TOWARDS A NEW PRISON

Facilitating the cyber crime threat

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CP

P5 01-02-2019

1. **Introduction:** cyber & no man's land
2. **Research:** traditional to cyber prison
3. **The concept:** unity, trinity, cavity
4. **The scheme:** construction, climate and materialization

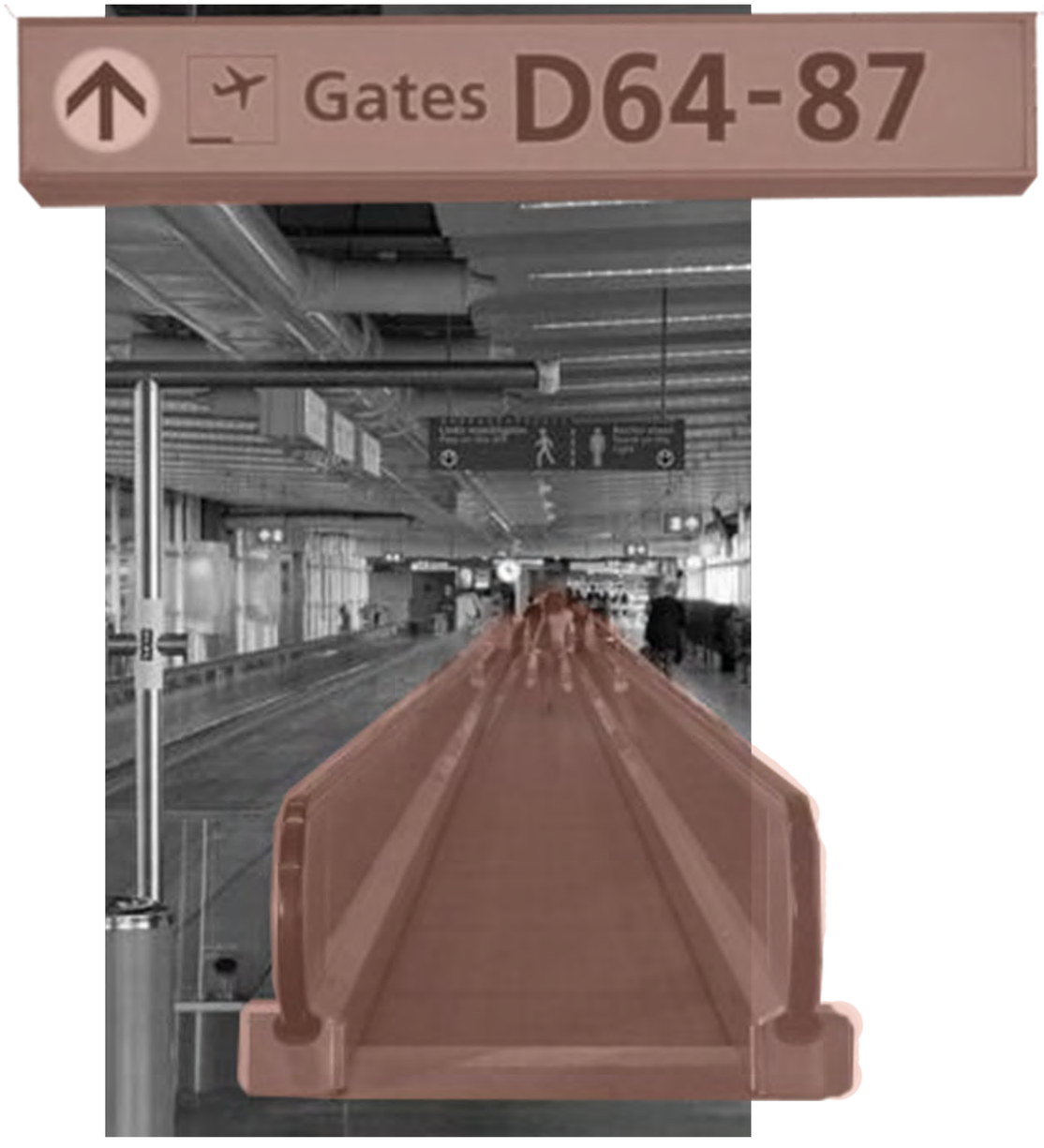
SCHIPHOL 2050

Schiphol

Schiphol plaza

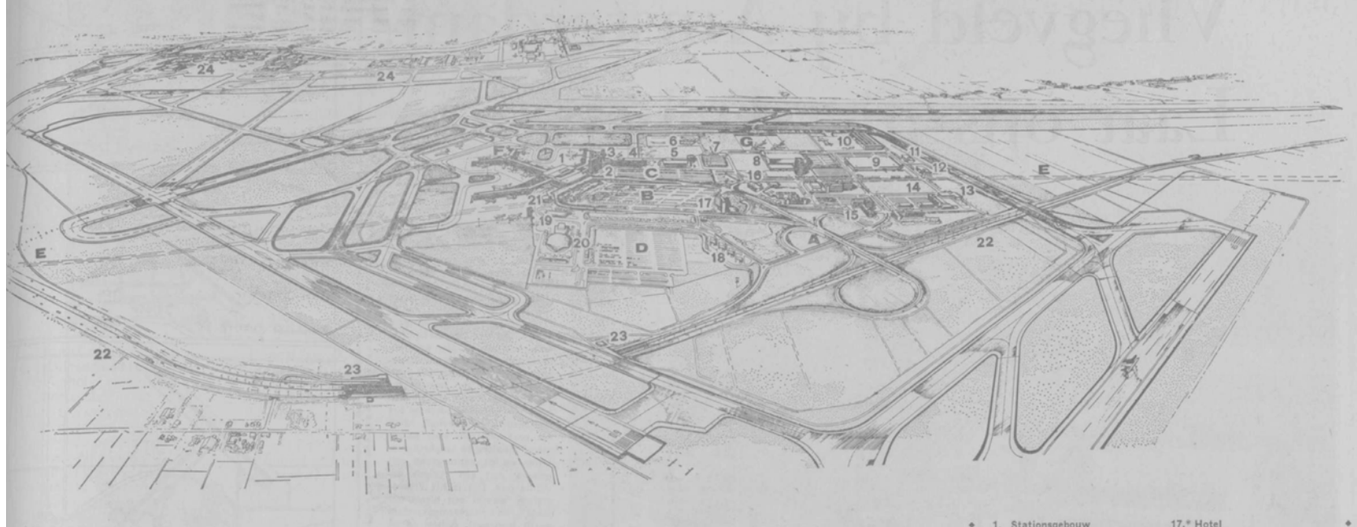
Ceintuurbaan

Restrictions



Automation

In polder verrees nieuw SCHIPHOL



Automatisering maakt het passagiers gemakkelijk

P vrijdag 28 april zal koningin Juliana het nieuwe Schiphol officieel openen. Zij zal met de genodigden in een lege luchthaven staan, want het eigenlijke moment van ingebruikning valt in de nacht van 7 op 8 mei. Dan zal van het ene uur op het andere het oude al buiten gebruik worden gesteld en het eerste toestel zijn passagiers afleveren in het ednieuwe stationsgebouw dat enkele kilometers verder op in de Haarlemmermeerpolder errezen.

ONDER zich aan de buitenlucht te hoeven bloot te stellen zal de luchtpassagier dan vanuit zijn huiskamer naar verre steden kunnen reizen. Indien hij een garage heeft, die aan zijn woning grenst zal hij van daar uit zijn auto naar de luchthaven rijden en zijn wagen stallen in een van de twee parkeergarages onder het tsgebouw. Vandaar gaat hij met de lift naar de vertrekhal op de eerste verdieping; vervolgens door spoortencontrole via de pieren en de Aviobruggen het vliegtuig in. Hij zal pas op het vliegveld van aanst de eerste buitenlucht opsnuiven. Dat is een van de mogelijkheden, die het nieuwe Schiphol biedt. Een thaven, die zich met de modernste ter wereld kan meten, die in vier jaar tijds uit de grond is gestampt en van de totale bouwkosten globaal *f* 400 miljoen bedragen. Het gehele luchthavencomplex wordt ingesloten vier start- en landingsbanen (het zogenaamde tangentiële uitbreidingsplan). Eén baan aan de overzijde rijksweg no. 4 moet nog worden aangelegd. Deze banen, elk 3300 meter lang, zijn een meter dik en samengesteld uit een aandwich van diverse soorten beton en zand.

nieursbureau ir. F. C. Weger te Rotterdam en prof. M. Duintjer in Amsterdam.

Kritiek

De opzet van het nieuwe stationsgebouw is veel rationeler dan die van het oude, dat van kort na de oorlog dateert toen men nog geen prognoses kon maken over de ontwikkeling van de luchtvaart anno 1967. Het maken van prognoses is trouwens nog moeilijk, want steeds blijkt de ontwikkeling veel sneller te gaan dan verwacht werd. Dit heeft tot gevolg, dat het ontwerp van de gehele nieuwe luchthaven kritiek heeft ontmoet van deskundige en minder deskundige personen, die van mening zijn dat er nog niet ver genoeg in de toekomst is gekeken.

Daar tegenover kan men stellen: op tere oppervlakte heeft dan Kennedy Airport in New York. Er is ook ruimte voor een hotel gereserveerd, maar over de bouw daarvan is nog niets definitief.

Uitgangspunt bij het ontwerpen van het nieuwe stationsgebouw was: de loopafstanden voor de passagiers zo kort mogelijk te houden en voor doorgaande reizigers snel overstappen mogelijk te maken. Met het aangrenzende bemanningscentrum is het stationsgebouw ongeveer zo groot als de nieuwe Nederlandsche Bank op het Frederikplein. Een 850 meter lange op- en afrit maakt de vertrekhal voor reizigers toegankelijk. Daarover kan men met de auto tot voor de ingang van de vertrekhal op de eerste verdieping rijden. De reiziger bevindt zich dan op hetzelfde niveau als de cabinevloer van het vliegtuig waarmee hij zal vertrekken.

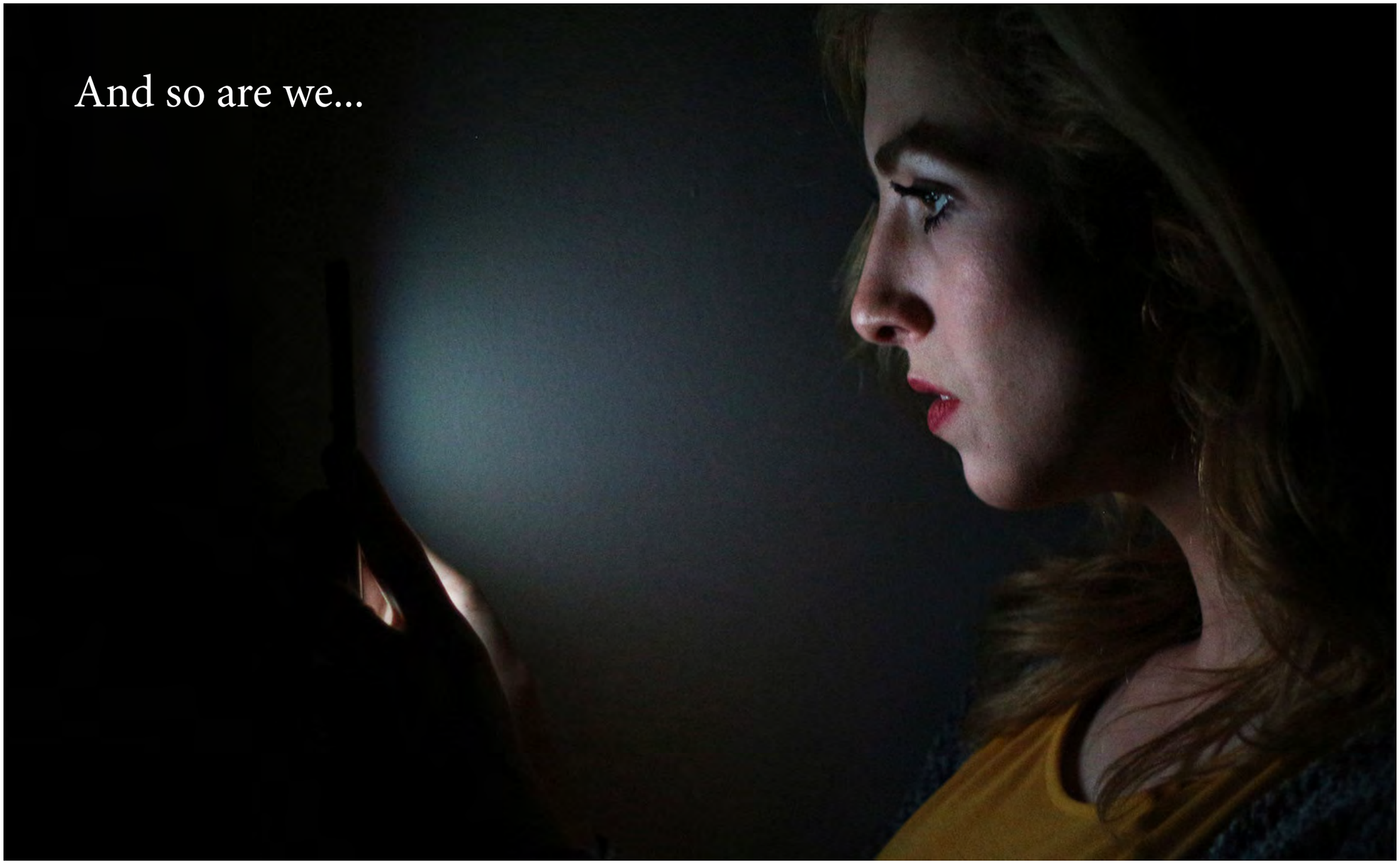
ze pieren kunnen 25 vliegtuigen tegelijk worden opgesteld, maar na eventuele verlenging van de twee zijpieren is er plaats voor 45 toestellen. Op de middenpier is een lopende band als een soort voortschuivend trottoir, zodat de passagier het lopen van deze afstand (250 meter), ook nog wordt

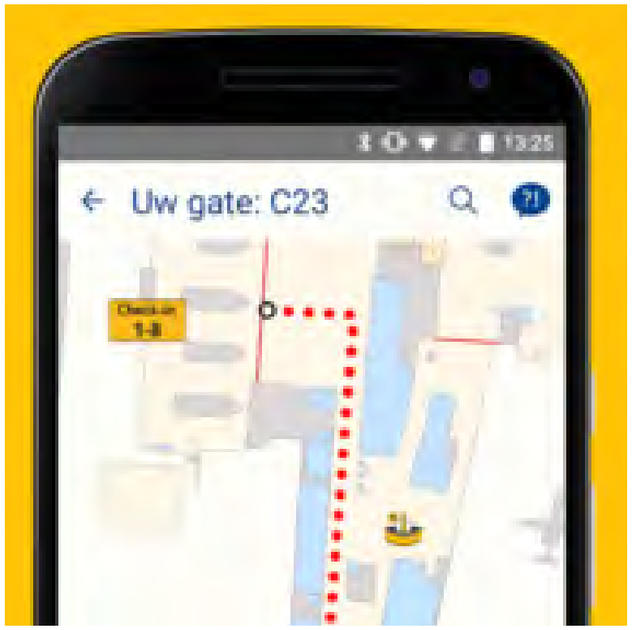
vervoer met buzjes en het overstappen op het winderige platform, zoals dat tot nu toe op Schiphol gebruikelijk was, behoort tot het verleden. Het dak van de pieren is toegankelijk voor uitwuivers en bezoekers. Men kan op die manier heel dicht bij de vliegtuigen komen. Door de toegenomen druk-

Algemeen Handelsblad, 26 April 1967

Automation makes it easy for passengers

Schiphol is very dependent on technology for flows, over all functioning and security


And so are we...

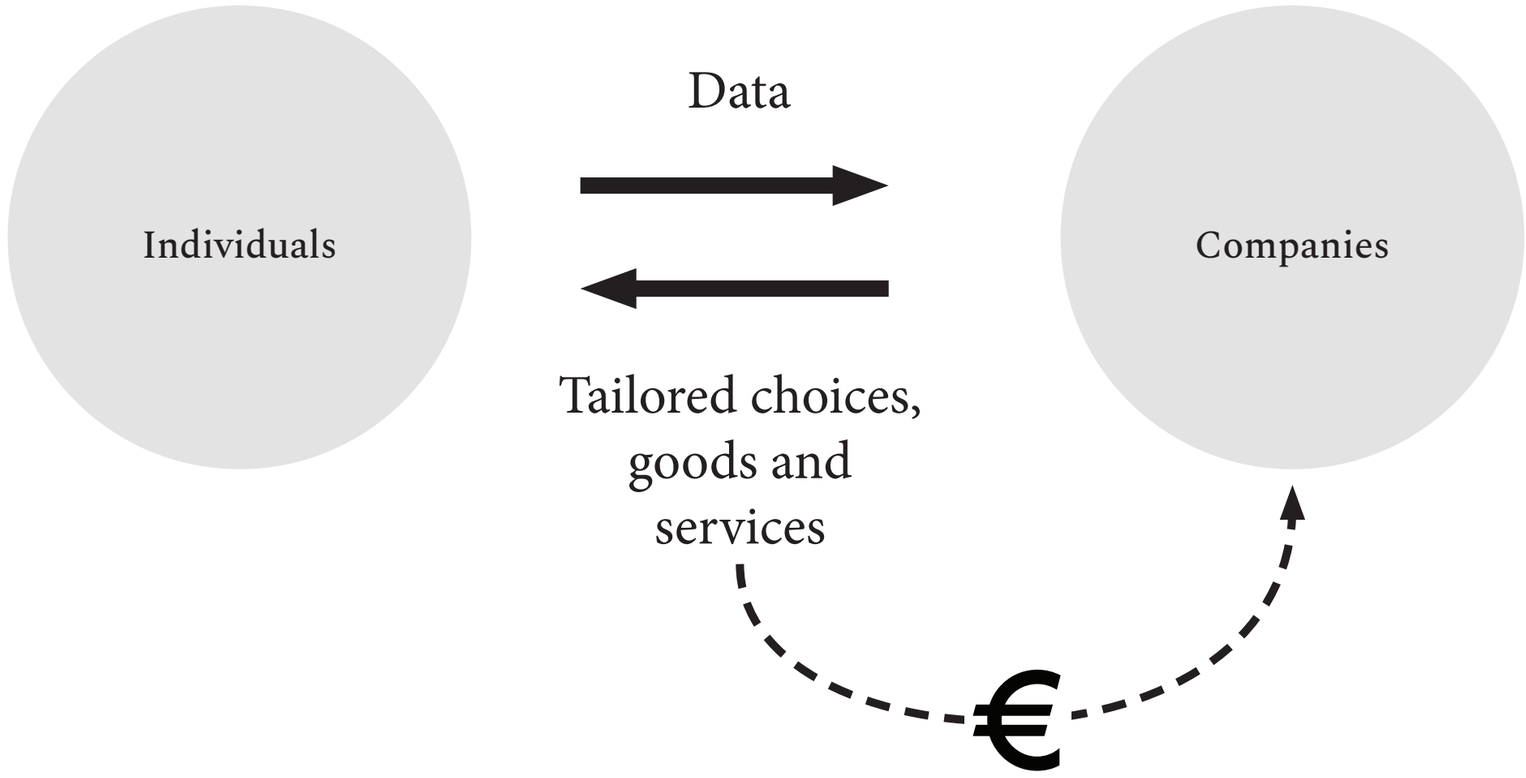


Possibilities of the digitalization

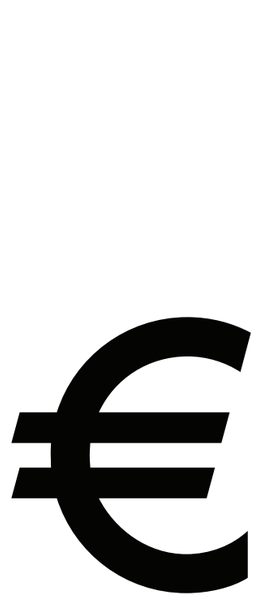
Data does have **value** in **understanding, predicting and influencing** individual behavior and decisions.

https://www.weforum.org/agenda/2017/09/the-value-of-data/

Value of data



Value out of data



335,5 billion euro

2018

769 billion euro

2025

European data economy

Data is the new Oil

There is **tremendous good** that data sharing brings about. But data sharing raises **legitimate concerns** about economic and national security, citizen and consumer privacy, and loss of intellectual property.

https://www.weforum.org/agenda/2016/01/a-global-economy-powered-by-data

Criminalization of data

Nature has placed mankind under the governance of two sovereign masters, **pain and pleasure**. It is for them alone to point out what we ought to do, as well as to determine what we **shall do**.

Jeremy Bentham, Principles of Morals and Legislation, 1832

Pleasure gained from crime

vs.

Pain of punishment

Anonymity of cyber space

The non-degradation of objects

Emancipation from place

Cyber crime

Probability
x
Impact
=
Risk

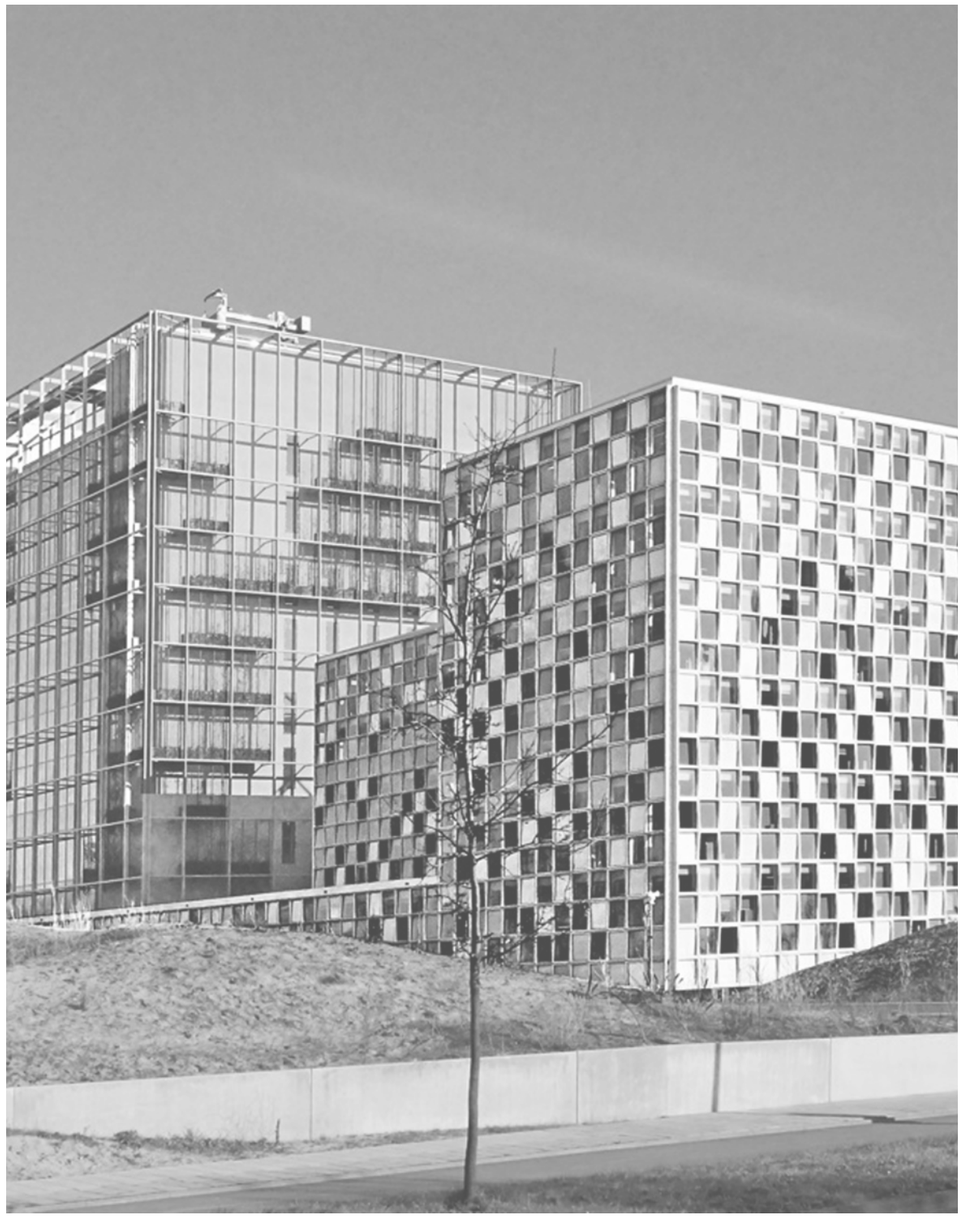
Research question

What role can Schiphol (and its no mans land) play in facilitating the increasing threat of cybercrime in the future?

Existing institutes and regulation

1995: Data protection directive (DPD)

2018: General data protection regulation (GDPR)

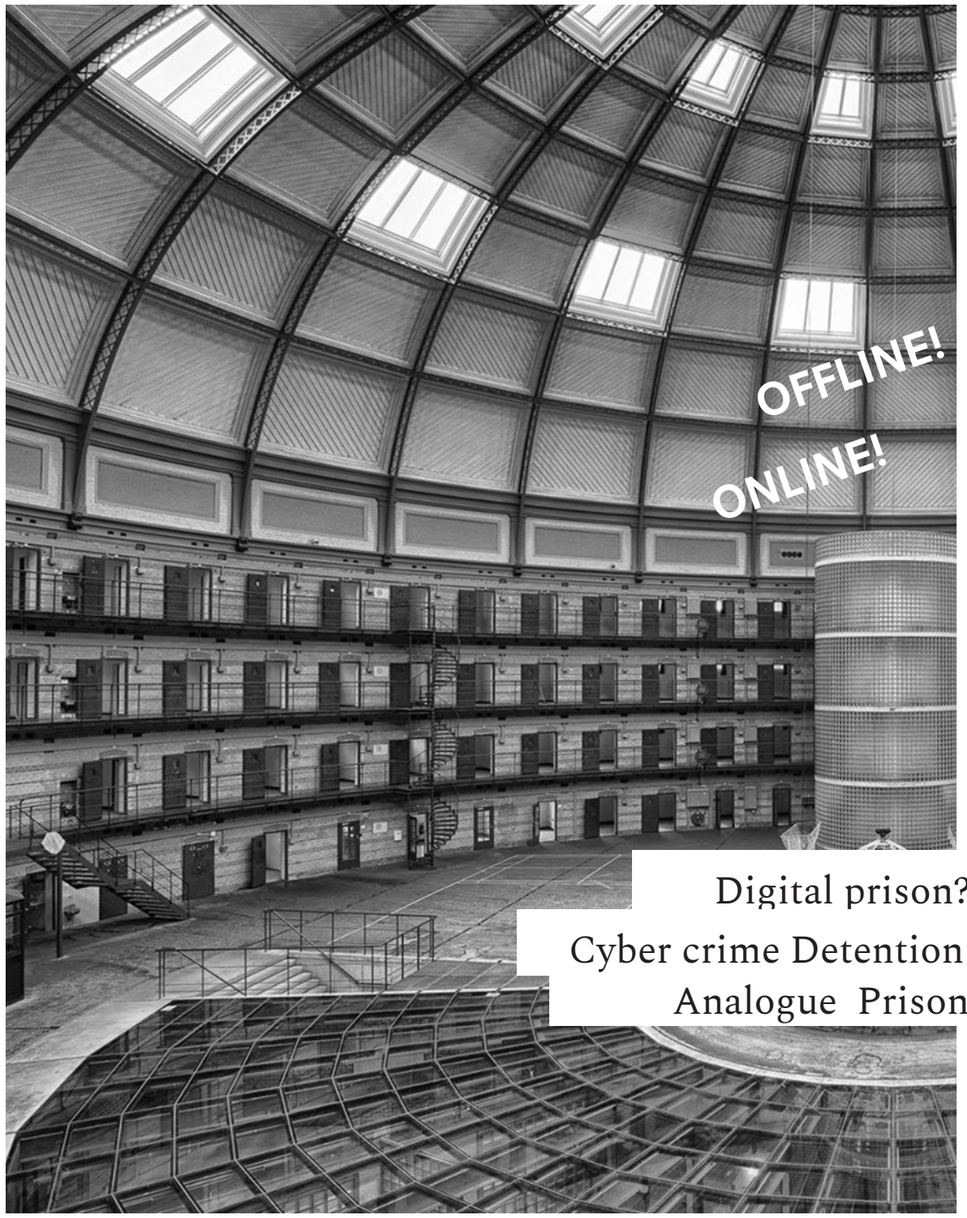


The Hague International criminal court

Europol: European Cybercrime Centre, The Hague

The Hague Security Delta

Tracking – Judging – Punishing



Digital prison?

Cyber crime Detention Centre?

Analogue Prison?

WHY SCHIPHOL?

Schiphol 2050: ‘Schip-hattan’

Traditional airport

vs.

Schip- ”hattan”

Visa free

An International zone..

A “No mans land”

Location at Schiphol

Location at Schiphol

Location at Schiphol

Location at Schiphol

Combination:
Vulnerability & “no man’s land”

What is a Cybercrime Prison?

RESEARCH

History of punishment and case studies

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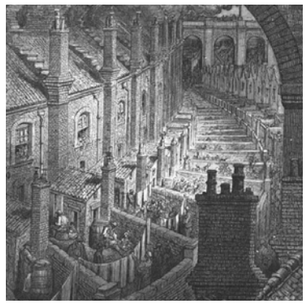
HISTORY OF PUNISHMENT

Literature research

WHAT IS PUNISHMENT?

1. It is imposed by an authority;
2. It deprives the offender of something valuable;
3. It is in response to an offence

HOW DID METHODS OF PUNISHMENT DEVELOP OVER THE YEARS?



History of punishment

1600s: corporal punishment & house of corrections

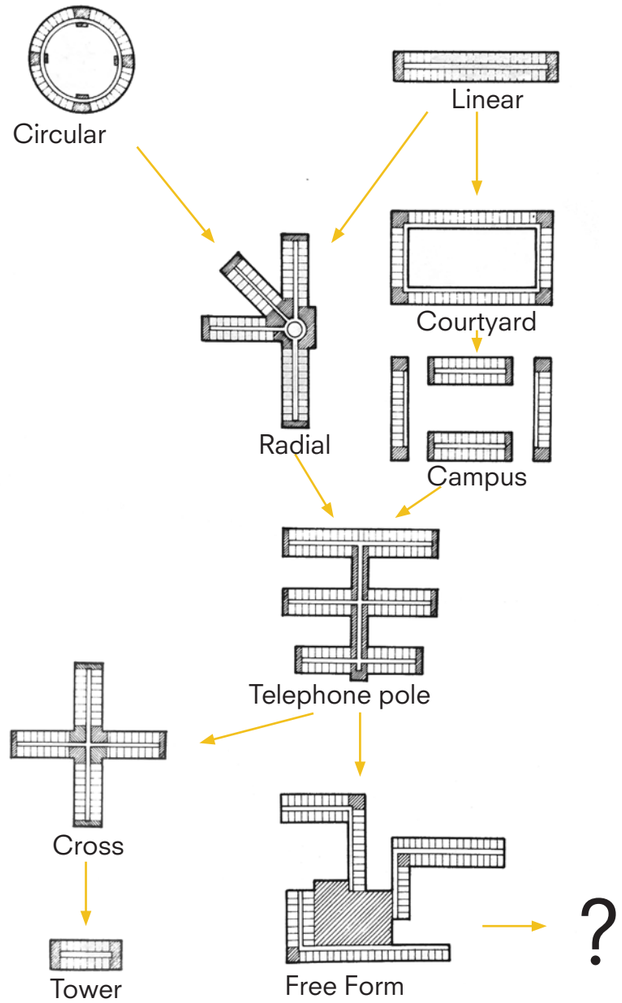
1700s: suspending freedom as punishment

Early 1800s: introduction of the prison cell

Late 1800s: architecture as disciplinary tool

Late 1900s: isolation to resocialization

2000s: resocialization to efficiency



Typological development

HOW DOES PUNISHMENT WORK FOR CYBERCRIME?

1. It is imposed by an authority;
2. **It deprives the offender of something valuable;**
3. It is in response to an offence

Past

Digital

Physical

Present

Digital Physical

Future?

Physical
Digital

Spatial isolation

Crime in physical space → Suspense from physical space → Rehabilitating for physical society

Rethinking punishment

Restriction of digital and physical freedom

&

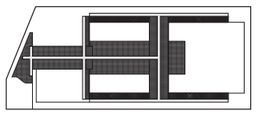
Preparation to return to digital and physical society

PROGRAM & MASSING

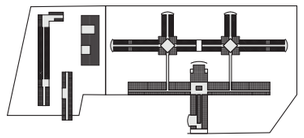
Research

PROGRAM

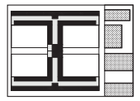
Case studies



PI Hoogeveen
22.000 m^2

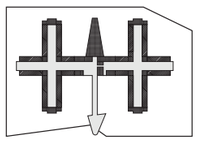


PI Zwolle I & II
25.000 m^2

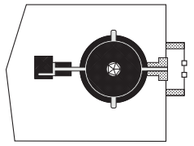


PI Alpehn aan den rijn
31.000 m^2

PI Grave
20.000 m^2

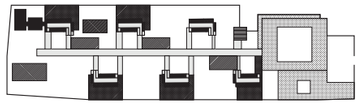


PI Nieuwegein
25.000 m^2



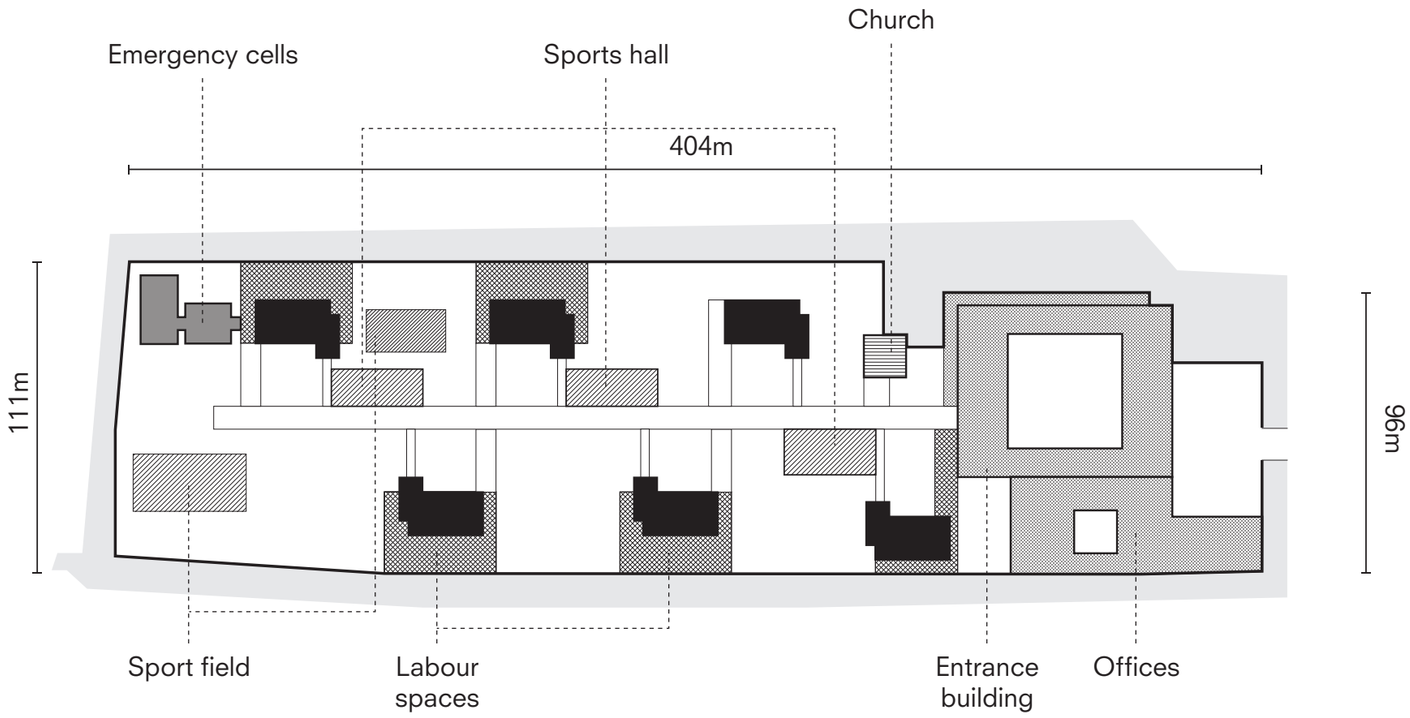
PI de Berg
17.000 m^2

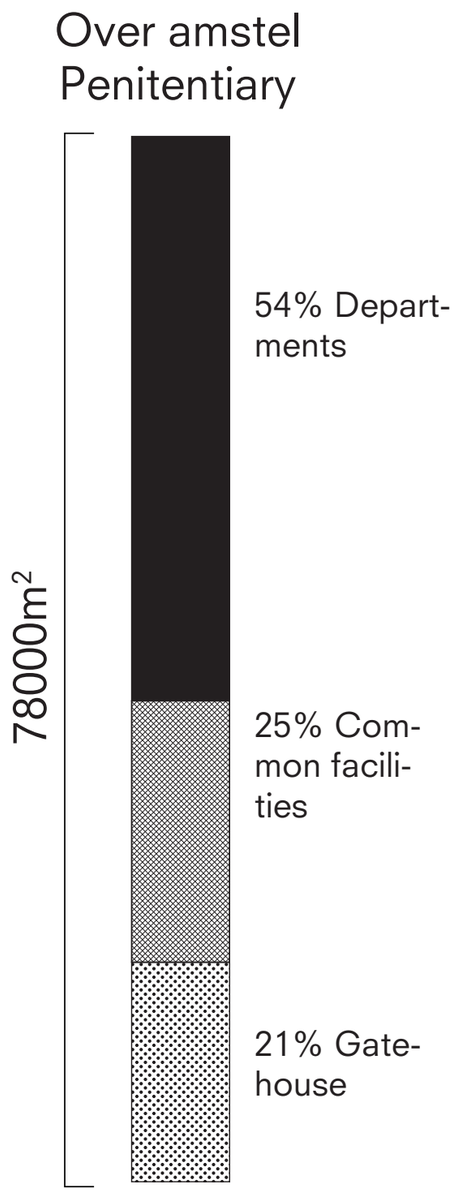
PI de Schie
25.000 m^2

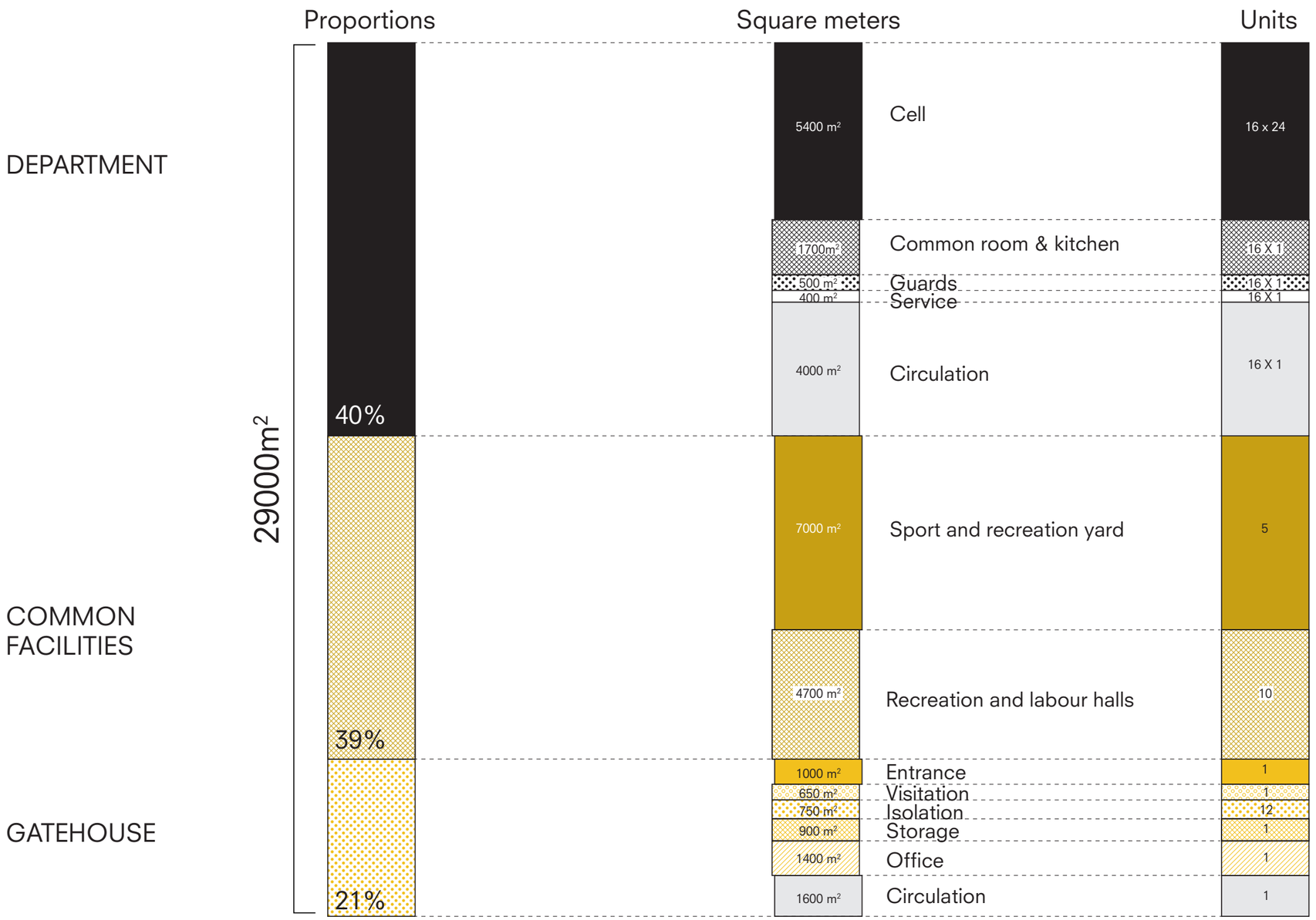


PI Over Amstel
85.000 m^2

Gatehouse - Common facilities - Cells & departments


Emergency cells
Sports hall
Church
404m
111m
96m
Sport field
Labour spaces
Entrance building
Offices


Over amstel Penitentiary
78000m2
54% Depart-ments
25% Com-mon facili-ties
21% Gate-house


Proportions
Square meters
Units
DEPARTMENT
COMMON FACILITIES
GATEHOUSE
29000m²
40%
39%
21%
5400 m²
Cell
16 x 24
1700m²
Common room & kitchen
16 X 1
500 m²
Guards
16 X 1
400 m²
Service
16 X 1
4000 m²
Circulation
16 X 1
7000 m²
Sport and recreation yard
5
4700 m²
Recreation and labour halls
10
1000 m²
Entrance
1
650 m²
Visitation
1
750 m²
Isolation
12
900 m²
Storage
1
1400 m²
Office
1
1600 m²
Circulation
1

ADDITIONAL PROGRAM

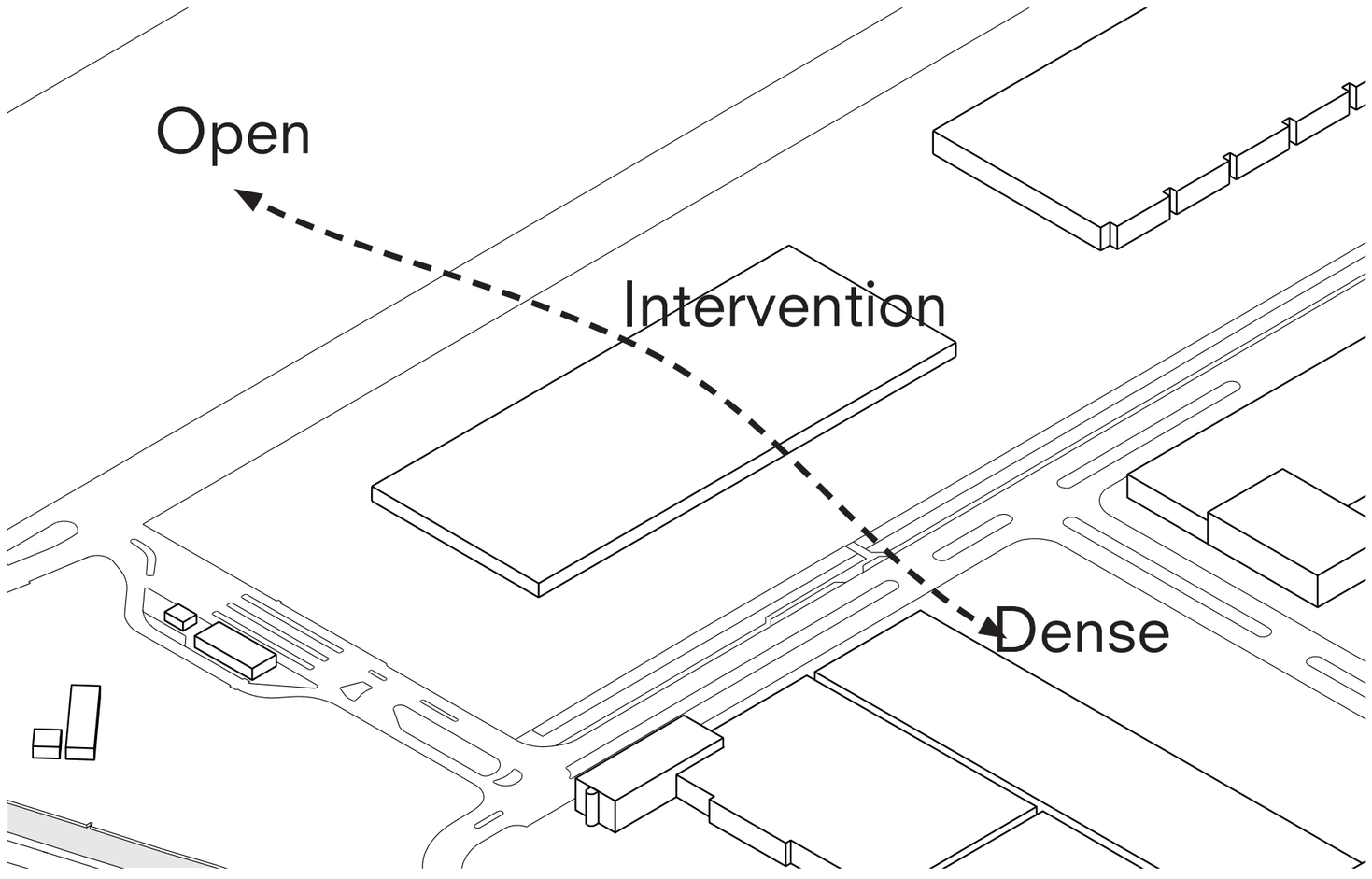
Data center

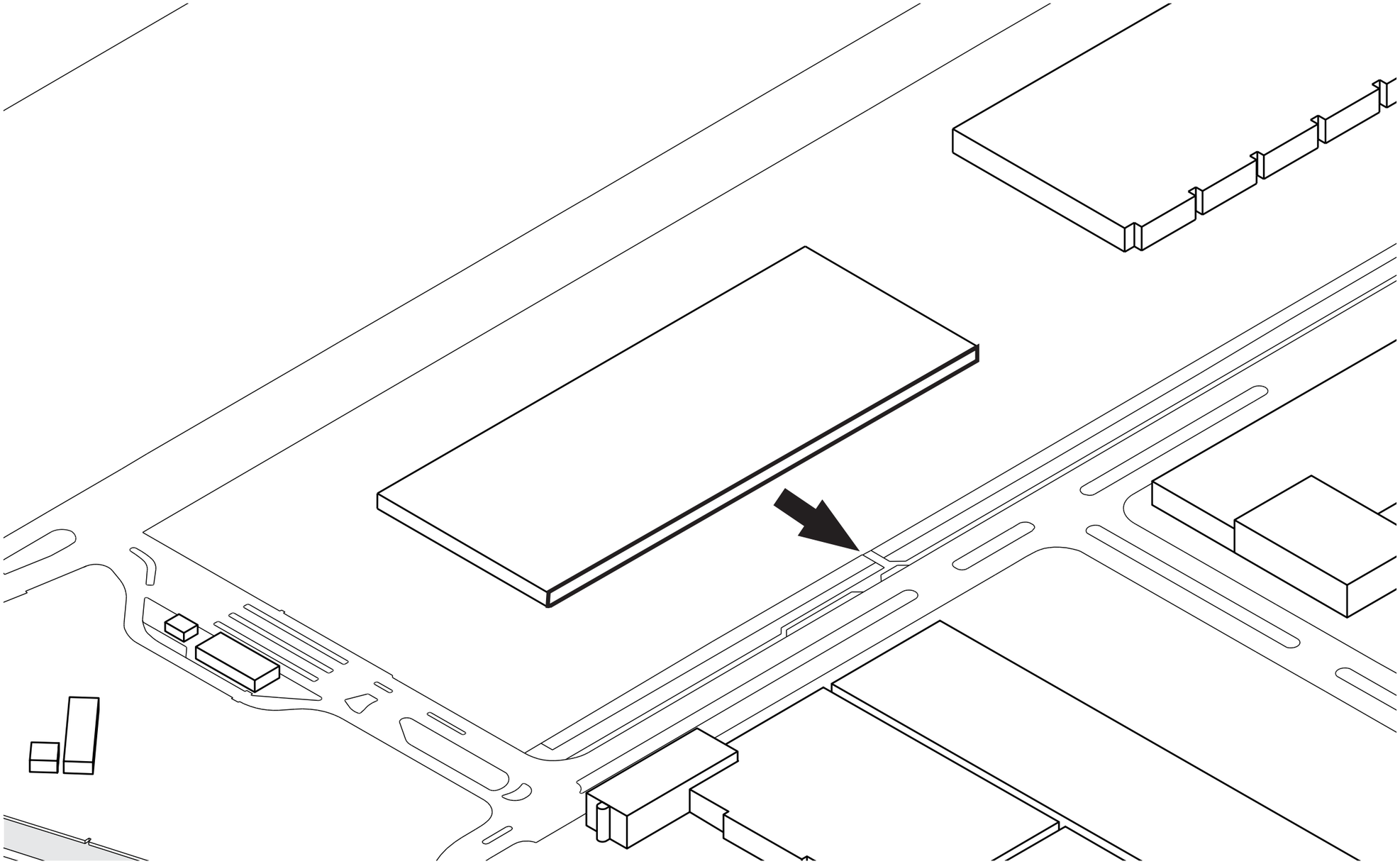
Work rooms

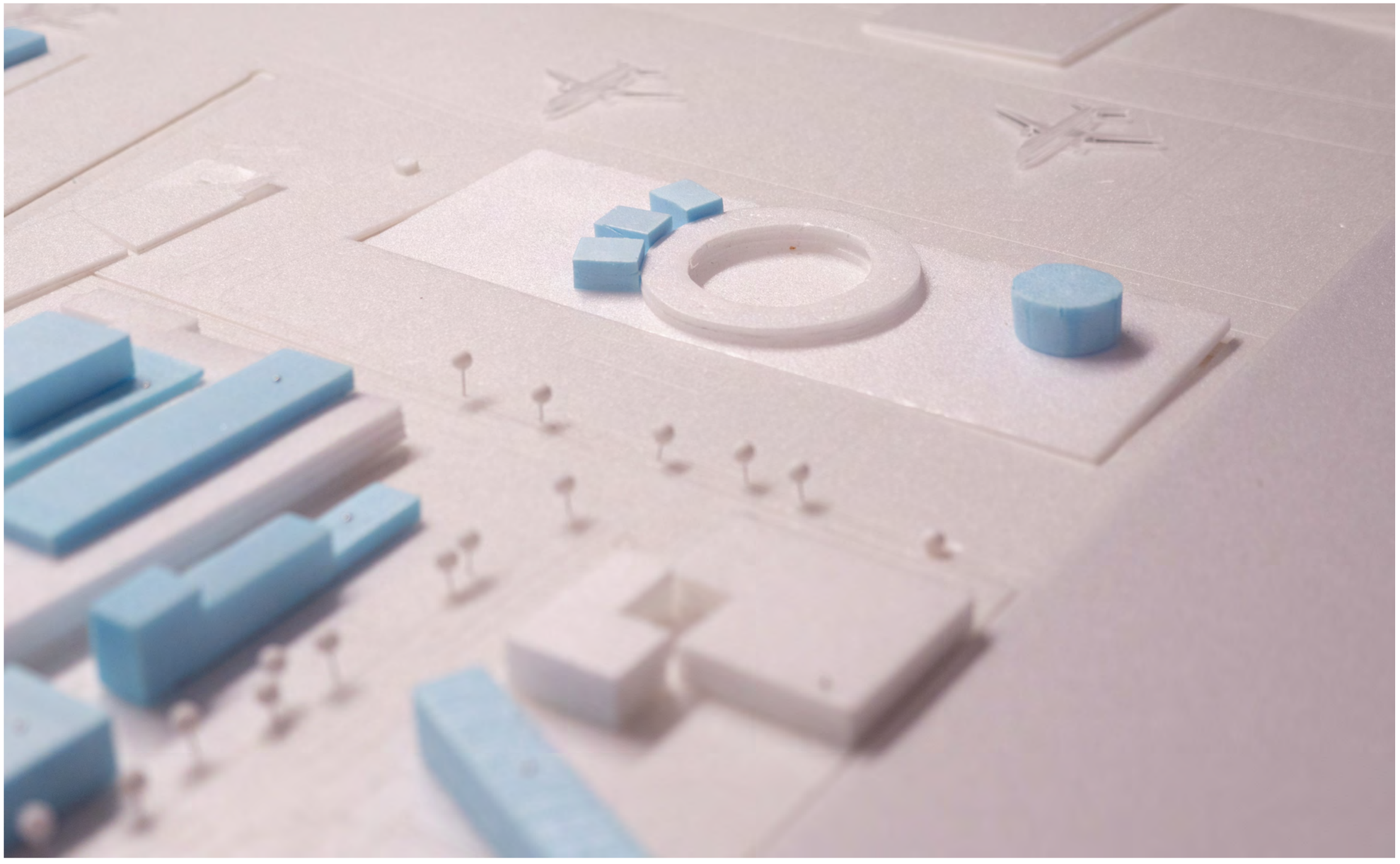
Surveillance system

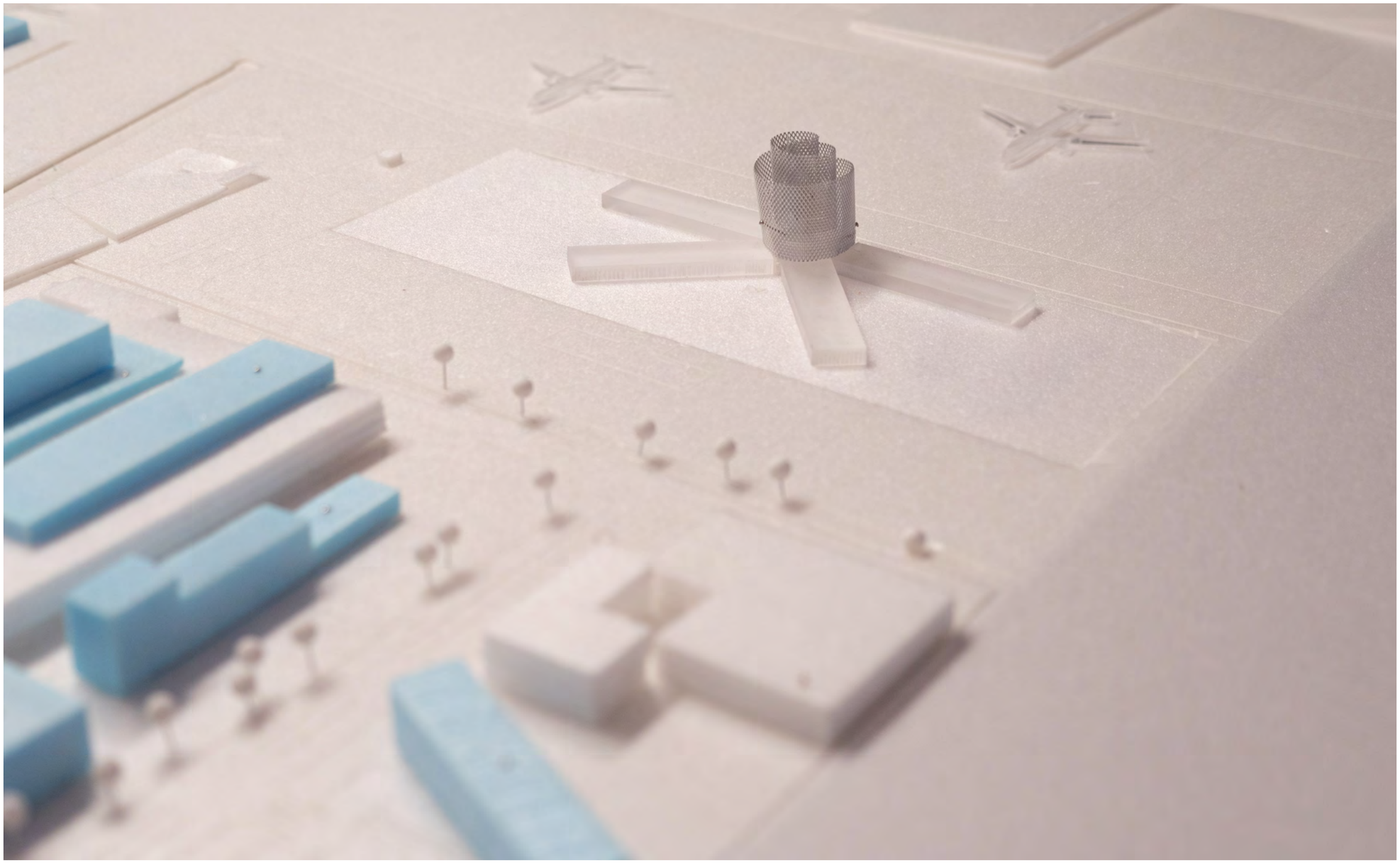
MASSING

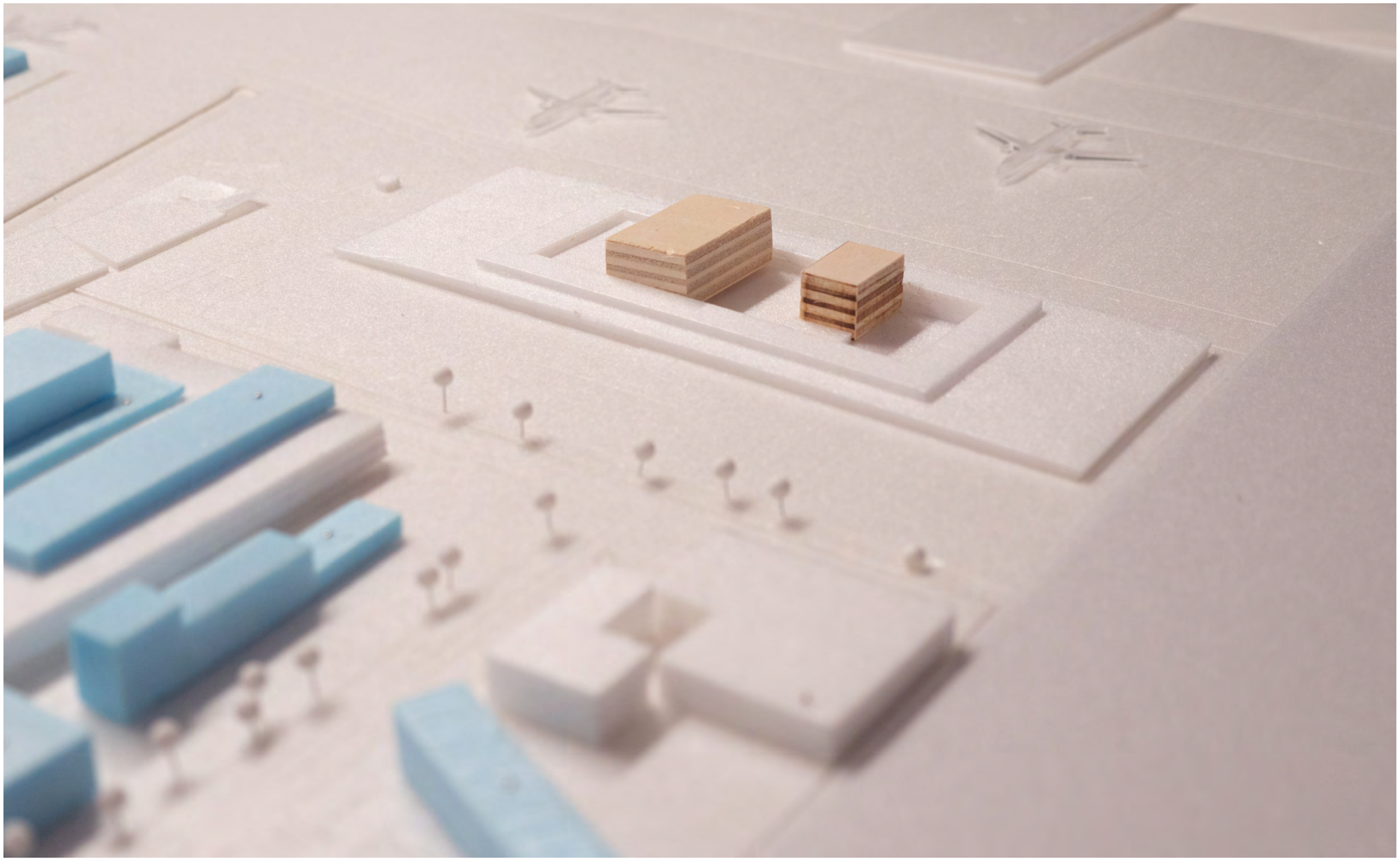
Model studies

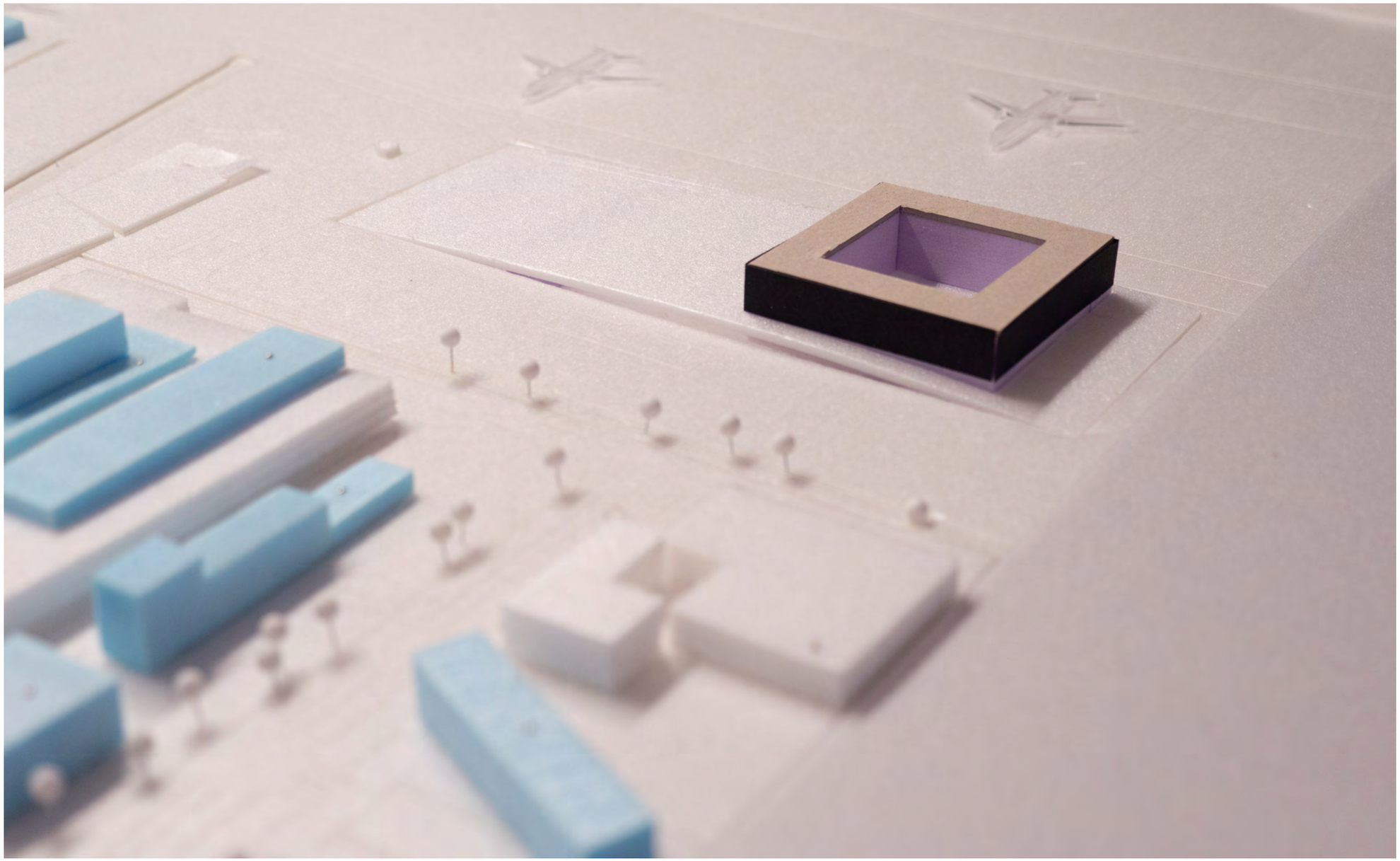

Open
Intervention
Dense

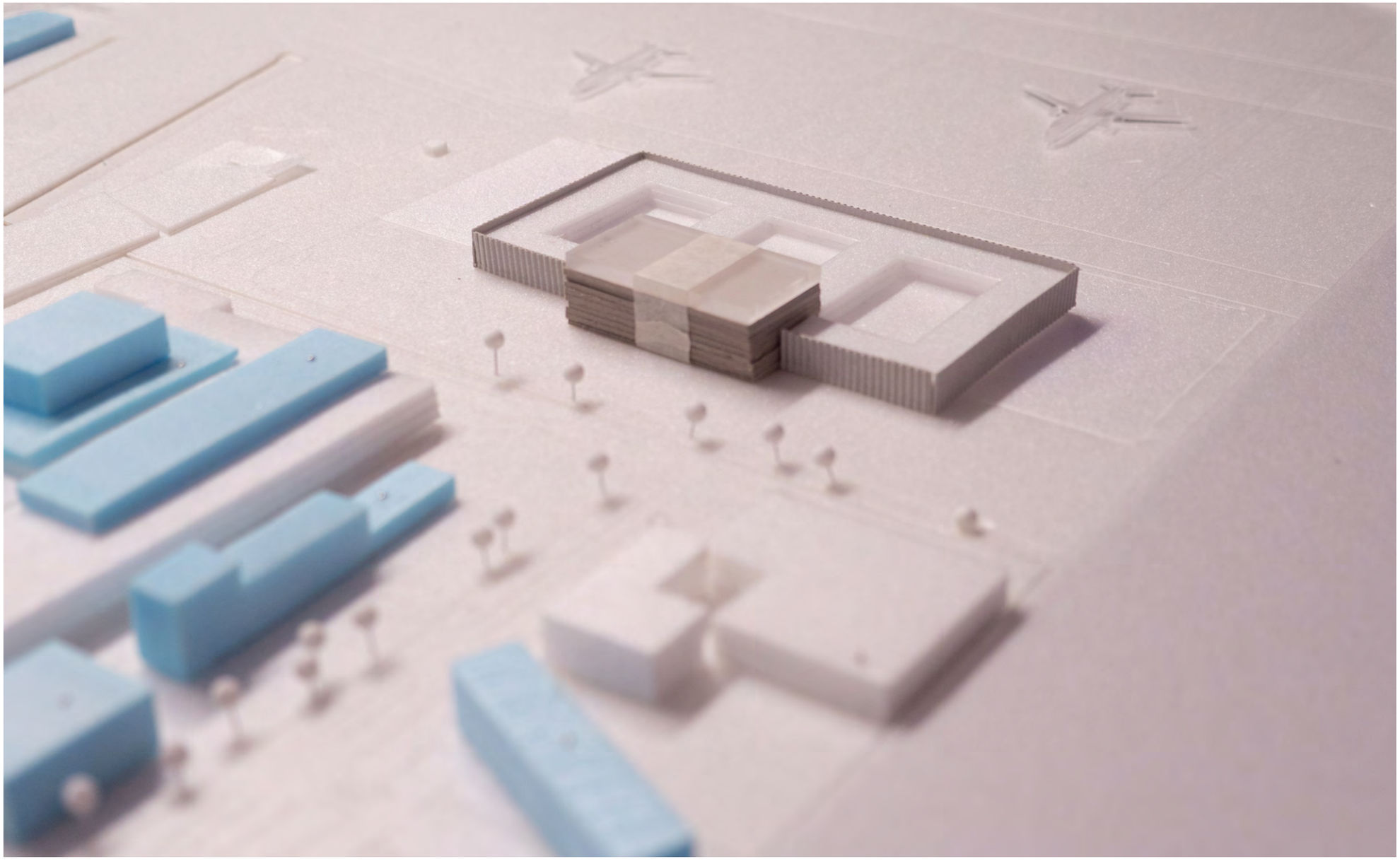


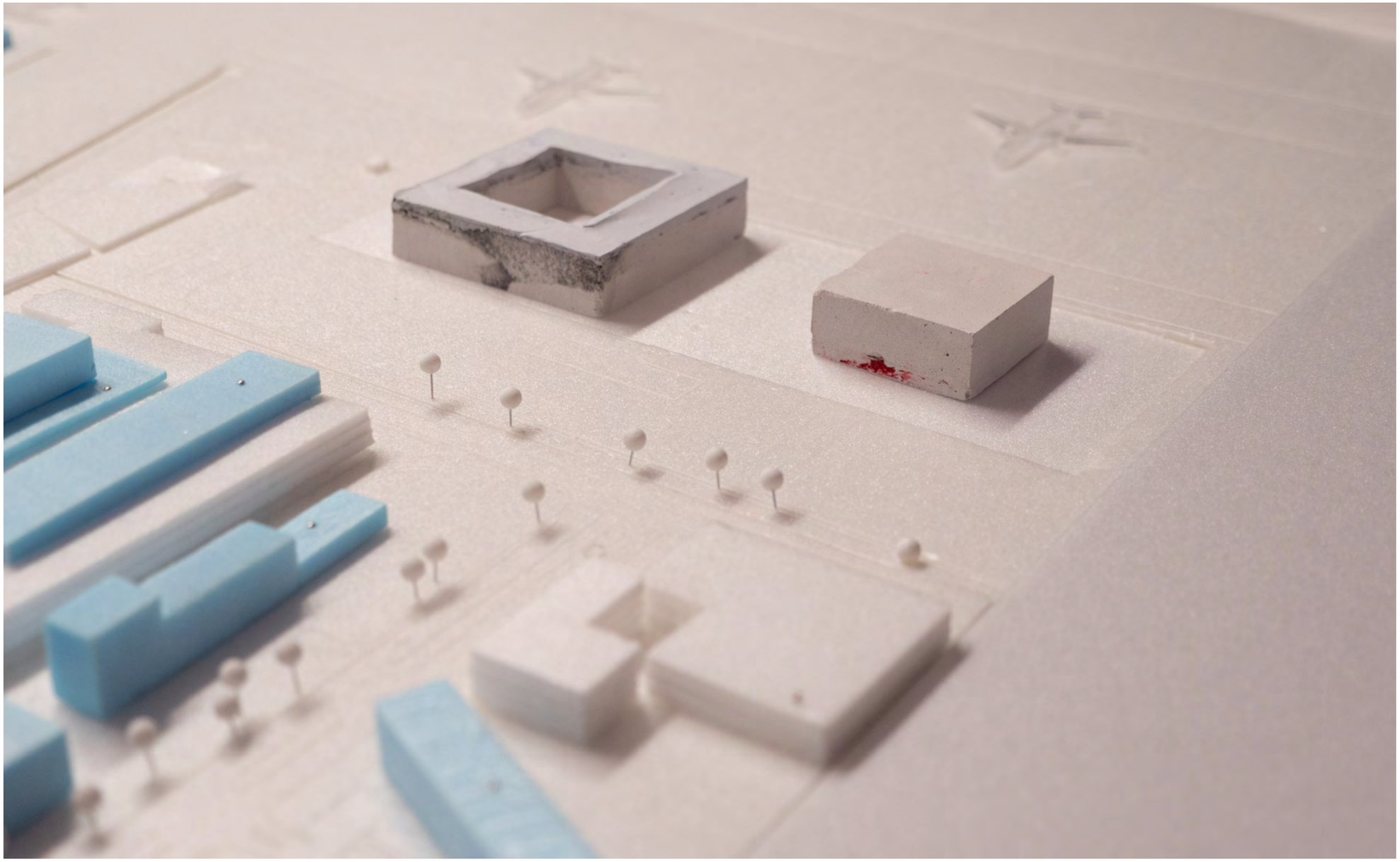


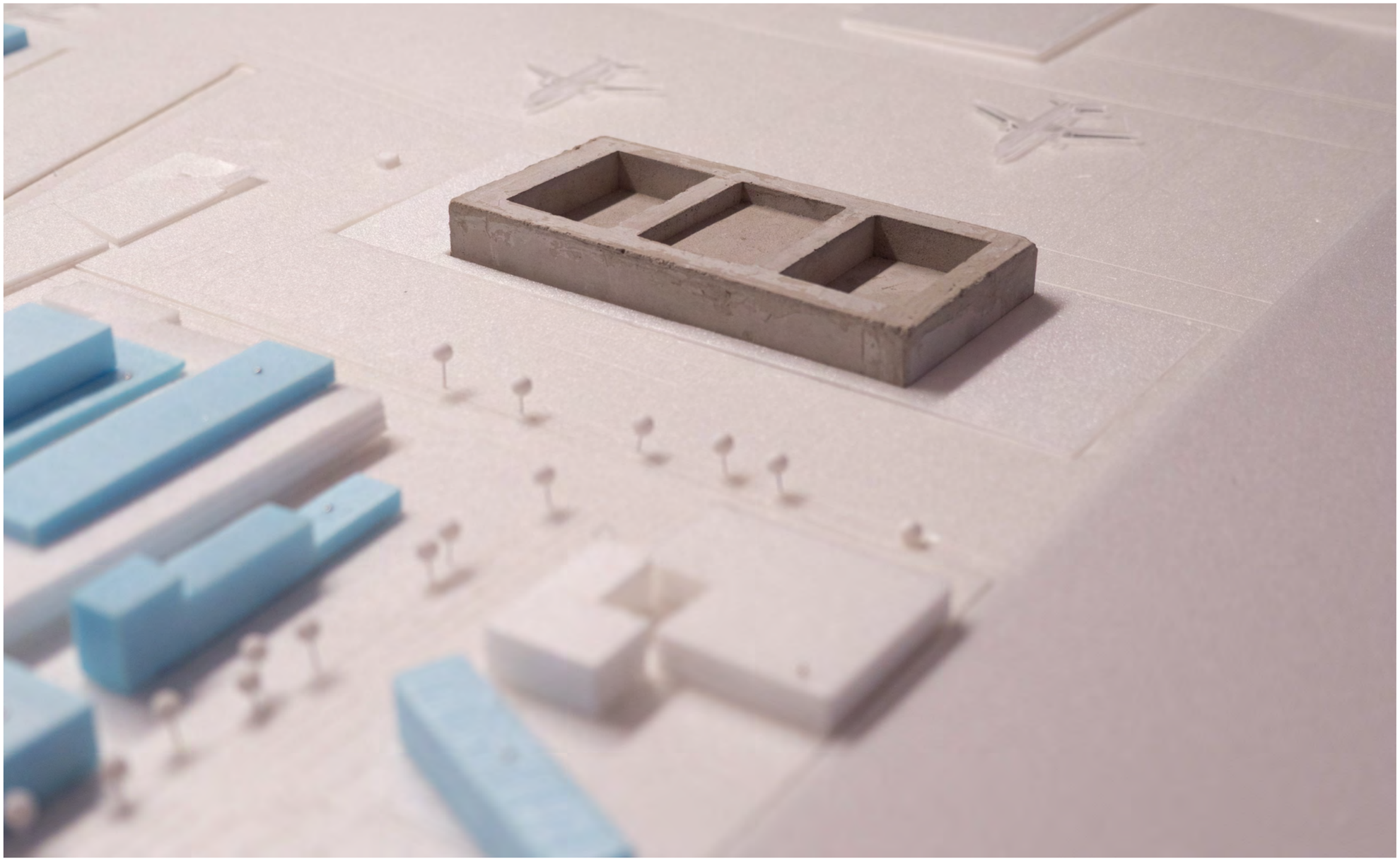


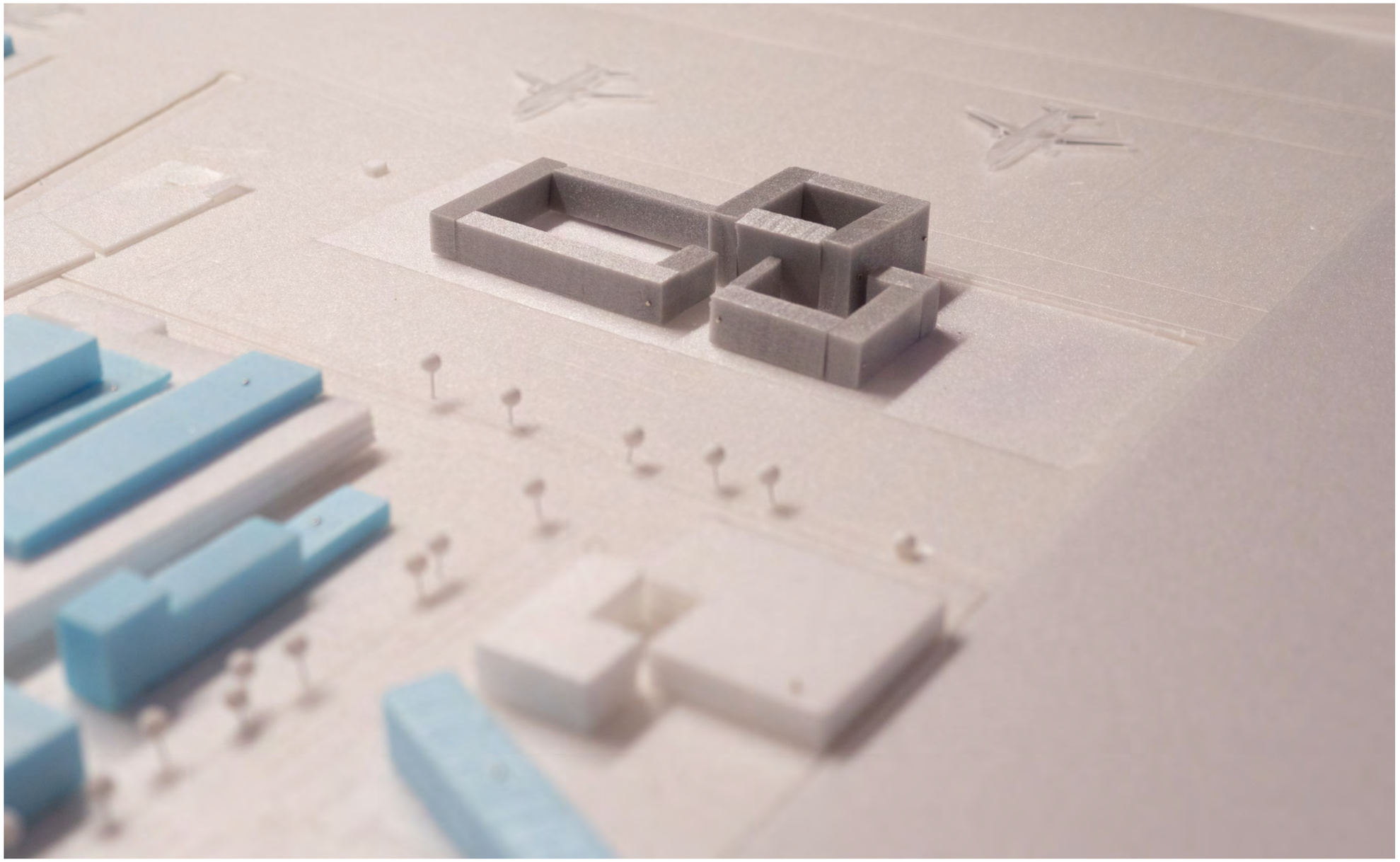


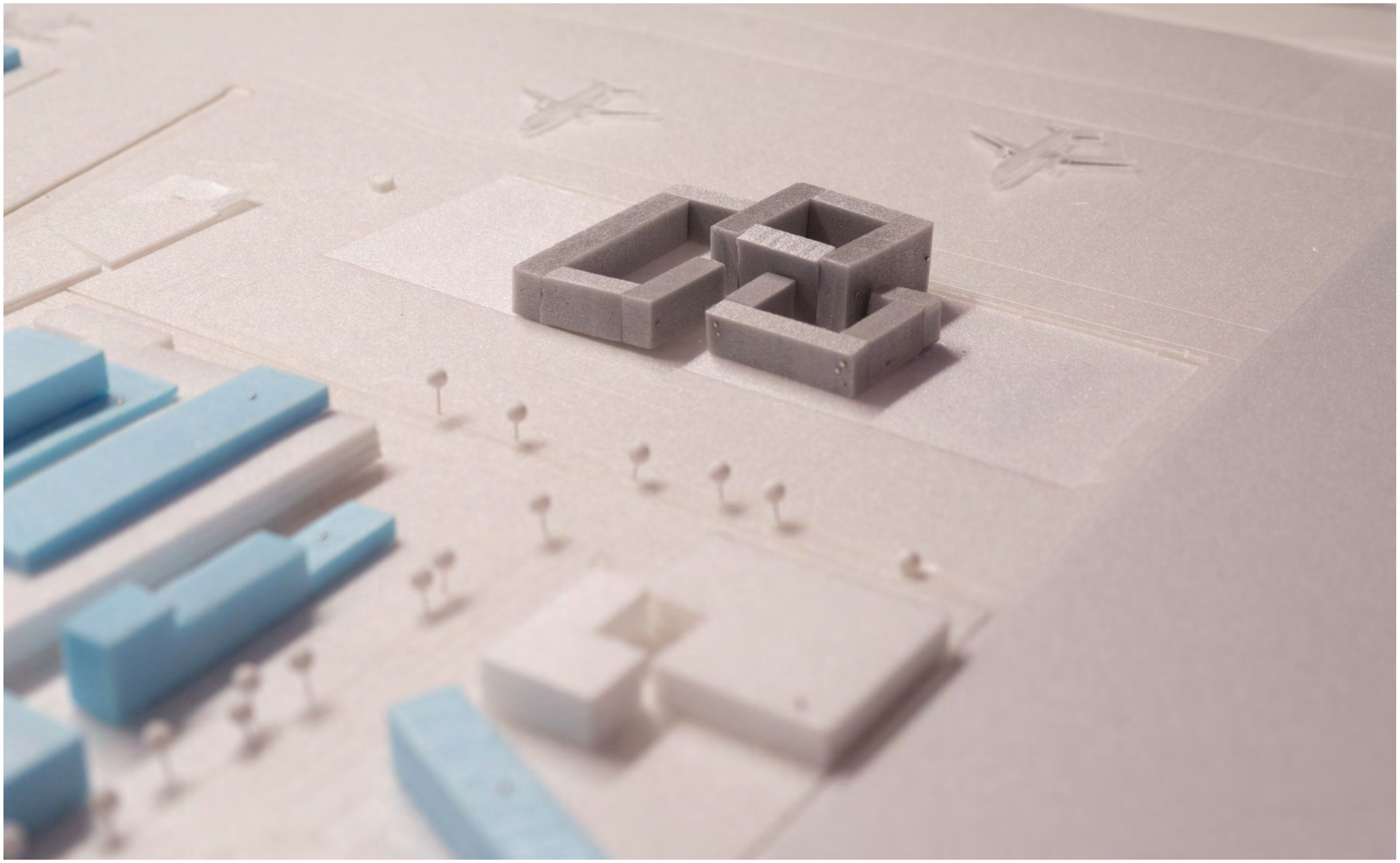


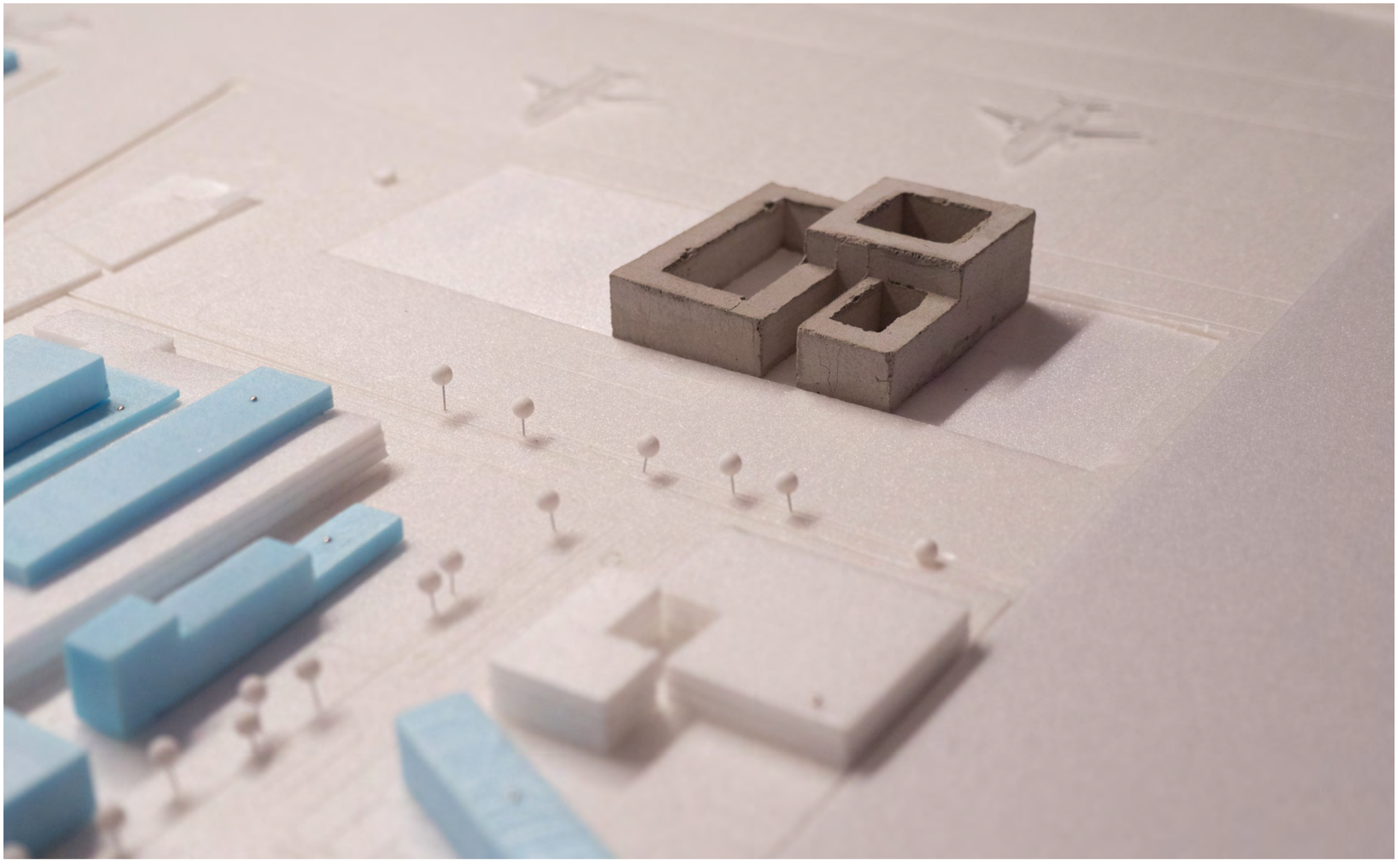








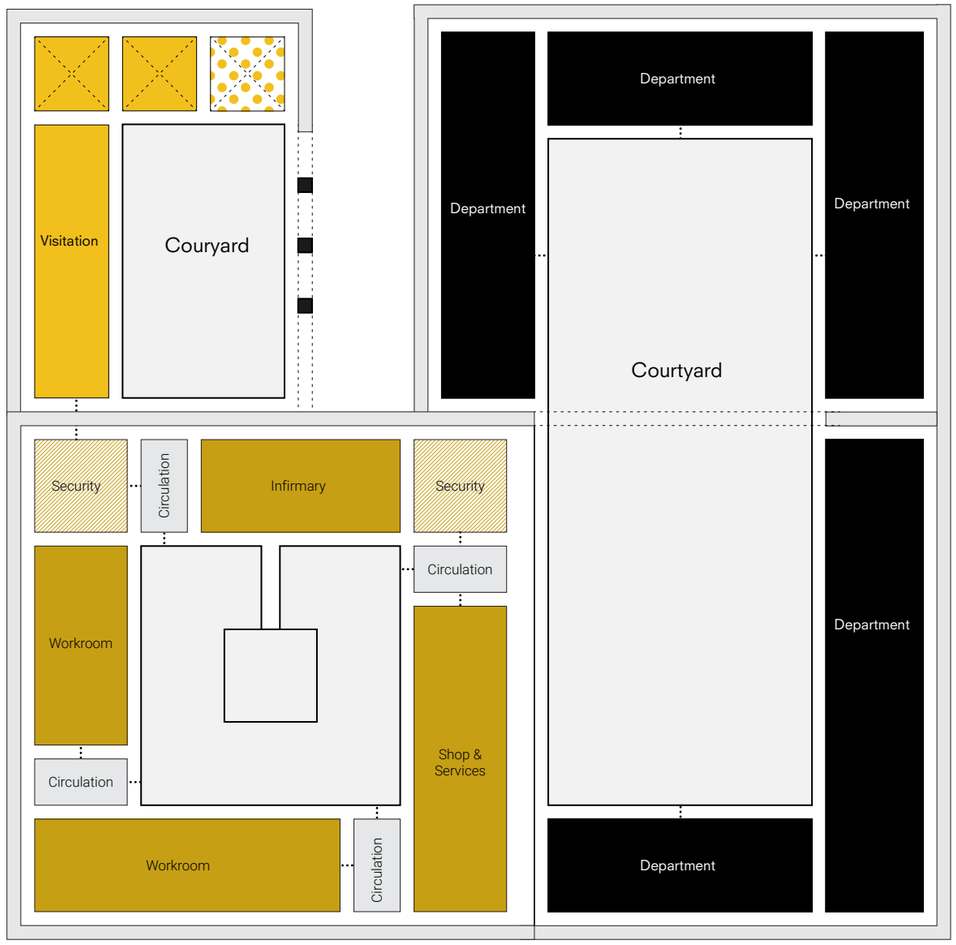




CONCLUSION

Program & massing

-1



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Program relations

THE CONCEPT

Unity, trinity and cavity

TRINITY

Unity, trinity and cavity

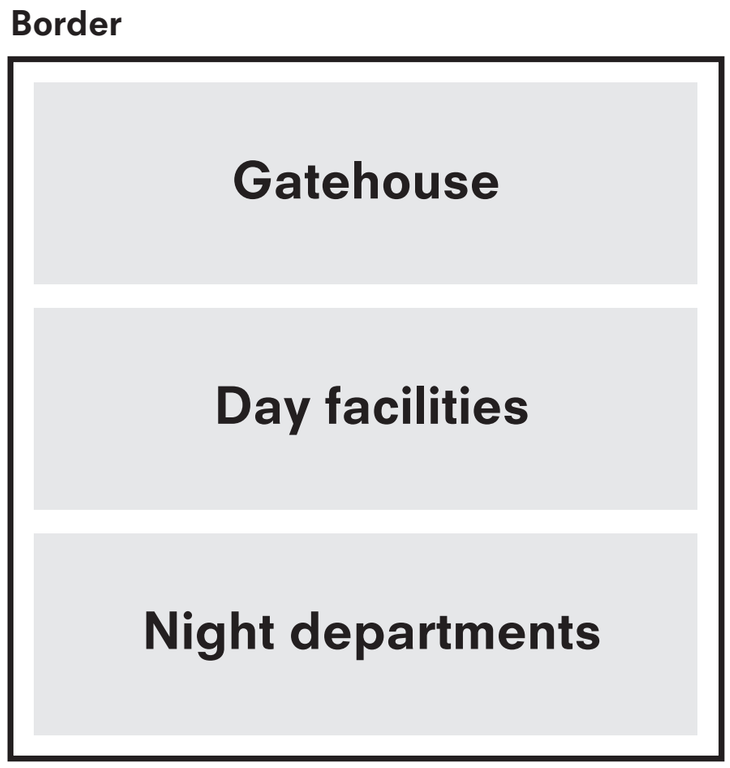
Gatehouse

Day facilities

Night departments

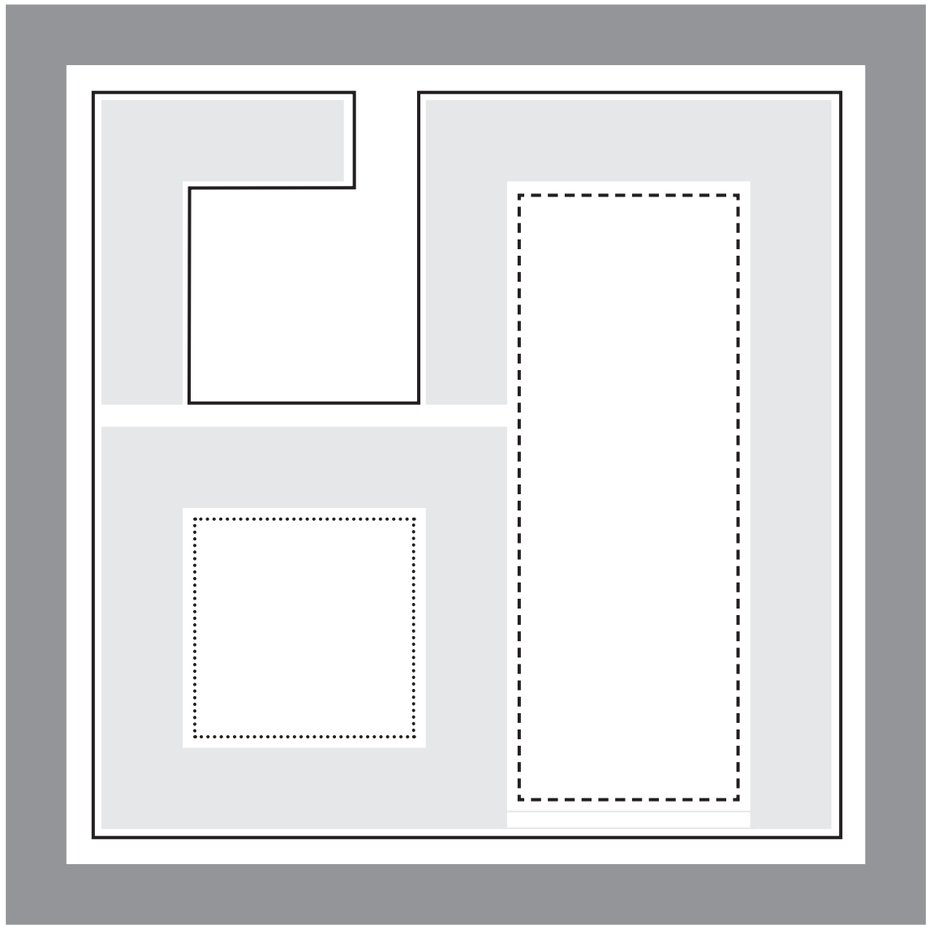
UNITY

Unity, trinity and cavity

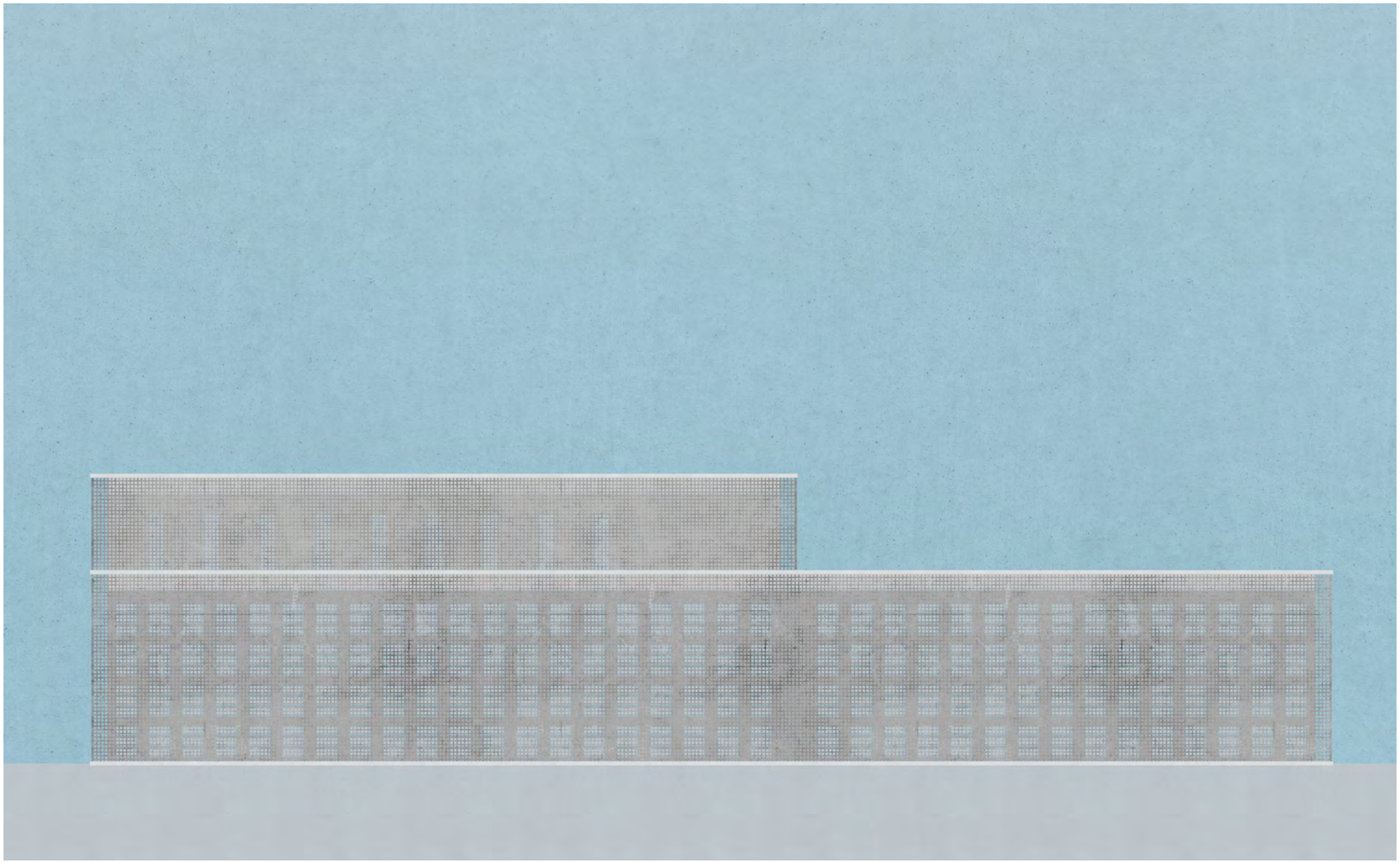


Three buildings in one

Three buildings in one



Three buildings in one



East Facade

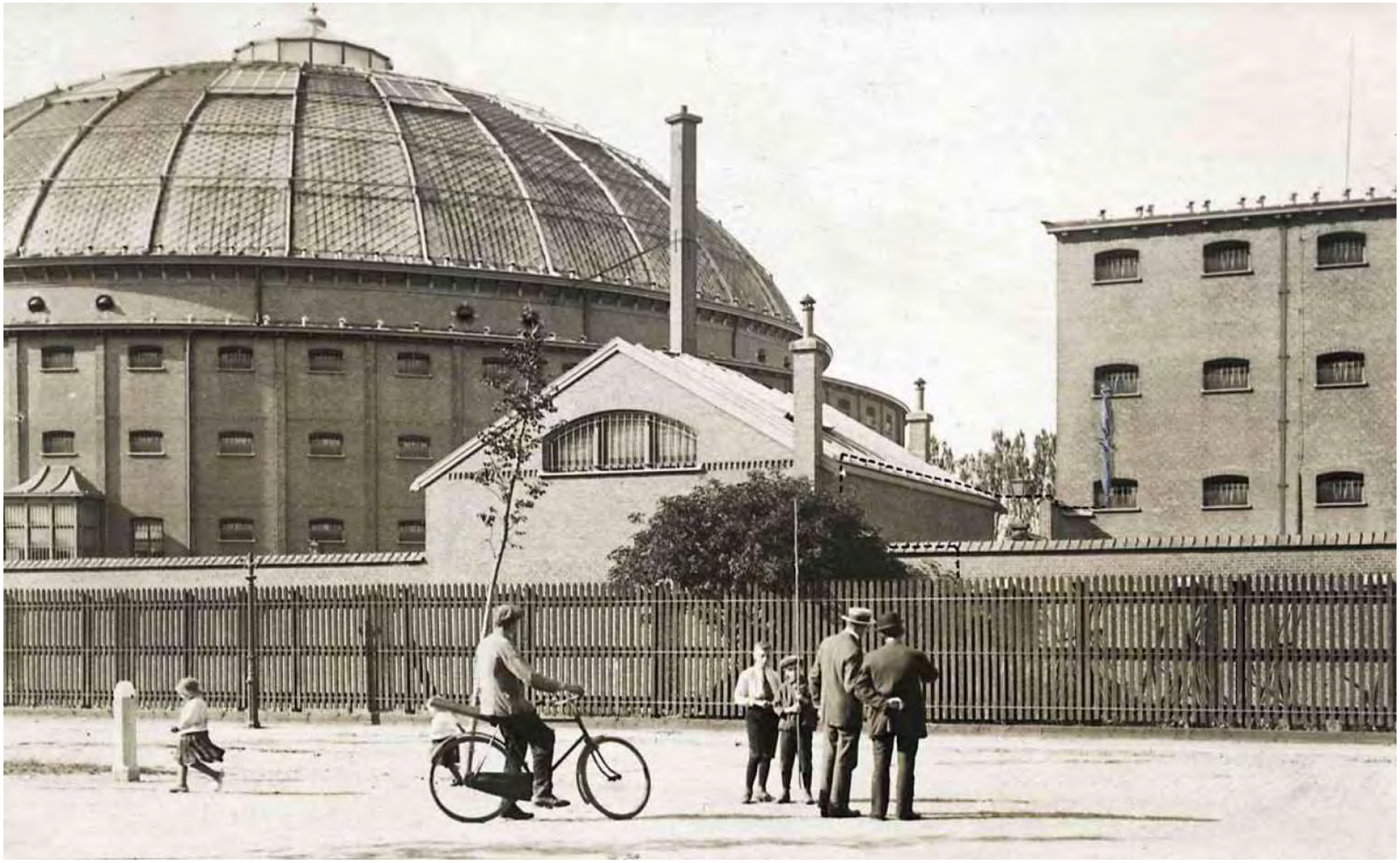
North Facade

Surrounding body of water

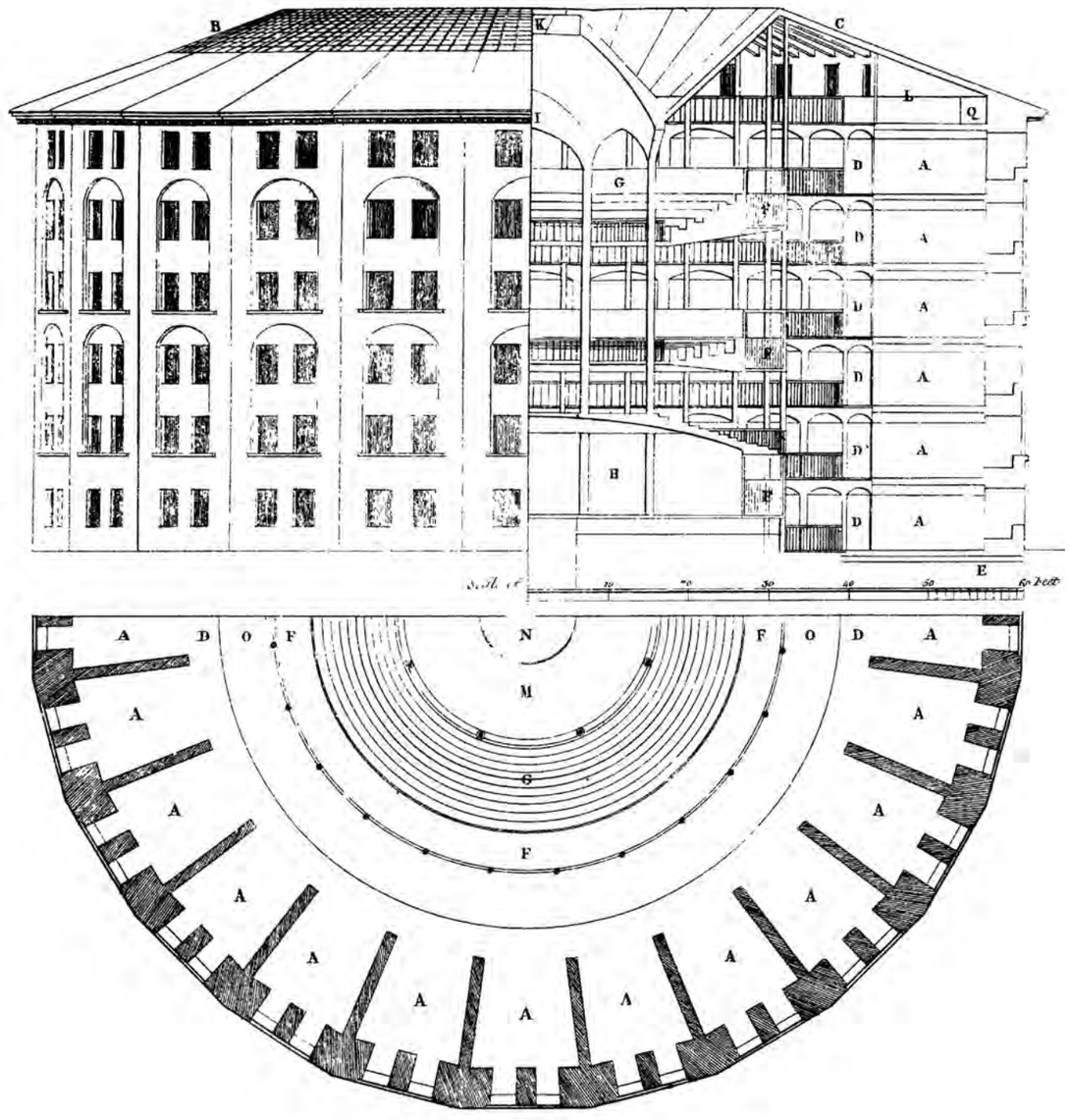
CAVITY

Unity, trinity and cavity

Surveillance system independent of digital technology



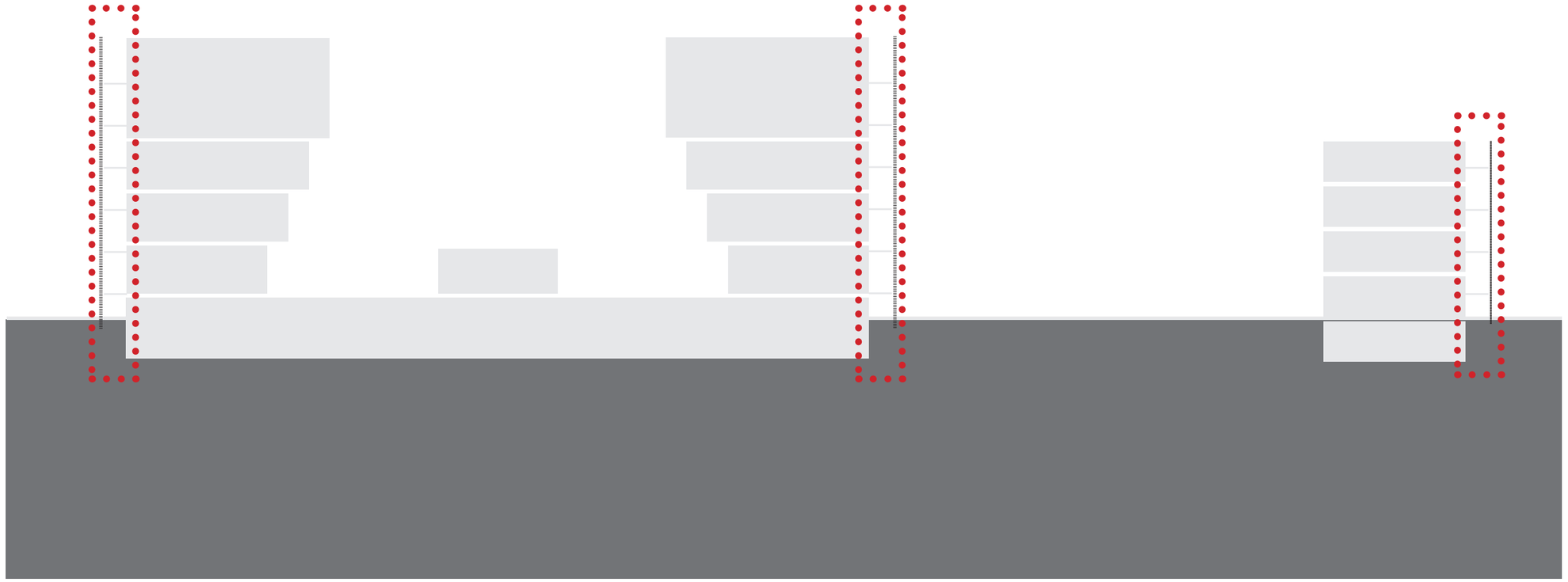
Dome prison Haarlem



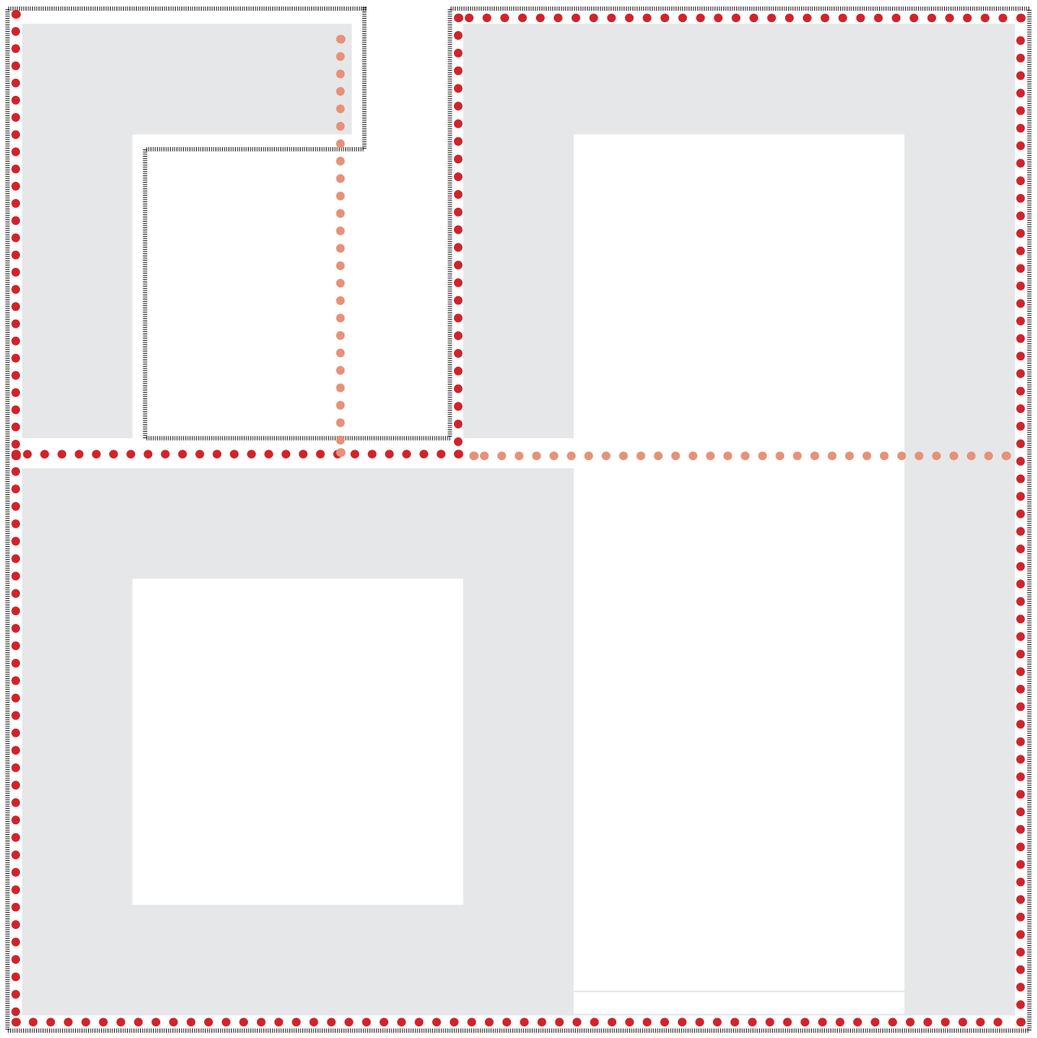
Panopticon blueprint by Jeremy Bentham, 1791

1.) Isolation;
2.) Total visibility;
3). Asymmetric balance of power;
4.) Optimization of power

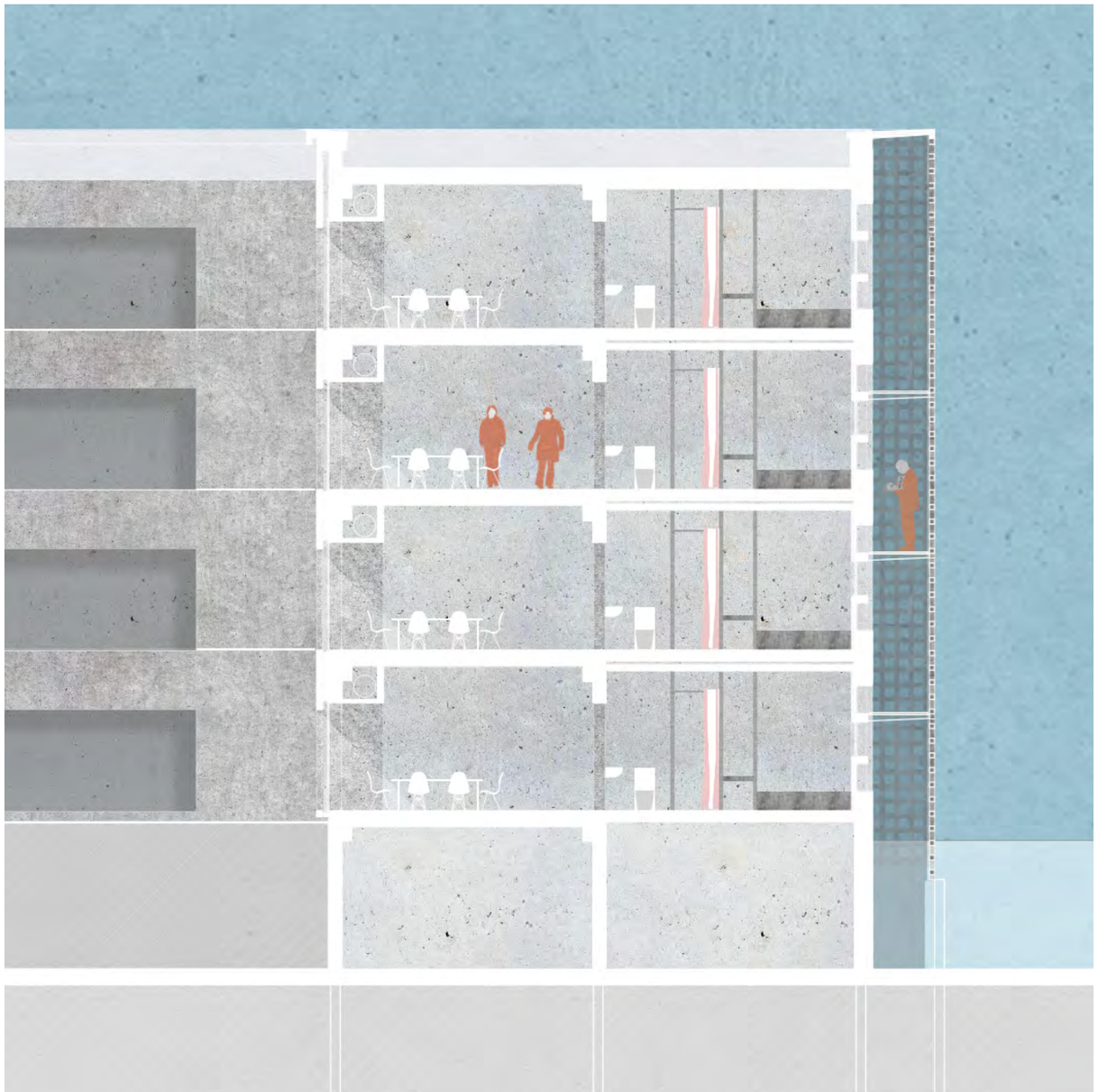
Unverifiable surveillance
&
Allowing social
interaction



Cavity in section



Cavity in plan



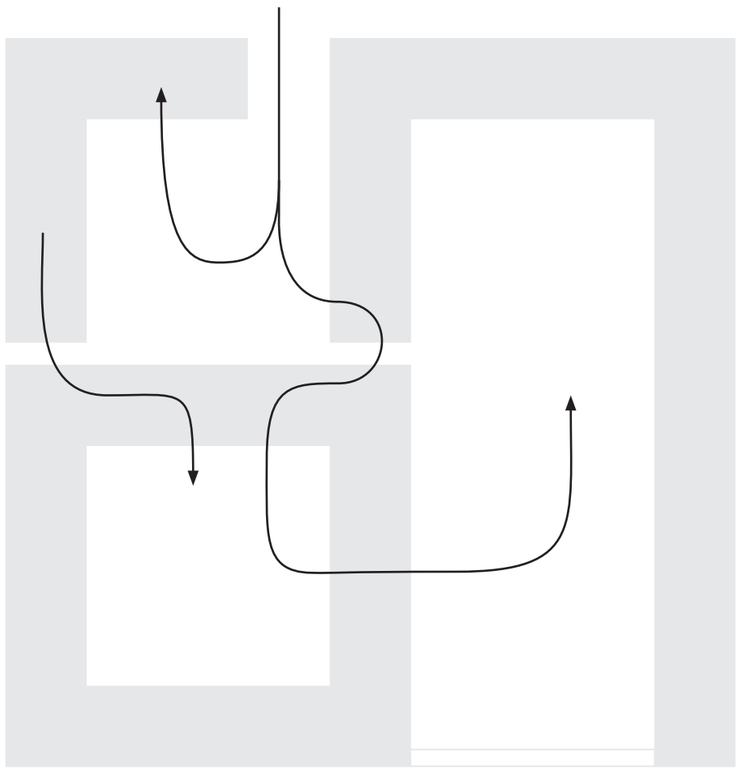
Cavity in detailed section

Dillemma of privacy

Cybercrime is essentially an **invasion of privacy** and private data. Are you entitled to your own privacy if you take away someone else's?

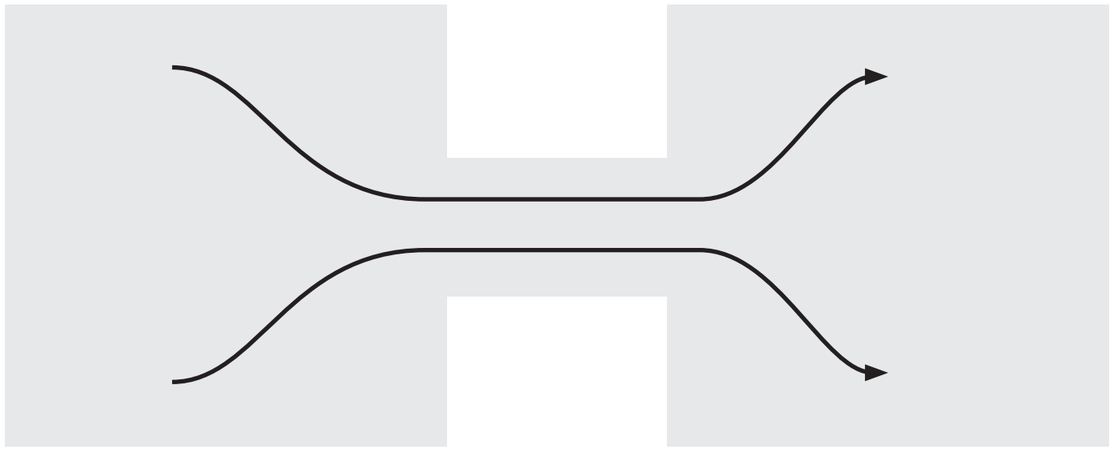
Controlled guidance

Security & control

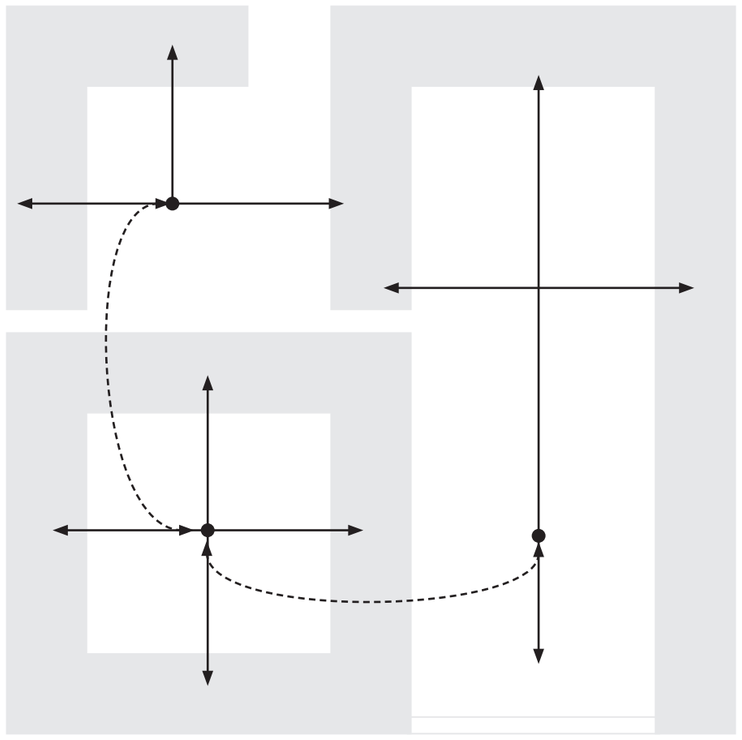


Circulation

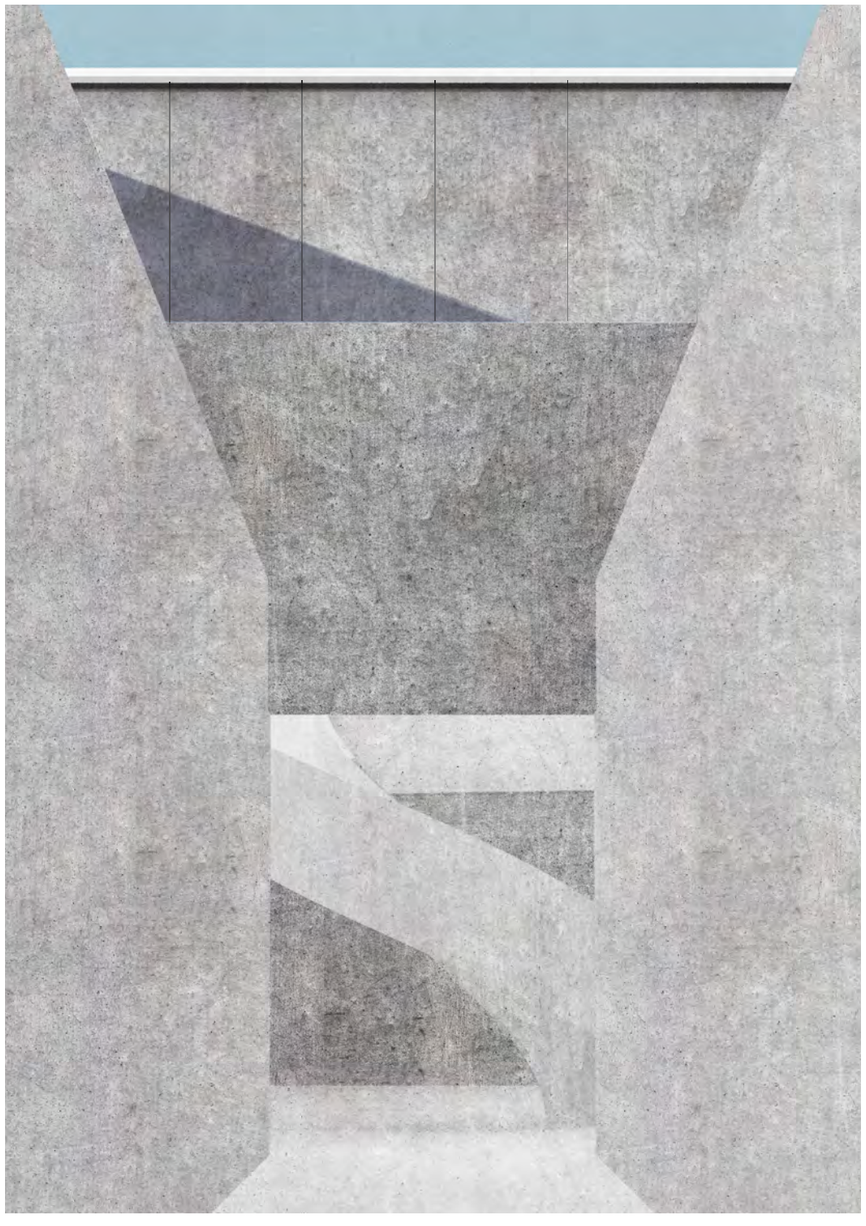
Bottleneck



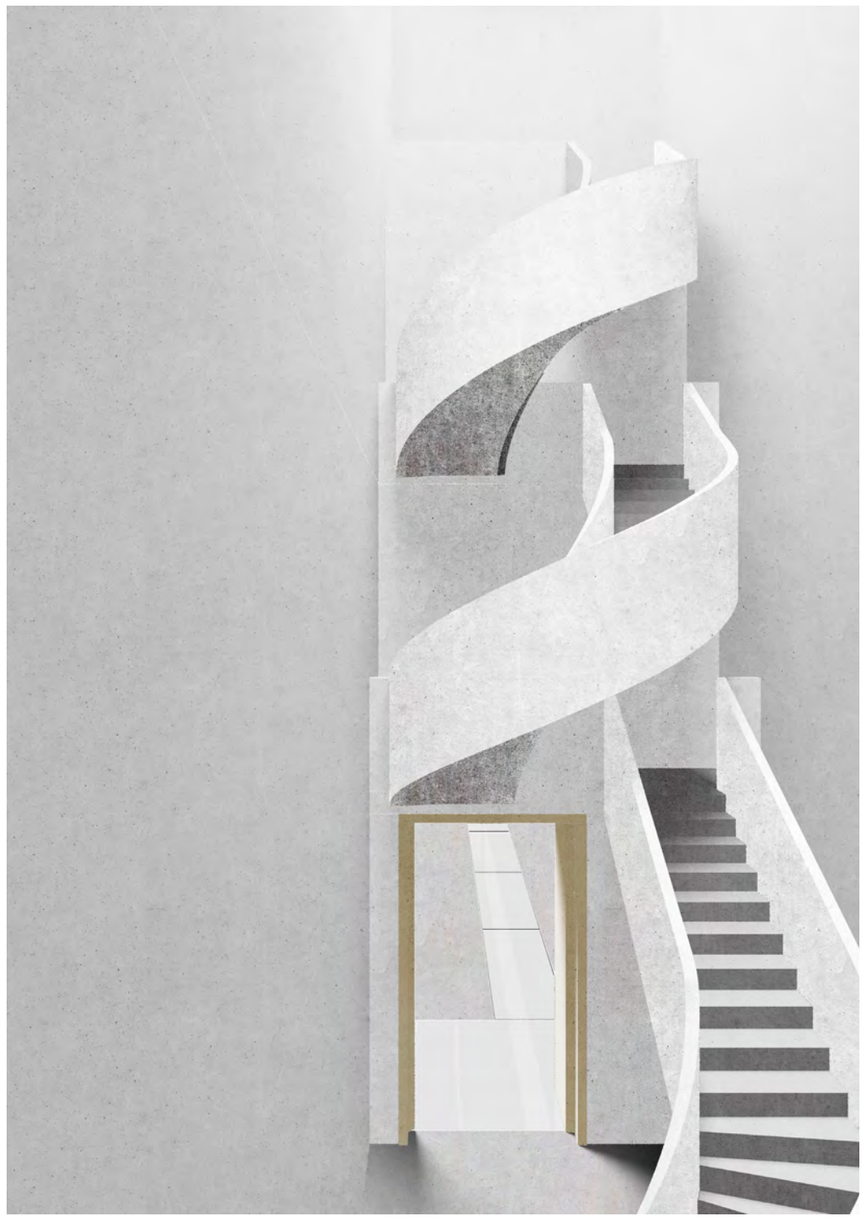
Bottleneck



Circulation

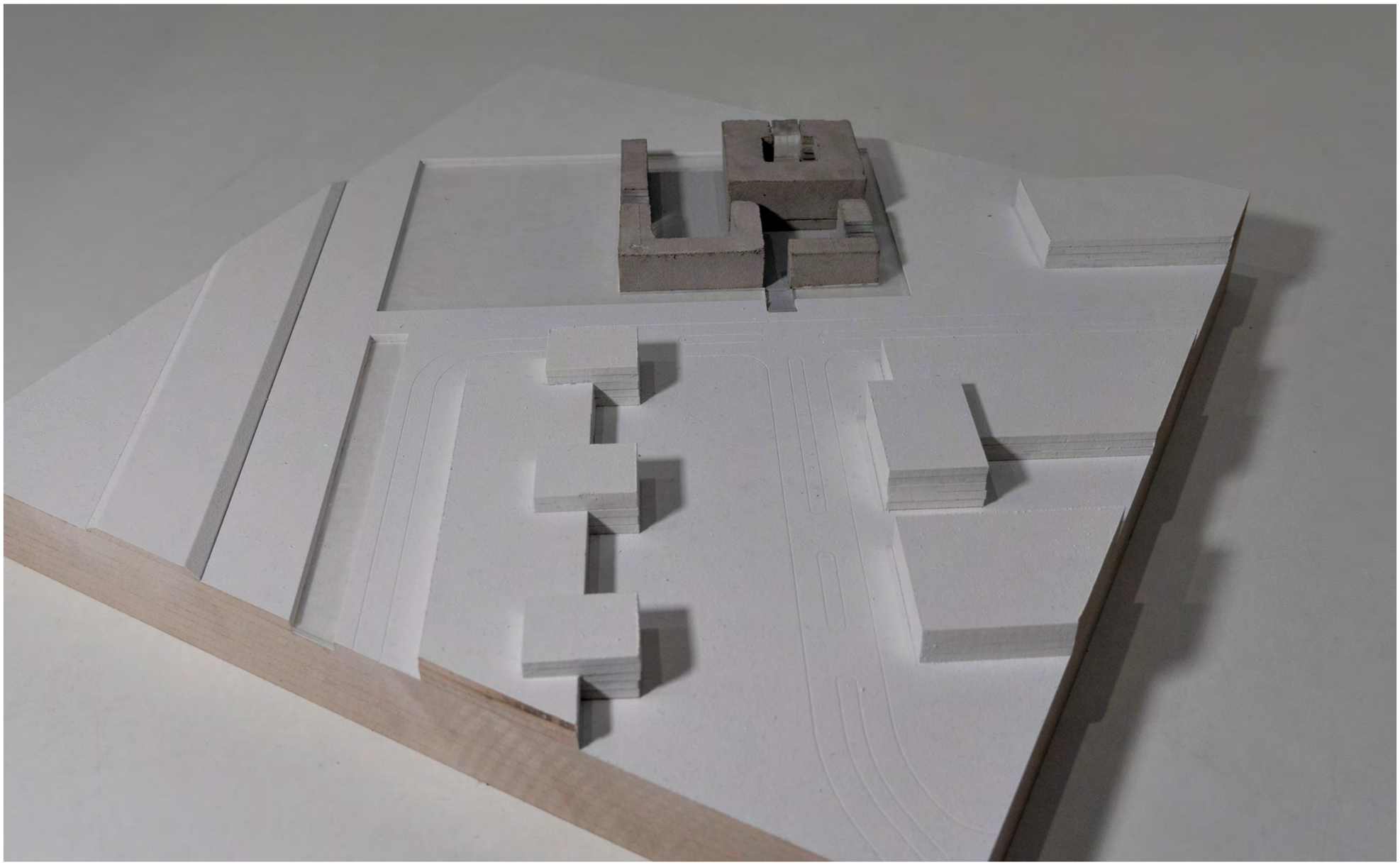


Entering the second courtyard

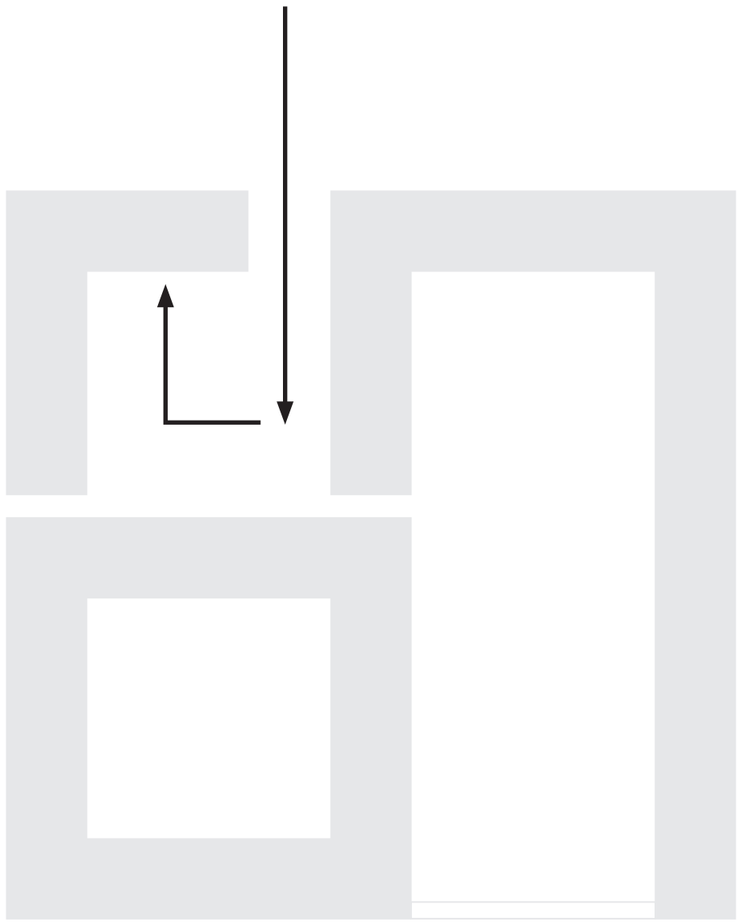


Entering the workspaces

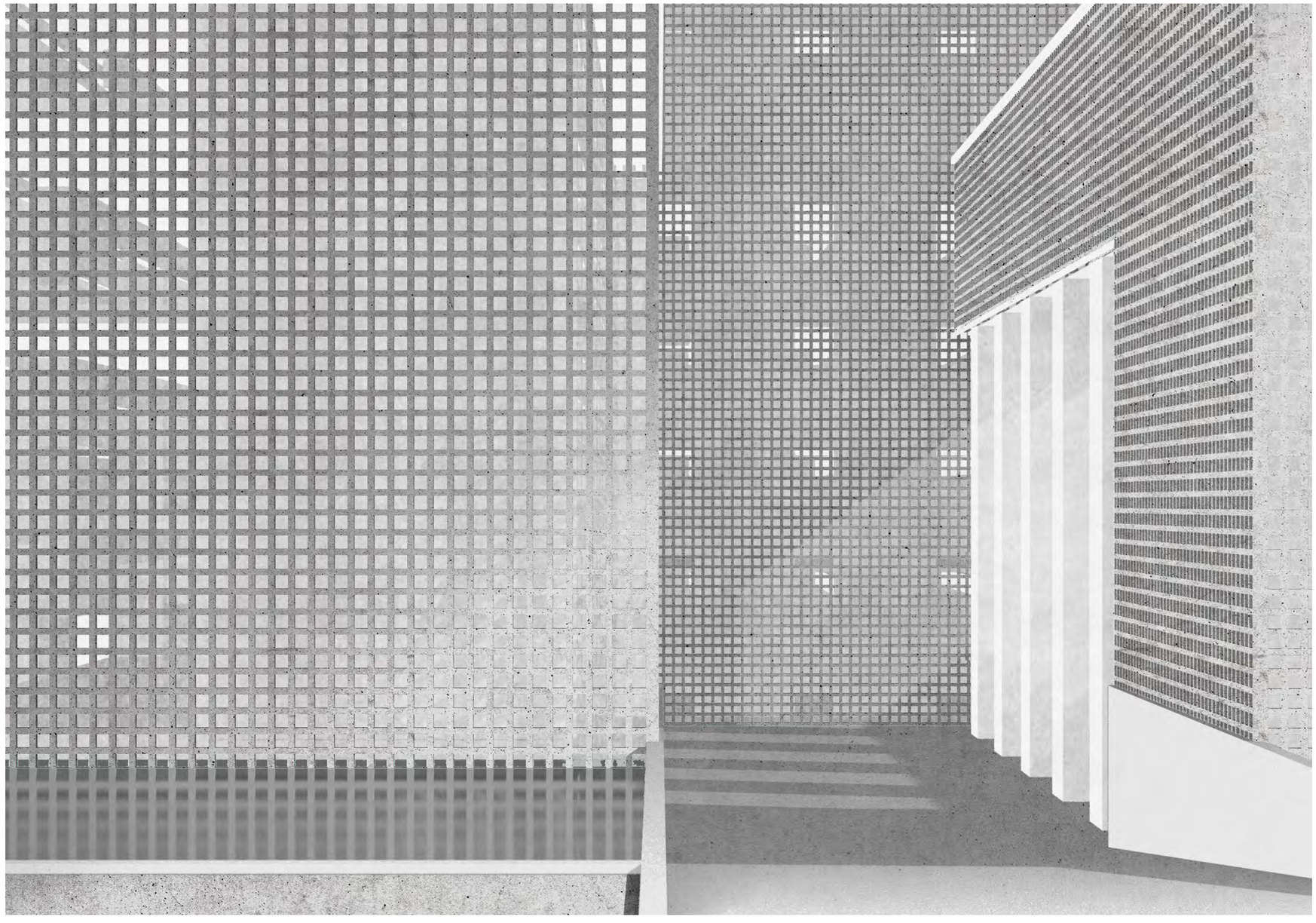
Indirection



Indirection



Indirection



Entrance

Prison as one institute

The first courtyard

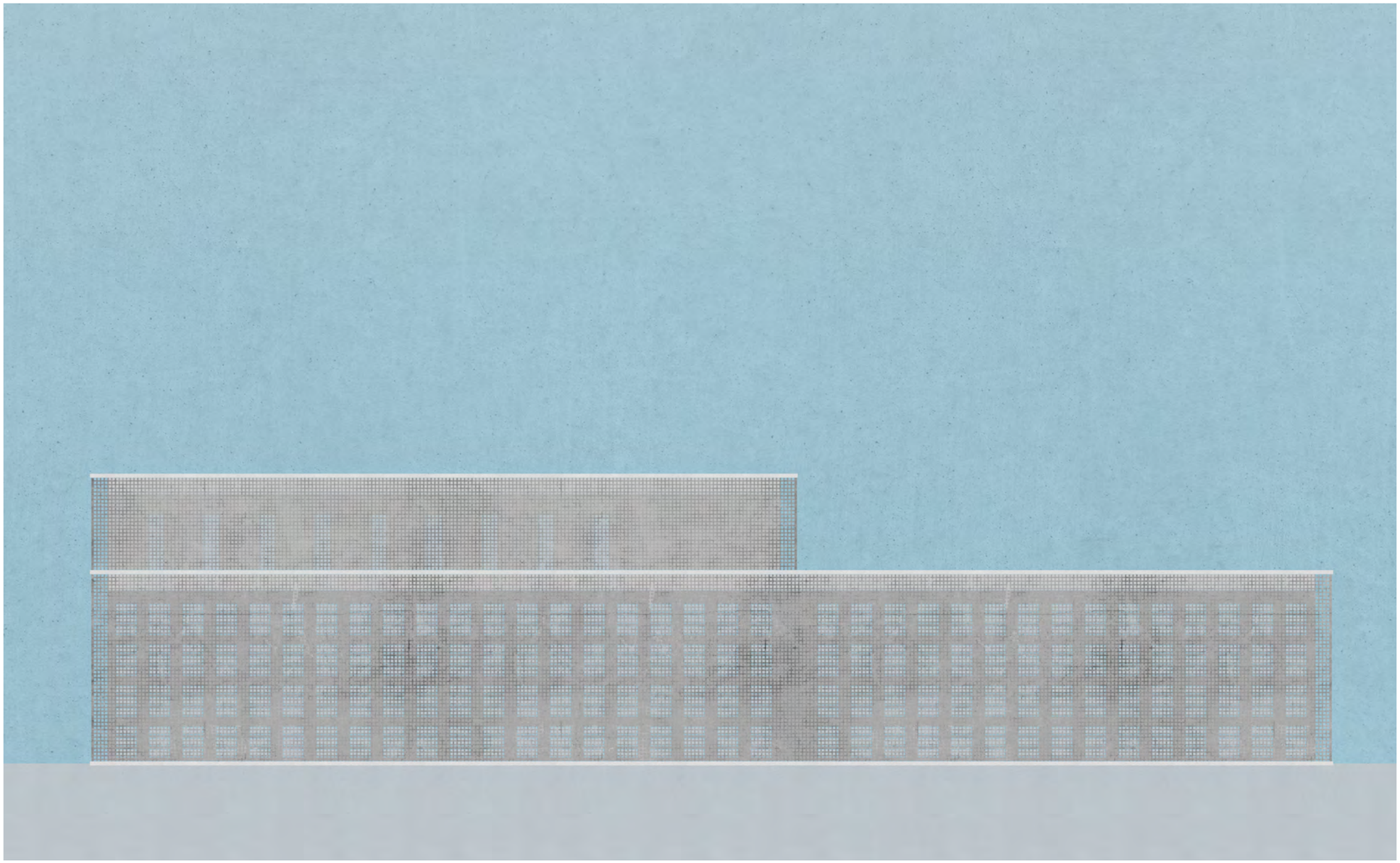
Coming and going

THE PLAN

Construction & materialization

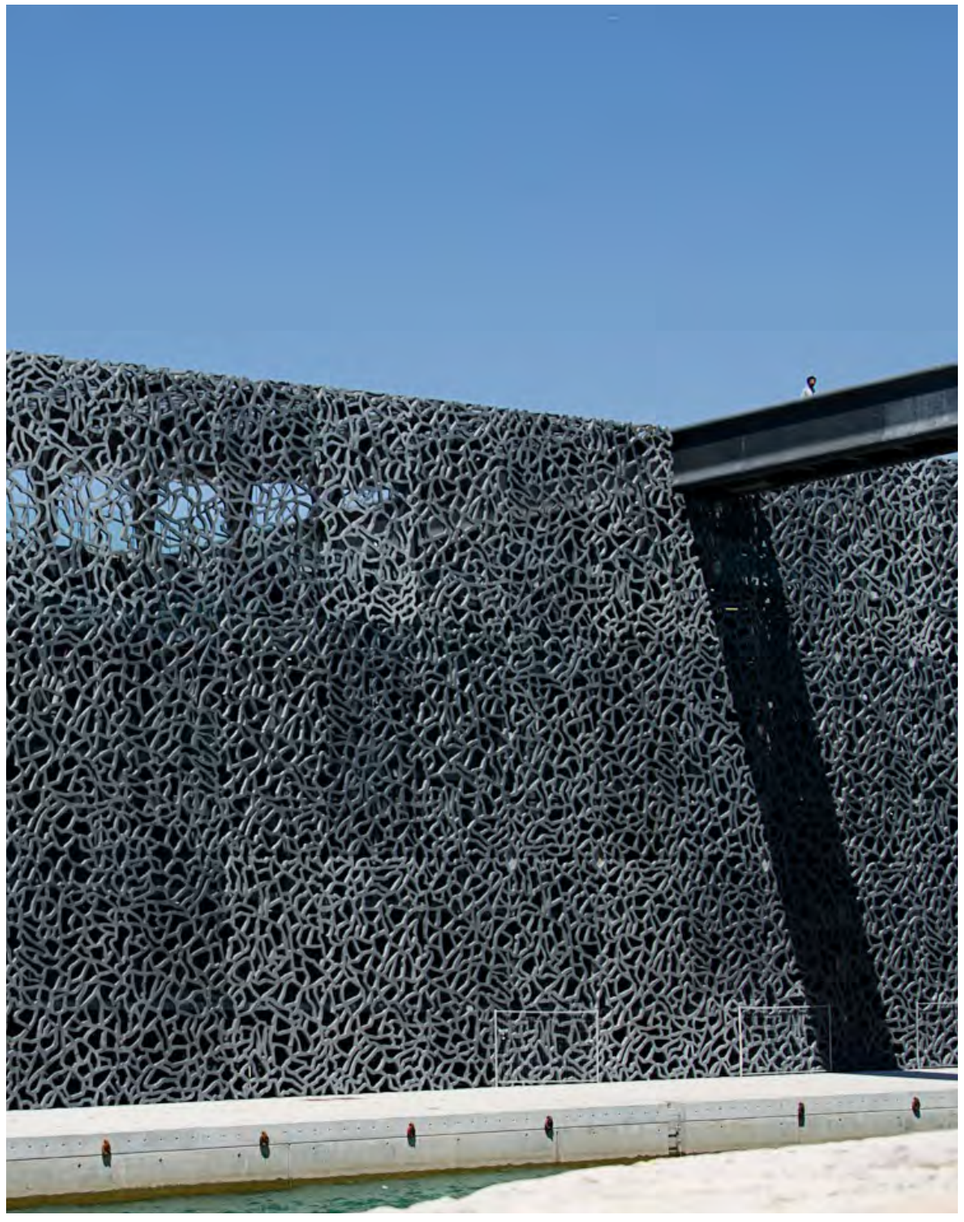
UNITY

Facade of latticeworks

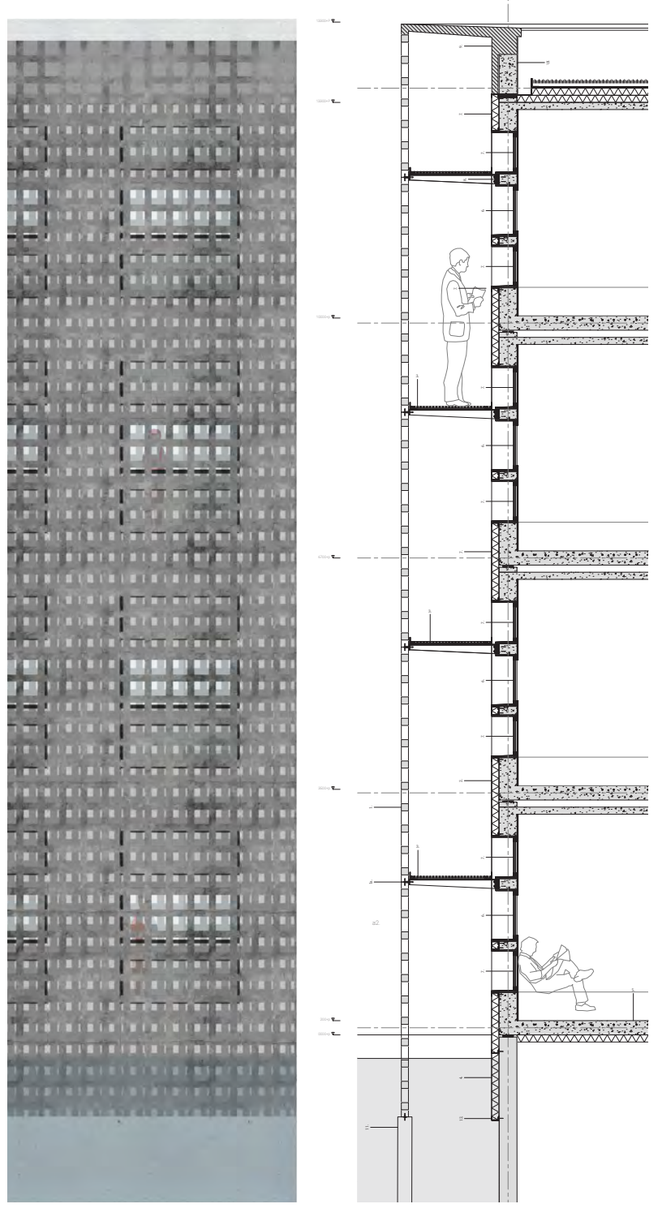


East Facade

North Facade



Ultra-High Performance Fibre-Reinforced concrete (UHPFRC)



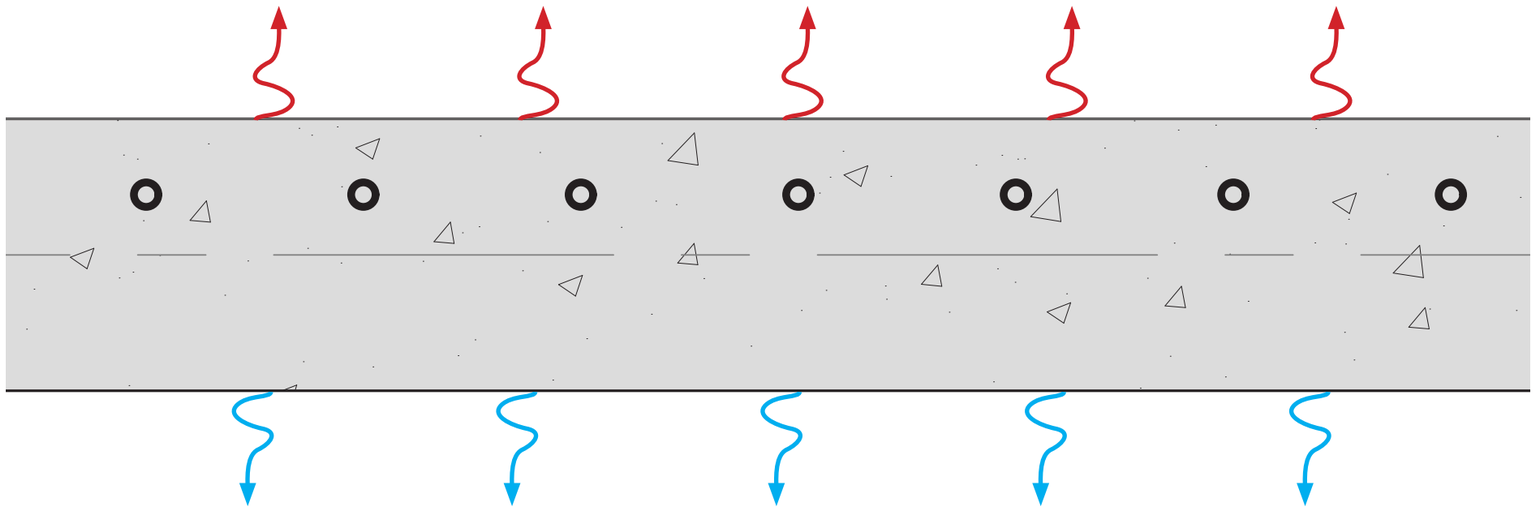
Facade Detail

HEATING

Concrete core activation

Taking advantage of thermal mass
Low temperature system
Stable occupation and heating demand

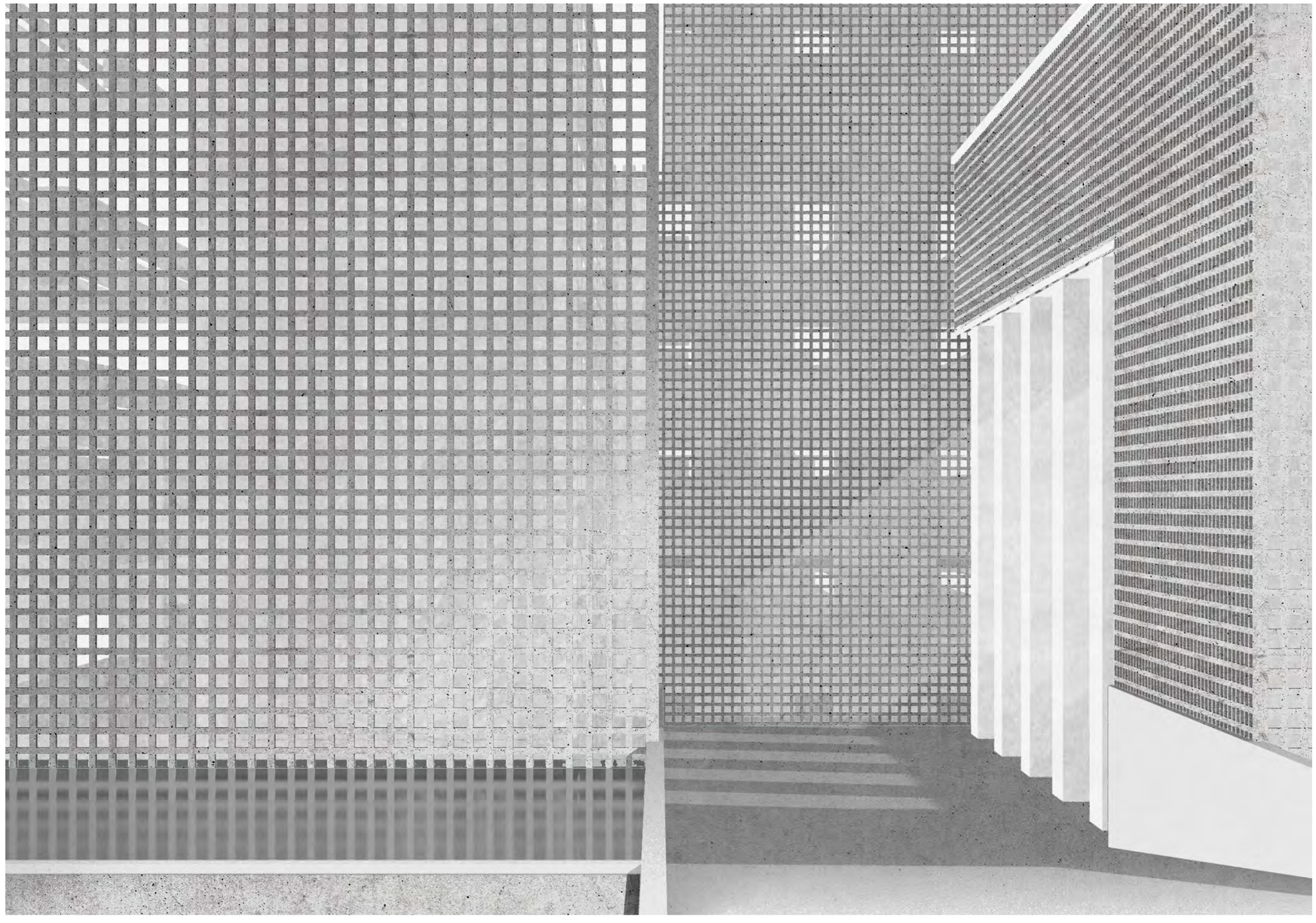
Depending on requirements, in combination with additional systems



Concrete core activation

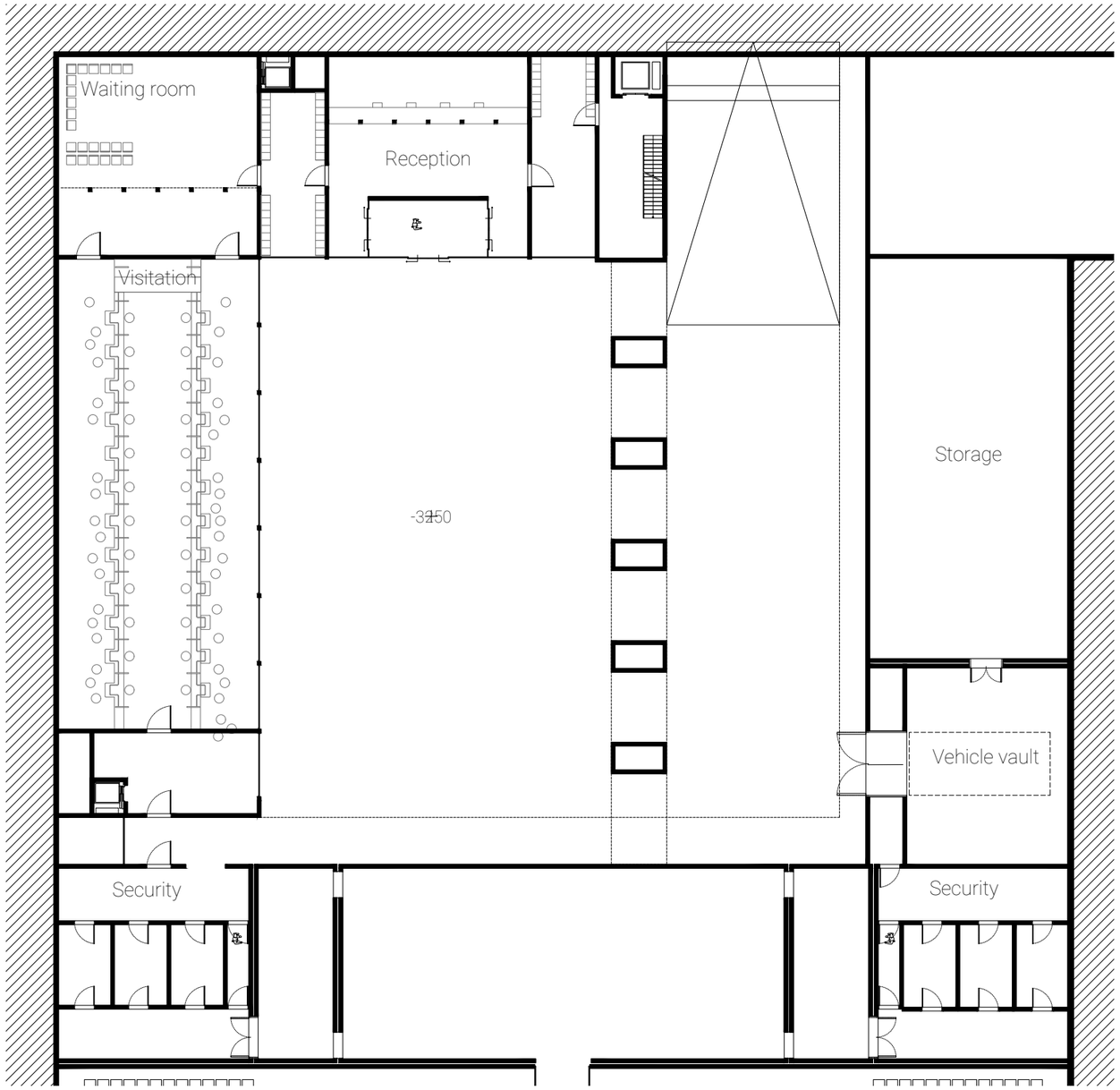
COURTYARD I

Office & visitation

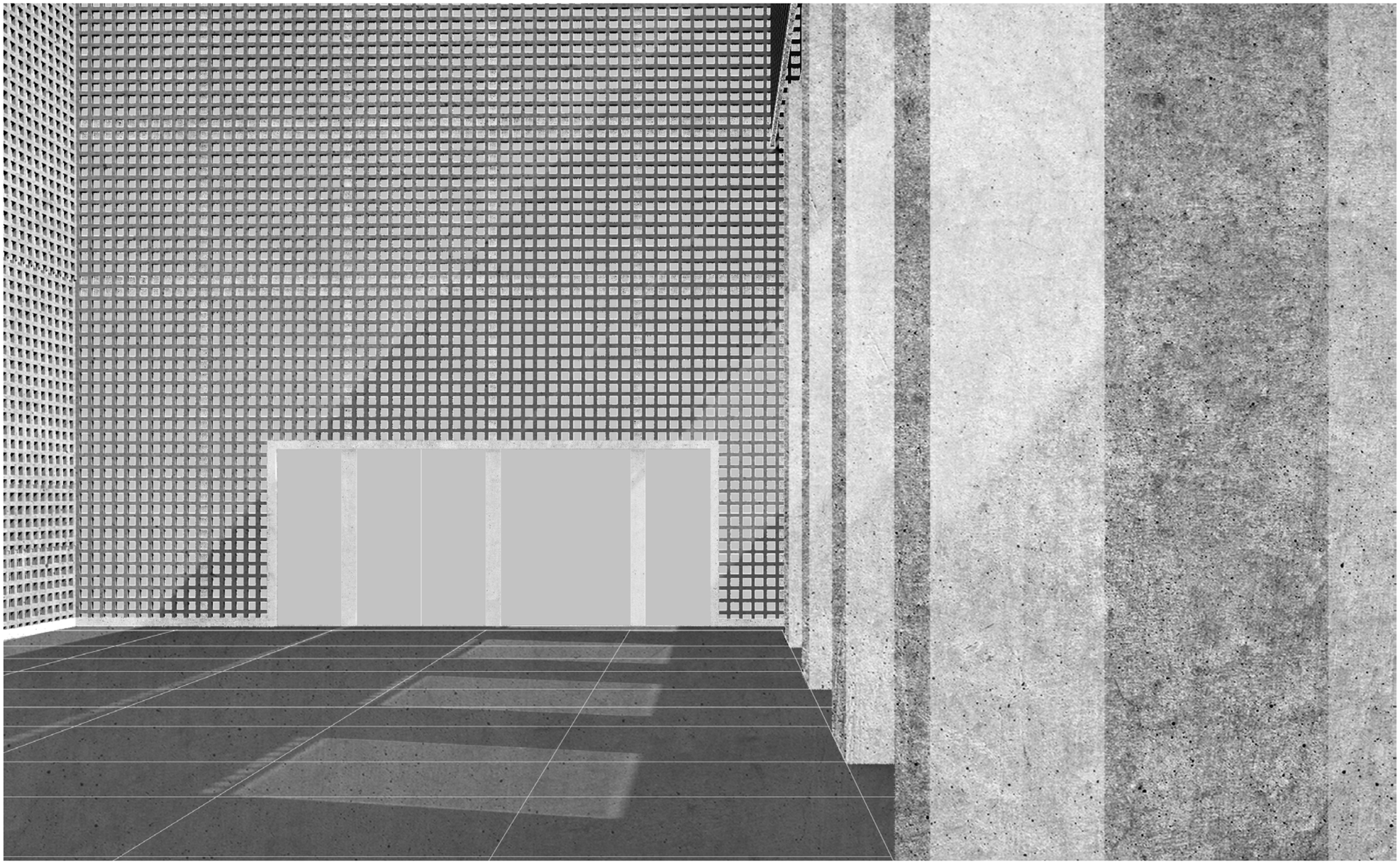


Entrance

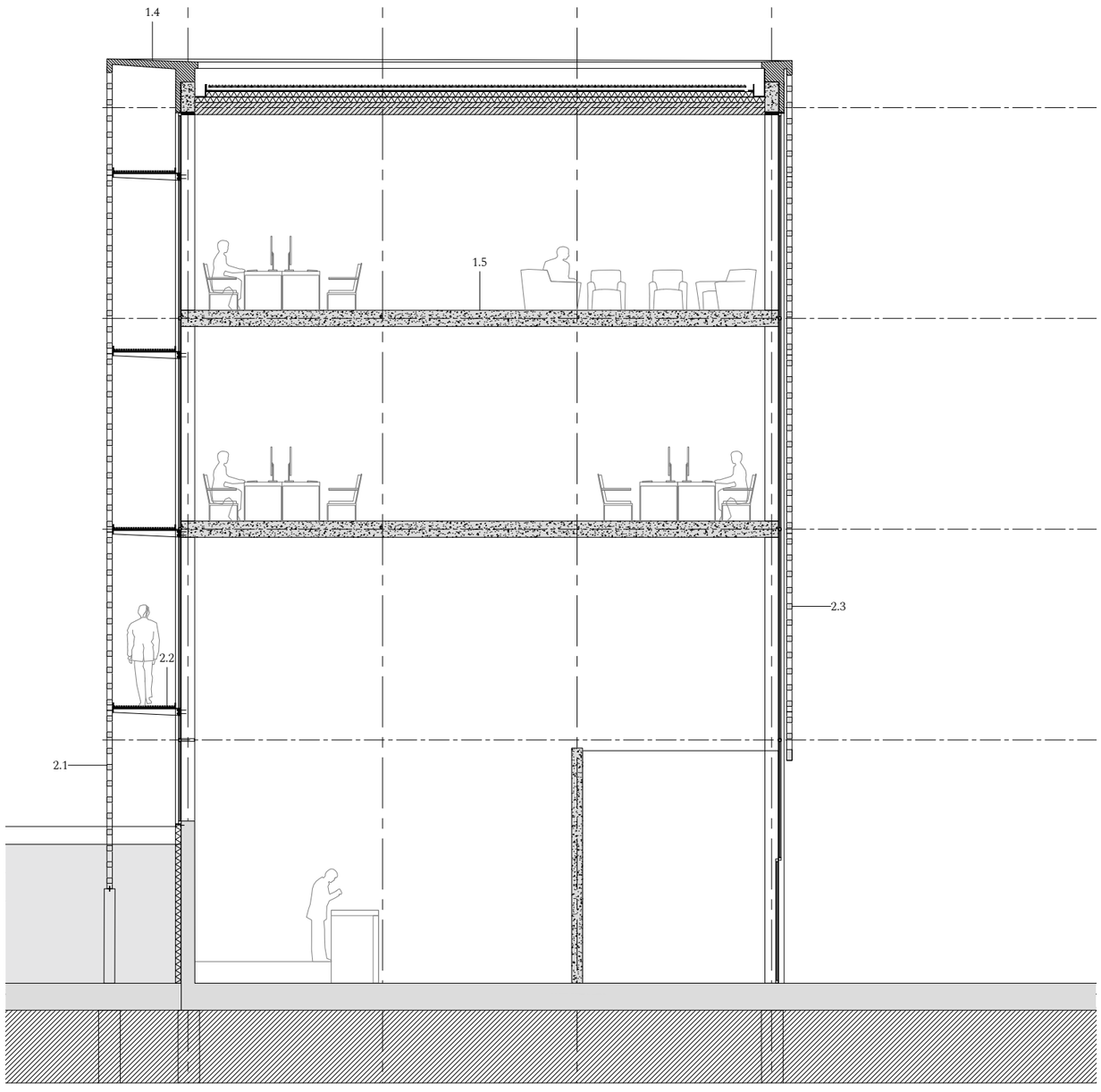
Prison as one institute


Waiting room
Reception
Visitation
-3150
Storage
Vehicle vault
Security
Security

Plan -1



Entrance

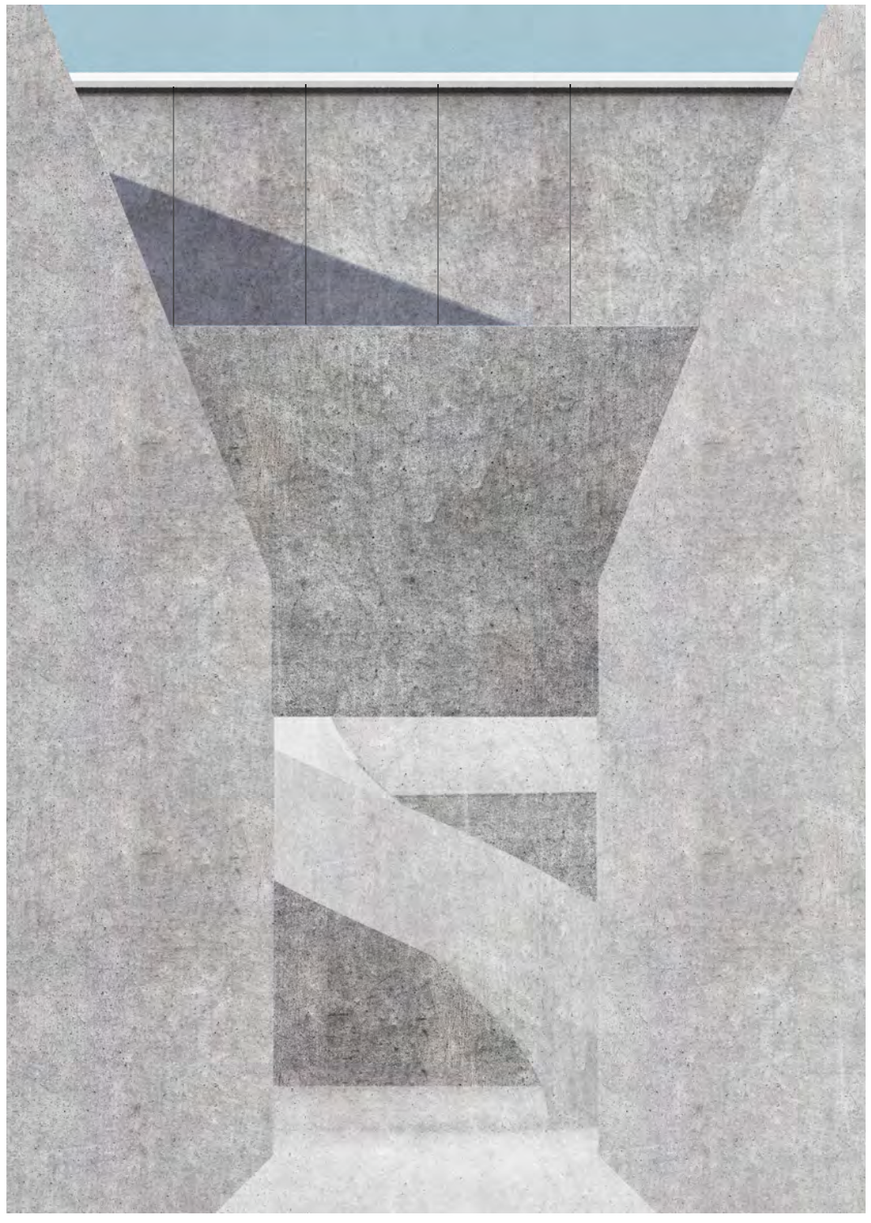


Section

Visitation

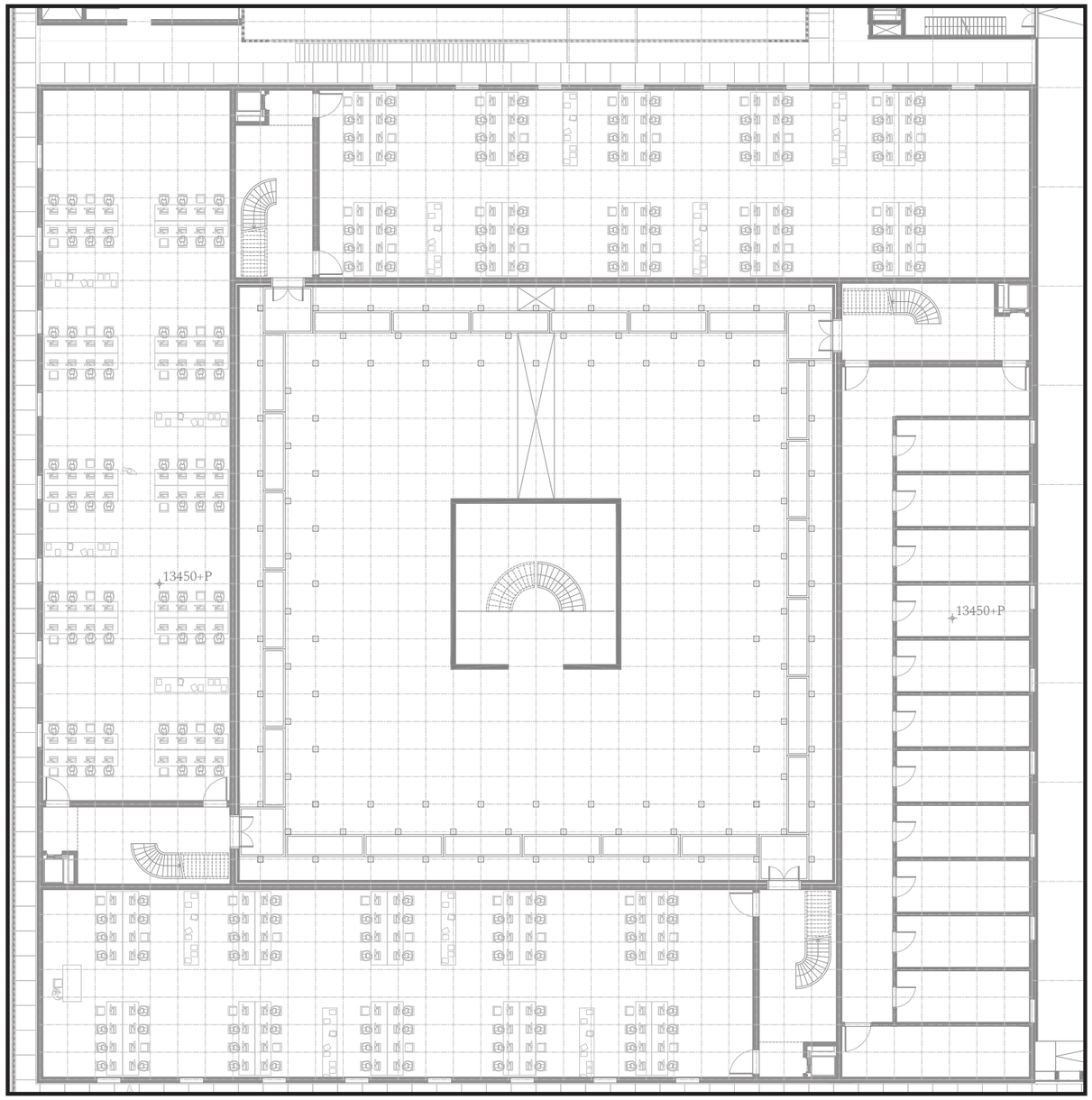
COURTYARD II

Day facilities

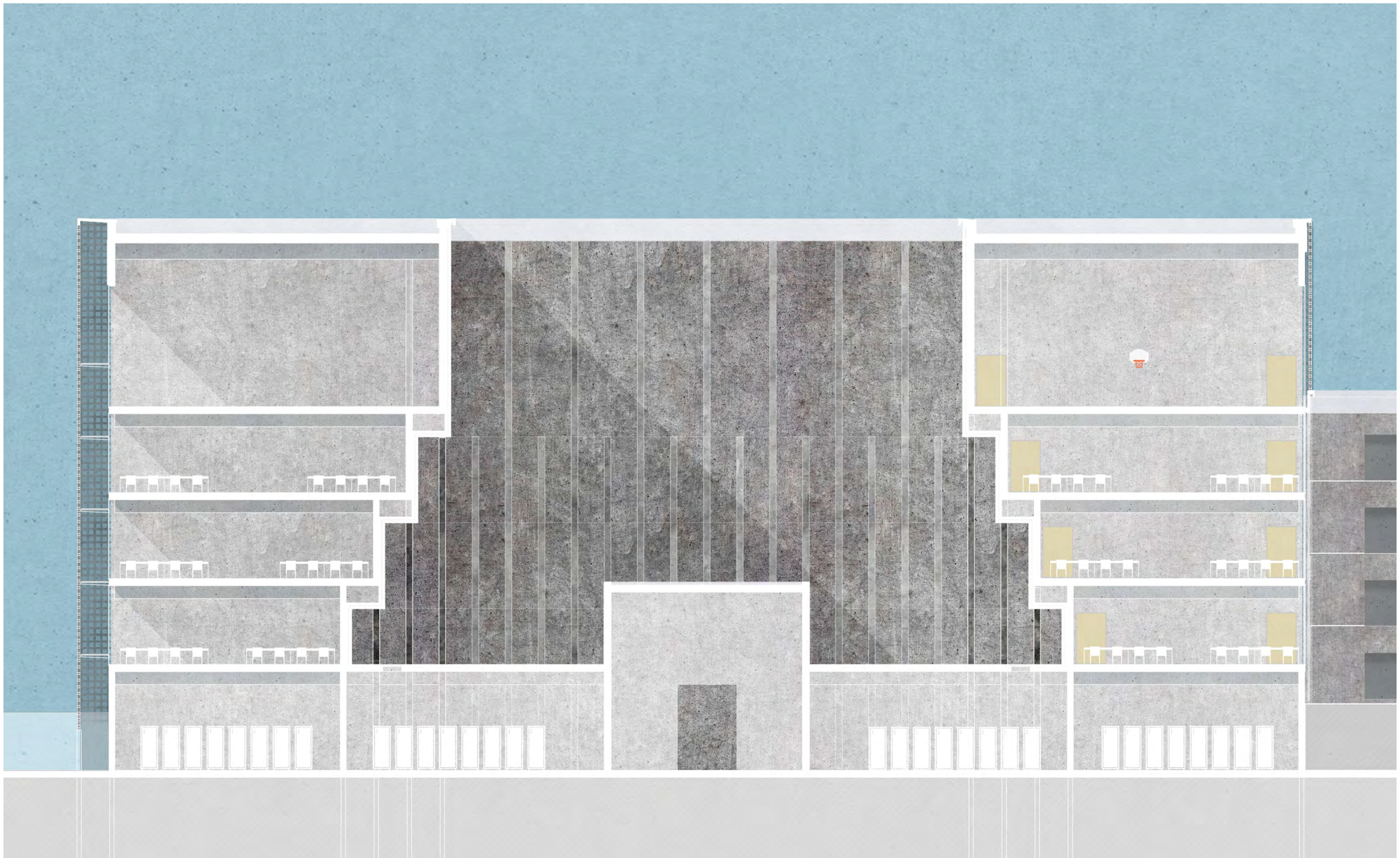


Entering the second courtyard

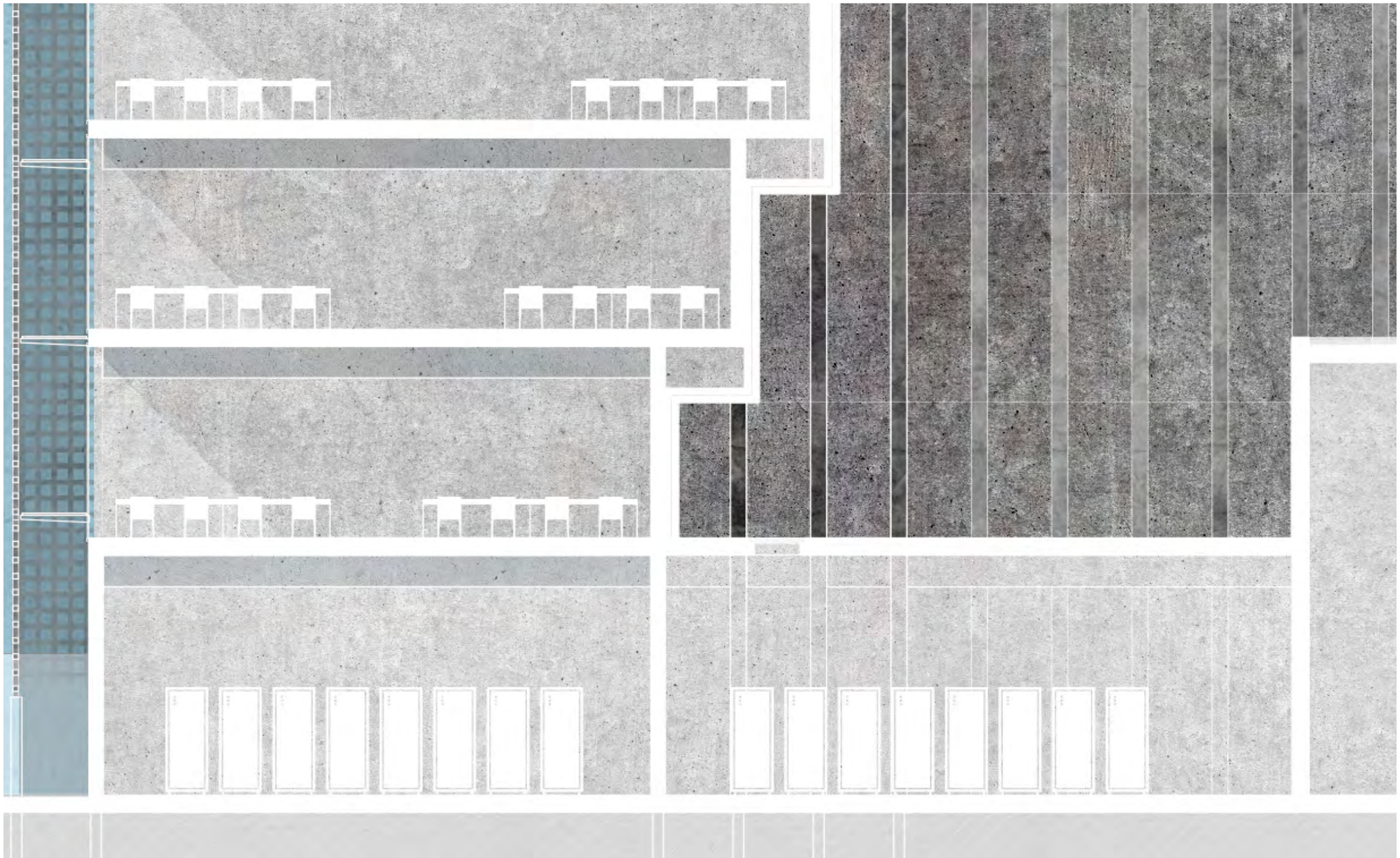
Data is almost sacred



Plan

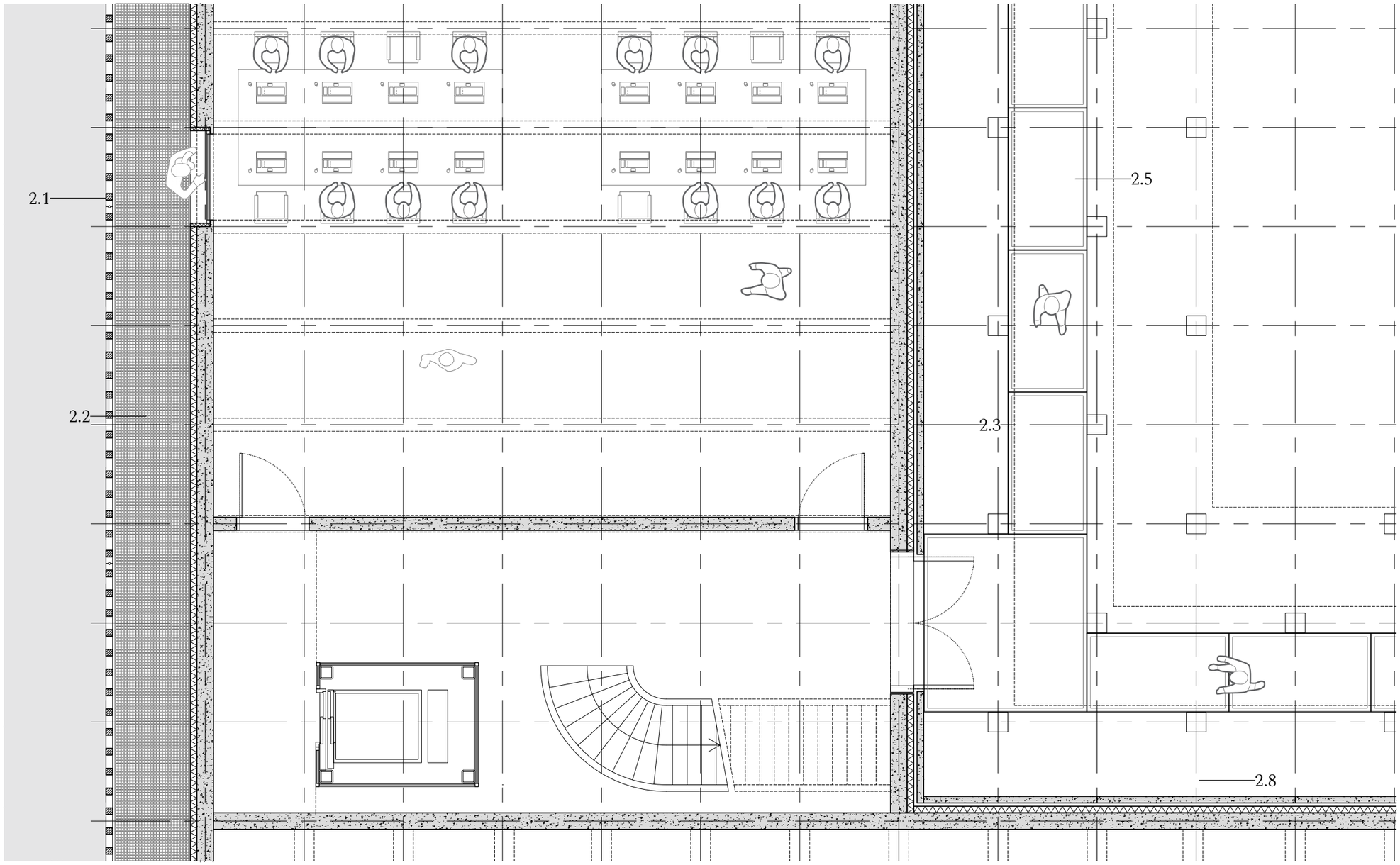


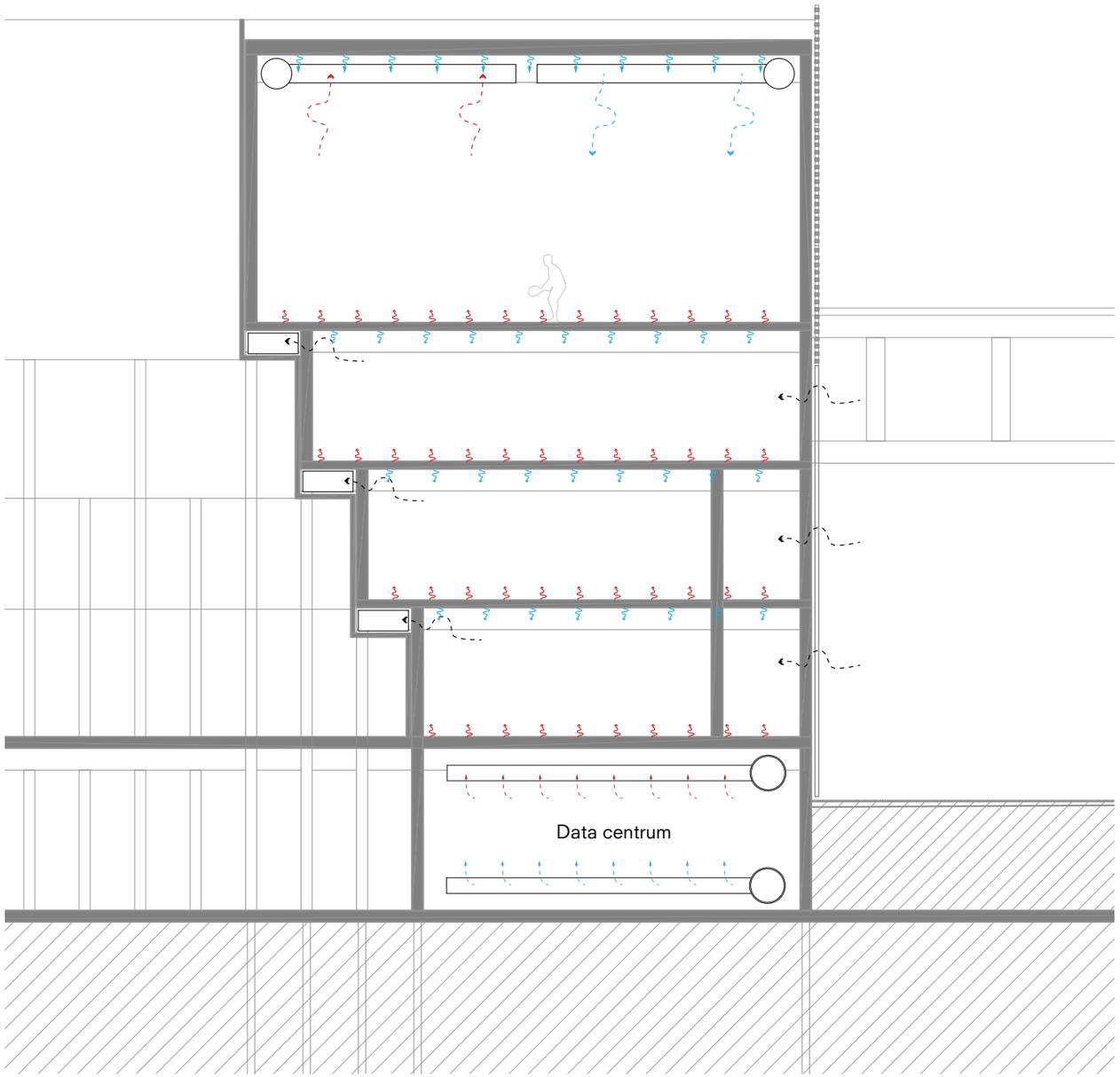
Section



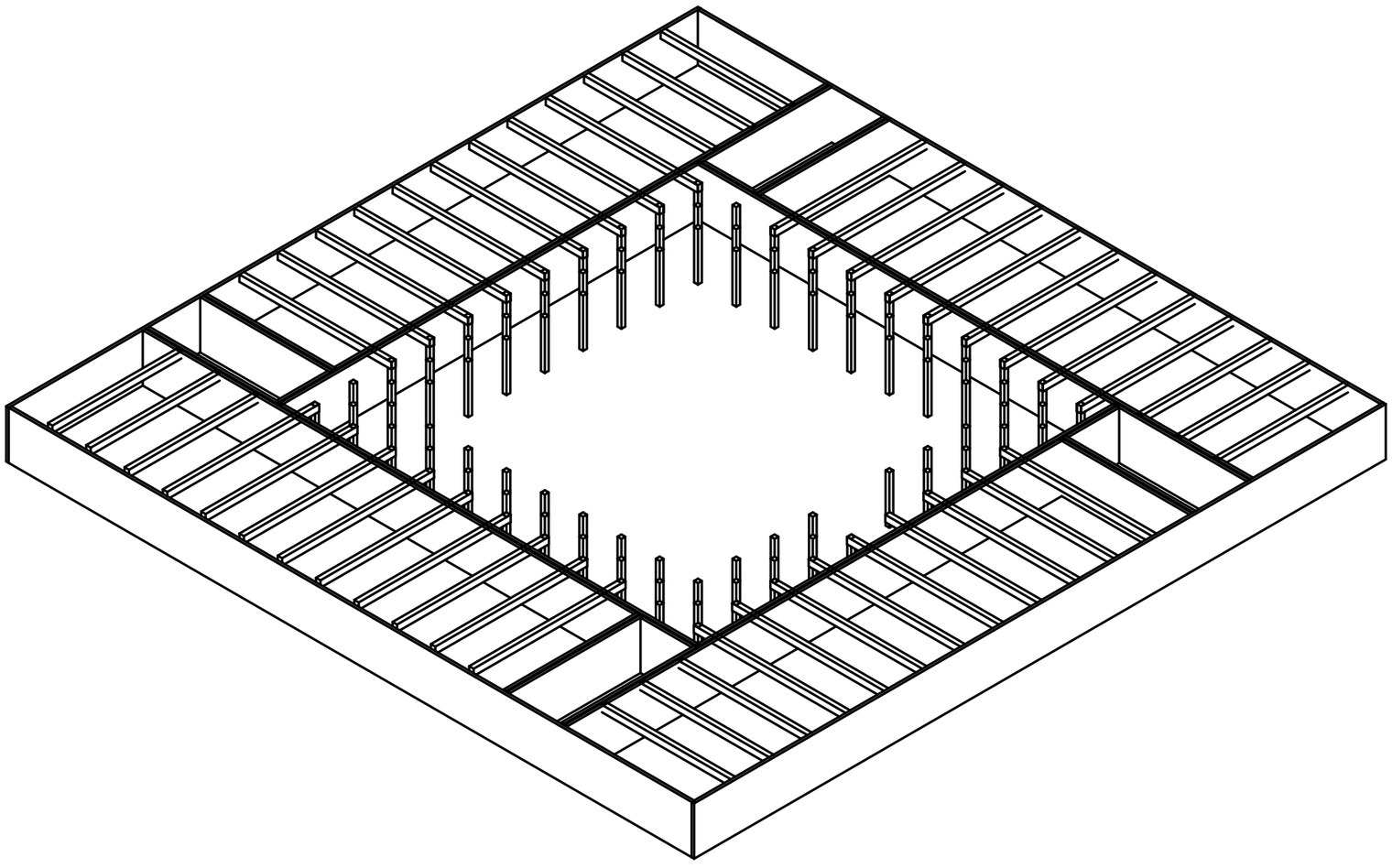
Glass walkway

Workspaces


2.1
2.2
2.3
2.5
2.8



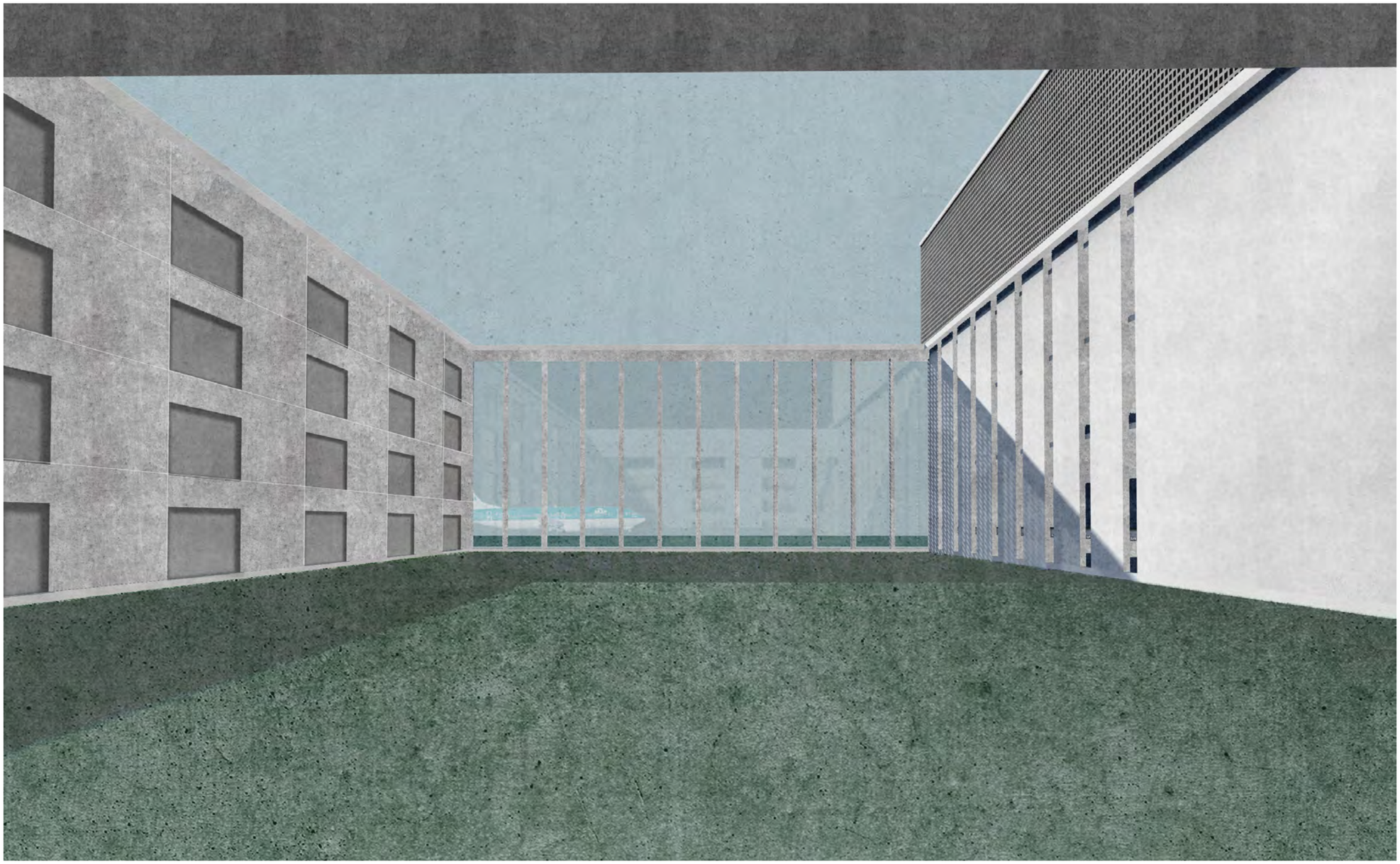
Ventilation & Heating



Construction zoom

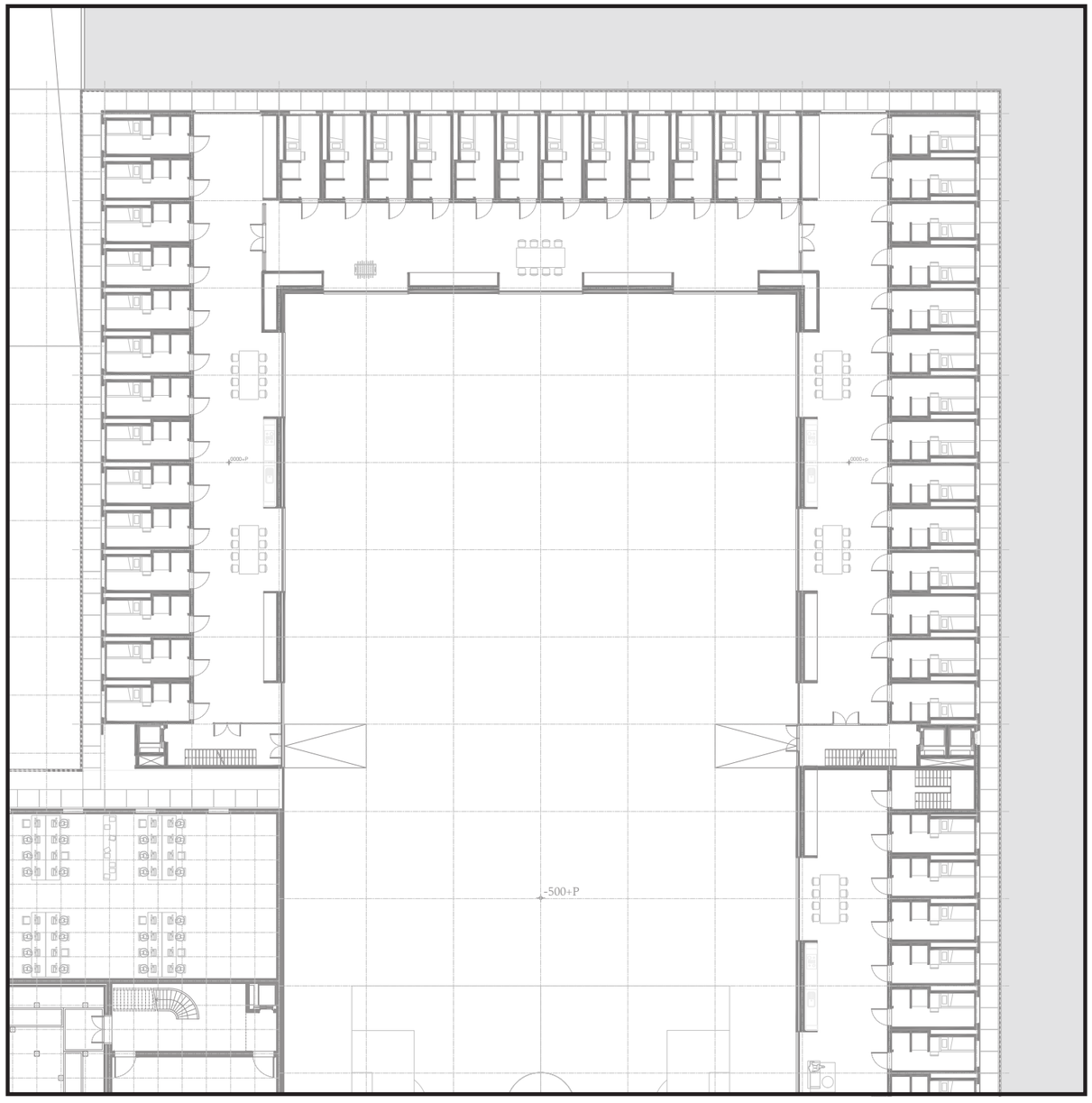
COURTYARD III

Departments & cells

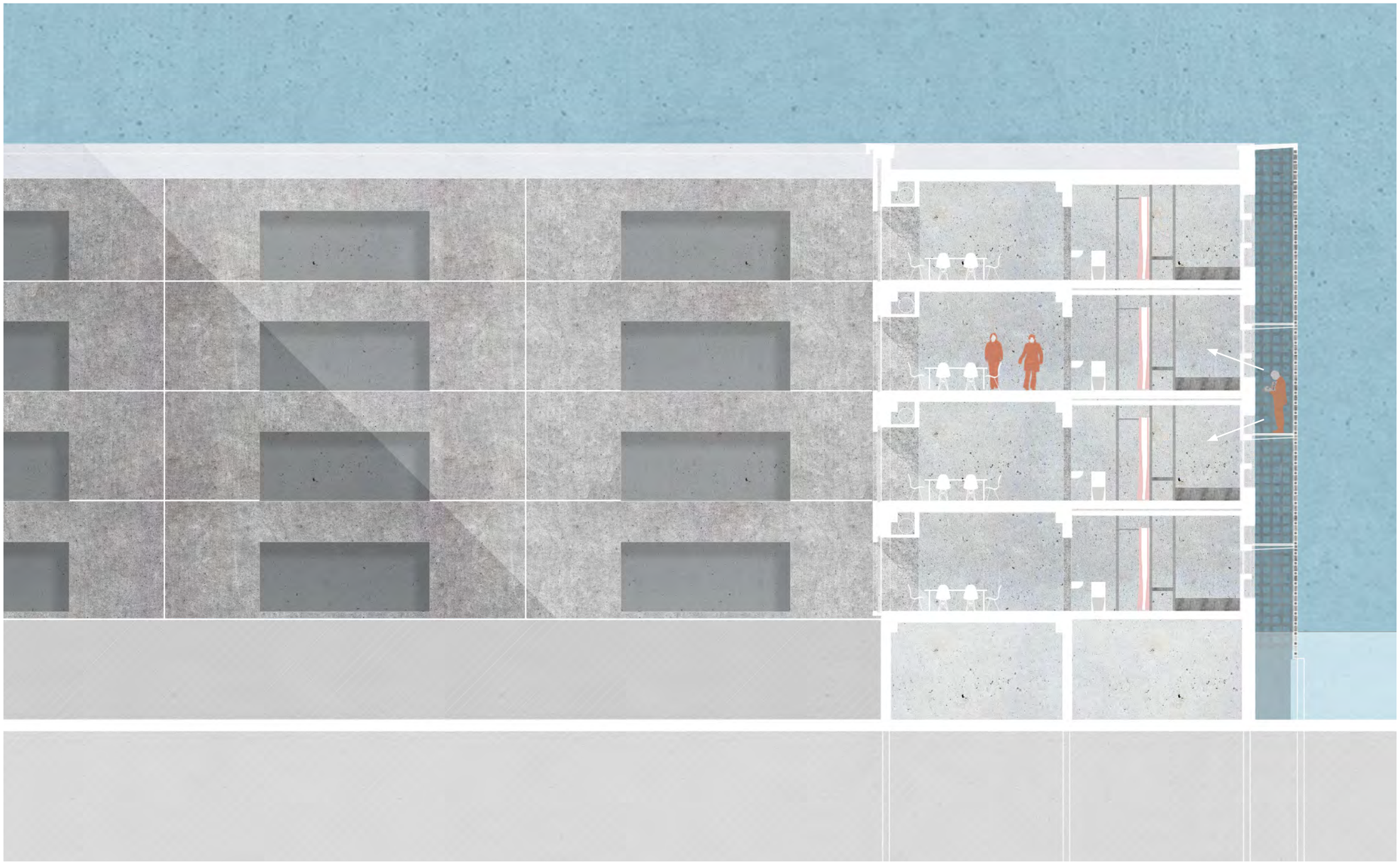


The third courtyard

Exercise



Plan

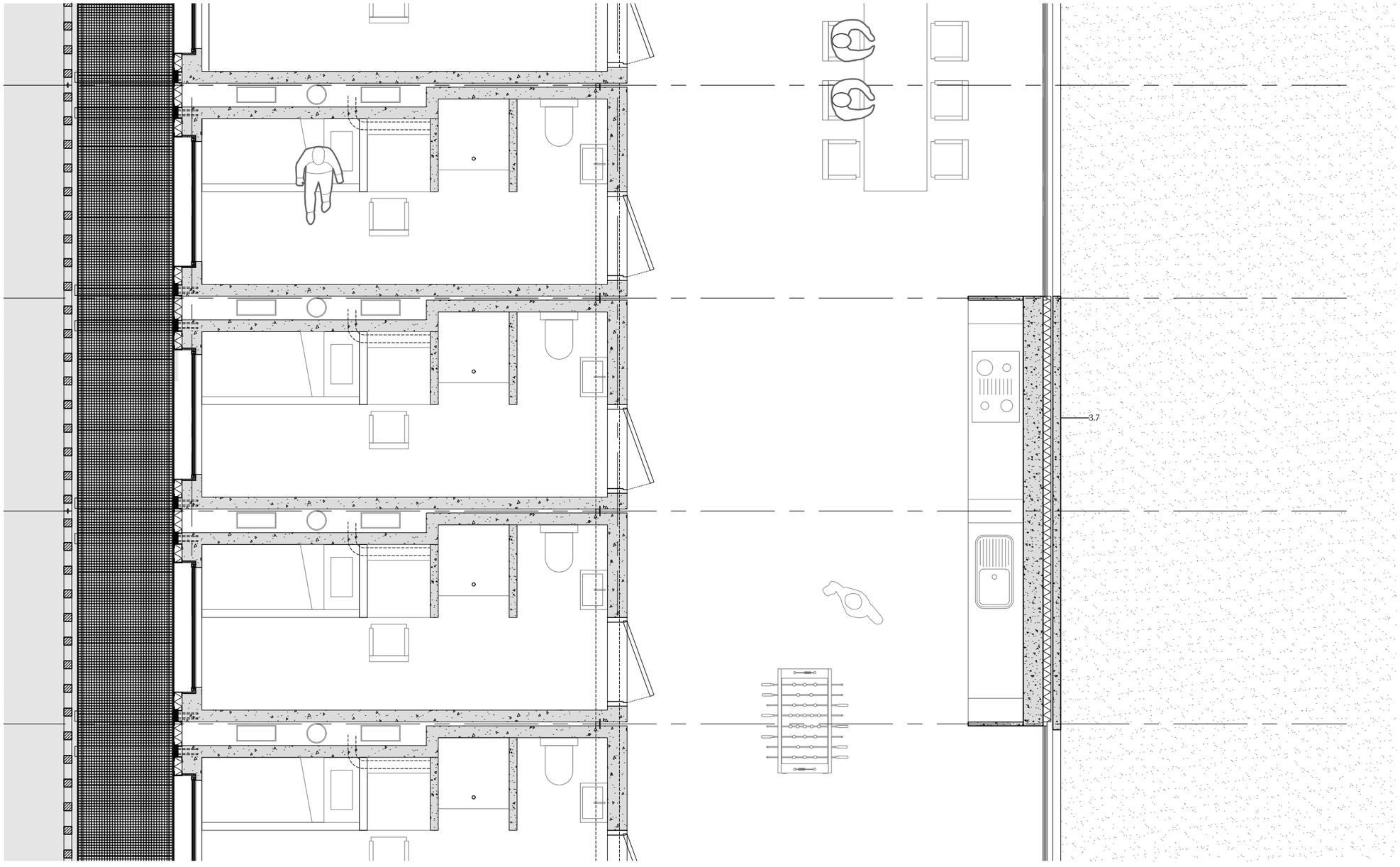


Common

Allowing social interaction

Common

Allowing social interaction



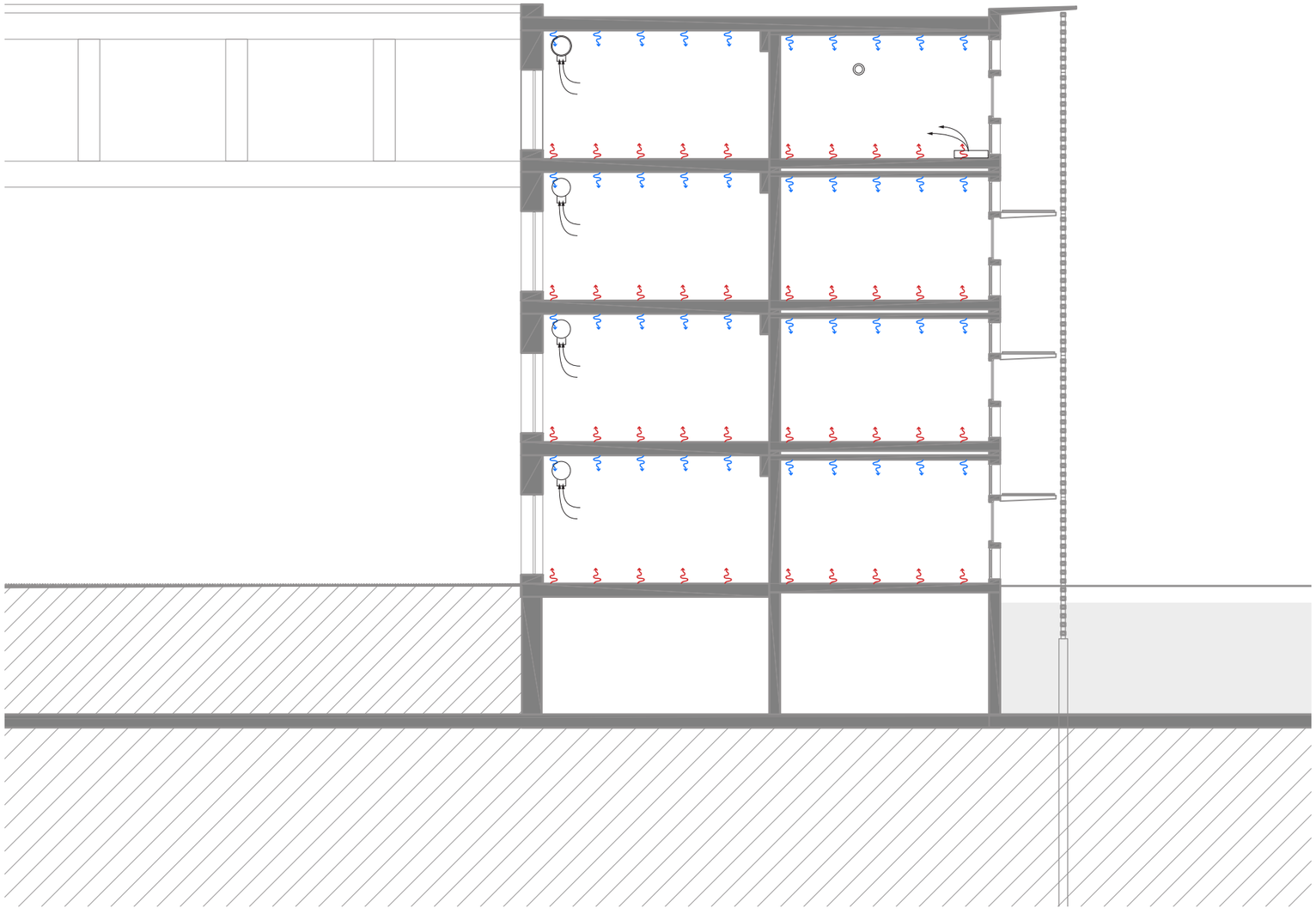
Common

Allowing social interaction

Cell

Forced reflection

Cells Zaandam penitentiary



Ventilation & Heating

What role can Schiphol (and its no mans land) play in facilitating the increasing threat of cybercrime in the future?