

MAT.LAB

CREATING VALUE FROM WASTE: DESIGN WITH EXISTING ELEMENTS

Hein van der Helm
student number: 4875060

Graduation Presentation P5
Architectural Engineering
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TU Delft
MSc Architecture, Urbanism and Building Sciences
architecture tutor: Y. Warmerdam
research tutor: J. de Krieger
building technology tutor: P. Tomesen





**1/3 Of all waste in the
European Union,
is construction and
demolition waste¹**

1) European Union (2020)
2) picture: by Hein

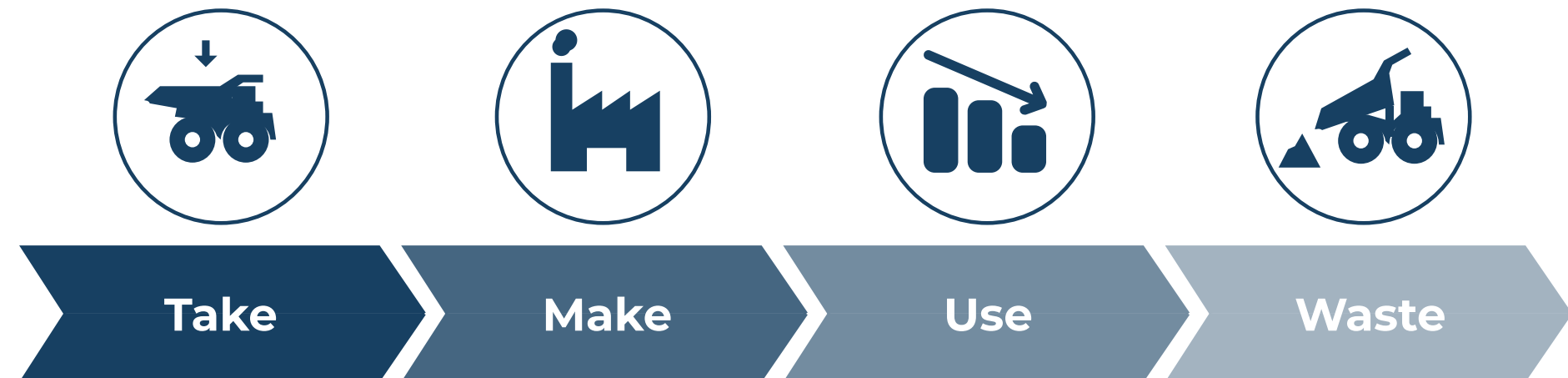


Majority of construction materials is new¹

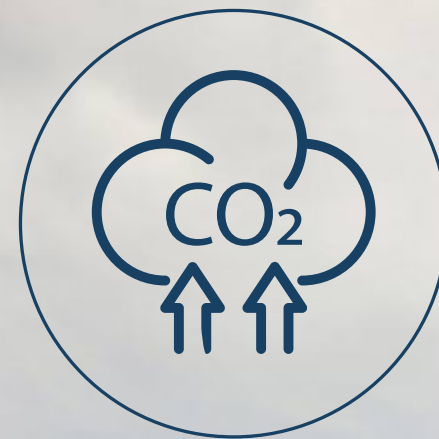
1) Gorgolewski (2018)
2) picture: UmweltBundesAmt.de



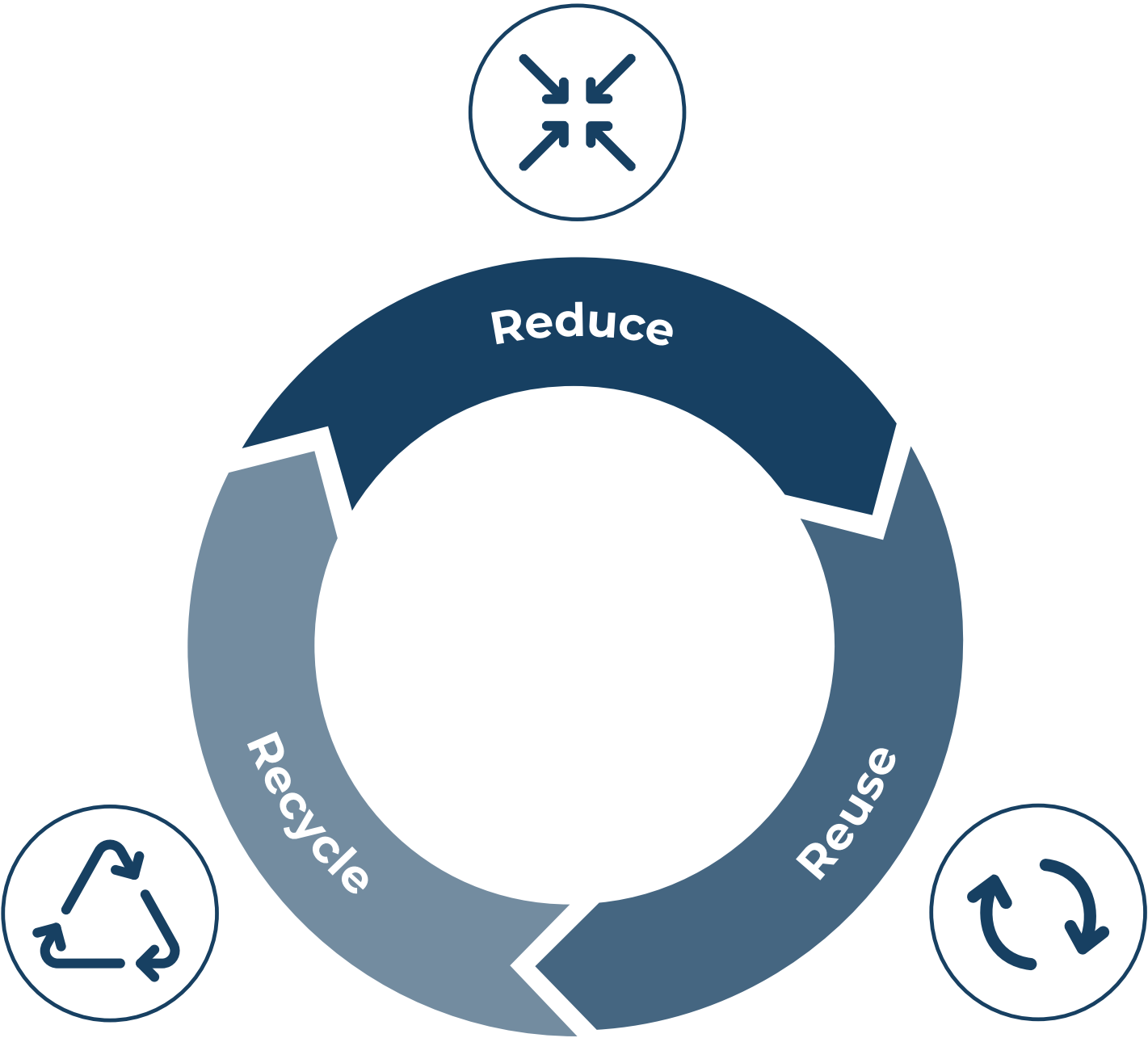
Linear economy with use of **raw materials**



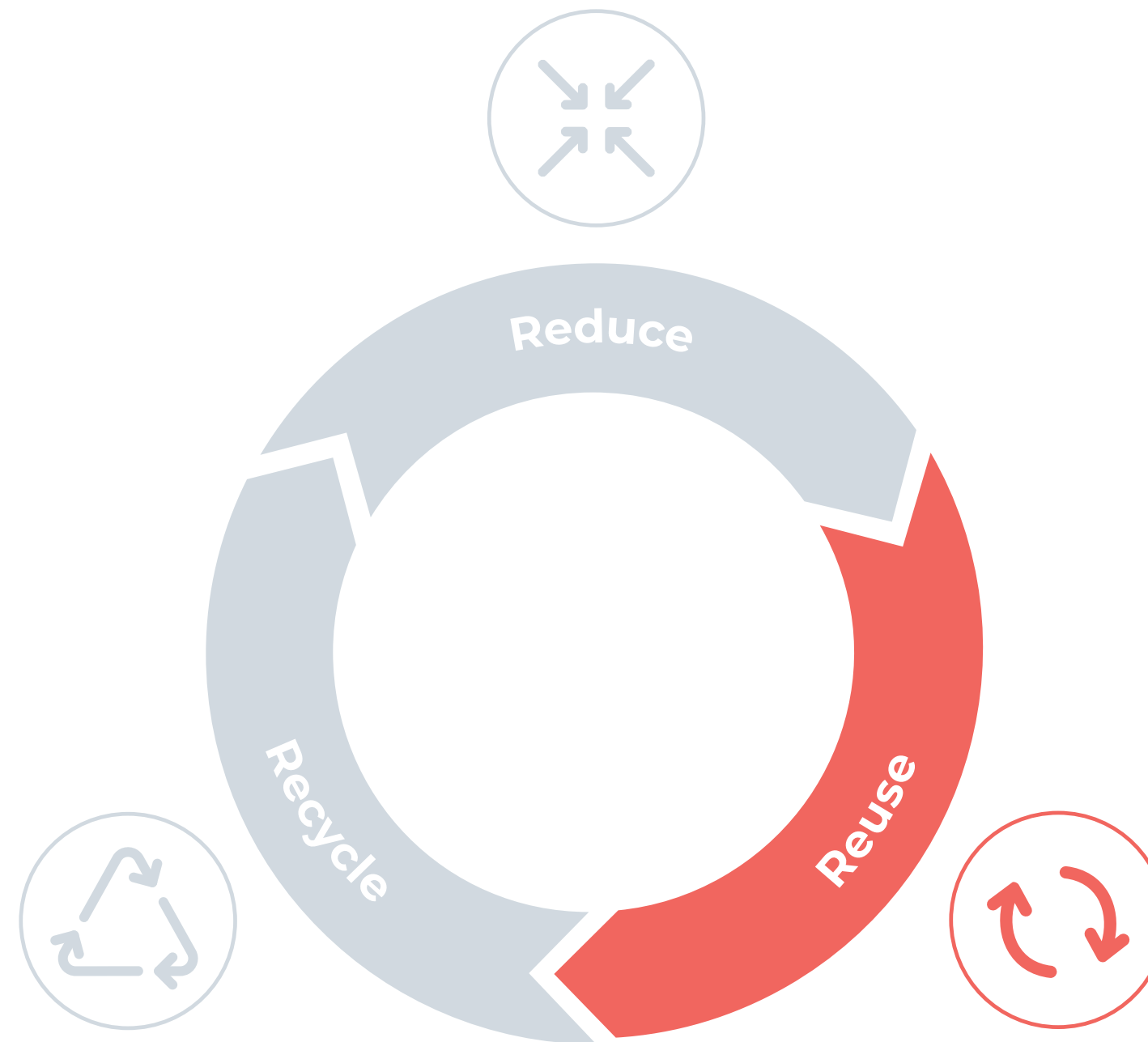
We have to **rethink**



Circular strategies



**The habit of reuse is
not visible enough**



The amount of waste is
influenced by how we
design and **build**



The amount of waste is influenced by how we **design** and **build**

Role of the architect



What design principles can be developed to enable architects to effectively integrate reuse on different scale levels during the design phase?



Popma ter Steege Architecten

Renovation project: Kantoor Vol Afval (KaVA)
 2022 - 2024
 Katwijk
 2100 m2



Apto Architects

Project: Kokomo
 2021 - 2024
 Amsterdam
 1000 m2



Design location

Based on existing research

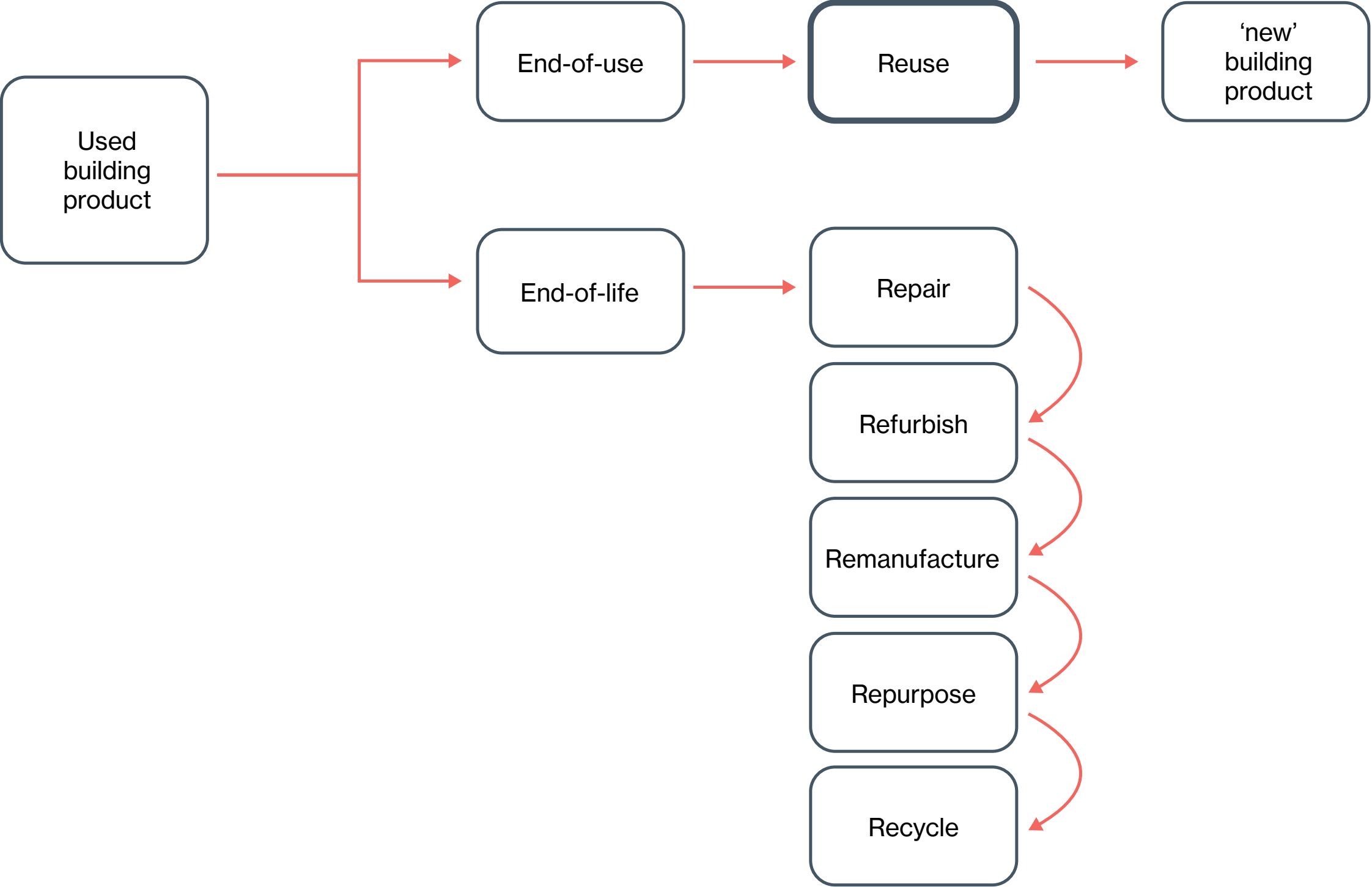
Reuse



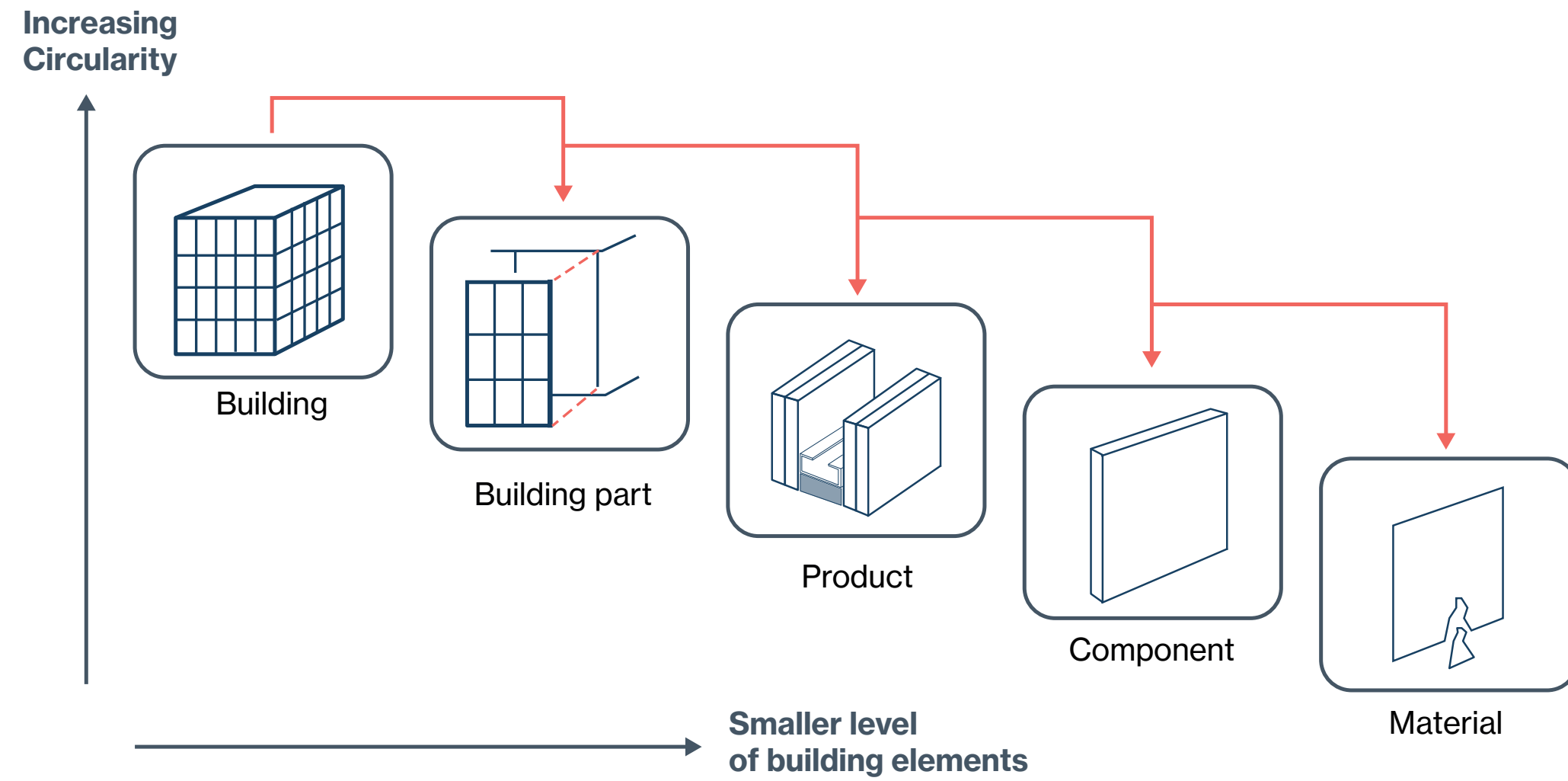
Spolia:

'The removal of building components from their original setting and reuse in a different structure'

Reuse in general



Reuse strategies



Factors influencing reuse potential



1.

Availability

- Timing
- Location
- Quantity

2.

Technical performance

- Technical condition
- Meet safety regulations

3.

Environmental impact

- Lower CO₂ impact
- Transportation
- LCA / Embodied energy

4.

Dimensions

- Standard sizes can change
- Irregularities

5.

Aesthetics

- Imperfections
- Add value

6.

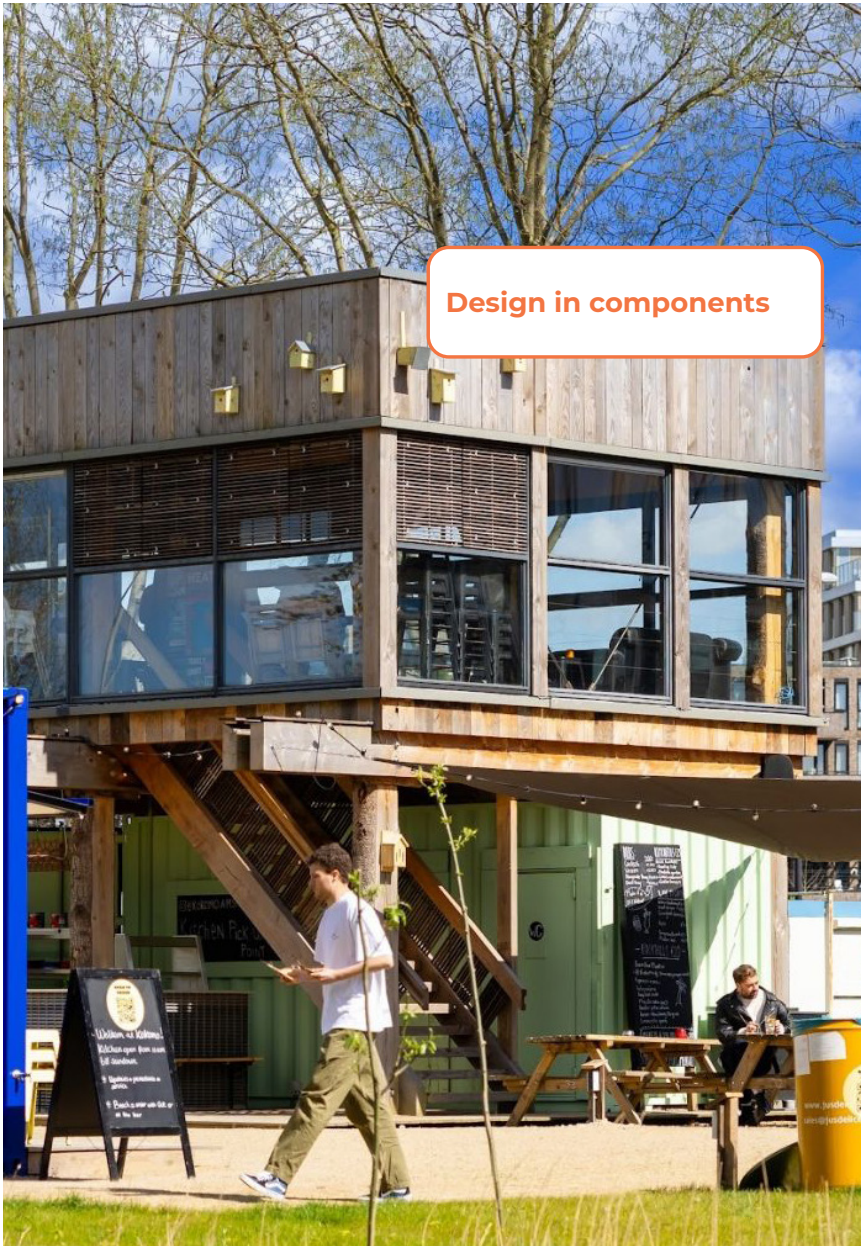
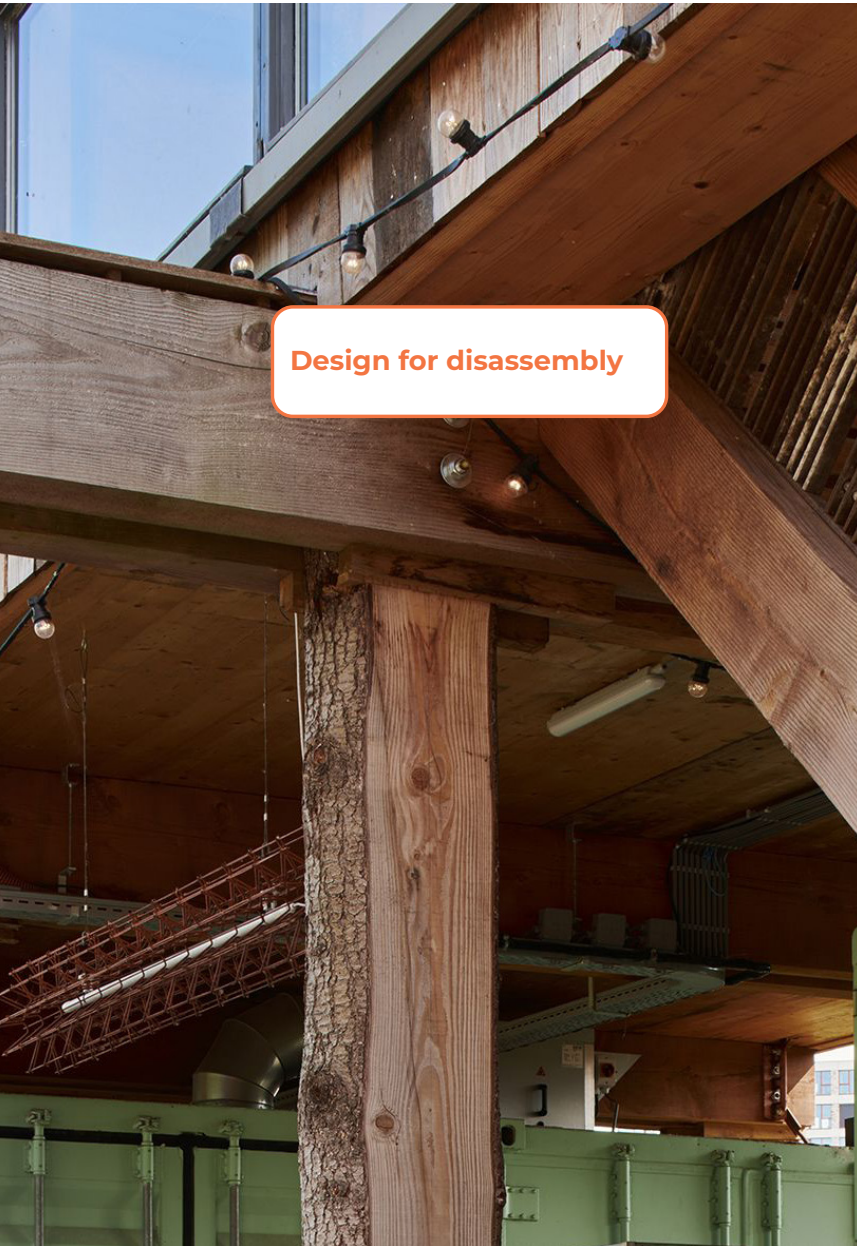
Costs

- Labour of deconstruction
- Storage costs
- Uncertainties

Discovered design principles focused on reuse



Discovered design principles focused on reuse



Early stakeholders
engagement

Specify measurable
reuse goals

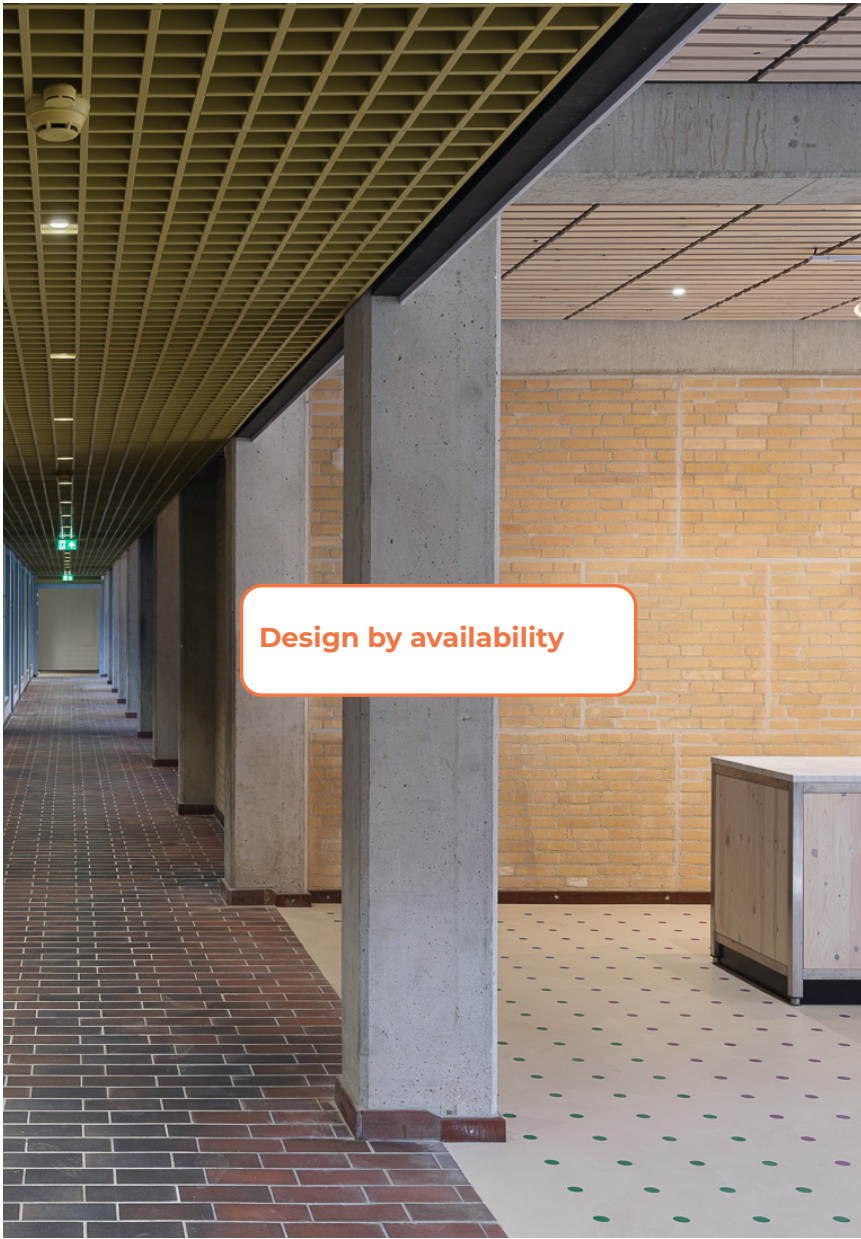
Define conditions &
disclaimers of element

Involvement on
construction site

Discovered design principles focused on reuse



Discovered design principles focused on reuse



Early stakeholders
engagement

Create flexible
character / concept

Reclaimed material
finding

Allow flexibility during
design process

Design process principles

1. Early stakeholders engagement

- At start of design process, elongated introduction phase with all stakeholders.
- Possible stakeholders from start: architect, contractor demolition contractor, material scientist, circularity advisor, reclaimed material scout.

2. Specify measurable reuse goals

- Define specific, measurable goals, such as the minimum percentage of reused building materials.

3. Create flexible character / concept

- Make a collage to allow freedom in interpretation, but set boundaries of where to look for in case of materiality.

4. Define conditions & disclaimers of materials per element

- Describe elements in the first design phase with freedom and flexibility, providing performance requirements and disclaimers.

5. Reclaimed material finding

- Make inventory of materials and building components found and desired.
- Hands-on material assessment by architect.
- Start with product that has most environmental impact.

6. Allow flexibility during design process

- Allow flexibility in the design process to accommodate materials found later and adapt to the characteristics of reused components.

7. Provide detailed drawing details

- Design for tolerances.
- Ensure clear guidance for construction and integration of reused materials.

8. Building components documentation

- Clearly describe all components and materials used in the building.
- Standardised information about the components in a building: material, quality and quantity.

9. Involvement on construction site

- Do not leave the solutions up to the contractor, but keep it to the designer. The tolerances and irregularities of components sometimes ask for creative sustainable solutions on site.

Design strategies

Standardisation and simplicity in construction

- Use standard sizes and connections for components

Deep understanding of material knowlegde

- More material knowlegde is needed about requirements.

Design for disassembly

- Use reversible connections
- Use dry connections
- Universal screws

Design by availability

- Use products that are widely available in the region
- Design sometimes follows material.

Design in components

- Start with building part > product > component.

Design for adaptability

- Design spaces and products that can be easily modified to meet the changing needs.

Stakeholders

Reclaimed material scout / dealer

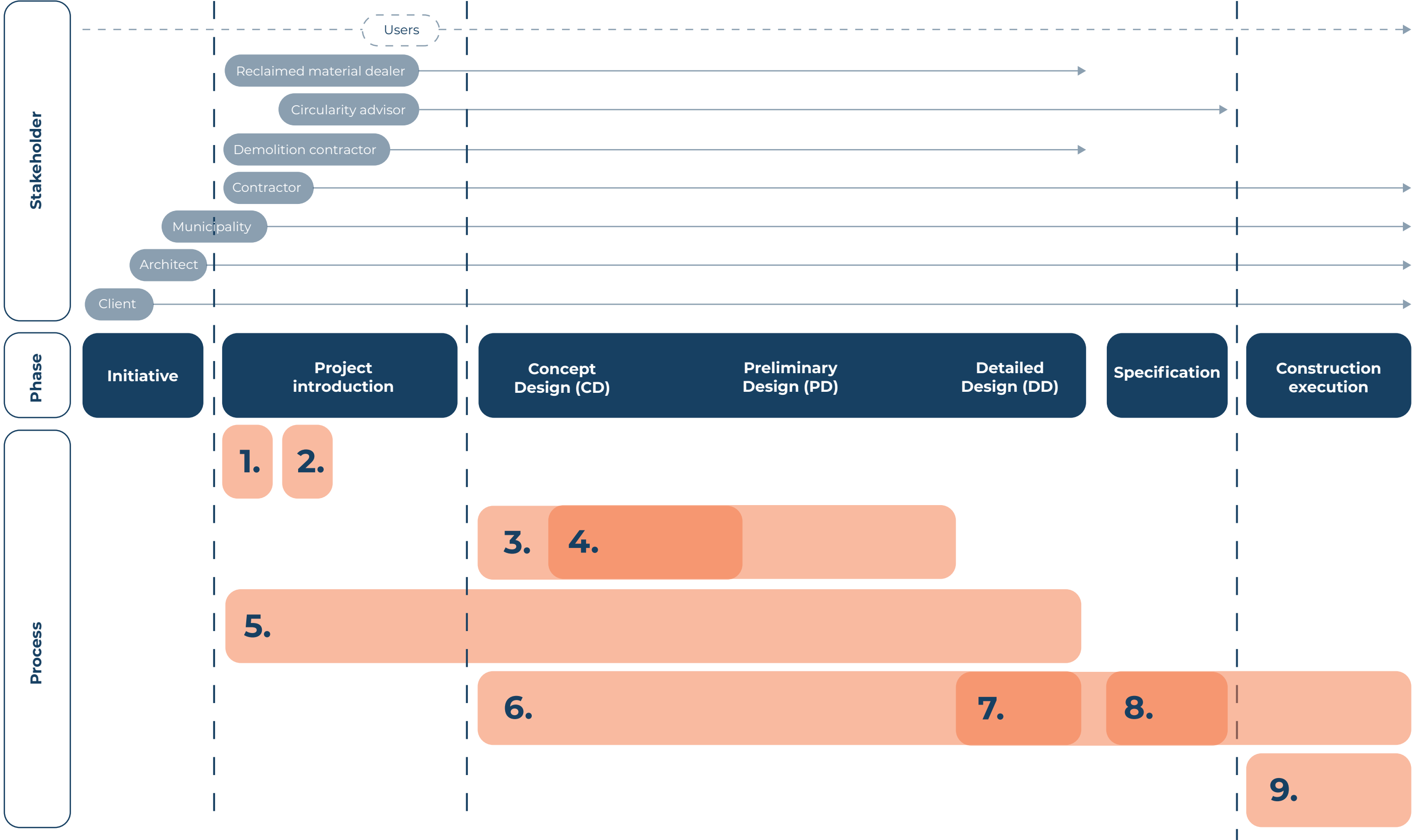
Circularity advisor

MSc Architecture - Hein van der Helm

Conclusion

21/82

1. Early stakeholders engagement
2. Specify measurable reuse goals
3. Create flexible character / concept
4. Define conditions & disclaimers of element
5. Reclaimed material finding
6. Allow flexibility during design process
7. Provide detailed drawing details
8. Building components documentation
9. Involvement on construction site



DESIGN

Provide a space where:

[1] Stakeholders in the building sector can be encouraged to learn more about circular building methods on reuse;

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[3] materials and reuse strategies are showcased to the public

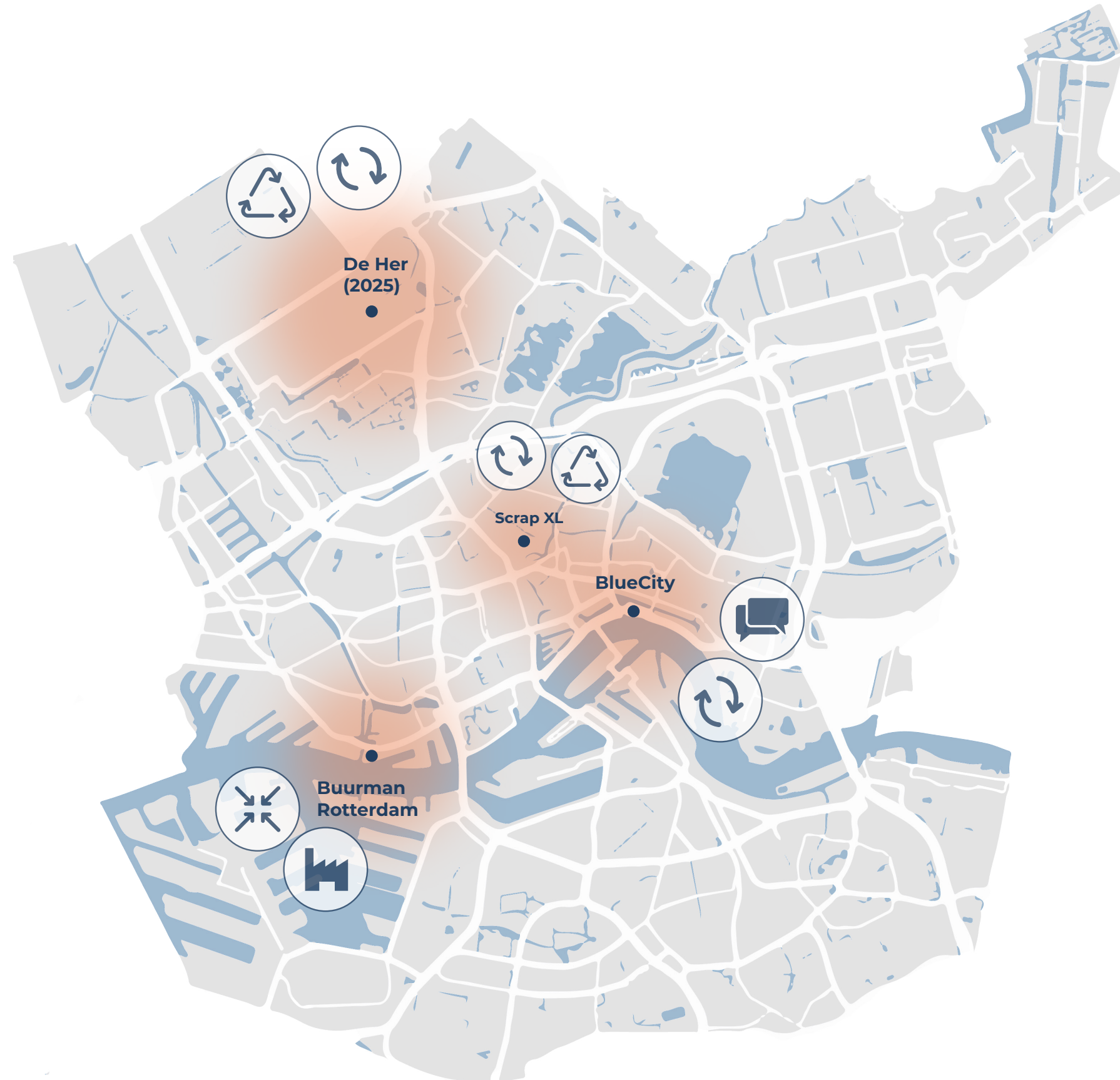
Provide a space where:

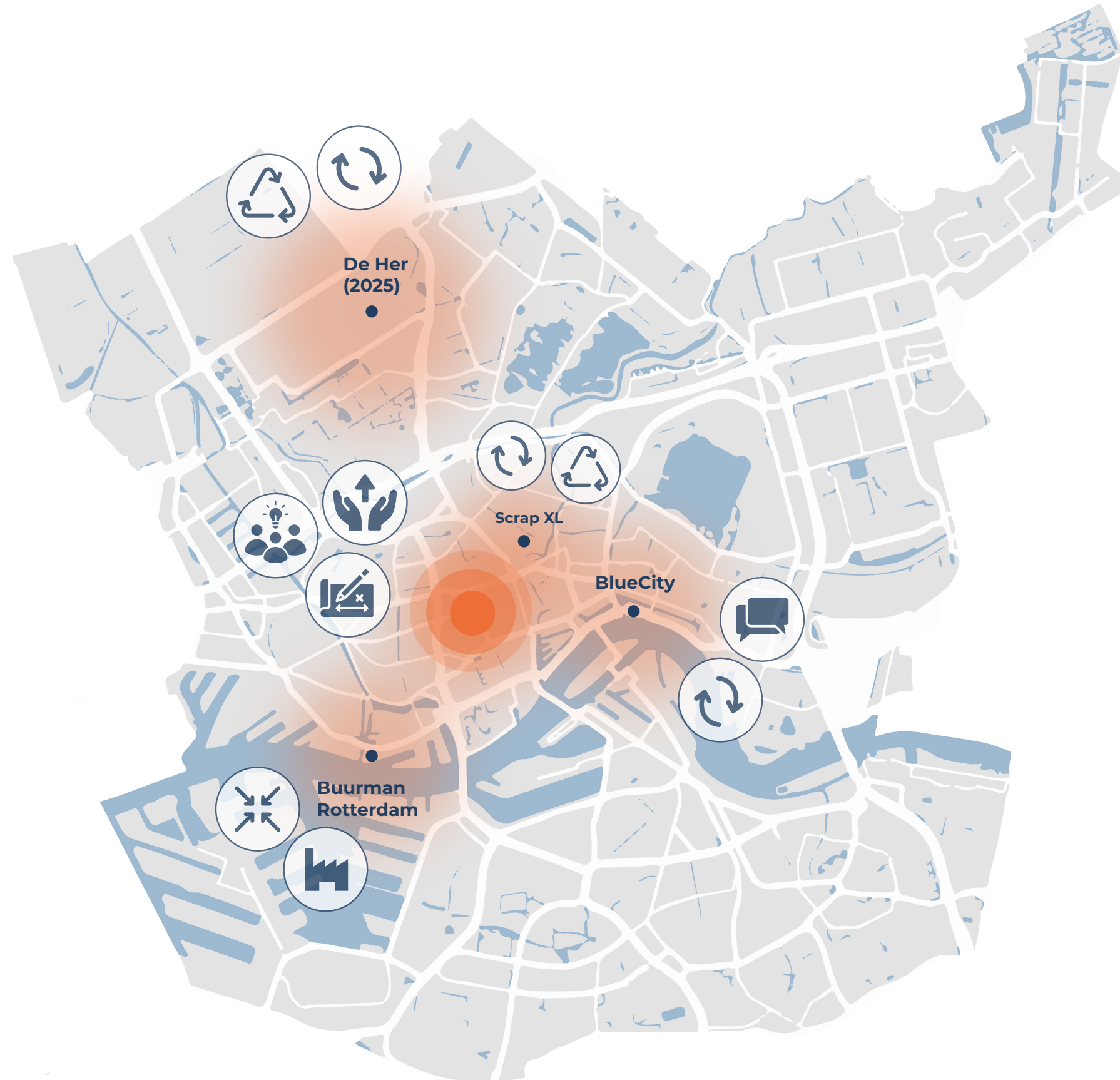
[1] Stakeholders in the building sector can be encouraged to **learn more** about circular building methods on reuse;

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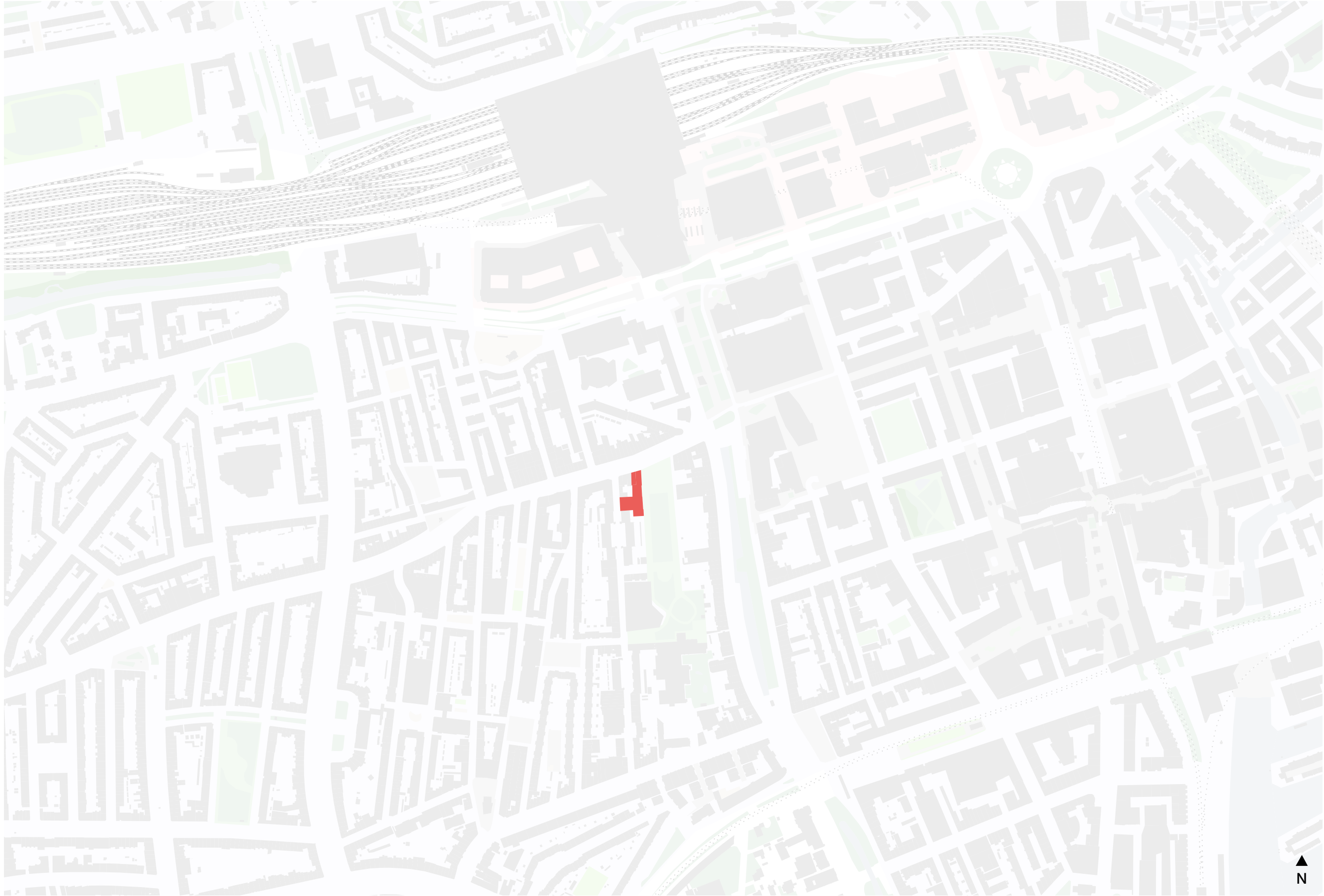
How can architectural reuse principles guide the transformation of the Amazing Oriental Supermarket in Rotterdam into a collaborative centre for learning, testing and showcasing innovative applications of reused materials?

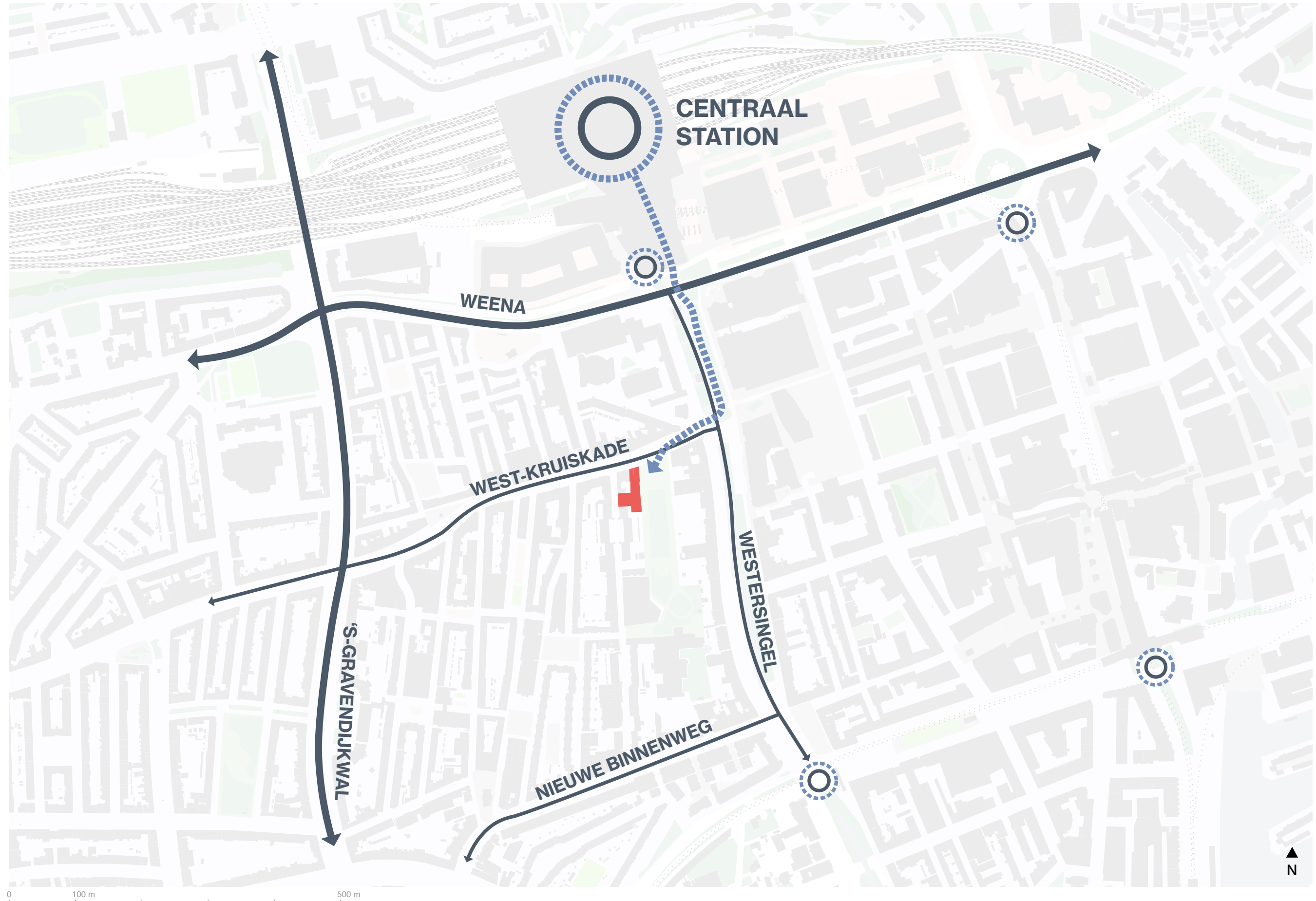


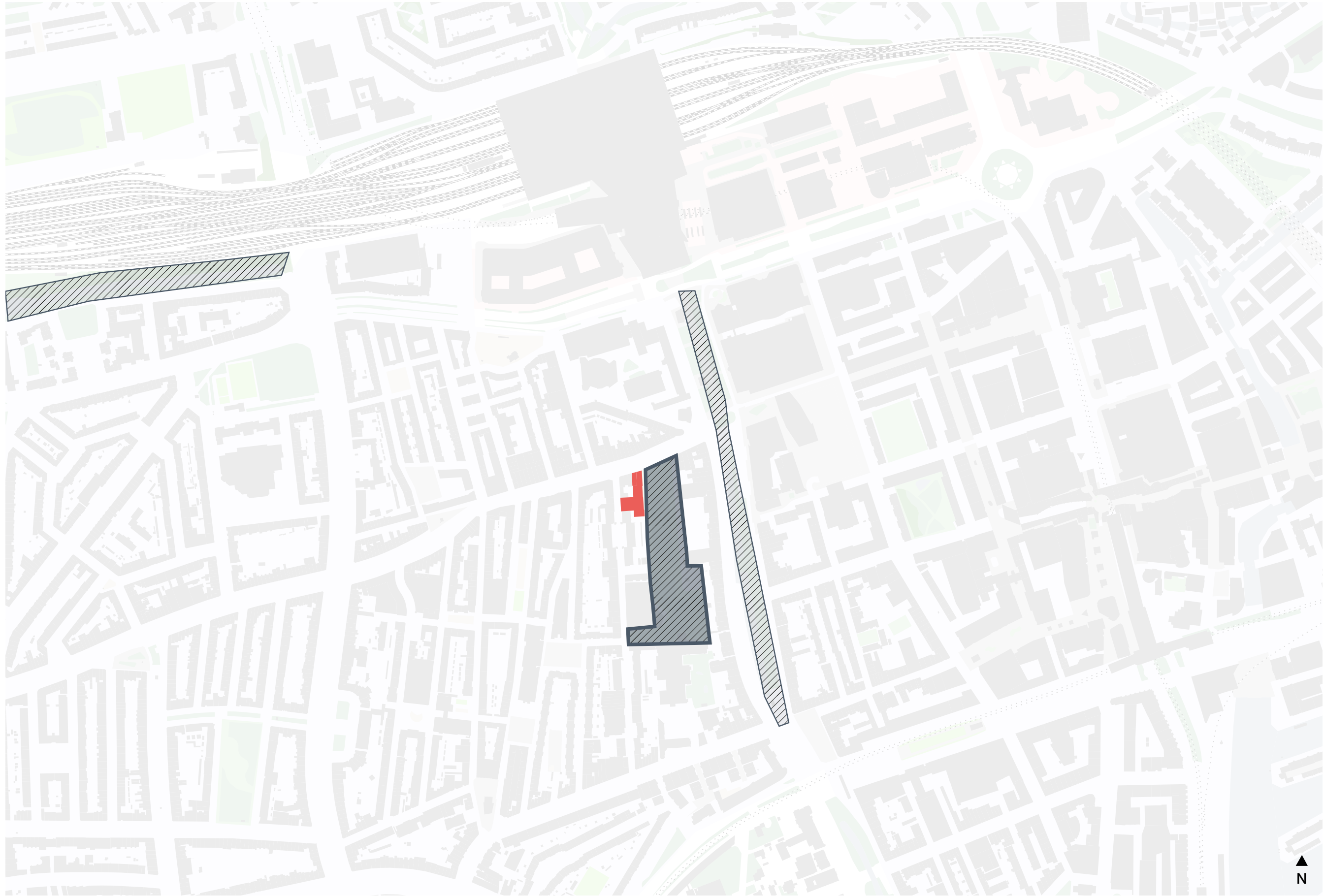




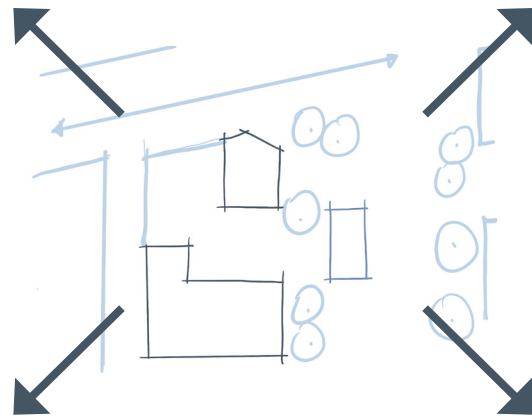






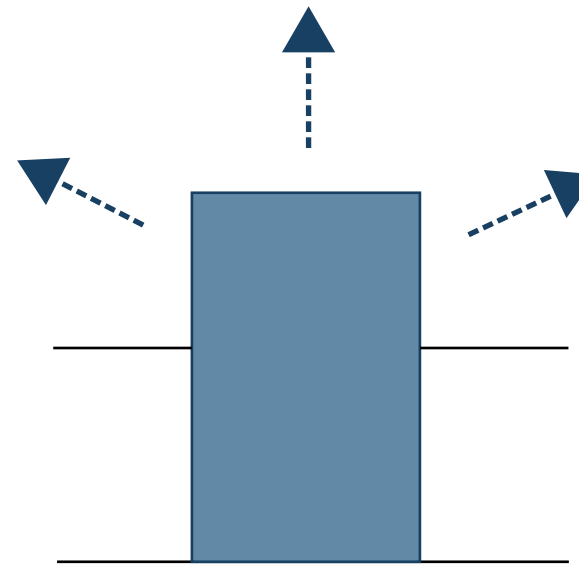


Creating value from waste



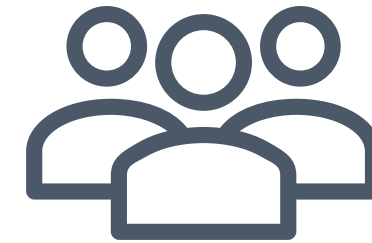
The neighbourhood

Showcase a circular way of building:
with reused materials



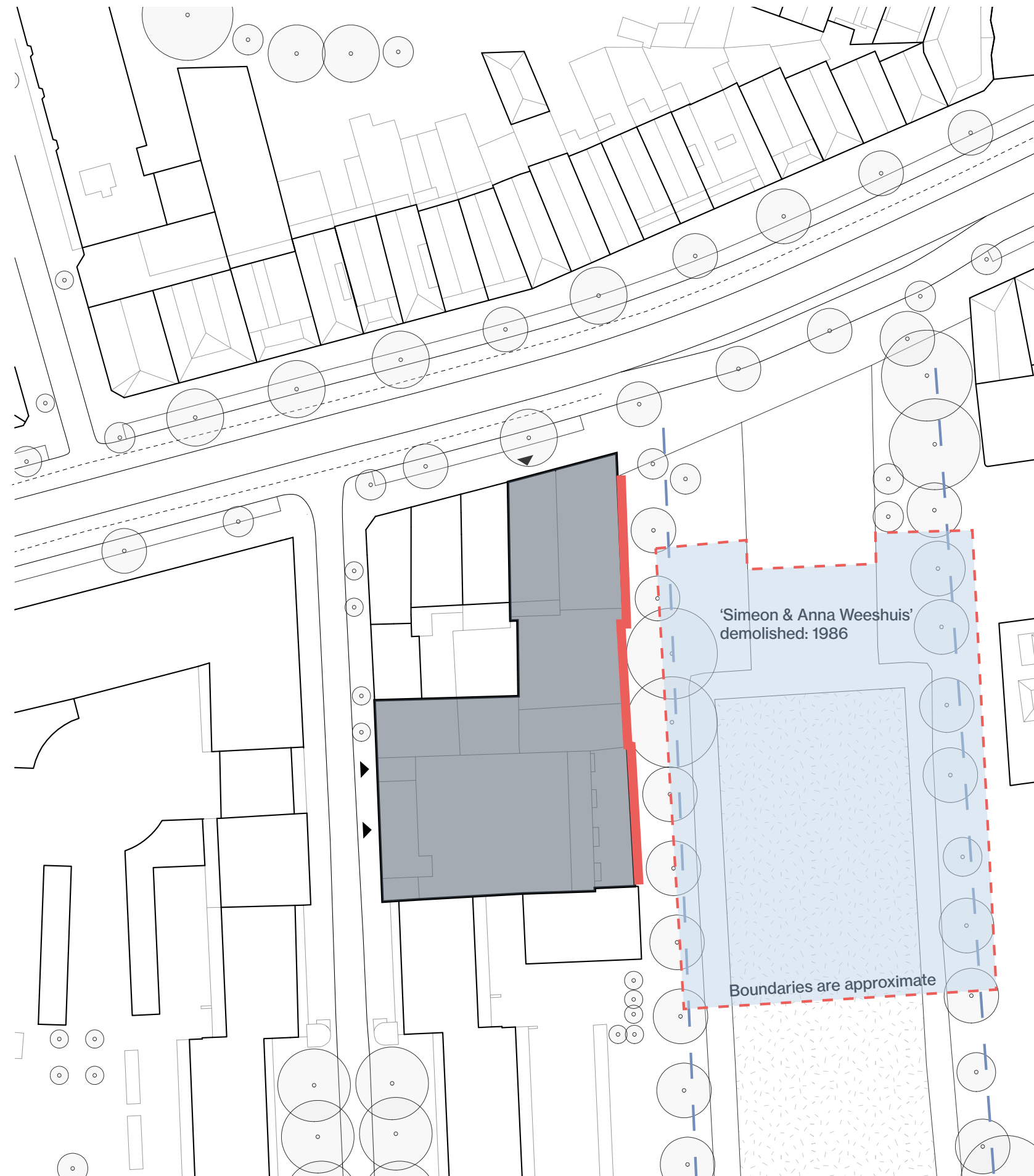
The building

Maximise the use of existing
building materials on site and
strive for optimal reuse



The users

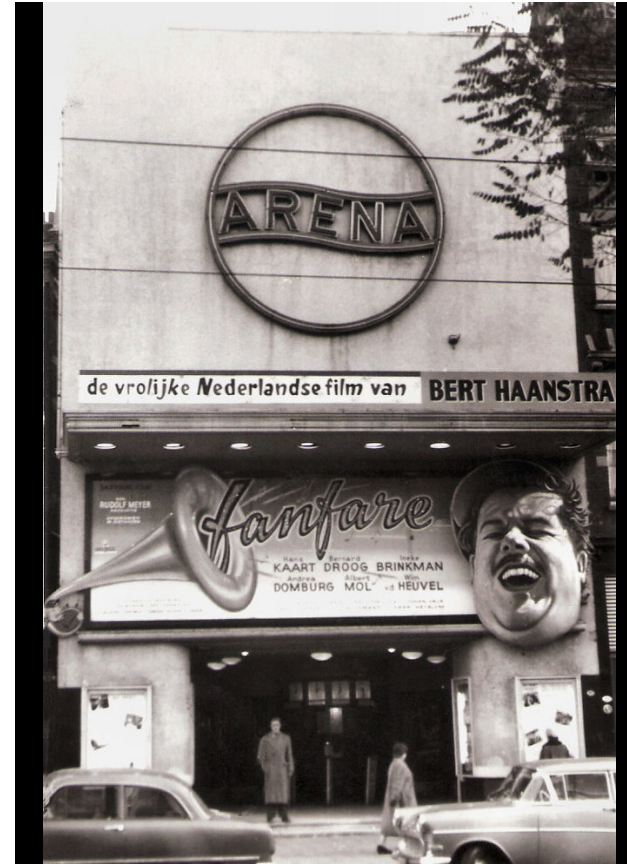
Make reuse visible and tangible



ROXY THEATER - 1930



ARENA BIOSCOOP - 1945



ARENA THEATER - 1966



GEKRAAKT - 1985



SLOOP 'SIMEON EN ANNA' HUIS - 1986



NIGHTTOWN - 1988

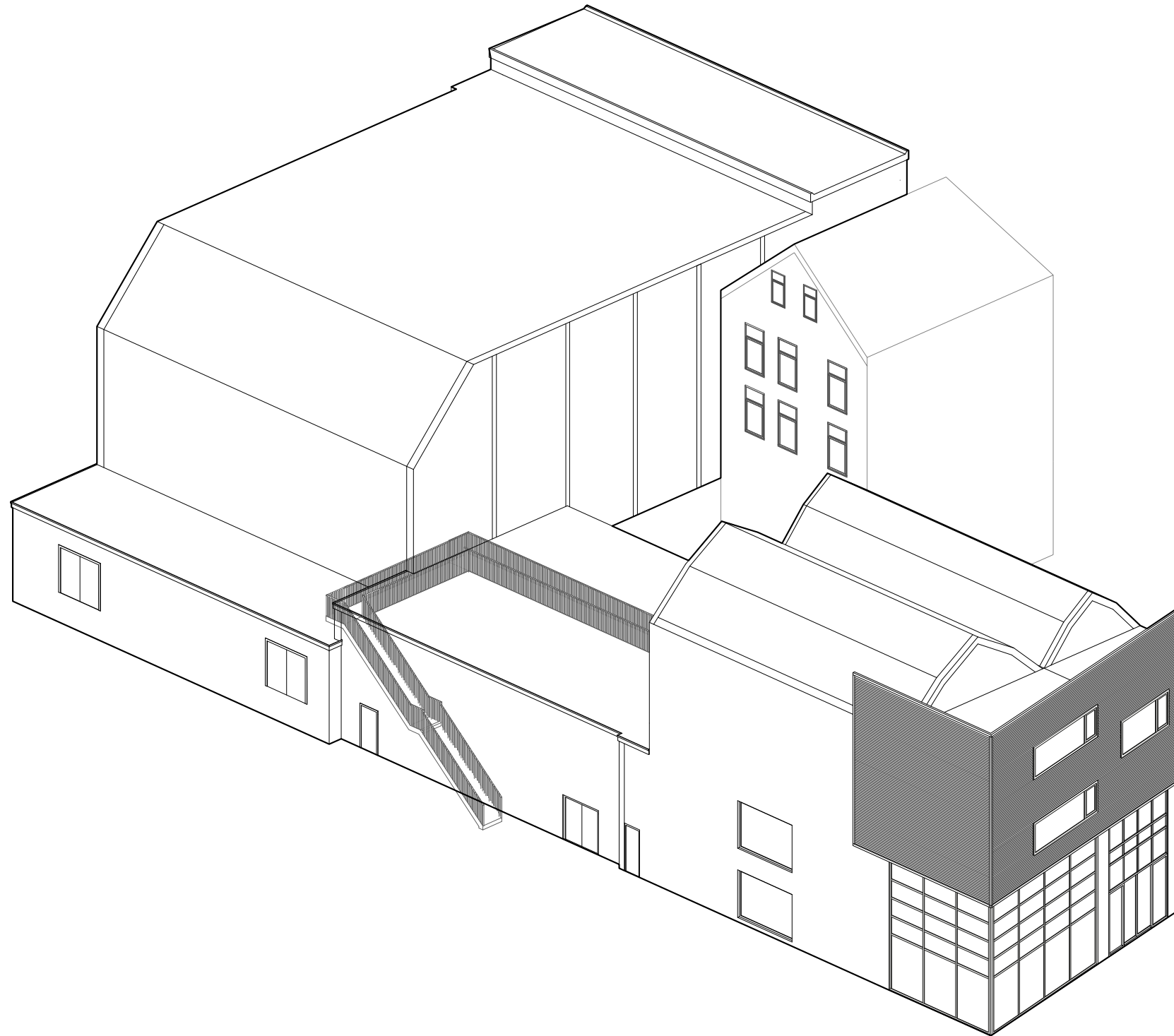


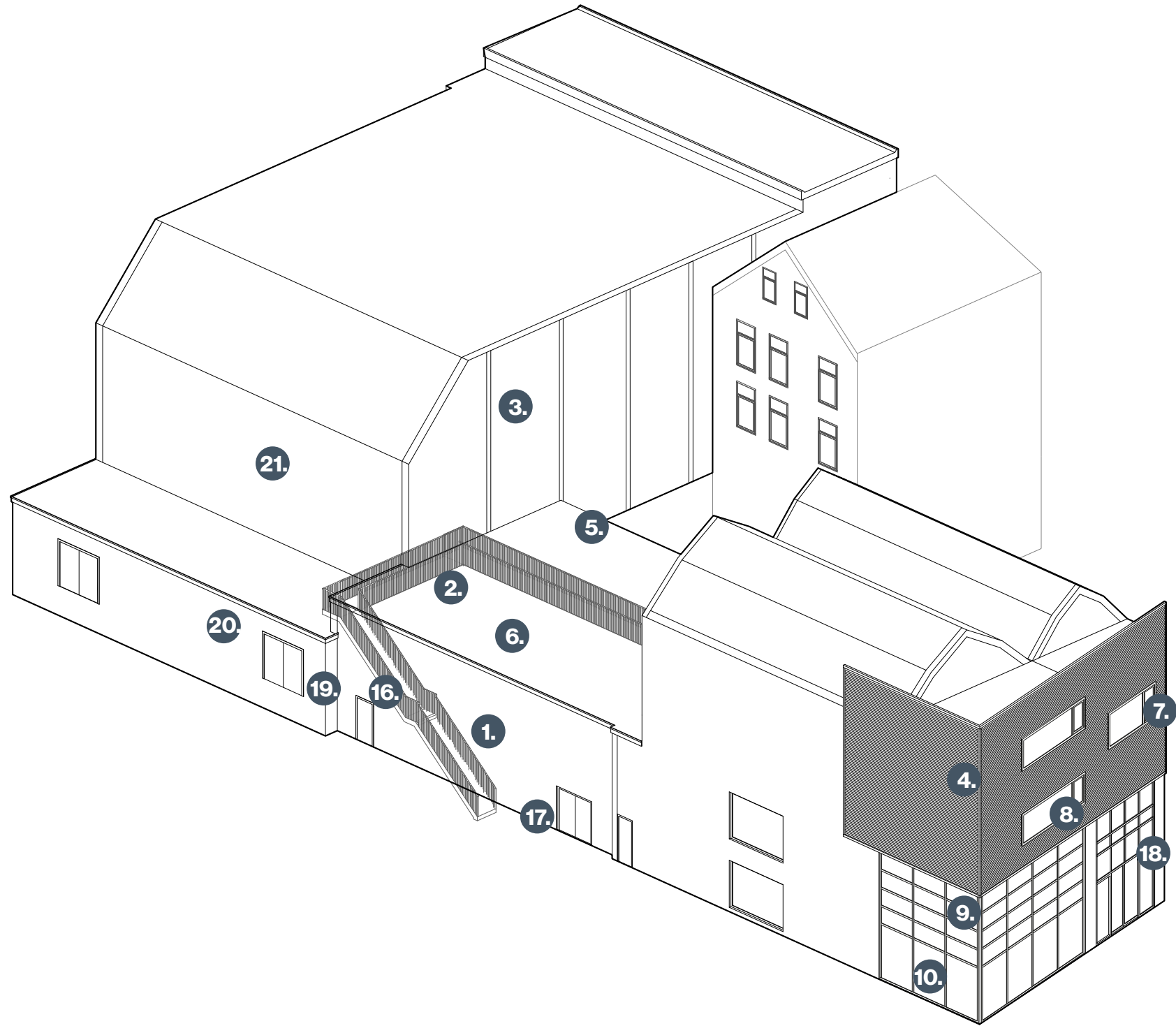
CLUB WATT - 2008

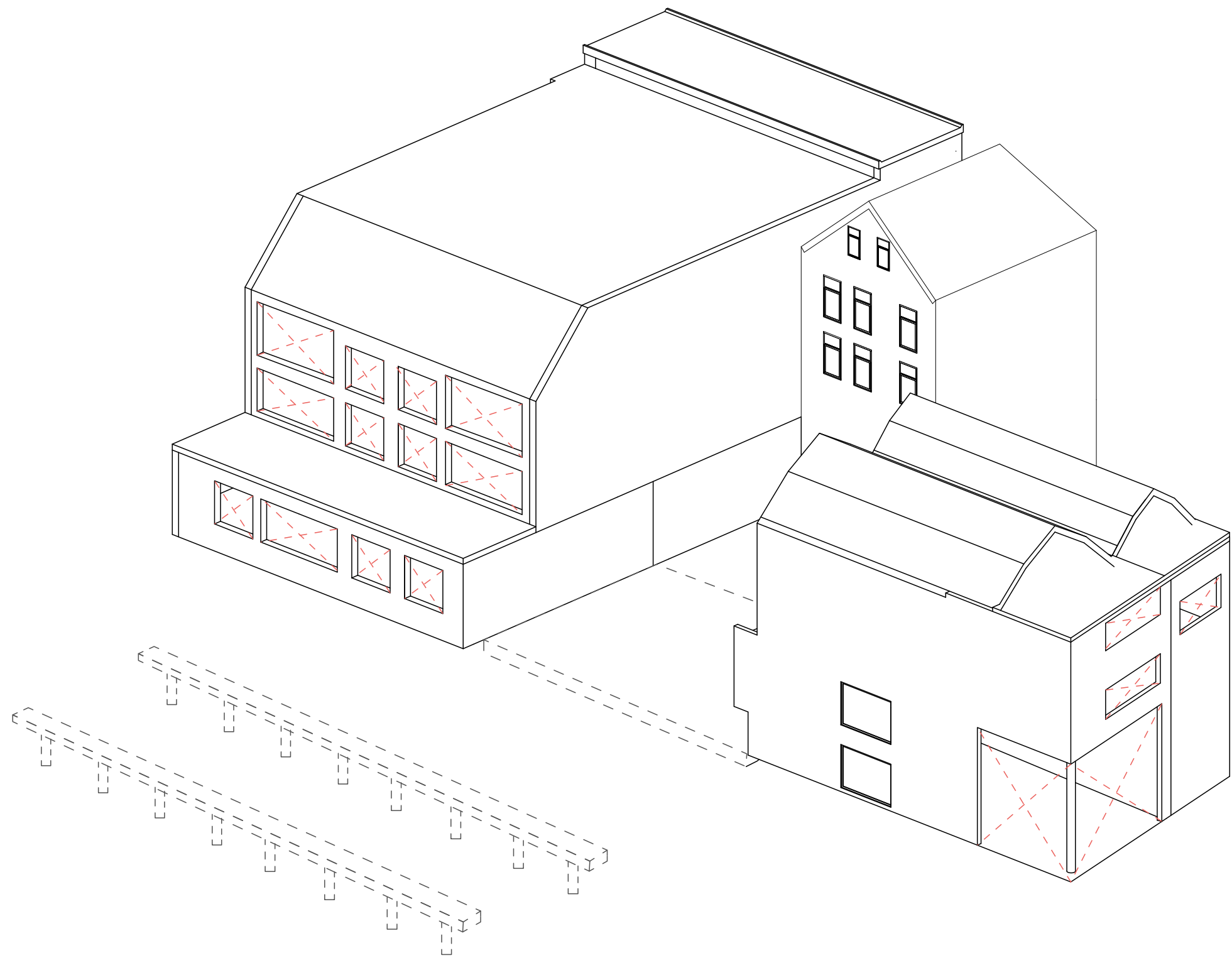


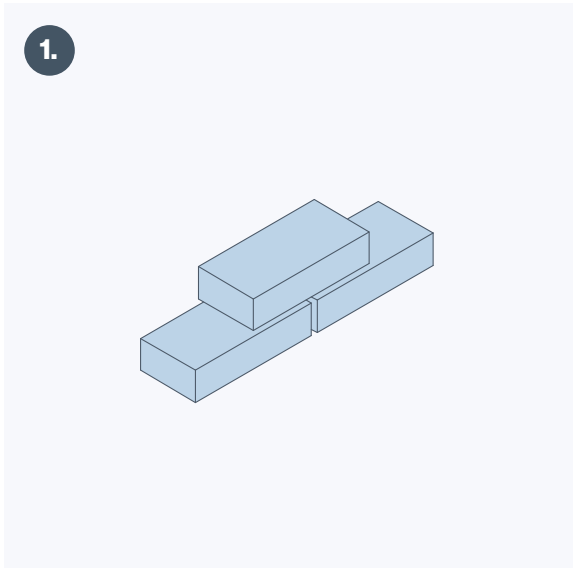
AMAZING ORIENTAL SUPERMARKET - 2013





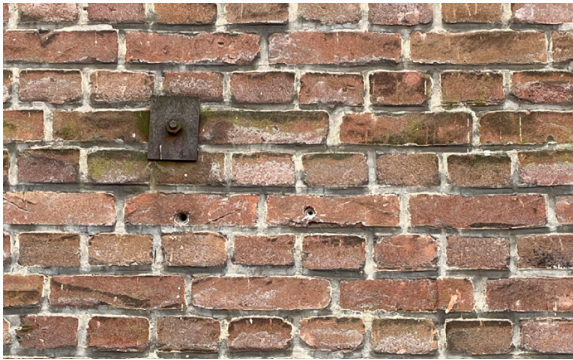




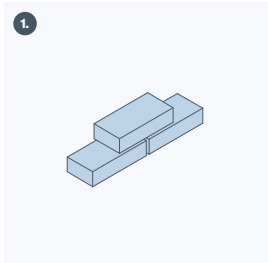


Bricks

Quantity	408 m²
Weight	-
Dimensions	210 x 100 x 50 mm
Material	Brick - Waalformaat
Location from site	-
Finish	-
Quality	Good

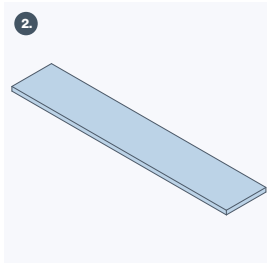


REUSE ELEMENTS



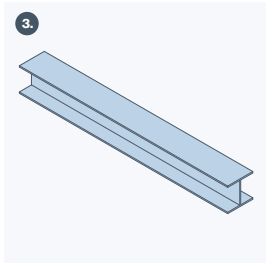
Bricks

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Quality	Good



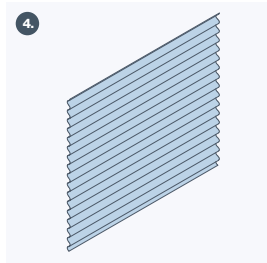
Concrete slabs

Quantity	178 m²
Weight	-
Dimensions	2710 x 600 x 50 mm
Material	Concrete (gasbeton)
Location from site	-
Finish	-
Quality	Not suited for roof



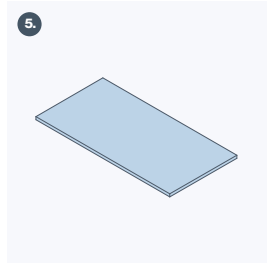
Steel structure

Quantity	10x
Weight	-
Dimensions	HE240A x 8900 mm
Material	Steel
Location from site	-
Finish	-
Quality	-



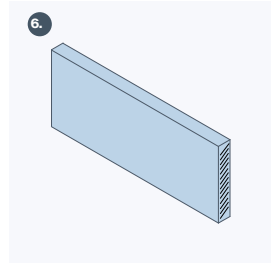
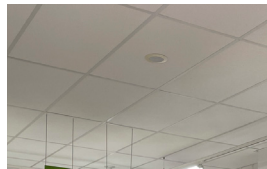
Metal plates

Quantity	151 m²
Weight	-
Dimensions	50 mm thick
Material	Metal
Location from site	-
Finish	Grey-silver colour
Quality	Good



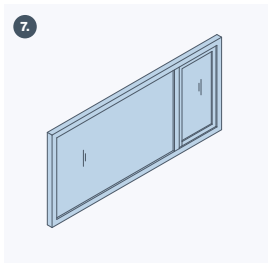
Ceiling tiles

Quantity	500 m²
Weight	-
Dimensions	1200 x 600 x 20 mm
Material	Steenwol
Location from site	-
Finish	-
Quality	Good



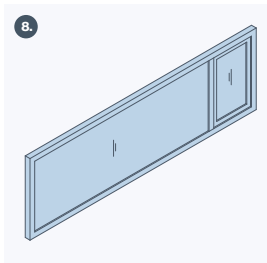
Wooden beams

Quantity	8x
Weight	-
Dimensions	5800 x 800 x 140 mm
Material	Hard wood, type unknown
Location from site	-
Finish	-
Quality	-



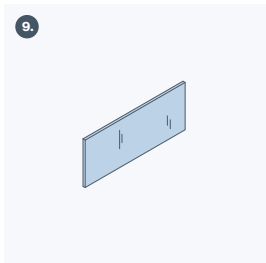
Window

Quantity	1x
Weight	-
Dimensions	1700 x 3600 x 100 mm
Material	Aluminium window
Location from site	-
Finish	-
Quality	Good



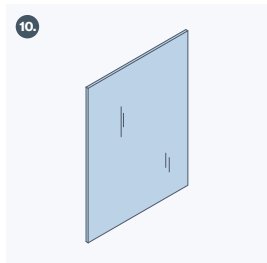
Window

Quantity	2x
Weight	-
Dimensions	1500 x 4800 x 100 mm
Material	Aluminium window
Location from site	-
Finish	-
Quality	Good



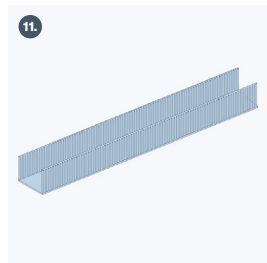
Glass panel

Quantity	28 x
Weight	-
Dimensions	1850 x 760 mm
Material	Glass
Location from site	-
Finish	-
Quality	-



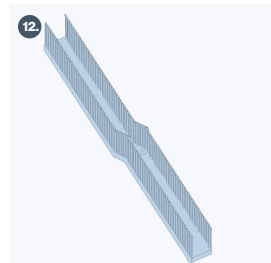
Glass panel

Quantity	6x
Weight	-
Dimensions	1850 x 2480 mm
Material	Glass
Location from site	-
Finish	-
Quality	-



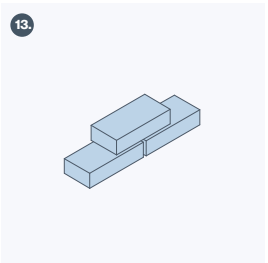
Metal walkway

Quantity	1x
Weight	-
Dimensions	1100 mm width
Material	Metal
Location from site	-
Finish	-
Quality	-



Staircase

Quantity	1
Weight	-
Dimensions	1100 mm width
Material	metal
Location from site	-
Finish	-
Quality	-



Bricks

Quantity	80 m²
Weight	-
Dimensions	210 x 100 x 50 mm
Material	Brick - Waalformaat
Location from site	-
Finish	red
Quality	Good



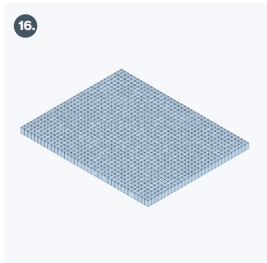
Door

Quantity	2 x
Weight	-
Dimensions	-
Material	-
Location from site	-
Finish	-
Quality	-



Doors

Quantity	2
Weight	-
Dimensions	2200 x 880 mm
Material	Wood
Location from site	-
Finish	-
Quality	-

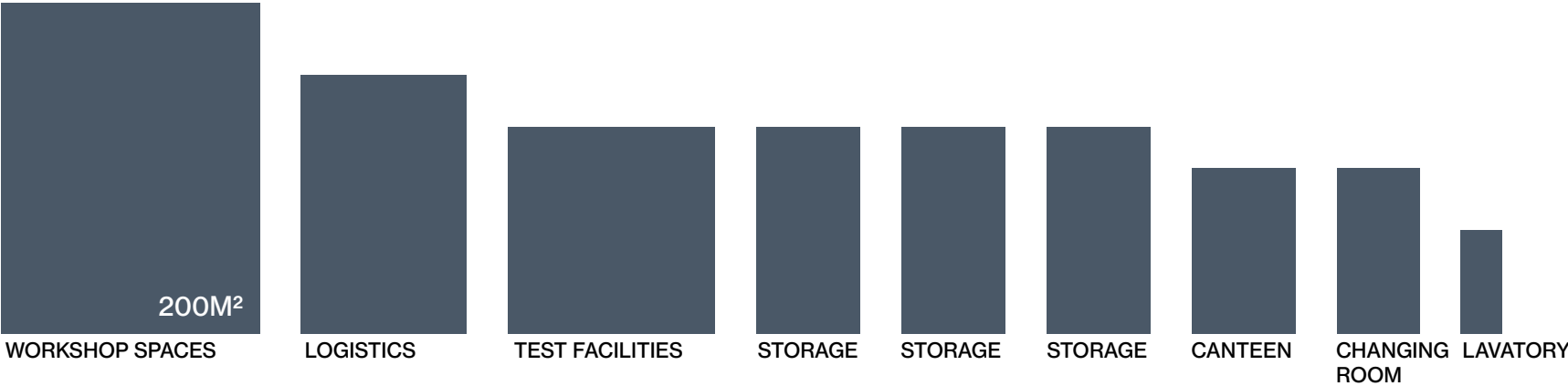


Steel grating

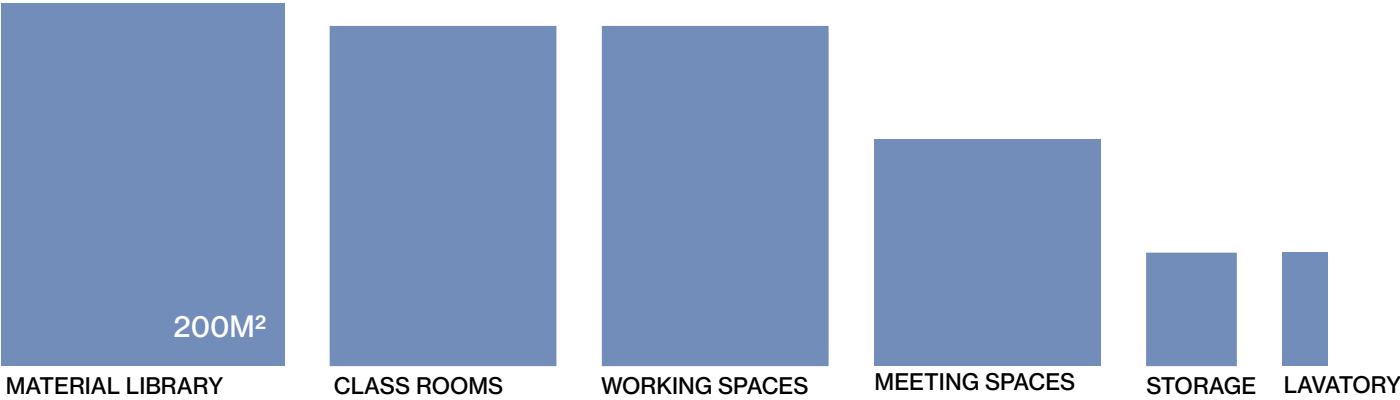
Quantity	1x
Weight	-
Dimensions	1200 x 3600 mm
Material	Galvanized steel
Location from site	on location + 70 km
Finish	-
Quality	Good



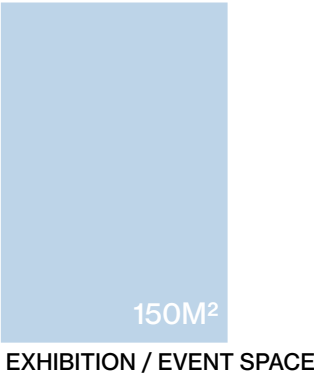
Testing

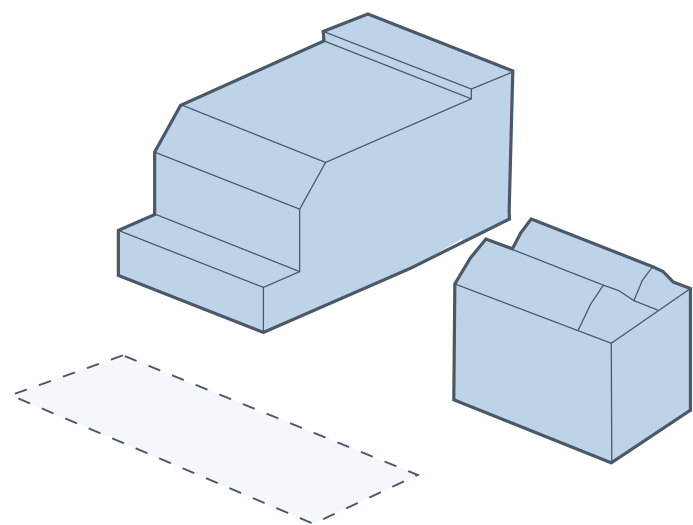


Learning

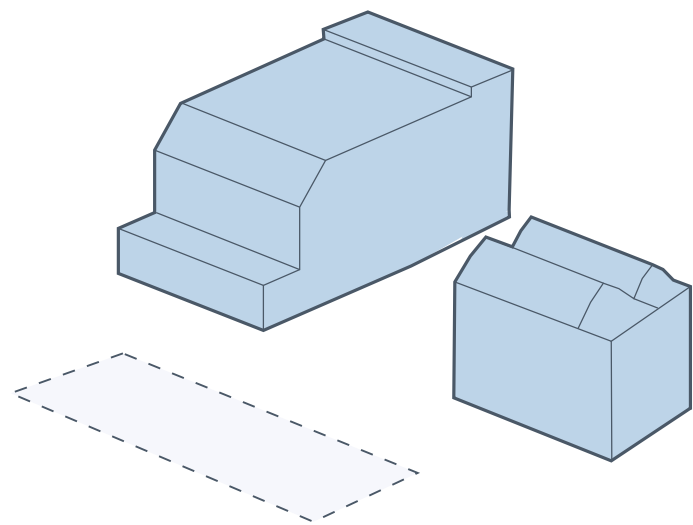


Showcasing

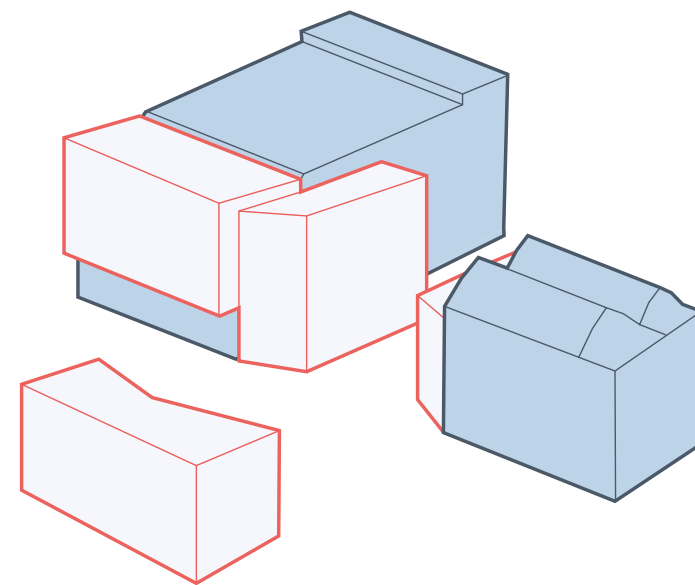




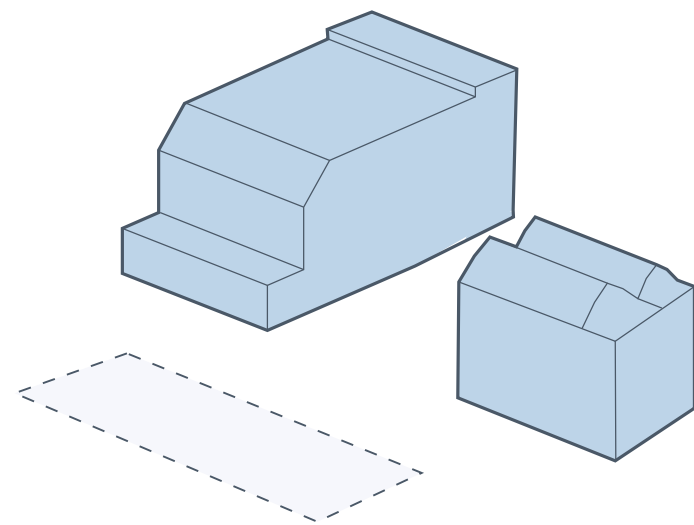
Current situation



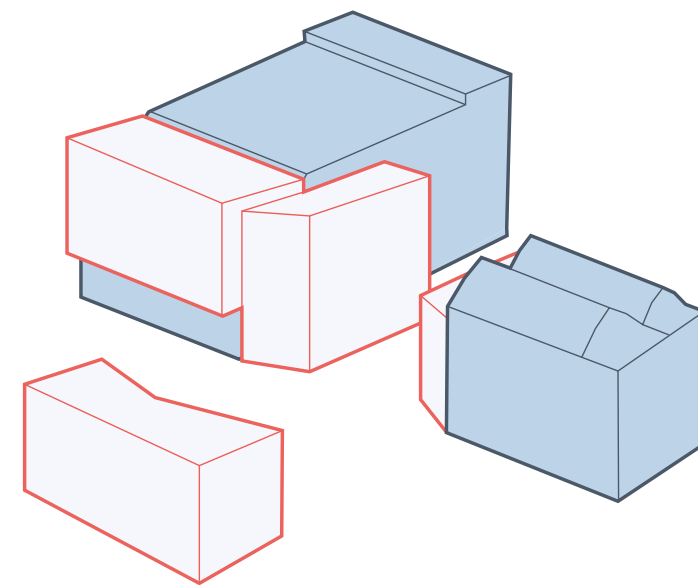
Current situation



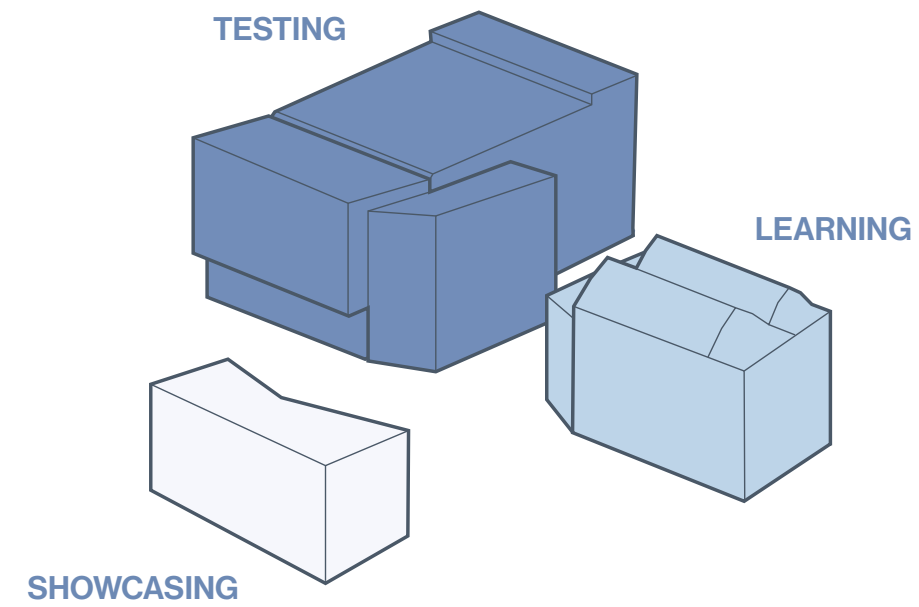
Add required program



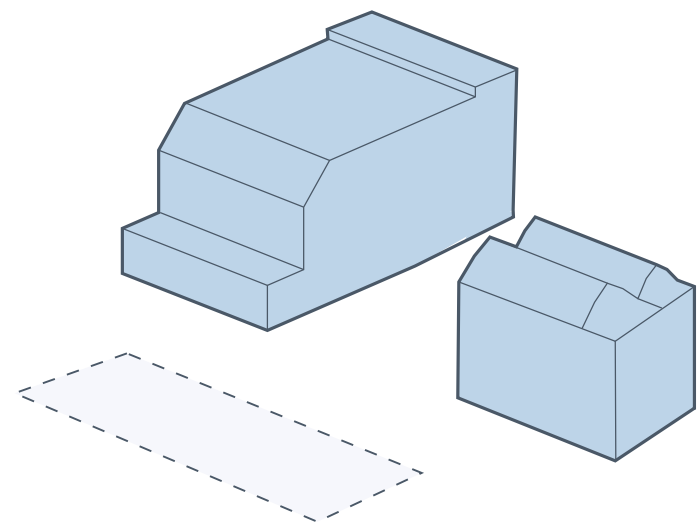
Current situation



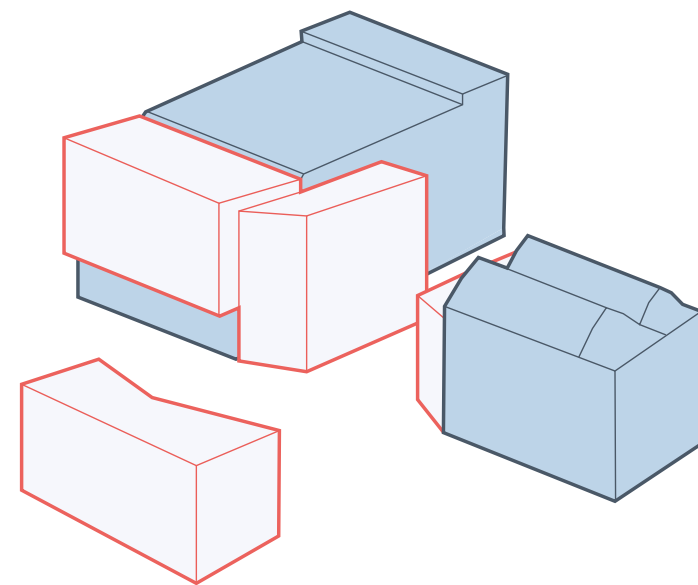
Add required program



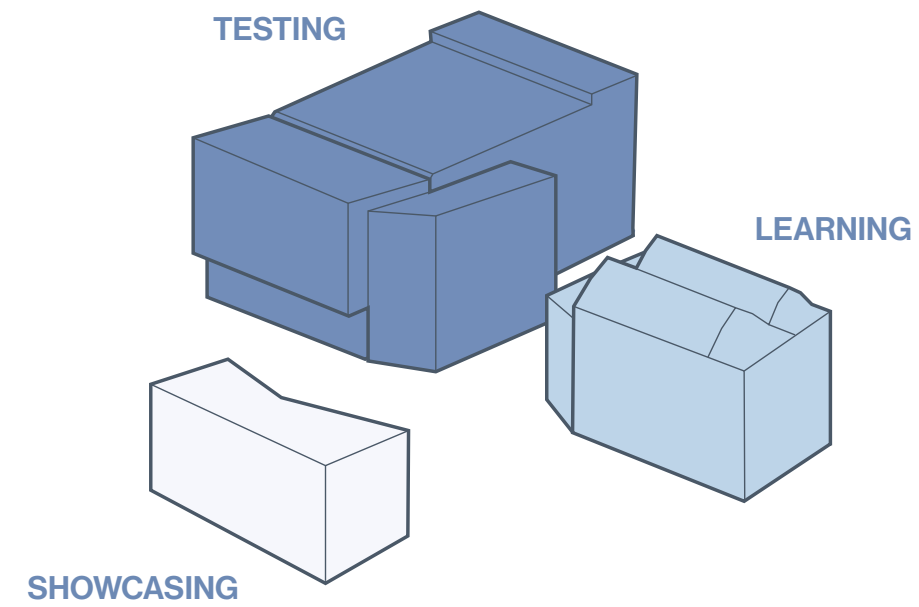
Seperate functions



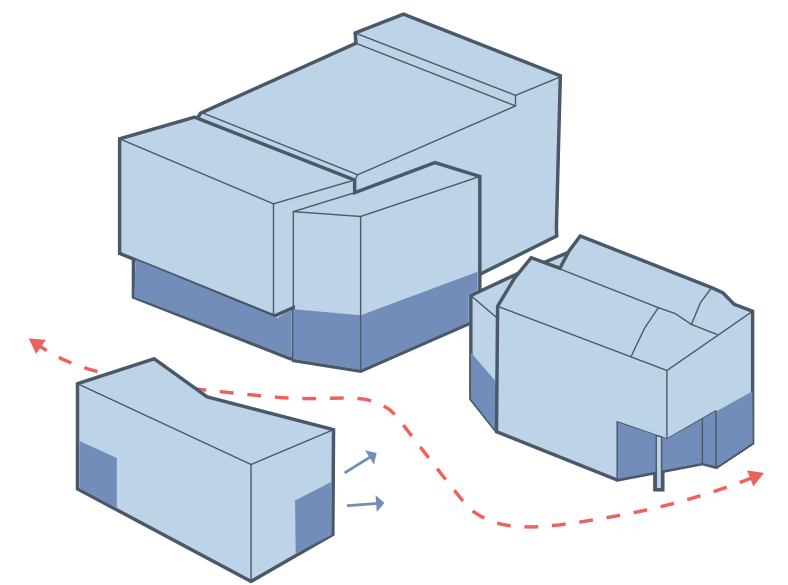
Current situation



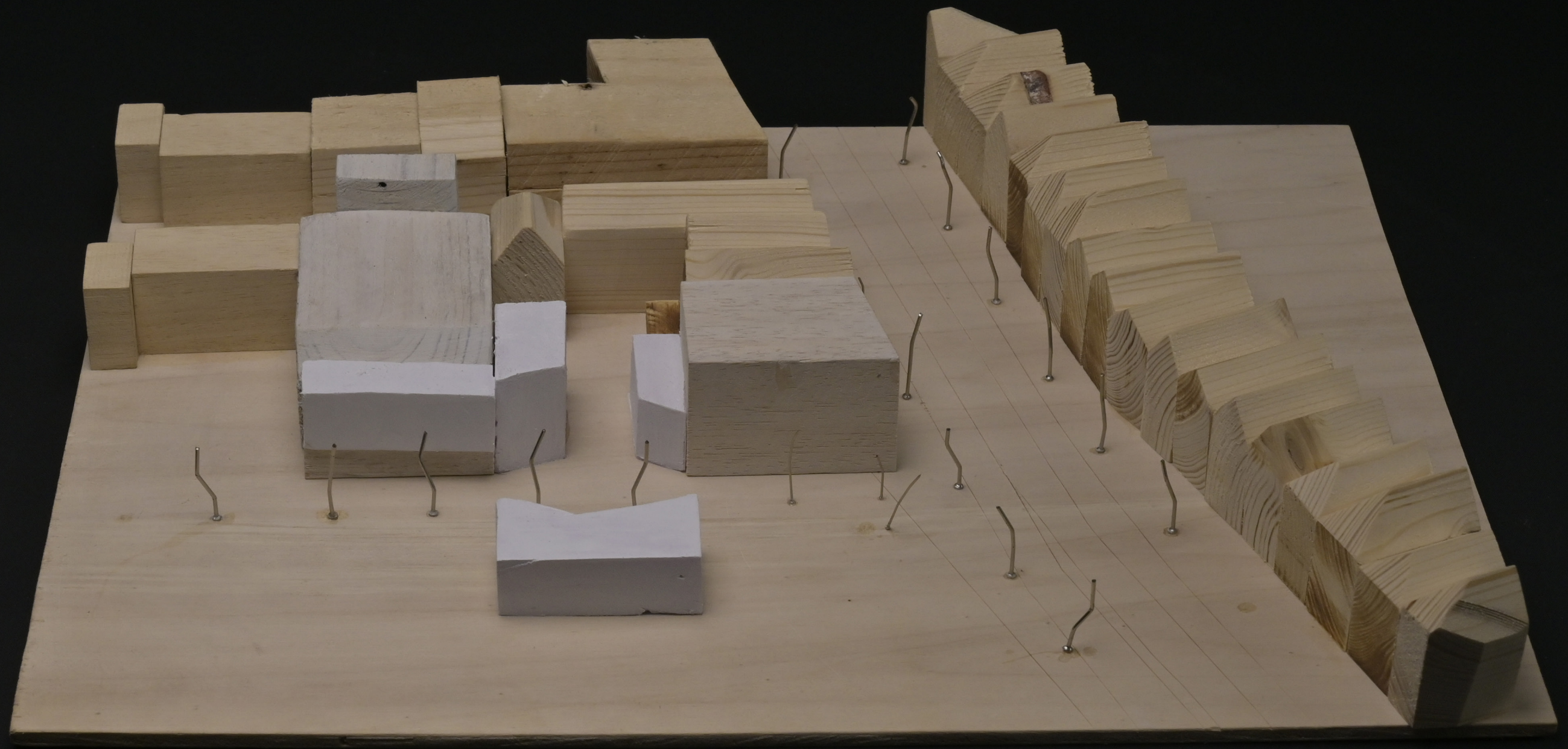
Add required program



Seperate functions



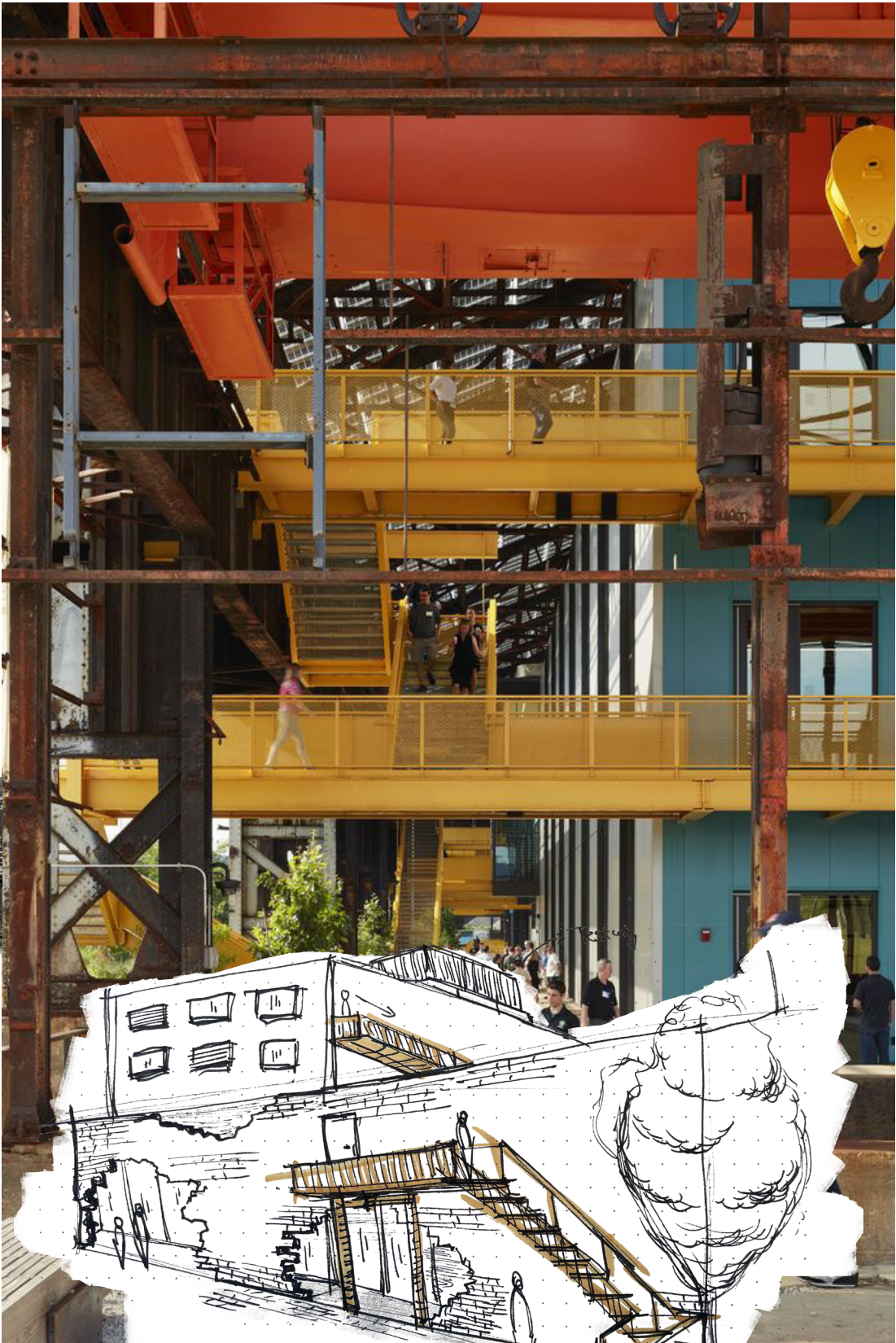
Connect with park and
transform blind plinth



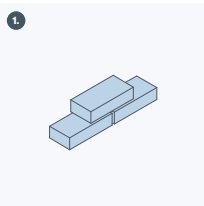
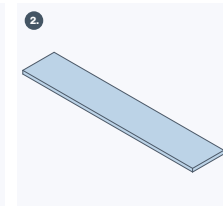
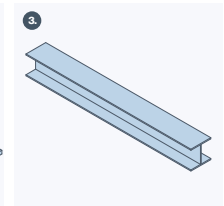
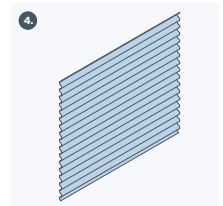
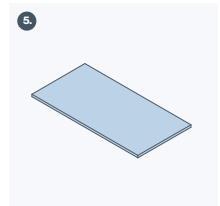
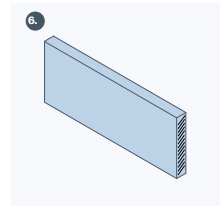
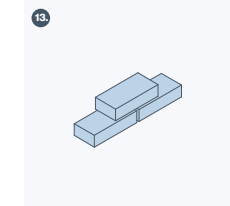


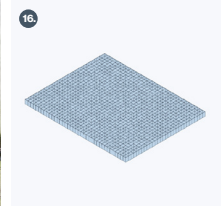
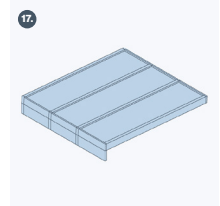













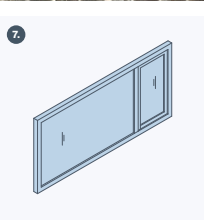
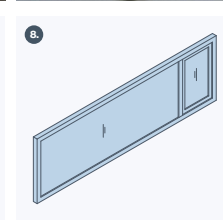
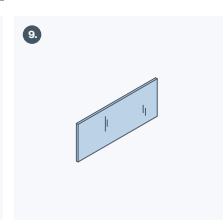
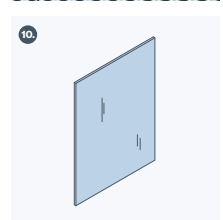
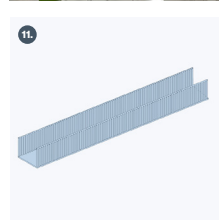
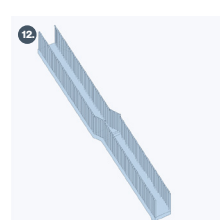
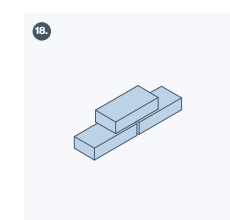
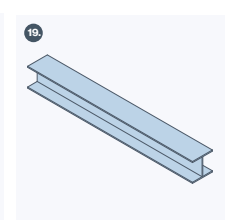
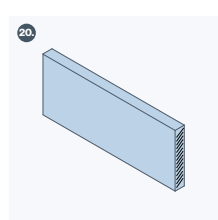
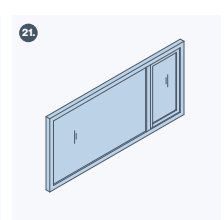
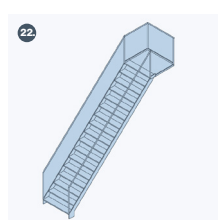
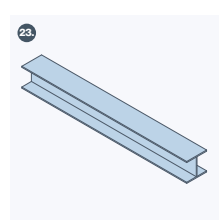







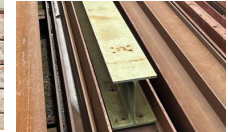




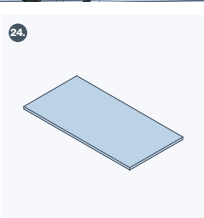
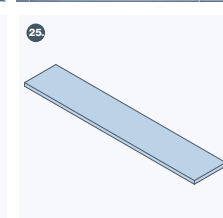
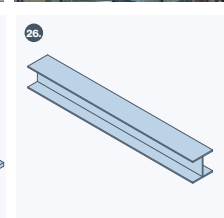
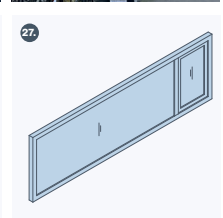
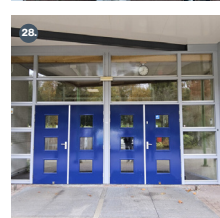
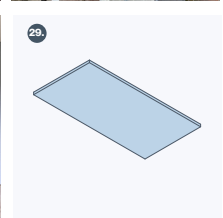
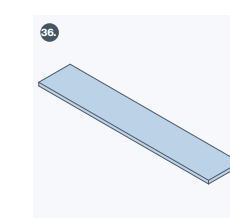
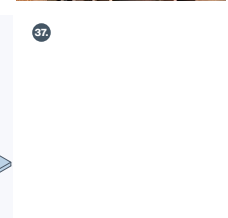
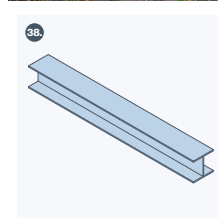
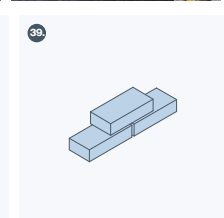
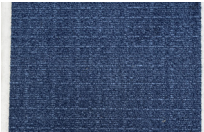









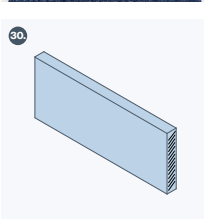
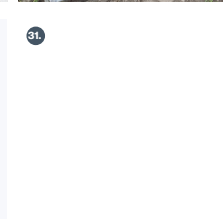
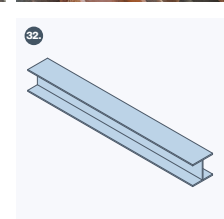
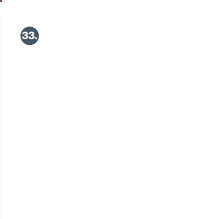
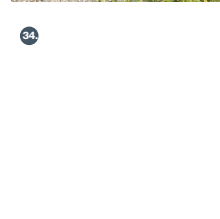
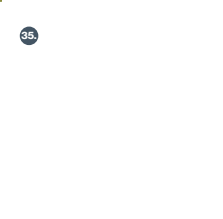



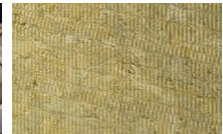

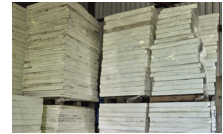
INDUSTRIAL LIBRARY

The goal is to not design just a building, but a collective effort that embodies **reuse** in an **innovative** way. Using building elements for a new purpose or a new life.

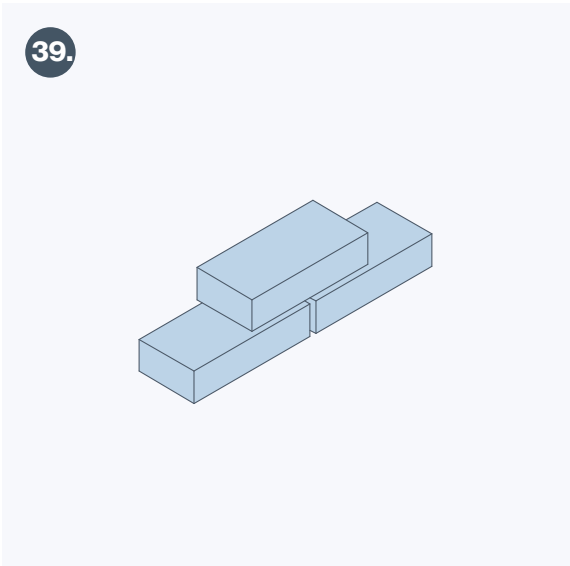
The atmosphere of this 'Material' Library should be like a museum or library, but with a rough and pure sense that aims to trigger people to think further about **circularity** and focus on the aspect of **making**.



Material finding

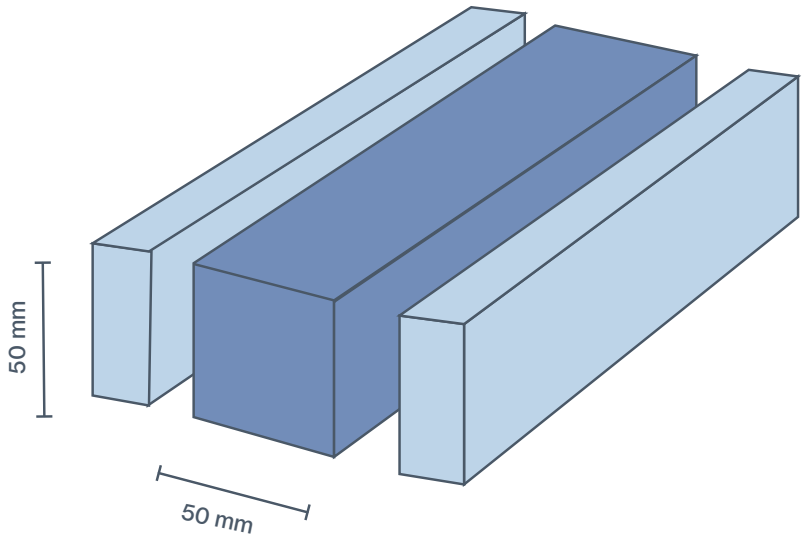
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<div>Bricks</div> <div>Quantity408 m²</div> <div>Weight-</div> <div>Dimensions210 x 100 x 50 mm</div> <div>MaterialBrick - Waalformaat</div> <div>Location from site-</div> <div>Finishred</div> <div>QualityGood</div> <div></div>	<div>Concrete slabs</div> <div>Quantity178 m²</div> <div>Weight-</div> <div>Dimensions2710 x 600 x 50 mm</div> <div>MaterialConcrete (gasbeton)</div> <div>Location from site-</div> <div>Finish-</div> <div>QualityNot suited for roof</div> <div></div>	<div>Steel structure</div> <div>Quantity10x</div> <div>Weight-</div> <div>DimensionsHE240A x 8900 mm</div> <div>MaterialSteel</div> <div>Location from site-</div> <div>FinishGrey-silver colour</div> <div>QualityGood</div> <div></div>	<div>Metal plates</div> <div>Quantity151 m²</div> <div>Weight-</div> <div>Dimensions50 mm thick</div> <div>MaterialMetal</div> <div>Location from site-</div> <div>Finish-</div> <div>QualityGood</div> <div></div>	<div>Ceiling tiles</div> <div>Quantity500 m²</div> <div>Weight-</div> <div>Dimensions1200 x 600 x 20 mm</div> <div>MaterialSteenwol</div> <div>Location from site-</div> <div>Finish-</div> <div>QualityGood</div> <div></div>	<div>Wooden beams</div> <div>Quantity8x</div> <div>Weight-</div> <div>Dimensions5800 x 800 x 140 mm</div> <div>MaterialHard wood, type unknown</div> <div>Location from site-</div> <div>Finish-</div> <div>Quality-</div> <div></div>	<div>Bricks</div> <div>Quantity80 m²</div> <div>Weight-</div> <div>Dimensions210 x 100 x 50 mm</div> <div>MaterialBrick - Waalformaat</div> <div>Location from site-</div> <div>Finishred</div> <div>QualityGood</div> <div></div>	<div>Door</div> <div>Quantity2 x</div> <div>Weight-</div> <div>Dimensions-</div> <div>Material-</div> <div>Location from site-</div> <div>Finish-</div> <div>Quality-</div> <div></div>	<div>Doors</div> <div>Quantity2</div> <div>Weight-</div> <div>Dimensions2200 x 880 mm</div> <div>MaterialWood</div> <div>Location from site-</div> <div>Finish-</div> <div>Quality-</div> <div></div>	<div>Steel grating</div> <div>Quantity1x</div> <div>Weight-</div> <div>Dimensions1200 x 3600 mm</div> <div>MaterialGalvanized steel</div> <div>Location from siteon location + 70 km</div> <div>Finish-</div> <div>QualityGood</div> <div></div>	<div>Roof light (Insert)</div> <div>Quantity-</div> <div>Weight-</div> <div>Dimensions48.61 m2</div> <div>MaterialAluminium window</div> <div>Location from site70 km (Soest)</div> <div>FinishDouble glass</div> <div>Quality-</div> <div></div>	<div></div> <div></div>
<div>7</div> 	<div>8</div> 	<div>9</div> 	<div>10</div> 	<div>11</div> 	<div>12</div> 	<div>18</div> 	<div>19</div> 	<div>20</div> 	<div>21</div> 	<div>22</div> 	<div>23</div> 
<div>Window</div> <div>Quantity1x</div> <div>Weight-</div> <div>Dimensions1700 x 3600 x 100 mm</div> <div>MaterialAluminium window</div> <div>Location from site-</div> <div>Finish-</div> <div>QualityGood</div> <div></div>	<div>Window</div> <div>Quantity2x</div> <div>Weight-</div> <div>Dimensions1500 x 4800 x 100 mm</div> <div>MaterialAluminium window</div> <div>Location from site-</div> <div>Finish-</div> <div>QualityGood</div> <div></div>	<div>Glass panel</div> <div>Quantity28x</div> <div>Weight-</div> <div>Dimensions1850 x 760 mm</div> <div>MaterialGlass</div> <div>Location from site-</div> <div>Finish-</div> <div>Quality-</div> <div></div>	<div>Glass panel</div> <div>Quantity6x</div> <div>Weight-</div> <div>Dimensions1850 x 2480 mm</div> <div>MaterialGlass</div> <div>Location from site-</div> <div>Finish-</div> <div>Quality-</div> <div></div>	<div>Metal walkway</div> <div>Quantity1x</div> <div>Weight-</div> <div>Dimensions1100 mm width</div> <div>MaterialMetal</div> <div>Location from site-</div> <div>Finish-</div> <div>Quality-</div> <div></div>	<div>Staircase</div> <div>Quantity1</div> <div>Weight-</div> <div>Dimensions1100 mm width</div> <div>Materialmetal</div> <div>Location from site-</div> <div>Finish-</div> <div>Quality-</div> <div></div>	<div>Bricks (Rebrick)</div> <div>Quantity...m²</div> <div>Weight-</div> <div>Dimensions210 x 100 x 50 mm</div> <div>MaterialBrick - Waalformaat</div> <div>Location from site10 km</div> <div>Finish-</div> <div>Quality-</div> <div></div>	<div>Construction steel</div> <div>Quantity2 x</div> <div>Weight-</div> <div>Dimensions-</div> <div>Material-</div> <div>Location from site-</div> <div>Finish-</div> <div>Qualityunknown</div> <div></div>	<div>Beams</div> <div>Quantity247</div> <div>Weight-</div> <div>Dimensions175 x (65 - 80) x 3800 mm</div> <div>MaterialWood</div> <div>Location from site60 km</div> <div>FinishRough</div> <div>QualityGood</div> <div></div>	<div>Windows</div> <div>Quantity-</div> <div>Weight-</div> <div>DimensionsVary</div> <div>MaterialWood</div> <div>Location from site-</div> <div>Finish-</div> <div>QualityUnknown</div> <div></div>	<div>Steel stair</div> <div>Quantity18x</div> <div>Weight-</div> <div>Dimensions1000 x 230 x 60 mm</div> <div>MaterialSteel</div> <div>Location from site70 km (Soest)</div> <div>Finish-</div> <div>QualityGood</div> <div></div>	<div>IPE330 - 8800 mm</div> <div>Quantity2x</div> <div>Weight-</div> <div>Dimensions330 x 8800 mm</div> <div>MaterialGlass</div> <div>Location from site60 km</div> <div>Finish-</div> <div>Quality-</div> <div></div>
<div>24</div> 	<div>25</div> 	<div>26</div> 	<div>27</div> 	<div>28</div> 	<div>29</div> 	<div>36</div> 	<div>37</div> 	<div>38</div> 	<div>39</div> 		
<div>Carpet tiles</div> <div>Quantity20000x</div> <div>Weight-</div> <div>Dimensions500 x 500 mm</div> <div>MaterialCarpet</div> <div>Location from site60 km</div> <div>FinishBlue colour</div> <div>QualityGood</div> <div></div>	<div>Hardhouten steenschotten</div> <div>Quantity360x</div> <div>Weight-</div> <div>Dimensions1400 x 1100 x 40 mm</div> <div>MaterialHard wood and steel</div> <div>Location from site60 km</div> <div>FinishRough</div> <div>Qualityunknown</div> <div></div>	<div>HEB240 - 7250</div> <div>Quantity4x</div> <div>Weight-</div> <div>DimensionsHE240B x 7250 mm</div> <div>MaterialSteel</div> <div>Location from site60 km</div> <div>Finish-</div> <div>Qualitygood</div> <div></div>	<div>Doors + windowframe</div> <div>Quantity116 m²</div> <div>Weight-</div> <div>Dimensions114 mm</div> <div>MaterialWood</div> <div>Location from site-</div> <div>FinishGrey-silver colour / blue</div> <div>QualityGood</div> <div></div>	<div></div> <div></div>	<div>Underlayment</div> <div>Quantity252 m²</div> <div>Weight-</div> <div>DimensionsVary - 19 mm</div> <div>Materialplywood</div> <div>Location from site70 km</div> <div>Finish-</div> <div>QualityGood</div> <div></div>	<div>Carpet tiles</div> <div>Quantity342 m²</div> <div>Weight-</div> <div>Dimensions330 x 3000 x 135 mm</div> <div>MaterialConcrete</div> <div>Location from site90 km</div> <div>FinishDirty</div> <div>QualityUnknown</div> <div></div>	<div>HWA</div> <div>Quantity6x + 5x</div> <div>Weight-</div> <div>Dimensions100 x 100 x 2800 mm</div> <div>MaterialGalvanised steel</div> <div>Location from site70 km</div> <div>Finish-</div> <div>Qualitygood</div> <div></div>	<div>Installations - LBK</div> <div>Quantity2x</div> <div>Weight-</div> <div>Dimensions1000 x 600 x 250 mm</div> <div>Material-</div> <div>Location from site70 km</div> <div>Finish-</div> <div>Qualityunknown</div> <div></div>	<div>Mid piece (waste) of brick for brick slips</div> <div>Quantity...m²</div> <div>Weight-</div> <div>Dimensions210 x 50 x 50 mm</div> <div>MaterialWaste brick slip</div> <div>Location from siteVanderSanden industry</div> <div>Finish-</div> <div>Quality-</div> <div></div>		
<div>30</div> 	<div>31</div> 	<div>32</div> 	<div>33</div> 	<div>34</div> 	<div>35</div> 						
<div>Glulam beam</div> <div>Quantity7x</div> <div>Weight-</div> <div>Dimensions450 x 120 x 22500 mm</div> <div>MaterialGlulam hard wood</div> <div>Location from site70 km</div> <div>Finish-</div> <div>QualityGood</div> <div></div>	<div>Rockwool</div> <div>Quantity503 m²</div> <div>Weight-</div> <div>Dimensions70 mm</div> <div>MaterialRockwool (steenwol)</div> <div>Location from site70 km</div> <div>Finish-</div> <div>Qualityunknown</div> <div></div>	<div>Stability steel bracing</div> <div>Quantity201 m</div> <div>Weight-</div> <div>Dimensions60 x 6 mm</div> <div>MaterialSteel</div> <div>Location from site-</div> <div>Finish-</div> <div>Qualityunknown</div> <div></div>	<div>Rockwool</div> <div>Quantity383 m²</div> <div>Weight-</div> <div>Dimensions100 mm</div> <div>MaterialRockwool (steenwol)</div> <div>Location from site70 km</div> <div>Finish-</div> <div>Qualityunknown</div> <div></div>	<div>Insulation - EPS</div> <div>Quantity317 m²</div> <div>Weight-</div> <div>Dimensions100 mm</div> <div>MaterialMetal</div> <div>Location from site60 km</div> <div>Finish-</div> <div>Qualityunknown</div> <div></div>	<div>Insulation - EPS</div> <div>Quantity317 m²</div> <div>Weight-</div> <div>Dimensions40 mm (tapered)</div> <div>MaterialMetal</div> <div>Location from site60 km</div> <div>Finish-</div> <div>Qualityunknown</div> <div></div>						

Material finding

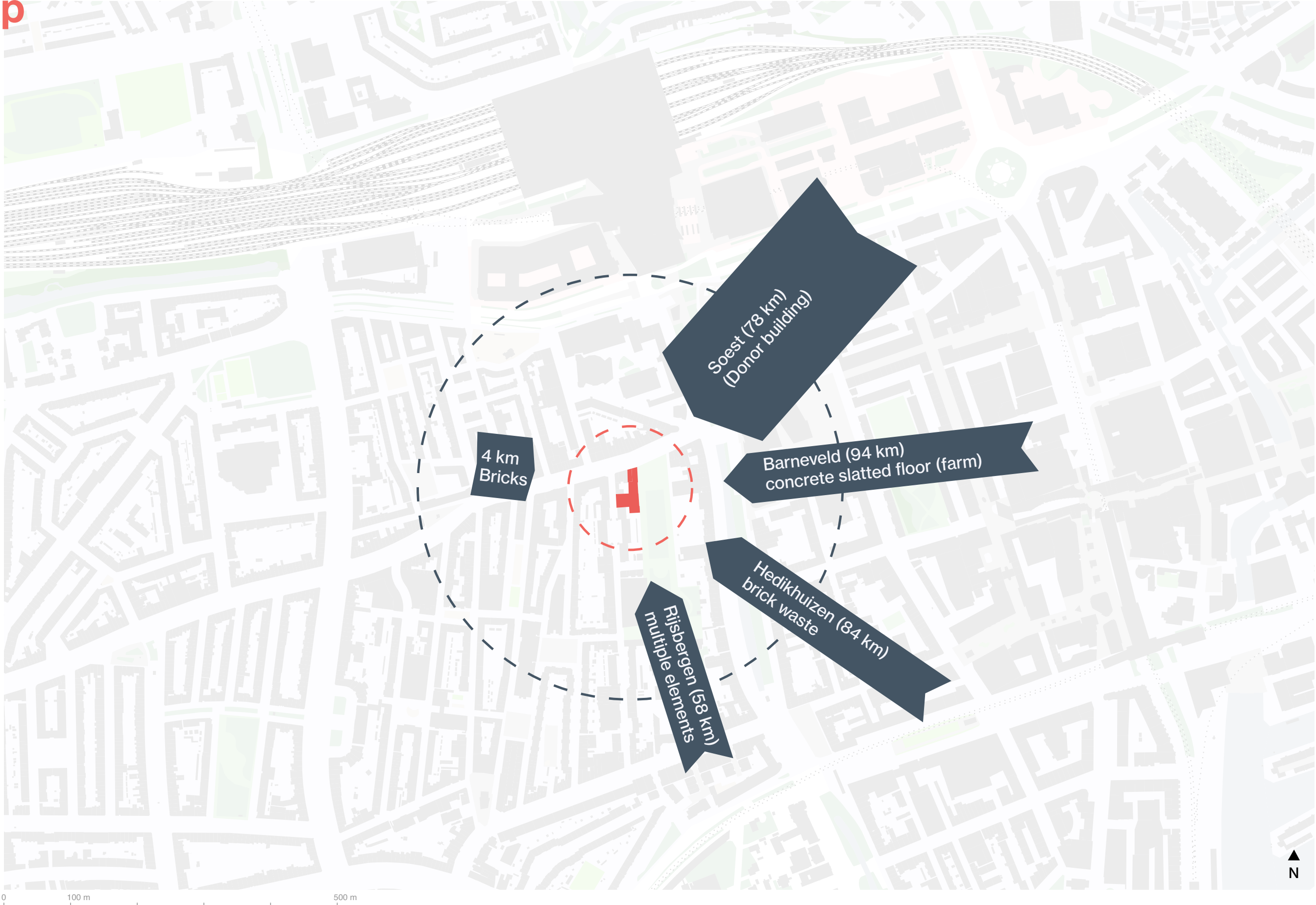


Mid piece (waste) of brick for brick slips

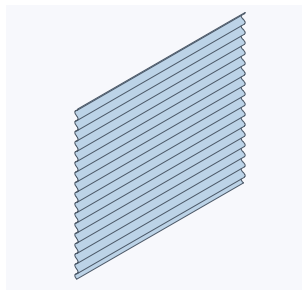
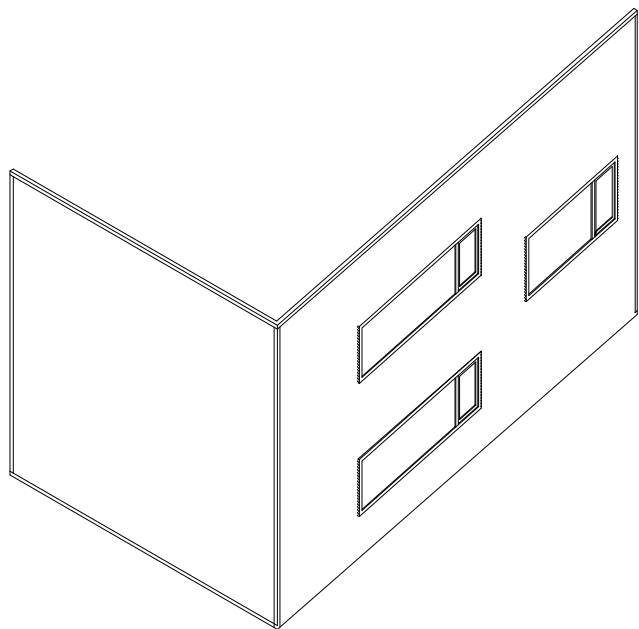
Quantity	... m²
Weight	-
Dimensions	210 x 50 x 50 mm
Material	Waste brick slip
Location from site	VanderSanden industry
Finish	-
Quality	-



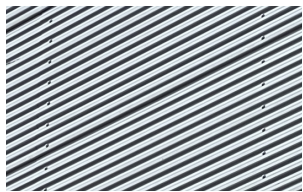
Harvest map



New configuration



Metal plates
Quantity 151m²
Weight -
Dimensions 50 mm thick
Material Metal
Location from site -
Finish Grey-silver colour
Quality Good



1. **Availability**

 - Timing
 - Location
 - Quantity
2. **Technical performance**

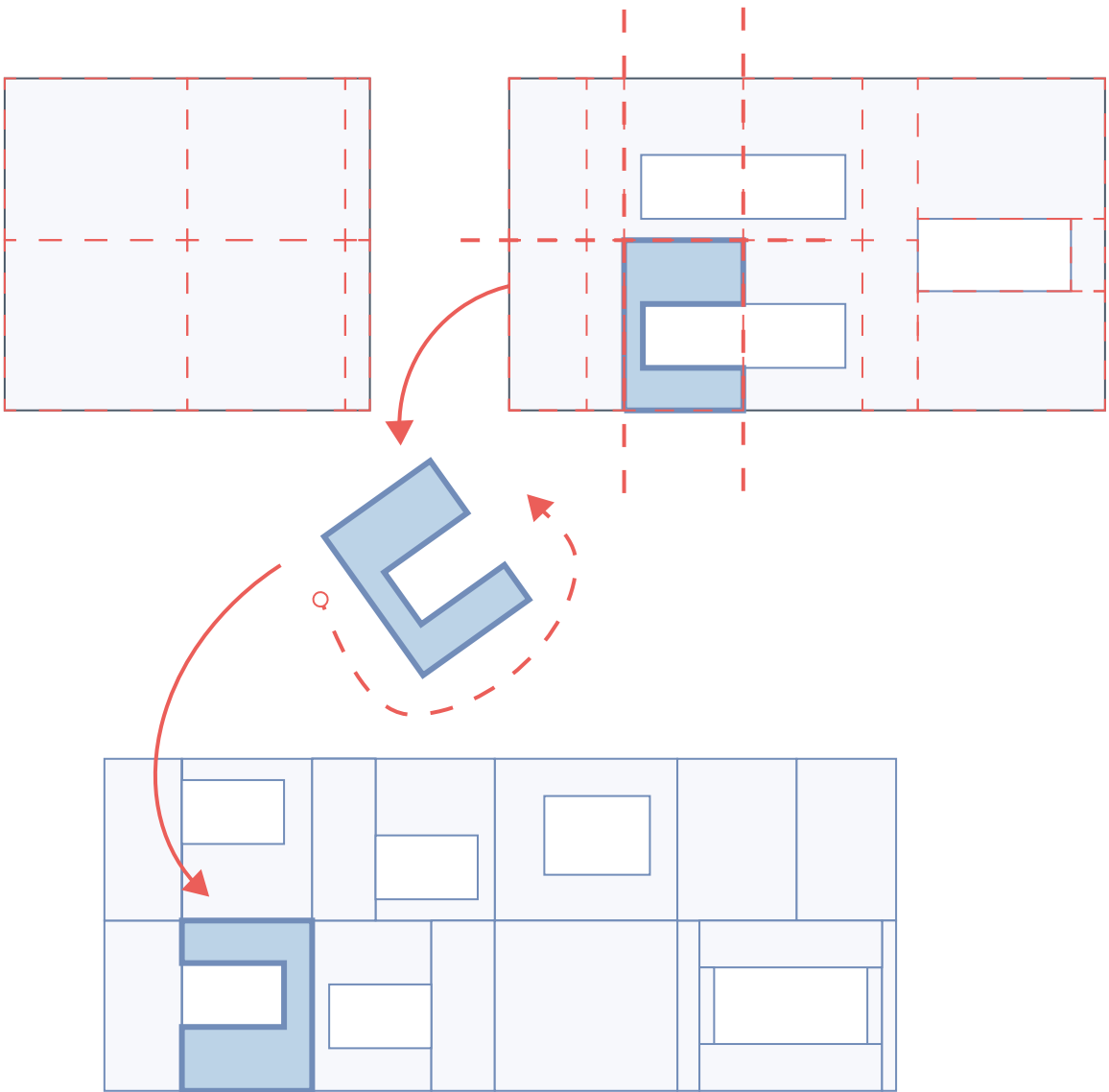
 - Technical condition
 - Meet safety regulations
3. **Environmental impact**

 - Lower CO₂ impact
 - Transportation
 - LCA / Embodied energy
4. **Dimensions**

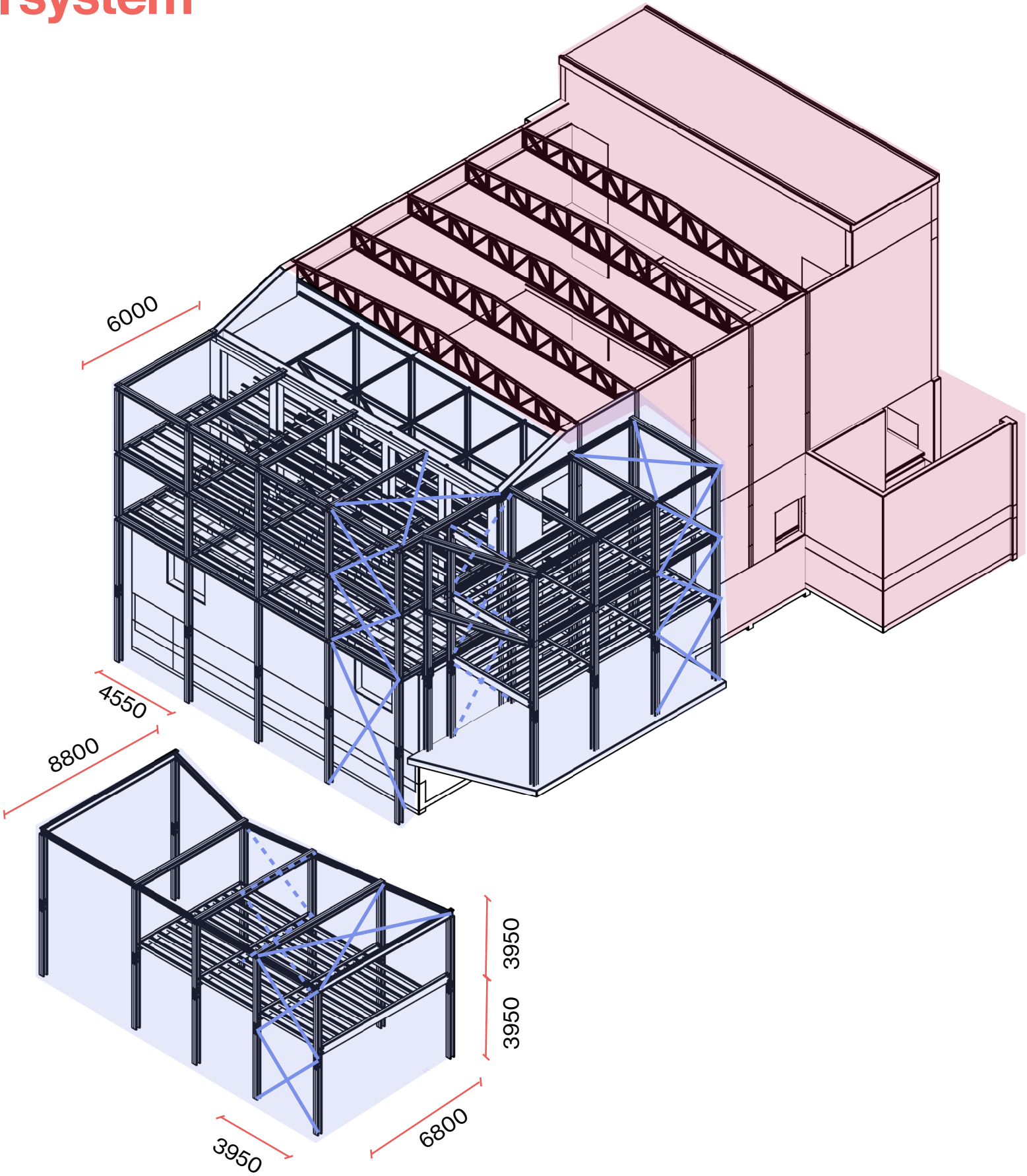
 - Standard sizes can change
 - Irregularities
5. **Aesthetics**

 - Imperfections
 - Add value
6. **Costs**

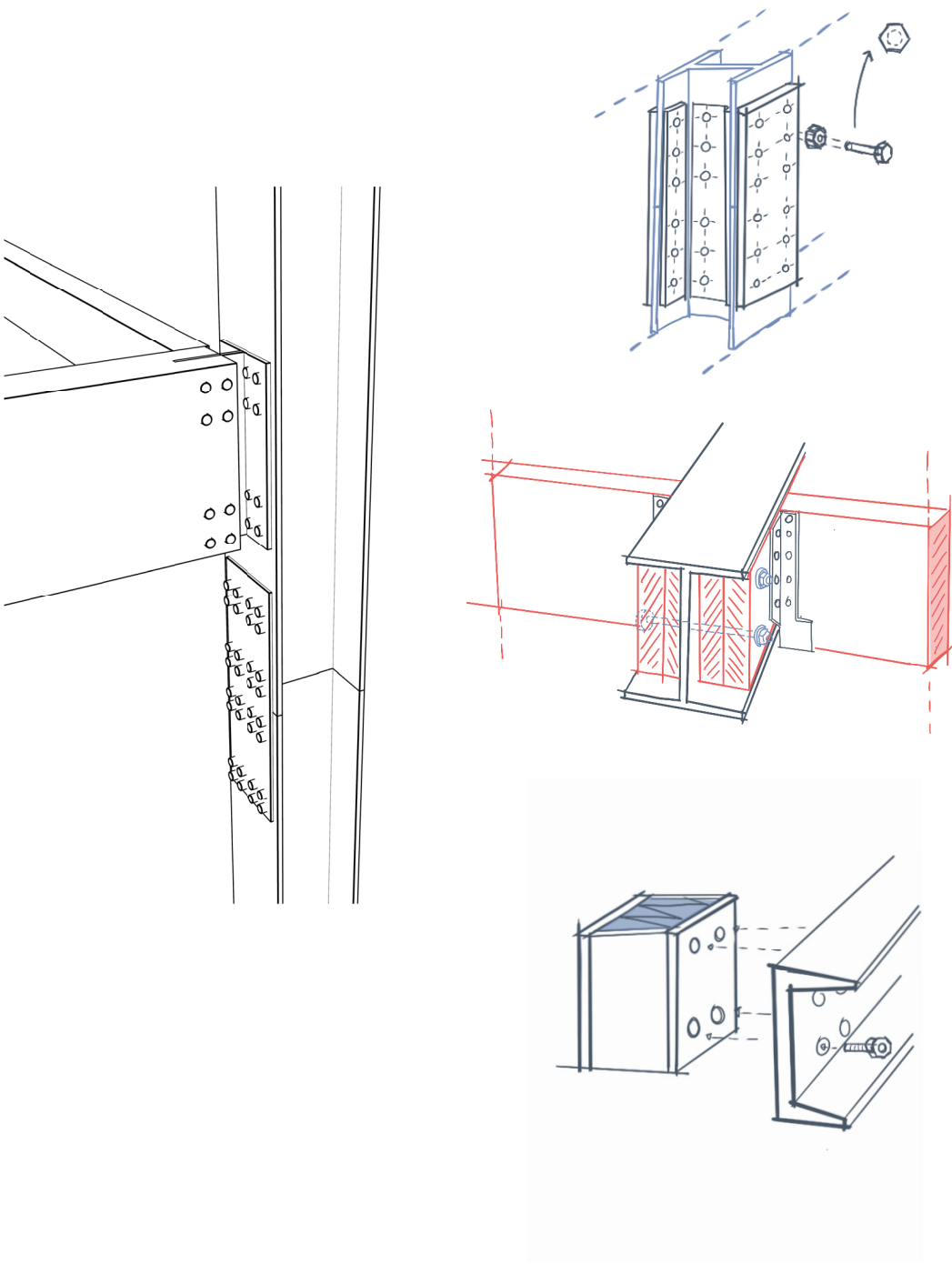
 - Labour of deconstruction
 - Storage costs
 - Uncertainties

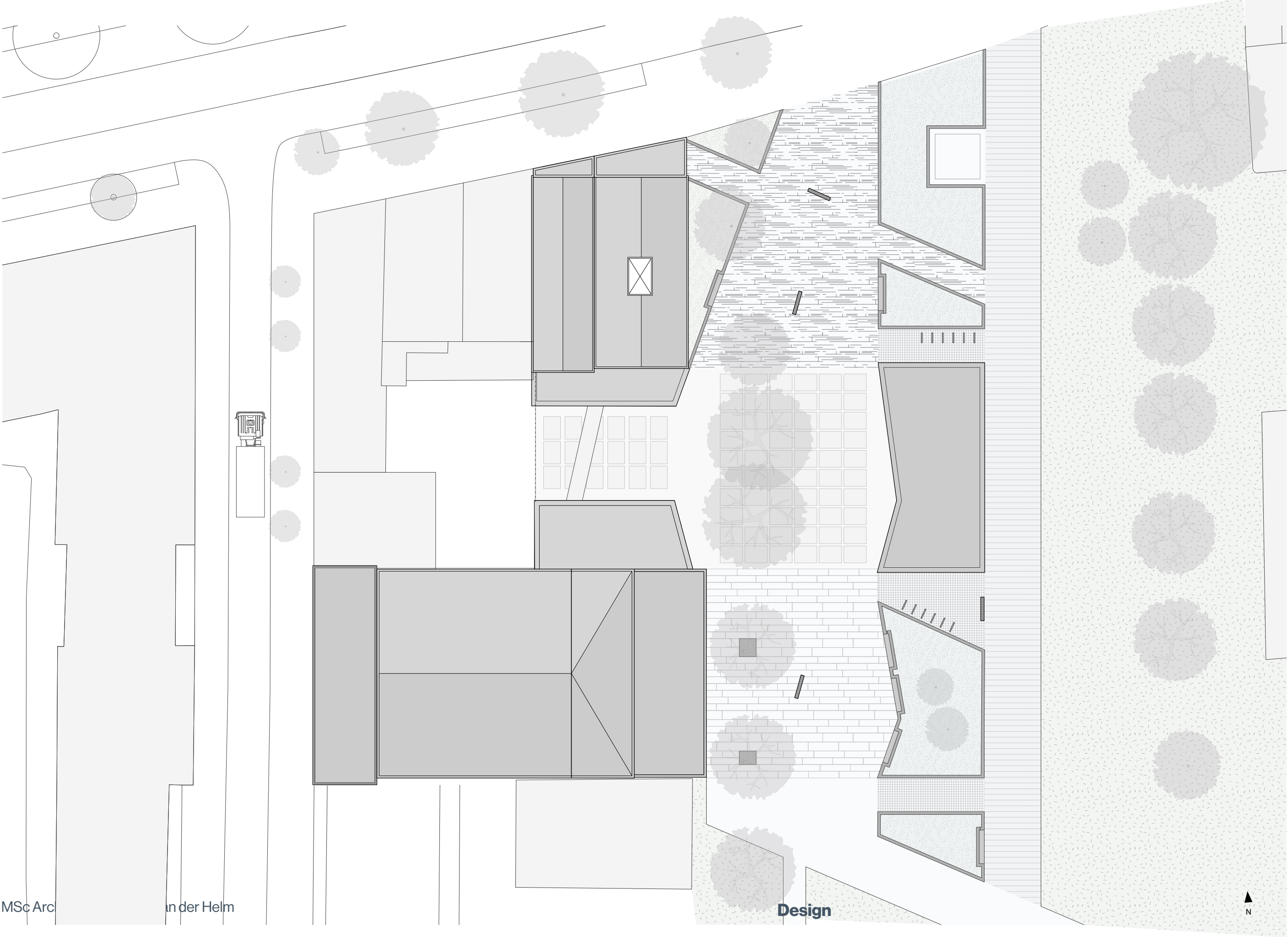


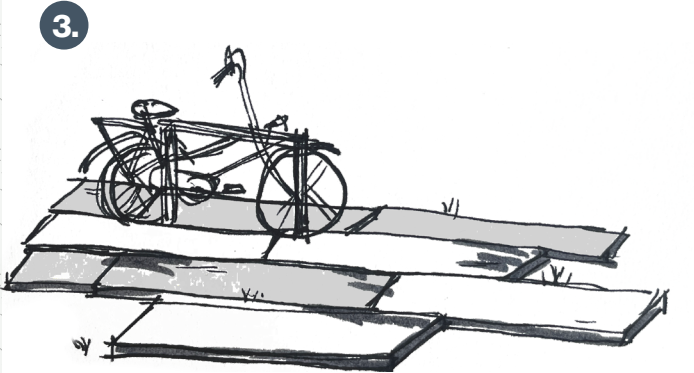
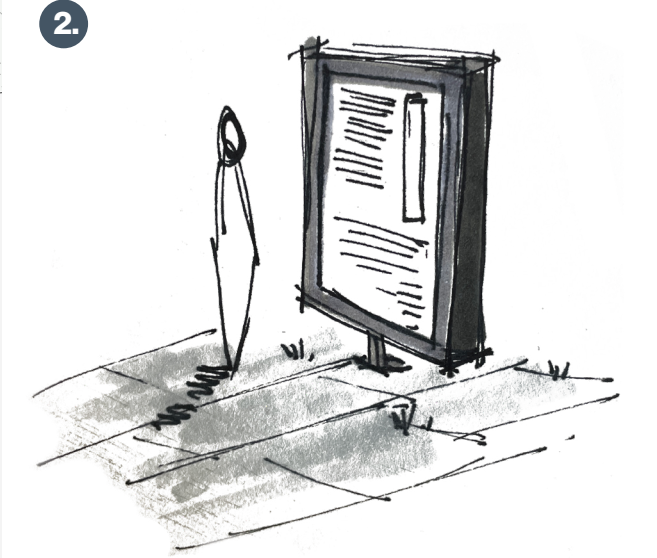
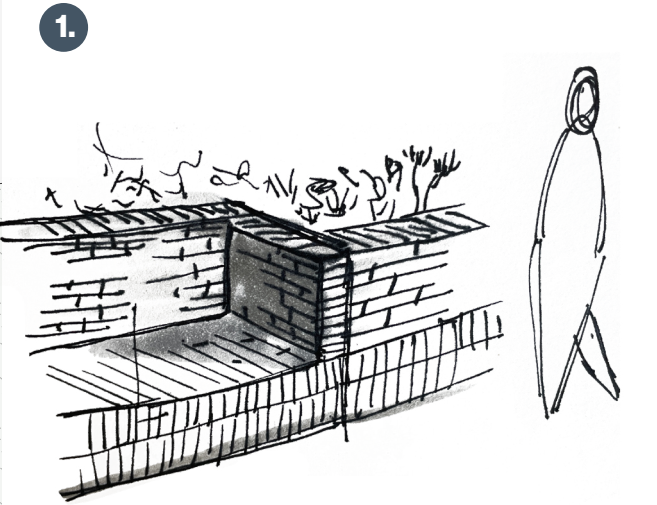
Structural system



DESIGN FOR DISASSEMBLY







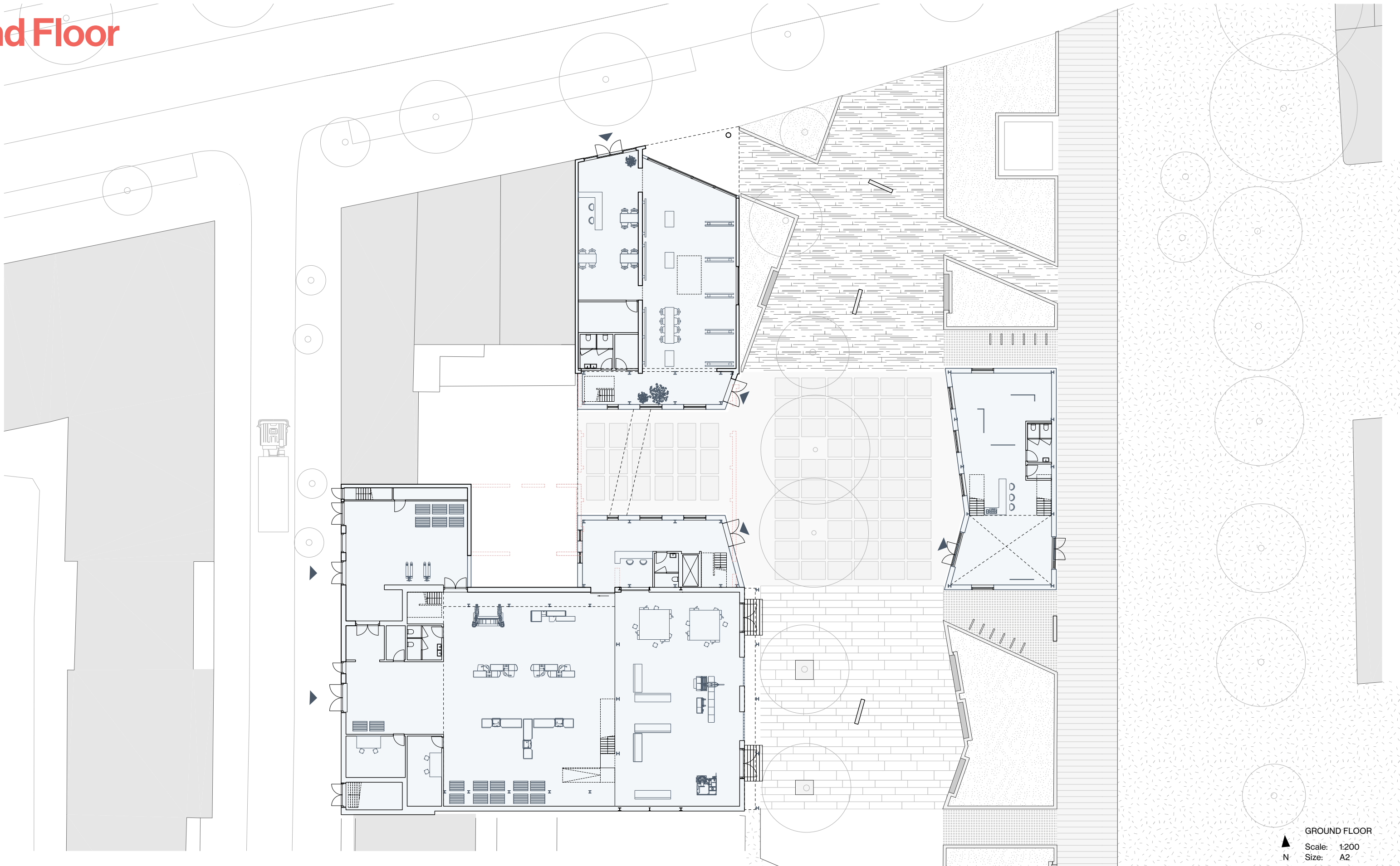


EX
PO

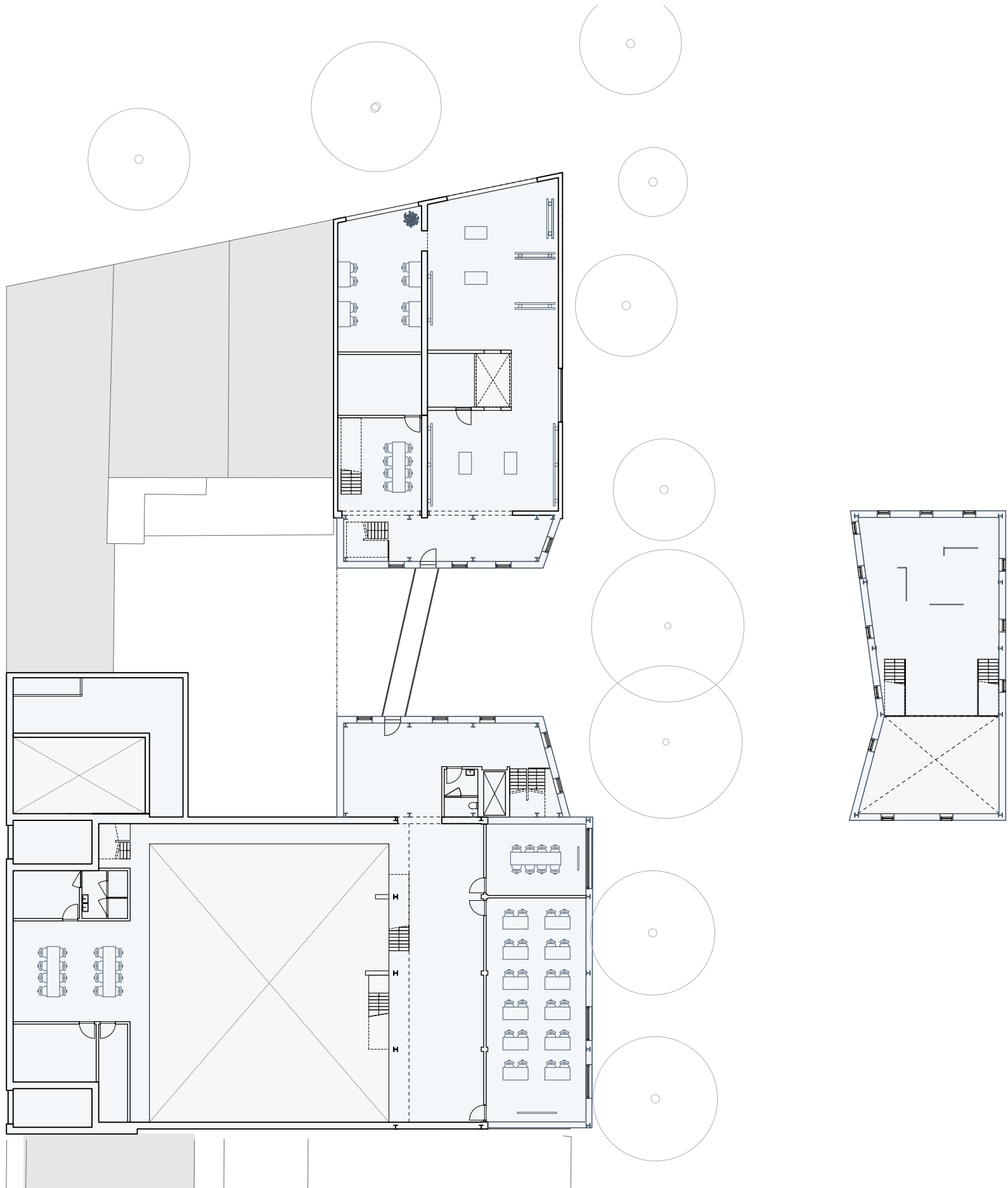
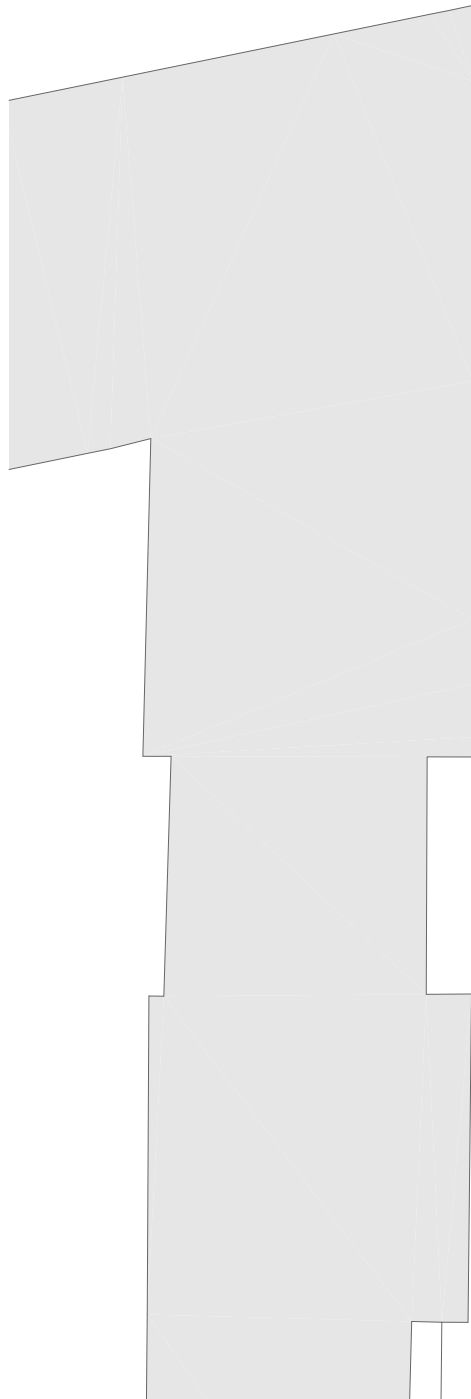
MAT.LAB

LIBRARY

Ground Floor

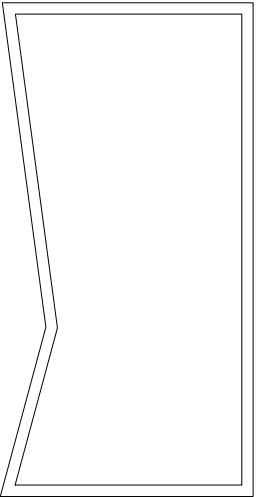
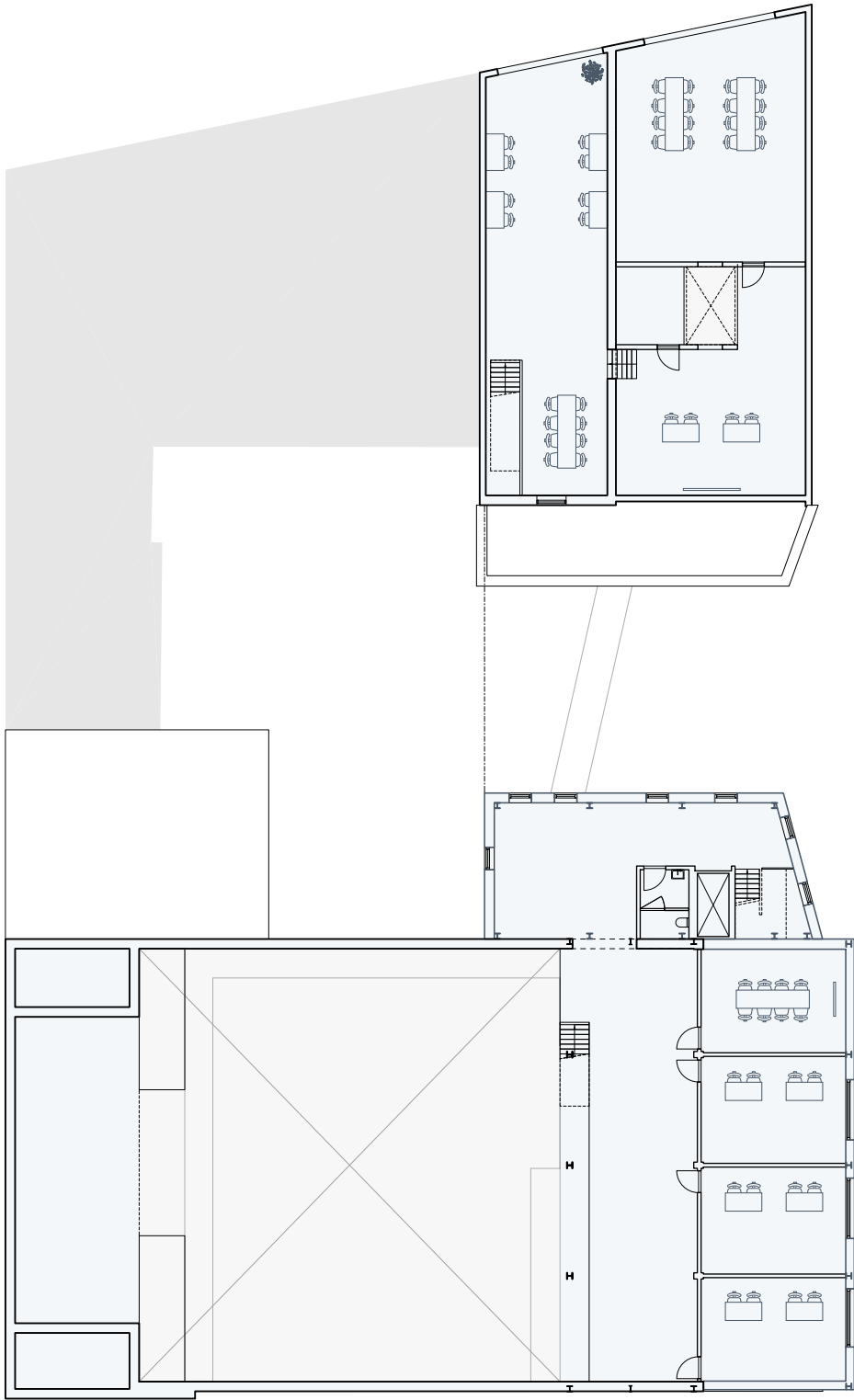


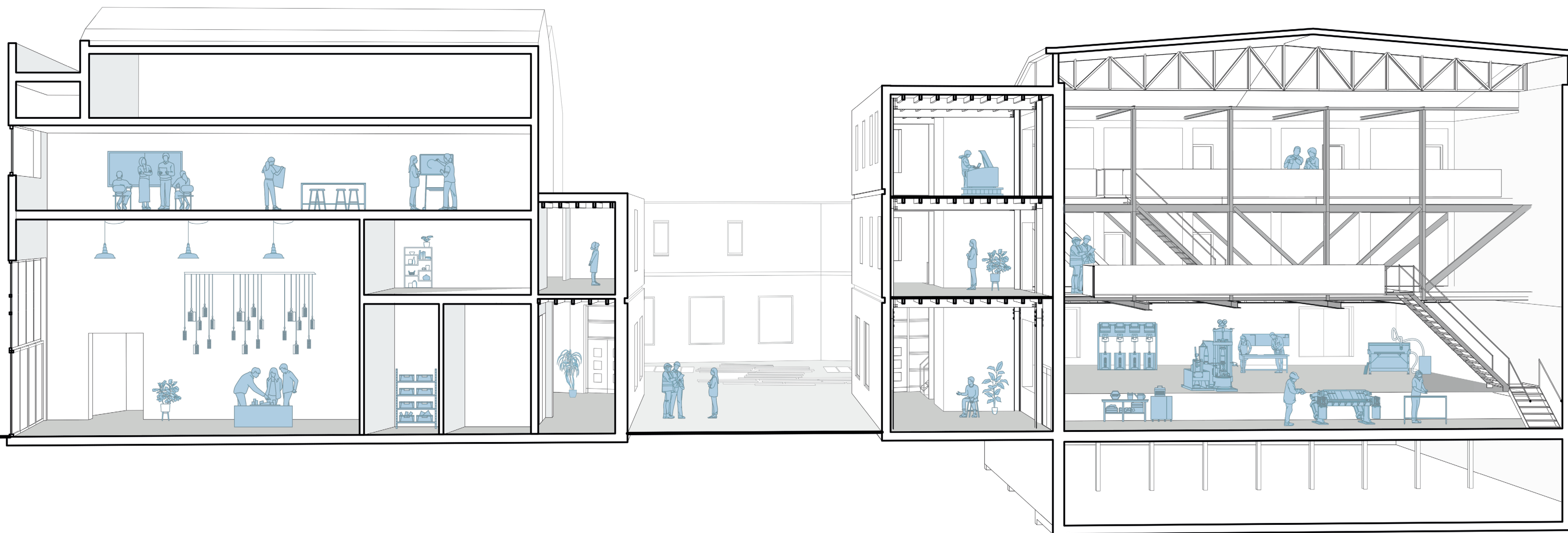
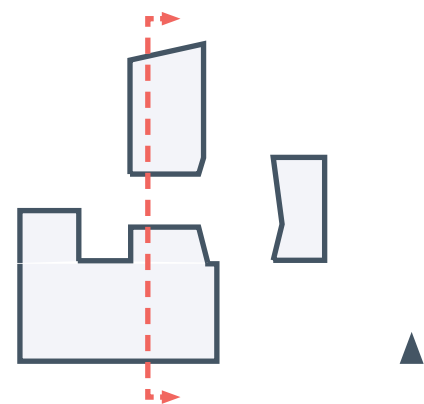
First Floor

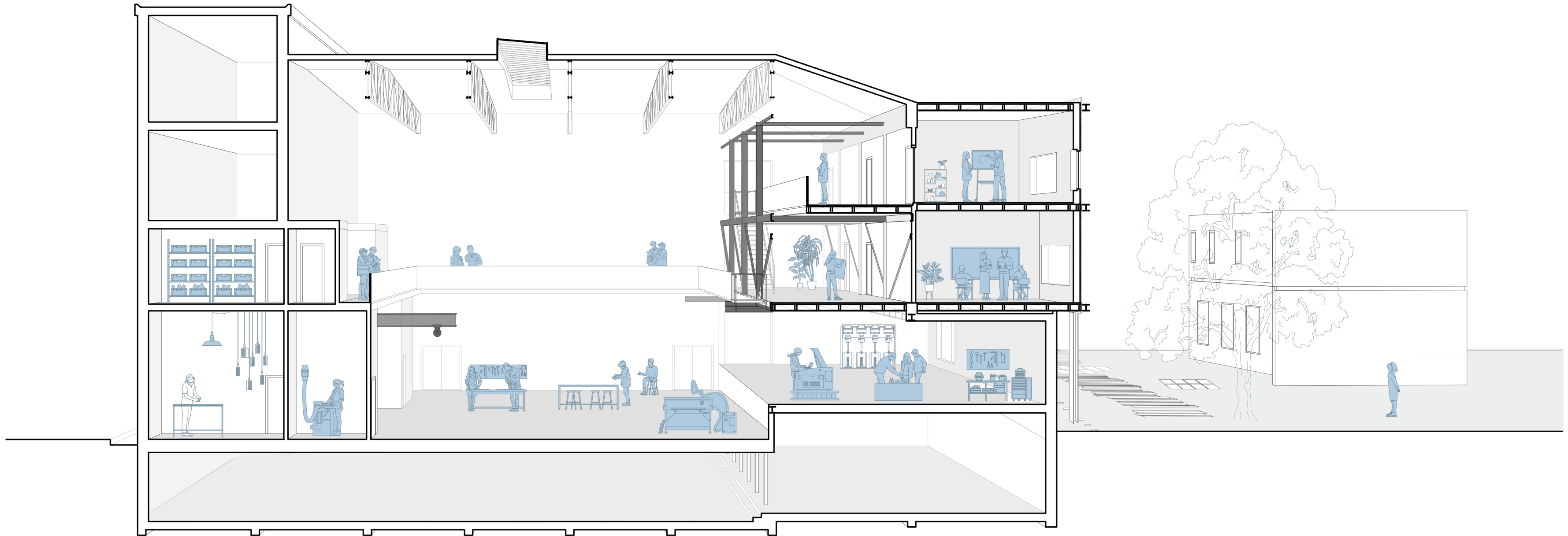
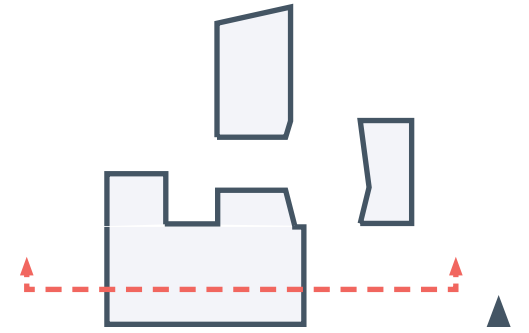


FIRST FLOOR
Scale: 1:200
Size: A2

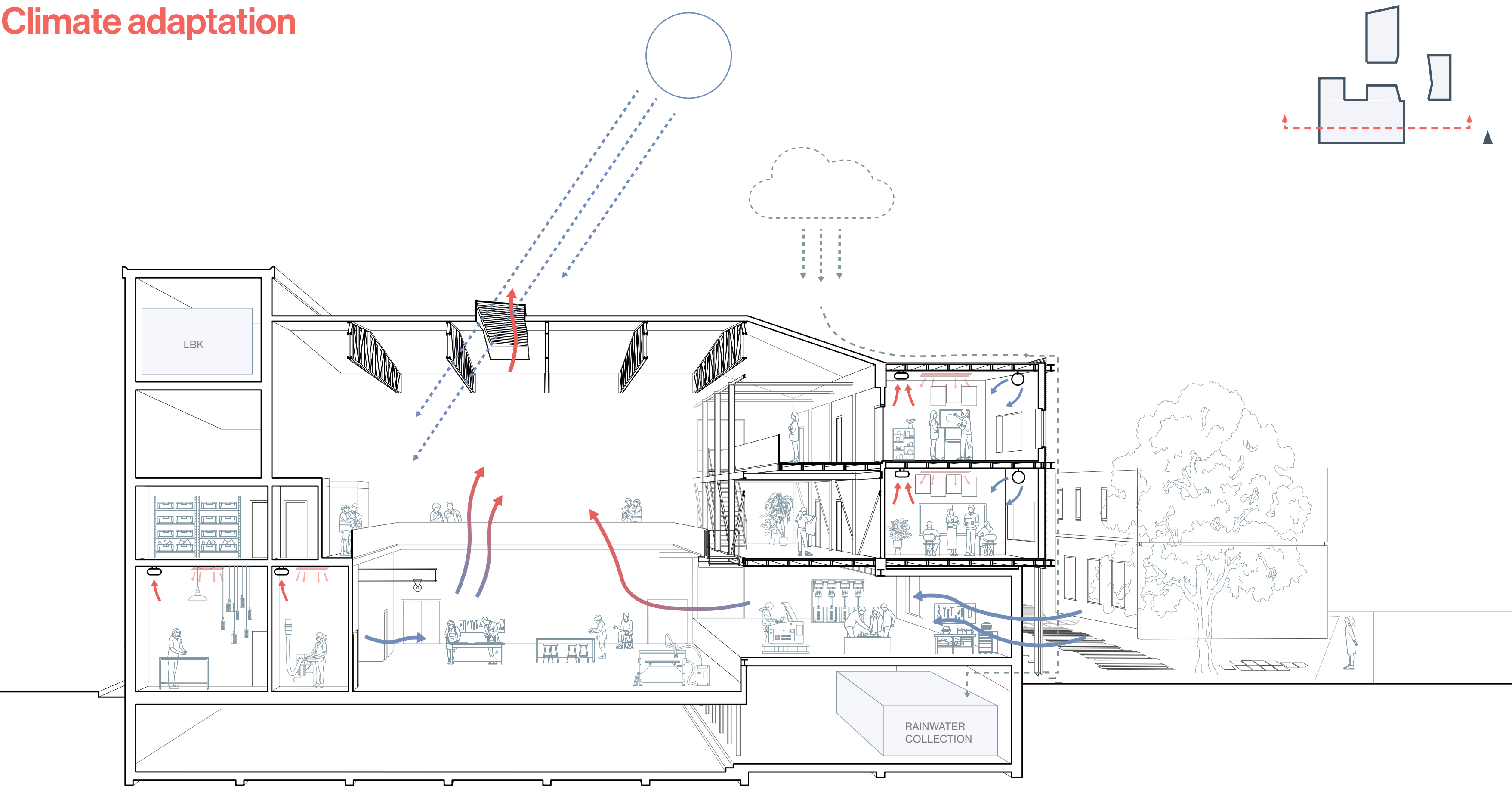
Second Floor





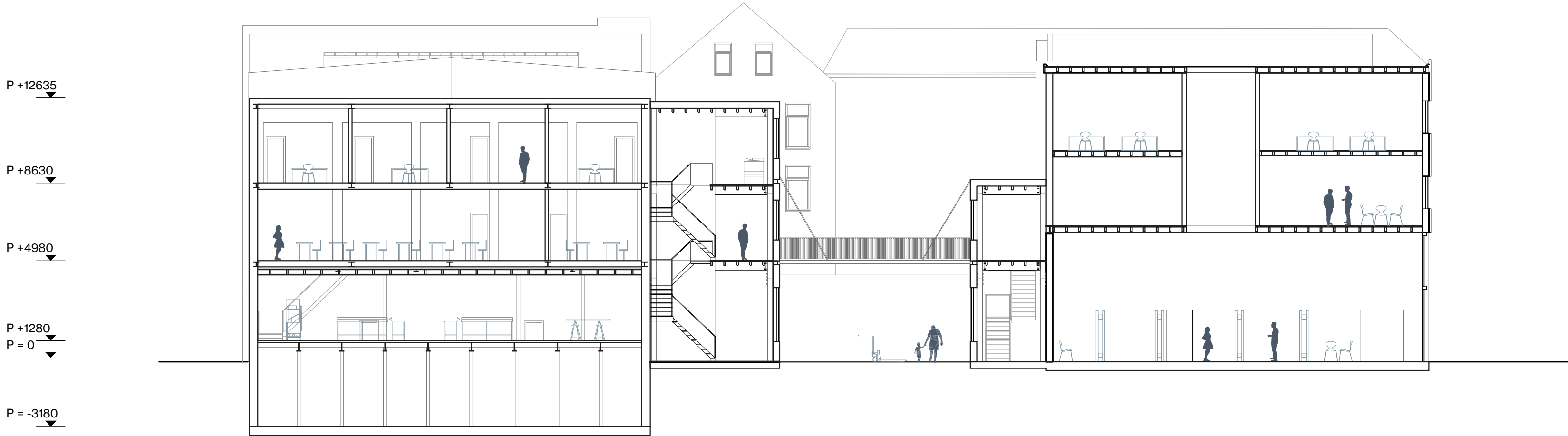
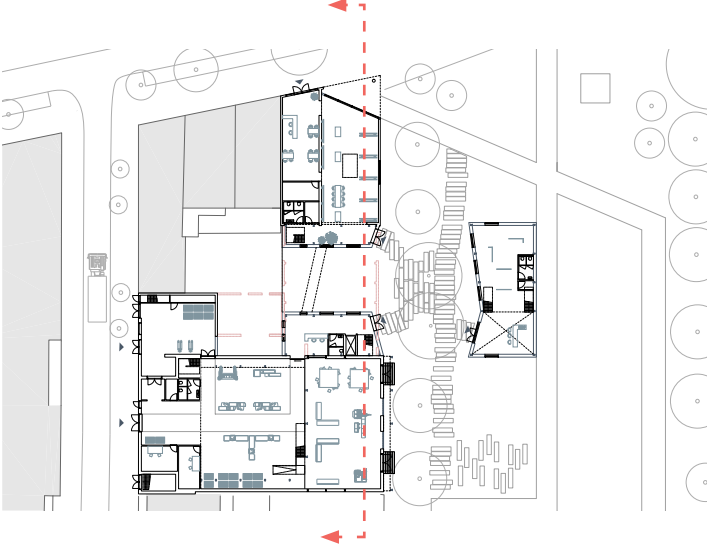


Climate adaptation

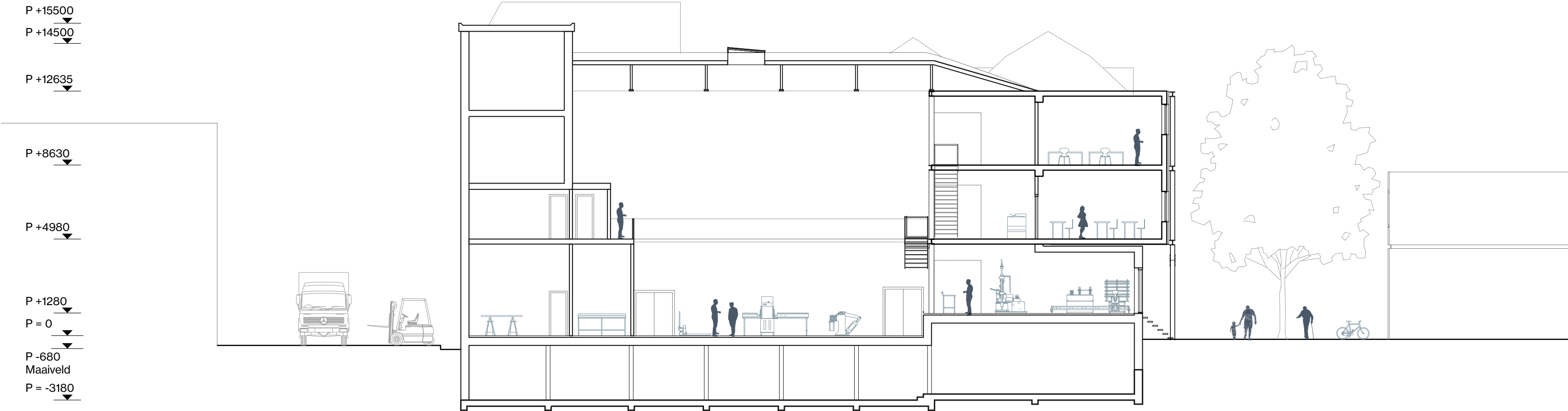




Section AA'



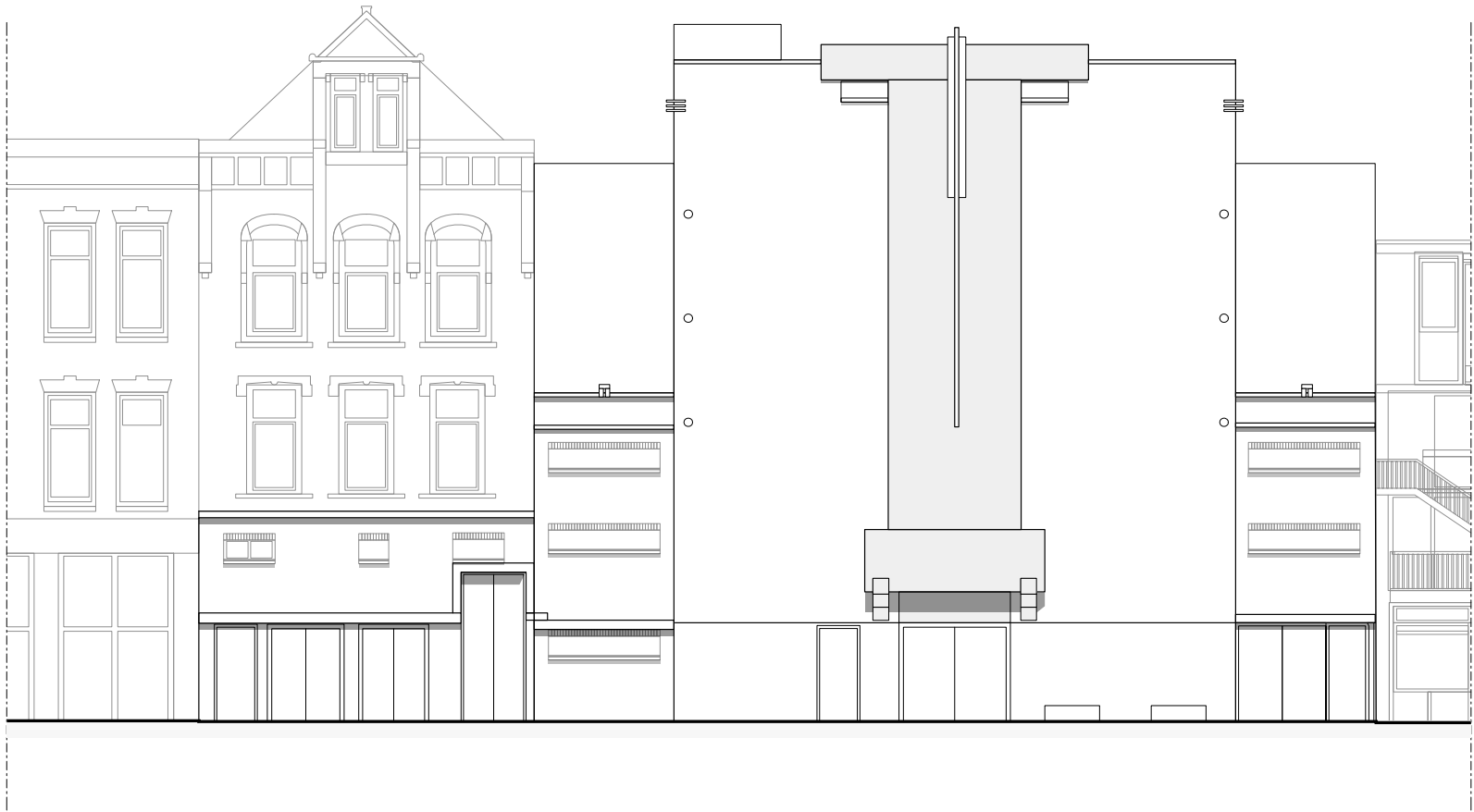
Section BB'



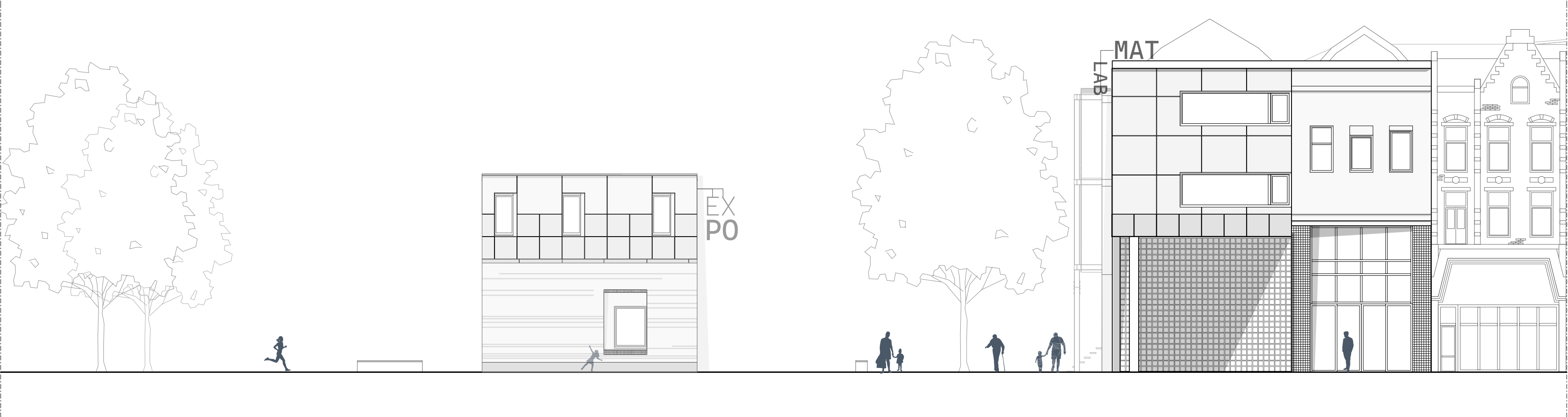


Elevations

ELEVATION GOUVERNESTRAT



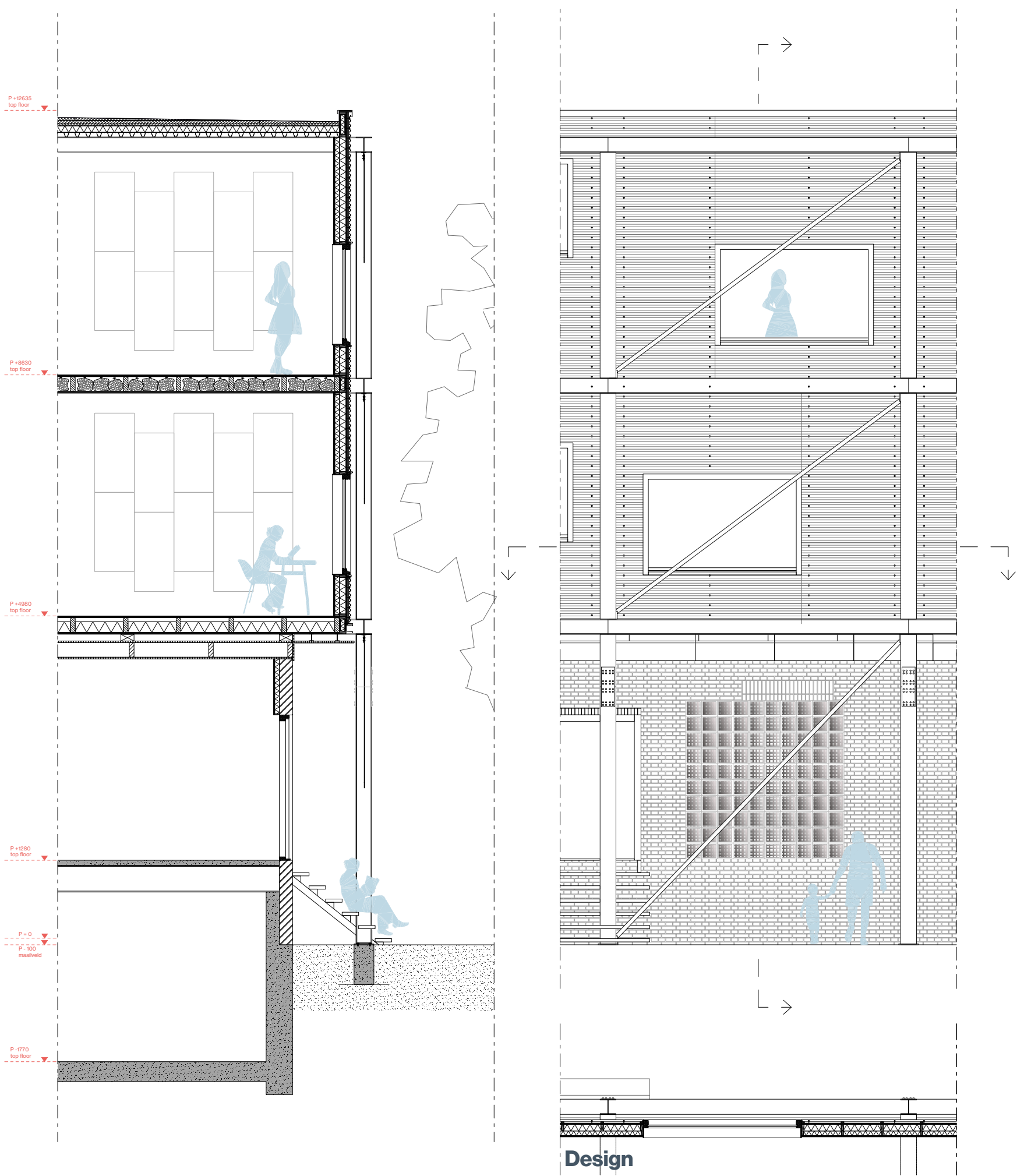
ELEVATION WEST-KRUISKADE



ELEVATION PARK

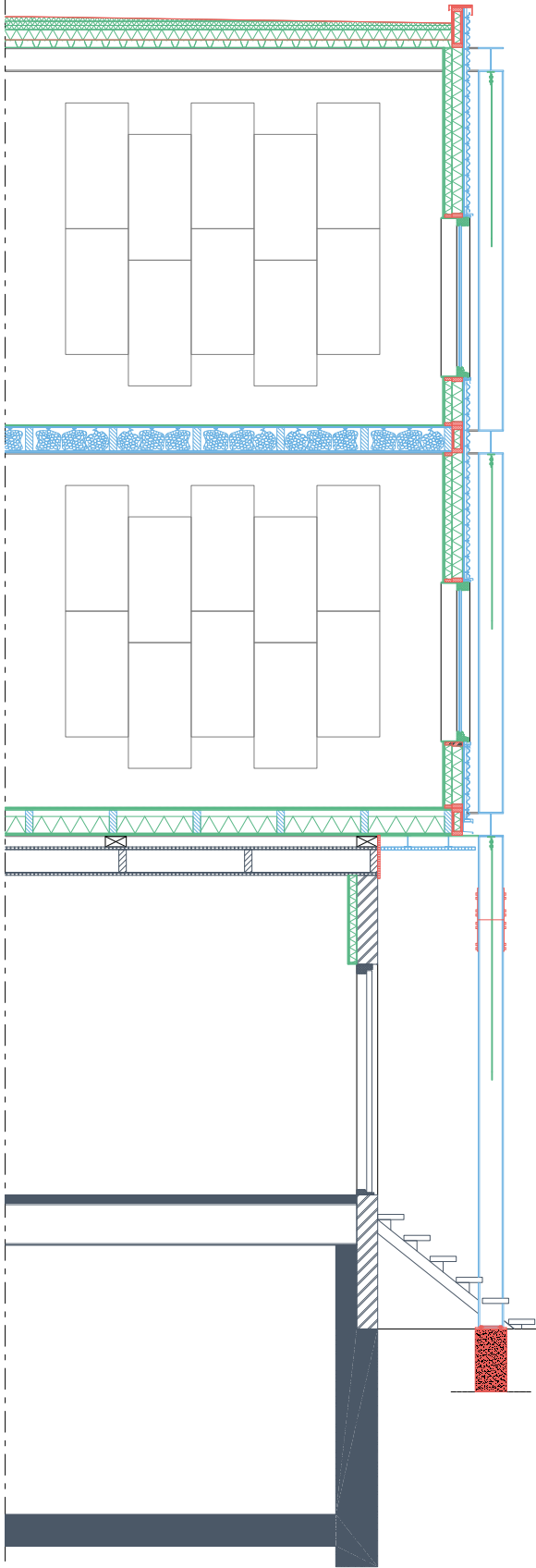


Fragment 1:20 A



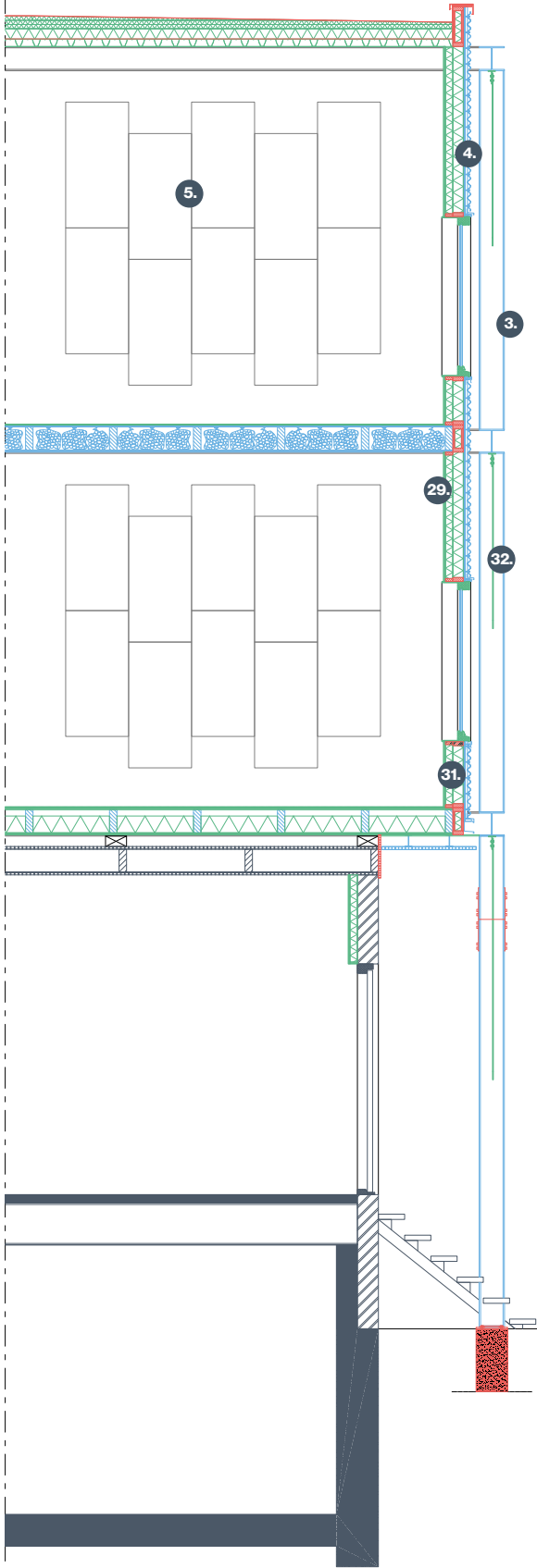
Fragment 1:20 A - Reuse

- EXISTING BUILDING
- BUILDING REUSE
- EXTERNAL REUSE
- NEW



Fragment 1:20 A - Reuse

- EXISTING BUILDING
- BUILDING REUSE
- EXTERNAL REUSE
- NEW



3.

4.

5.

Steel structure

Quantity	10x
Weight	-
Dimensions	HE240A x 8900 mm
Material	Steel
Location from site	-
Finish	-
Quality	-

Metal plates

Quantity	151 m²
Weight	-
Dimensions	50 mm thick
Material	Metal
Location from site	-
Finish	Grey-silver colour
Quality	Good

Ceiling tiles

Quantity	500 m²
Weight	-
Dimensions	1200 x 600 x 20 mm
Material	Steenwol
Location from site	-
Finish	-
Quality	Good

29.

31.

32.

Underlayment

Quantity	252 m²
Weight	-
Dimensions	Vary - 19 mm
Material	plywood
Location from site	70 km
Finish	-
Quality	Good

Rockwool

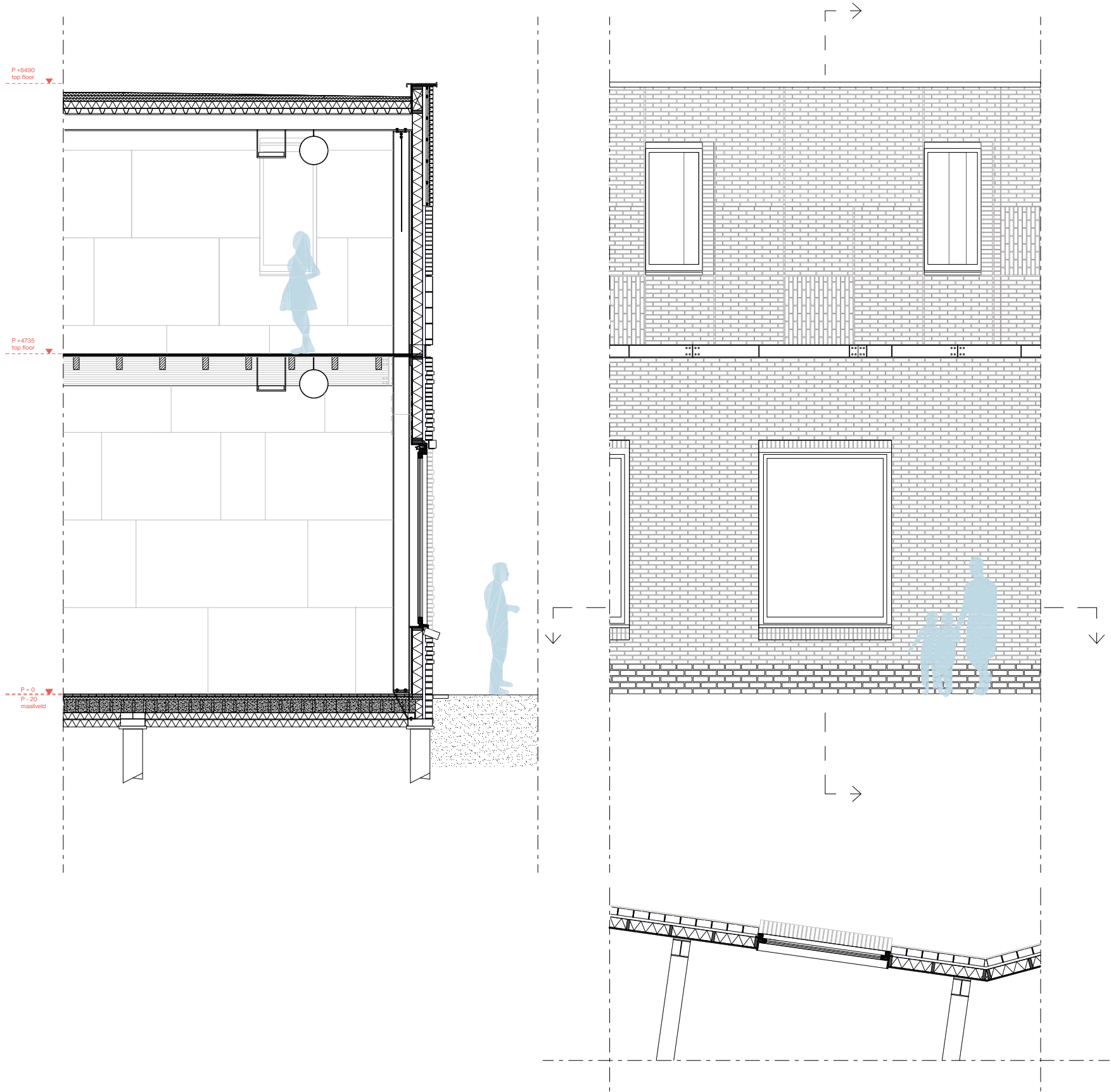
Quantity	503 m²
Weight	-
Dimensions	70 mm
Material	Rockwool (steenwol)
Location from site	70 km
Finish	-
Quality	unknown

Stability steel bracing

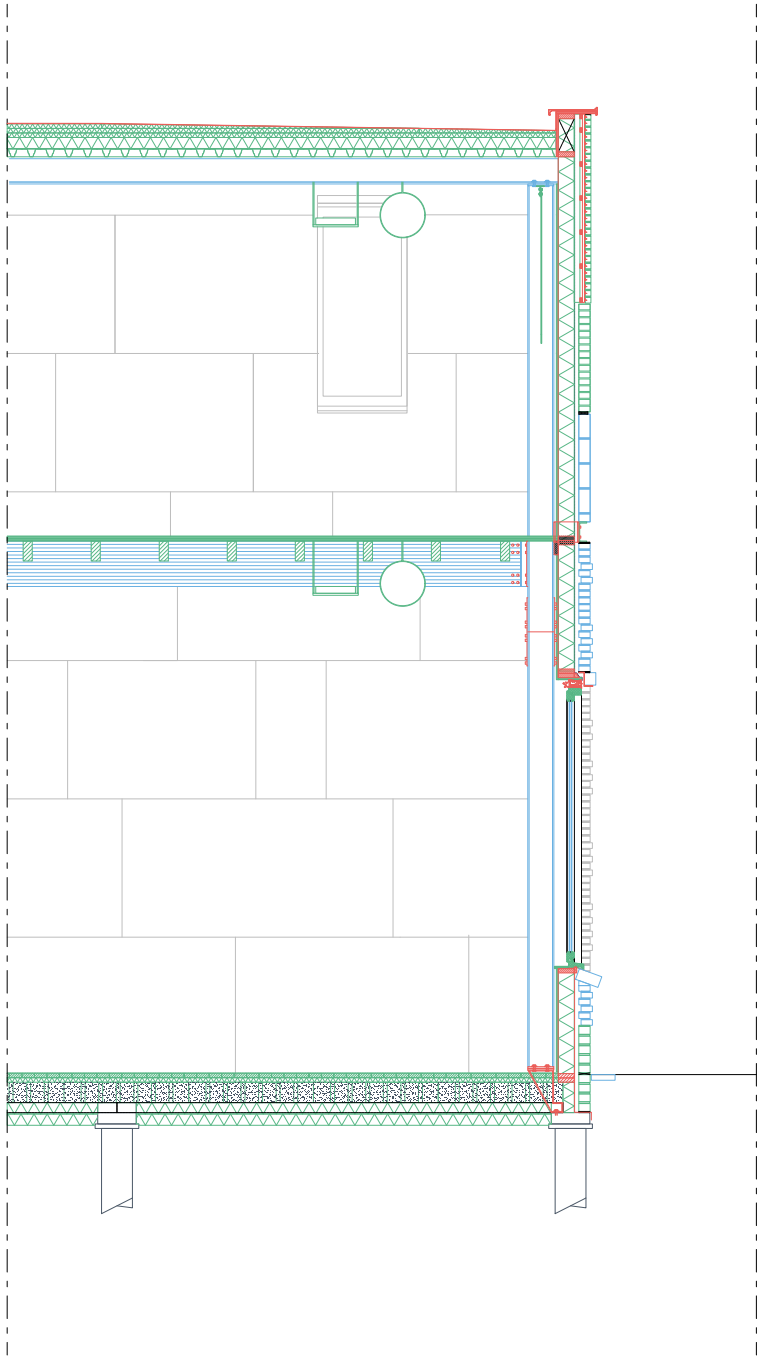
Quantity	201 m
Weight	-
Dimensions	60 x 6 mm
Material	Steel
Location from site	70 km
Finish	-
Quality	unknown



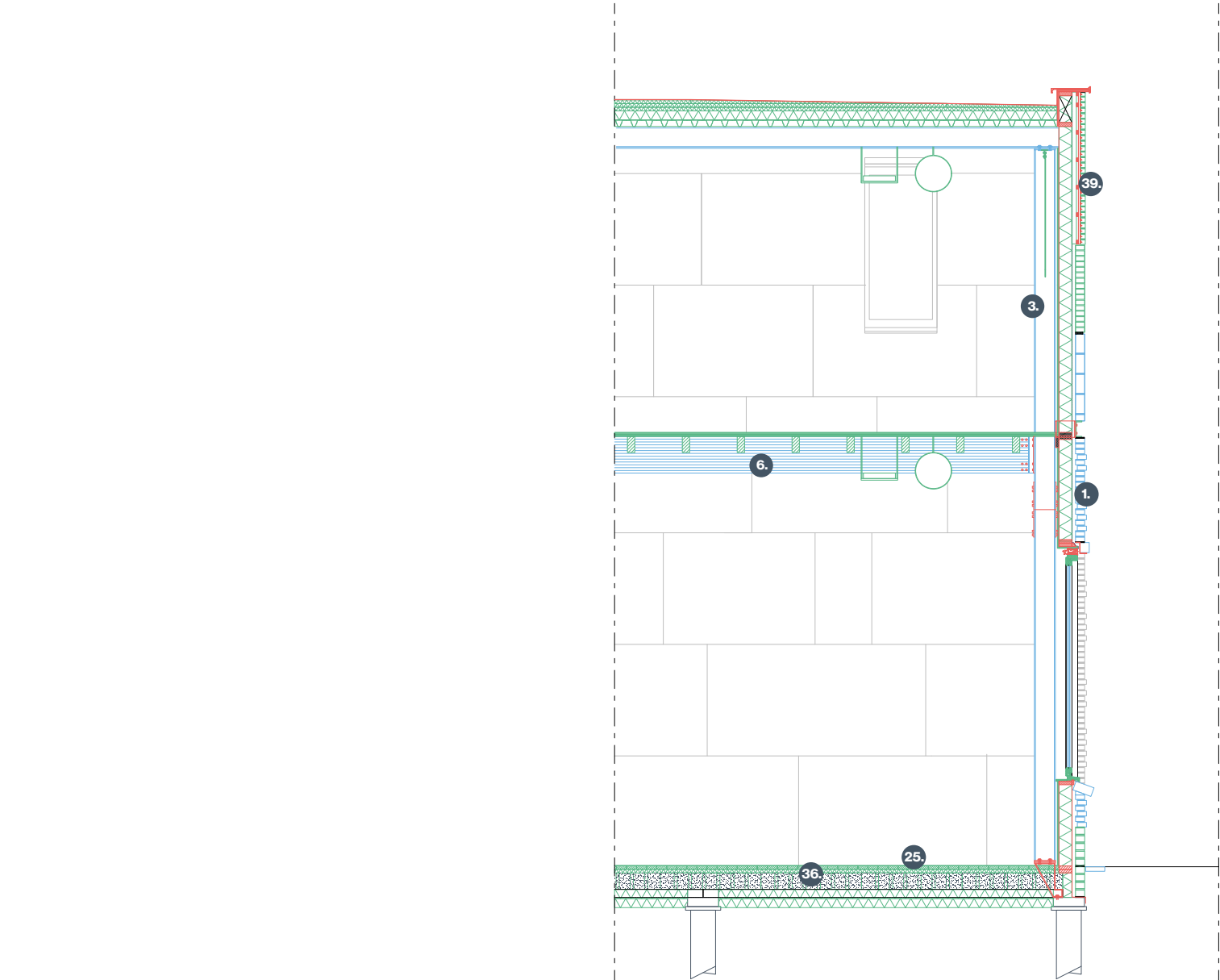
Fragment 1:20 B



Fragment 1:20 B - Reuse



Fragment 1:20 B - Reuse



- EXISTING BUILDING
- BUILDING REUSE
- EXTERNAL REUSE
- NEW



3.

6.

1.

Steel structure

Quantity	10x
Weight	-
Dimensions	HE240A x 8900 mm
Material	Steel
Location from site	-
Finish	-
Quality	-

Wooden beams

Quantity	8x
Weight	-
Dimensions	5800 x 800 x 140 mm
Material	Hard wood, type unknown
Location from site	-
Finish	-
Quality	-

Bricks

Quantity	408 m²
Weight	-
Dimensions	210 x 100 x 50 mm
Material	Brick - Waalformaat
Location from site	-
Finish	-
Quality	Good

36.

39.

25.

Concrete slatted floor panels

Quantity	342 m²
Weight	-
Dimensions	330 x 3000 x 135 mm
Material	Concrete
Location from site	90 km
Finish	Dirty
Quality	Unknown

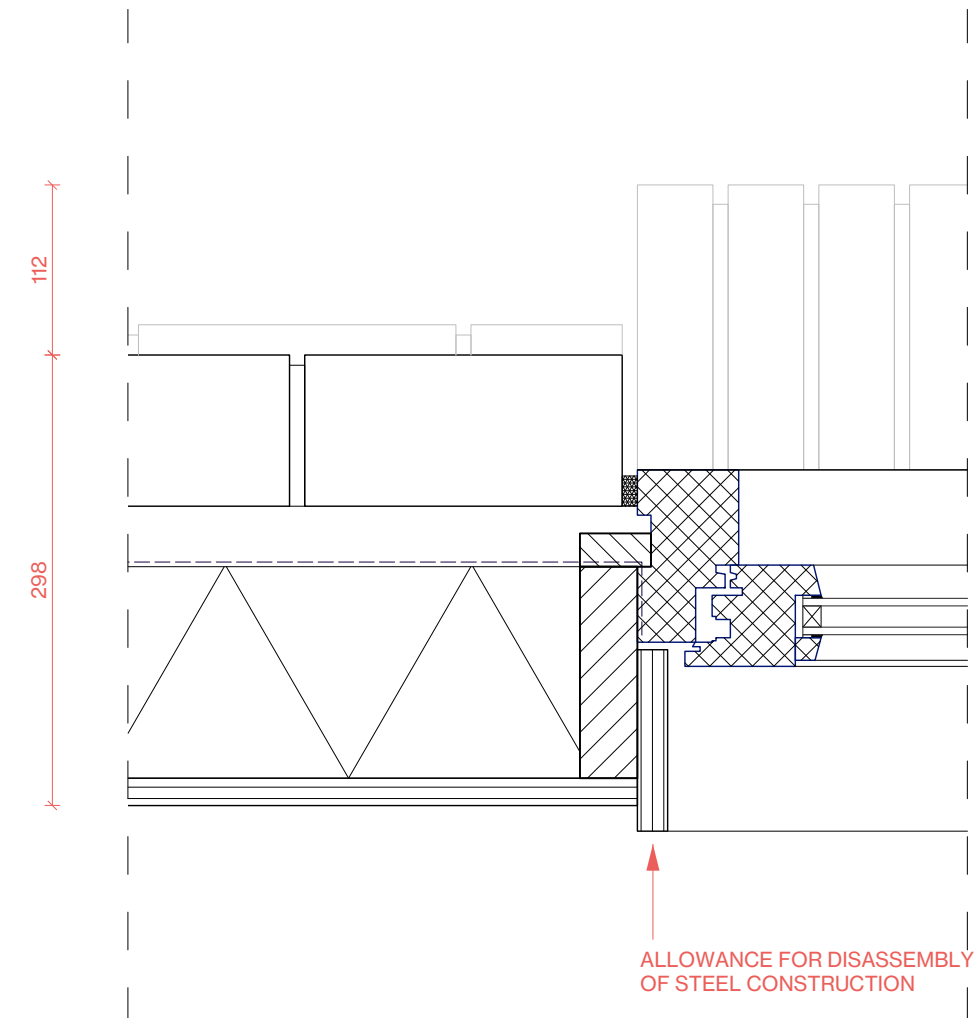
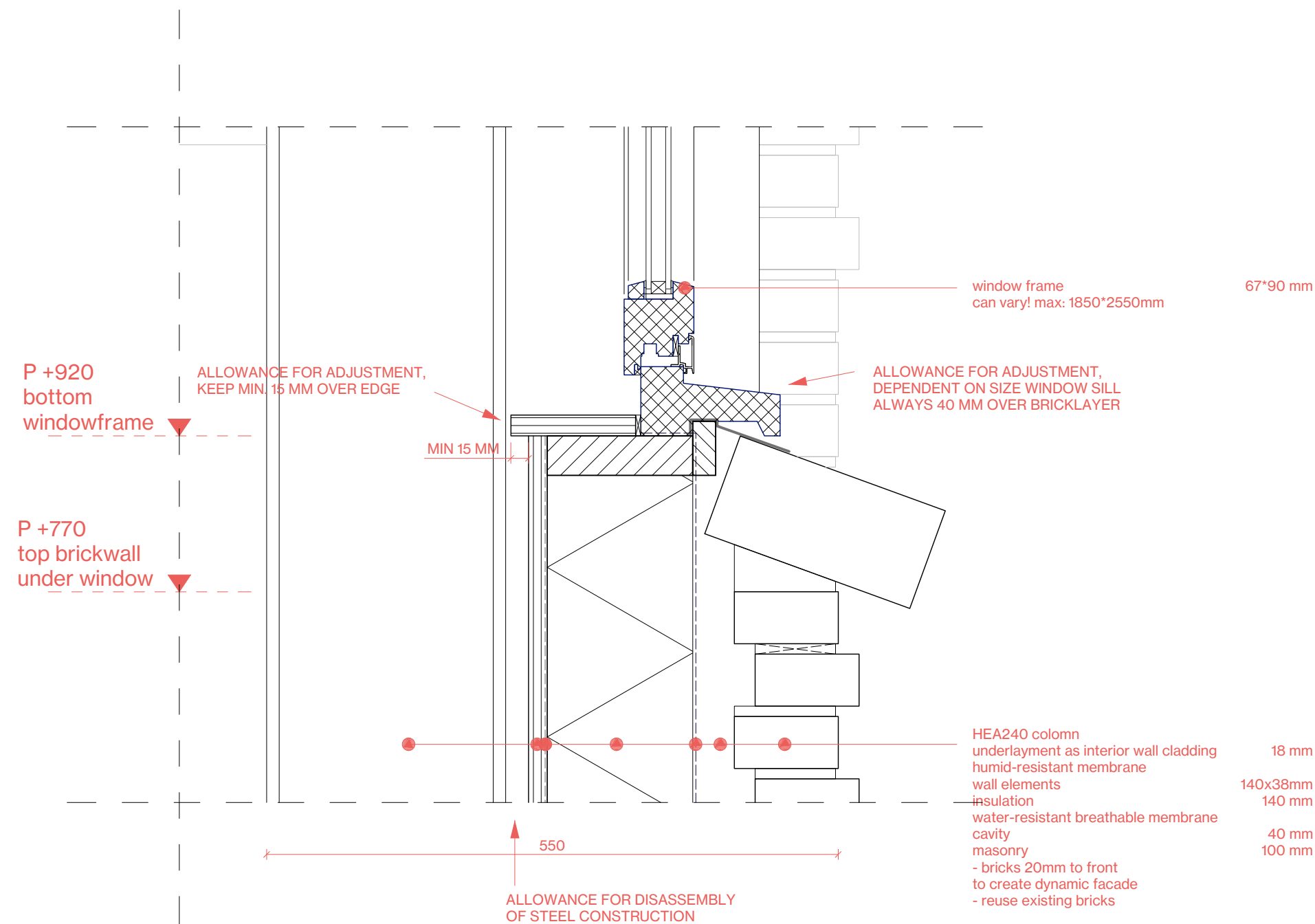
Mid piece (waste) of brick for brick slips

Quantity	...m²
Weight	-
Dimensions	210 x 50 x 50 mm
Material	Waste brick slip
Location from site	VanderSanden industry
Finish	-
Quality	-

Hardhouten steenschotten

Quantity	360x
Weight	-
Dimensions	1400 x 1100 x 40 mm
Material	Hard wood and steel
Location from site	60 km
Finish	Rough
Quality	unknown

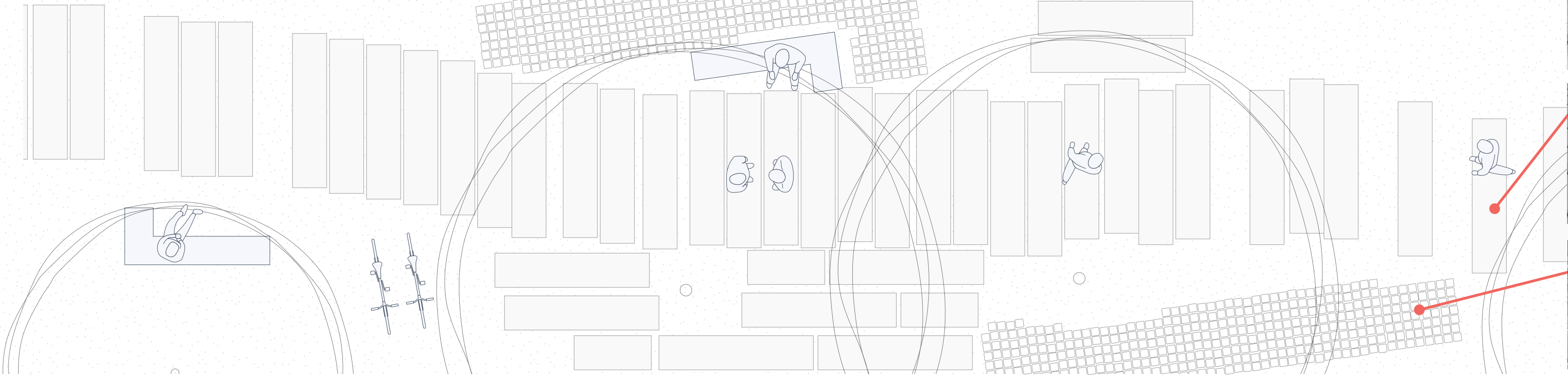
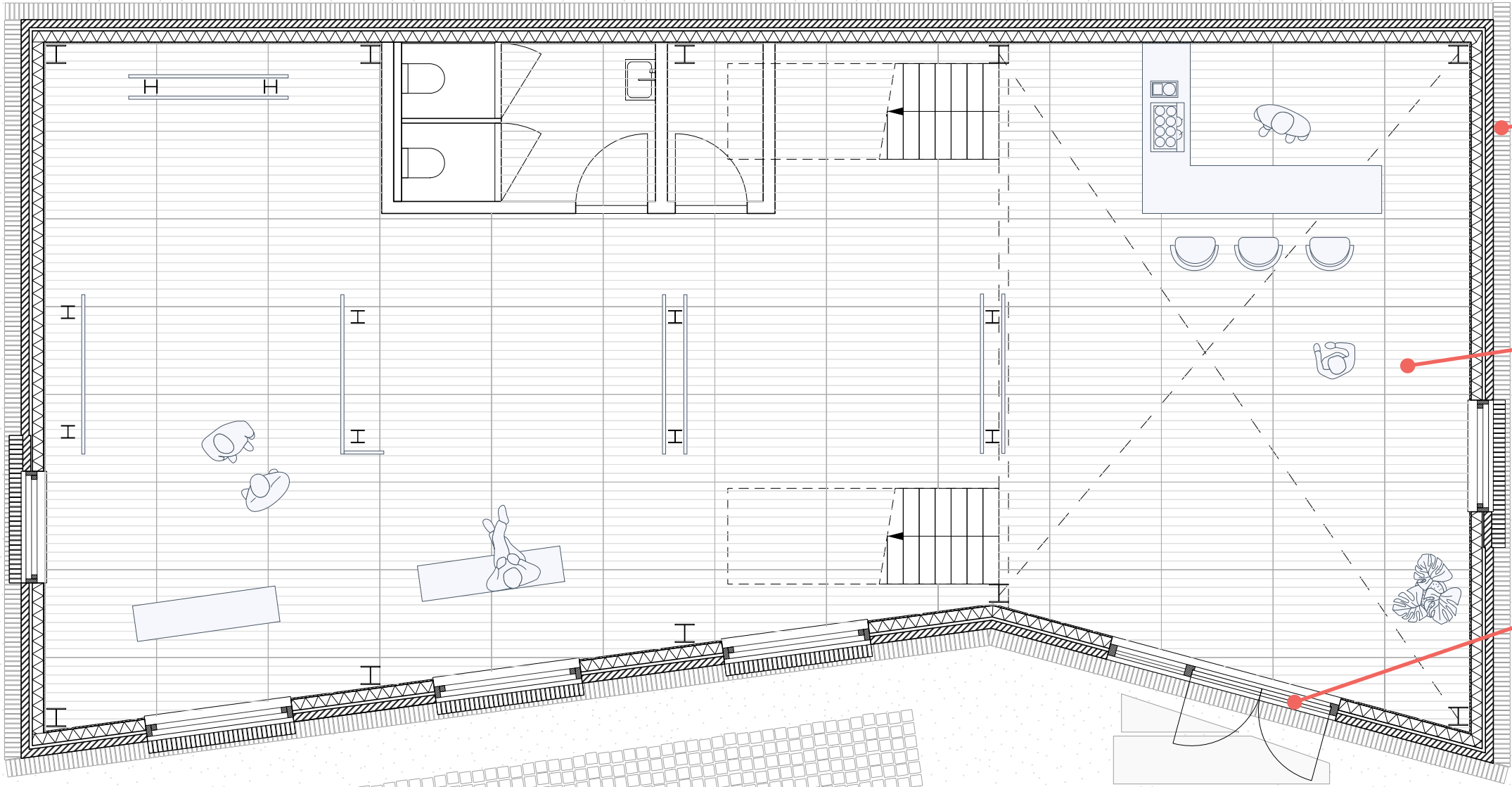
Details 1:5



Elevation pavilion 1:50



Plan 1:50



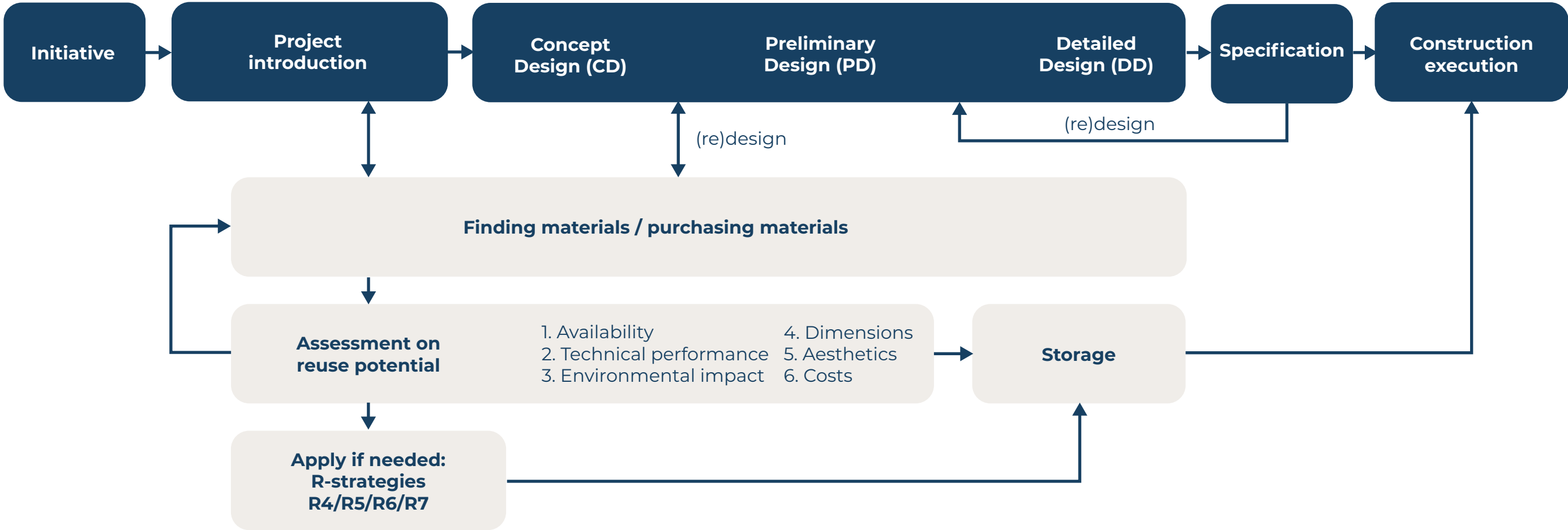


How can architectural reuse principles guide the transformation of the Amazing Oriental Supermarket in Rotterdam into a collaborative centra for learning, testing and showcasing innovative applications of reused materials?

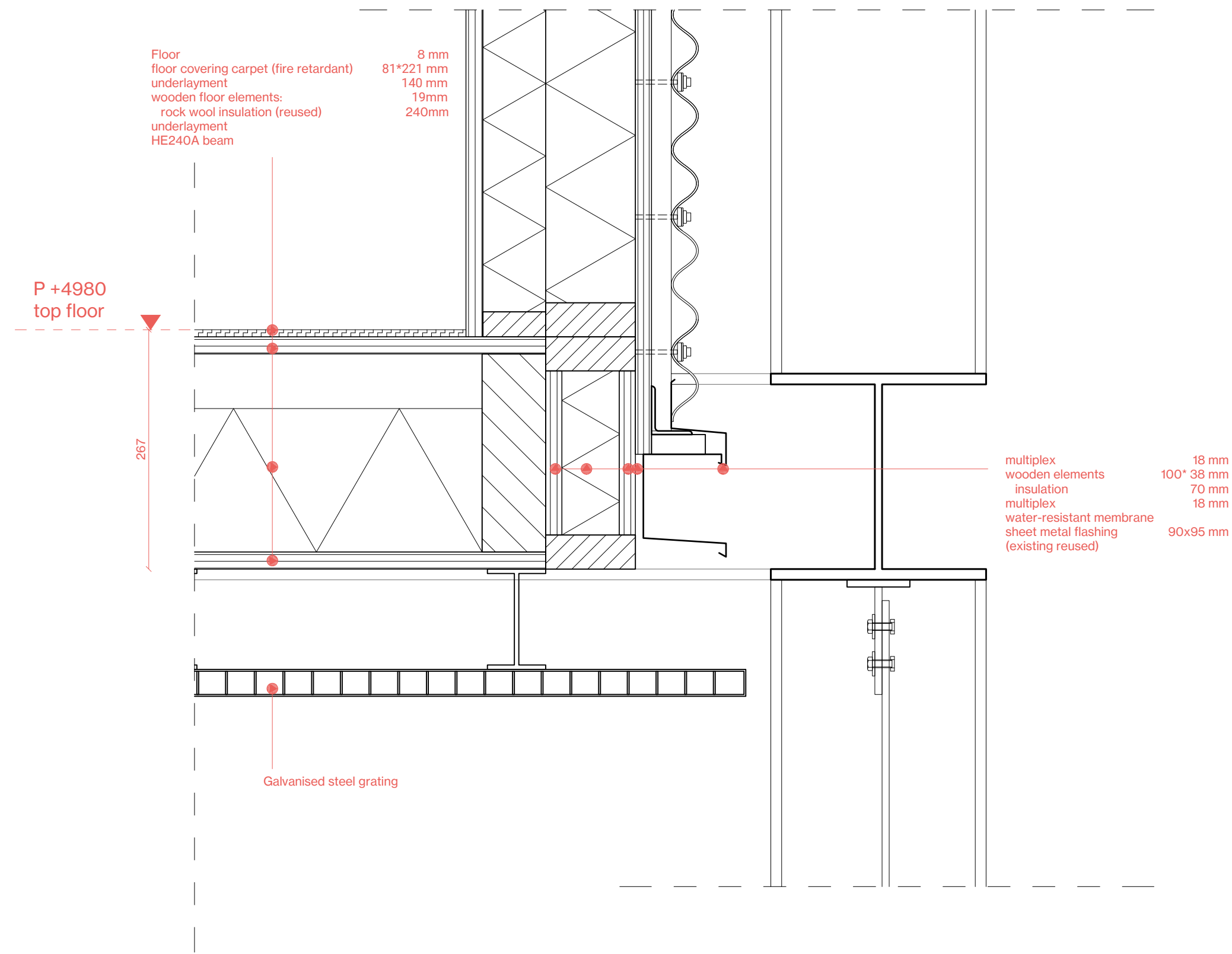
An architectural rendering of a modern, multi-story brick building complex. The building features a mix of red and yellow bricks, with some windows having yellow frames. A large, leafy tree stands in the center of the courtyard. People are depicted in various activities: a woman sits on a brick ledge on the left, a couple stands in the center, a person pushes a cart, and another person sits on a ledge on the right. A small cat is also visible on the right ledge. The sky is light blue with a few birds. The text "CREATING VALUE FROM WASTE" is written in black, and "THE NEW NORMAL WAY" is written in red, both with a red line through the first part of the first line. The word "EXPO" is written in purple on the left building, and "MATERIAL" is written vertically in purple on the right building.

CREATING VALUE FROM WASTE THE NEW NORMAL WAY

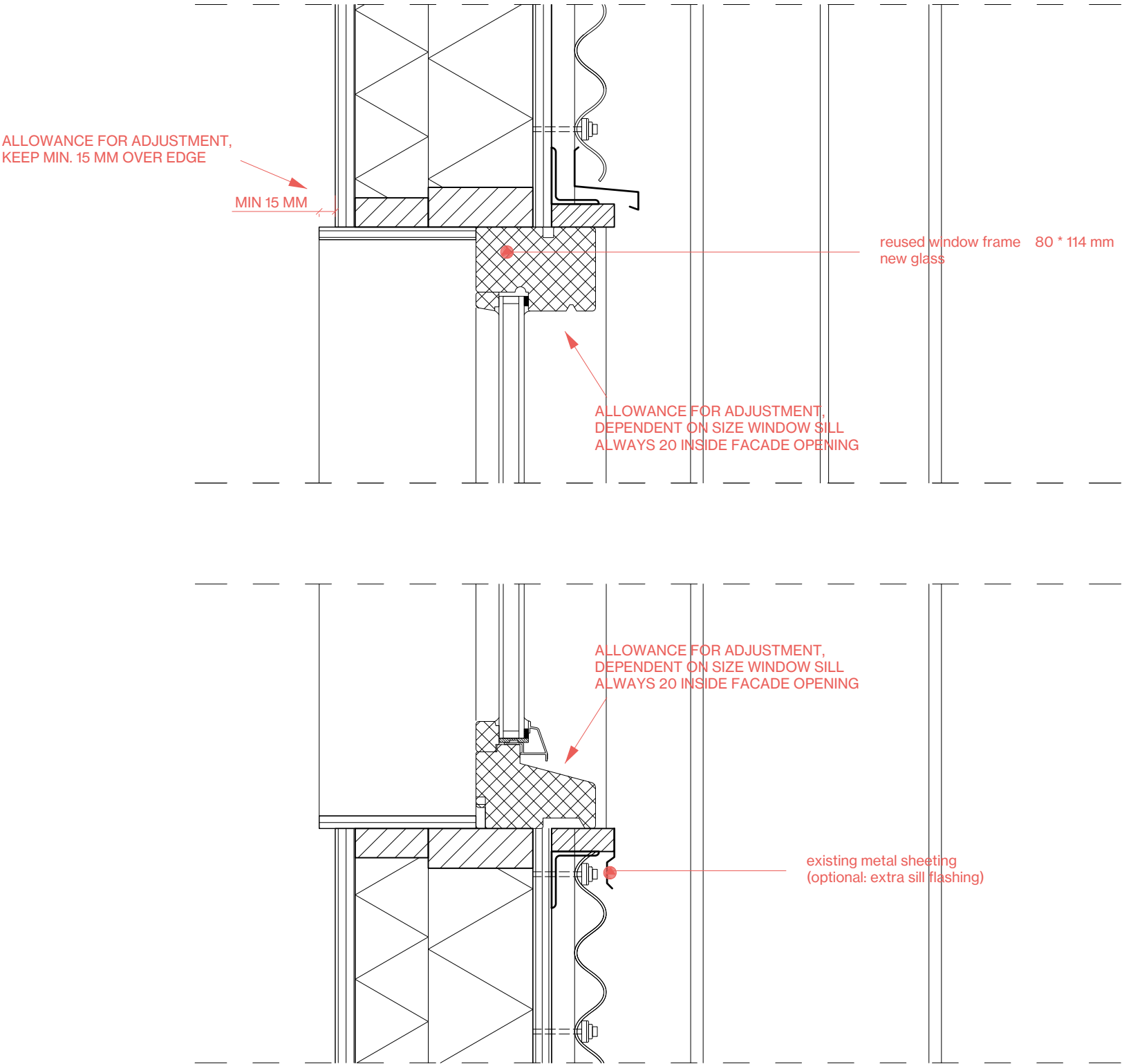
Design and construction process involving reuse



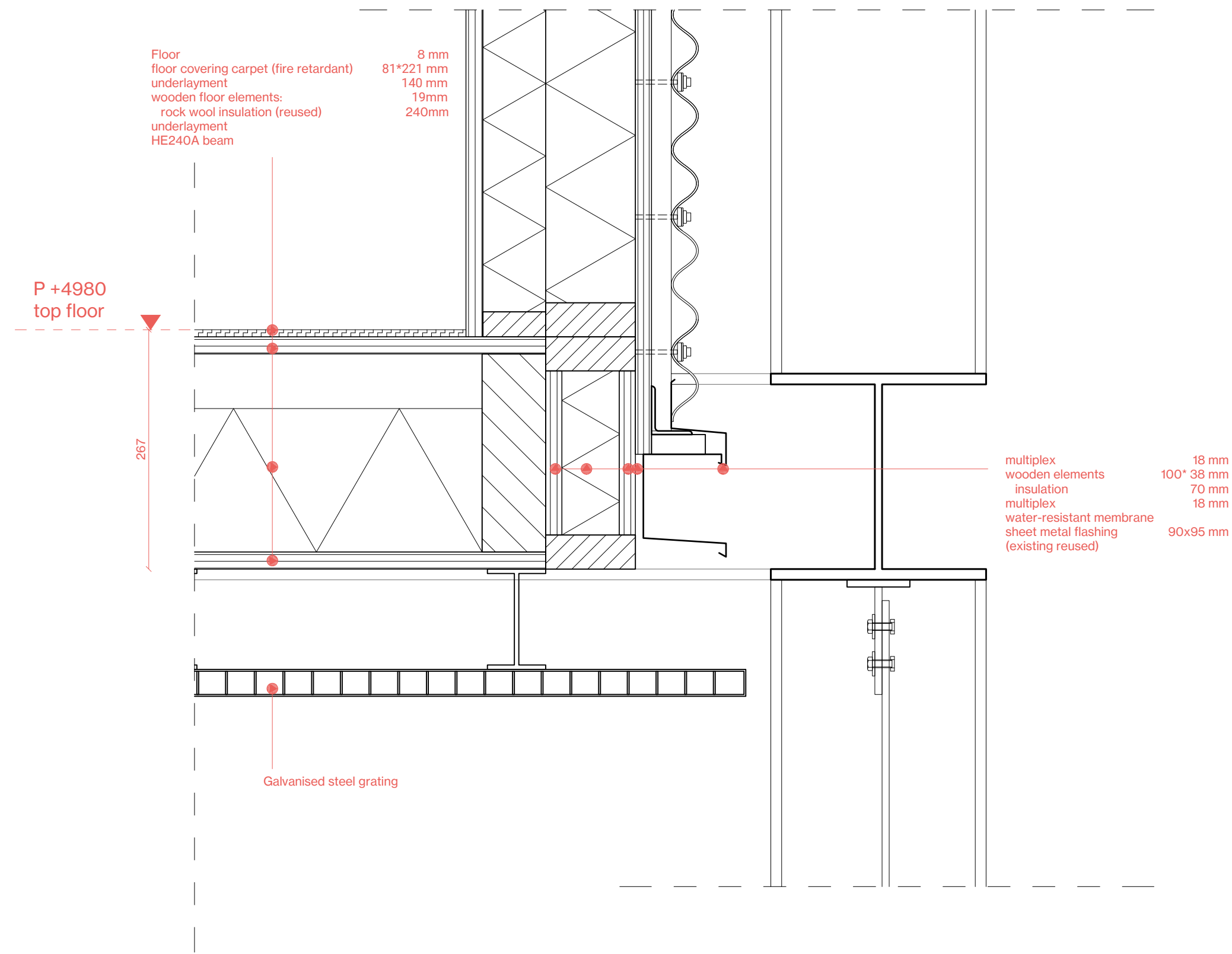
Details 1:5



Details 1:5



Details 1:5



Interior and comfort

