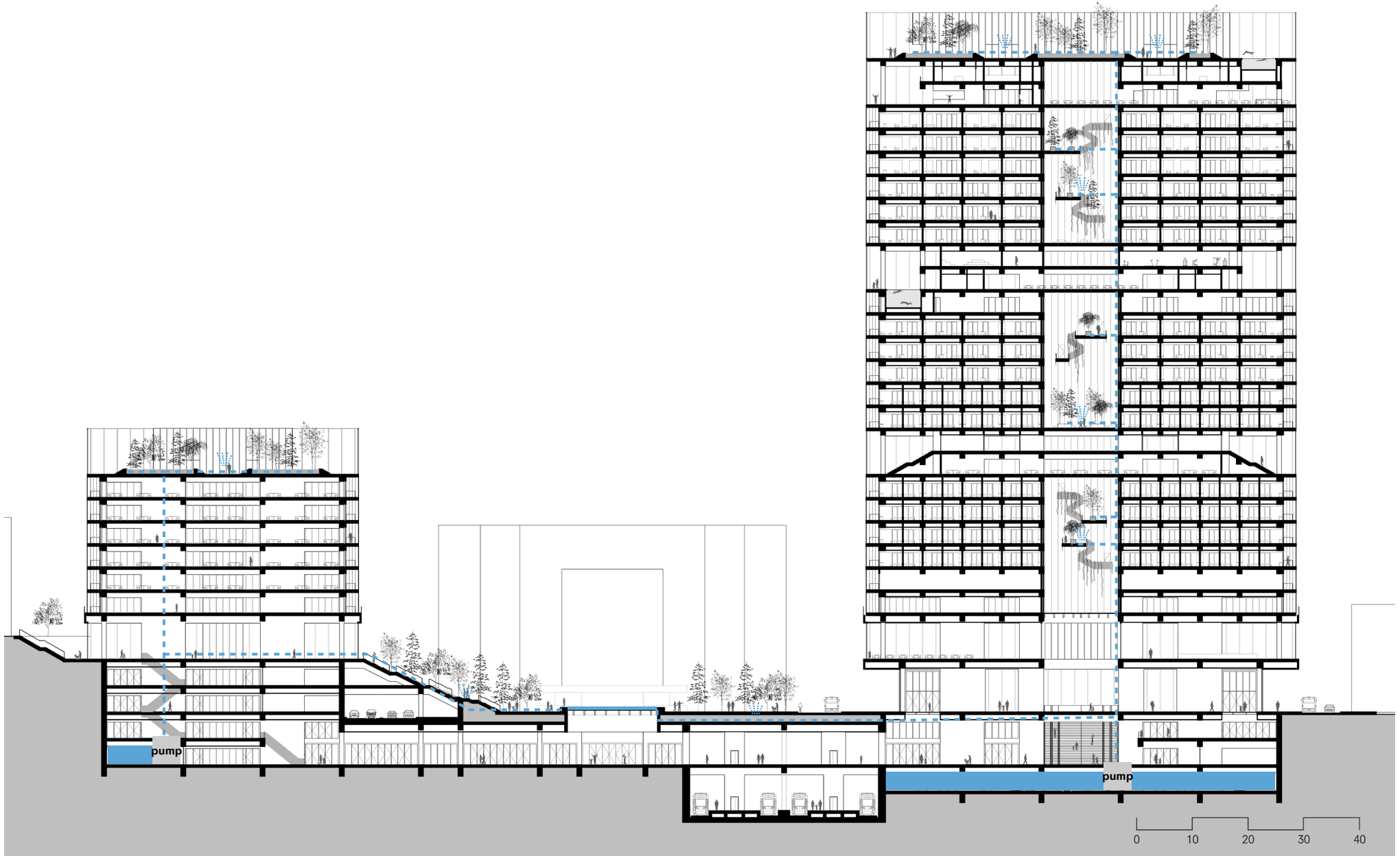
implementation

RAINWATER COLLECTION

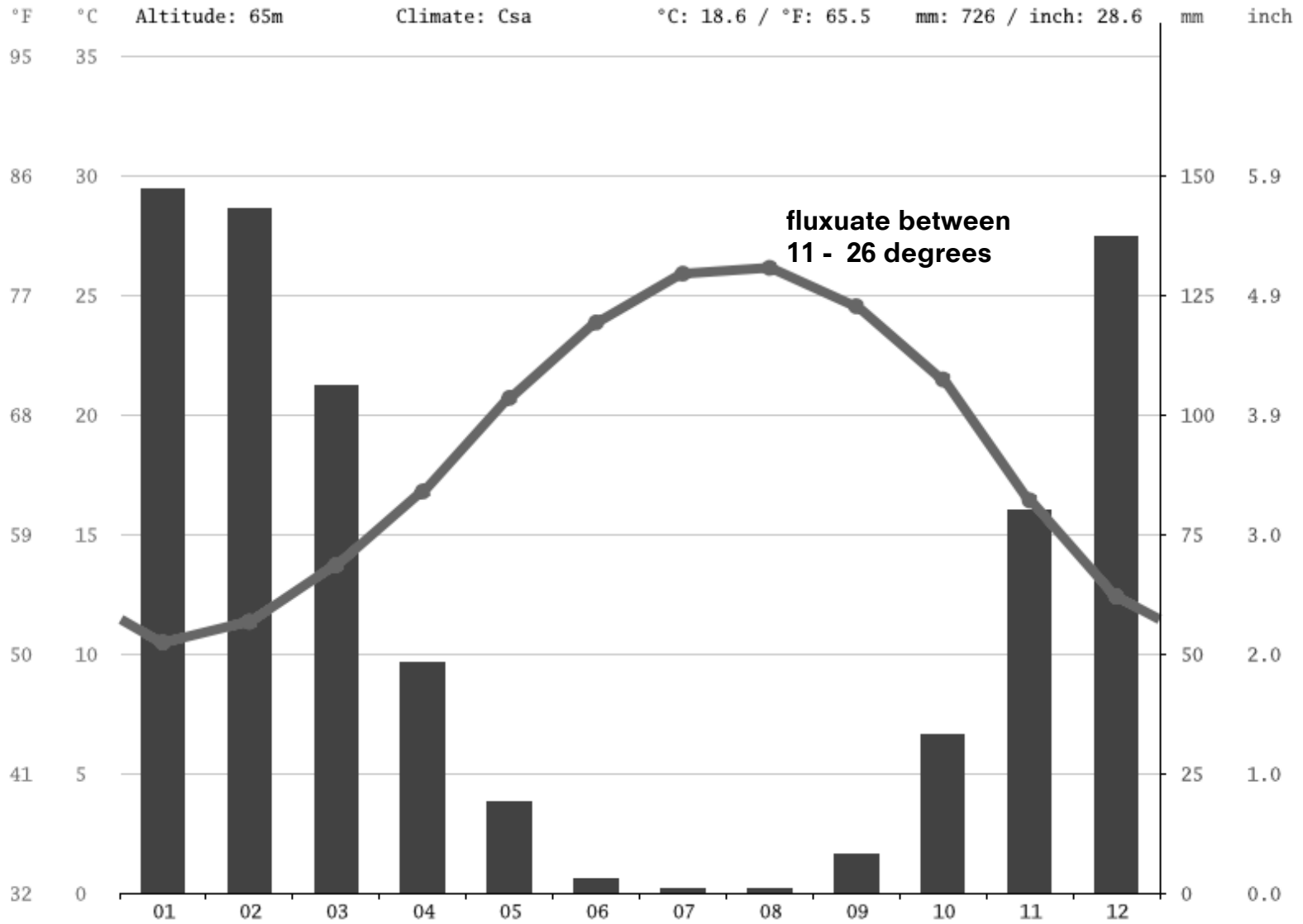


implementation

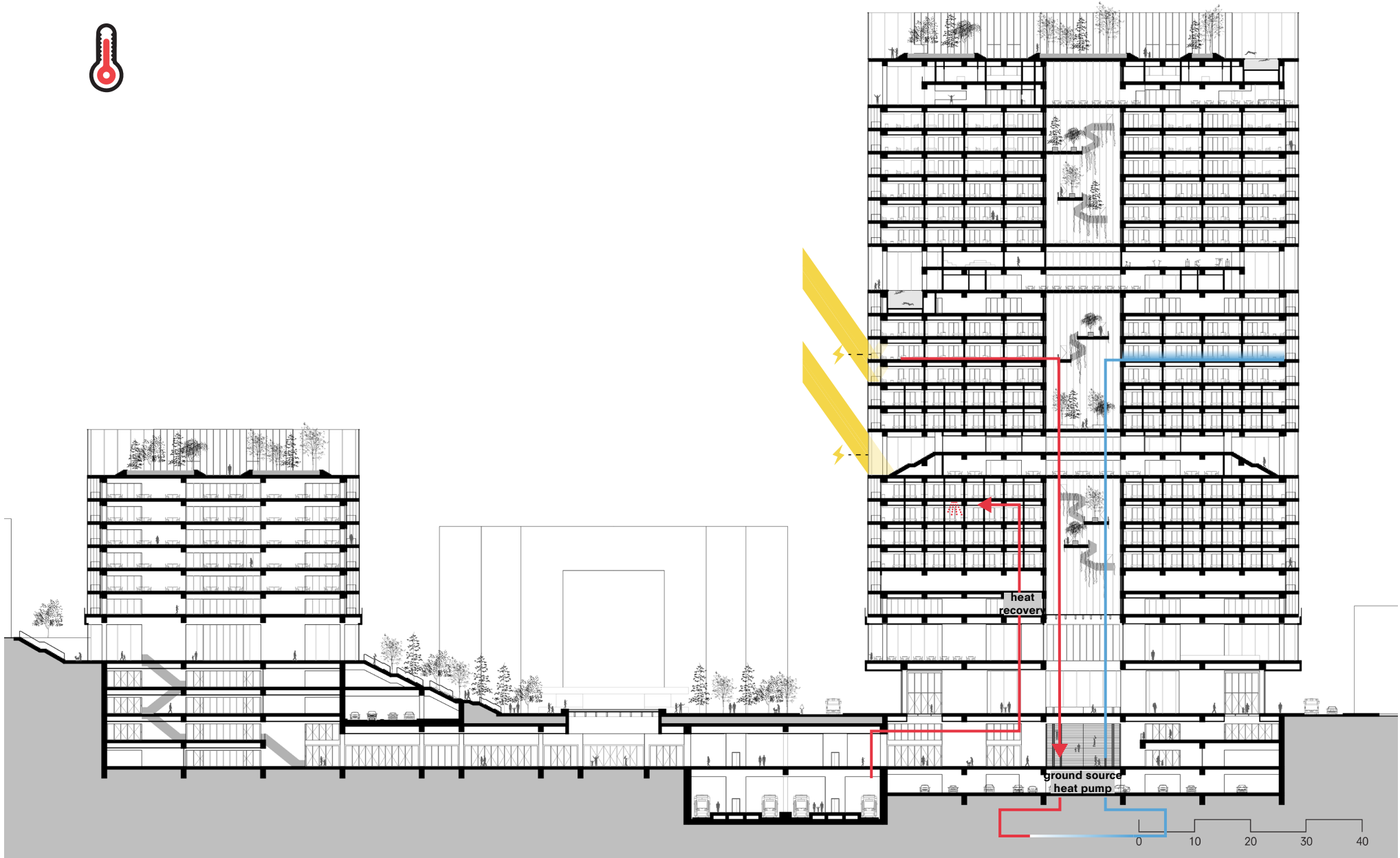
IRRIGATION OF PLANTS



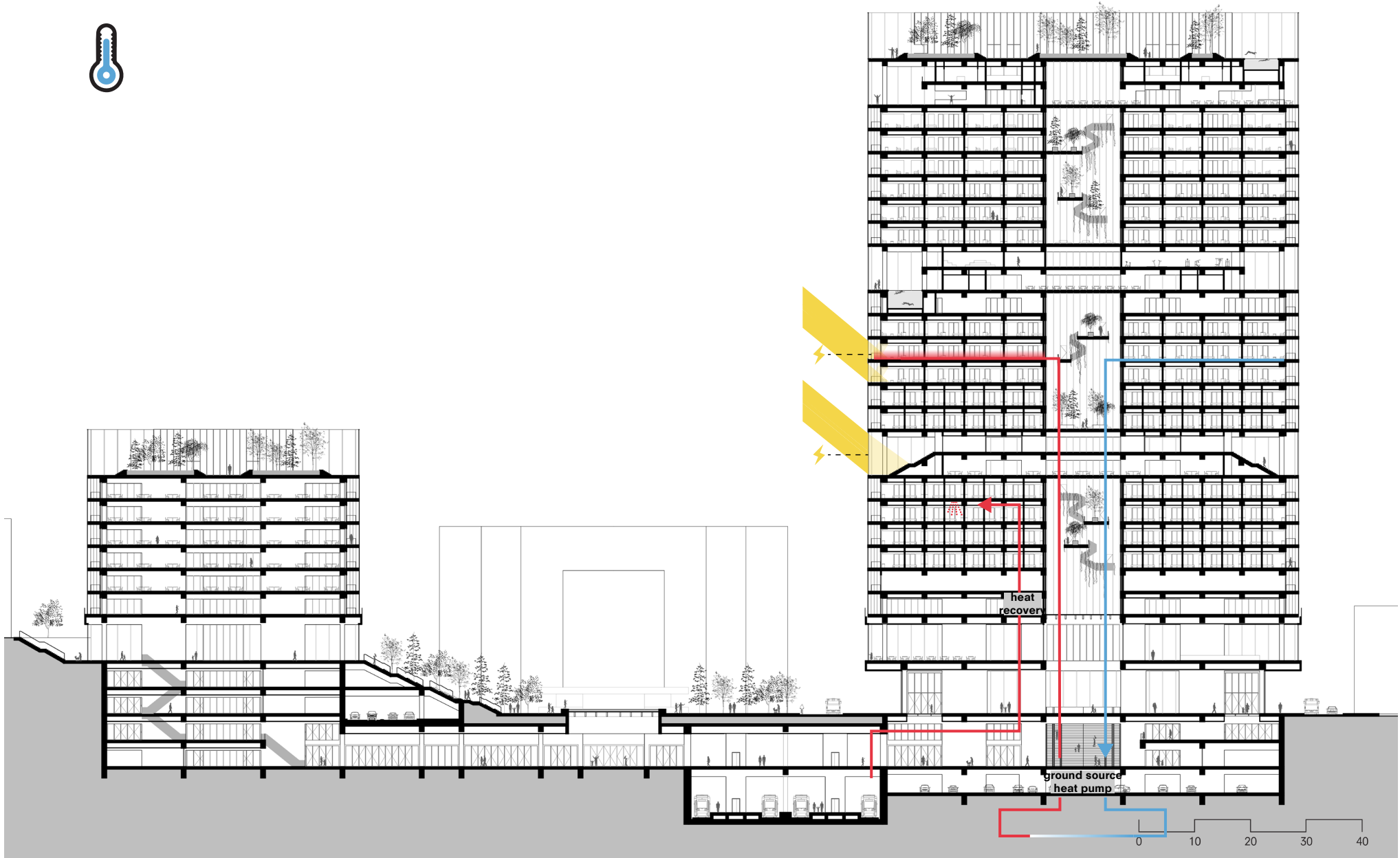
implementation CLIMATE



implementation
GEOHERMAL EXCHANGE SYSTEM

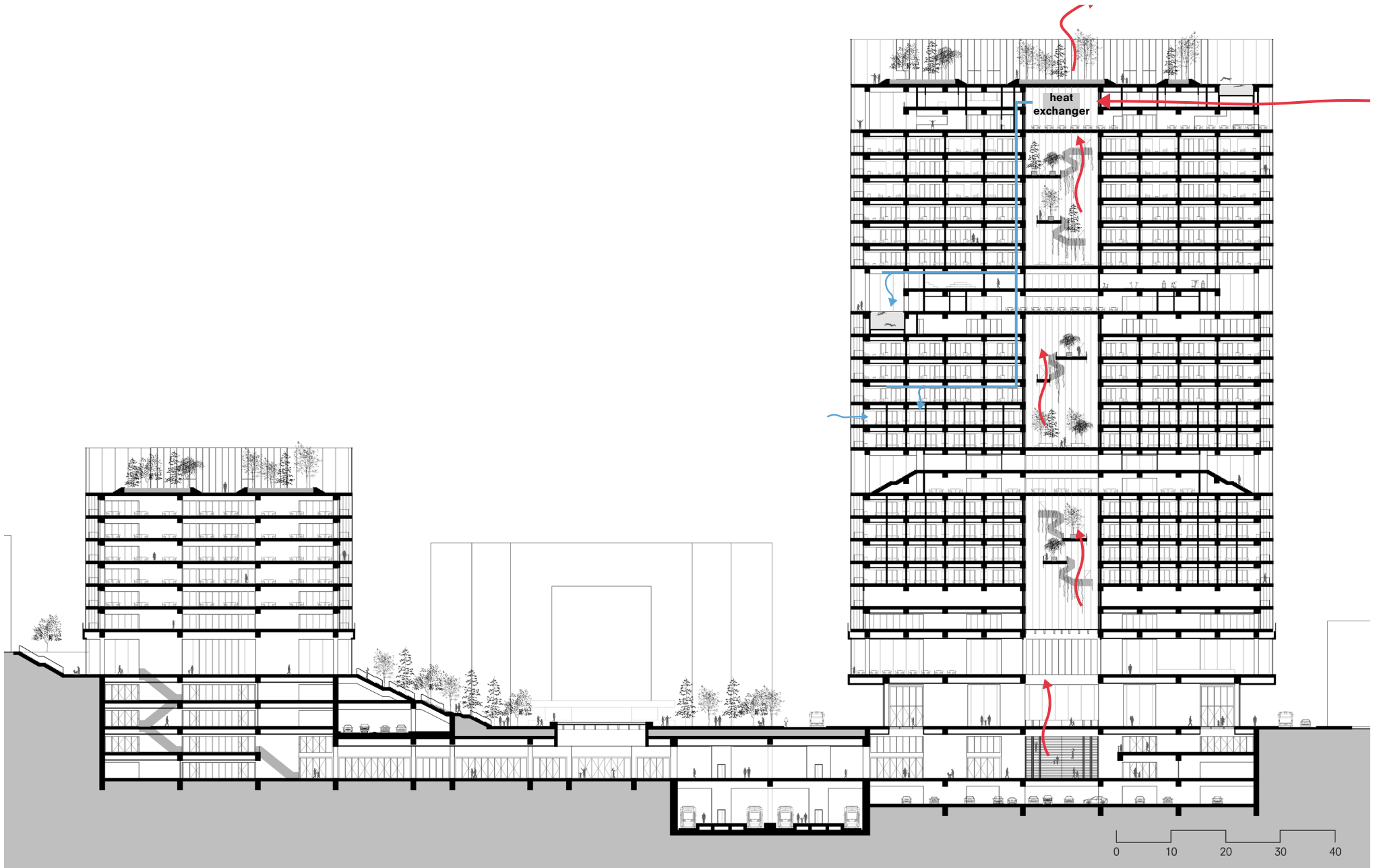


implementation
GEOHERMAL EXCHANGE SYSTEM

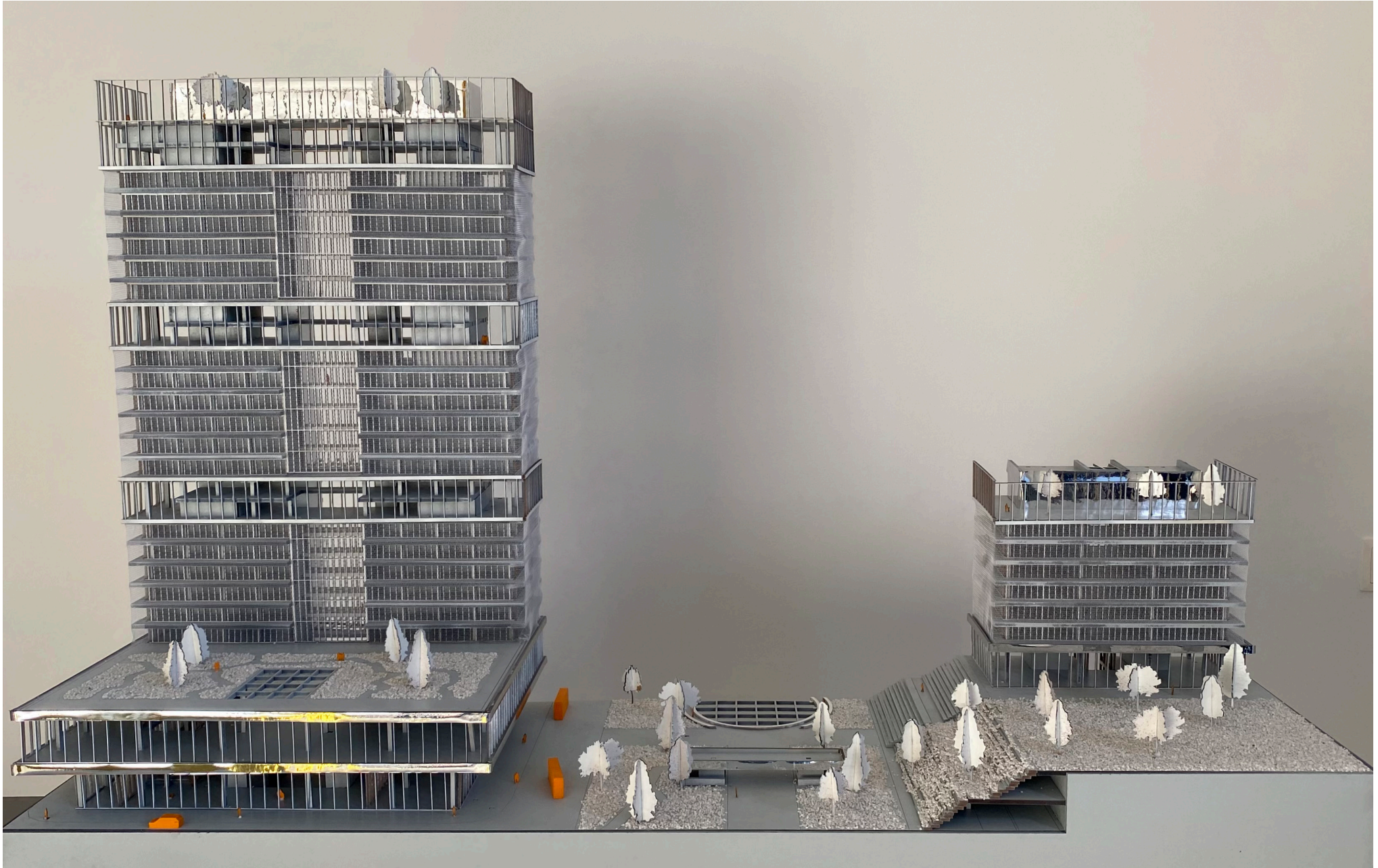


implementation

MECHANICAL VENTILATION



conclusion



THANK YOU

