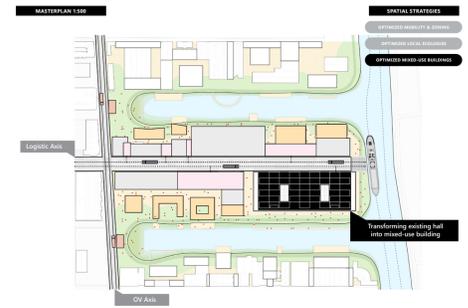
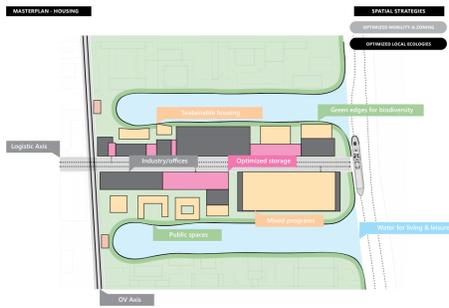
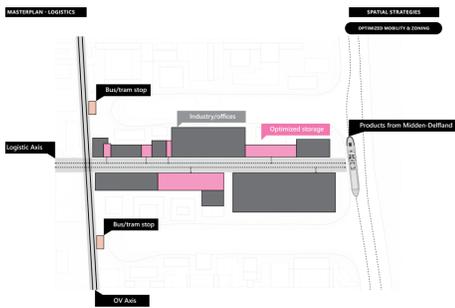


1. Dutch peat landscape becomes production park

2. Requires symbiosis between landscape & city

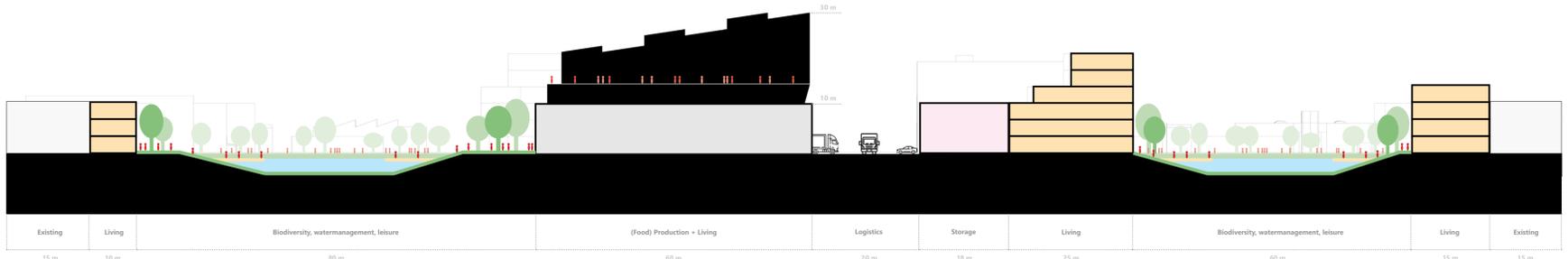
3. Districts related to the production park



1. Efficient clustering of logistics & industry

2. Space for green, water and a mix of functions

3. Existing buildings can be transformed



Living areas

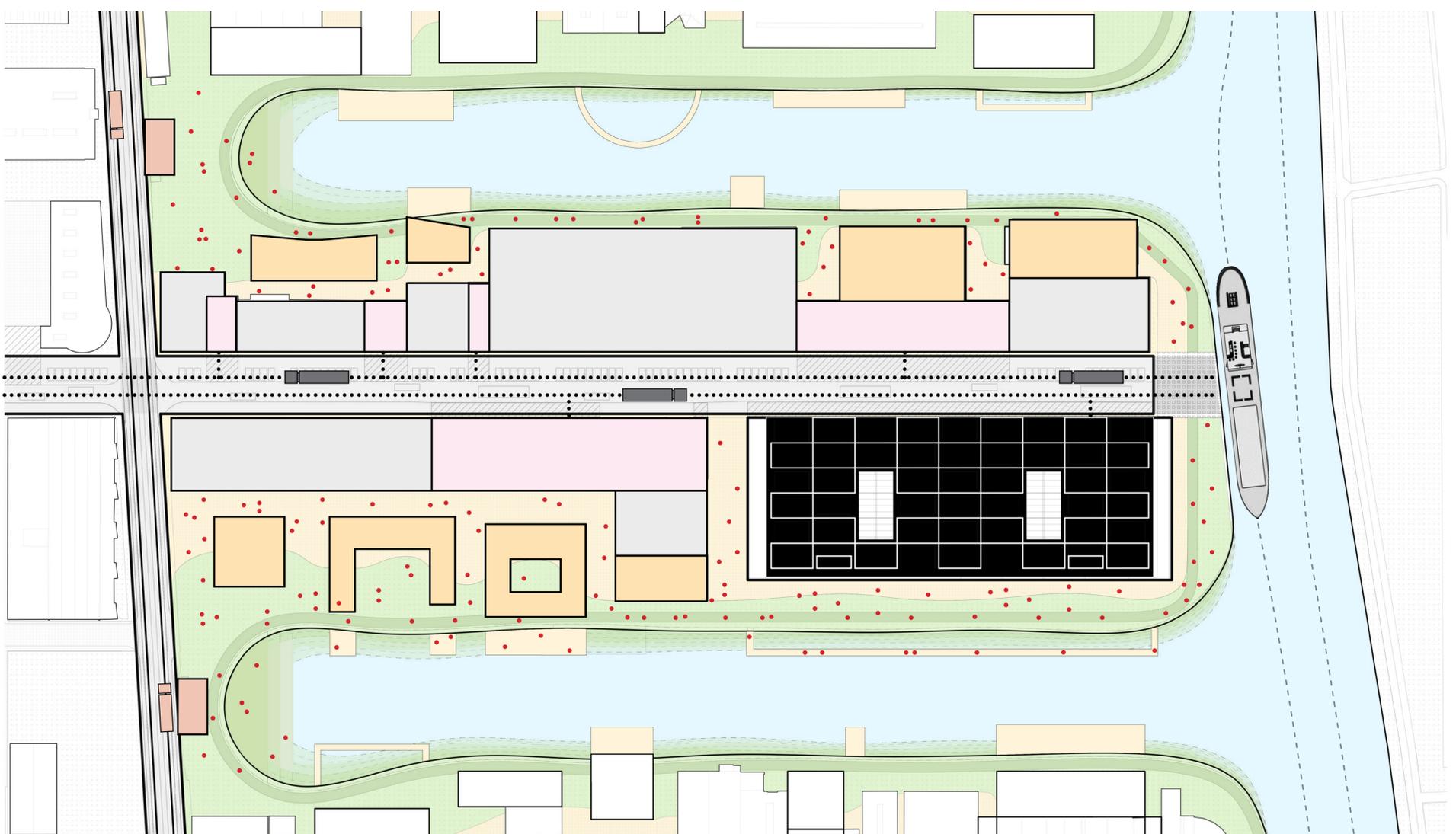
Green lush recreational areas

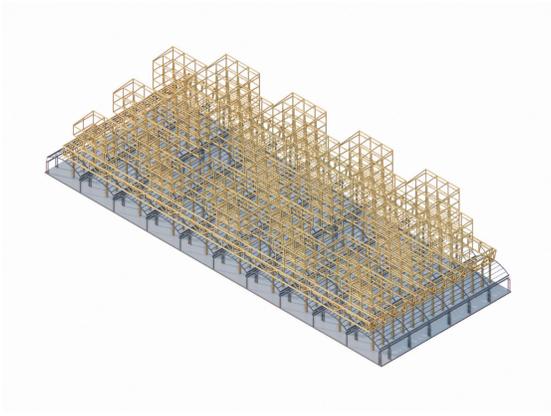
Transformed buildings

Logistic corridor

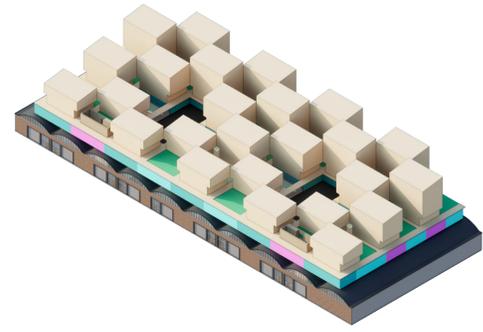
Green lush recreational areas

Living areas

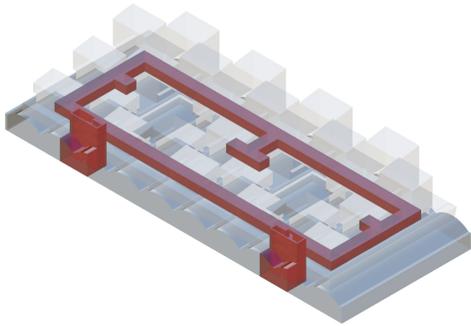




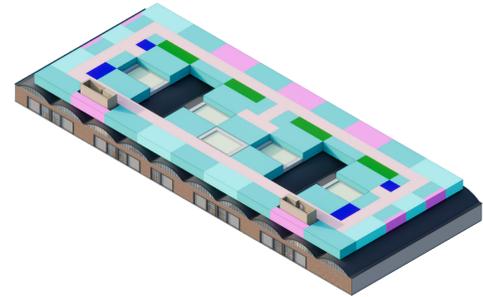
Contrast between concrete (old) and wood (new)



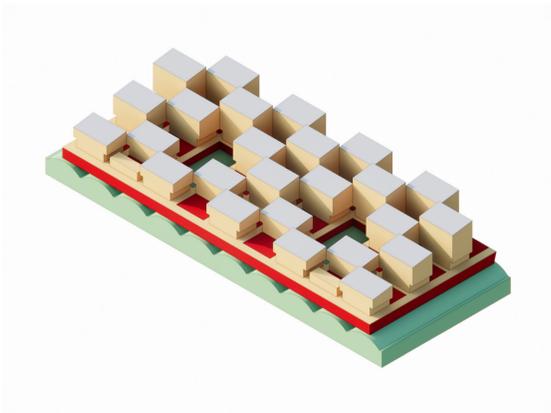
On top: Living communities with shared gardens



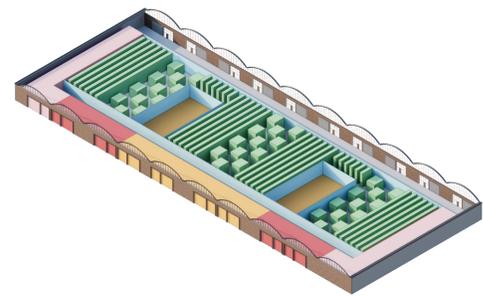
A social corridor connecting collective spaces



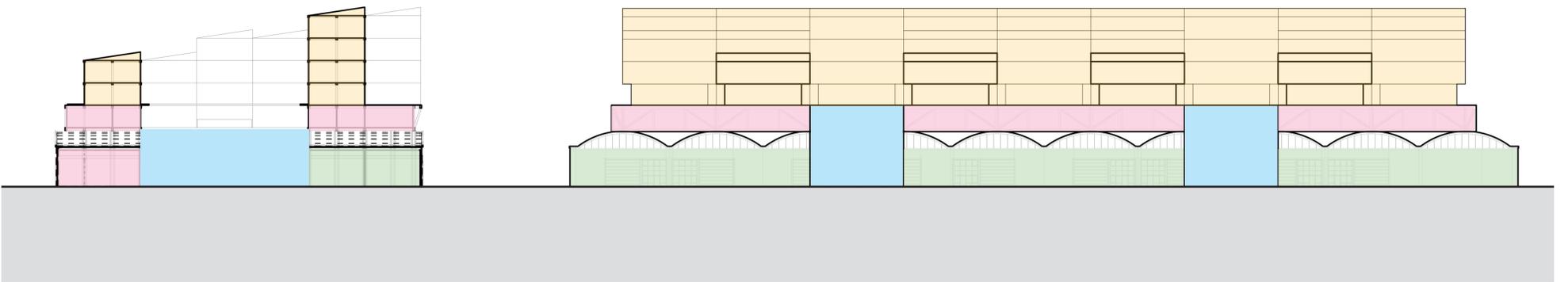
Inbetween: Studios, circulation and collective spaces

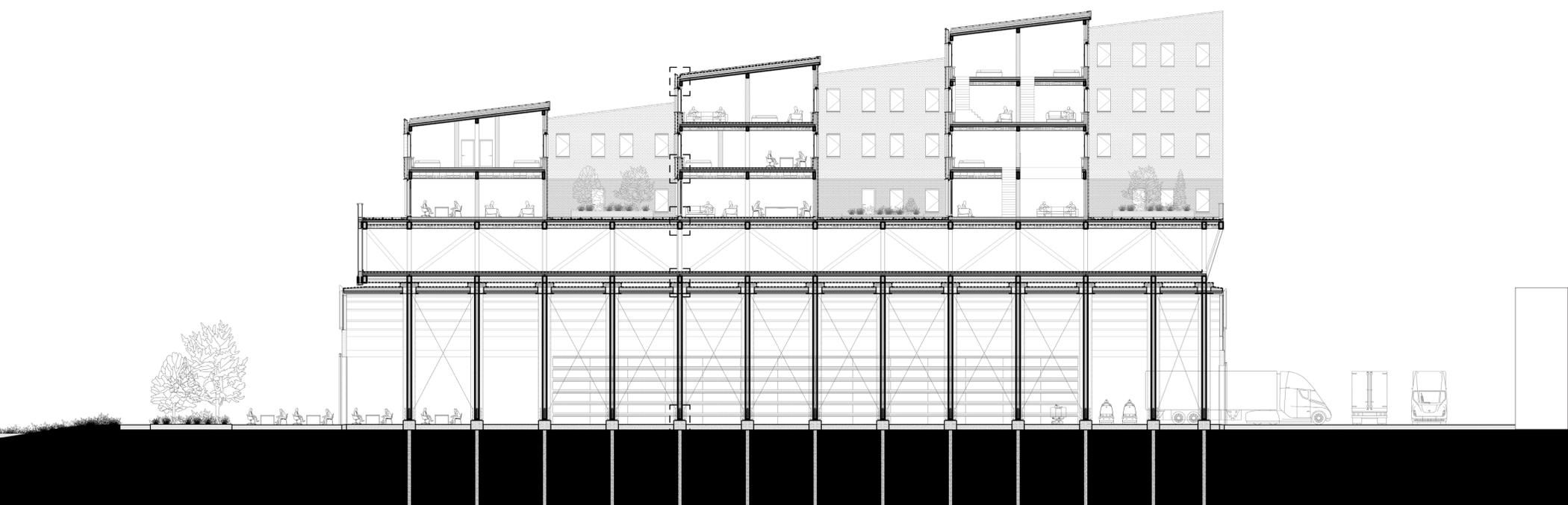
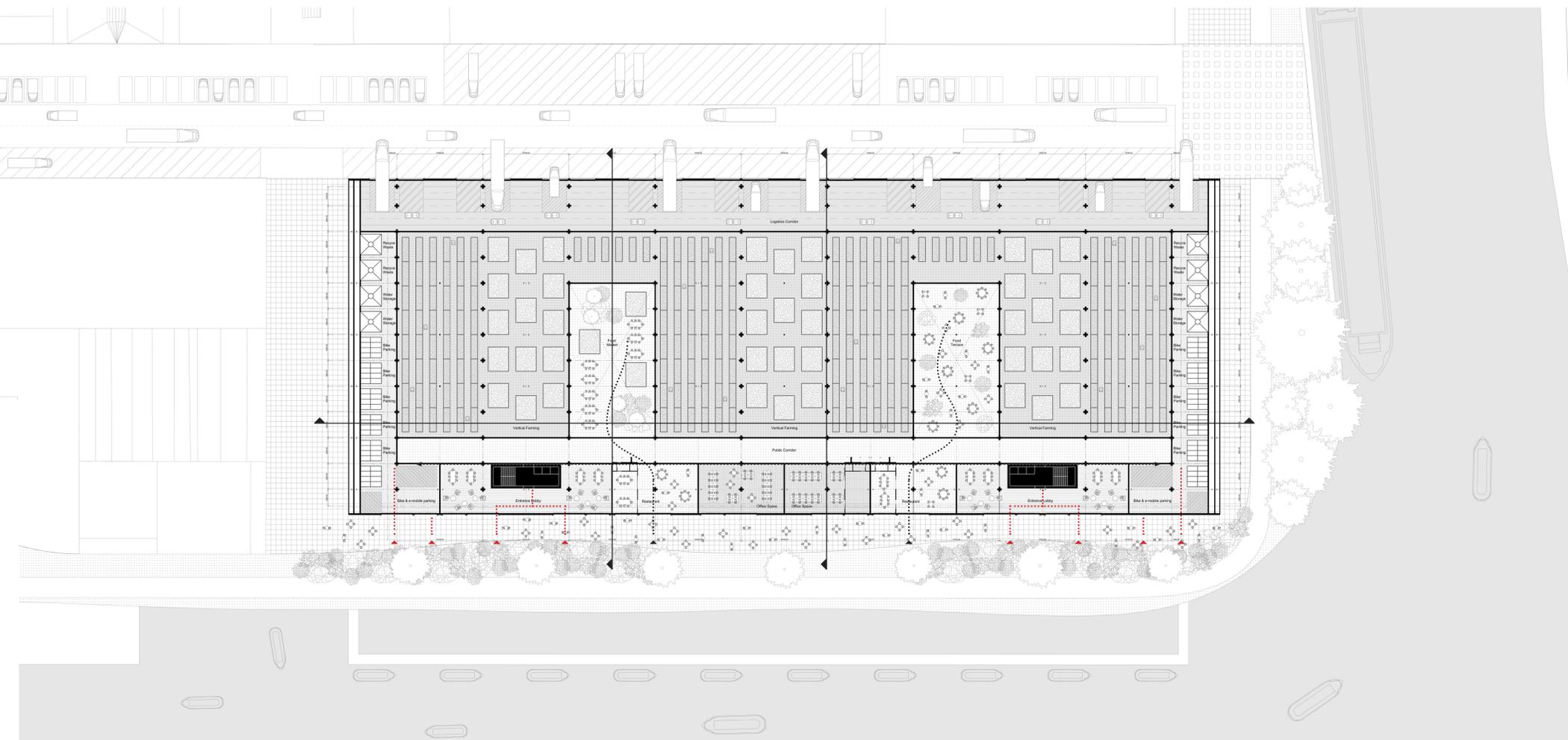
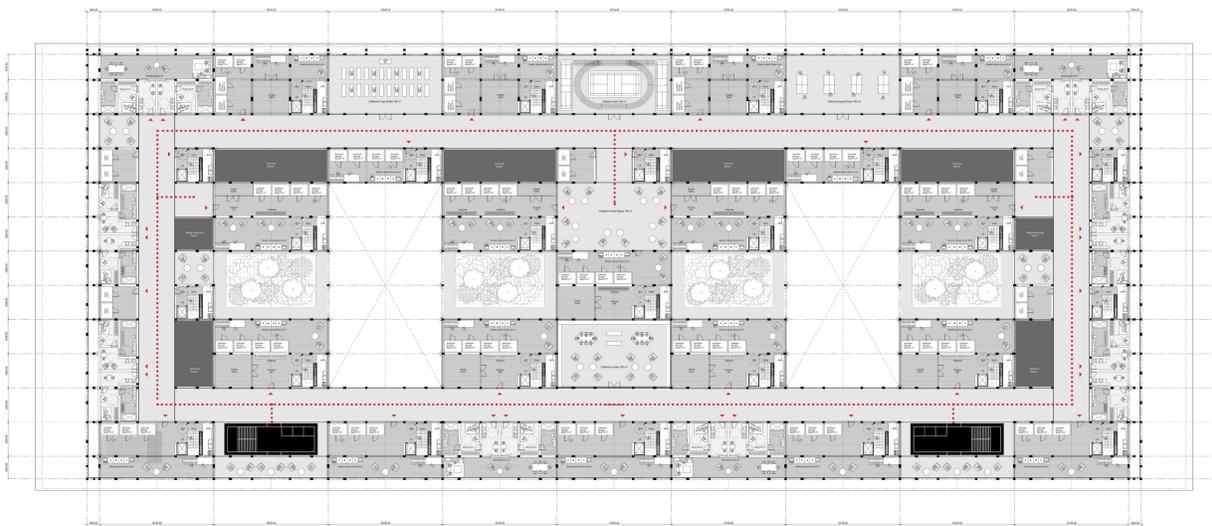
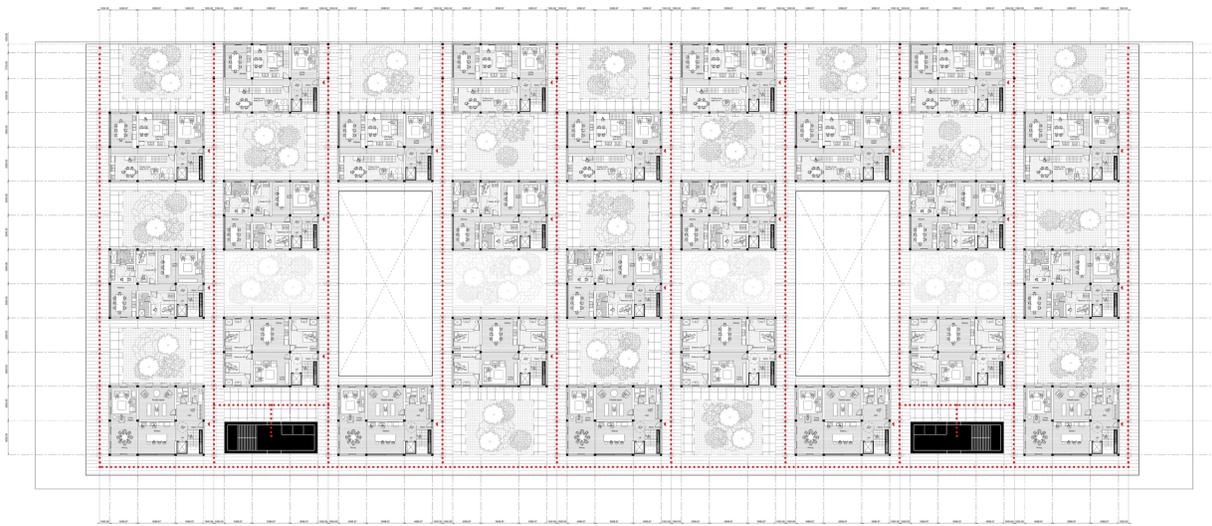


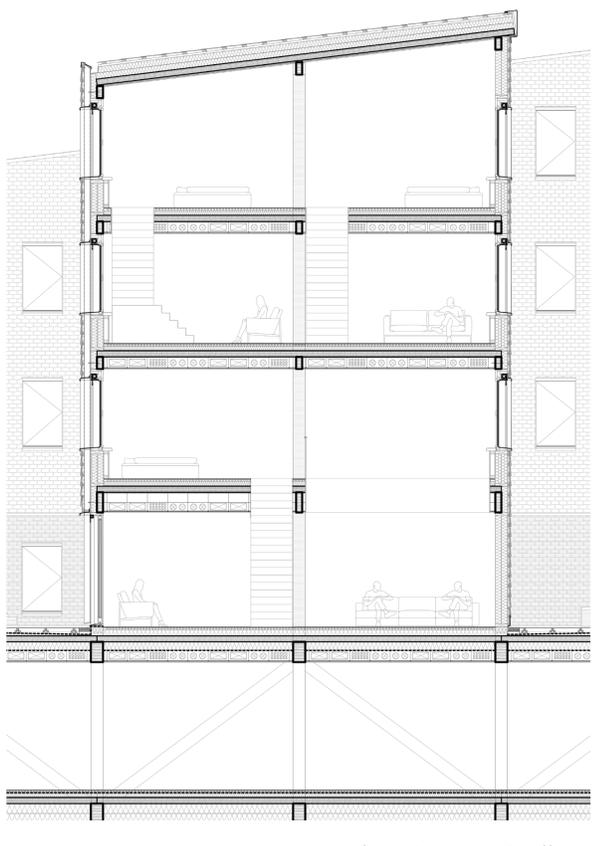
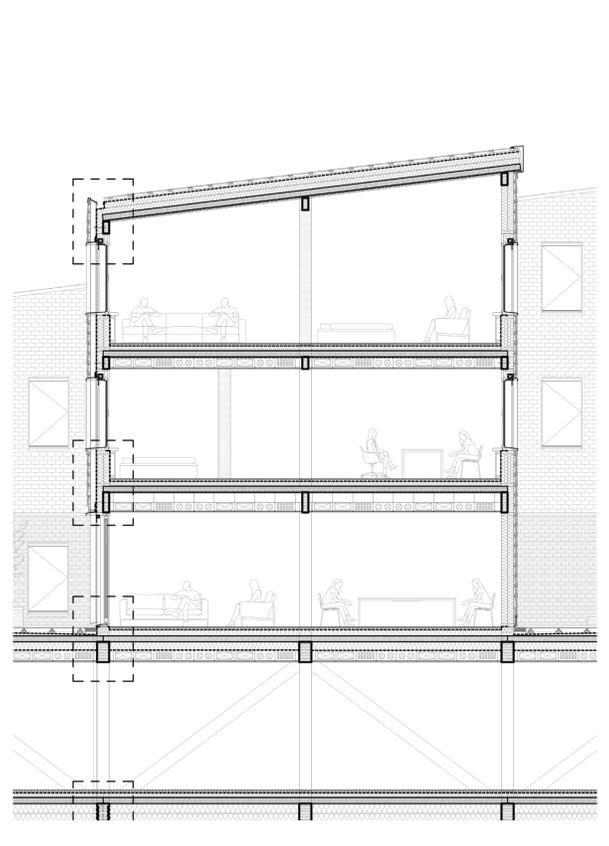
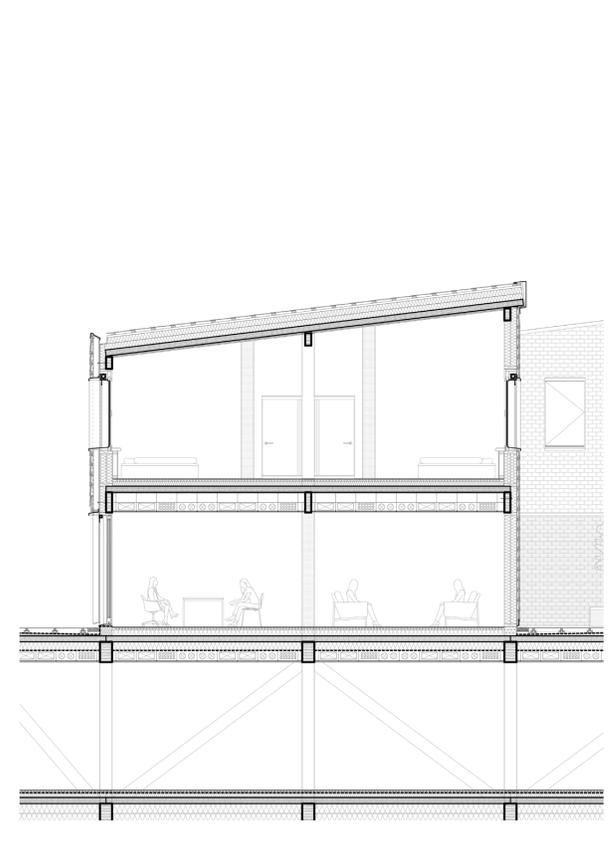
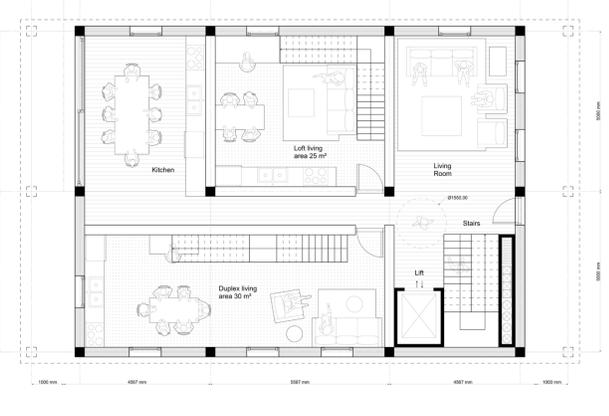
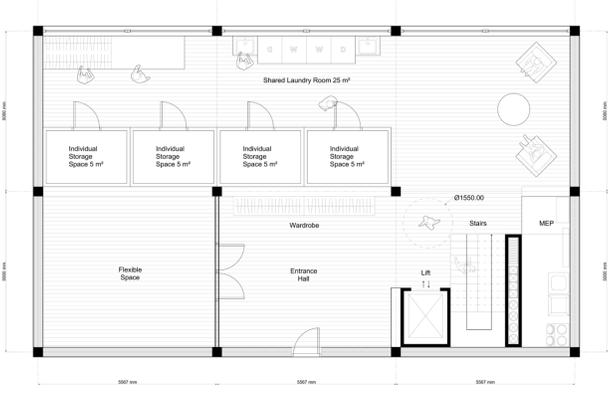
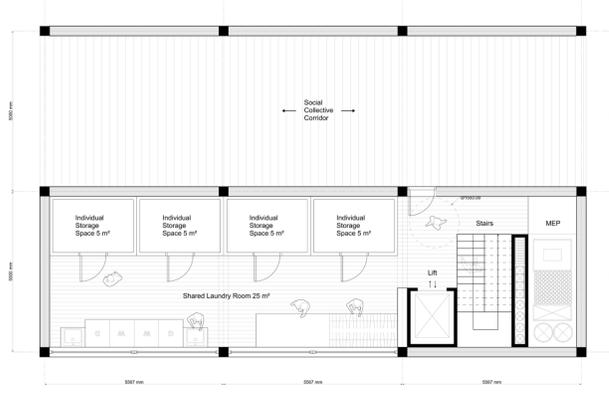
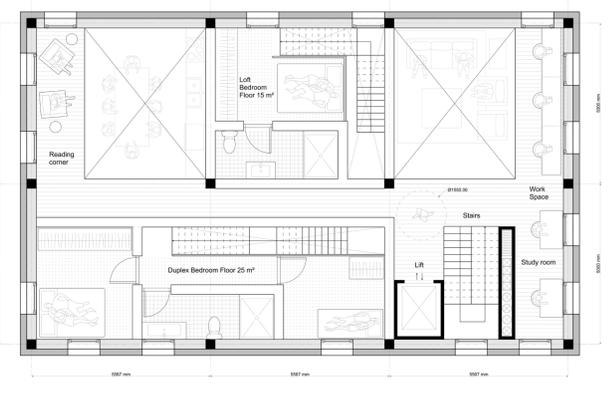
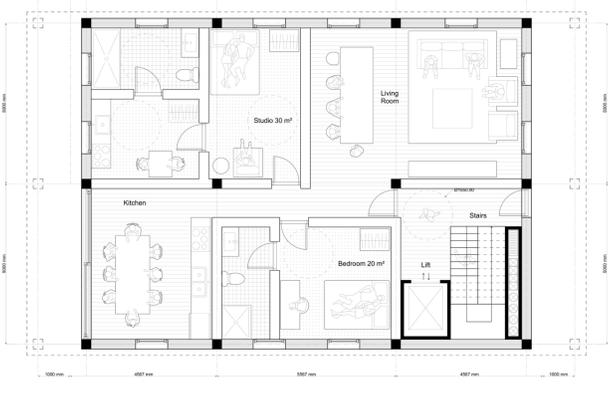
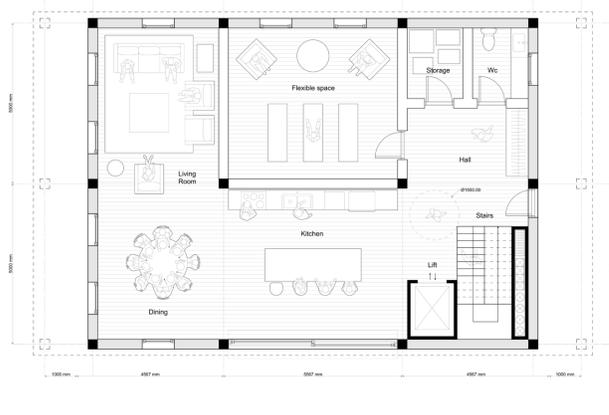
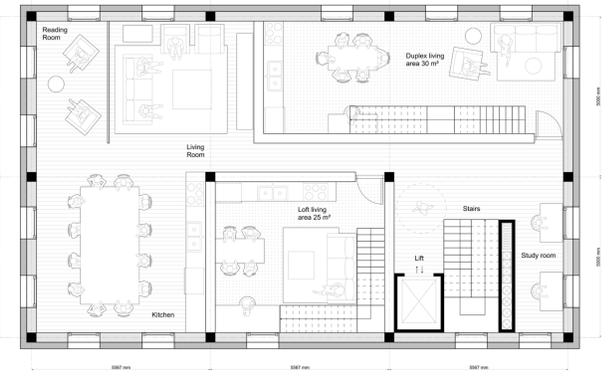
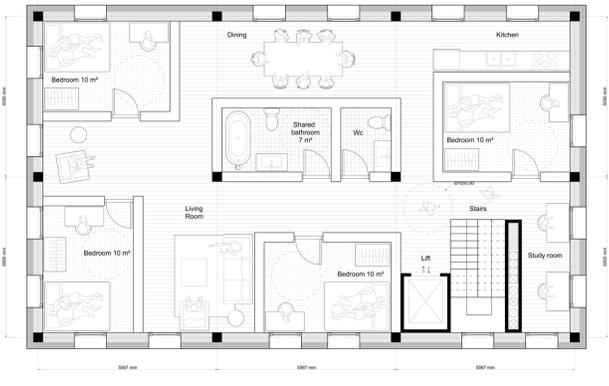
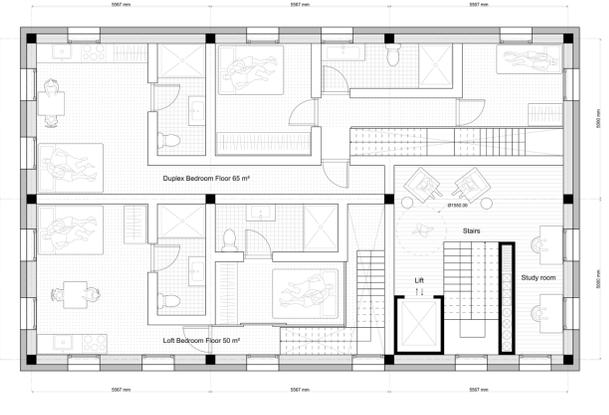
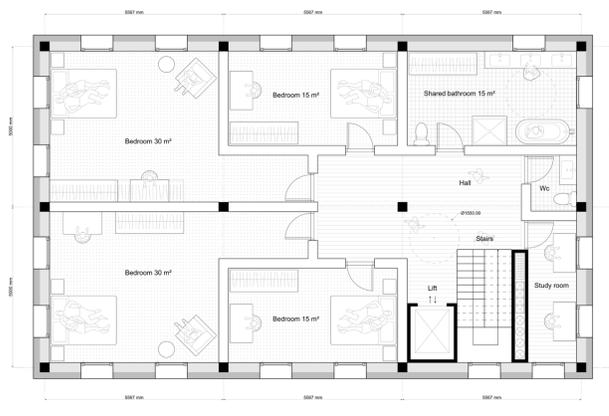
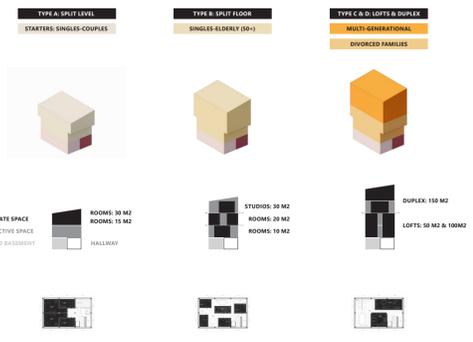
Exchange of resources between functions



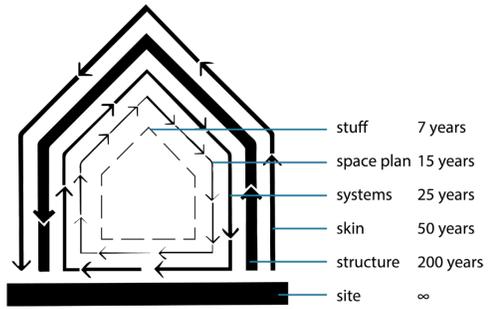
Ground floor: Vertical farming and food production



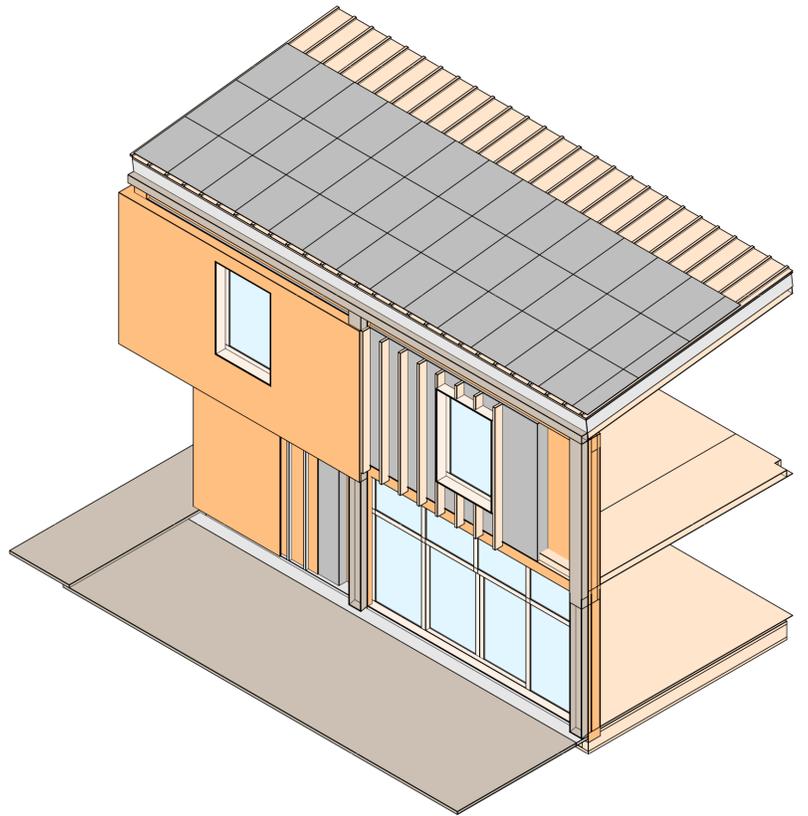




# Sustainability & Circularity



## FACADE



1 Facade build-up concept

## SUSTAINABILITY

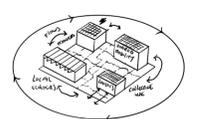
1. RETHINK: URBAN PLANNING
2. REFUSE: TO USE POLLUTING MATERIALS
3. REDUCE: CO2 EMISSIONS
4. REPURPOSE: EXISTING BUILDINGS
5. REUSE: EXISTING MATERIALS
6. RECYCLE: RESOURCES
7. ROT: RESIDUAL FLOWS

## CIRCULARITY

1. SITE: BUILD ON EXISTING URBAN SITE
2. STRUCTURE: SEALING FOR DURABILITY
3. SKIN: DEMOUNTABLE SHINGLES
4. SYSTEMS: EFFICIENT & UPGRADABLE
5. SPACE PLAN: FLEXIBLE STRUCTURE
6. STUFF: SHARED SPACE & OBJECTS
7. \* MAXIMUM DEMOUNTABILITY



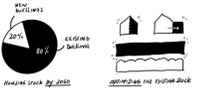
Regional development



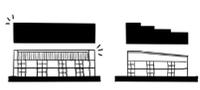
Collective circular ecologies



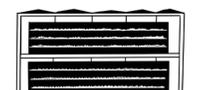
Building with local materials



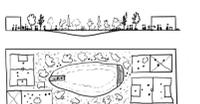
Re-using/optimizing existing



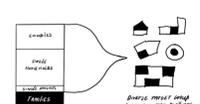
Fostering historical values



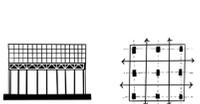
Urban indoor food production



Improve urban environment

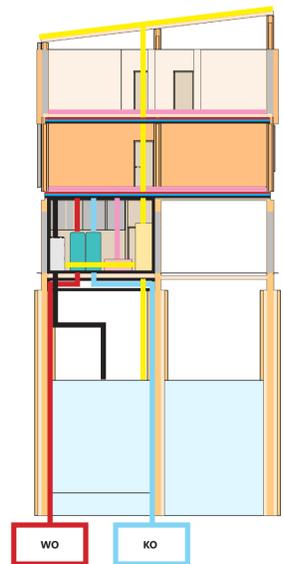
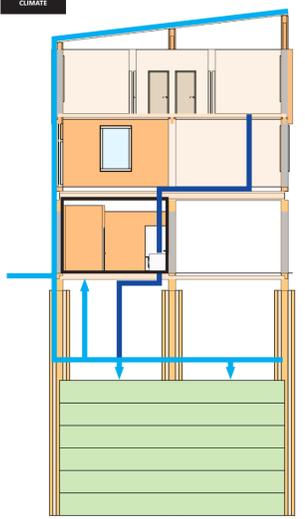


Add diverse housing types

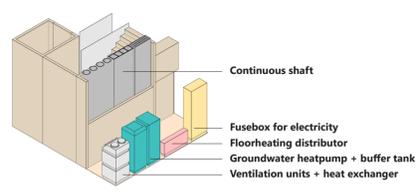


Structural flexibility

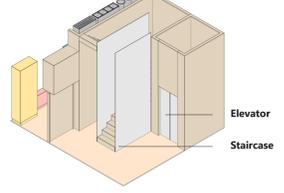
## CLIMATE



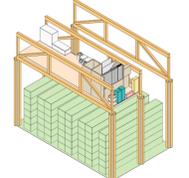
1 Dedicated space for installation technique



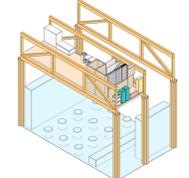
2 Continuous core for optimal accessibility



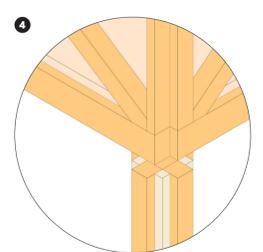
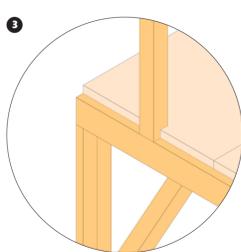
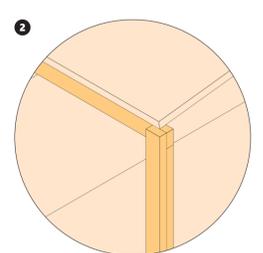
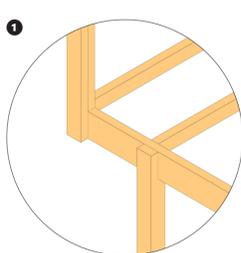
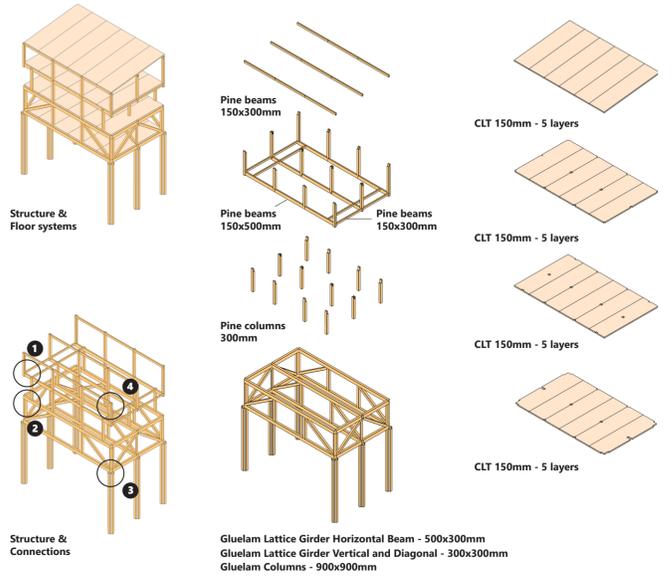
3 Exchange of water/energy (vertical farming)



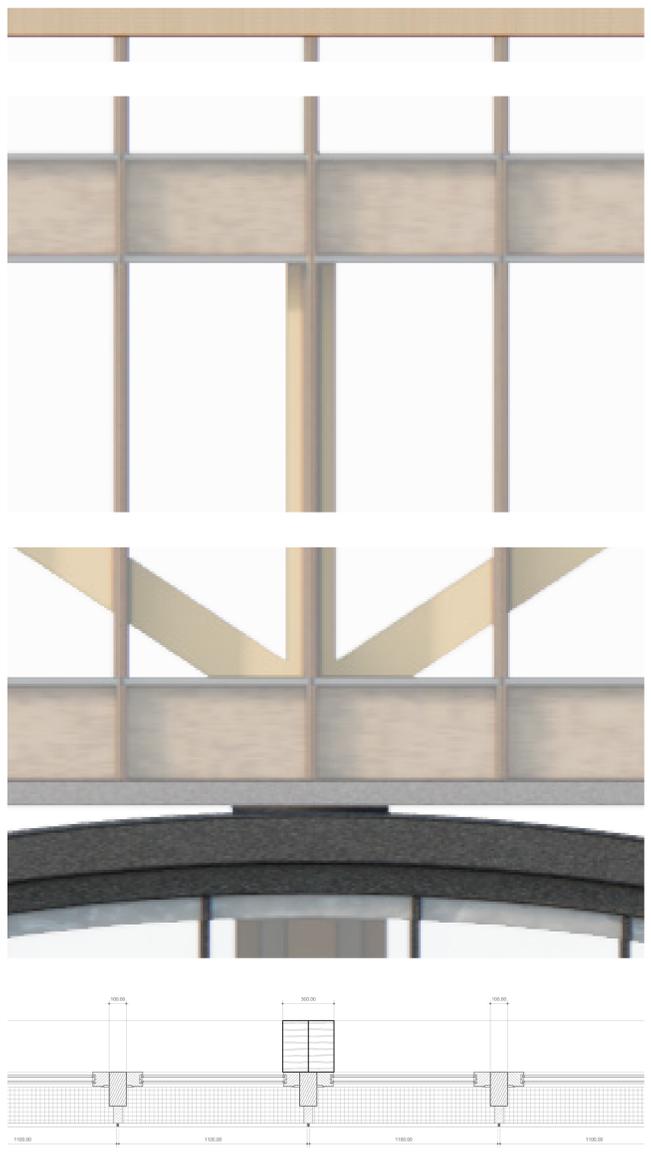
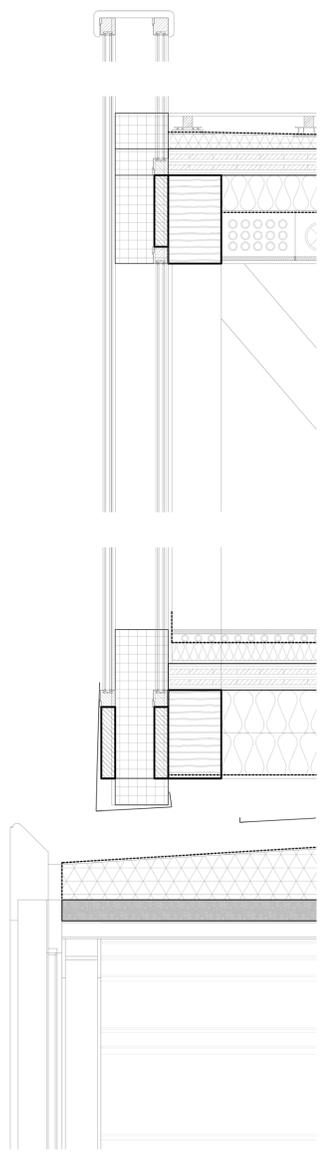
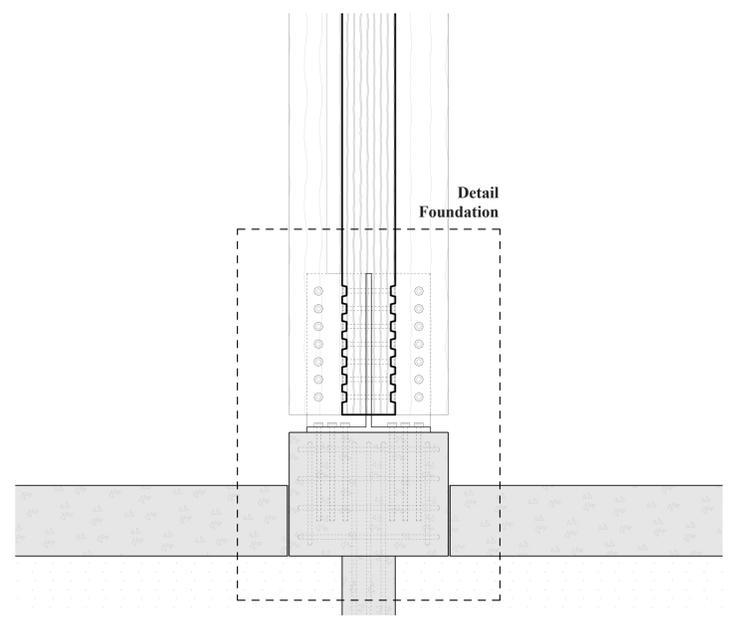
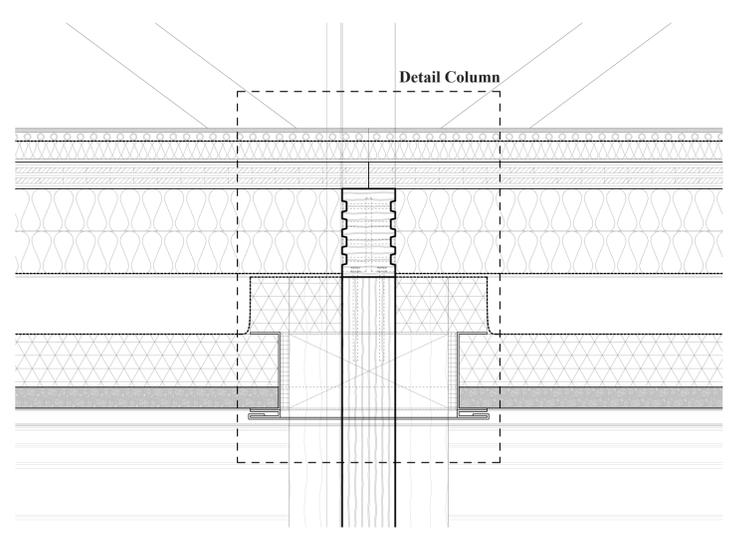
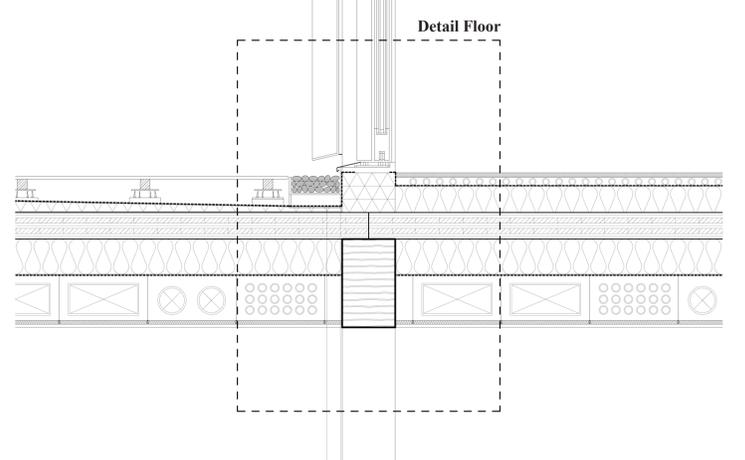
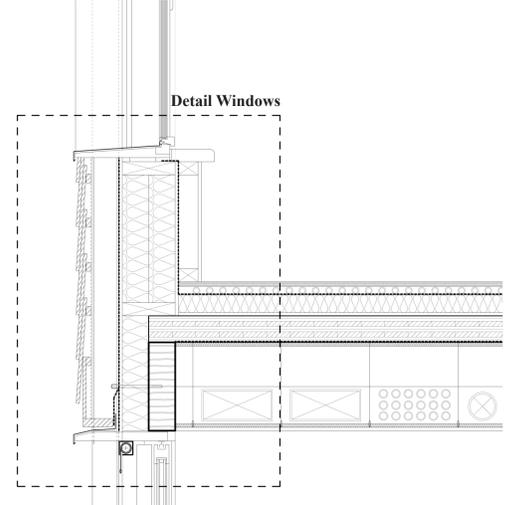
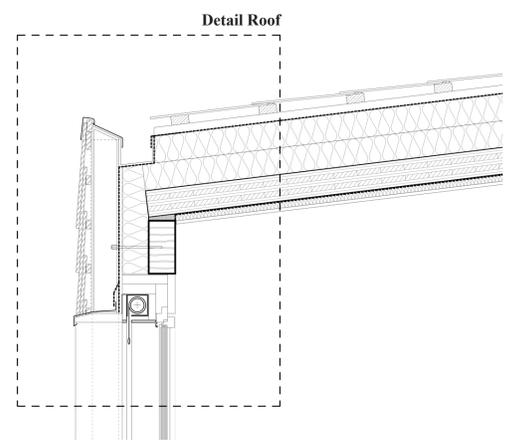
4 Exchange of water/energy (shops/restaurants)



## STRUCTURE



Fragment II - Elevation 1:20

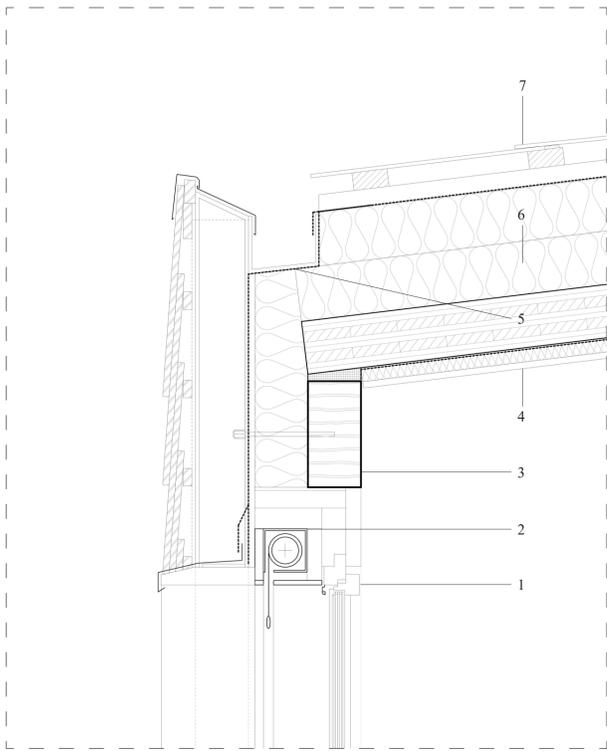


Fragment I - Section 1:20

Fragment I - Elevation 1:20

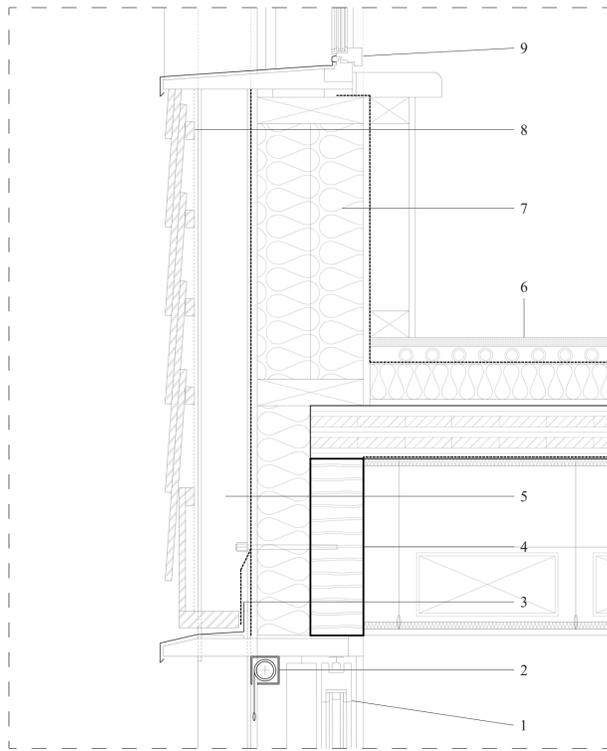
Fragment II - Section 1:20

Justin Vermeulen - Poster 6 - Facade



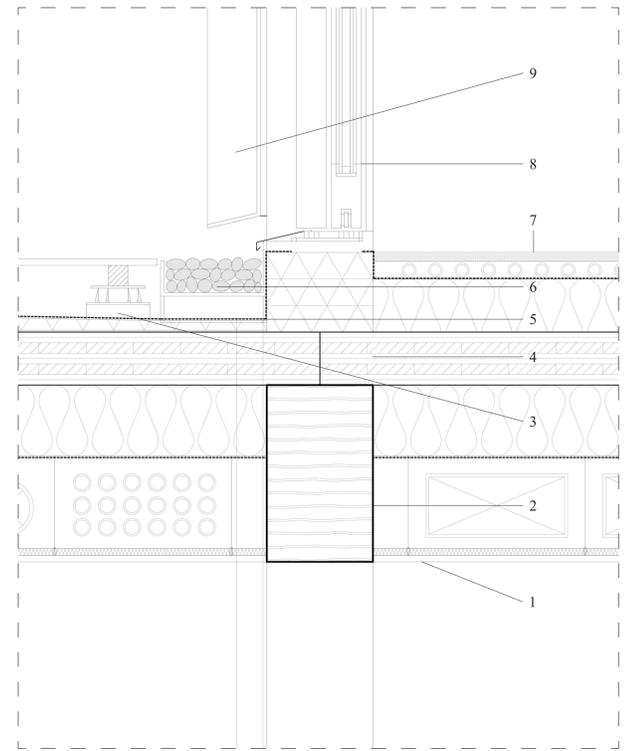
**Detail Roof - Scale 1:10**

1. Insulation glazing in larch frame: 2x 4 mm laminated safety glass + 16 mm cavity + 2x 4 mm laminated safety glass,  $U_g = 1.0 \text{ W/m}^2\text{K}$
2. Ritscreen, electric retractable exterior window screening to mitigate solar gain in summer
3. Glue laminated beam, height 500mm and width 150mm, rainpipe locally bolted to structure, CLT roof panel bolted to beam
4. Ceiling panels perforated fir 18mm, 50mm felt acoustic layer, PE damp proof membrane
5. Water resistant PE membrane, galvanized steel, hidden gutter 300mm connected to vertical rainpipe
6. Stora Enso CLT 150mm, Pavatherm pressure-resistant insulation 300mm ( $R_d = 7.86 \text{ m}^2\text{K/W}$ )
7. Glass monocryalline 7.5 mm, buttens 50 mm, counter buttens 50 mm, bitumen roof finish, water resistant PE membrane



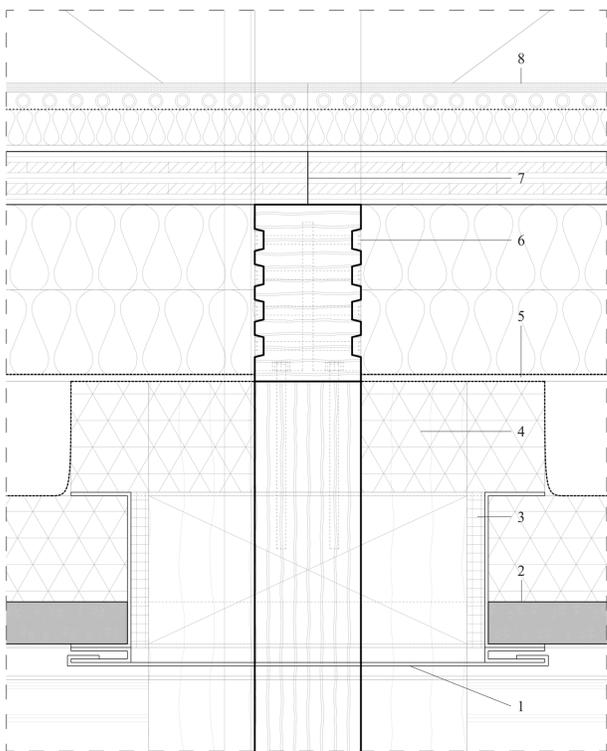
**Detail Windows - Scale 1:10**

1. Sliding door: insulation glazing in larch frame: 2x 4 mm lam. safety glass + 16 mm cavity + 2x 4 mm lam. safety glass,  $U_g = 1.0 \text{ W/m}^2\text{K}$
2. Ritscreen, electric retractable exterior window screening to mitigate solar gain in summer
3. Sheet zinc cornice, pre-weathered for water drainage, water resistant PE membrane covering
4. Glue laminated beam, height 500mm and width 150mm, rainpipe locally bolted to structure
5. Facade cavity for passive airflow and cooling, hidden galvanized steel rain pipe, depth 150mm and width 300mm, attached to structural beam
6. Flooring finish, floor heating in 100mm concrete screed, PE damp proof membrane, Thermoflex wood fiber insulation 100mm
7. Water resistant PE membrane, WBP wooden plate 18mm, Isovlas natural bio-based flax insulation 300mm ( $R_d = 7.86 \text{ m}^2\text{K/W}$ ), multiplex 18mm
8. Larch shingles split 2-layer length 600 mm, Support buttens 25 mm, vertical spacer buttens 160 mm, PE membrane, WBP wooden plate 18mm
9. Insulation glazing in larch frame: 2x 4 mm laminated safety glass + 16 mm cavity + 2x 4 mm laminated safety glass,  $U_g = 1.0 \text{ W/m}^2\text{K}$



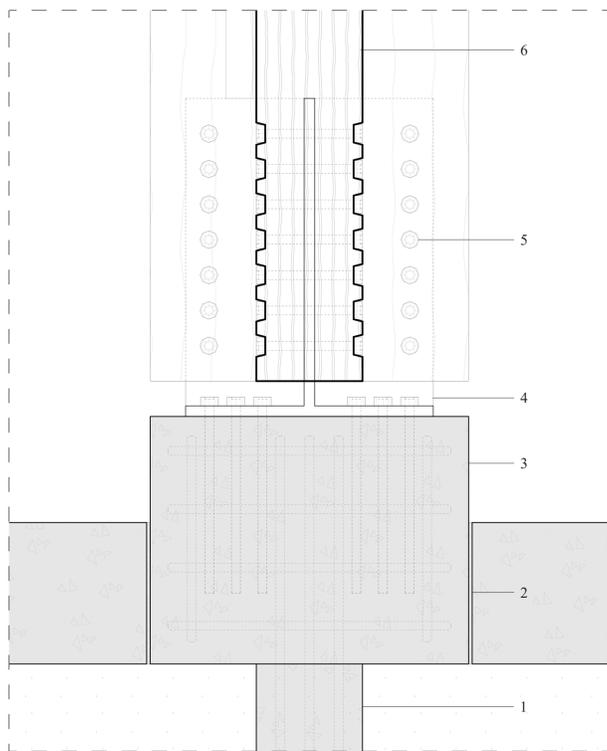
**Detail Floor - Scale 1:10**

1. Climate ceiling 300mm, perforated fir 18mm, 50mm felt acoustic layer
2. Glue laminated beam 500mm, width 300mm
3. Dural patio support system, larch beam 500mm, larch terrace planks 18mm
4. Stora Enso CLT flooring system (5 layers) 150mm, width 2.75m and length 10m, non-visual quality (NVI)
5. Pavatherm pressure-resistant insulation 300mm ( $R_d = 7.86 \text{ m}^2\text{K/W}$ ), water resistant foil, bitumen roof covering
6. Drain stone linear element for gravel finishing; stainless steel drainage system with pebbles for water filtration
7. Flooring finish, floor heating in 100mm concrete screed, PE damp proof membrane, Thermoflex wood fiber insulation 100mm
8. Sliding door: insulation glazing in larch frame: 2x 4 mm lam. safety glass + 16 mm cavity + 2x 4 mm lam. safety glass,  $U_g = 1.0 \text{ W/m}^2\text{K}$
9. Exposed galvanized steel rain pipe, depth 150mm and width 300mm, attached to structural column



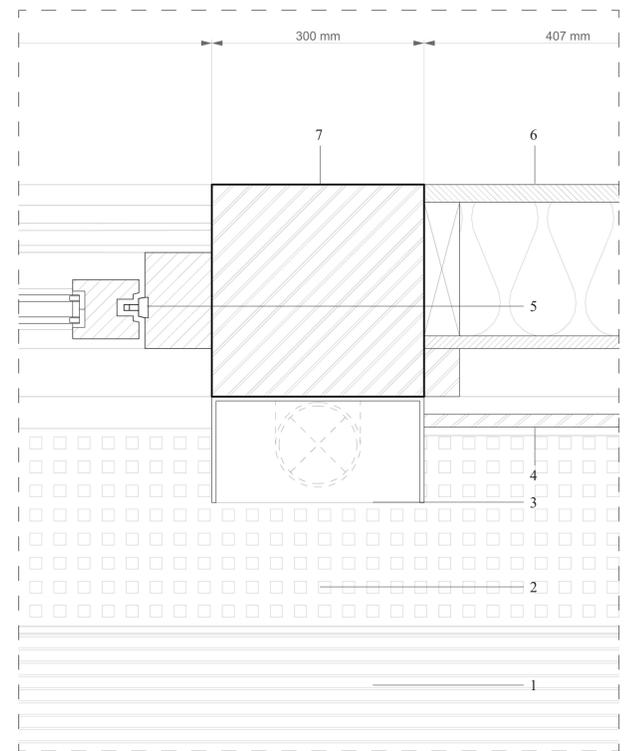
**Detail Column - Scale 1:10**

1. Folded steel 2mm, attached to perforated concrete roof, central cut out for column intersection.
2. Existing concrete roof, waffle panels 150mm, situated on existing galvanized steel beams IPE 180.
3. Tempex EPS incision separation strip 50mm, for coplum positioning and concealment of the side cavities.
4. Pavatherm pressure-resistant insulation 300mm ( $R_d = 7.86 \text{ m}^2\text{K/W}$ ), water resistant foil, bitumen roof covering
5. WBP wooden plate 18mm, Isovlas, water resistant foil, flax insulation 500mm ( $R_d = 13.12 \text{ m}^2\text{K/W}$ )
6. Adjustable galvanized stainless steel column base with insert leaf 300x450mm, galvanized steel class 4.8 Bolts 300mm.
7. Stora Enso CLT flooring system (5 layers) 150mm, width 2.75m and length 10m, non-visual quality (NVI), fire protection board 18mm
8. Flooring finish, floor heating in 100mm concrete screed, PE damp proof membrane, Thermoflex wood fiber insulation 100mm



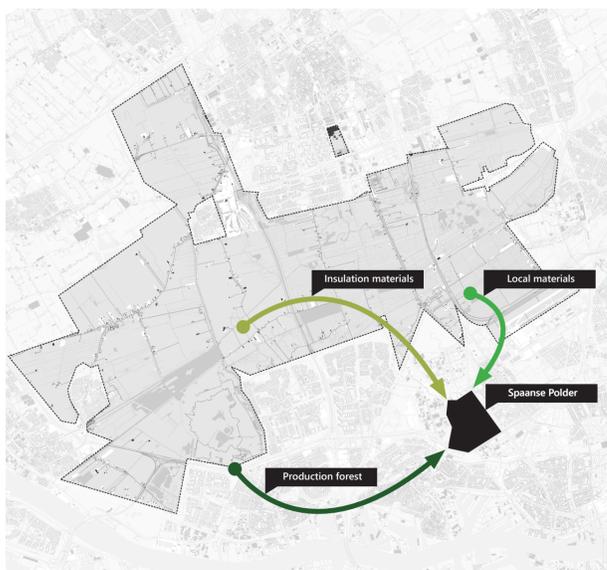
**Detail Foundation - Scale 1:10**

1. Vroom prefab reinforced concrete foundation 26 meters, 290x290mm, C55 XC2.
2. Existing concrete floors 400mm, Peridam Tempex incision separation strip 5mm.
3. In situ concrete connection with foundation head, interwoven reinforced steel connection.
4. Adjustable galvanized stainless steel column base with insert leaf 700x500mm.
5. Galvanized steel class 4.8 Bolts 300mm, same bolts at the concrete base 500mm.
6. Glue laminated timber column, 900x900mm, 300mm in width, 10 meters in height.



**Horizontal Detail Sliding Door - Scale 1:5**

1. Larch terrace planks 18mm on larch spacer beams (50mm) carried by Dural patio support system
2. Drain stone linear element for gravel finishing; stainless steel drainage system with pebbles for water filtration
3. Exposed galvanized steel rain pipe, depth 150mm and width 300mm, attached to structural column
4. Larch shingles split 2-layer length 600 mm, Support buttens 25 mm, vertical spacer buttens 160 mm, PE membrane, WBP wooden plate 18mm
5. Sliding door: insulation glazing in larch frame: 2x 4 mm lam. safety glass + 16 mm cavity + 2x 4 mm lam. safety glass,  $U_g = 1.0 \text{ W/m}^2\text{K}$
6. Multiplex 18mm, Isovlas natural bio-based flax insulation 300mm ( $R_d = 7.86 \text{ m}^2\text{K/W}$ ), Water resistant PE membrane
7. Glue laminated column 300 x 300mm, height 3050mm, exterior sealing with



**Material ambitions: Re-use existing (building) & use local bio-based resources \***

- Light structural beams/columns:** Pine or poplar trees that can grow locally.
- Heavy beams & floors:** CLT & Glulam from locally sourced pine/spruce trees.
- Facade:** Durable larch spacers, frames and shingles, locally grown/sourced.
- Insulation:** Flax insulation, woodfibre insulation, hemp & cattail (optional).
- Interior:** Multiplex (made from pine/spruce/fir) or pine wood finishes.

<b>Light structural beams/columns</b>		<ol style="list-style-type: none"> <li>1. Spruce or poplar wooden beams (Gadero)</li> <li>2. Galvanized steel connection points/insert leaves (when needed)</li> <li>3. Wooden connections with minimal use and visibility of steel</li> </ol>
<b>Heavy beams &amp; floorsystems</b>		<ol style="list-style-type: none"> <li>1. Glue Laminated beams (Stora Enso - various sizes)</li> <li>2. Cross Laminated timber (Stora Enso - 150mm 5 layers)</li> <li>3. Galvanized steel connection points/insert leaves</li> </ol>
<b>Facade exterior materials</b>		<ol style="list-style-type: none"> <li>1. Larch wood for exterior use: Spacers, windowframes, plating</li> <li>2. Larch shingles with cavity behind it for passive cooling</li> <li>3. Galvanized metal (exposed) rainpipe, zinc windowsill</li> </ol>
<b>Insulation material products</b>		<ol style="list-style-type: none"> <li>1. Woodfibre insulation boards (Pavatherm - pressure resistant)</li> <li>2. Flax insulation material in the walls (Isovlas)</li> <li>3. Hemp insulation material (Isohemp) - optional</li> </ol>
<b>Interior finishes products</b>		<ol style="list-style-type: none"> <li>1. Multiplex materials as a wall finish or</li> <li>2. Pine wood for wall/floor/ceiling finish</li> </ol>

