Accelerating the transition towards Circular Economy

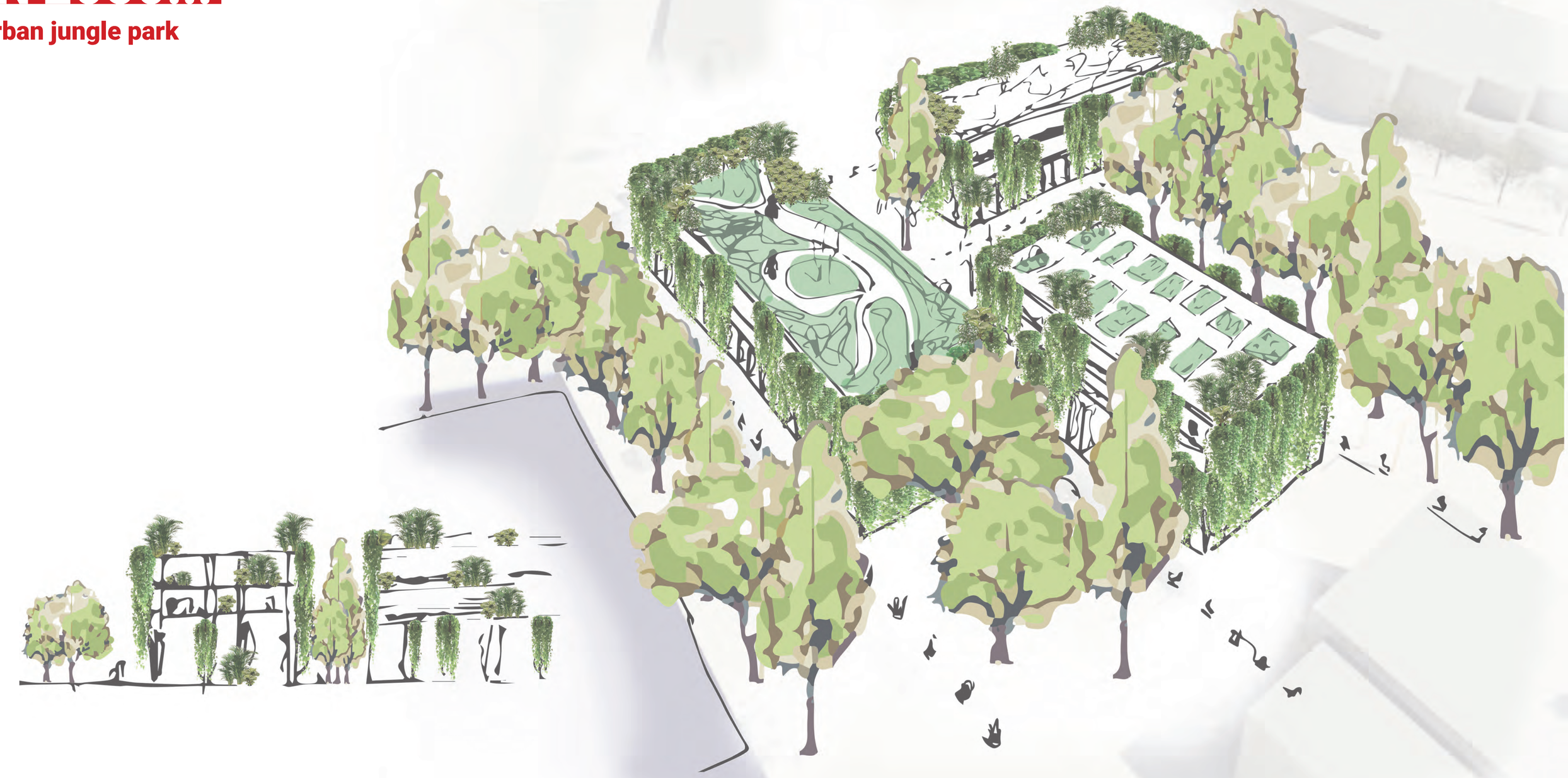
MARC BOLIER - 4283066

P5 PRESENTATION - ARCHITECTURAL ENGINEERING - 1-FEBUARI-2019

TUTURS: ROEL VAN DE PAS, ENGBERT VAN DER ZAAG, DAVID PECK, FRITS VAN LOON

IN 2050...

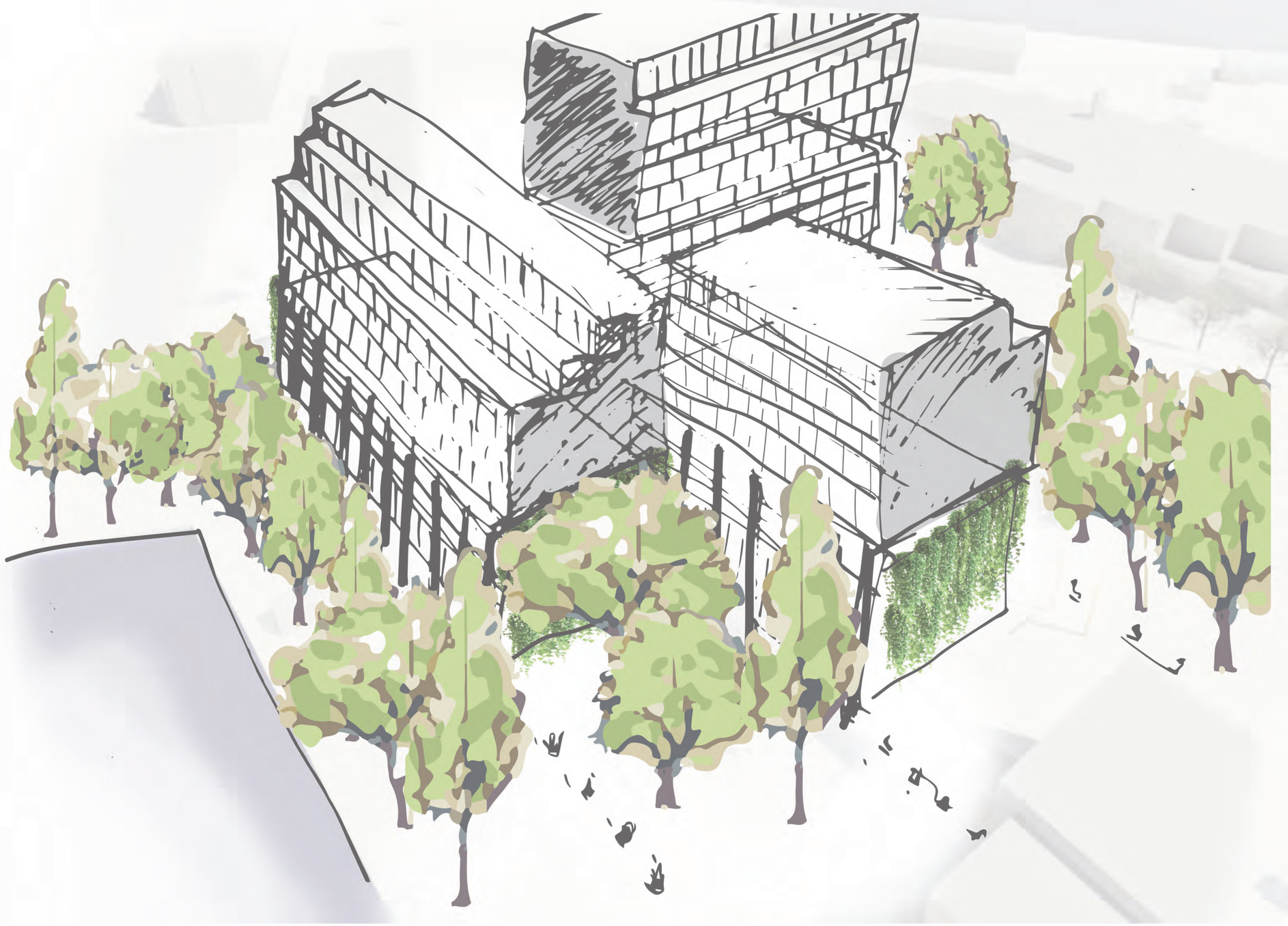
Urban jungle park



2050 2055 2060 2065 2070 2075 2080 2085 2090 2095 2100

IN 2050...

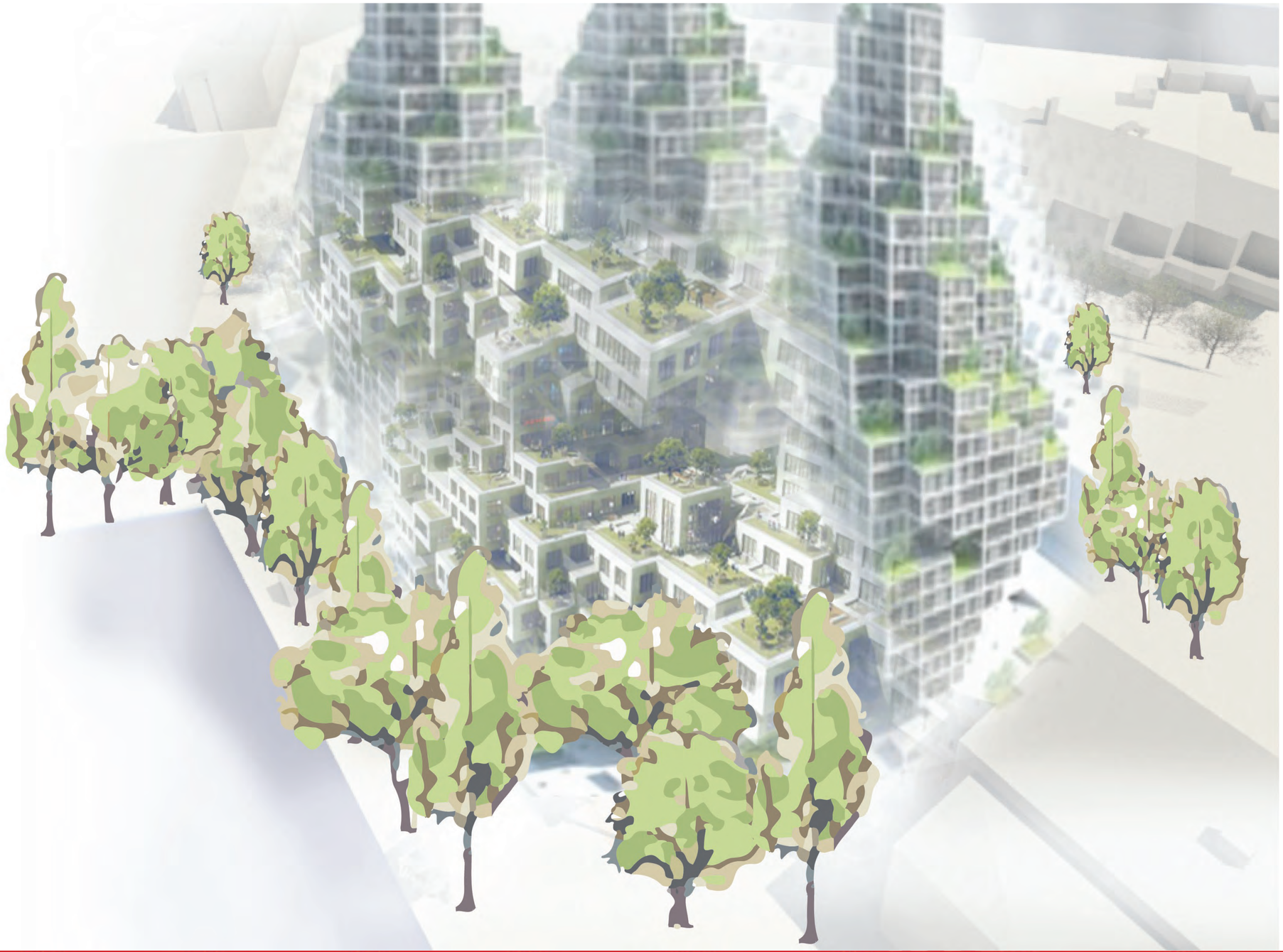
Or stacking



2050 2055 2060 2065 2070 2075 2080 2085 2090 2095 2100

IN 2050...

Or MVRDV/BIG

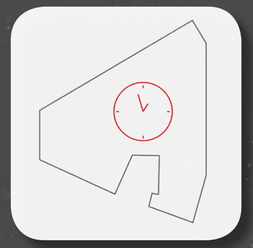


2050 2055 2060 2065 2070 2075 2080 2085 2090 2095 2100

BUT FIRST...

2050 2055 2060 2065 2070 2075 2080 2085 2090 2095 2100

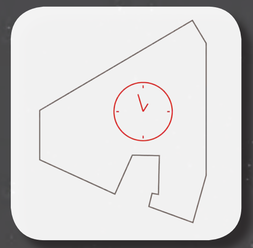
PROPOSED SCENARIO



Temporary

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

PROPOSED SCENARIO

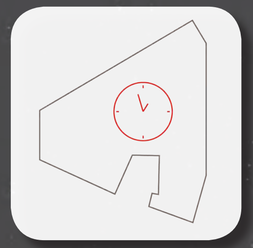


Temporary

Circular

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

PROPOSED SCENARIO



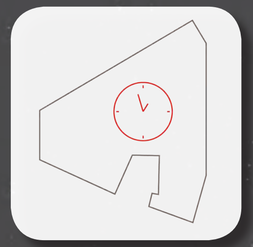
Temporary

Circular

By an integrated team

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

PROPOSED SCENARIO



Temporary

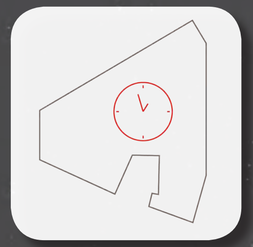
Circular

By an integrated team

Celebrating the history

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

PROPOSED SCENARIO



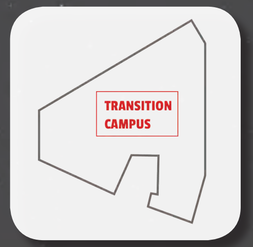
Temporary

Circular

By an integrated team

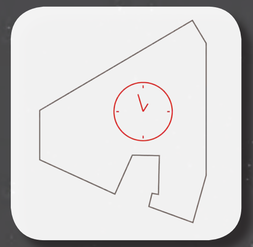
Celebrating the history

Combining the whole site into a transition campus



2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

PROPOSED SCENARIO



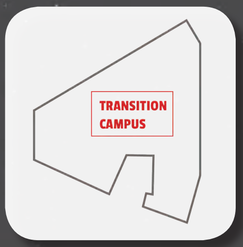
Temporary

Circular

By an integrated team

Celebrating the history

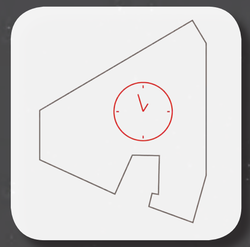
Combining the whole site into a transition campus



Providing the missing necesssities

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

PROPOSED SCENARIO



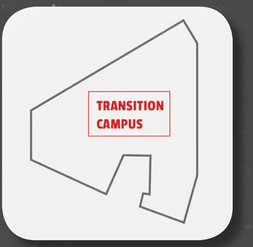
Temporary

Circular

By an integrated team

Celebrating the history

Combining the whole site into a transition campus

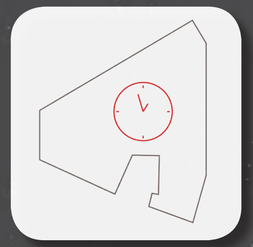


Providing the missing necesssities

Providing a testing ground

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

PROPOSED SCENARIO



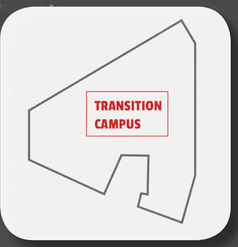
Temporary

Circular

By an integrated team

Celebrating the history

Combining the whole site into a transition campus



Providing the missing necesssities

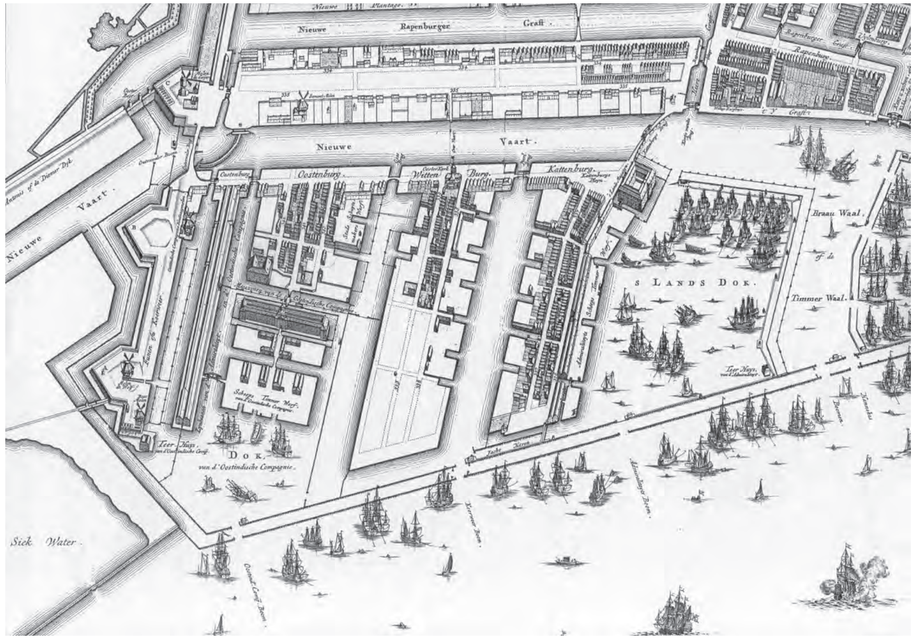
Providing a testing ground

Facilitating interlinkages between niche-innovations

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

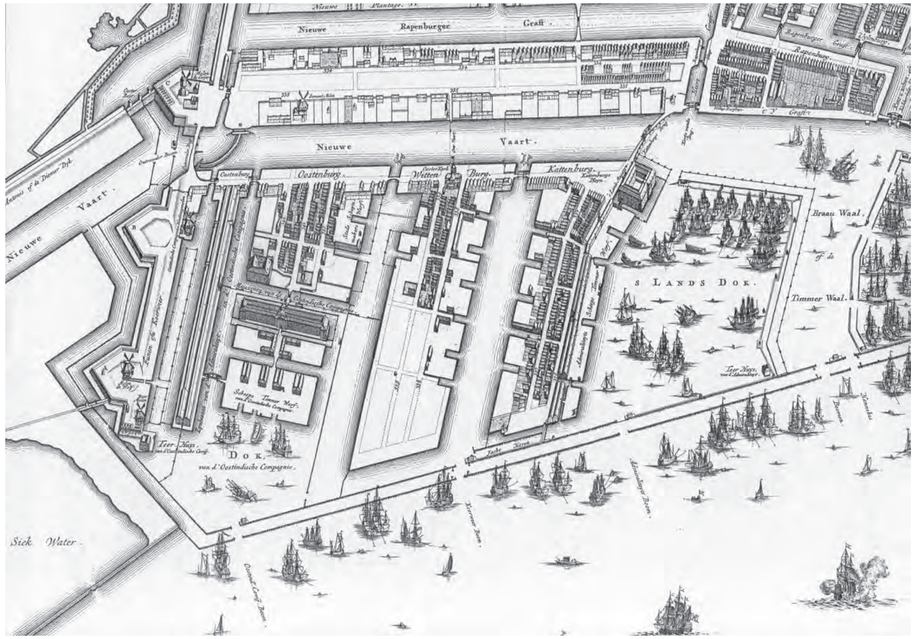
MARINETERREIN

History and development



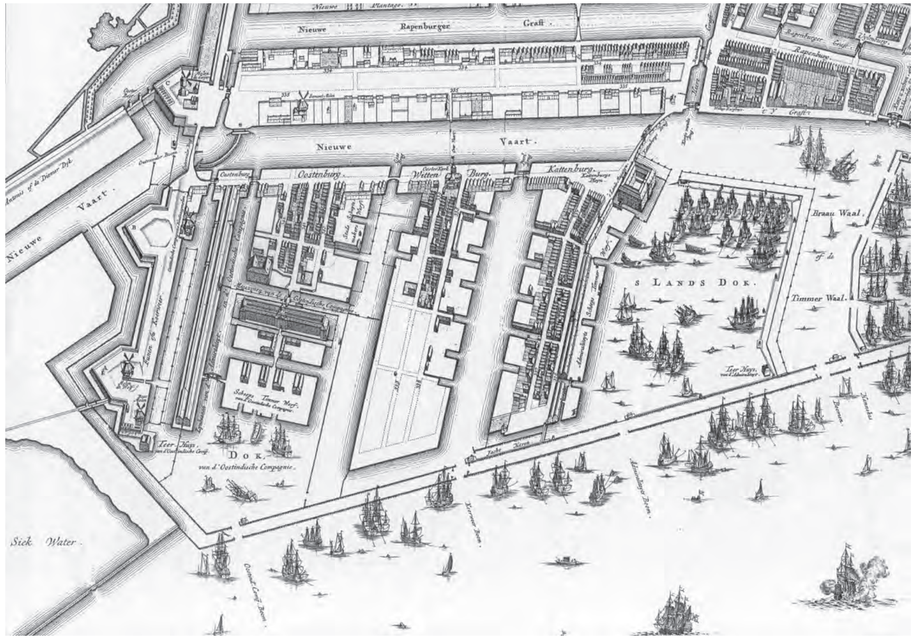
MARINETERREIN

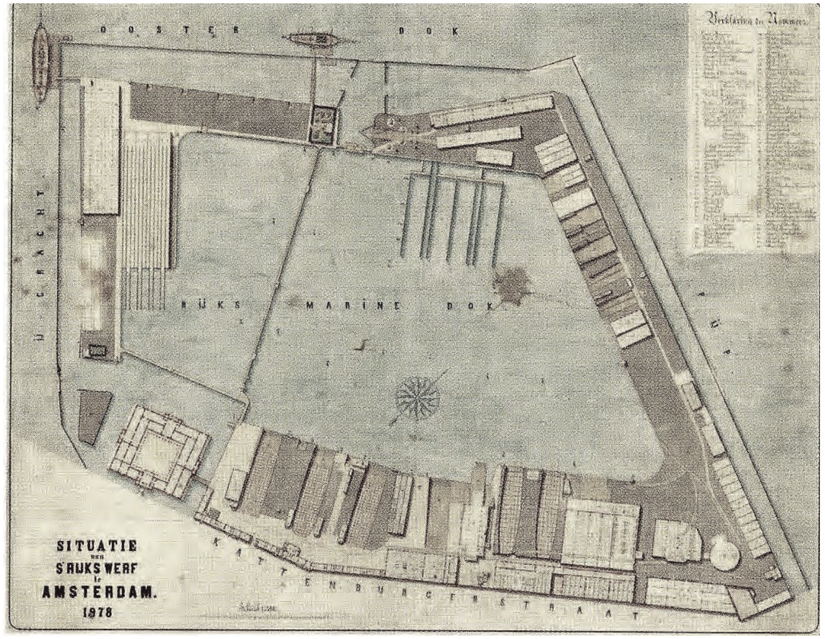
History and development



MARINETERREIN

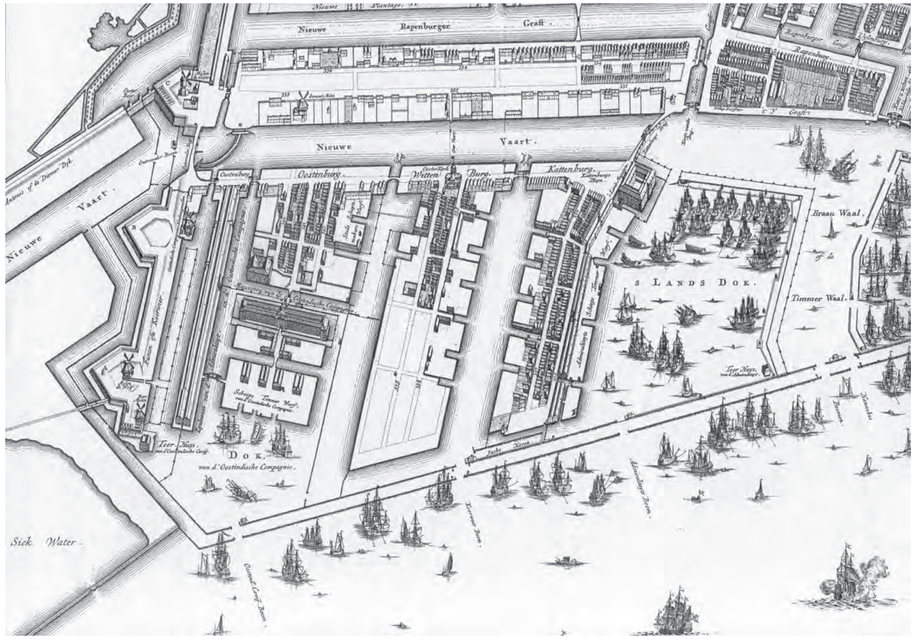
History and development

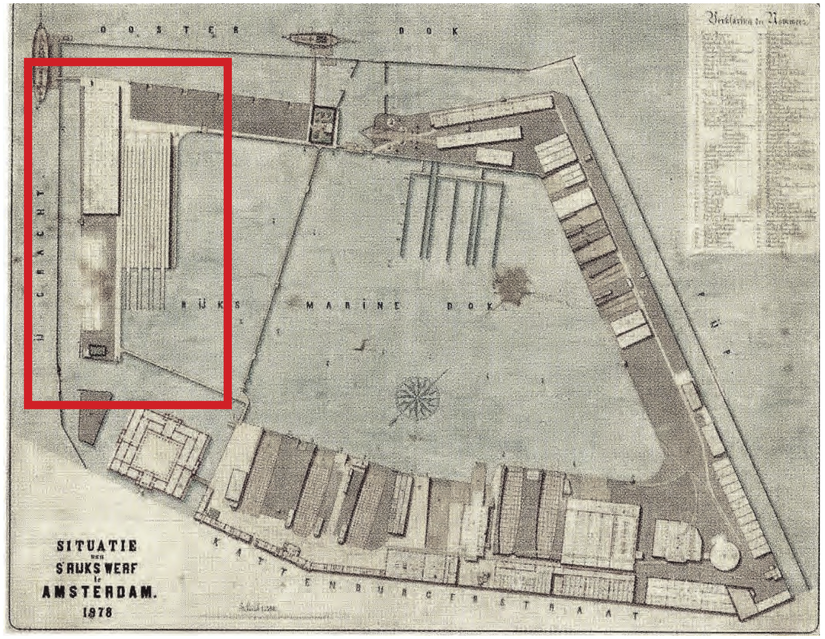


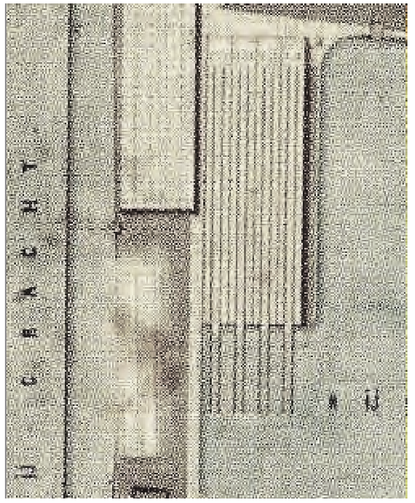


MARINETERREIN

History and development

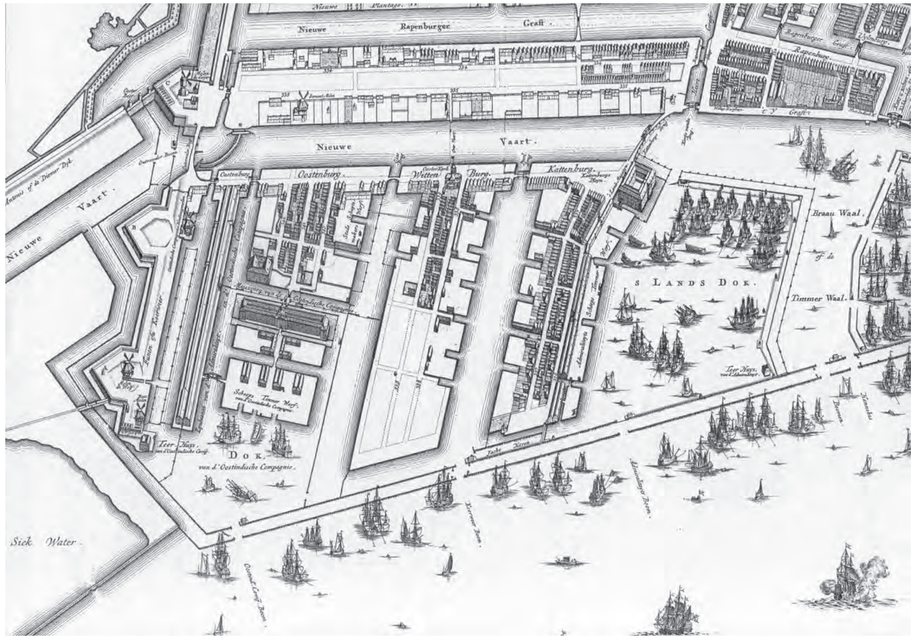


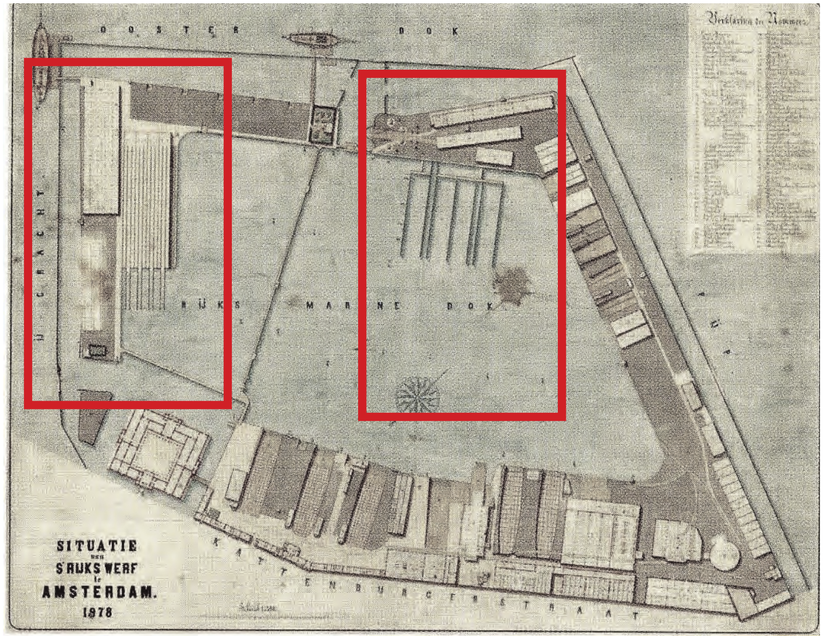


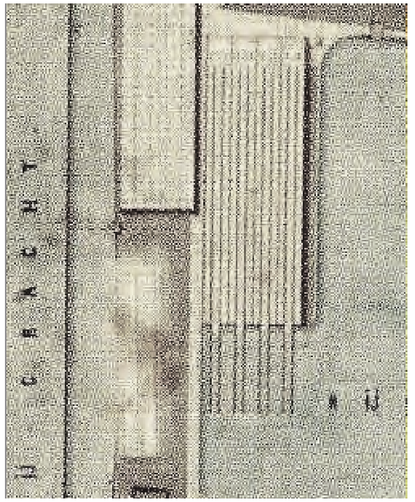


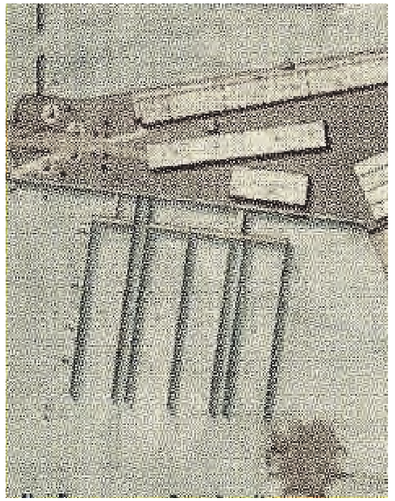
MARINETERREIN

History and development





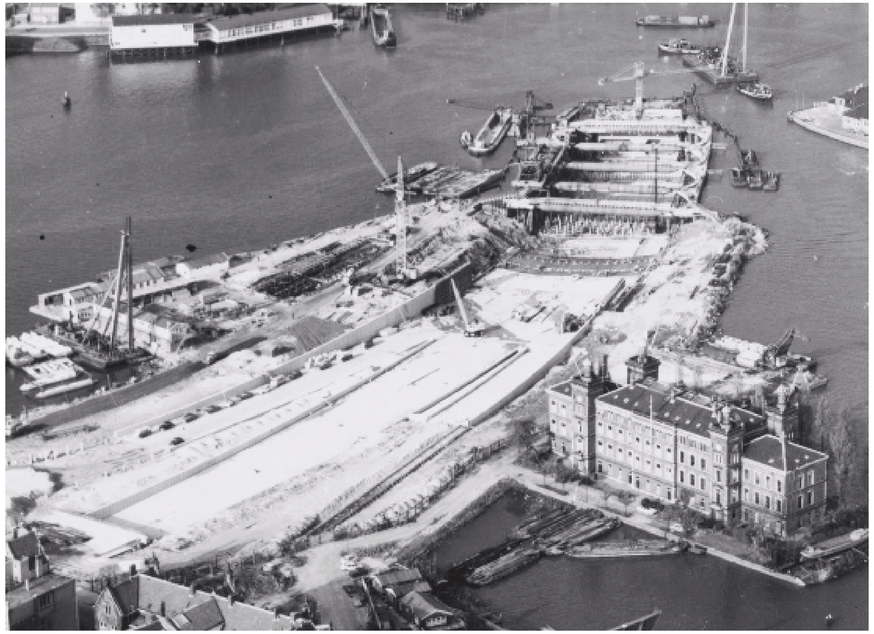




1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

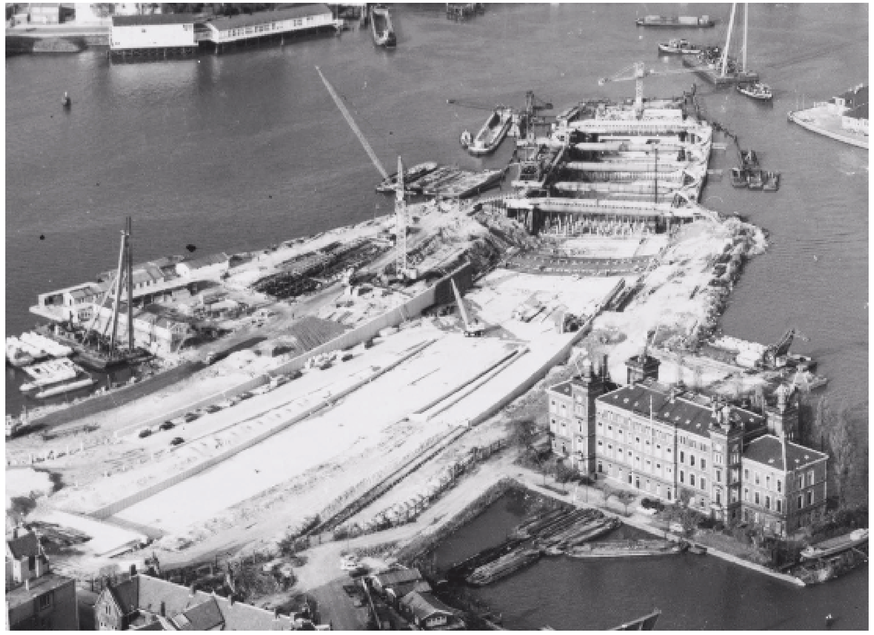
MARINETERREIN

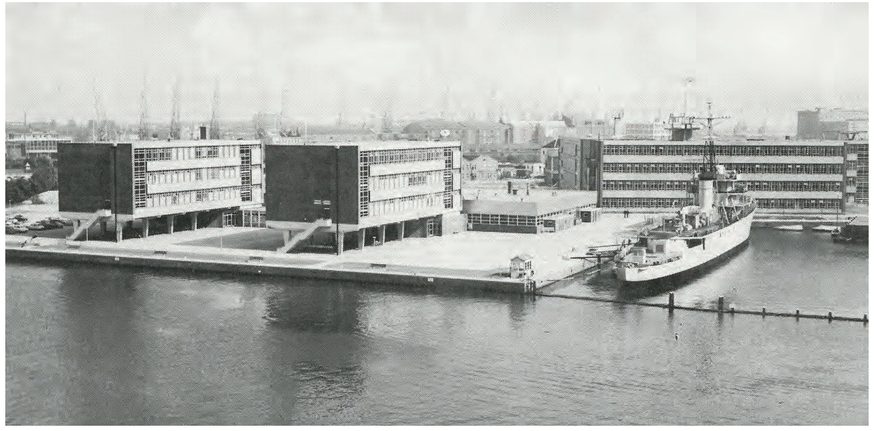
History and development



MARINETERREIN

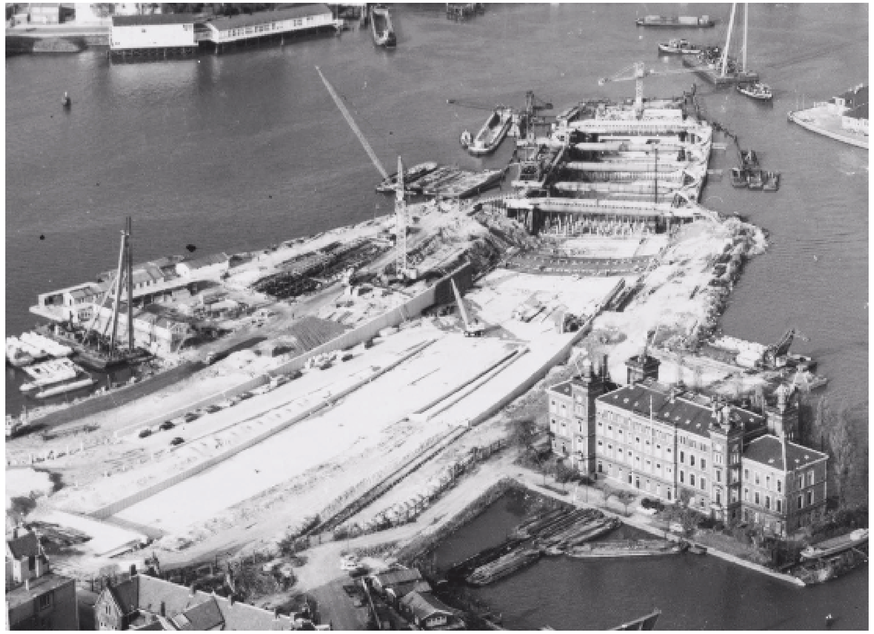
History and development

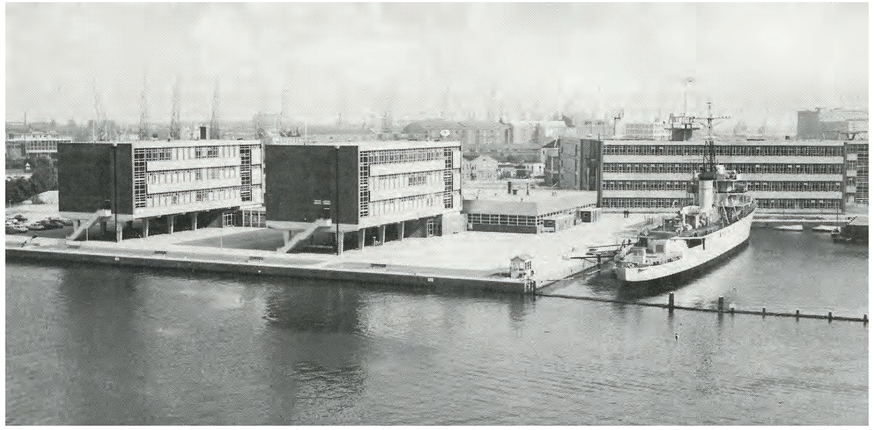


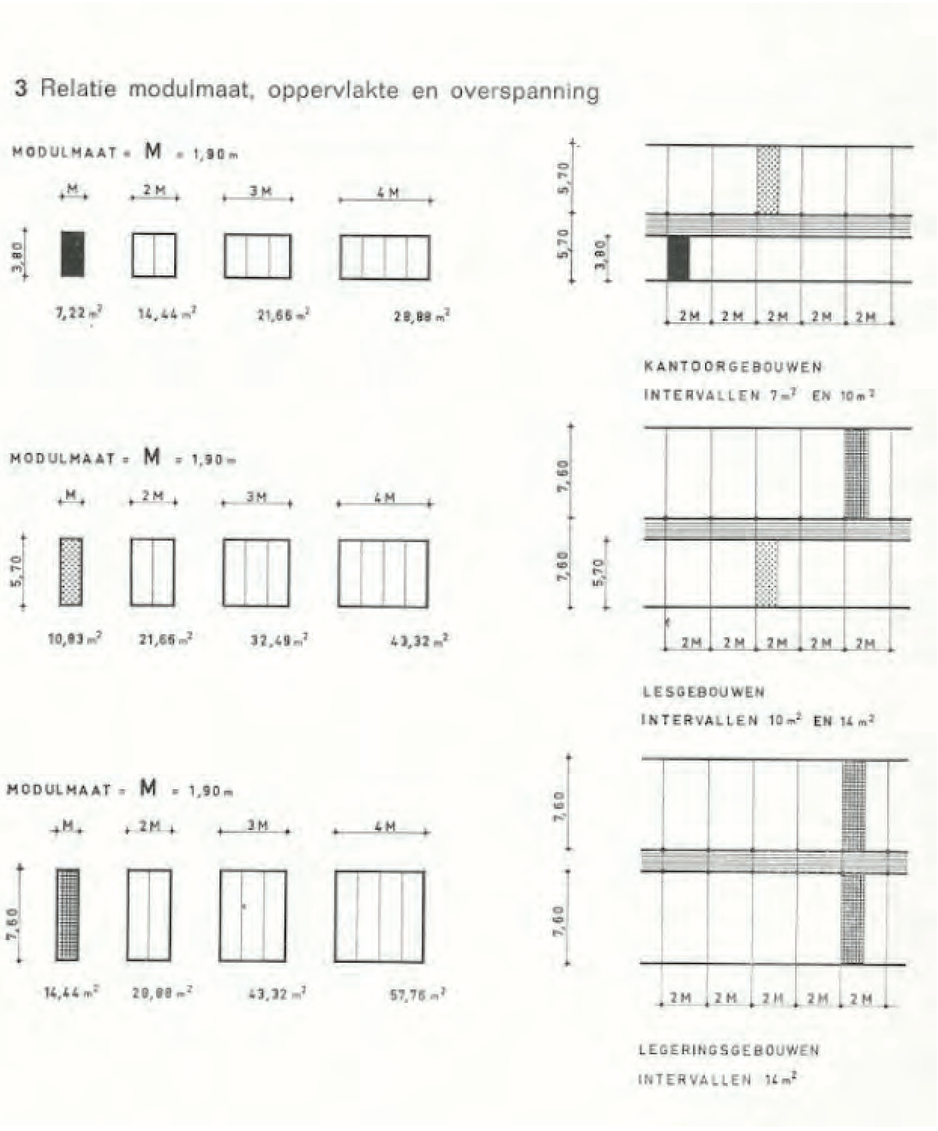


MARINETERREIN

History and development

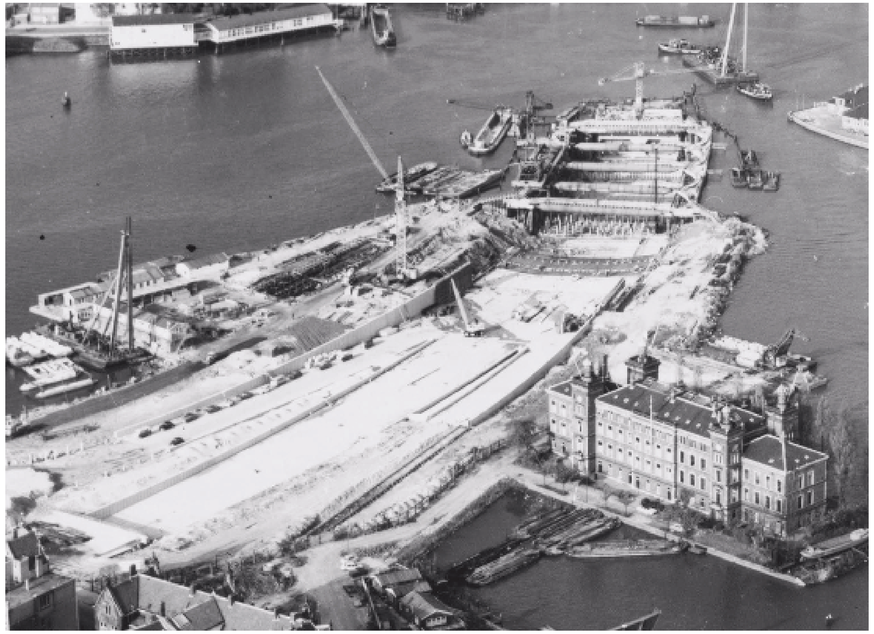


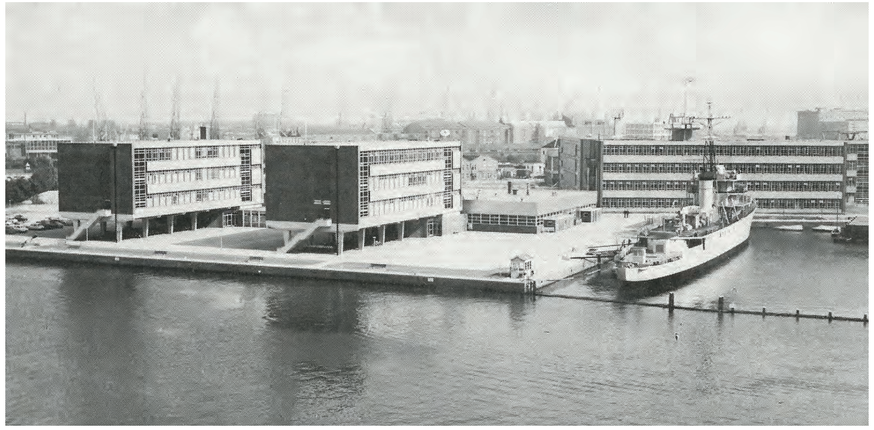


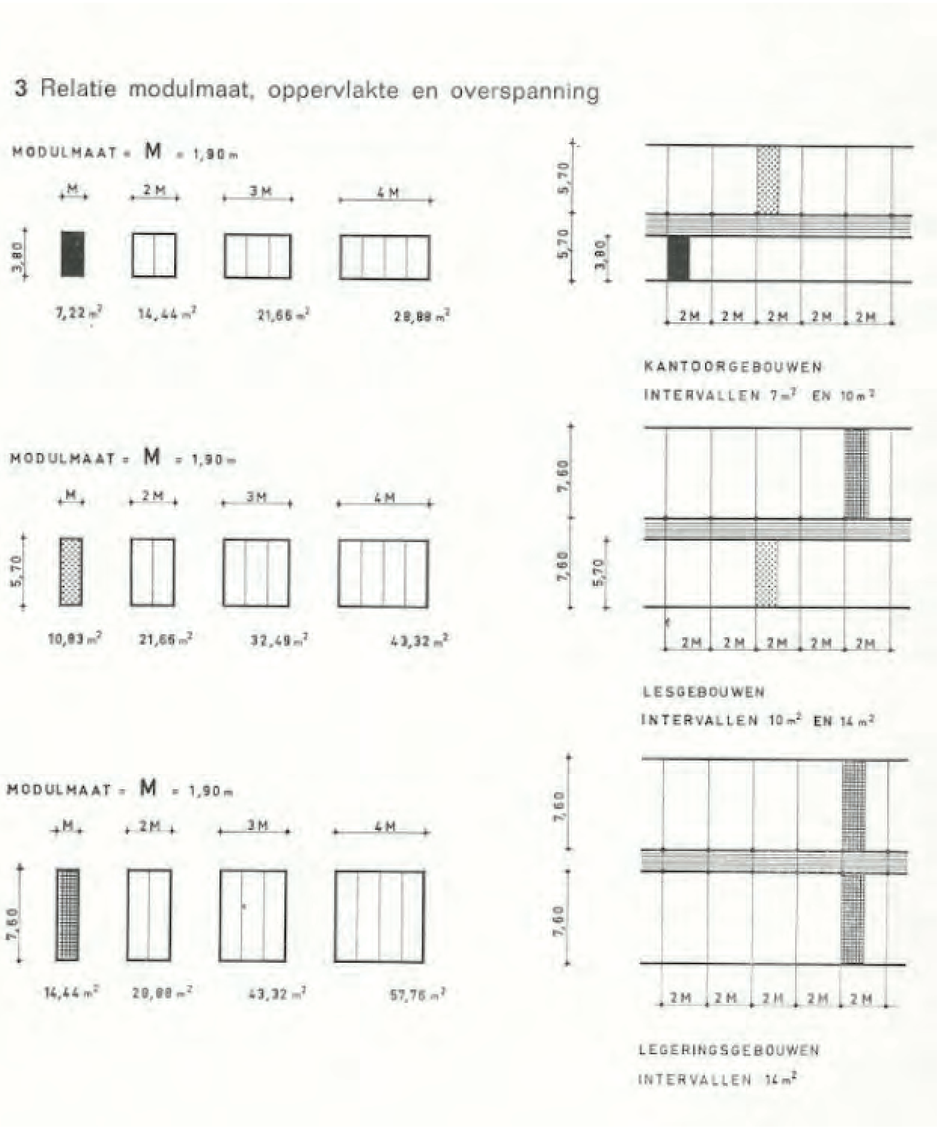


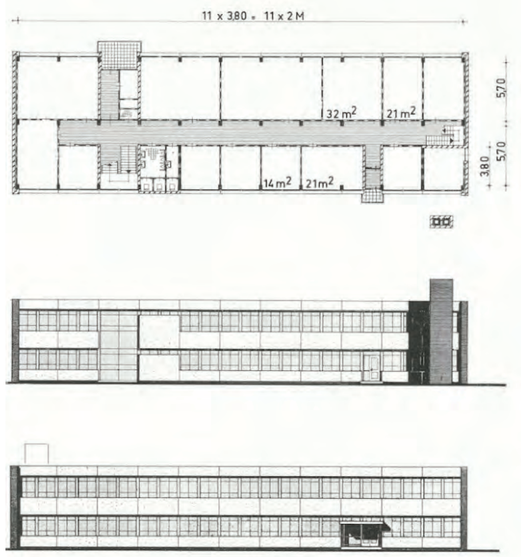
MARINETERREIN

History and development





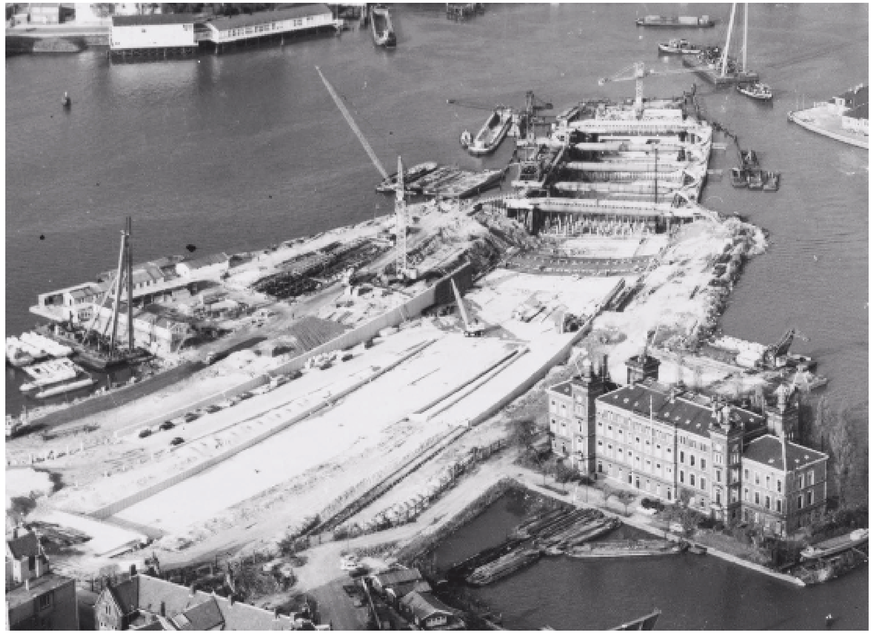


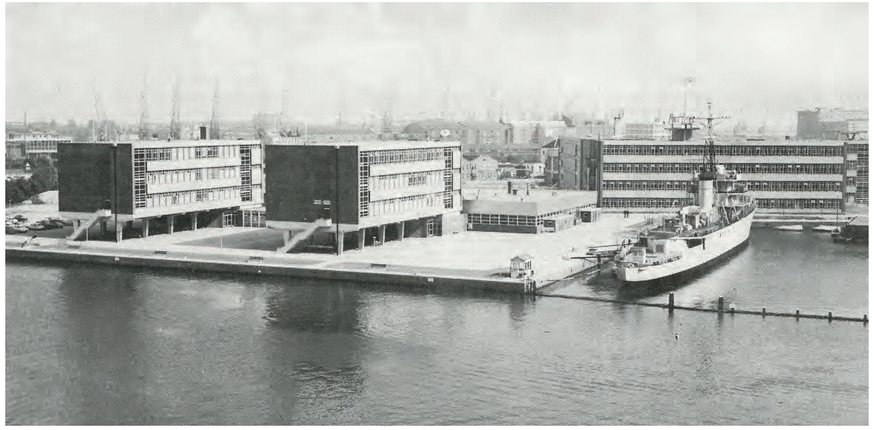


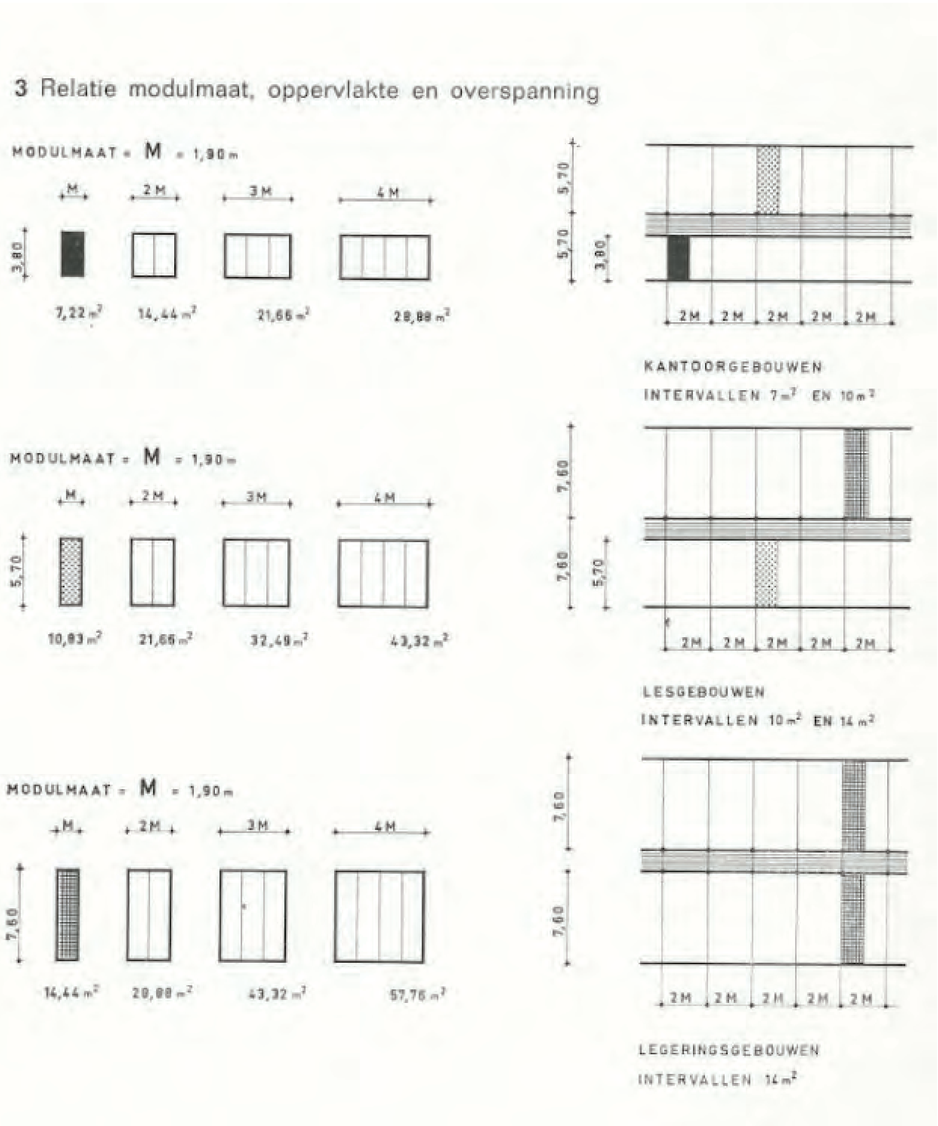
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

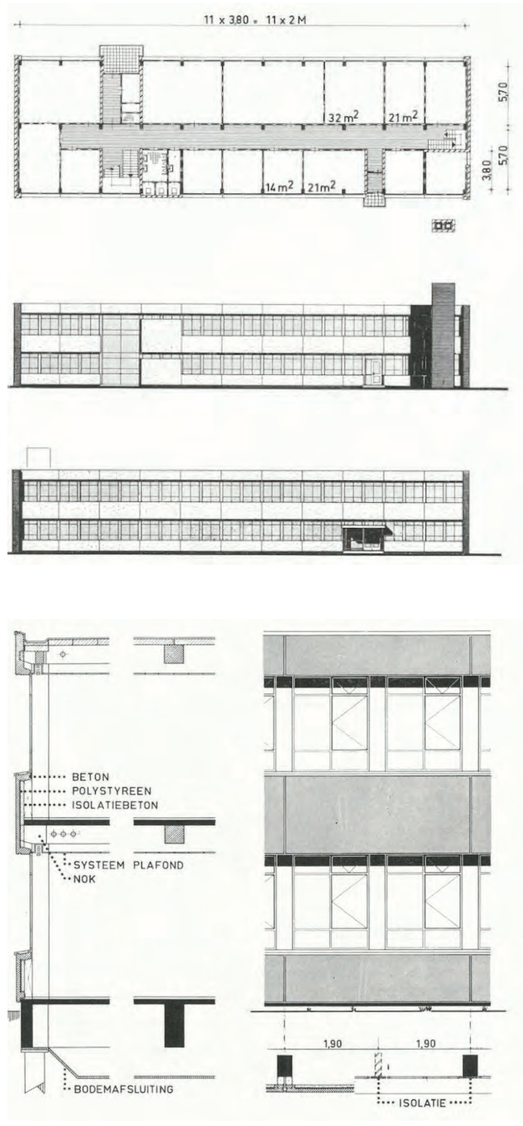
MARINETERREIN

History and development



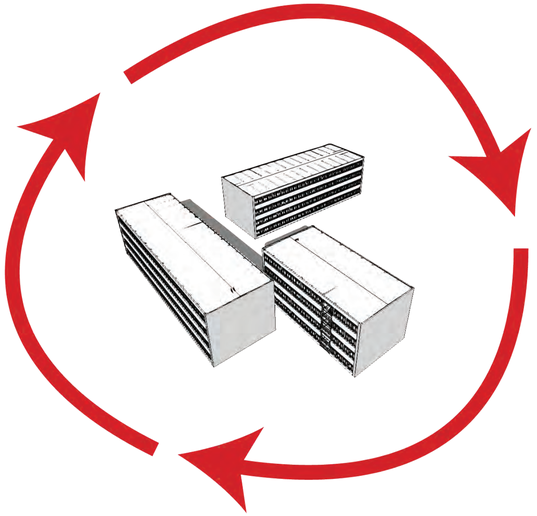






THEORY

Circularity



THEORY

Circularity - butterfly model

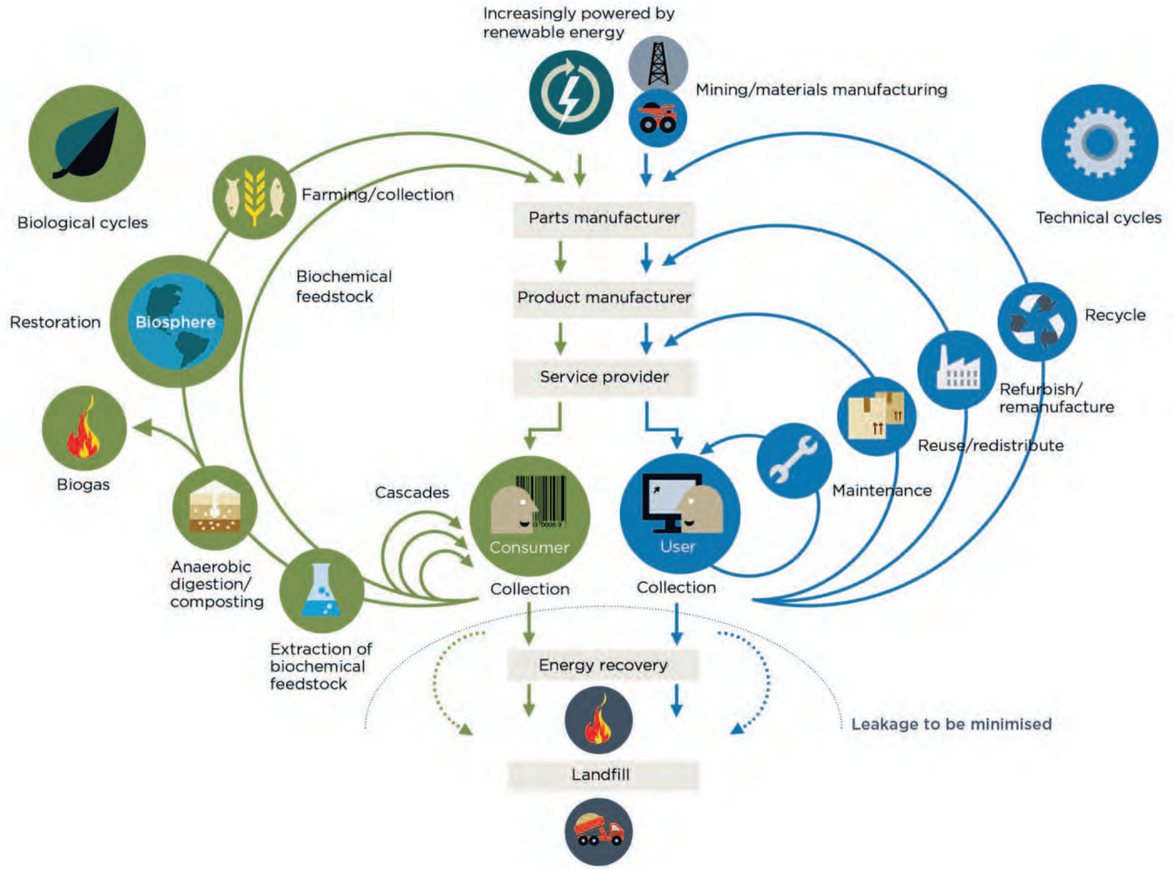


Illustration by: EMF, E. M. F. (2015). Towards a circular economy: business rationale for an accelarated transition.

THEORY

Transitions

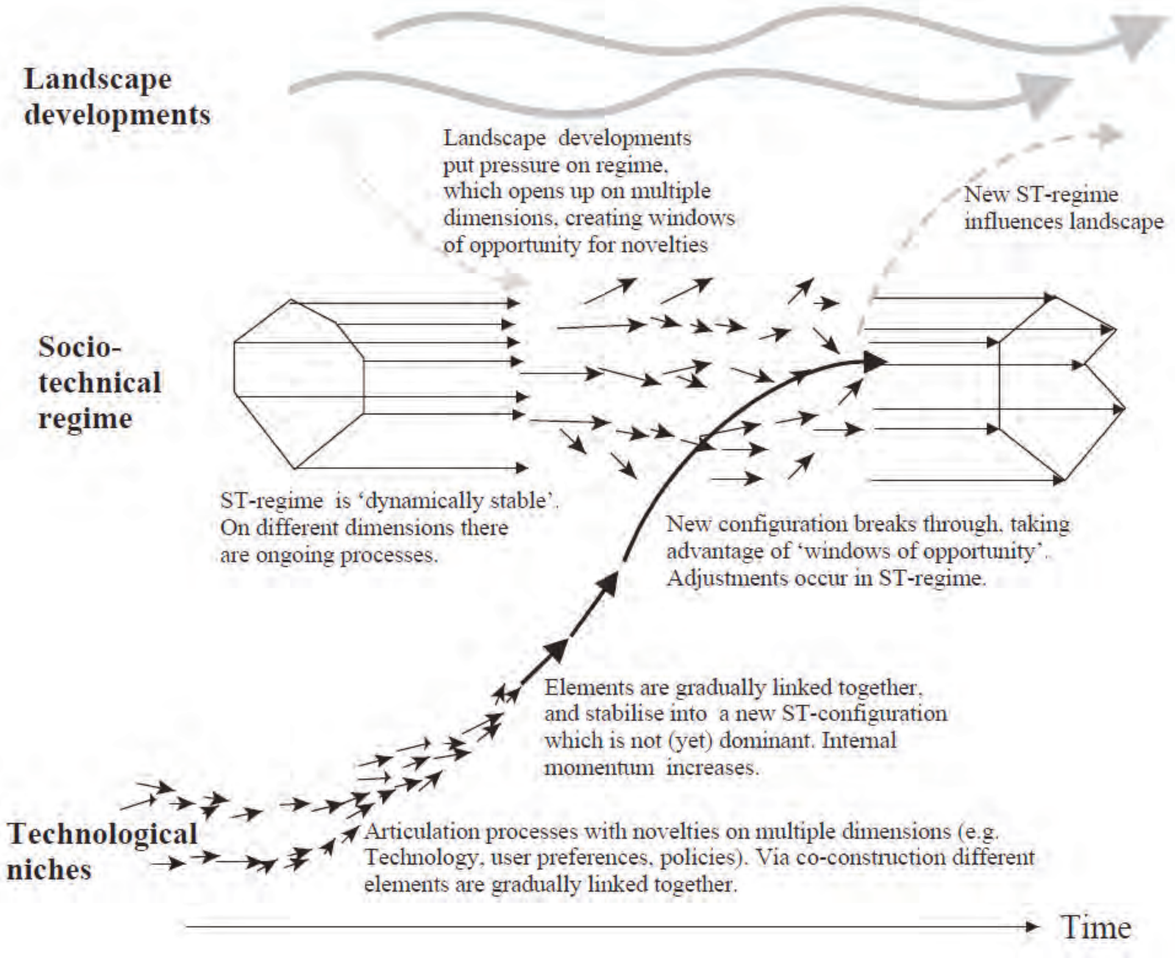
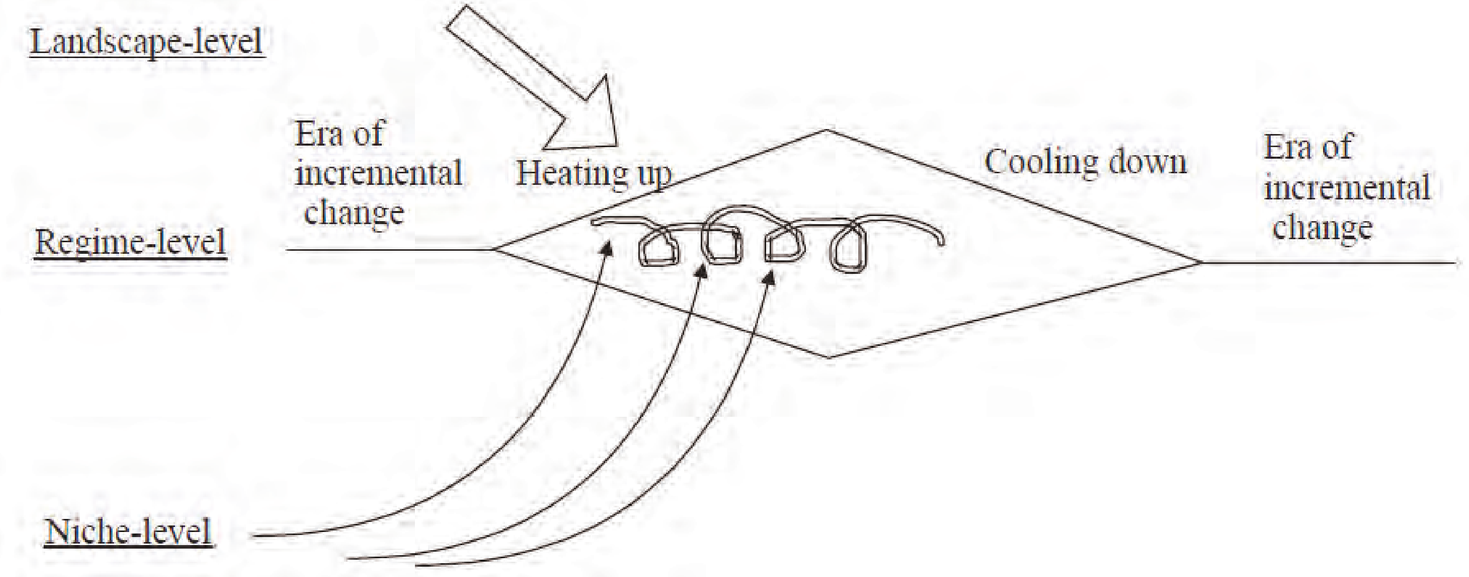


Illustration by Geels. (Geels, 2005)

THEORY

Transitions



Wider transformation route in systems innovations. (Geels, 2005)

THEORY

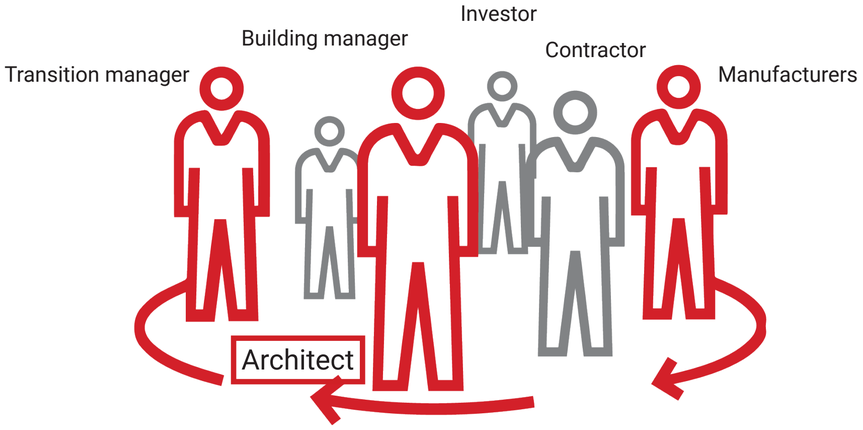
How can I put this to use?

Actively steer the transition

THEORY

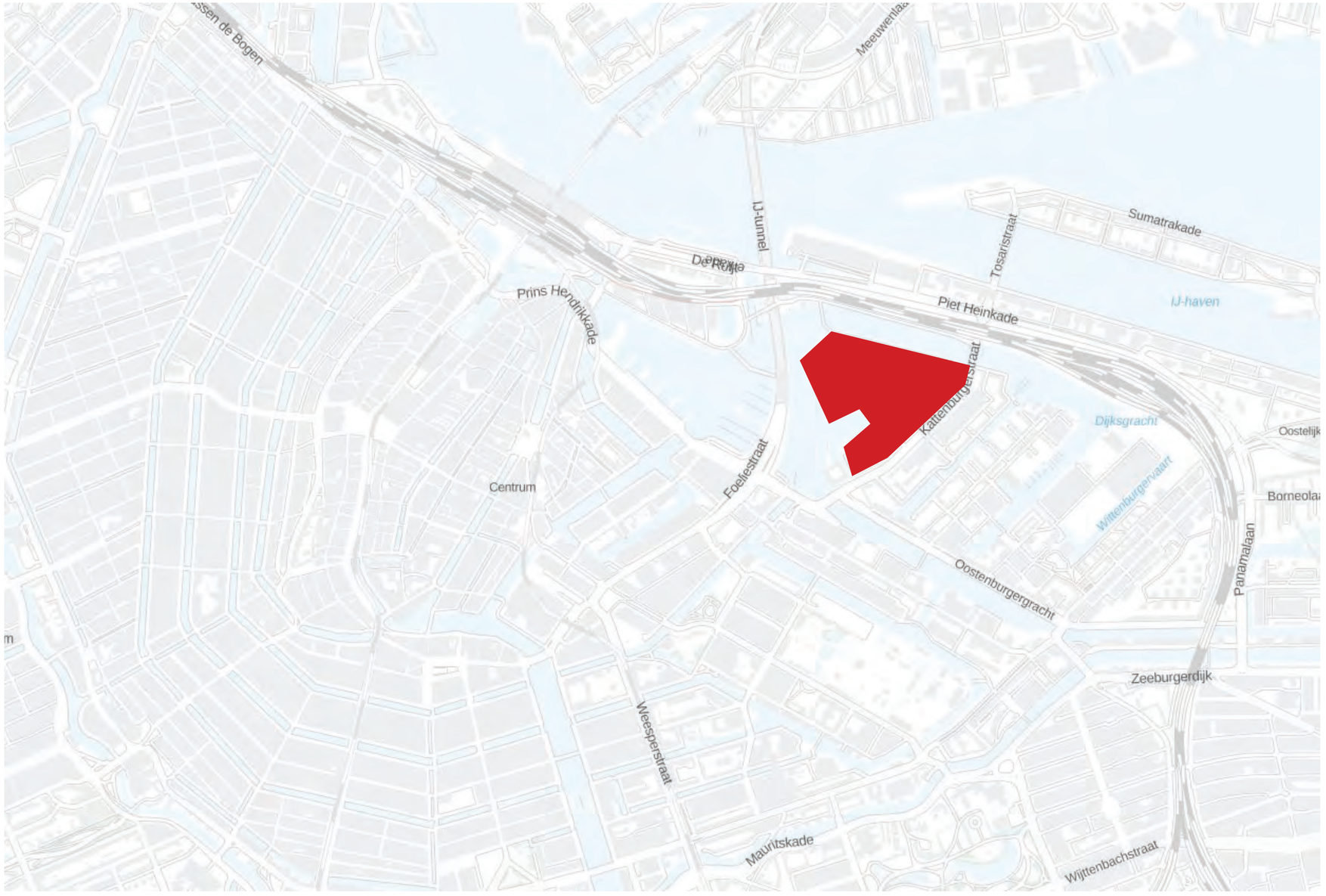
How can I put this to use?

Actively steer the transition



Integrated team

SITE



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

SITE
Marineterrein opens its gates
1500
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2050

SITE

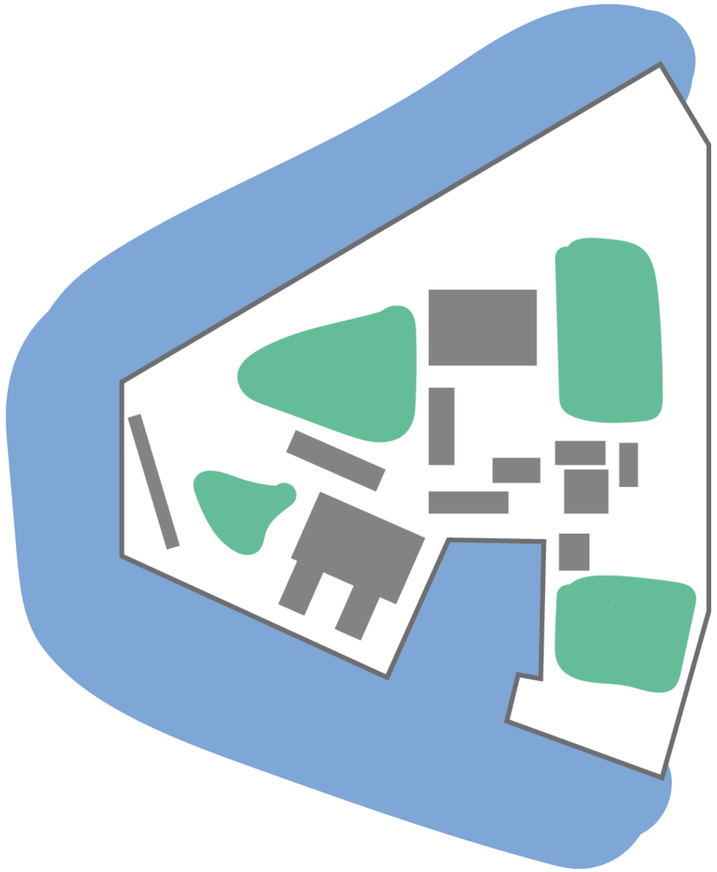
Municipality strategy - three pilars

- History
- Innovation
- Waterpark

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

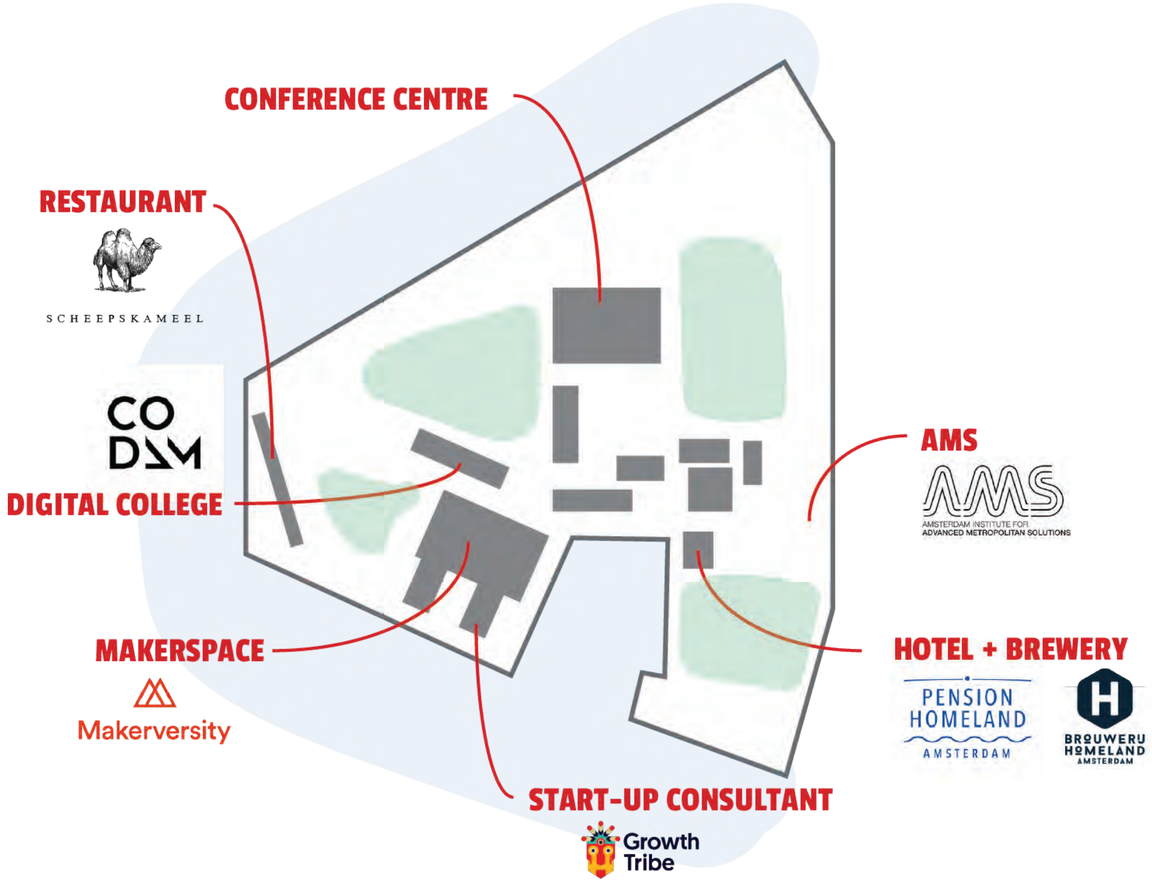
SITE

Marineterrein as a campus



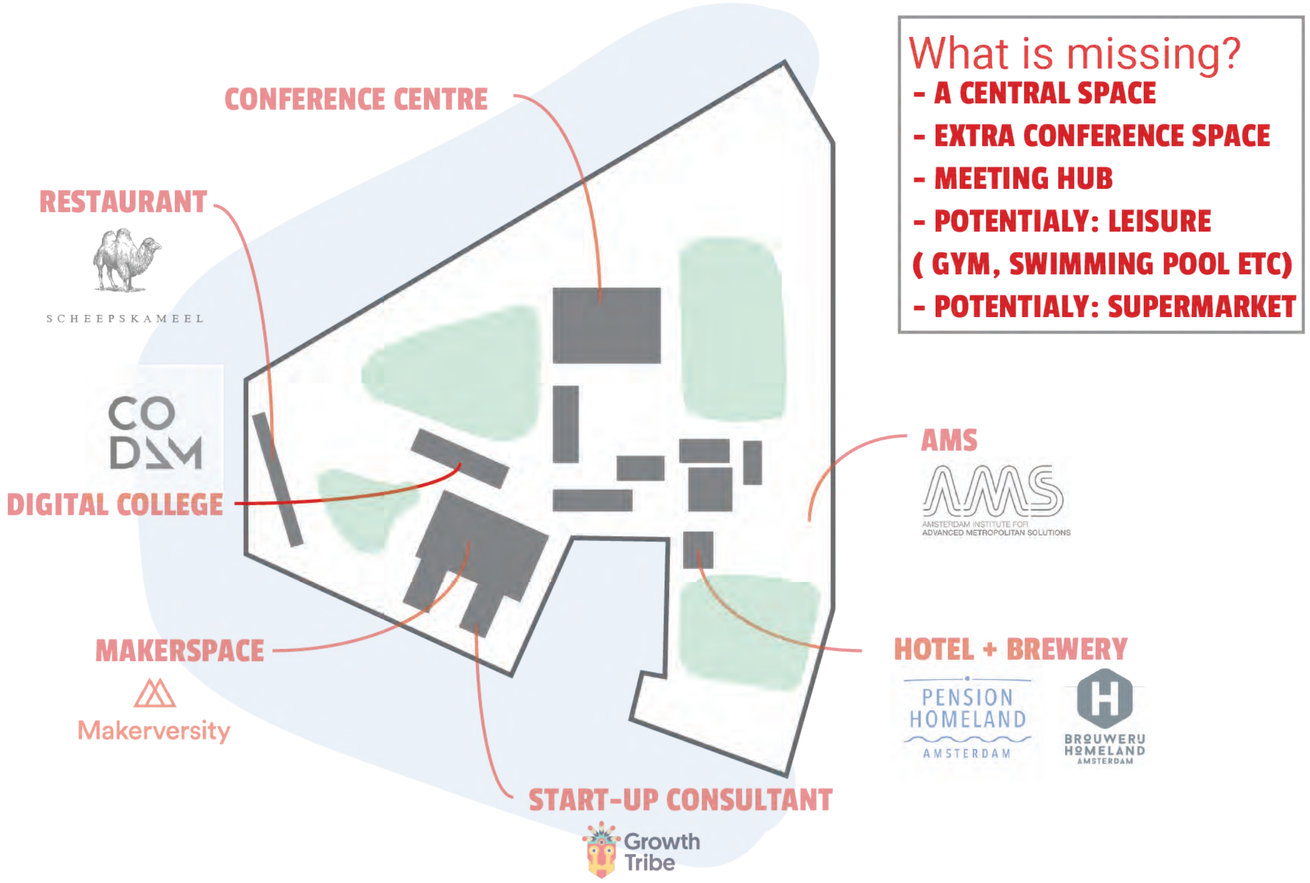
SITE

Marineterrein as a campus



SITE

Marineterrein as a campus

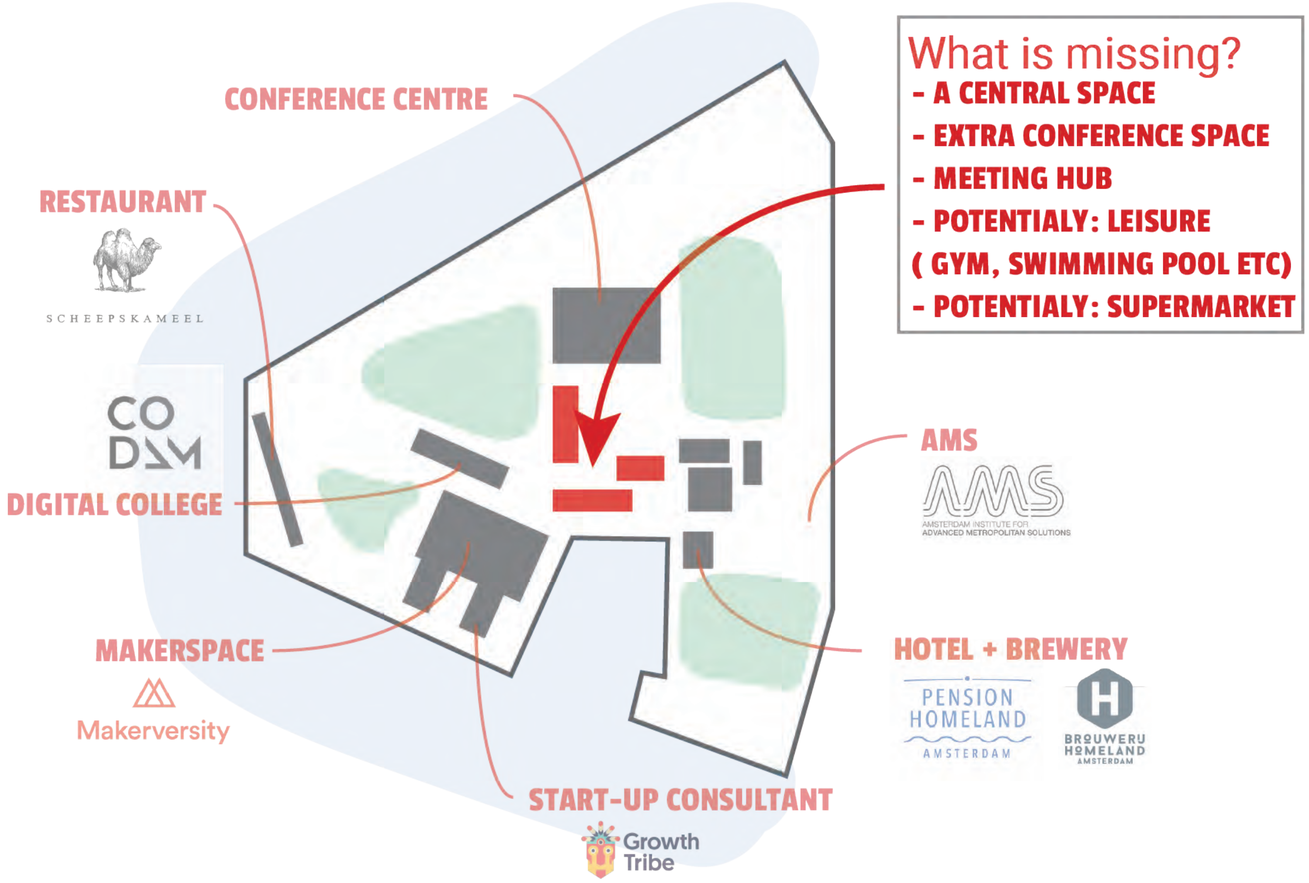


What is missing?

- A CENTRAL SPACE
- EXTRA CONFERENCE SPACE
- MEETING HUB
- POTENTIALY: LEISURE (GYM, SWIMMING POOL ETC)
- POTENTIALY: SUPERMARKET

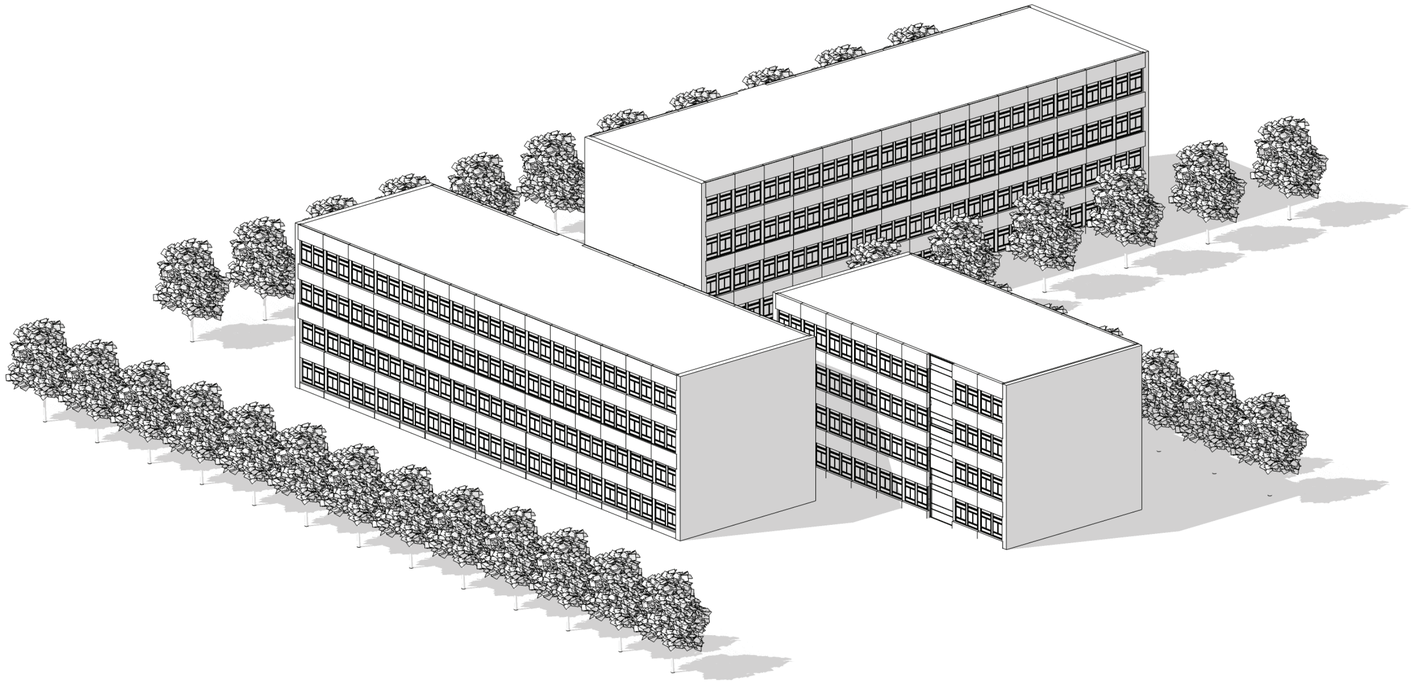
SITE

Marineterrein as a campus



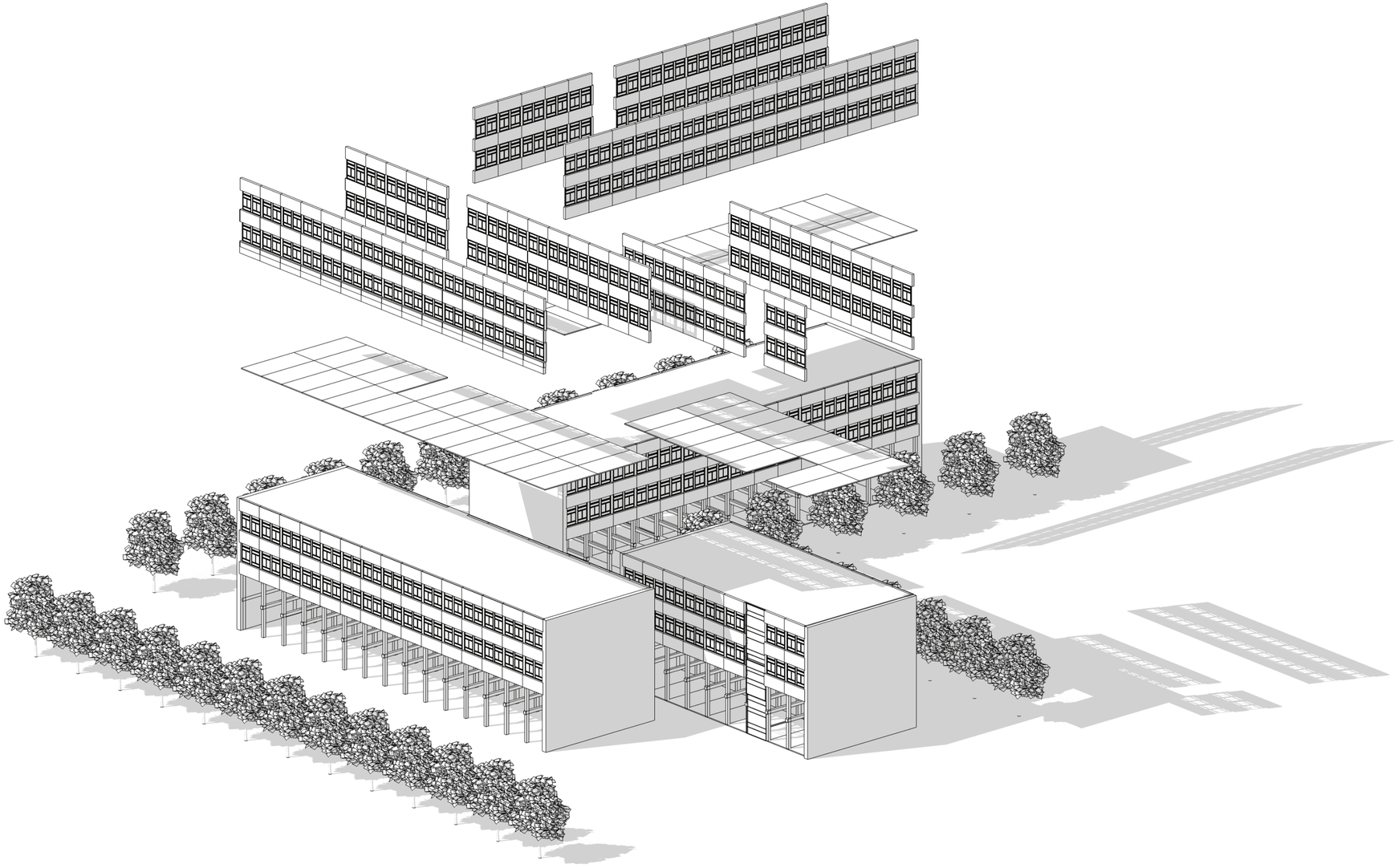
OUR INTERVENTION

Current situation



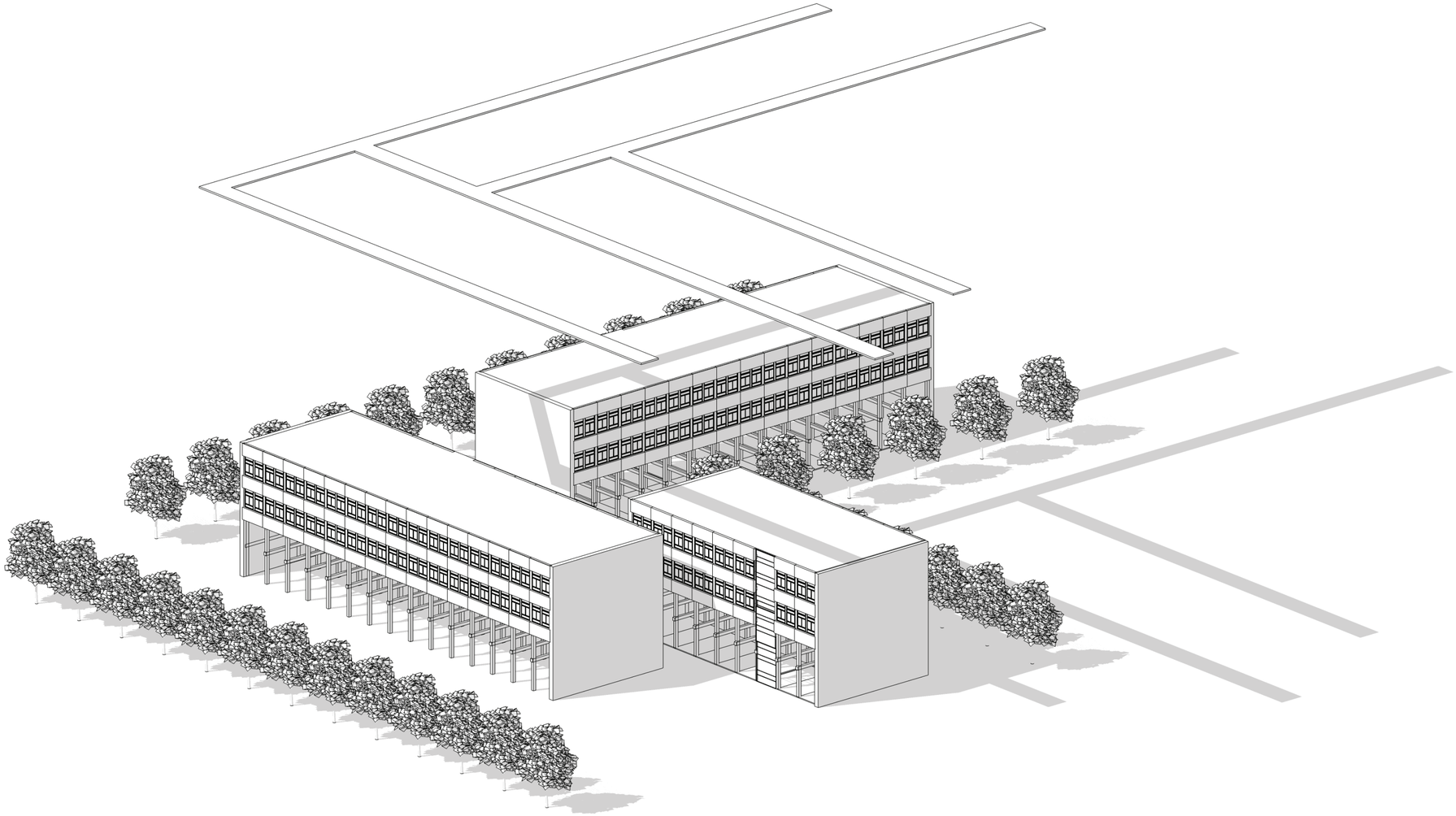
OUR INTERVENTION

Remove floor & facade



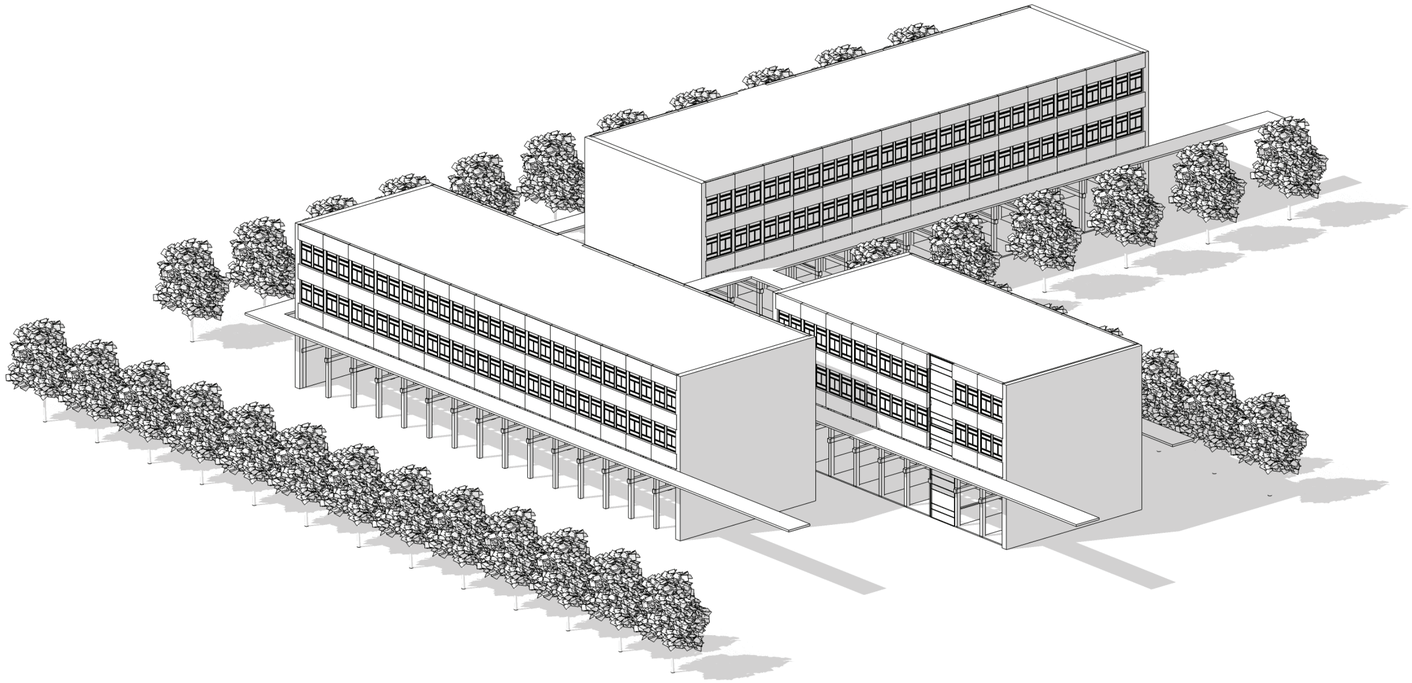
OUR INTERVENTION

Add walkway



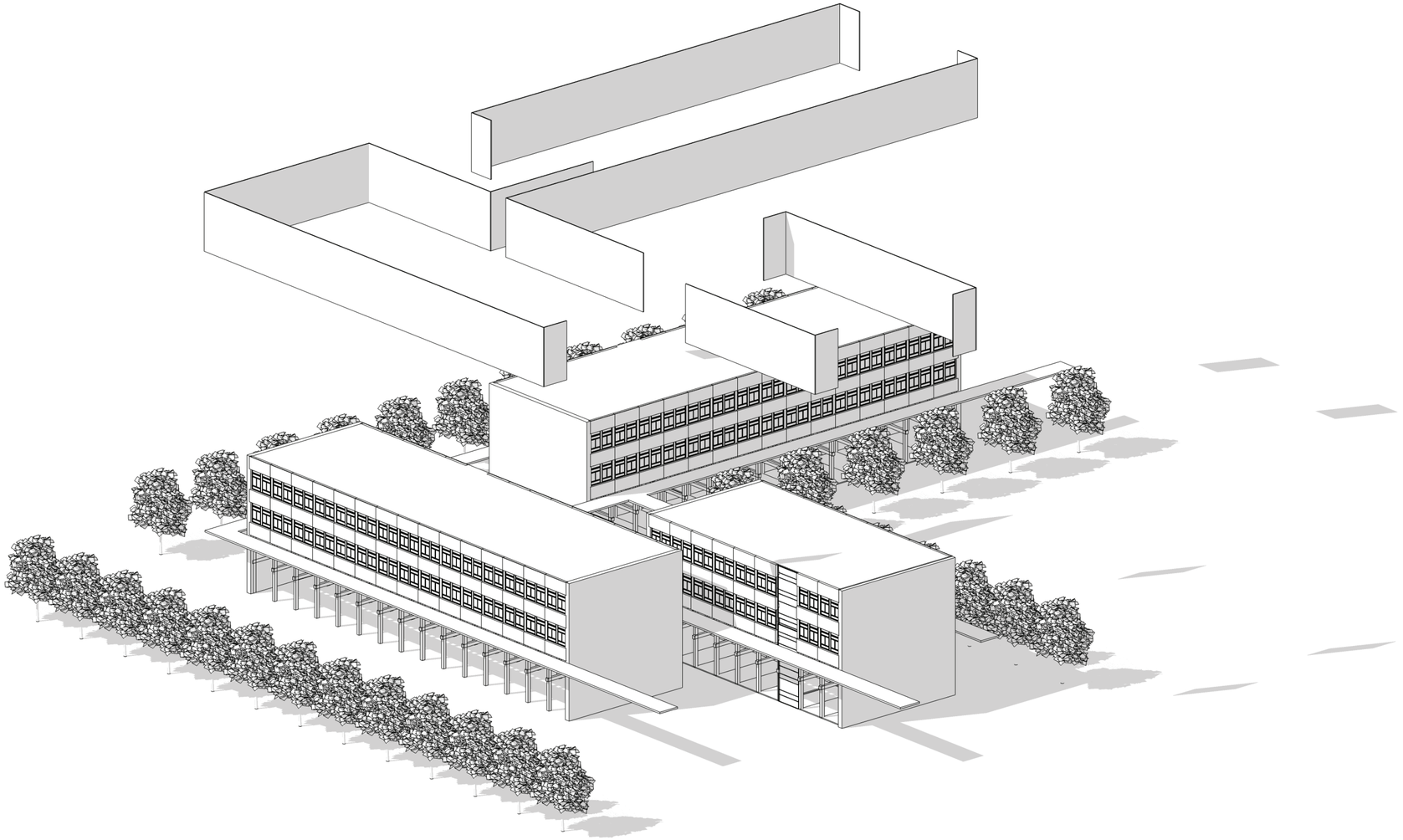
OUR INTERVENTION

Add walkway



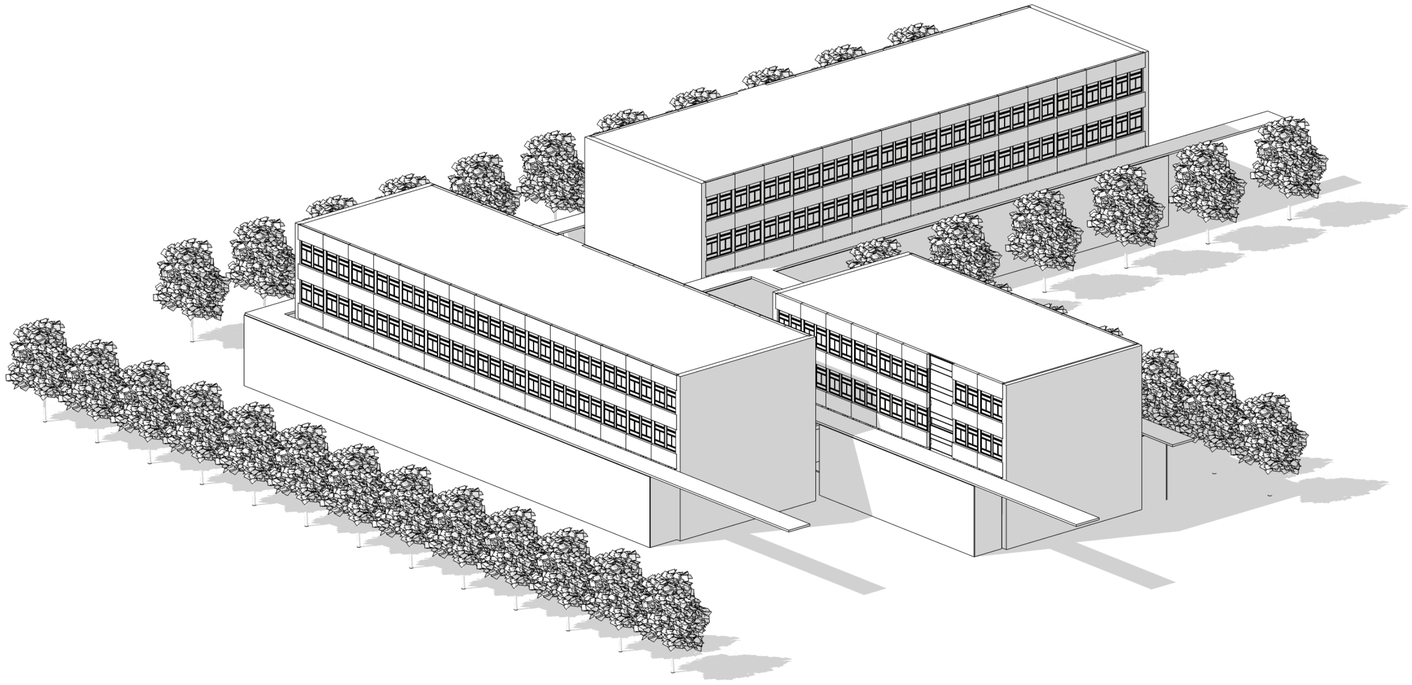
OUR INTERVENTION

New facade



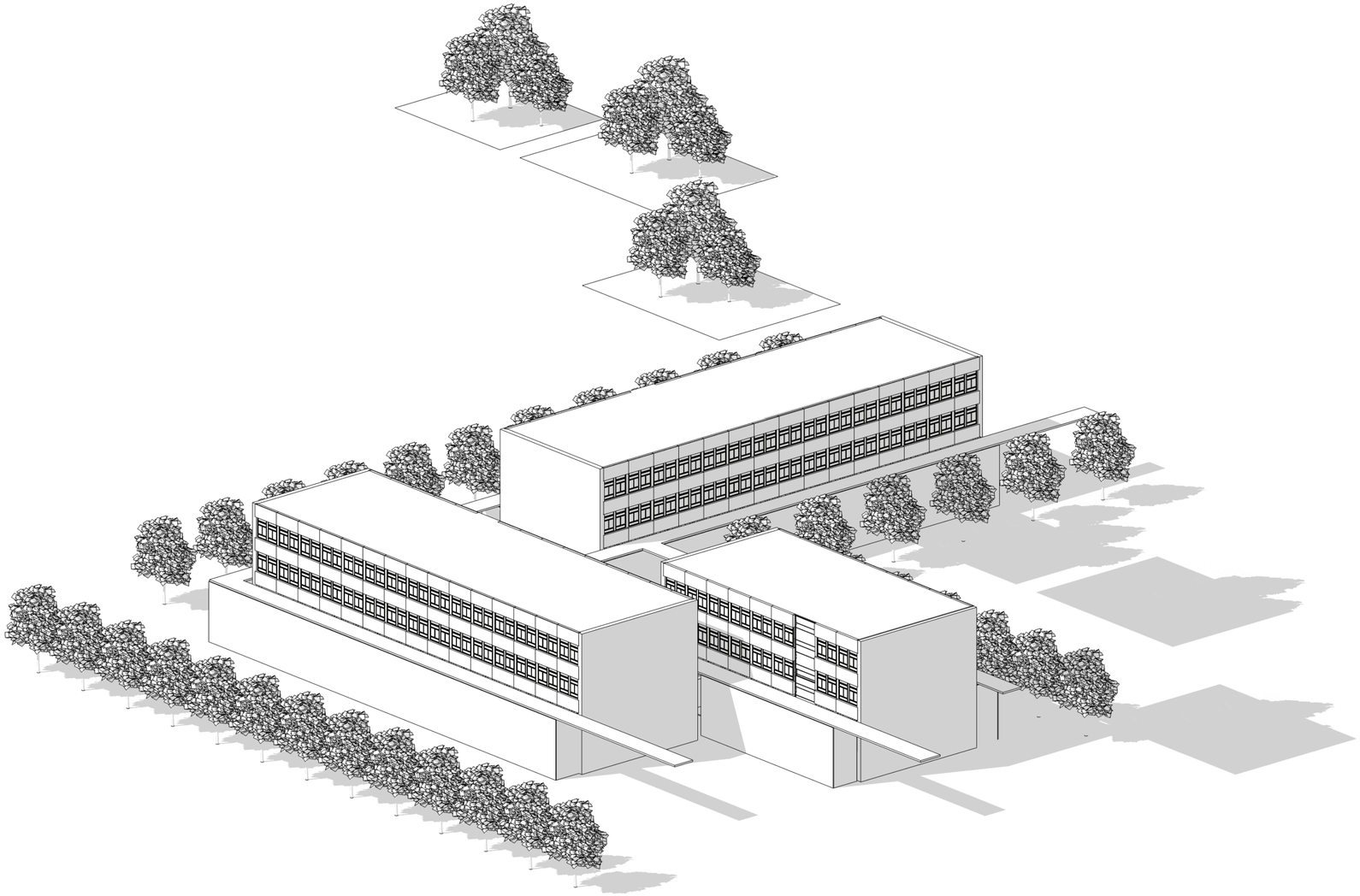
OUR INTERVENTION

New facade



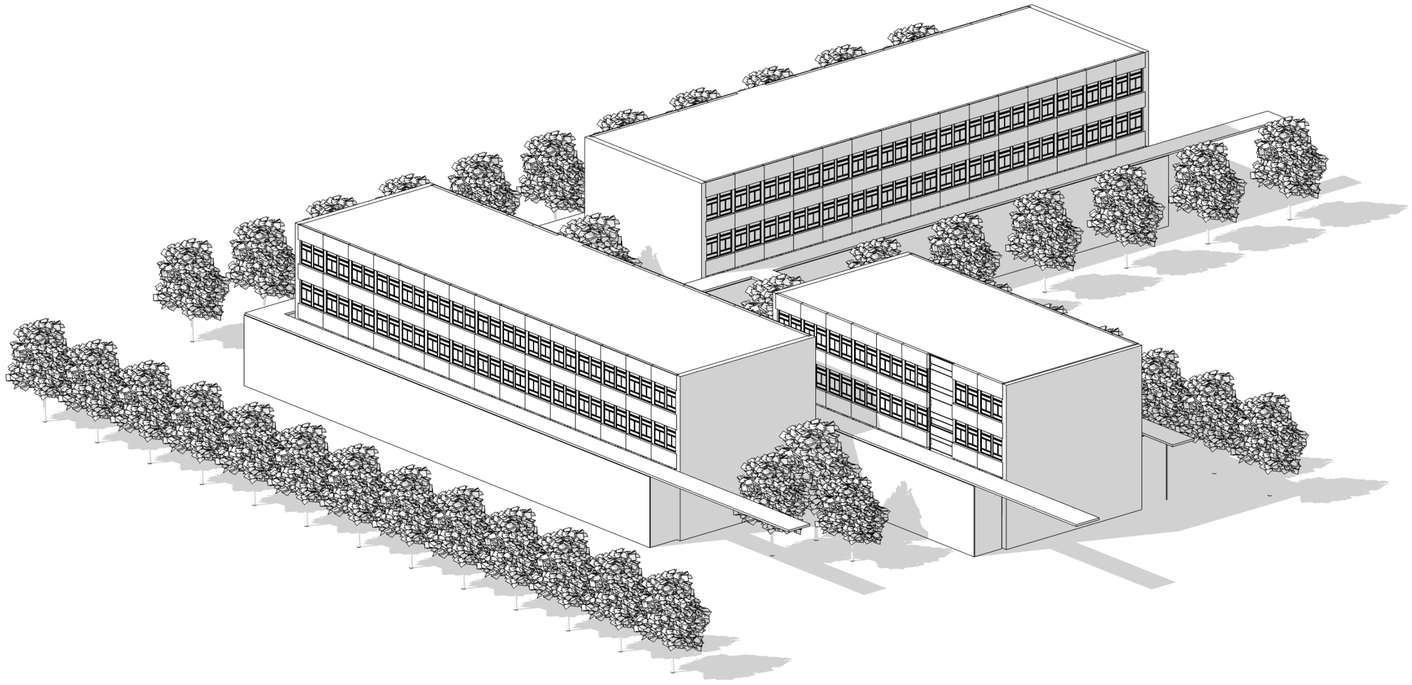
OUR INTERVENTION

Patio's



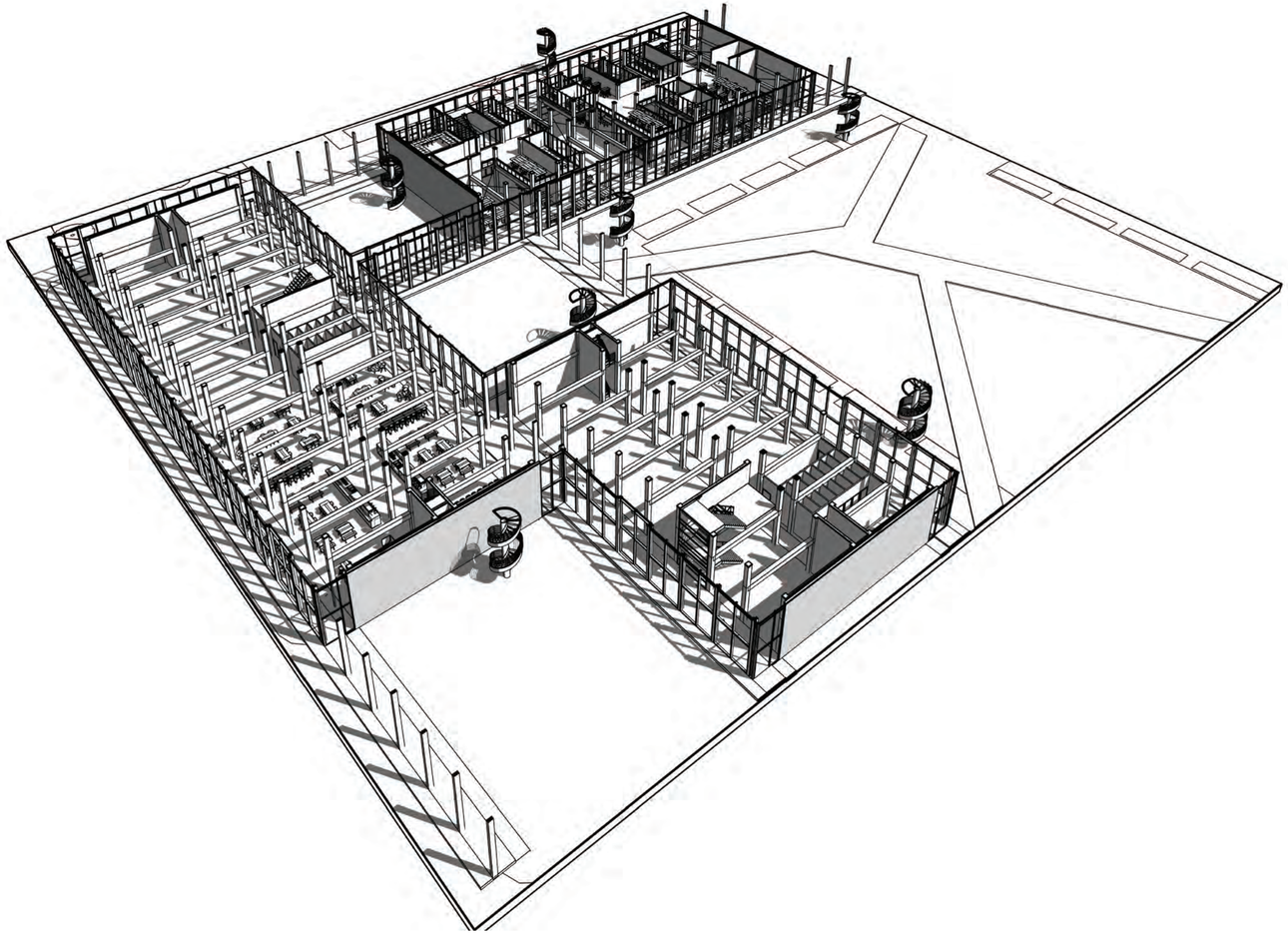
OUR INTERVENTION

Patio's



FUNCTIONING OF THE BUILDING

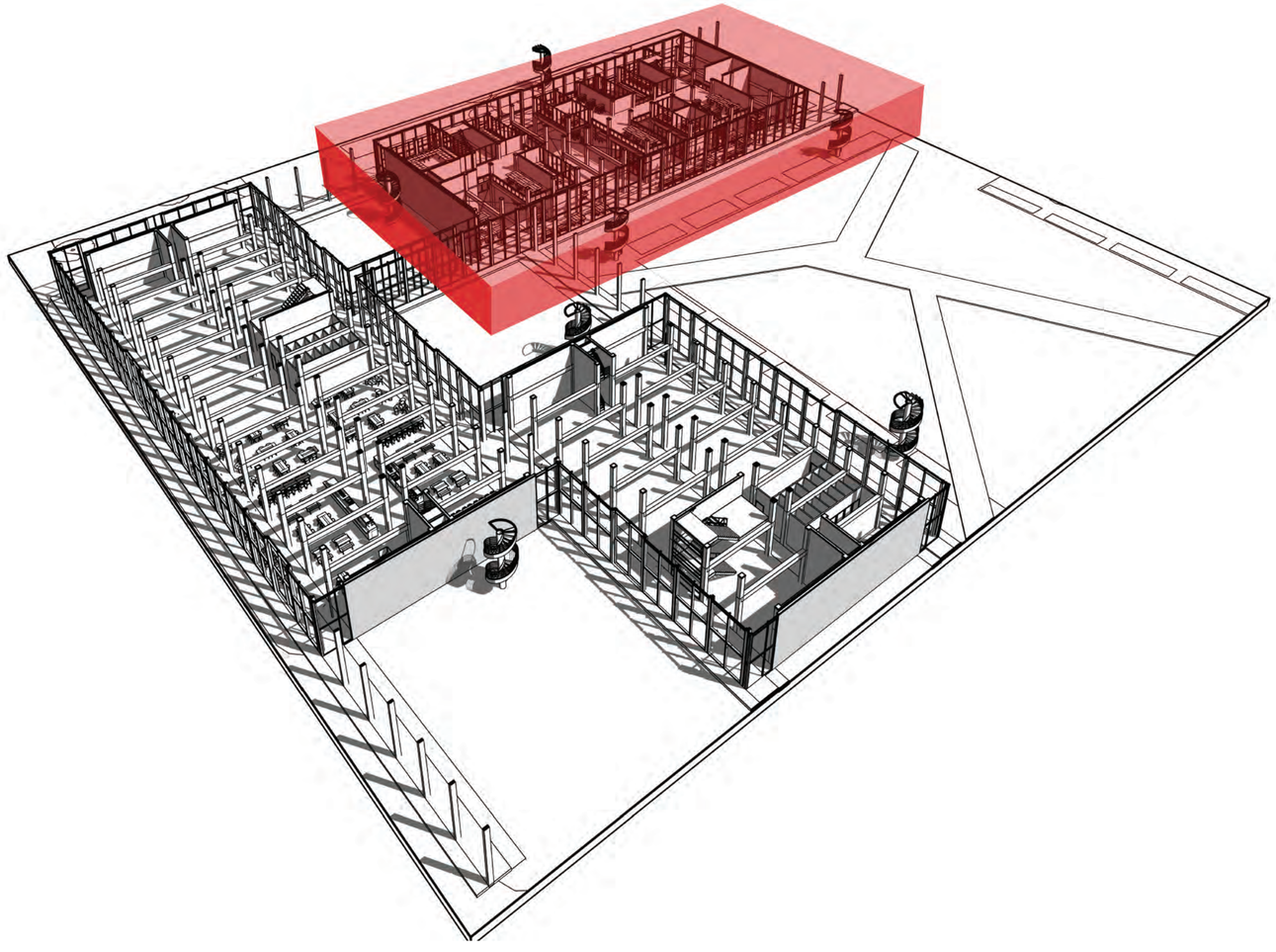
Organisation



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

FUNCTIONING OF THE BUILDING

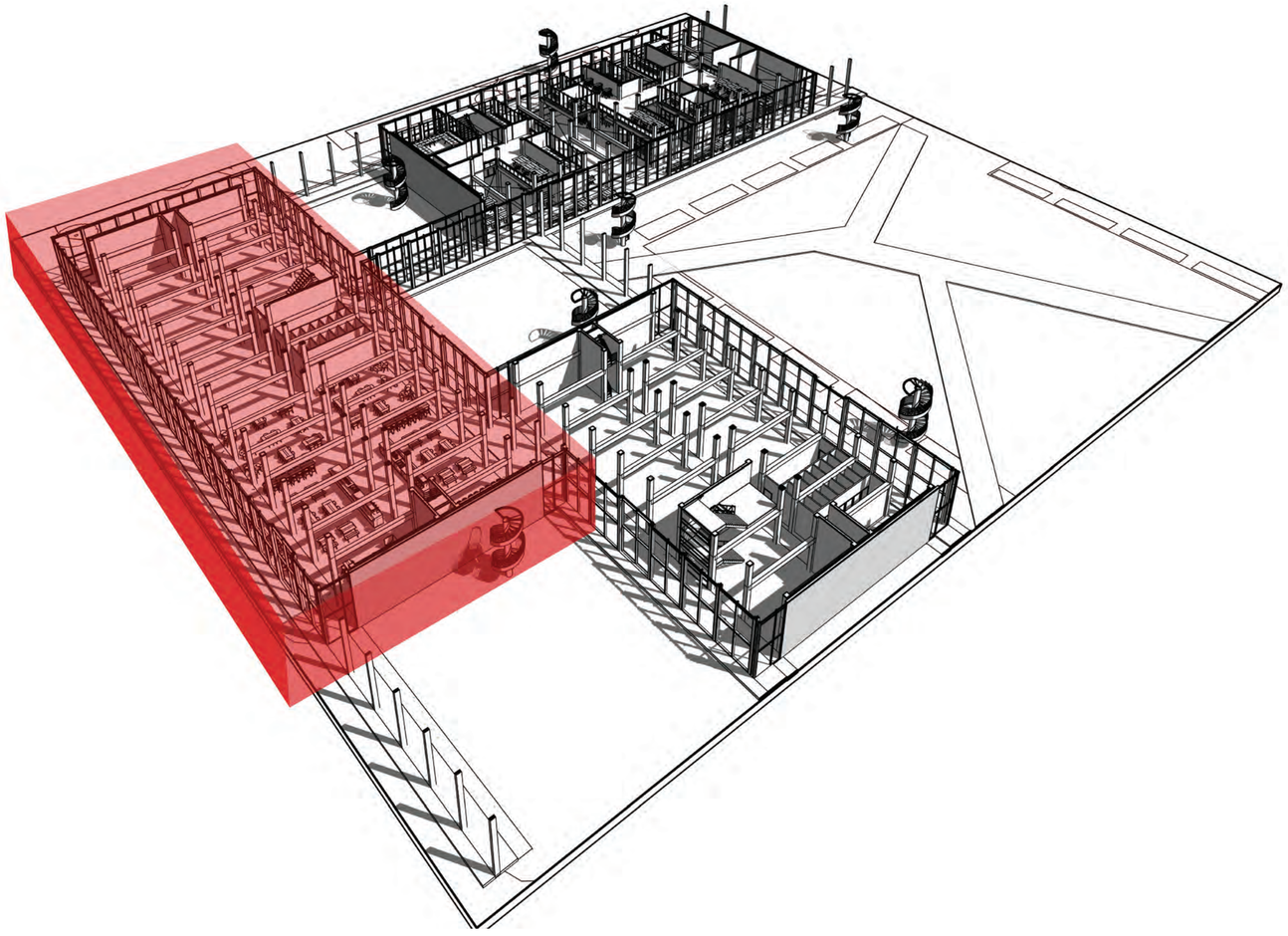
Organisation



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

FUNCTIONING OF THE BUILDING

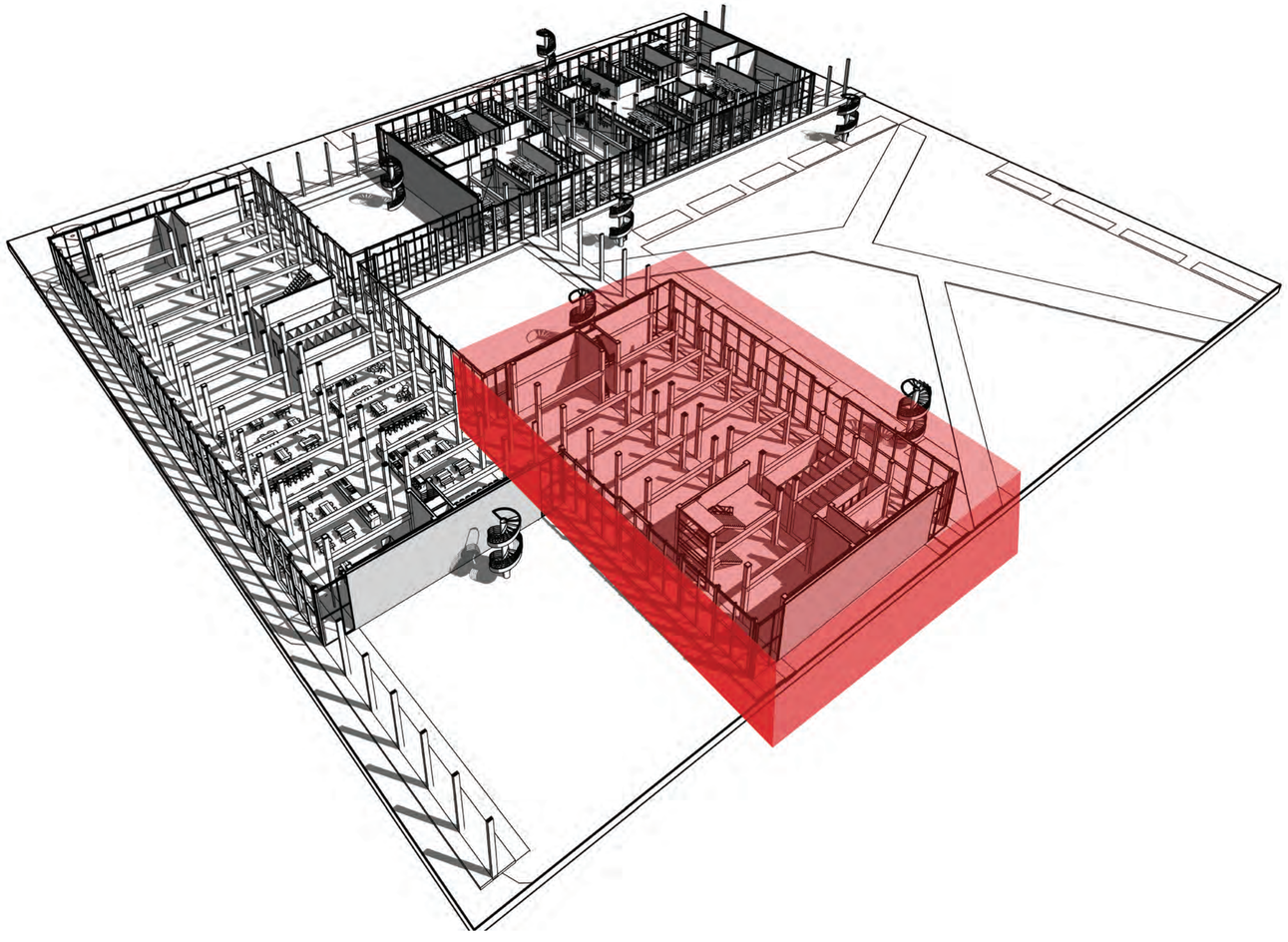
Organisation



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

FUNCTIONING OF THE BUILDING

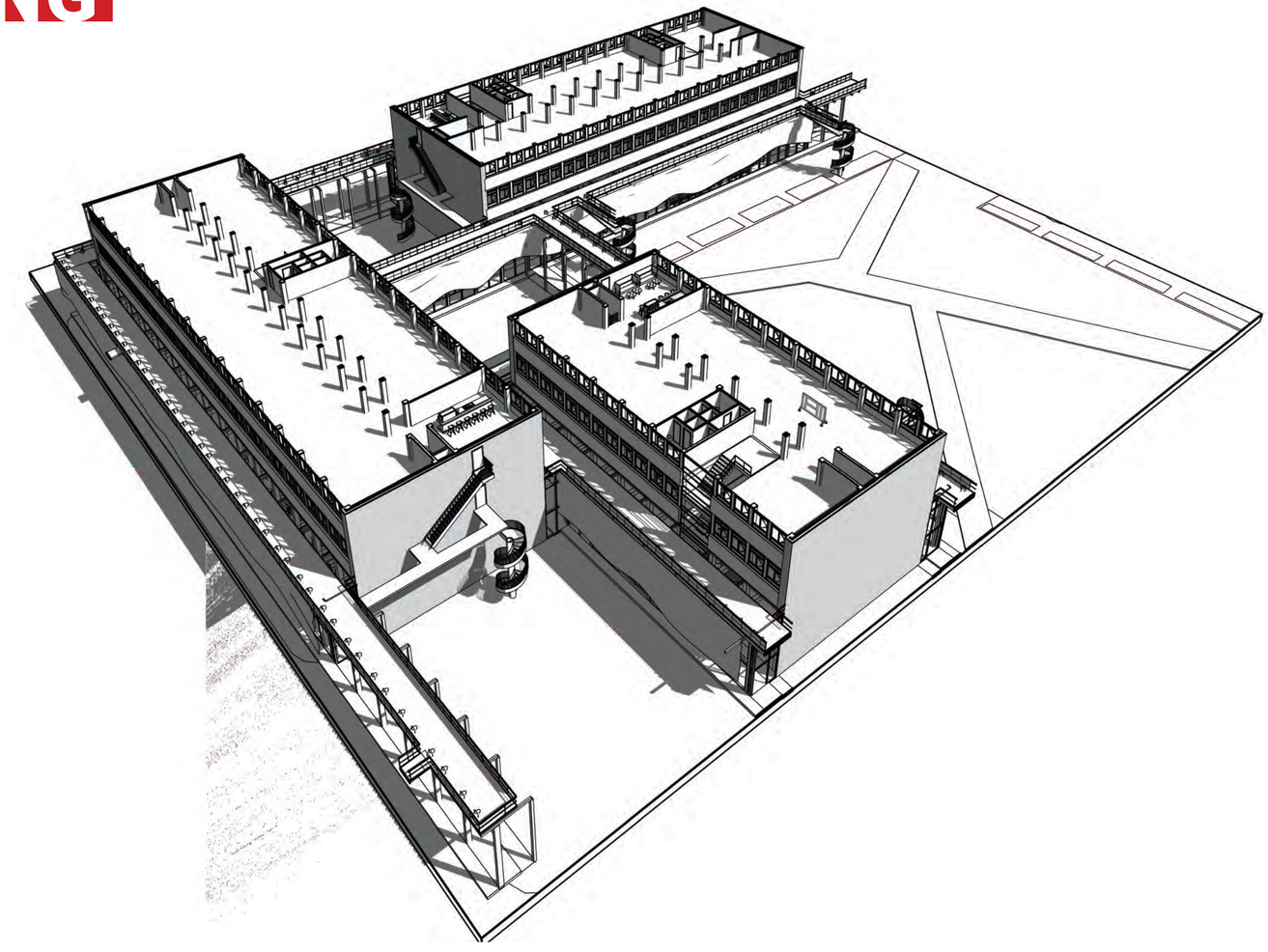
Organisation



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

FUNCTIONING OF THE BUILDING

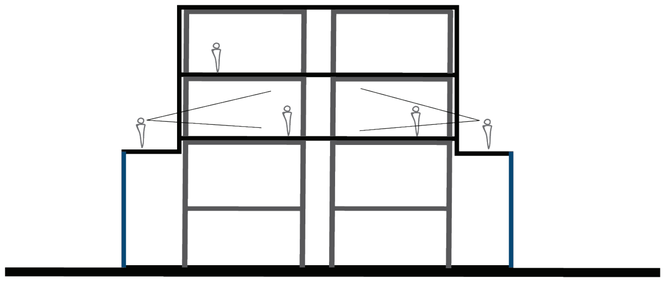
Organisation

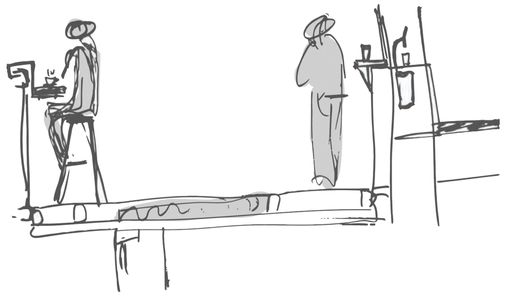


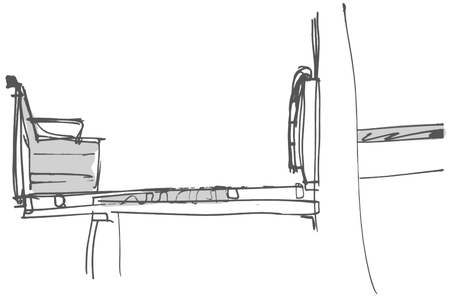
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

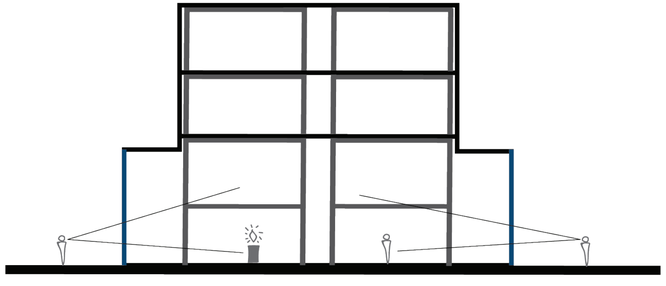
FUNCTIONING OF THE BUILDING

Walkway





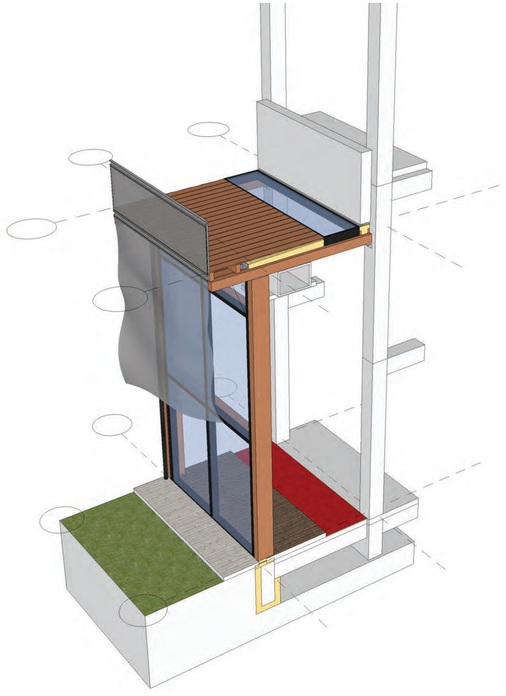


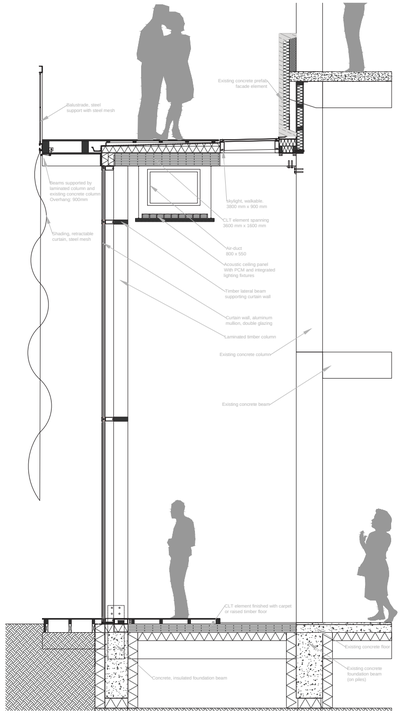


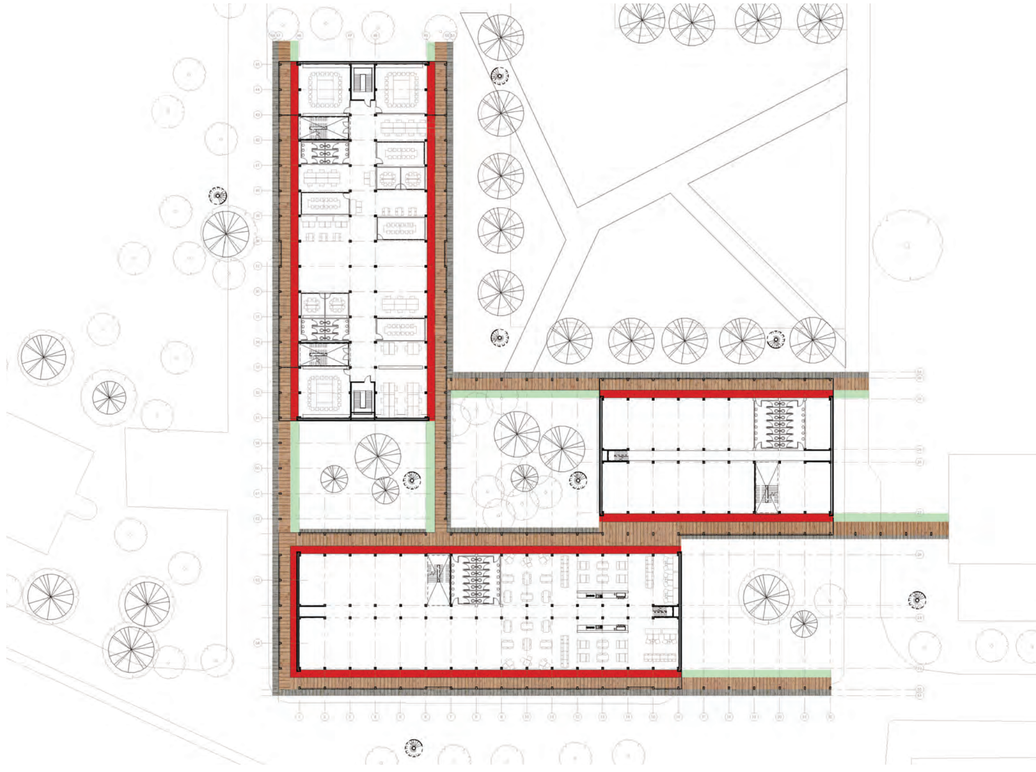
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

FUNCTIONING OF THE BUILDING

Transition zones

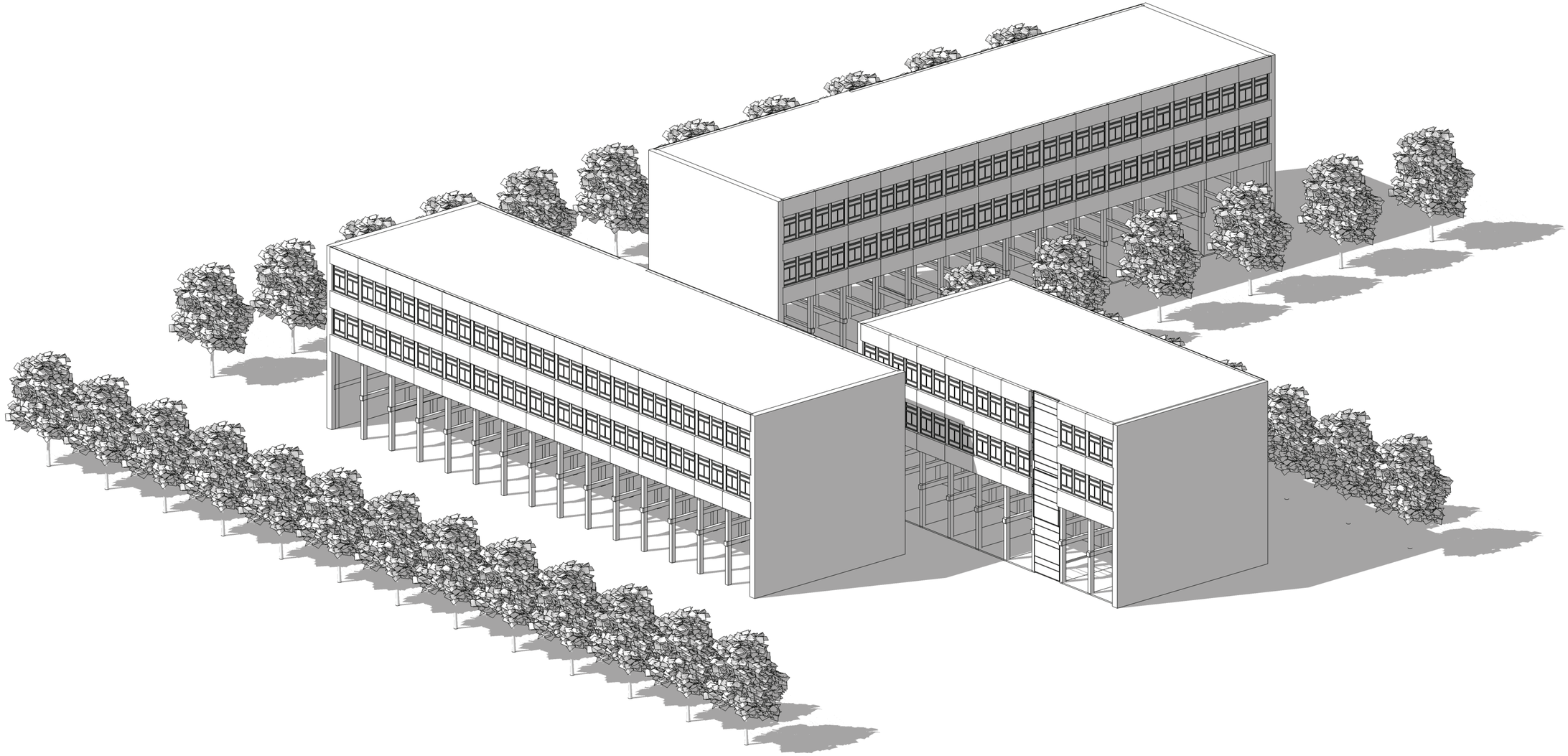




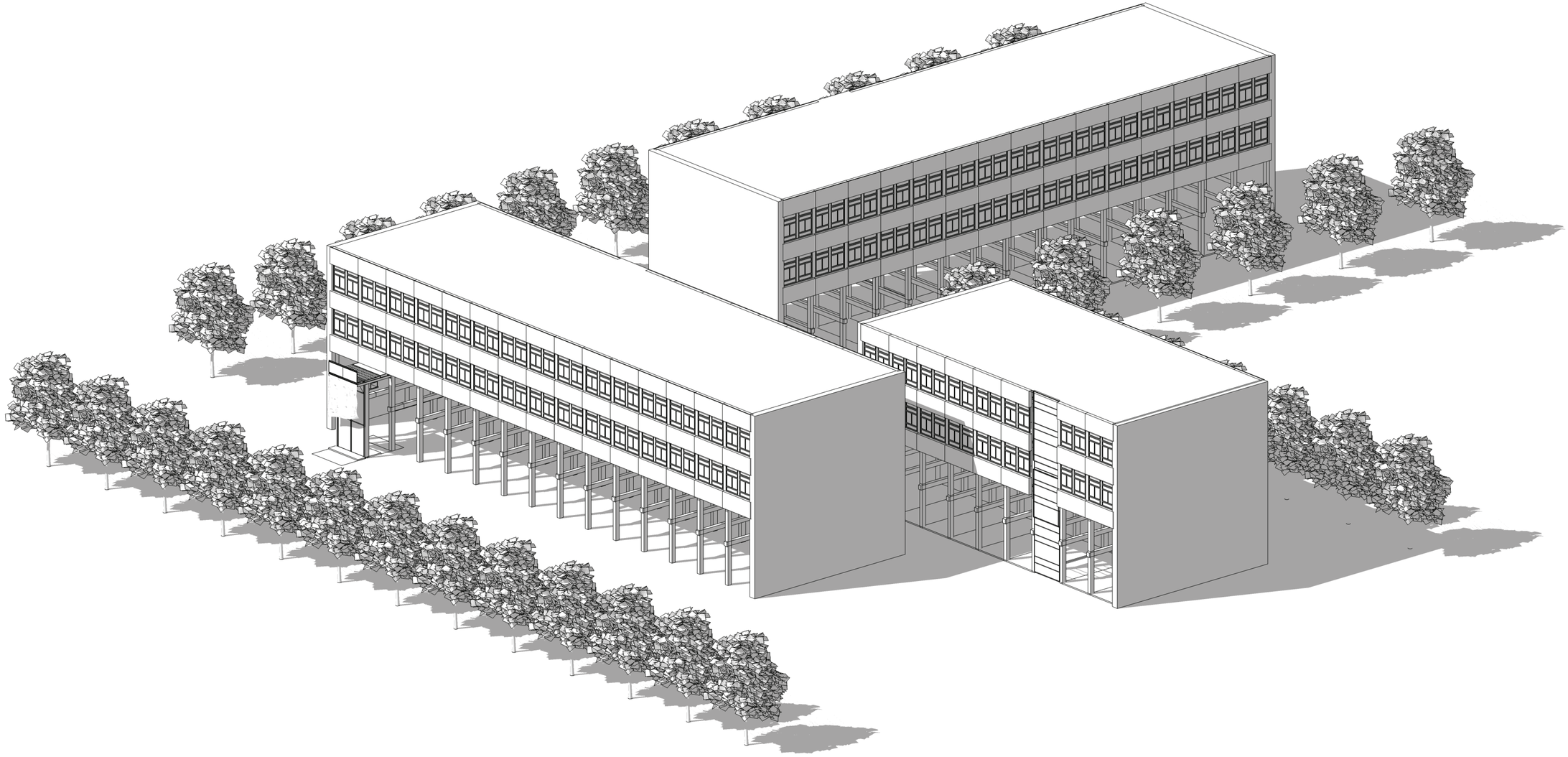


1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

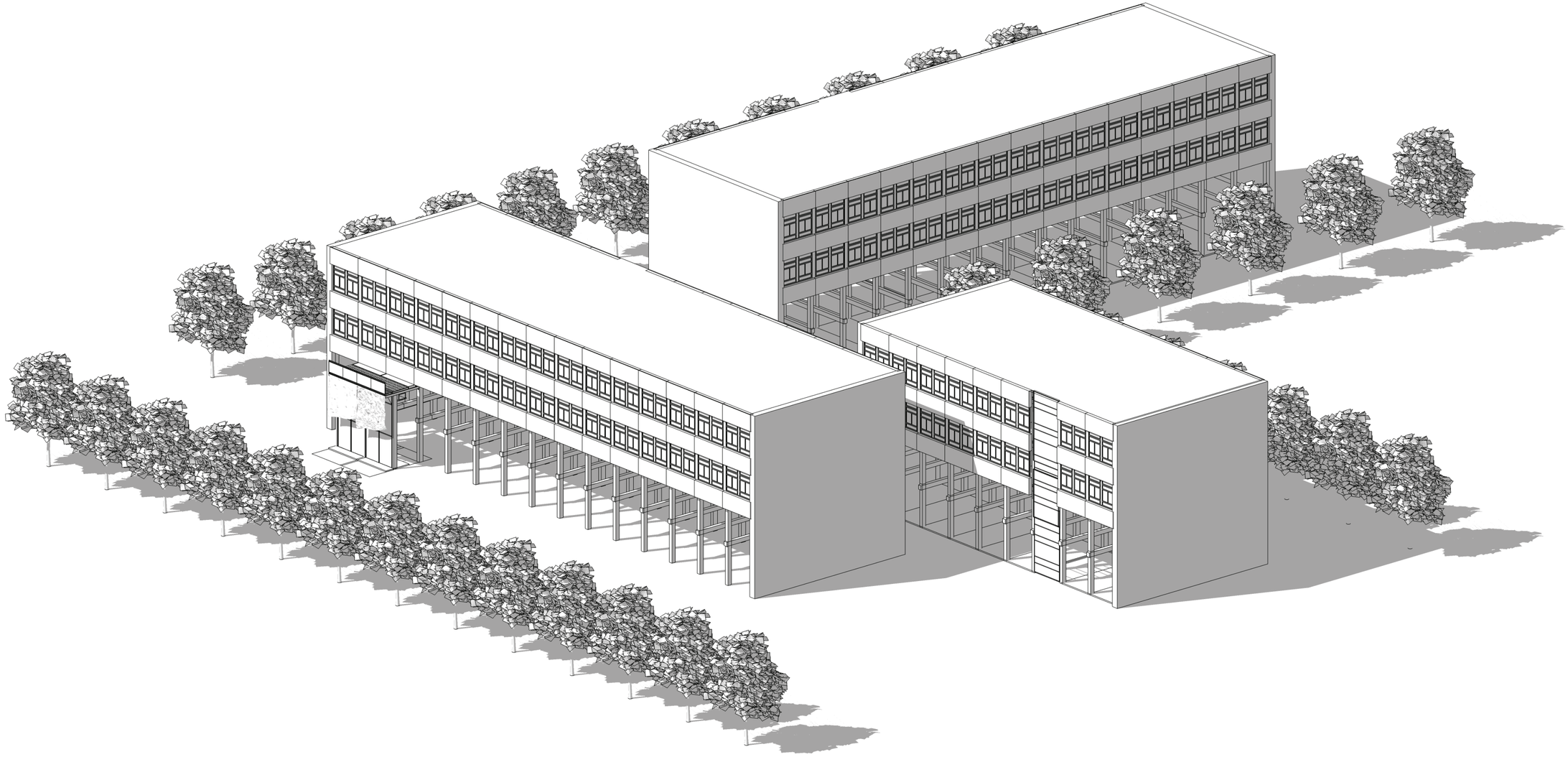
BUILDING MODULES



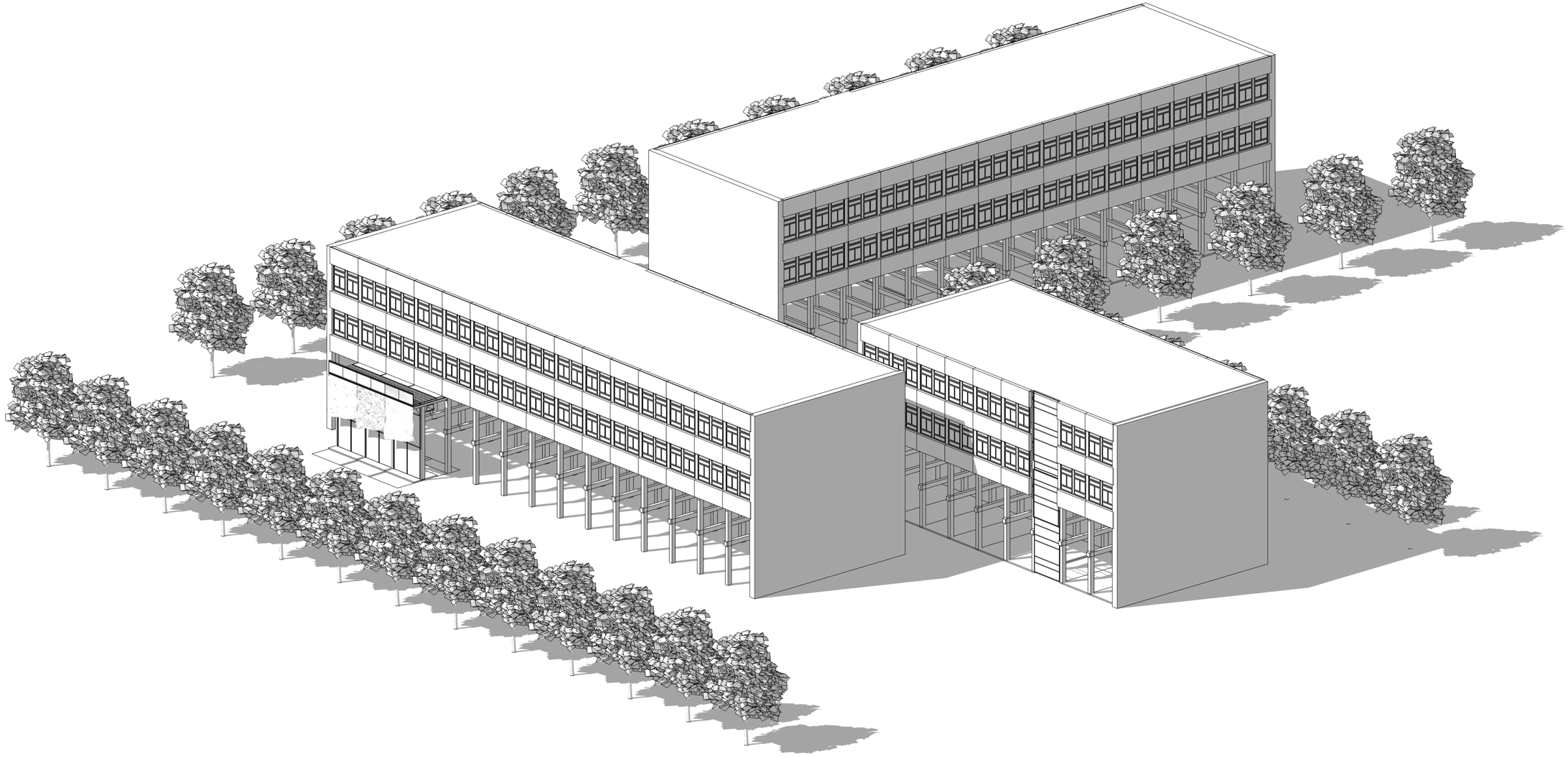
BUILDING MODULES



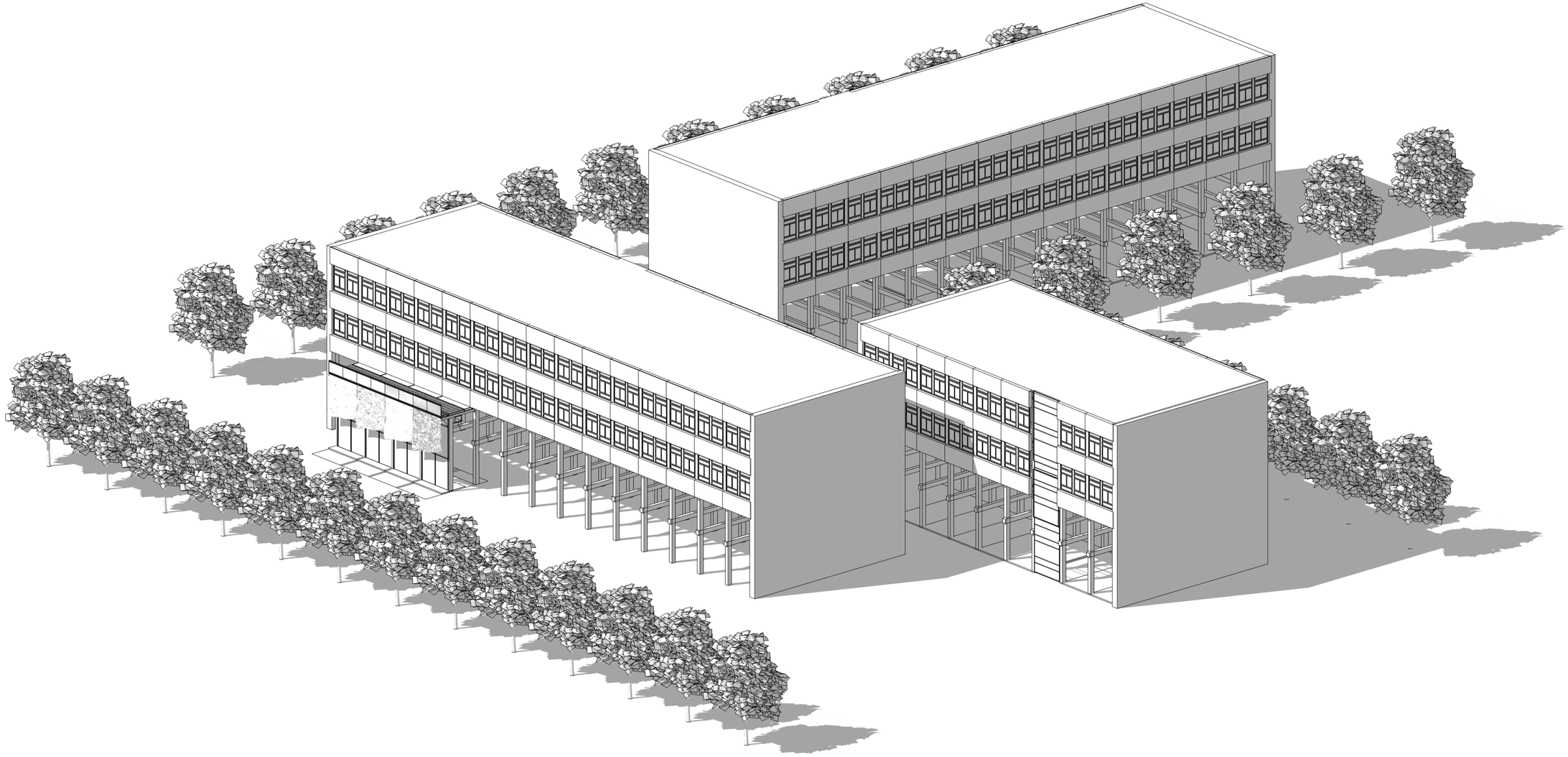
BUILDING MODULES



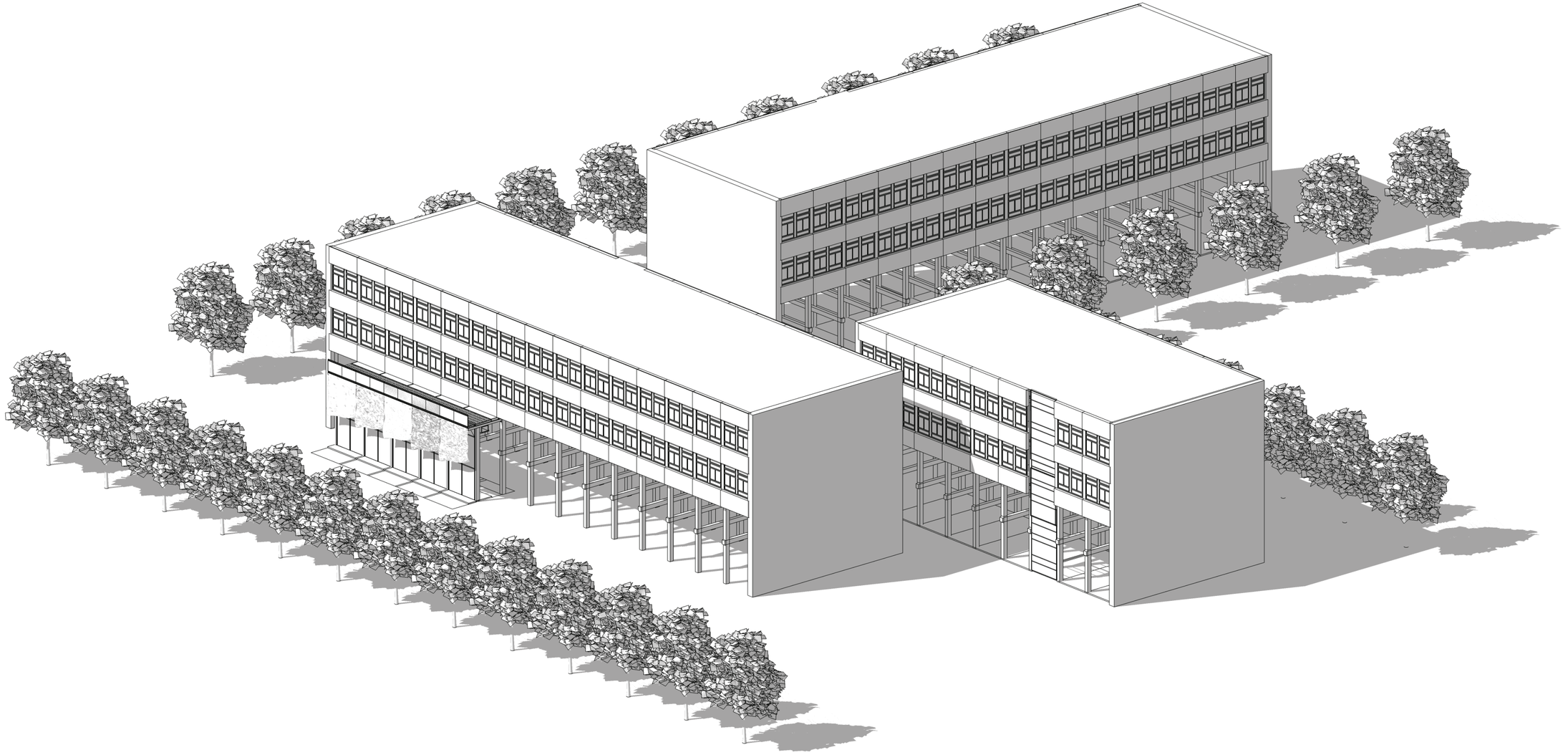
BUILDING MODULES



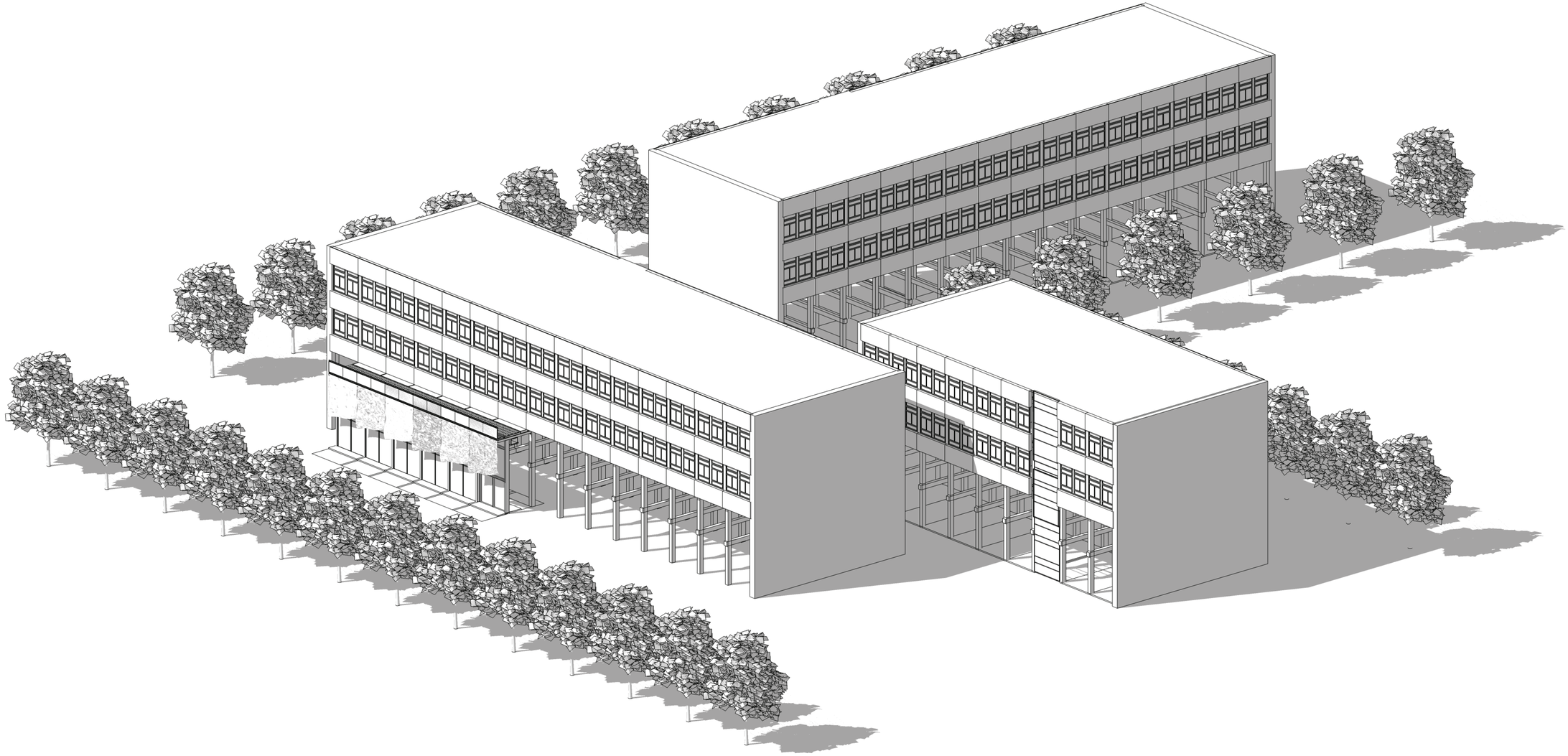
BUILDING MODULES



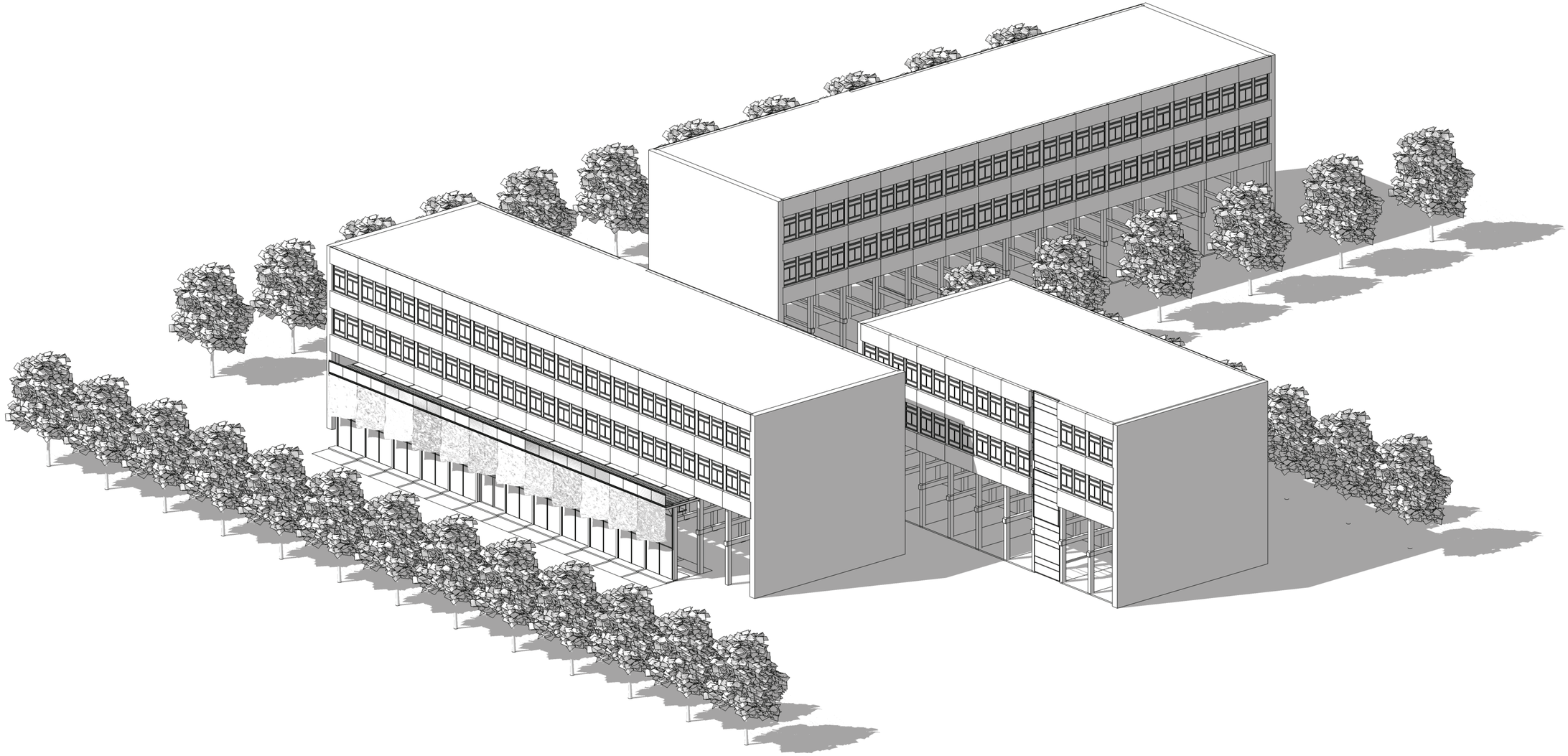
BUILDING MODULES



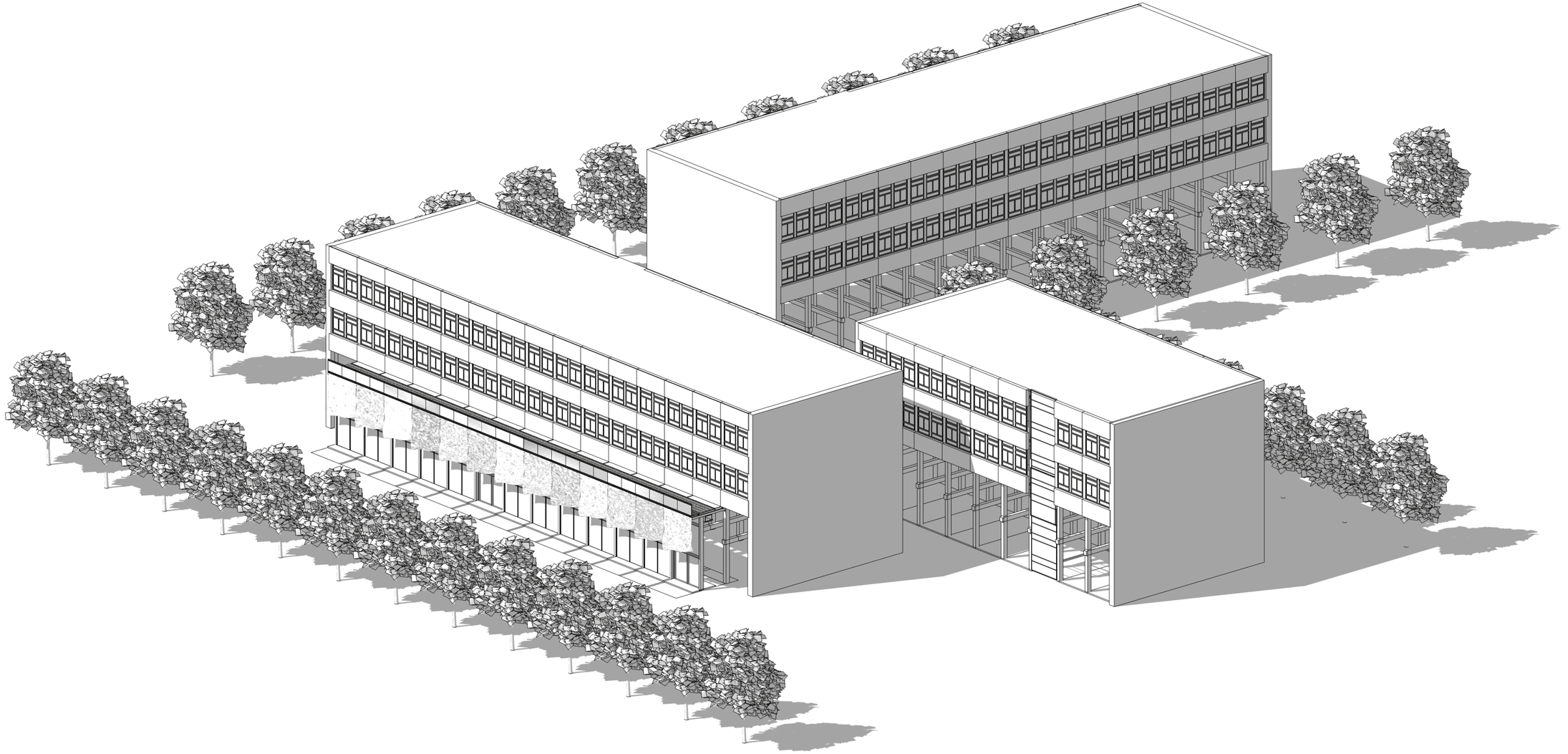
BUILDING MODULES



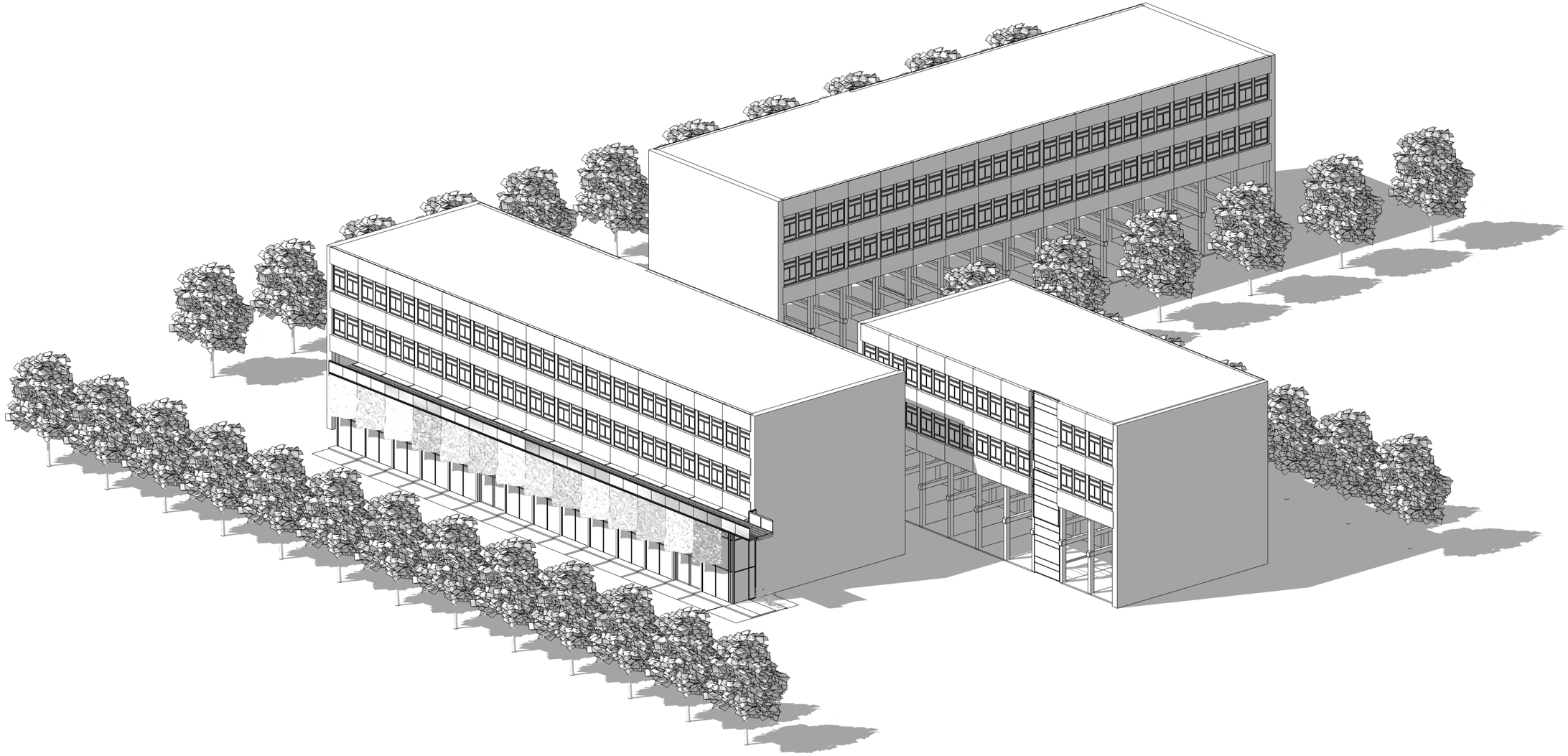
BUILDING MODULES



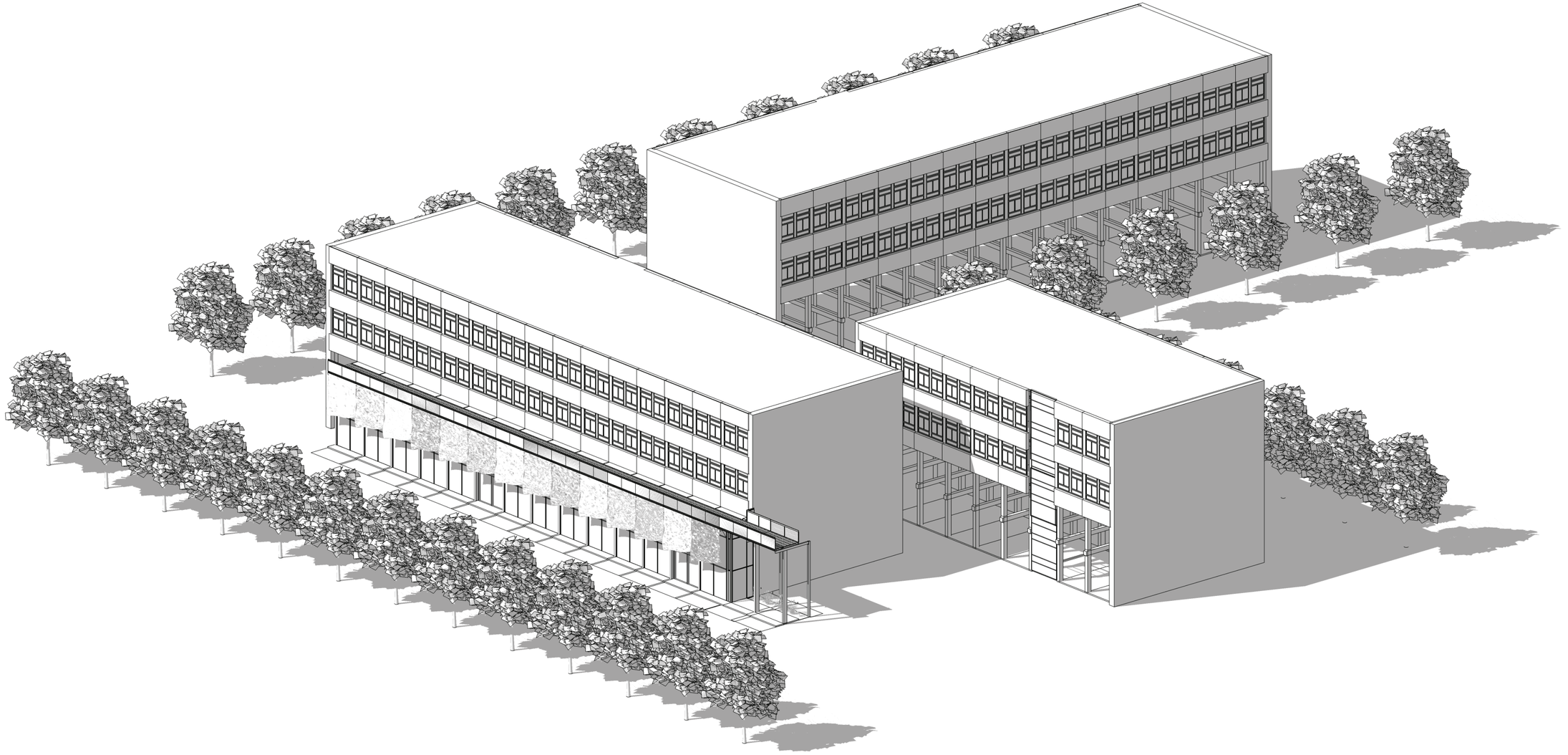
BUILDING MODULES



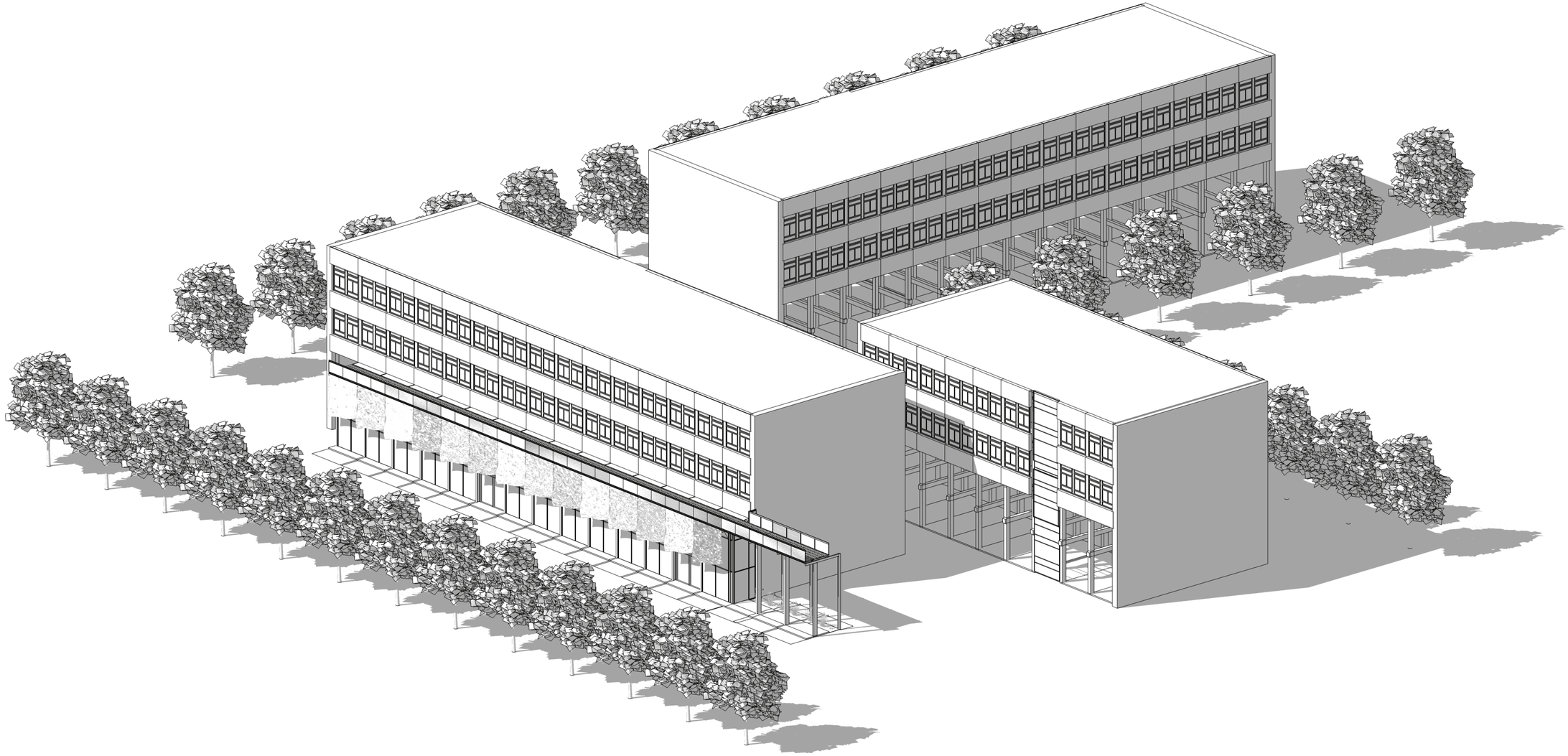
BUILDING MODULES



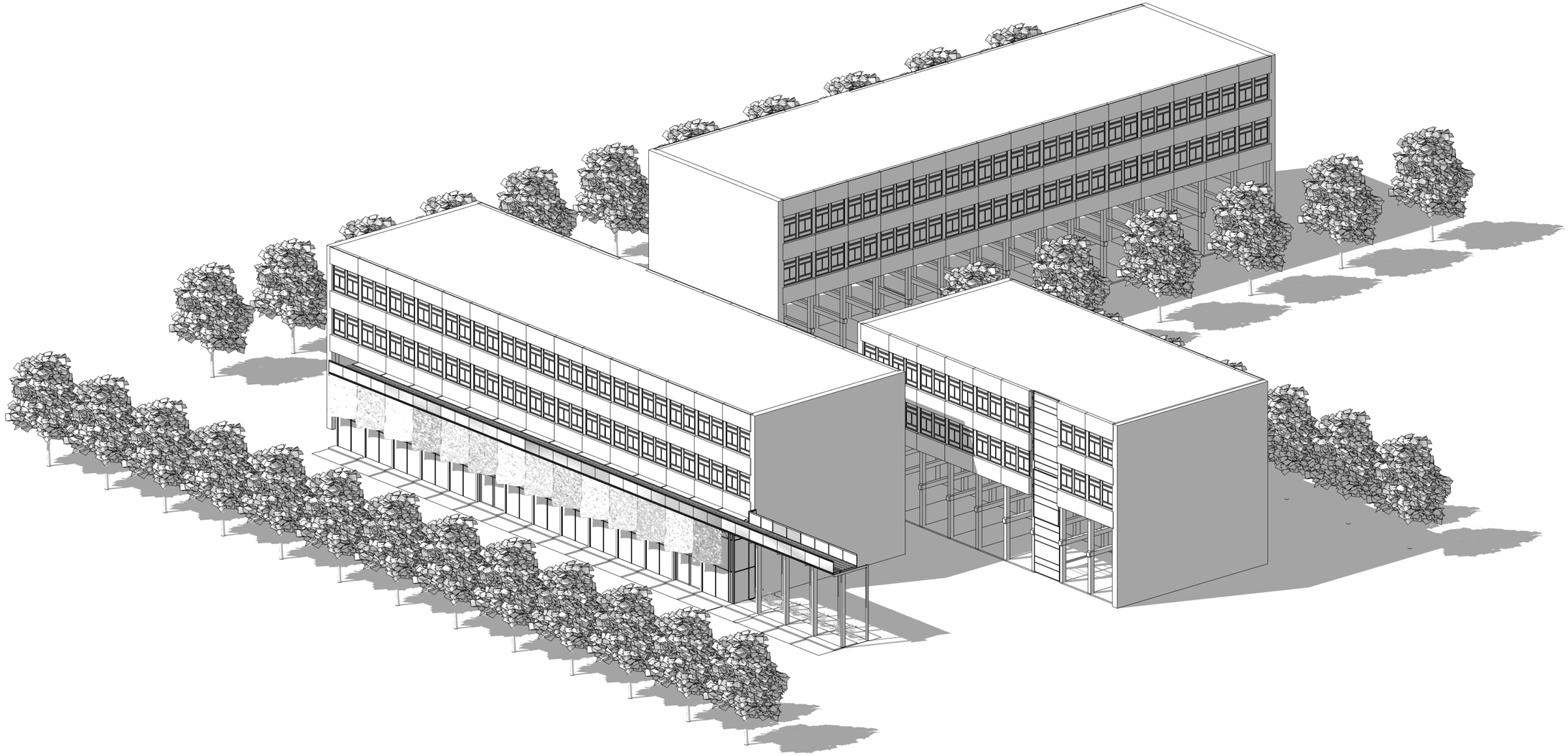
BUILDING MODULES



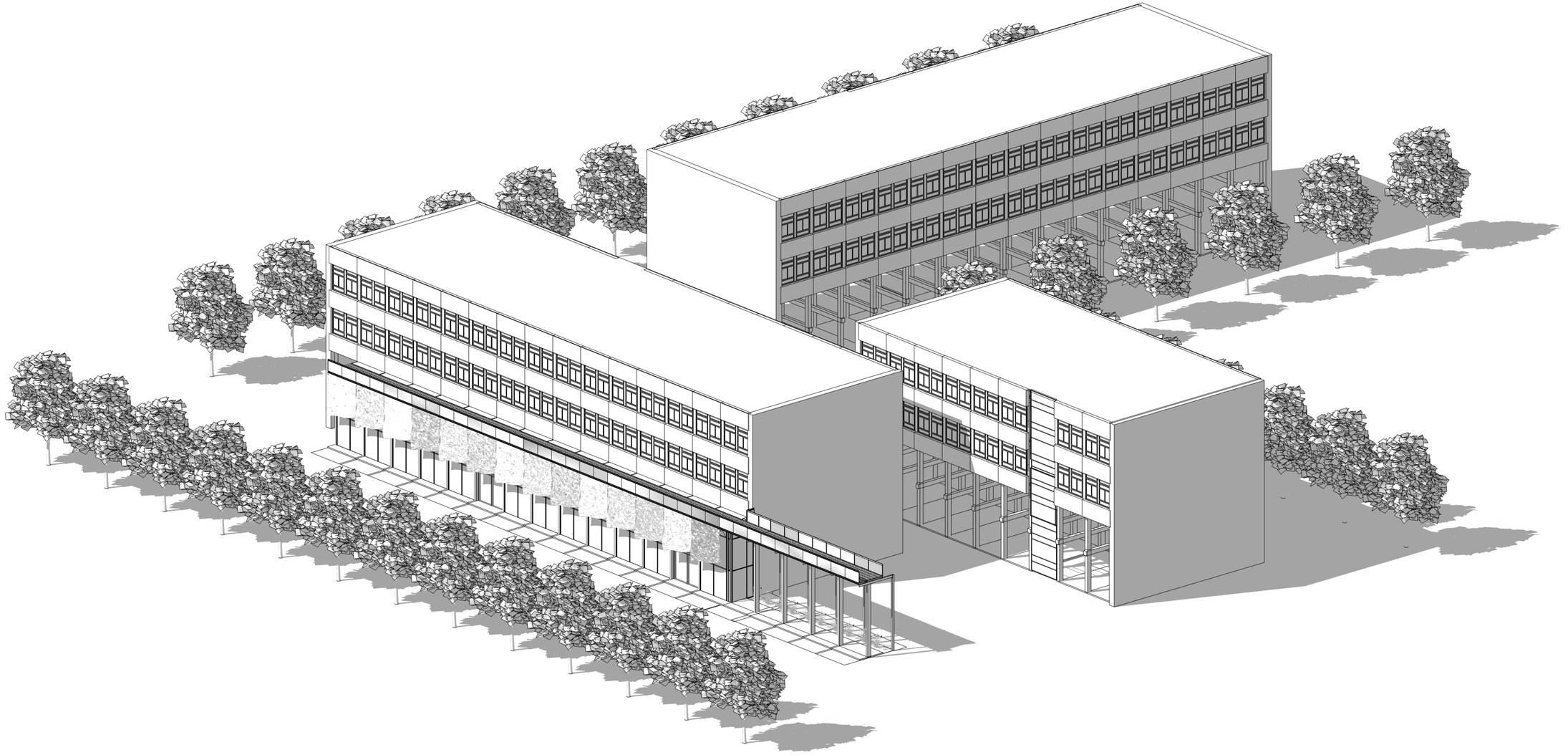
BUILDING MODULES



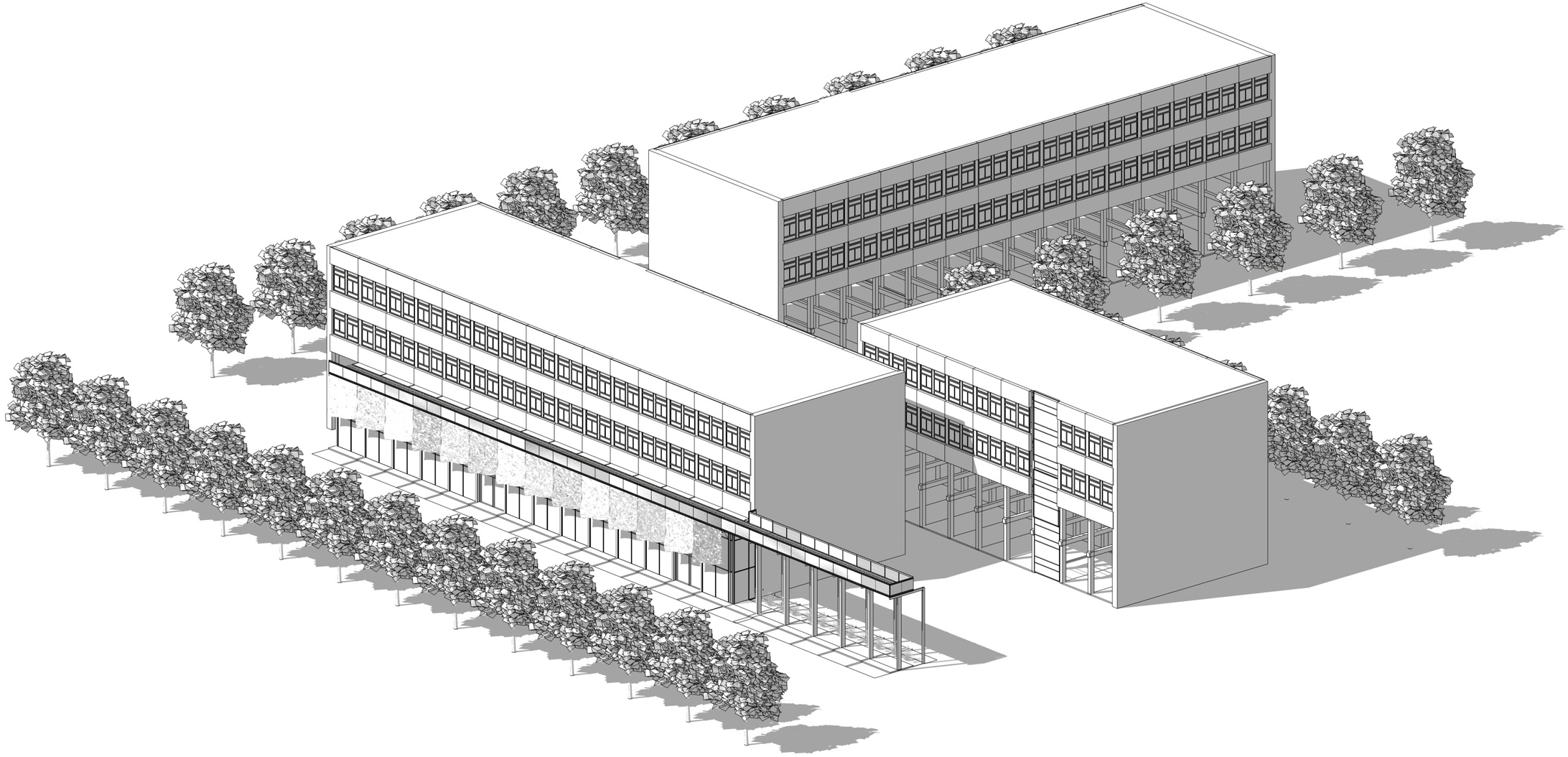
BUILDING MODULES



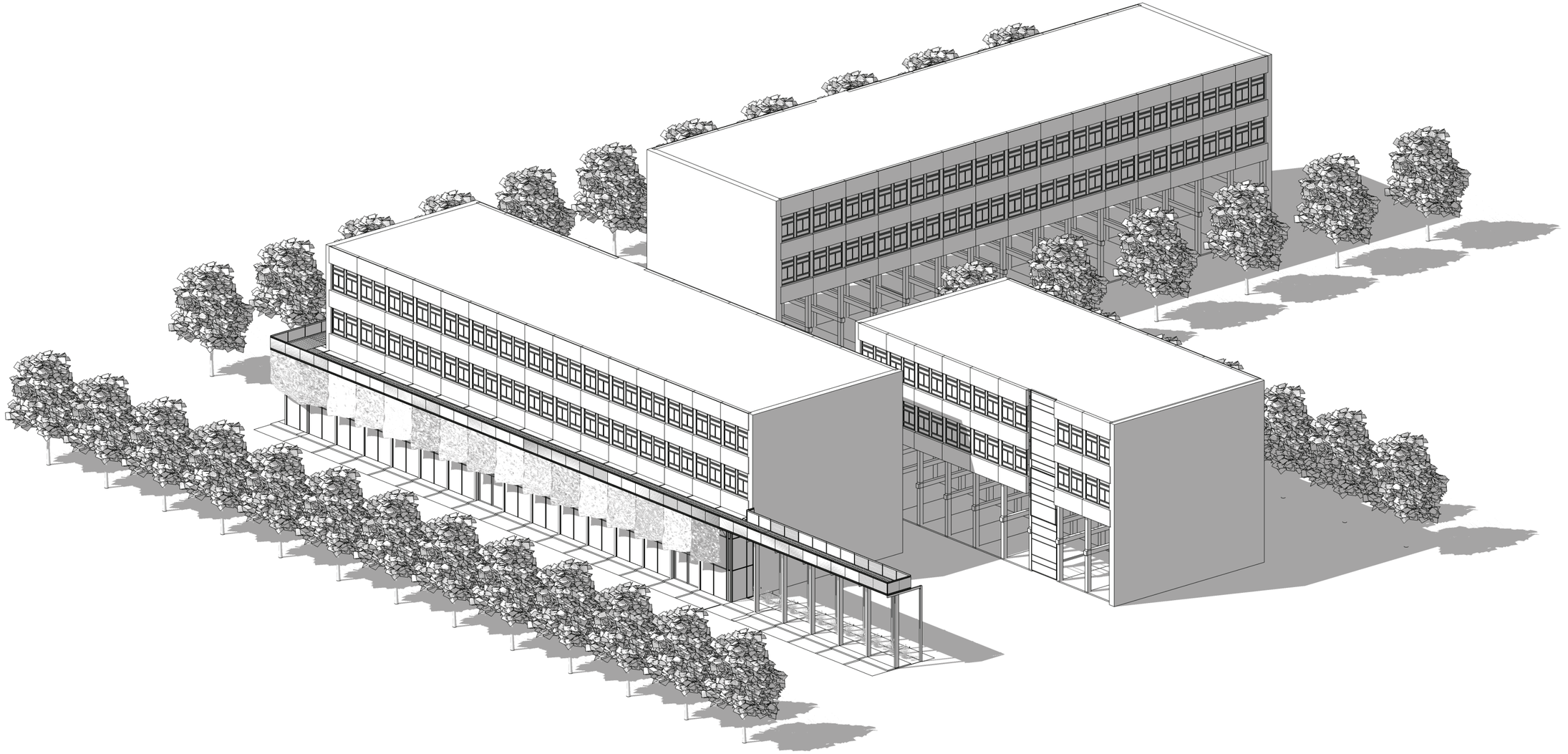
BUILDING MODULES



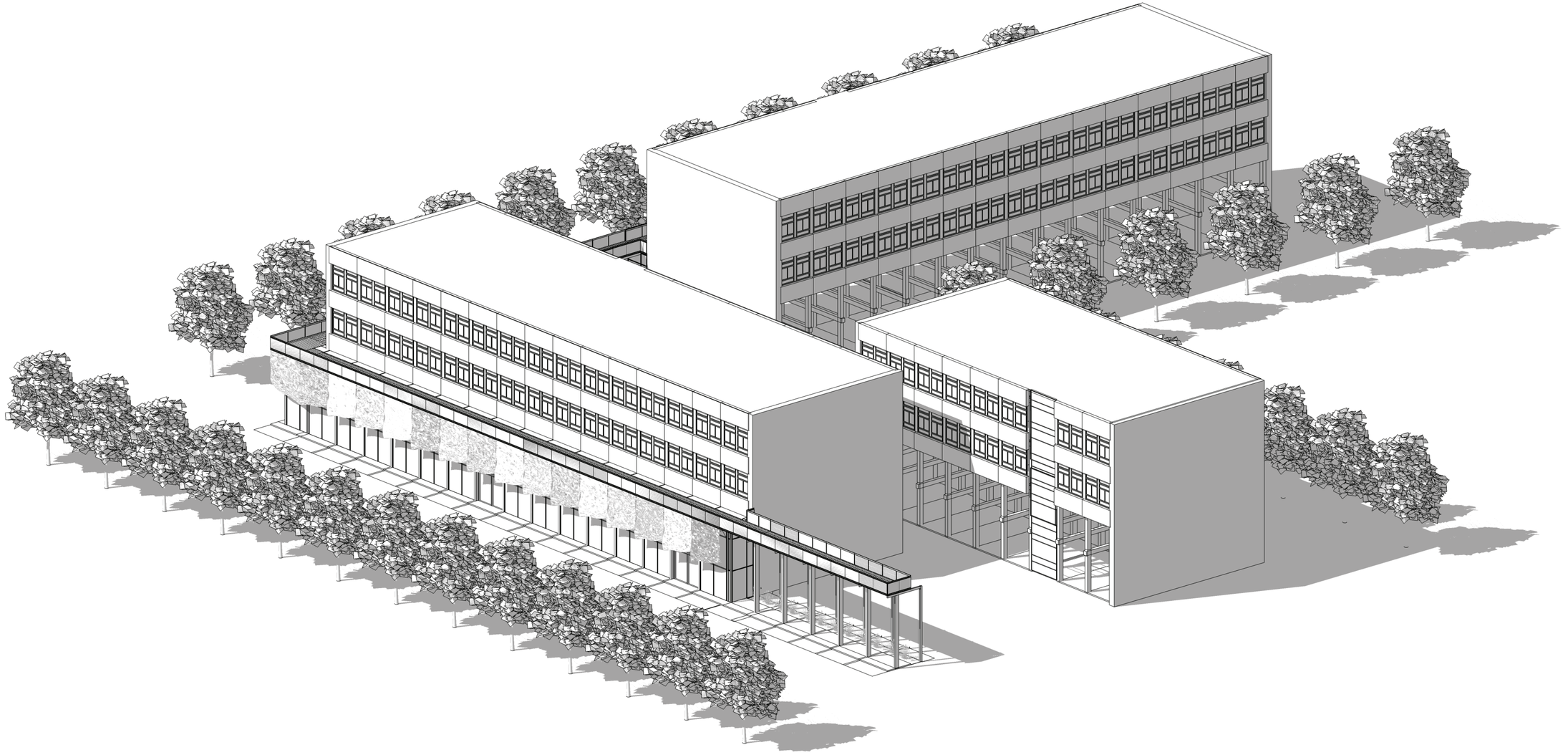
BUILDING MODULES



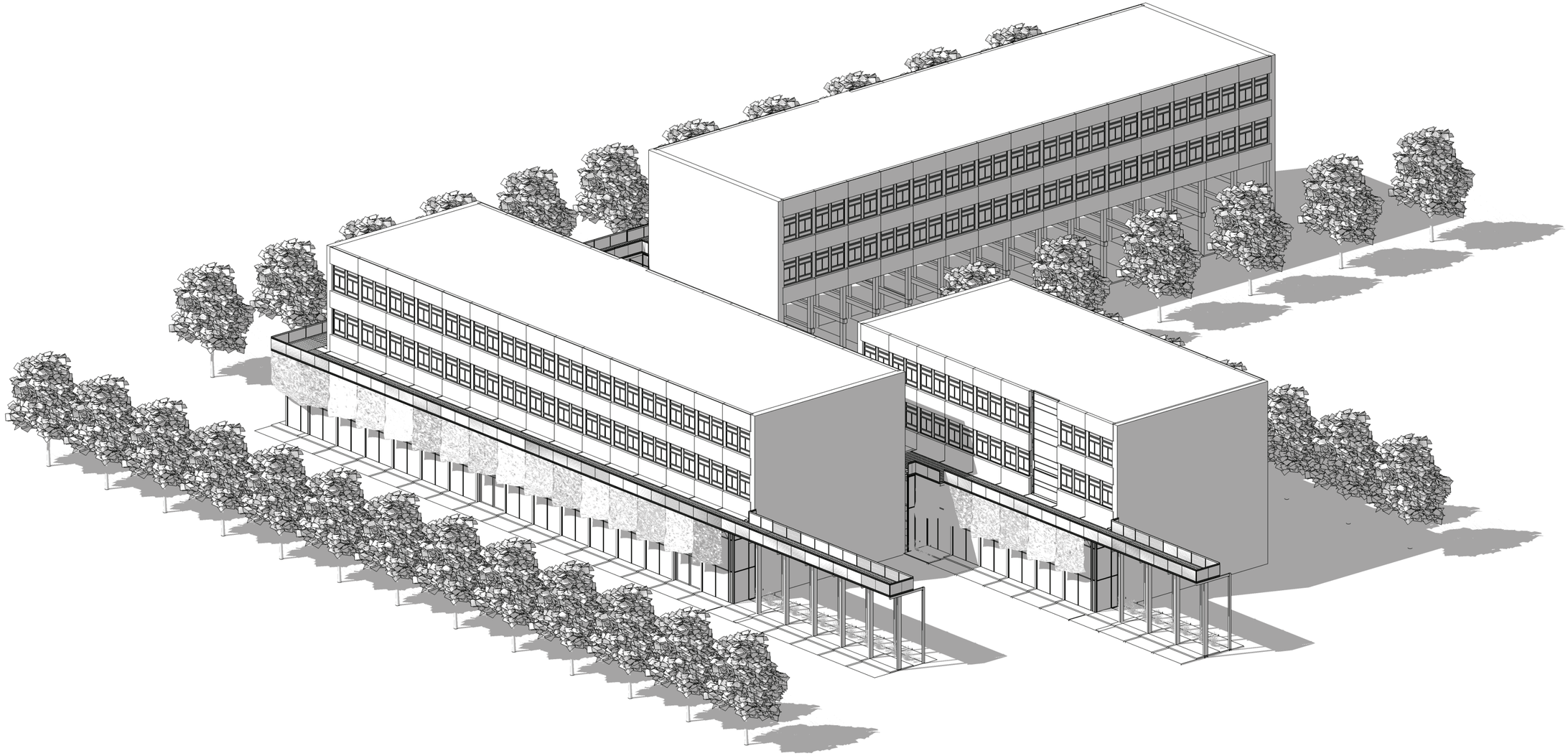
BUILDING MODULES



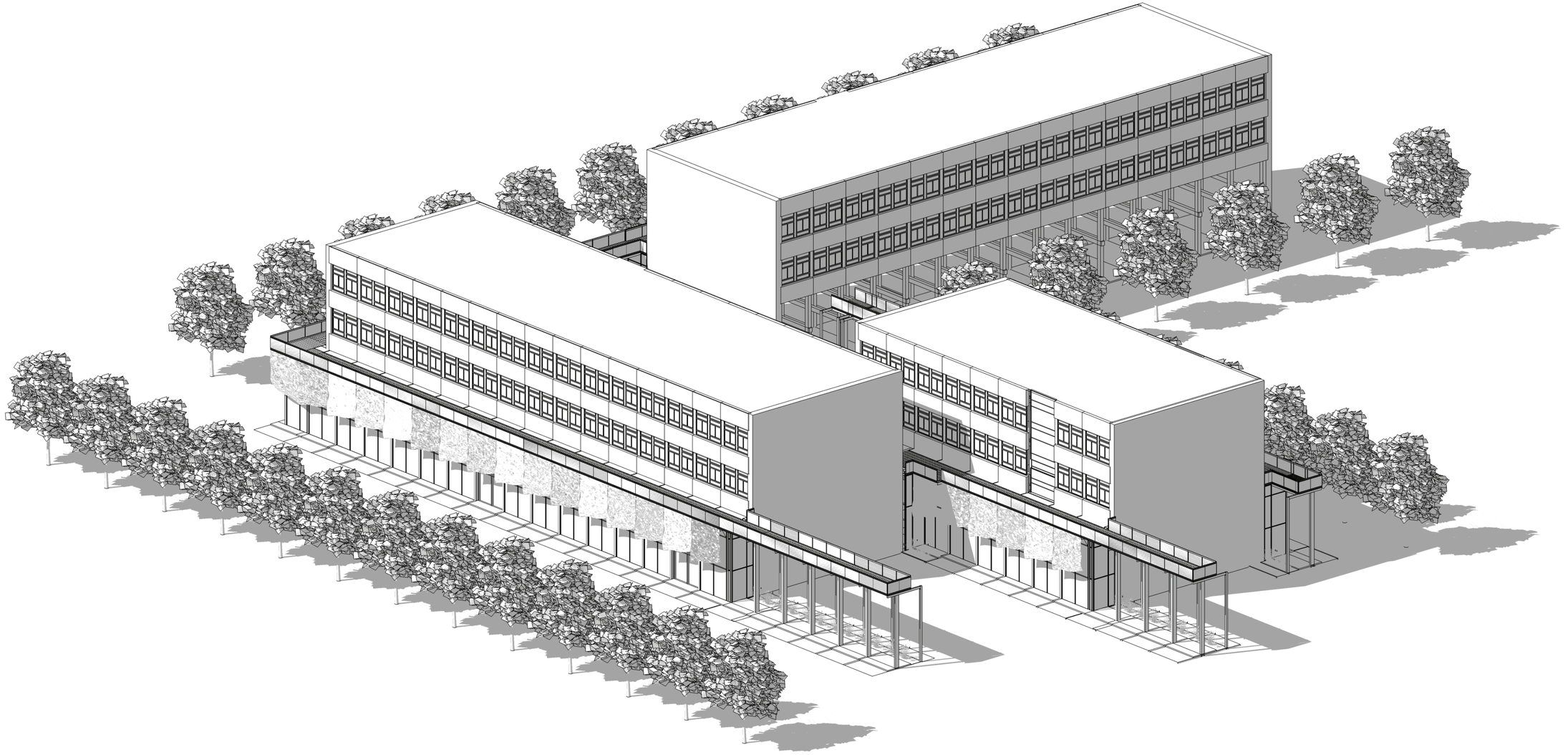
BUILDING MODULES



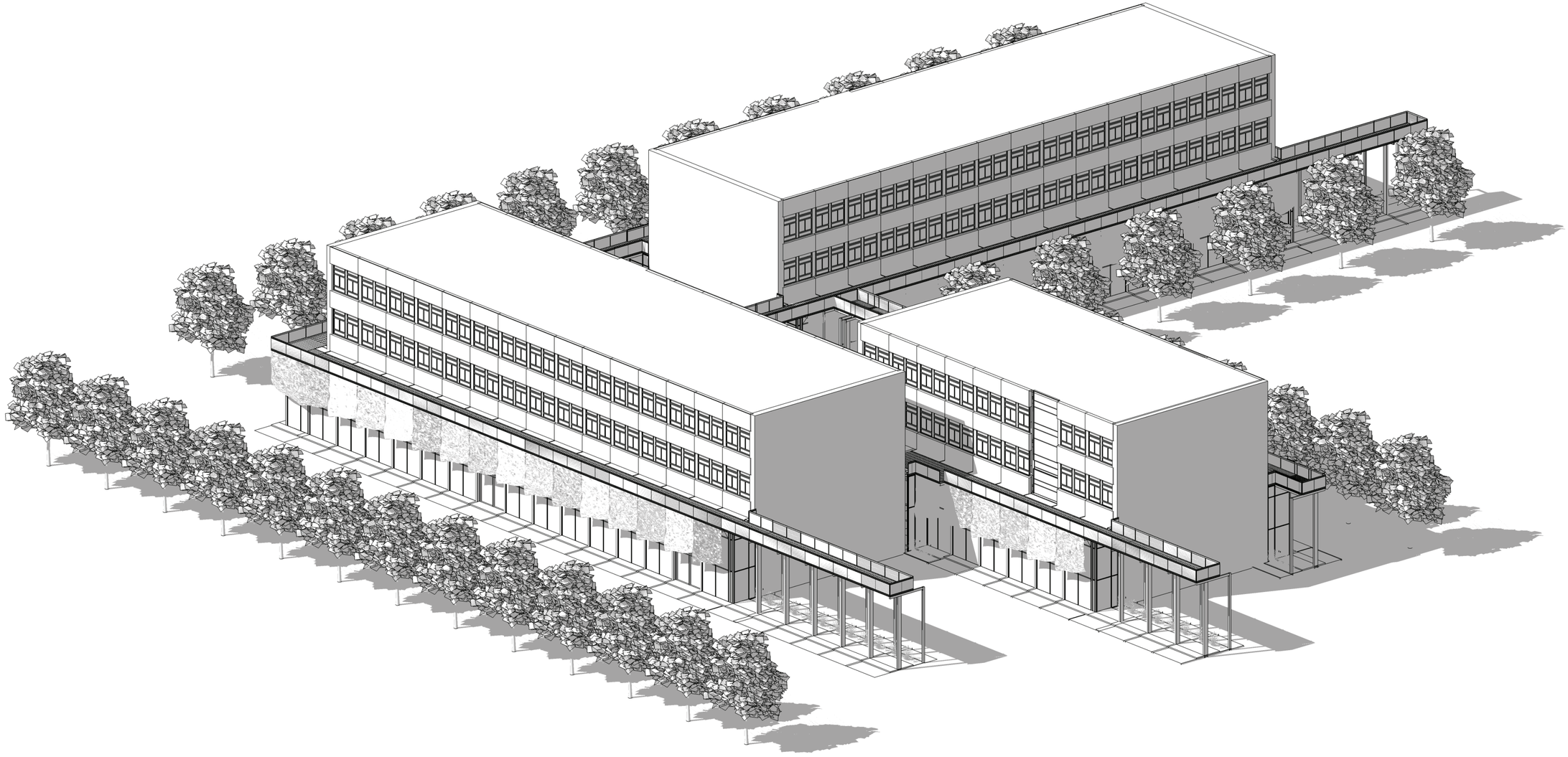
BUILDING MODULES



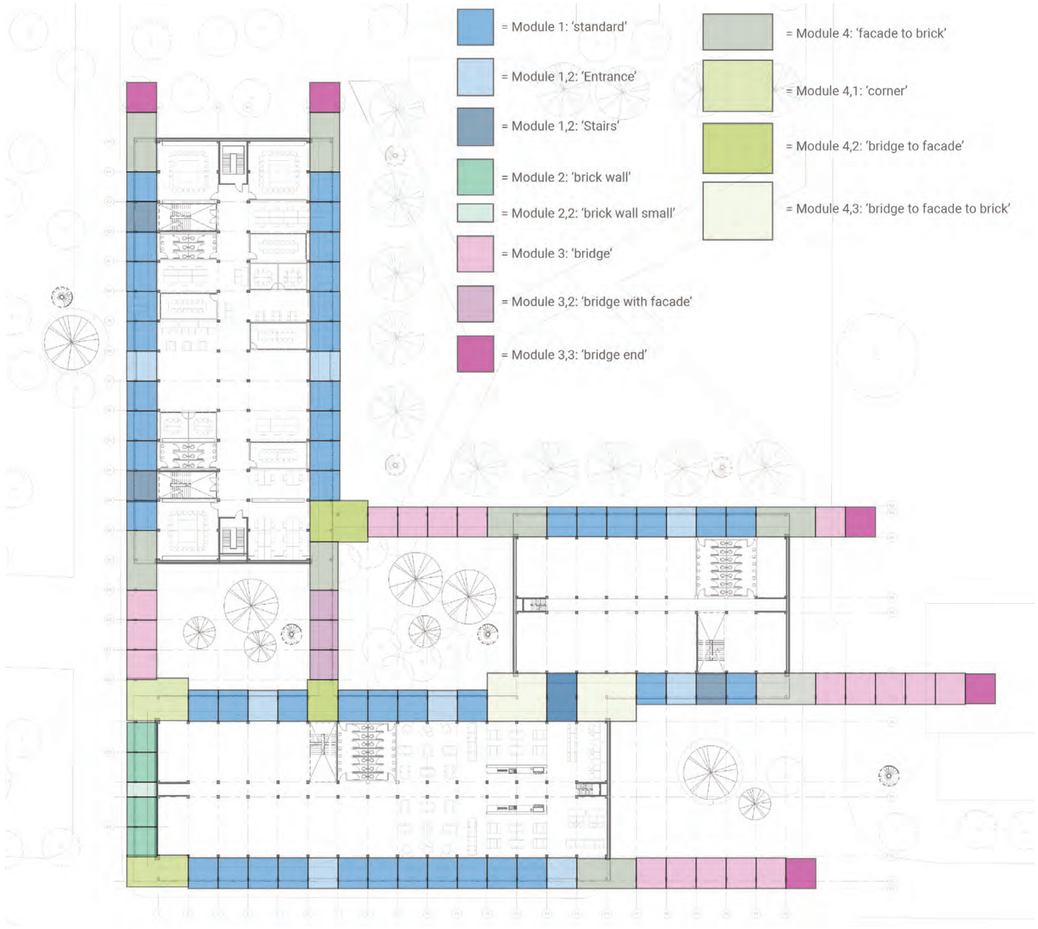
BUILDING MODULES

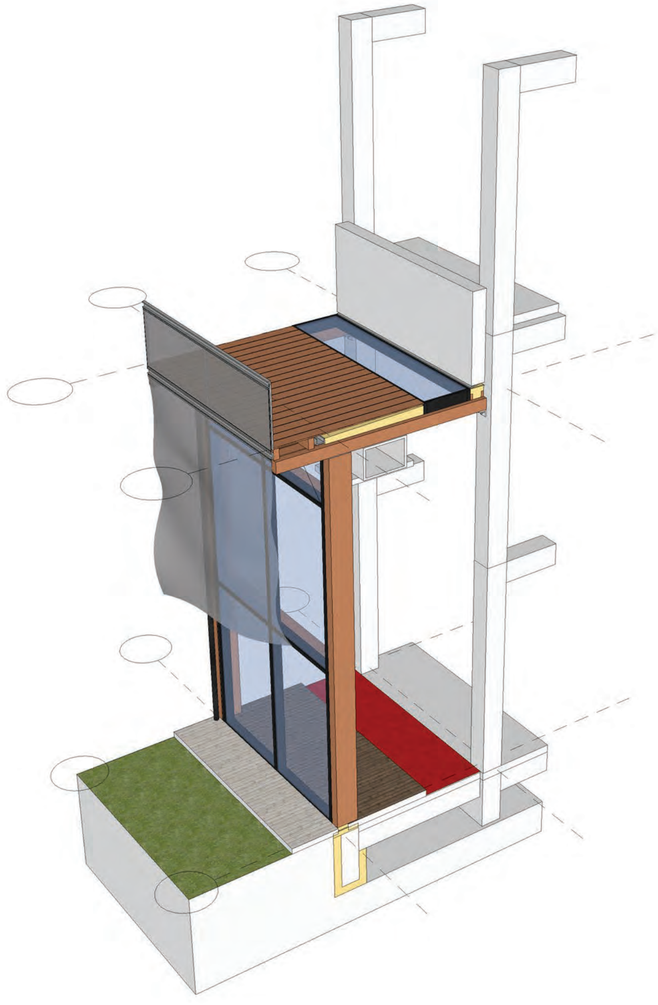


BUILDING MODULES



BUILDING SYSTEM

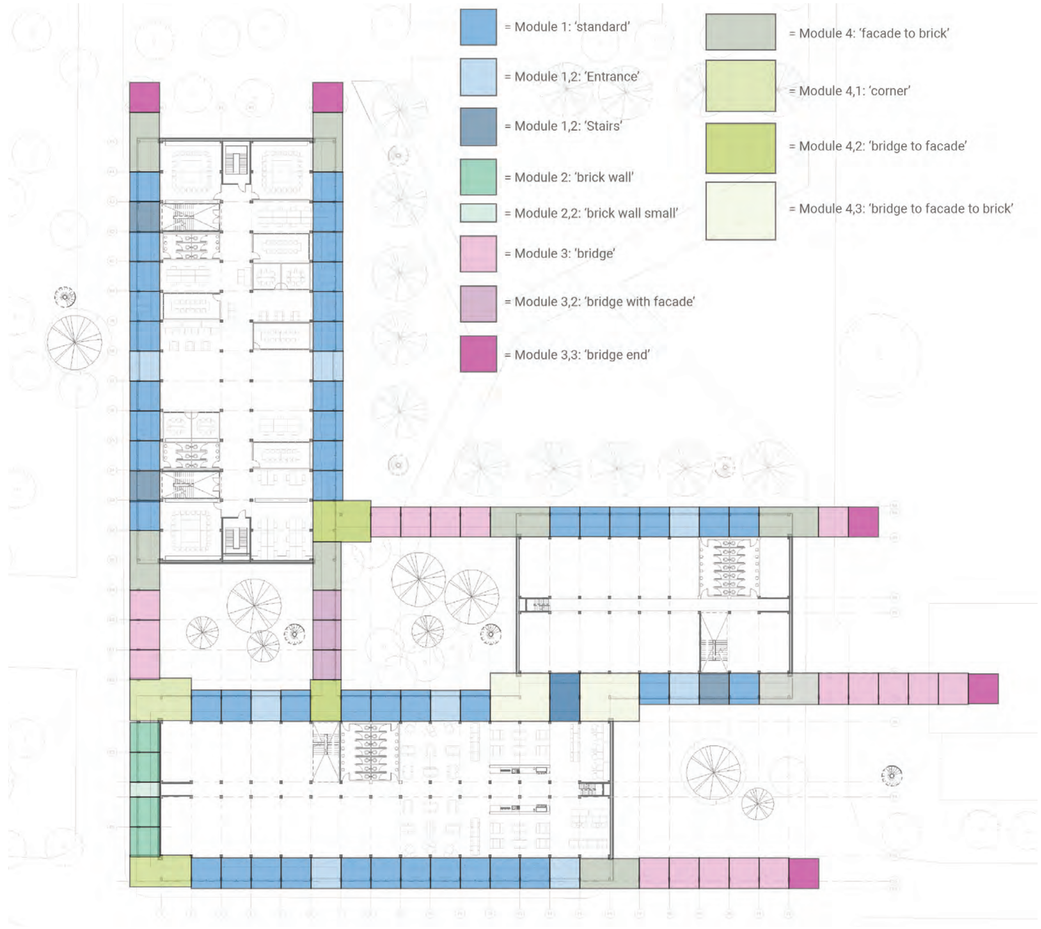


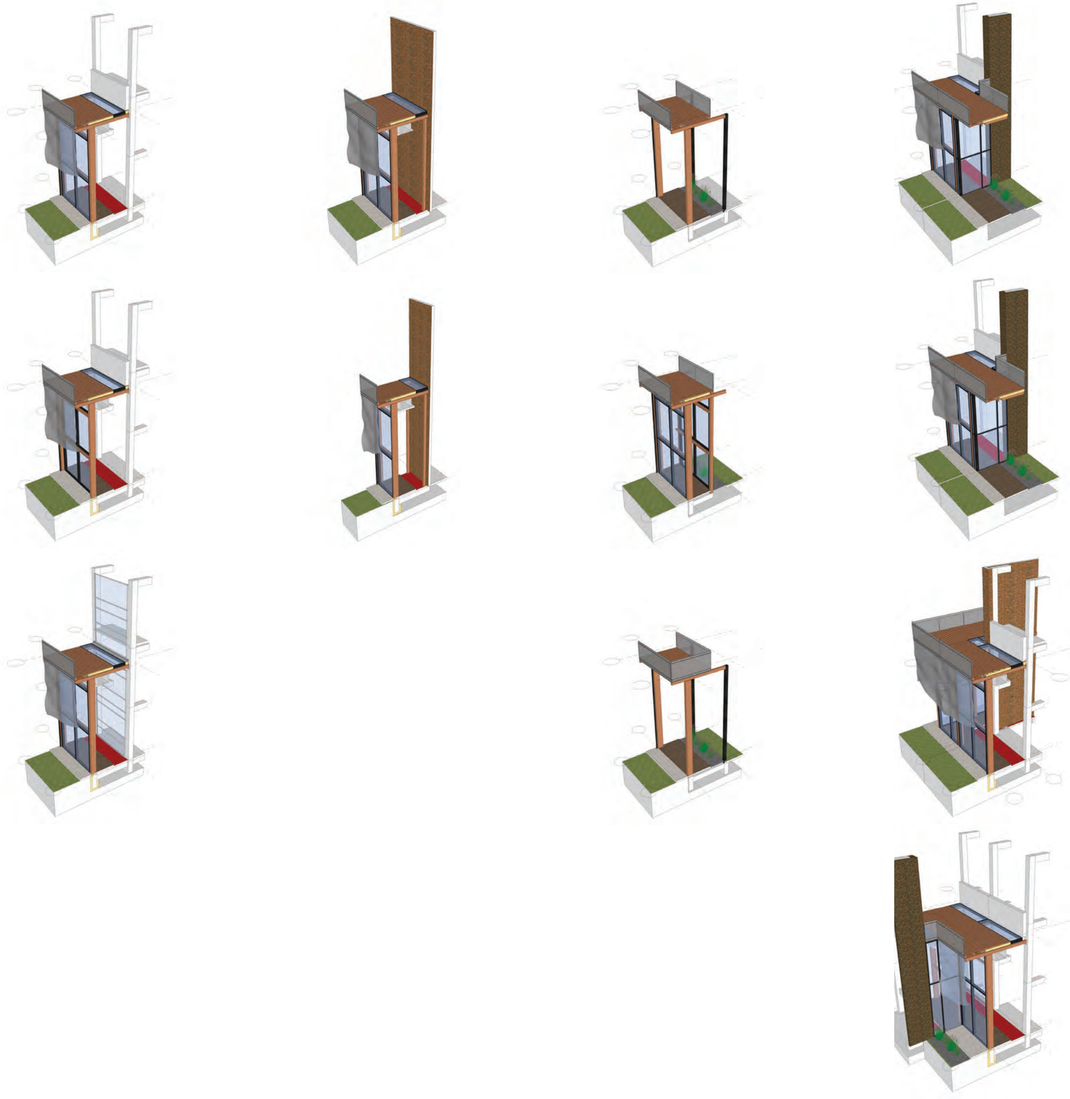


1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

BUILDING SYSTEM

Catalogue

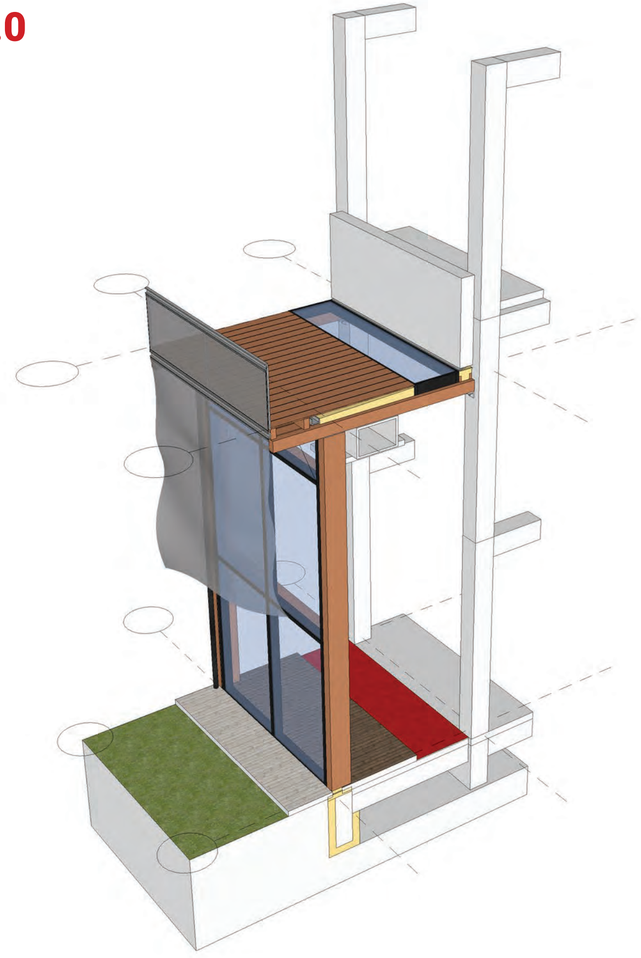


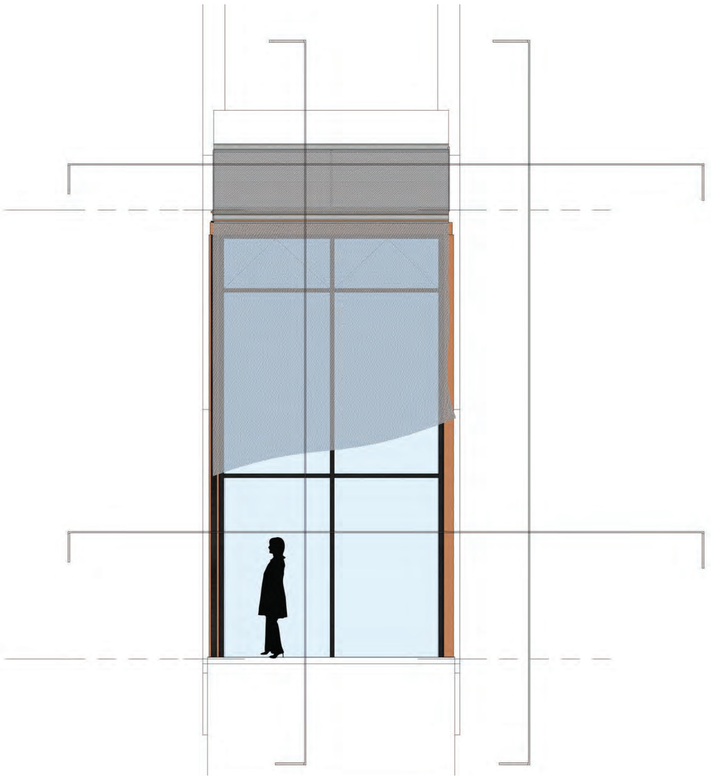


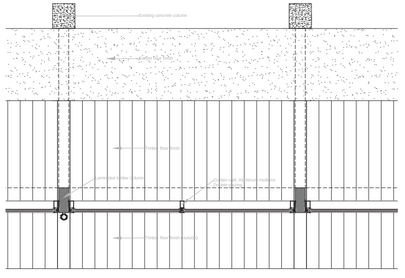
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

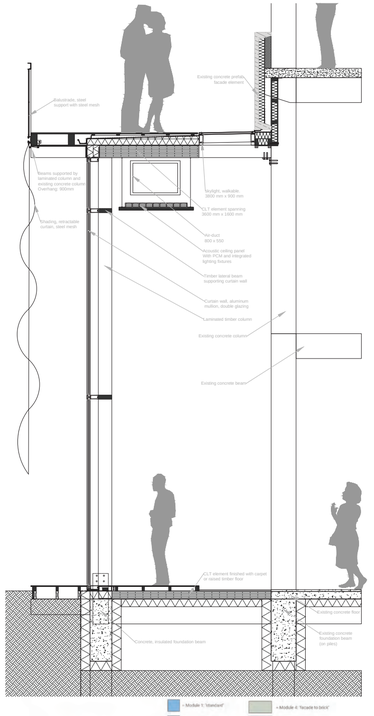
BUILDING SYSTEM

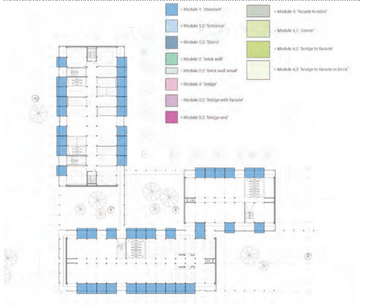
Module 1.0







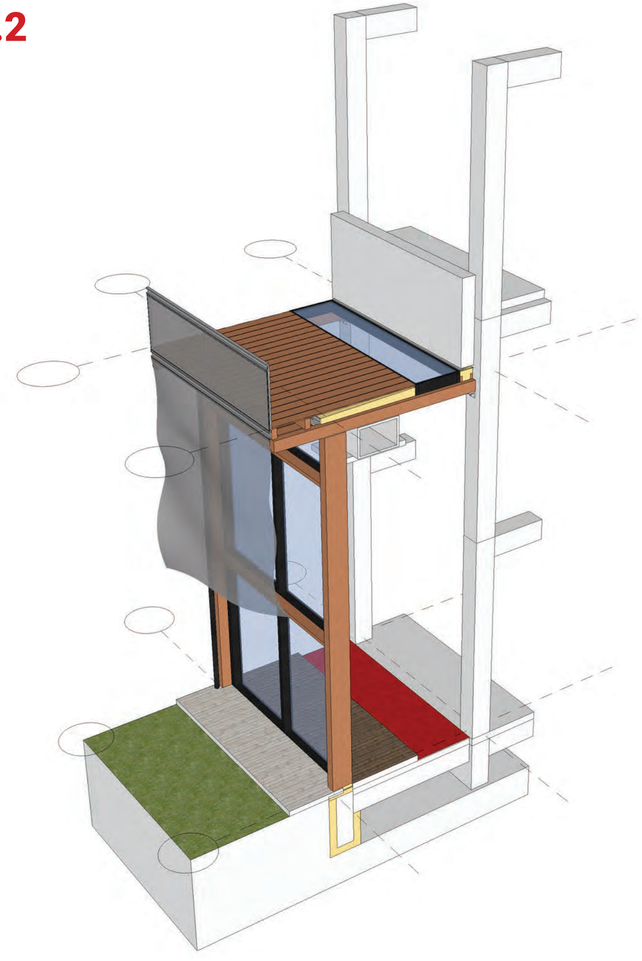


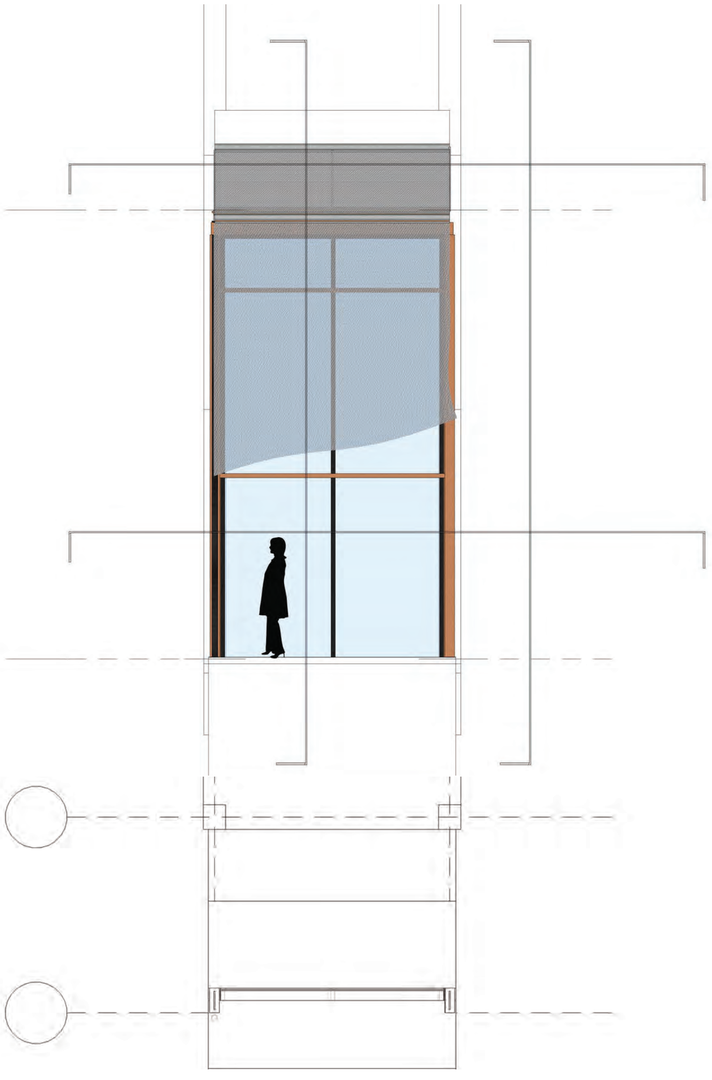


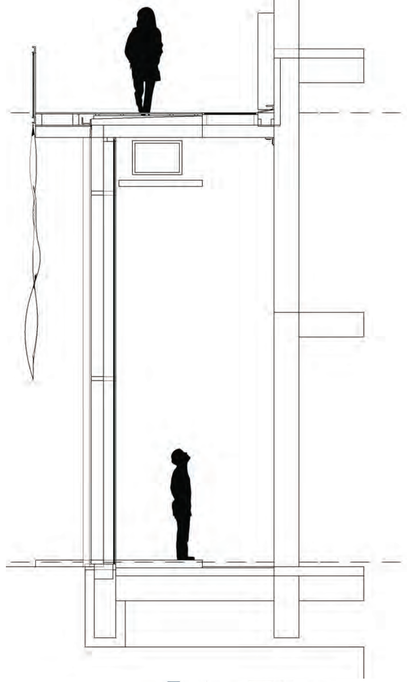
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

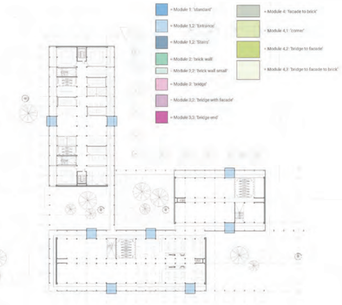
BUILDING SYSTEM

Module 1.2





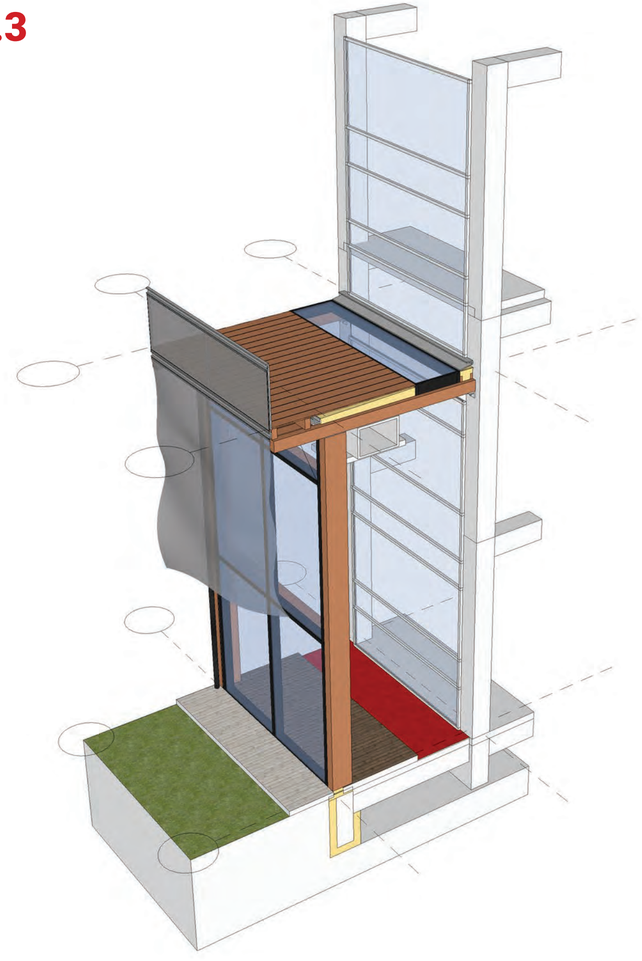


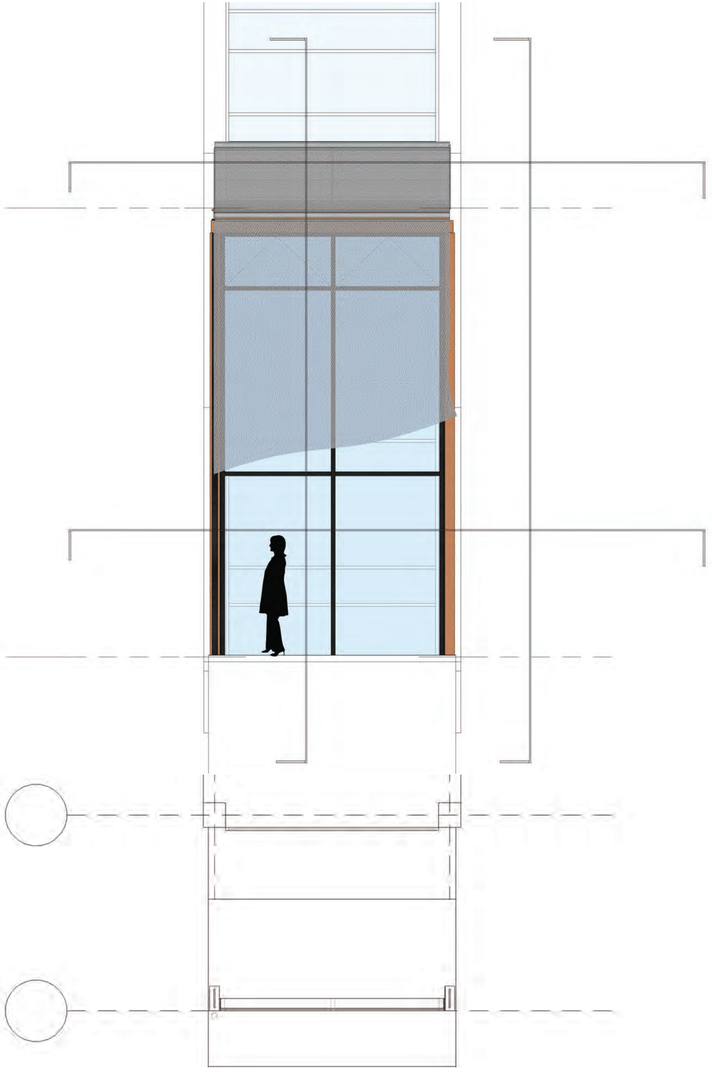


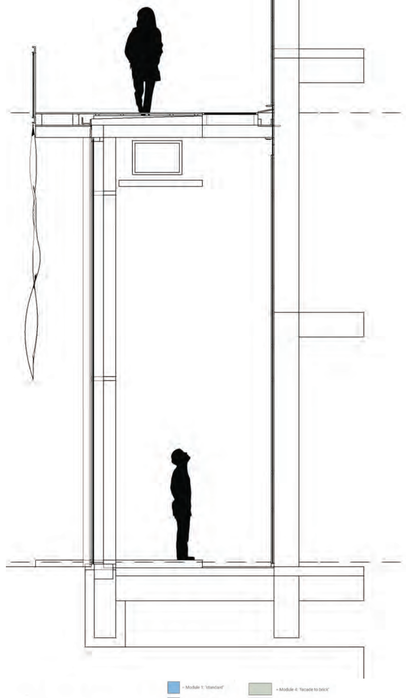
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

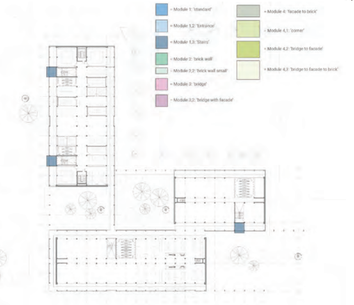
BUILDING SYSTEM

Module 1.3





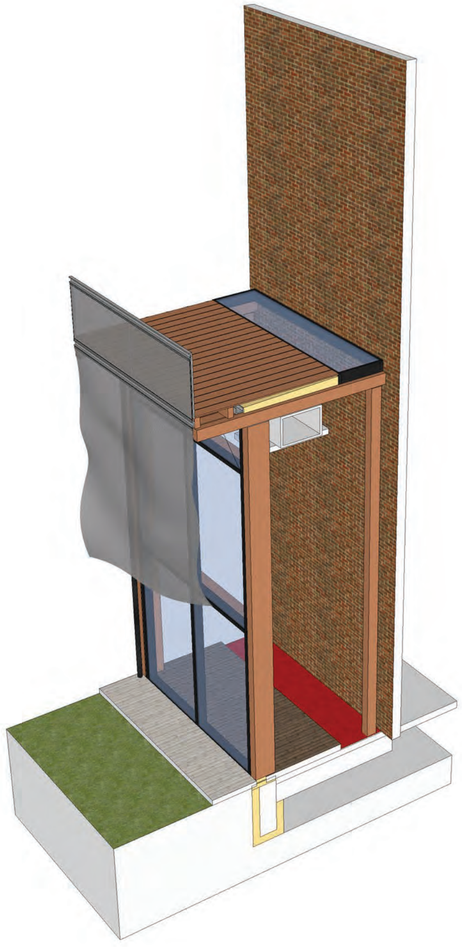


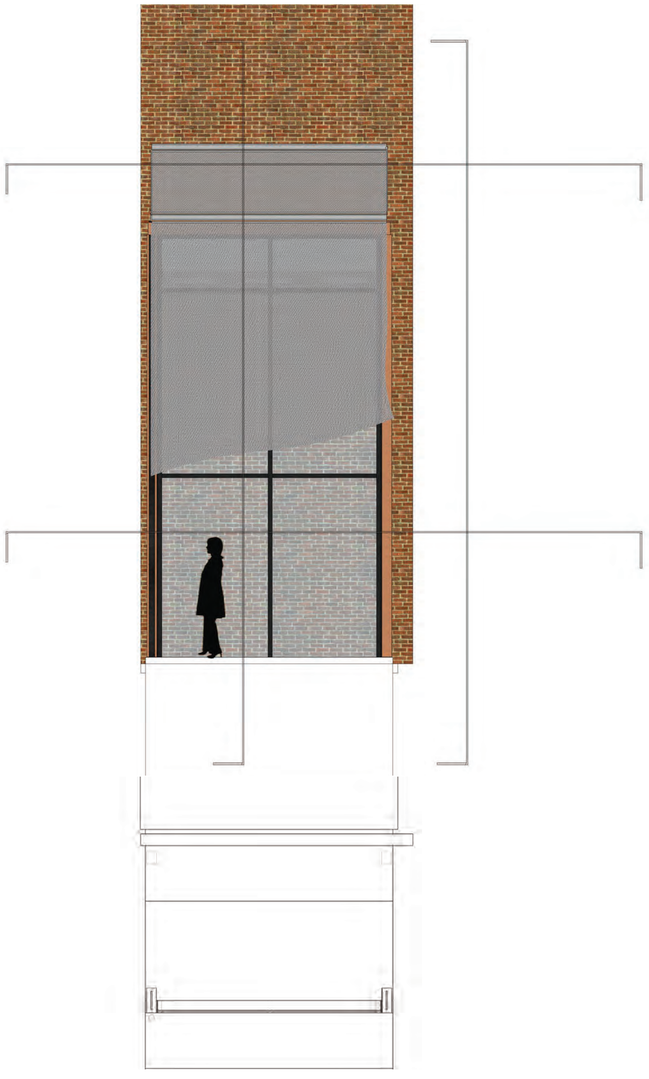


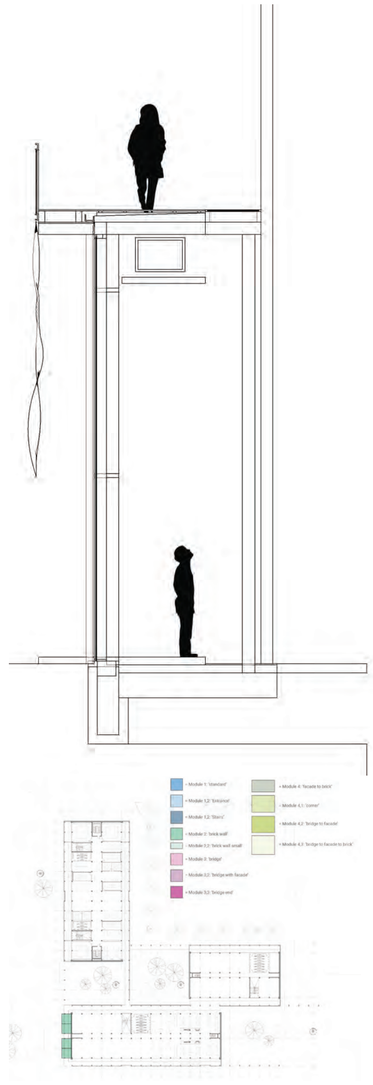
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

BUILDING SYSTEM

Module 2.0



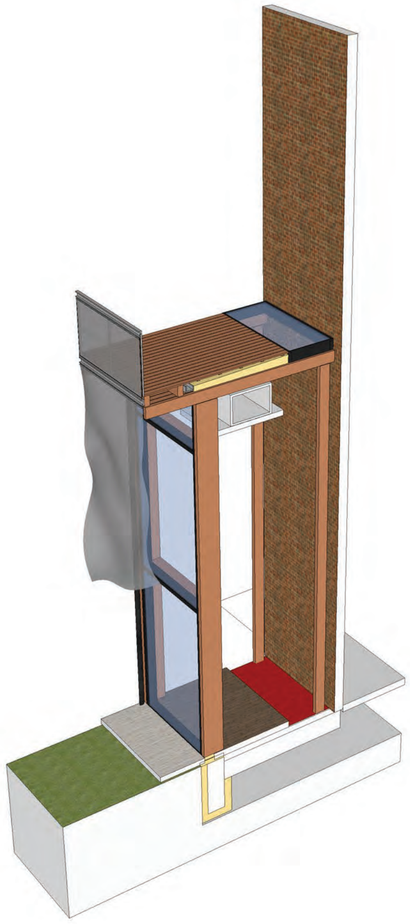


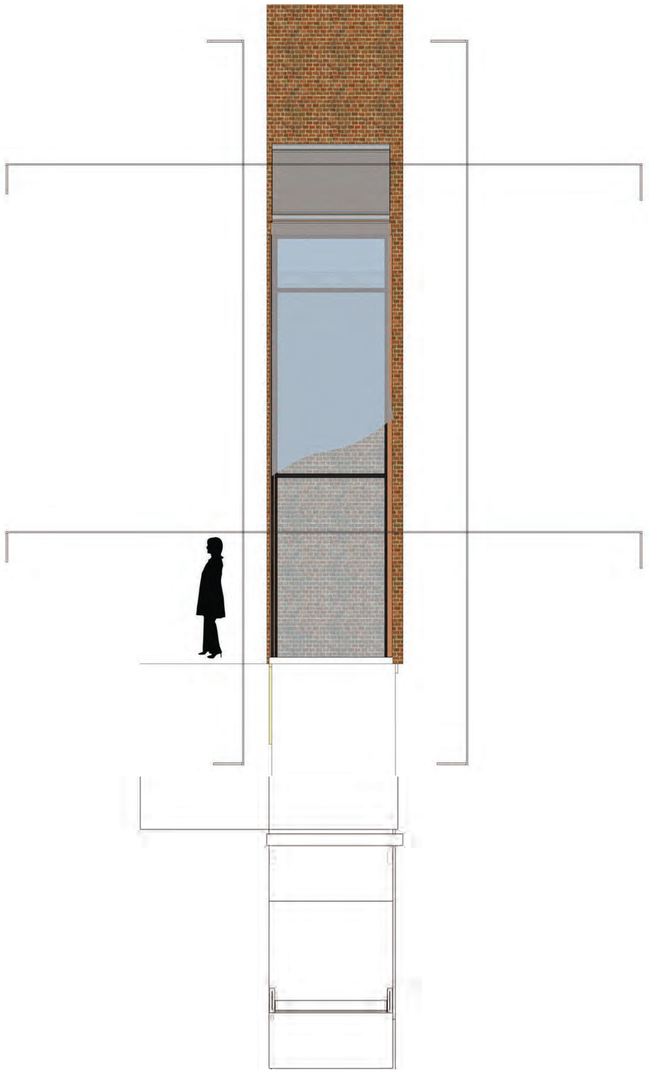


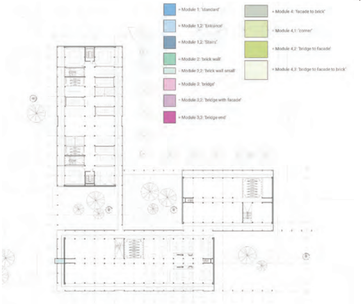
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

BUILDING SYSTEM

Module 2.2



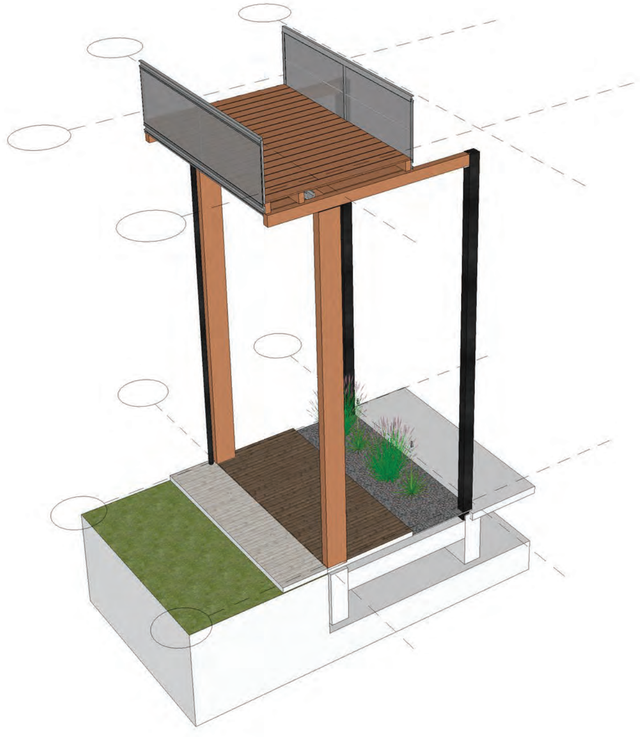


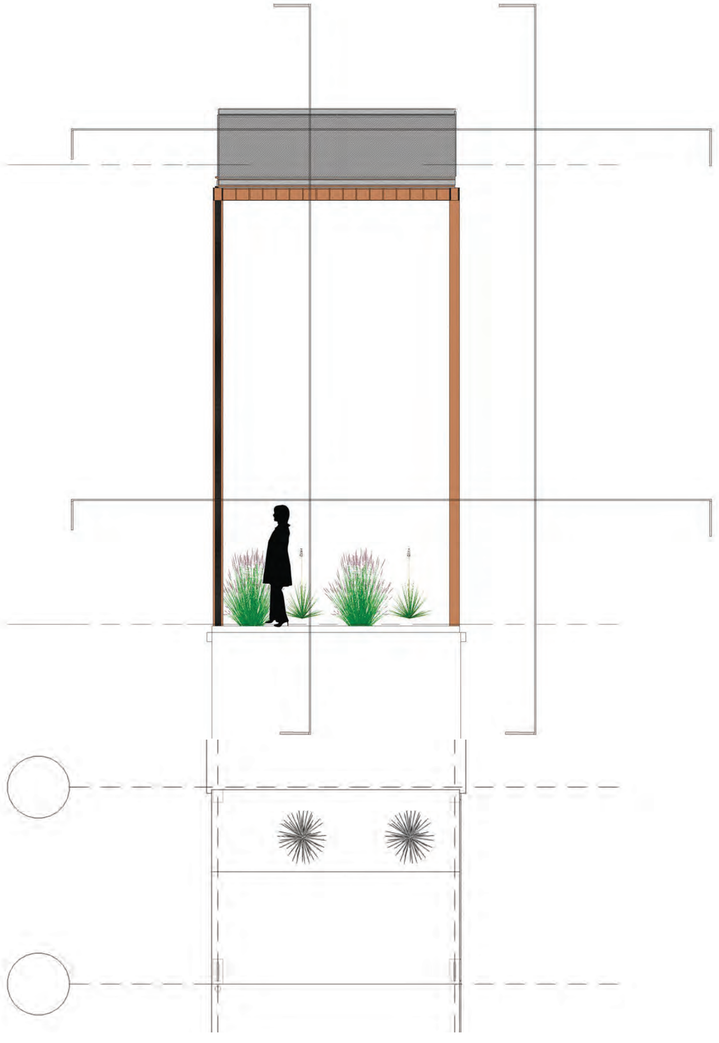


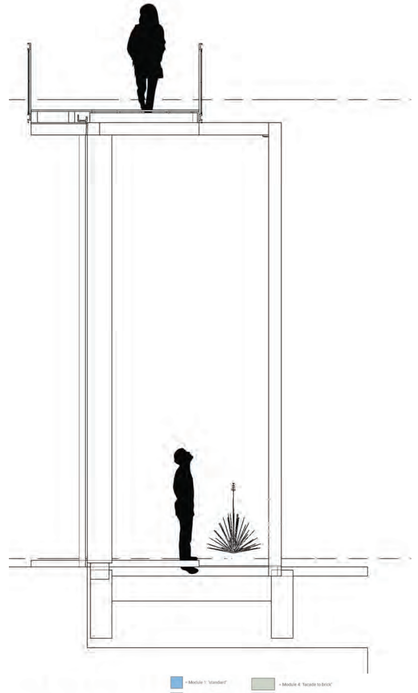
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

BUILDING SYSTEM

Module 3.0



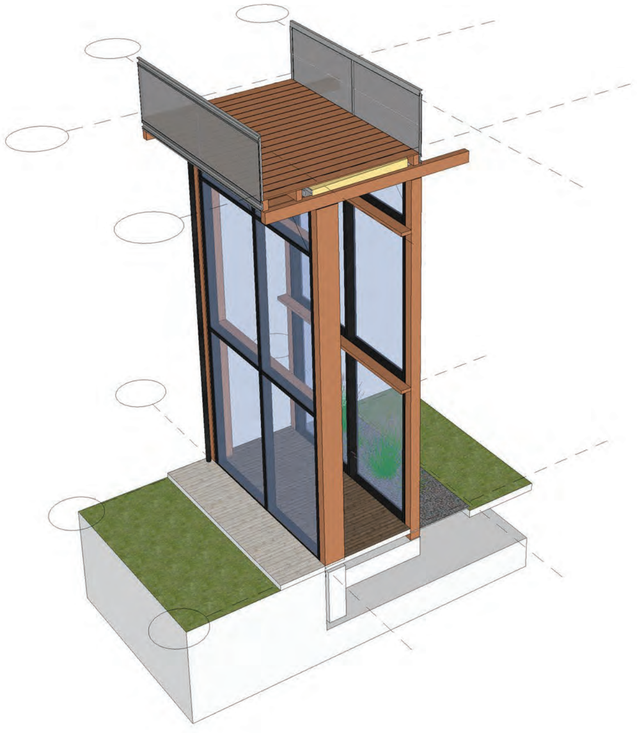


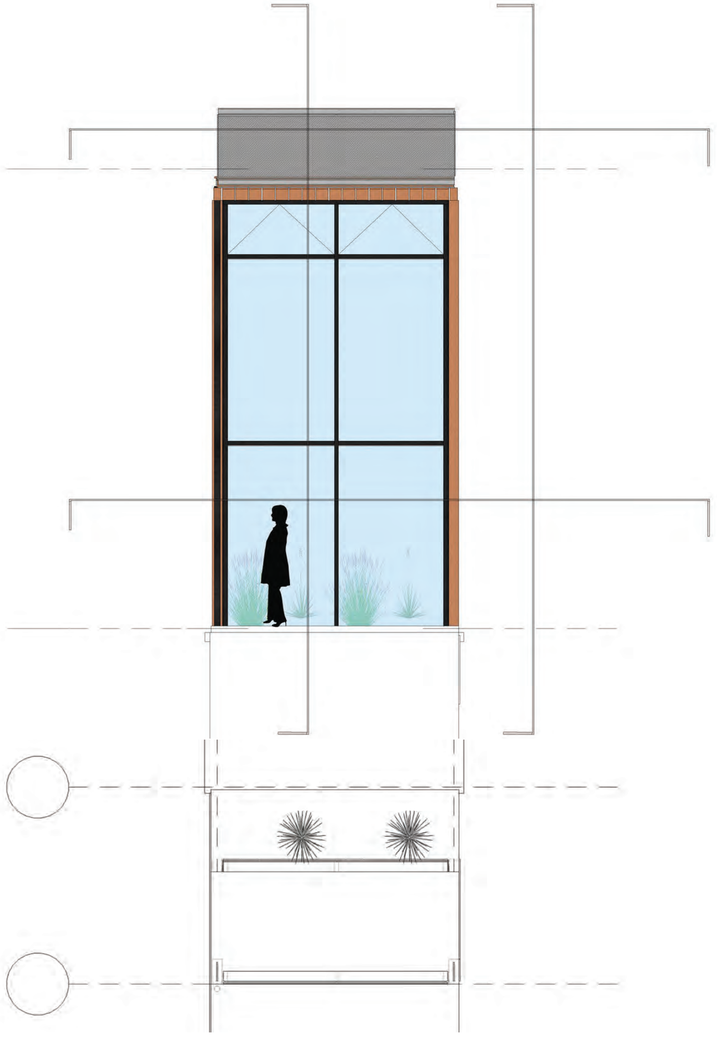


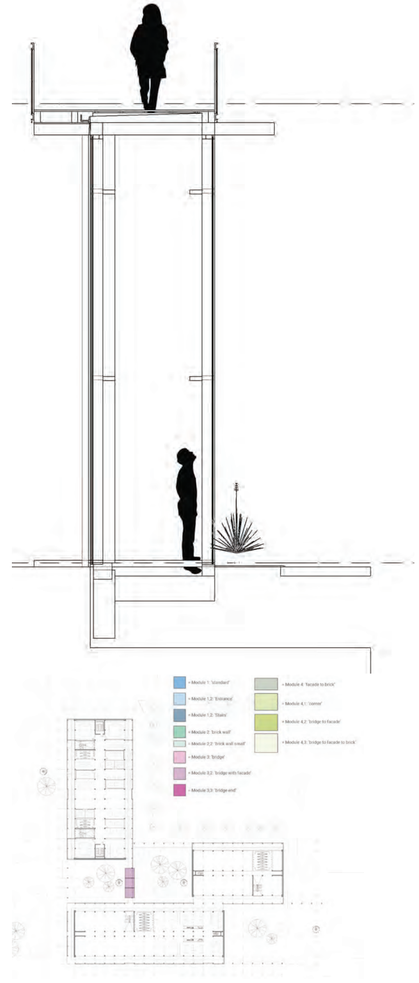
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

BUILDING SYSTEM

Module 3.2



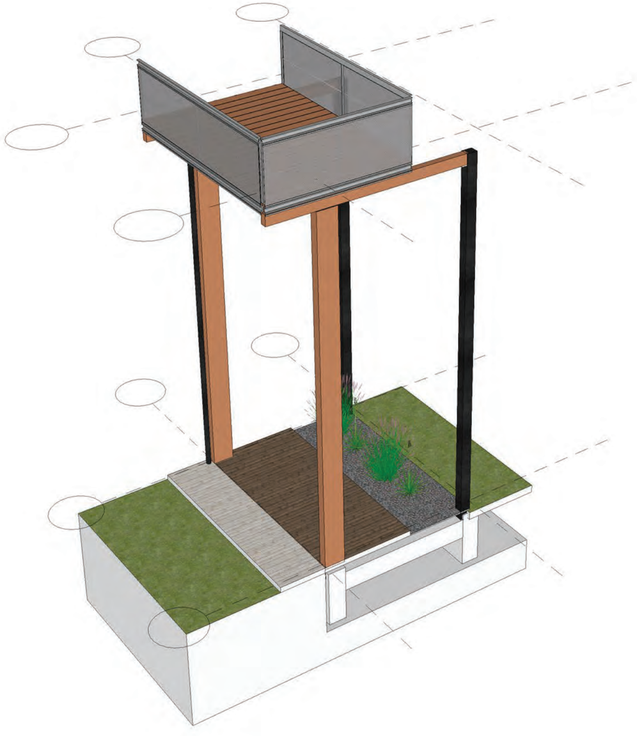


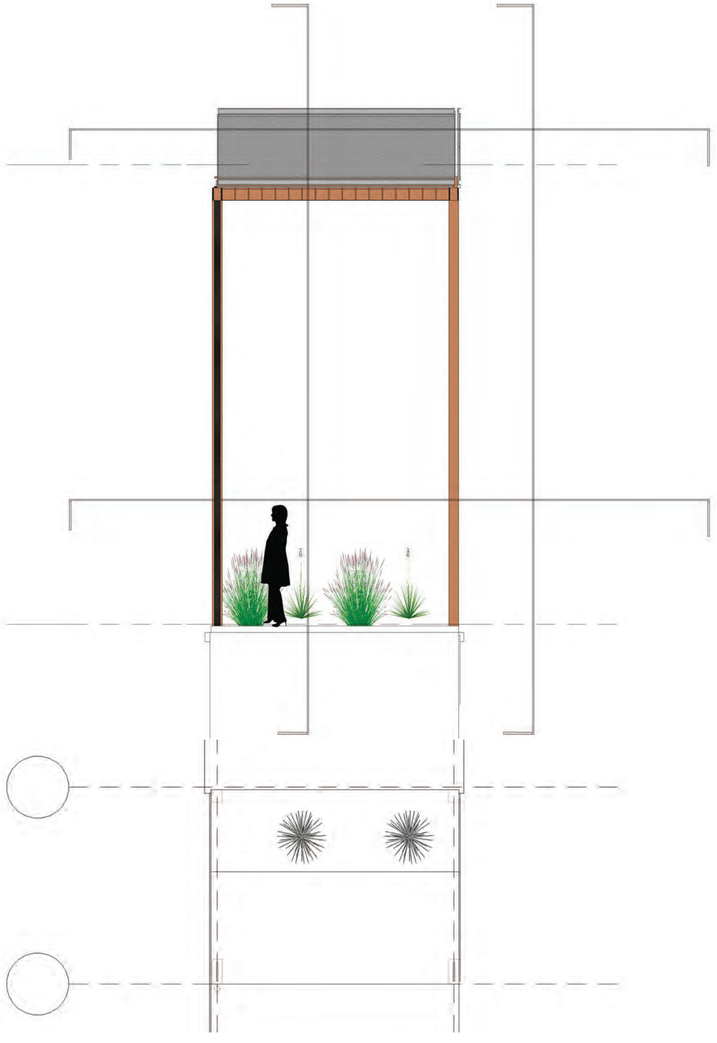


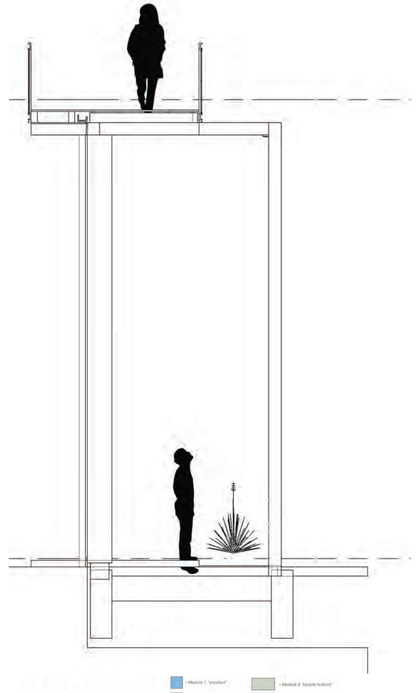
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

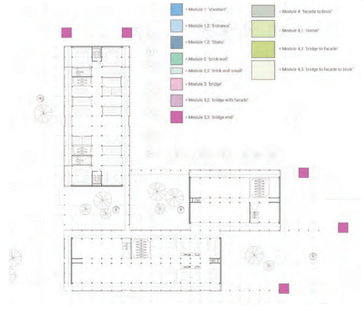
BUILDING SYSTEM

Module 3.3





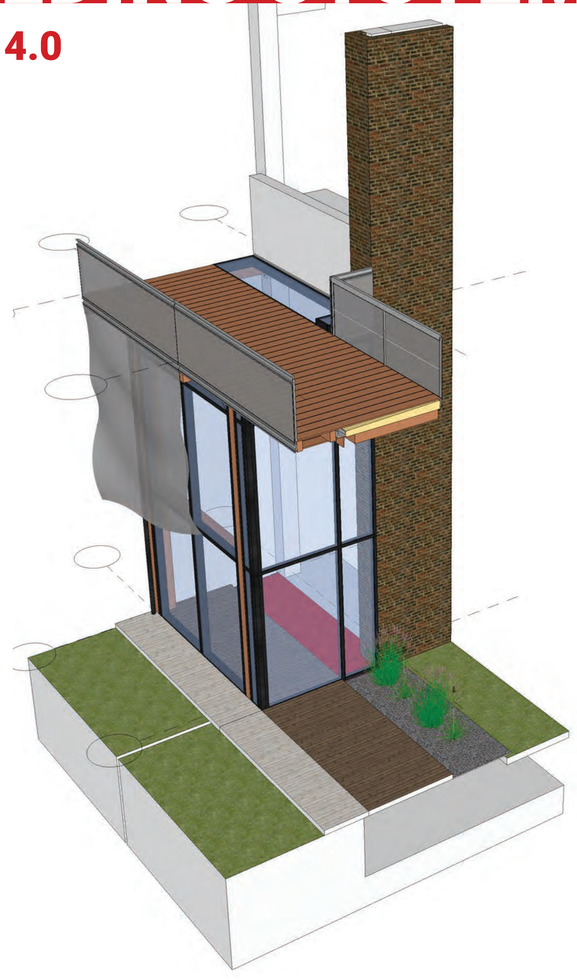


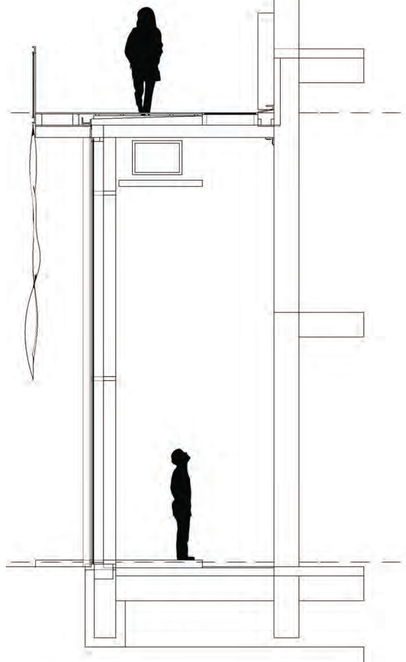


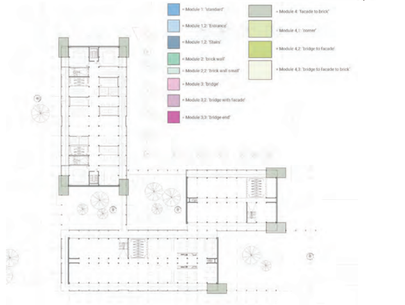
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

BUILDING SYSTEM

Module 4.0



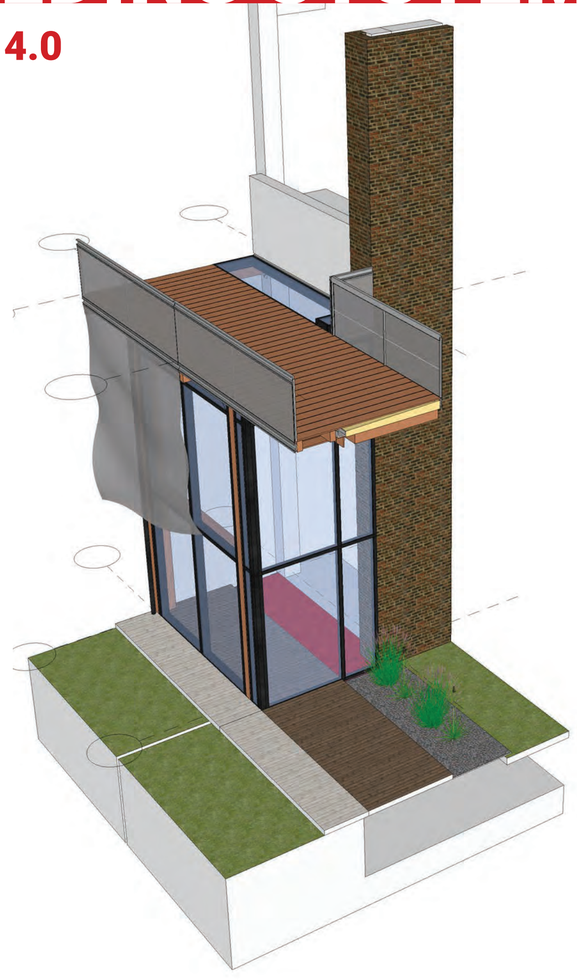


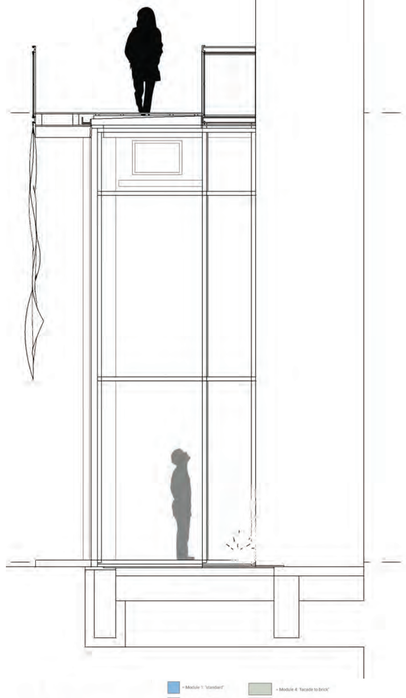


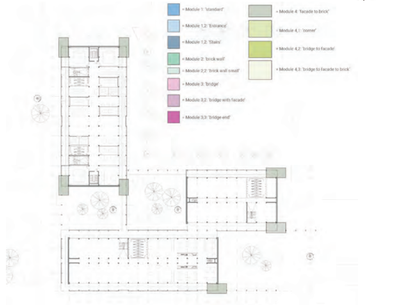
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

BUILDING SYSTEM

Module 4.0



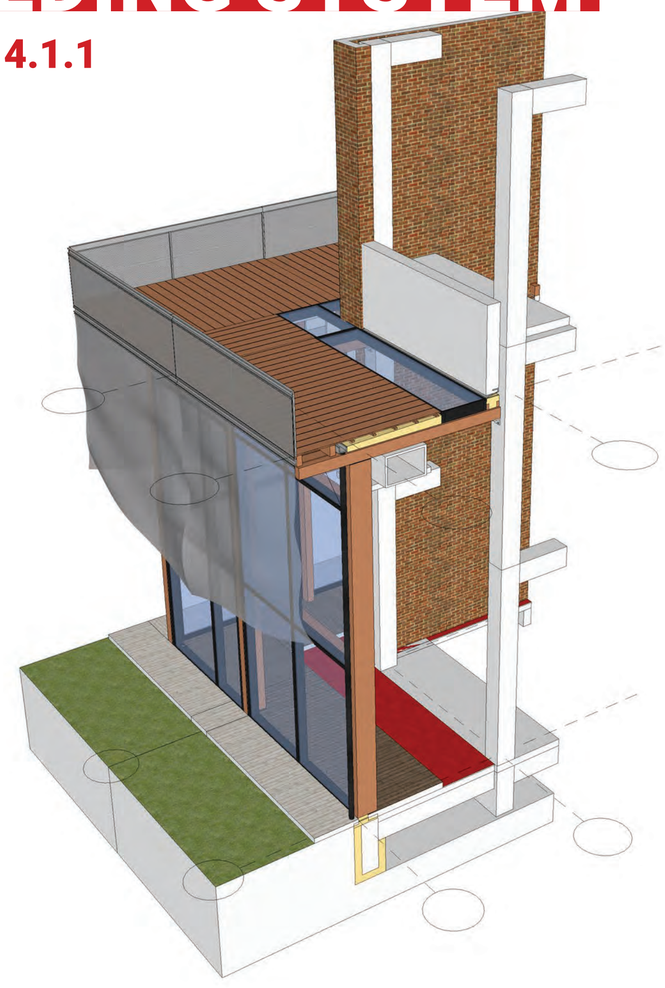


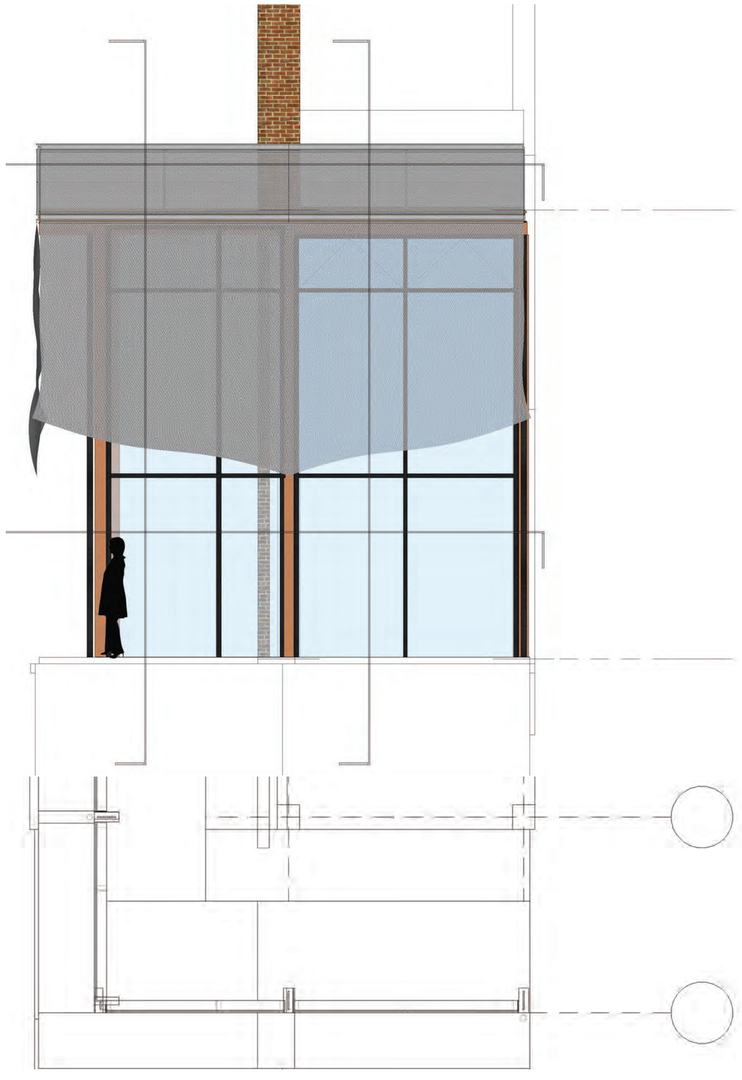


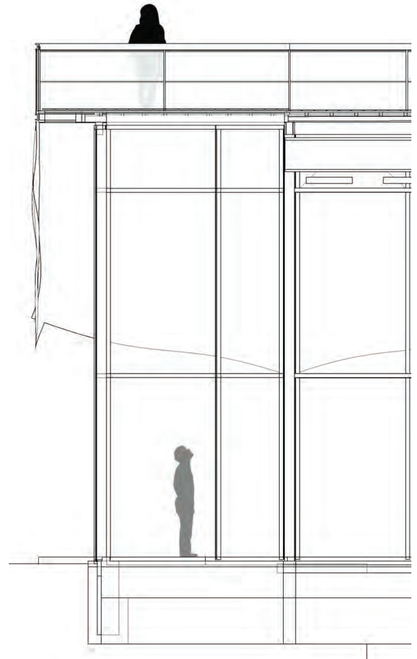
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

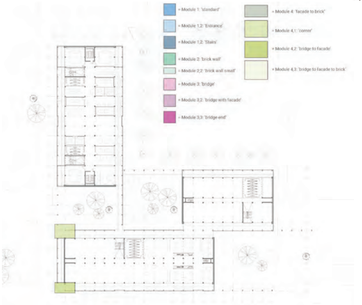
BUILDING SYSTEM

Module 4.1.1





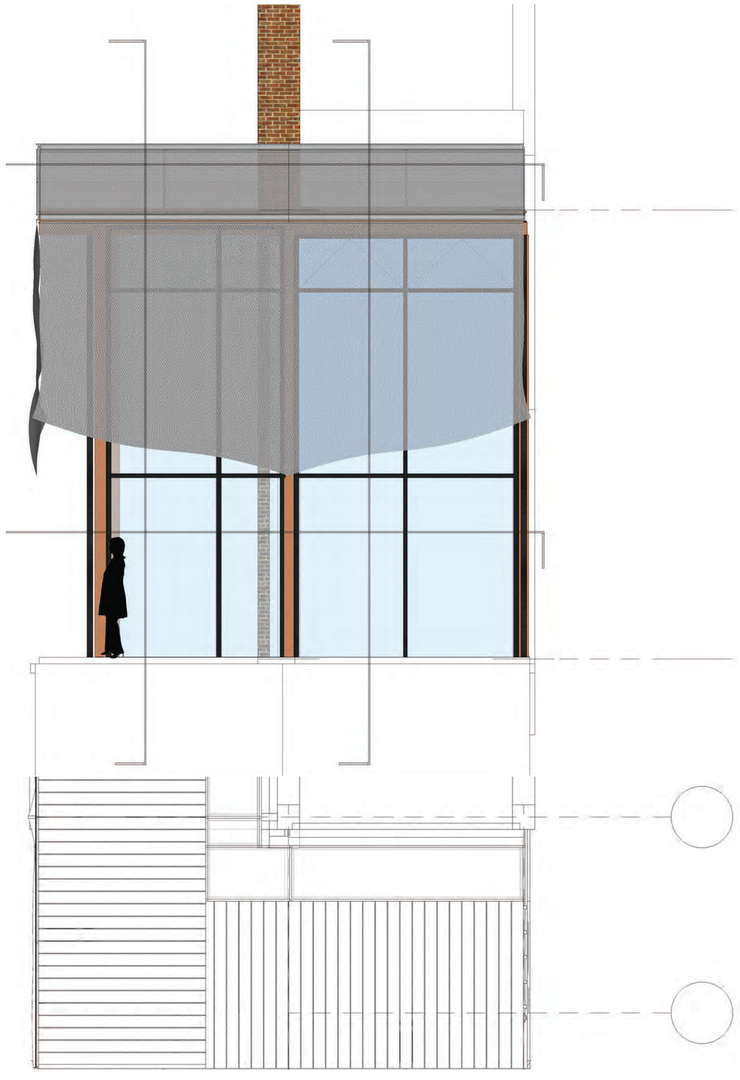


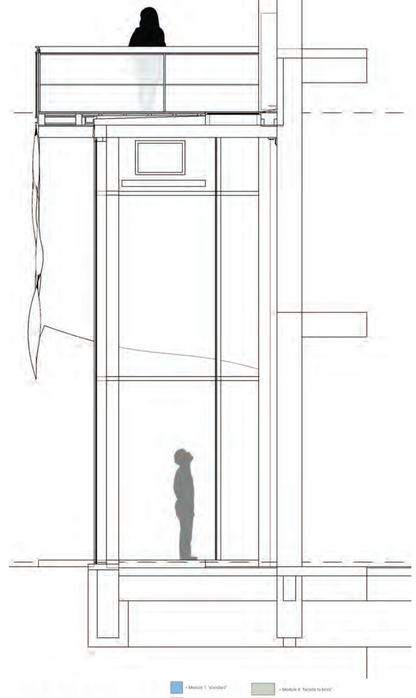


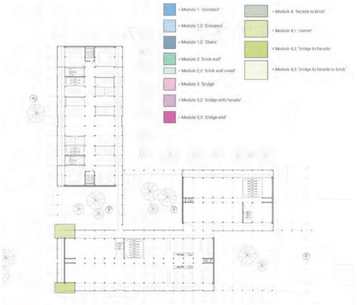
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

BUILDING SYSTEM

Module 4.1.1



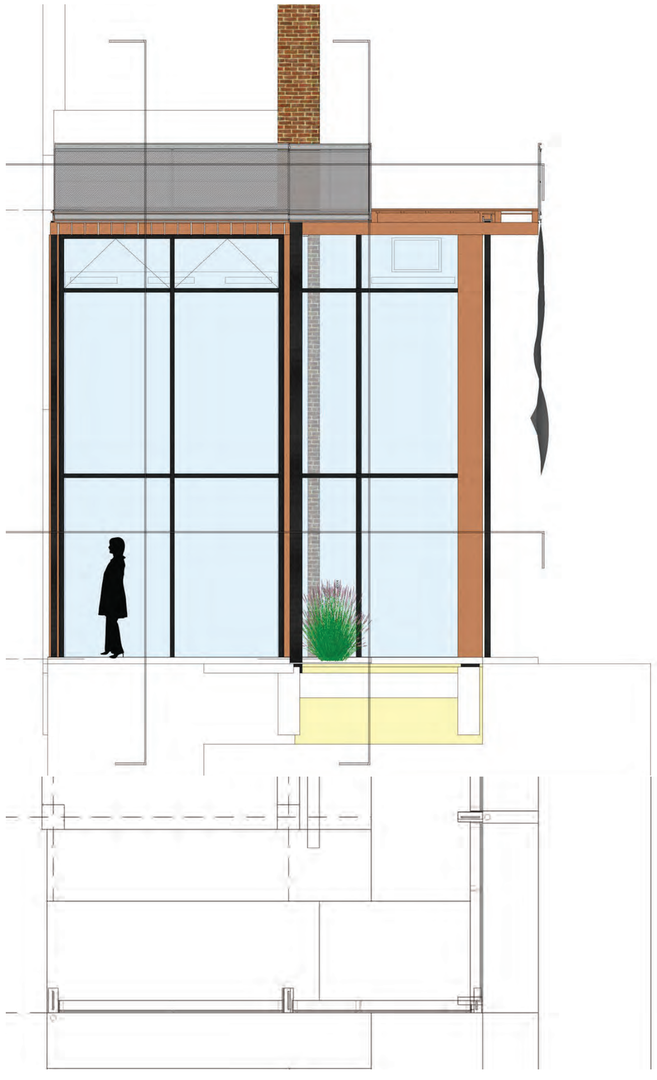


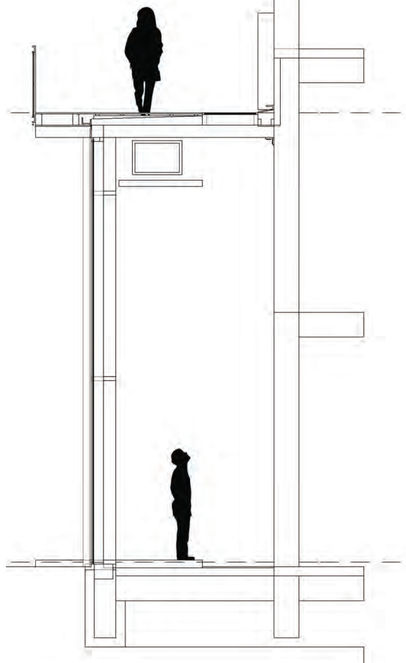


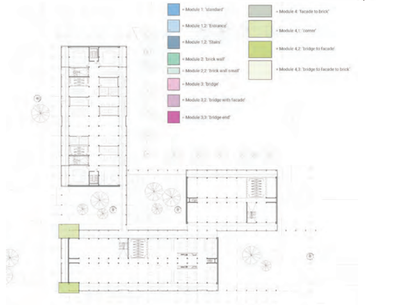
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

BUILDING SYSTEM

Module 4.1.2



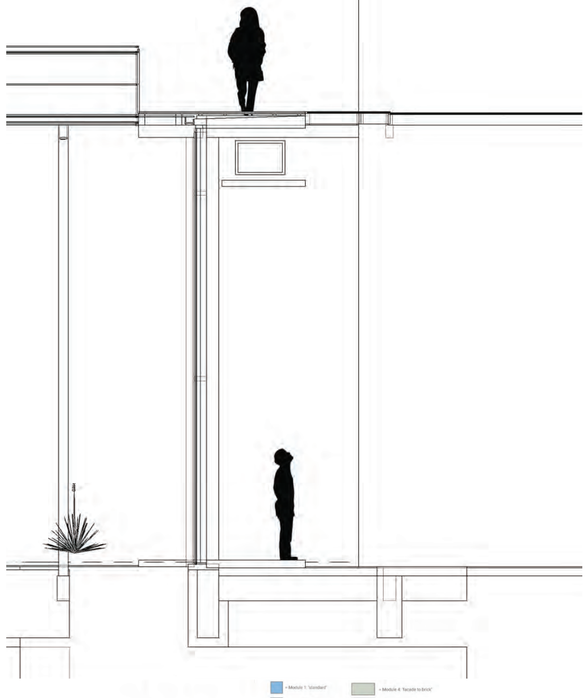


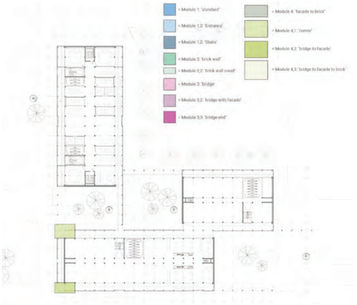


1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

BUILDING SYSTEM

Module 4.1.2

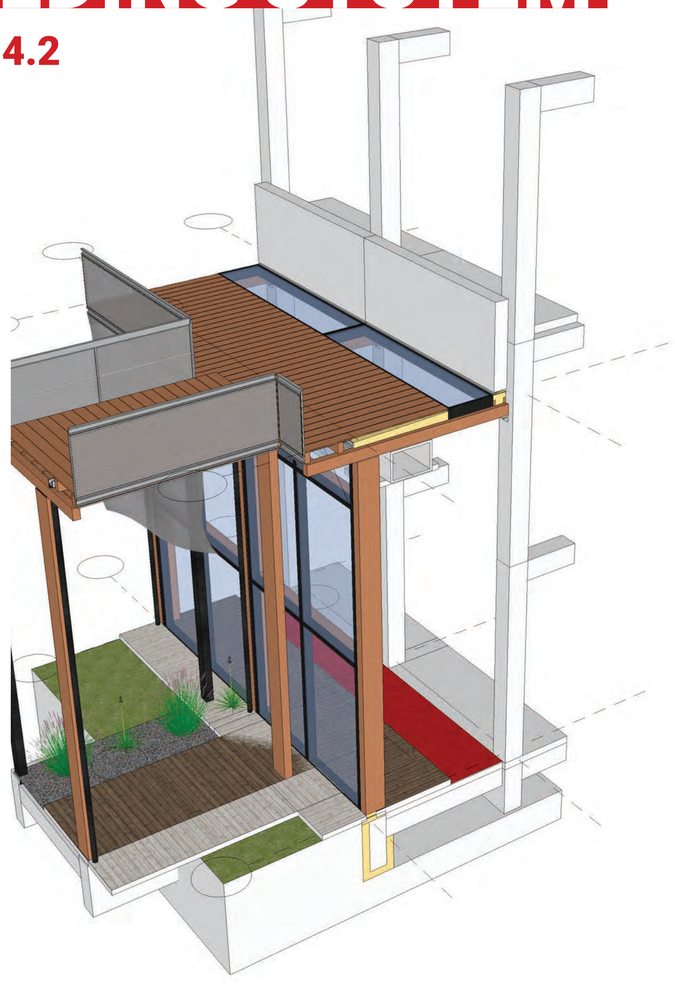


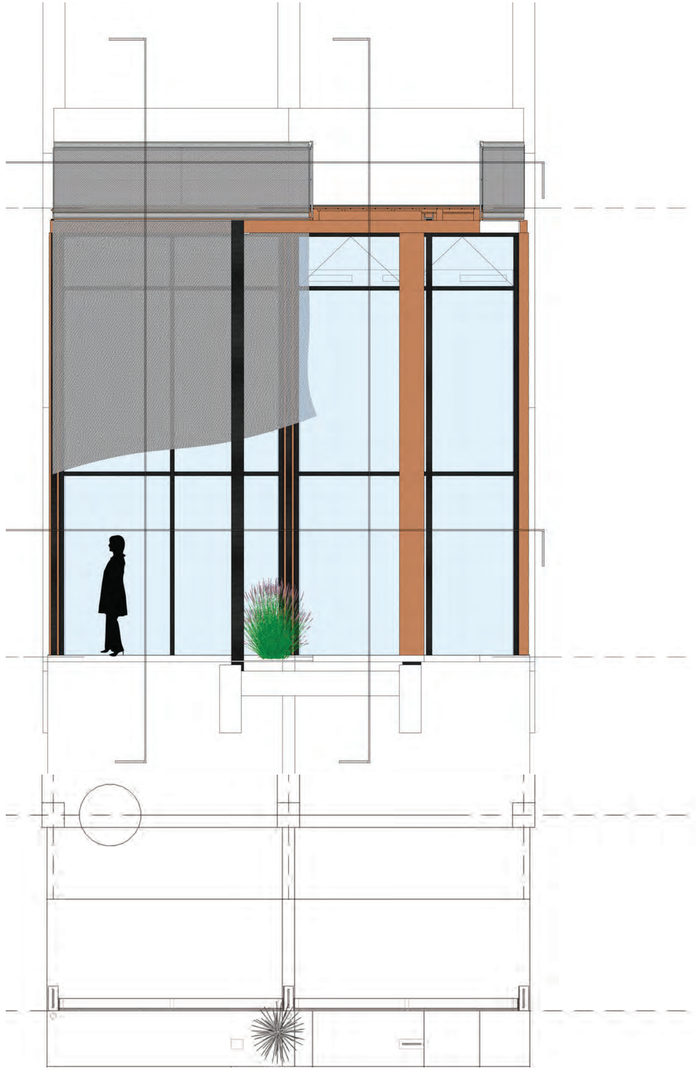


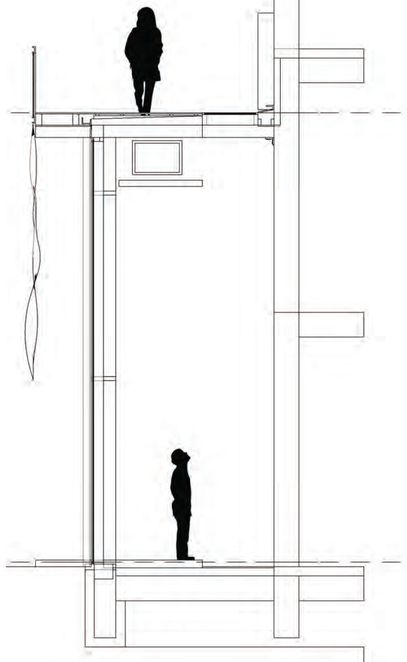
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

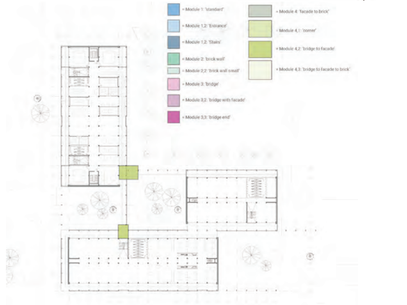
BUILDING SYSTEM

Module 4.2





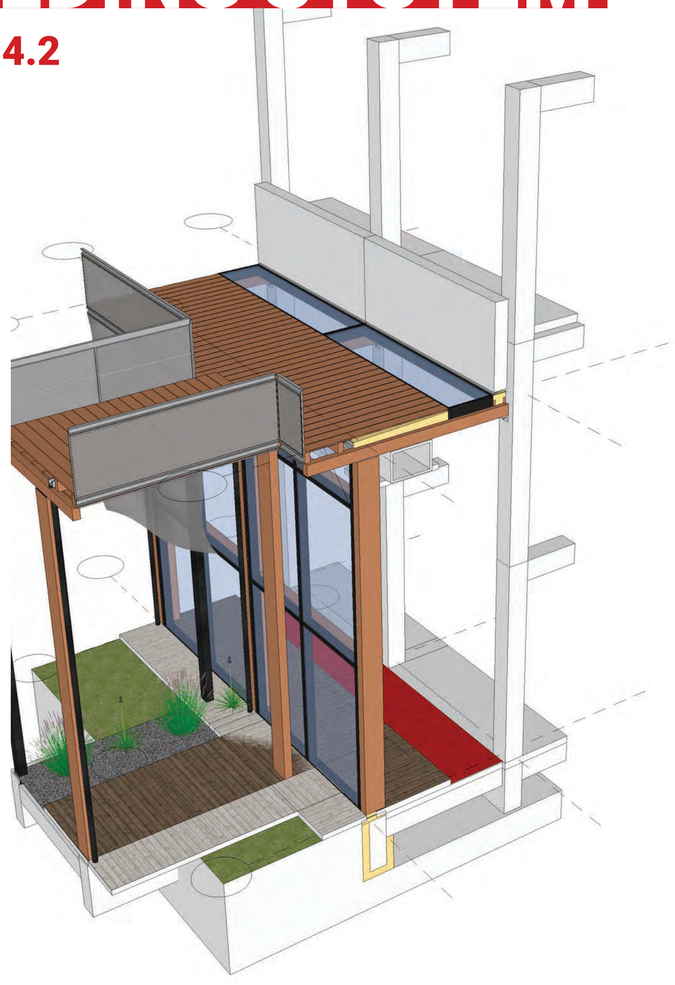


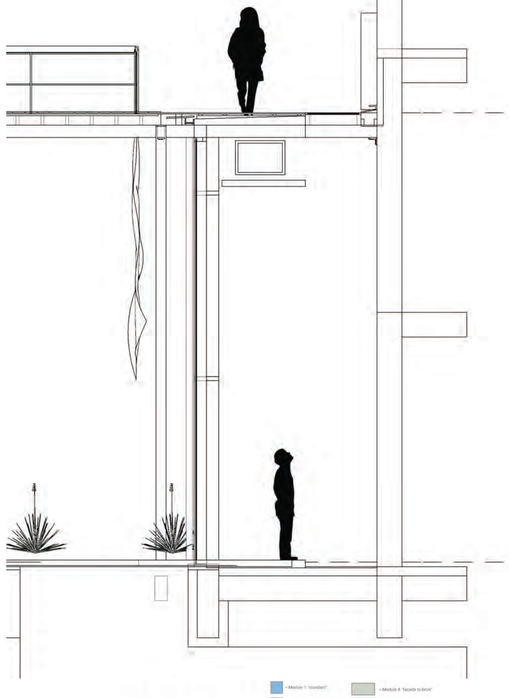


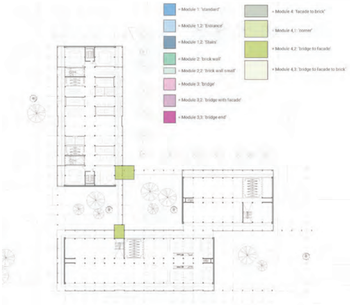
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

BUILDING SYSTEM

Module 4.2



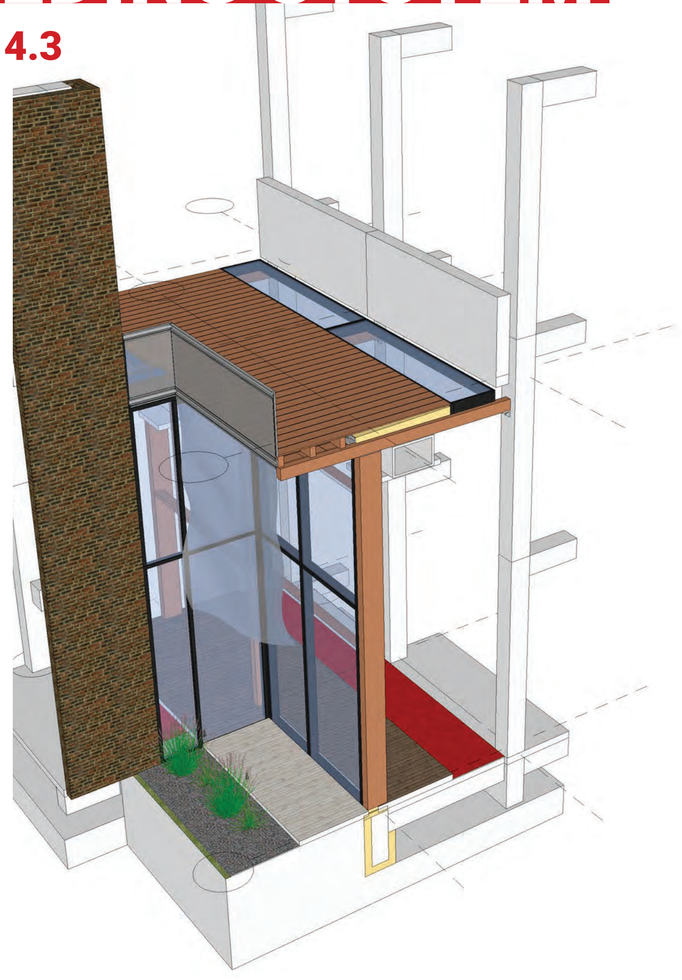


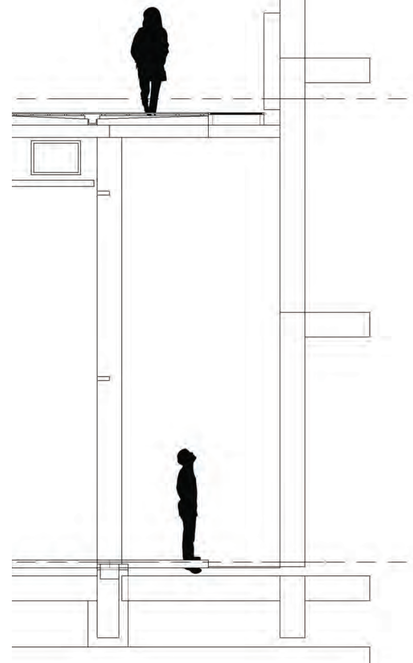


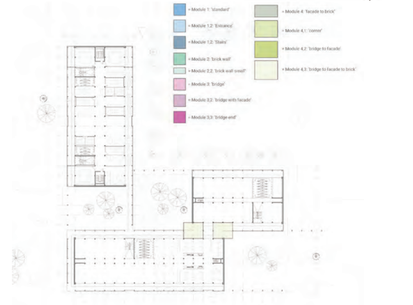
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

BUILDING SYSTEM

Module 4.3



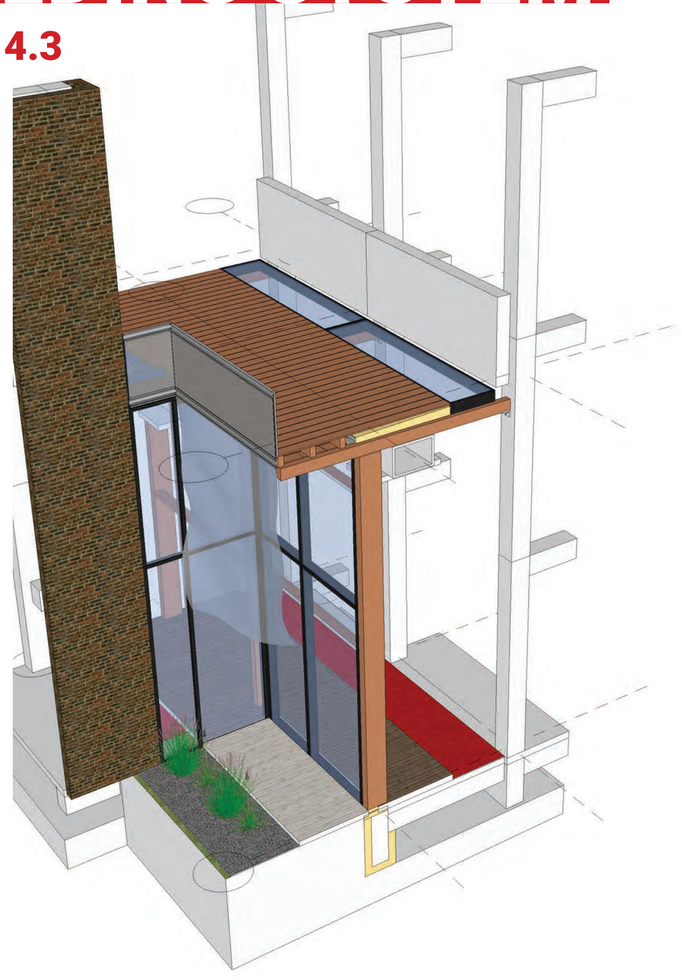


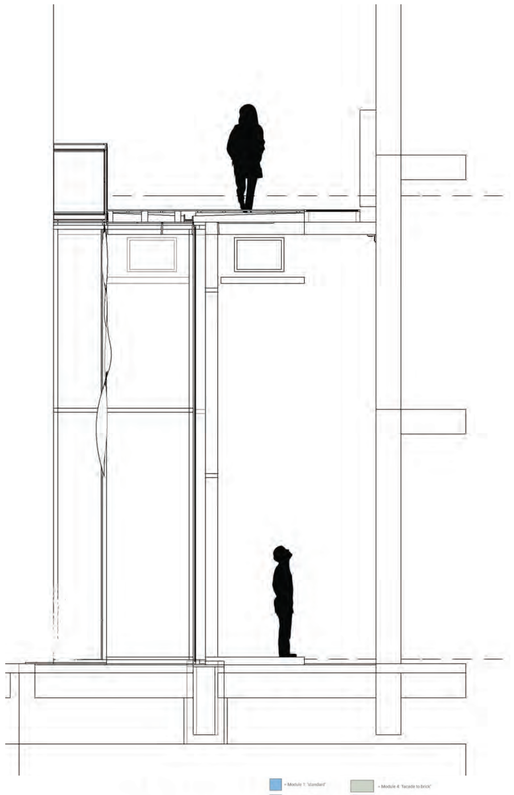


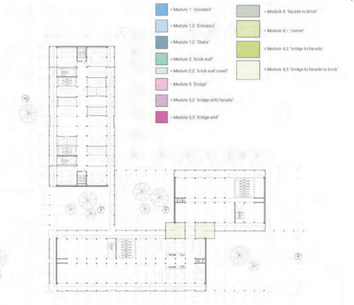
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

BUILDING SYSTEM

Module 4.3







1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LEASING MATERIALS

Partners & contracts

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LEASING MATERIALS

Partners & contracts

MetsäWood

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LEASING MATERIALS

Partners & contracts

MetsäWood

ALKONDOR
HENGELO

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LEASING MATERIALS

Partners & contracts

MetsäWood

ALKONDOR
HENGELO

unica

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LEASING MATERIALS

Partners & contracts

MetsäWood

ALKONDOR HENGELO

unica

DESSO A Tarkett Company

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LEASING MATERIALS

Partners & contracts

MetsäWood

ALKONDOR HENGELO

unica

DESSO A Tarkett Company

Kingspan

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LEASING MATERIALS

Partners & contracts

MetsäWood

ALKONDOR HENGELO

unica

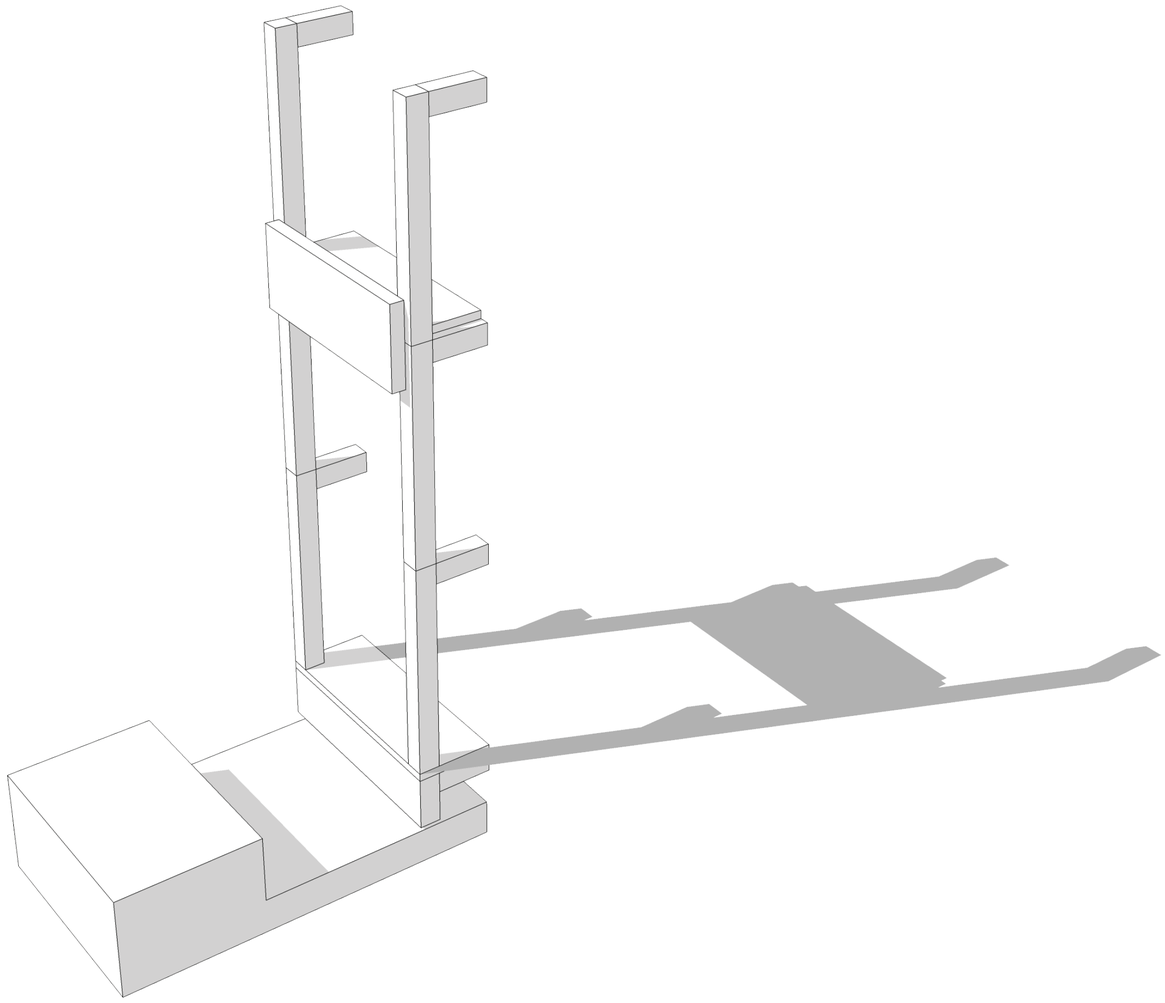
DESSO A Tarkett Company

Kingspan

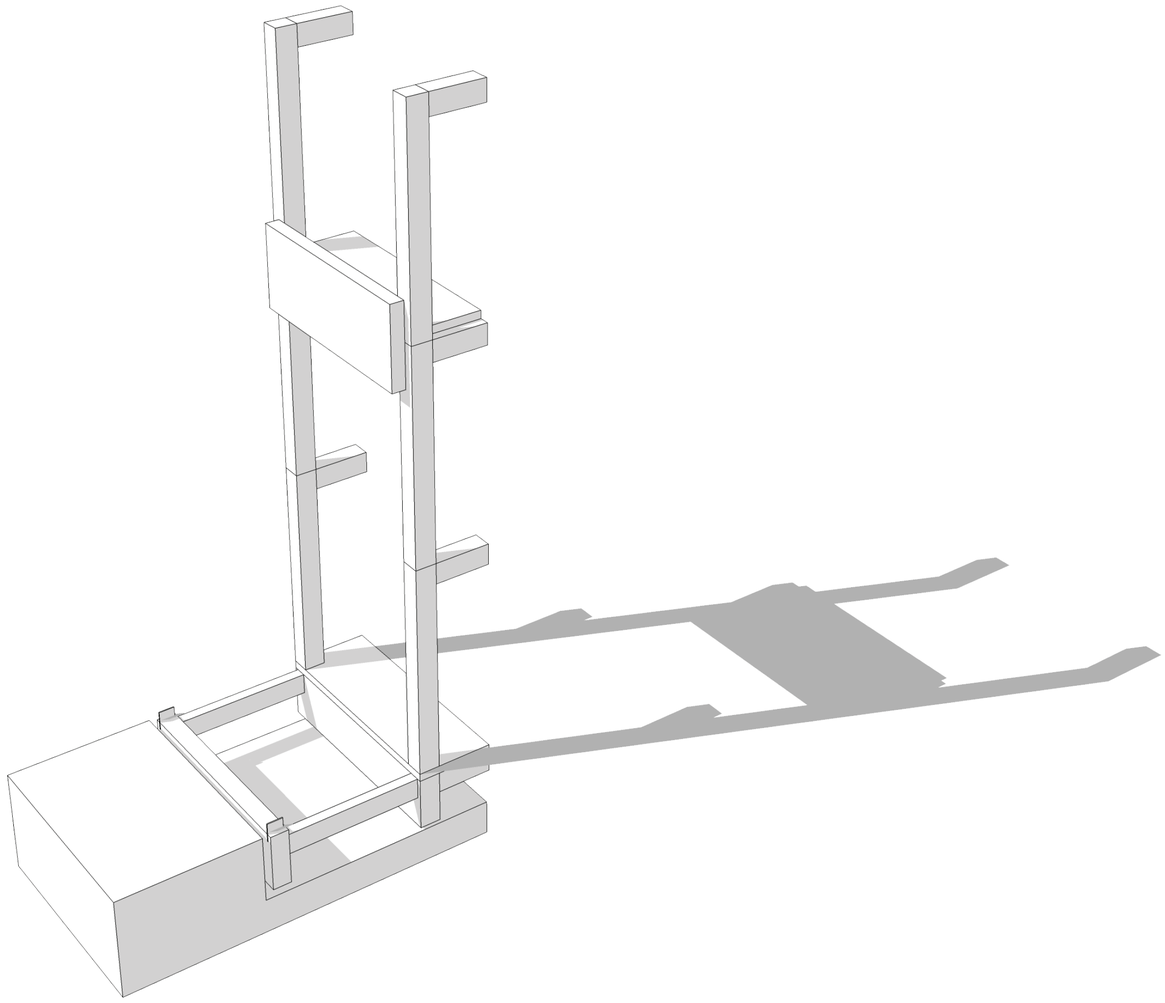
Solease

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

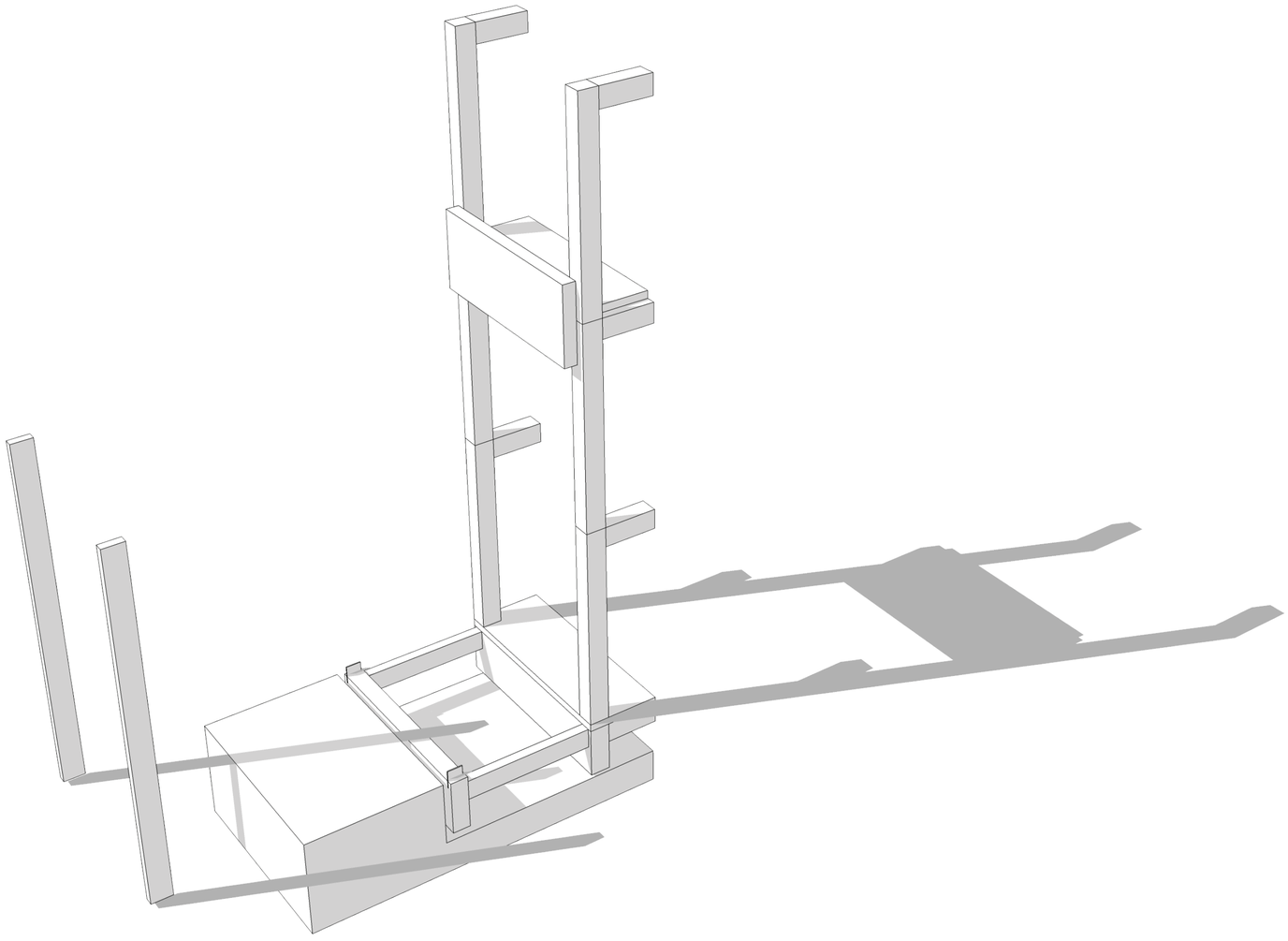
MODULE ELEMENTS



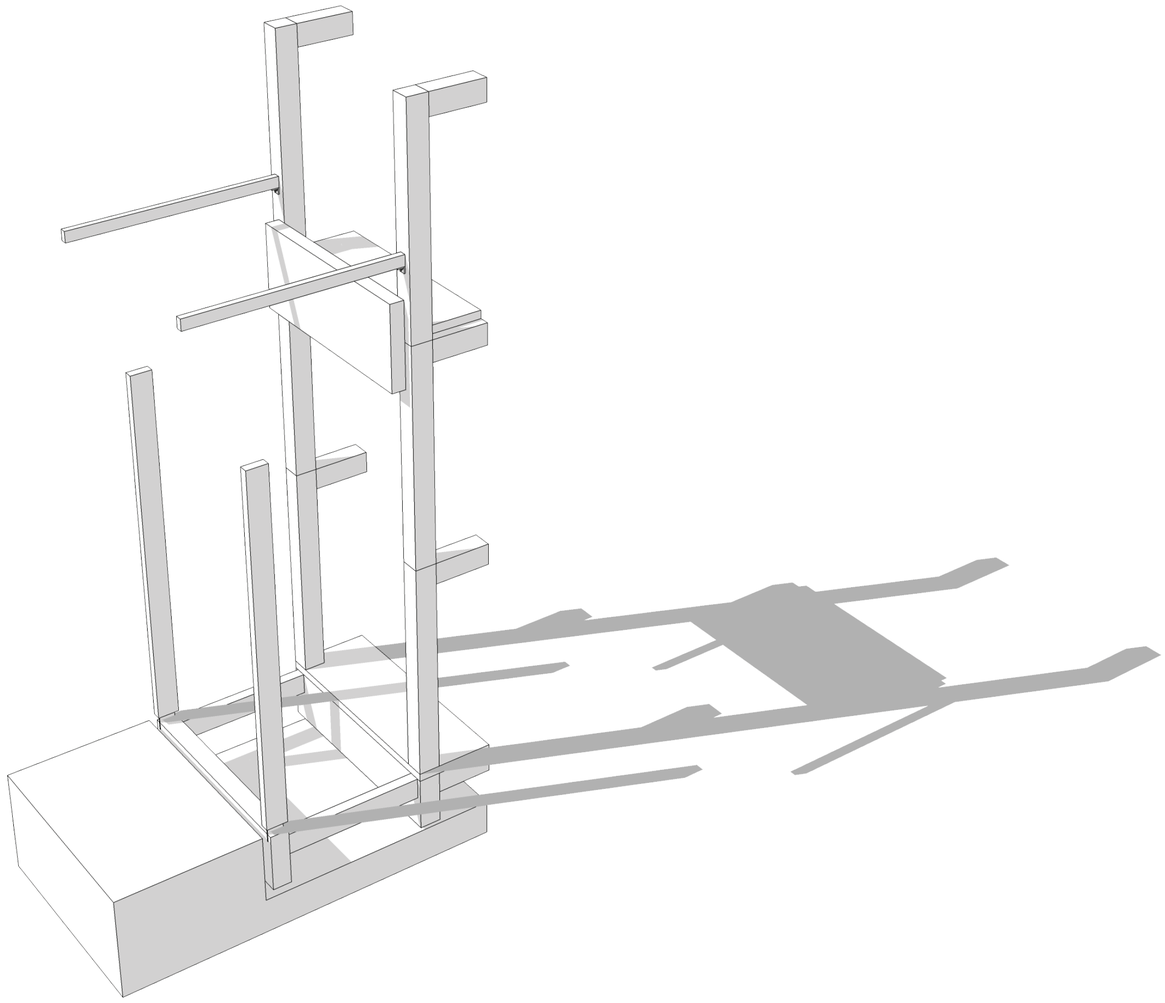
MODULE ELEMENTS



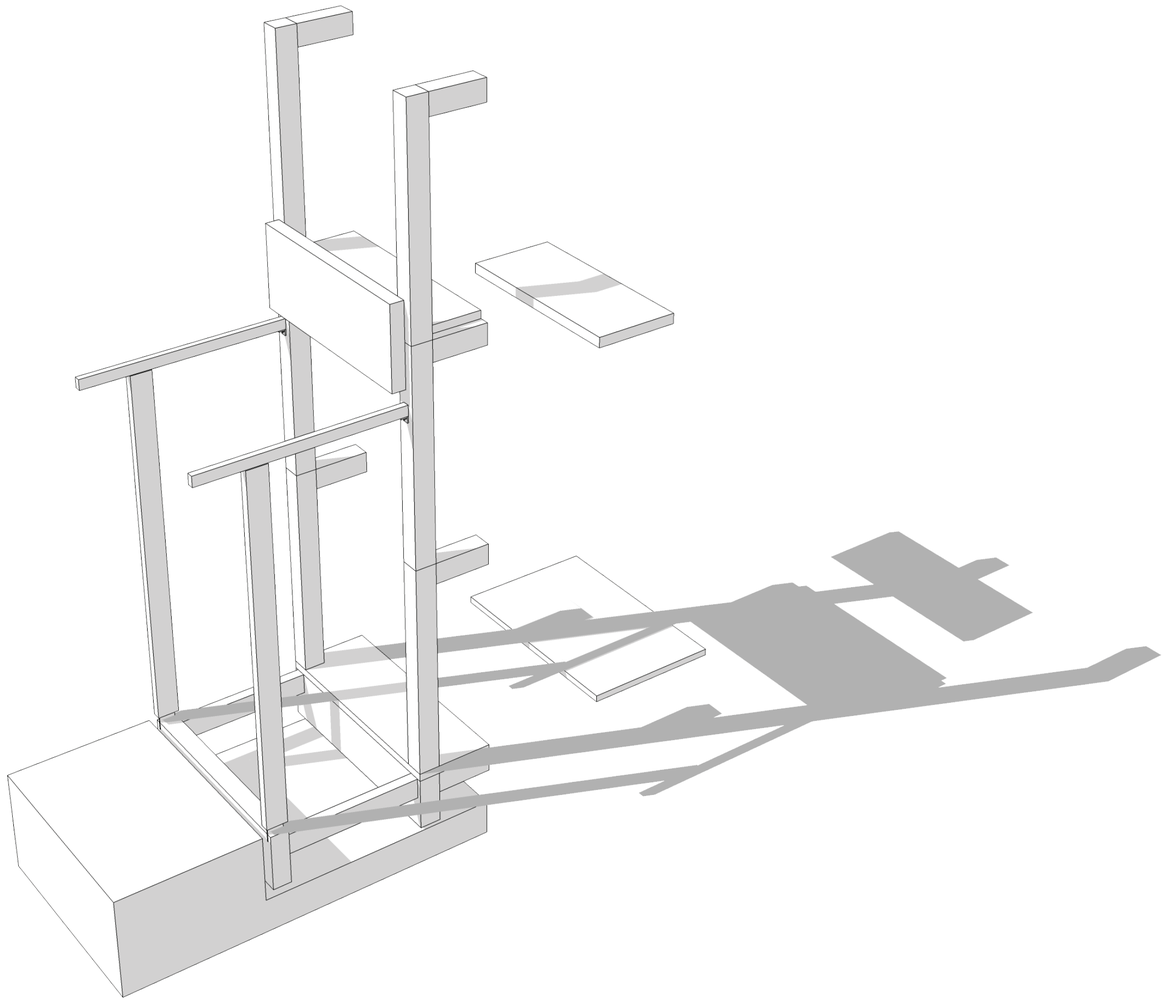
MODULE ELEMENTS



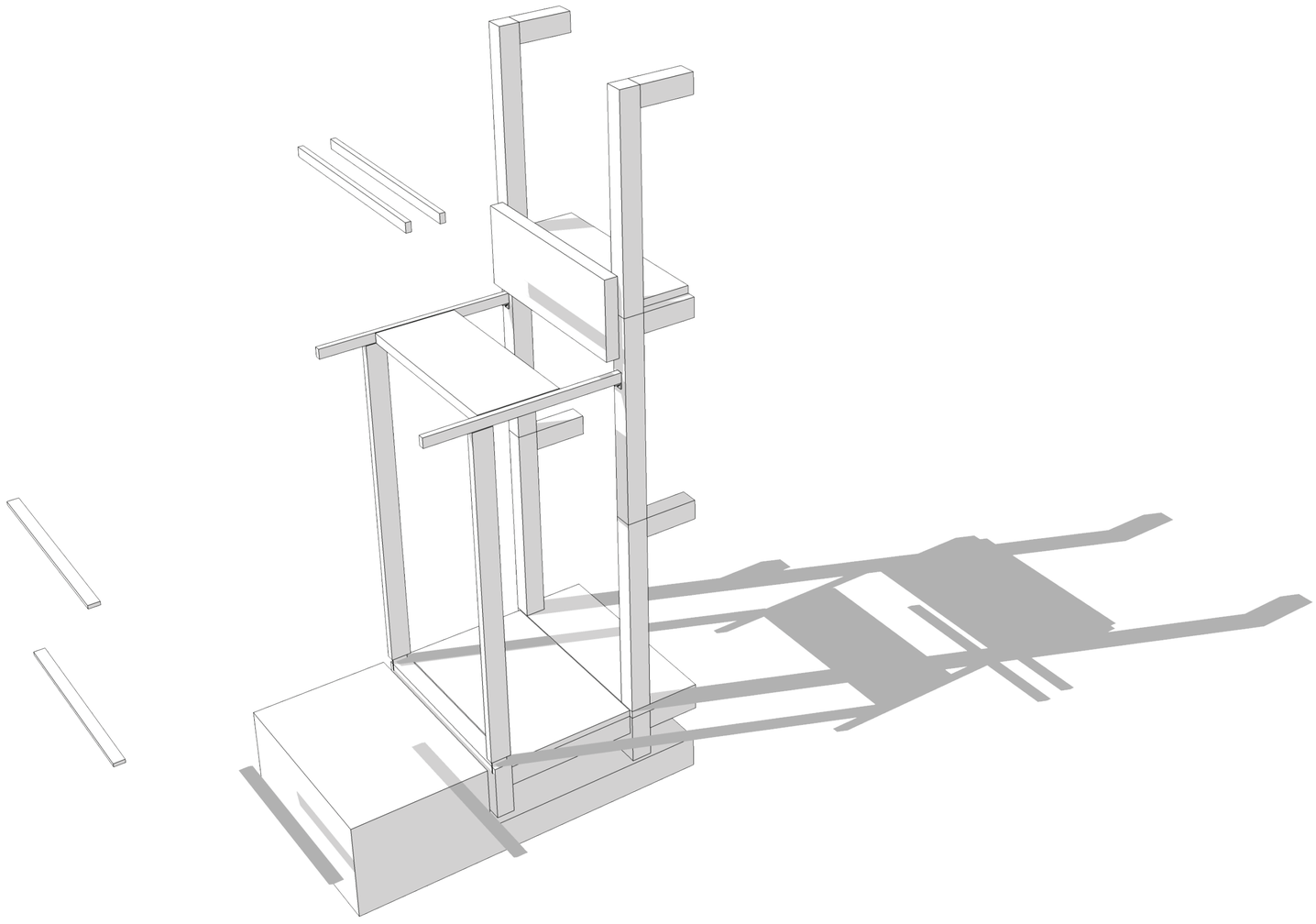
MODULE ELEMENTS



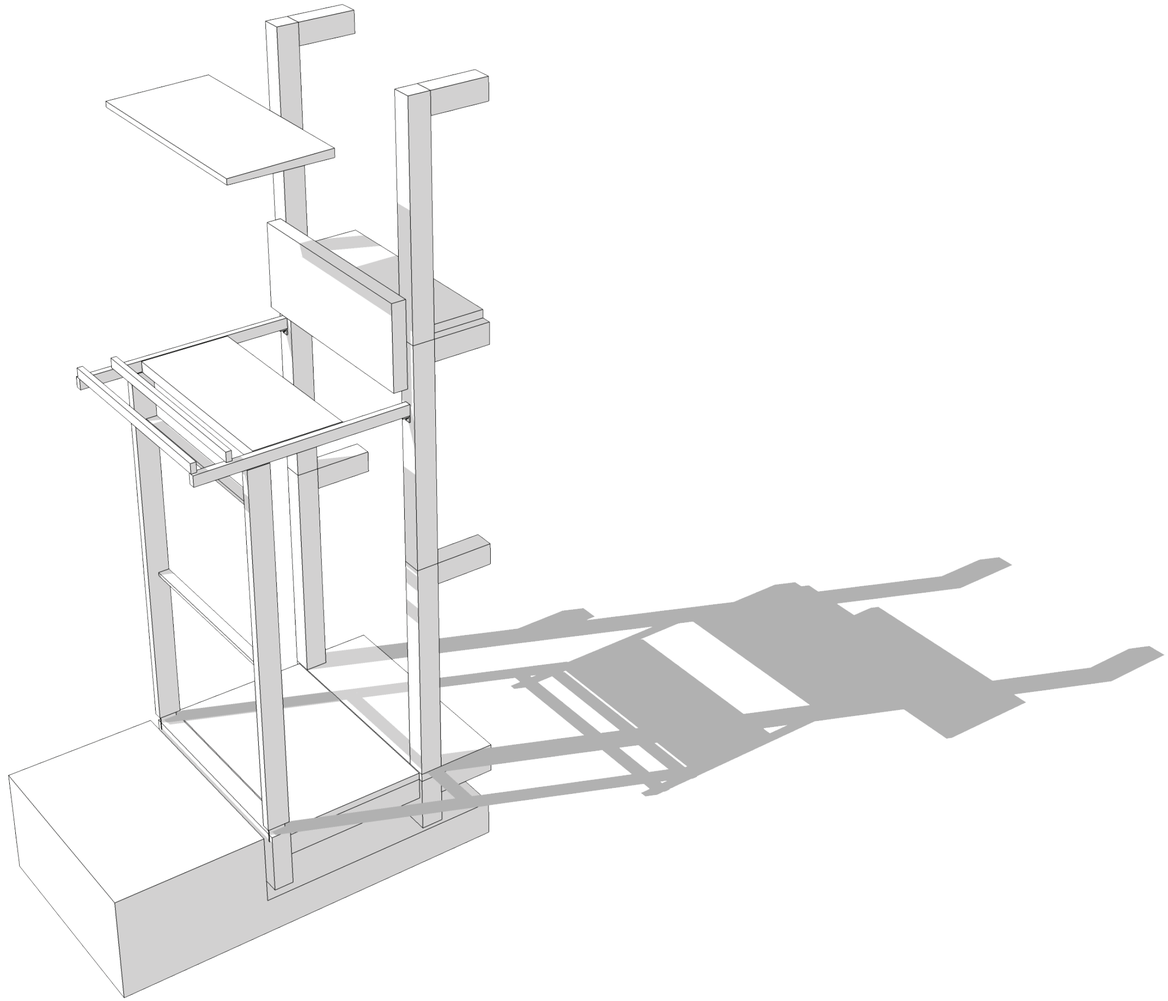
MODULE ELEMENTS



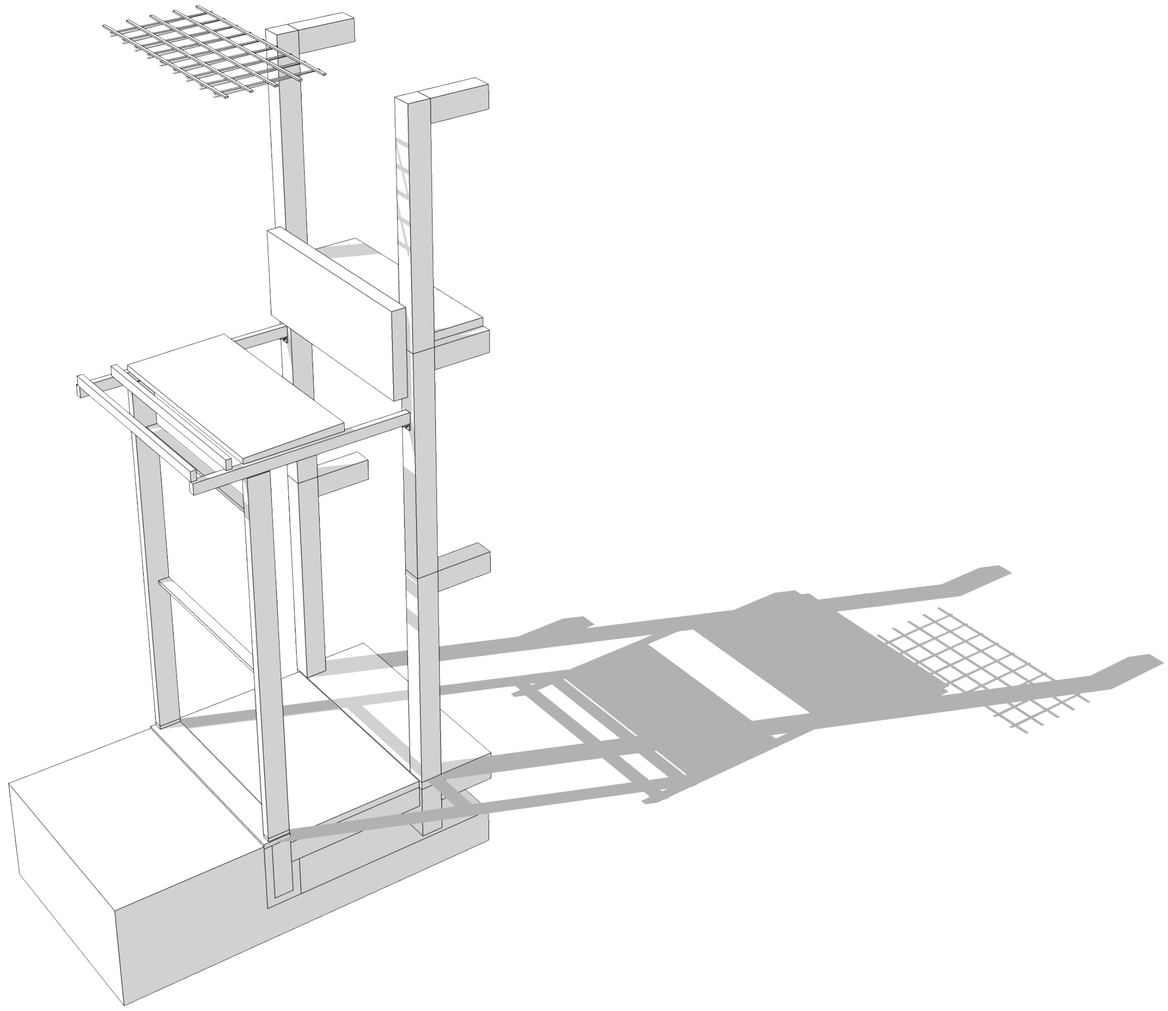
MODULE ELEMENTS



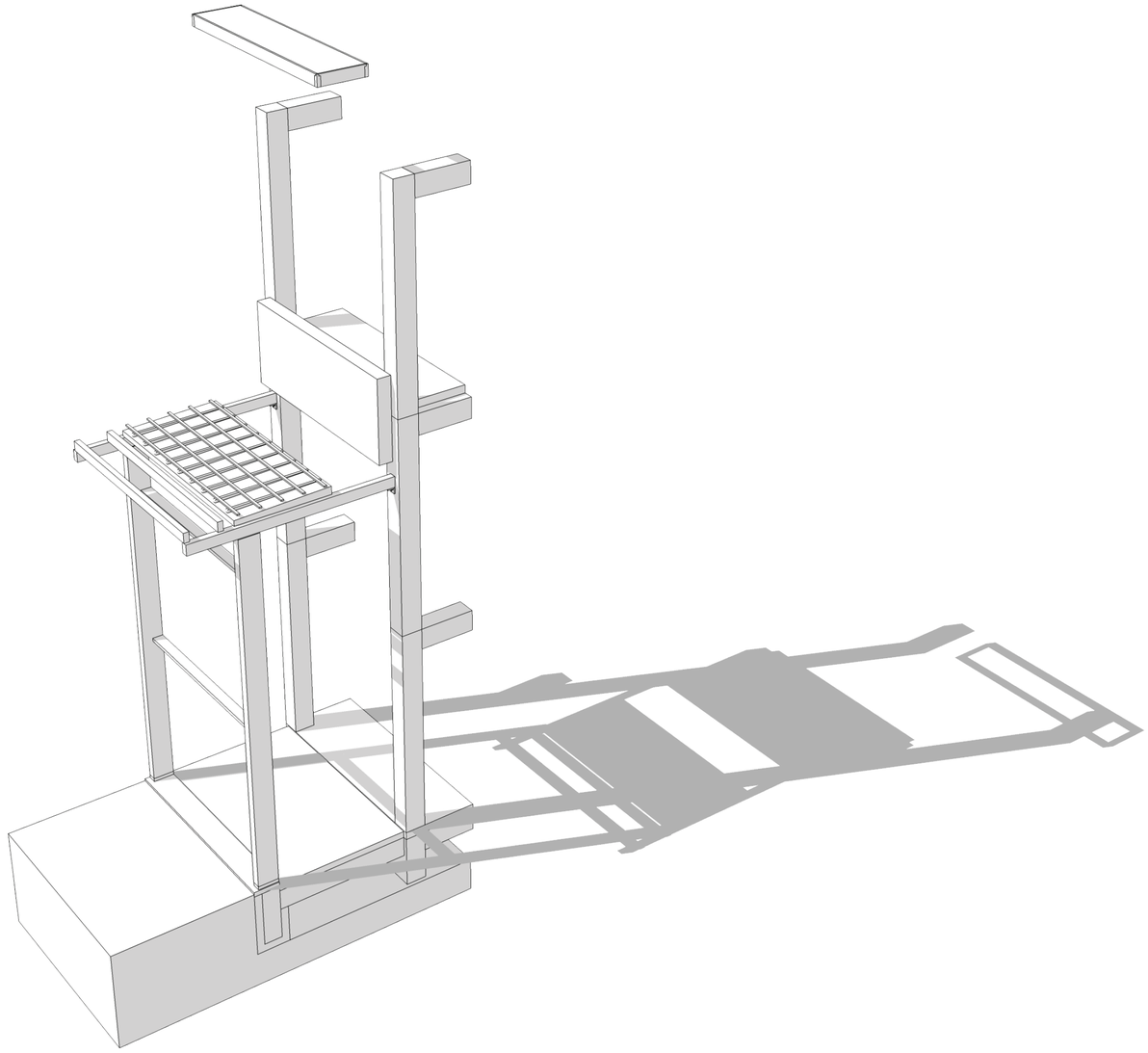
MODULE ELEMENTS



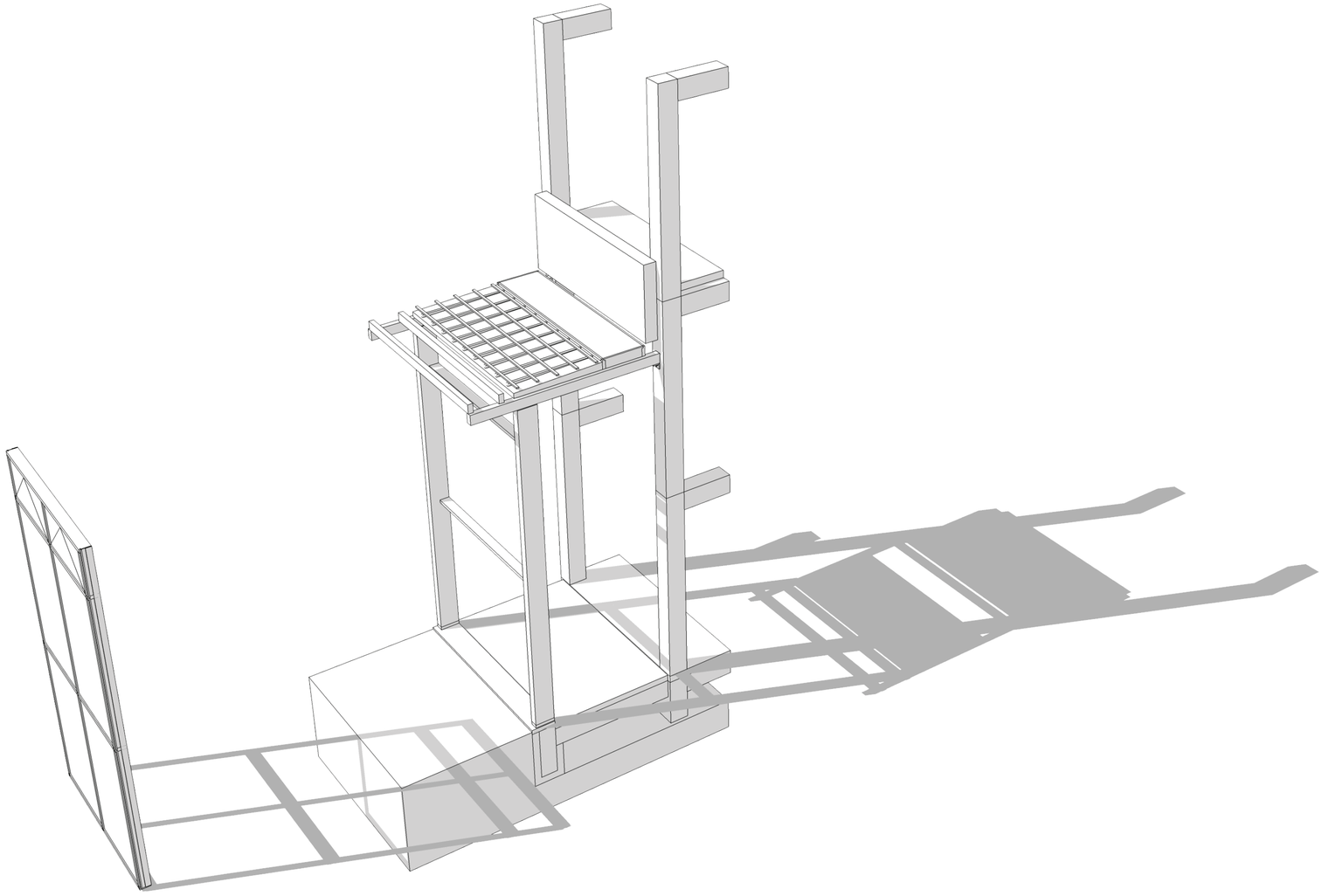
MODULE ELEMENTS



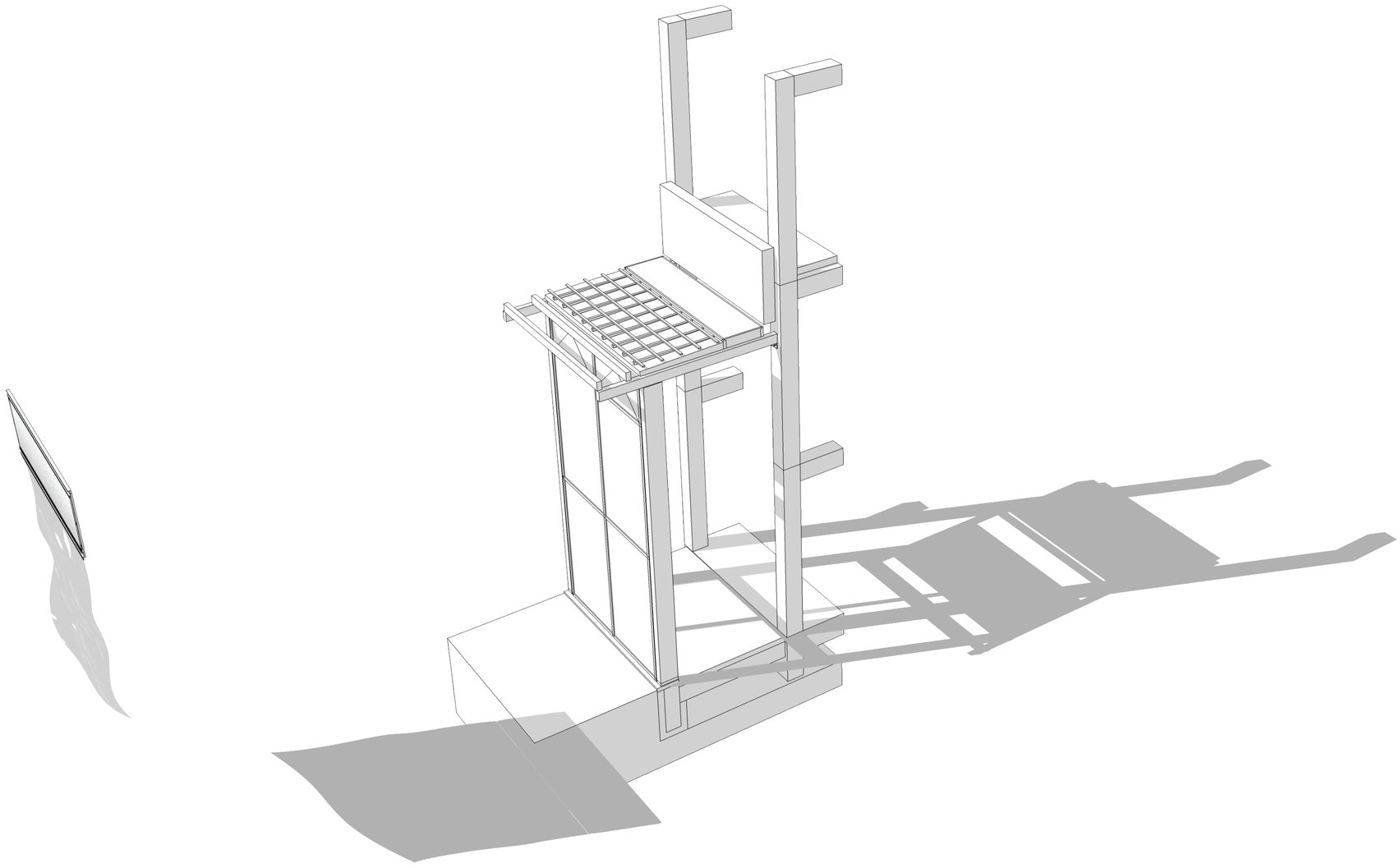
MODULE ELEMENTS



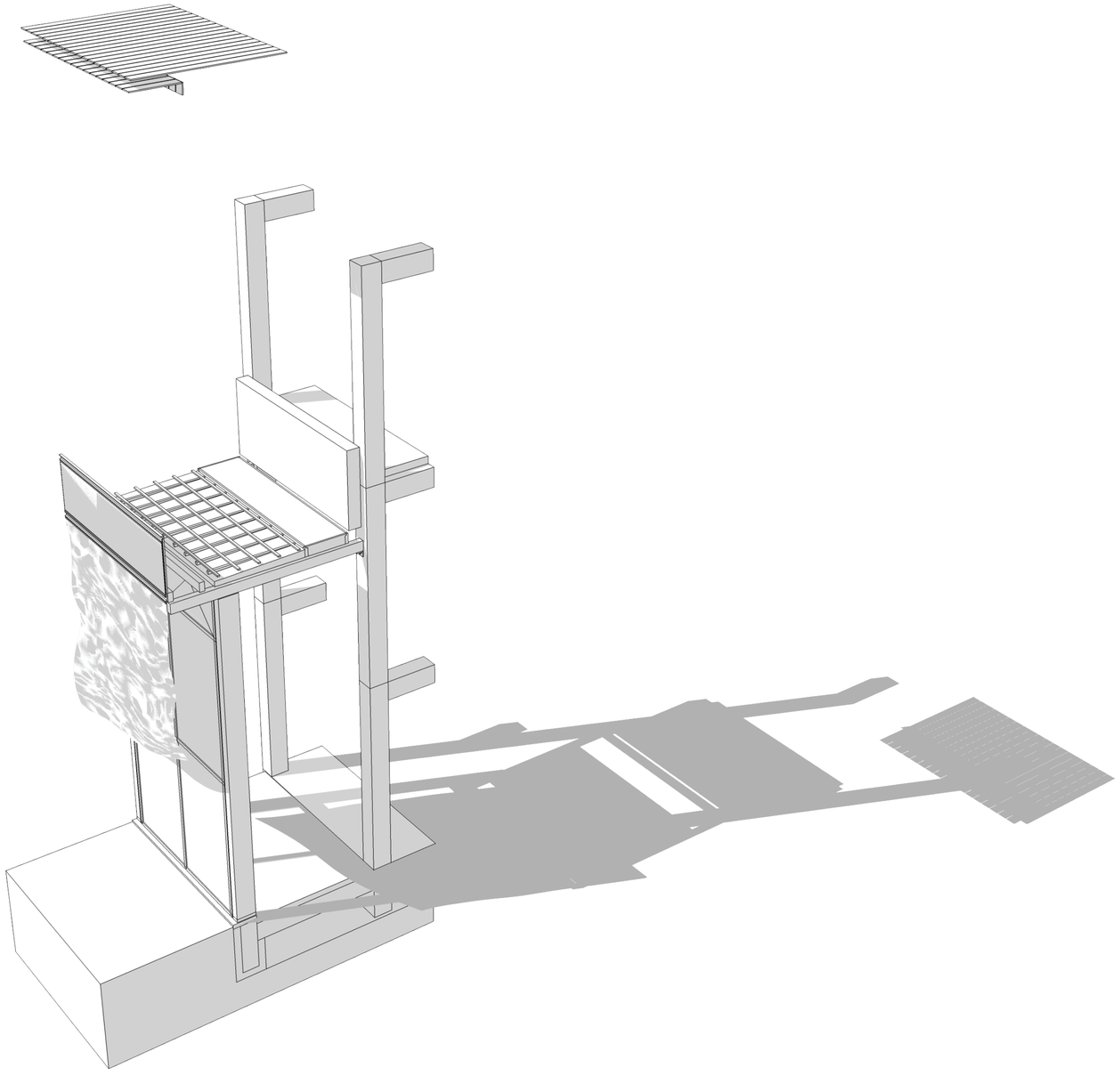
MODULE ELEMENTS



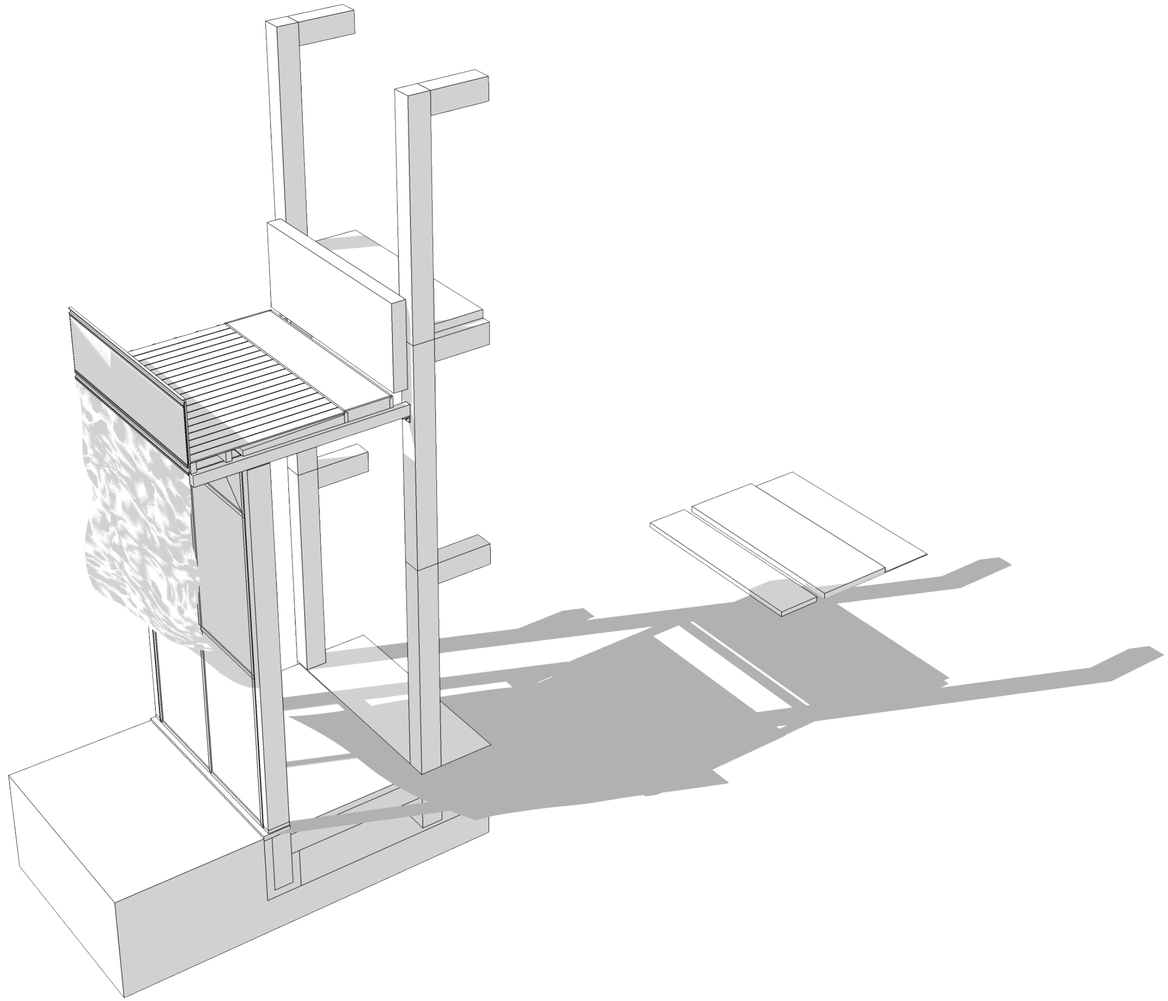
MODULE ELEMENTS



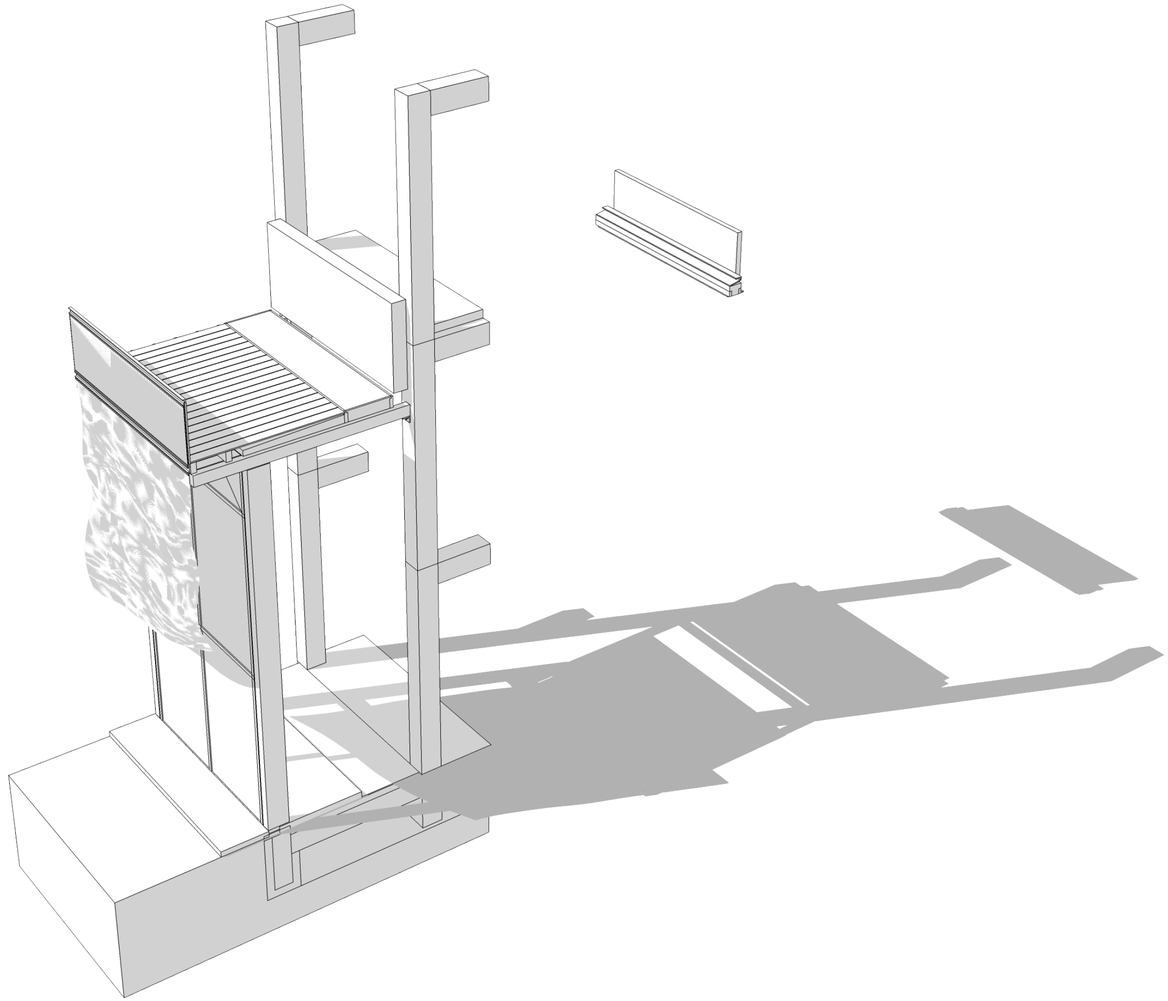
MODULE ELEMENTS



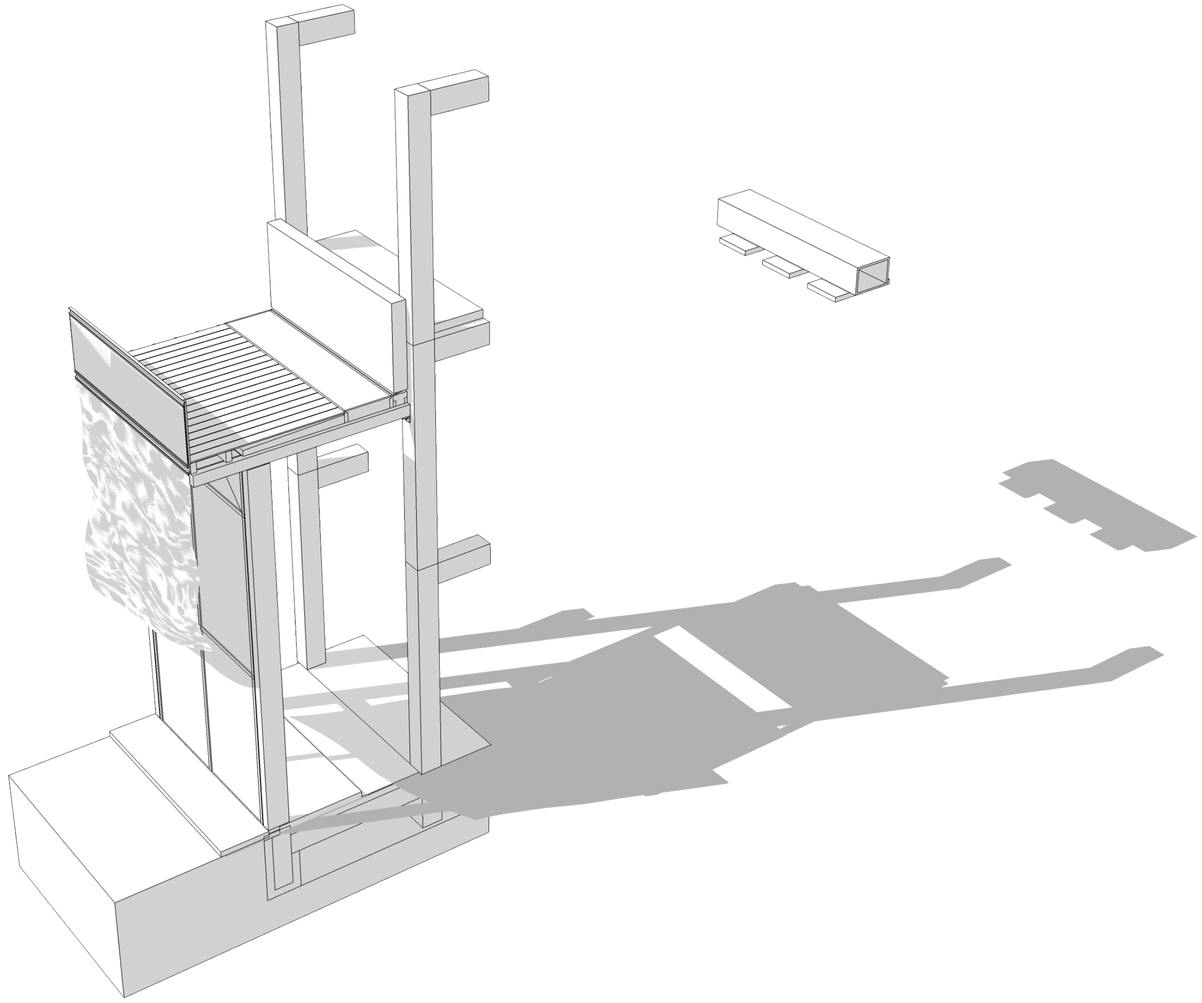
MODULE ELEMENTS



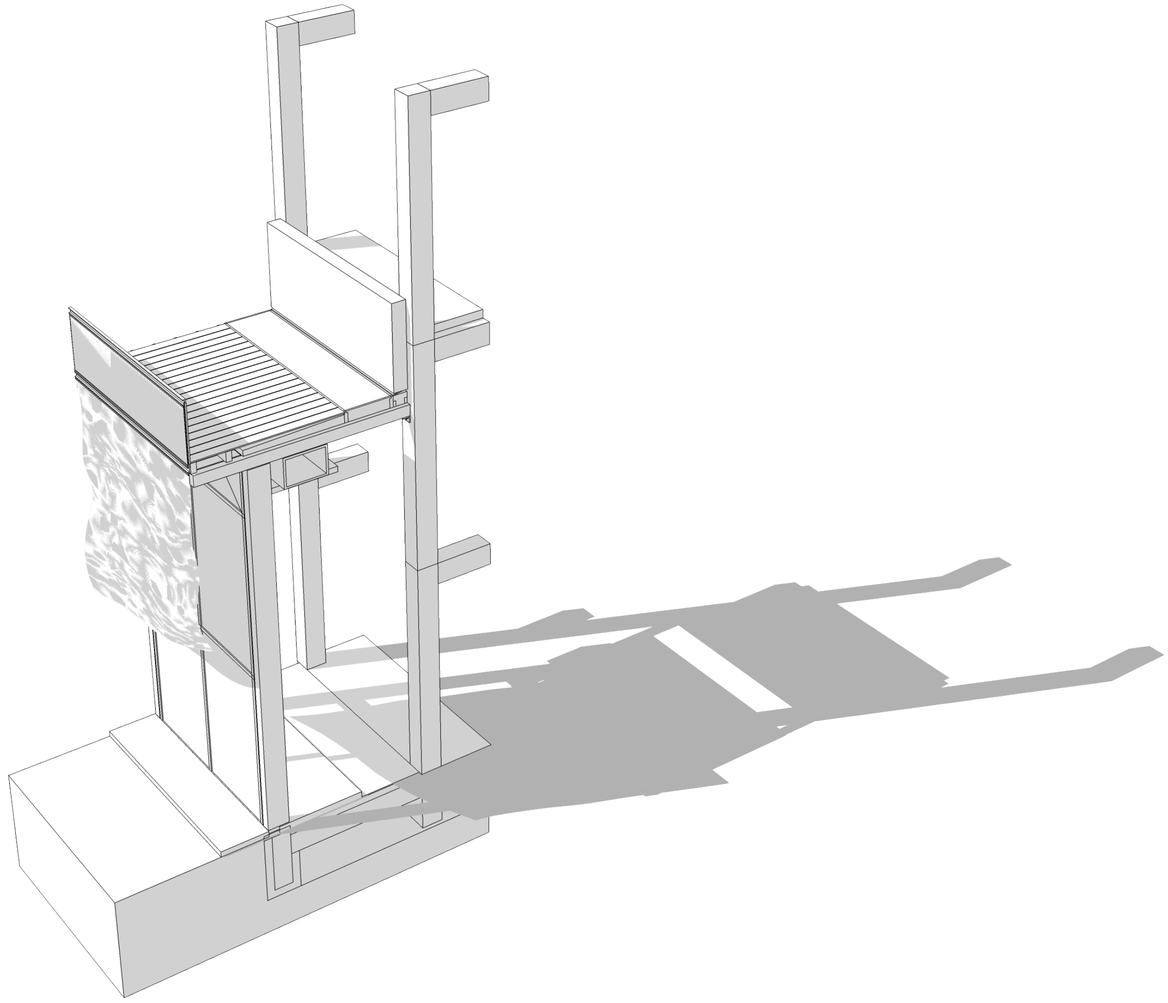
MODULE ELEMENTS



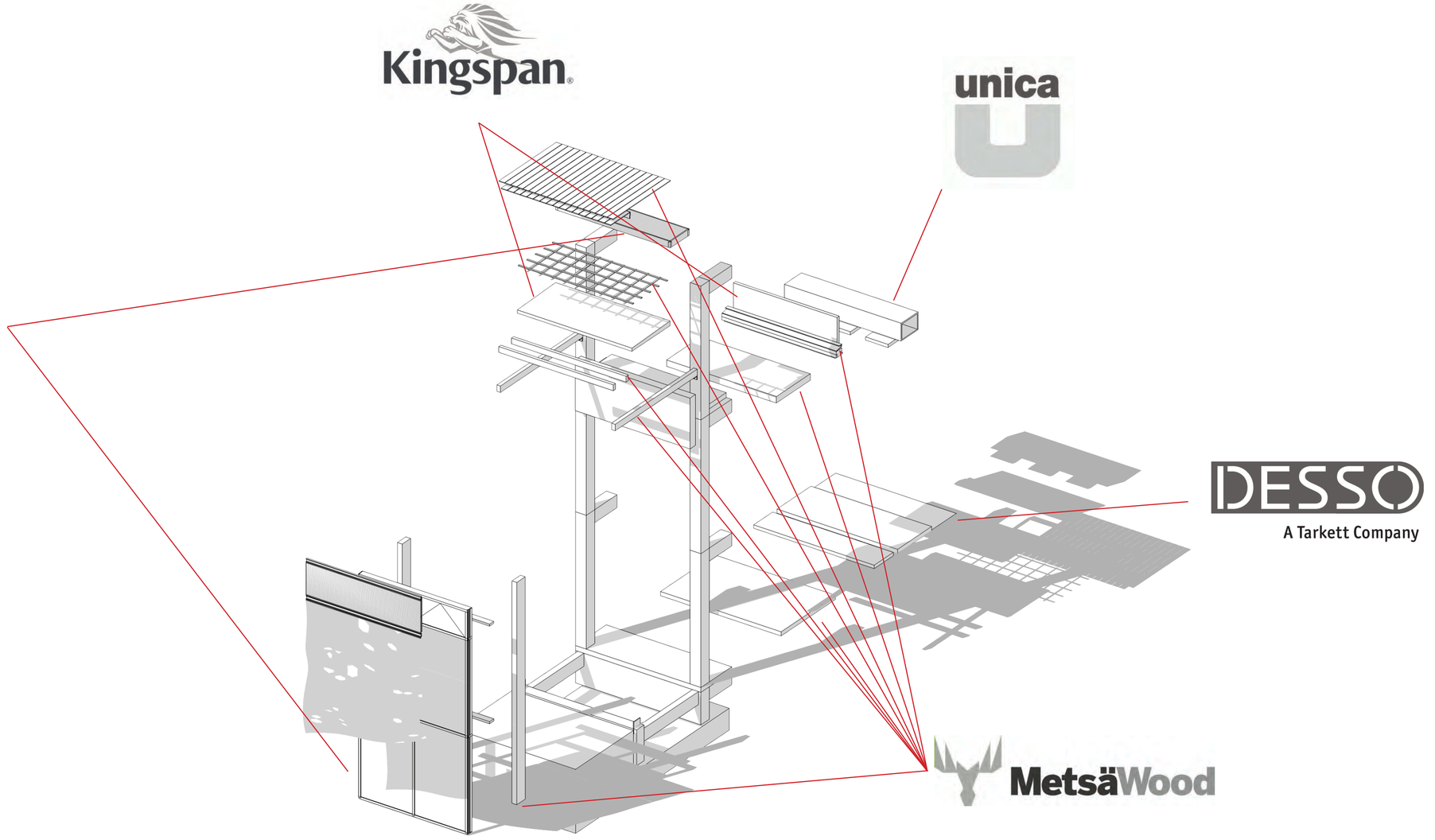
MODULE ELEMENTS



MODULE ELEMENTS

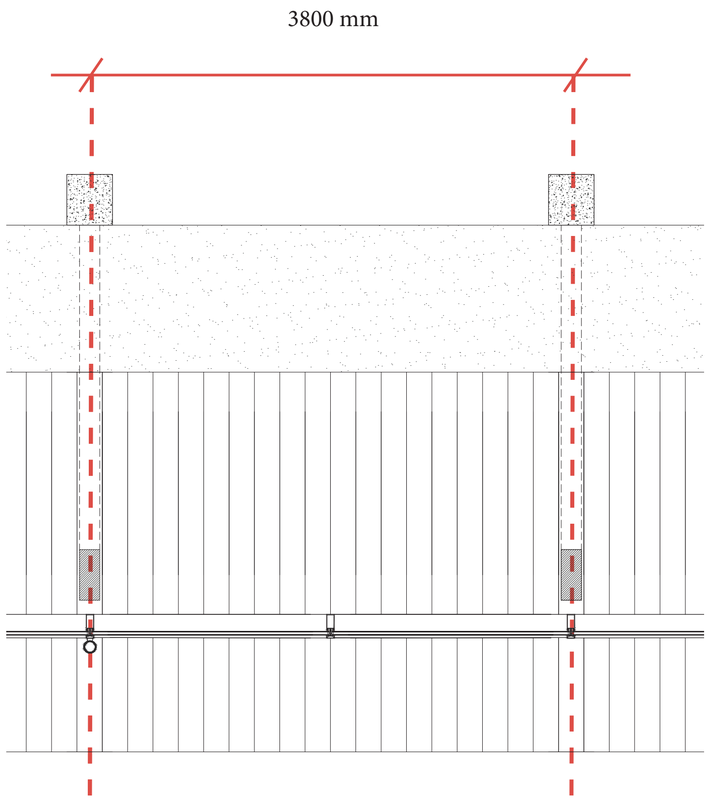


MODULE ELEMENTS



LEASING MATERIALS

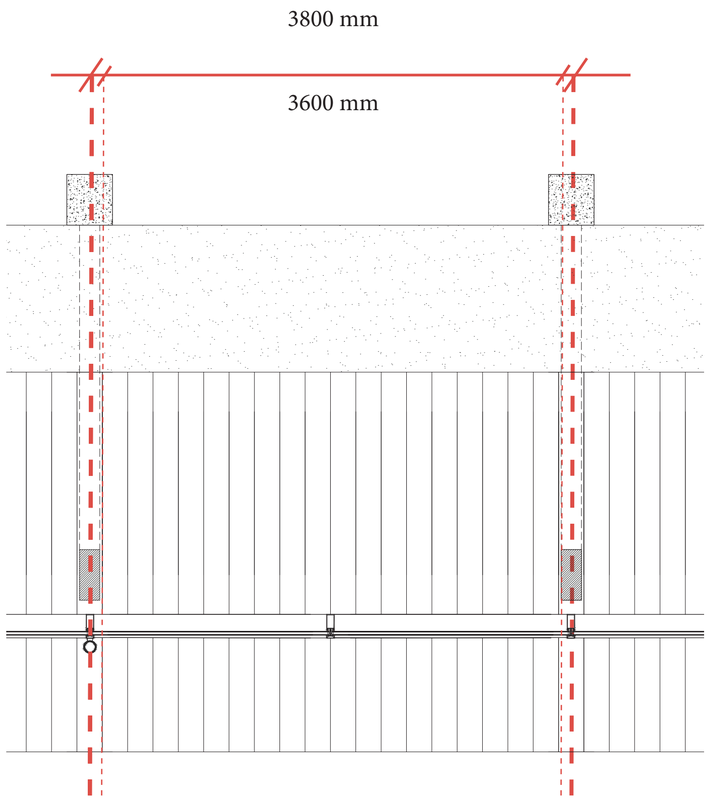
Standard sizes



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LEASING MATERIALS

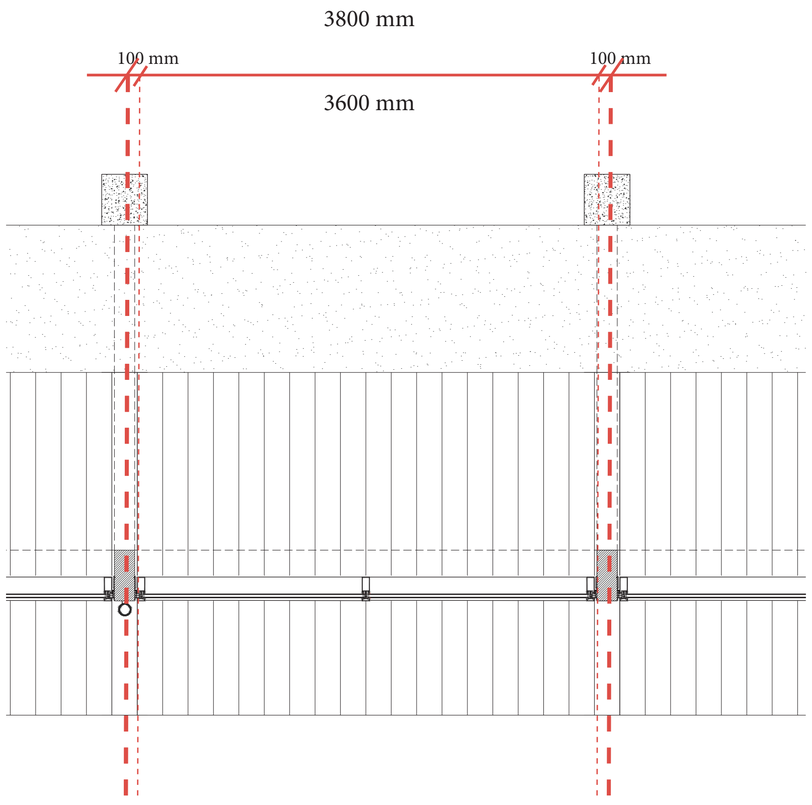
Standard sizes



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LEASING MATERIALS

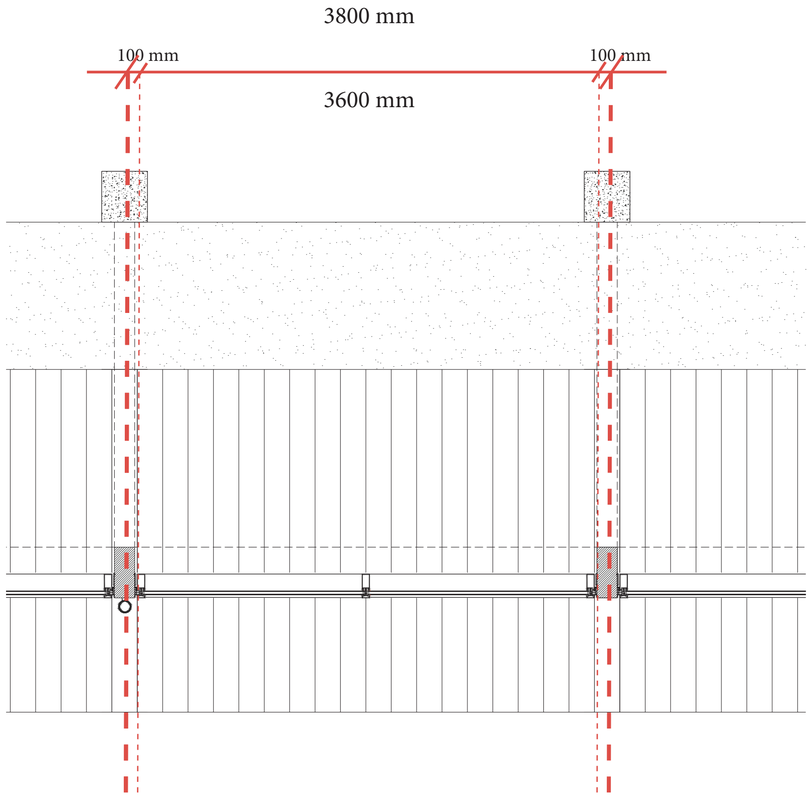
Standard sizes

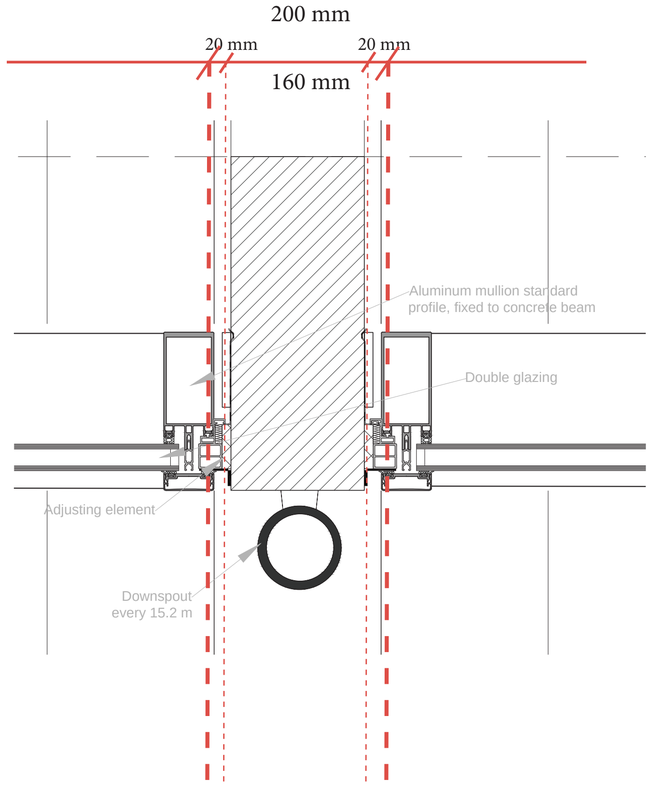


1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LEASING MATERIALS

Standard sizes

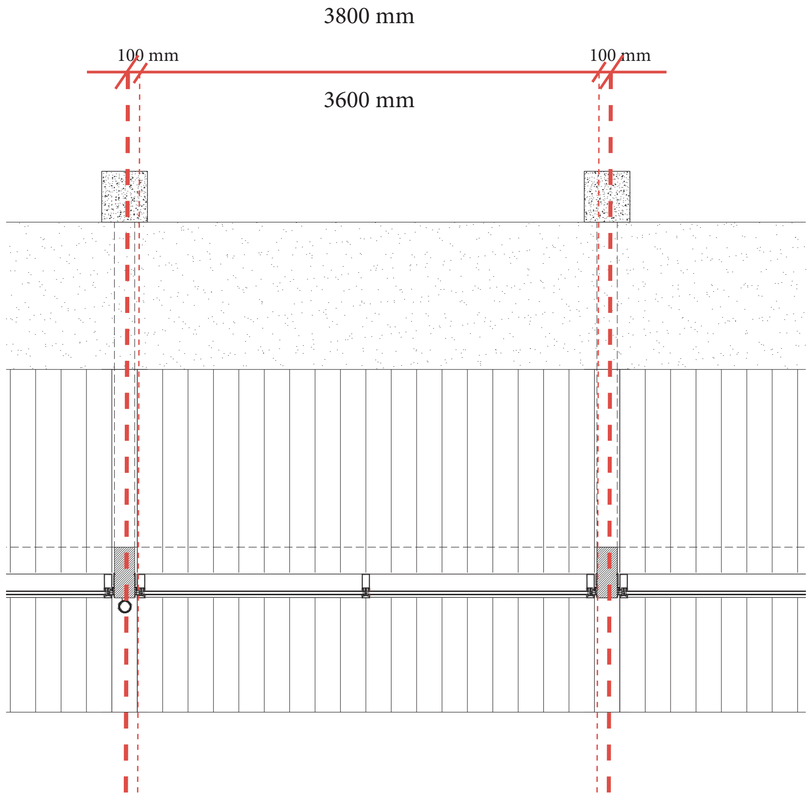


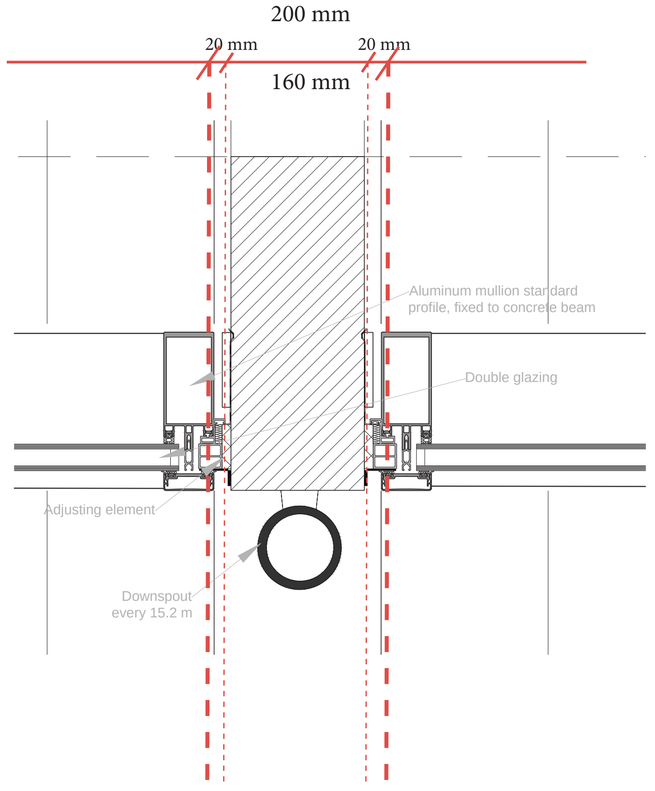


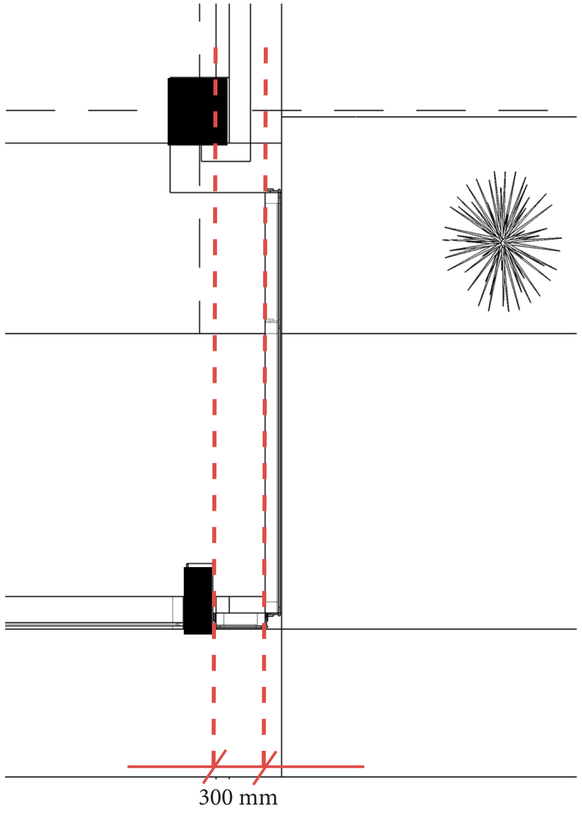
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LEASING MATERIALS

Standard sizes







1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

DESIGN PRINCIPLES

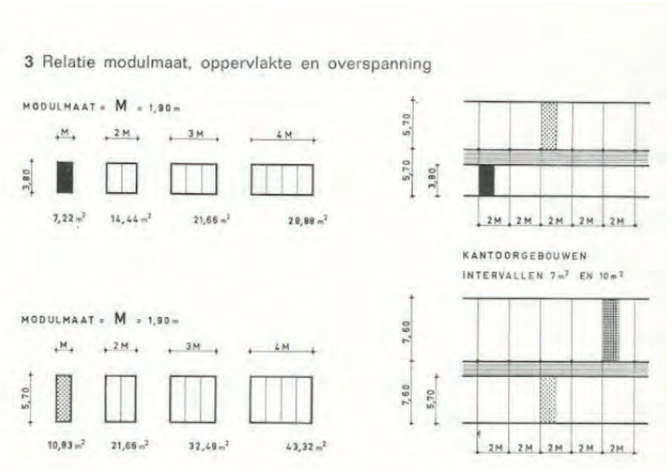
Celebrate the ancient

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

DESIGN PRINCIPLES

Celebrate the ancient

Postwar architecture

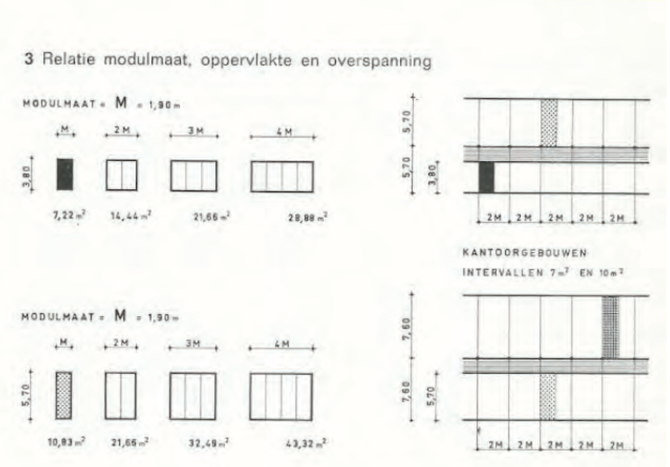


1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

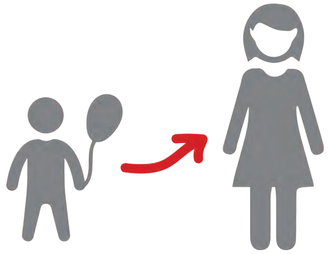
DESIGN PRINCIPLES

Celebrate the ancient

Postwar architecture



‘The new is the old’

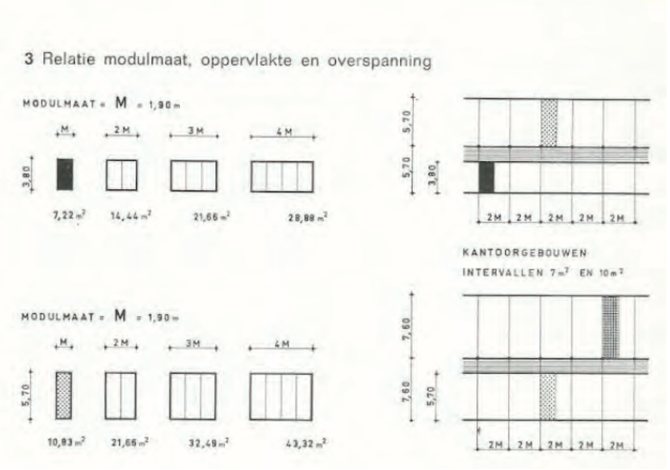


1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

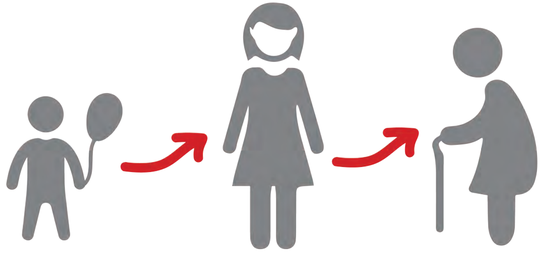
DESIGN PRINCIPLES

Celebrate the ancient

Postwar architecture



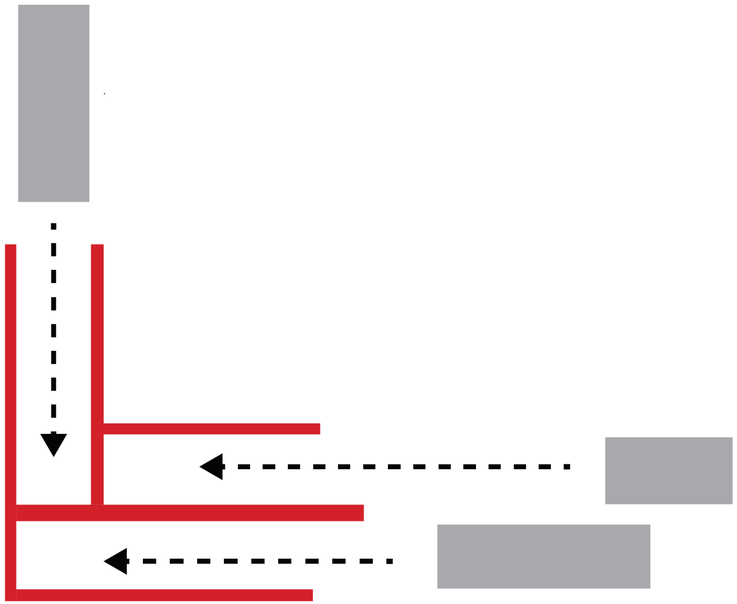
‘The old becomes the ancient’



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

DESIGN PRINCIPLES

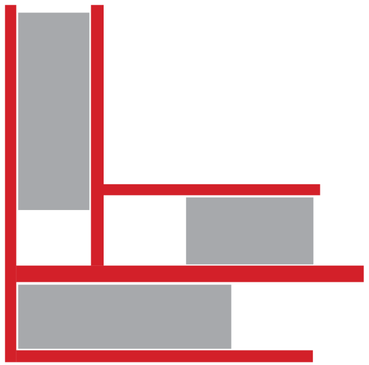
Drydock analogy



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

DESIGN PRINCIPLES

Drydock analogy

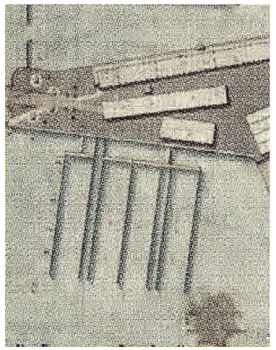


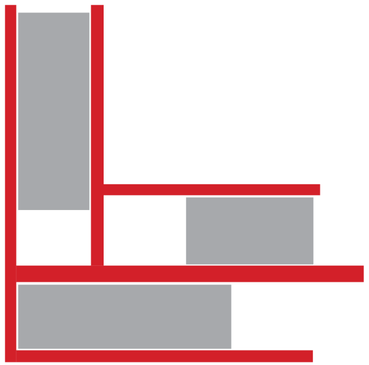
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

DESIGN PRINCIPLES

Drydock analogy

History

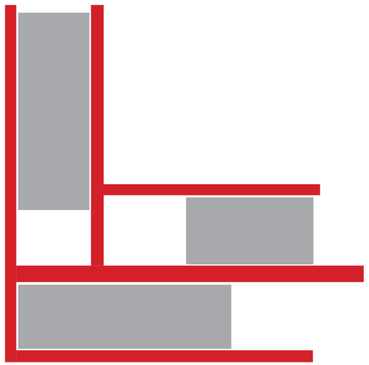




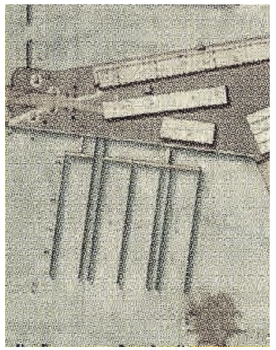
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

DESIGN PRINCIPLES

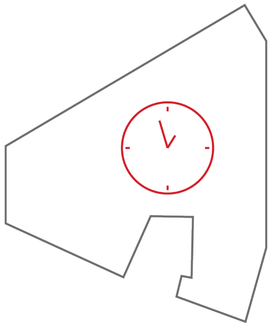
Drydock analogy



History



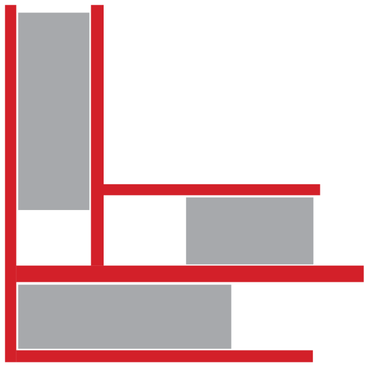
Temporary



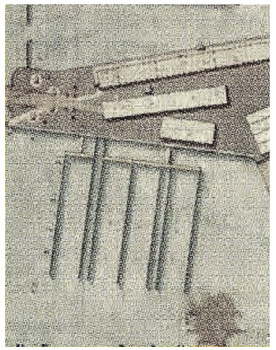
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

DESIGN PRINCIPLES

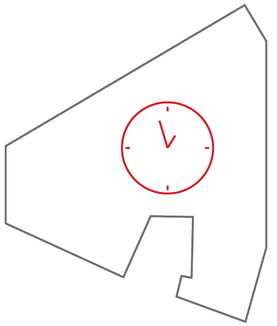
Drydock analogy



History



Temporary



Building (on the circular economy!)

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

DESIGN PRINCIPLES

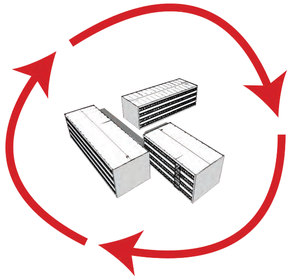
Ripple effect

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

DESIGN PRINCIPLES

Ripple effect

Circular

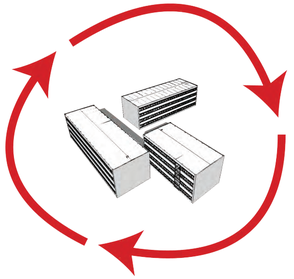


1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

DESIGN PRINCIPLES

Ripple effect

Circular



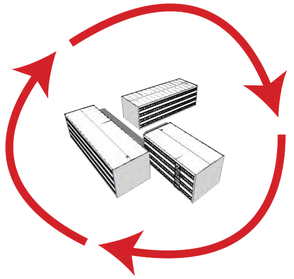
Low threshold

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

DESIGN PRINCIPLES

Ripple effect

Circular



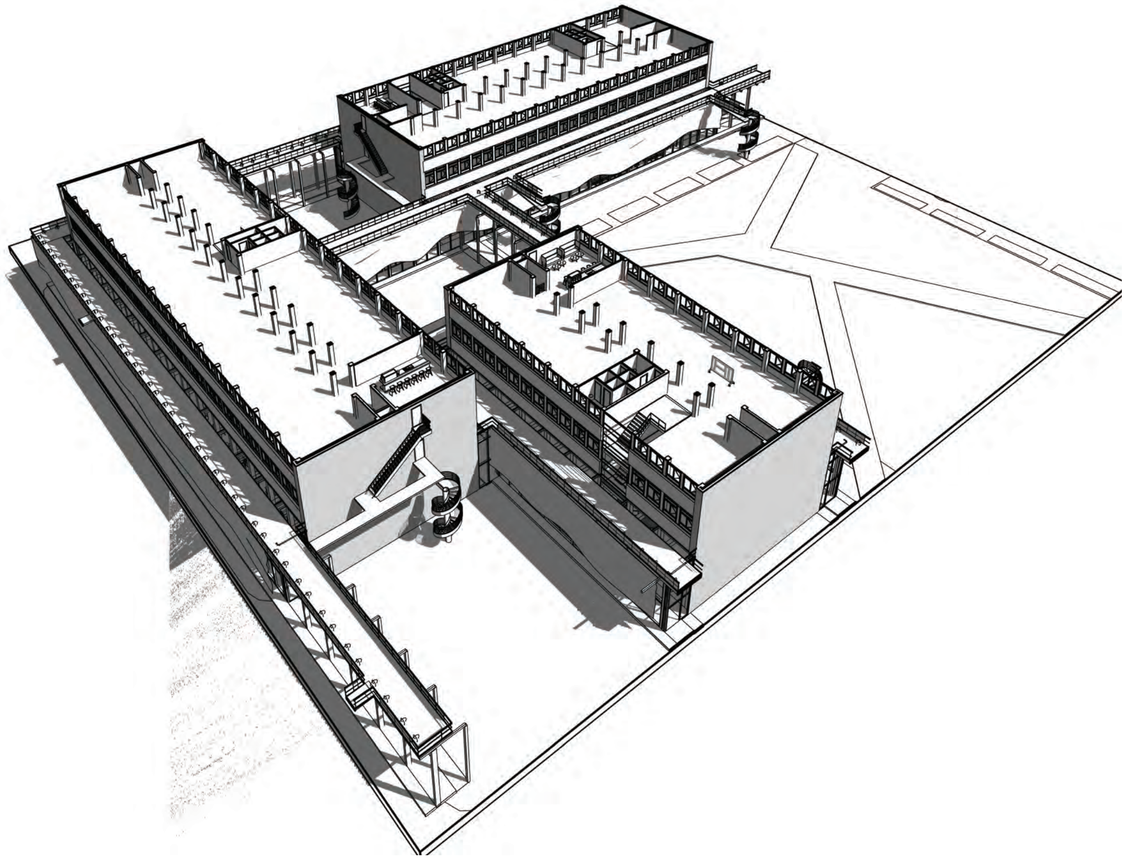
Low threshold

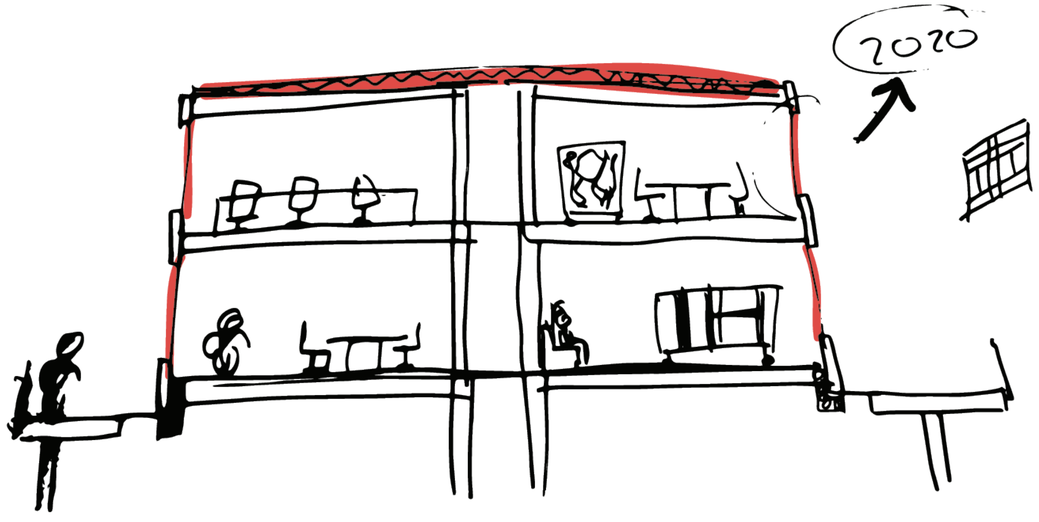
Military efficiency

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LIFESPAN OF THE BUILDING

Growth of the intervention





1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LIFESPAN OF THE BUILDING

Start-up policy - roomdeviders options

Start-ups are given two options:

Cheap: create own lay-out with reused facade elements

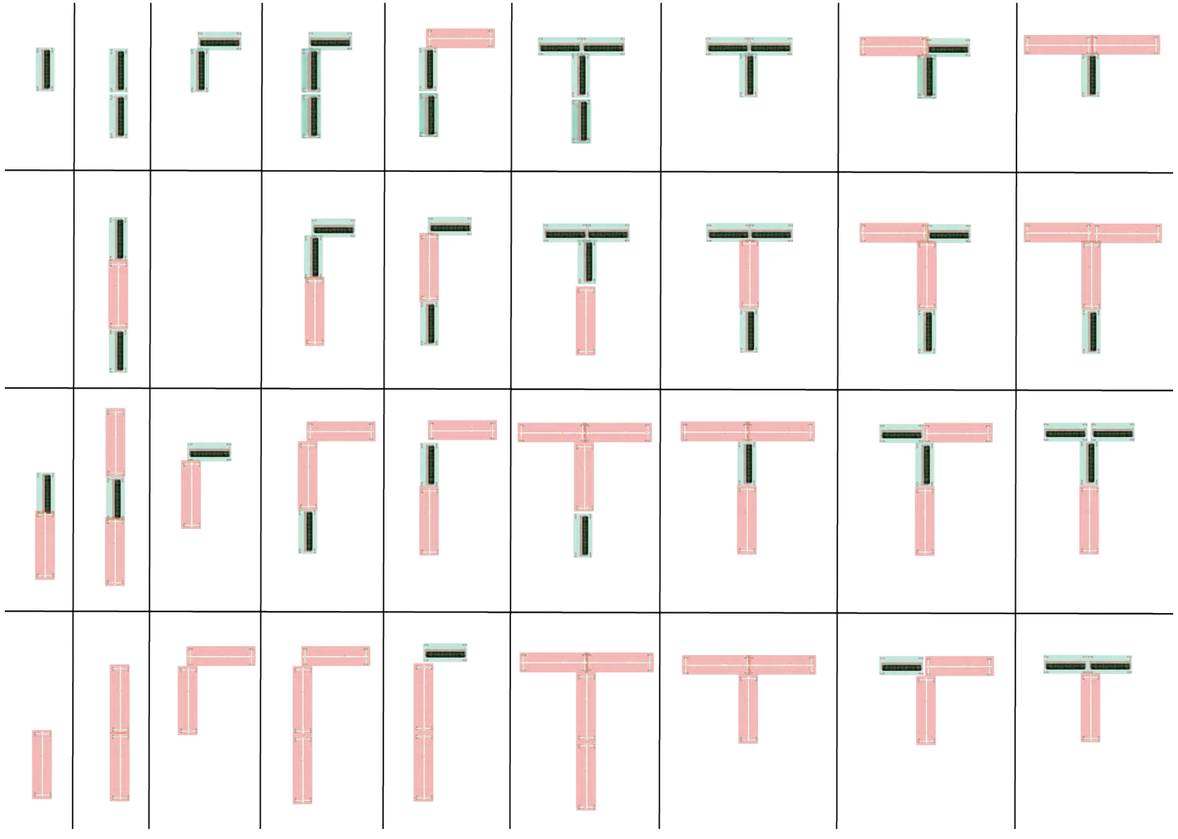
Expensive: custom build office

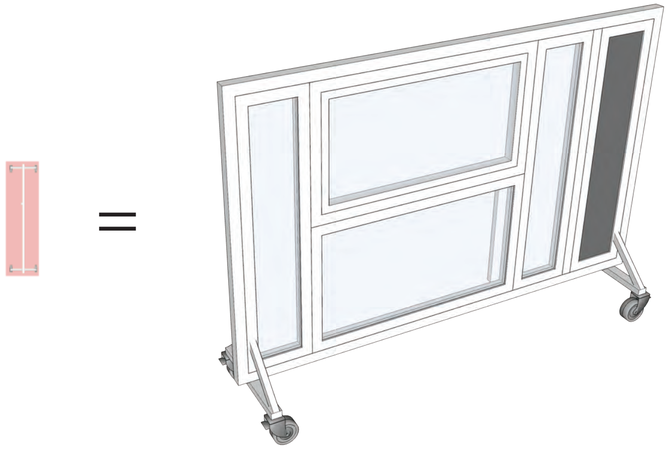
See: interior partitions

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LIFESPAN OF THE BUILDING

Start-up policy - roomdeviders catalogue

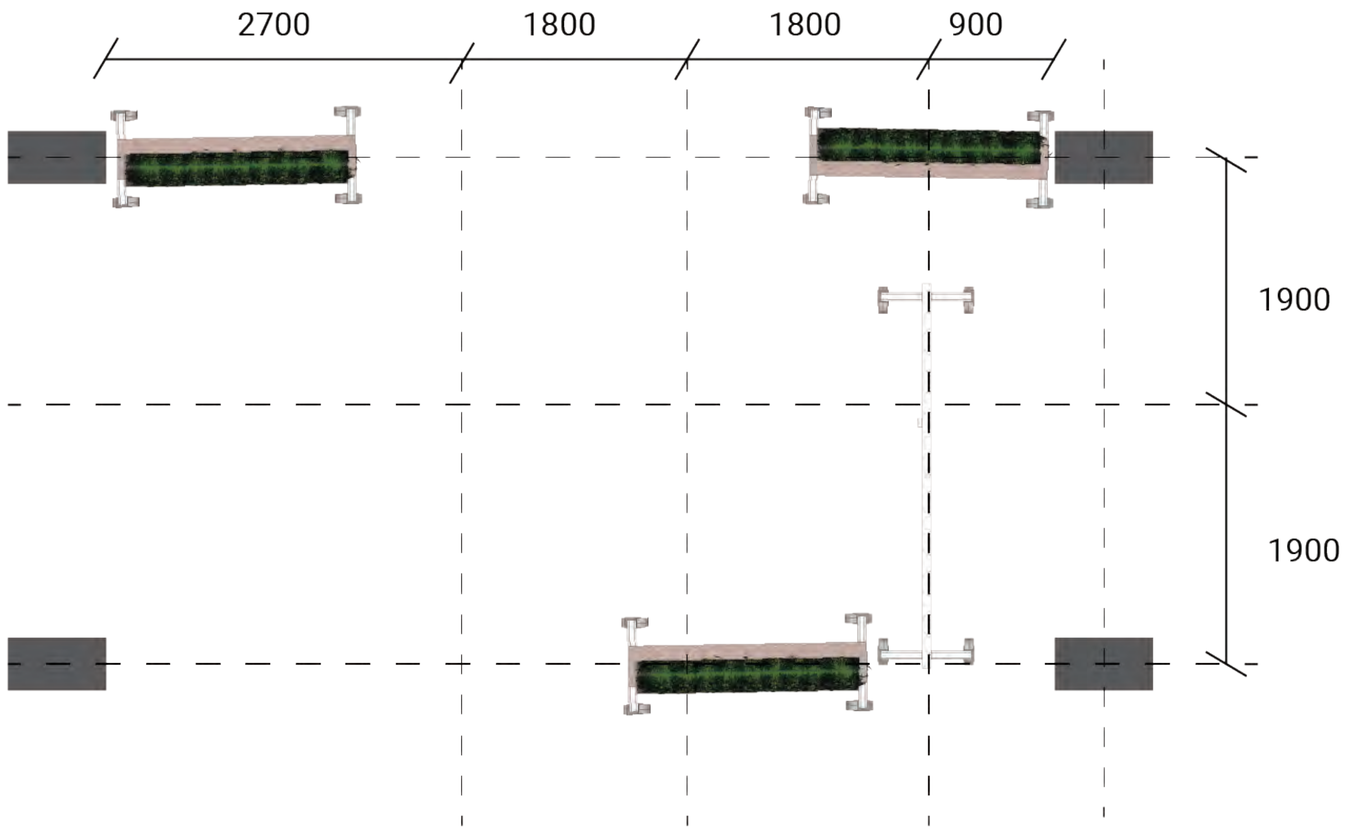




1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LIFESPAN OF THE BUILDING

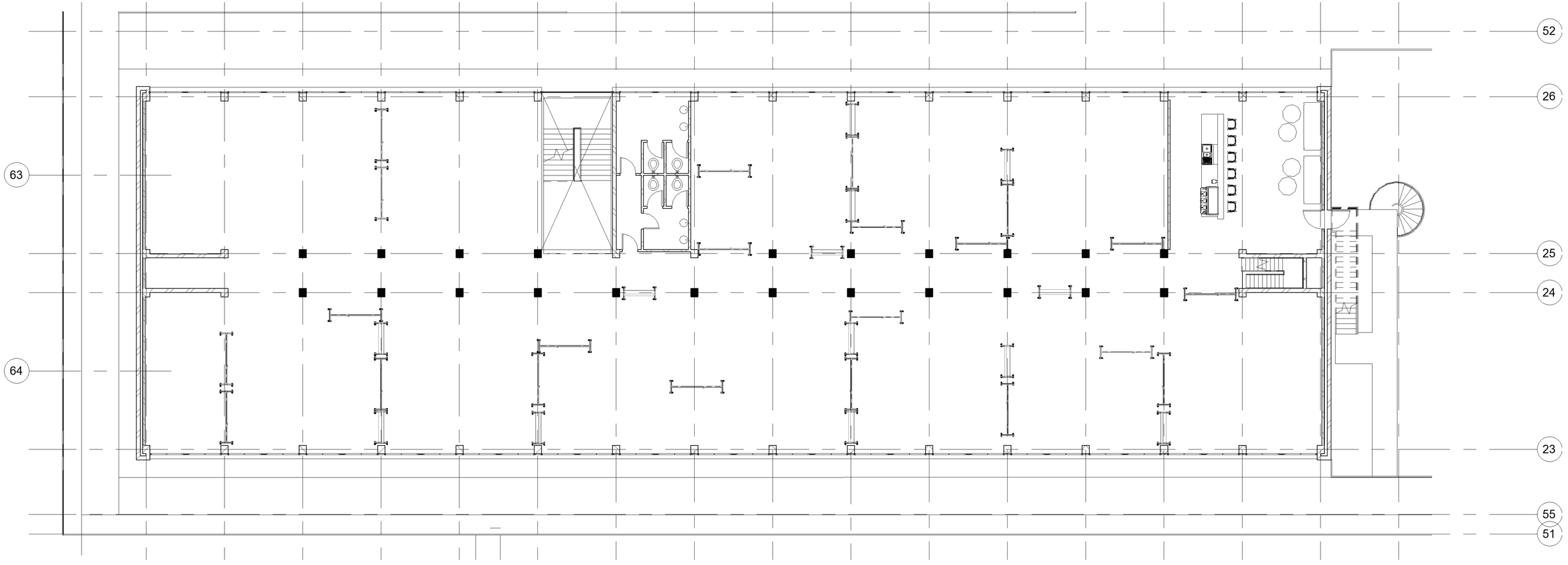
Start-up policy - placement roomdeviders



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LIFESPAN OF THE BUILDING

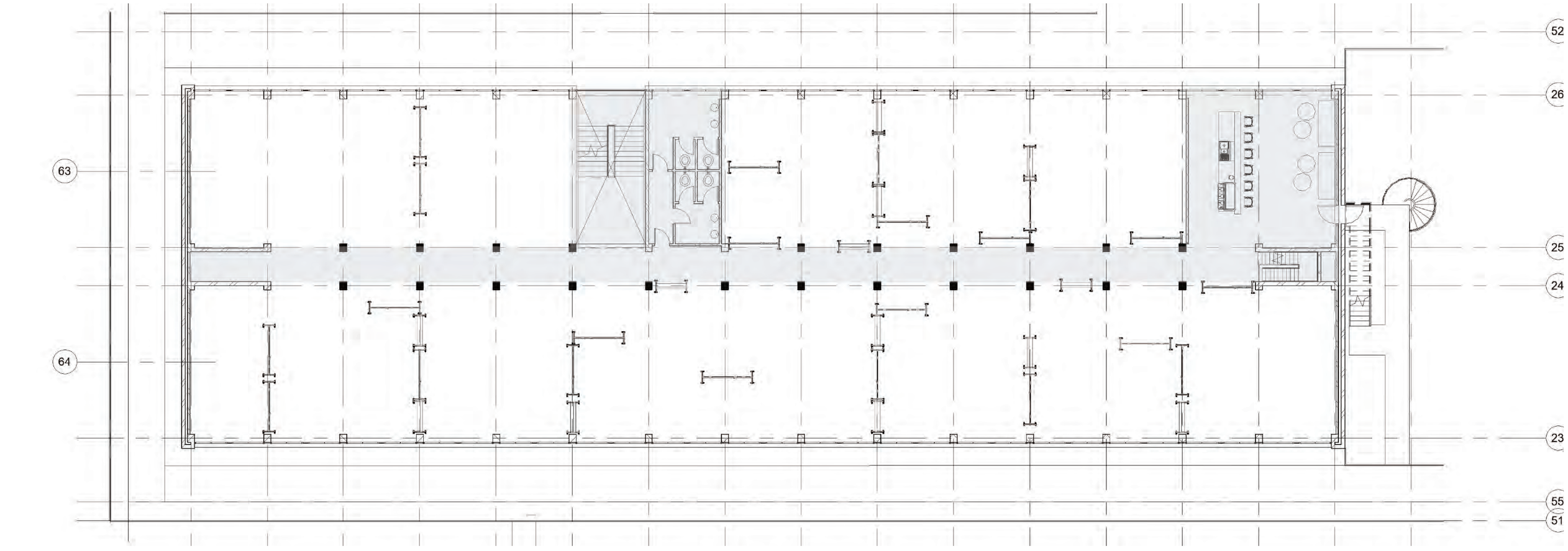
Start-up policy - example floor



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LIFESPAN OF THE BUILDING

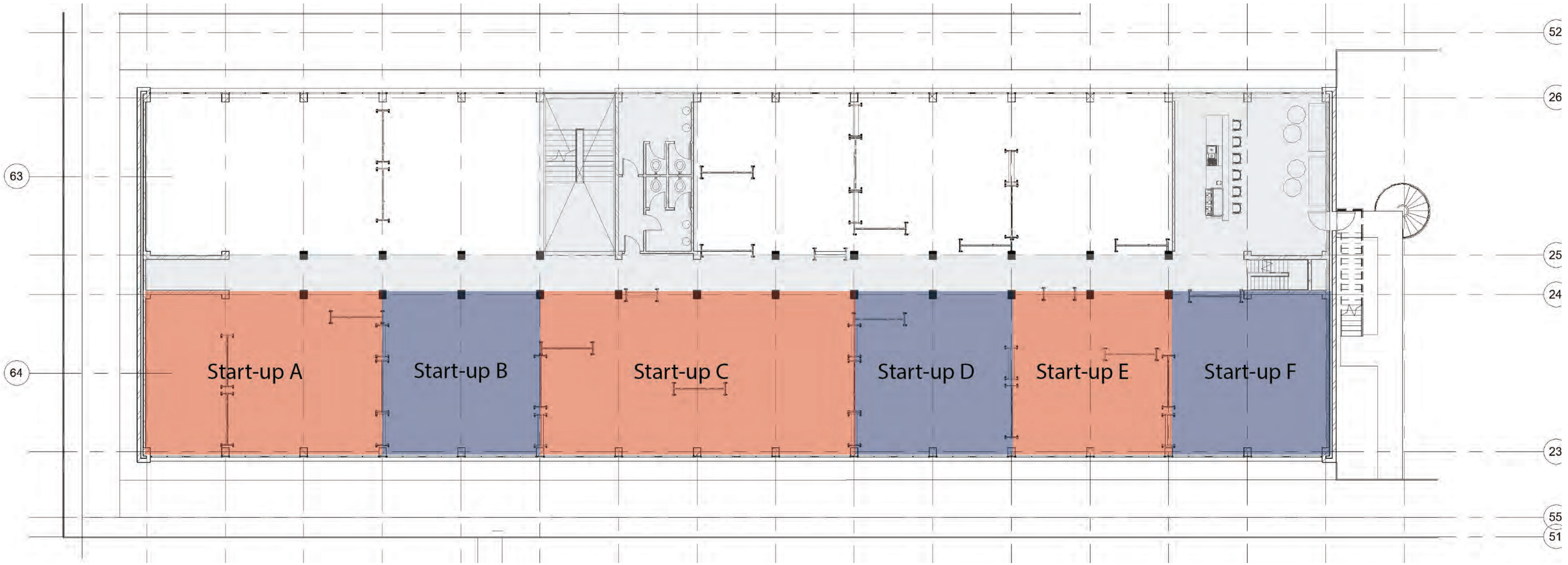
Start-up policy - example floor



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LIFESPAN OF THE BUILDING

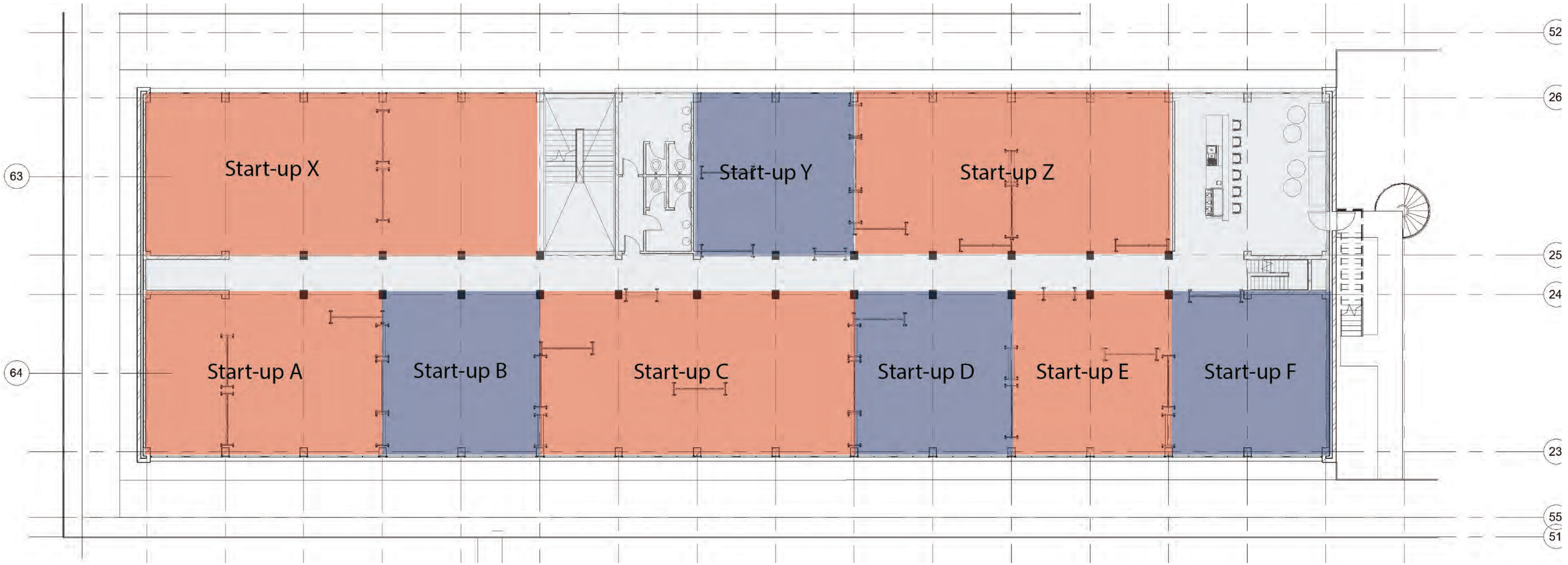
Start-up policy - example floor



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LIFESPAN OF THE BUILDING

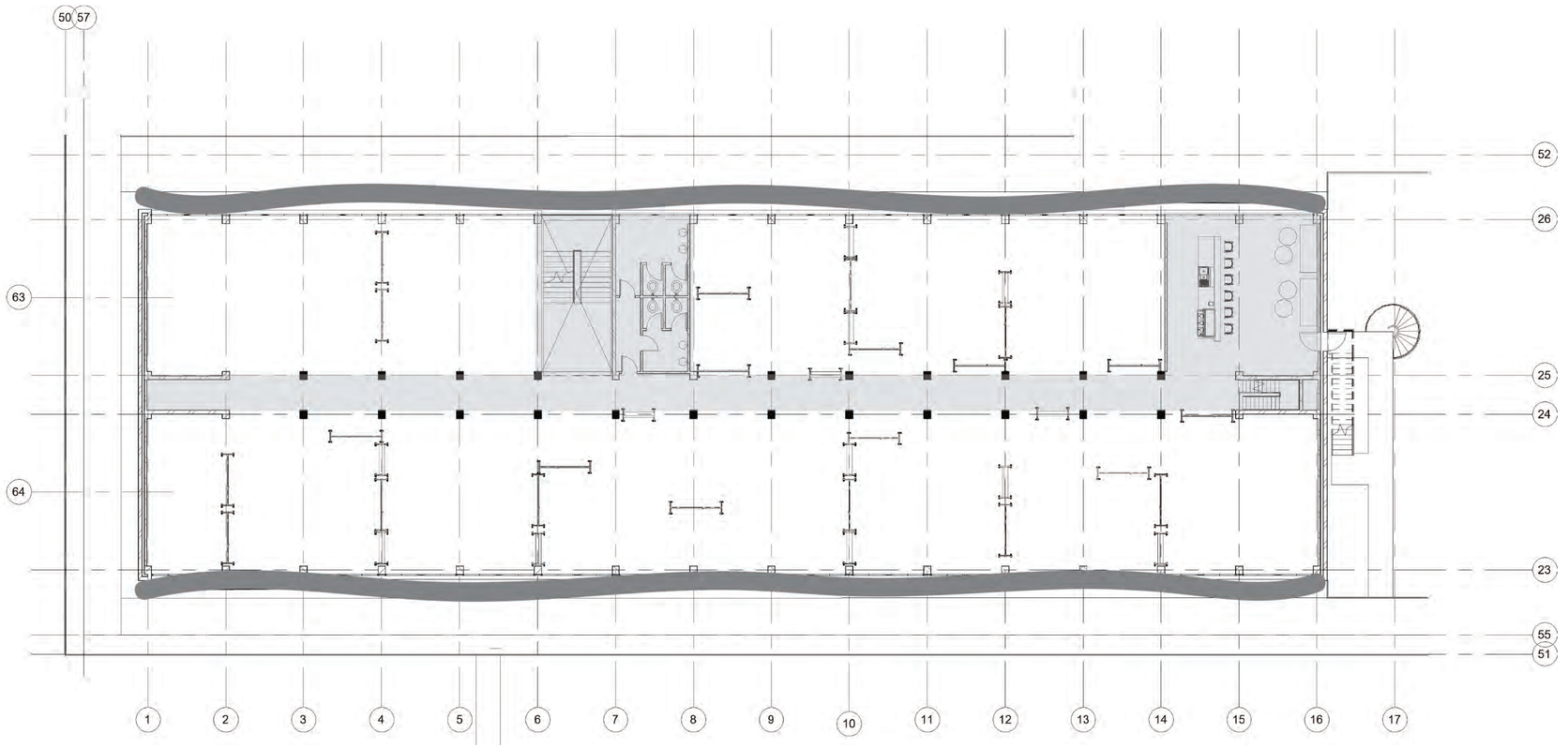
Start-up policy - example floor



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LIFESPAN OF THE BUILDING

Start-up policy - example floor



InfraTech2017 Nationaal platform voor de hele infrasector 17-20 januari | Rotterdam Ahoy

bam infra

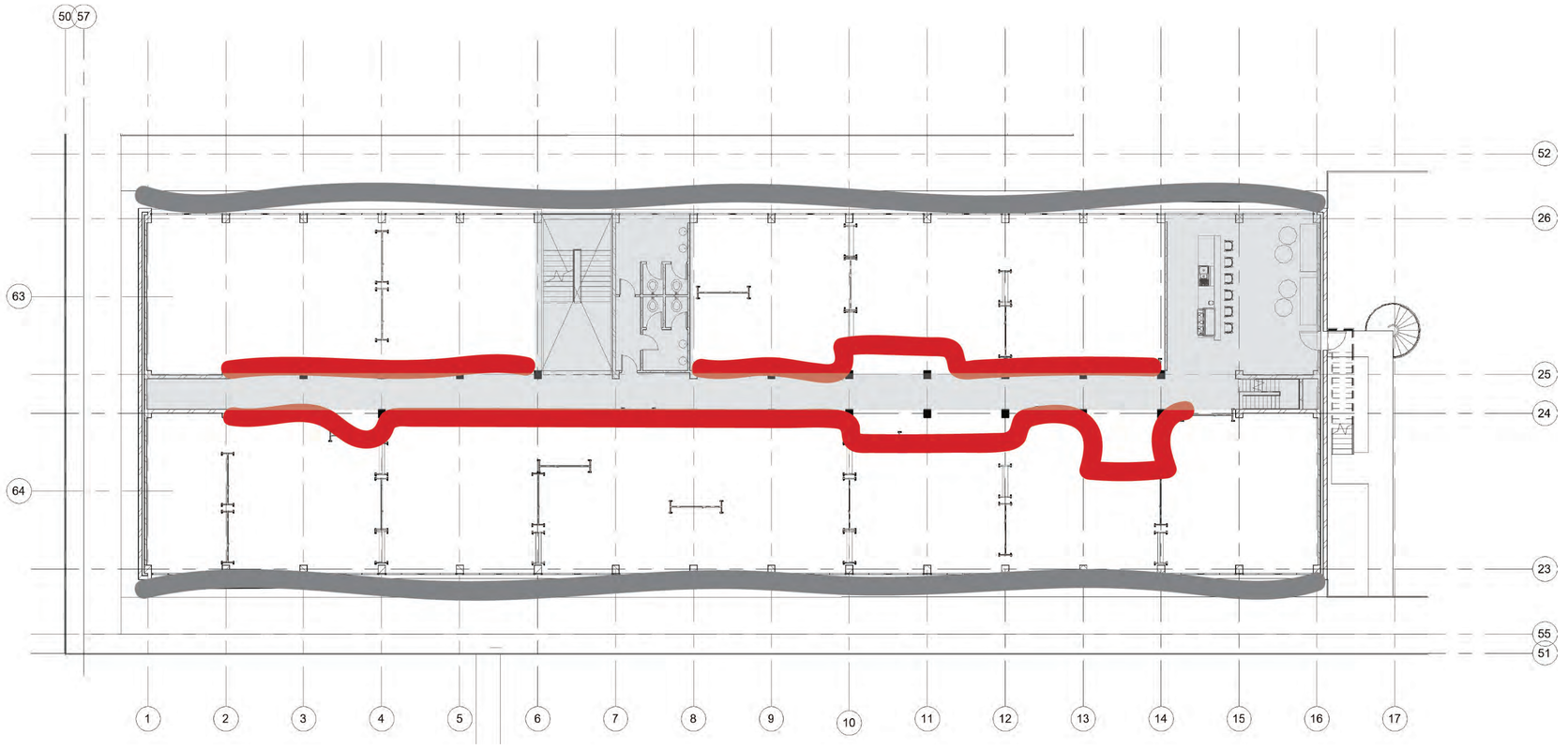
ROTTERDAM AHOY

Exterior Signage: 'common goal' : single style

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LIFESPAN OF THE BUILDING

Start-up policy - example floor

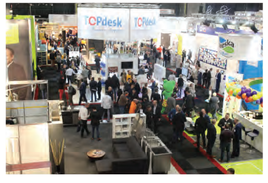


InfraTech2017 Nationaal platform voor de hele infrasector 17-20 januari | Rotterdam Ahoy

bam infra

ROTTERDAM AHOY

Exterior Signage: 'common goal' : single style

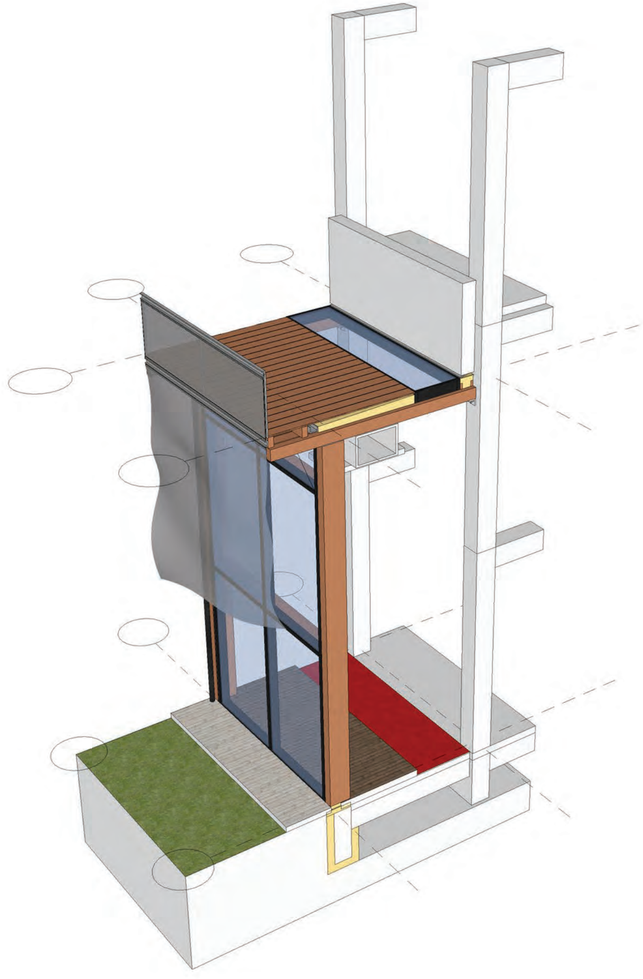


Interior Signage: Differentiate! Go nuts!

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

LIFESPAN OF THE BUILDING

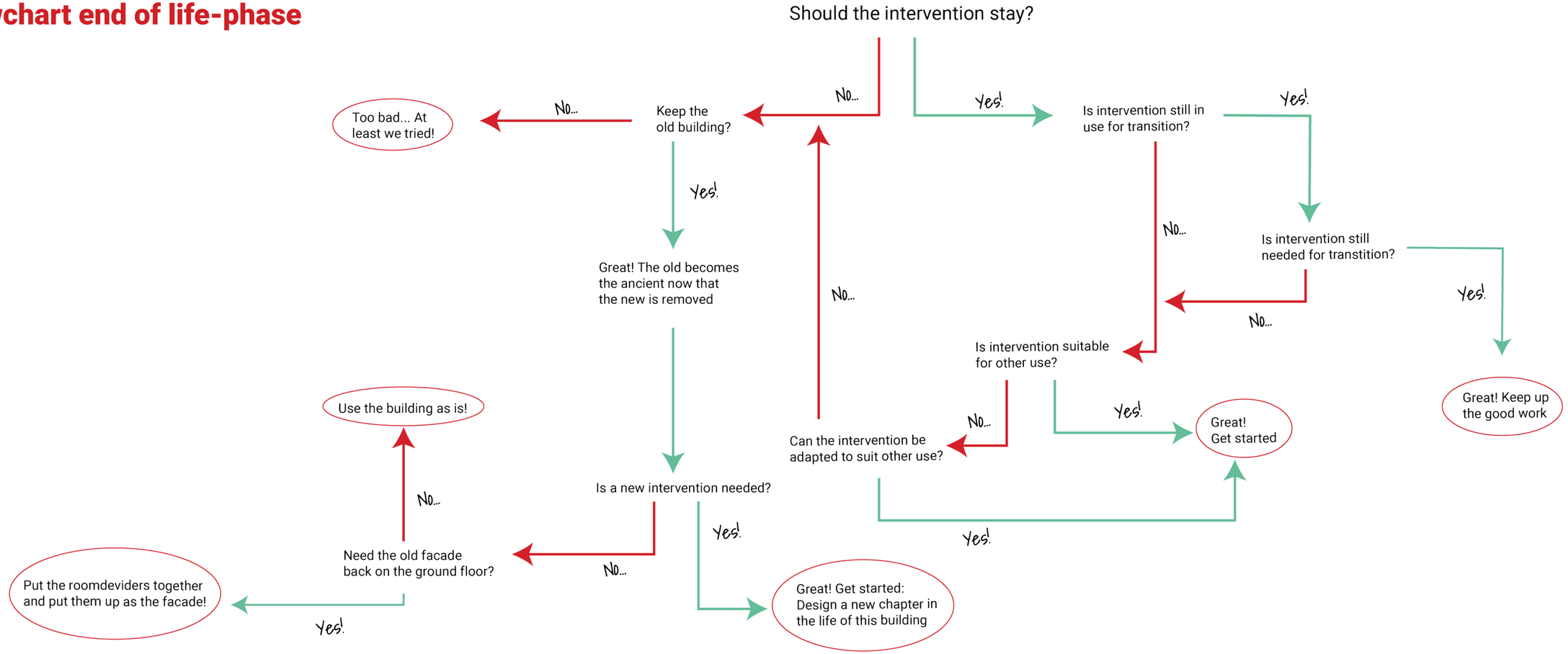
Living lab



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

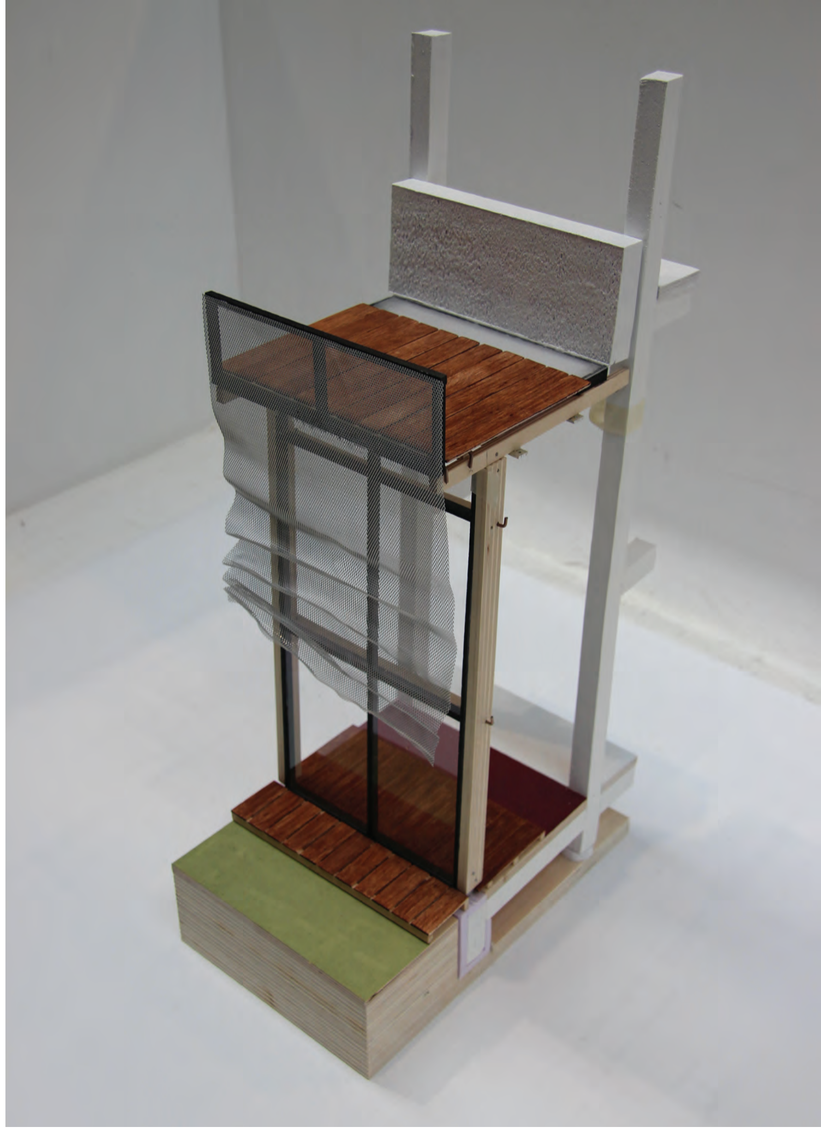
Flowchart end of life-phase



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

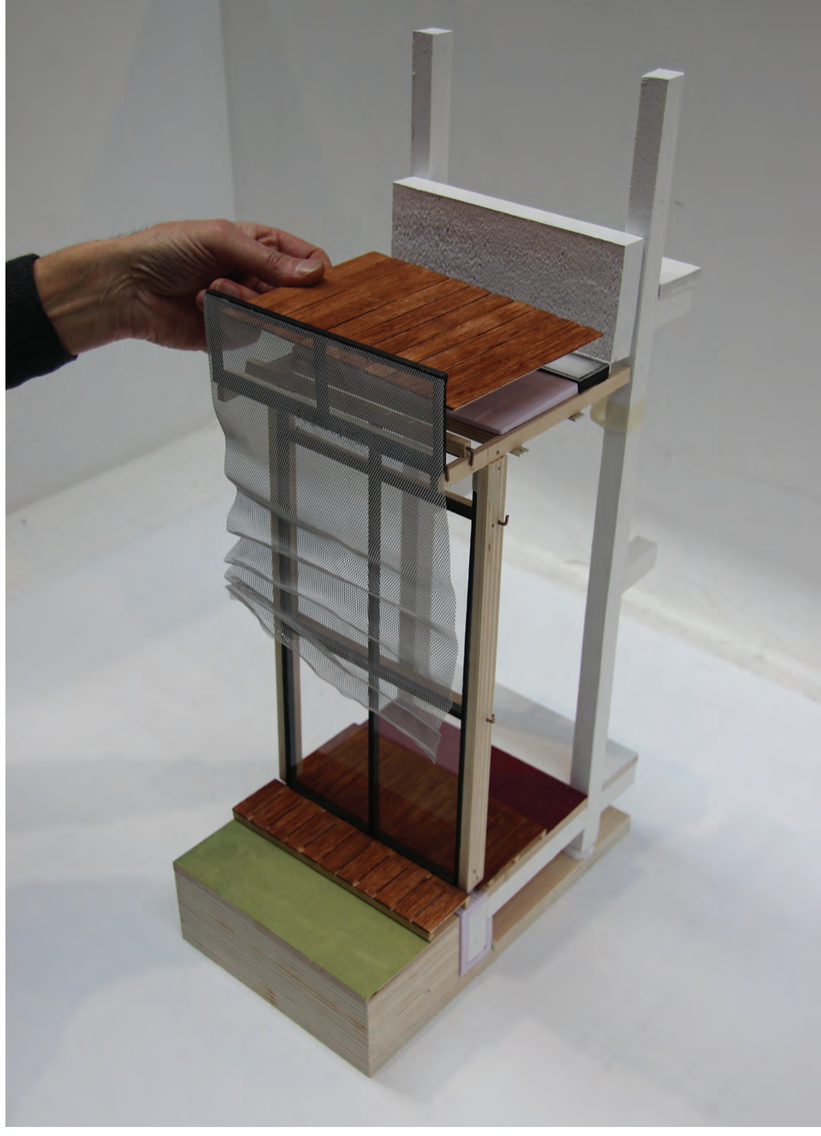
Dismanteling the building



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

Dismanteling the building



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

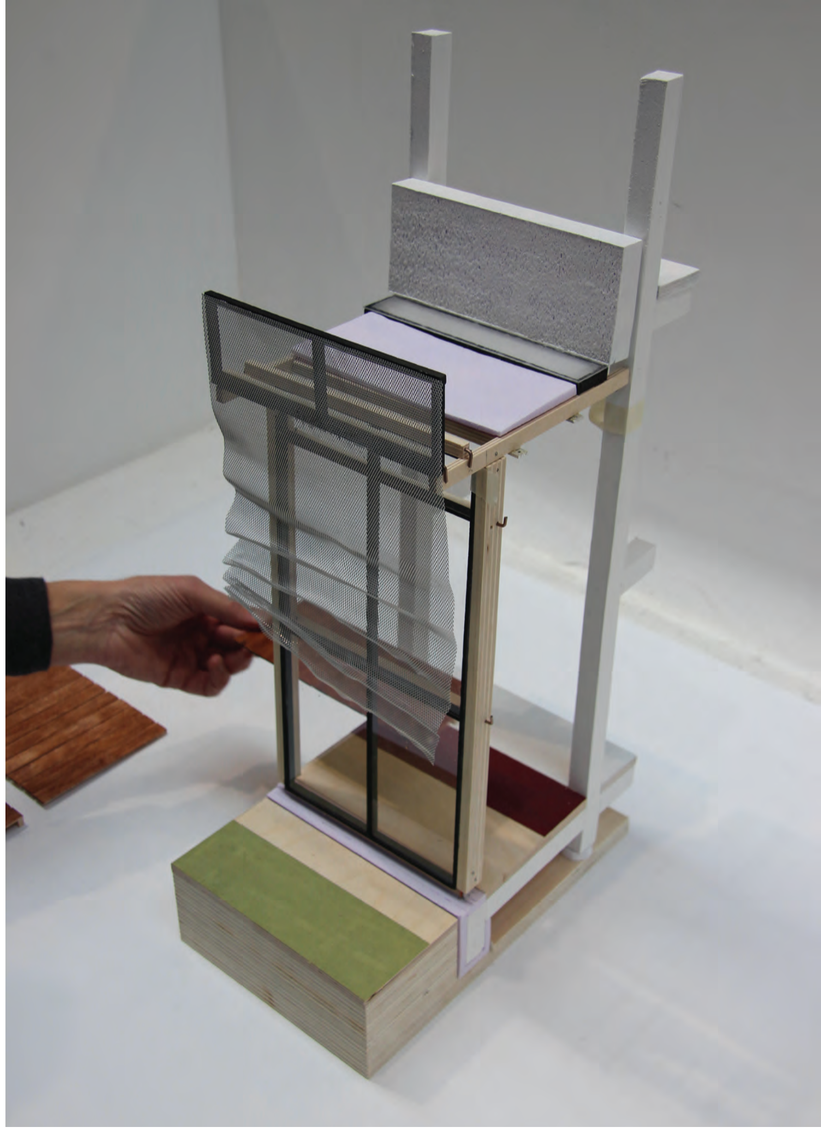
TEN YEARS LATER...

Dismanteling the building

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

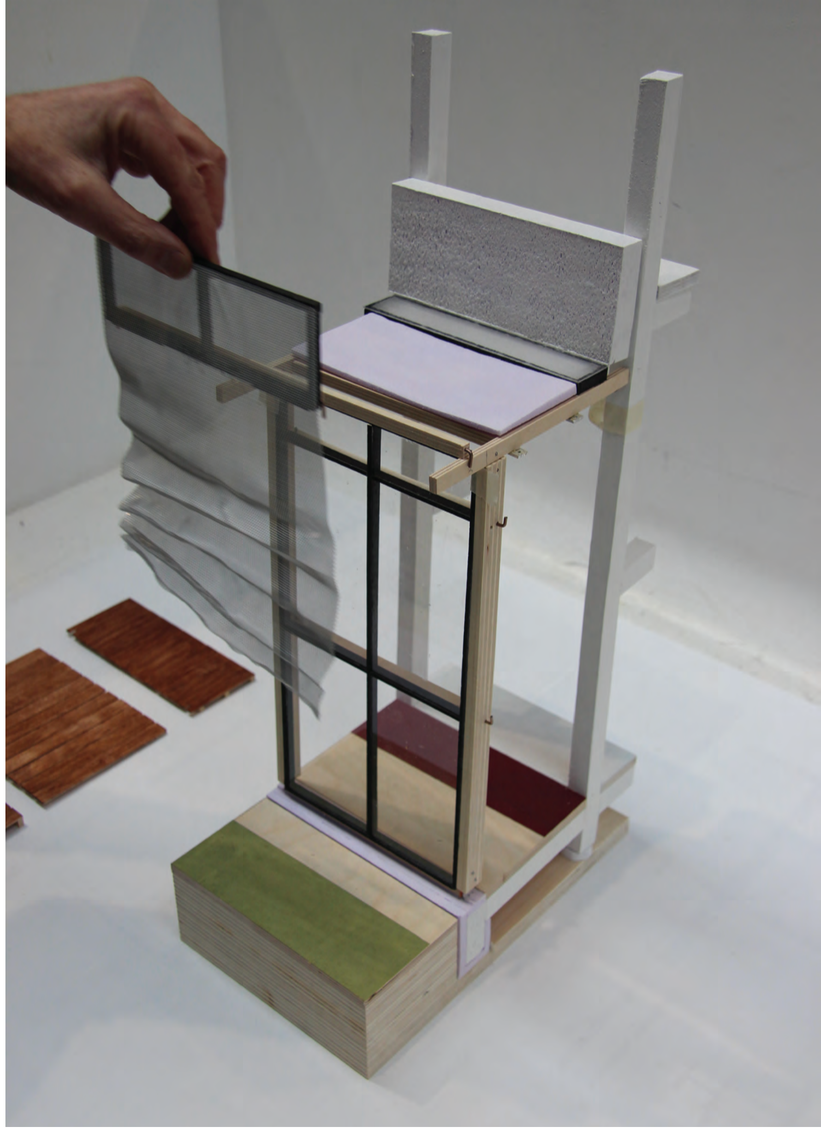
Dismanteling the building



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

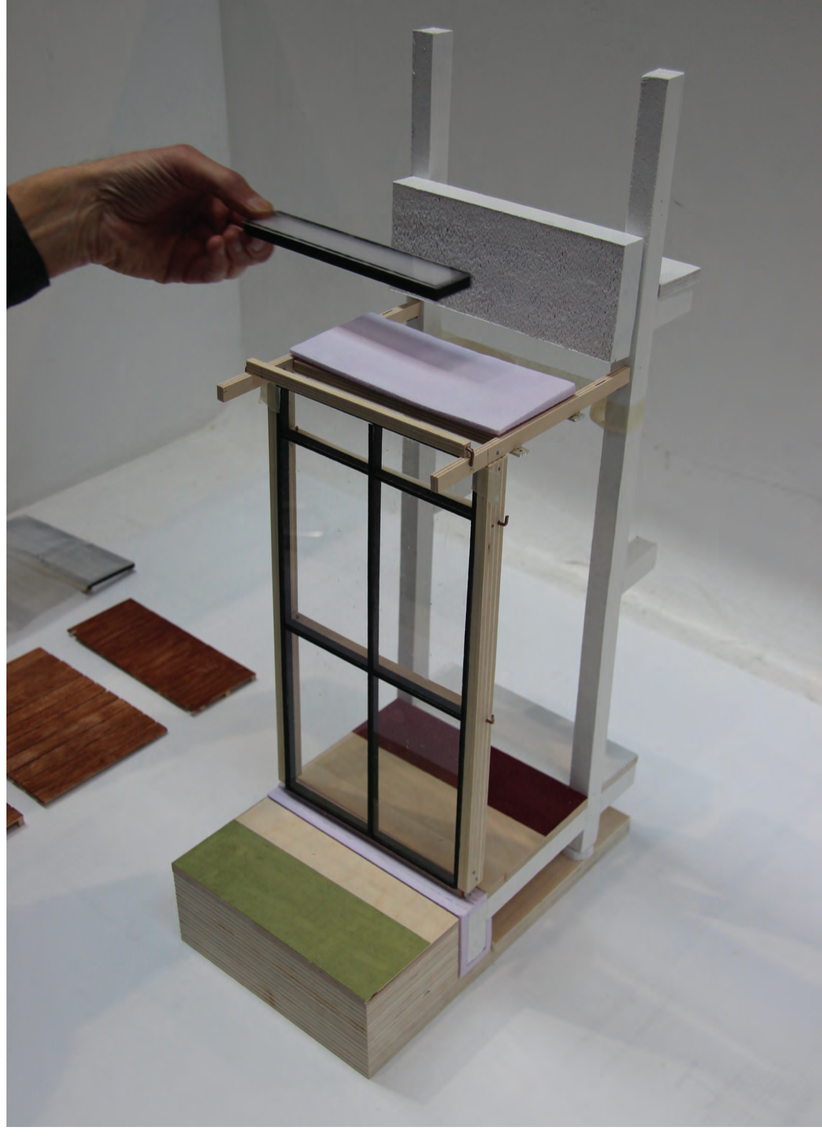
Dismanteling the building



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

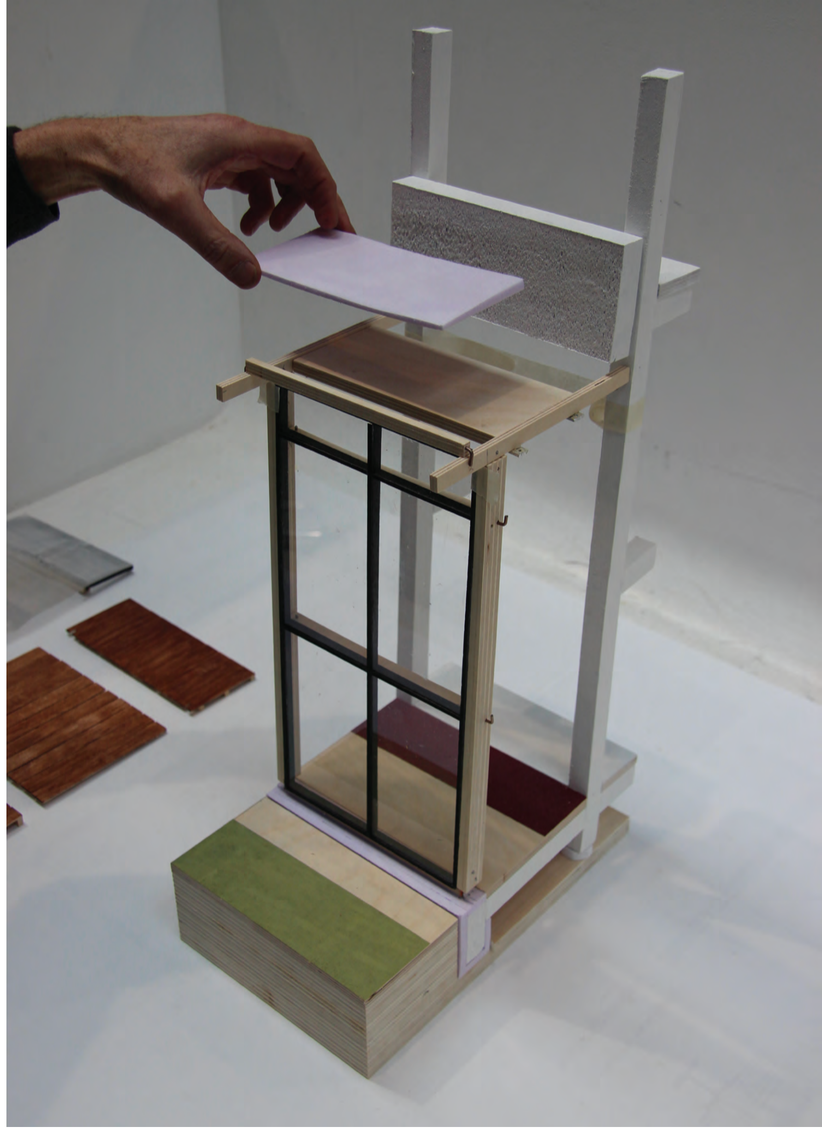
Dismanteling the building



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

Dismanteling the building



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

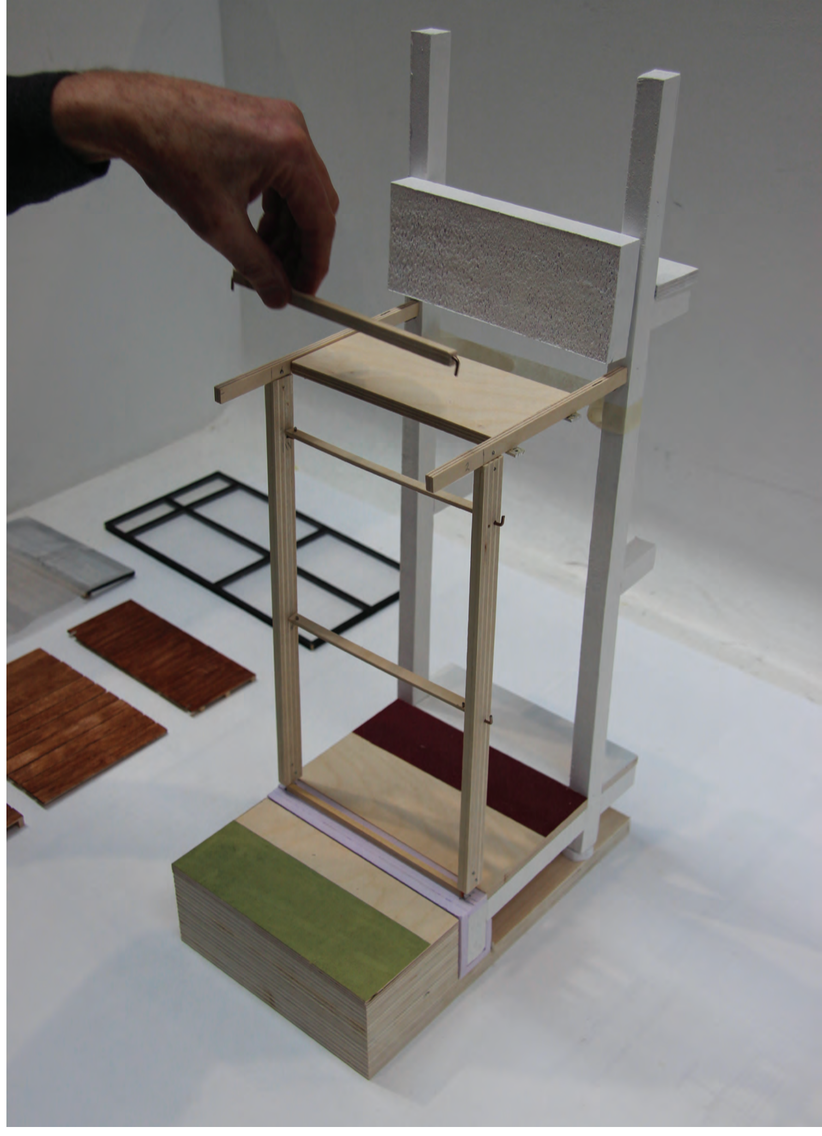
TEN YEARS LATER...

Dismanteling the building

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

Dismanteling the building



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

Dismanteling the building

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

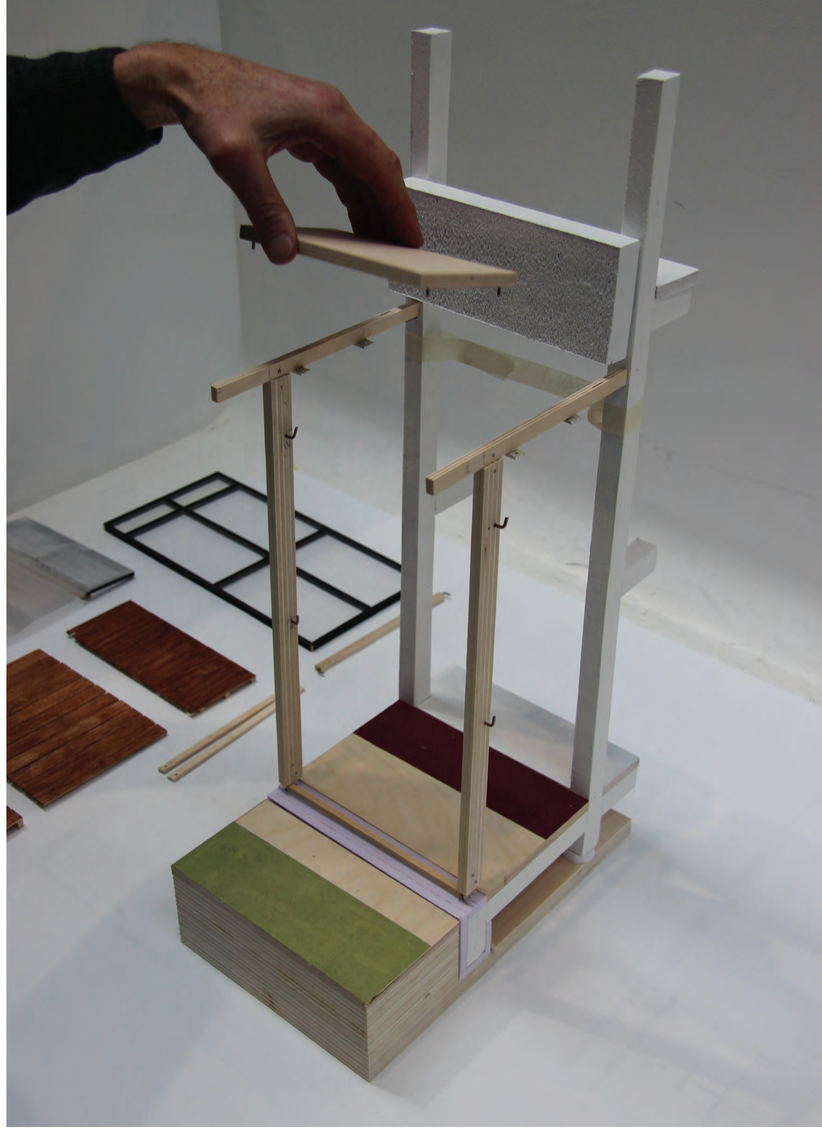
TEN YEARS LATER...

Dismanteling the building

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

Dismanteling the building



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

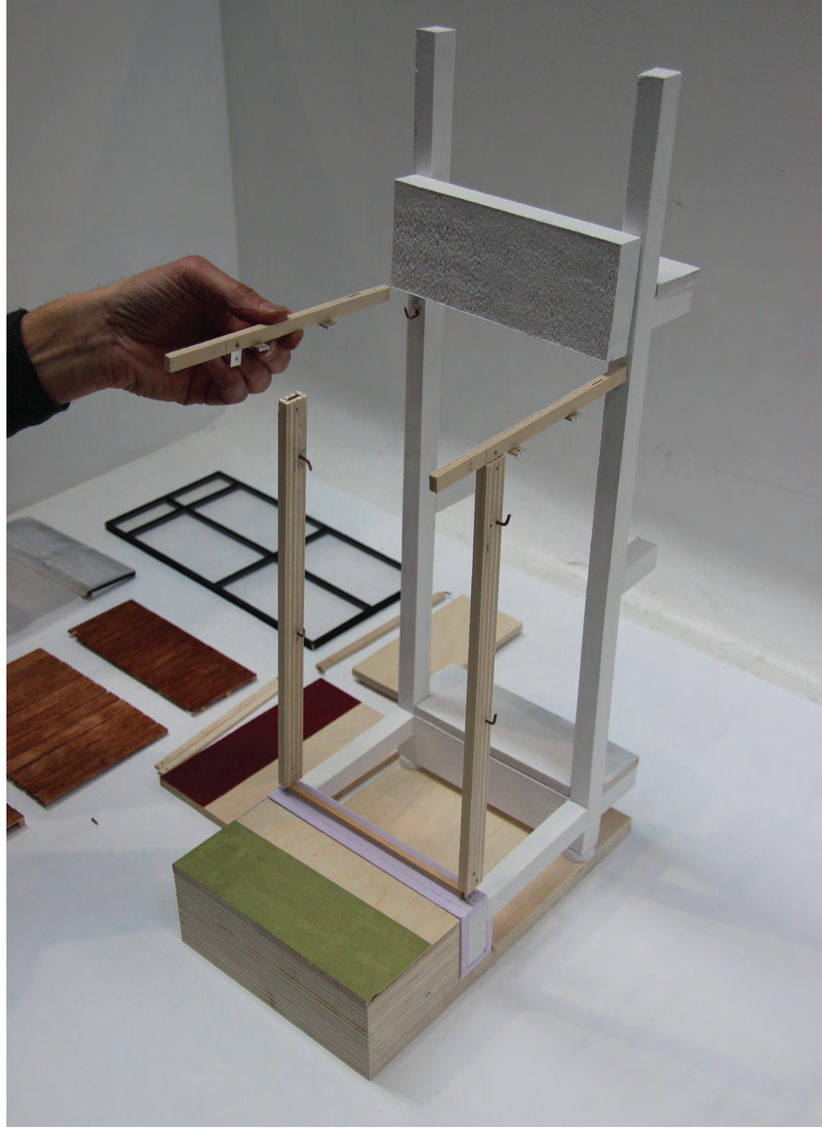
TEN YEARS LATER...

Dismanteling the building

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

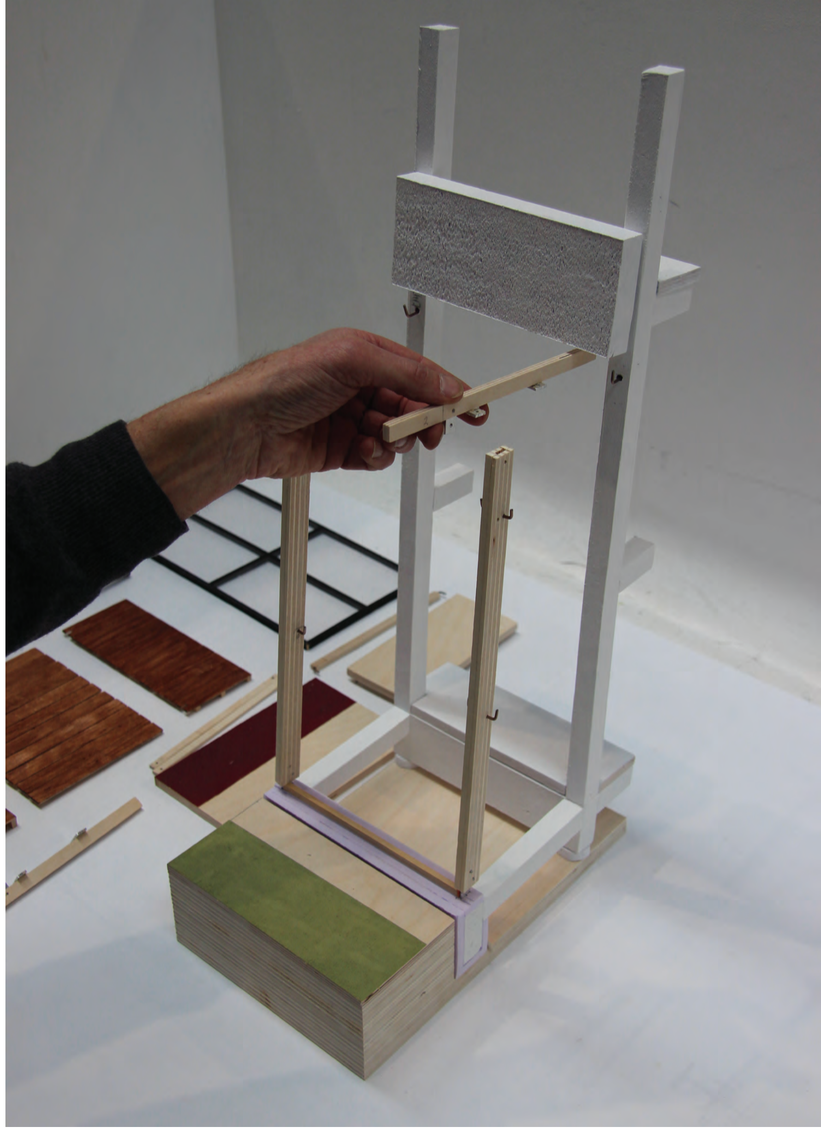
Dismanteling the building



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

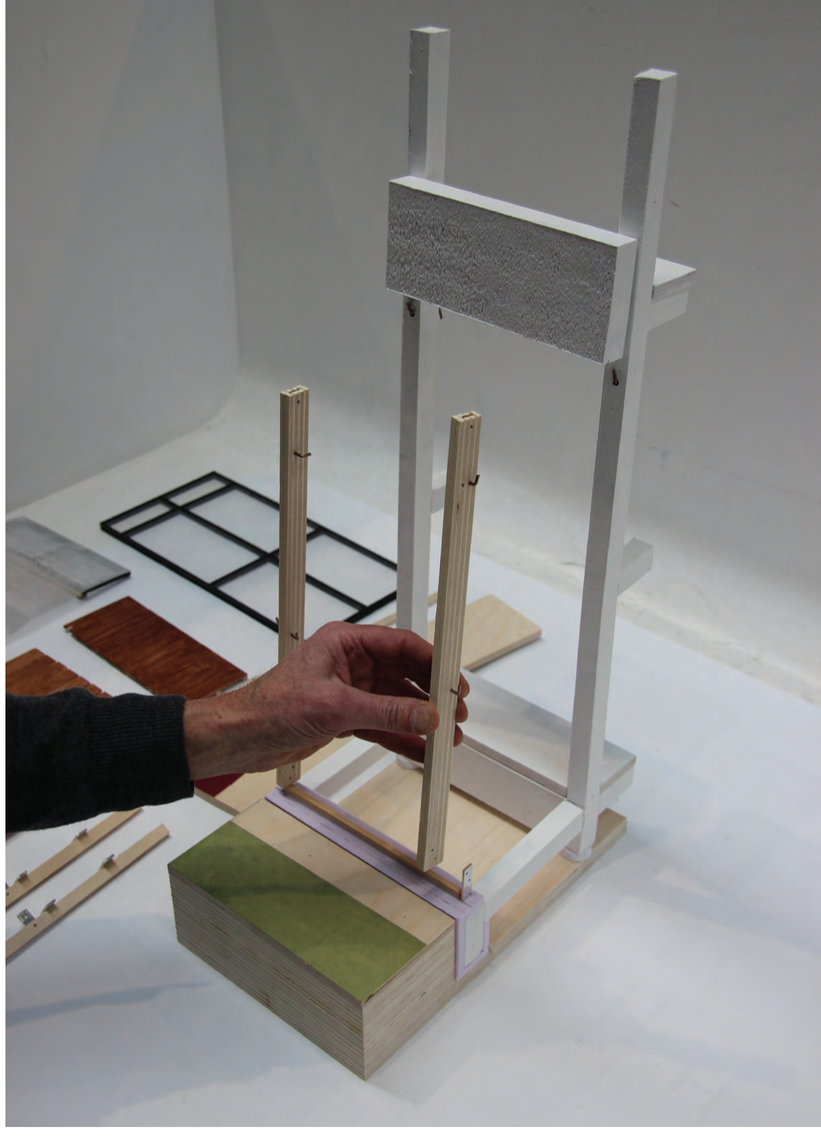
Dismanteling the building



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

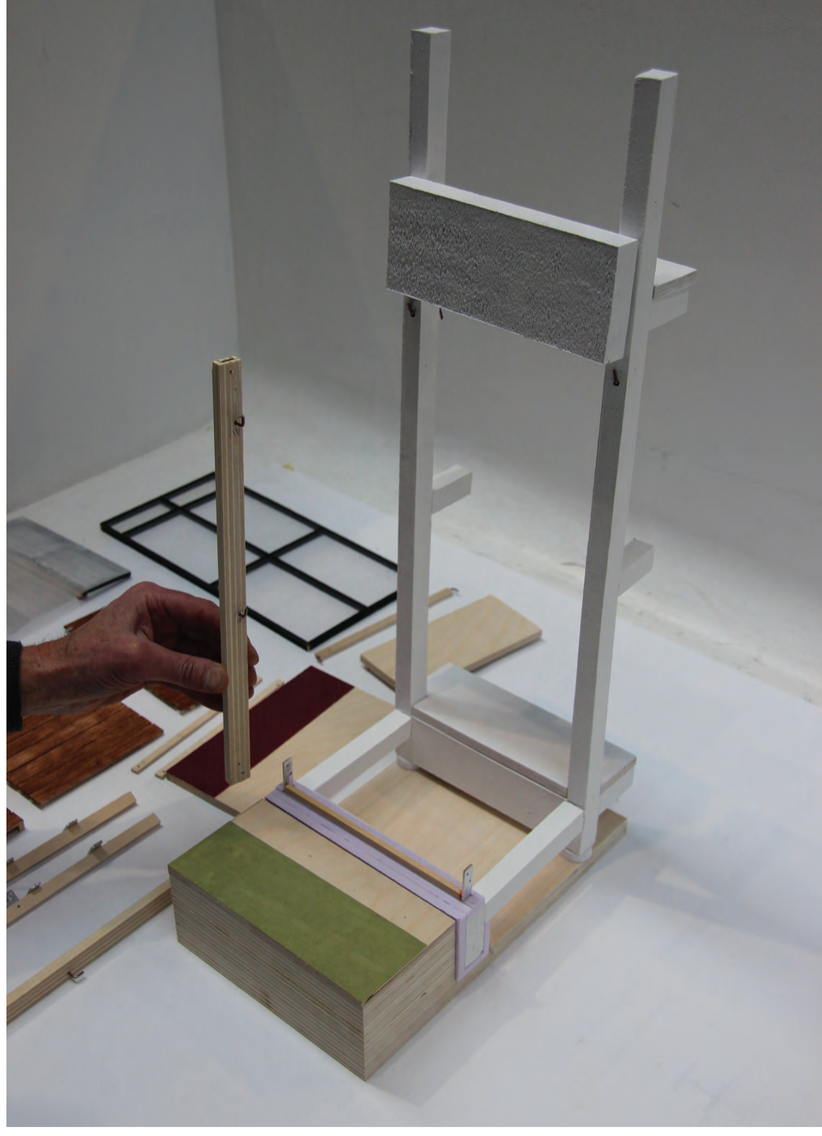
Dismanteling the building



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

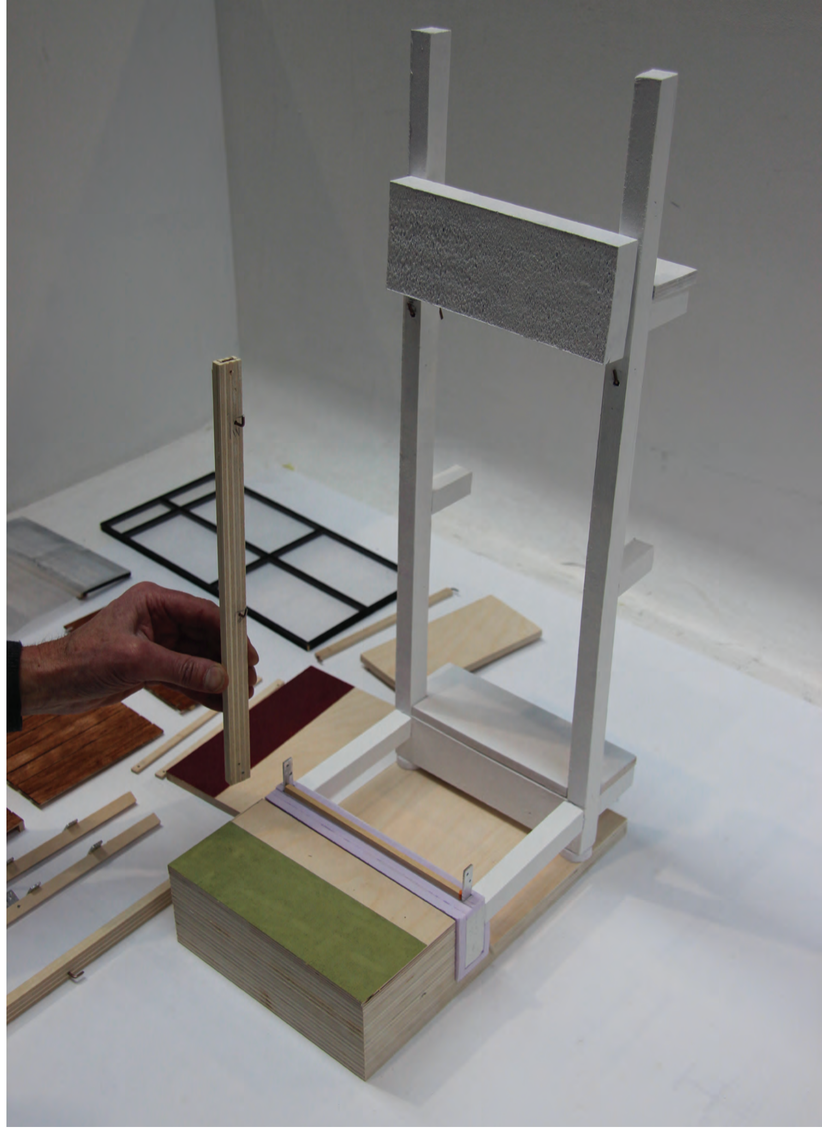
Dismanteling the building



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

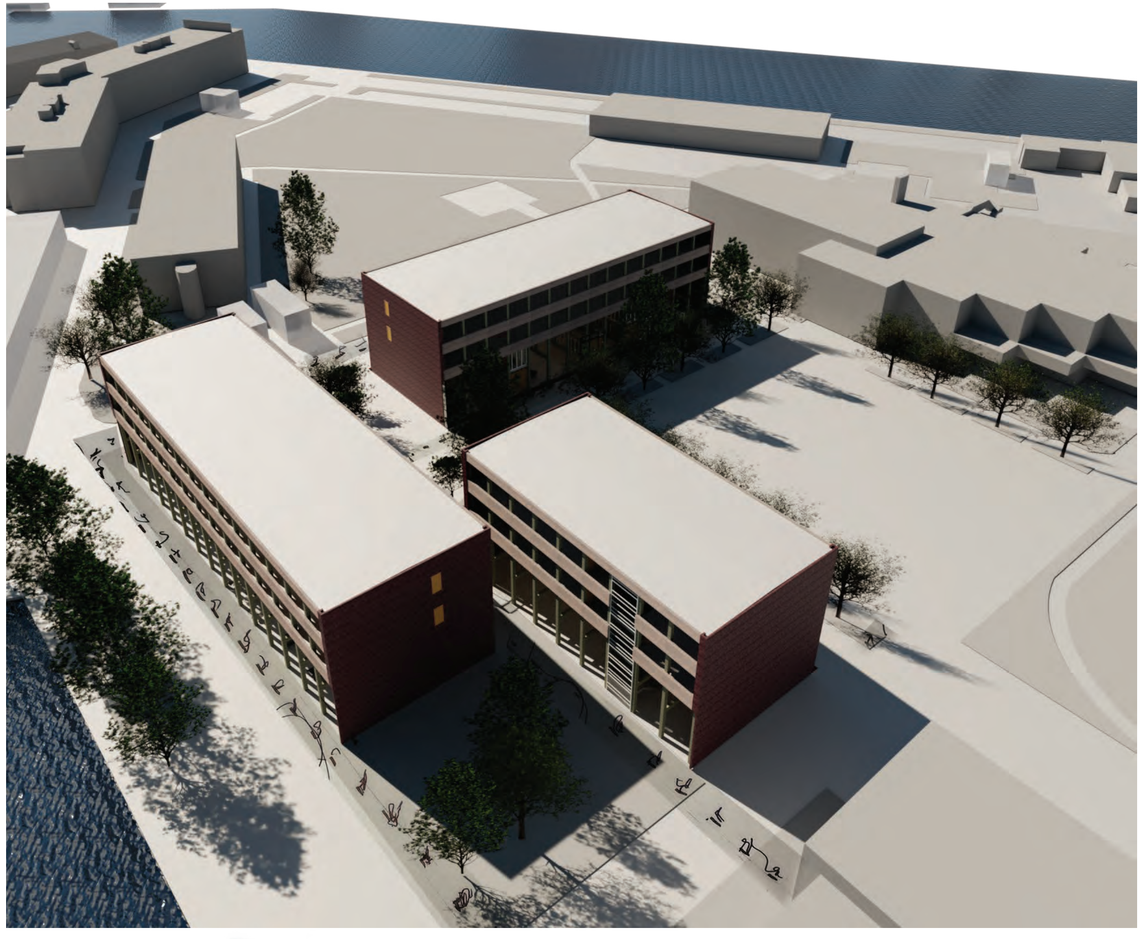
Dismanteling the building

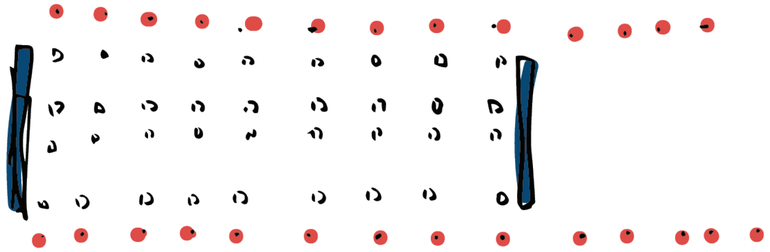


1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

TEN YEARS LATER...

What is left behind?

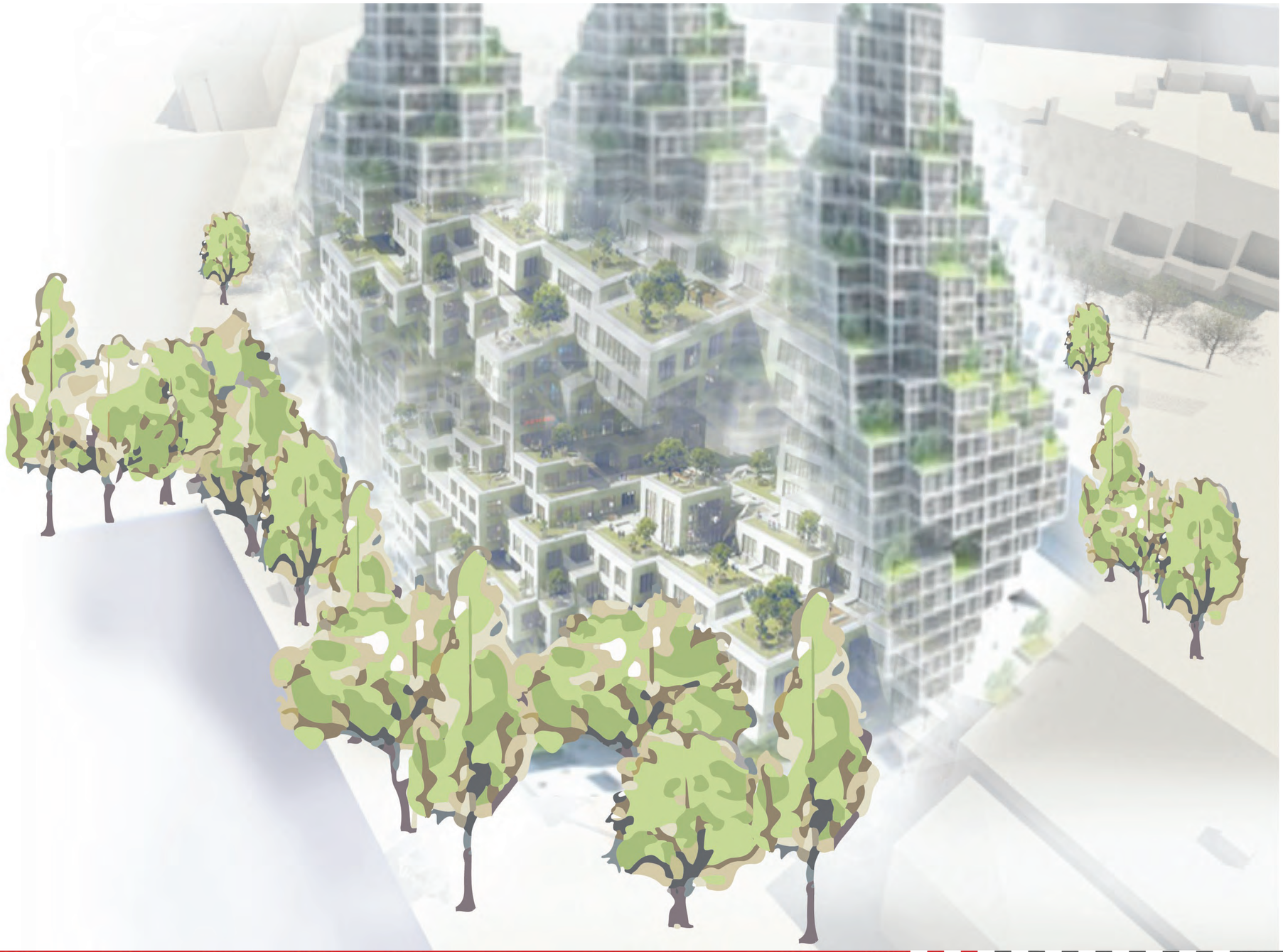




1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

IN 2050...

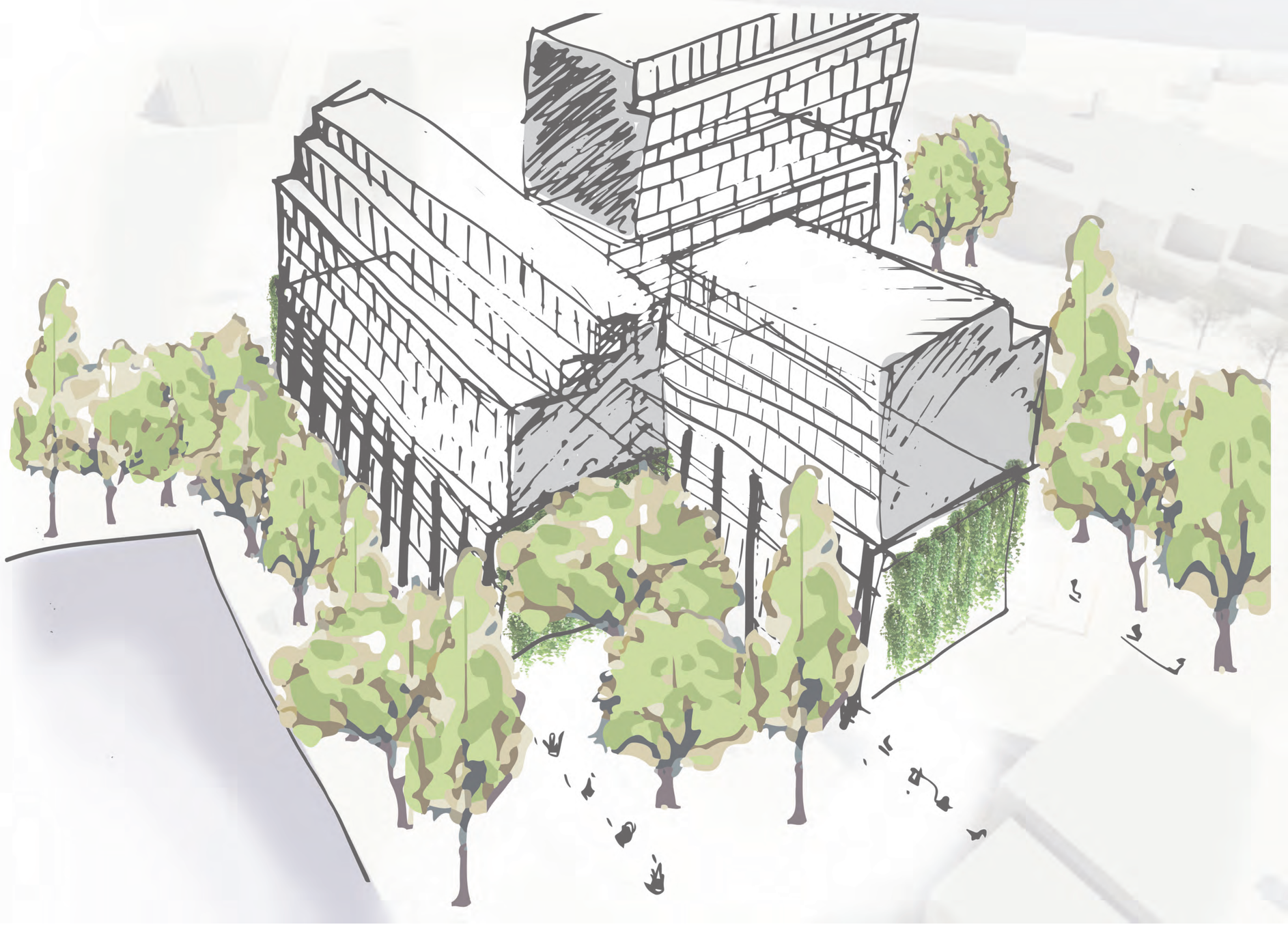
Or MVRDV/BIG



1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

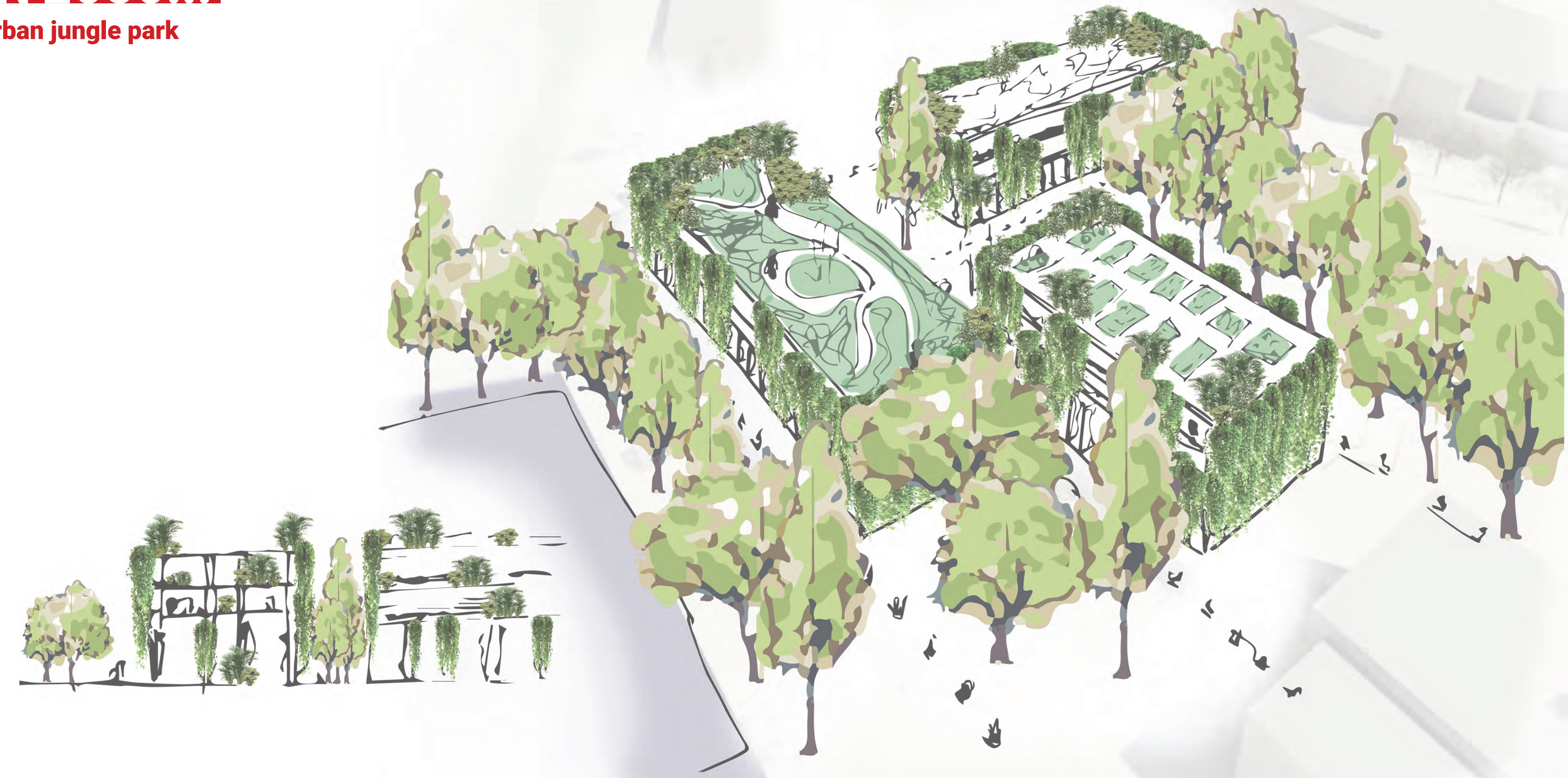
IN 2050...

Or stacking



IN 2050...

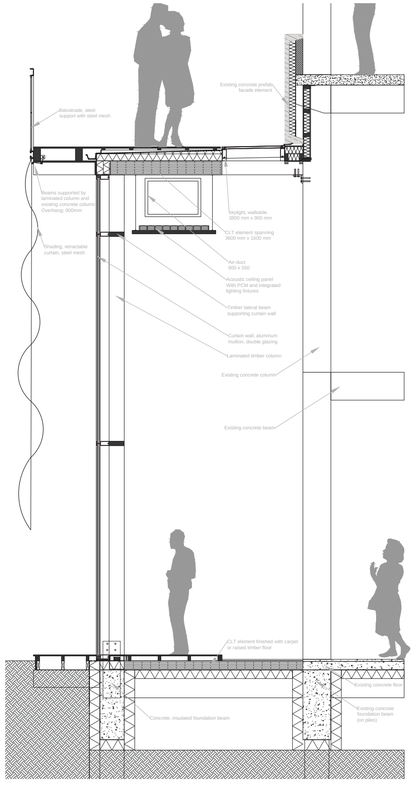
Urban jungle park

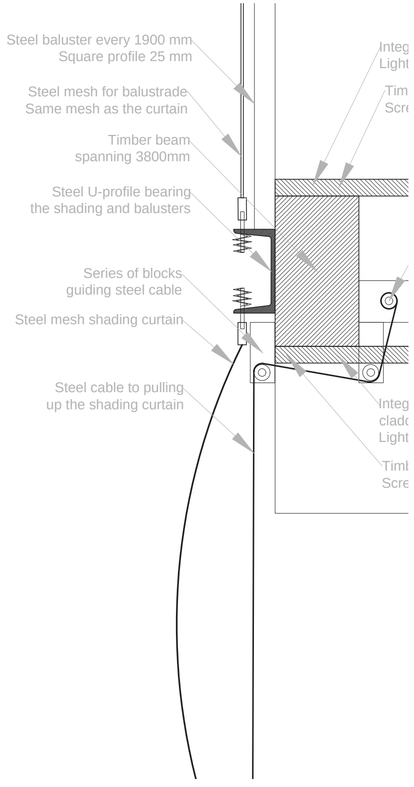


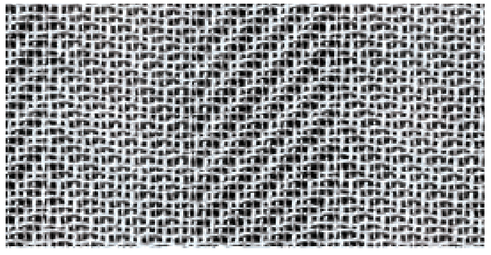
QUESTIONS?

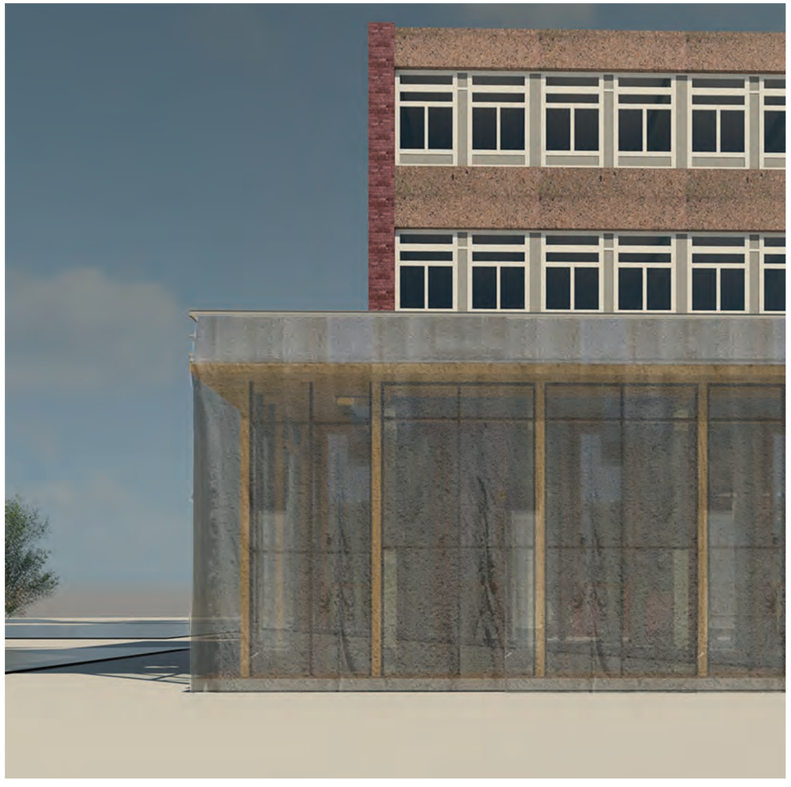
CLIMATE DESIGN

Shading curtains





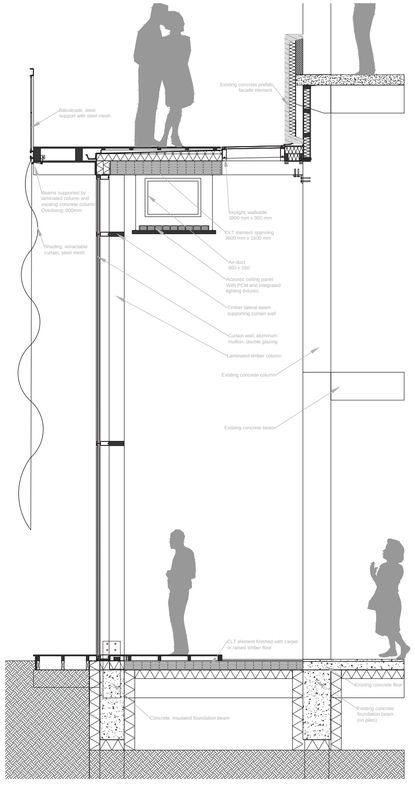


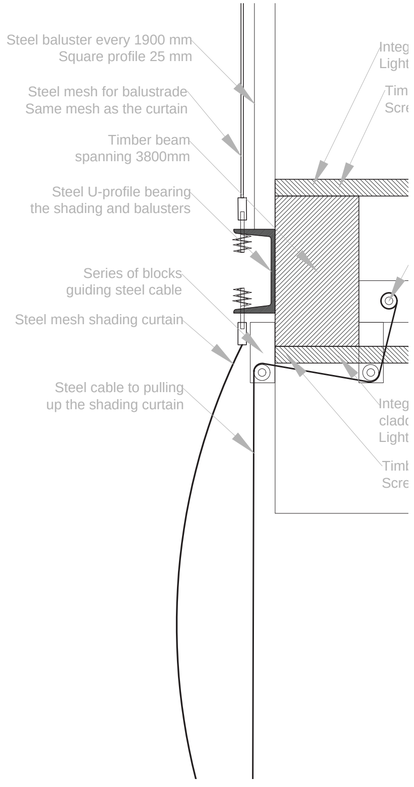


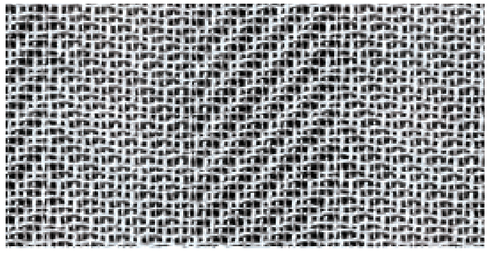
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

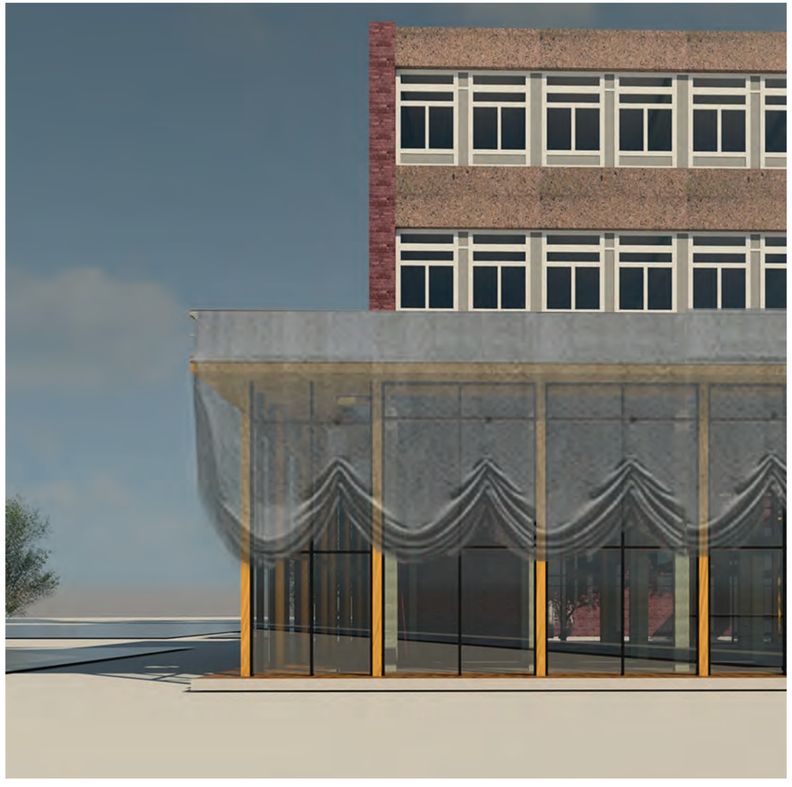
CLIMATE DESIGN

Shading curtains





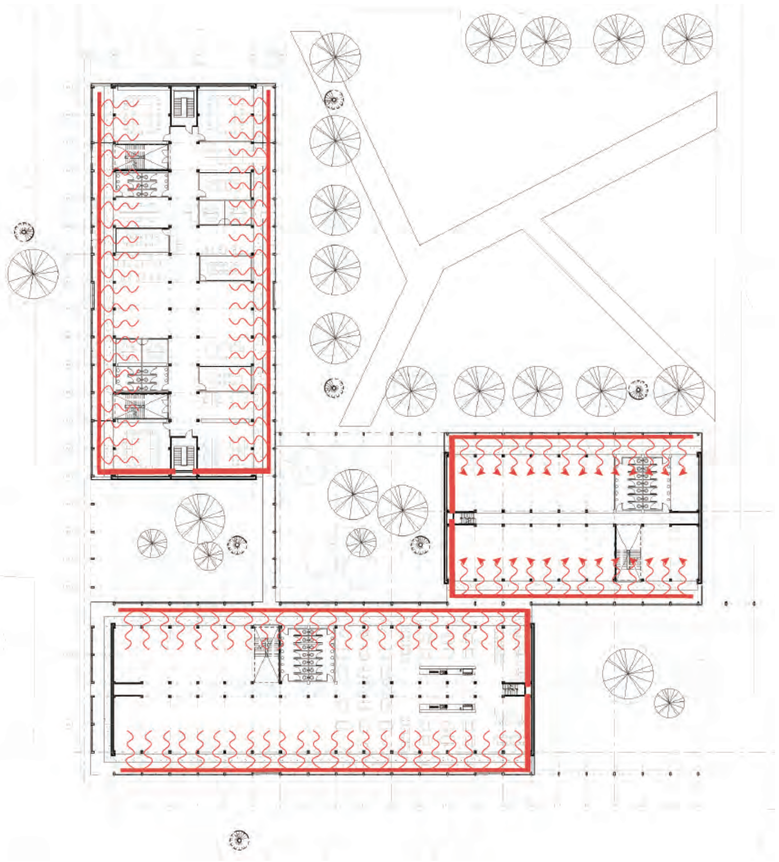


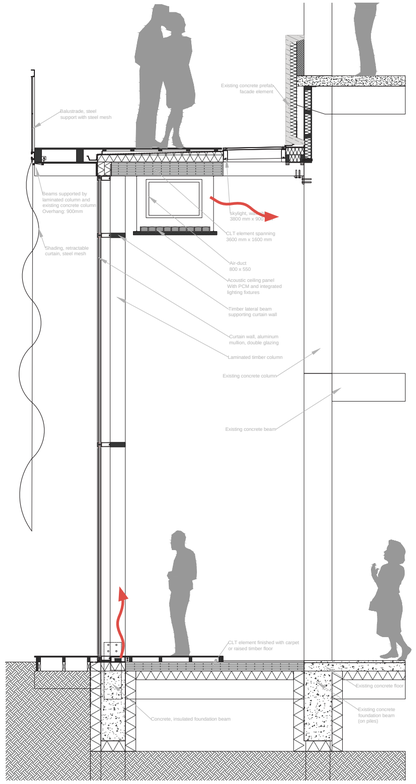


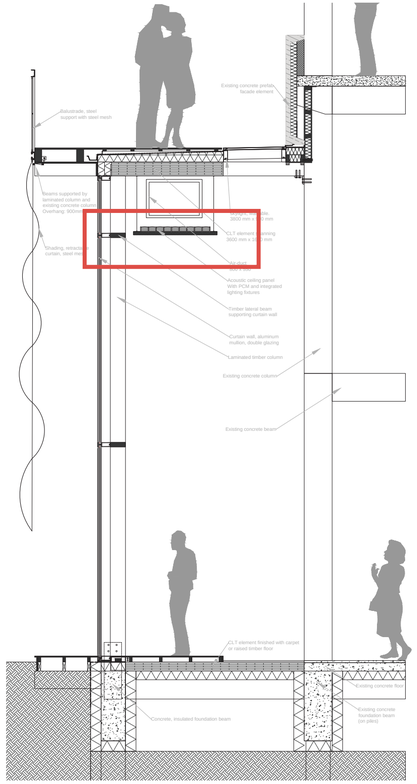
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

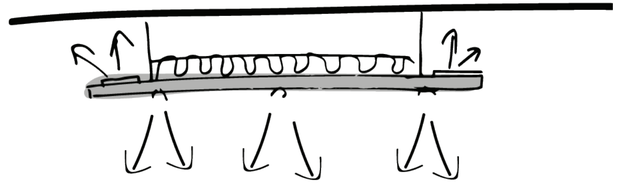
CLIMATE DESIGN

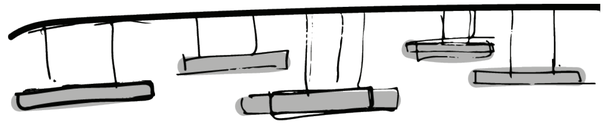
Ventilation & Phase changing materials







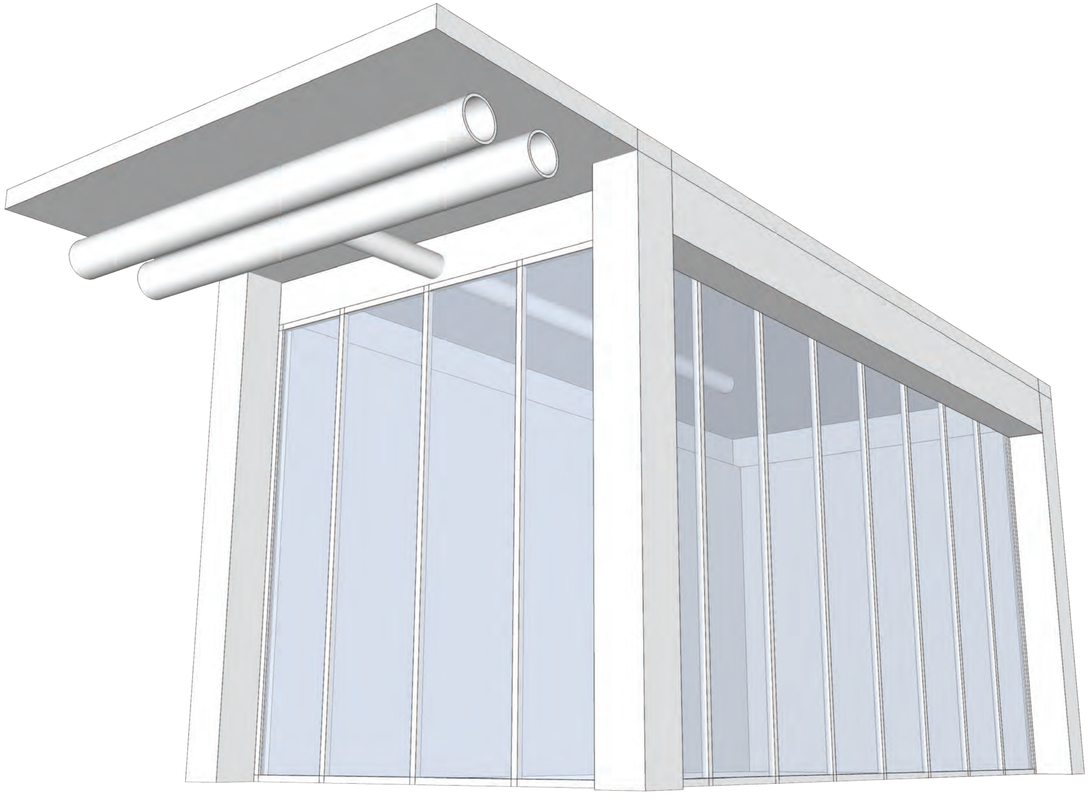


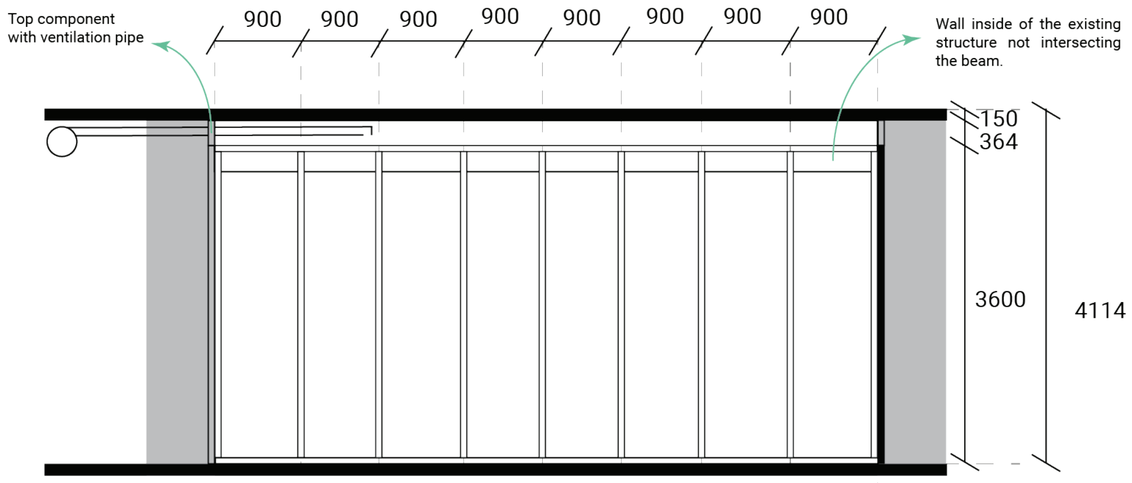


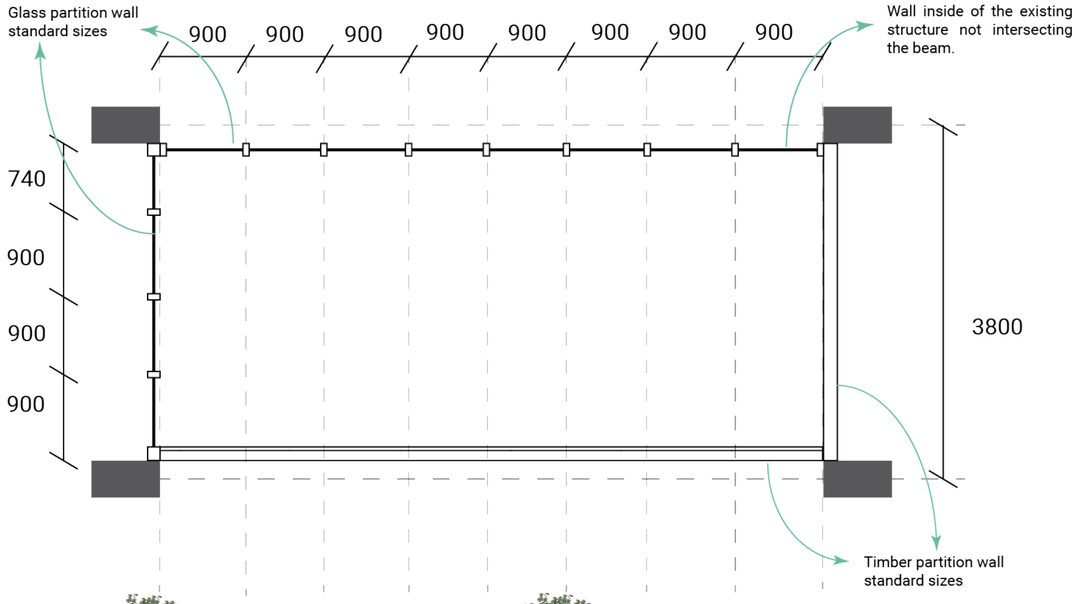
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

CLIMATE DESIGN

Interior partition walls



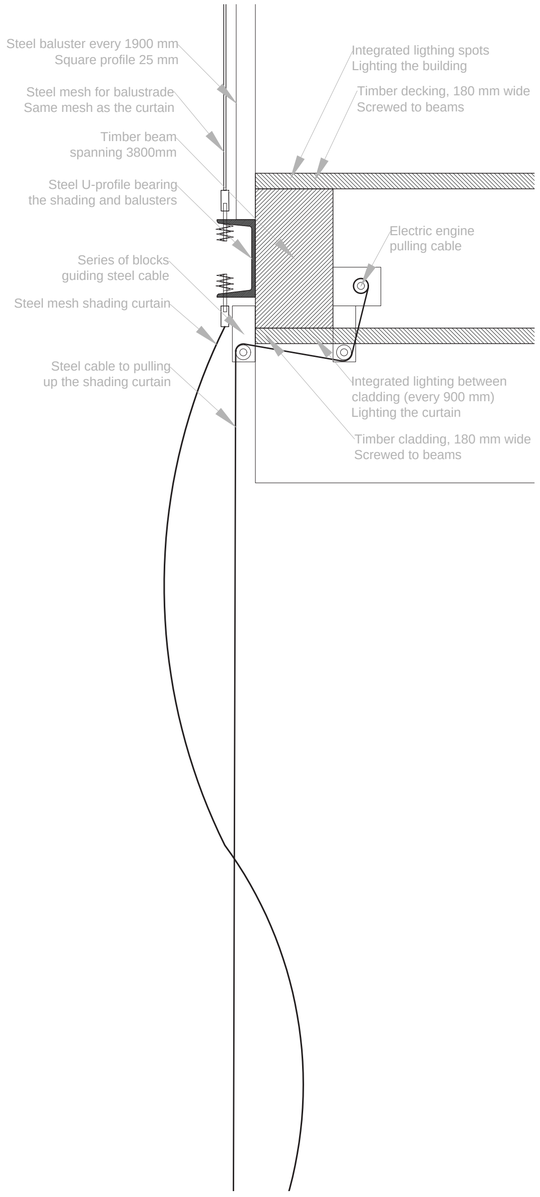


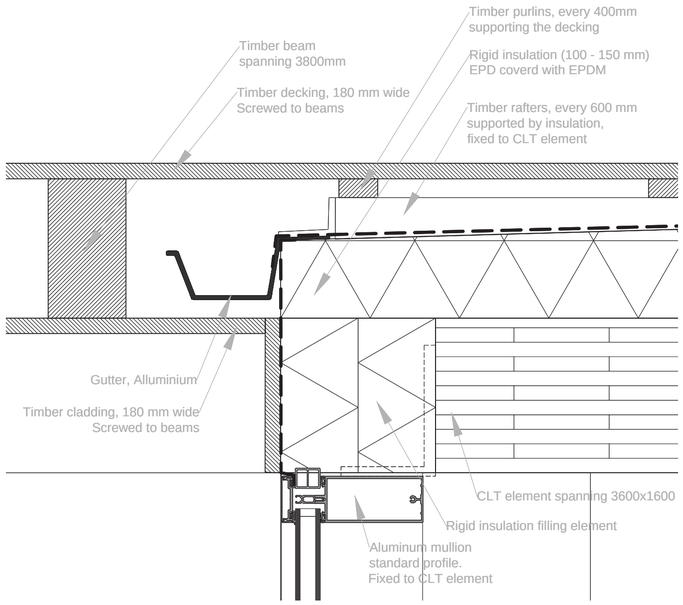


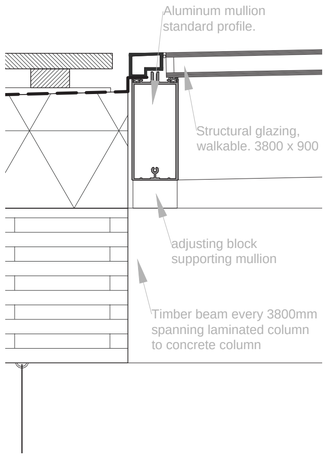
1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

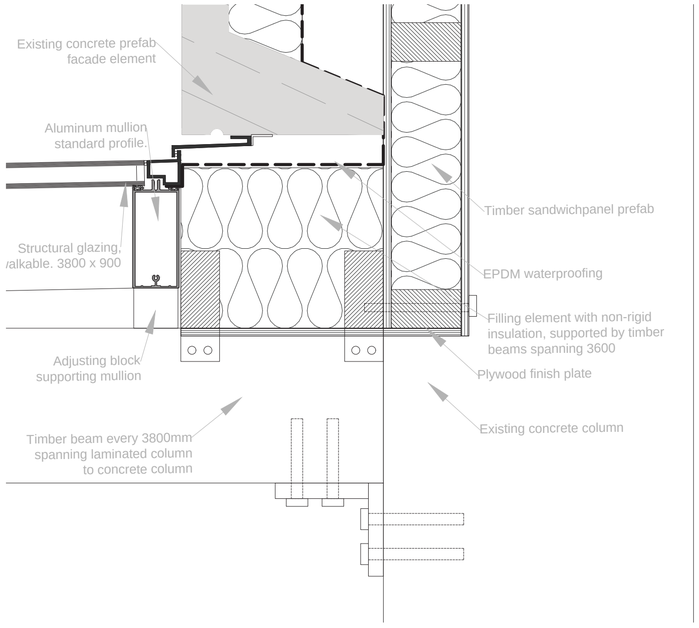
TECHNICAL DESIGN

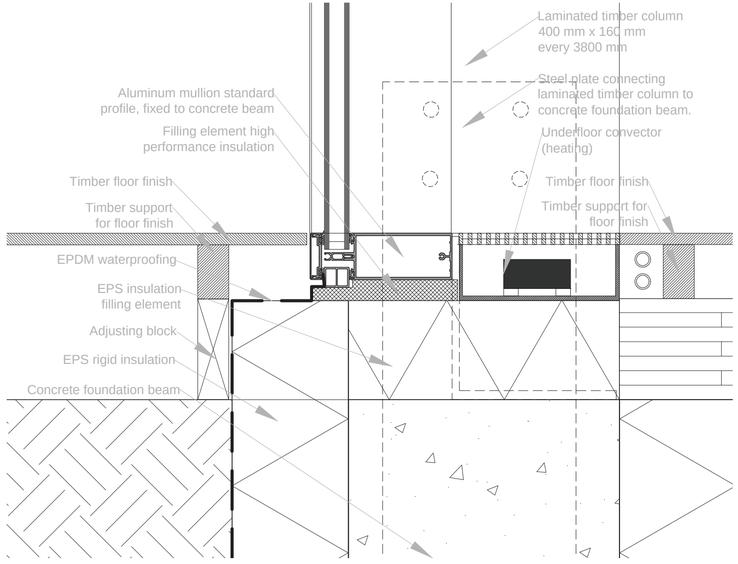
Details

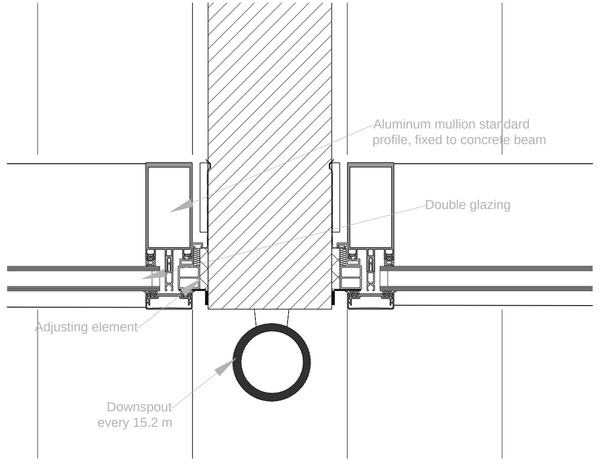






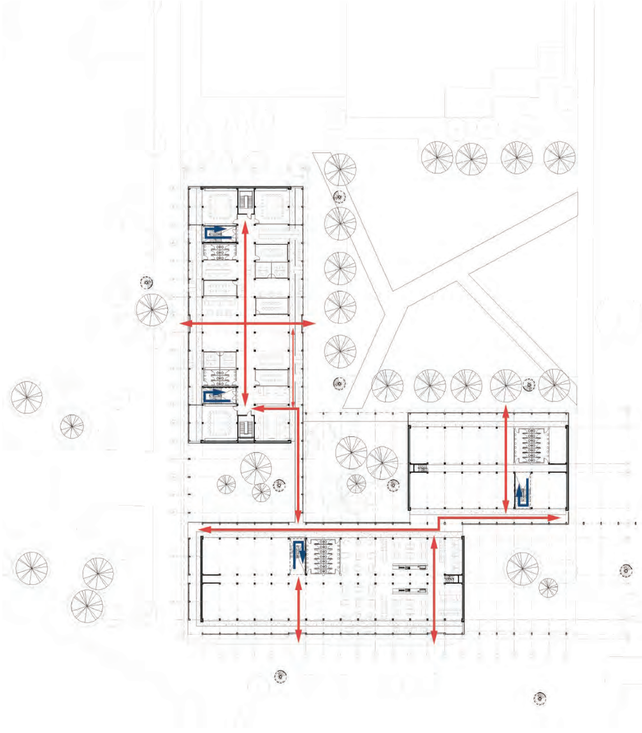




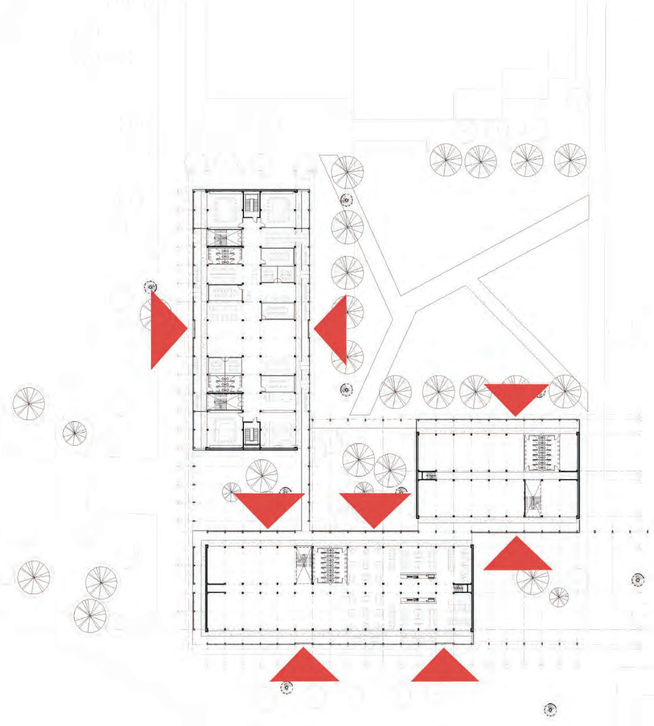


1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050

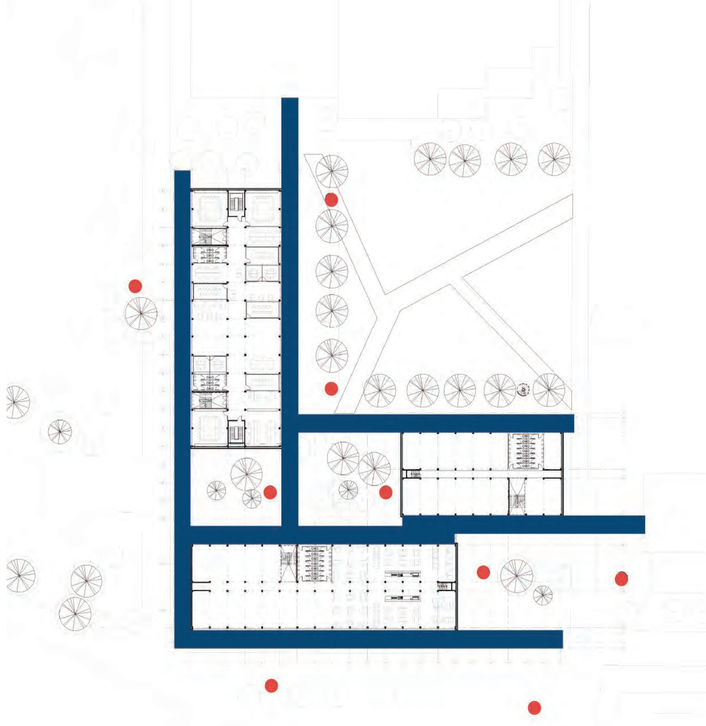
DESIGN DETAILS



Routing



Entrances



staircases to walkways

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050