



BANK OF MAAS

Danica Mijonic 4739019

J. van Zalingen | S. Holst | H. Smidhen | H. Ploeger



complex projects

22/01/2021

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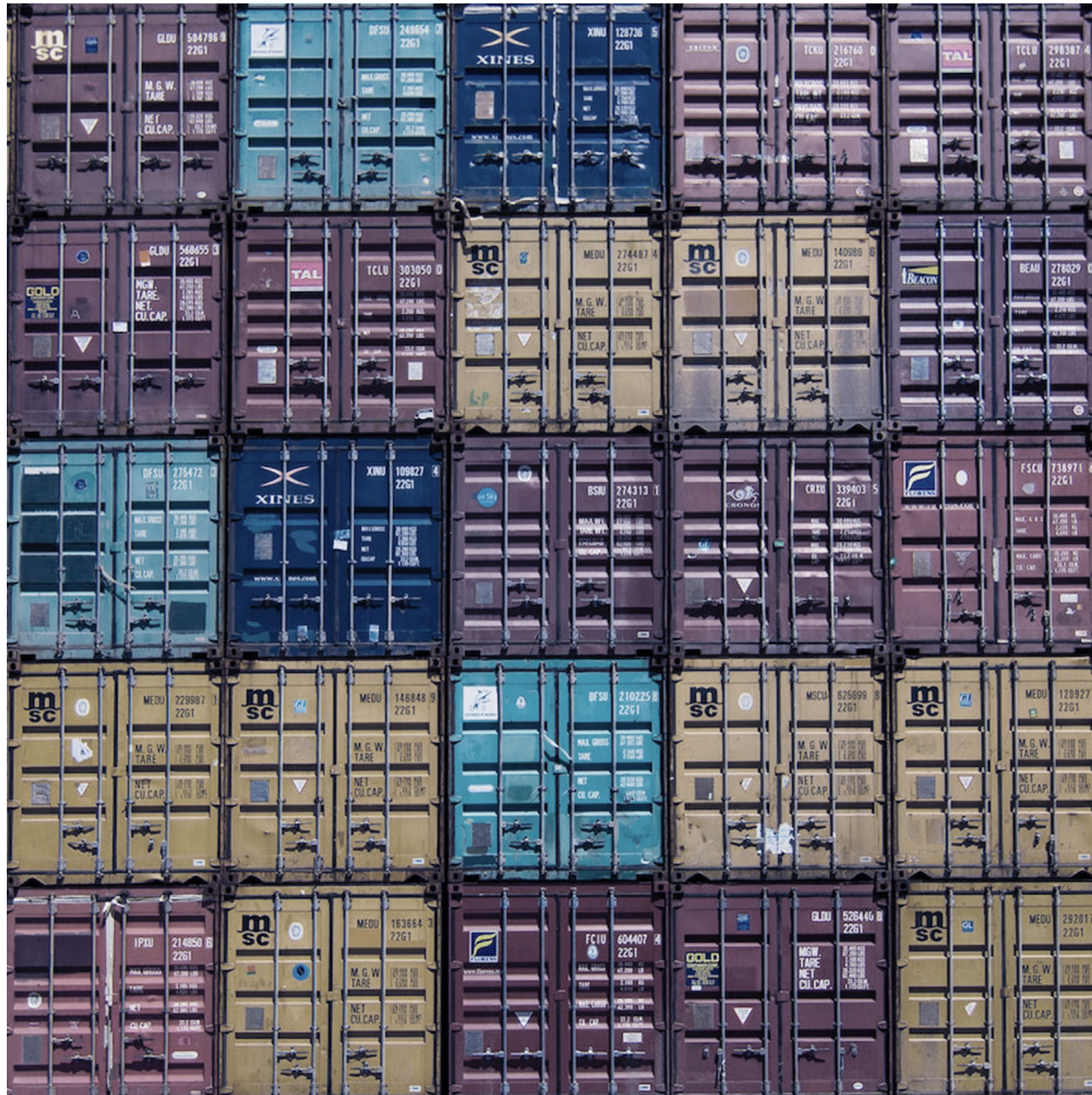
WORLDS BIGGEST PORTS

1. Shanghai(CN)_37,1
2. Singapore(SG)_30,9
3. Shenzhen (CN) _24,0
4. Ningbo-Zhoushan (CN)_21,6
5. Busan(KR)_19,9
6. Hong Kong (CN)_19,8
7. Guangzhou (CN)_18,9
8. Qingqao (CN)_18,1
9. Jebel Ali(AE)_15,7
10. Tianjin (CN)_14,5
11. Klang(MY)_13,2

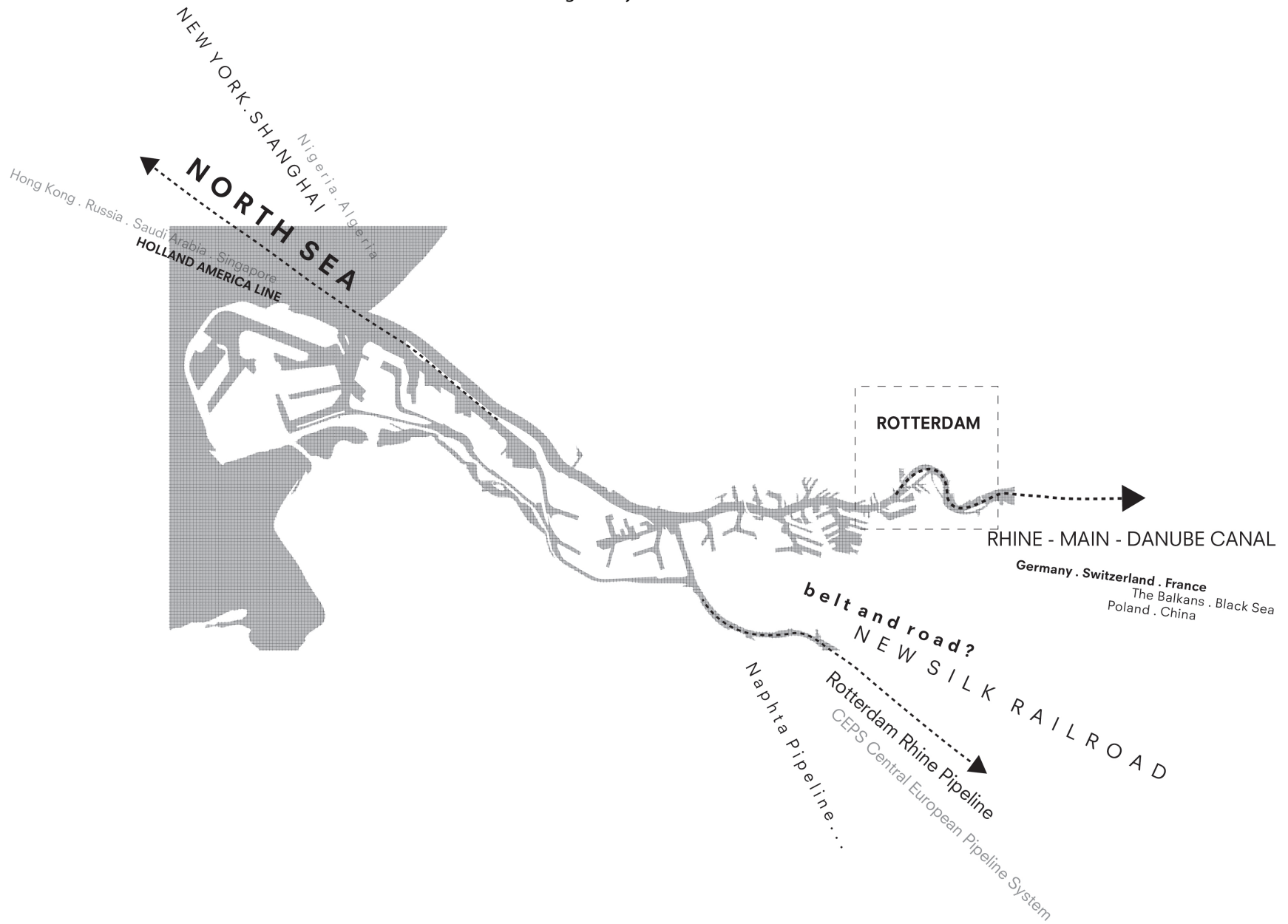
Rotterdam(NL)_12,4*

13. Kaohsiung(TW)_10,5
14. Antwerp(BE)_10,0

PORT OF ROTTERDAM as a logistical node



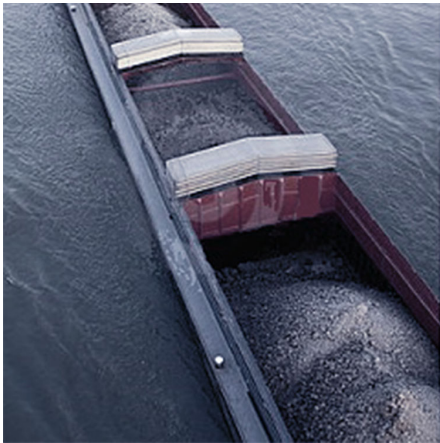
PORT OF ROTTERDAM a gateway to the world



PORT OF ROTTERDAM



Introduction
PORT OF ROTTERDAM



dry bulk



liquid bulk



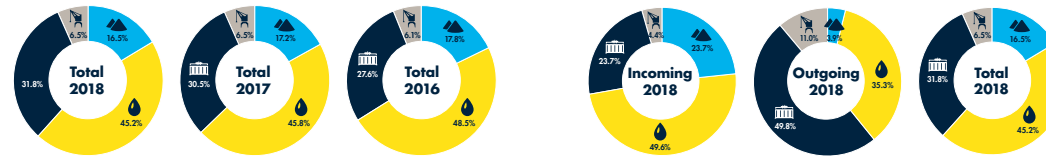
container goods

Introduction

PORT OF ROTTERDAM

cargo throughput

Cargo Throughput



TOTAL THROUGHPUT BY COMMODITY

| | 2018 | 2017 | 2016 |
|-----------------------------|--------------|--------------|--------------|
| Iron ore and scrap | 30.1 | 31.2 | 31.2 |
| Coal | 26.4 | 25.8 | 28.4 |
| Agribulk | 9.9 | 11.1 | 10.4 |
| Other dry bulk | 11.3 | 12.1 | 12.2 |
| Subtotal dry bulk | 77.6 | 80.2 | 82.3 |
| Crude oil | 100.3 | 104.2 | 101.9 |
| Mineral oil products | 77.7 | 79.2 | 88.8 |
| LNG | 5.2 | 2.0 | 1.7 |
| Other liquid bulk | 28.6 | 28.9 | 31.2 |
| Subtotal liquid bulk | 211.8 | 214.3 | 223.5 |
| Total bulk goods | 289.5 | 294.5 | 305.8 |
| Containers | 149.1 | 142.6 | 127.1 |
| Roll-on/Roll-off | 24.1 | 23.8 | 22.4 |
| Other general cargo | 6.4 | 6.5 | 5.9 |
| Total breakbulk | 30.4 | 30.3 | 28.3 |
| Total throughput | 469.0 | 467.4 | 461.2 |

Unit: Gross weight x 1 million metric tons

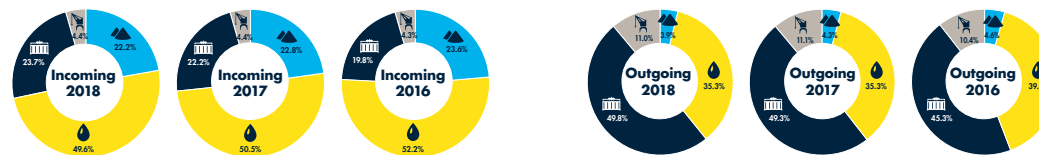
Source: Port of Rotterdam

INCOMING AND OUTGOING BY COMMODITY 2018

| | Incoming | Outgoing | Total |
|-----------------------------|--------------|--------------|--------------|
| Iron ore and scrap | 28.3 | 1.8 | 30.1 |
| Coal | 25.6 | 0.7 | 26.4 |
| Agribulk | 8.9 | 1.0 | 9.9 |
| Other dry bulk | 9.1 | 2.3 | 11.3 |
| Subtotal dry bulk | 71.9 | 5.7 | 77.6 |
| Crude oil | 98.8 | 1.5 | 100.3 |
| Mineral oil products | 40.5 | 37.2 | 77.7 |
| LNG | 3.6 | 1.7 | 5.2 |
| Other liquid bulk | 17.6 | 11.0 | 28.6 |
| Subtotal liquid bulk | 160.4 | 51.4 | 211.8 |
| Total bulk goods | 232.3 | 57.2 | 289.5 |
| Containers | 76.6 | 72.5 | 149.1 |
| Roll-on/Roll-off | 10.3 | 13.7 | 24.1 |
| Other general cargo | 4.0 | 2.3 | 6.4 |
| Total breakbulk | 14.4 | 16.1 | 30.4 |
| Total throughput | 323.2 | 145.7 | 469.0 |

Unit: Gross weight x 1 million metric tons

Source: Port of Rotterdam



INCOMING BY COMMODITY

| | 2018 | 2017 | 2016 |
|-------------------------|--------------|--------------|--------------|
| Total dry bulk | 71.9 | 73.9 | 75.9 |
| Total liquid bulk | 160.4 | 163.7 | 167.8 |
| Containers | 76.6 | 71.9 | 63.7 |
| Total breakbulk | 14.4 | 14.4 | 13.8 |
| Total throughput | 323.2 | 323.9 | 321.2 |

Unit: Gross weight x 1 million metric tons

Source: Port of Rotterdam

OUTGOING BY COMMODITY

| | 2018 | 2017 | 2016 |
|-------------------------|--------------|--------------|--------------|
| Total dry bulk | 5.7 | 6.2 | 6.4 |
| Total liquid bulk | 51.4 | 50.6 | 55.7 |
| Containers | 72.5 | 70.7 | 63.4 |
| Total breakbulk | 16.1 | 15.9 | 14.5 |
| Total throughput | 145.7 | 143.4 | 140.0 |

Unit: Gross weight x 1 million metric tons

Source: Port of Rotterdam

Introduction
PORT OF ROTTERDAM
cargo throughput

2018.

- 149.1 milion metric
tons in container bulk

2016.

- 127.1 milion metric
tons in container bulk

Introduction
MARKET ACCESS DATABASE

Access2Markets

Home Goods ▾ Services ▾ Investment ▾ Markets ▾ Toolbox ▾ Contact

My Trade Assistant [How to use this form](#)
Including **ROSA** Rules of Origin Self-Assessment

Product name or HS code Country of origin Country of destination

Product name or HS code China Netherlands

Product search

To proceed with the search, you have to select the country of origin and the country of destination.



- + Live animals; animal products
- + Vegetable products
- + Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes
- + Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes

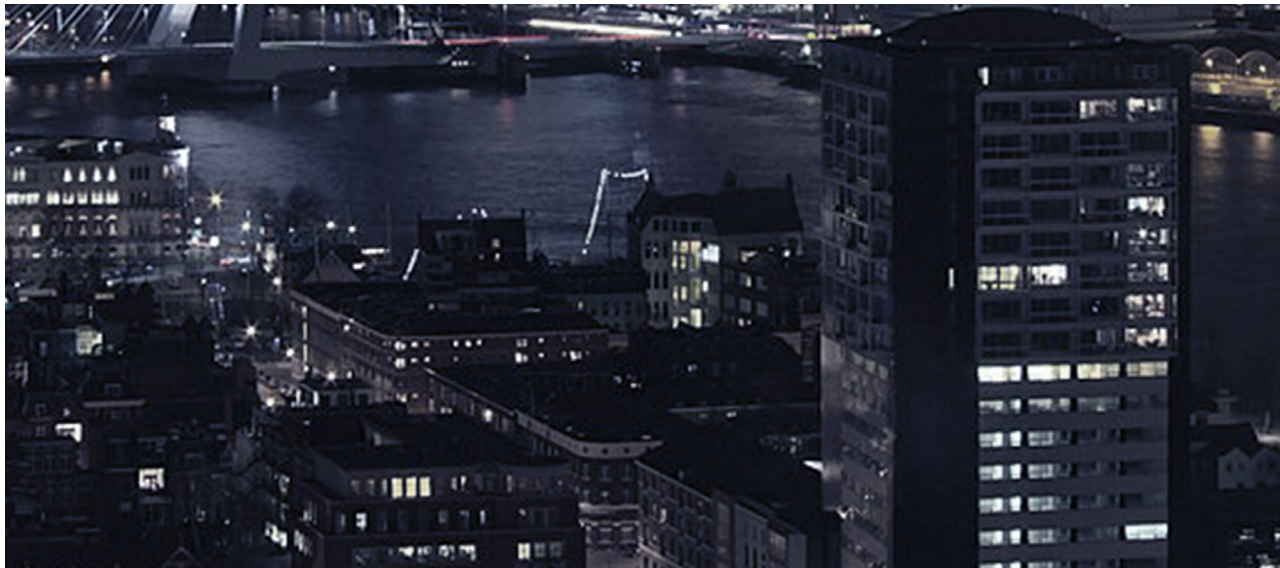




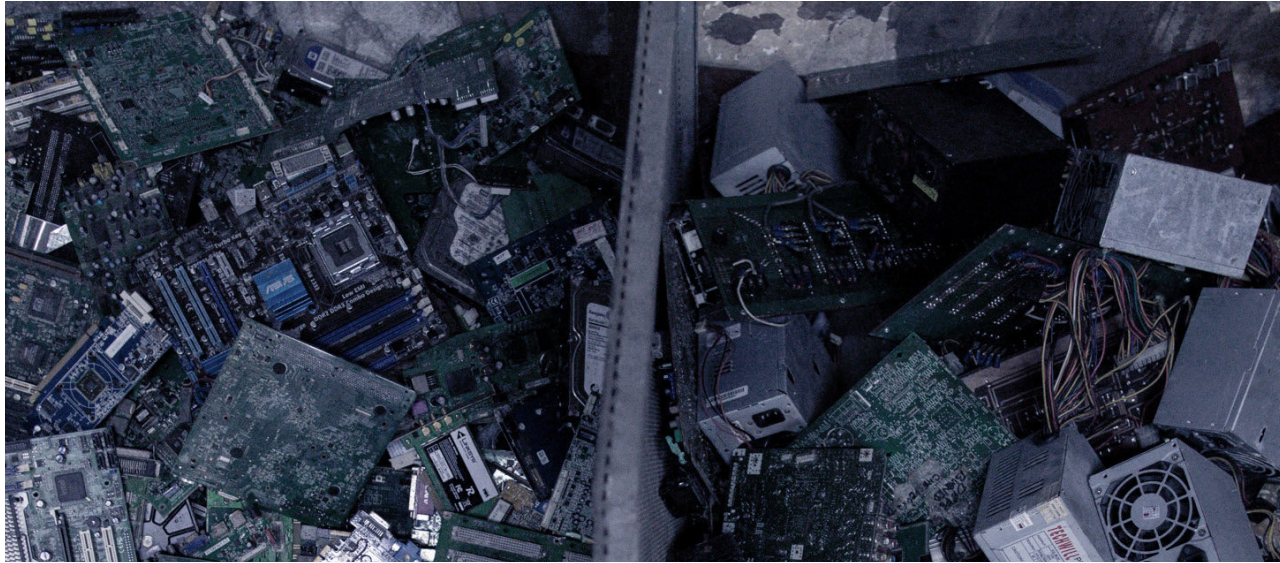
> Will numbers continue to rise
at this pace?



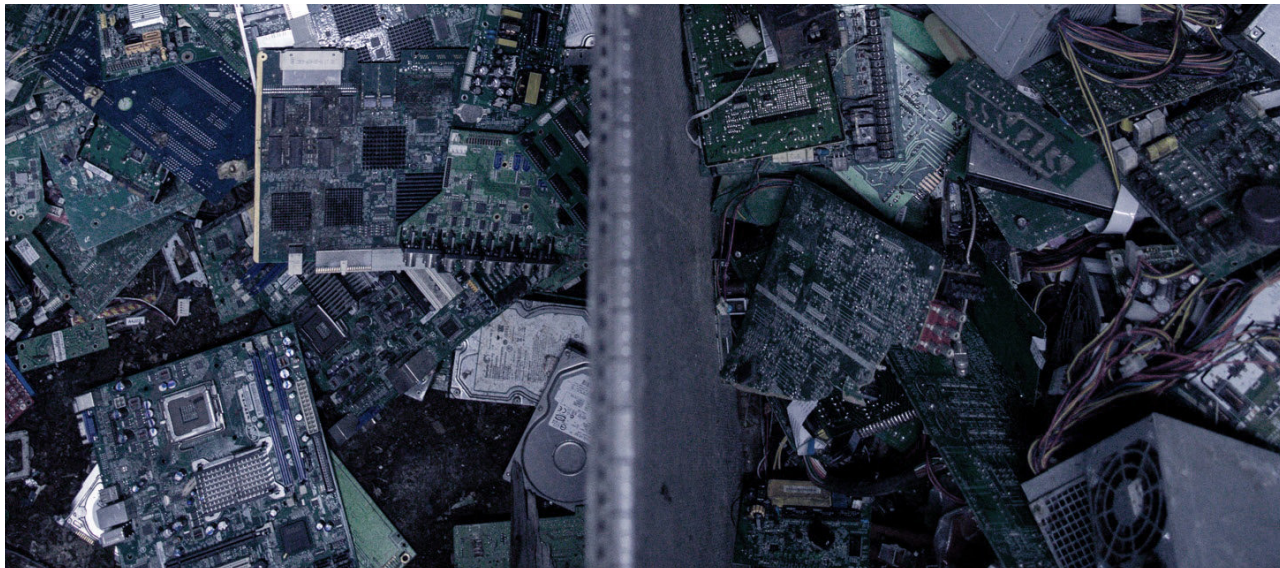
> What does this mean for
...the city?



> What does this mean for
...local production?



> What does this mean for
...waste management?





> What does this mean for
...local skills and knowledge?



> Are cities today entirely powered by
remotely produced goods?

> What does this mean for
...the environment?

> ???

> What does this mean for
...local production?

> What does this mean for
...waste disposal?

> What does this mean for
...working conditions

> Are cities today fully dependent on
remotely produced goods?

▷ ... ?

> What does this mean for
...local raw materials?

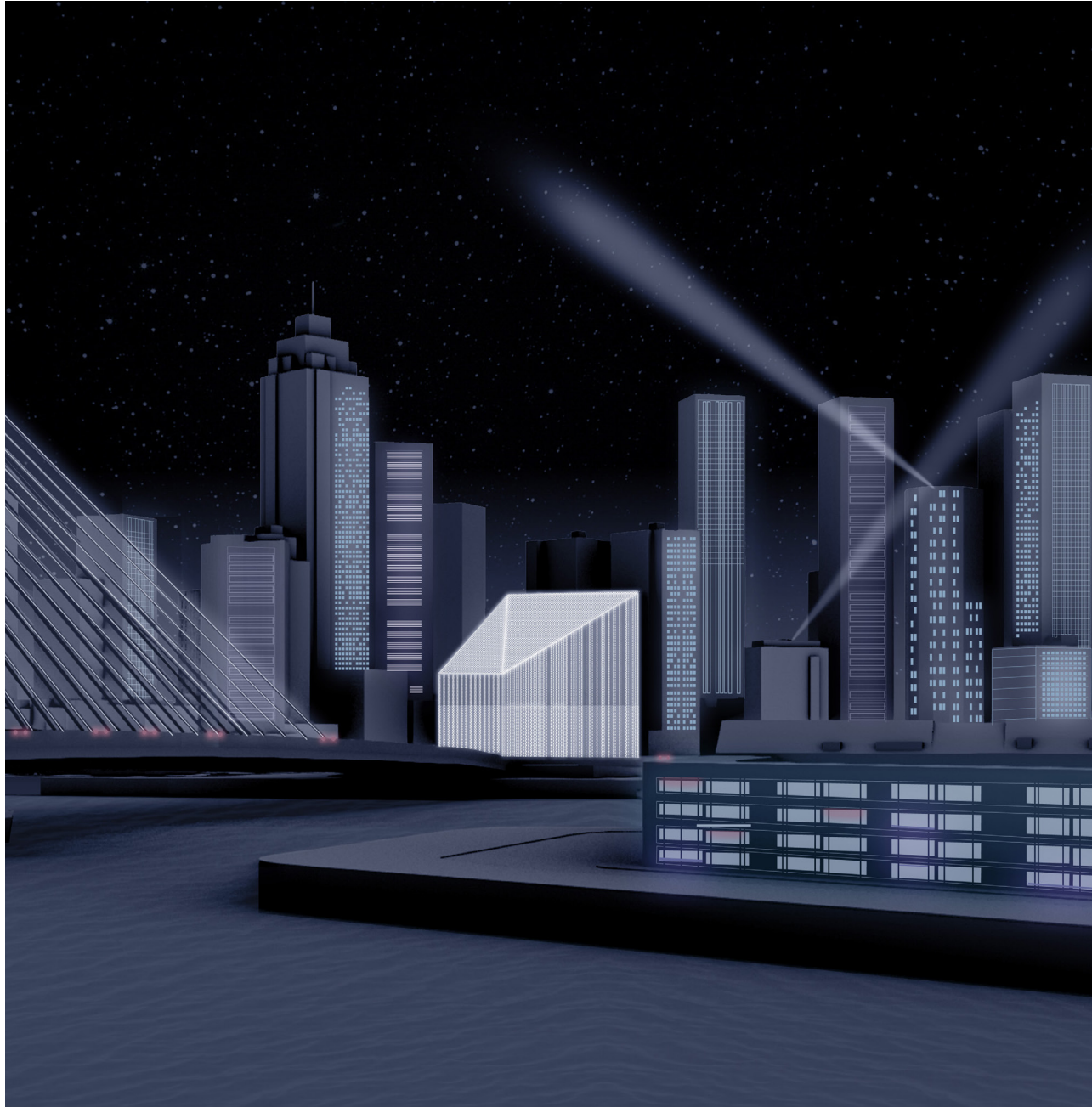
> What does this mean for
...the city?

> What does this mean for
...local skills and knowledge?

>?



Introduction
BANK OF MAAS



...exploring the changes in the built environment, occurring as a result of technological developments.

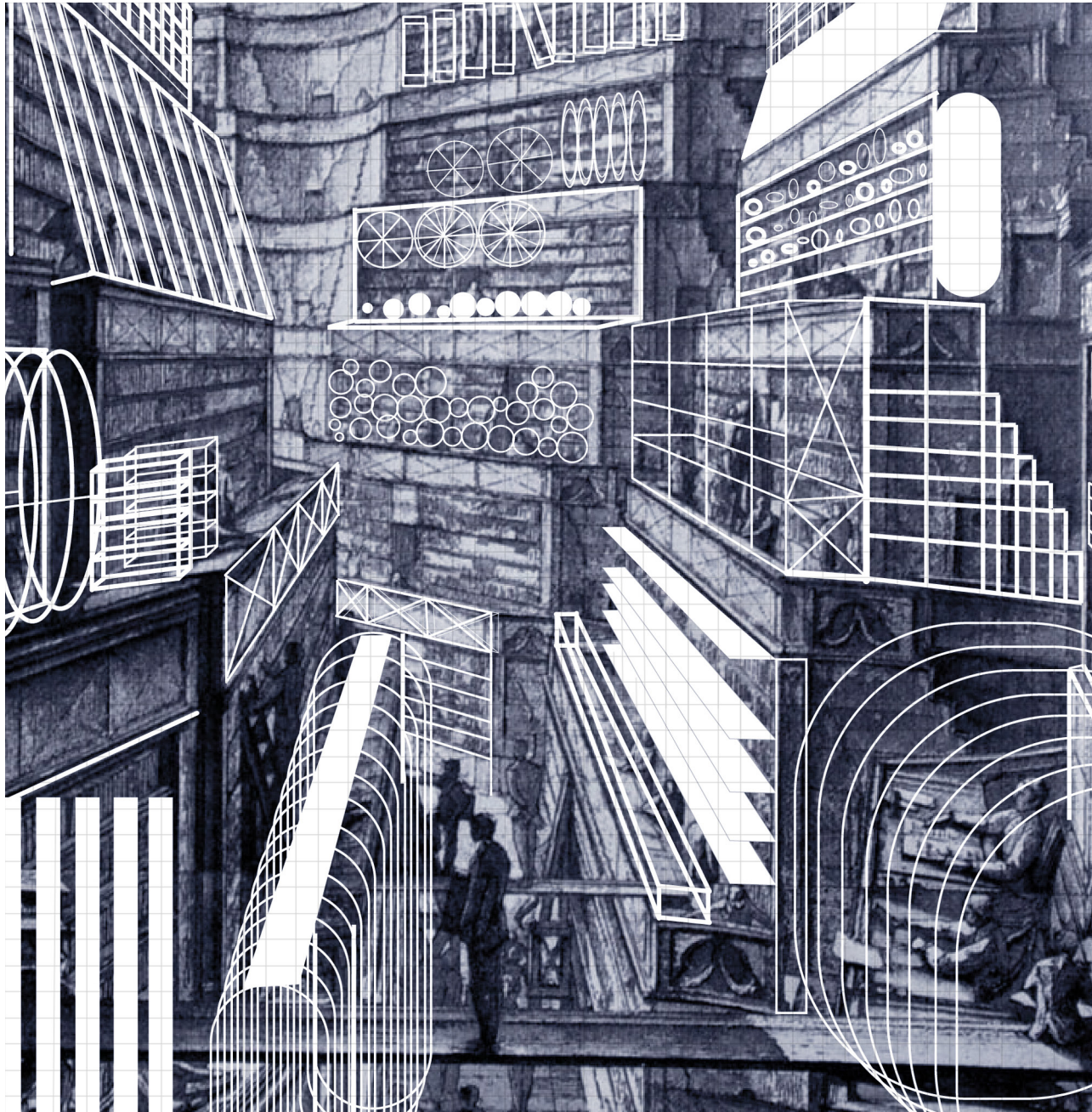
TECHNOLOGICAL DEVELOPMENTS



> ...urban production



PROJECT AMBITION



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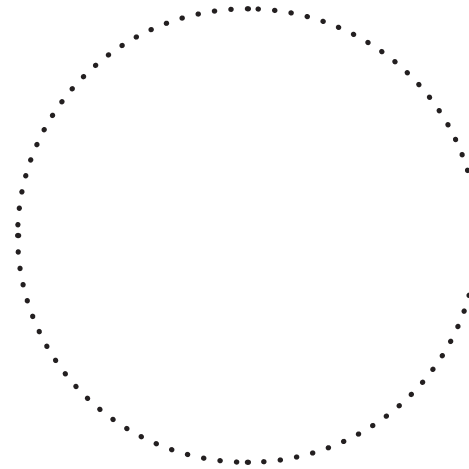
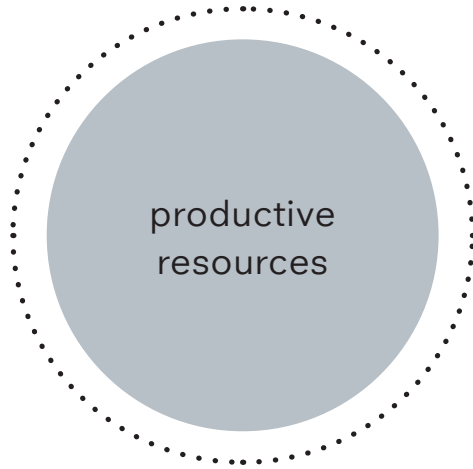
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MIGRATION



MIGRATION OF...



MIGRATION OF...

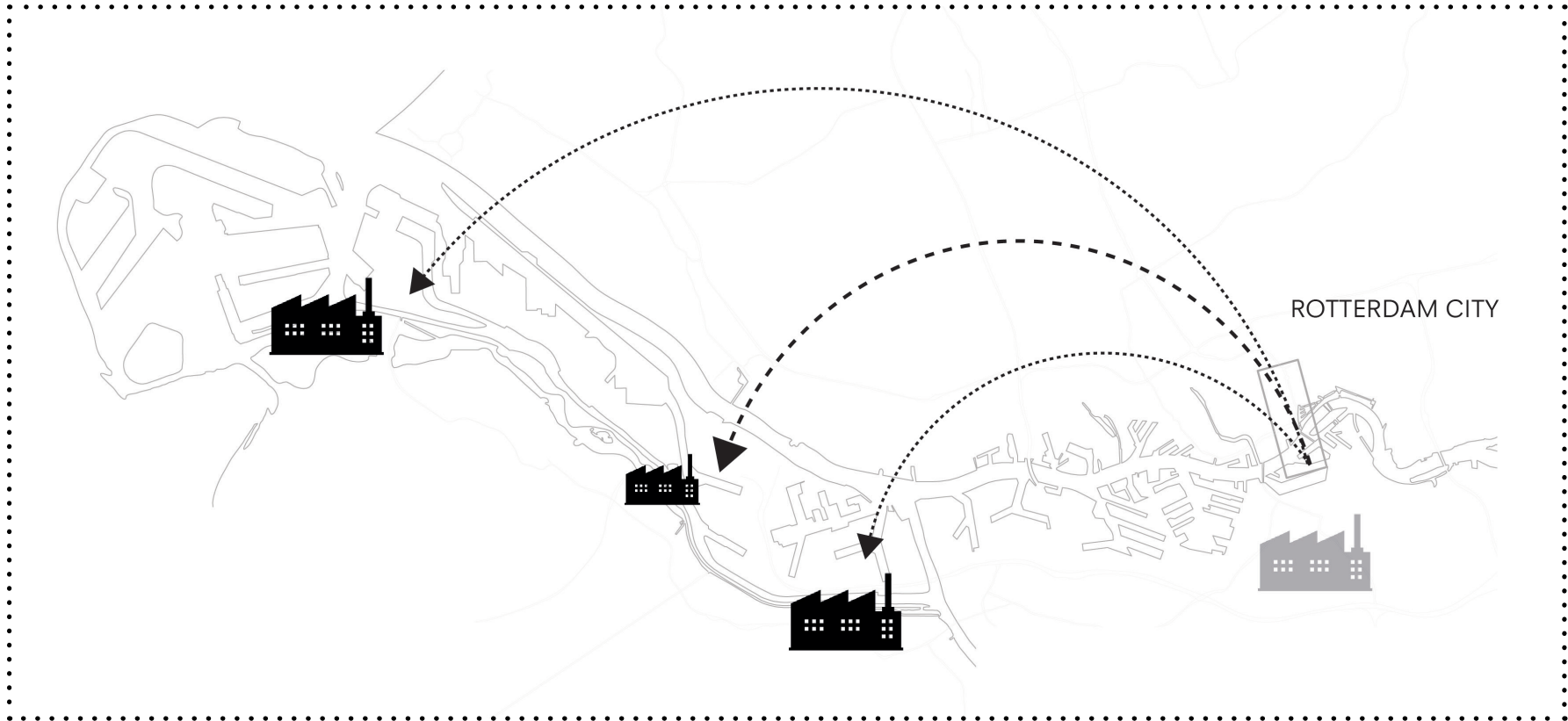


DE-INDUSTRIALIZATION

*“Since the 1970s, cities world-wide have been witness to **radical de-industrialisation**. Production was considered incompatible with urban life and was actively pushed out.”*

Hill, Adrian V (ed.) Foundries of the Future:
a Guide to 21st Century Cities of Making

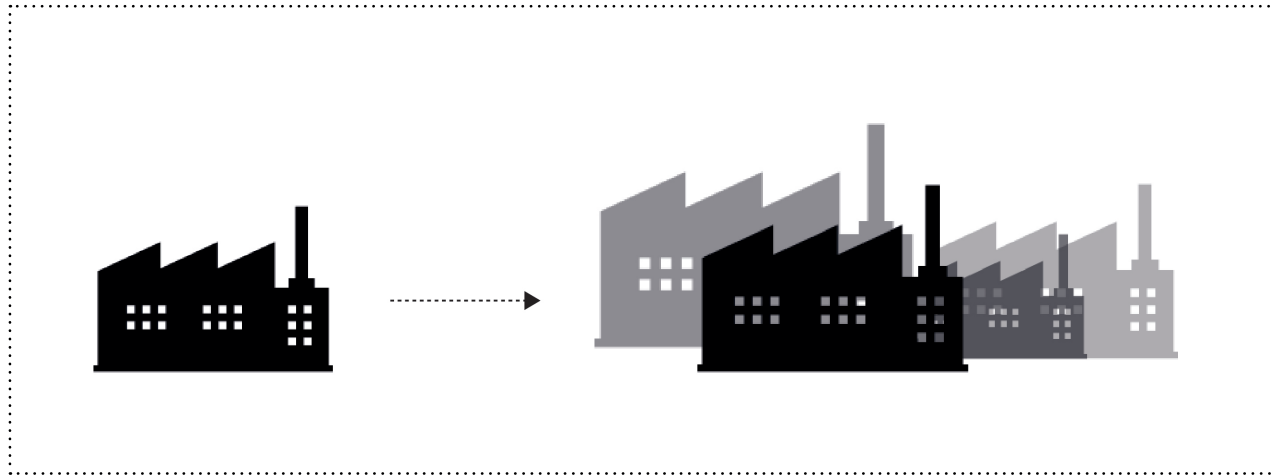
RE-LOCATION OF PRODUCTION



WHY?



Research
EXPANSION



Research

HAZARDS



Research

HIGH-YIELDING FUNCTIONS

offices; housing



TRANSPORTATION AND INFORMATION TECHNOLOGIES



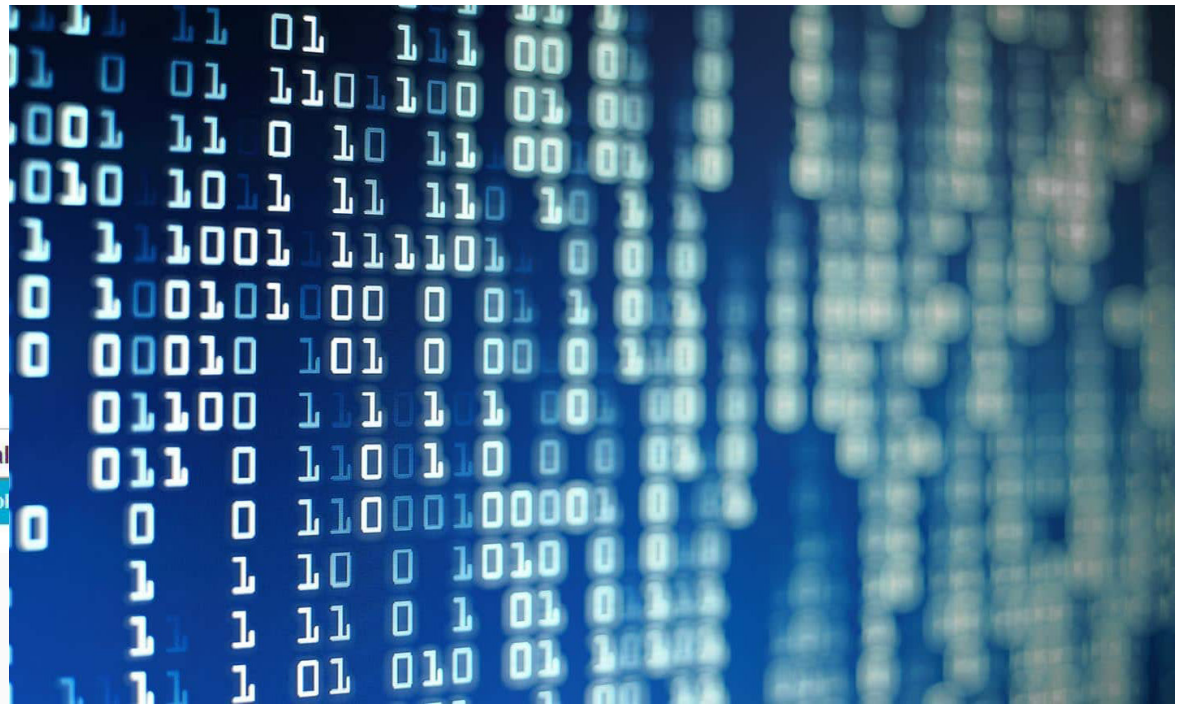
FAST TRAFFIC



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A 620mph hyperloop network between Amsterdam and Paris - with journey times of just 90 minutes - could be up and running within the next eight years

- Dutch firm Hardt Hyperloop is developing the ultra-fast transport technology
- It involves travelling in a train-style pod through a steel tube in a partial vacuum
- Study has revealed project could be economically viable and running by 2028

Research

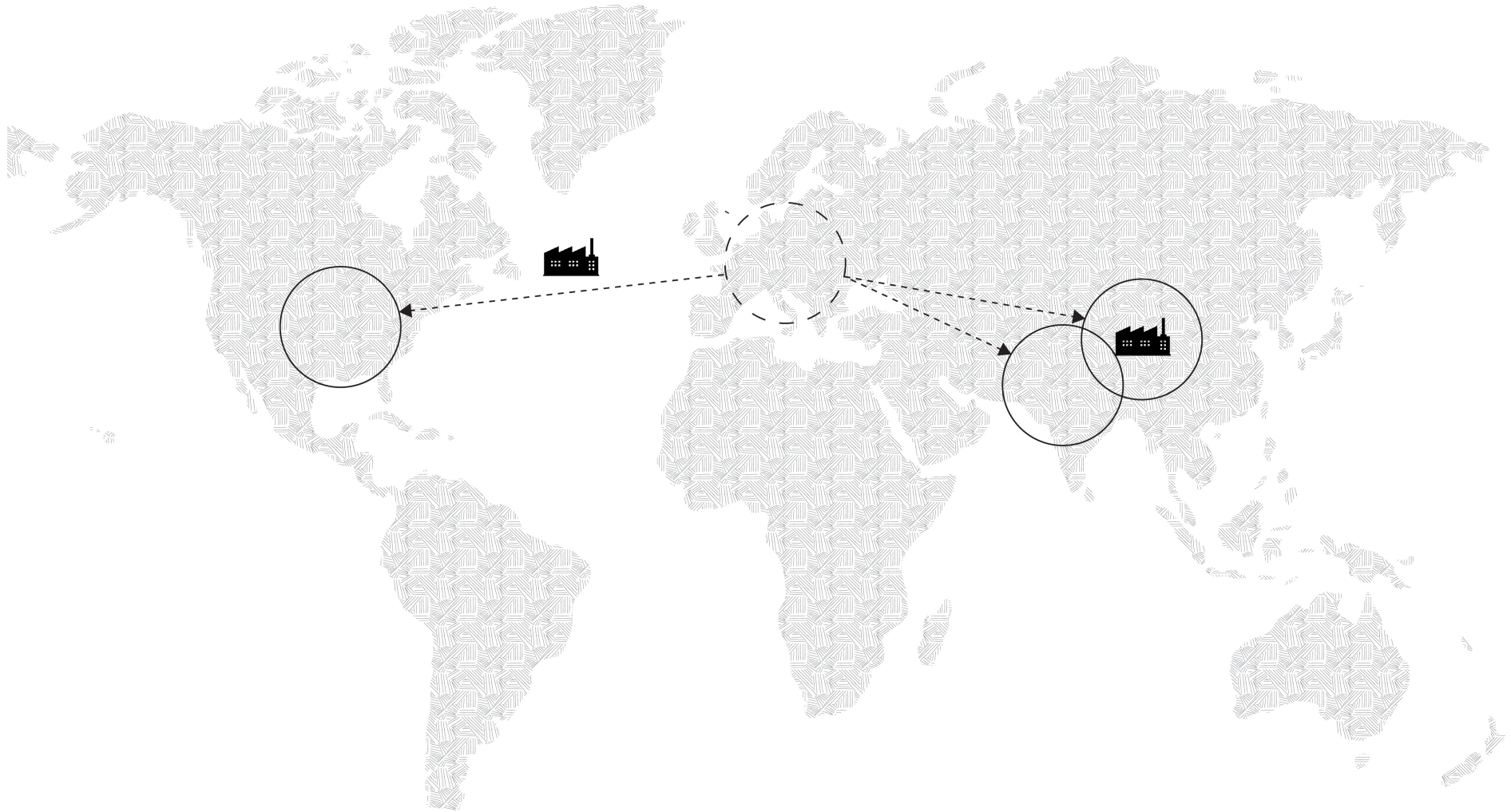
CHEAP WORKFORCE



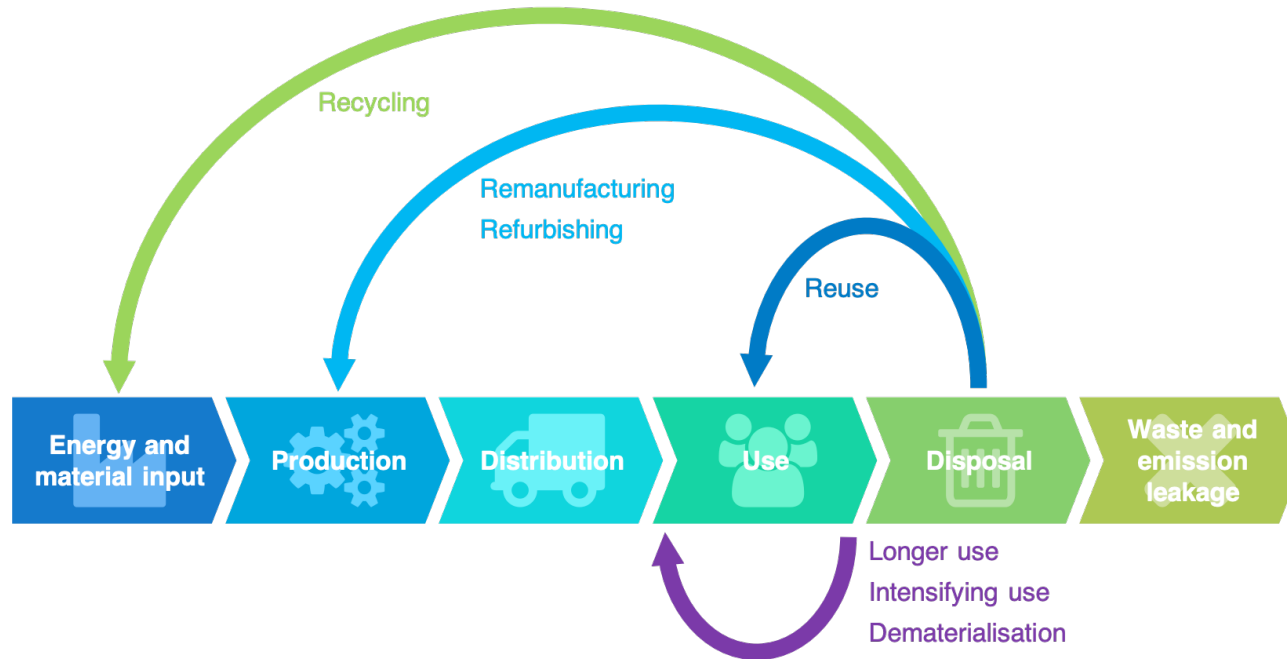
LOOS ENVIRONMENTAL REGULATIONS



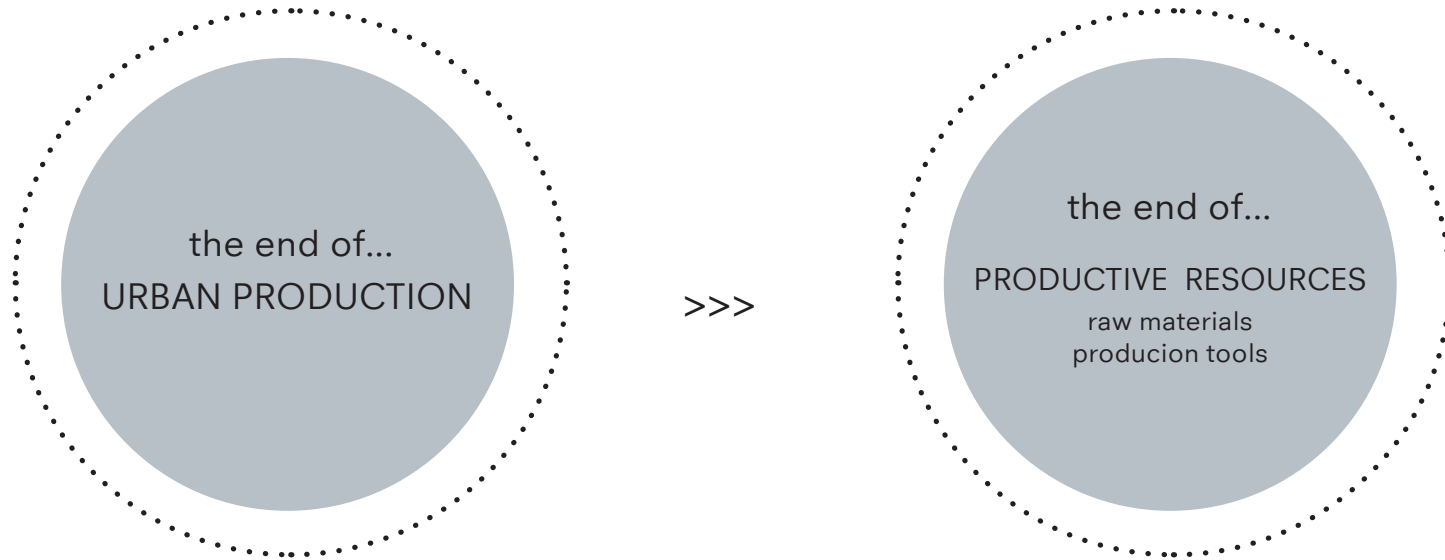
RELOCATION OF PRODUCTION and de-industrialization of cities



Research
CIRCULAR ECONOMY?



CONSEQUENCES



>>> Is this a problem?



“Raw materials initiative”
European Commission

Technological progress
and quality of life
rely on **access to** a growing
number of raw materials.

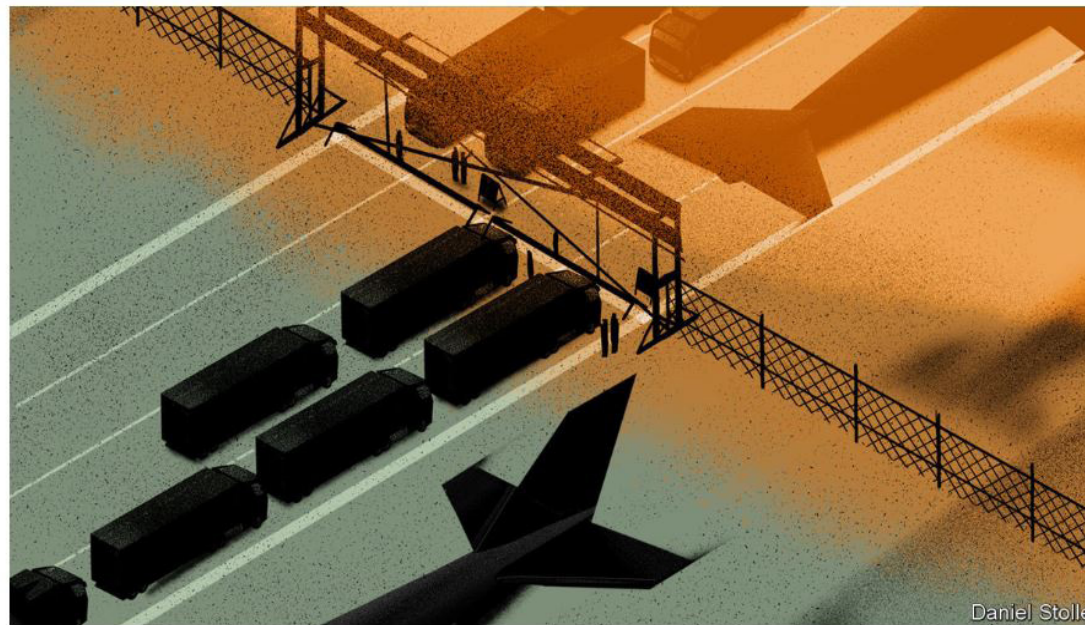
*European Commission
"Raw materials initiative"*

>>> Did urban life become fully dependent
on remote production and long distance transportation?

GLOBALIZATION



DE-INDUSTRIALIZATION



International

Feb 15th 2020 edition >

A deadly disease disrupts

The new coronavirus could have a lasting impact on global supply chains

Multinationals have failed to take seriously the risk of disruption

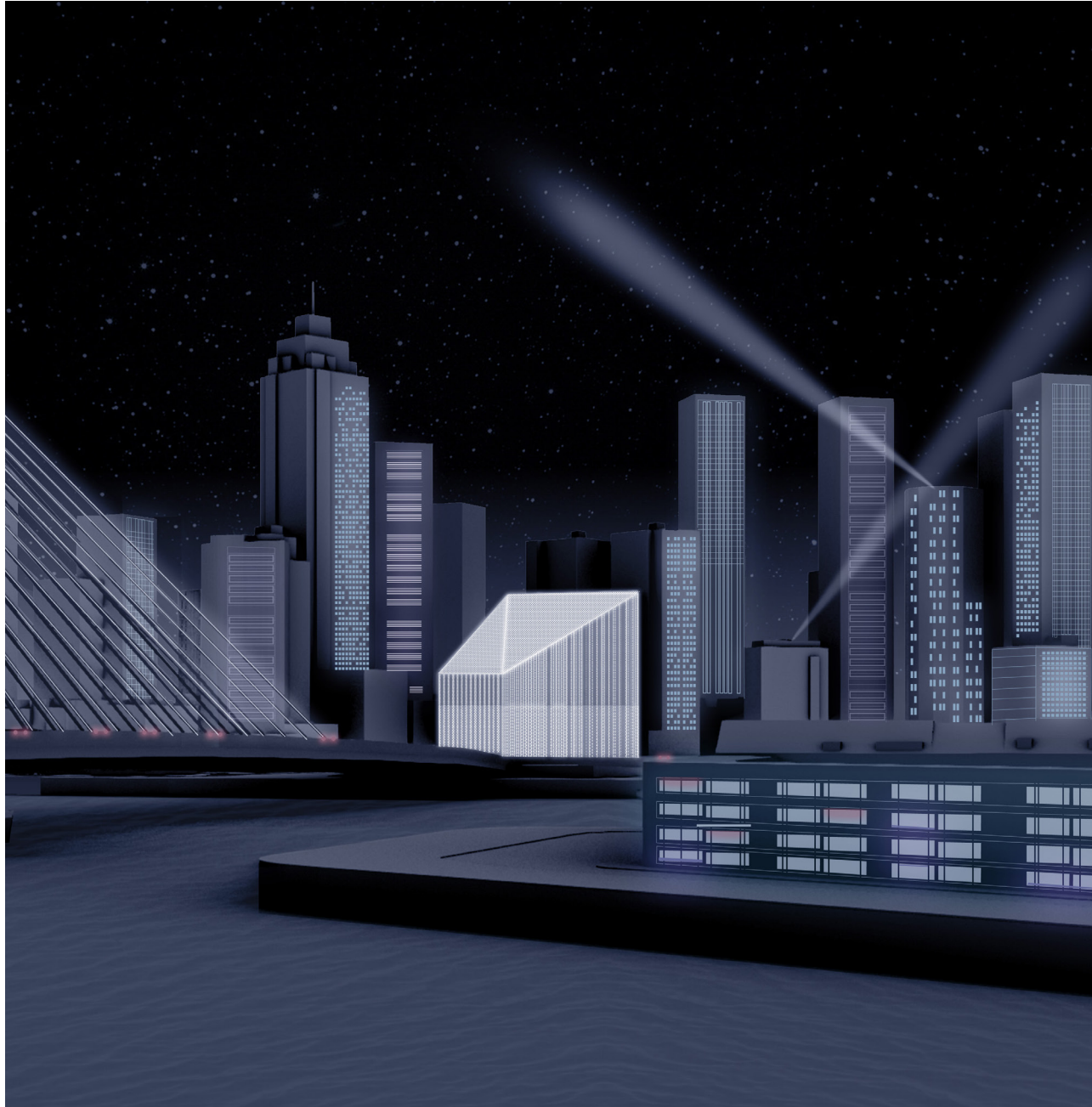
NEW YORK, PARIS, SHANGHAI
AND TOKYO

TO GLIMPSE THE impact of the new coronavirus on global businesses, consider Apple. Such is the American tech titan's reliance on the Chinese

RESEARCH QUESTION

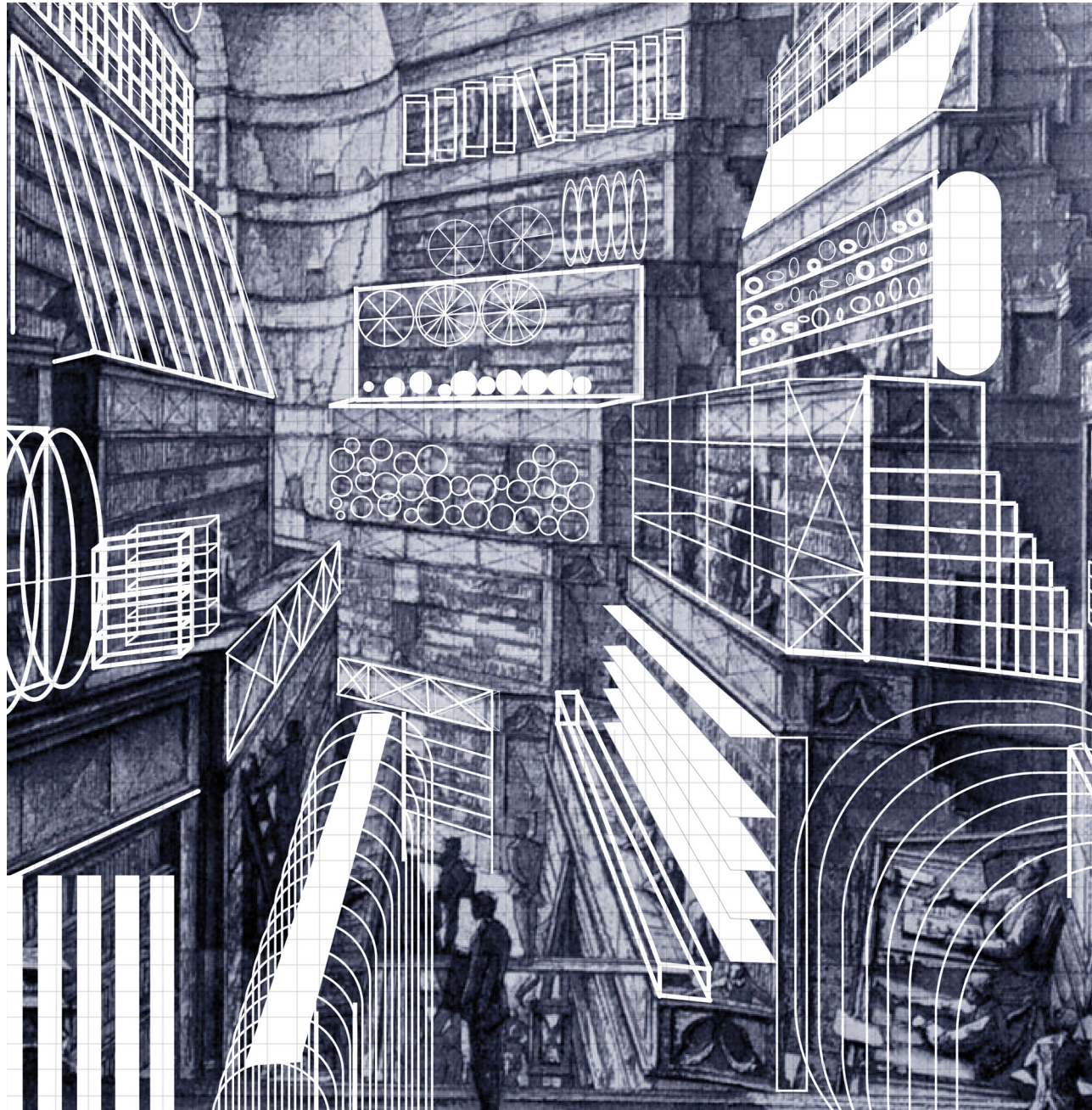
*How can productive resources
return to the inner city and
re-establish urban production?*

Research
BANK OF MAAS

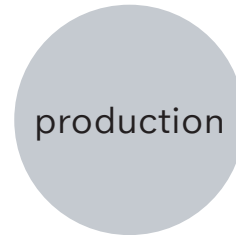
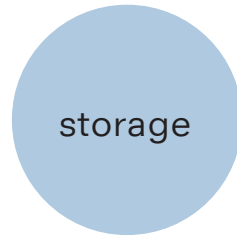


Research

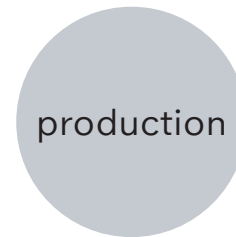
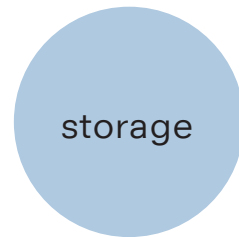
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Research
BANK OF MAAS



Research
BANK OF MAAS



innovative
storage technology

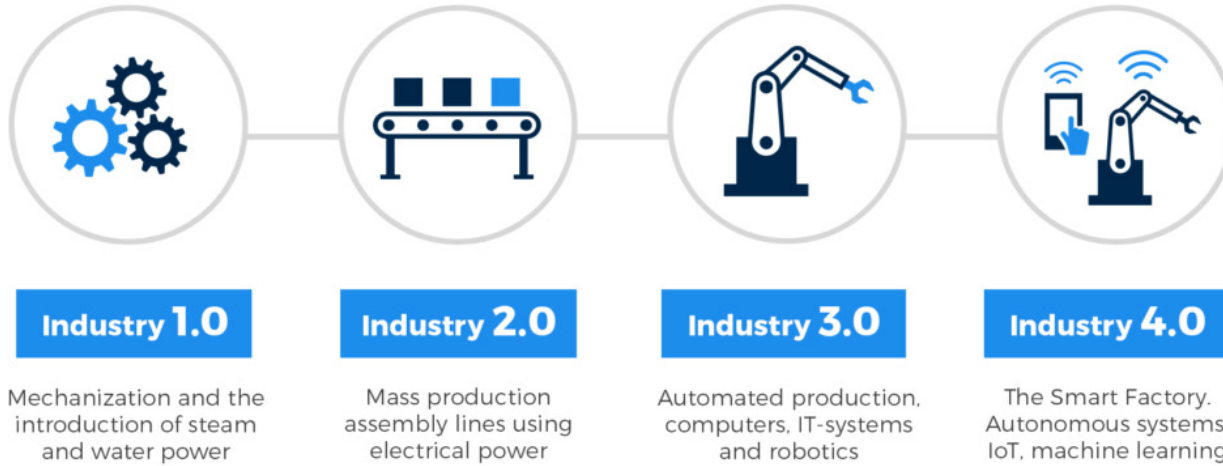


smart
production tools

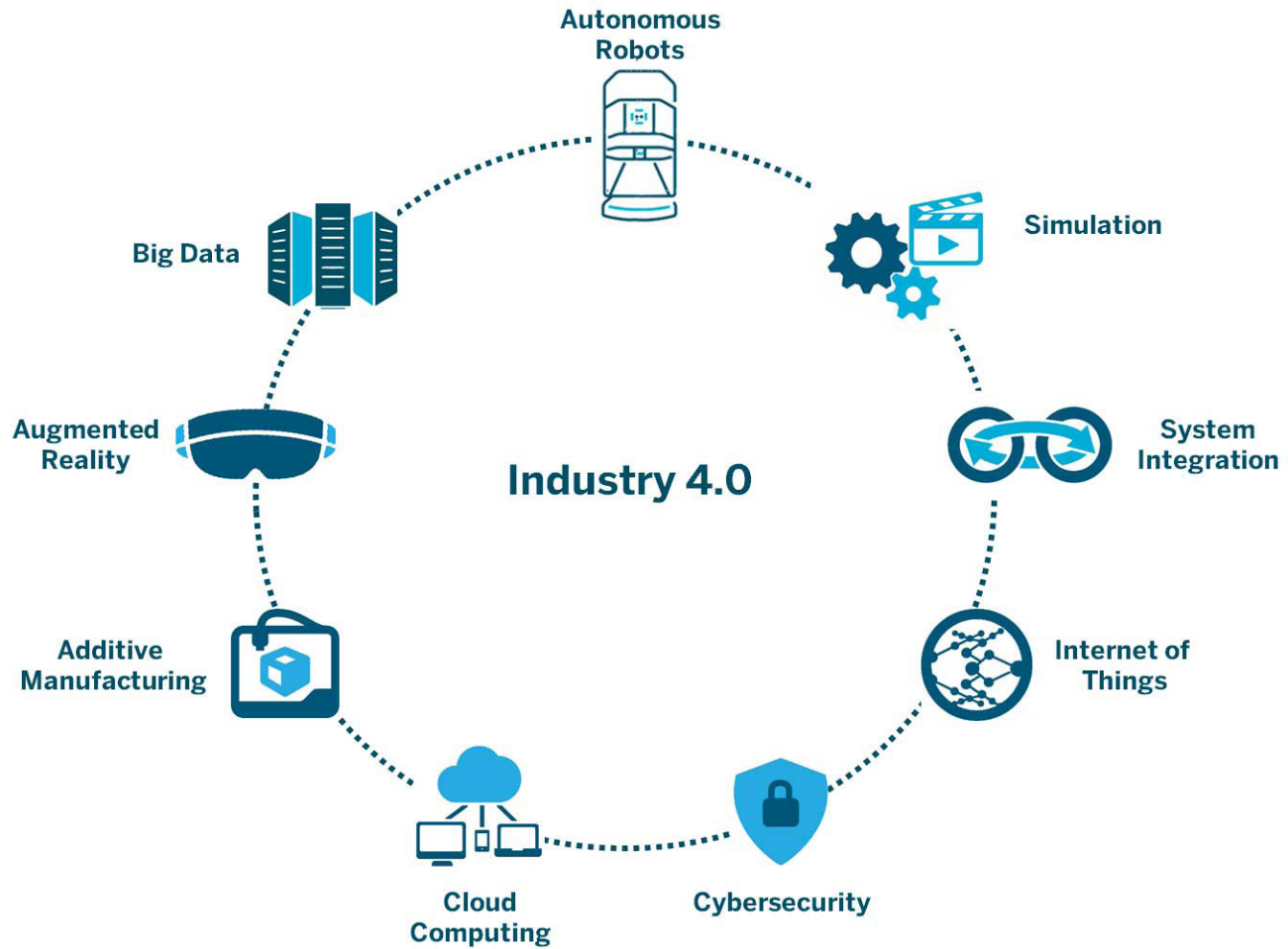


INDUSTRY 4.0

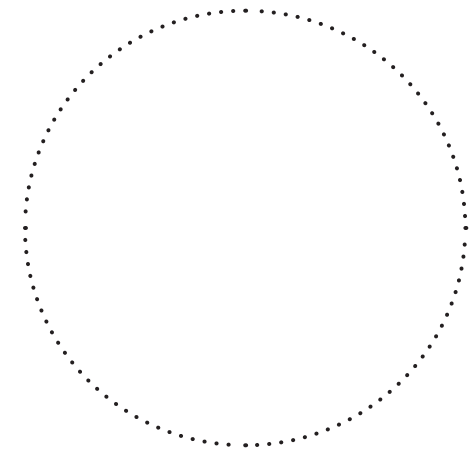
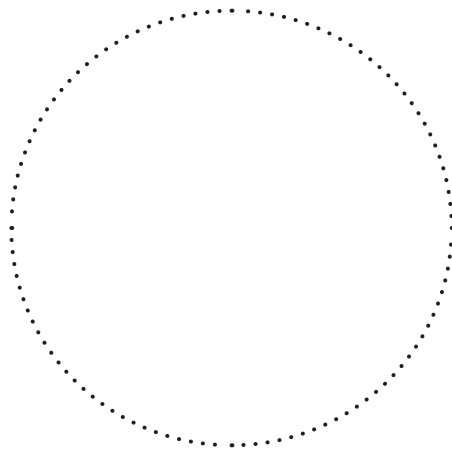
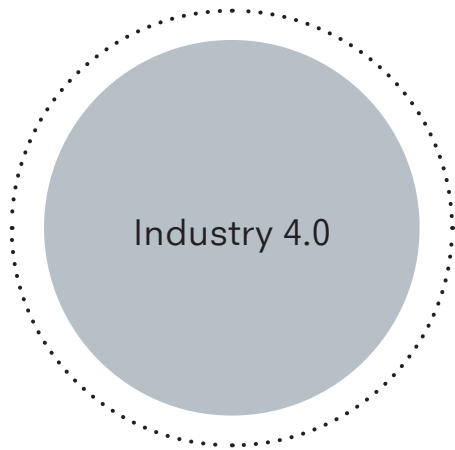
The Four Industrial Revolutions



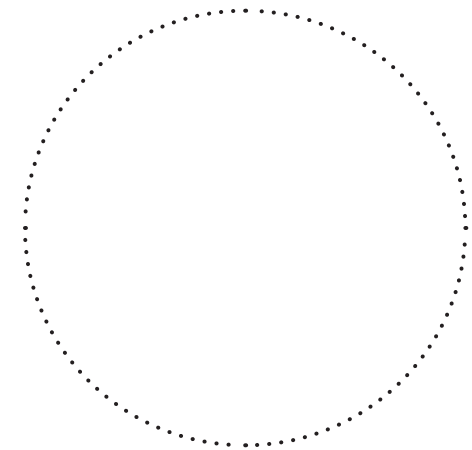
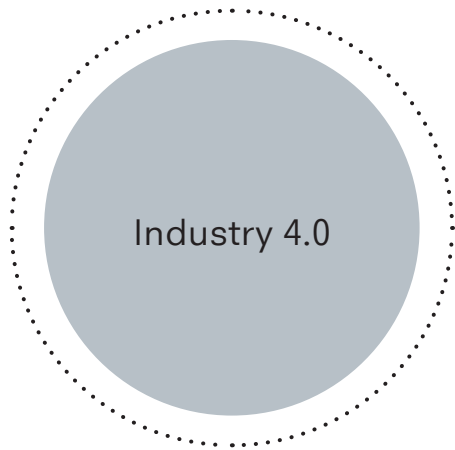
INDUSTRY 4.0



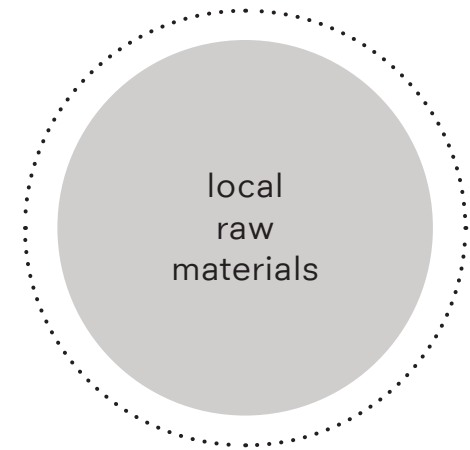
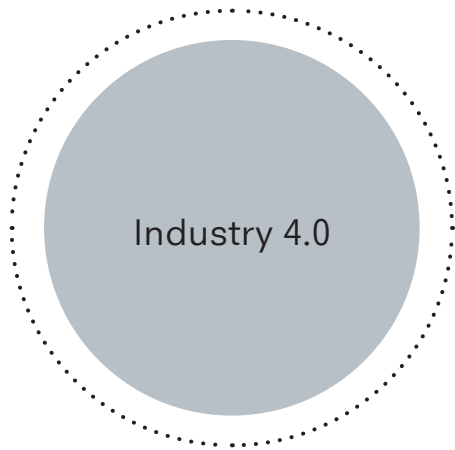
Research
INDUSTRY 4.0



Research
INDUSTRY 4.0



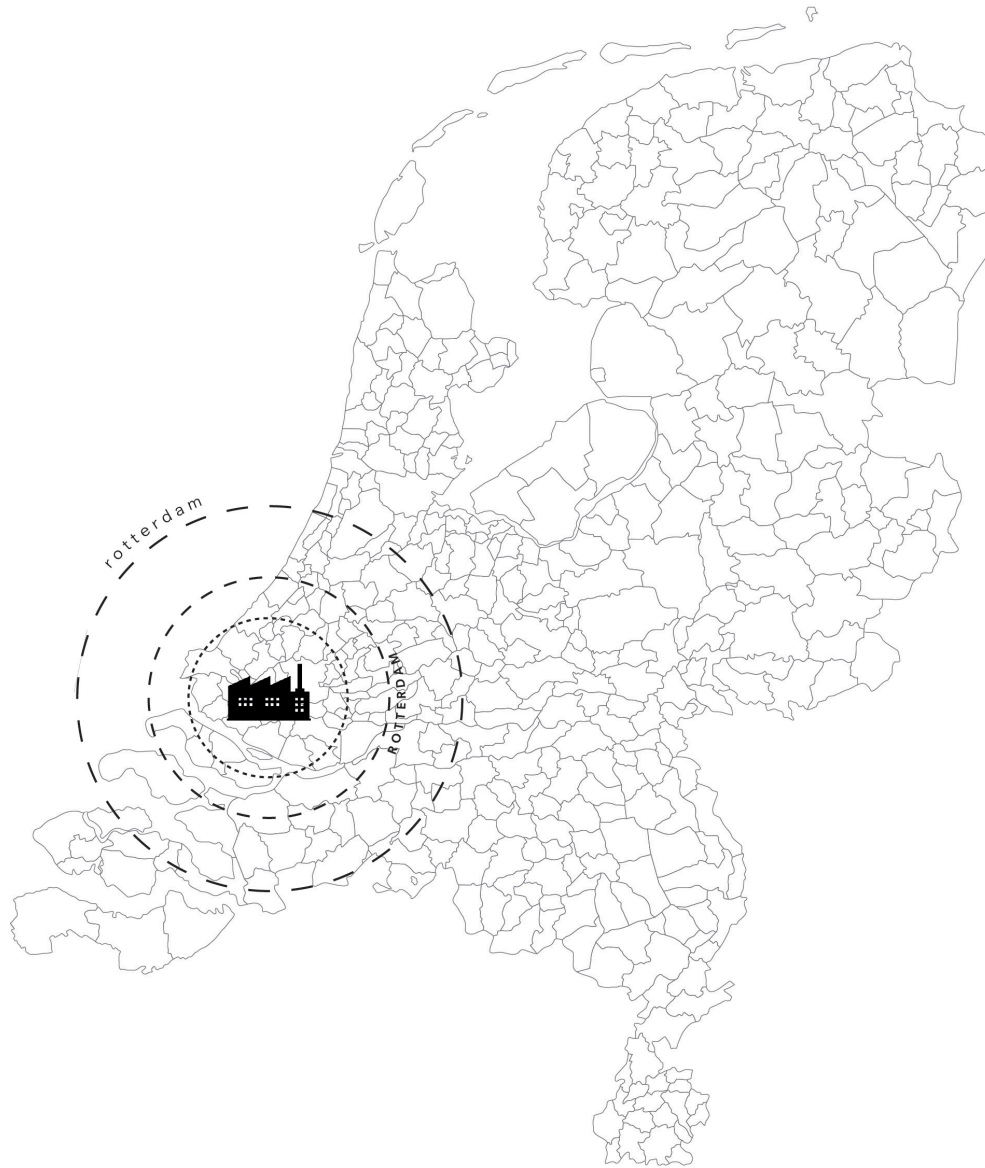
Research
INDUSTRY 4.0



ROTTERDAM







ROTTERDAM MAKERS DISTRICT



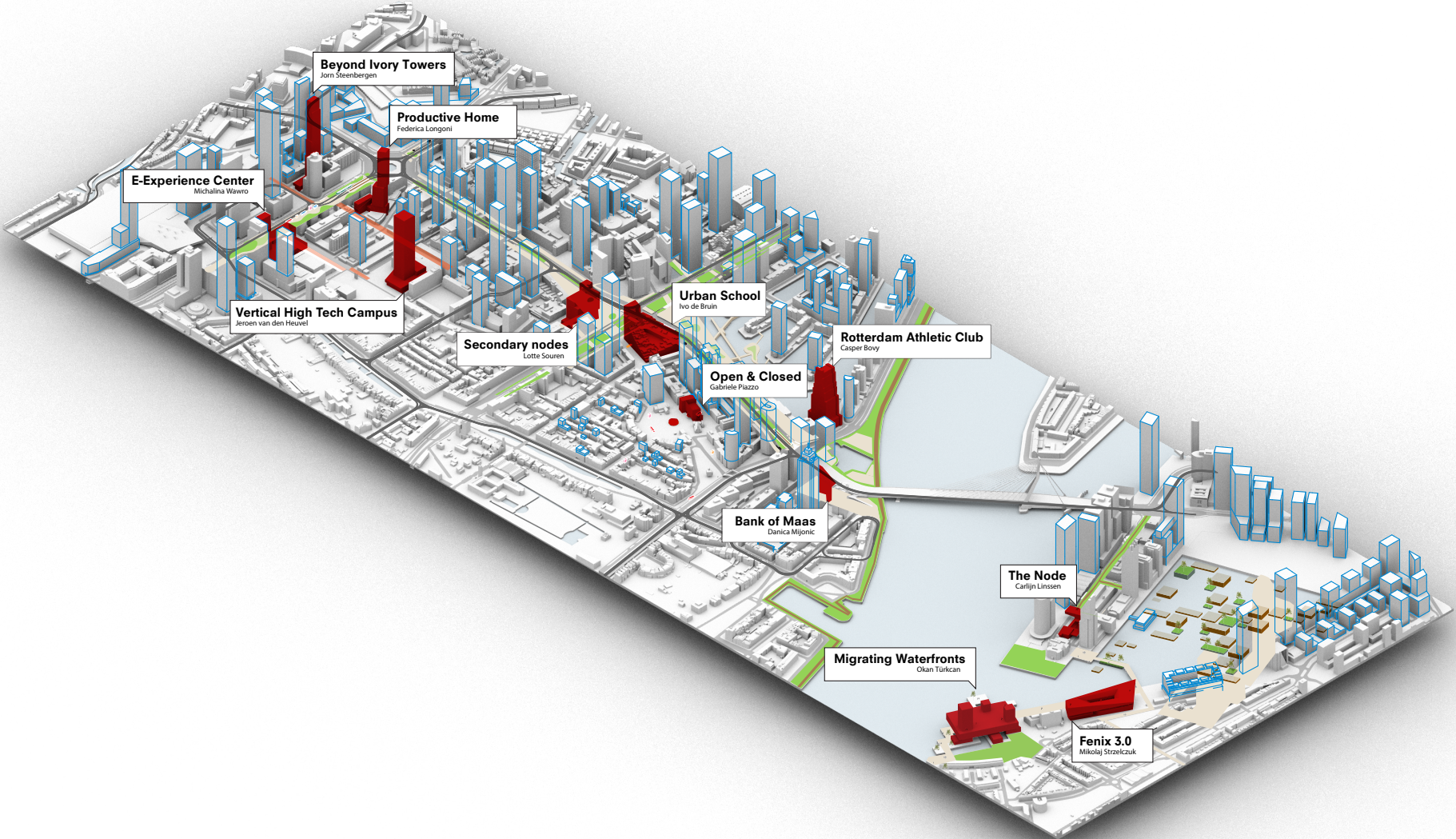
POSSIBLE FINANCIER



GROUP VISION



Research
GROUP VISION



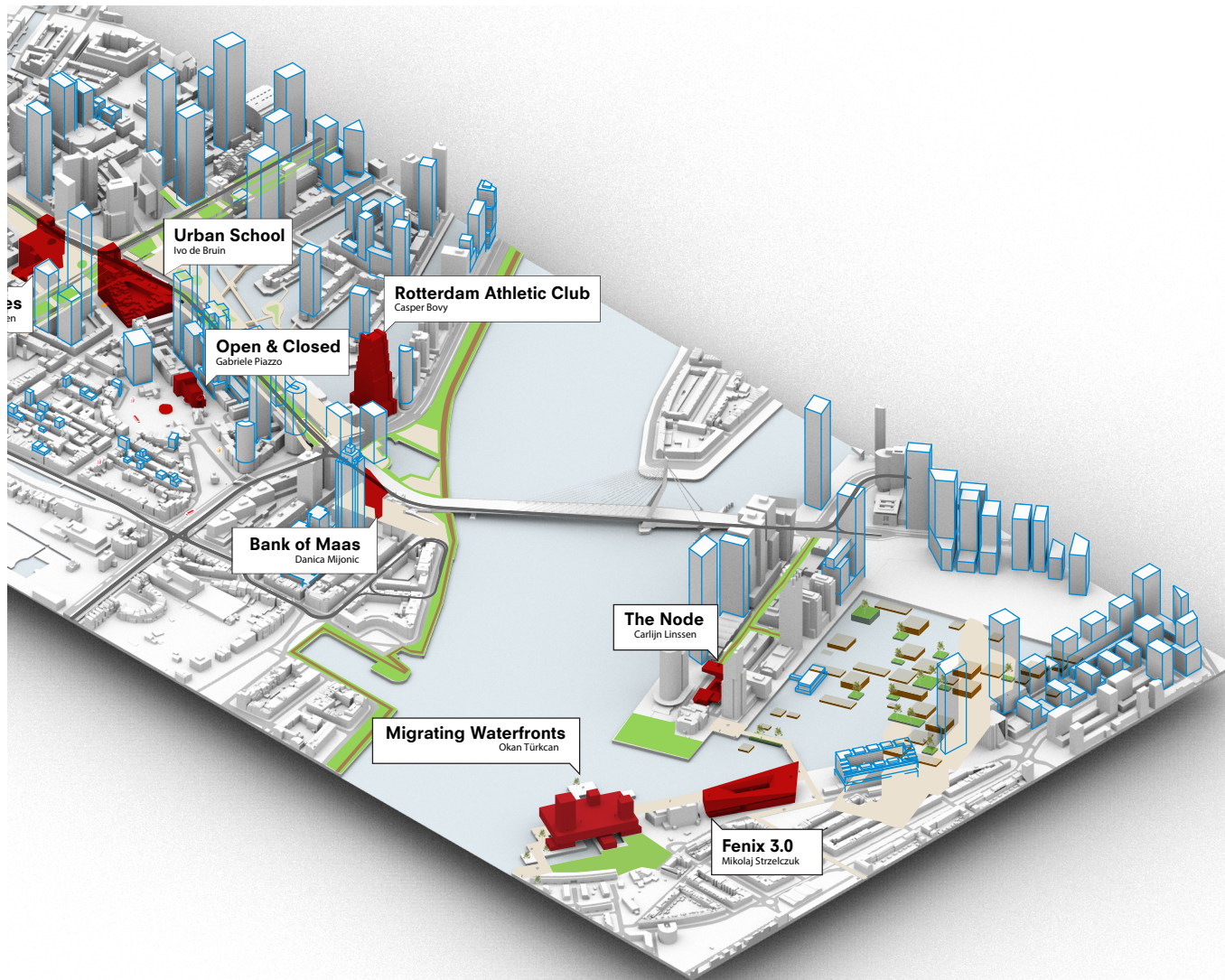
ROTTERDAM VISION



GROUP VISION

>>> As the city's economy enters a new phase
the city has to adapt
through a **diversification of functions**,
creating a productive network
of working and living communities.

WATER AS AN URBAN RESOURCE



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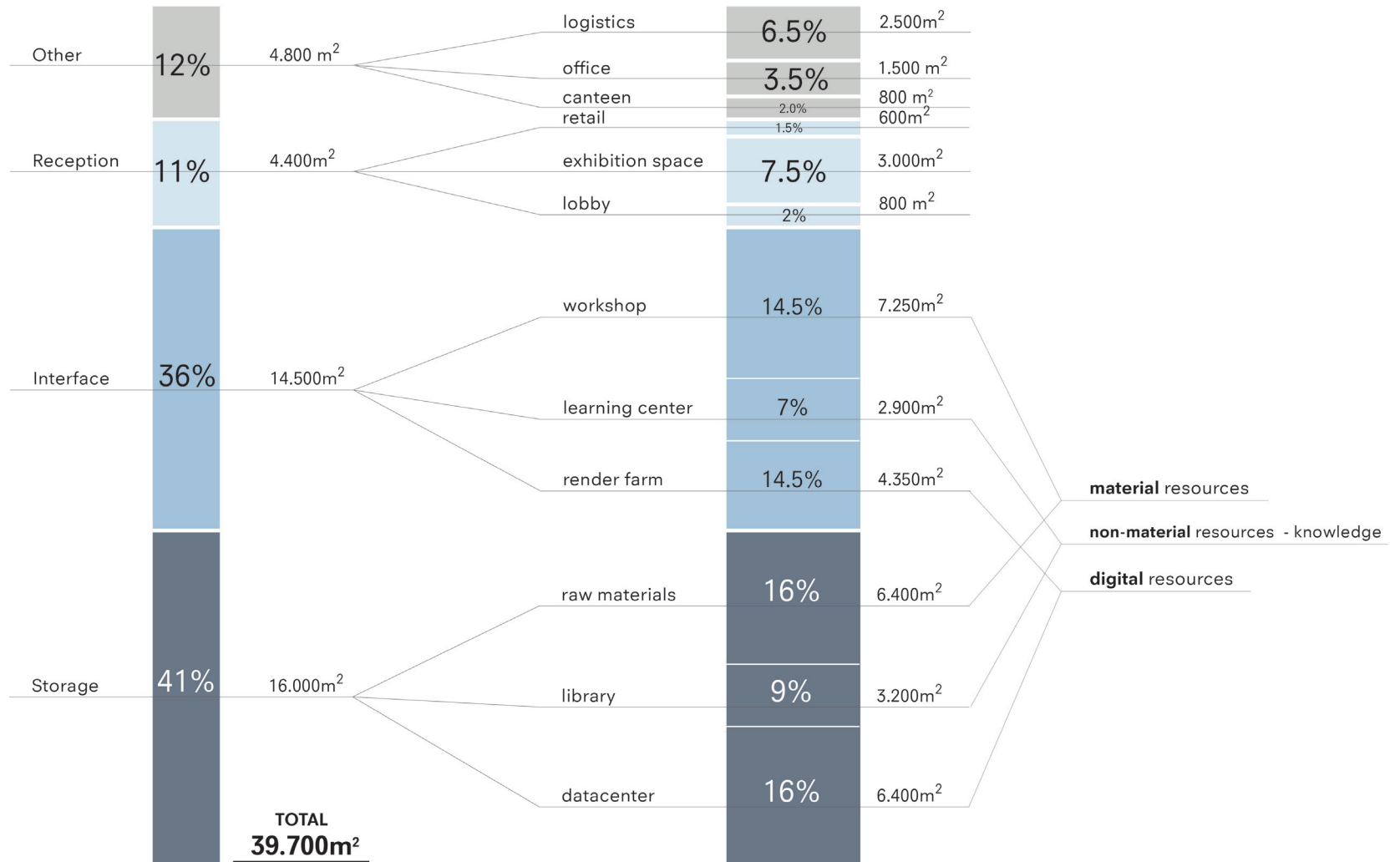
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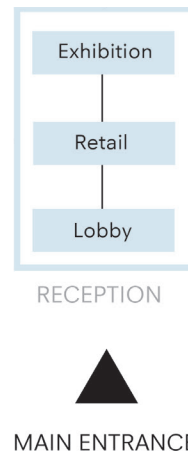


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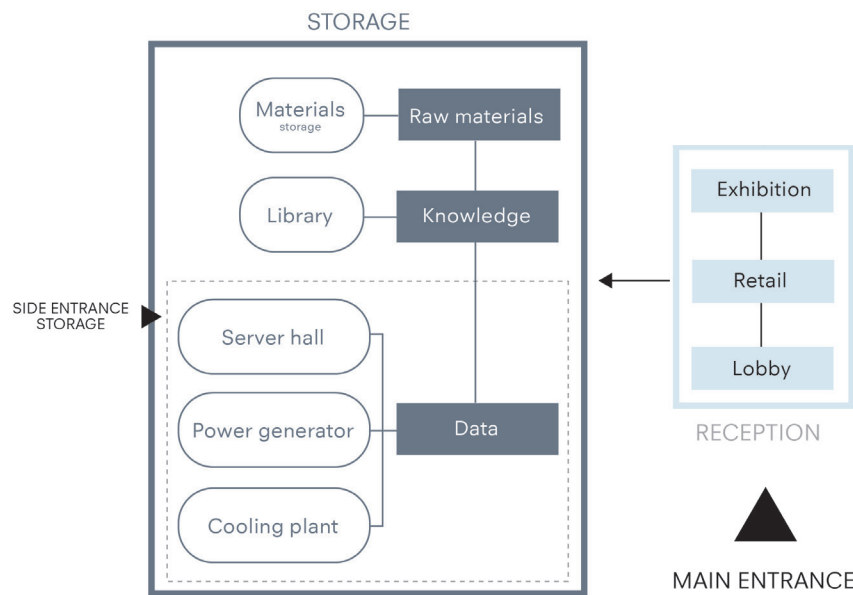
PROGRAM BAR



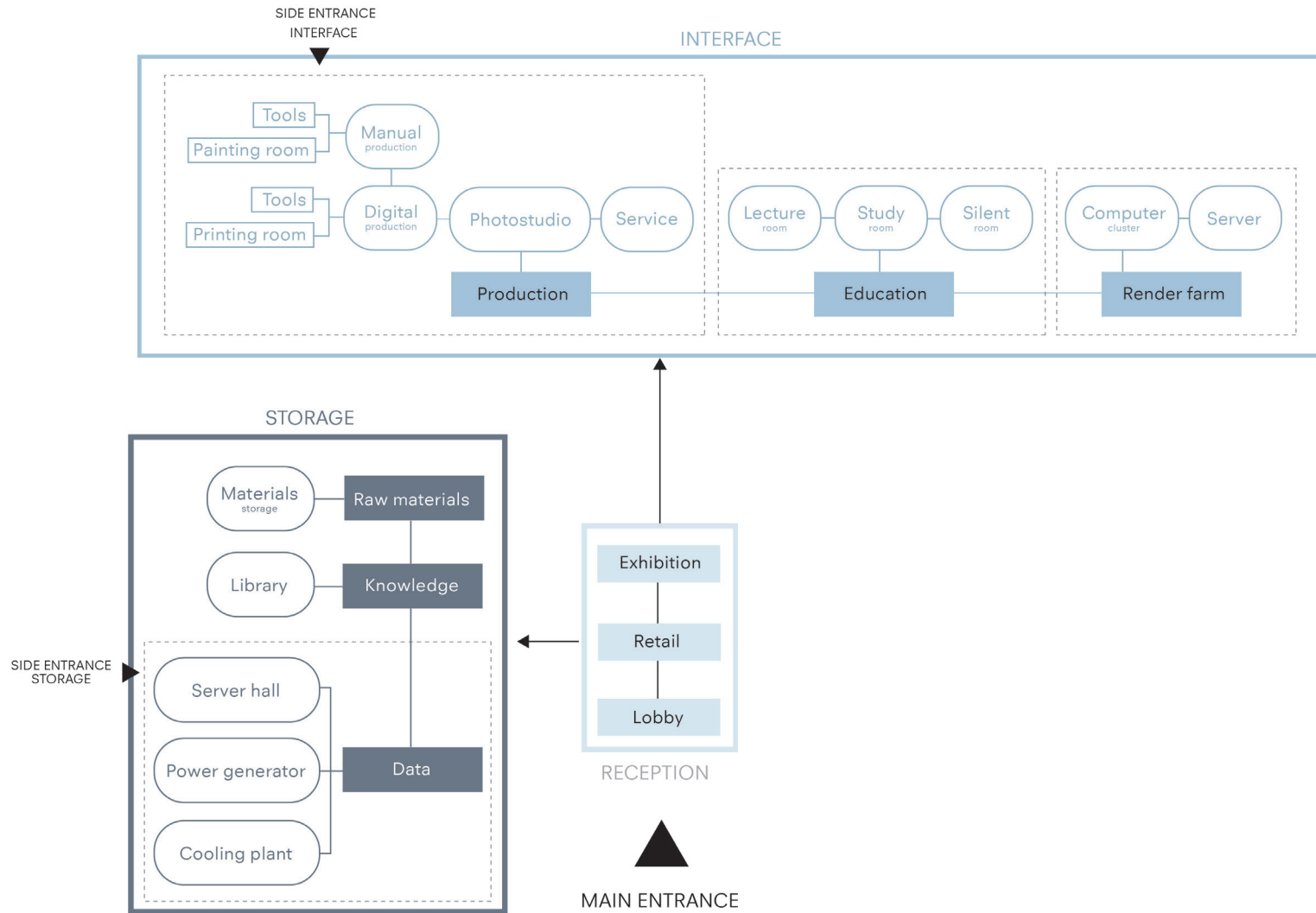
PROGRAM SCHEME



Design Brief
PROGRAM SCHEME

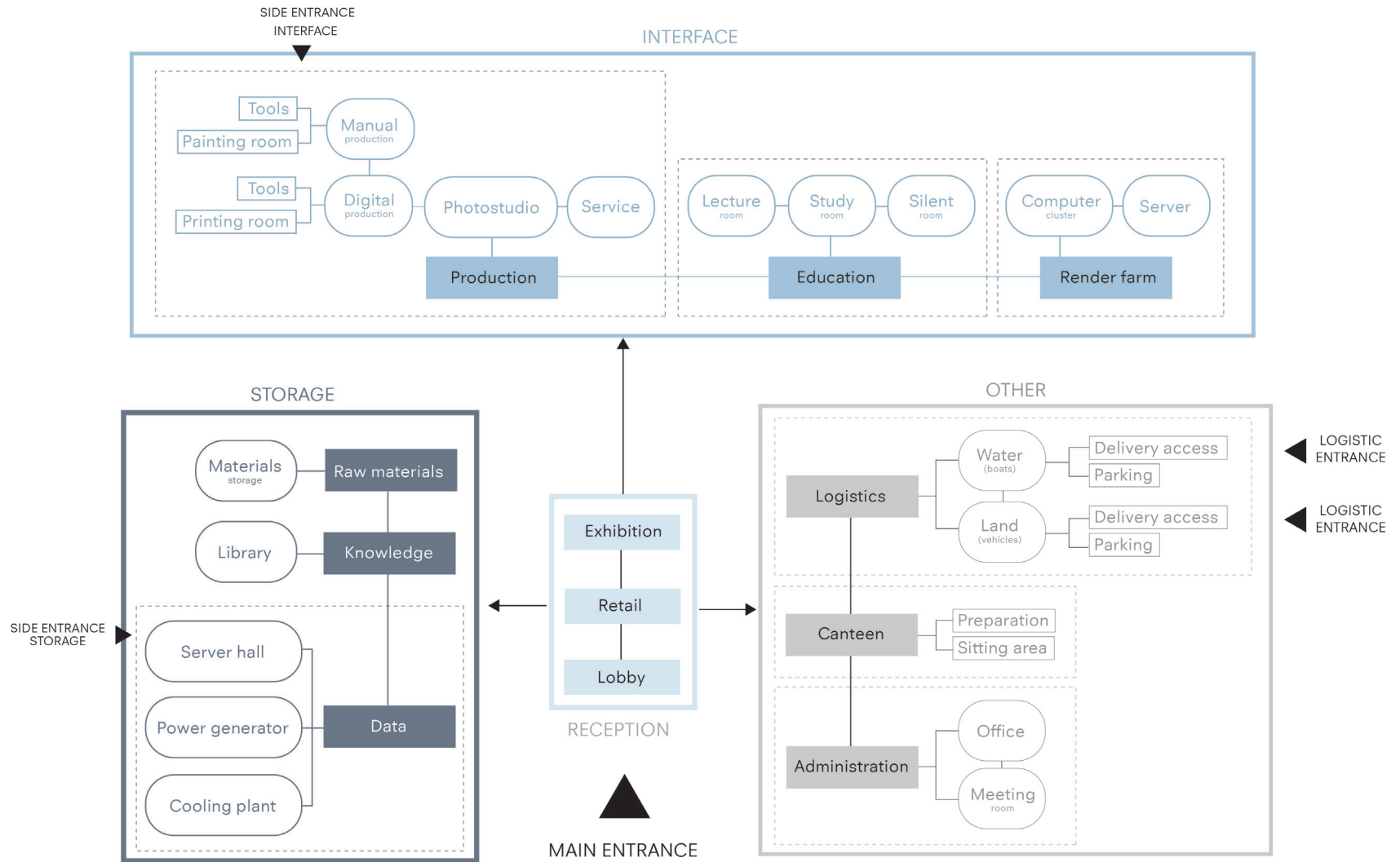


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PROGRAM SCHEME



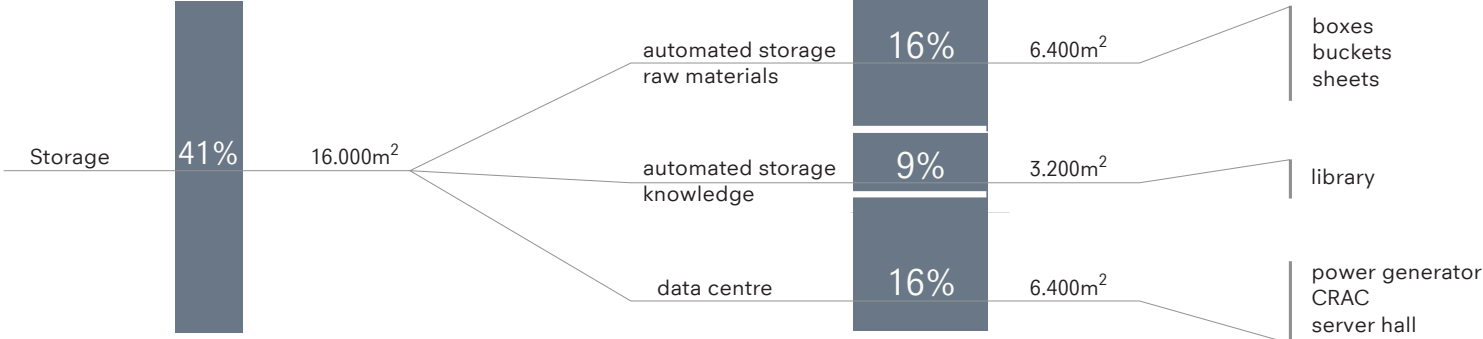
Design Brief

PROGRAM SCHEME

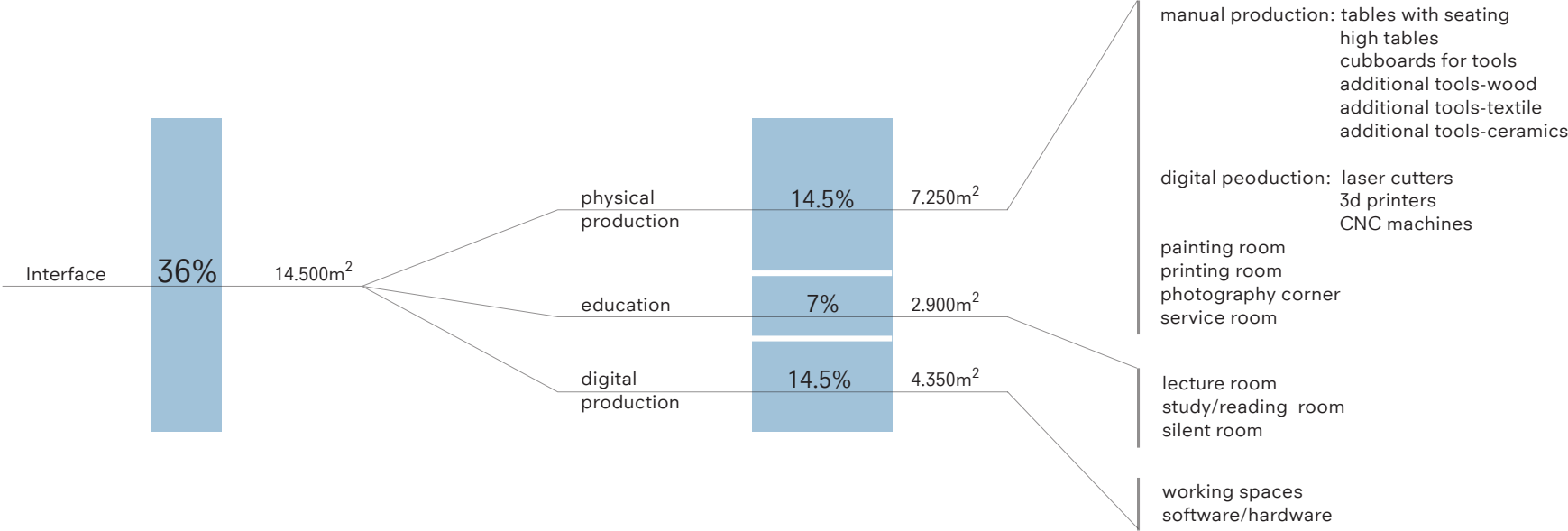


PRODUCTION SPACE >>> INTERFACE

Design Brief



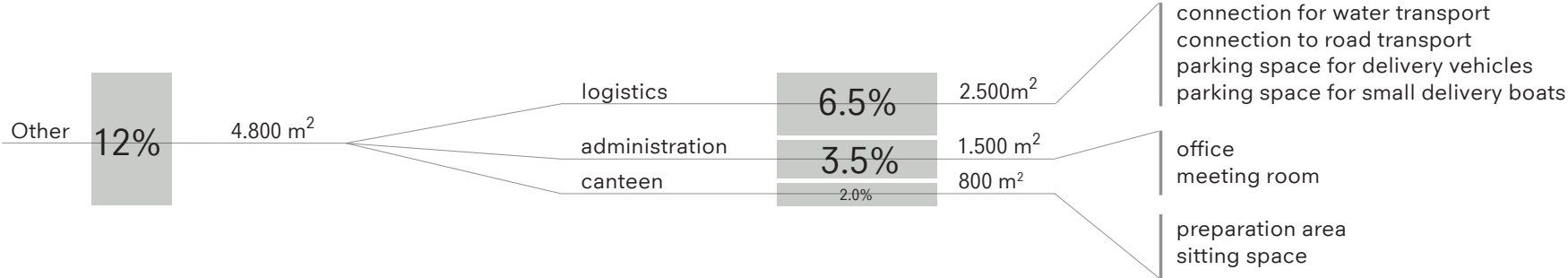
Design Brief



Design Brief



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LANDMARKS



Erasmusbrug



Zalmhaventoren

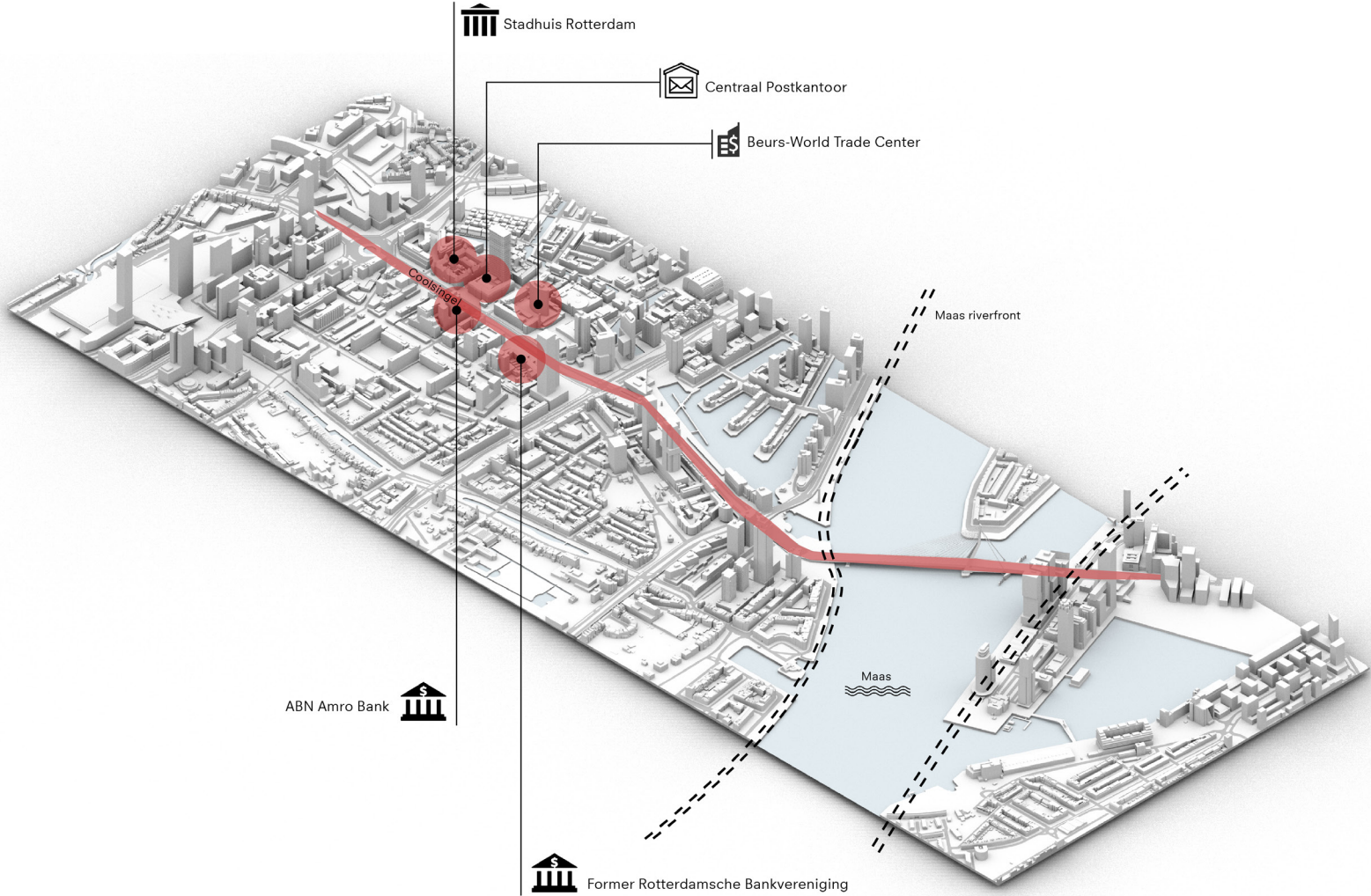


De Rotterdam

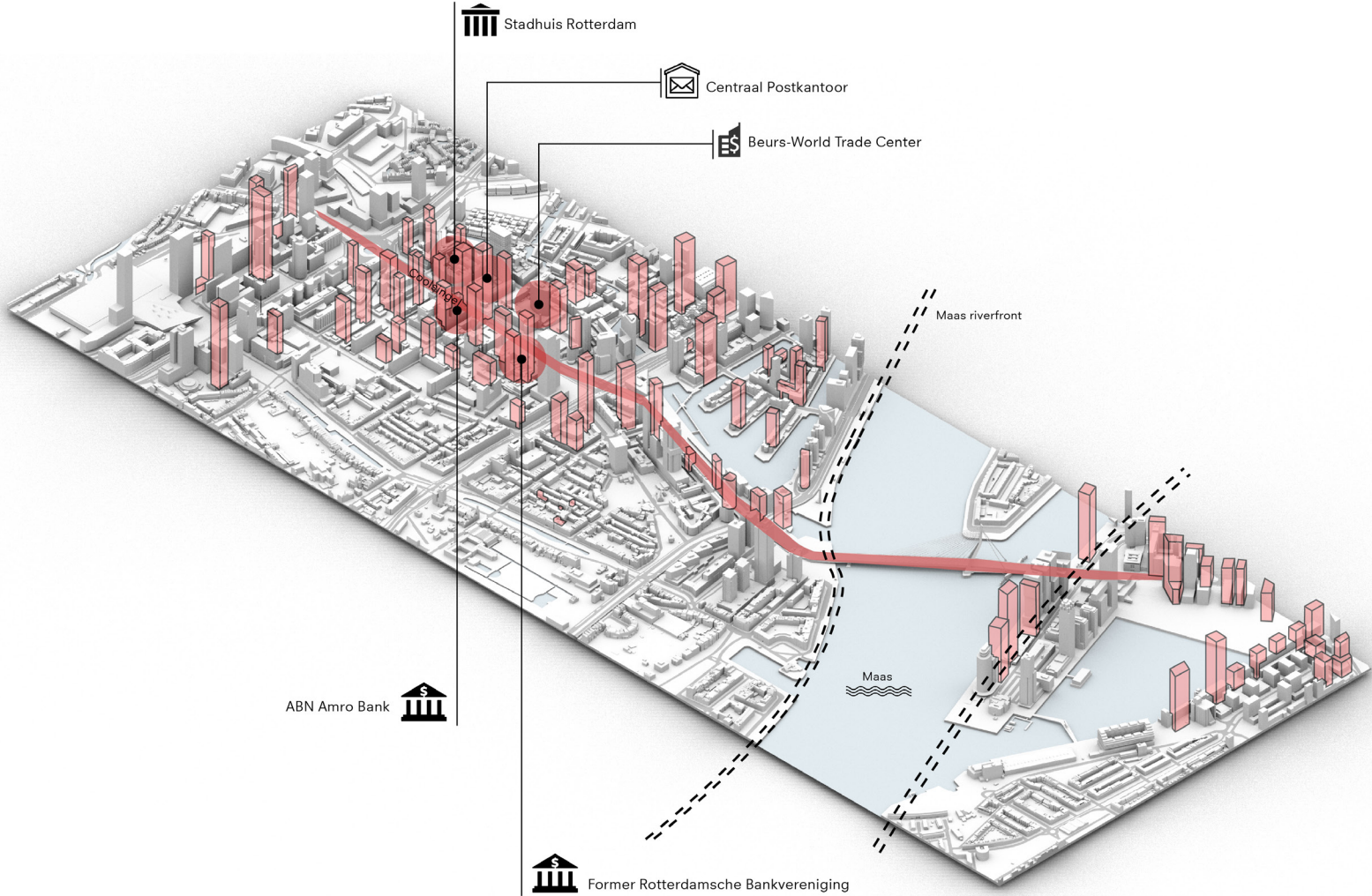


Leuvehaven

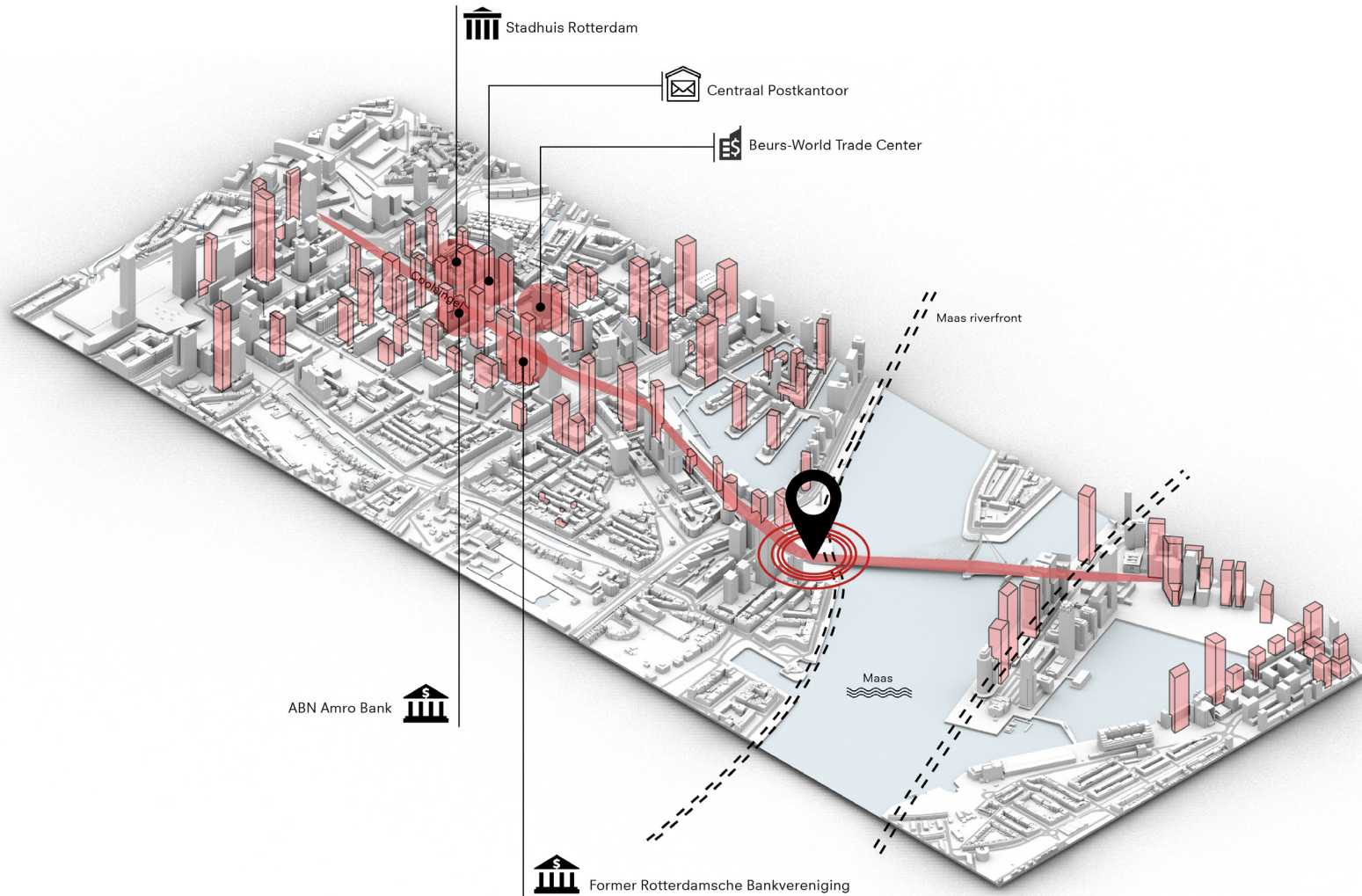
COOLSINGEL



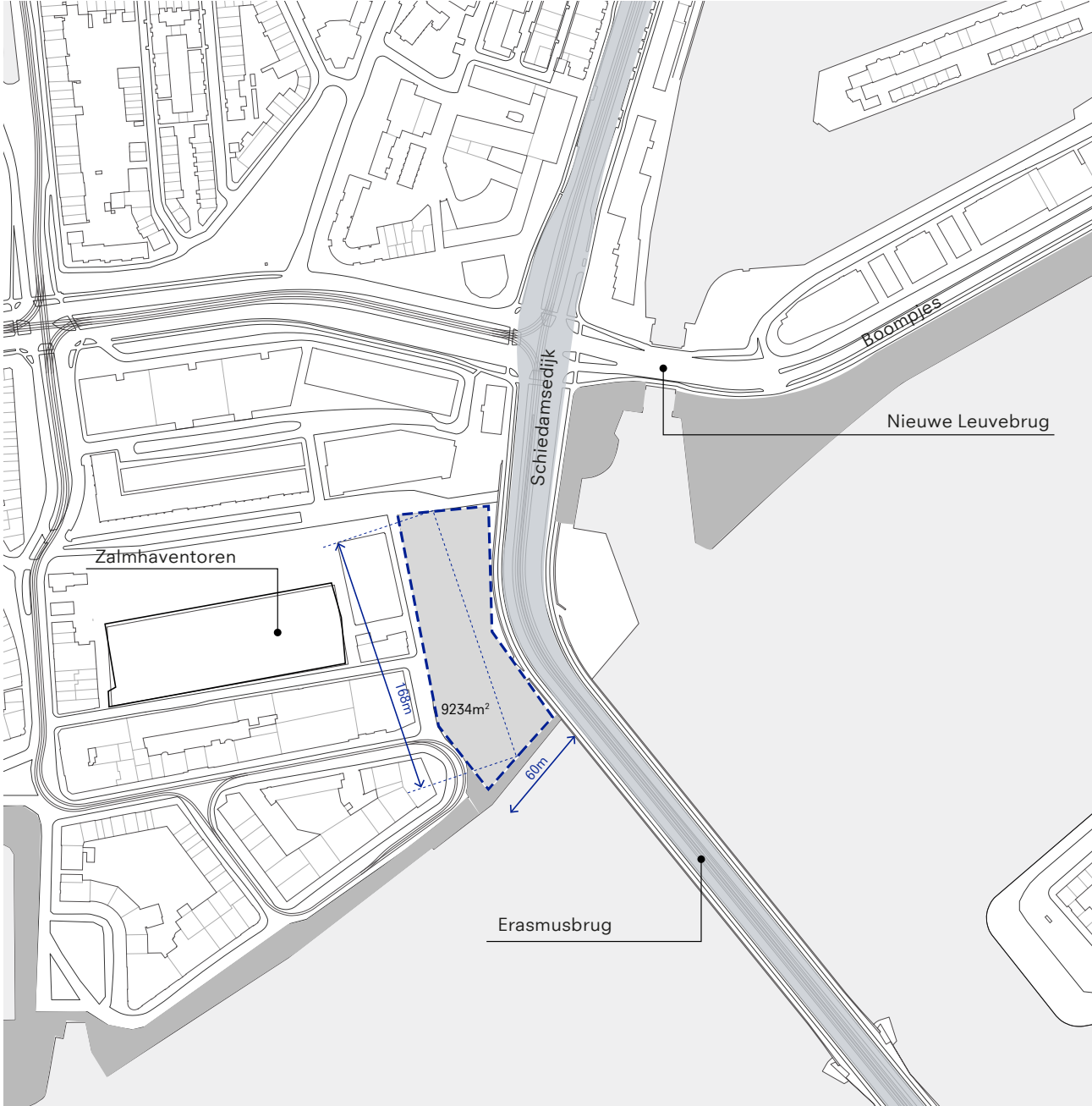
HIGH-RISE STRATEGY



INTERSECTION WITH THE MAAS



LOCATION



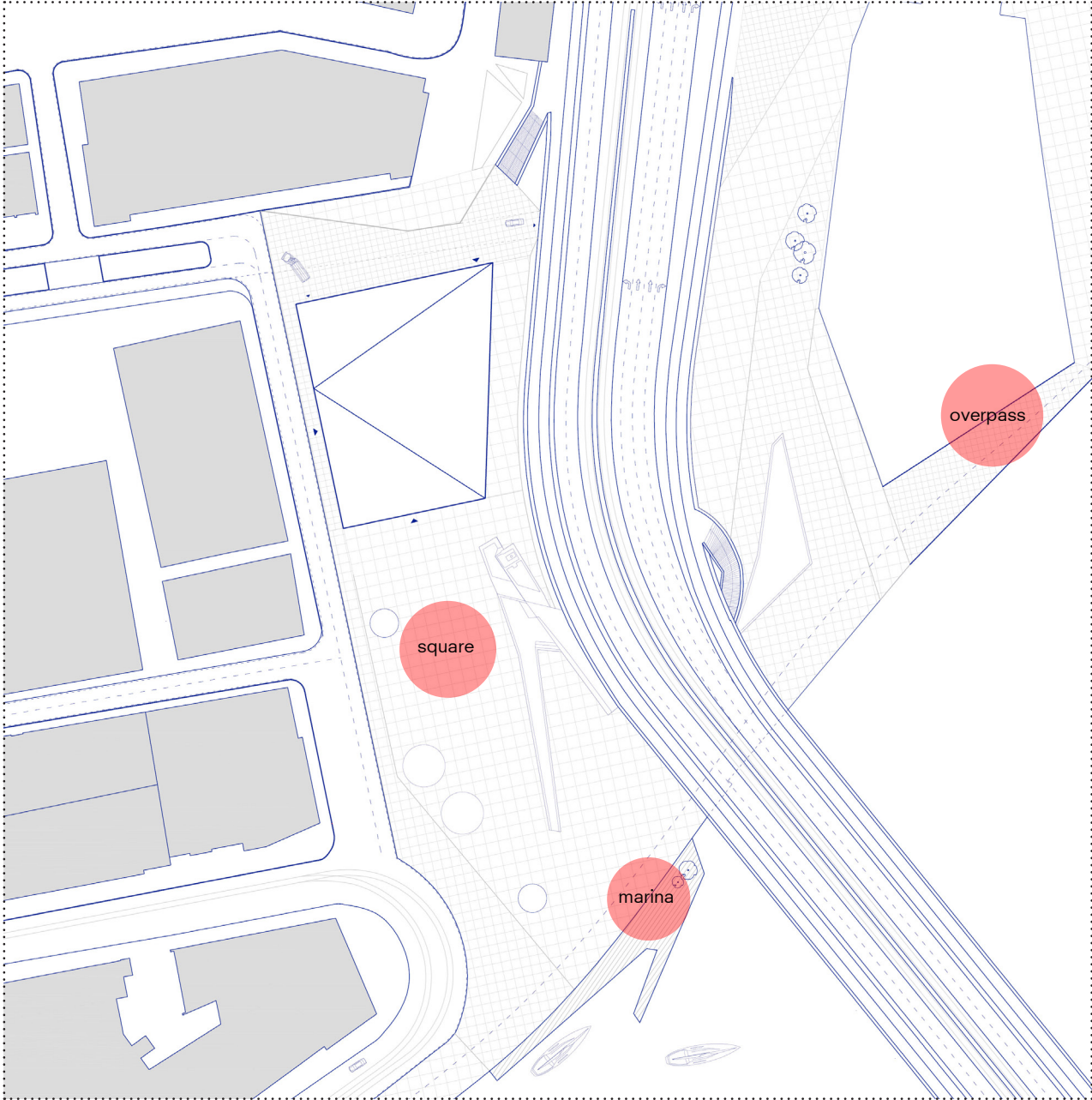
SITE CONCEPT



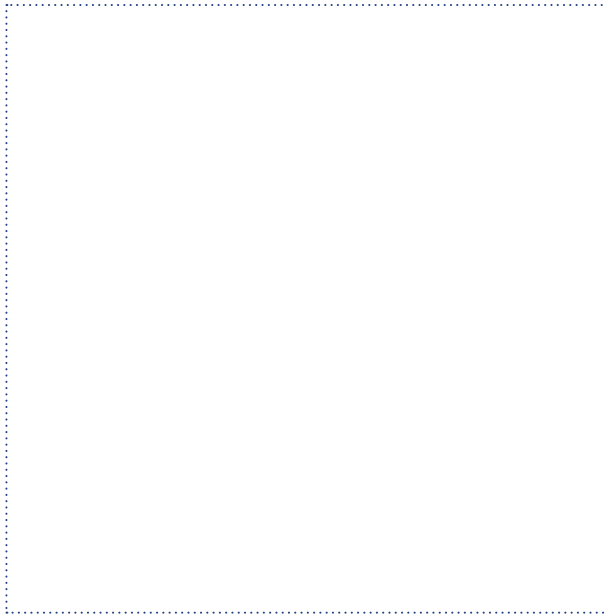
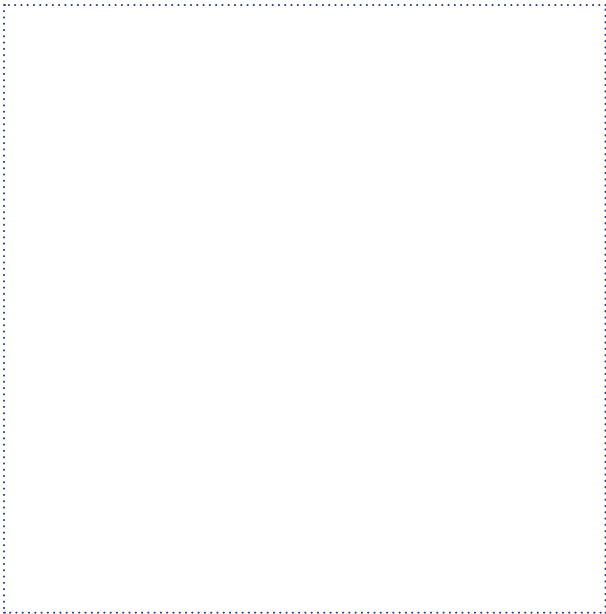
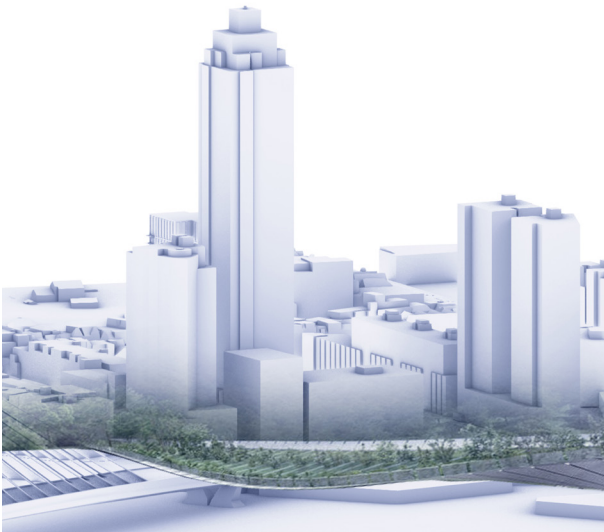


Concept and Implementation

1:1000



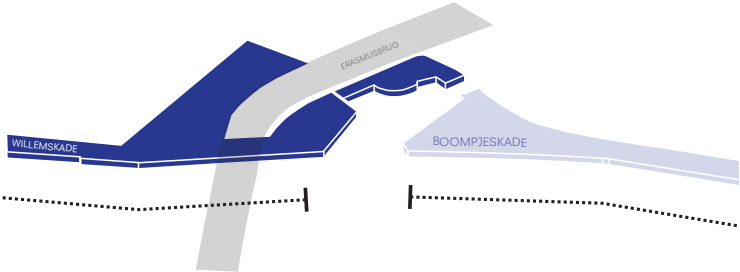
SITE CONCEPT



1.0
Maas boulevard

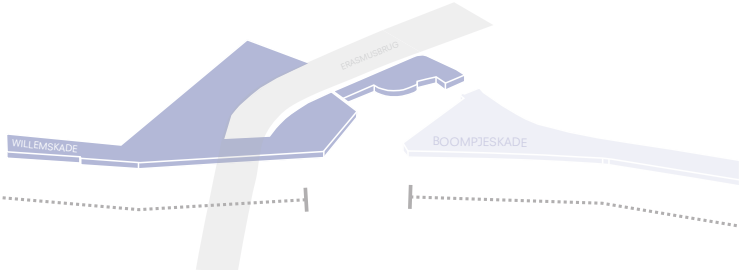
MAAS BOULEVARD

1| Fragmentation of public space

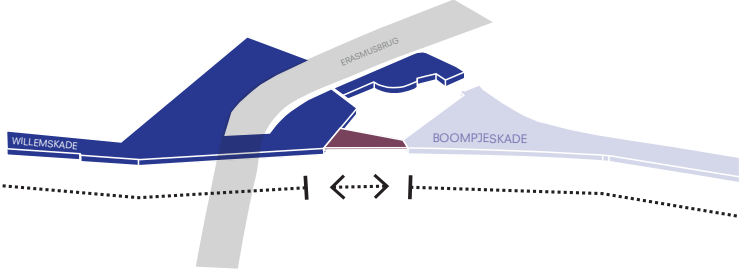


MAAS BOULEVARD

1| Fragmentation of public space

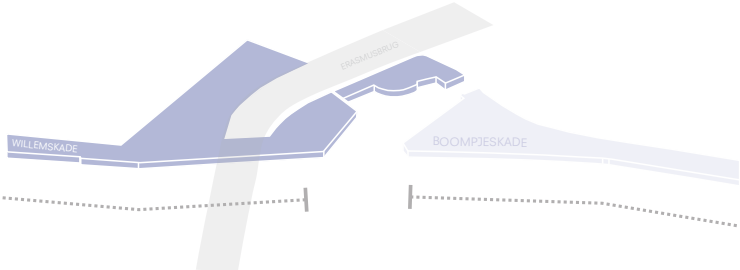


2| Introducing new bridge
Improving safety and comfort

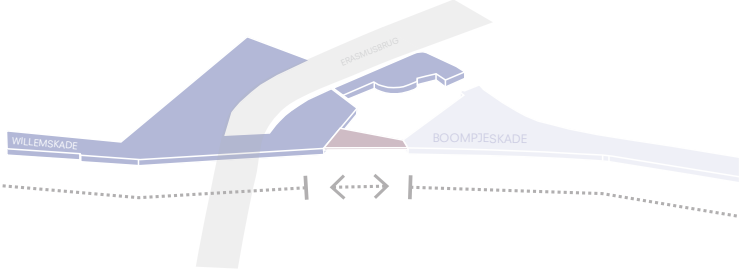


MAAS BOULEVARD

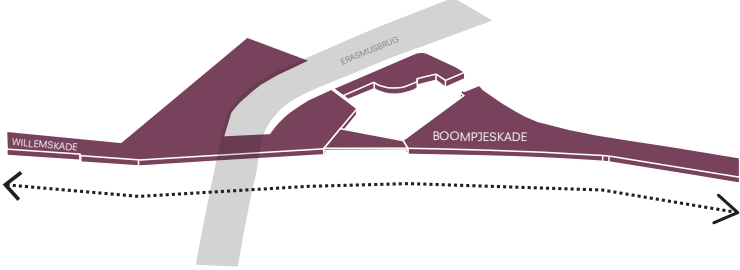
1| Fragmentation of public space



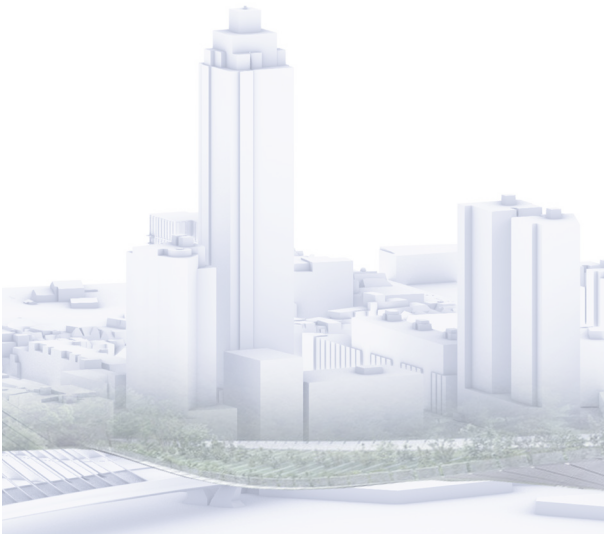
2| Introducing new bridge
Improving safety and comfort



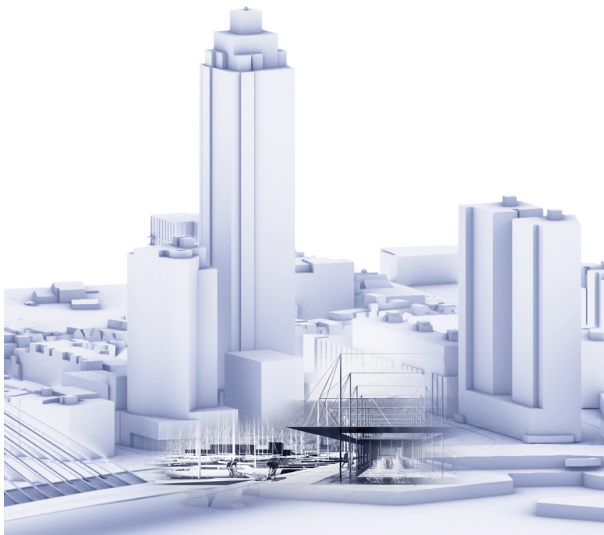
3| Continuous pedestrian path and bicycle lane



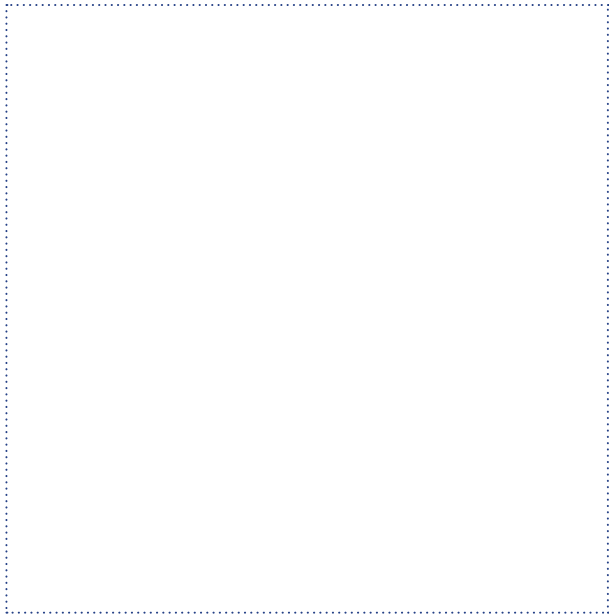
SITE CONCEPT



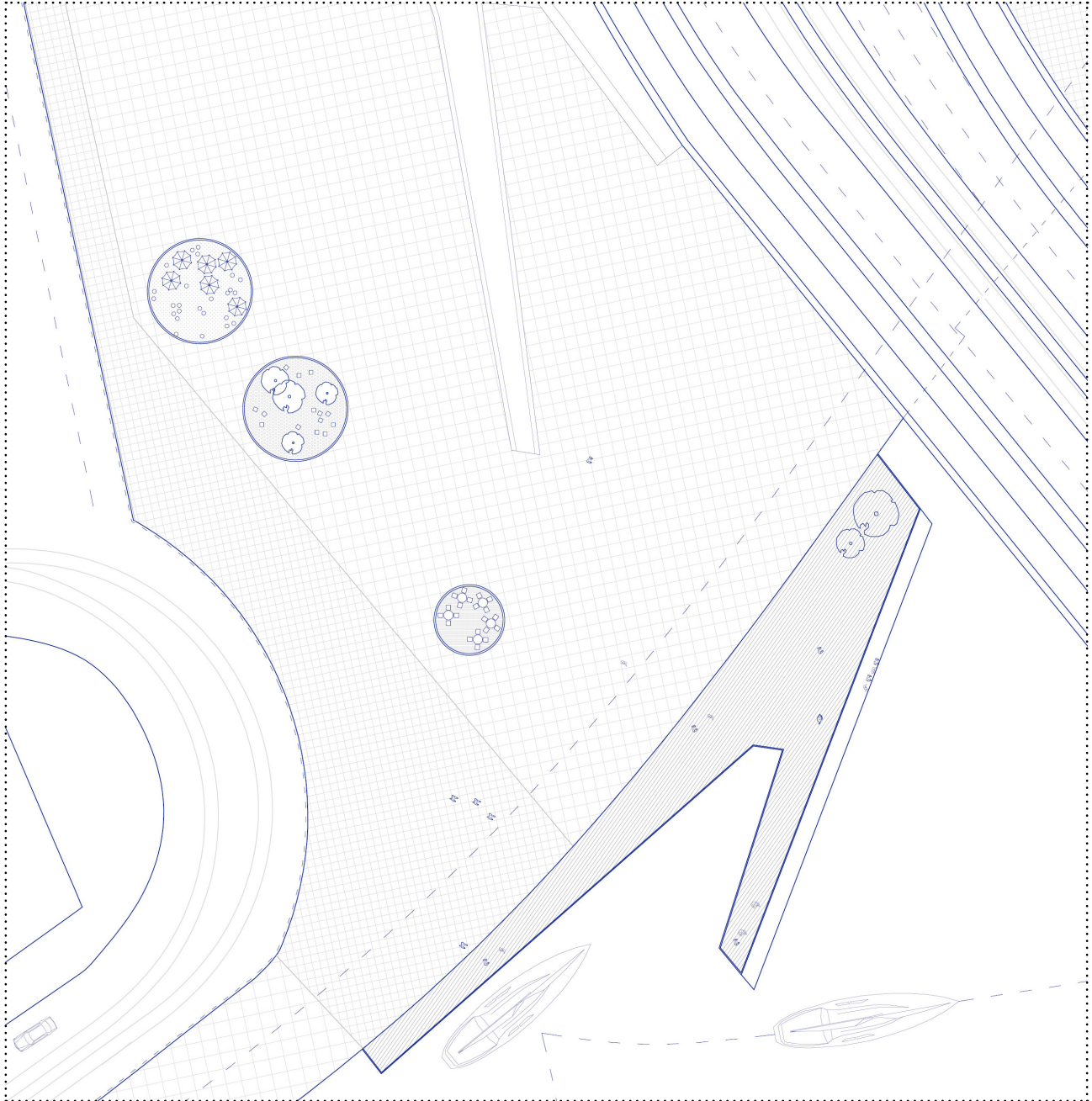
1.0
Maas boulevard



2.0
marina



MARINA



MARINA



Hasle Harbour Bath, Bornholm, Denmark
Architects: White

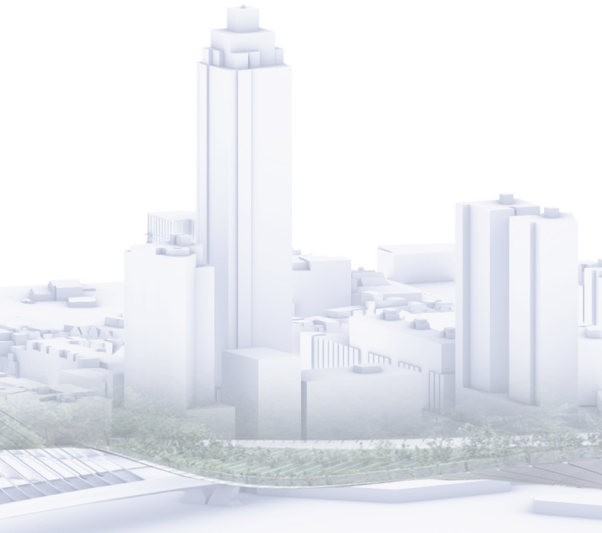


Sørenga Sjøbad, Oslo, Norway
Architects: LPO arkitekter

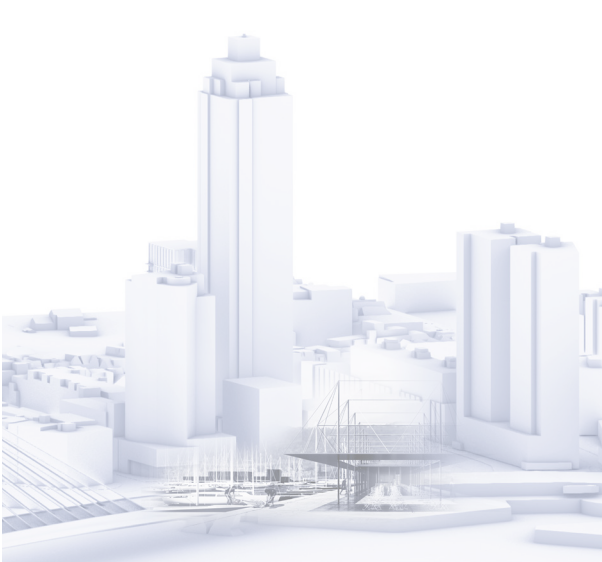


Sørenga Sjøbad, Oslo, Norway
Architects: LPO arkitekter

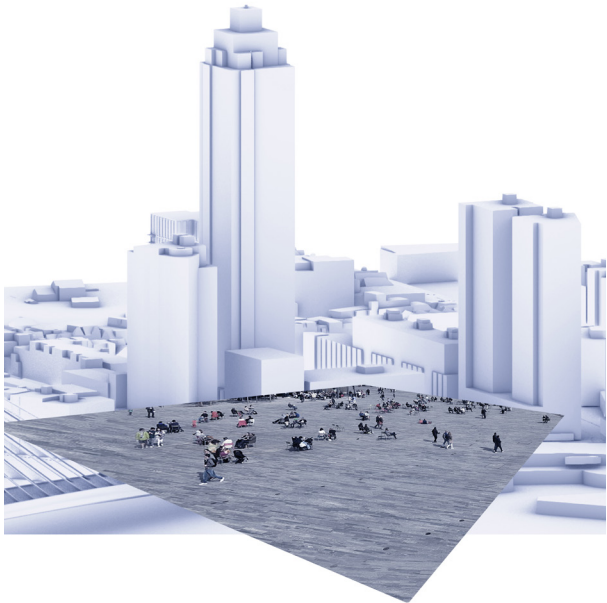
SITE CONCEPT



1.0
Maas boulevard

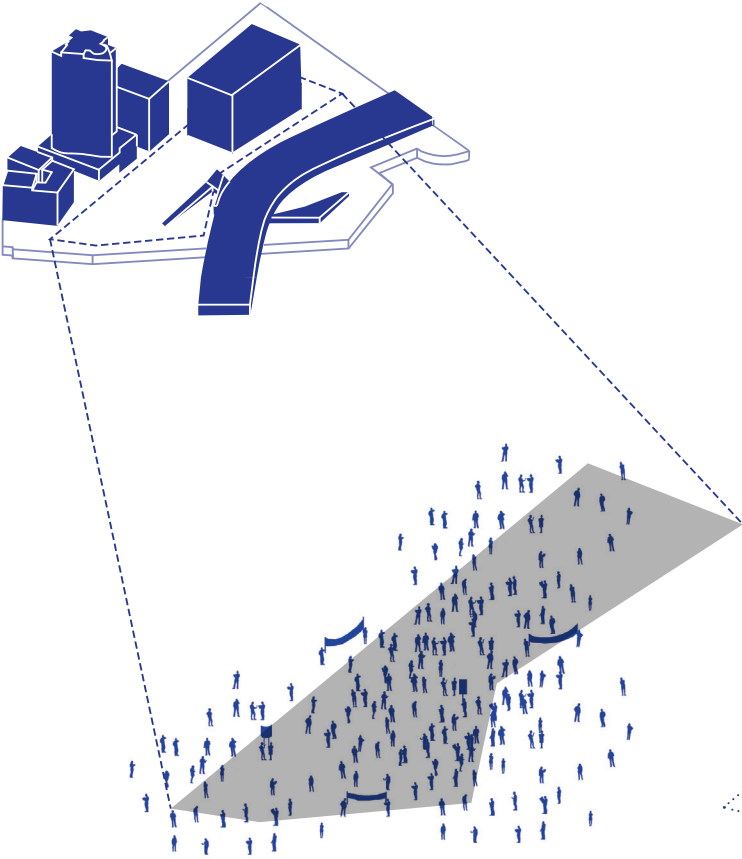


2.0
marina

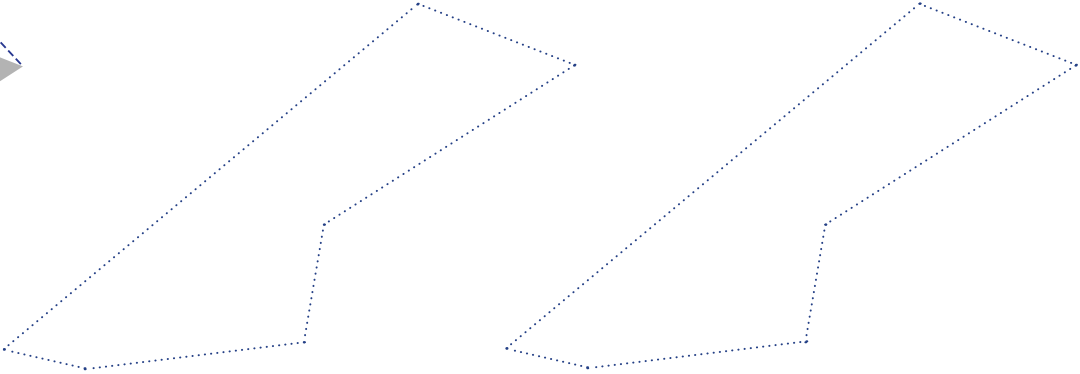


3.0
public square

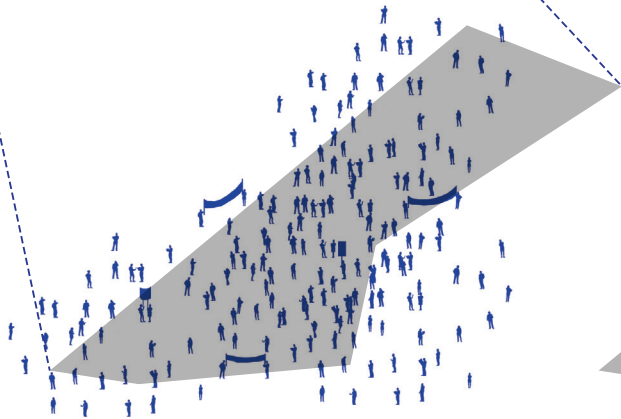
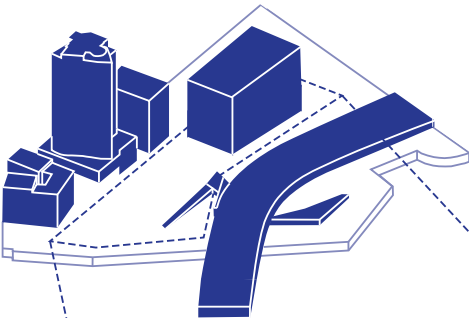
PUBLIC SQUARE



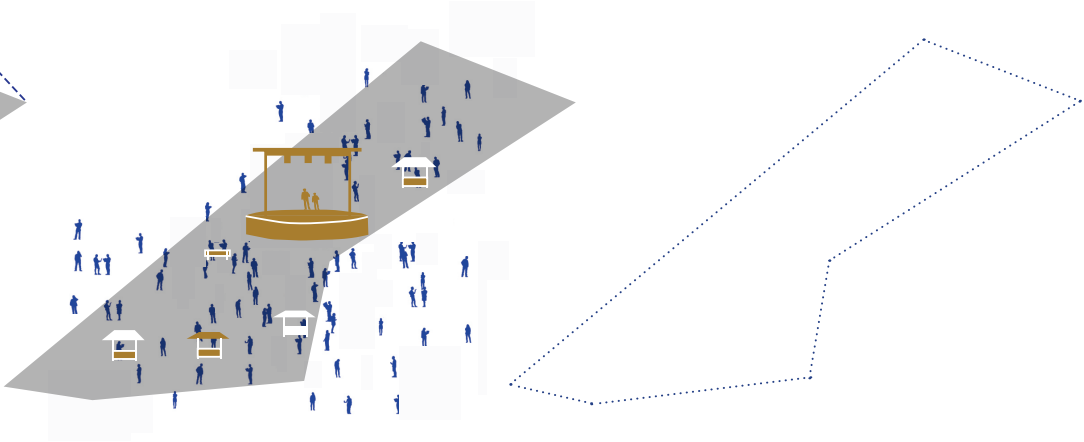
Opt. 1
Public gathering / protest



PUBLIC SQUARE

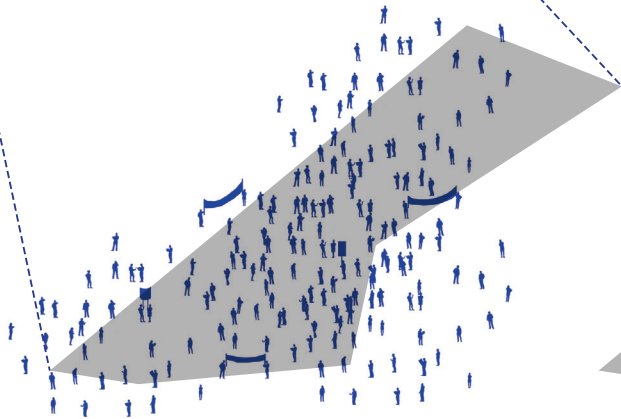
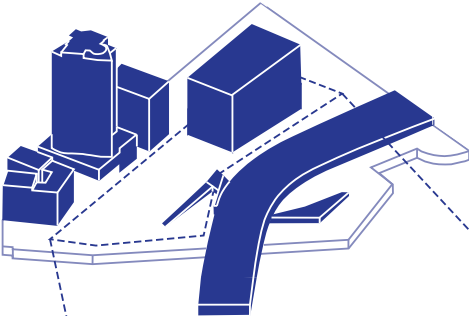


Opt. 1
Public gathering / protest

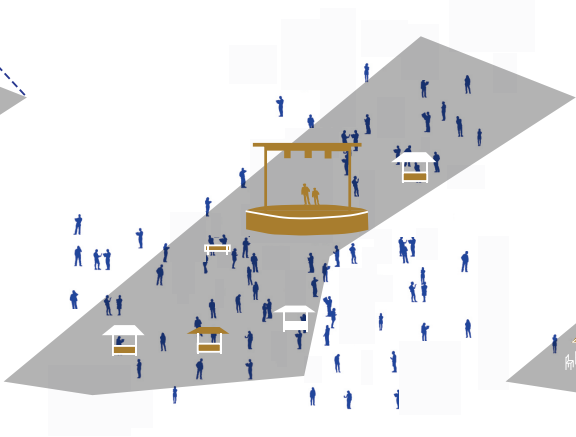


Opt. 2
Event

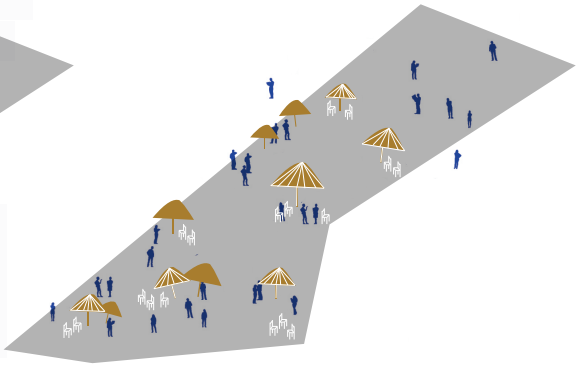
PUBLIC SQUARE



Opt. 1
Public gathering / protest

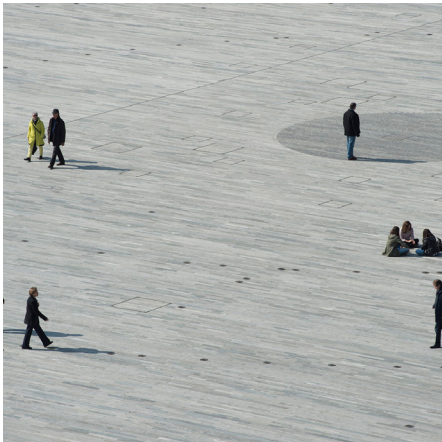


Opt. 2
Event



Opt. 3
Summer day

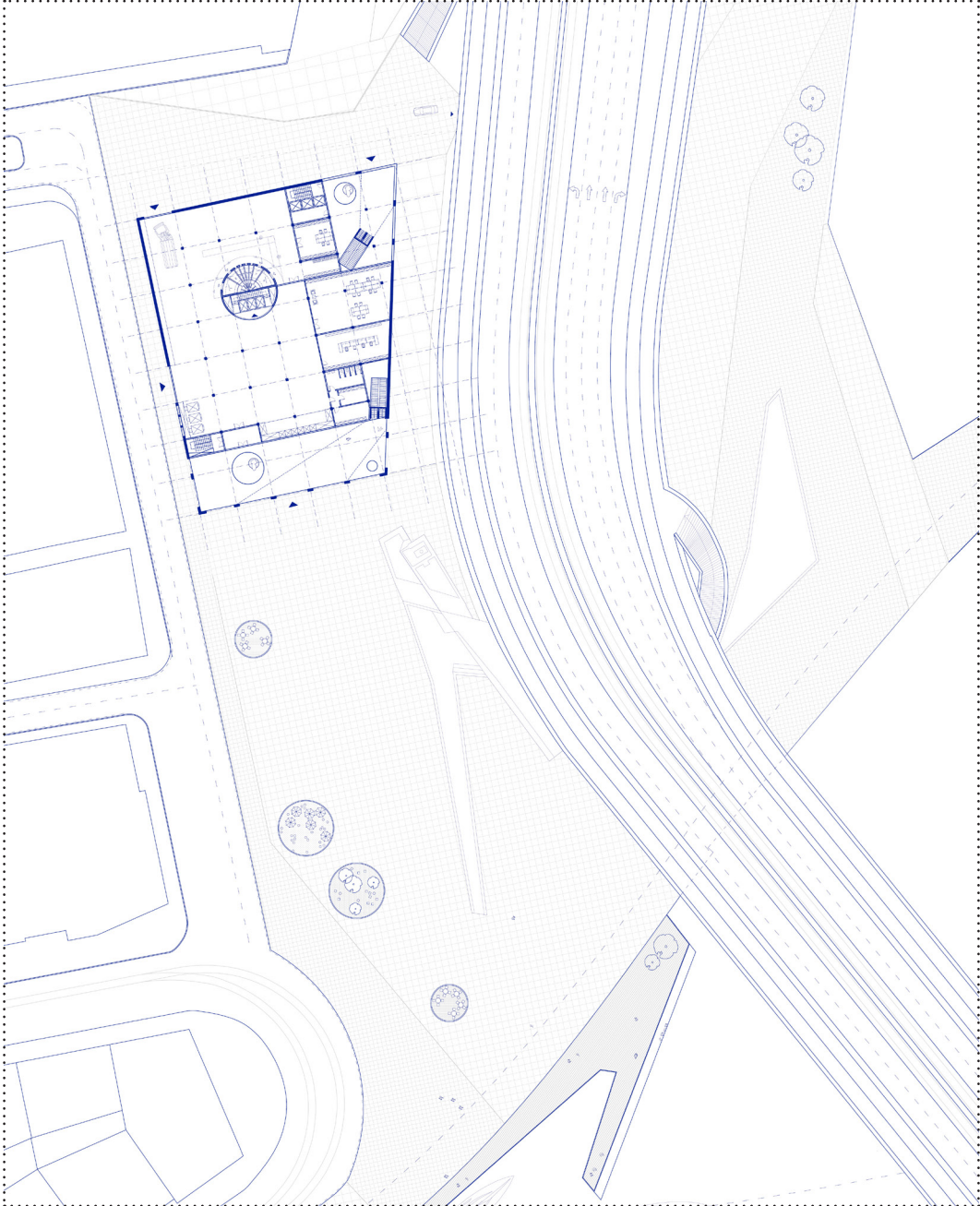
PUBLIC SQUARE



Sechseläutenplatz, Zürich
Zach+Zünd Architekten

Concept and Implementation

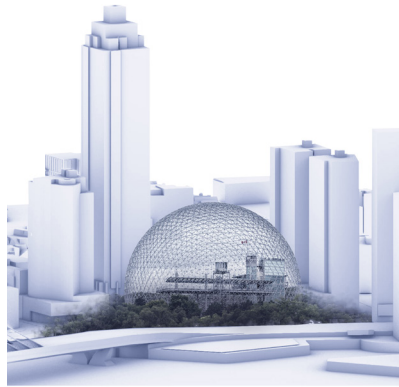
1:500



BUILDING CONCEPT



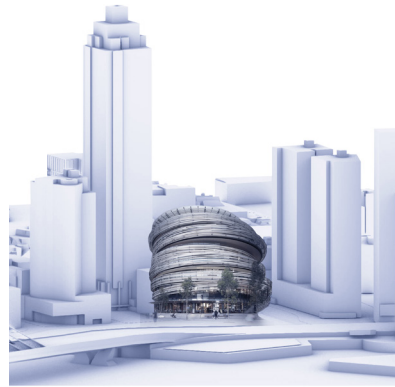
Concept and Implementation
ARCHITECTURAL EXPRESSION



Opt. 1



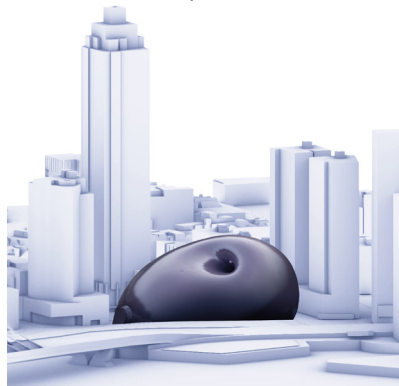
Opt. 2



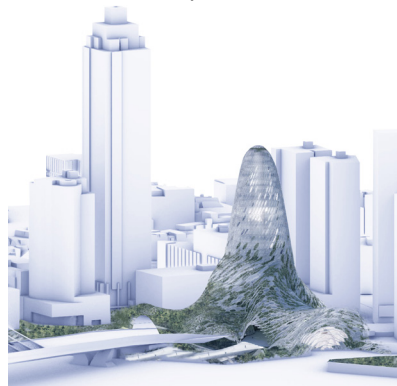
Opt. 3



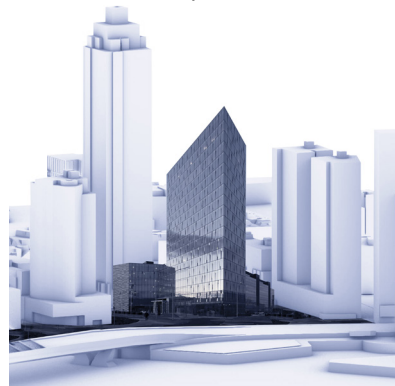
Opt. 4



Opt. 5



Opt. 6



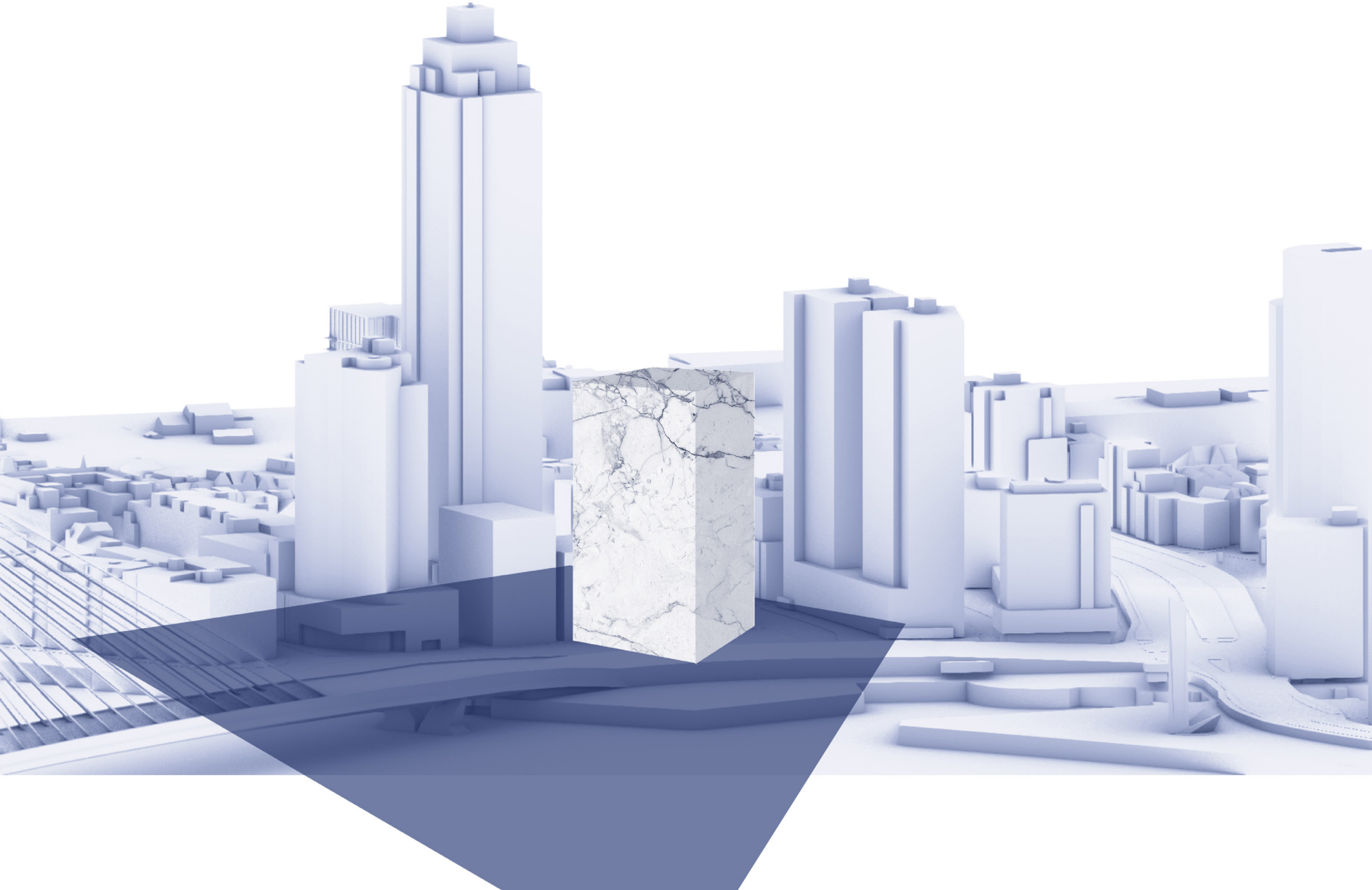
Opt. 7



Opt. 8

2 MAIN QUALITIES

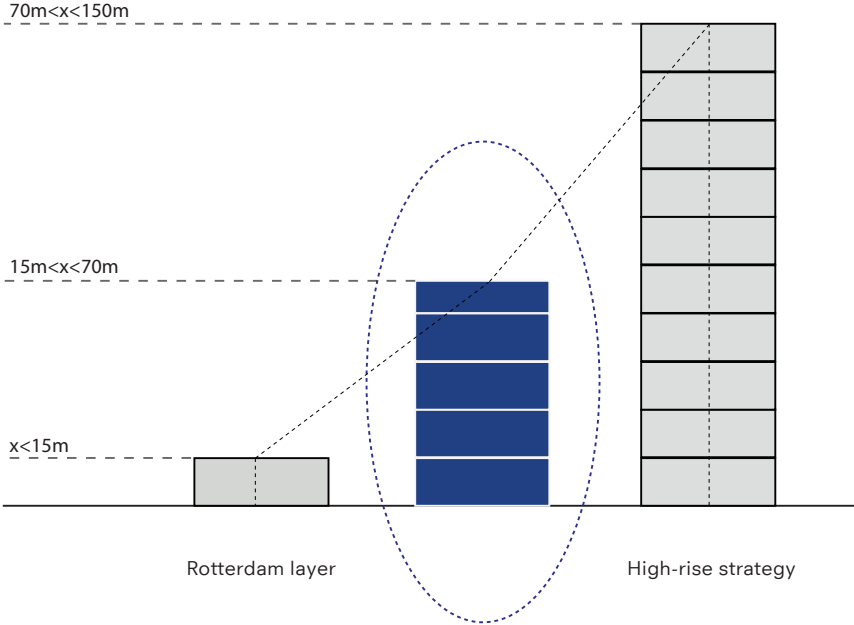
MONUMENTALITY of an institution



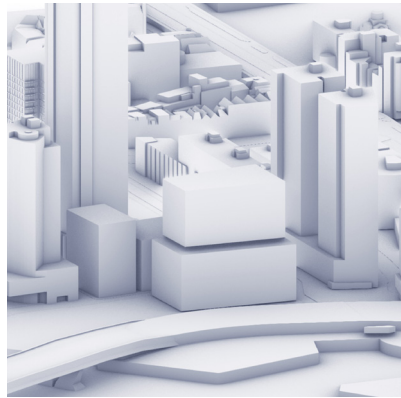
TRANSPARENCY



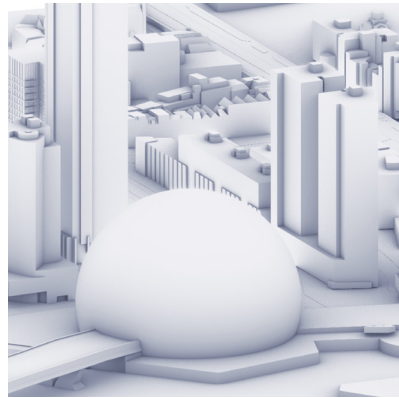
MEDIATING HEIGHT



URBAN TYPOLOGIES



Opt. 1



Opt. 2



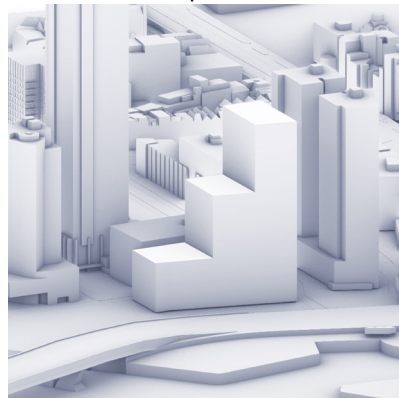
Opt. 3



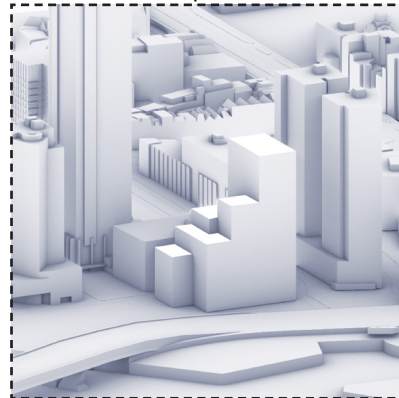
Opt. 4



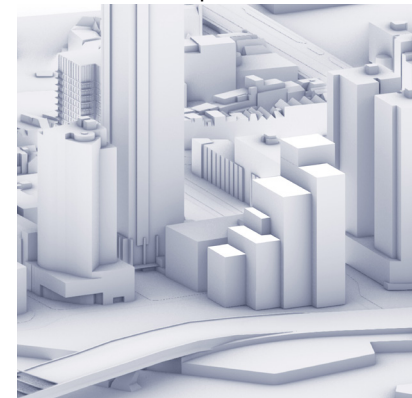
Opt. 5



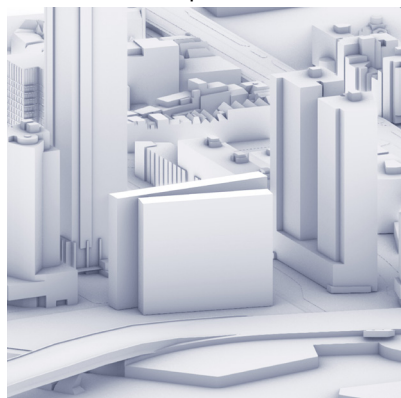
Opt. 6



Opt. 7



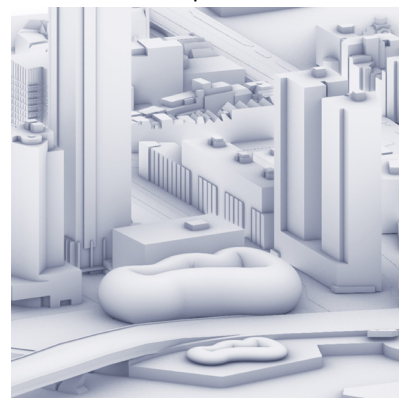
Opt. 8



Opt. 9



Opt. 10



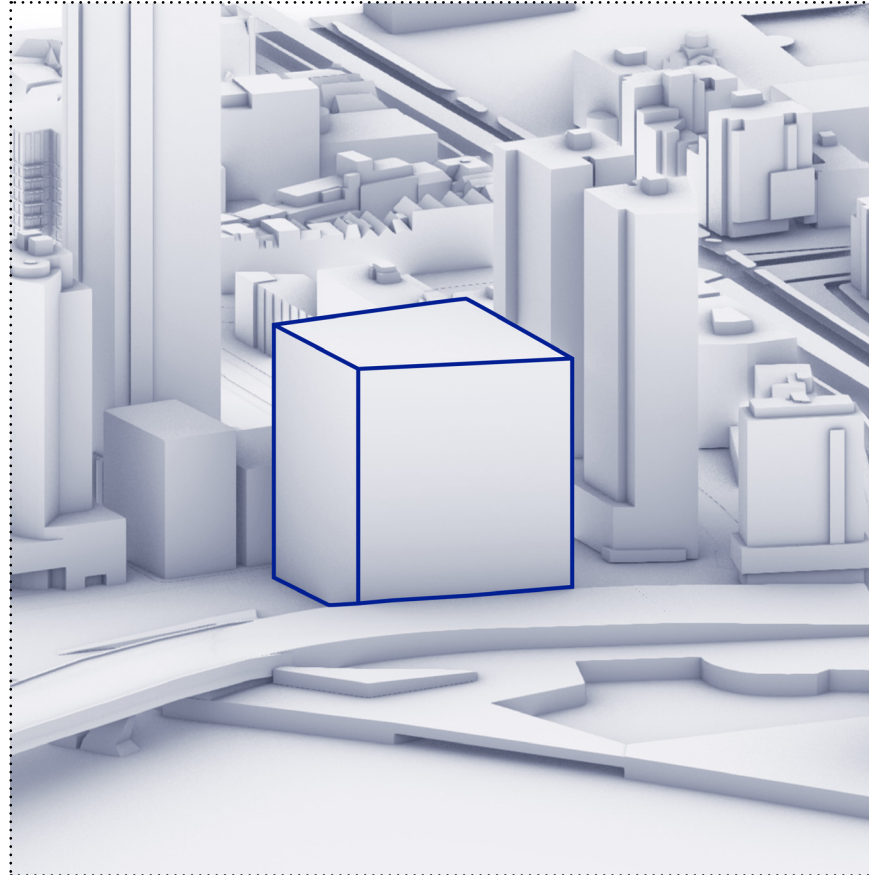
Opt. 11



Opt. 12

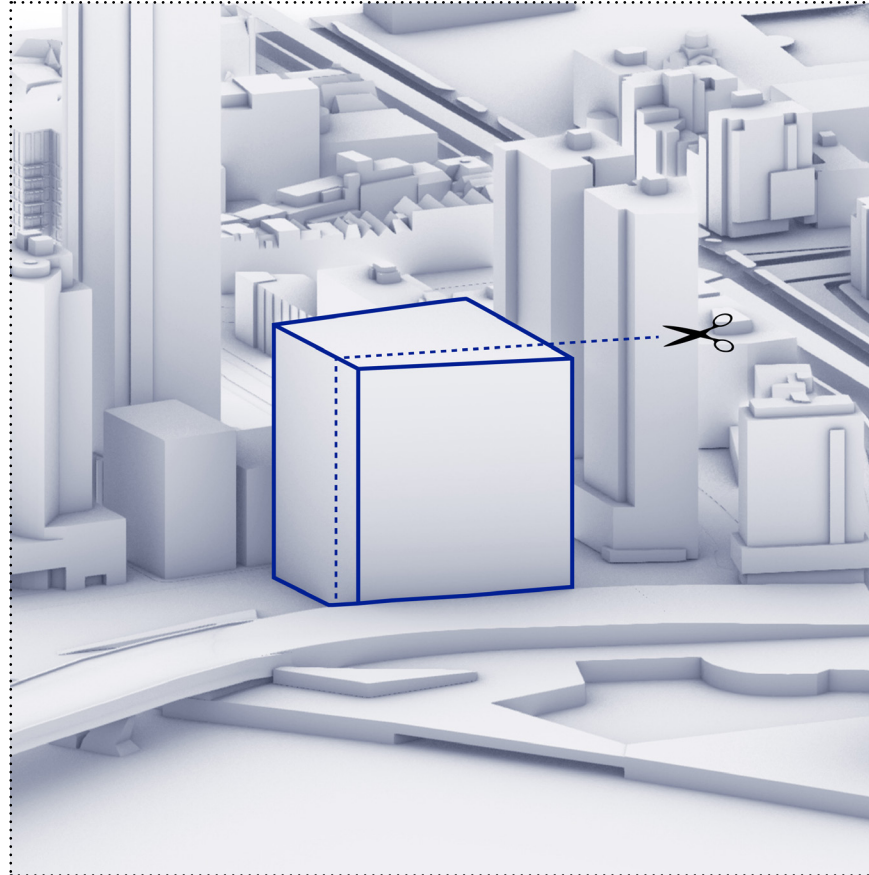
conclusion:
ASCENDING BUILDING HEIGHT

MASSING



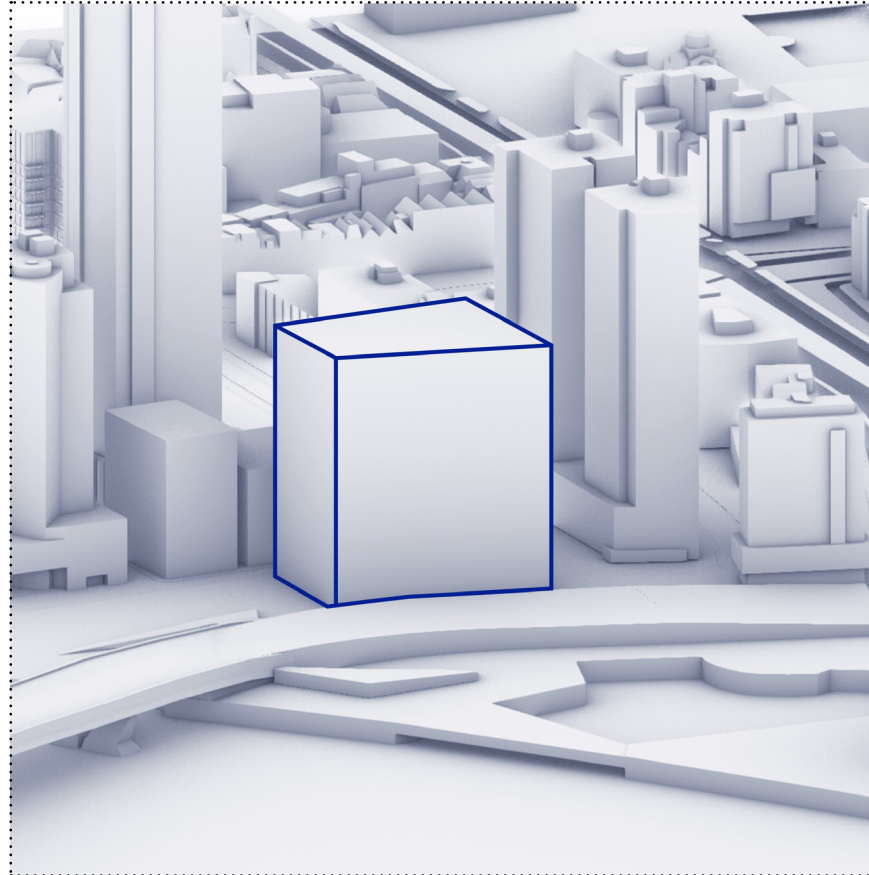
1.0 Initial volume

MASSING



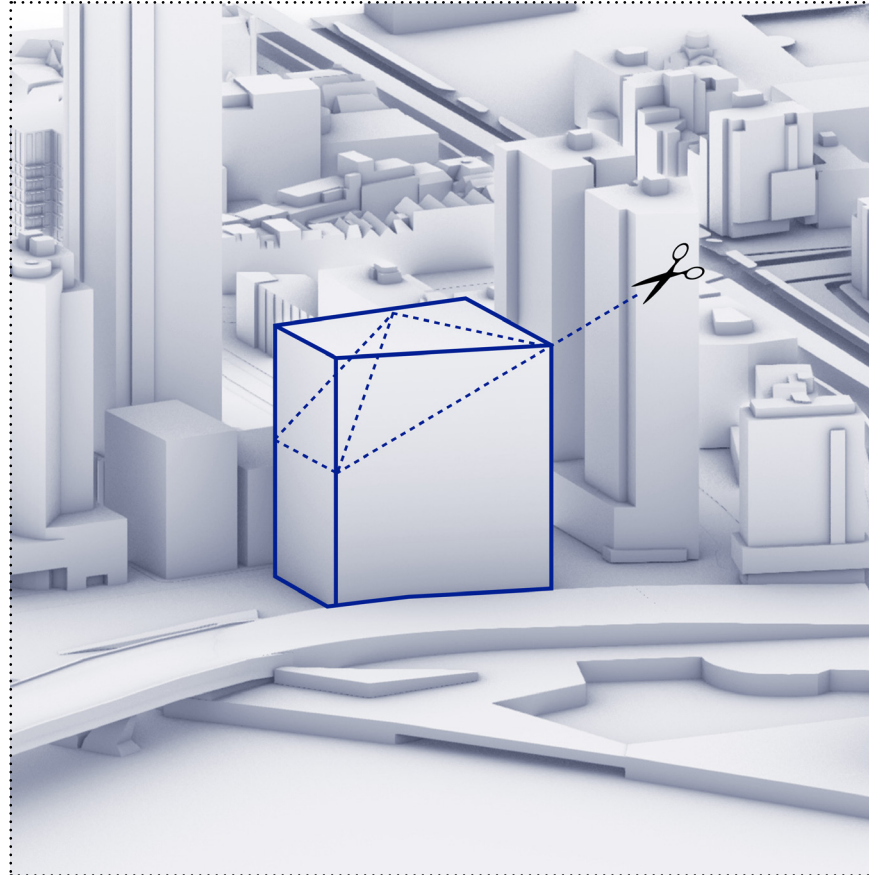
2.0 Distance to Erasmusbrug

MASSING



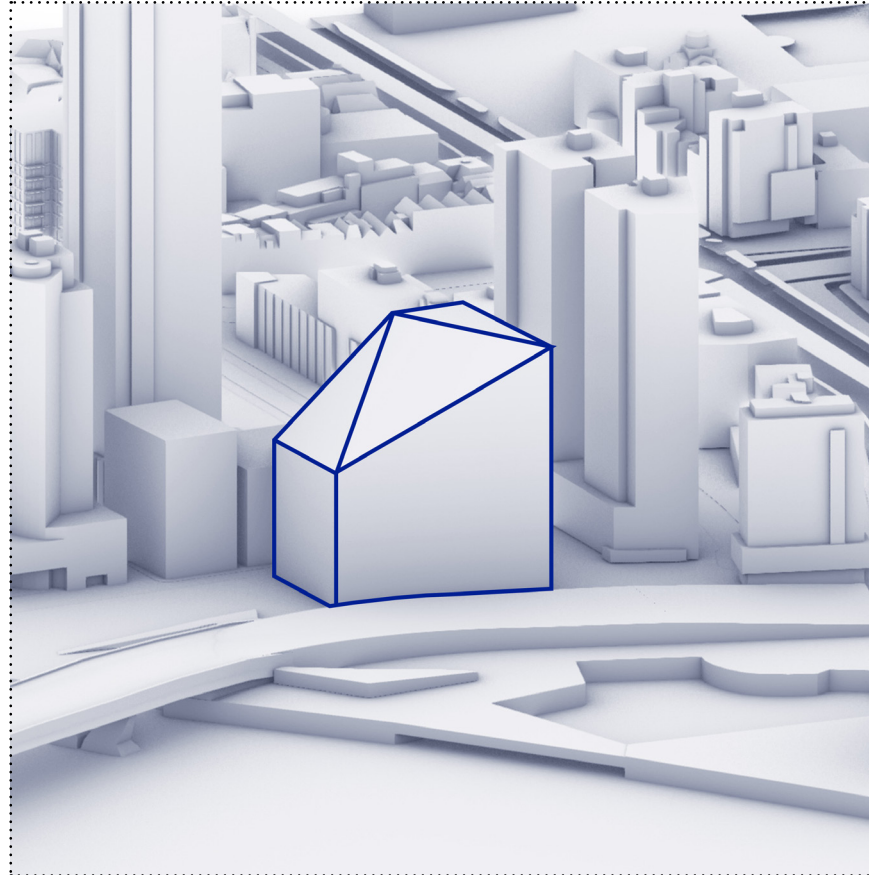
3.0 Distance to Erasmusbrug

MASSING



4.0 Sloping towards the Maas

MASSING

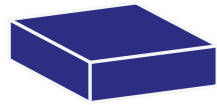


5.0 Final mass

INVERTING THE BANK

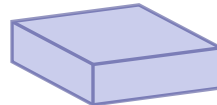


Concept and Implementation
PROGRAM ARRANGEMENT

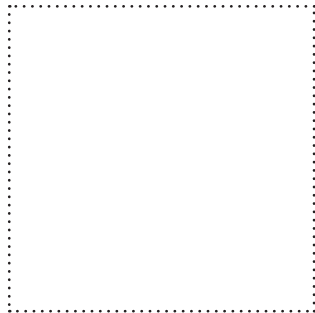


STORAGE

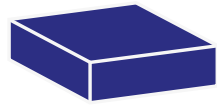
+



INTERFACE

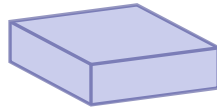


Concept and Implementation
PROGRAM ARRANGEMENT

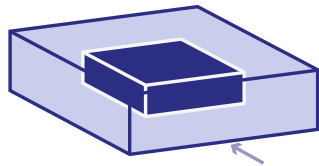


STORAGE

+



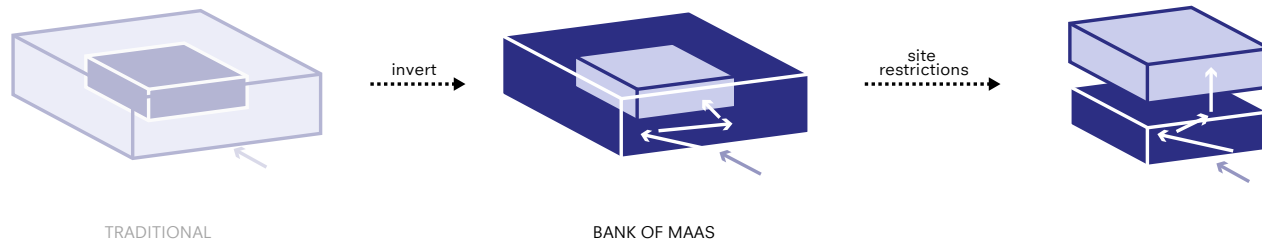
INTERFACE



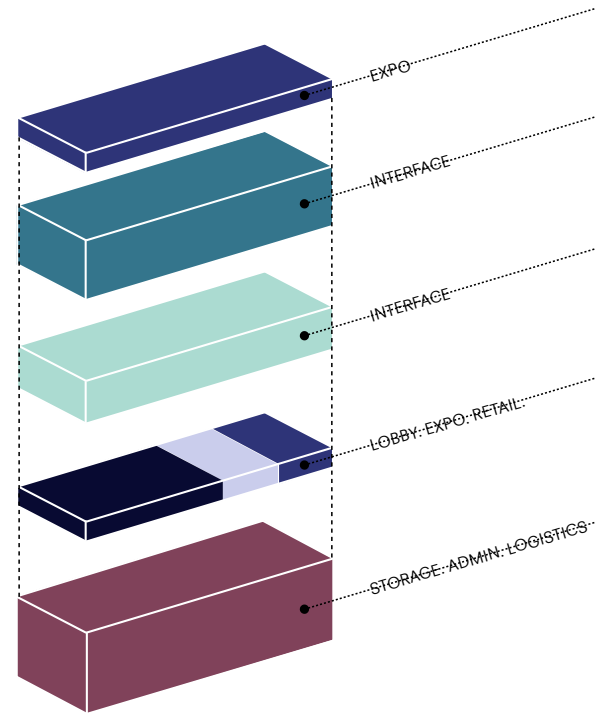
TRADITIONAL



Concept and Implementation
PROGRAM ARRANGEMENT



PROGRAM ARRANGEMENT



ACCESS

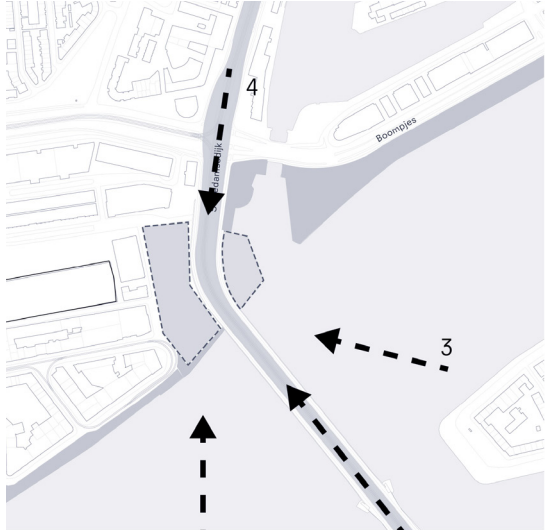
SURROUNDING



1.



2.

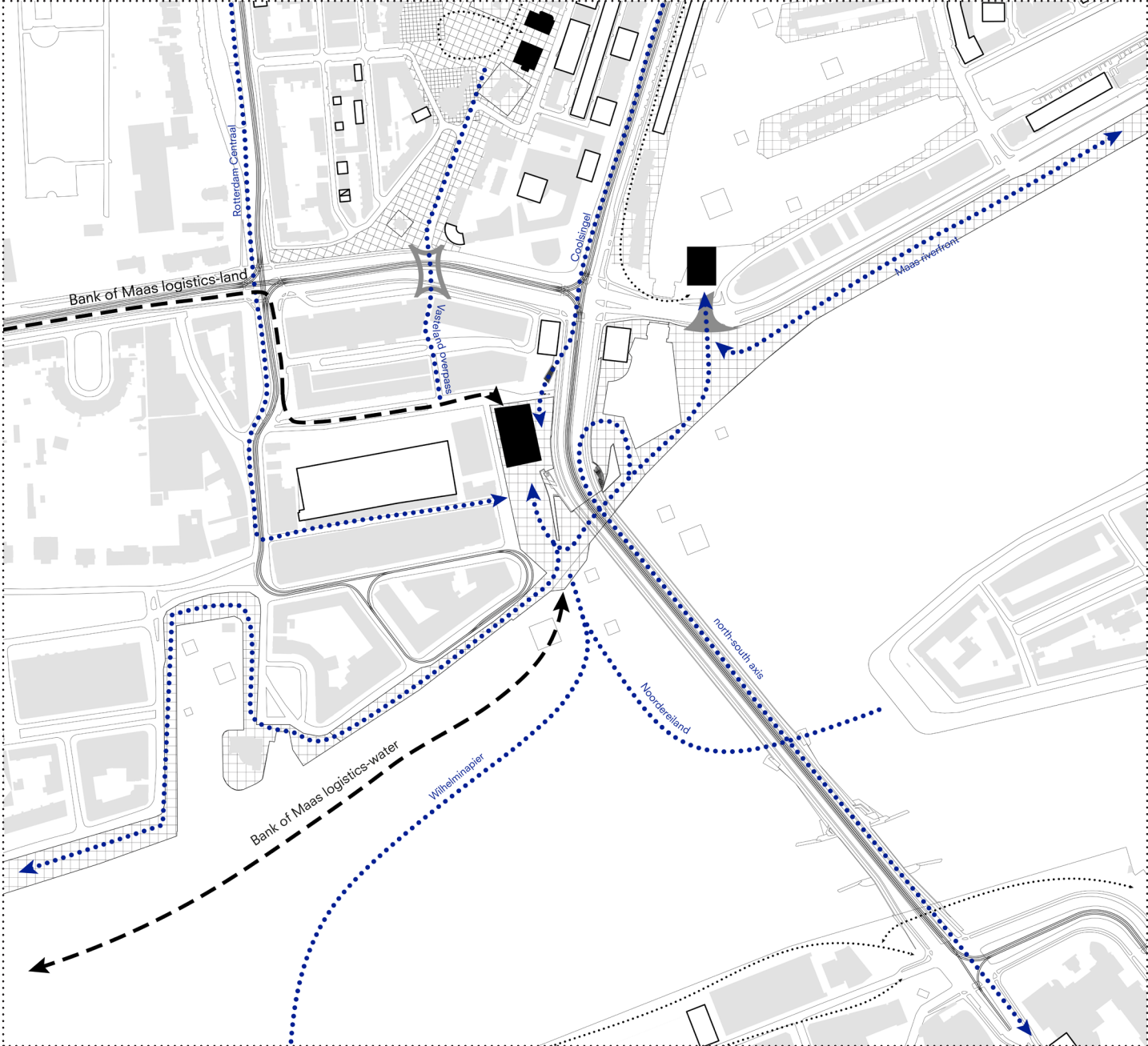


3.



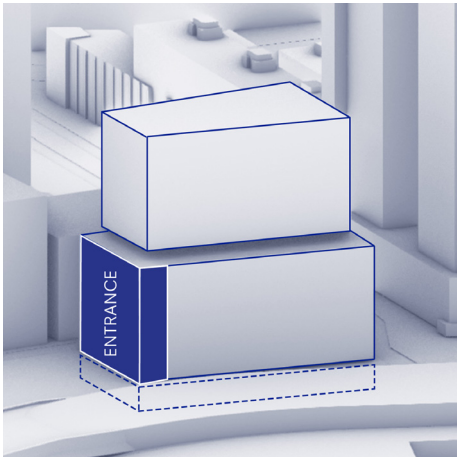
4.

ACCESS



ENTRANCE

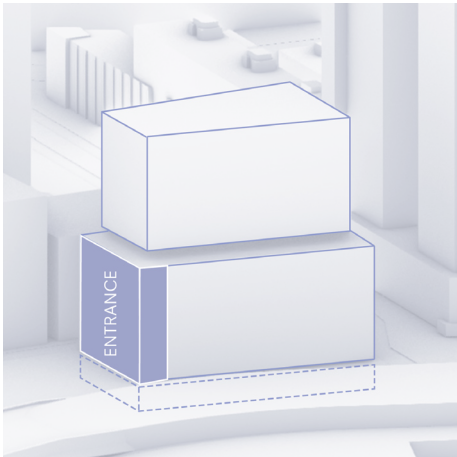
MAIN



Opt. 1 S.E.
Entrance *facing the river
*defining the plaza

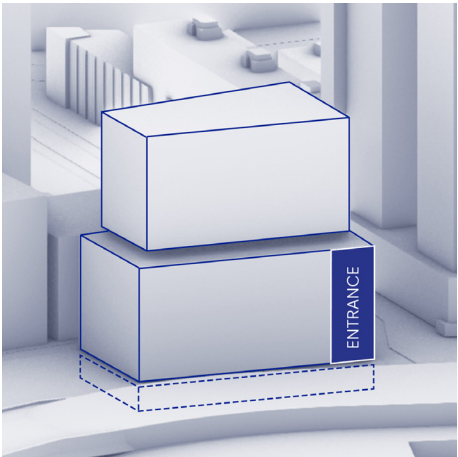
ENTRANCE

MAIN



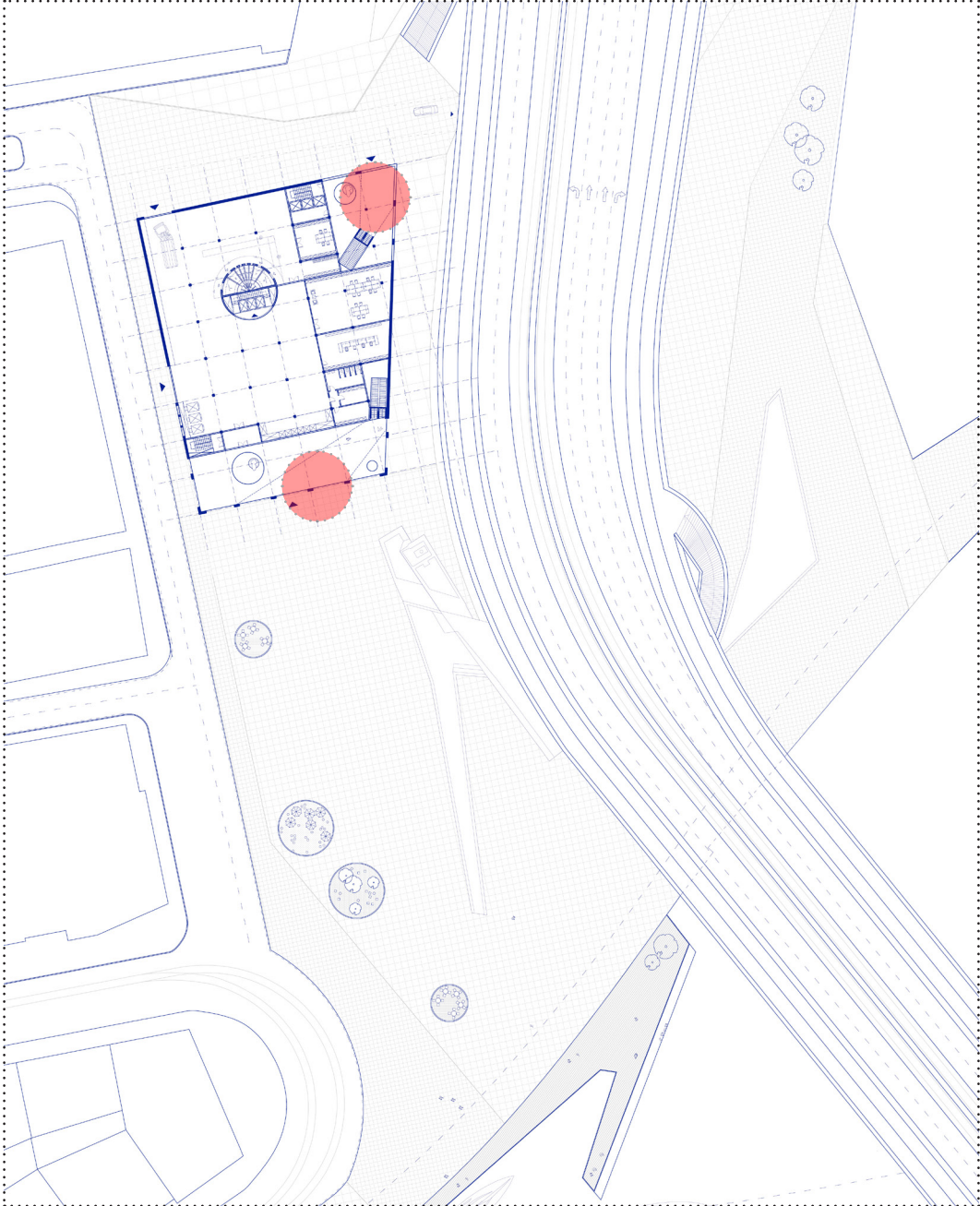
Opt. 1 S.E.
Entrance *facing the river
*defining the plaza

SECONDARY



Opt. 2 N.E.
Entrance *facing the Erasmusbrug
*facing the extension of the Coolingsingel

ENTRANCE

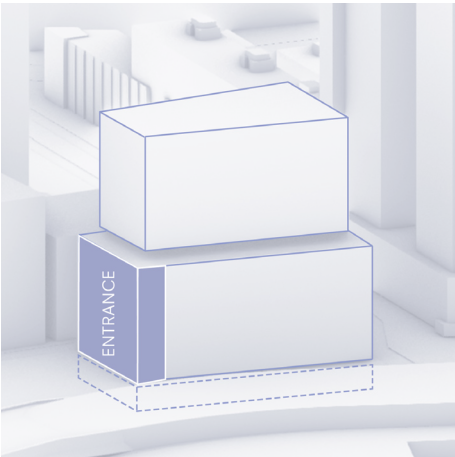


MAIN ENTRANCE



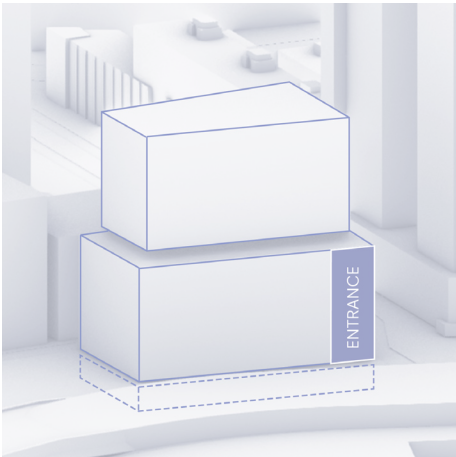
ENTRANCE

MAIN



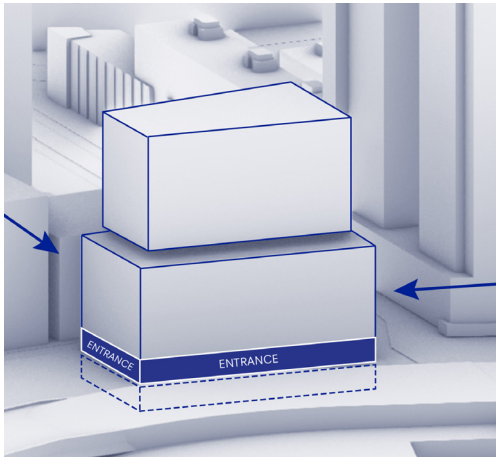
Opt. 1 S.E.
Entrance *facing the river
*defining the plaza

SECONDARY



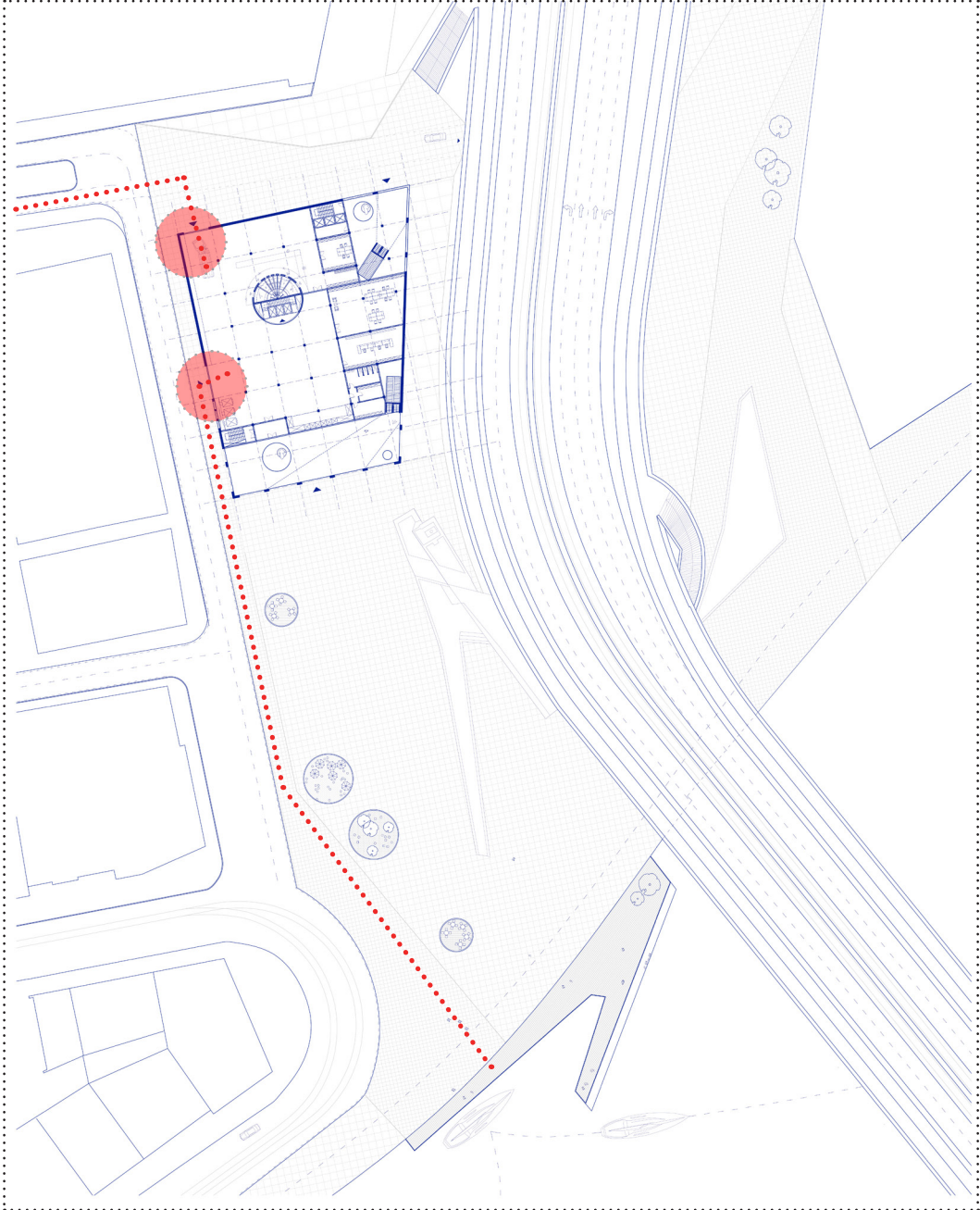
Opt. 2 N.E.
Entrance *facing the Erasmusbrug
*facing the extension of the Coolingsingel

LOGISTICS



Opt. 3
Multiple entrances

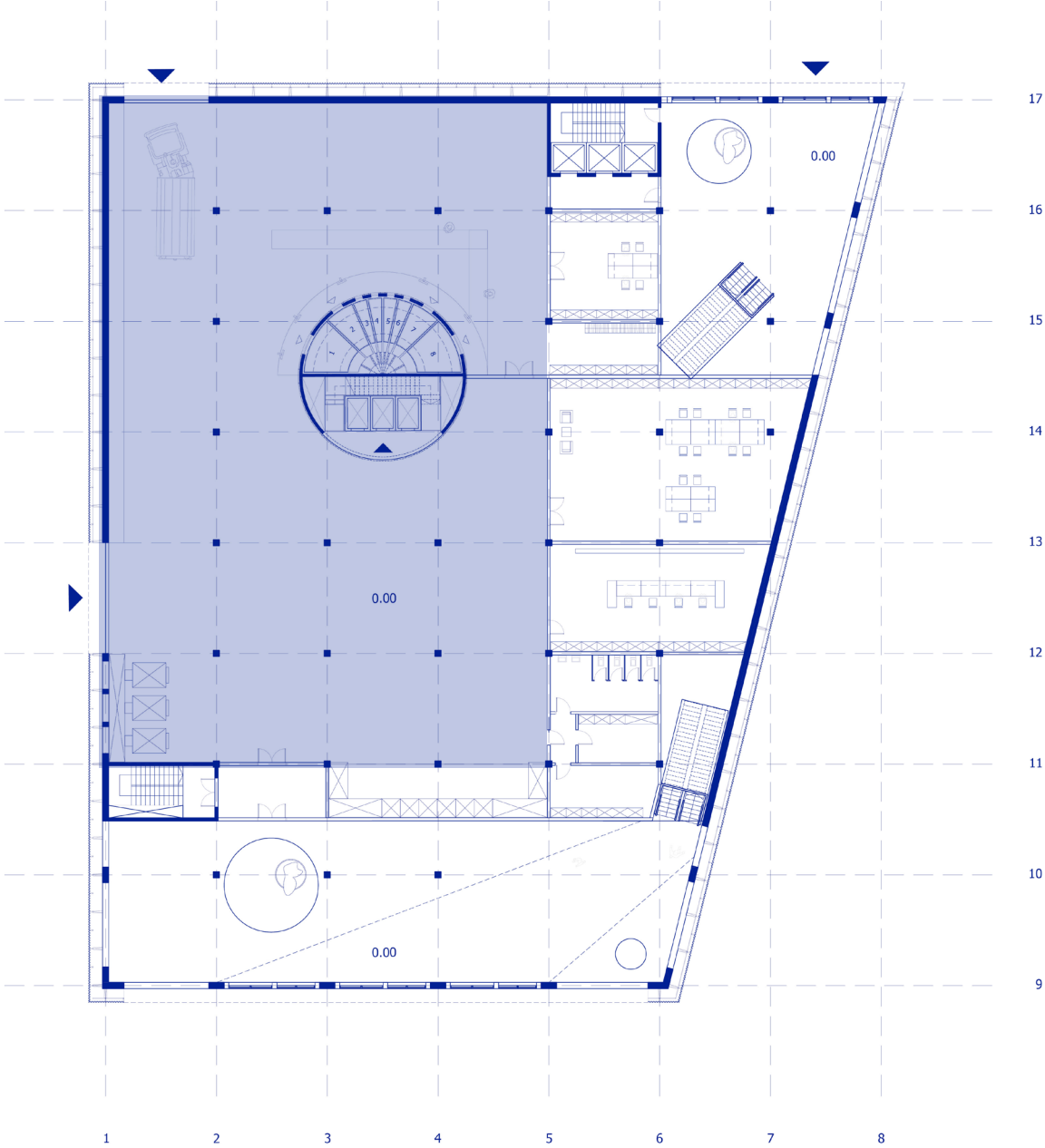
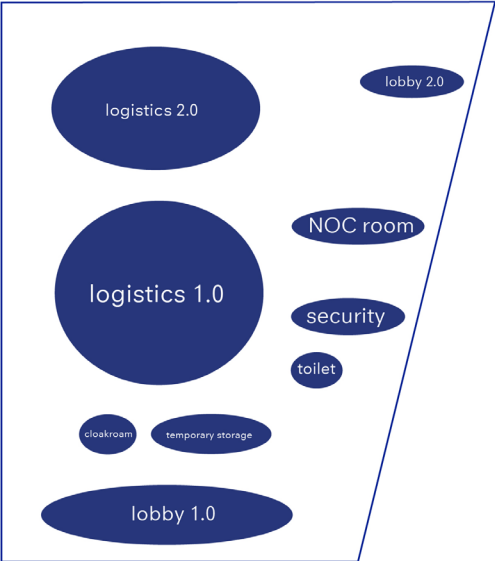
LAND LOGISTICS+WATER LOGISTICS



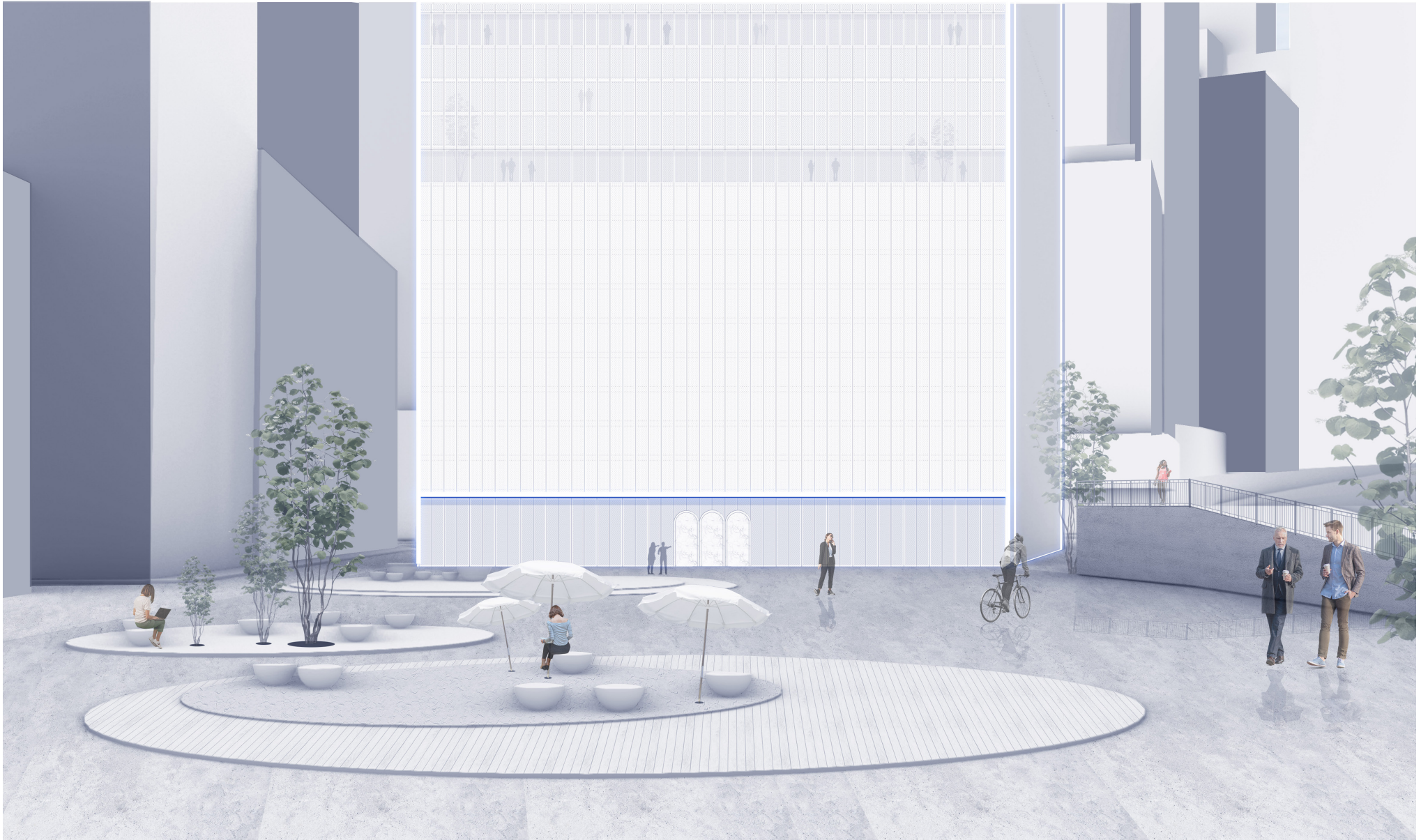
ENTRANCE LOGISTICS



DISTRIBUTION



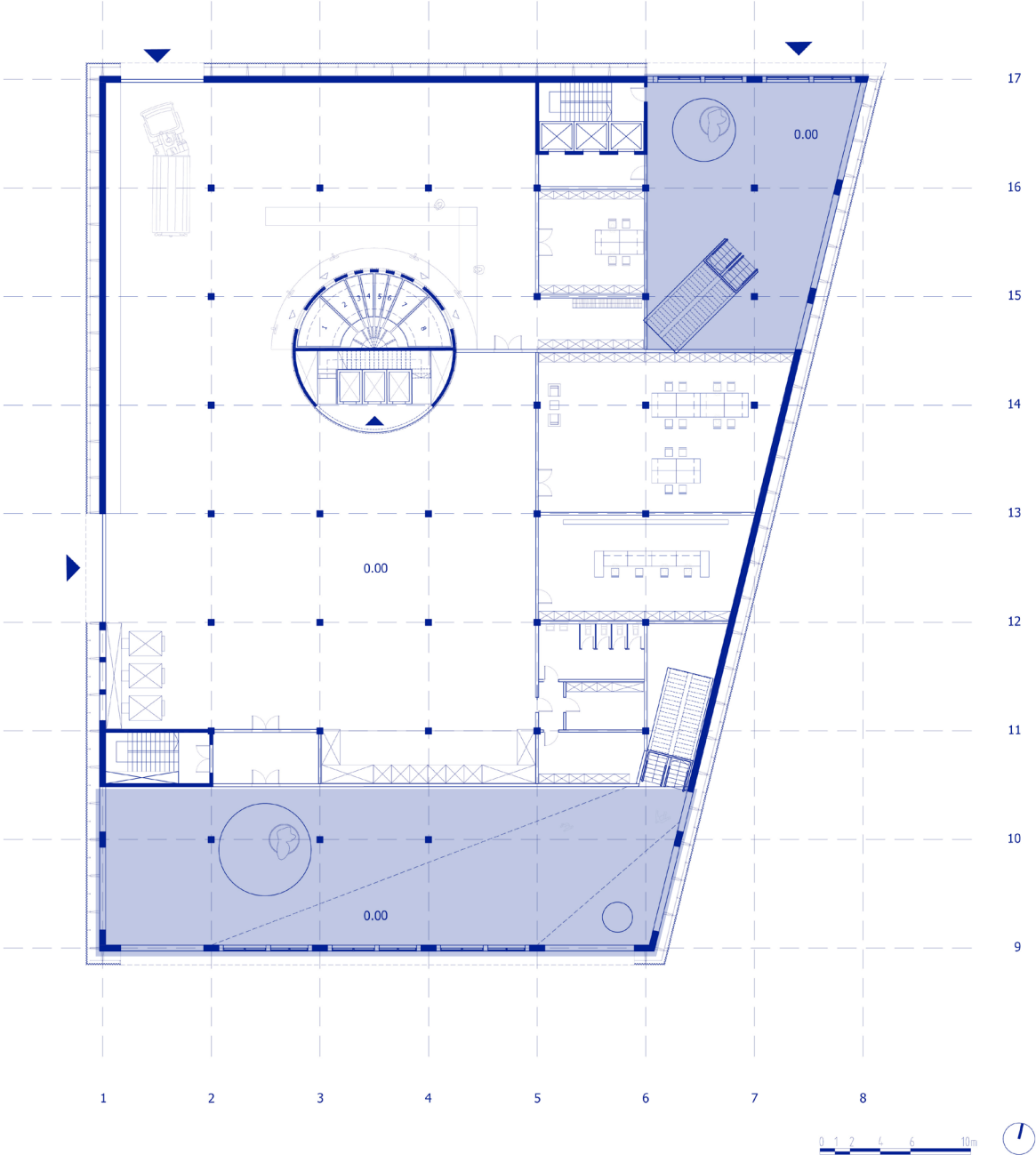
VIEW FROM THE SQUARE



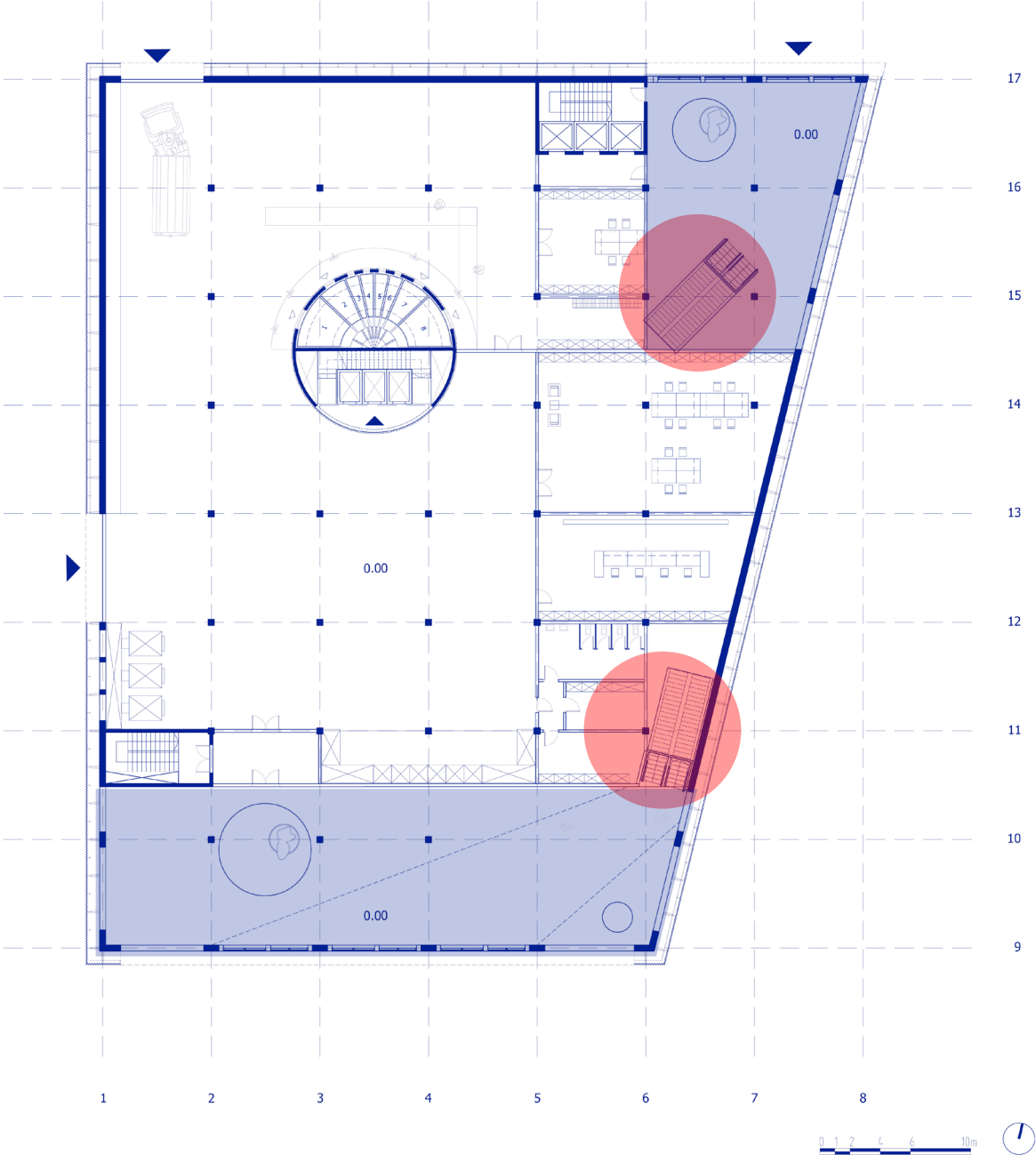
MAIN ENTRANCE



ESCALATORS



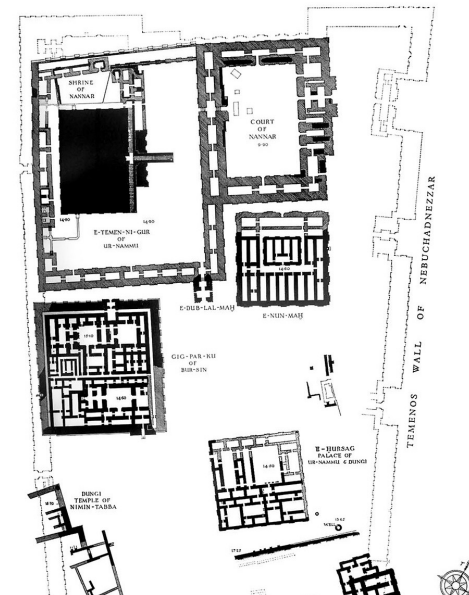
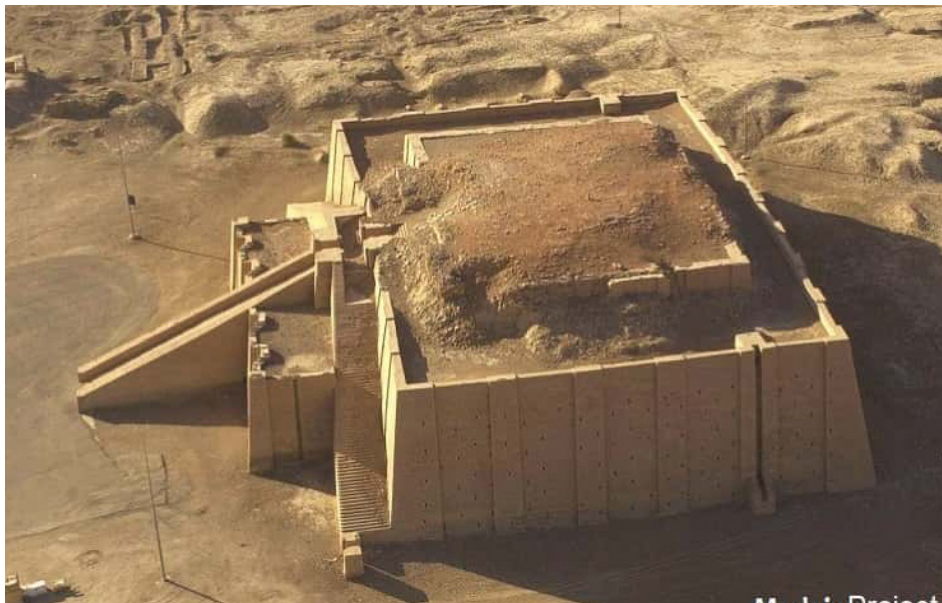
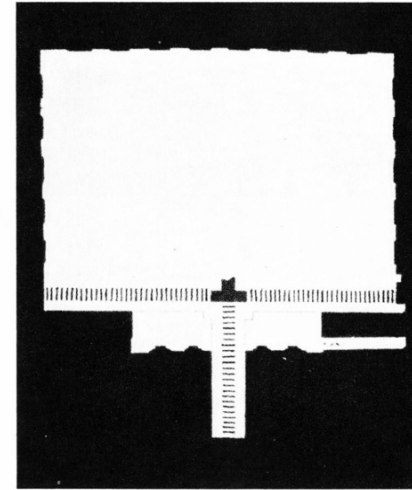
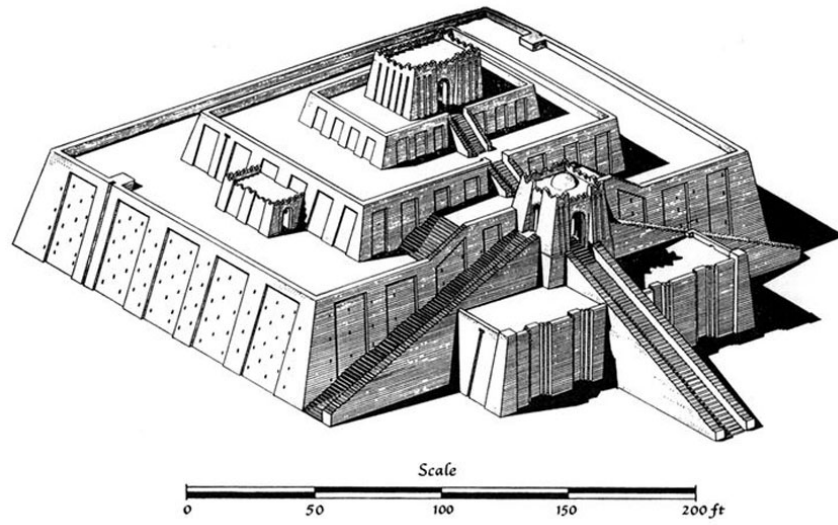
ESCALATORS



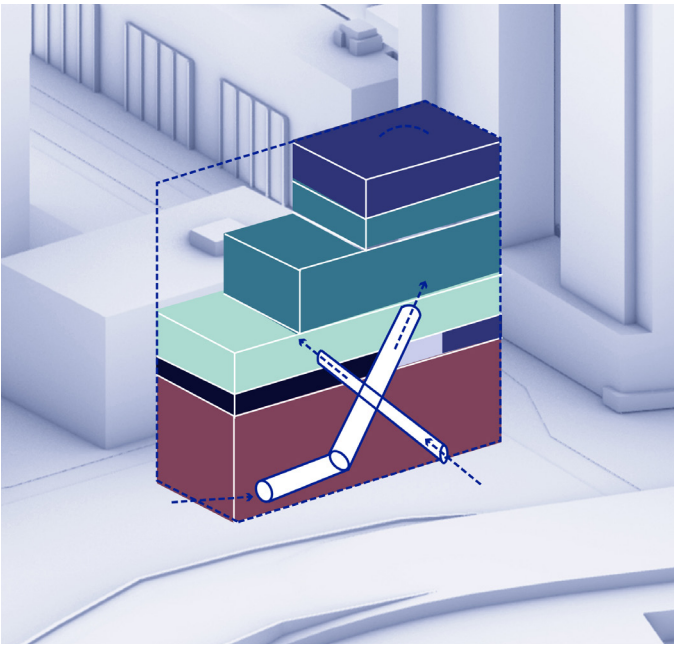
Concept and Implementation

SUMERIAN ZIGGURAT

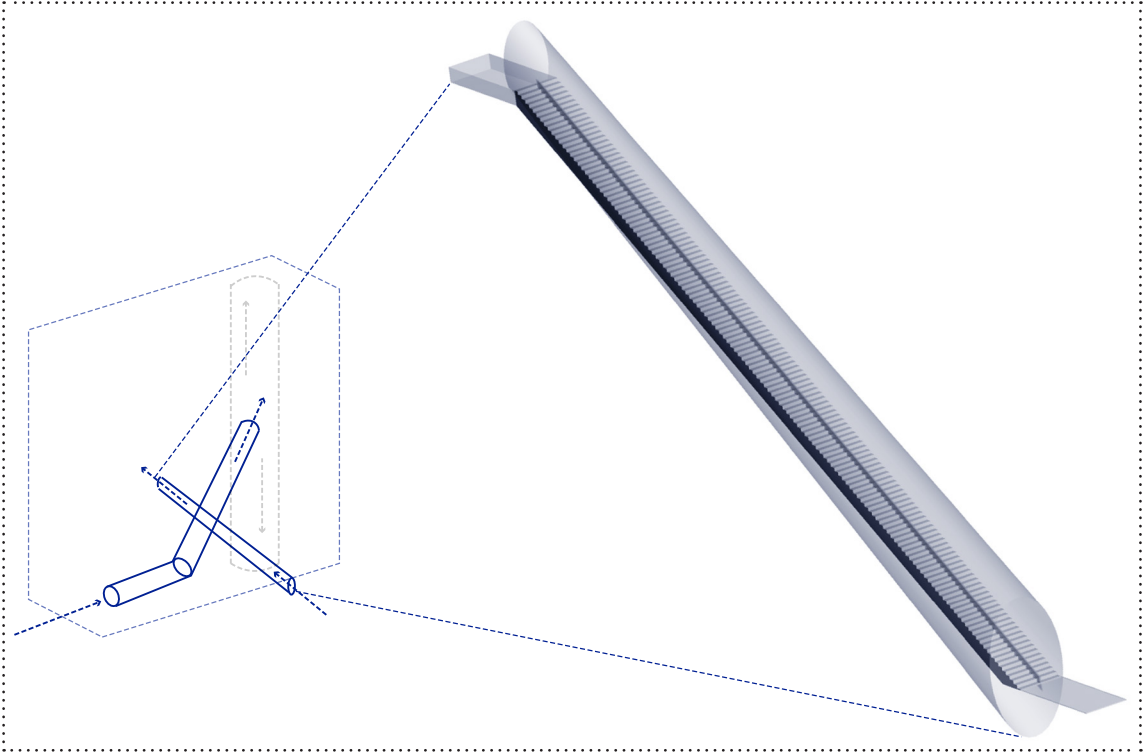
monumental stairs+elevated entrance



ESCALATORS

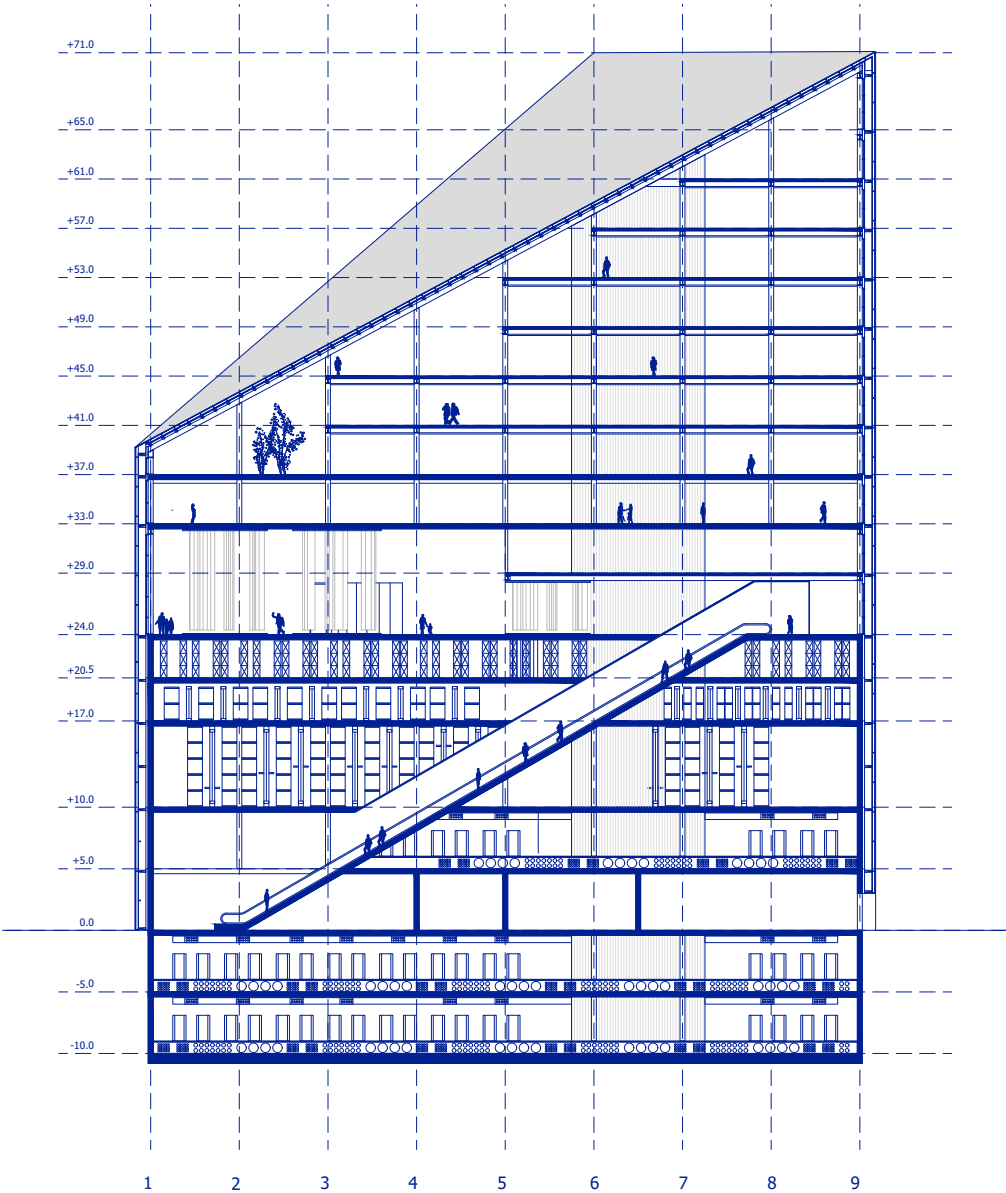


ESCALATORS
education + experience



Concept and Implementation

SECTION

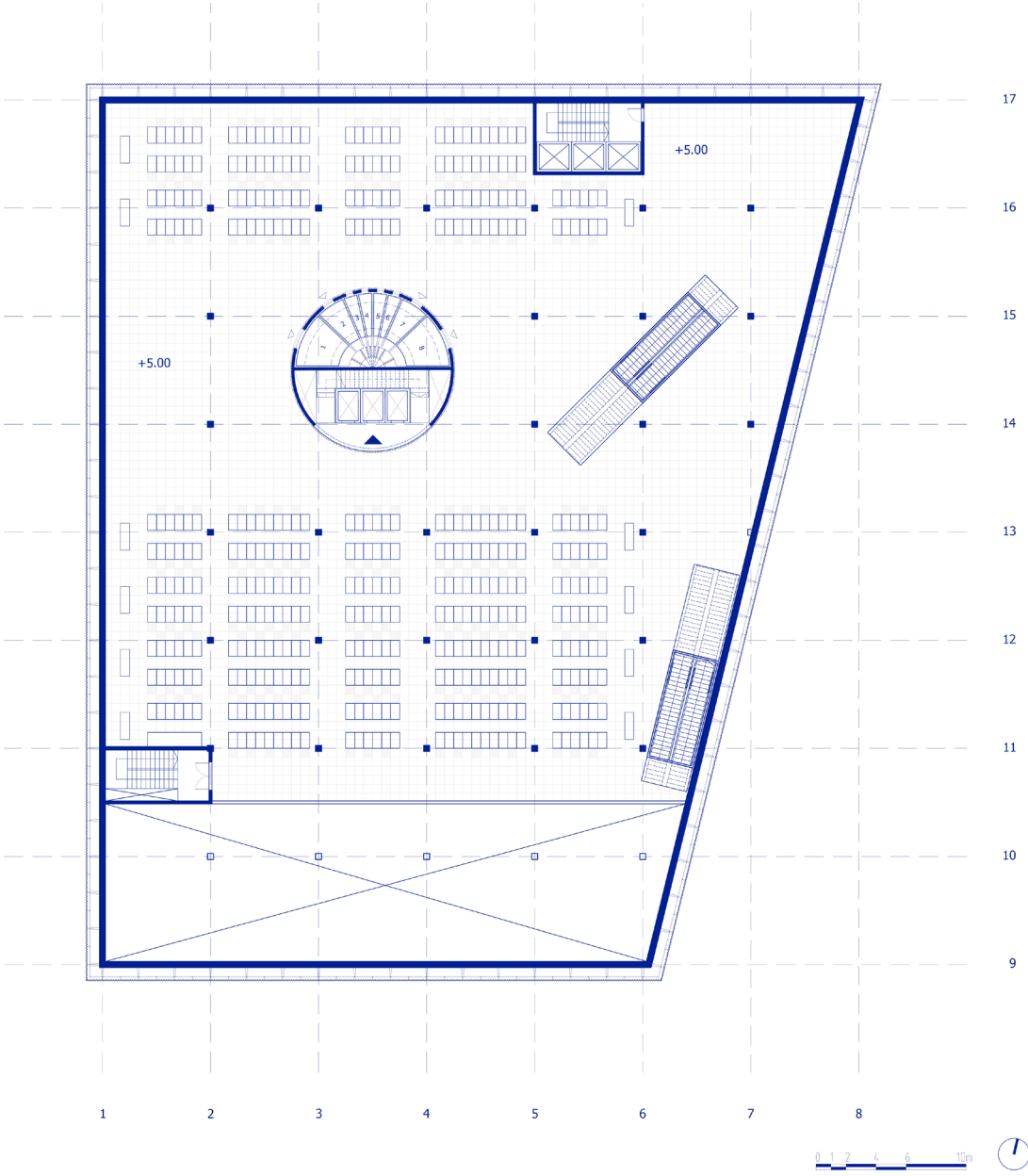


VIEW FROM THE ESCALATORS



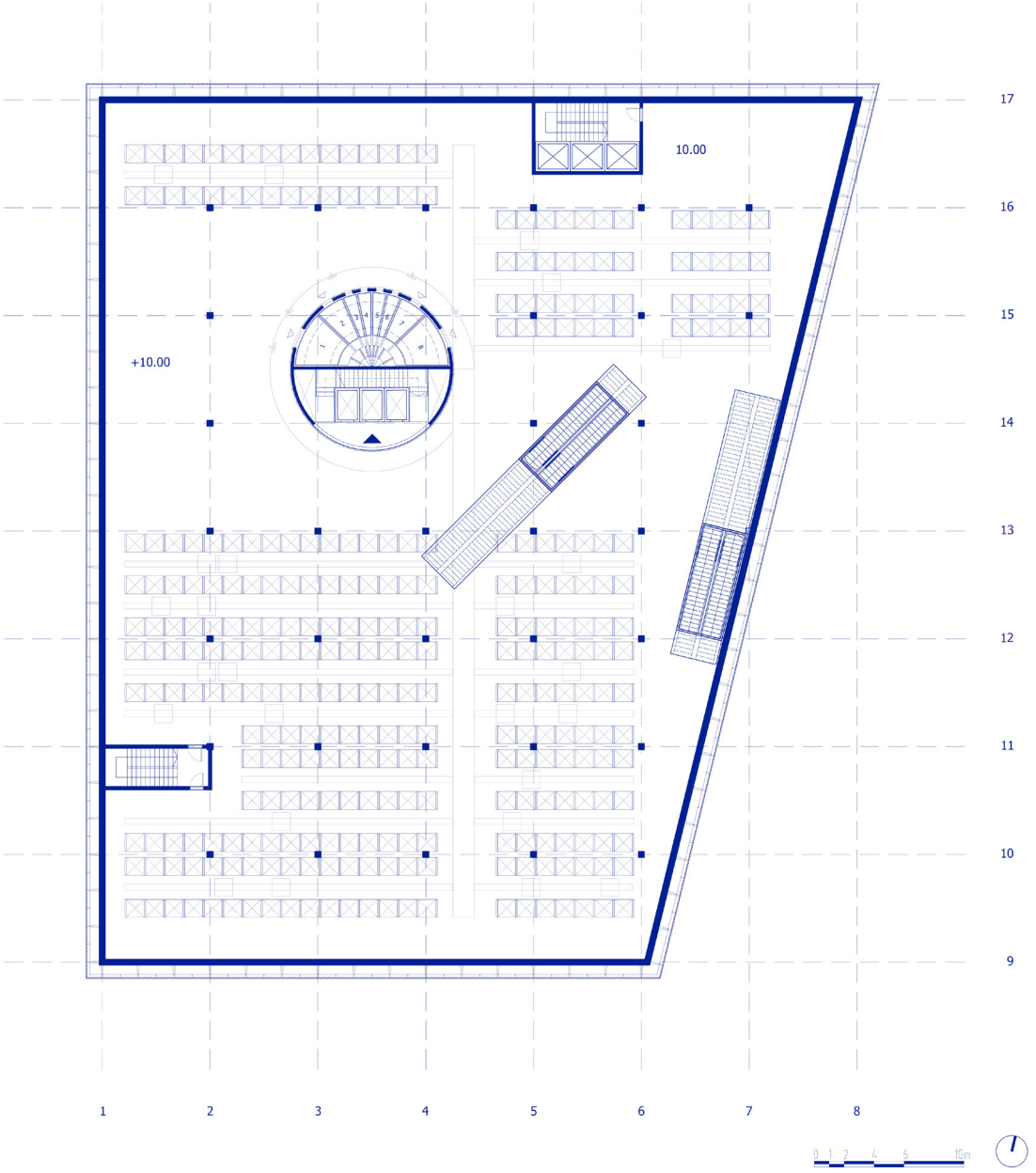
DATA CENTRE

level +1



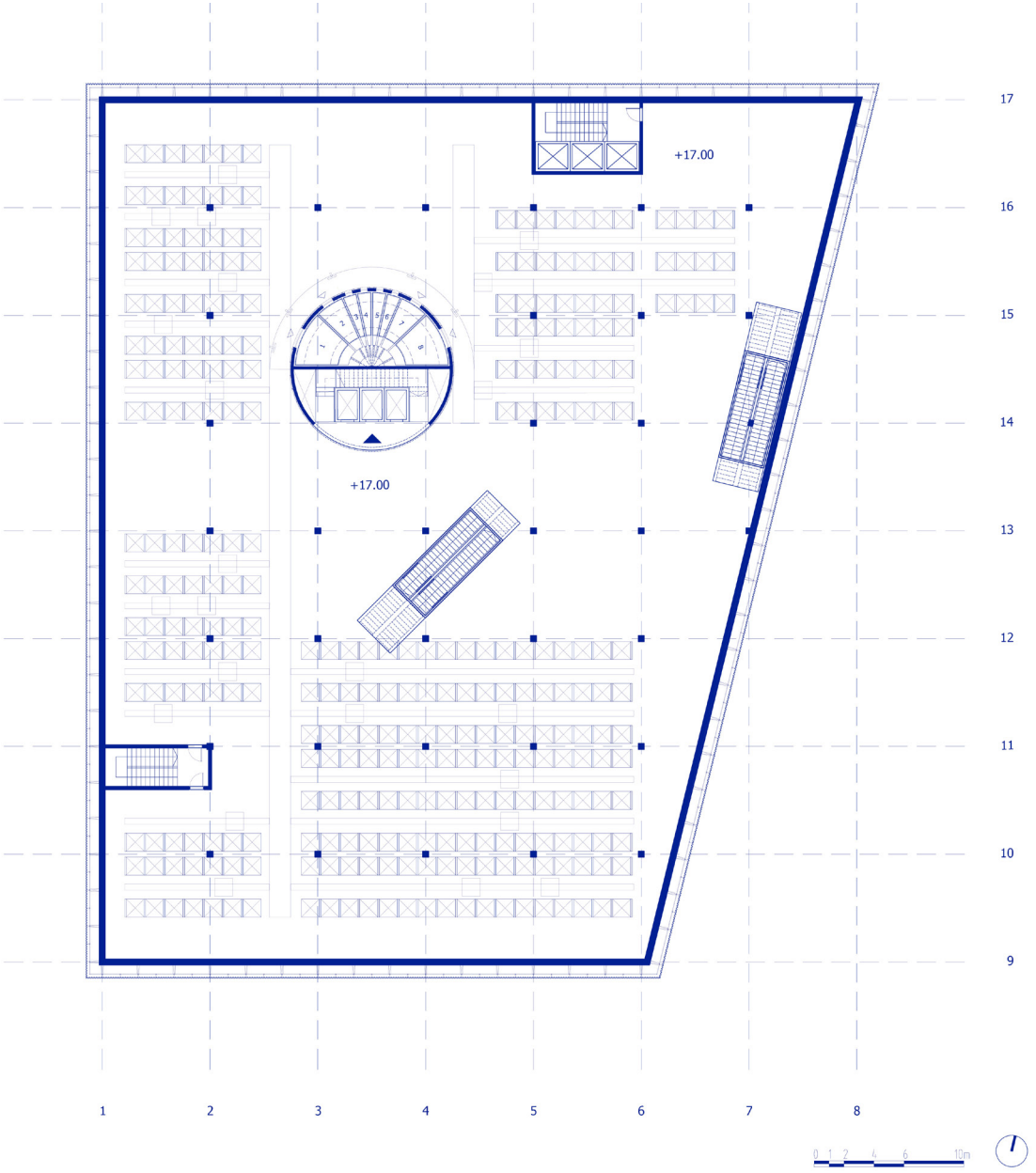
AUTOMATED STORAGE

level +2



AUTOMATED STORAGE

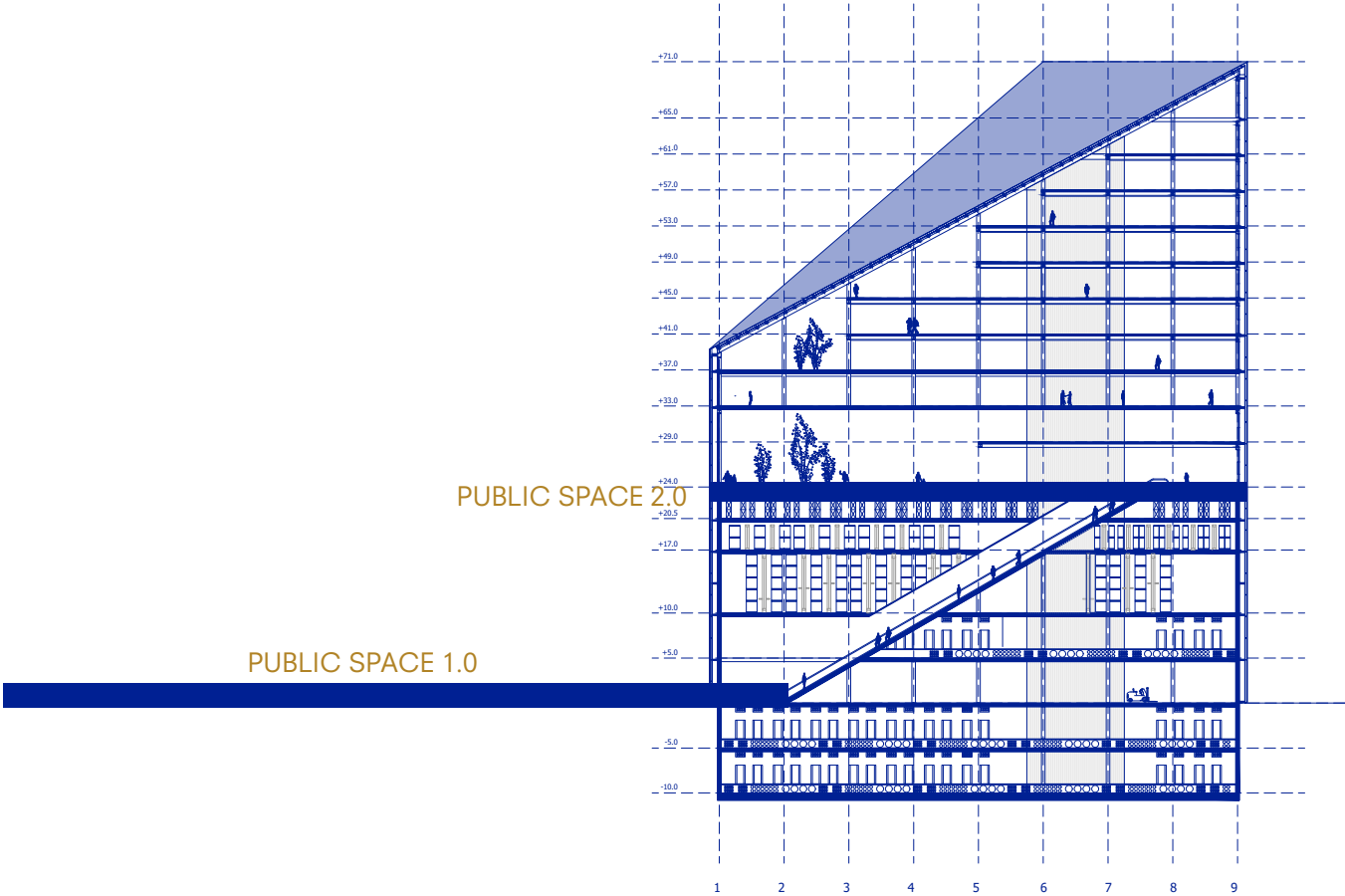
level +3



STORAGE AMBIENCE

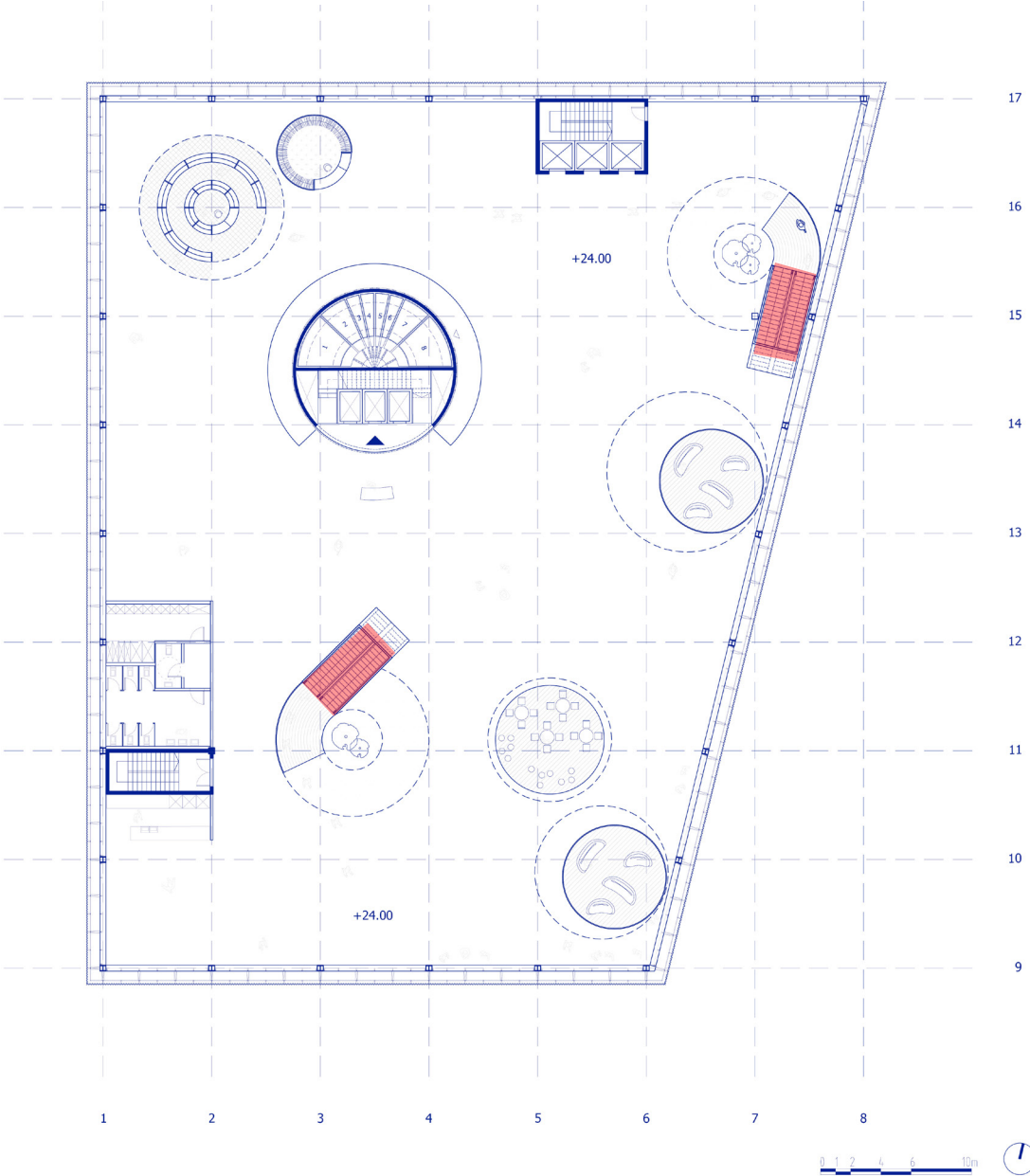


PUBLIC SQUARE 2.0

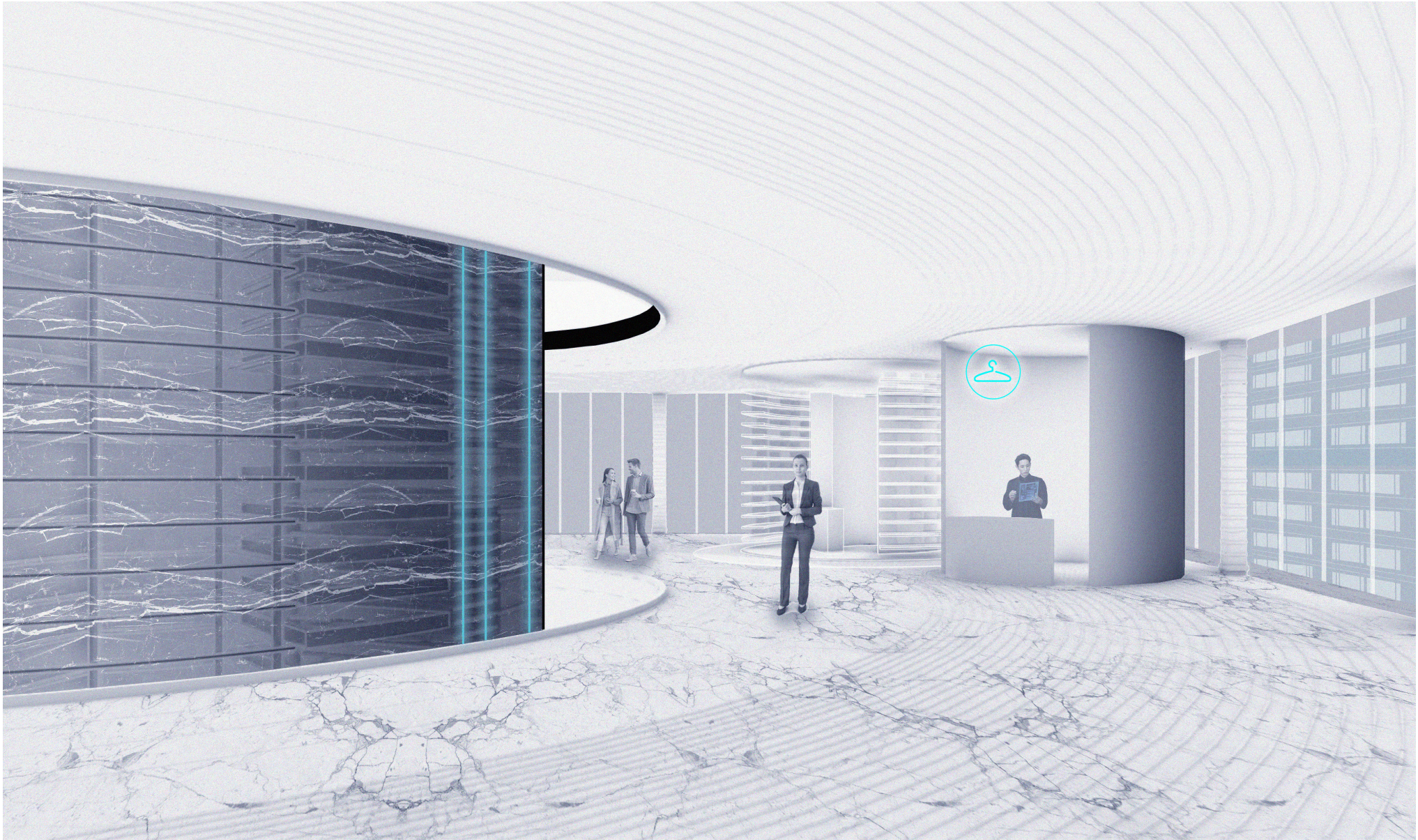


ELEVATED PLYNTH

level +5



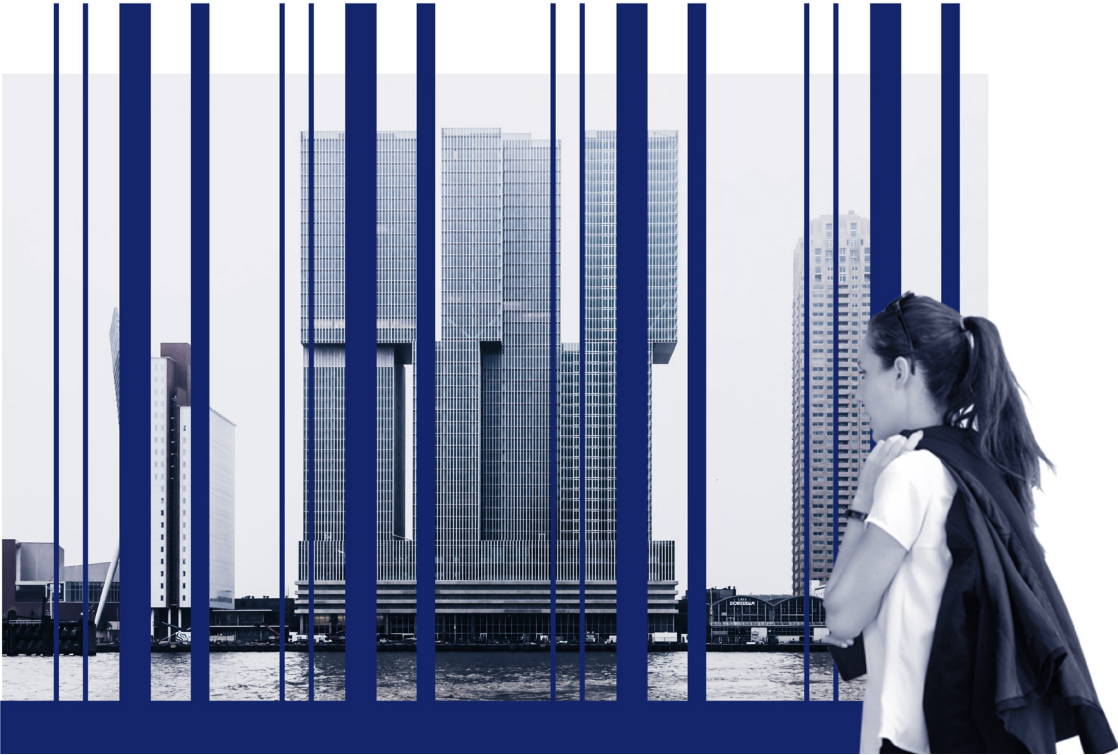
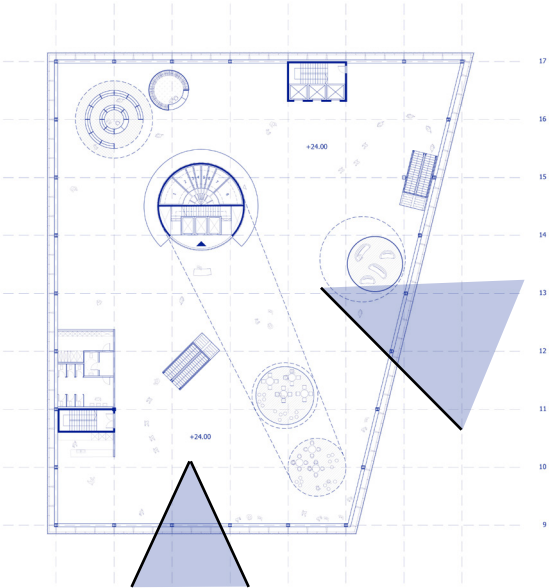
CLOACROOM AND RETAIL



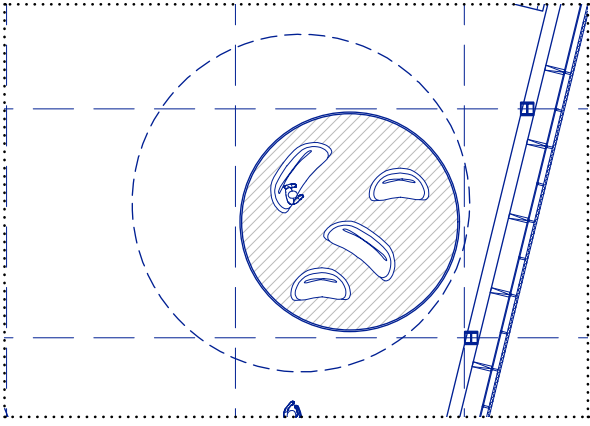
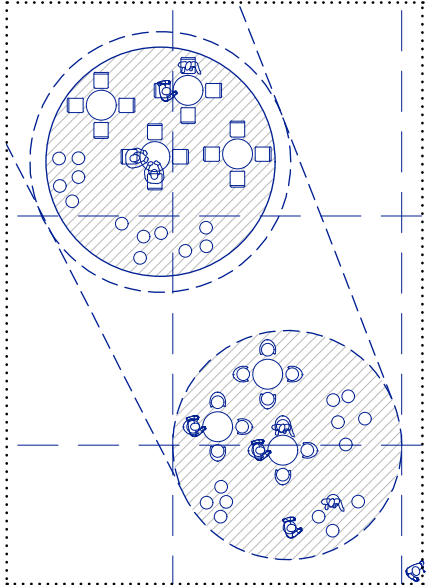
ELEVATED LOBBY



VIEW
level +5



LOBBY
level +5



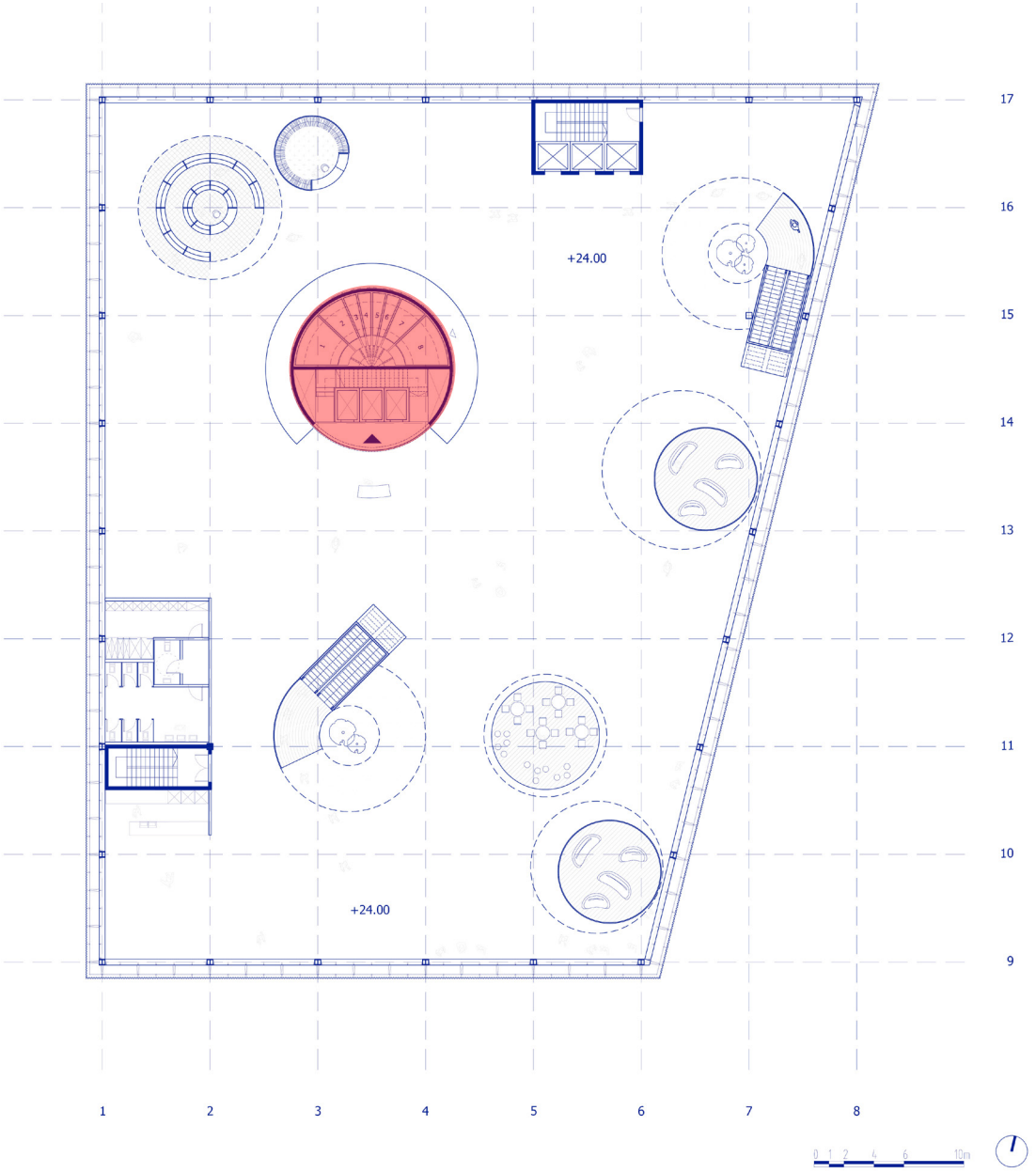
Cloakroom and retail

Canteen

Relaxing

LOBBY

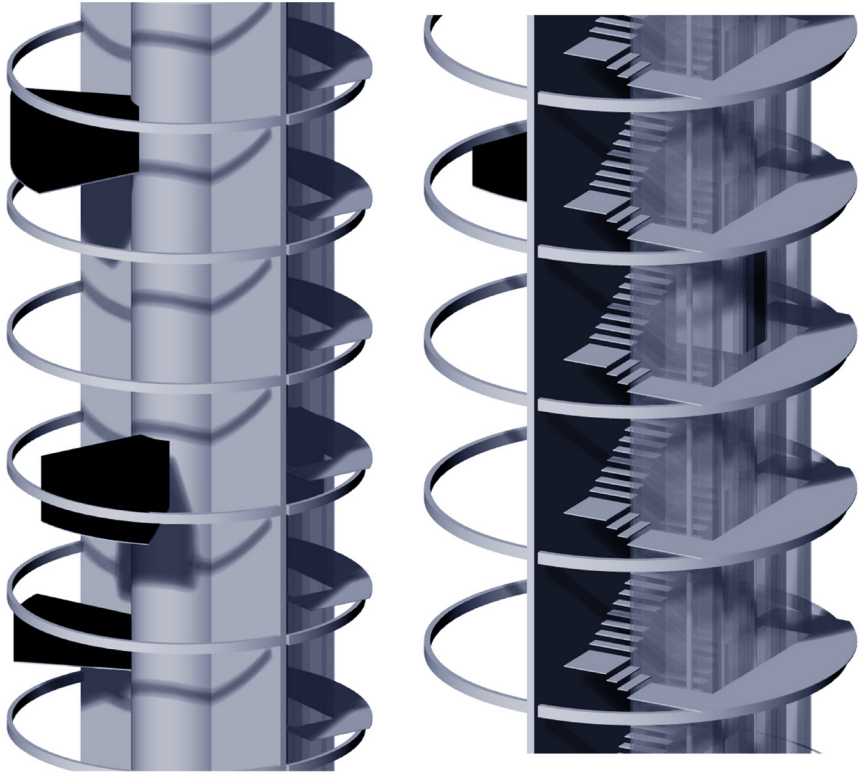
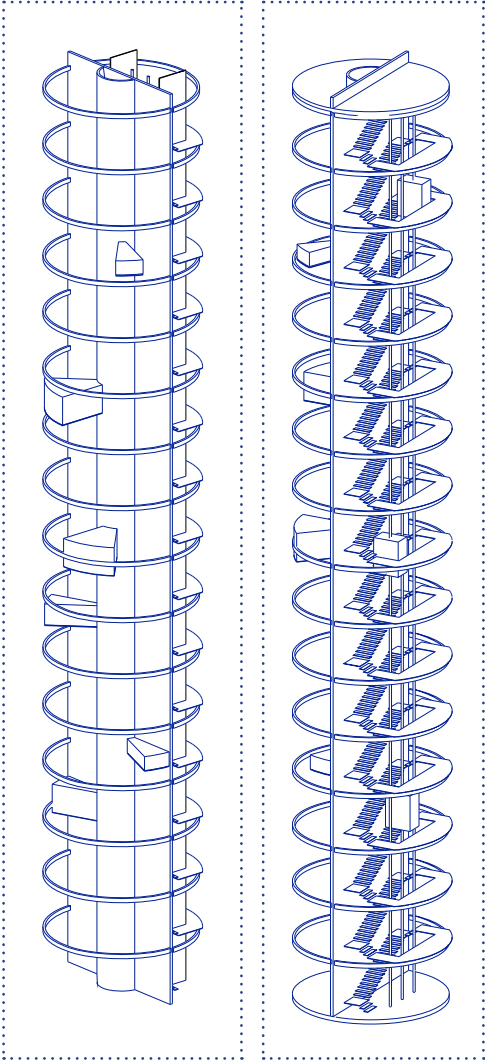
level +5



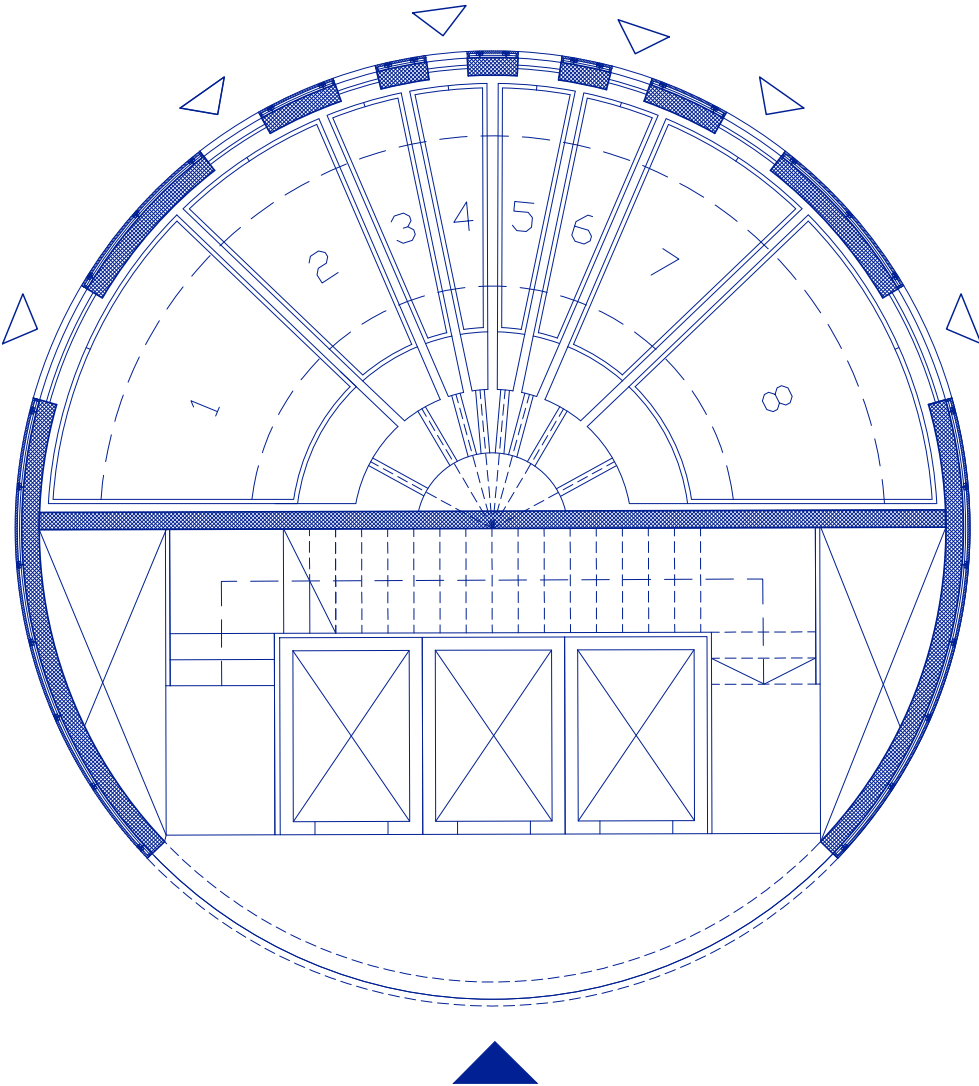
RECEPTION



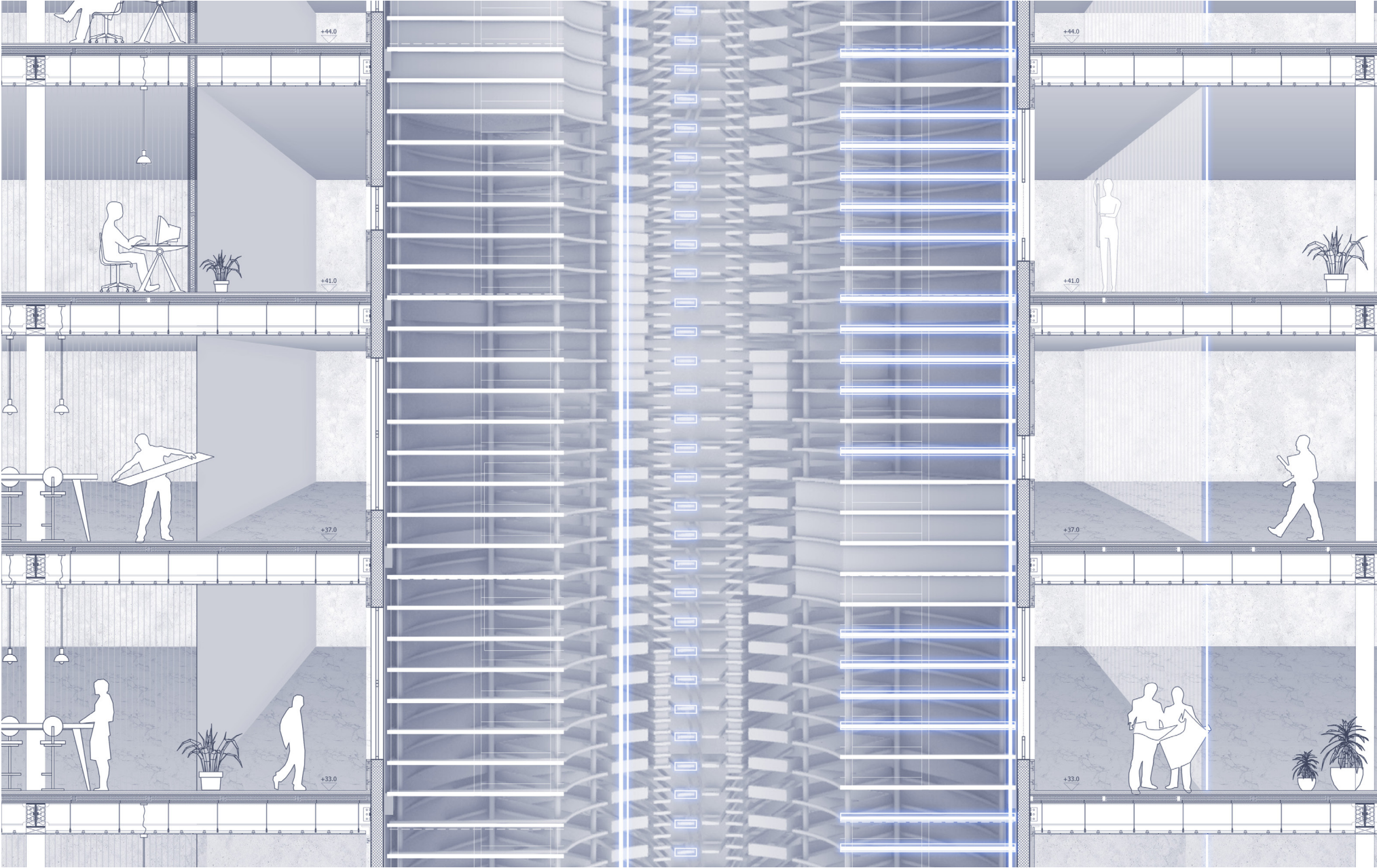
HUMAN-TO-MACHINE



VERTICAL CORE



VERTICAL CORE

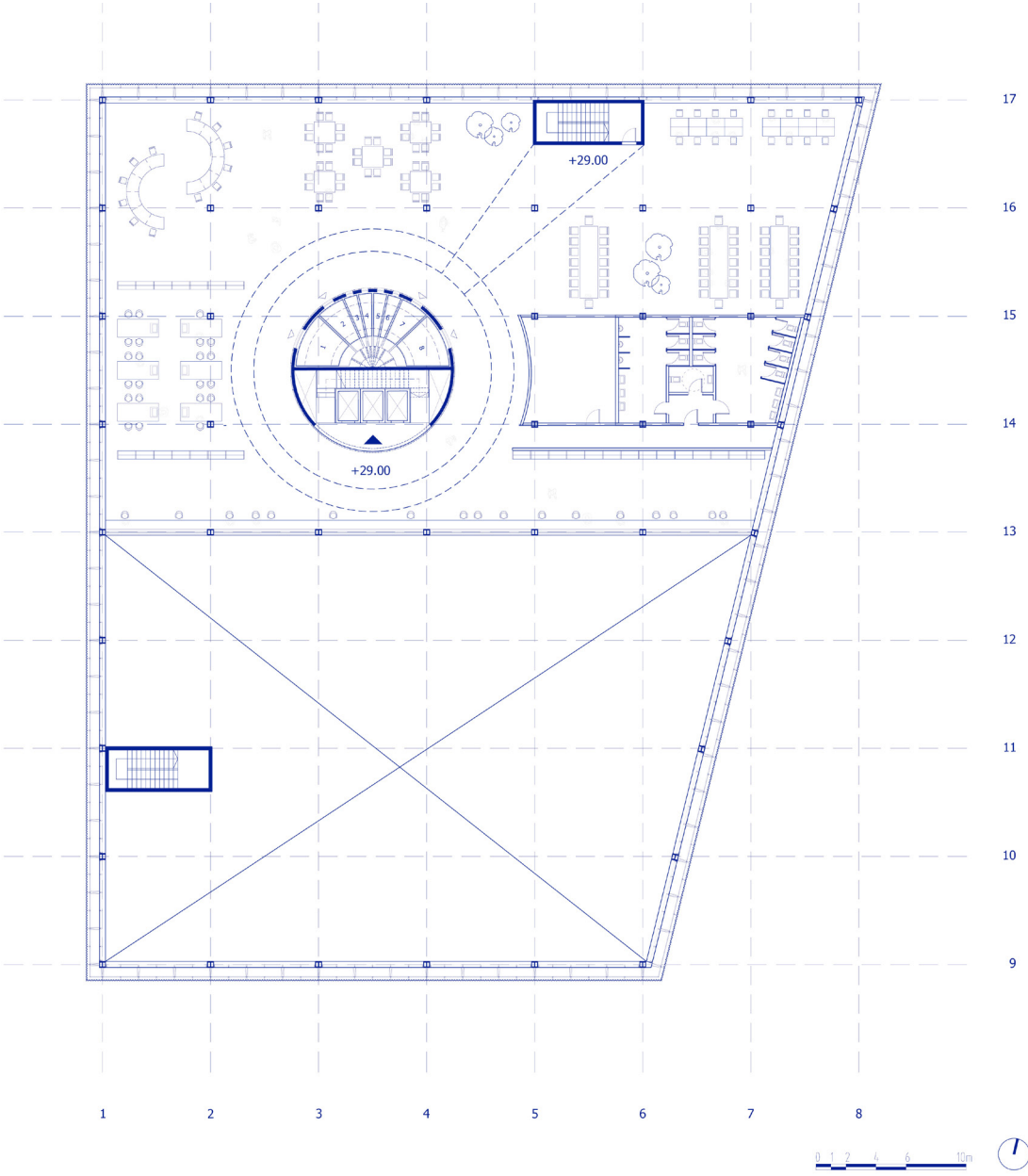


VERTICAL CORE



PHYSICAL PRODUCTION

level +6

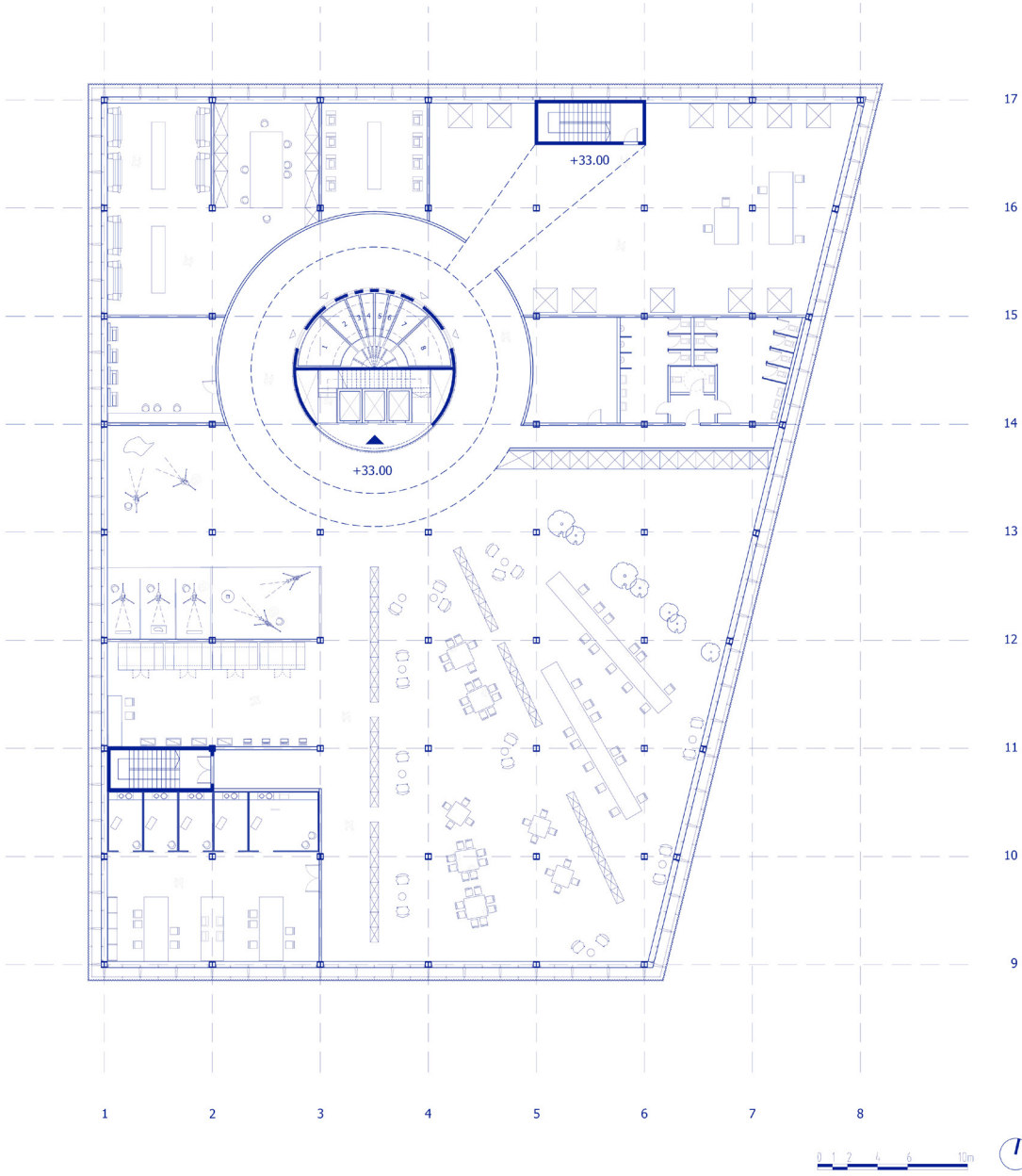
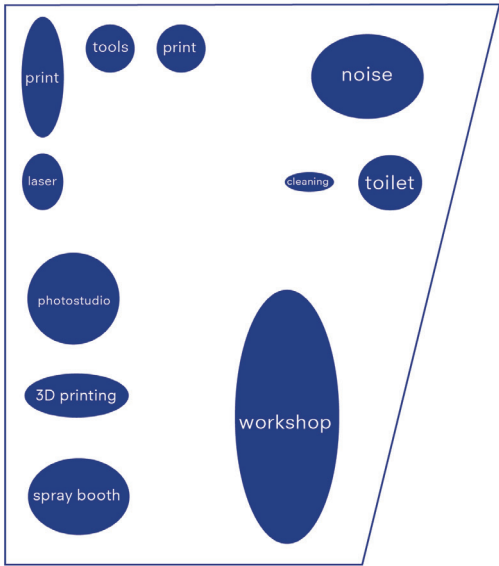


PRODUCTION SPACE

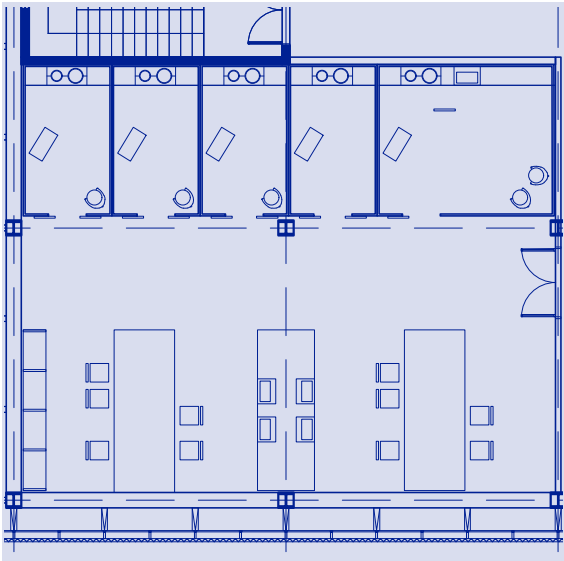


PHYSICAL PRODUCTION

level +7



PHYSICAL PRODUCTION



spraying booth

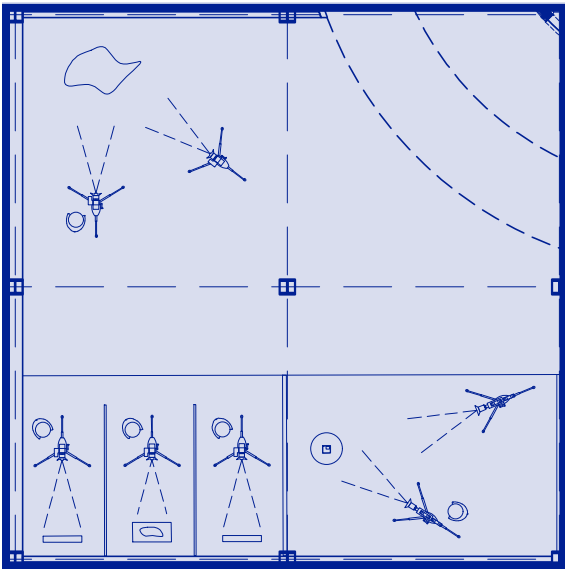
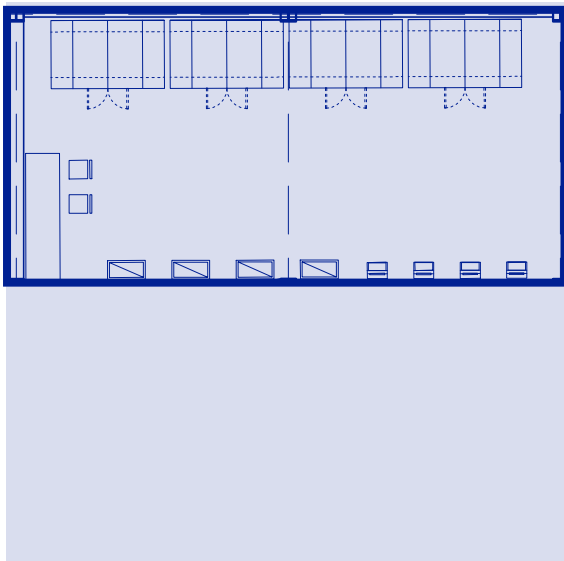


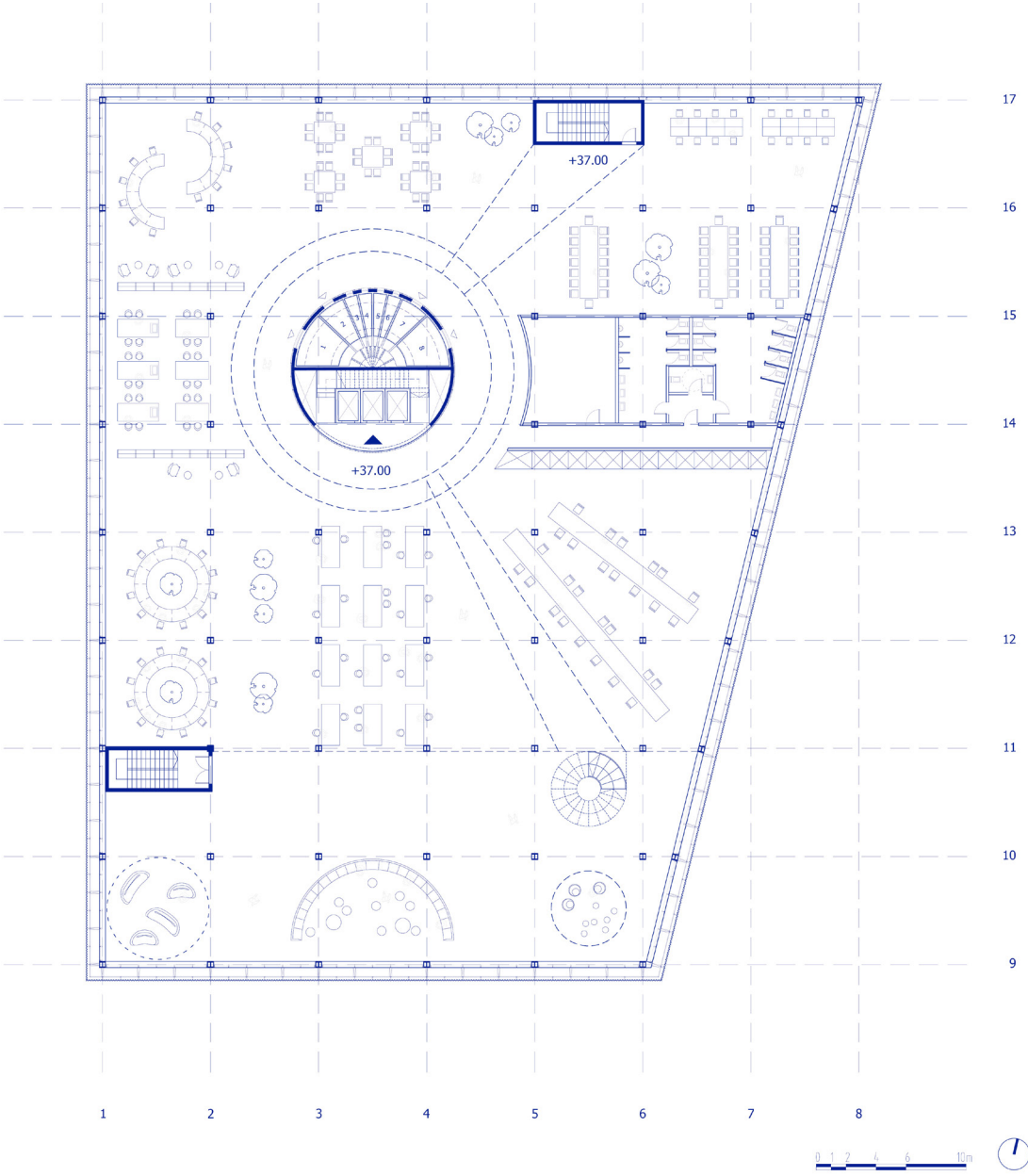
photo studio



3d printing room

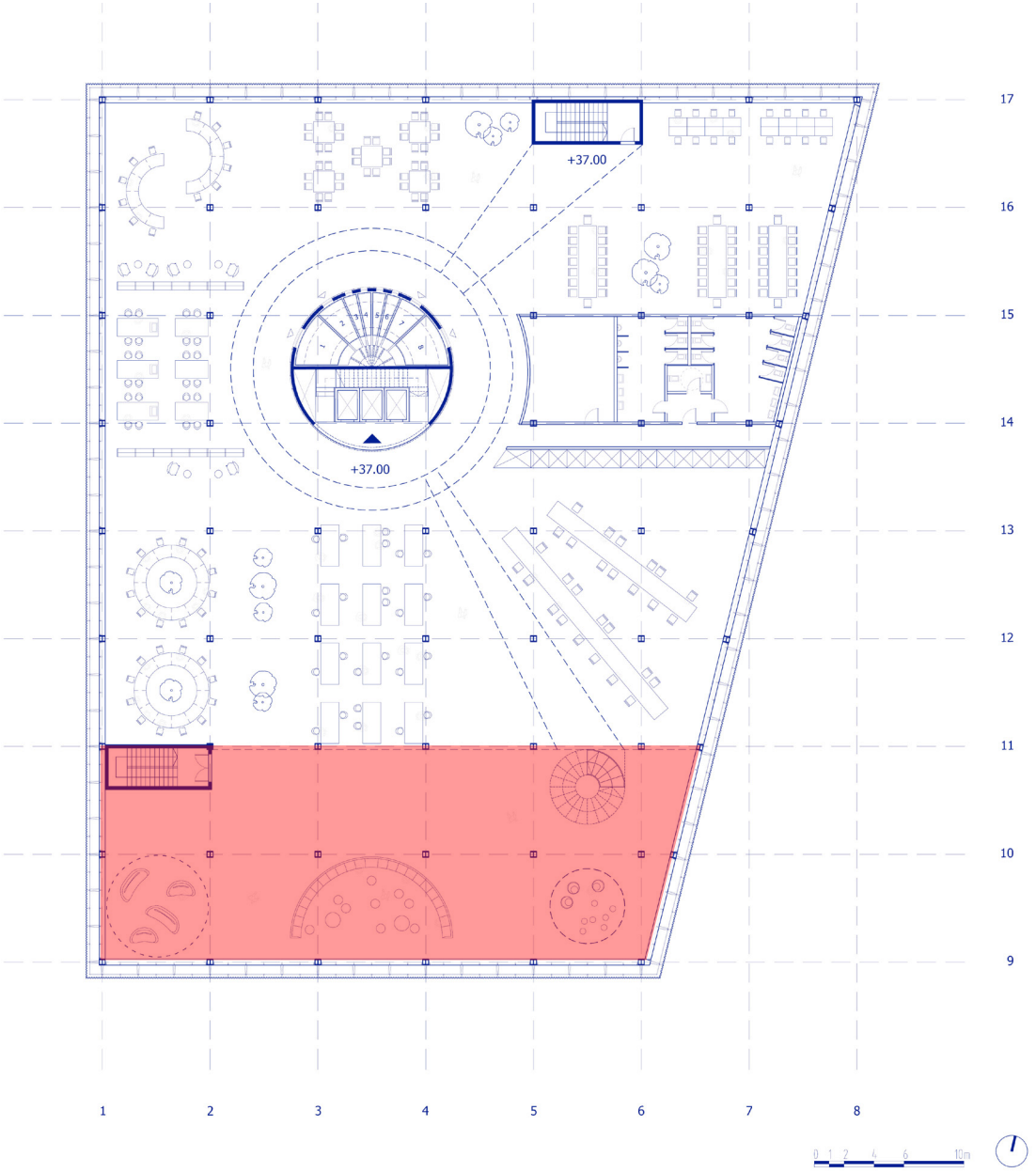
PHYSICAL PRODUCTION

level +8



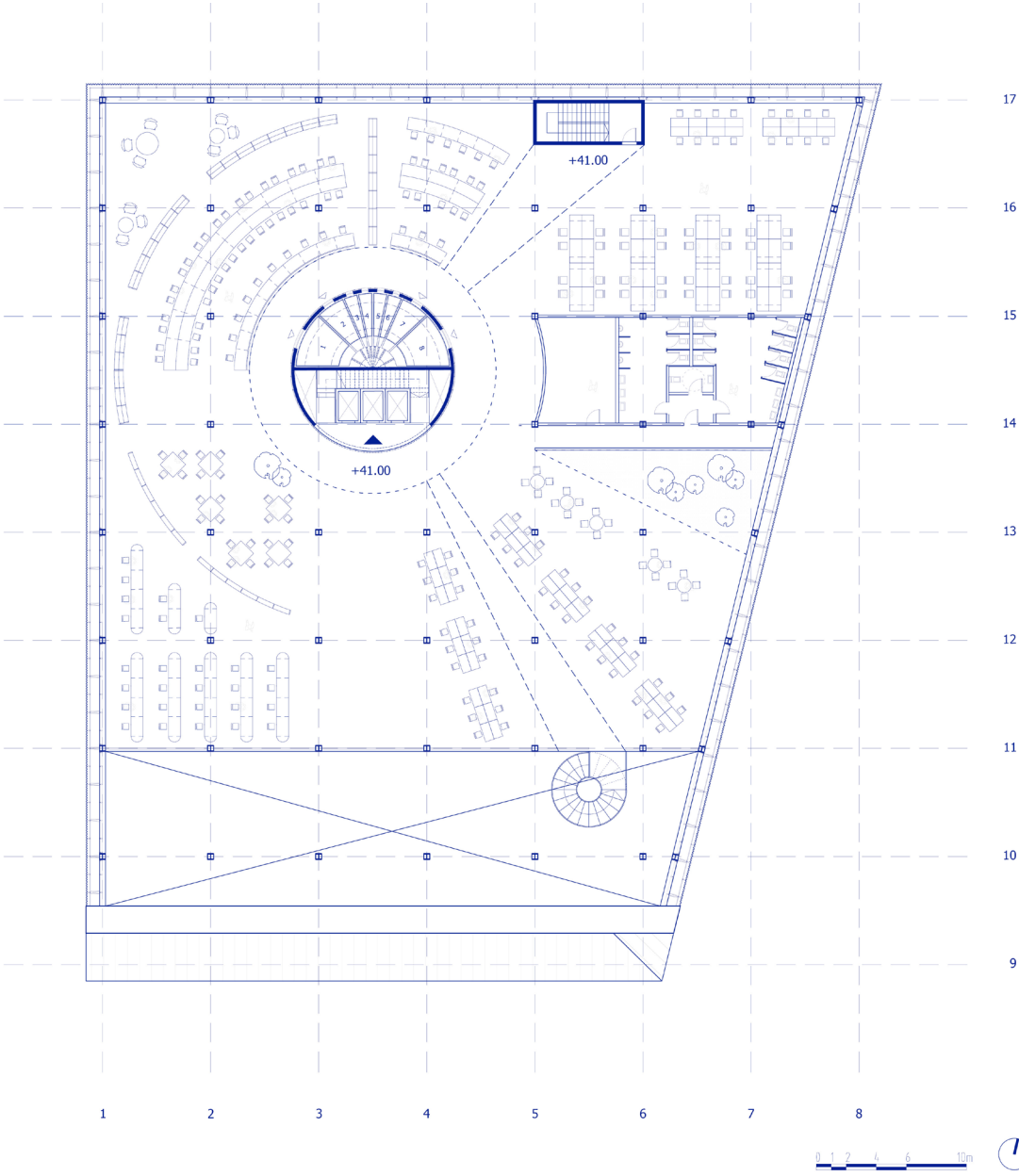
PHYSICAL PRODUCTION

level +8



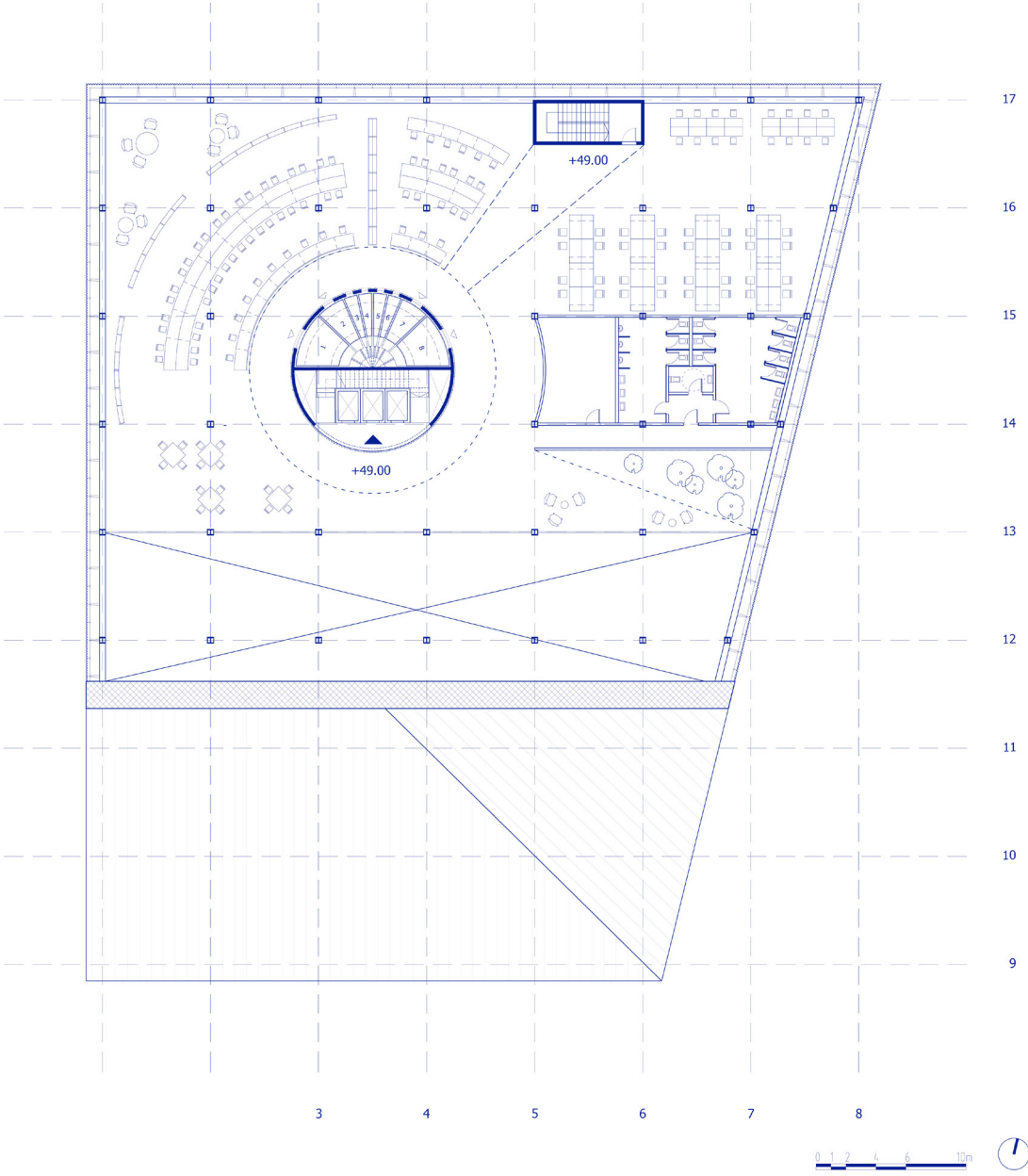
DIGITAL PRODUCTION

level +9

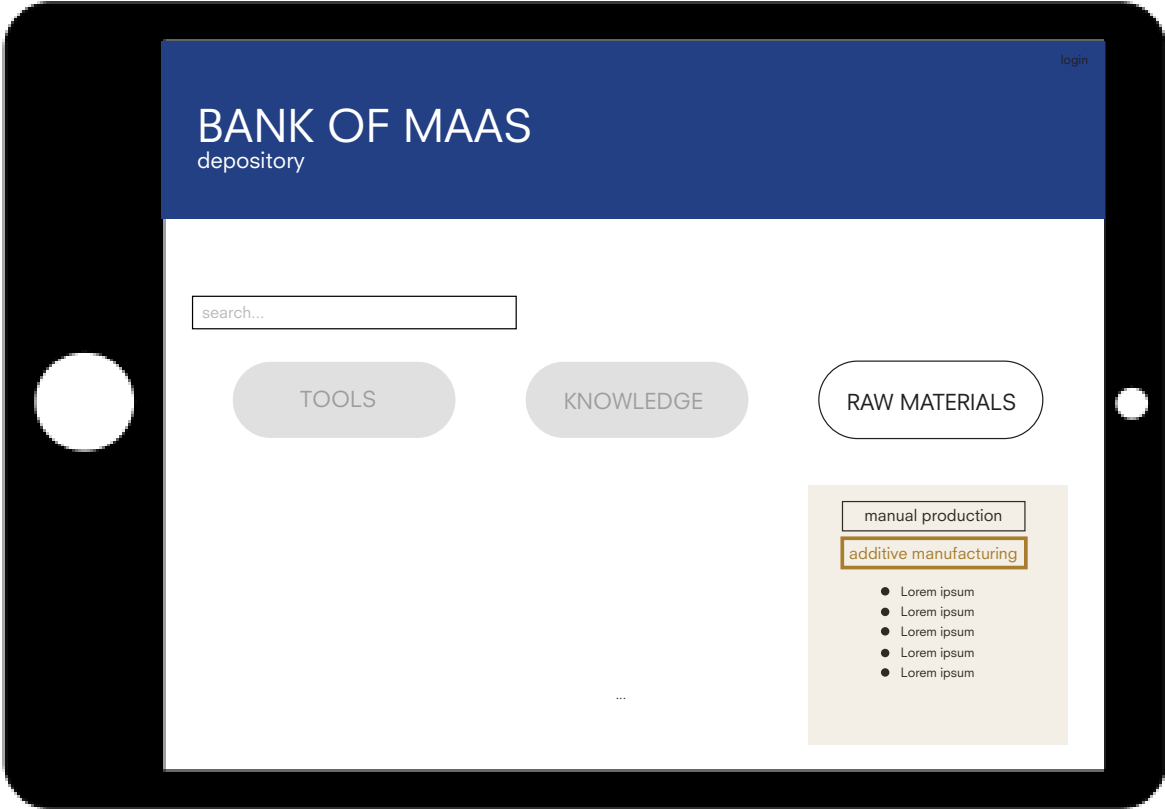


DIGITAL PRODUCTION

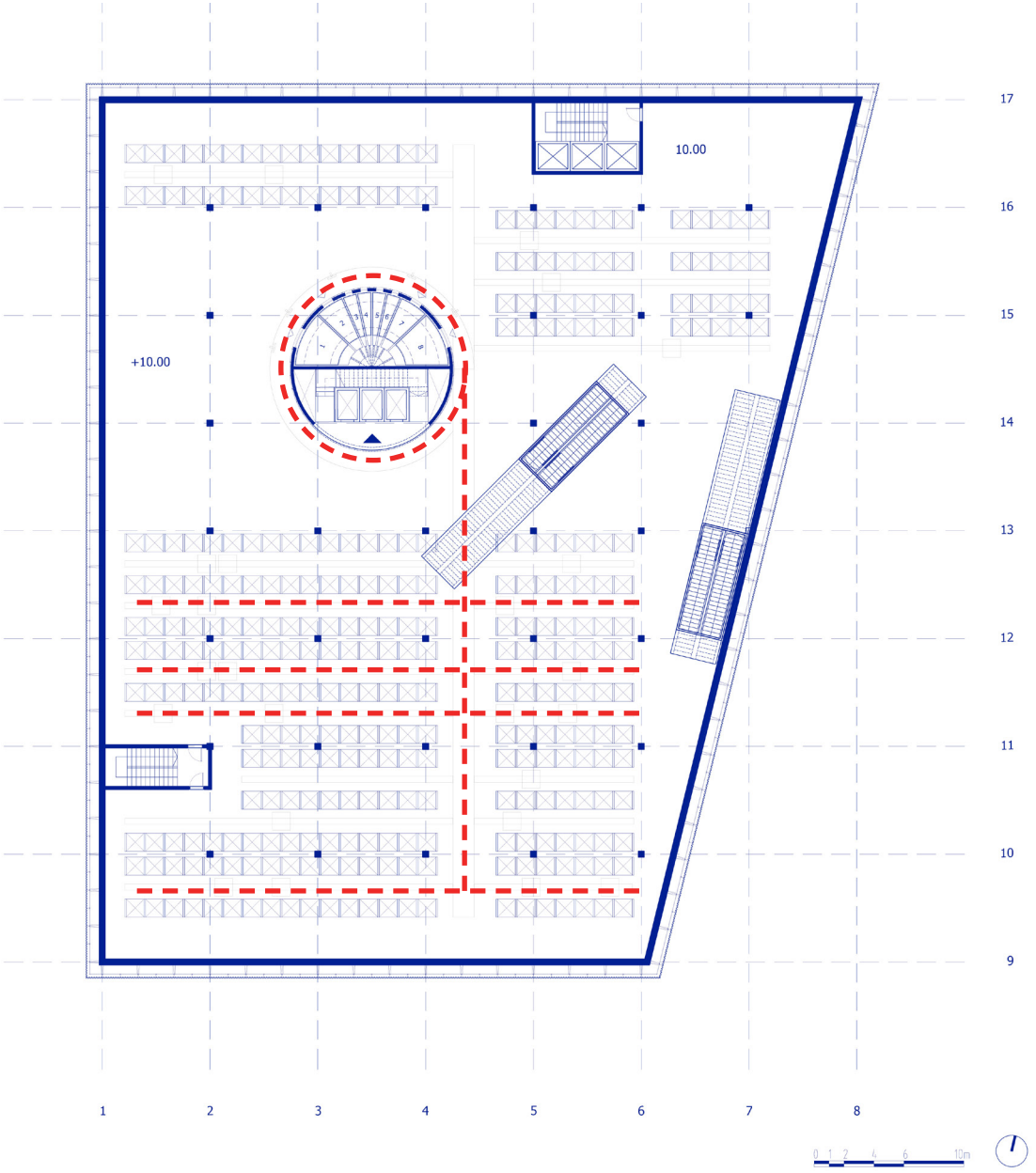
level +11



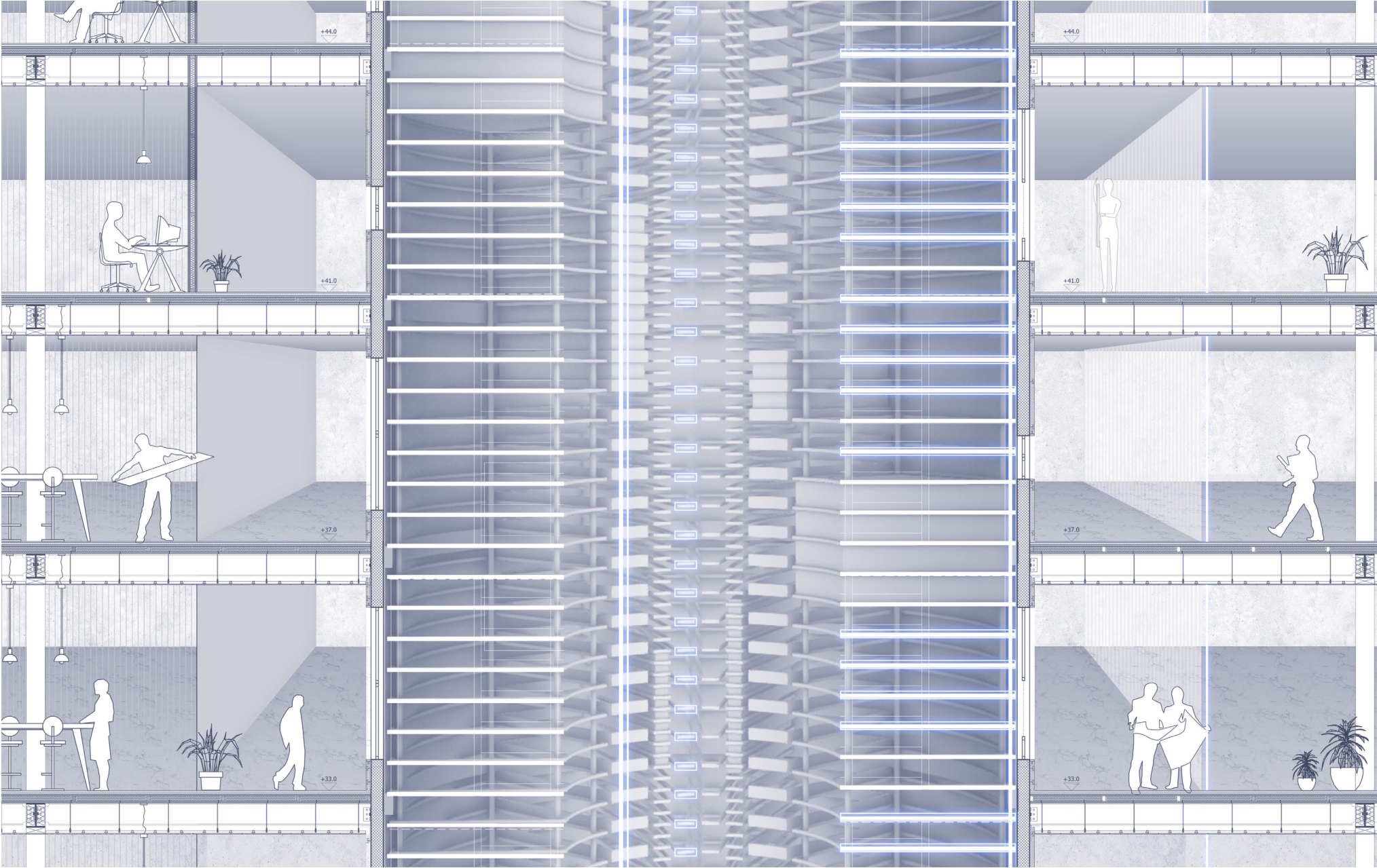
ONLINE DEPOSITORY



AUTOMATED STORAGE



VERTICAL CORE



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STRUCTURE

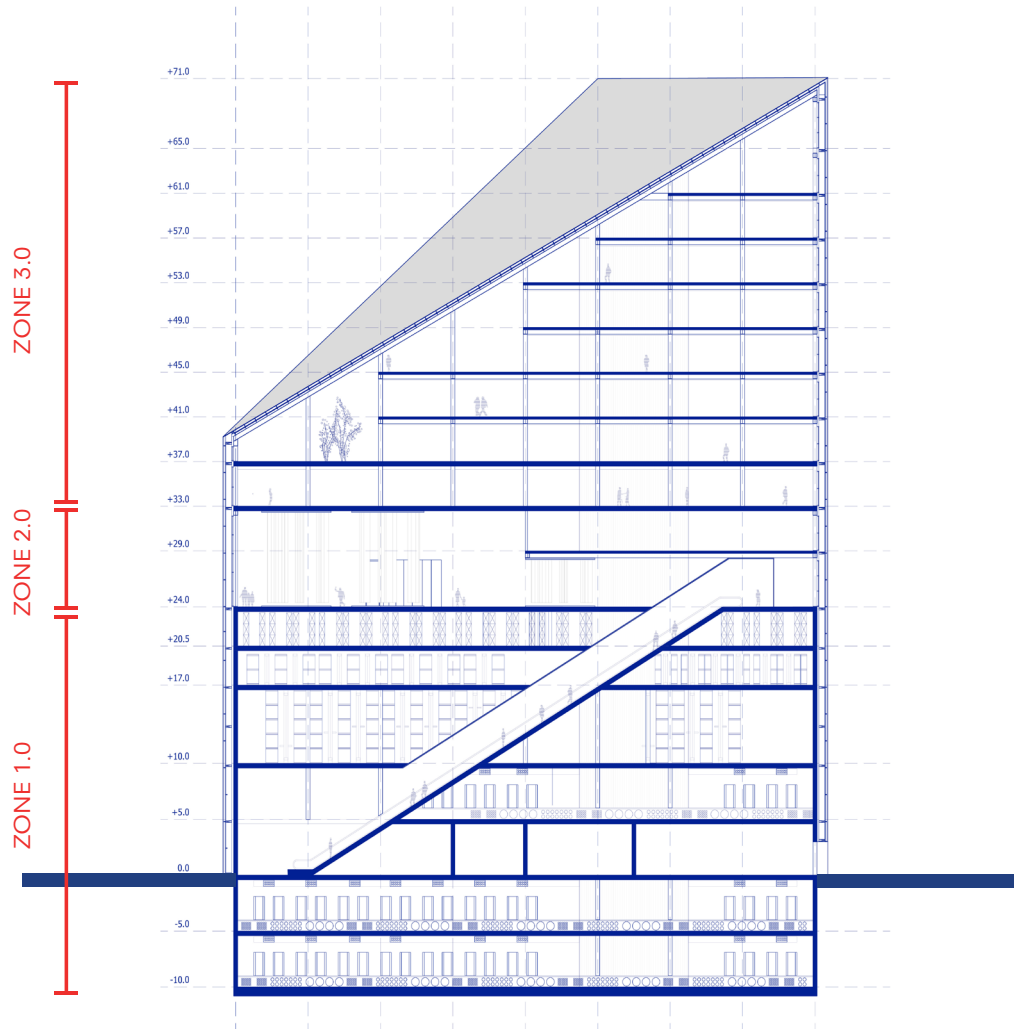


STRUCTURE

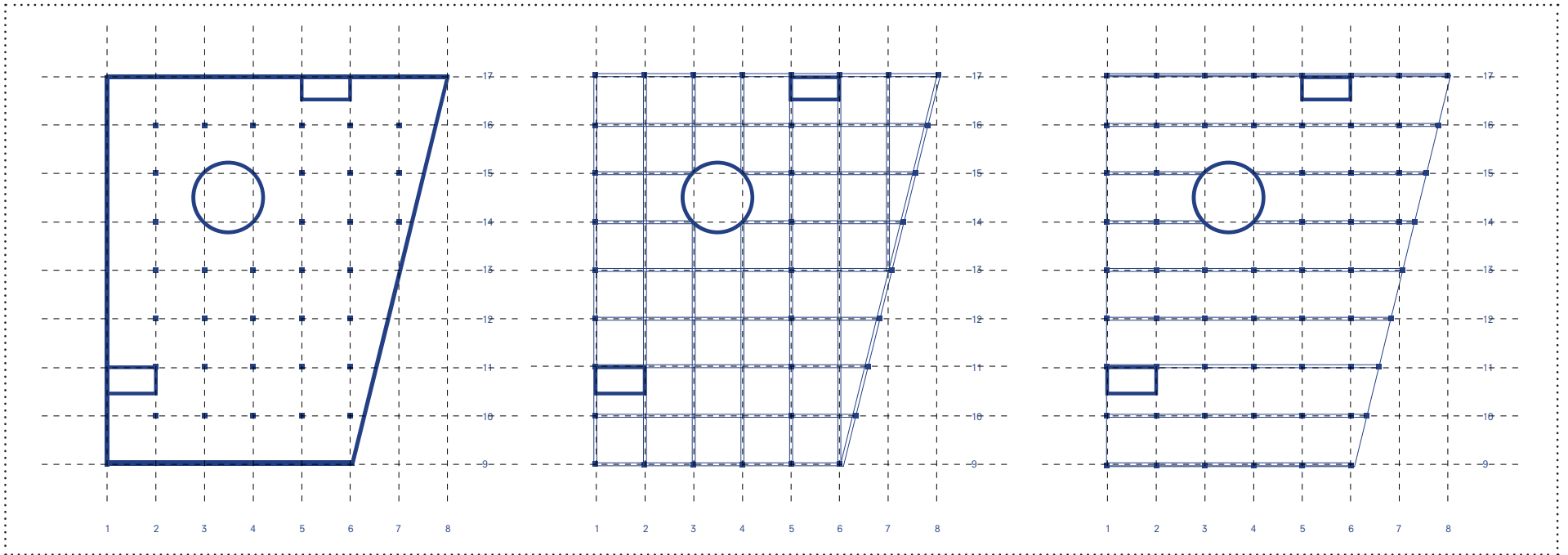
ZONE 3.0
steel
loadbearing
structure

ZONE 2.0
steel
loadbearing
structure -
vierendeel truss

ZONE 1.0
concrete
loadbearing
structure



STRUCTURE

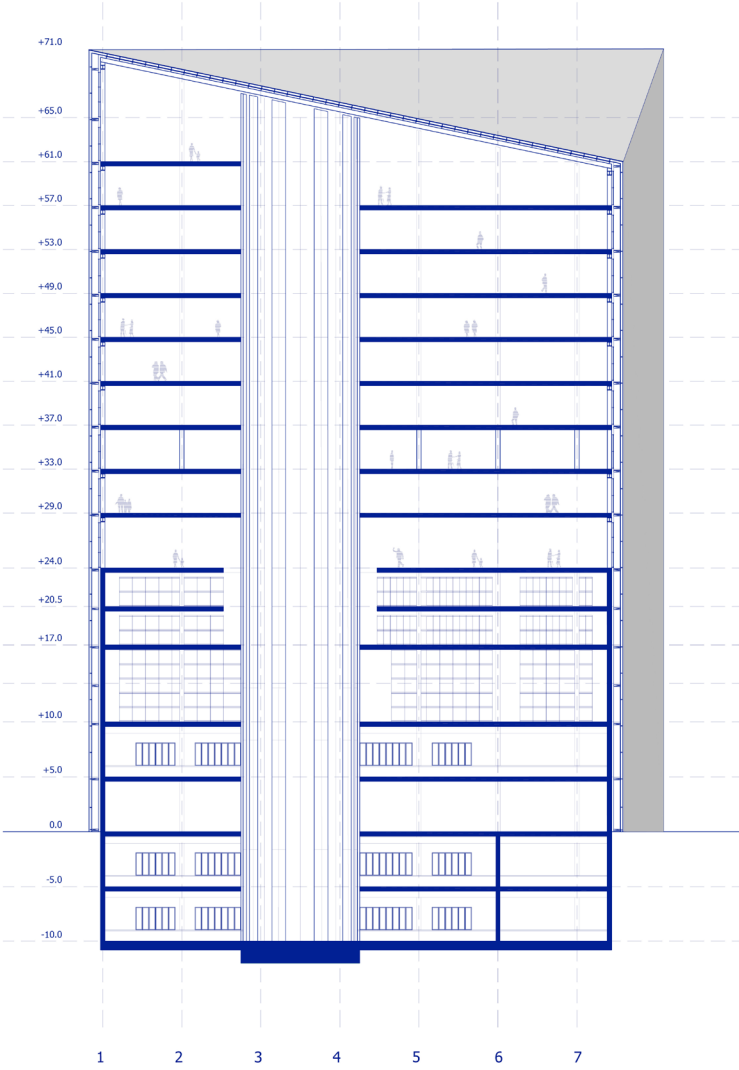
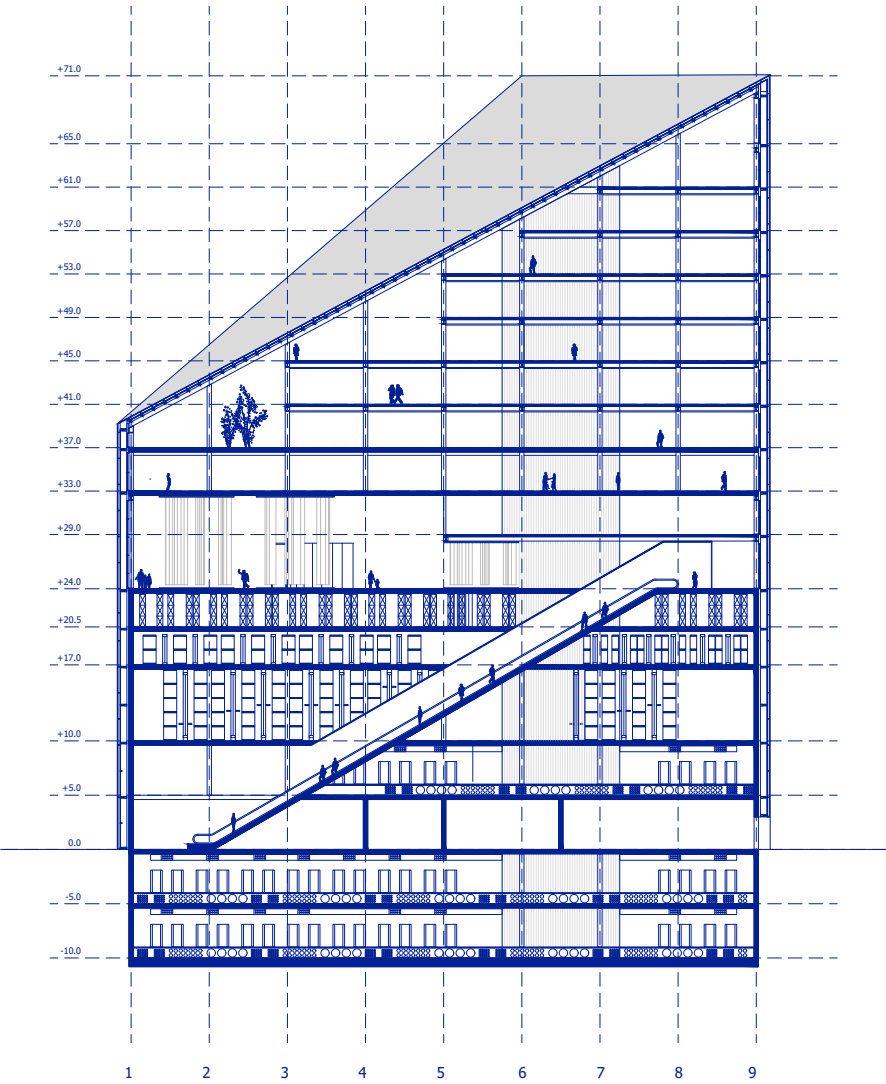


ZONE 1.0
concrete
loadbearing structure

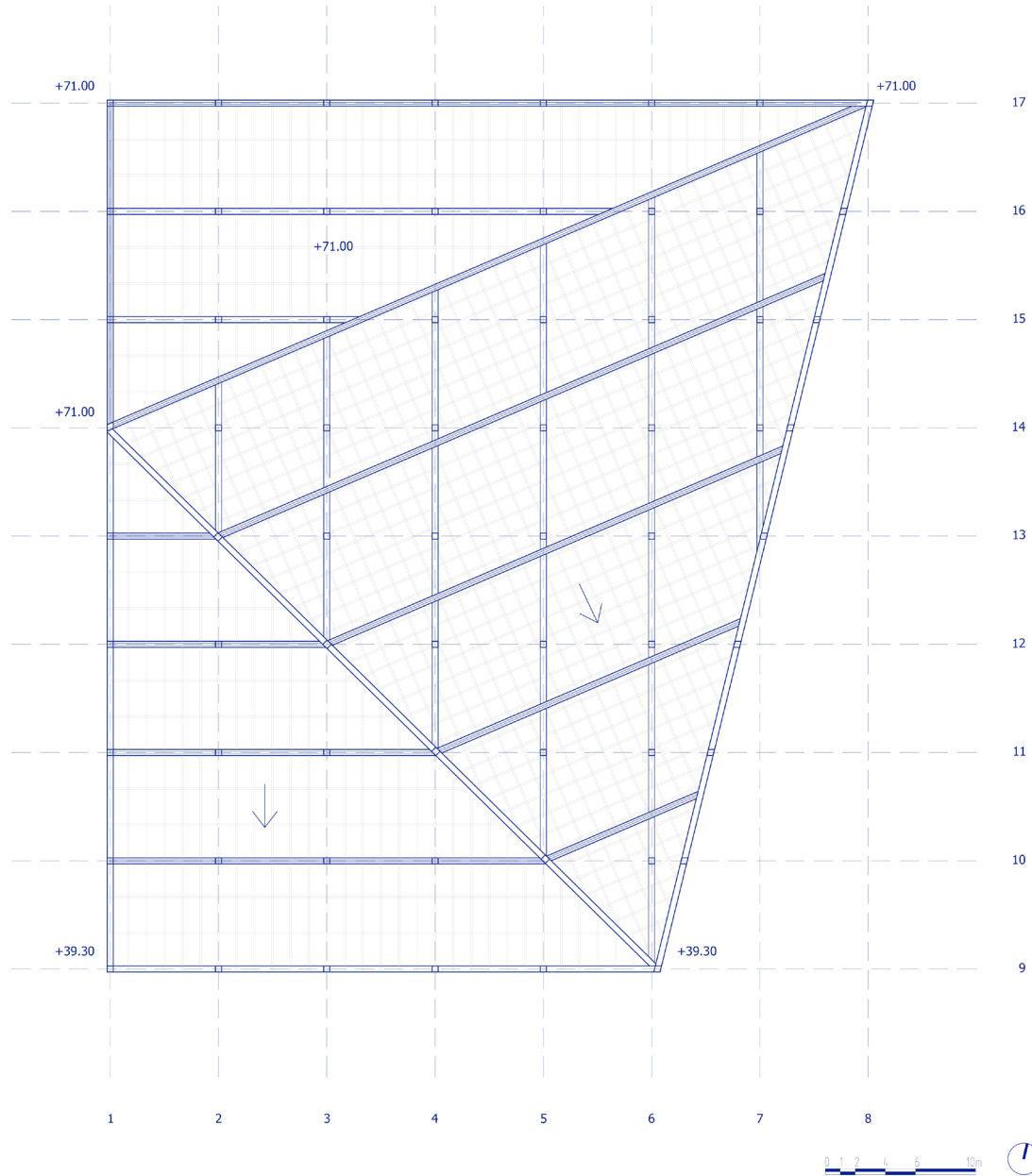
ZONE 2.0
steel
loadbearing structure
- vierendeel truss

ZONE 3.0
steel
loadbearing structure

SECTION



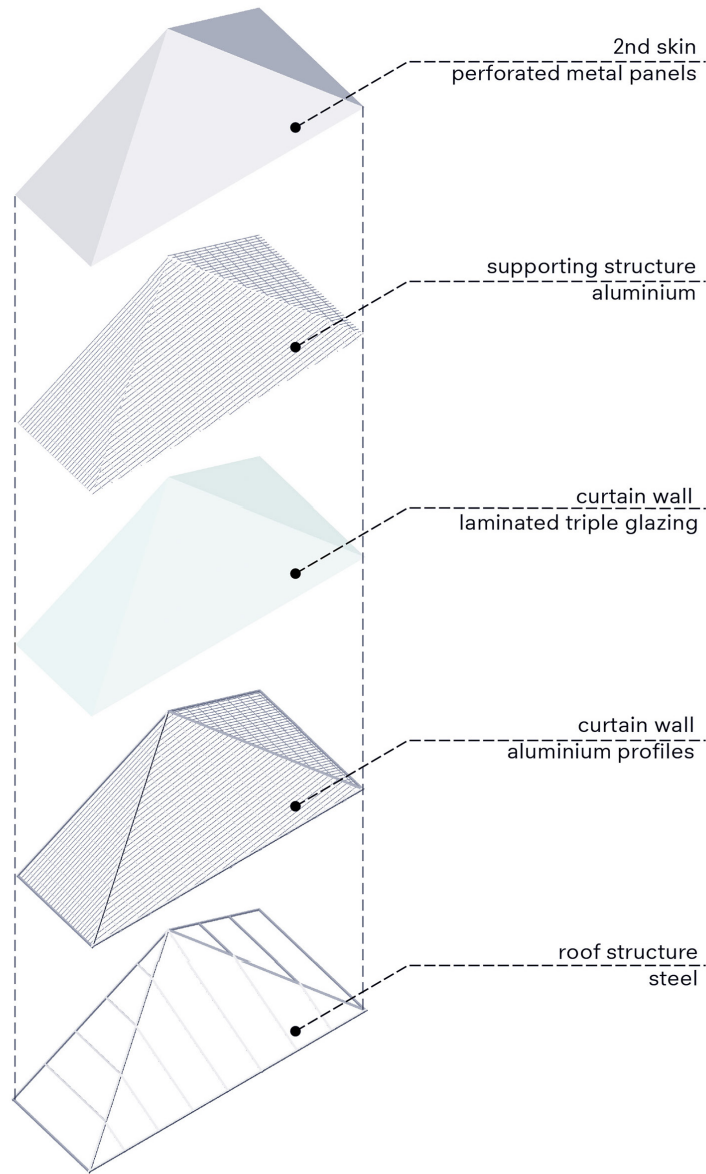
Development
ROOF STRUCTURE



Development

ROOF STRUCTURE

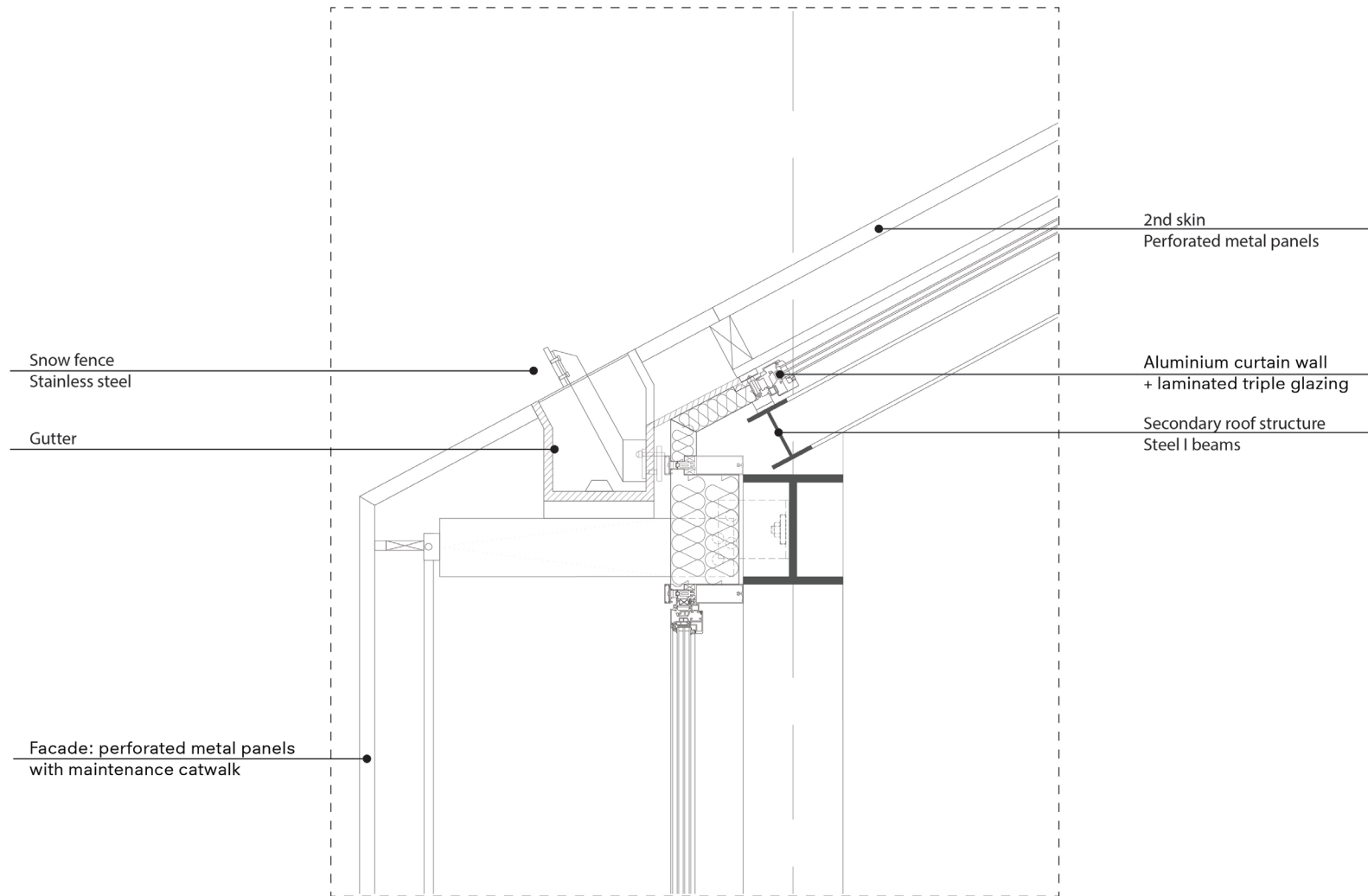
skin 2.0
skin 1.0



Development

ROOF DETAIL

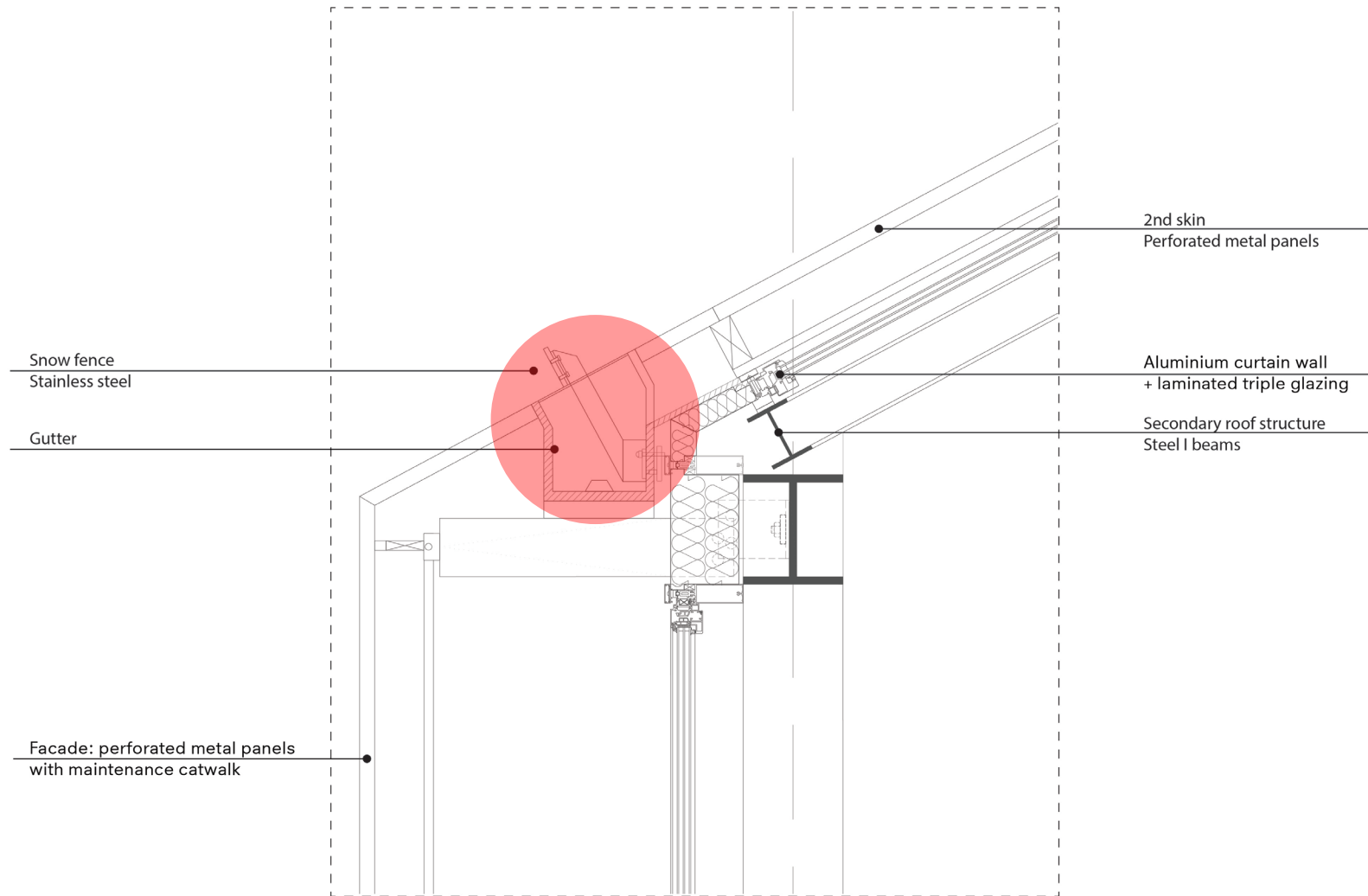
1:5



Development

ROOF DETAIL

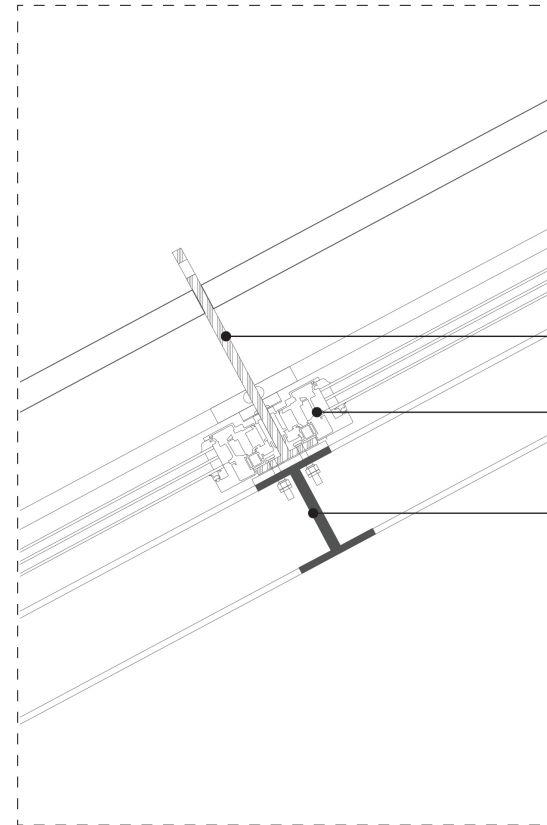
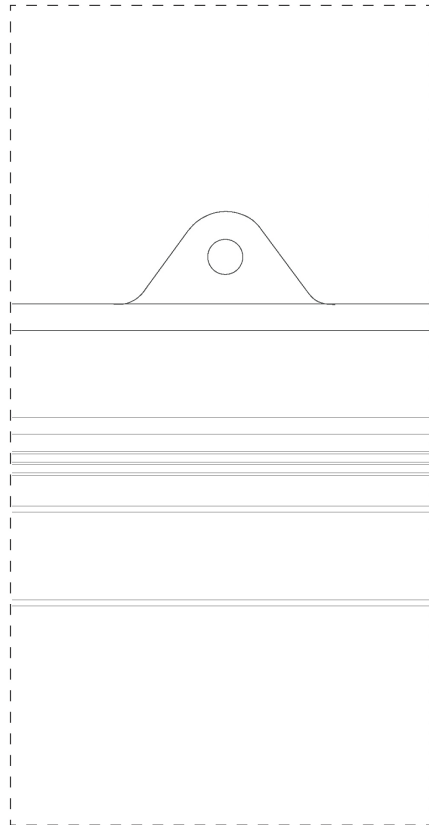
1:5



Development

ROOF MAINTENANCE

1:5



Stainless steel eyebolts
penetrating mullion body

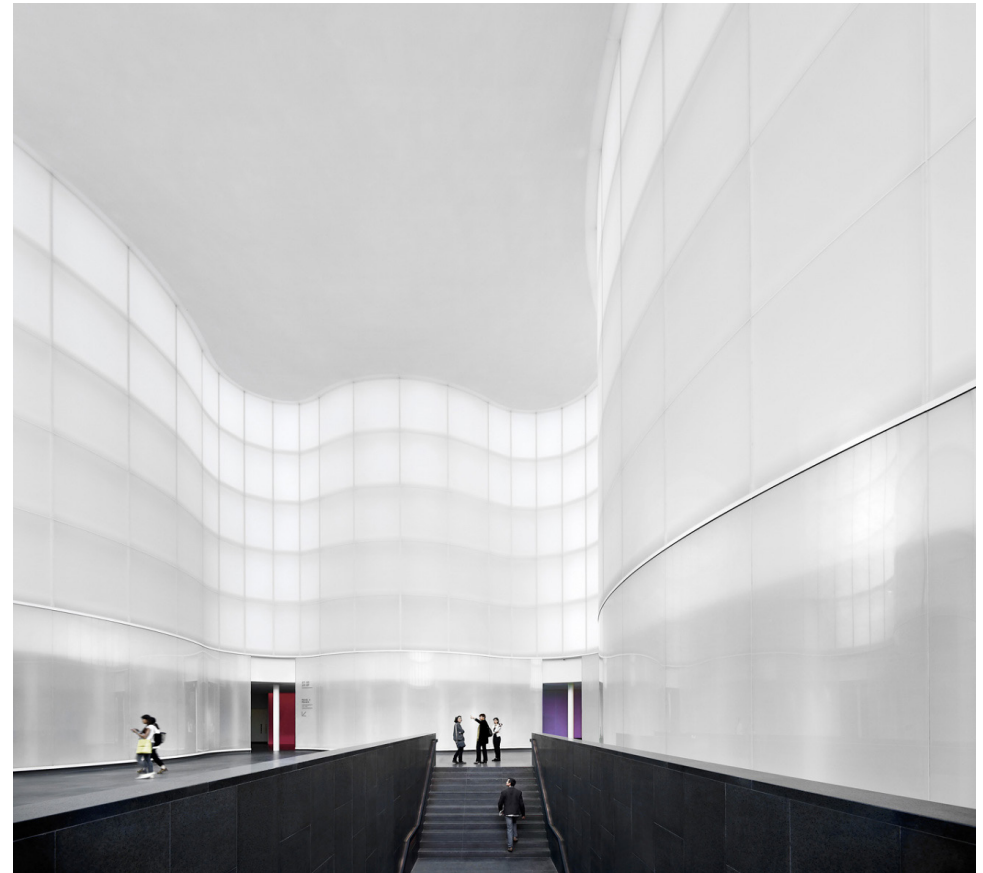
Aluminium mullion

Load bearing steel structure

MATERIALISATION

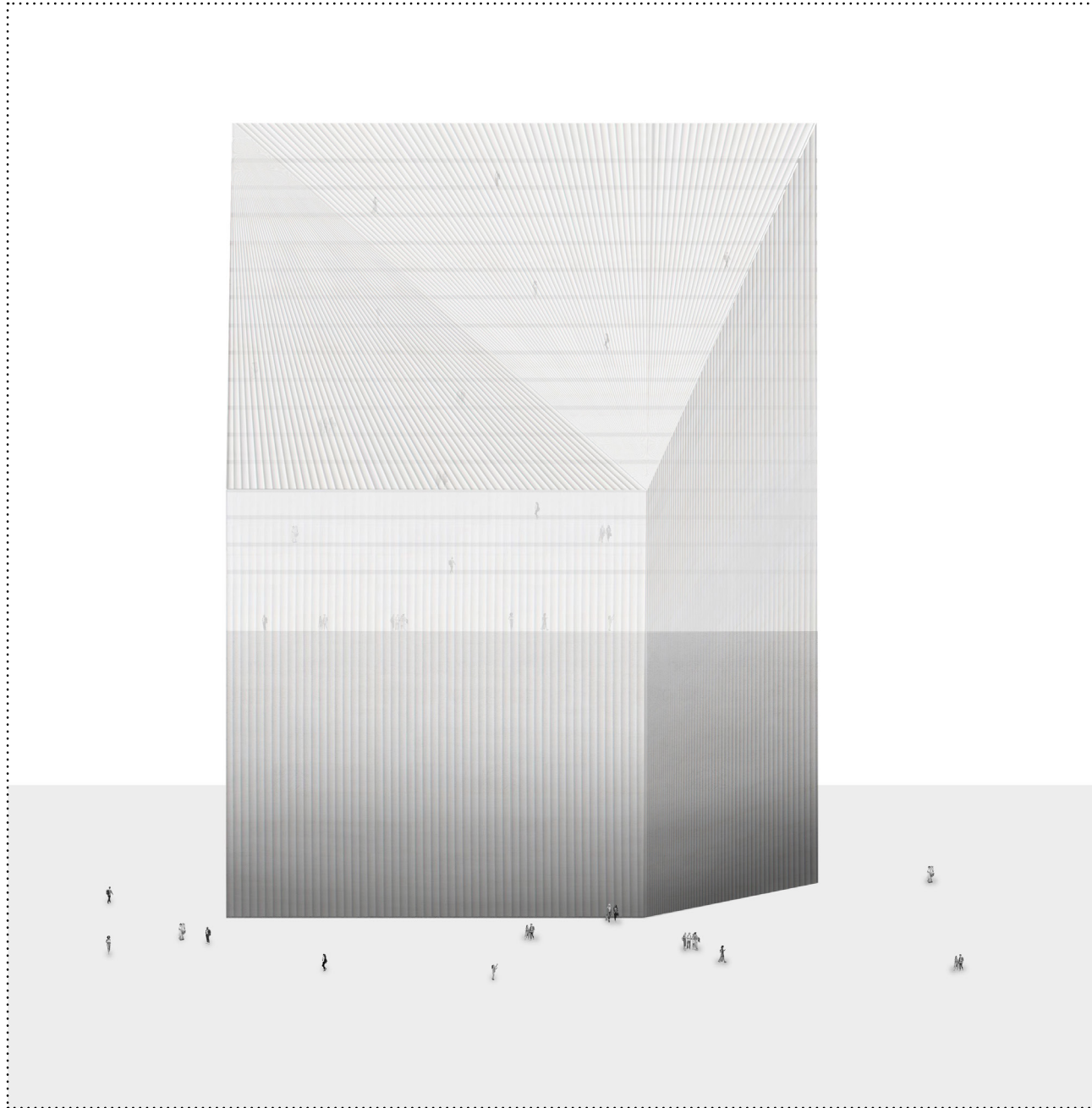


FACADE REFERENCE

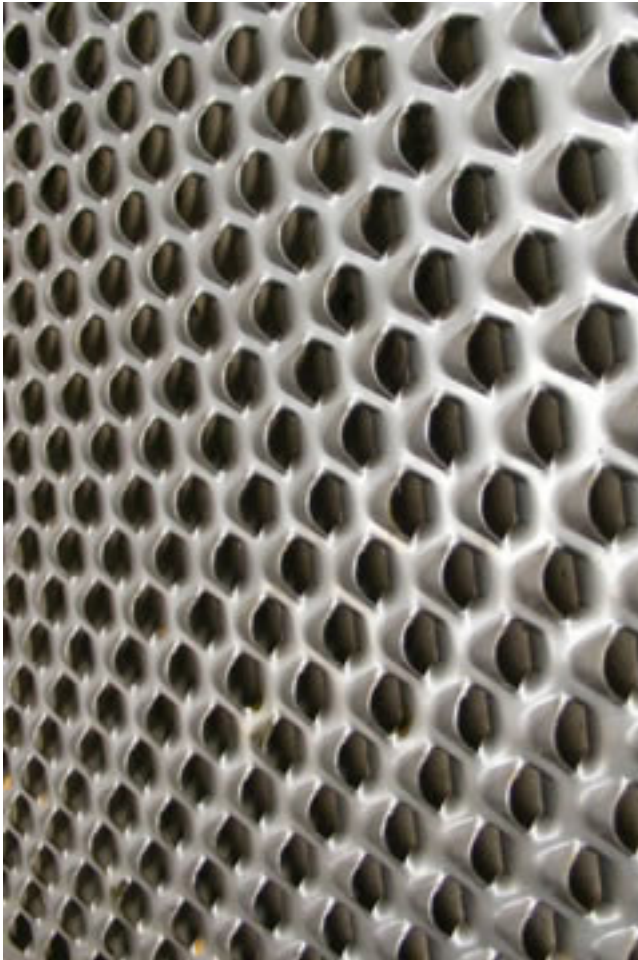


Development

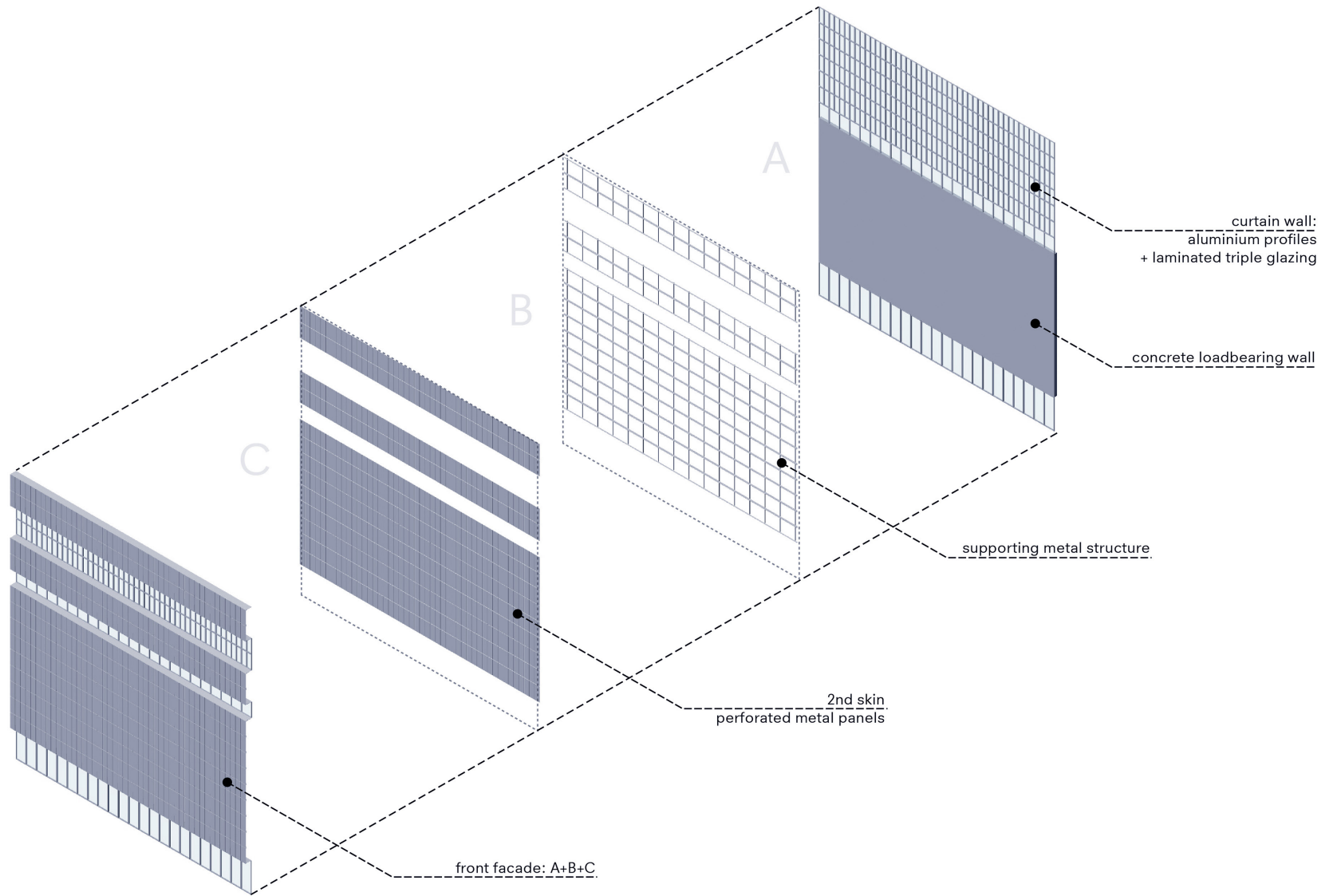
FACADE IMPRESSION



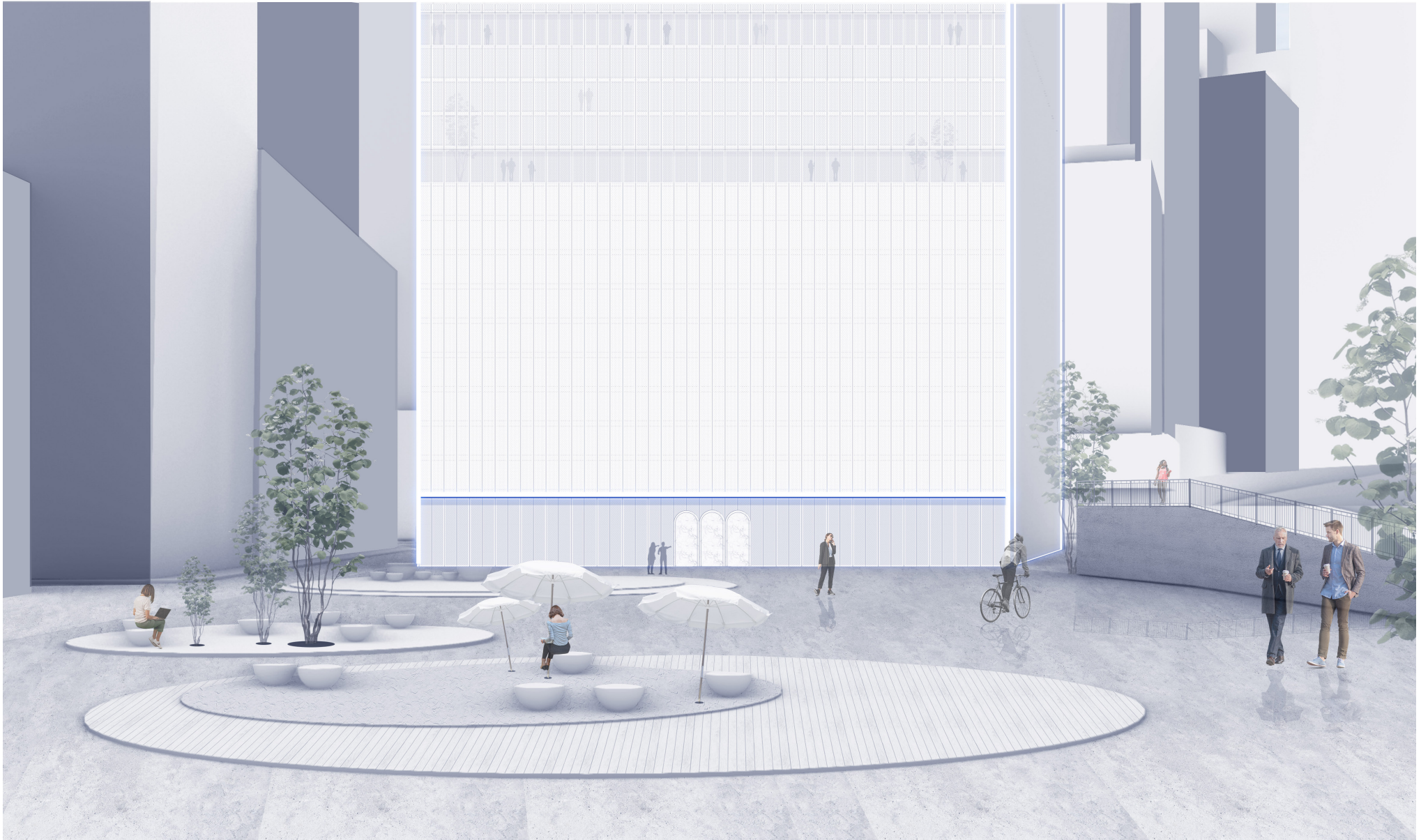
PERFORATED METAL FACADE



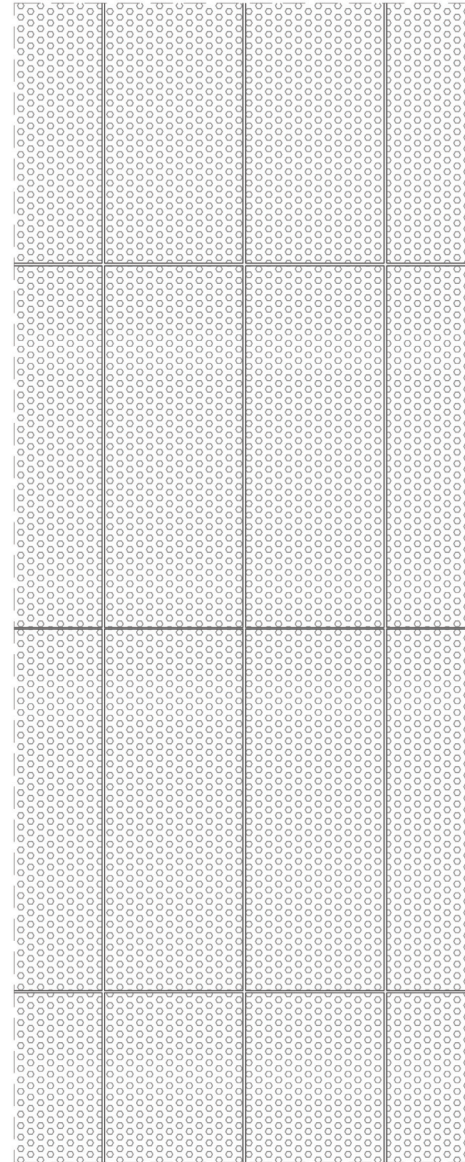
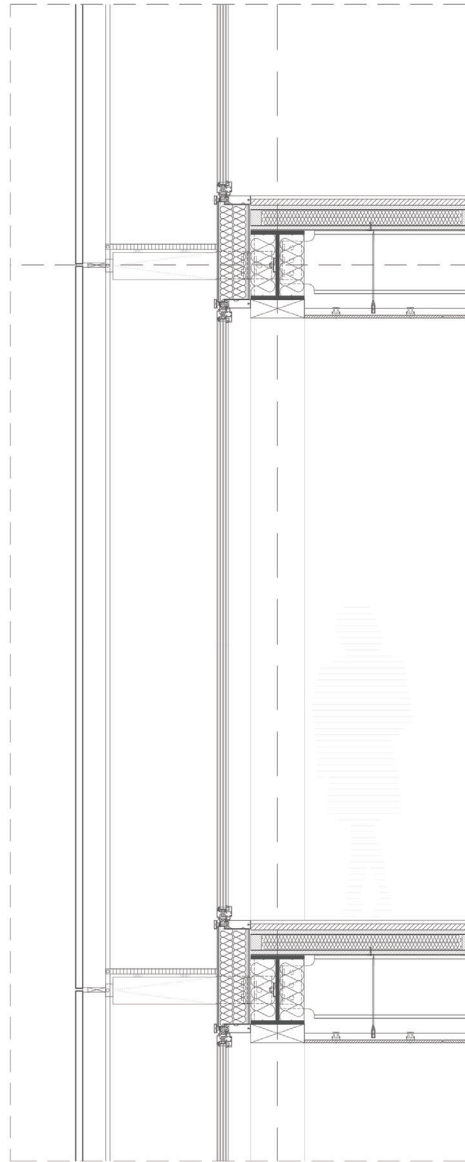
Development
FACADE DESIGN



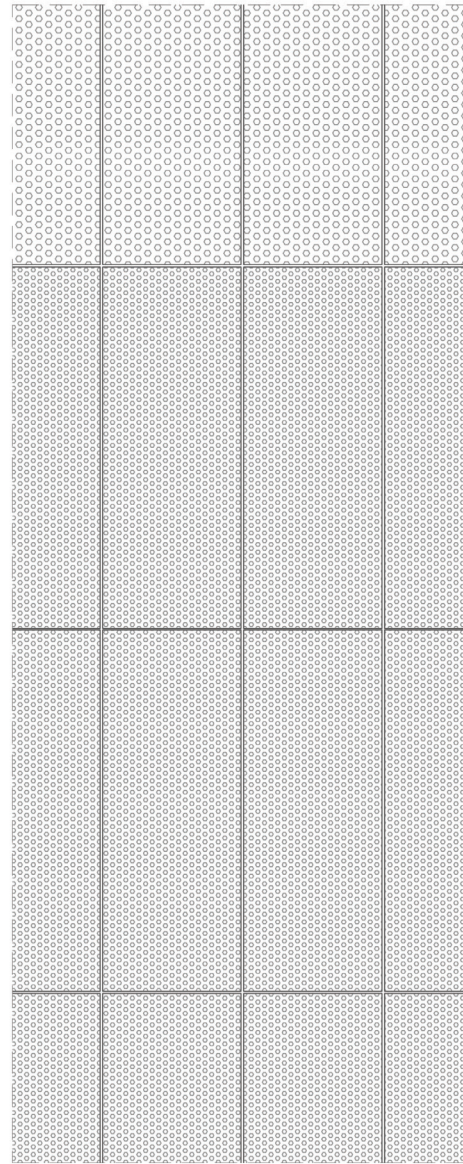
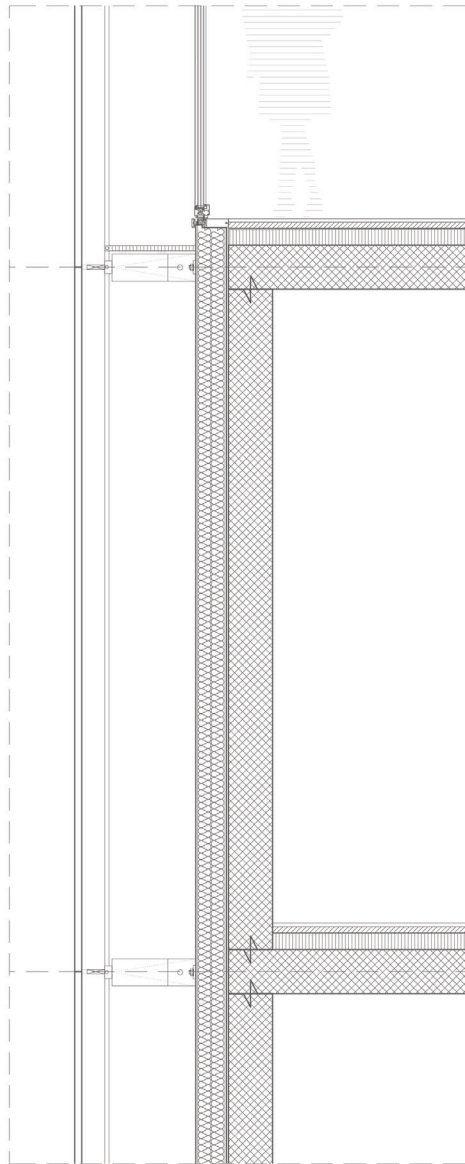
VIEW FROM THE SQUARE



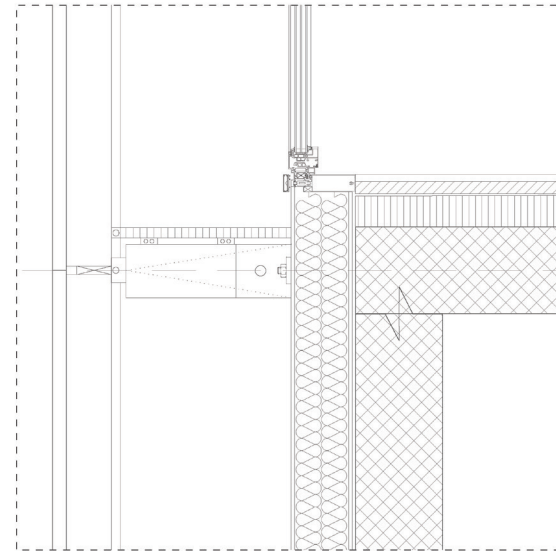
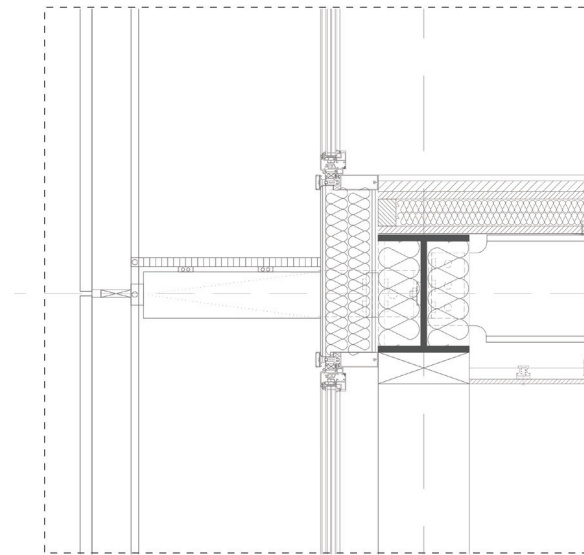
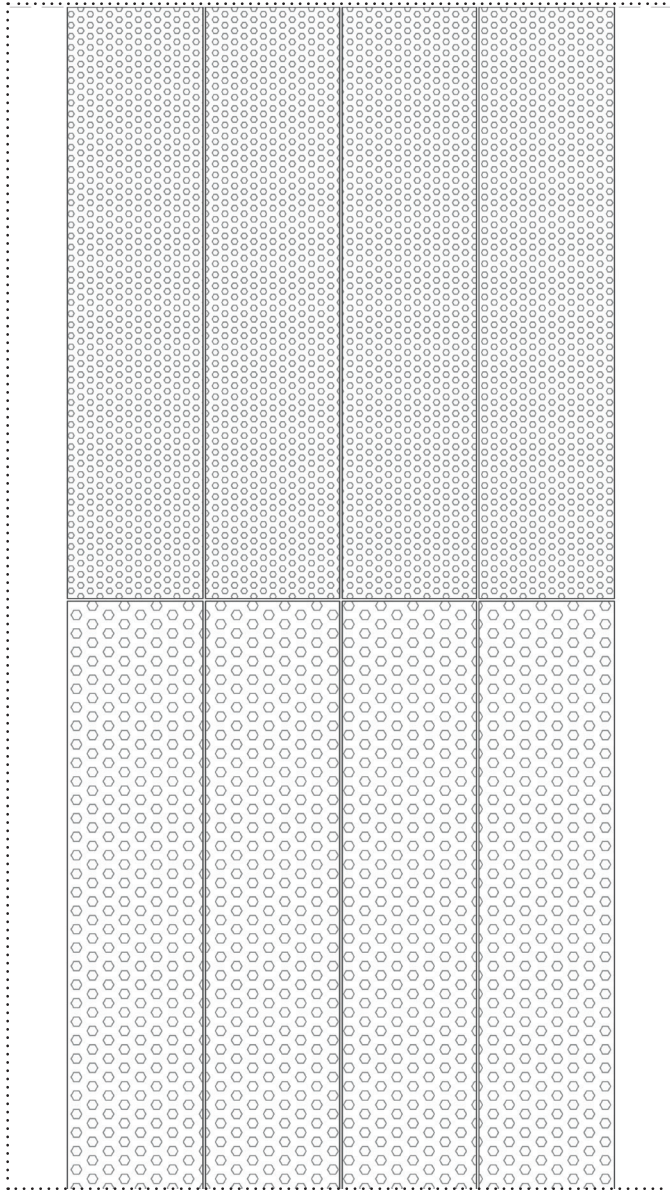
Development
FACADE 1:20
interface



Development
FACADE 1:20
interface



FACADE PERFORATION



Development

INTERIOR



Floor:
Marble



Vertical core:
Onyx-semi transparent stone



Wall finish-storage:
Concrete



Partition walls:
Celulose fibre acoustic panels



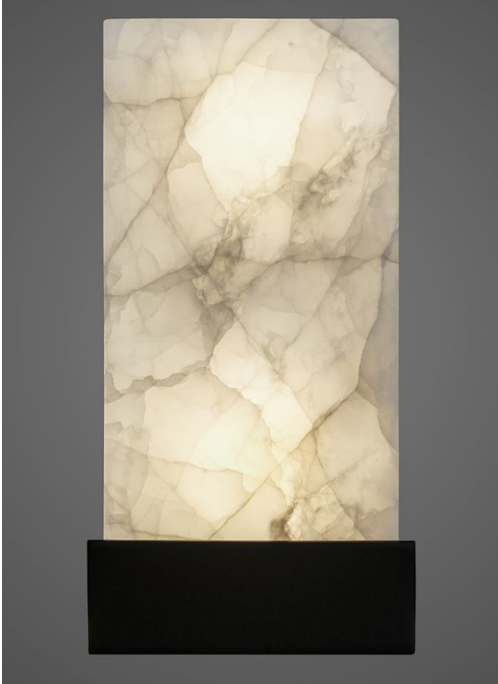
Partition walls:
Recycled PET acoustic tiles



Lobby:
Curtains

CORE MATERIALISATION

onyx - semi transparent stone



Development

CLIMATE

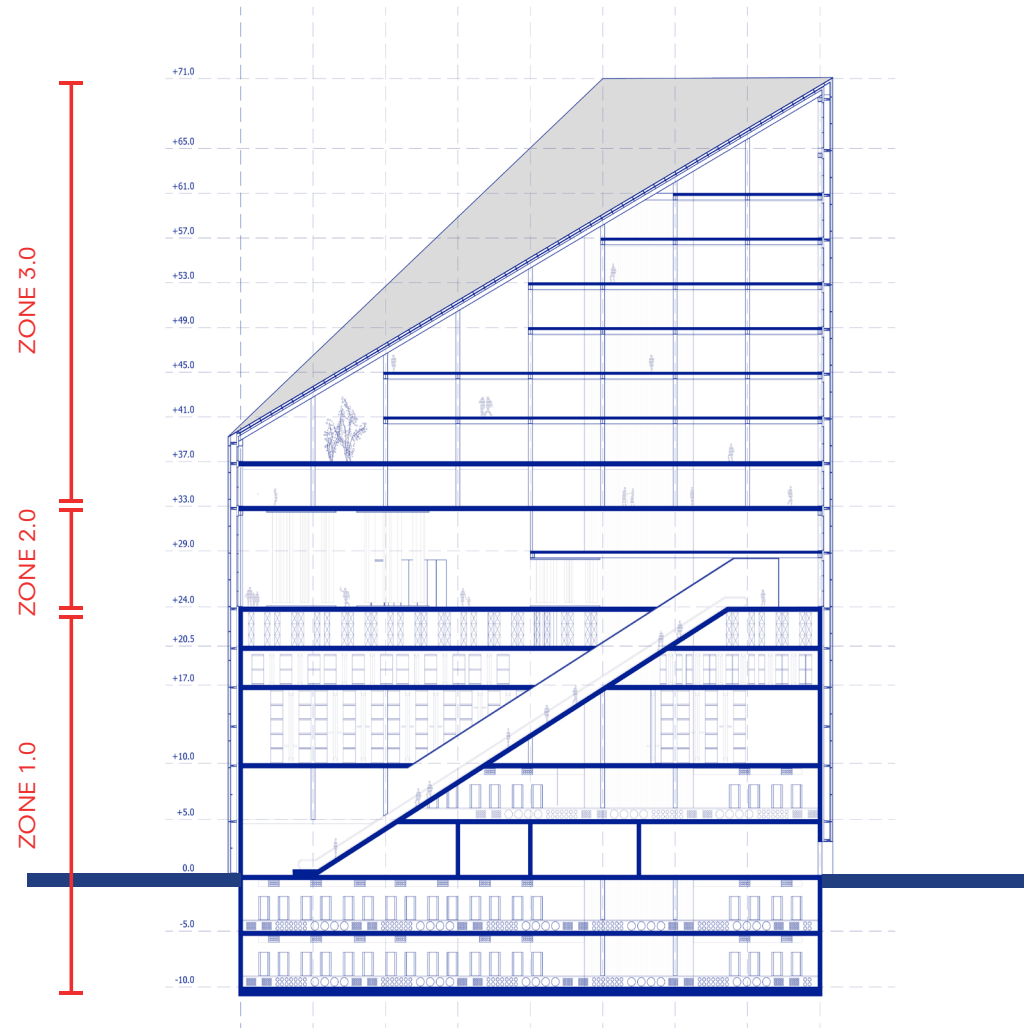


CLIMATE PRINCIPLES

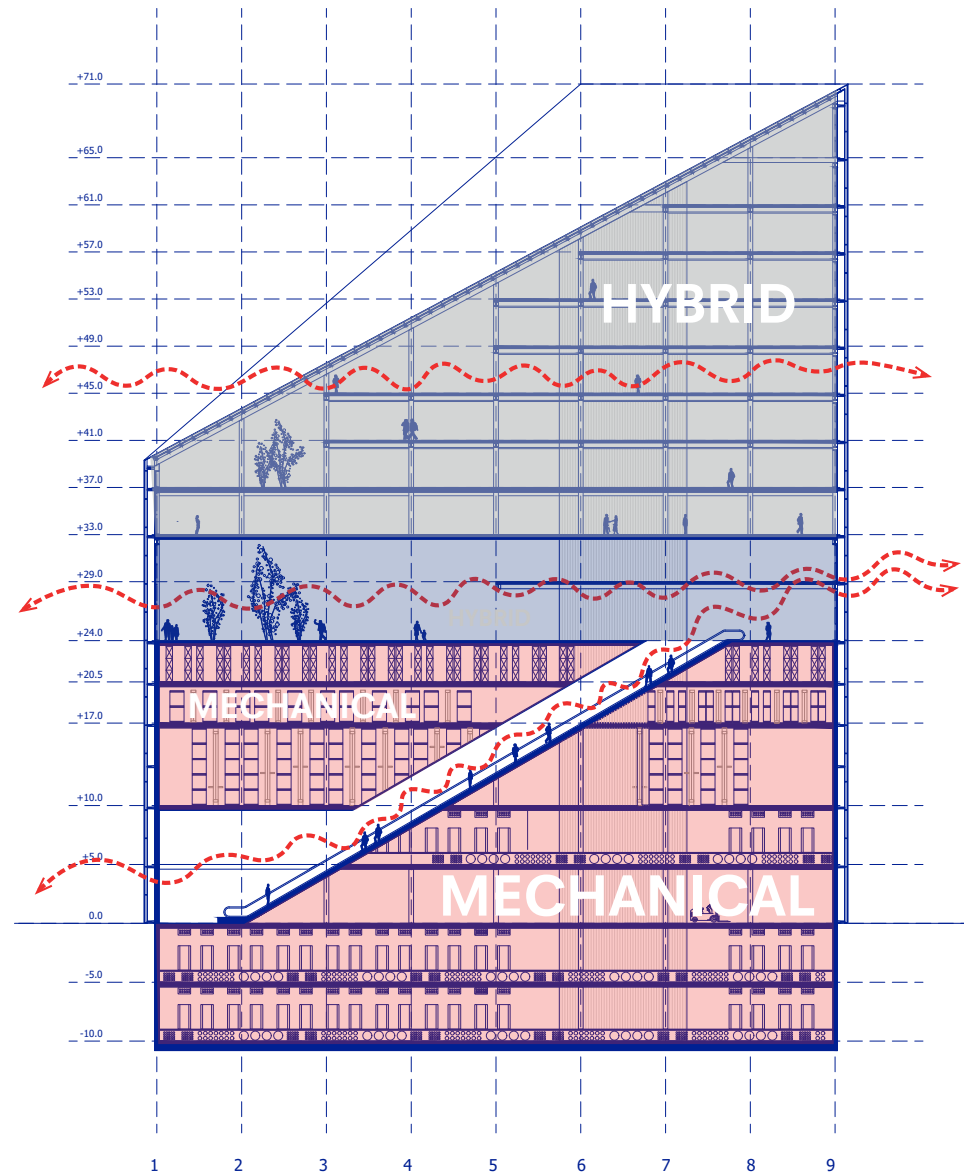
ZONE 3.0
climate controlled by
users
+
natural ventilation
natural light

ZONE 2.0
centrally controlled
climate
+
natural ventilation
natural light

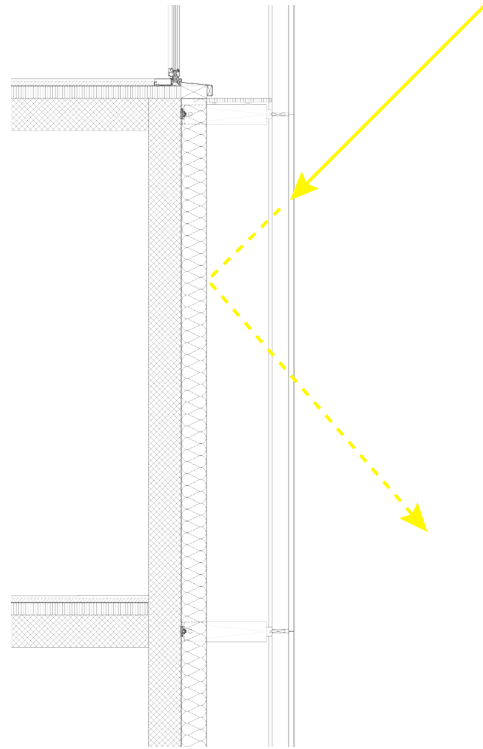
ZONE 1.0
artificial;
strictly regulated



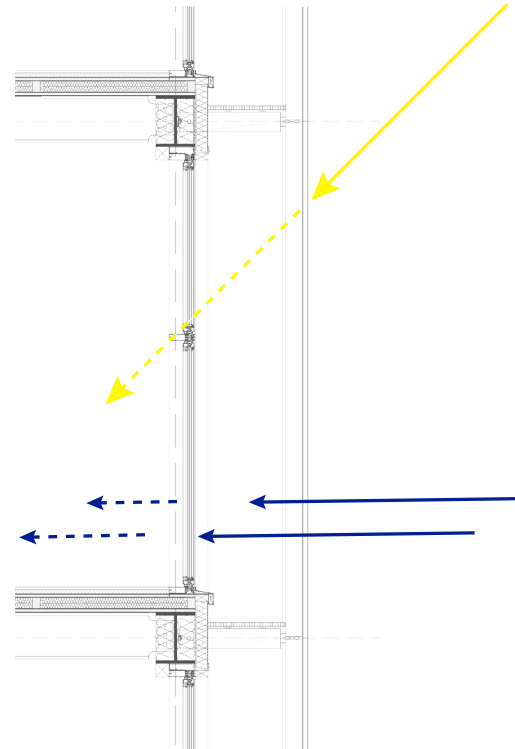
Development
VENTILATION



FACADE

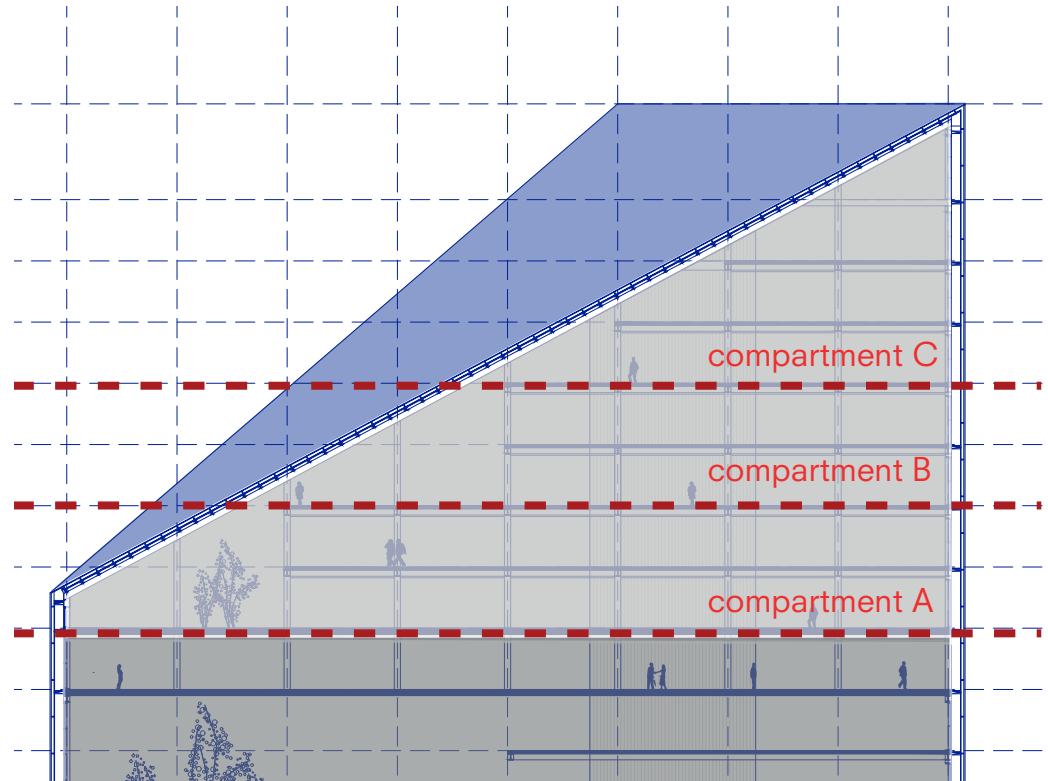


ZONE 1.0
blocking light



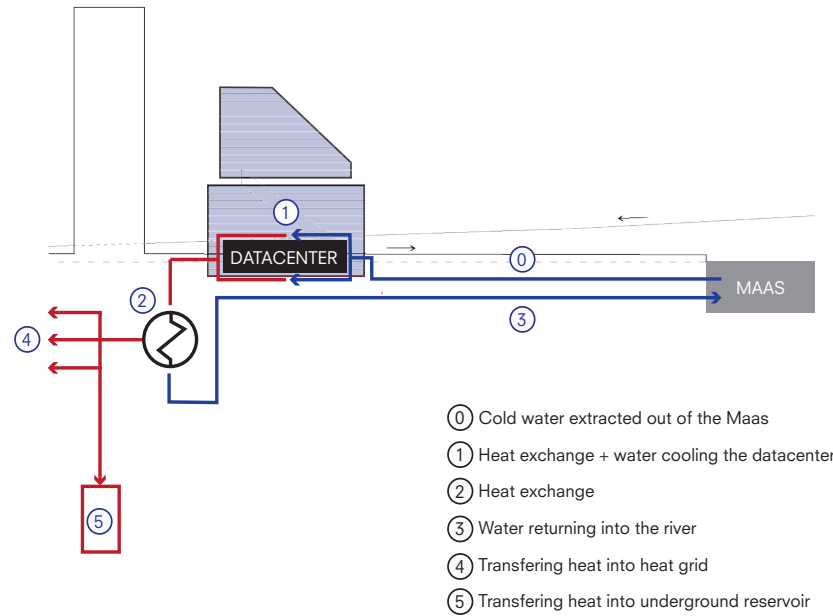
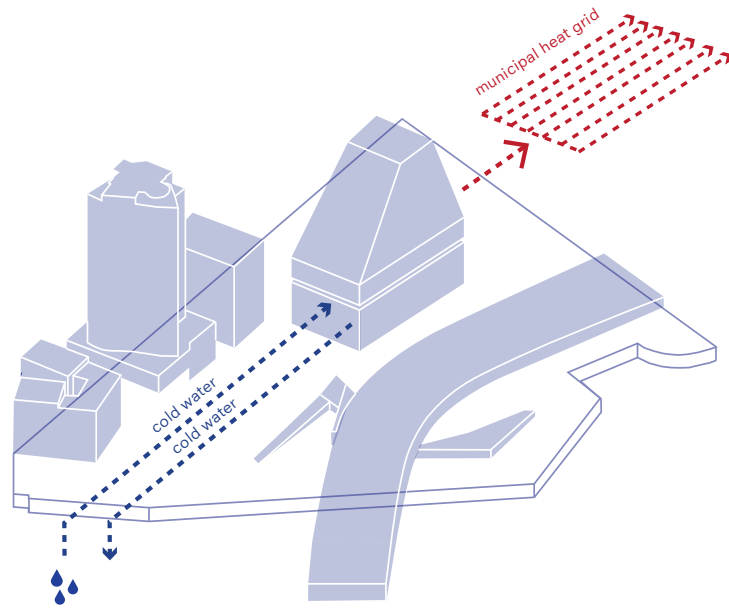
ZONE 2.0 and 3.0
diffusing light
reducing wind

SAFETY

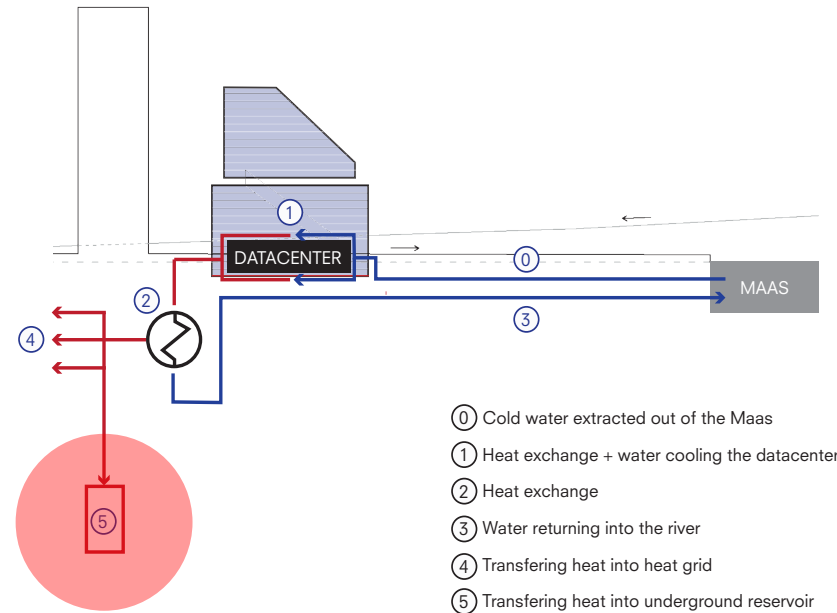
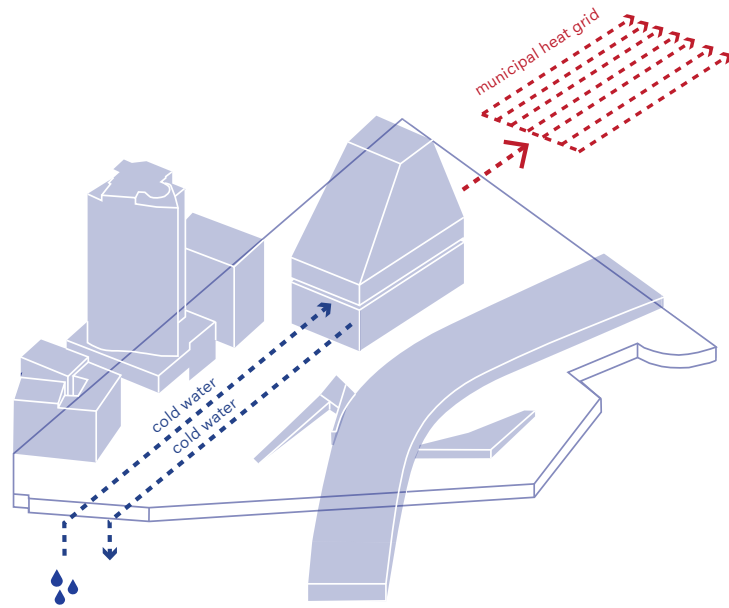


3 COMPARTMENTS
fire protection
noise regulation
climate regulation

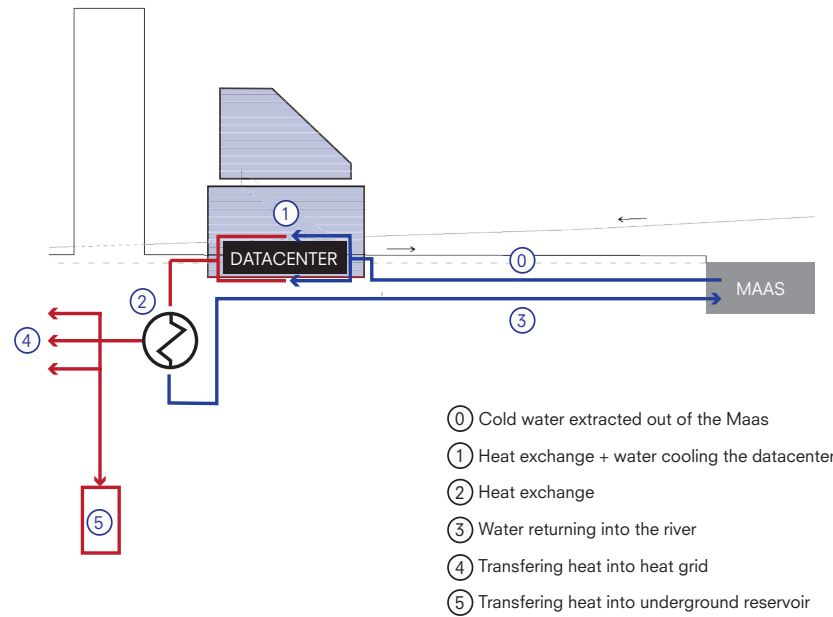
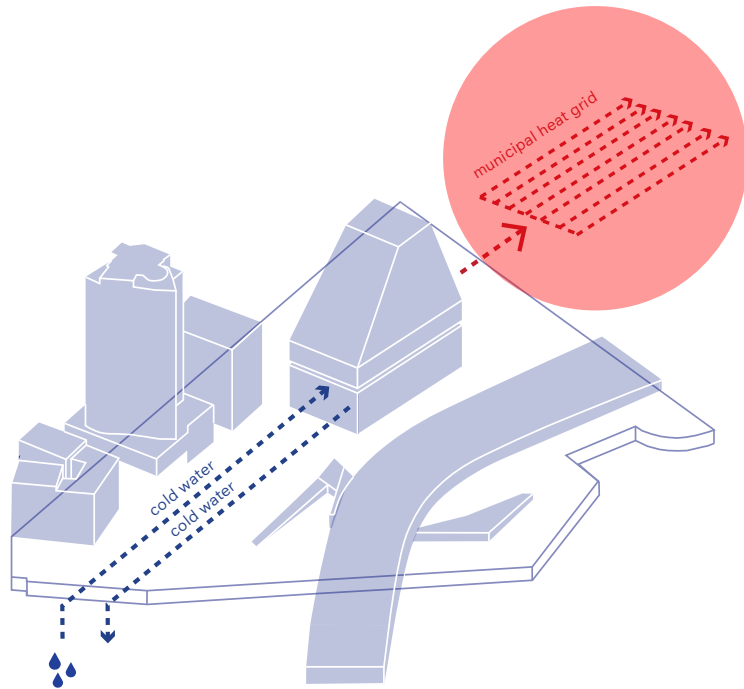
HEATING AND COOLING



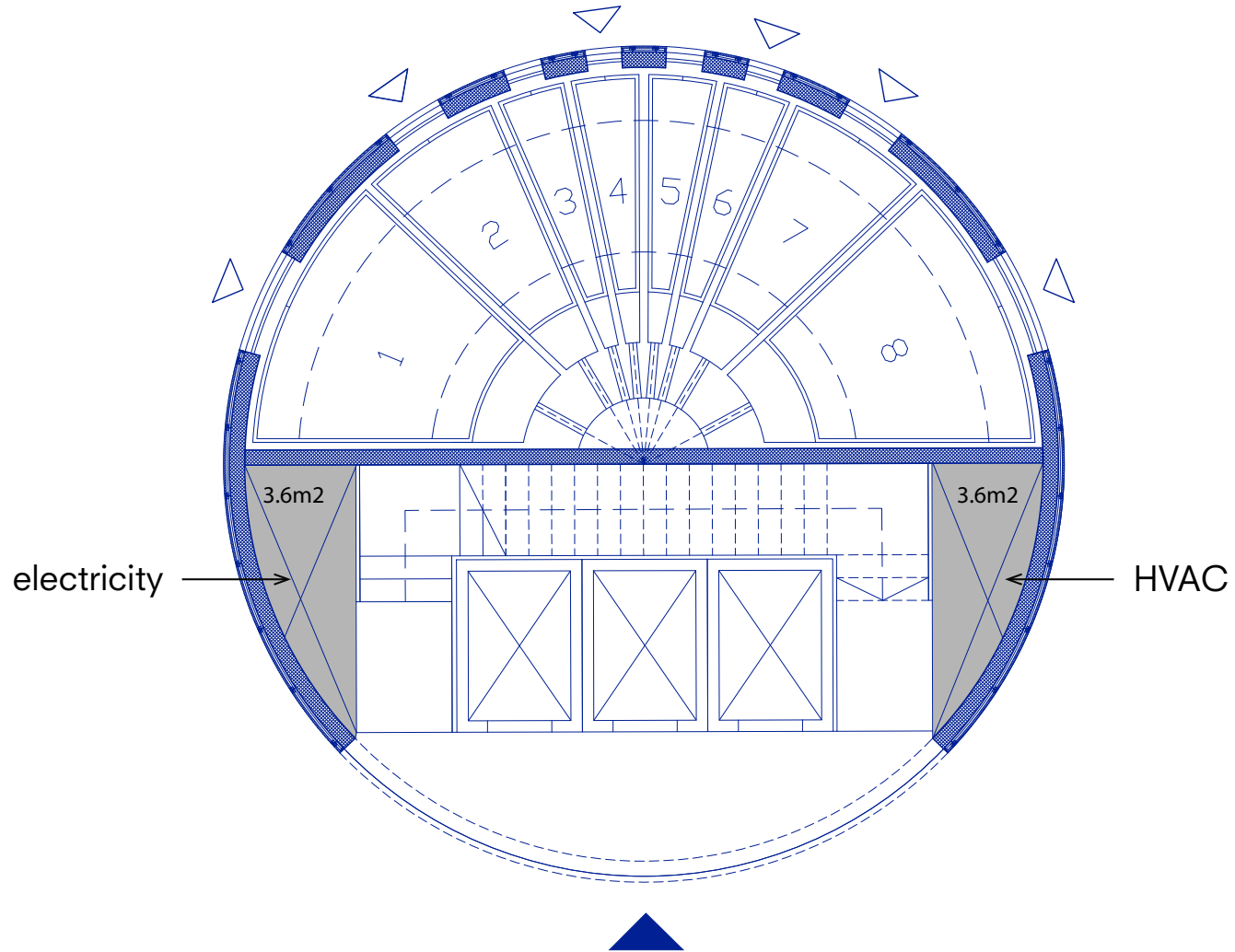
HEATING AND COOLING



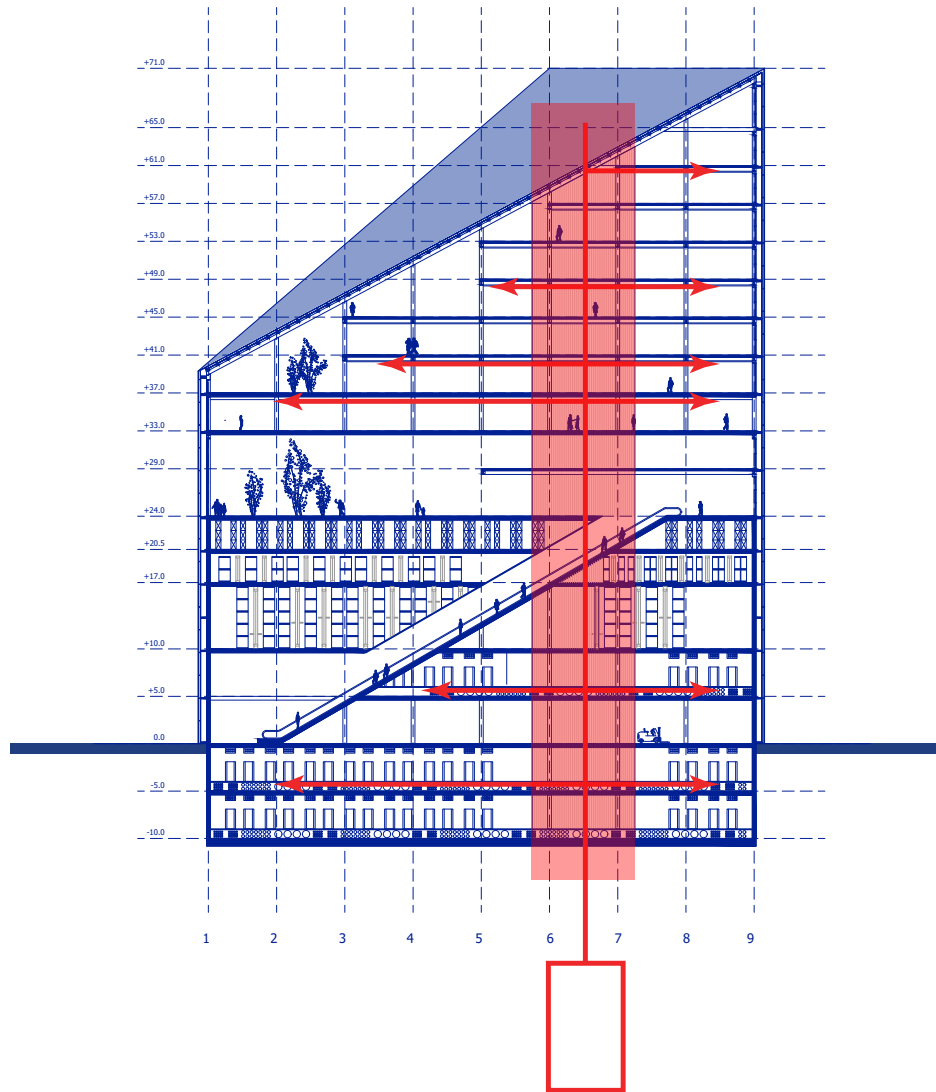
Development
HEATING AND COOLING



TECHNICAL INSTALATIONS

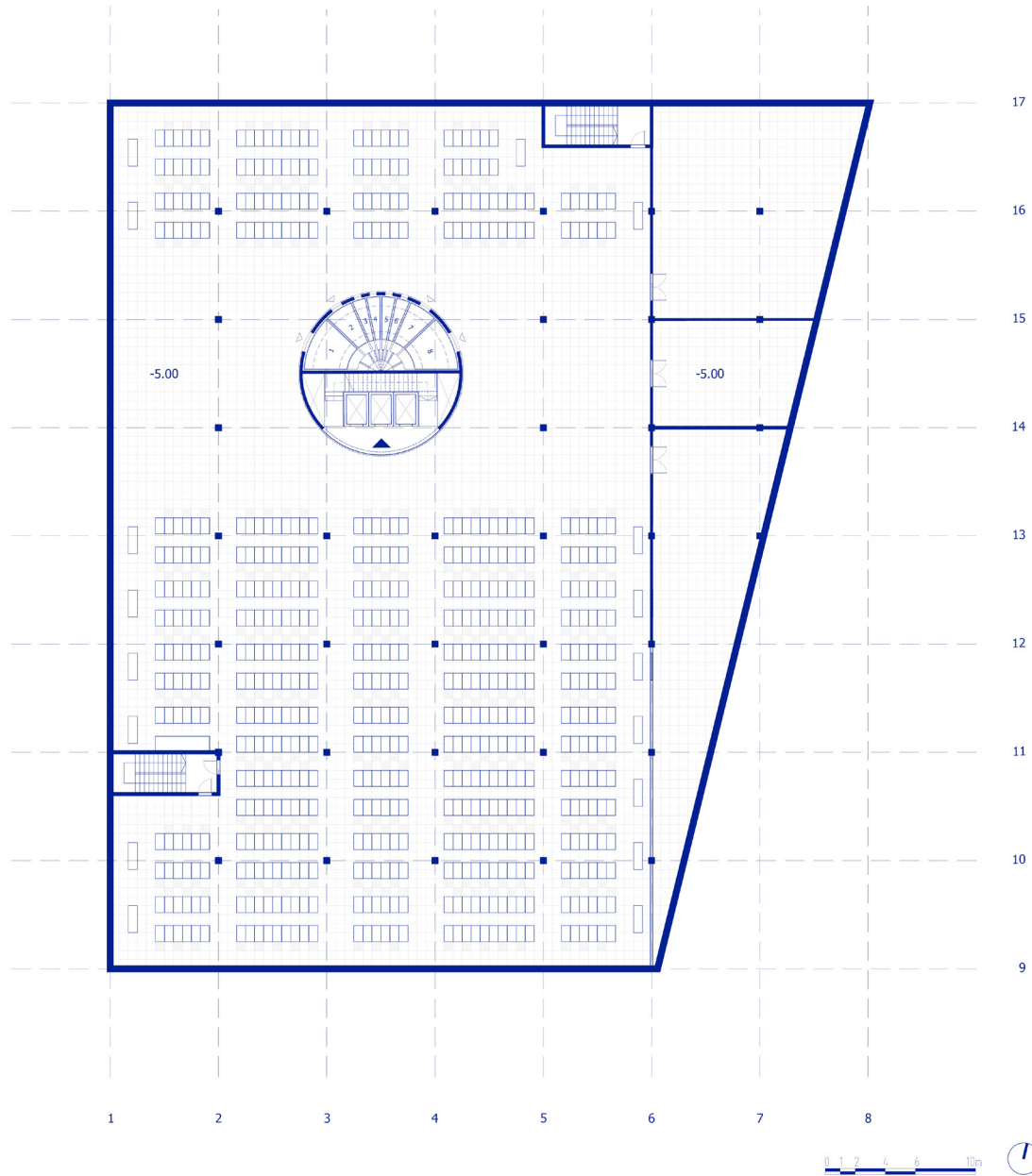


TECHNICAL INSTALATIONS



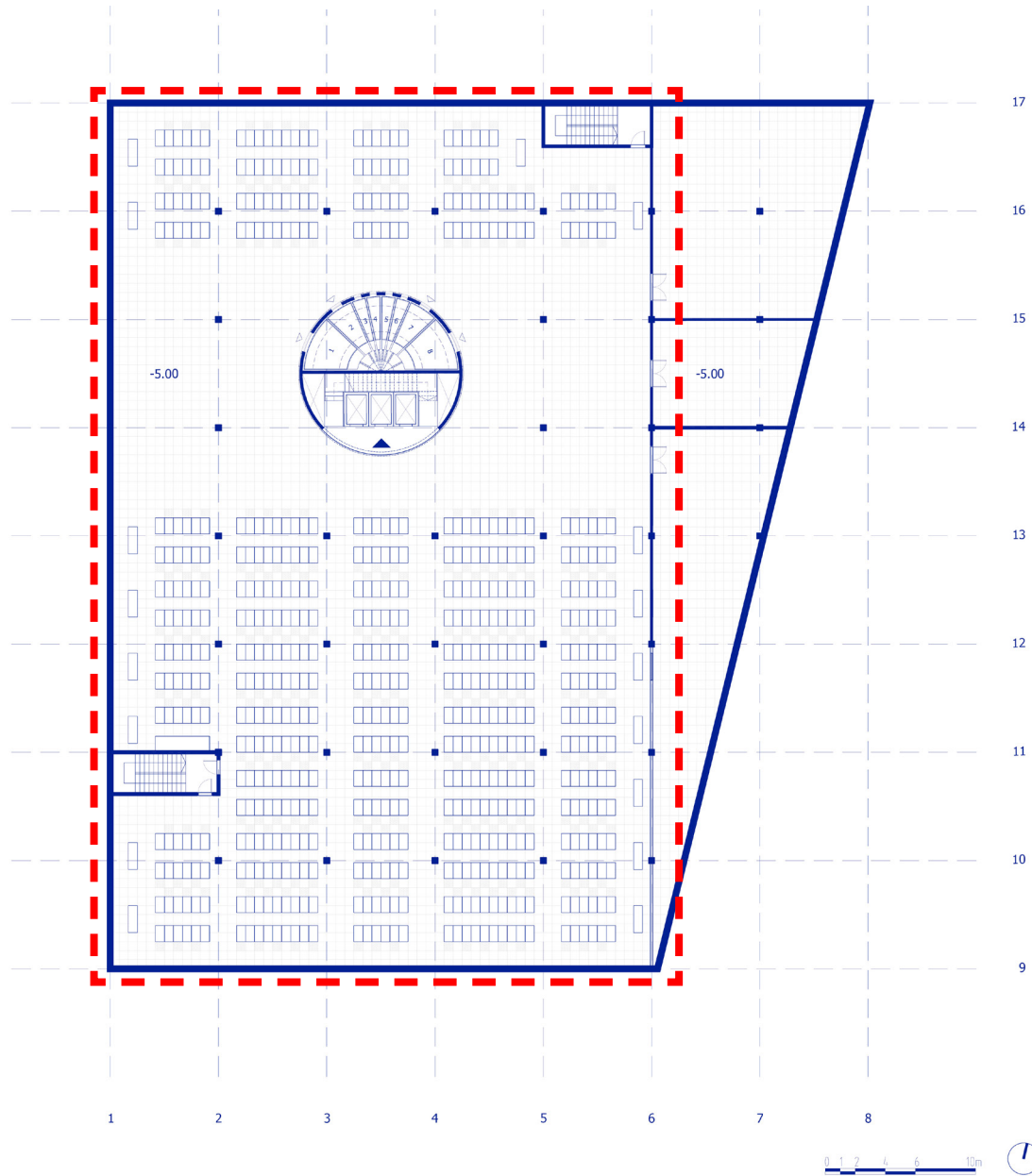
DATA CENTRE

level -1

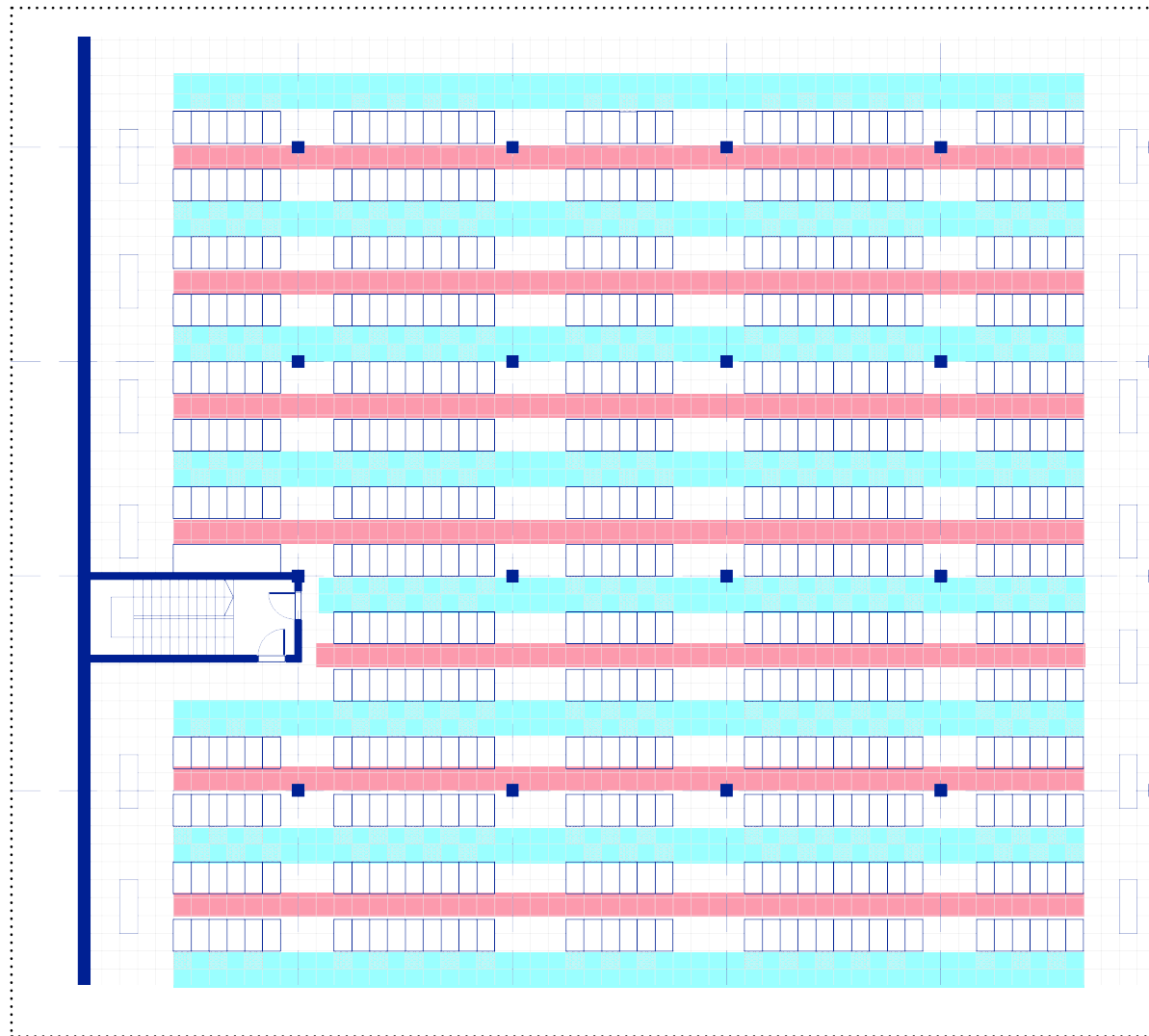


DATA CENTRE

level -1

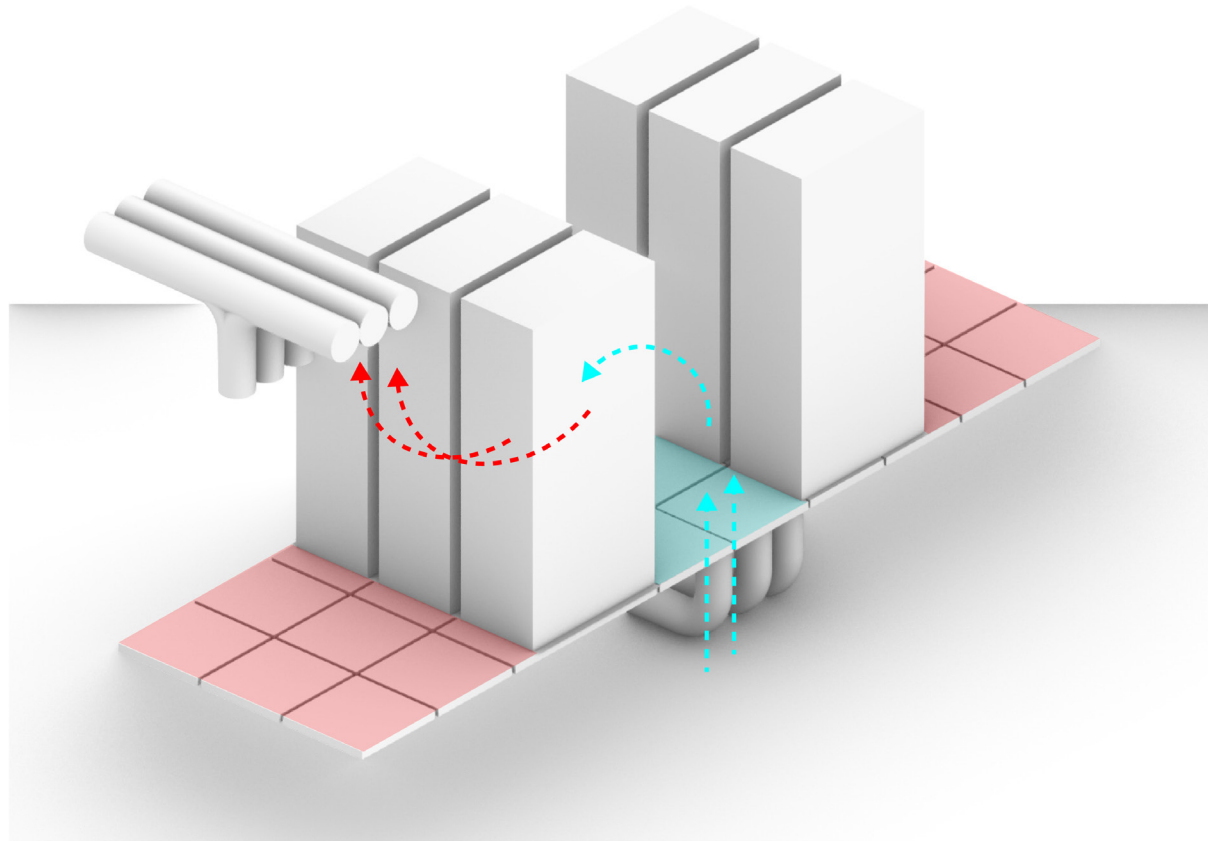


SERVER RACKS - LAYOUT

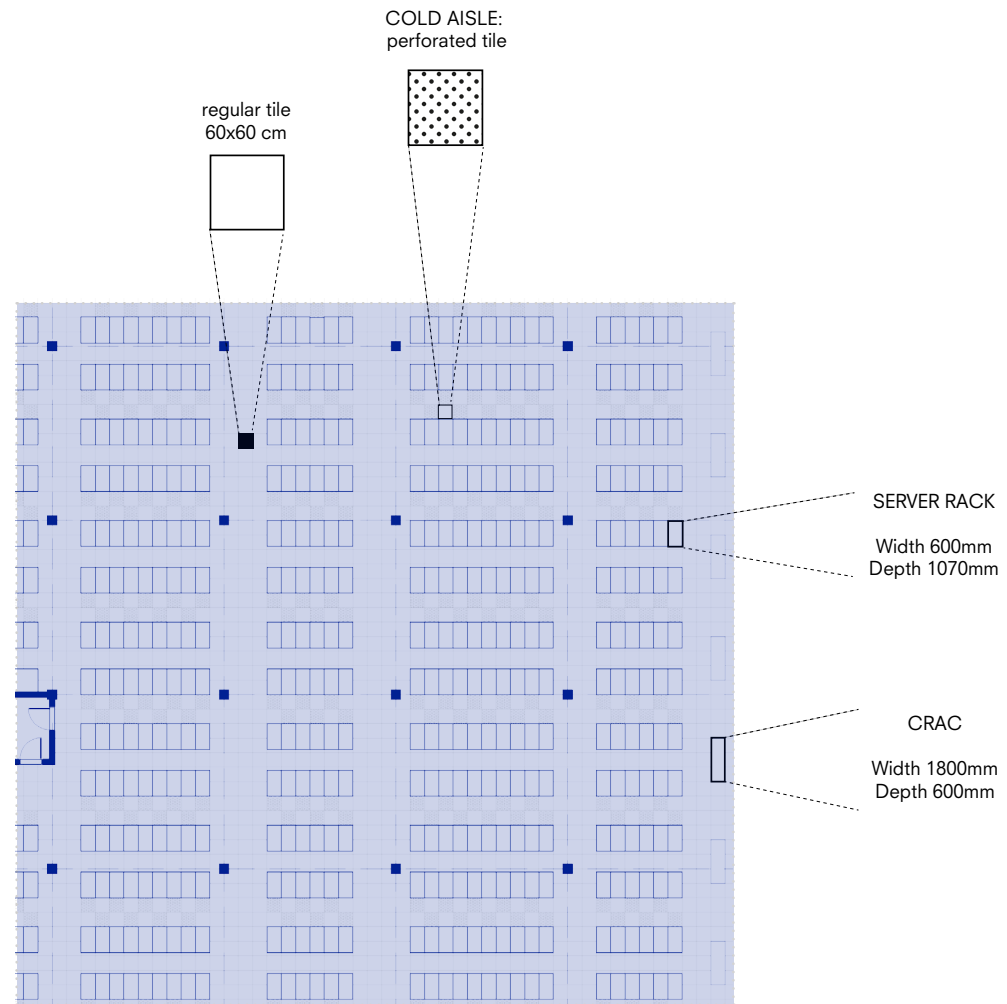


Altering hot and cold aisles

SERVER RACKS - COOLING



Development DATACENTRE



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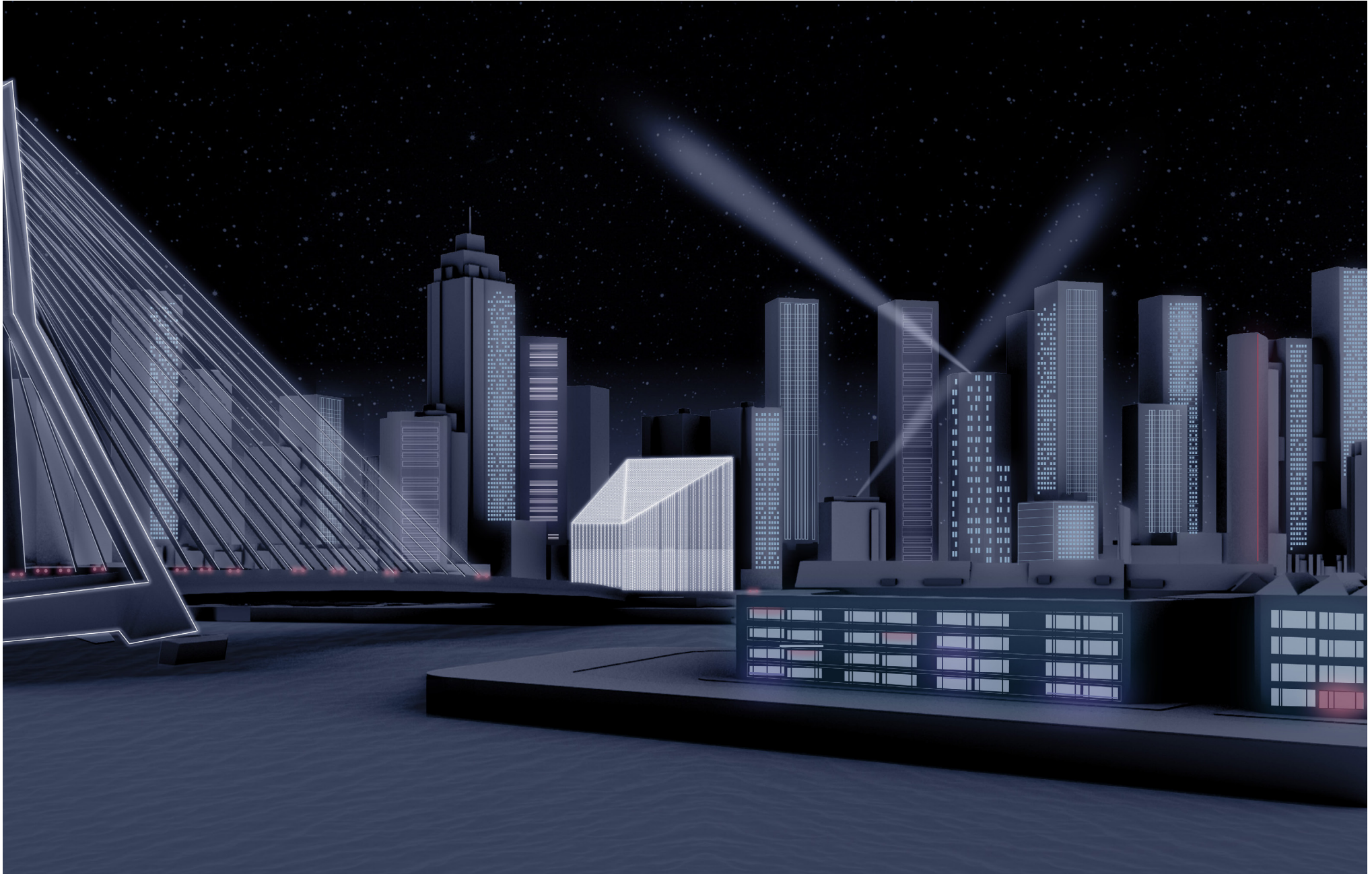
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Conclusion
BANK OF MAAS



> ...exploring the possibilities
of urban production

PRODUCTIVE RESOURCES



CITIES AS PRODUCTIVE, WELL CONNECTED BODIES



Conclusion

> ... facilitated with a network of productive resource banks.





THANK YOU.



complex projects