PERMANENT TEMPORALITY

EXPLORE LAB 15

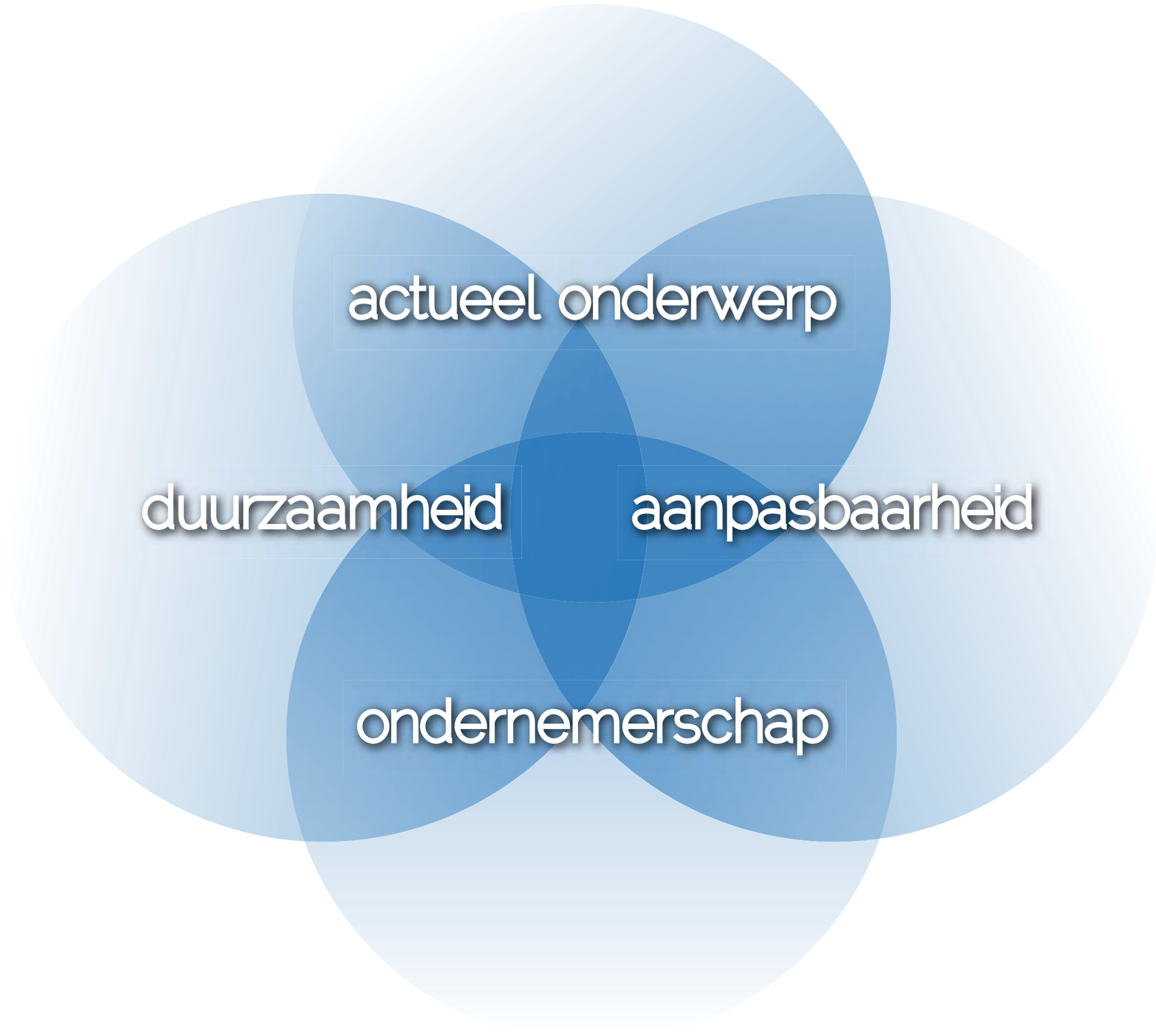
PERMANENTE TIJDELIJKHEID

AFSTUDEERSCRIPTIE EXPLORELAB 15

Technische Universiteit Delft / Faculteit Bouwkunde
ExploreLab 15 (2012-2013) - MSc3/4 - Afstudeerpresentatie

Student: Tim Hilhorst / 1302906

Hoofdmentor: Ir. K.P.M. (Kristel) Aalbers (URB)
Onderzoeksmentor: Ir. H.T. (Hilde) Remøy (RE&H)
Bouwtechnologie mentor: Ir. Y.J. (Ype) Cuperus (BT)
Extern gecommitteerde: Ir. D. (Daan) Vitner


actueel onderwerp
duurzaamheid
aanpasbaarheid
ondernemerschap


VERHUISBOX
ontwerp-
oplossing
VIRGINGALA

PROBLEEM STELLING

Office vacancy is a growing problem in the Netherlands. In the first half of 2012, office vacancy continued to grow to 7,62 million square meters, **15,4% of the total office stock**. Demographic trends (decrease of the workforce), changing ways of working (telecommuting), decreasing immigration and technological innovations (continued automation) may give an even bigger rise to a strong reduction in demand for office space. The situation is clear that office vacancy is an enormous challenge for building owners dealing with non-rentable space and municipalities having to deal with the **degradation of areas** due to lack of liveliness.

The second part of the problem statement involves **sustainability**. Transformation of office vacancy is often referred to as being sustainable. Reusing buildings extends the lifespan of a building and cuts down in the use of materials compared to new construction. The shift of focus from new construction to building transformation is highly relevant in the current market. Therefore it is necessary to research the **advantages and disadvantages of transformation** in the topic of sustainability, and creating clarity about ways of approaching sustainability in structurally vacant offices transformation.

ONDERZOEKS-VRAAG

What, if any, **standardized dwelling system** will offer an **architectural solution** for the transformation of **vacant office buildings** in a **sustainable, flexible** and **customizable way**?

PROJECT DOELSTELLING

The goal of this project would be to design an **architectural intervention** that proposes a **way of dealing** with the increasing problem of **structural vacancy.** The research is executed to determine if there are possibilities making a sustainable design that **can be applicable to standard size office buildings** in the Netherlands. Secondly, the research will investigate the potential of combining the surplus of office space with the shortage of **student housing**.

ONDERZOEK & ONTWERP
METHODE

fascination → problem description → research question → methodology

- topical subject
- sustainability
- flexibility
- entrepeneurship

structural office
vacancy & sustainability

What, if any, standardized dwelling system will offer an architectural solution for the transformation of vacant office buildings in a sustainable, flexible and customizable way?

- Who can benefit from this modular building system and how?
- Who can use this solution, how and for in what price range should it be available?
- To which (percentage of) offices will the system be applicable?
- How can the transformation be done in a sustainable way?
- What are the financial pluses and minuses associated with this solution?
- What is the role of the architect in this architectural solution?
- In what way is the system comparable and in what way is it an addition to existing systems?

research topics { transformation; student housing; flexibility & sustainability } → { literature study; case studies { publications, drawings; interviews } } → design guidelines

design product → apply in a selected building → conclusions & recommendations

standard design solution
for vacant offices

Eerste van der Kunstraat 292
Den Haag

ONDERZOEK

SAMENVATTING

ONDERZOEK

SAMENVATTING

KANTORENTRANSFORMATIE

ONDERZOEK
SAMENVATTING
KANTOORTRANSFORMATIE

ONDERZOEK
SAMENVATTING
KANTOORTRANSFORMATIE

ONDERZOEK
SAMENVATTING
KANTOORTRANSFORMATIE

LEEGSTAND CIJFERS

- Een 'gezond' leegstandspercentage is **4 tot 8 procent**
- Structurele leegstand kan de komende jaren **groeien naar 30%**
- Te veel leegstand kan leiden tot **verloedering van de buurt** en een **slecht ondernemingsklimaat**

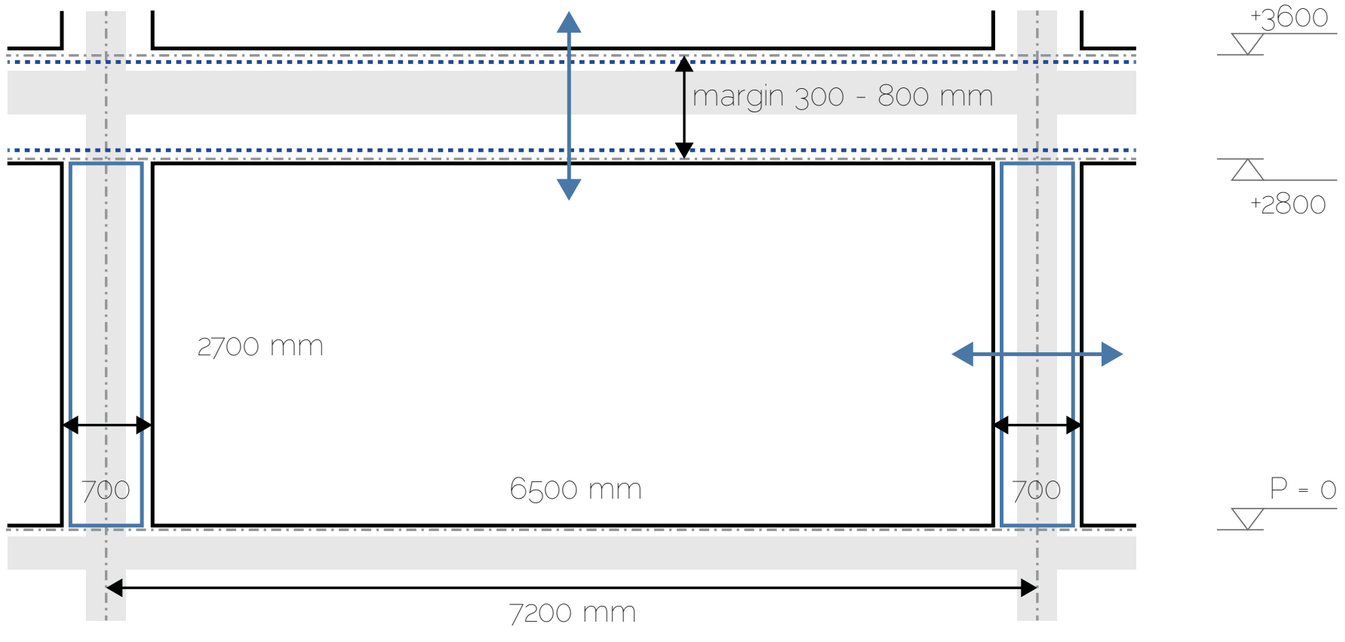
KNELPUNTEN

- Financieel knelpunt > **kantoorruimte levert een hogere huurprijs op dan woningen**. Investeerders zijn terughoudend in het afwaarderen van het vastgoed en wachten op nieuwe huurders
- **60-70% afwaardering** creëert een business case **voor studentenhuisvesting**

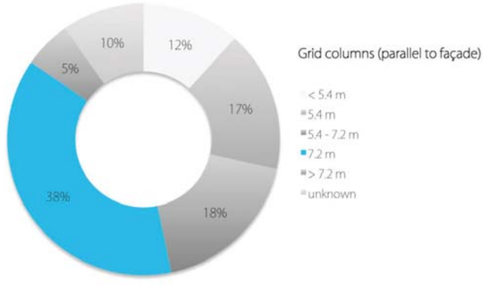
INITIATIEVEN

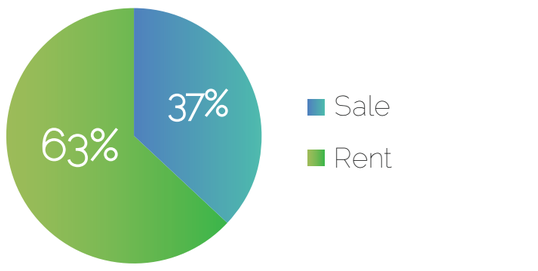
- KANTORENLOODS - 2006
- WRO (WET RUIMTELIJKE ORDENING) - 2008
- CRISIS- EN HERSTELWET - 2010
- WABO (WET ALGEMENE BEPALINGEN OMGEVINGSRECHT) - 2010
- WET KRAKEN EN LEEGSTAND - 2010
- TRANSFORMATIEWIJZER: WONEN BUITEN KANTOORTIJD

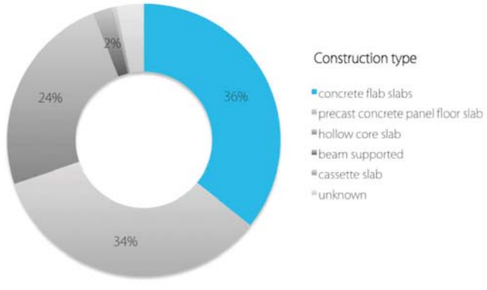
ONDERZOEK
SAMENVATTING
KANTOORTRANSFORMATIE

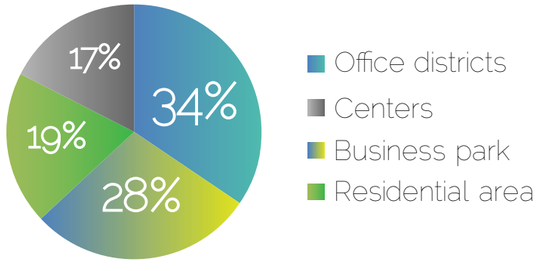


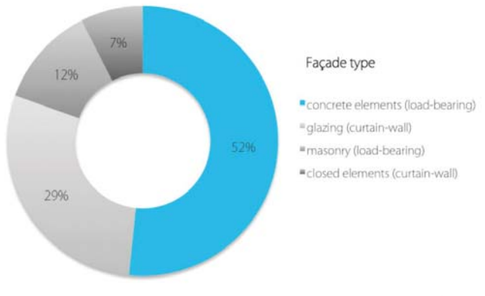
Koornneef, 2012

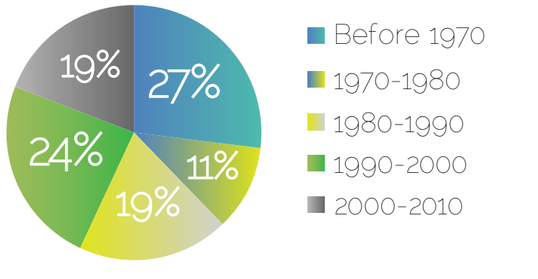












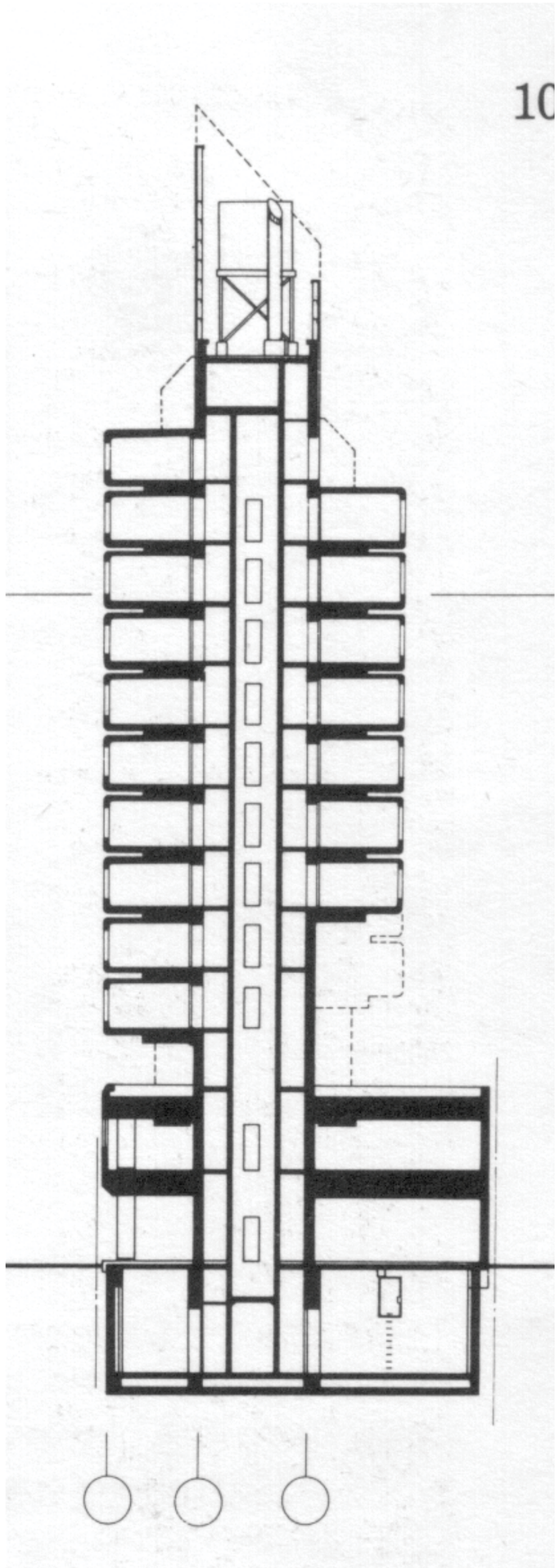
Koornneef, 2012

Meijel, L. van & Bouma, T. (2013)

ONDERZOEK

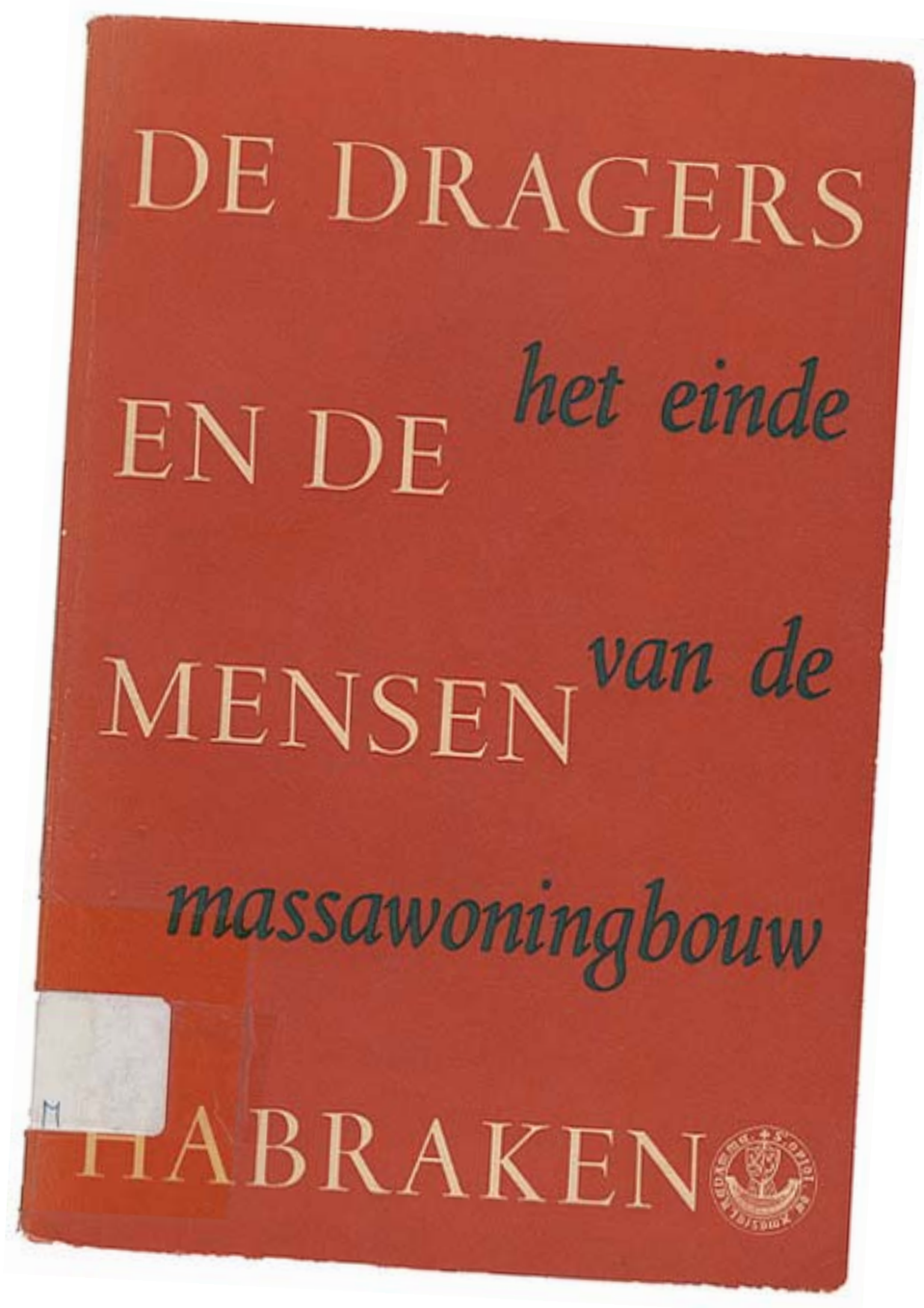
SAMENVATTING

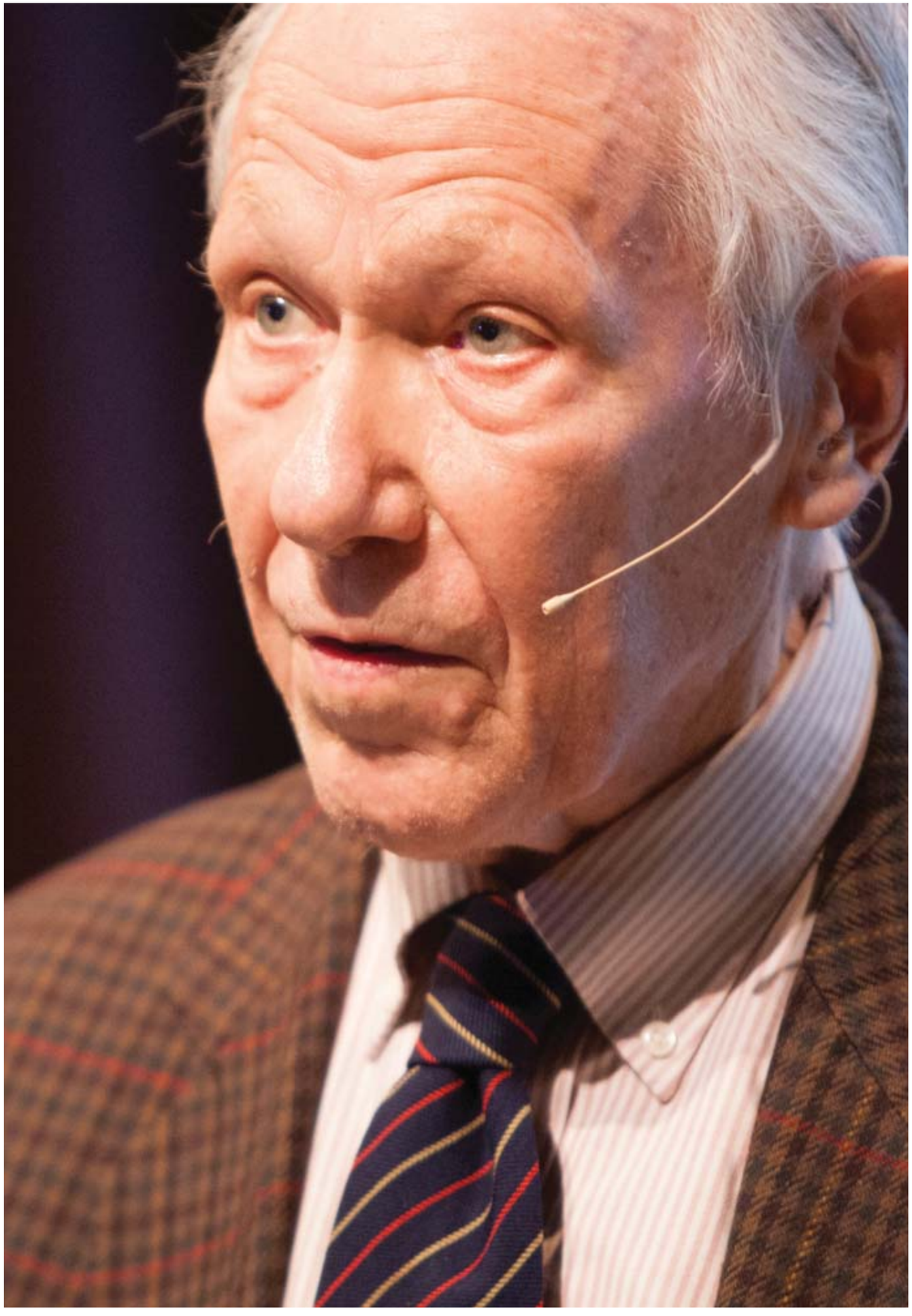
FLEXIBILITEIT



“THE ARCHITECTURE OF **METABOLISM IS THE ARCHITECTURE OF TEMPORARINESS**. A DYNAMIC BALANCE EXPRESSED BY **BUDDHISM’S CONCEPT OF IMPERMANENCE** AS AN ALTERNATIVE TO THE WESTERN AESTHETIC IDEALS OF THE UNIVERSAL AND THE ETERNAL.”

– KUROKAWA, 1992


DE DRAGERS
EN DE
het einde
MENSEN
van de
massawoningbouw
HABRAKEN



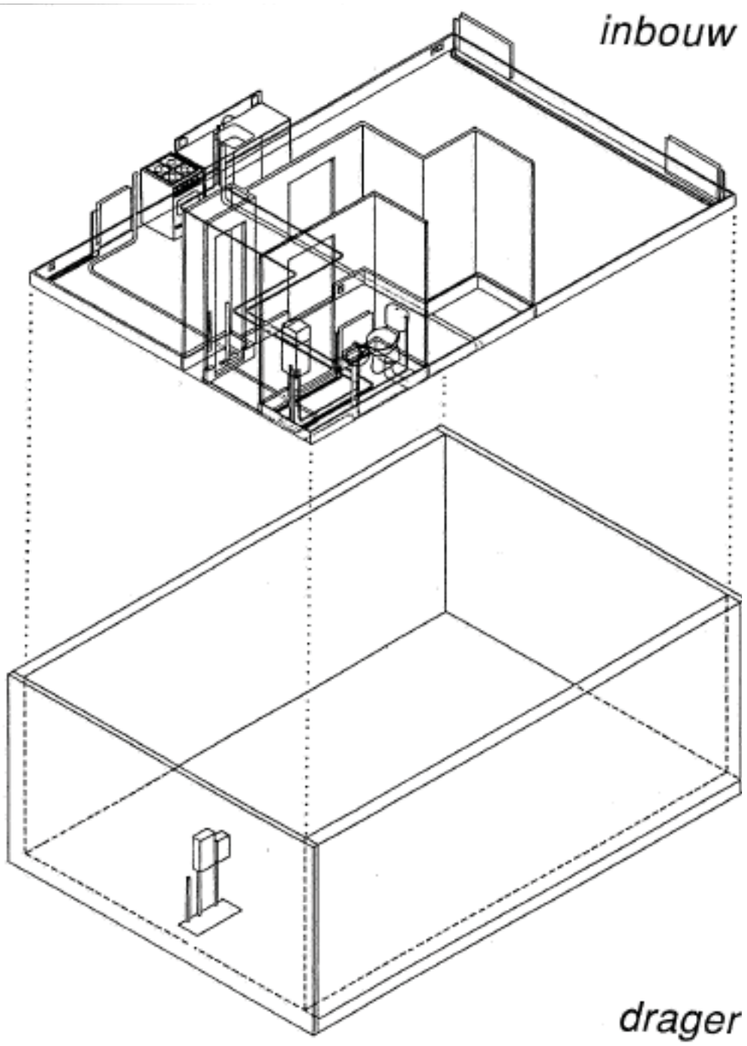
“NAAR MIJN VASTE OVERTUIGING HEEFT HET DENKEN VAN ARCHITECTEN, STEDENBOUWKUNDIGEN EN PLANOLOGEN SLECHTS WERKELIJK **EEN TOEKOMST** INDIEN DEZE DISCIPLINES ER IN SLAGEN HET ASPECT **VERANDERING ALS GRONDSLAG** TE KIEZEN VOOR HUN THEORETISCHE BESCHOUWING”

– HABRAKEN, 1975

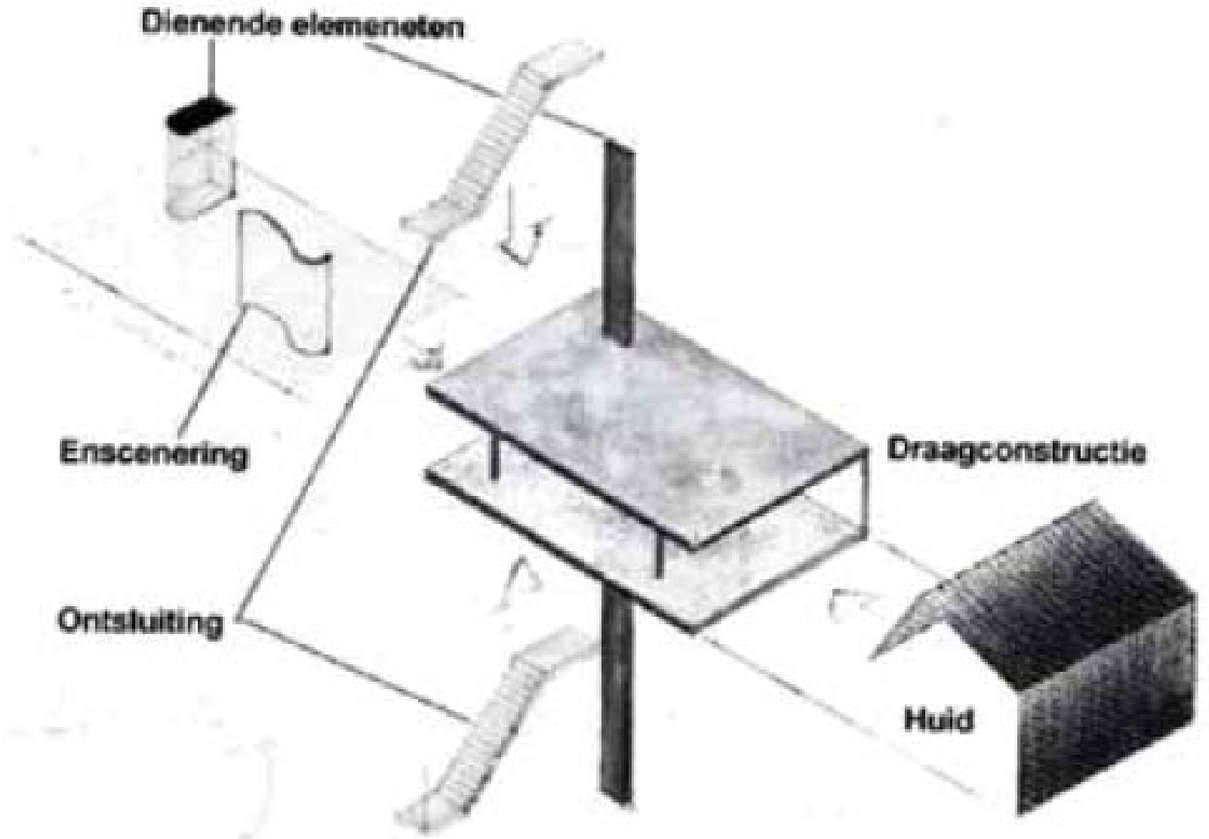
SOLIDS ARE **SUSTAINABLE, BECAUSE THE LIFE-CYCLE** OF SUCH A BUILDING IS VERY LONG. THEY DO NOT HAVE TO BE DEMOLISHED IF THE (HOUSING) NEEDS CHANGE. **SOLIDS ADAPT TO THE DIVERSITY OF SOCIETY**, AND THEREFORE ADD TO THE SOCIAL SUSTAINABILITY OF THE NEIGHBORHOOD.

– GARRITZMAN, 1998-2003

ONDERZOEK
SAMENVATTING
FLEXIBILITEIT



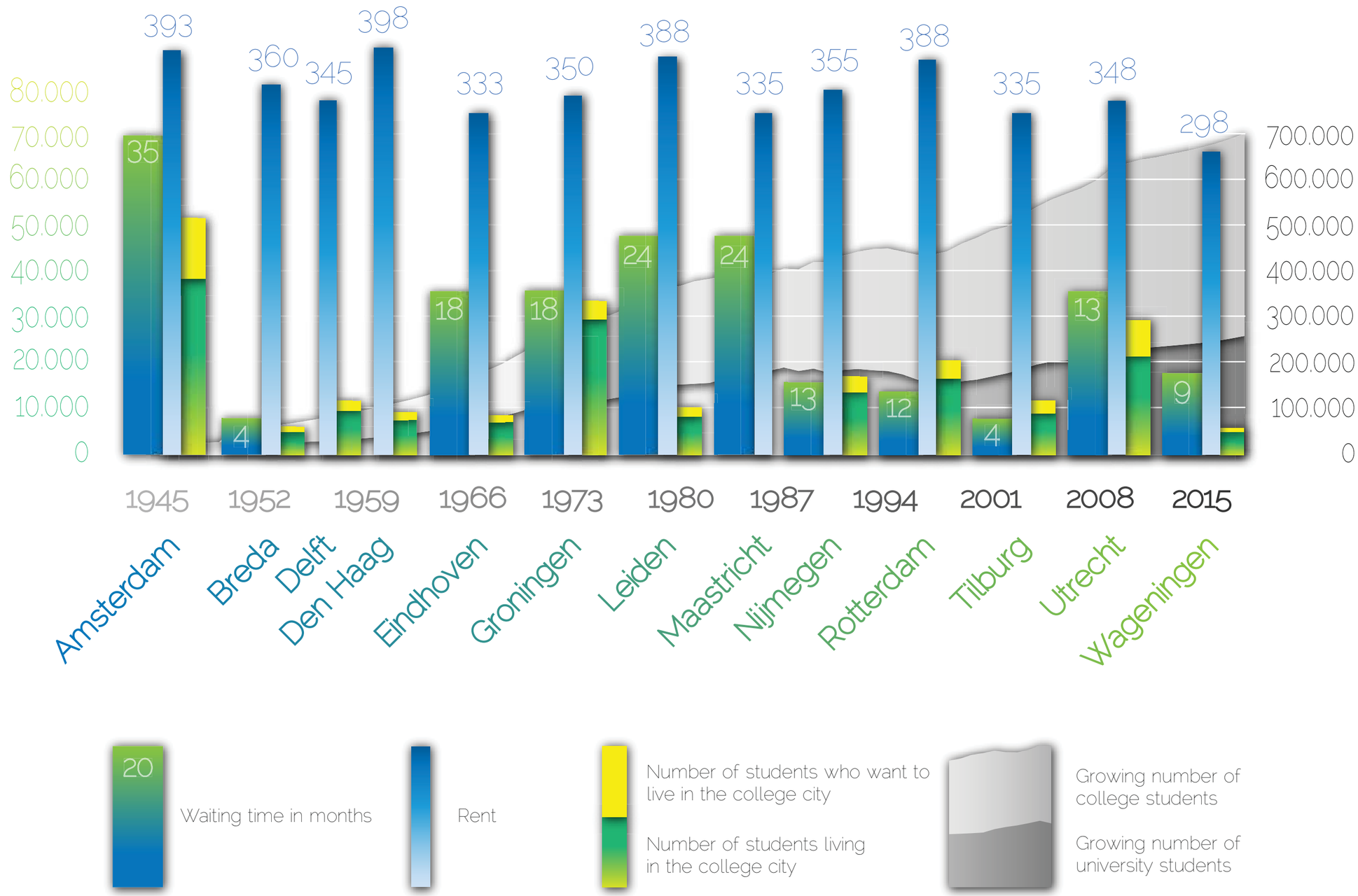
Supports: an Alternative to Mass Housing; Habraken, 1961



Kader en generieke ruimte; Leupen, 2002

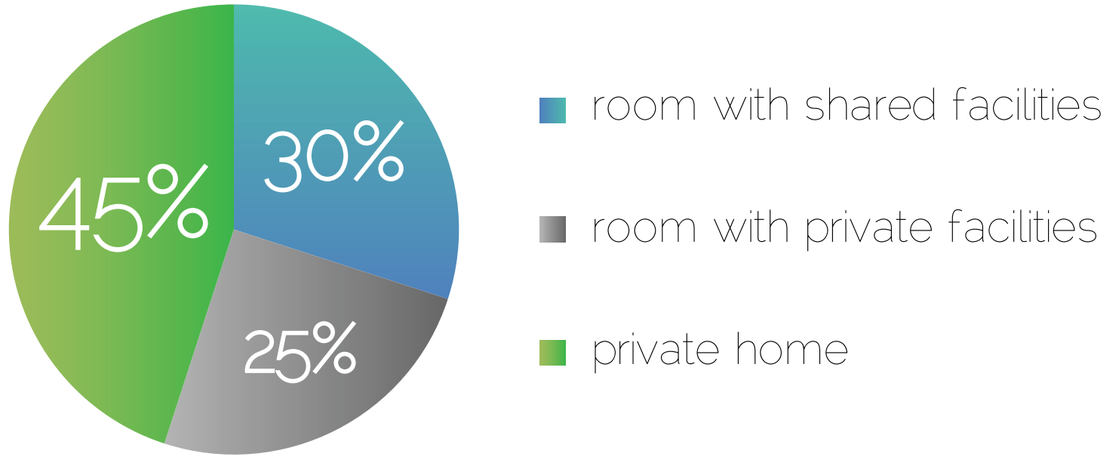
ONDERZOEK
SAMENVATTING
STUDENTENHUISVESTING

ONDERZOEK
SAMENVATTING
STUDENTENHUISVESTING

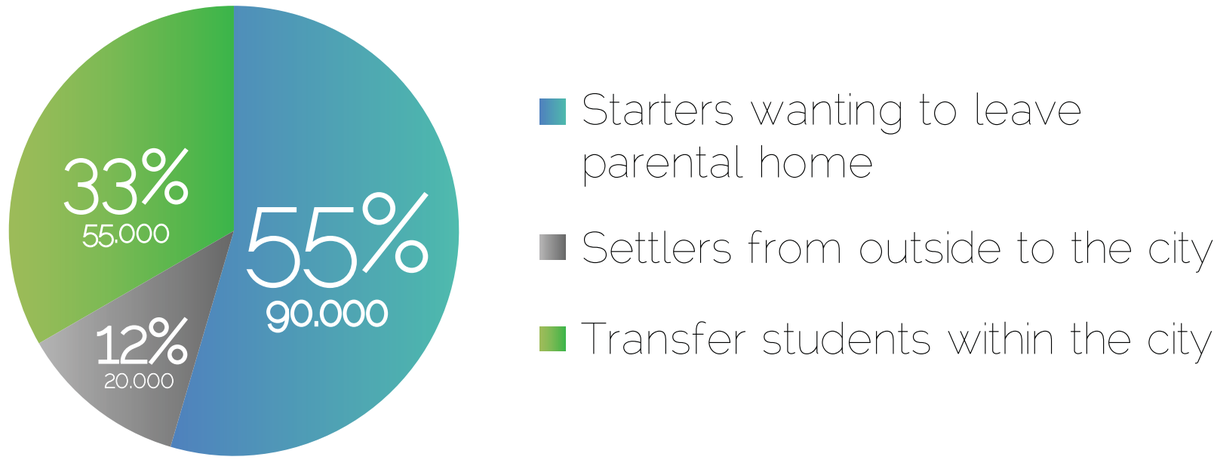


ONDERZOEK
SAMENVATTING
STUDENTENHUISVESTING

Hoe willen studenten wonen?



Waar willen studenten wonen?



ONDERZOEK
SAMENVATTING
CASE STUDIES

DUURZAME
TRANSFORMATIE

KRAAIJVANGER

PROVINCIEKANTOOR, HAARLEM

DE ZWARTE HOND

GASTERRA KANTOOR, GRONINGEN

KANTOOR
TRANSFORMATIE

MULDERBLAUW ARCHITECTEN

HOLIDAY INN, UTRECHT

KARINA BENRAAD

VOORMALIG ACTA-GEBOUW, AMSTERDAM

STUDENTEN-
HUISVESTING

YANOVSHTCHINSKY ARCHITECTEN

DUWO, DELFT

HENDRIK POSTEL

KRAKEELHOF, DELFT

ONTWERP RICHTLIJNEN

Design guidelines

Technical

- Flexibele dimensions
- Fixed, individual installations
- Detachment of base building and fit-out
- Standardization in dimensions
- Installations under a raised floor or in walls

Sustainable

- NIBE material index
- Reduce energy demands
- User involvement
- ATES system / geothermal storage
- Triple-glazed windows, natural sunlight heat gain
- PV panels, green roof, green house effect

Building tech

- Self-built construction
- Elements to fit in elevator
- Easy understandable construction drawings

Financial

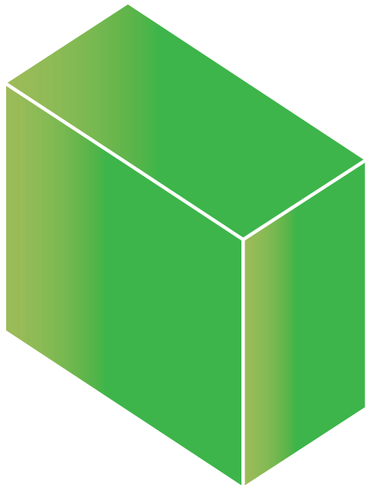
- Rent price (>300 euro/ month, <450 euro/month)
- Financial separation base building and fit-out
- Small units lead to larger profit
- Leasing gets the user involved in making sustainable choices

Function scenario's (small units)

- Student housing
- Elderly care homes
- CEE migrants
- Young professionals

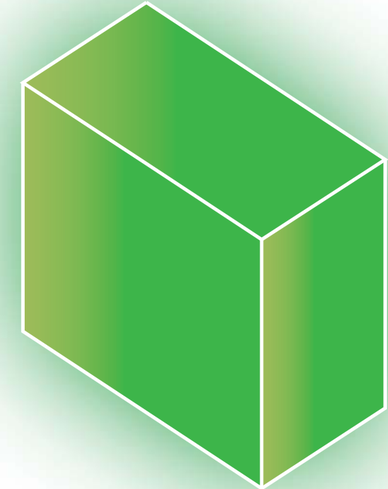
ONTWERP
RICHTLIJNEN
DUURZAAMHEID OP VERSCHILLENDE SCHALEN

HERGEBRUIK
BESTAAND
KANTOORGEBOUW



DUURZAME
TRANSFORMATIE
GEBOUW

BETREKKEN
BEWONER
IN DUURZAME
KEUZES



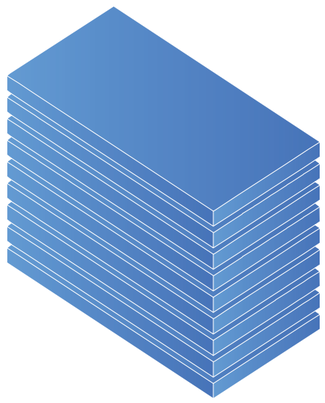
DUURZAME
UITSTRALING
NAAR OMGEVING

ONTWERP SYSTEEM

ONTWERP SYSTEEM

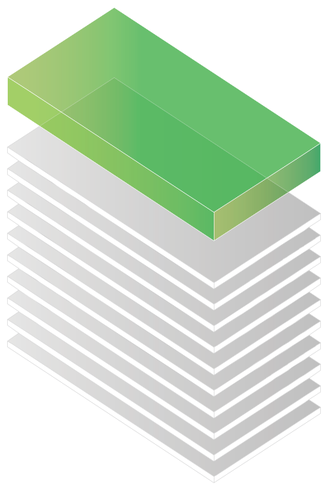
BESTAANDE GEBOUW

DRAGER & INBOUW

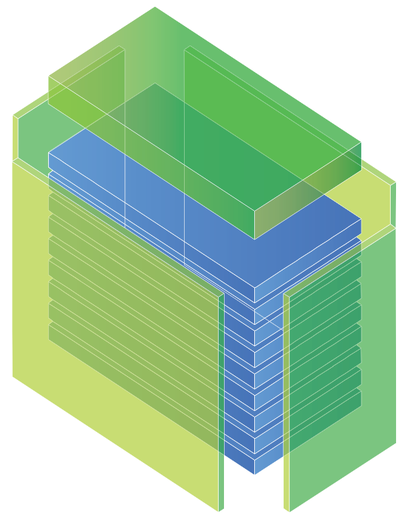


GEVELS

OPTOPPEN



TOTAAL PAKKET



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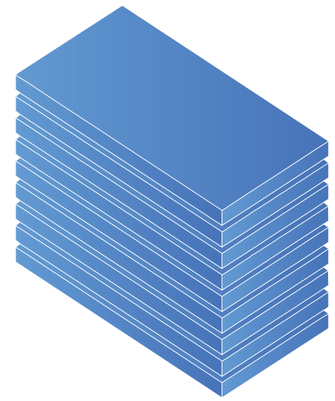
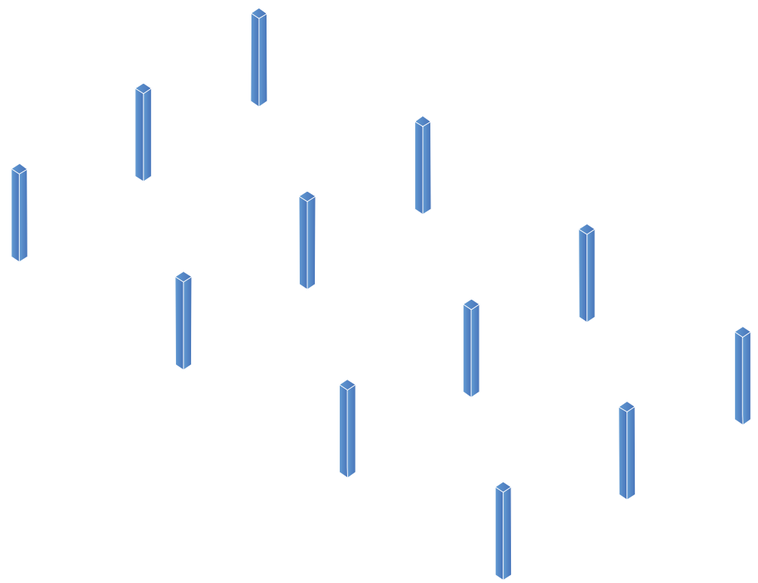
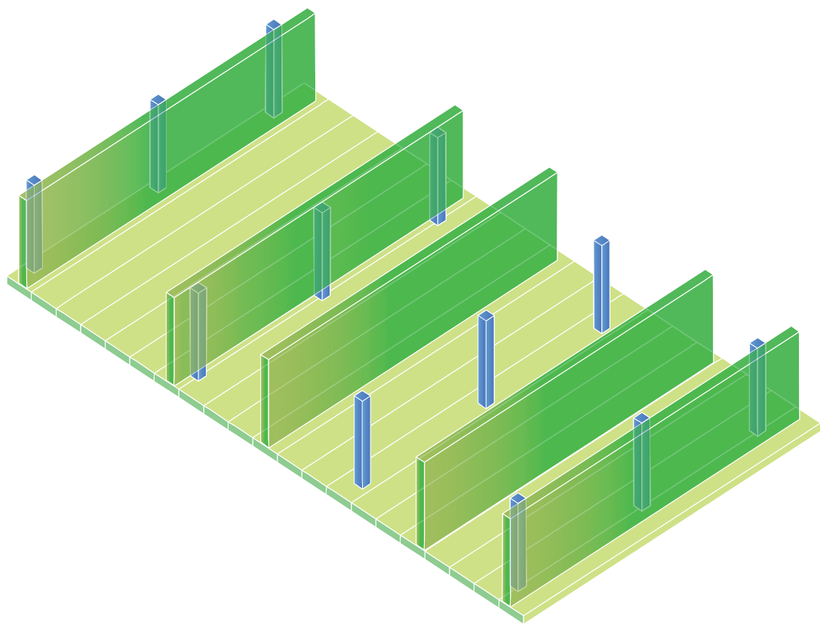
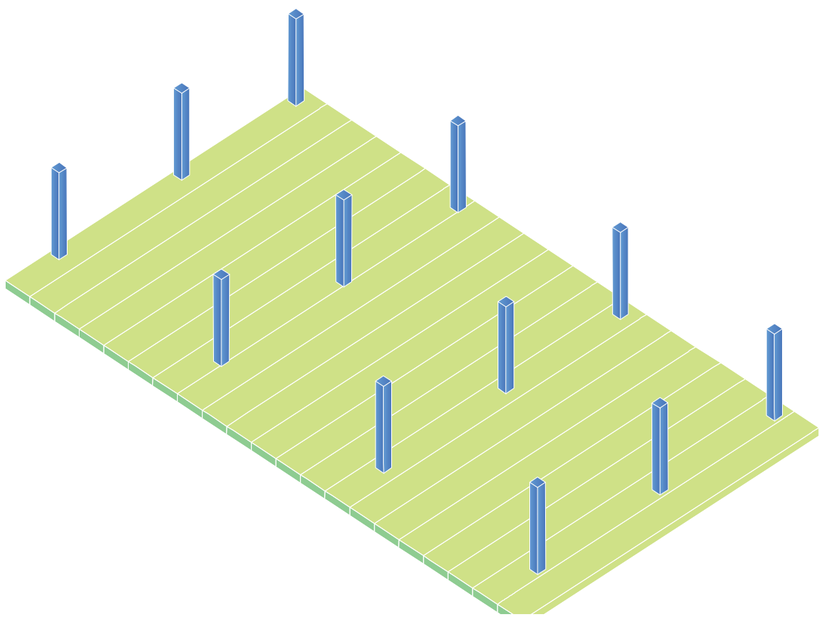
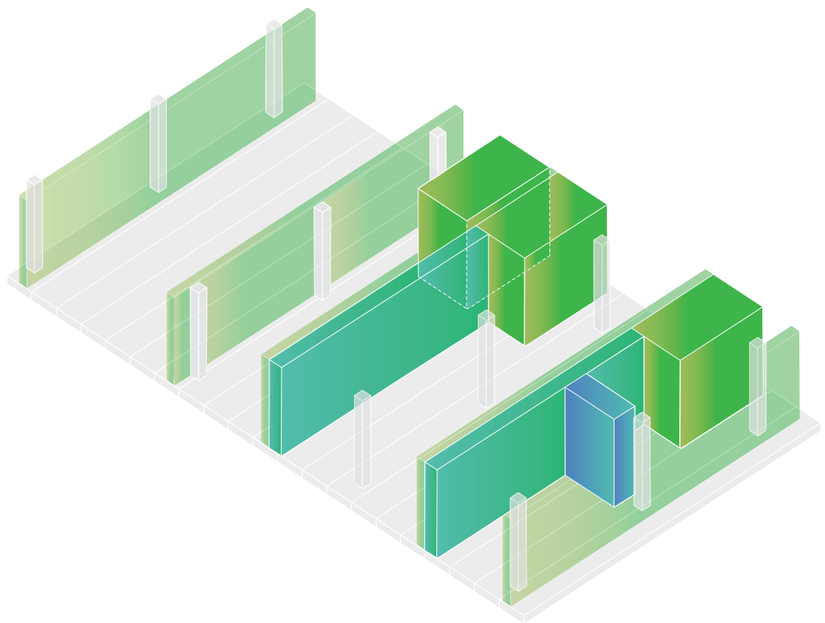
SYSTEEM
DRAGER & INBOUW











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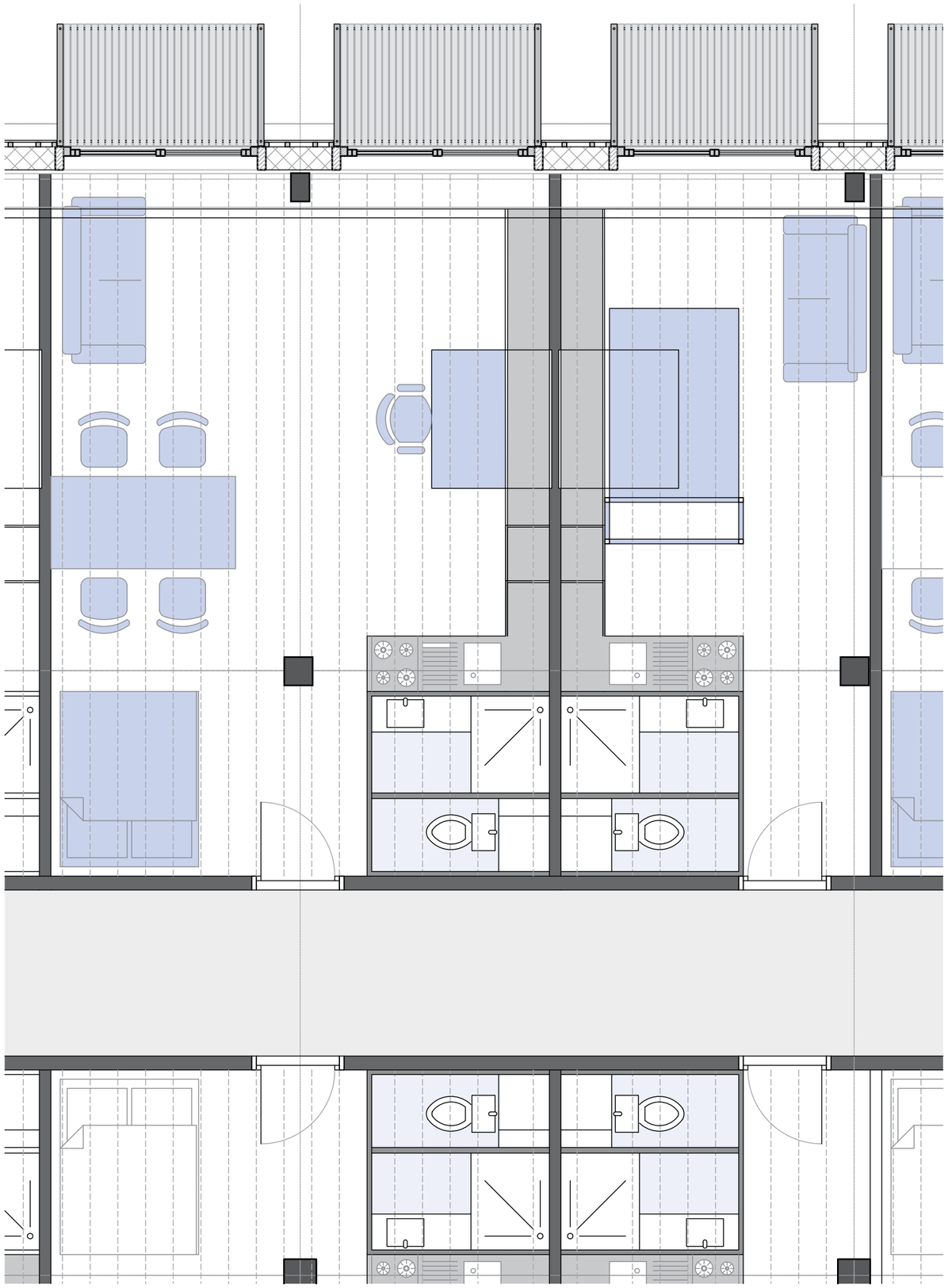

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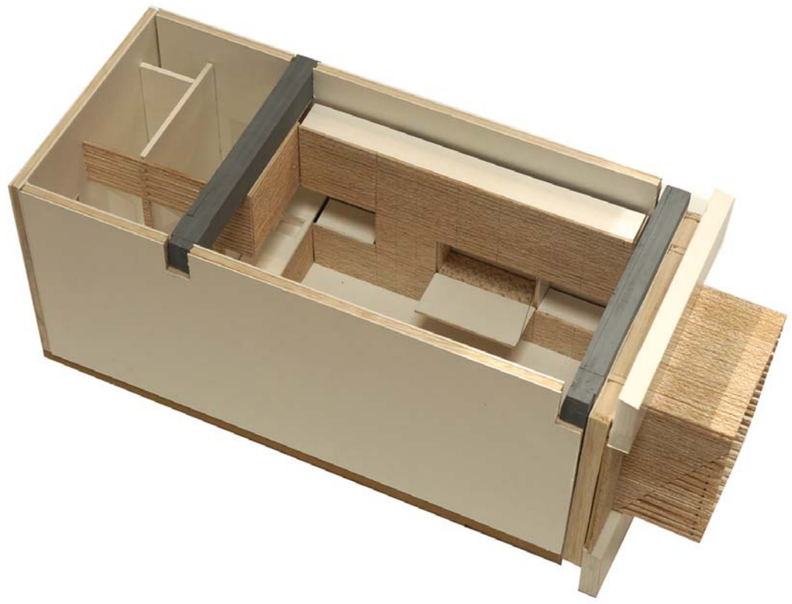

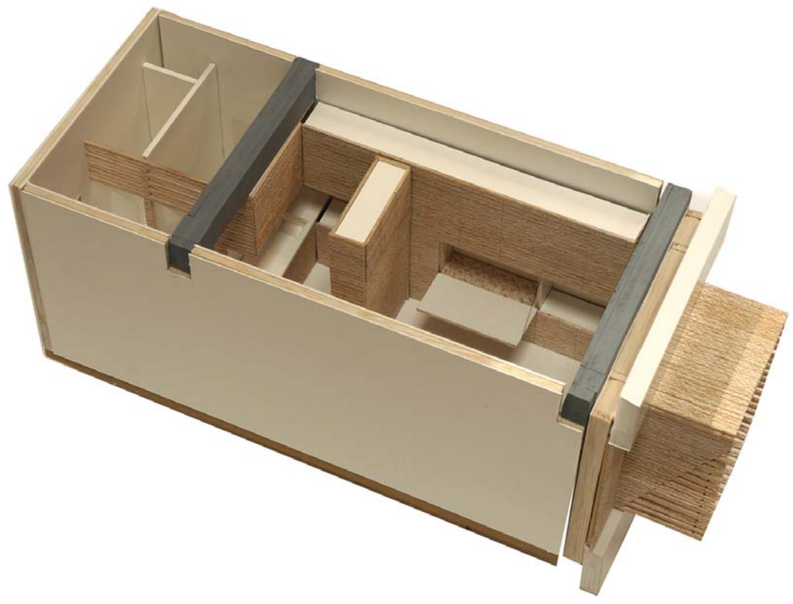

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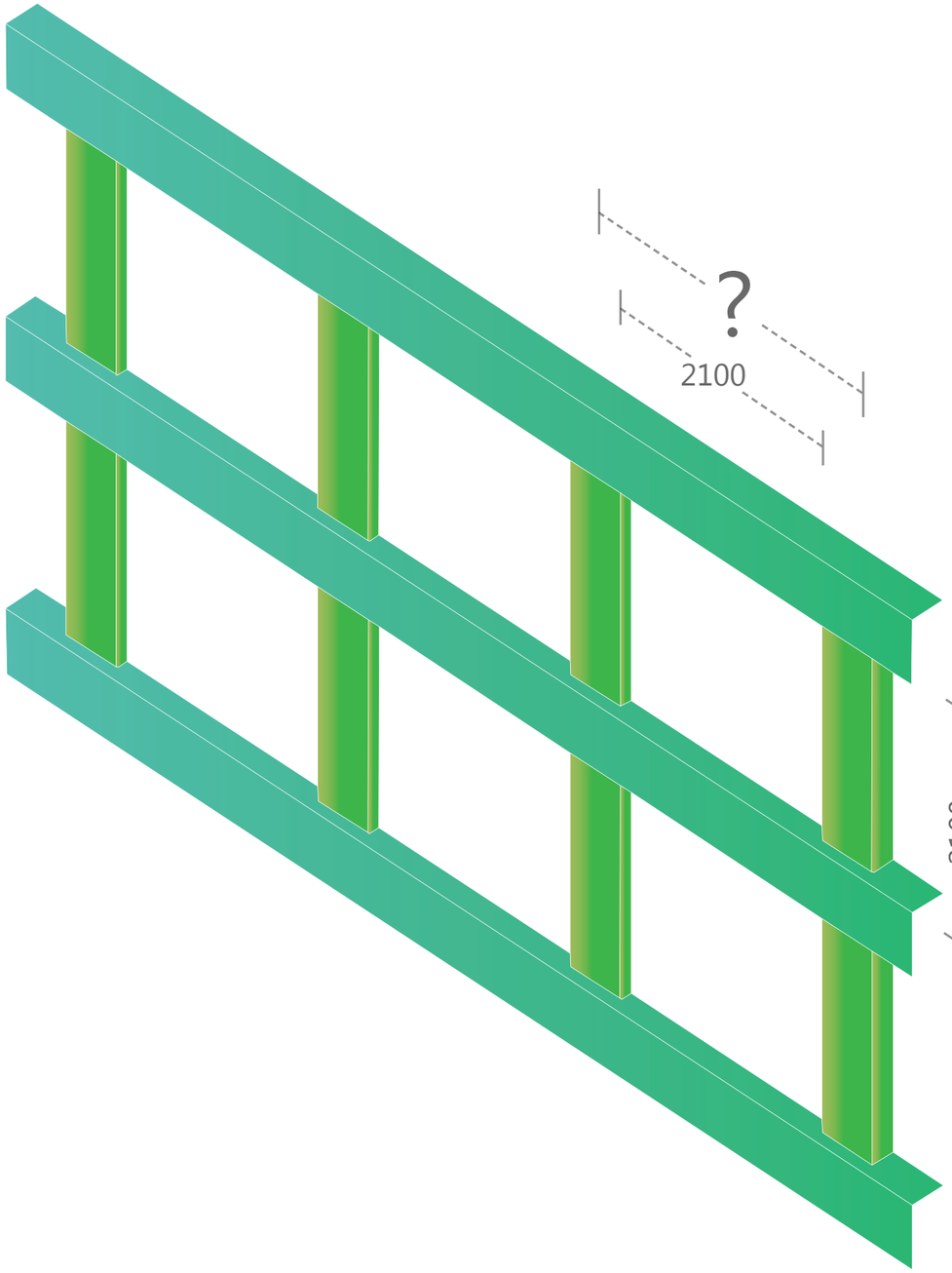
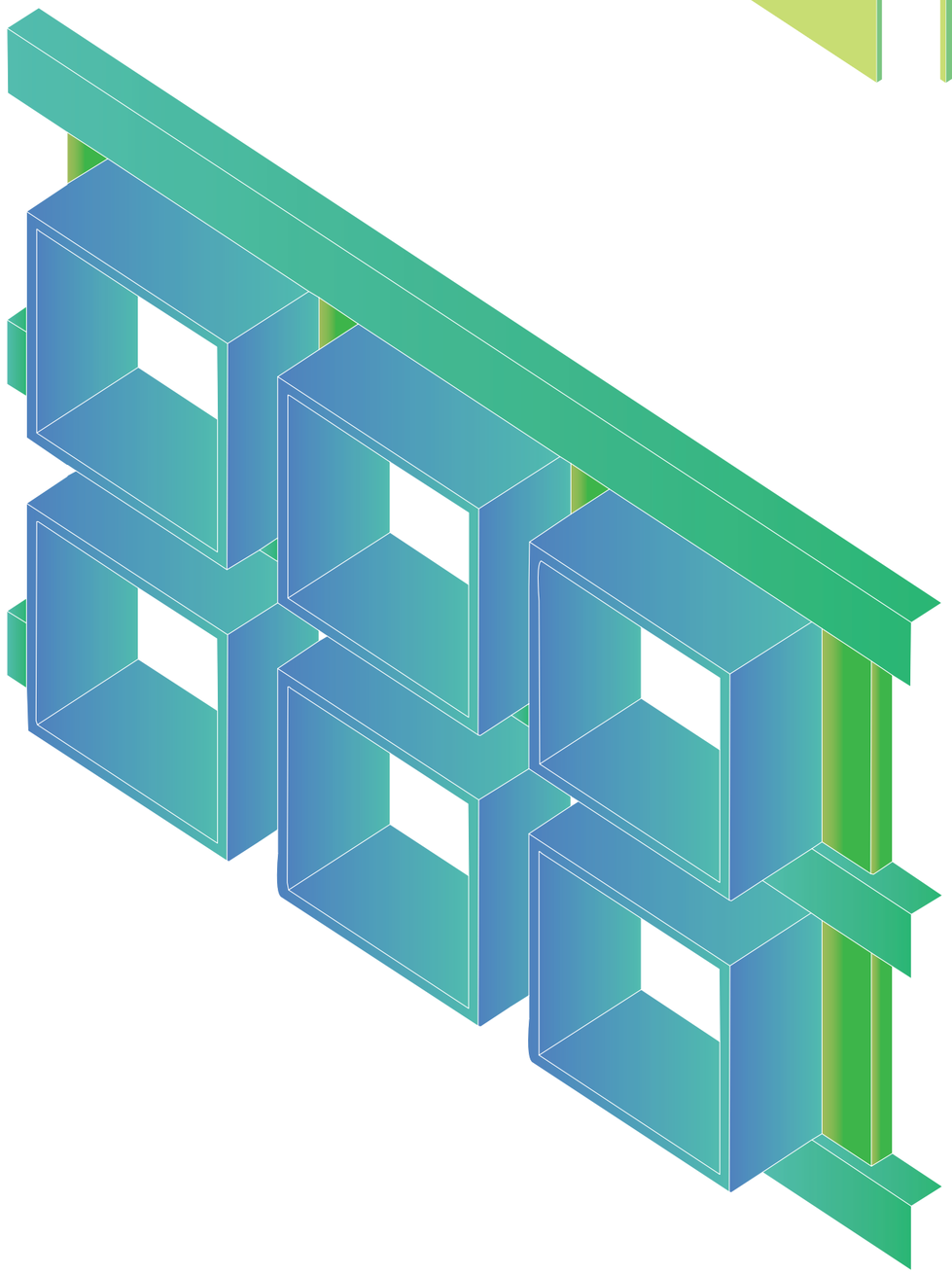
GEVELS





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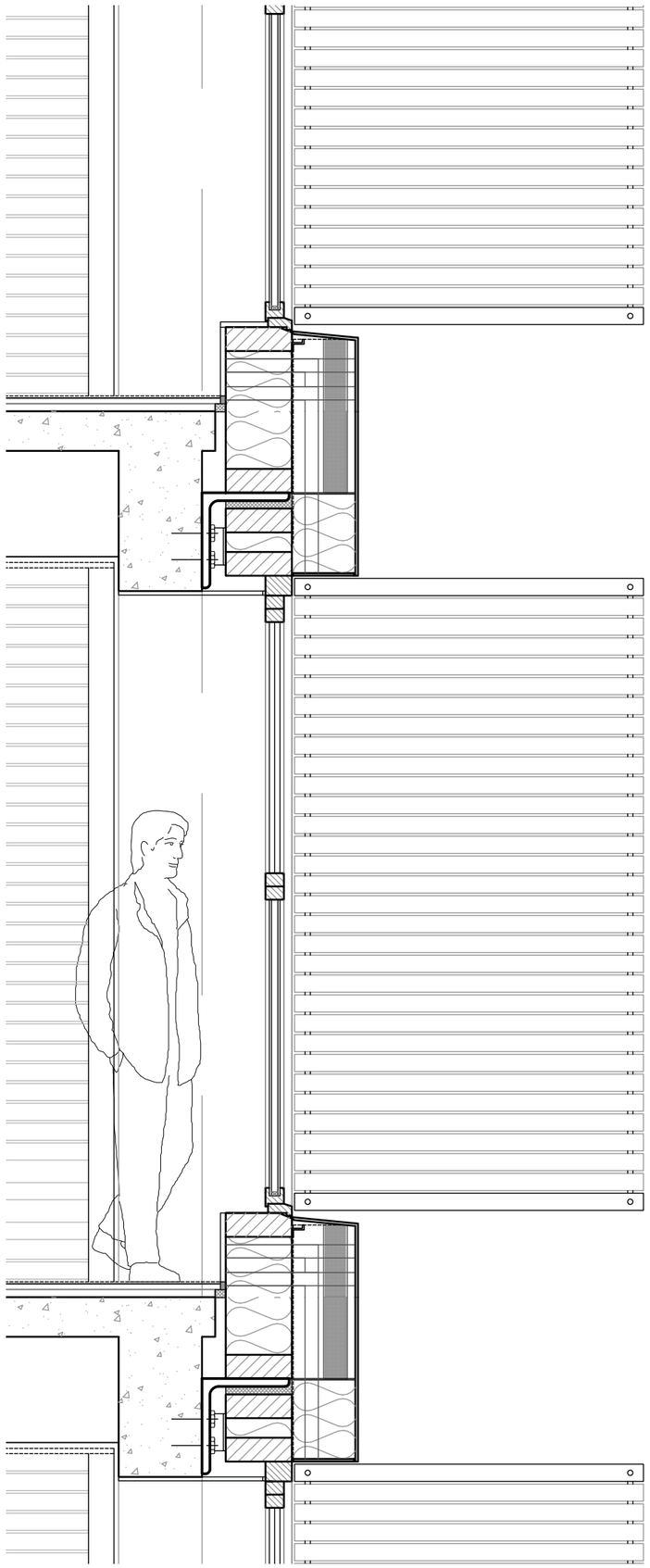

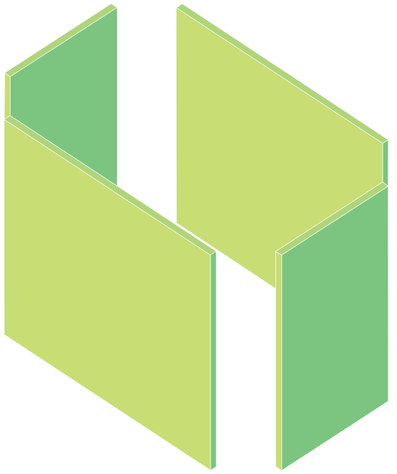

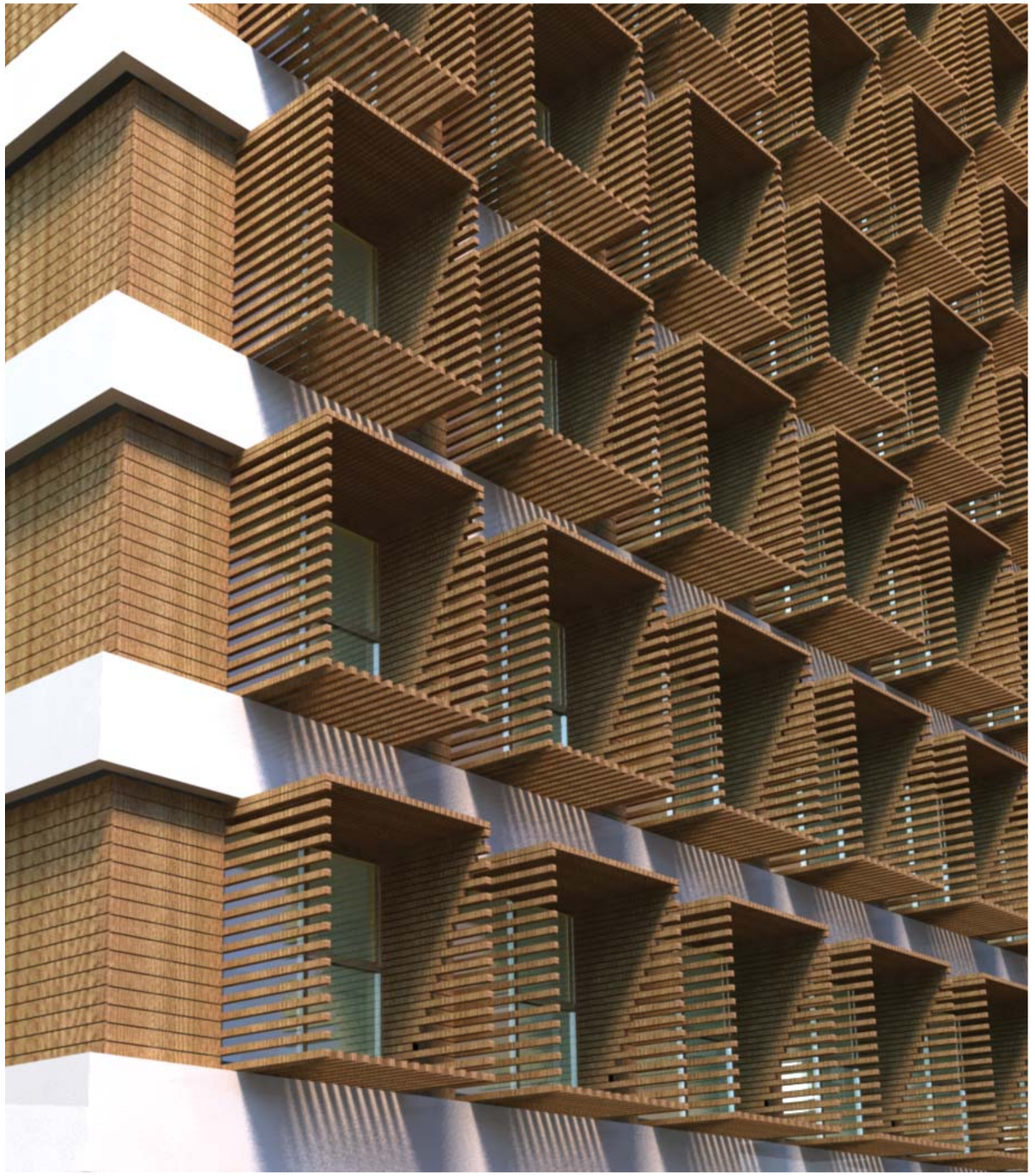

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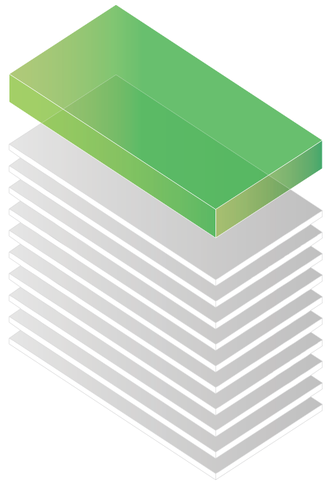

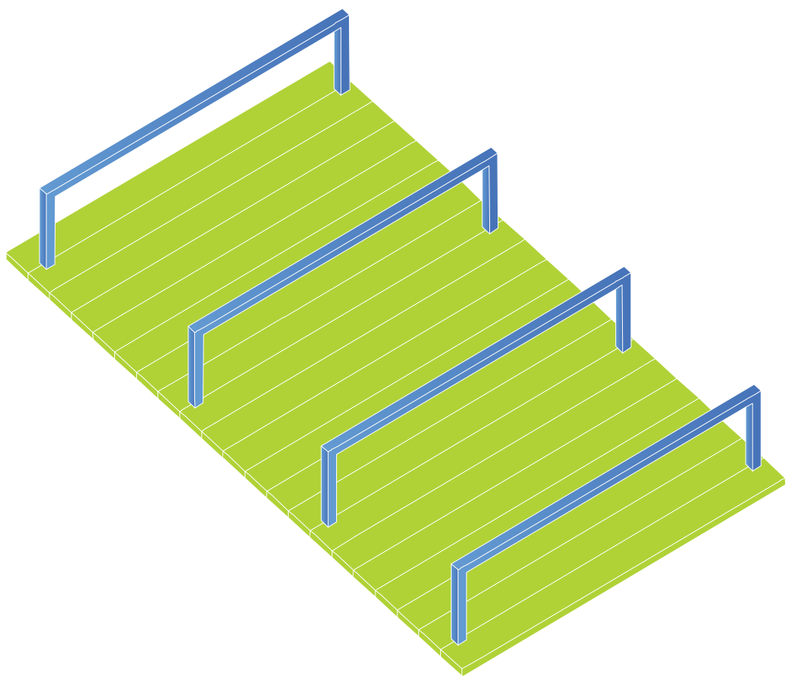

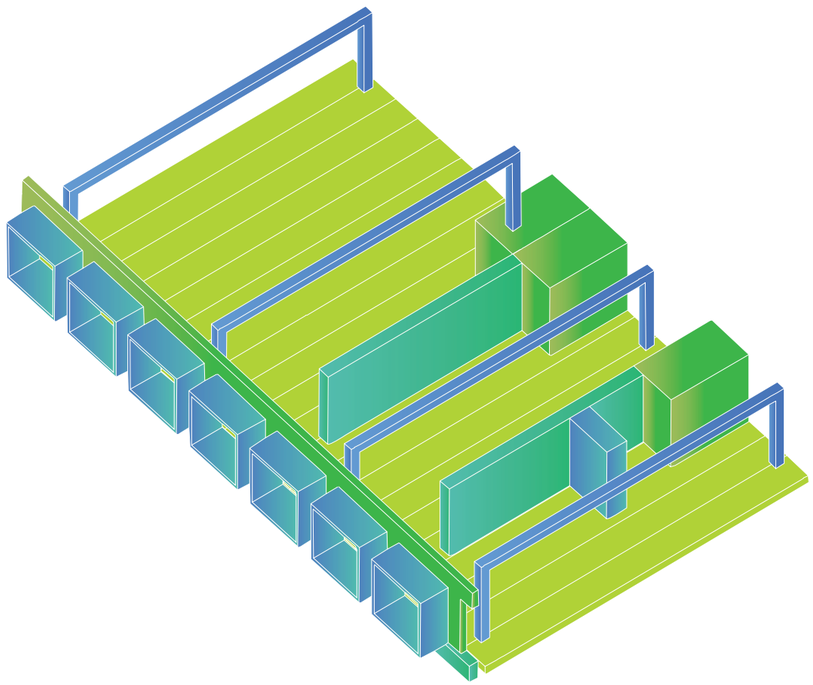

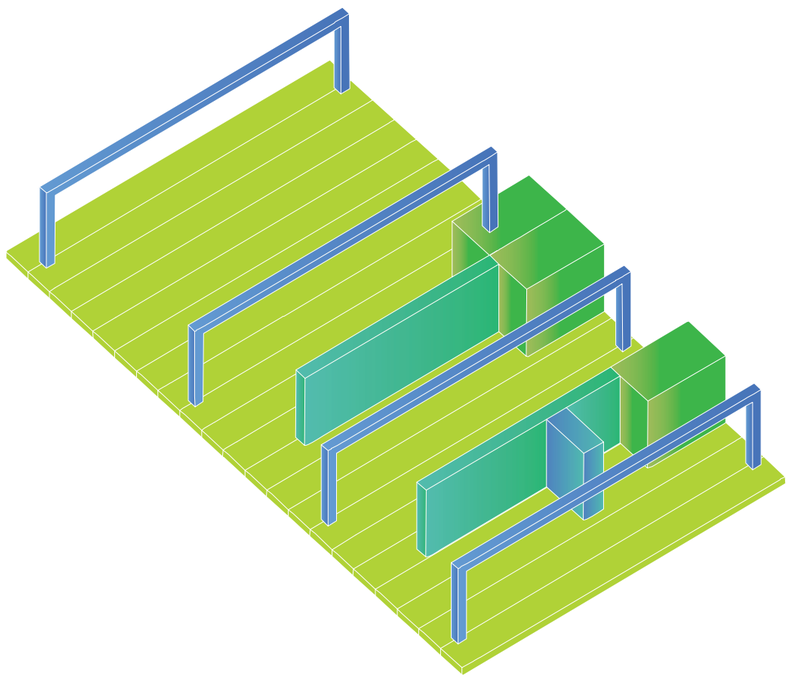

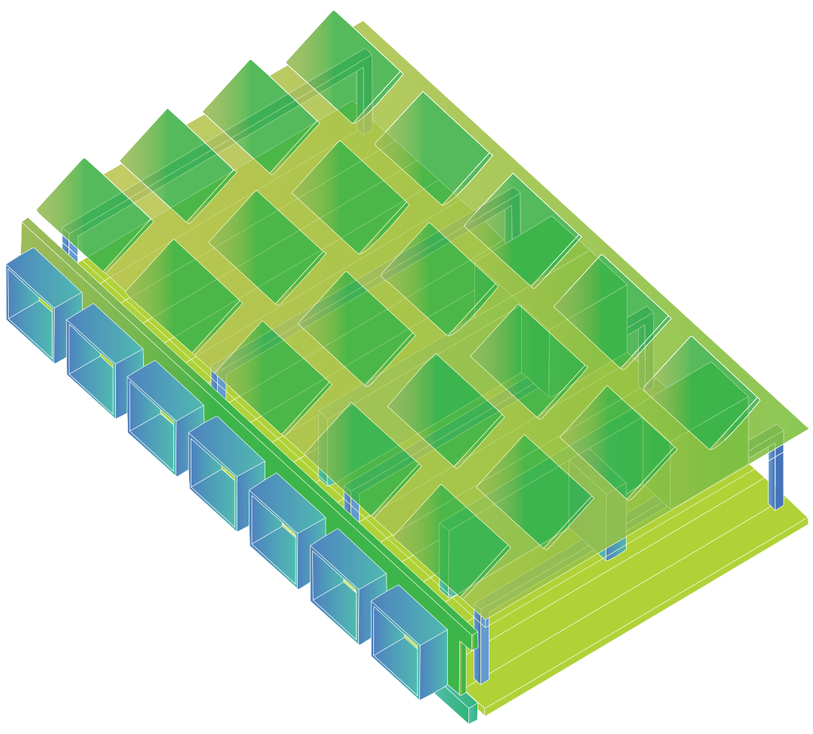

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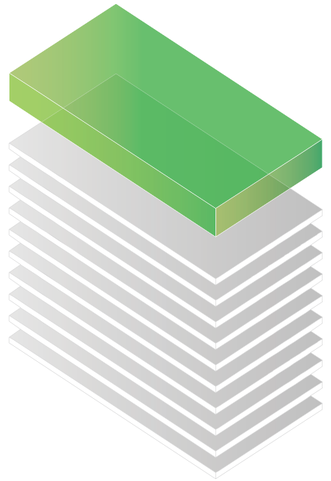
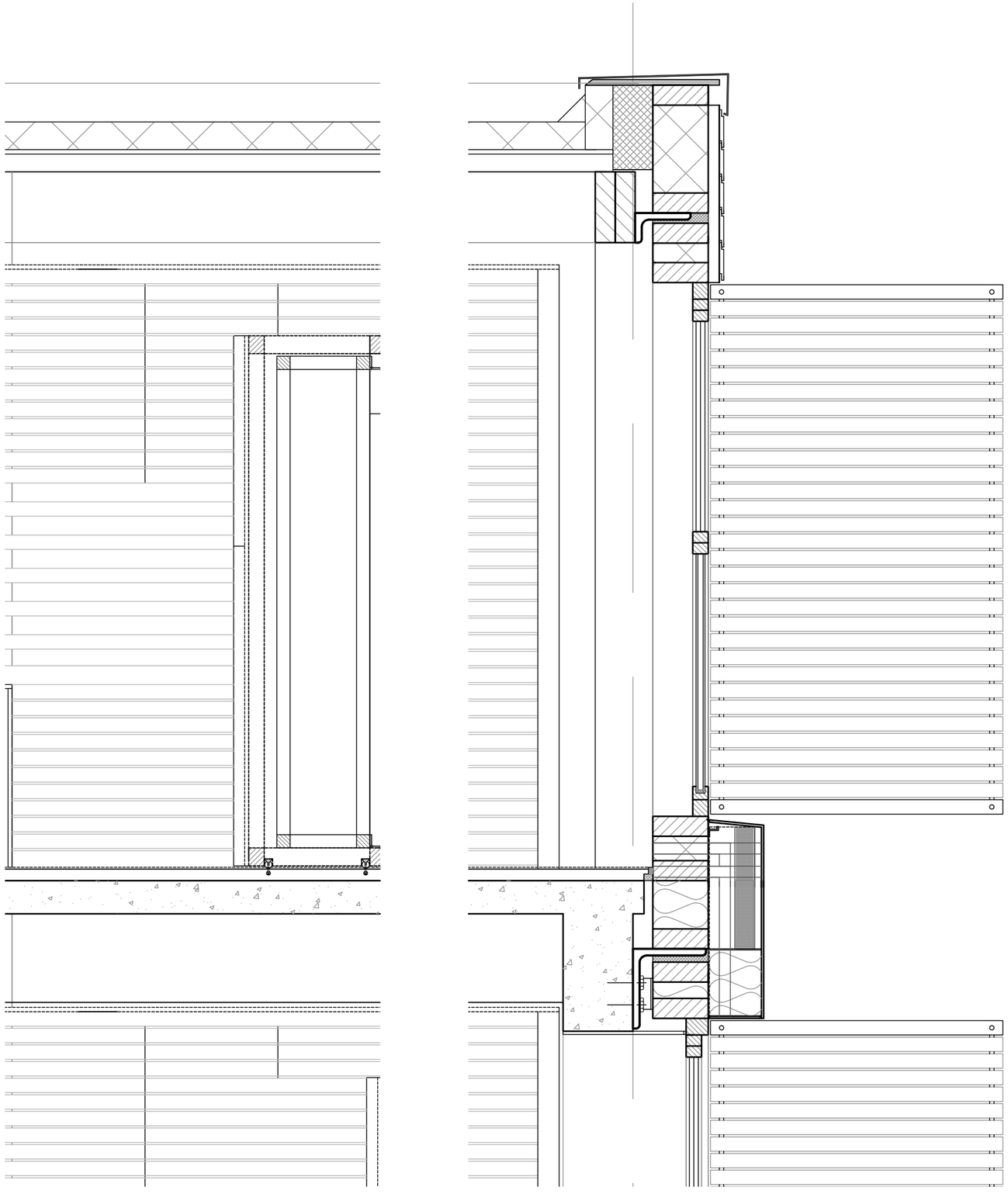
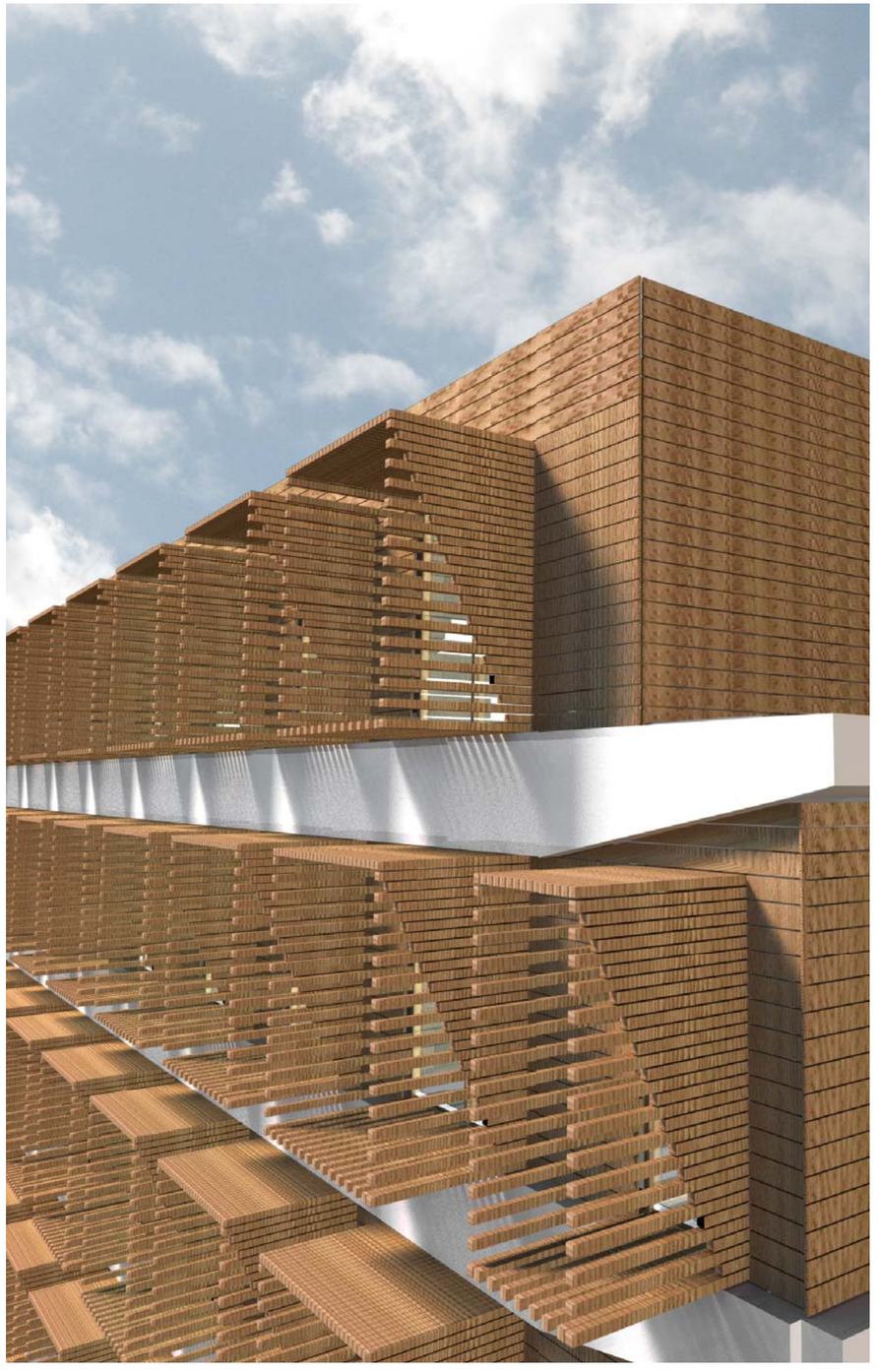
SYSTEEM
OPTOPPEN







UITGEKOZEN GEBOUW & LOCATIE

UITGEKOZEN GEBOUW & LOCATIE

De Pionier

DURA VERMEER
Waarmaken van ambities

LAB

Stadswijk Laakhaken-West

1e Van der Kunstraat 292, The Hague

Locatie nabij de Haagse Hoge school, Mondriaan College en treinstation Den Haag HS; ideaal voor studentenhuisvesting.

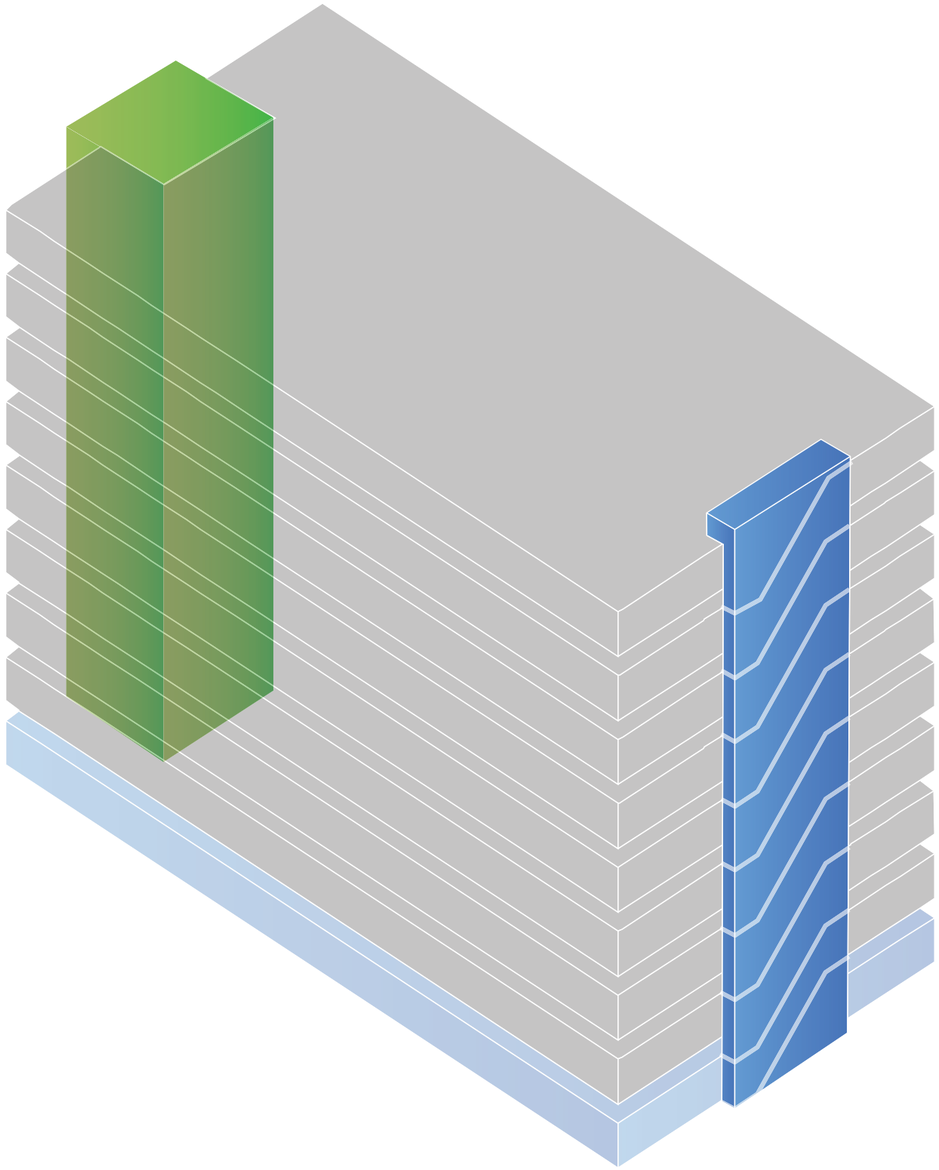
Gridmaat: 6m

Bruto vloeroppervlak:
4.474 m2
Huur per m2:
€ 85,00

Verhuurbaar vloeroppervlak (VVO):
5.000m2


De Pionier
Den Haag HS

GEBOUW KENMERKEN

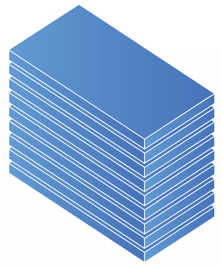


ONTWERP RICHTING

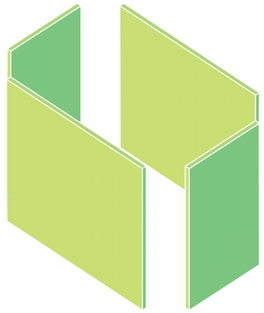
Function scenario's (small units)

- Student housing
- Elderly care homes
- CEE migrants
- Young professionals
- Multi-use
- Mono-functional

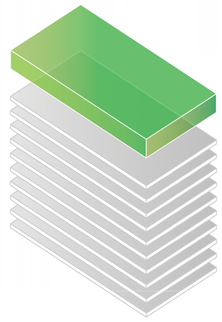
Transformation scenario's



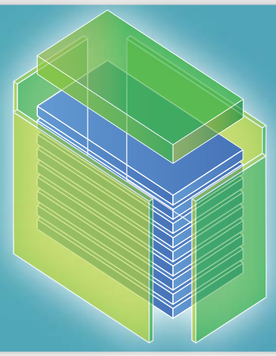
Base building & fit -out



Renew facade



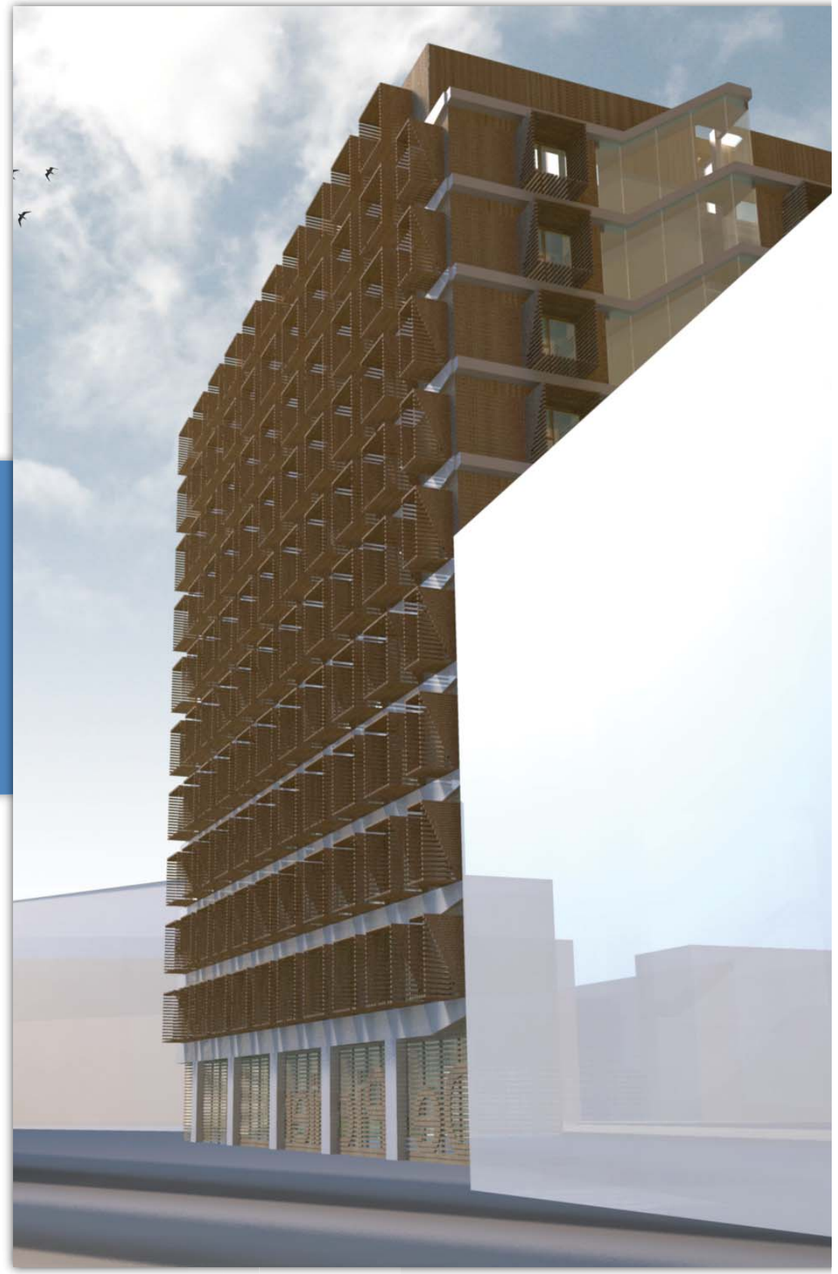
Adding floor(s)



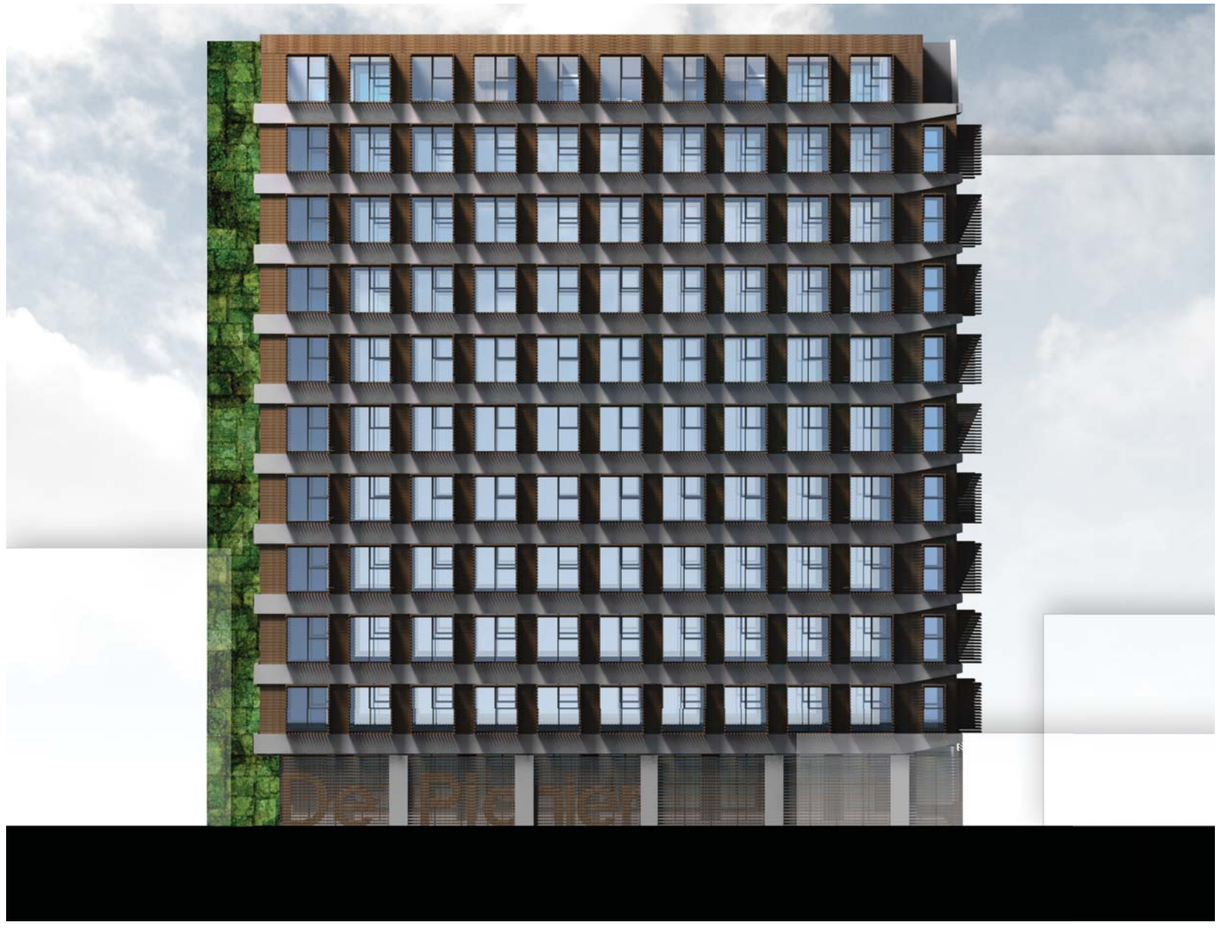
All options combined

Options in transformation scenario's

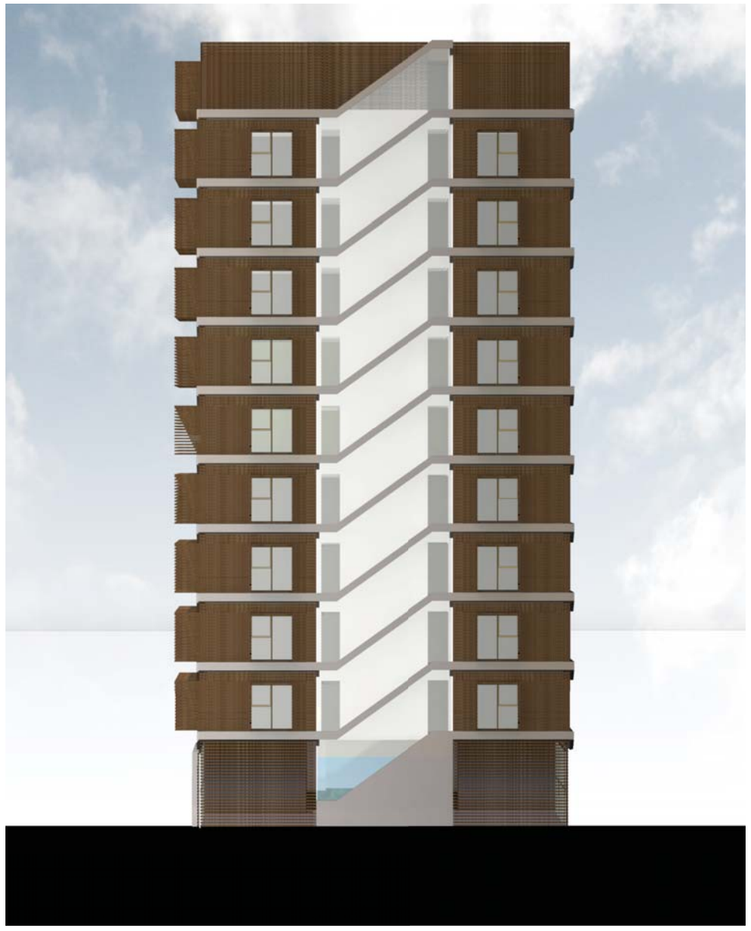
- Shared facilities
- Individual facilities
- Both shared and individual facilities
- Standard shading facade element
- Invididually chosen shading/energy facade element
- Use roof surface for energy production
- Roof green house, kitchen gardens



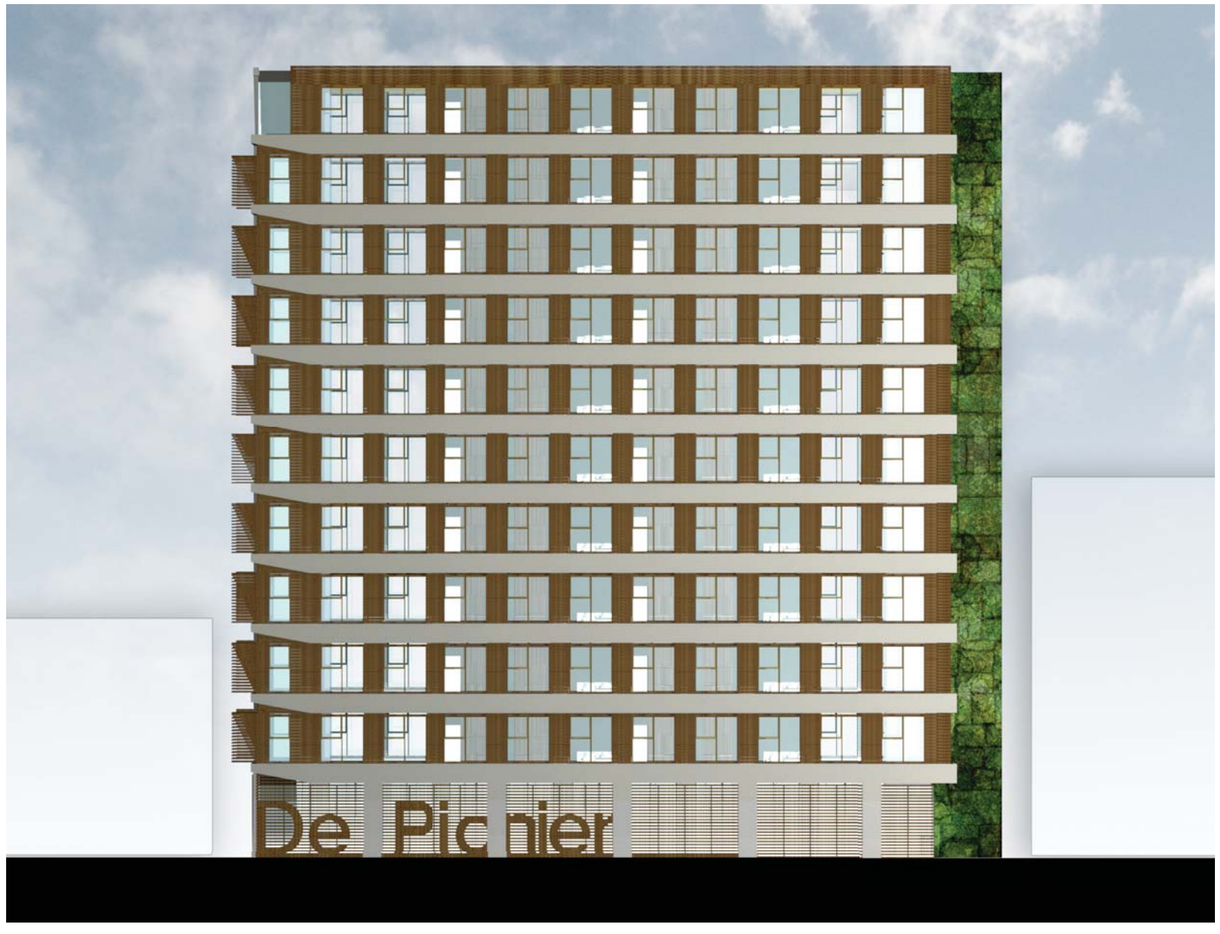
ZUID-OOST GEVEL



ZUID-WEST GEVEL

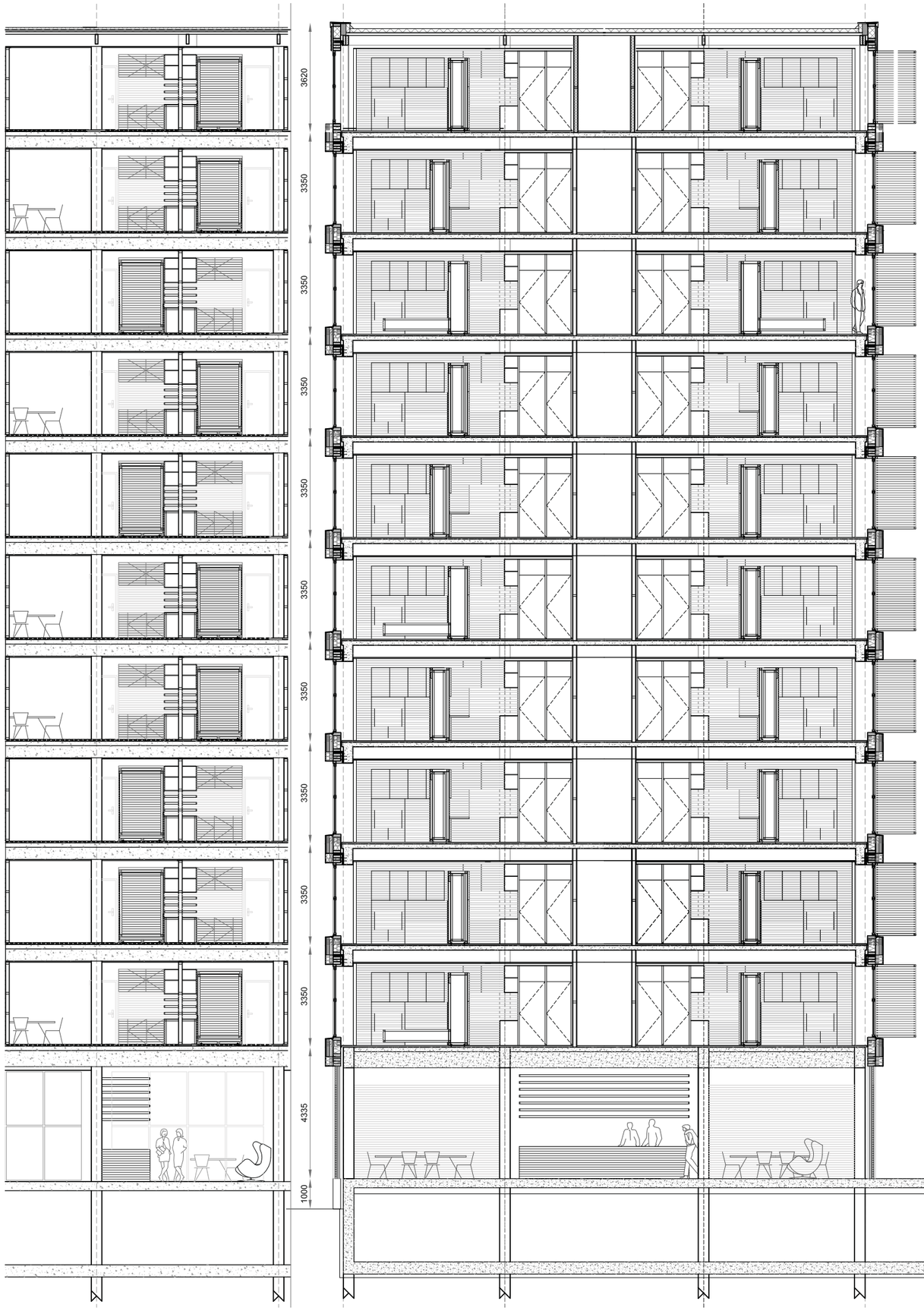


NOORD-WEST GEVEL

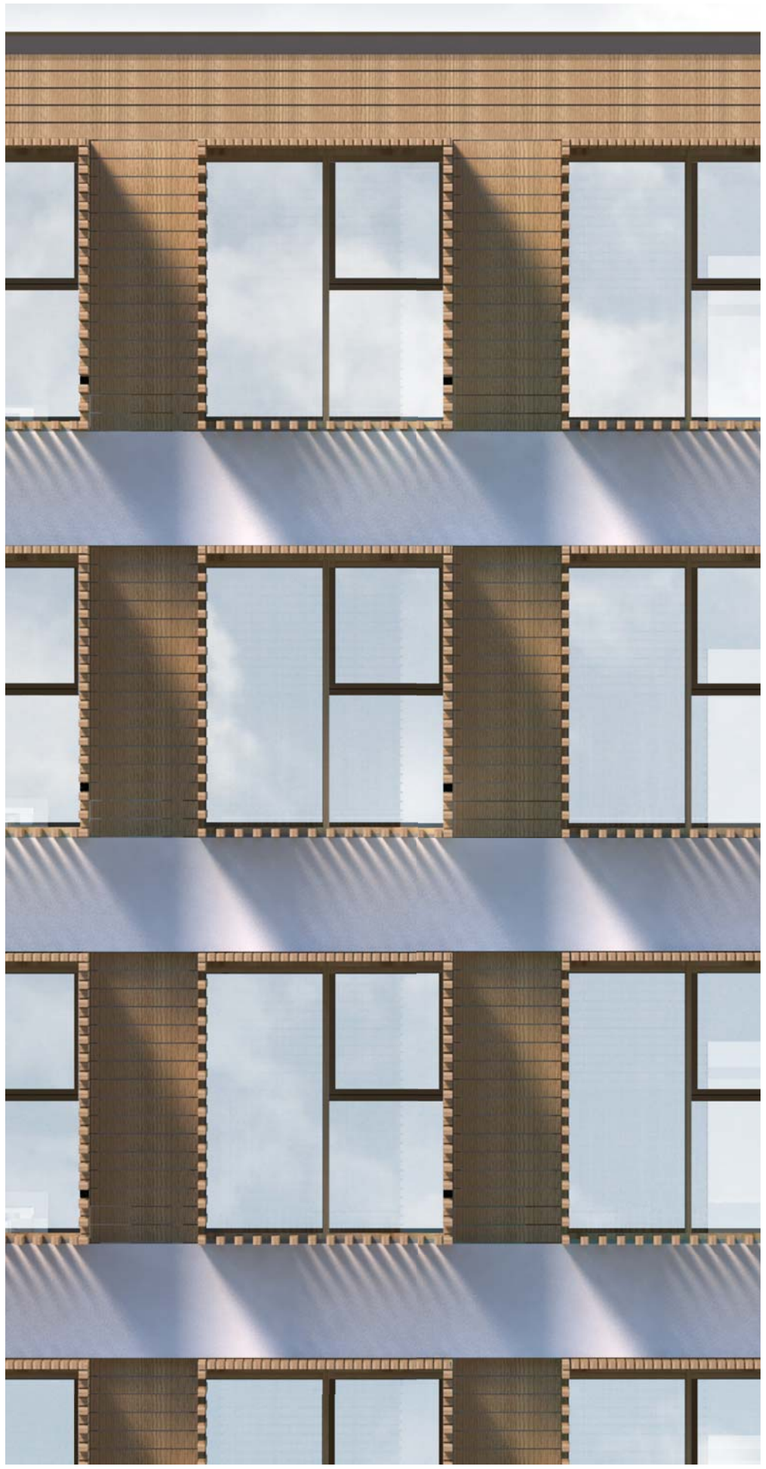


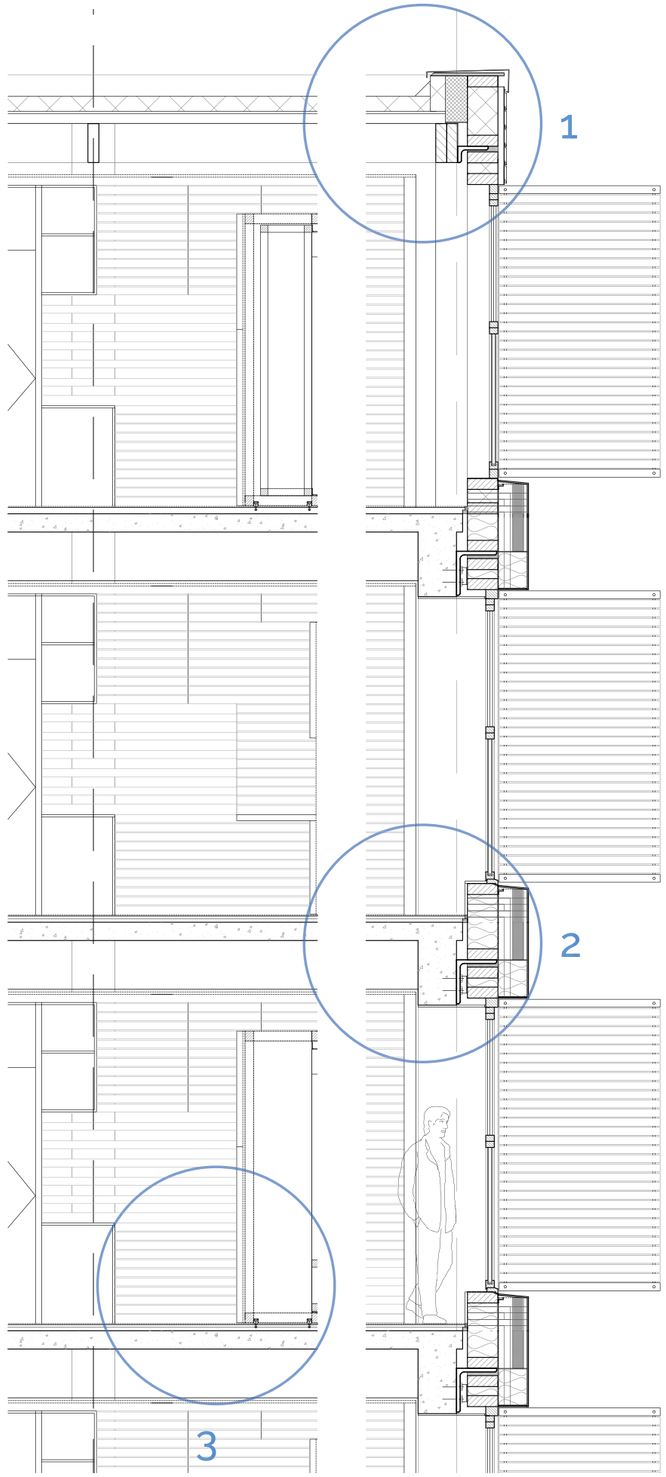
NOORD-WEST GEVEL

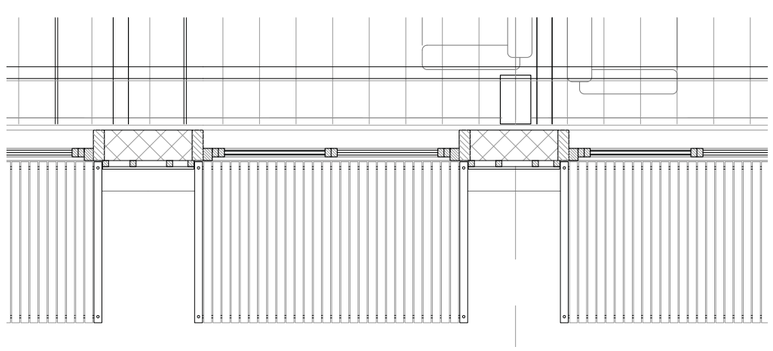
SECTIONS
1:100



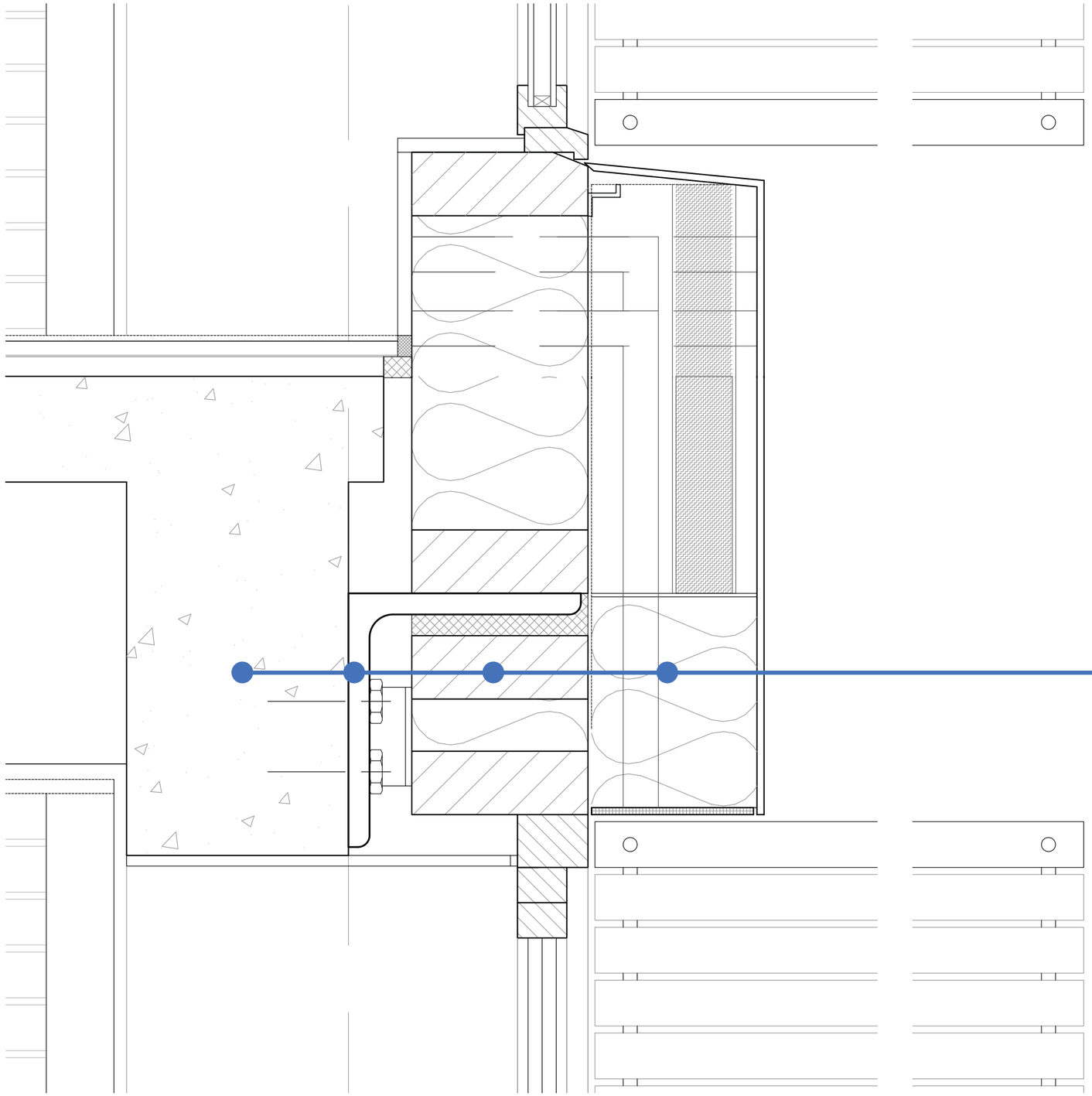
FACADE
FRAGMENT
1:20







2



Bestaande draag-
constructie (beton)

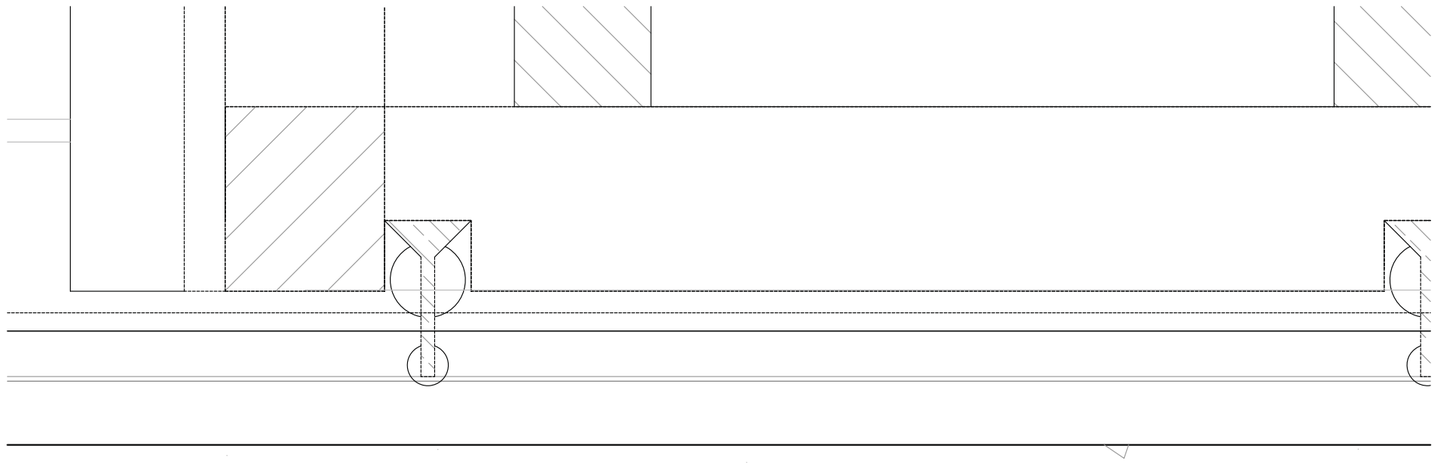
Stalen L-profiel

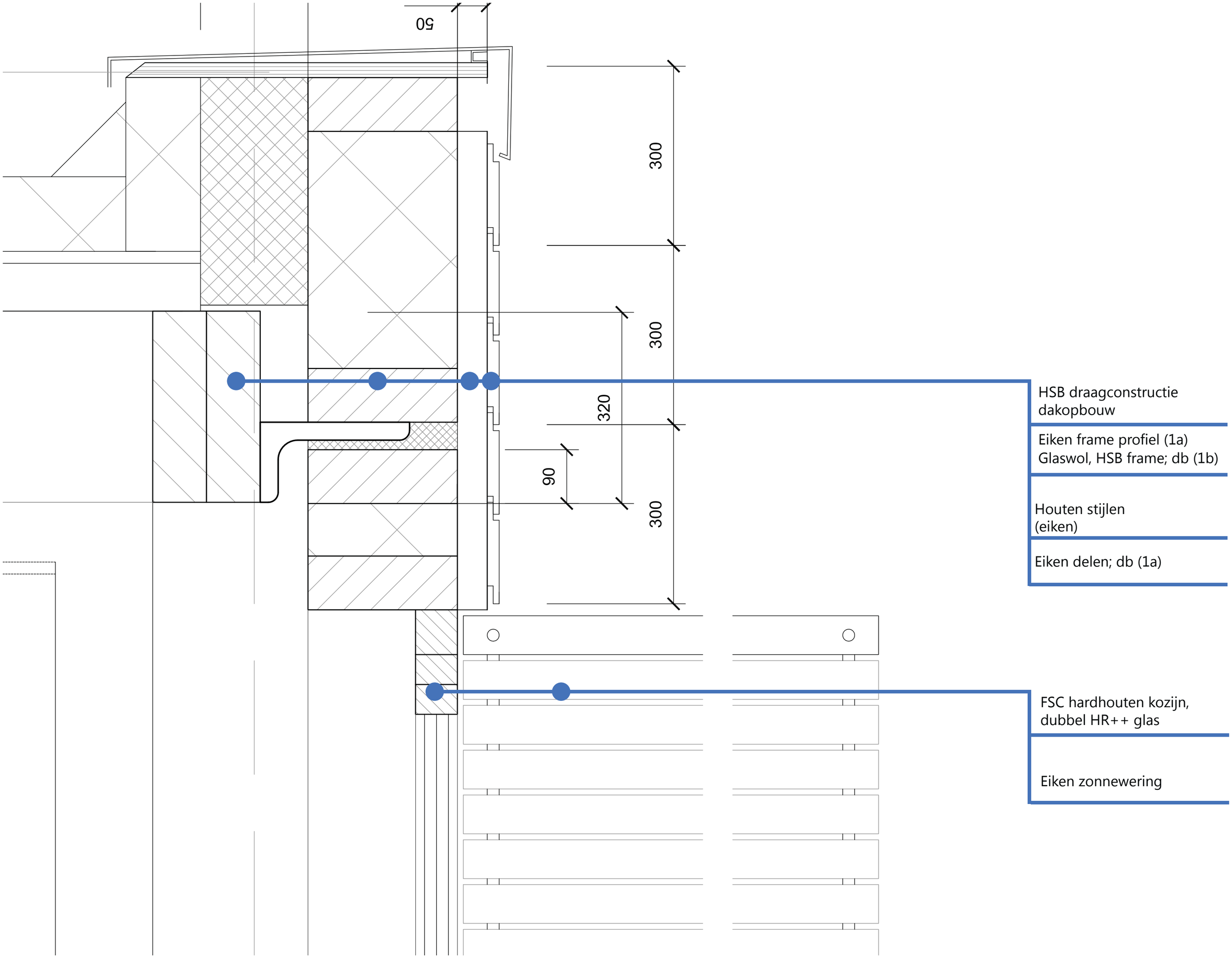
Eiken frame (ophangsysteem
demontabele schaduwelement

Demontabele ventilatie unit

Kingspan pictura
vezelcementplaat

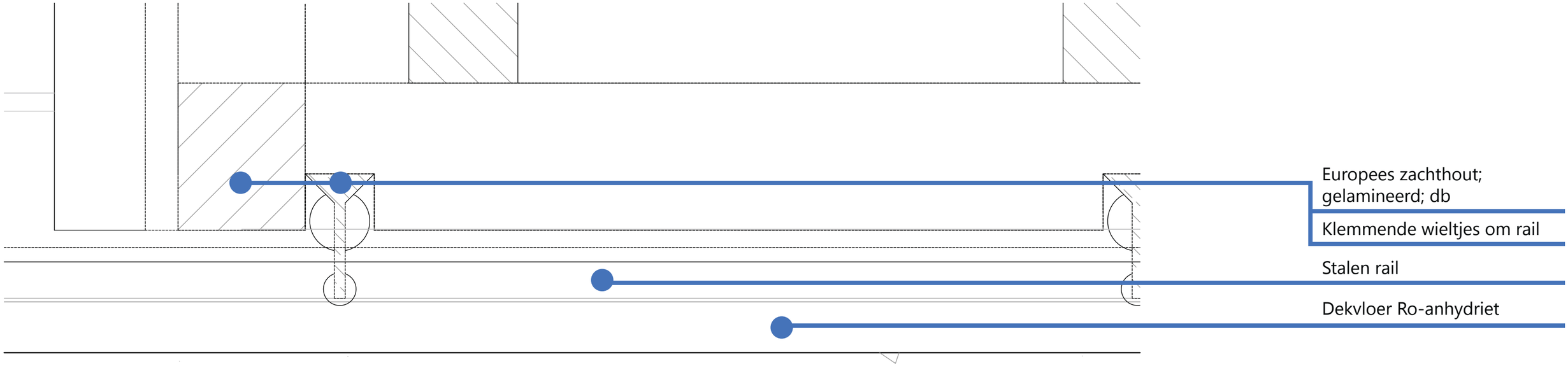
3

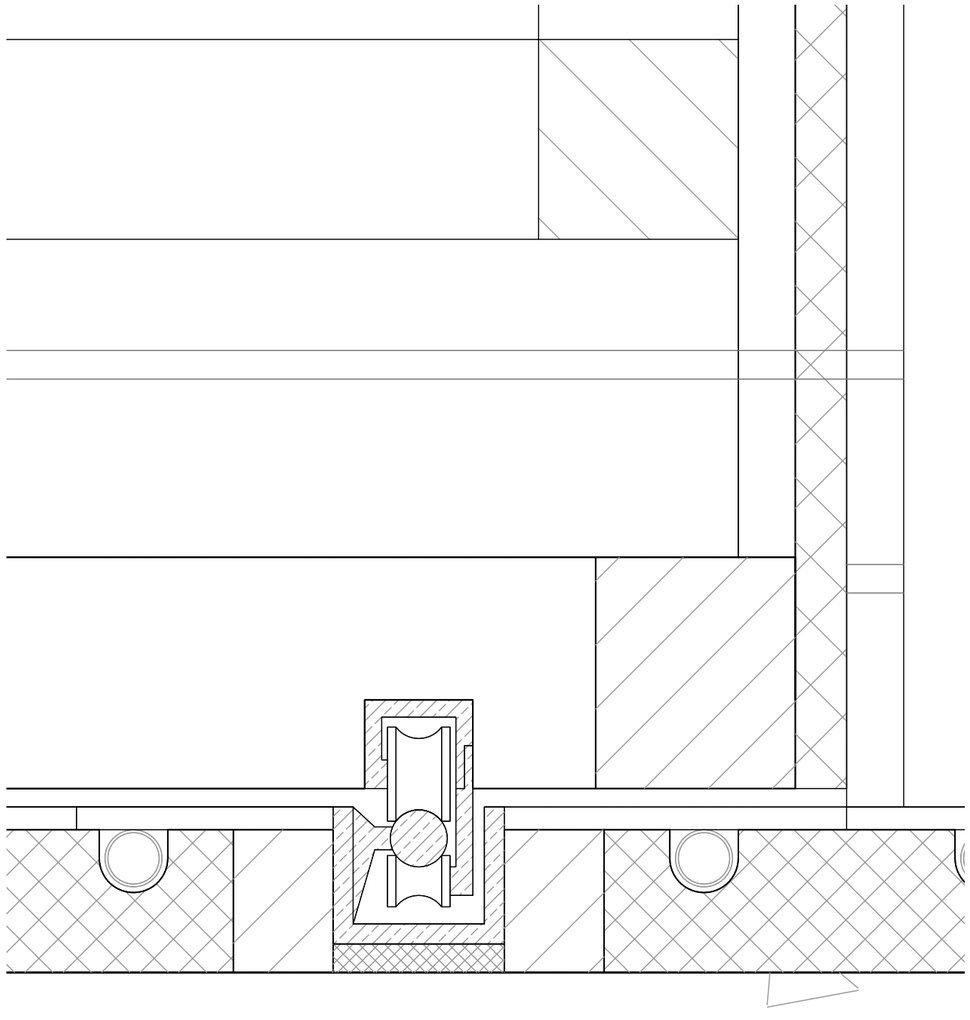


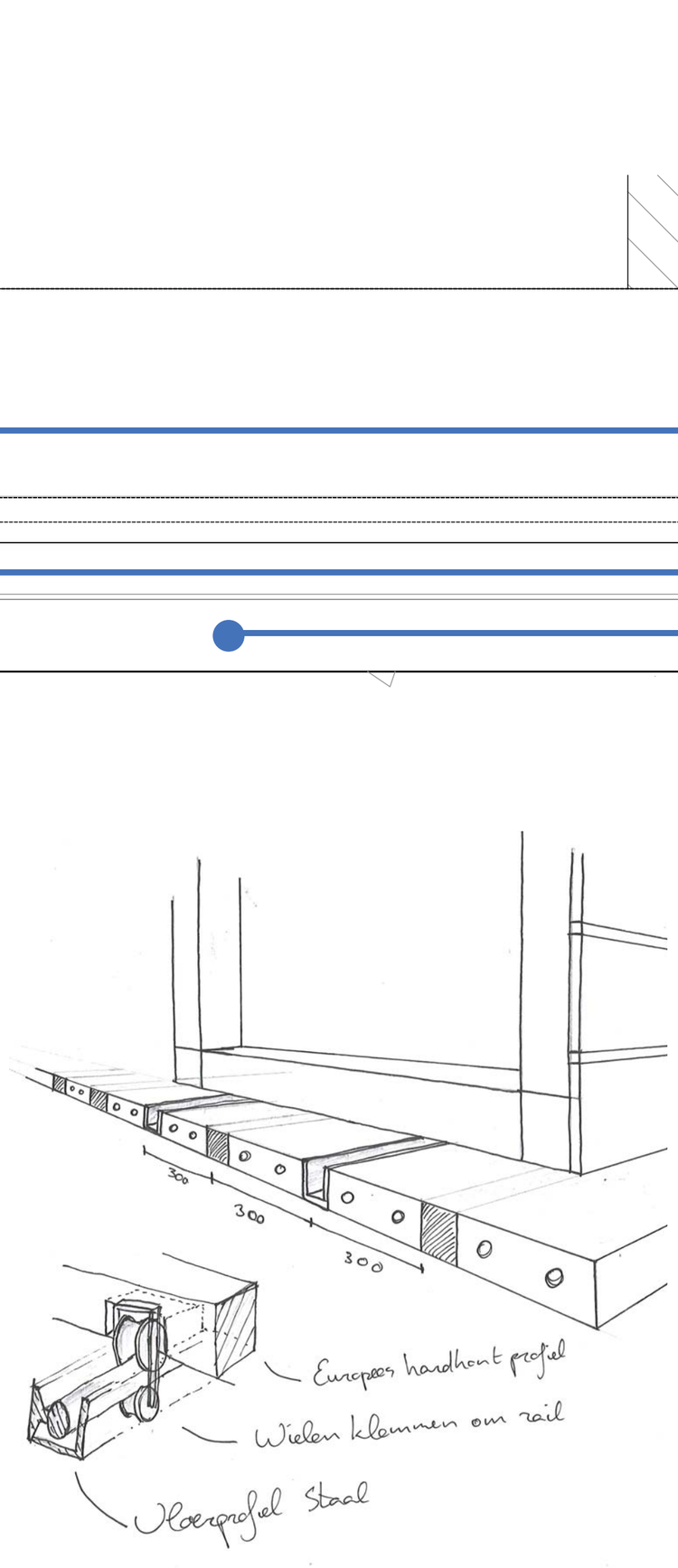

50
300
300
320
90
300
HSB draagconstructie
dakopbouw
Eiken frame profiel (1a)
Glaswol, HSB frame; db (1b)
Houten stijlen
(eiken)
Eiken delen; db (1a)
FSC hardhouten kozijn,
dubbel HR++ glas
Eiken zonnewering

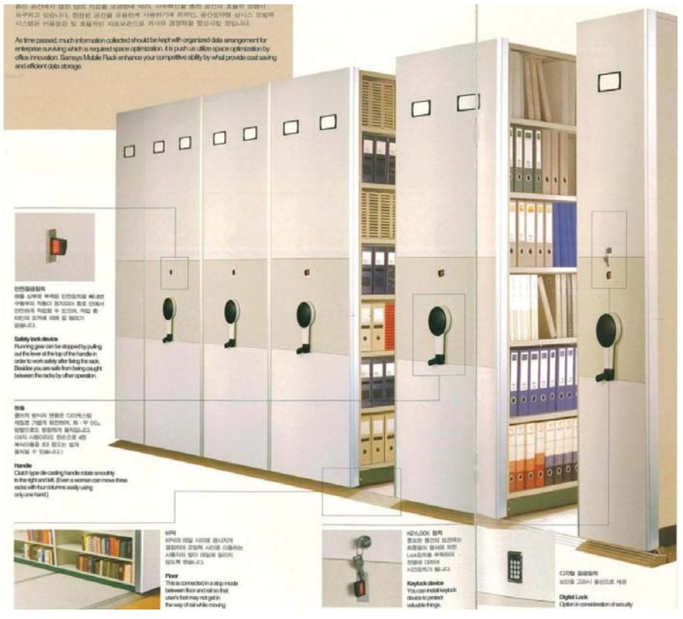
DETAIL

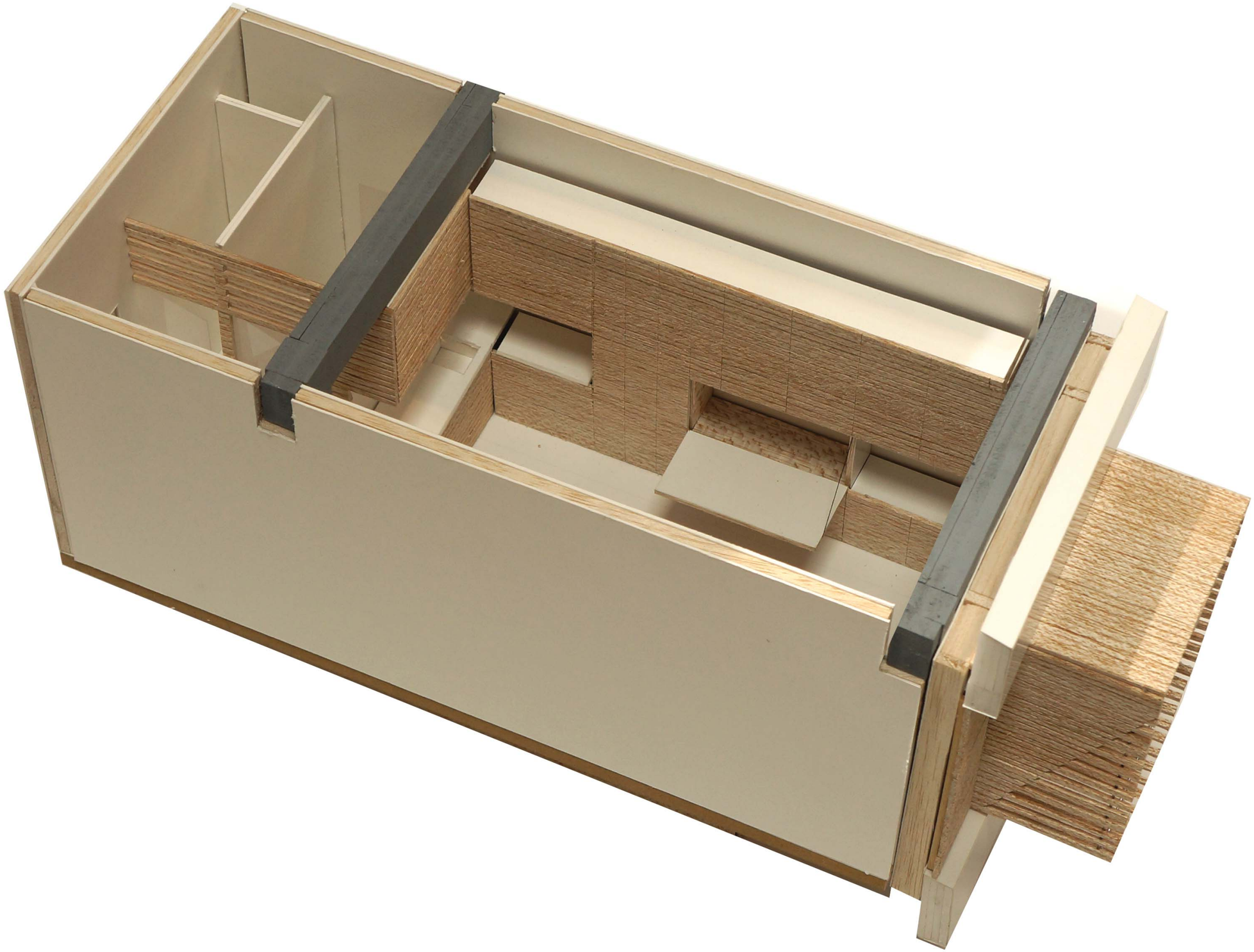
1:2

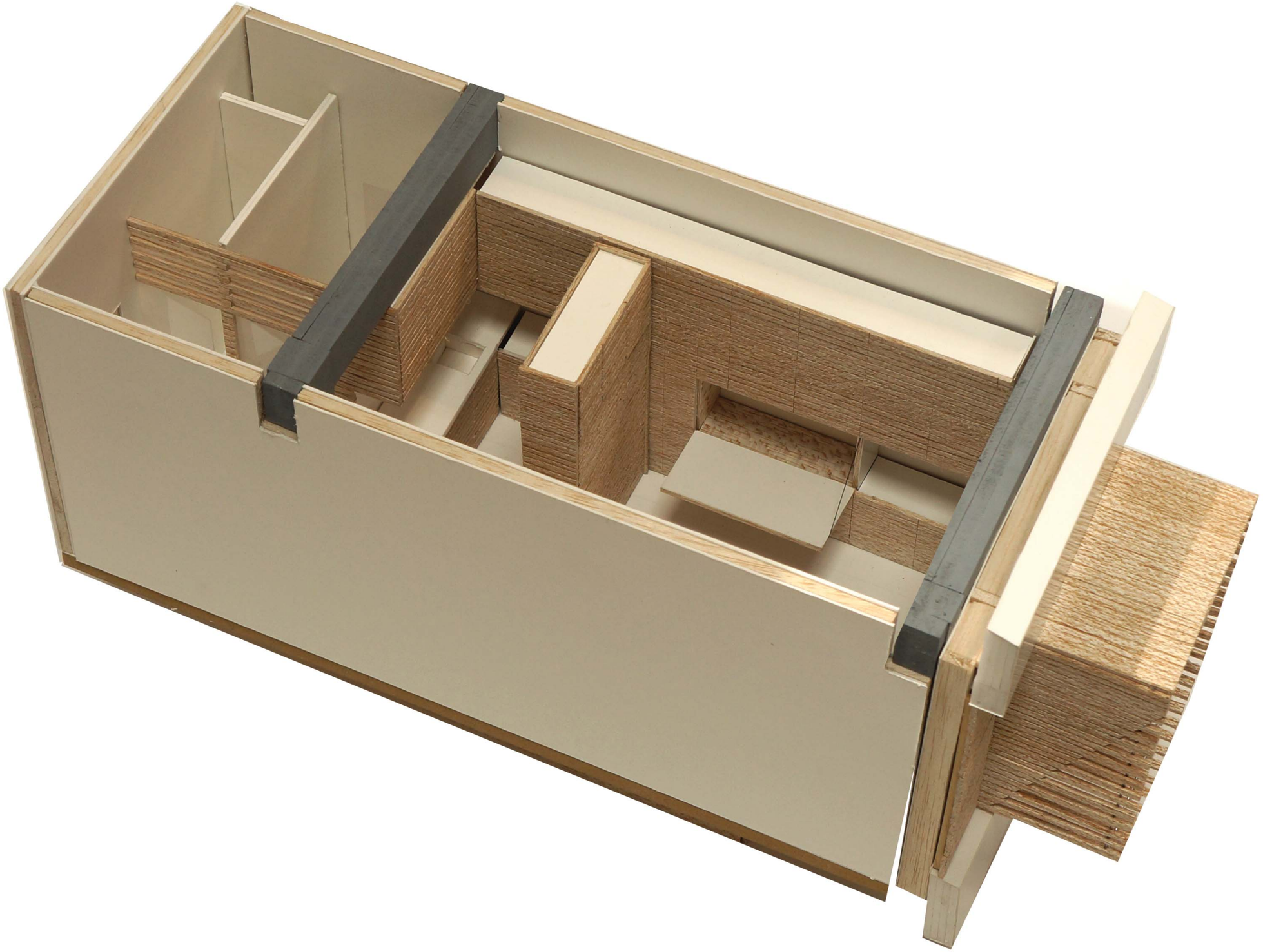

Europees zachthout; gelamineerd; db
Klemmende wieltjes om rail
Stalen rail
Dekvloer Ro-anhydriet

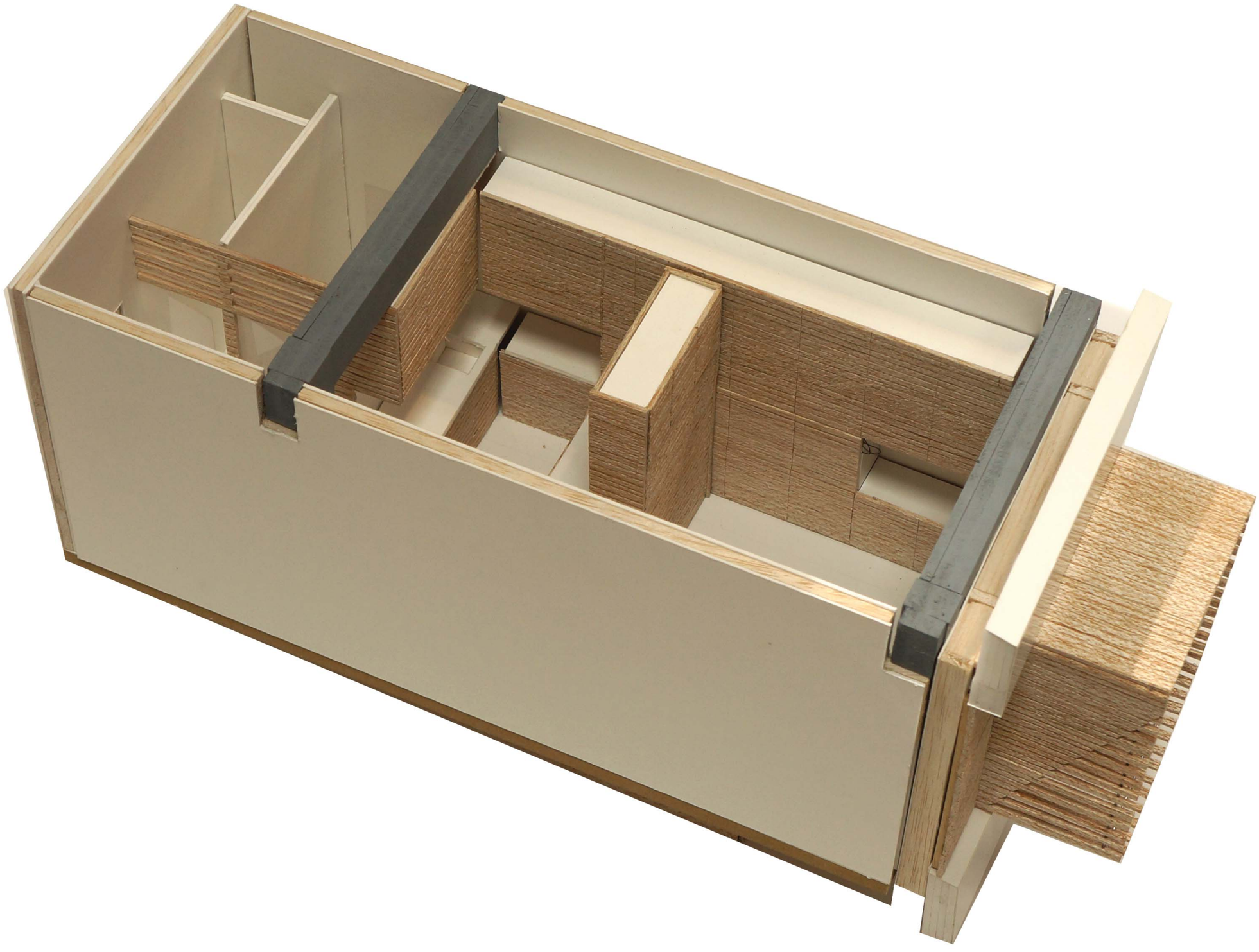


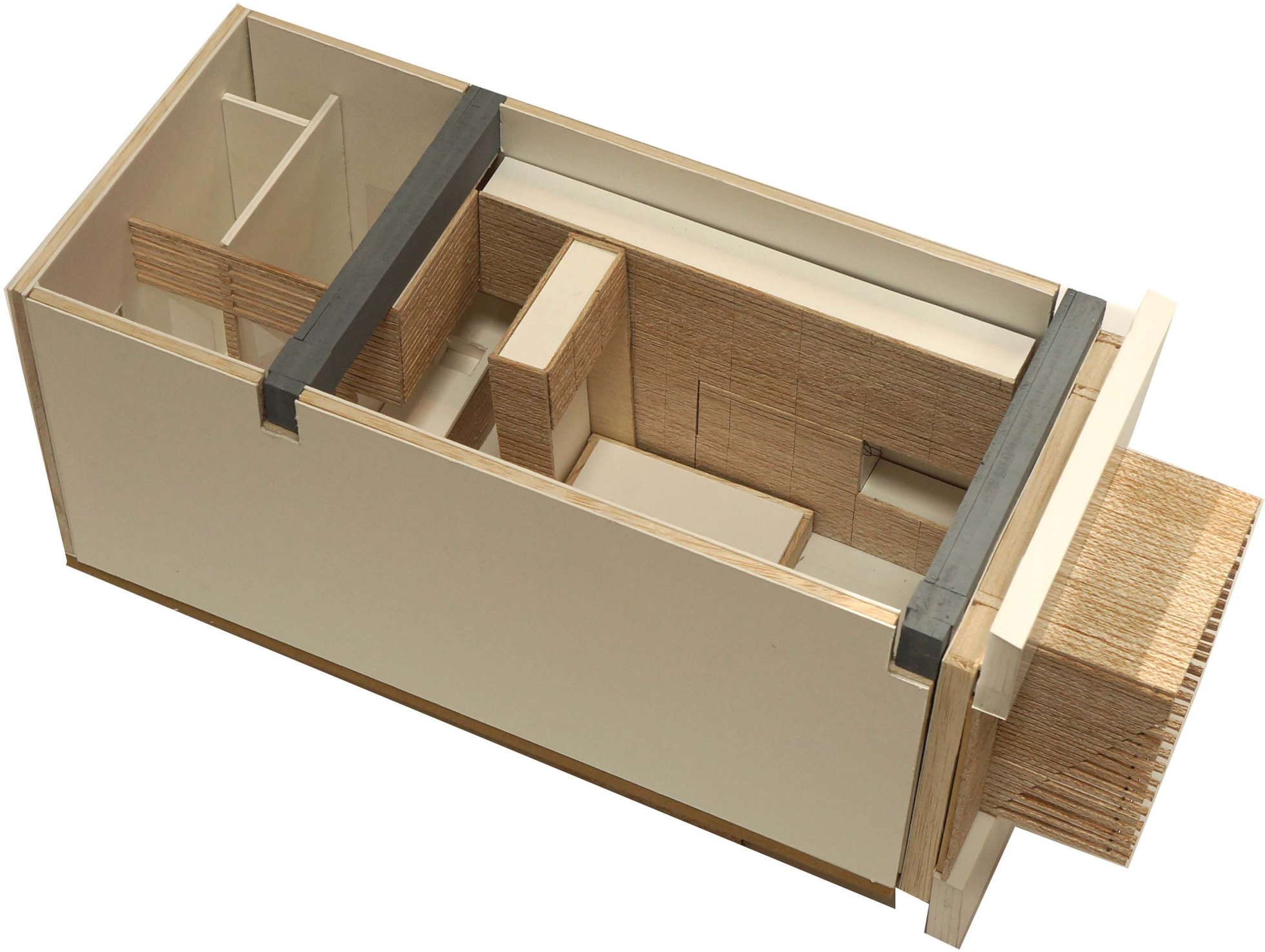

300
300
300
Europees hardhout profiel
Wielen klemmen om rail
Vloerprofiel Staal

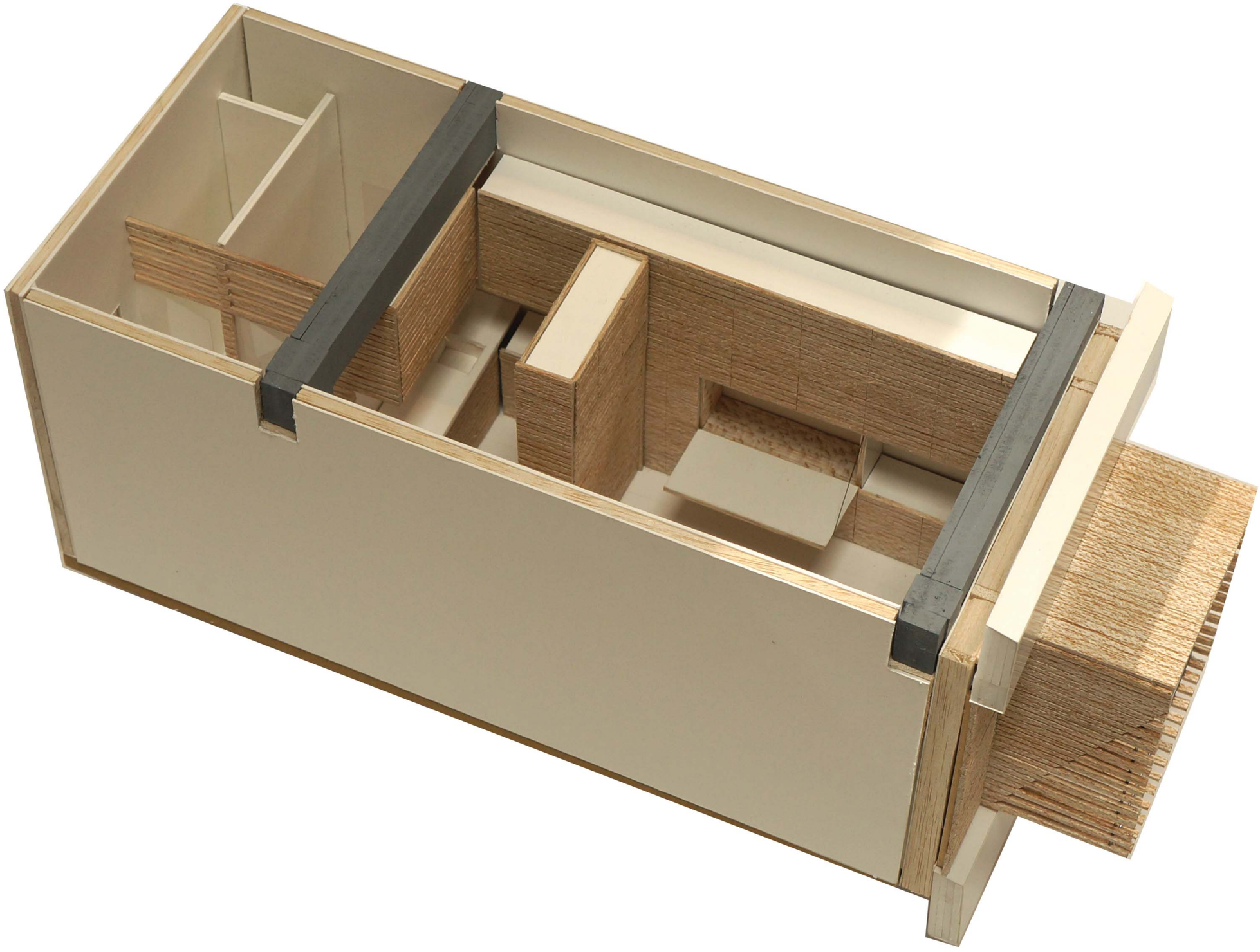


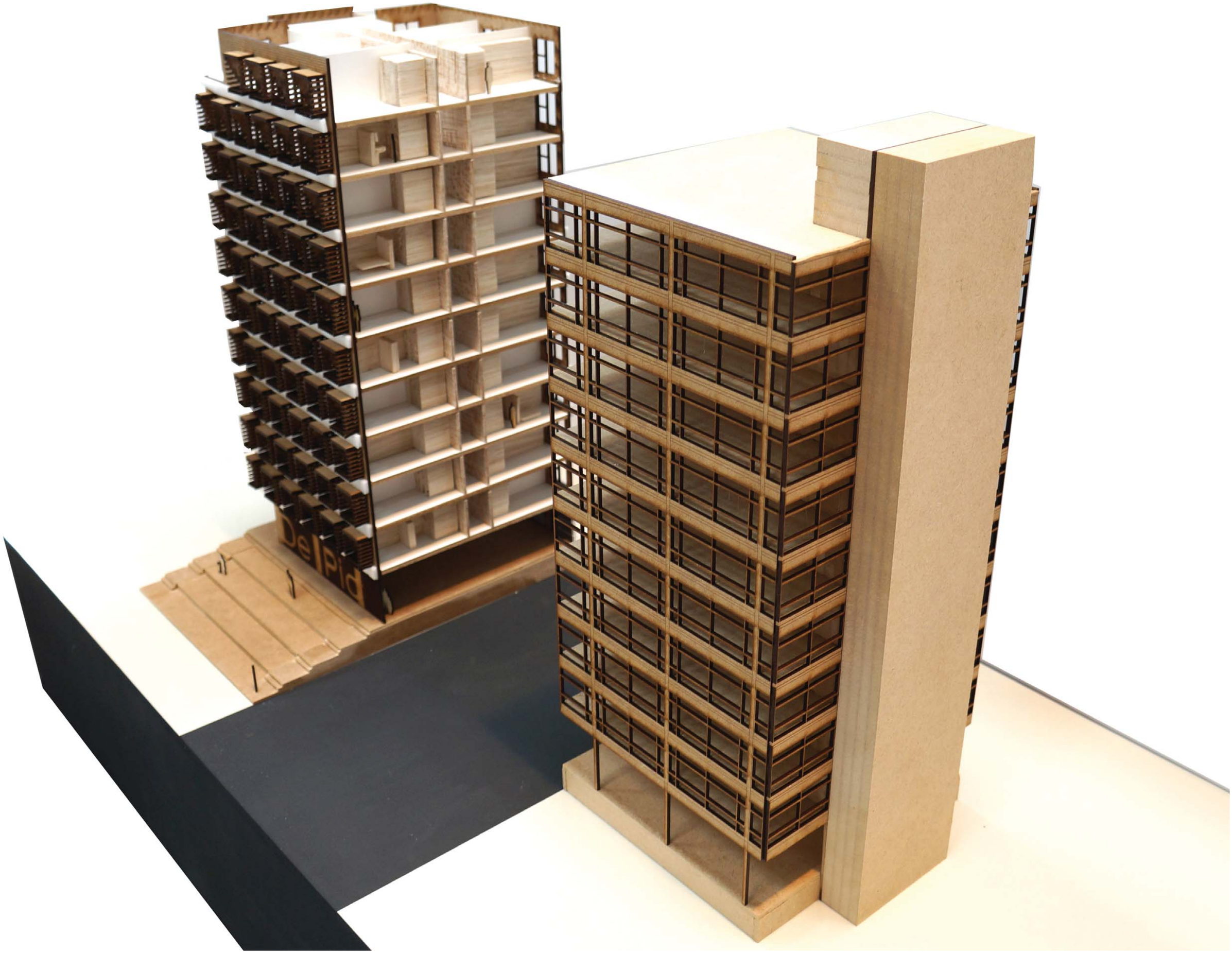






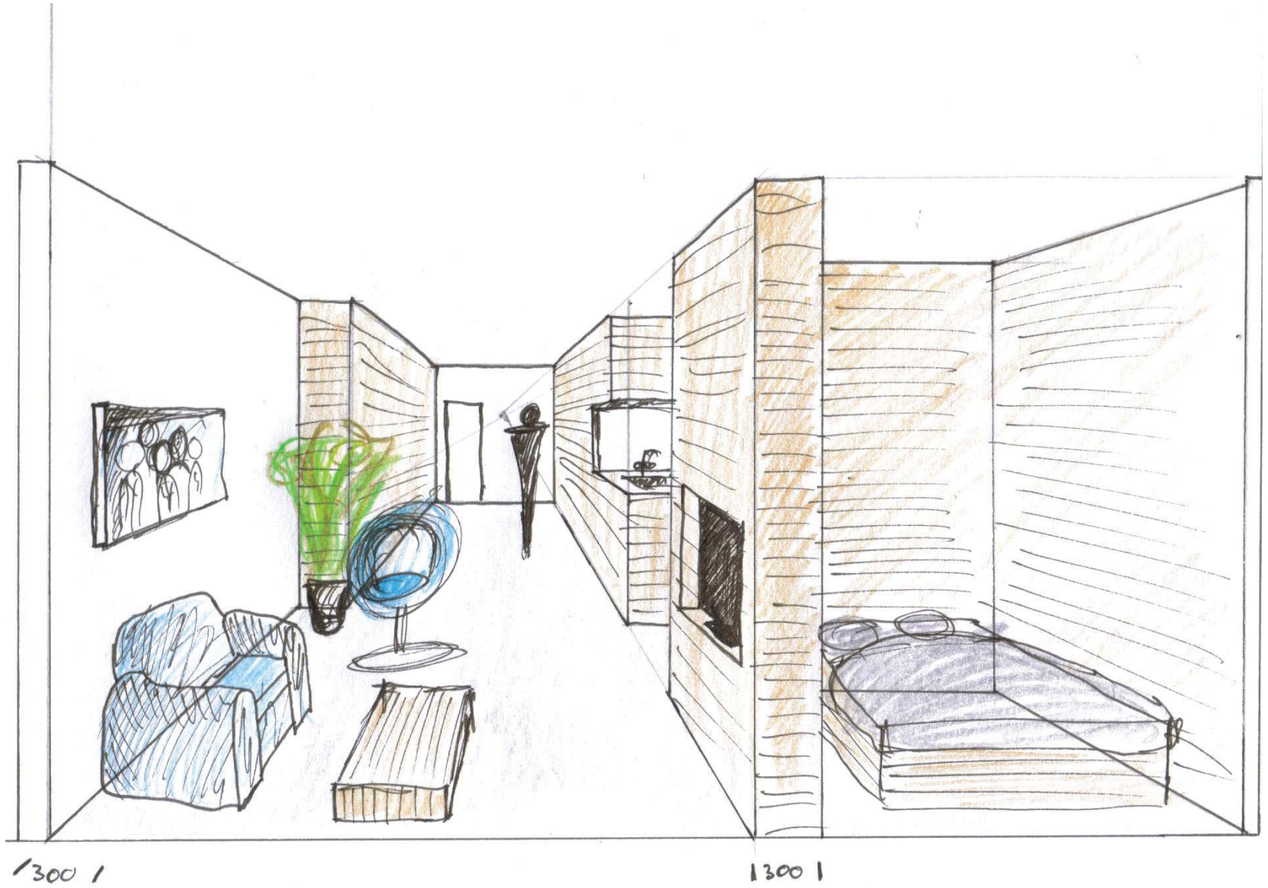


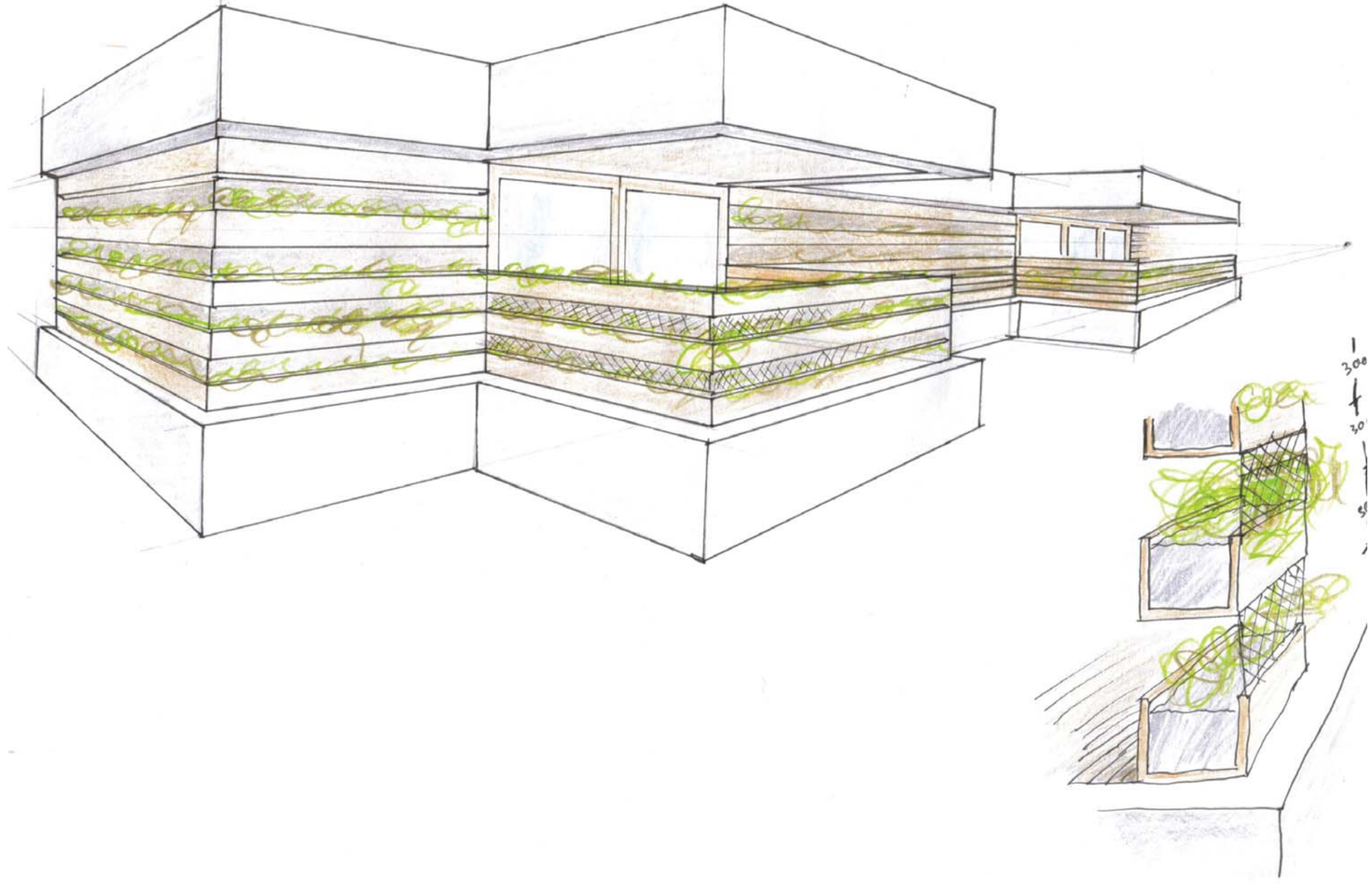



DelPid

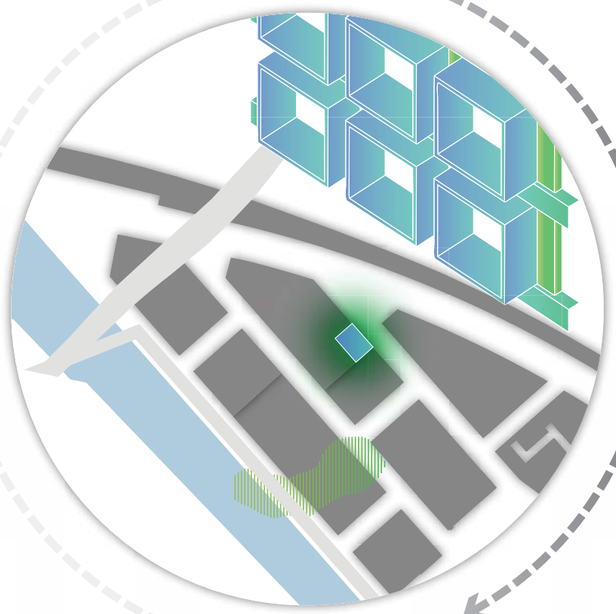

DelPid

ONTWERP SCENARIO'S


1300
1300

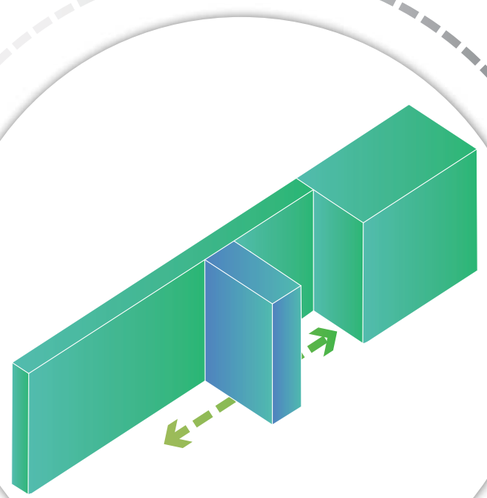

1300

Functie & uitstraling



25 jaar

Gebruik



24 uur

Gebouw

50 jaar

Gebruiker

2-5 jaar

Functie & uitstraling

Duurzame uitstraling
door eiken afwerking
en groene gevel

Gebruik

Duurzaam materiaal-
gebruik (NIBE)

Gebouw

Hergebruik bestaand
kantoorgebouw

Gebruiker

Bewoner kiest bewust
voor duurzamere meubels

PERMANENTE TIJDELIJKHEID

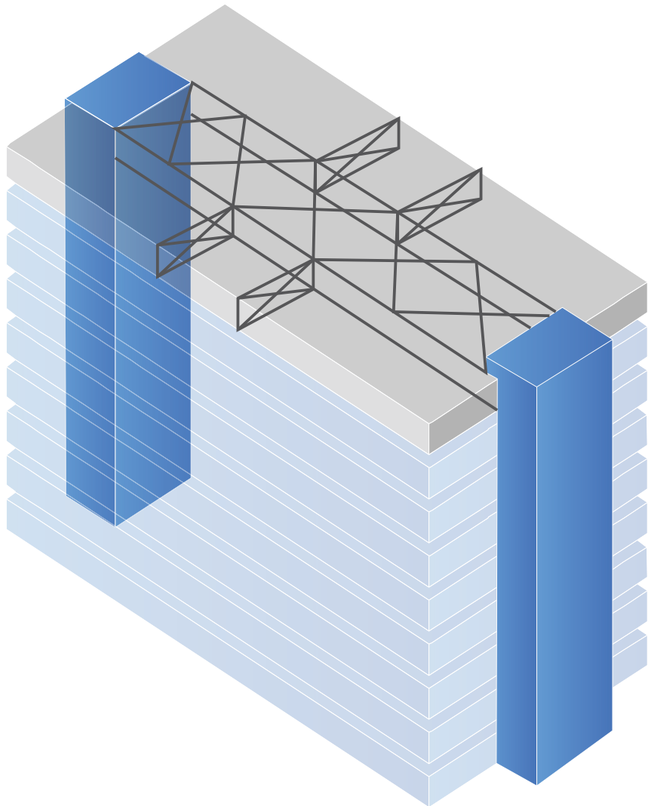
AFSTUDEERSCRIPTIE EXPLORELAB 15

Technische Universiteit Delft / Faculteit Bouwkunde
ExploreLab 15 (2012-2013) - MSc3/4 - Afstudeerpresentatie

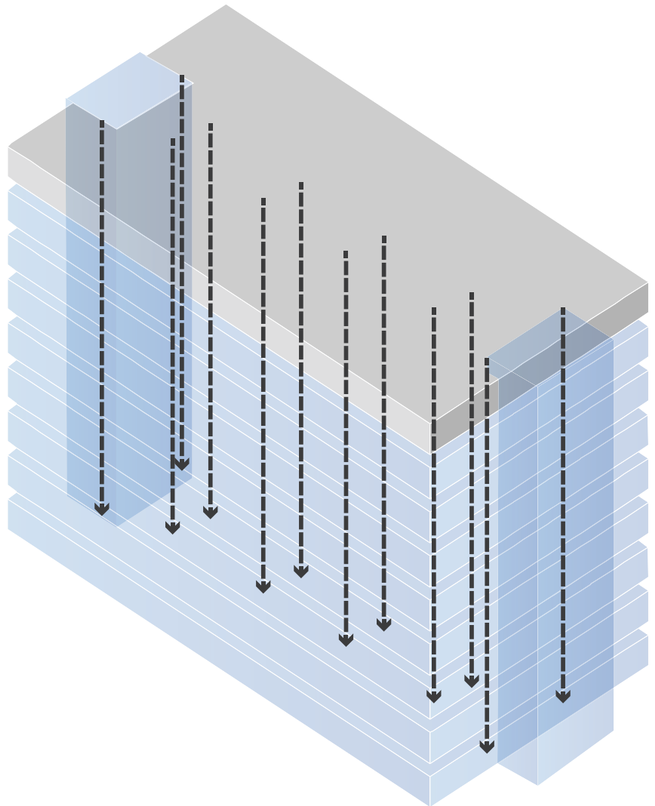
Student: Tim Hilhorst / 1302906

Hoofdmentor: Ir. K.P.M. (Kristel) Aalbers (URB)
Onderzoeksmentor: Ir. H.T. (Hilde) Remøy (RE&H)
Bouwtechnologie mentor: Ir. Y.J. (Ype) Cuperus (BT)
Extern gecommitteerde: Ir. D. (Daan) Vitner

STRUCTURE & INSTALLATIONS

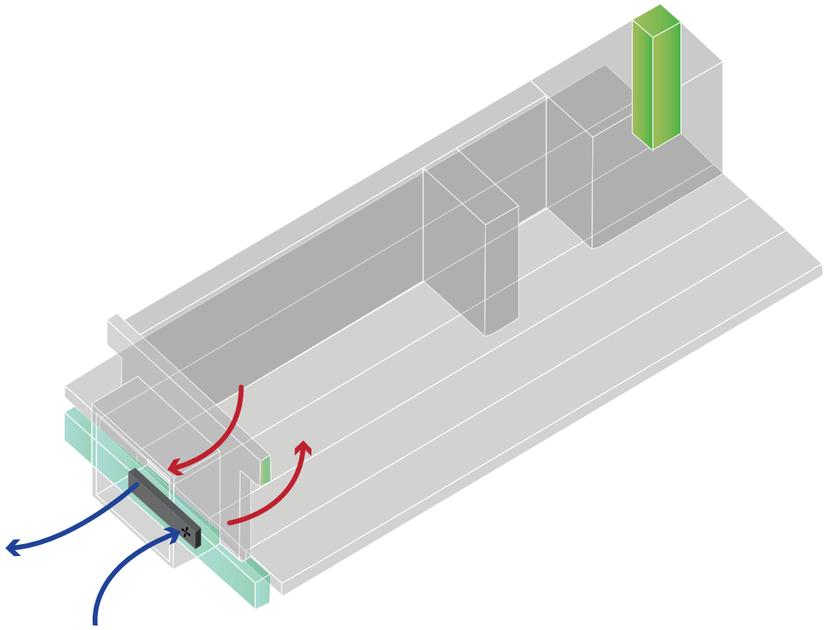


LOAD-BEARING STRUCTURE

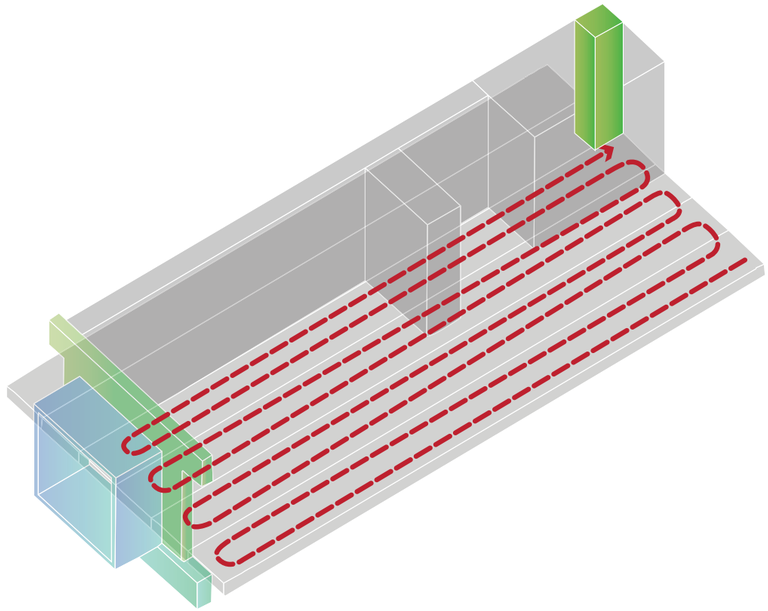


INSTALLATION SHAFTS

DWELLING INSTALLATIONS



VENTILATION SCHEME
- individual installations
- adjustable mechanical ventilation
- heat exchanger



FLOOR HEATING
- piping of the underfloor heating in 0.3m grid

REFLECTION

What

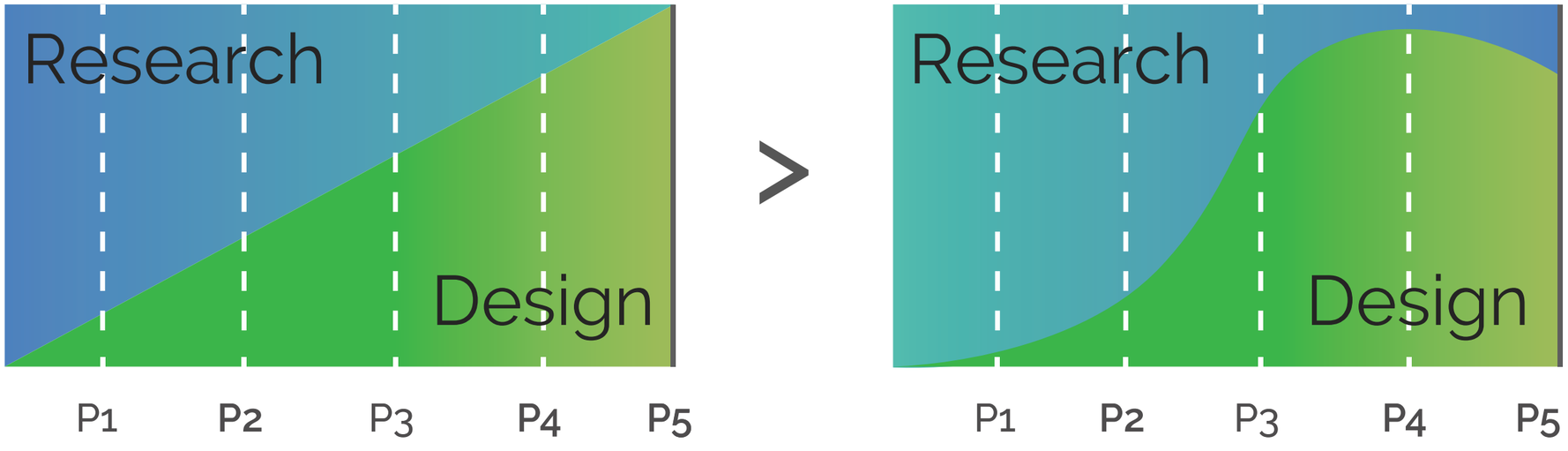
research topics
- transformation
- student housing
- flexibility & sustainability

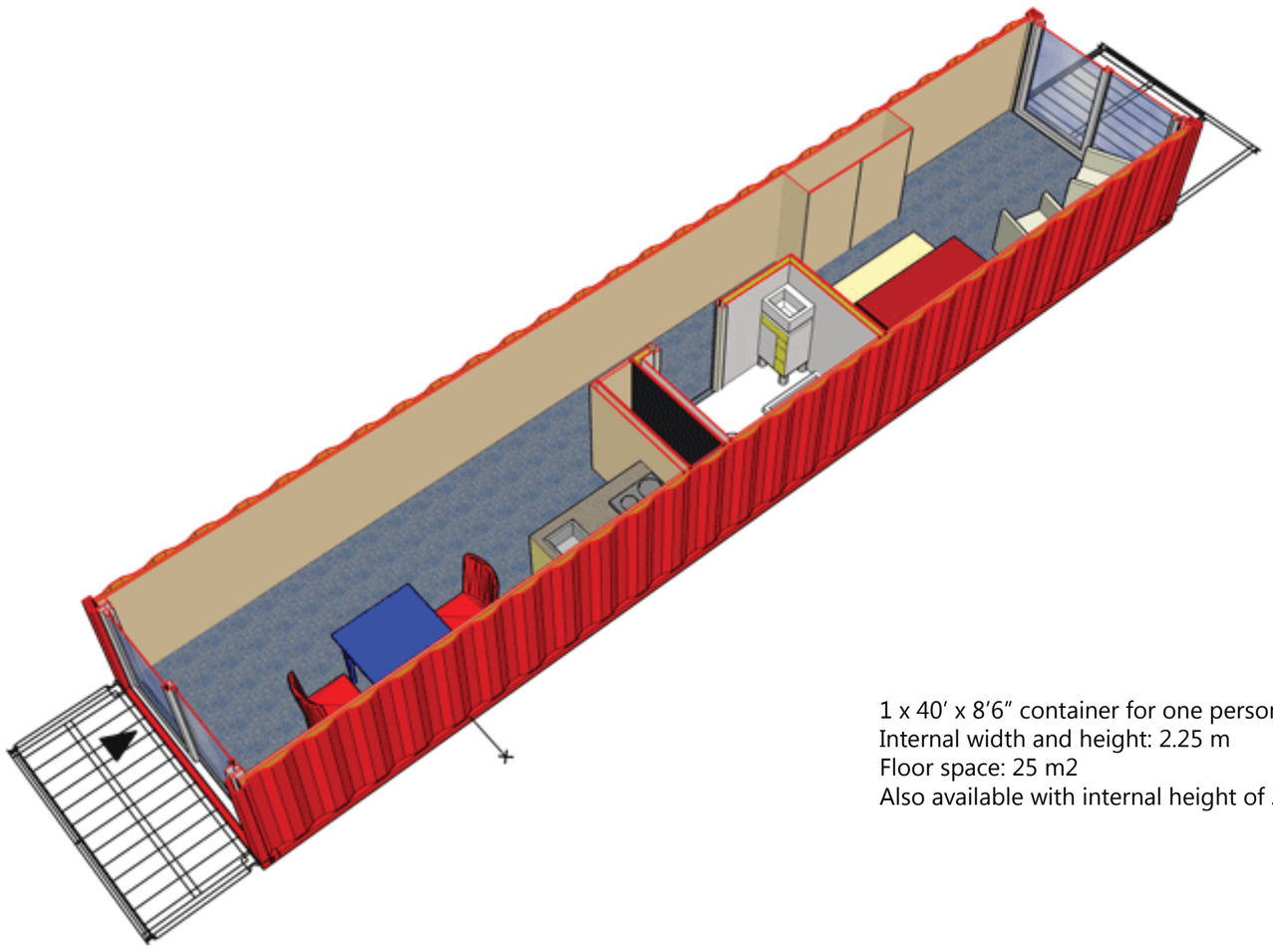
How

- literature study
- case studies
  - publications, drawings
  - interviews

Why

design guidelines





1 x 40’ x 8’6” container for one person household
Internal width and height: 2.25 m
Floor space: 25 m2
Also available with internal height of 2.5 m

Blobitecture

High-tech (modernisme)

Abstractexpressionisme

Postmodernisme

Nazi architectuur

International style

Art Deco

Fascistische architectuur

Functionalisme

Constructivisme

Amsterdamse school

Expressionisme

1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2020