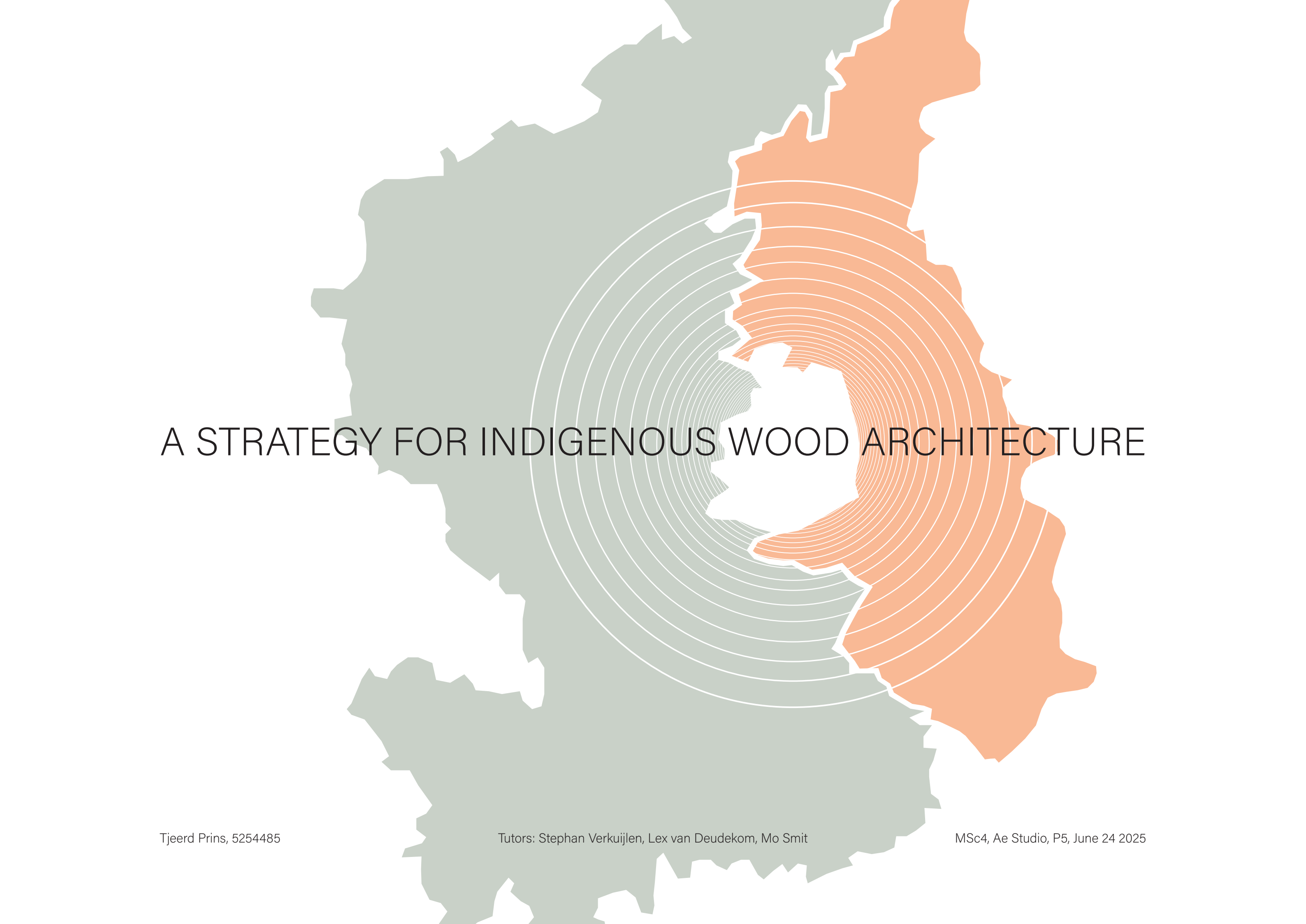


The background features a large, abstract graphic. It consists of two main organic shapes: a light green one on the left and an orange one on the right. Overlaid on these is a series of concentric white circles that are centered on a white, irregular shape in the middle. The circles are more densely packed on the orange side and more spread out on the green side.

# A STRATEGY FOR INDIGENOUS WOOD ARCHITECTURE

# content

problem

vision

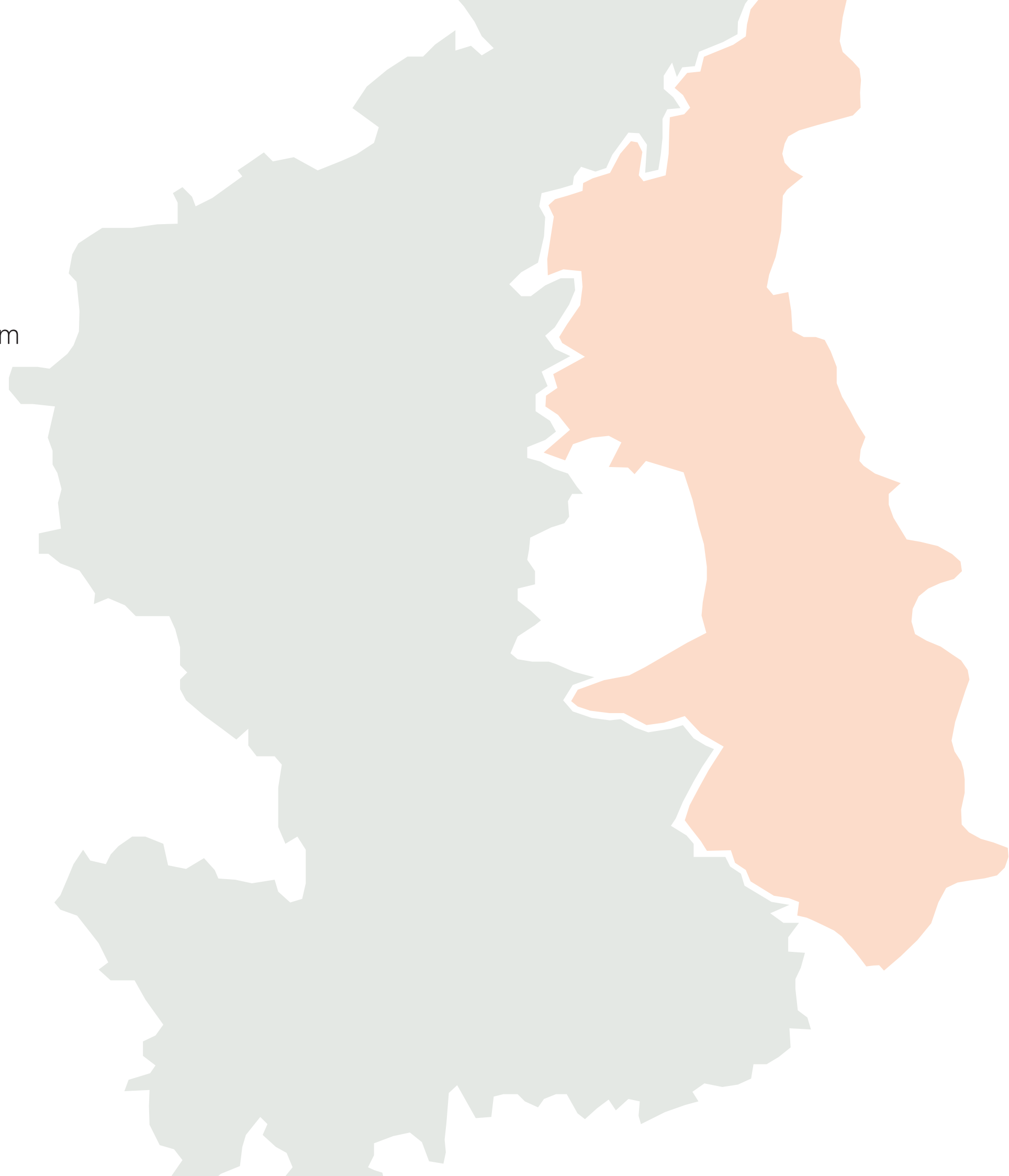
ecosystem to building system

architectural tectonics

dimensions

temporality

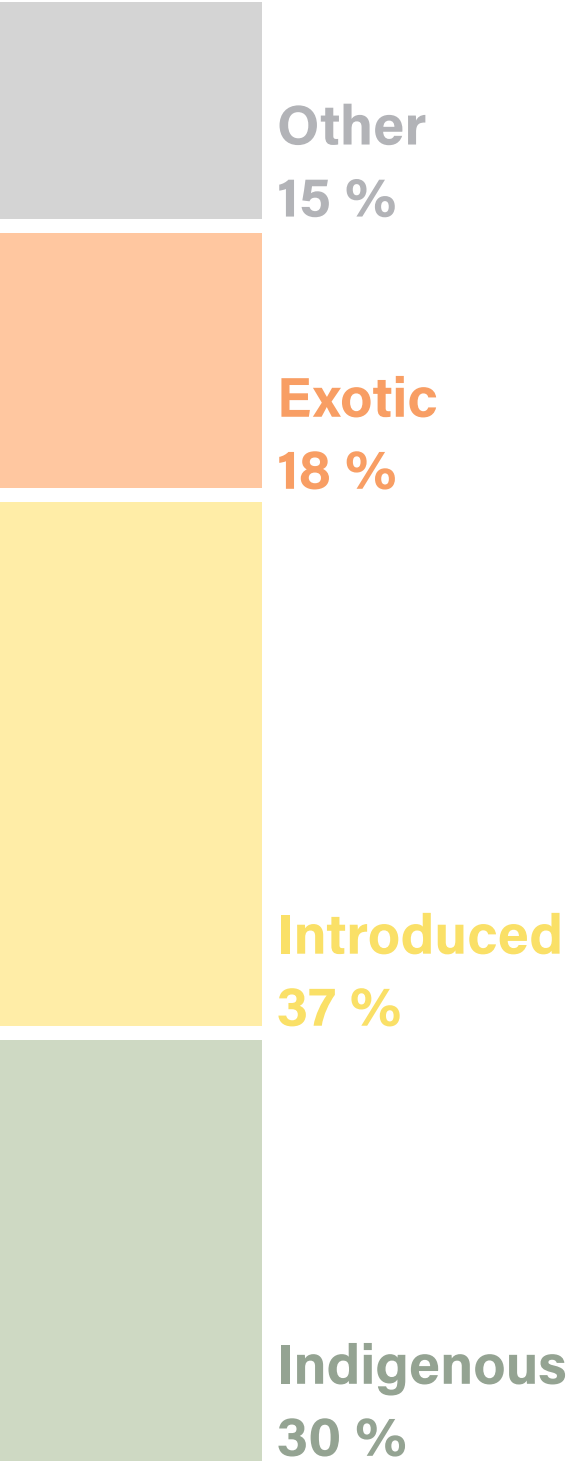
public proximity



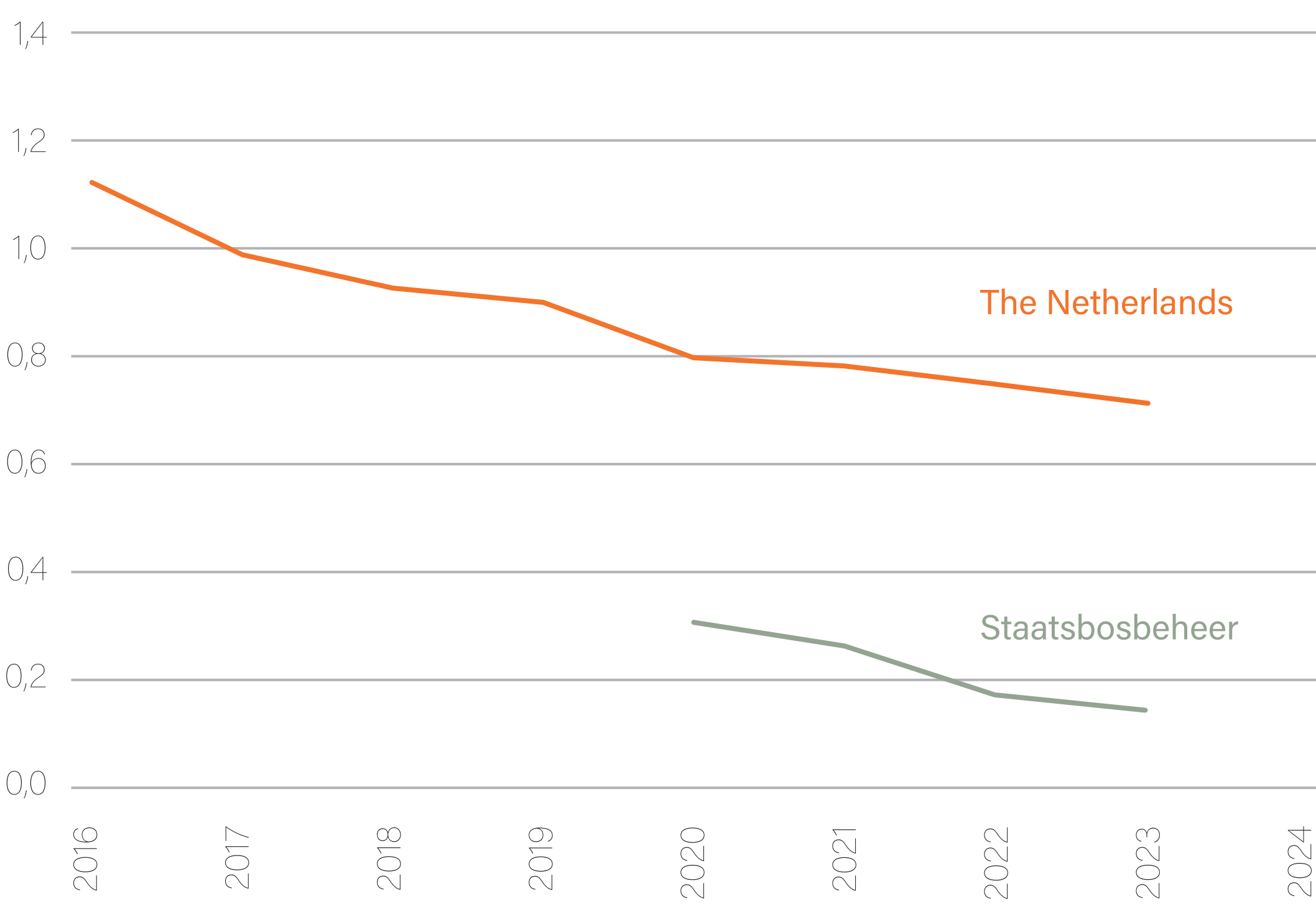


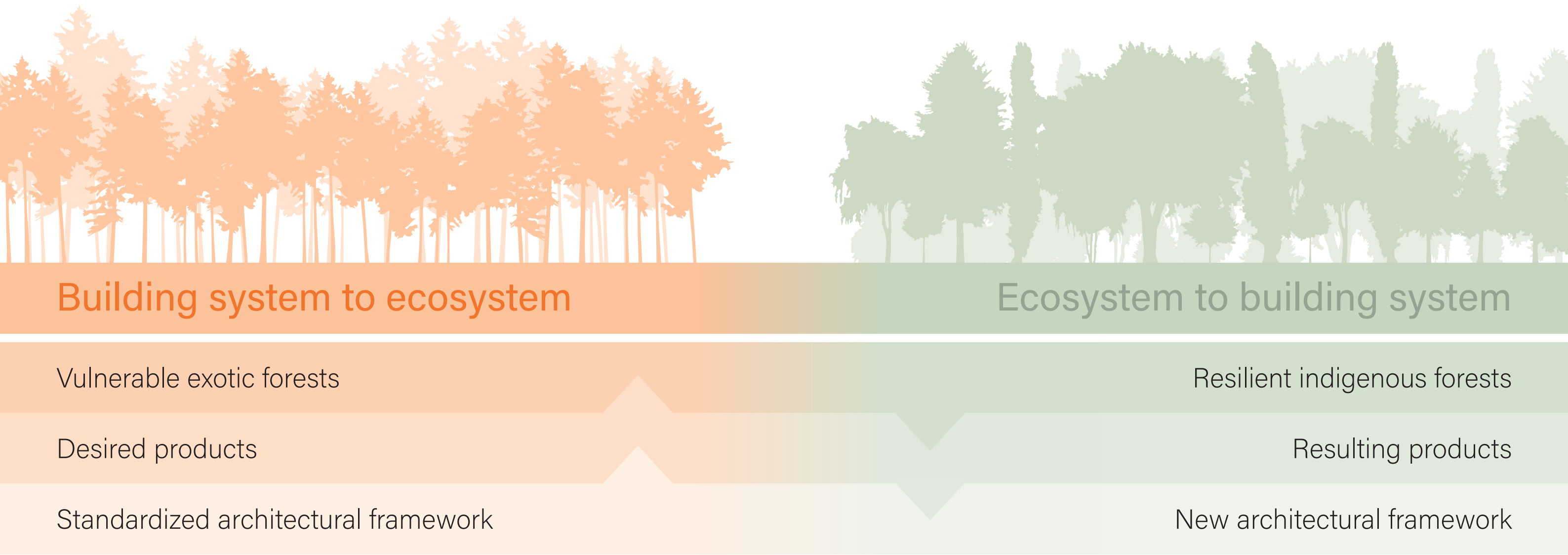
# problem

Tree origin [%]

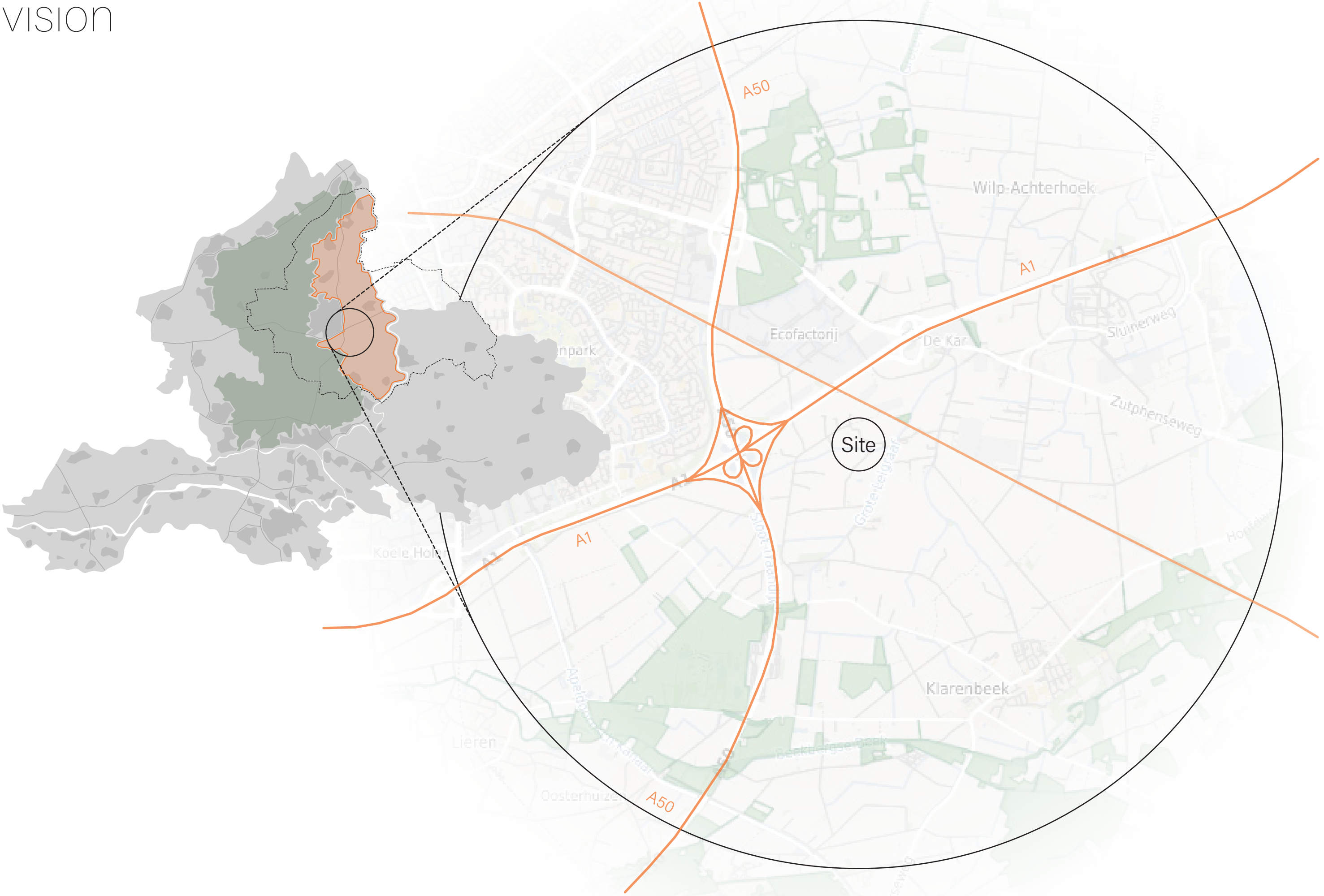


Dutch wood production [x 1.000.000 m³]





vision



# vision

## ecosystem to building system

- resilient indigenous forests
- local material yield
- new architectural framework

## public proximity

- attracting visitors
- providing activities
- encouraging innovation



# vision

## ecosystem to building system

- resilient indigenous forests
- local material yield
- new architectural framework

## public proximity

- attracting visitors
- providing activities
- encouraging innovation





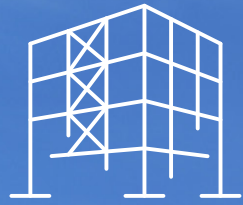
vision



*production  
recreation  
education*



# ecosystem to building system



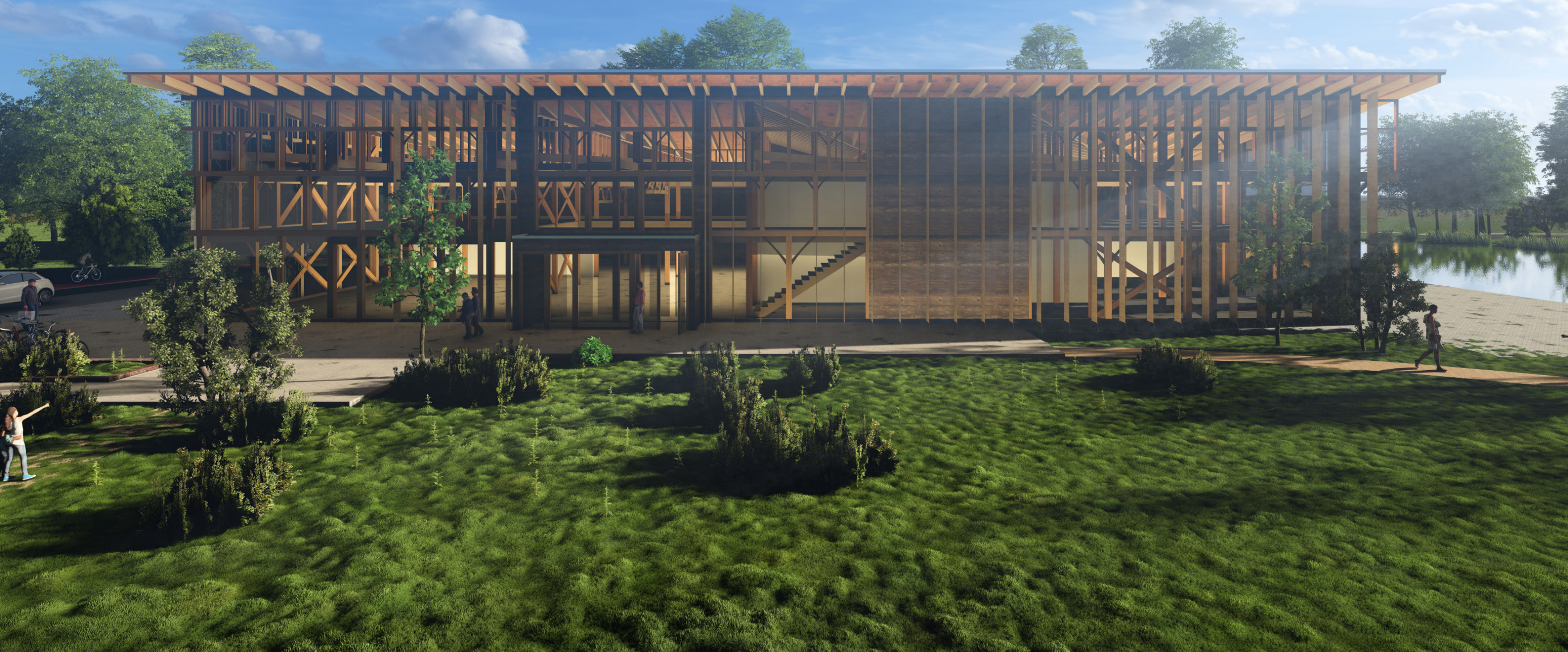
architectural  
tectonics



dimensions

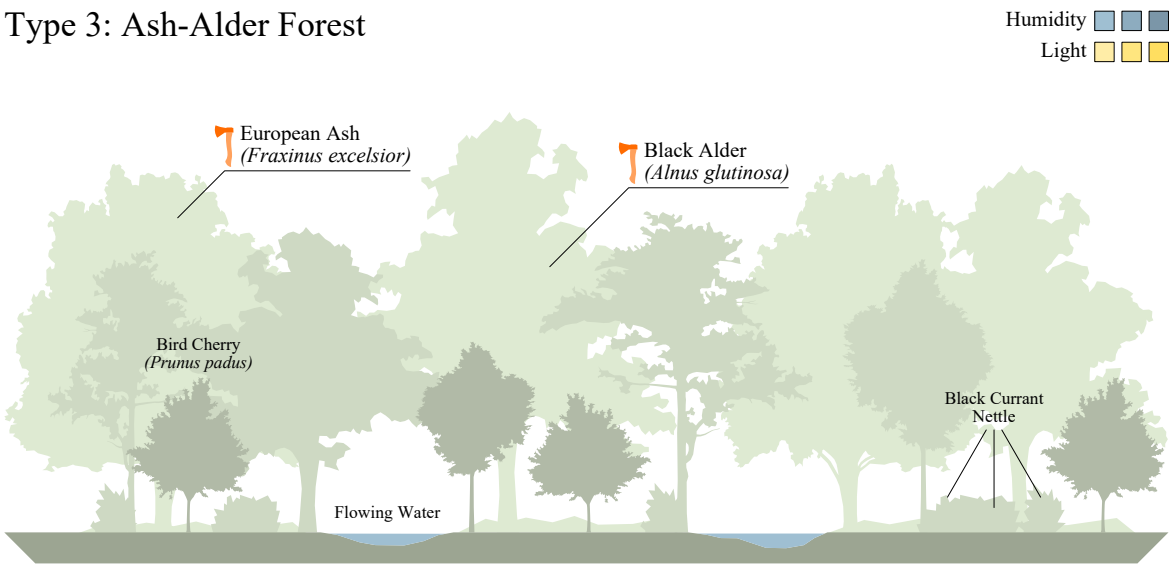
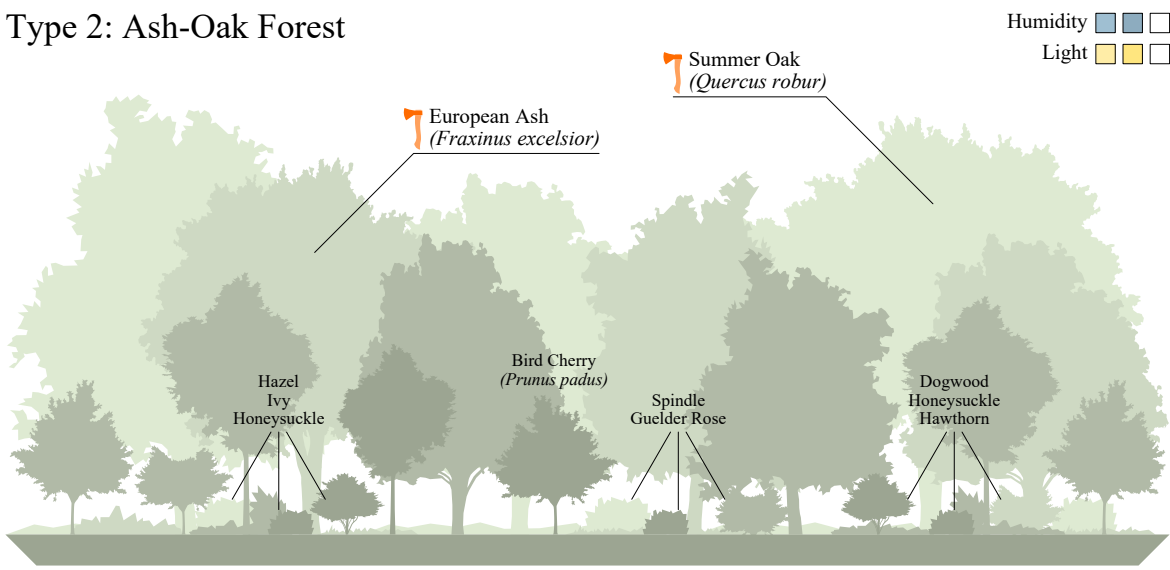
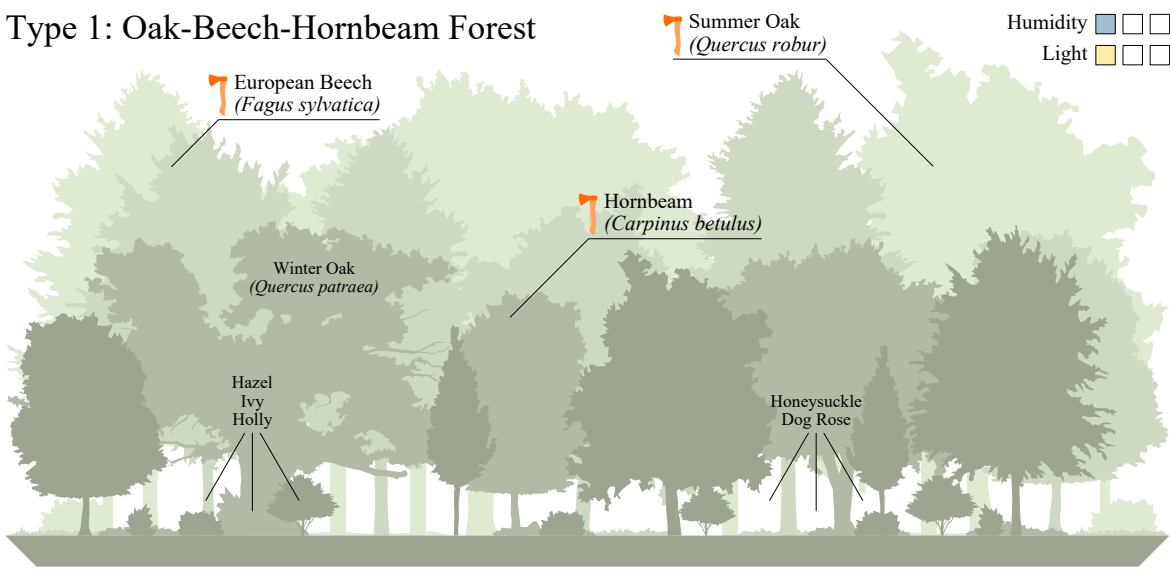


temporality



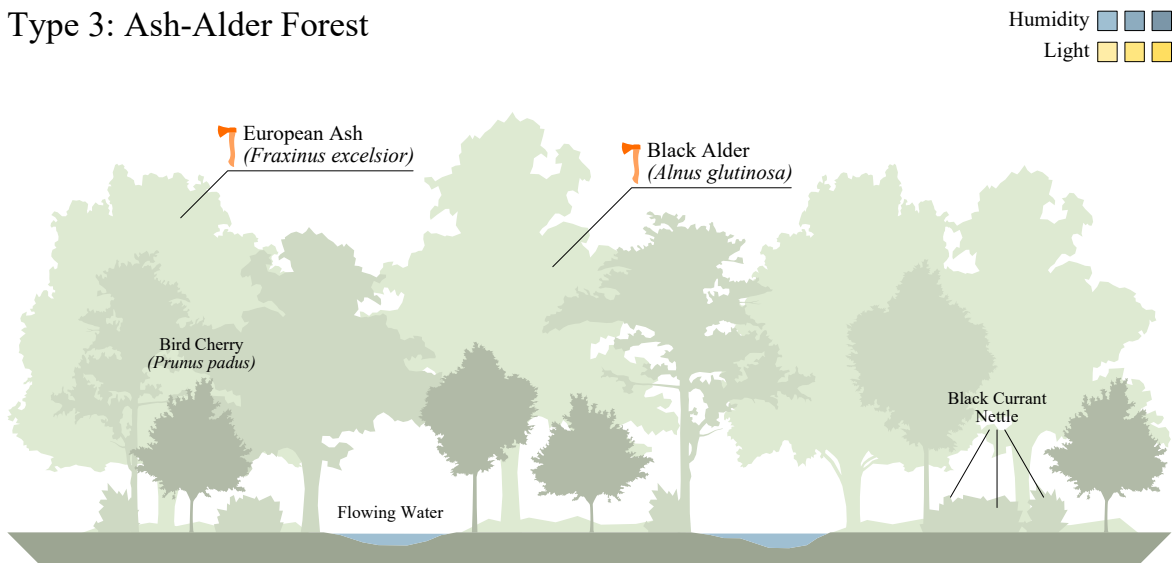
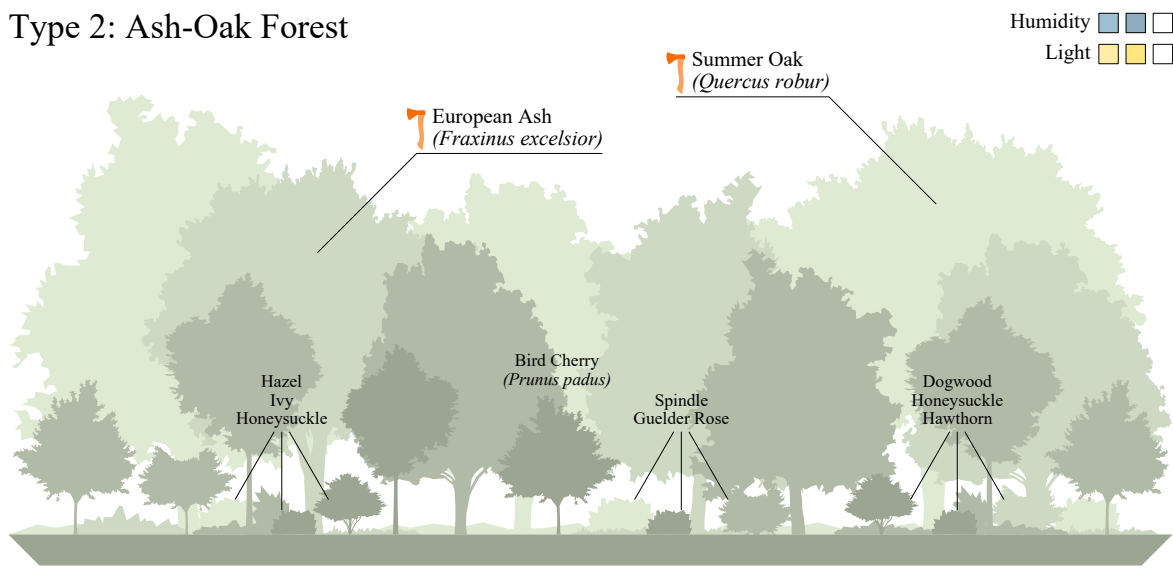
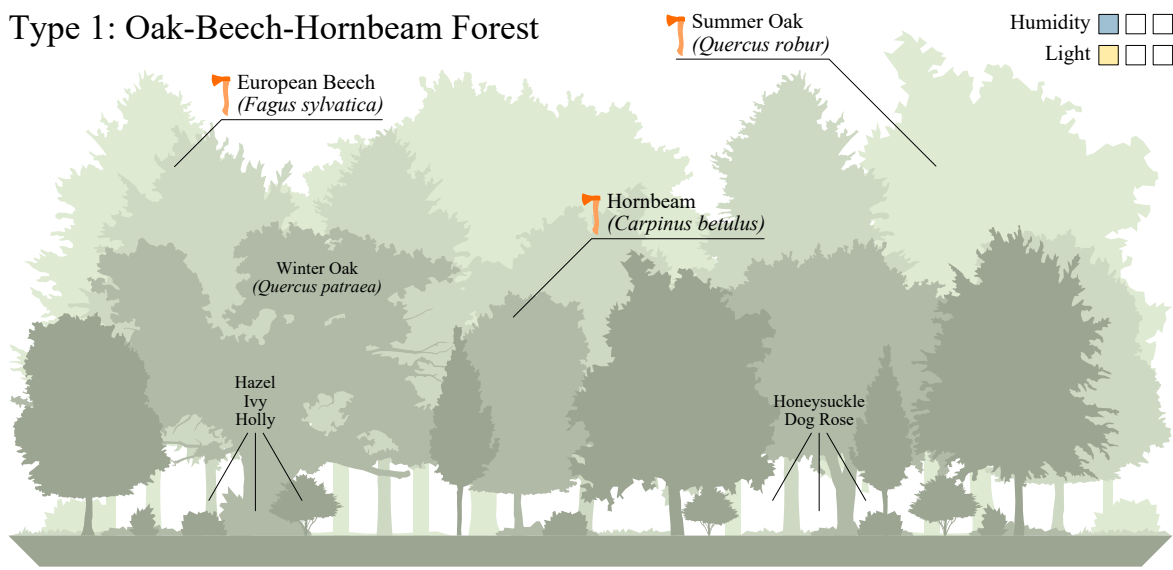


# ecosystem to building system



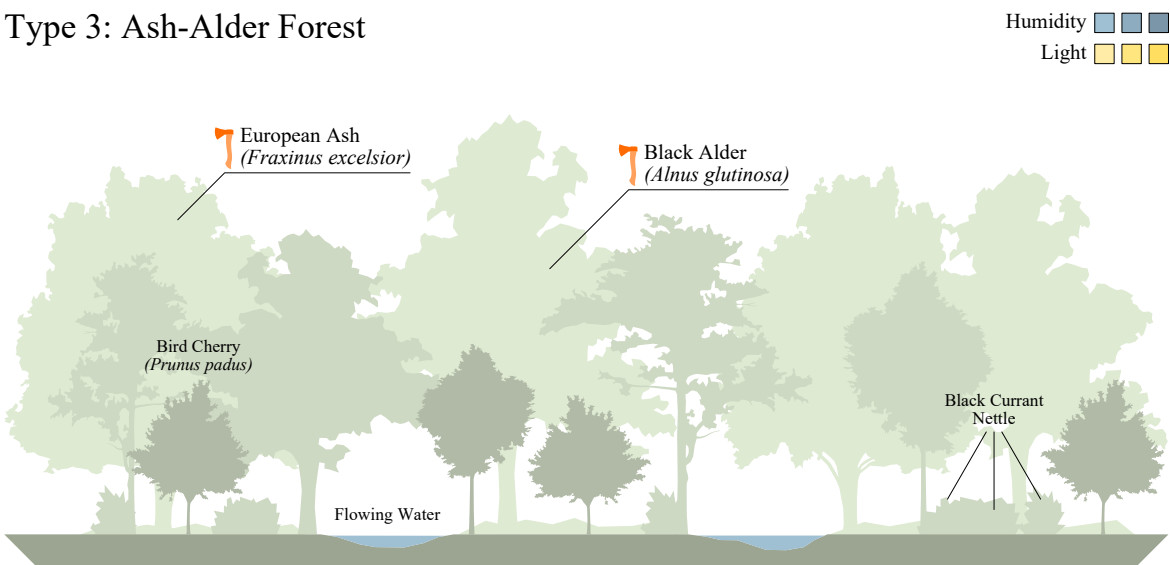
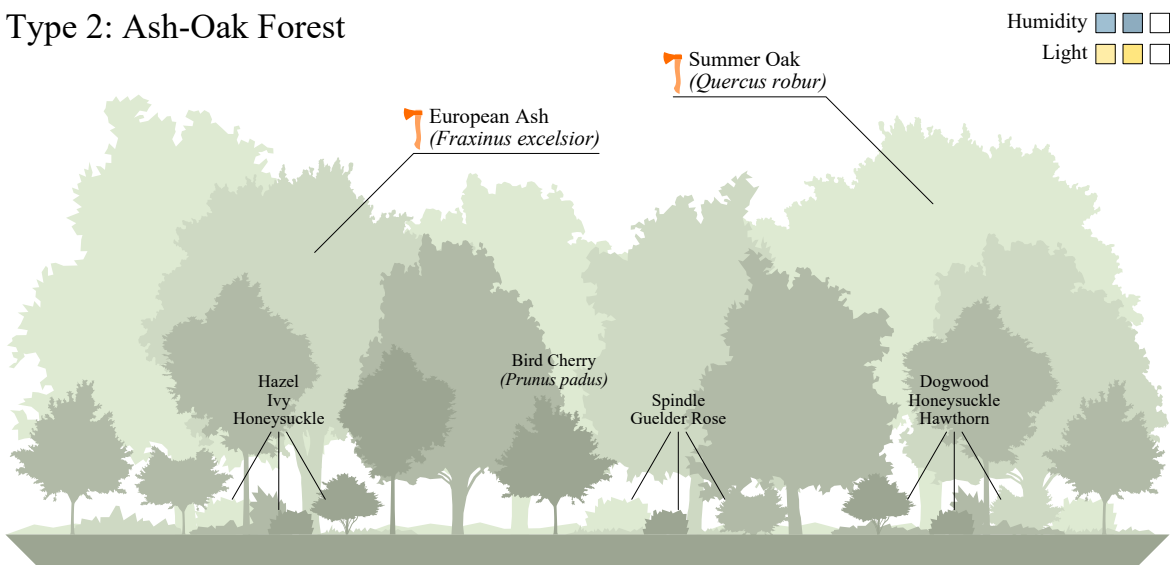
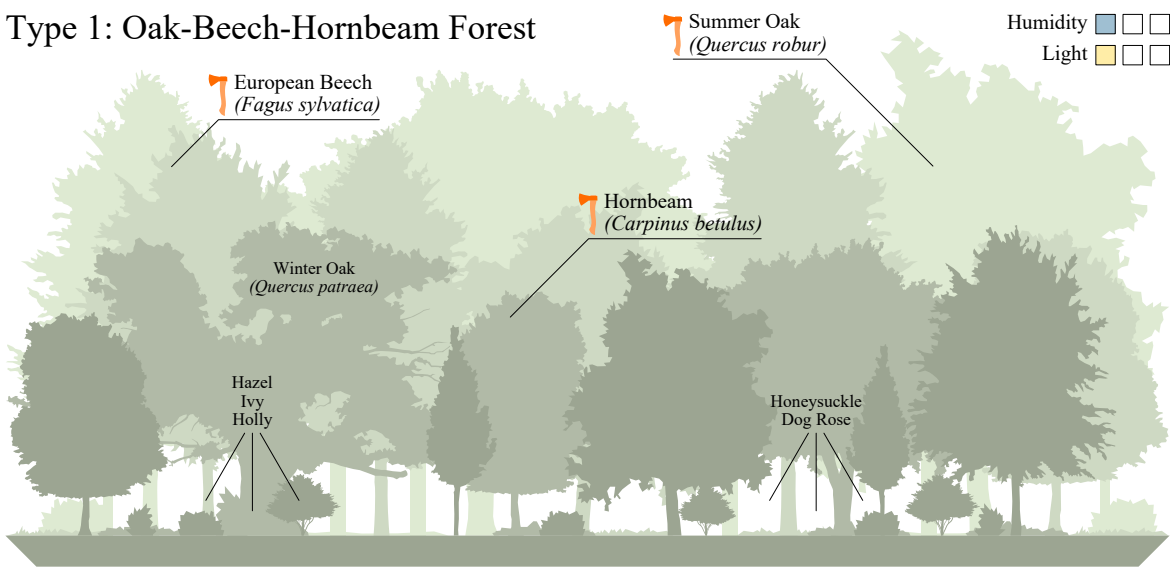


# ecosystem to building system





# ecosystem to building system



Application ranking matrix for five wood types in load-bearing constructions

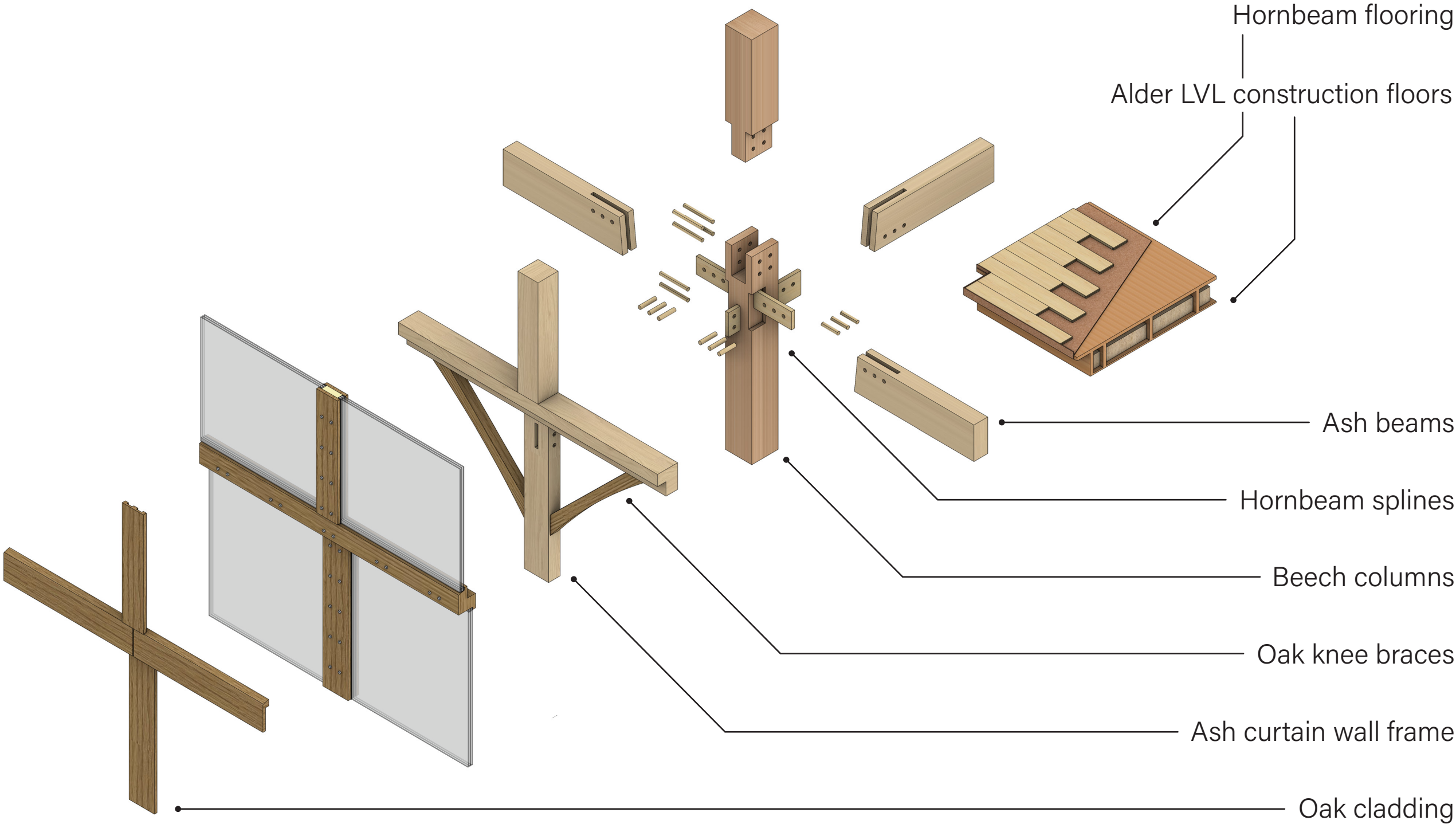
|                             |                     | Black Alder | European Ash   | European Beech   | Hornbeam         | Summer Oak       |
|-----------------------------|---------------------|-------------|----------------|------------------|------------------|------------------|
| Truss construction          | Top chord (rafter)  | B           | G              | G                | M (limited size) | G                |
|                             | Bottom chord (tie)  | M           | G              | G                | M (limited size) | G                |
|                             | Web member (strut)  | B           | G              | G                | E                | G                |
|                             | Web member (tie)    | M           | G              | G                | E                | G                |
|                             | Zero-force members  | G           | G              | G                | G                | G                |
|                             | Nodes, joints, pegs | B           | E              | G (as dowels)    | E                | G                |
| Post & beam constr.         | Posts & columns     | B           | G              | G                | M (limited size) | G                |
|                             | Beams & purlins     | B           | E              | G                | M (limited size) | G                |
|                             | Braces              | B           | G              | G                | M (limited size) | G                |
|                             | Knee braces         | B           | G              | G (universalist) | G                | G (universalist) |
| Platform-frame construction | Sills or Soles      | B           | G (if durable) | B (moisture)     | M (limited size) | E (durability)   |
|                             | Studs (vertical)    | M           | G              | G                | M (limited size) | G                |
|                             | Top plates          | M           | G              | G                | M (limited size) | G                |
|                             | Headers & lintels   | B           | E              | G                | E (short span)   | G                |
|                             | Floor joists        | B           | E              | G                | E (short span)   | G                |
|                             | Rim joists          | M           | G              | G (universalist) | M (limited size) | G (universalist) |
|                             | Sheathing           | E           | G              | G                | G                | G                |
| Misc.                       | Foundation piles    | E           | M              | B (moisture)     | M                | G                |
|                             | Foundation beams    | B           | M              | B (moisture)     | M                | E                |

Note: E = Excellent ; G = Good ; M = Moderate ; B = Bad

The appreciations in the matrix are based on the literature as discussed in the thematic research paper (paragraph 3.4), the comparative analysis of mechanical properties (see appx. C), as well as personal communications with Max Salzberger from Cologne University of Applied Sciences (M. Saltzberger, personal communications, January 7 2025).

ecosystem to building system

architectural tectonics

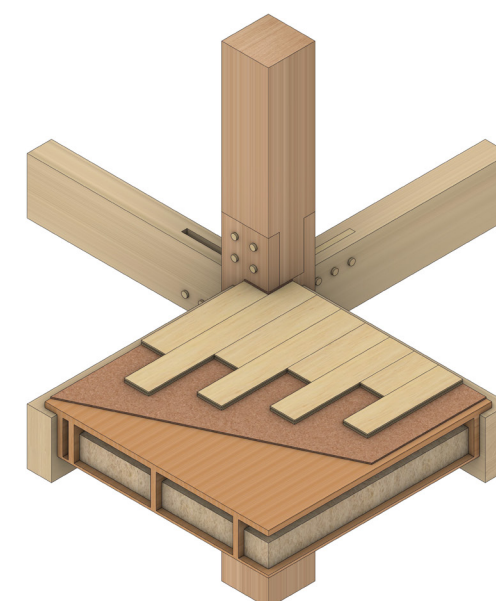
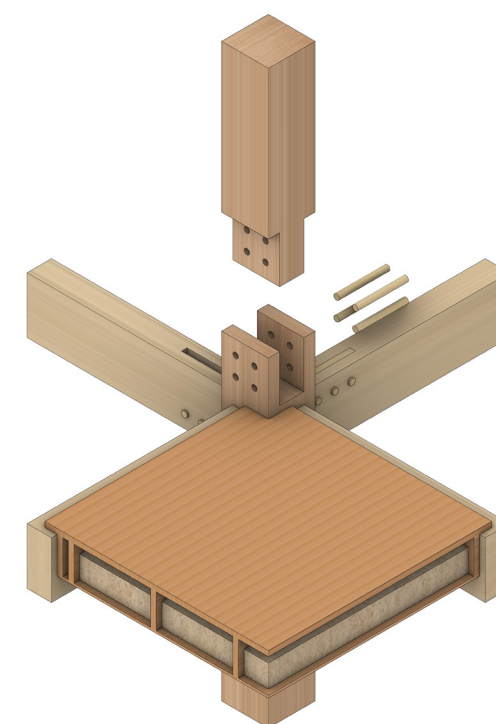
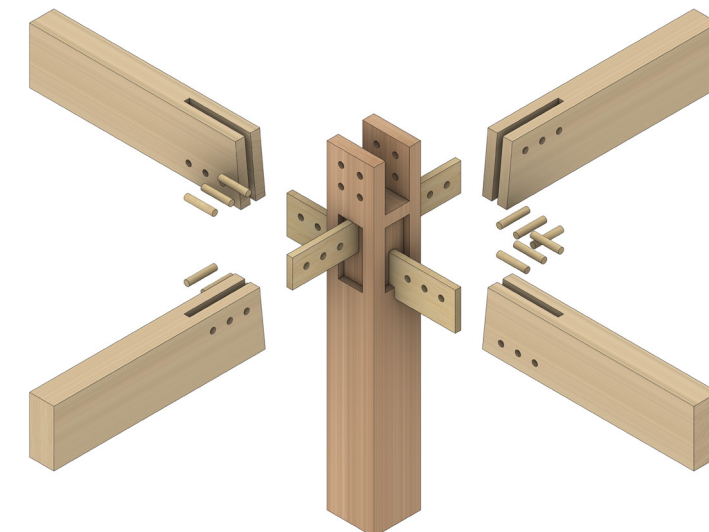
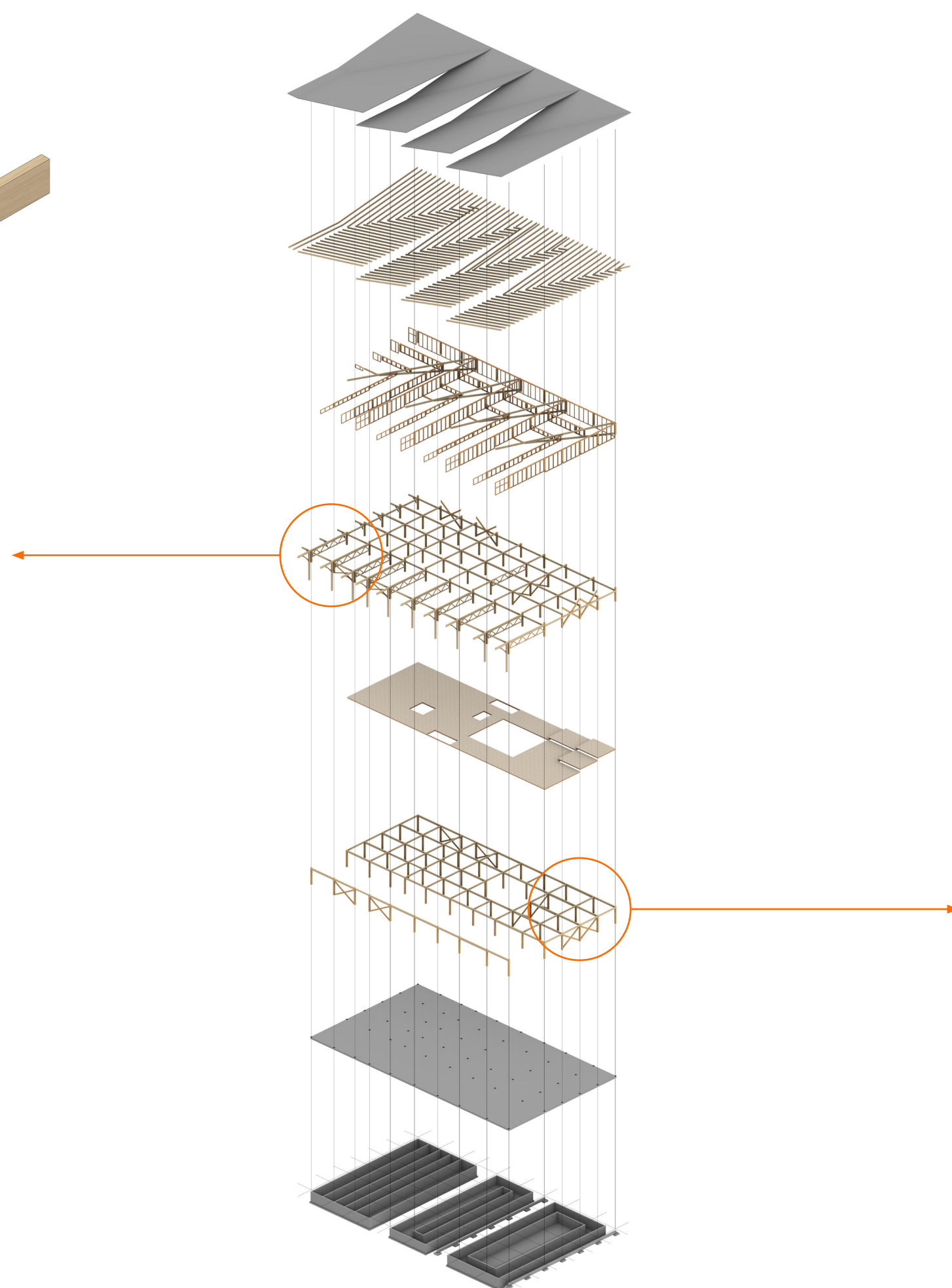
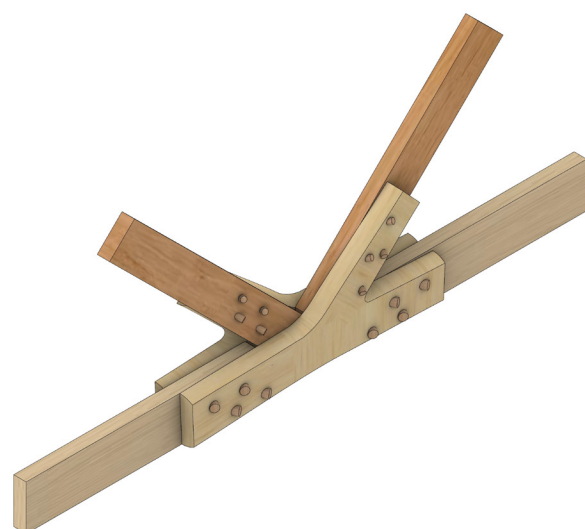
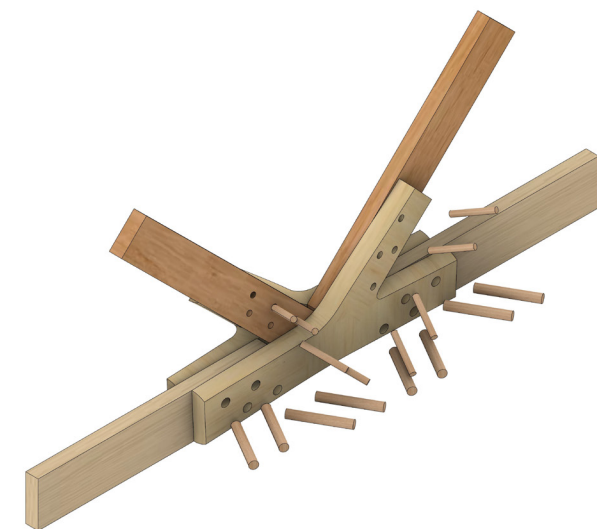
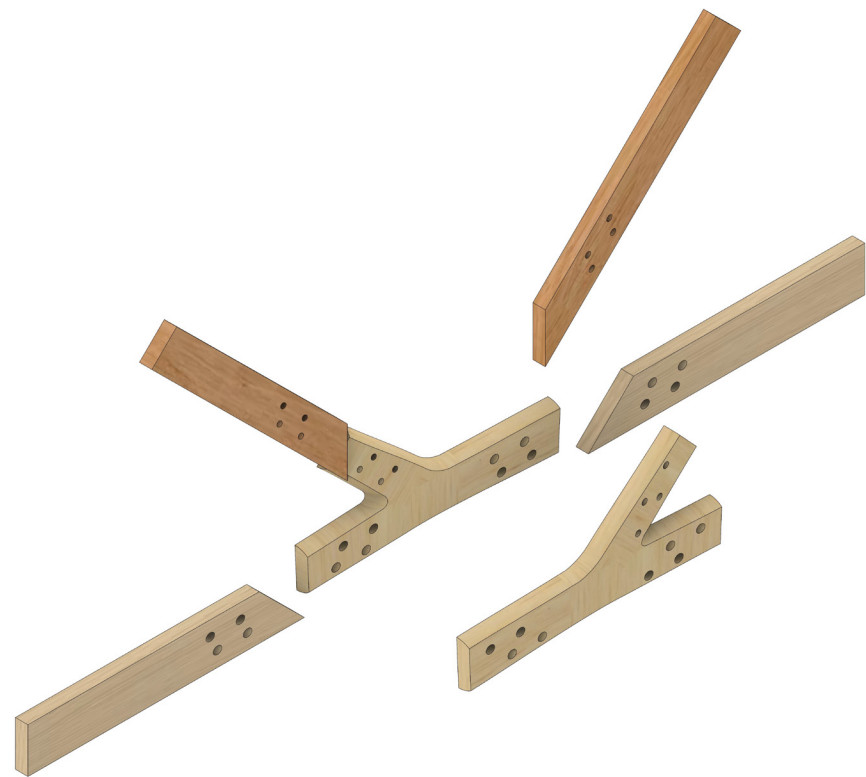




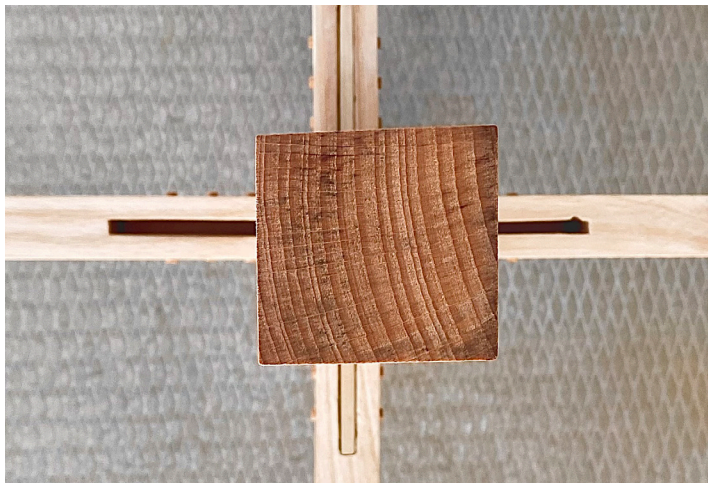
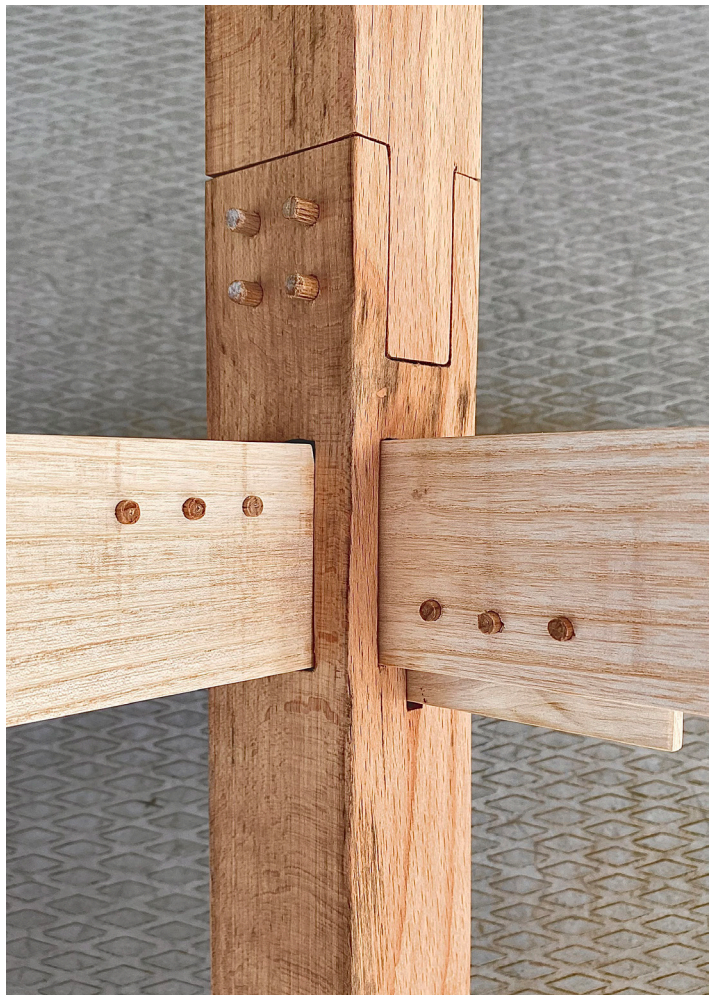


architectural tectonics  
ecosystem to building system













architectural tectonics  
ecosystem to building system

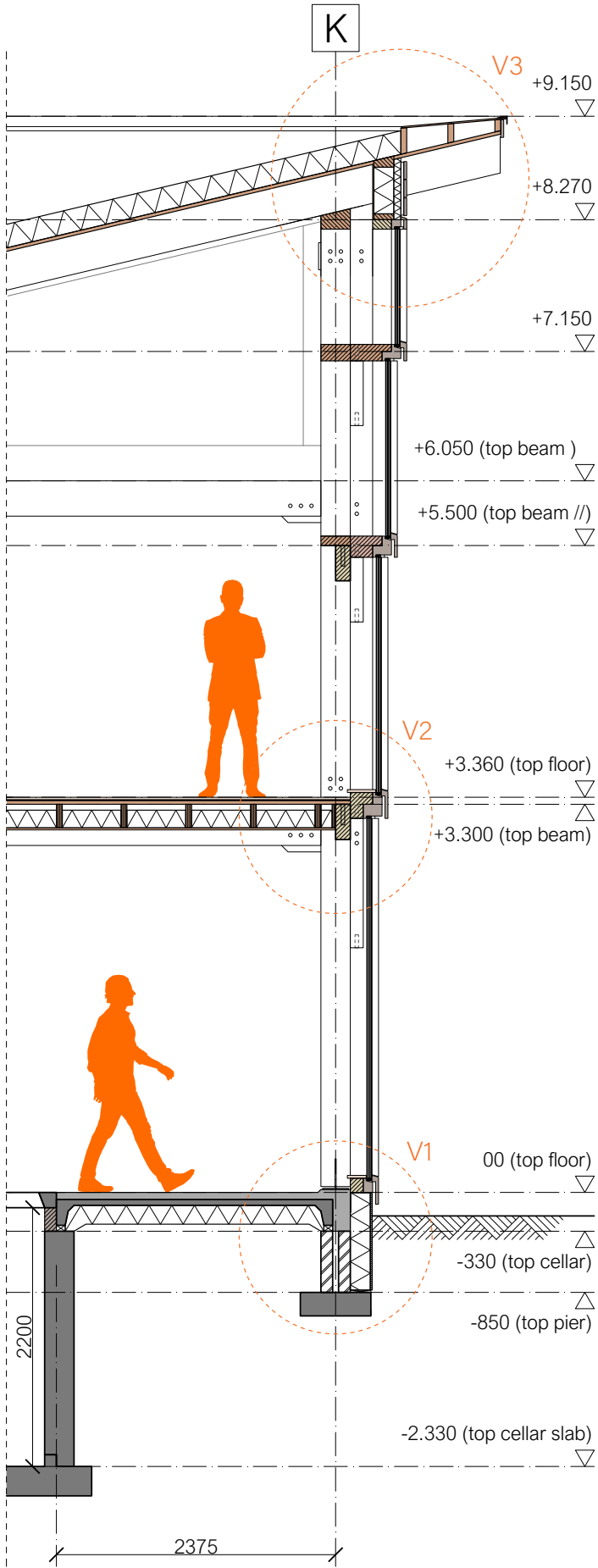
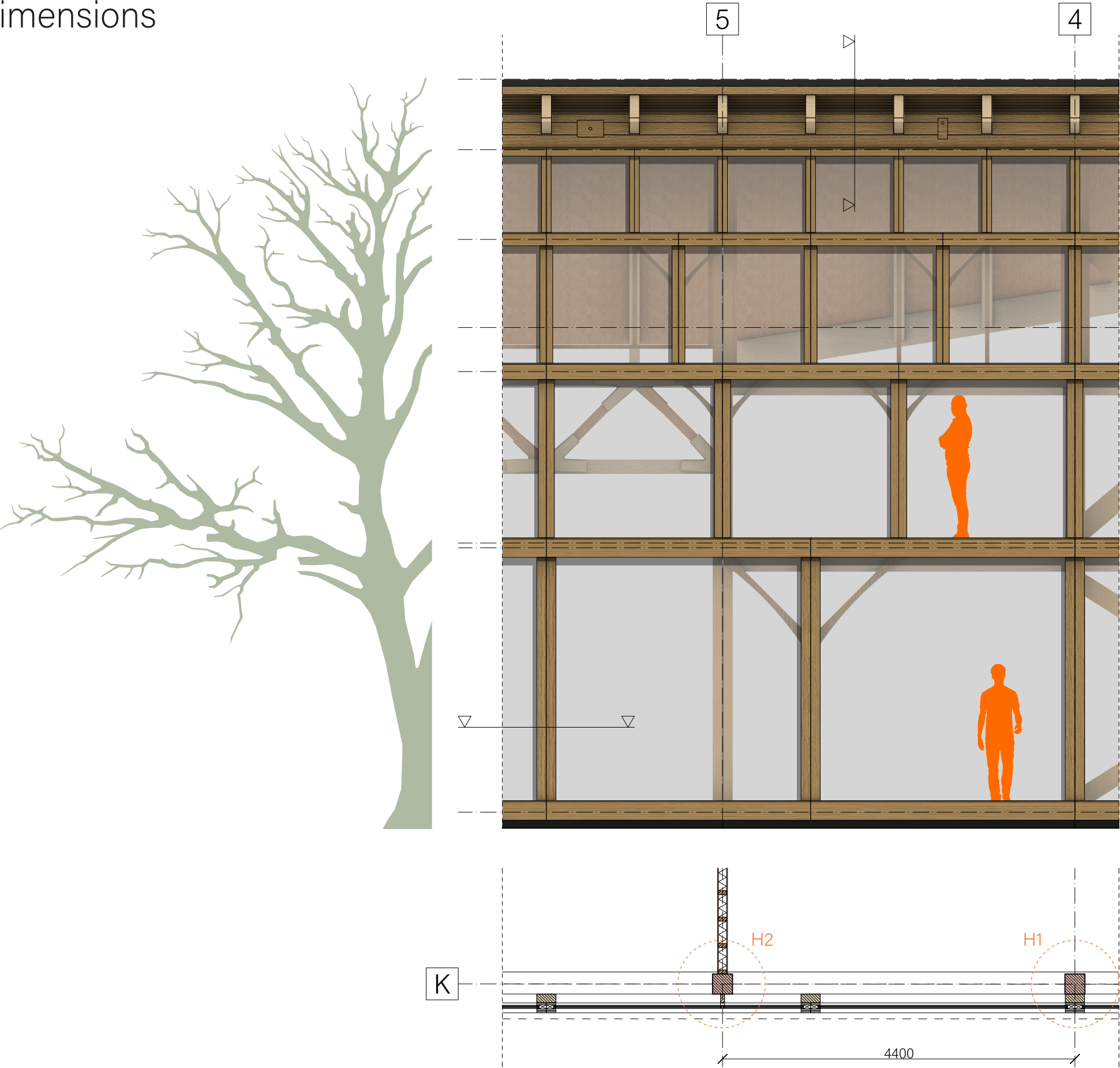


# ecosystem to building system dimensions





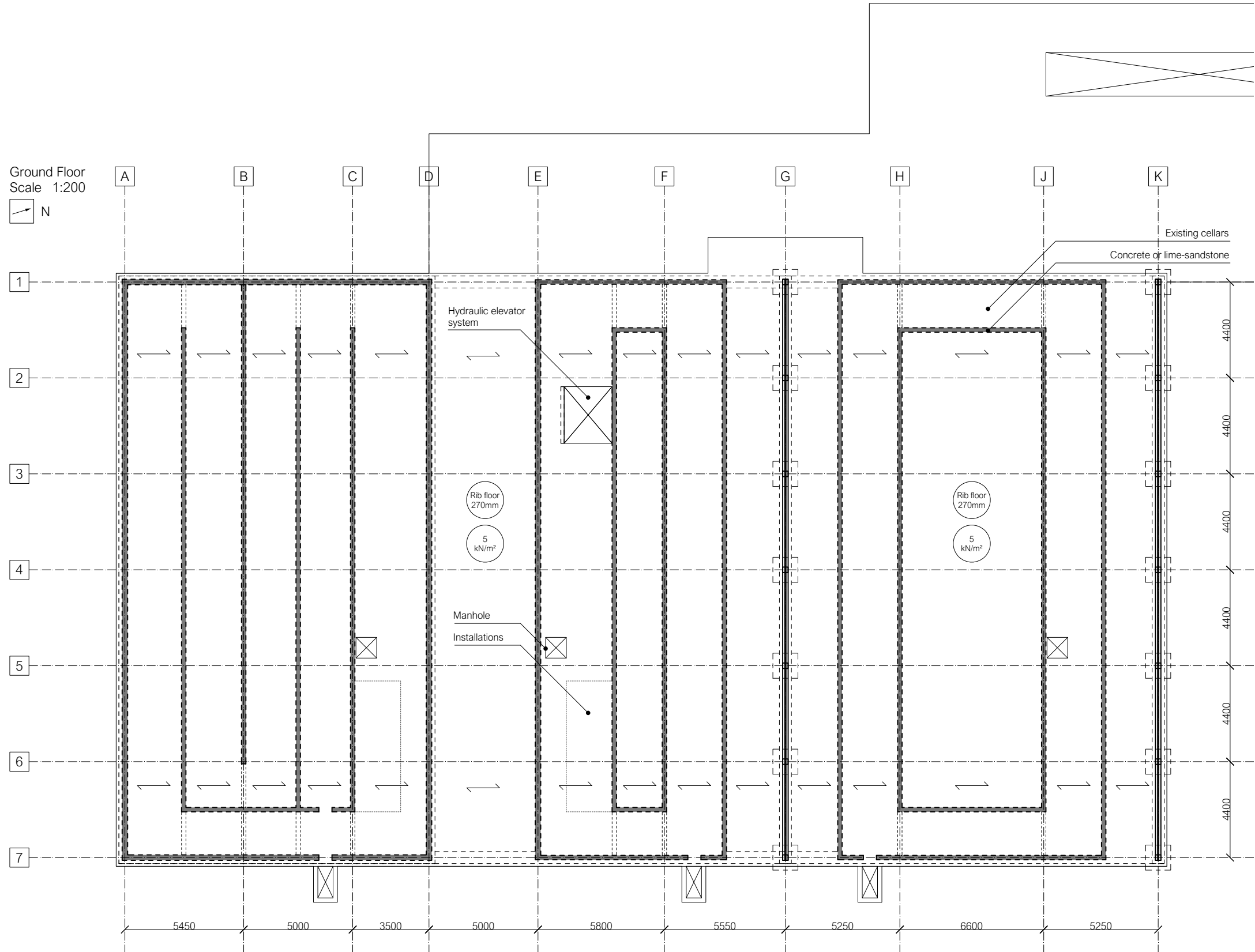
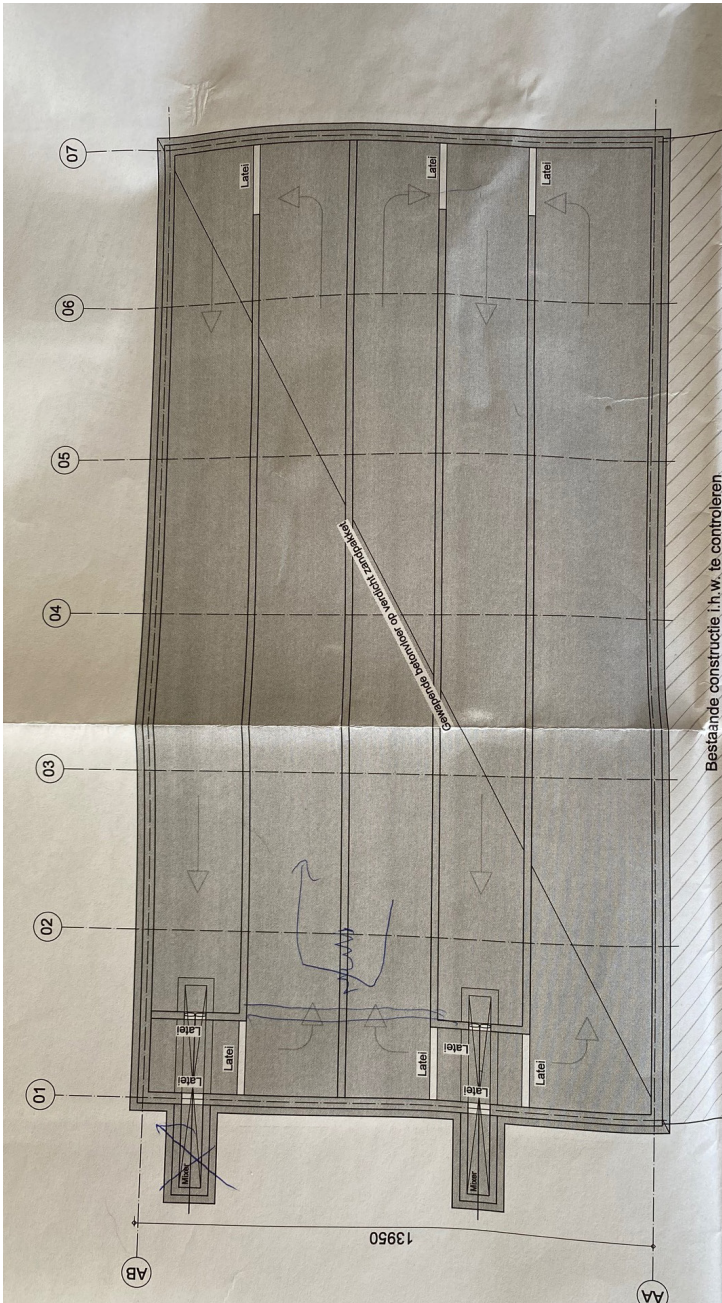
ecosystem to building system  
dimensions





# ecosystem to building system

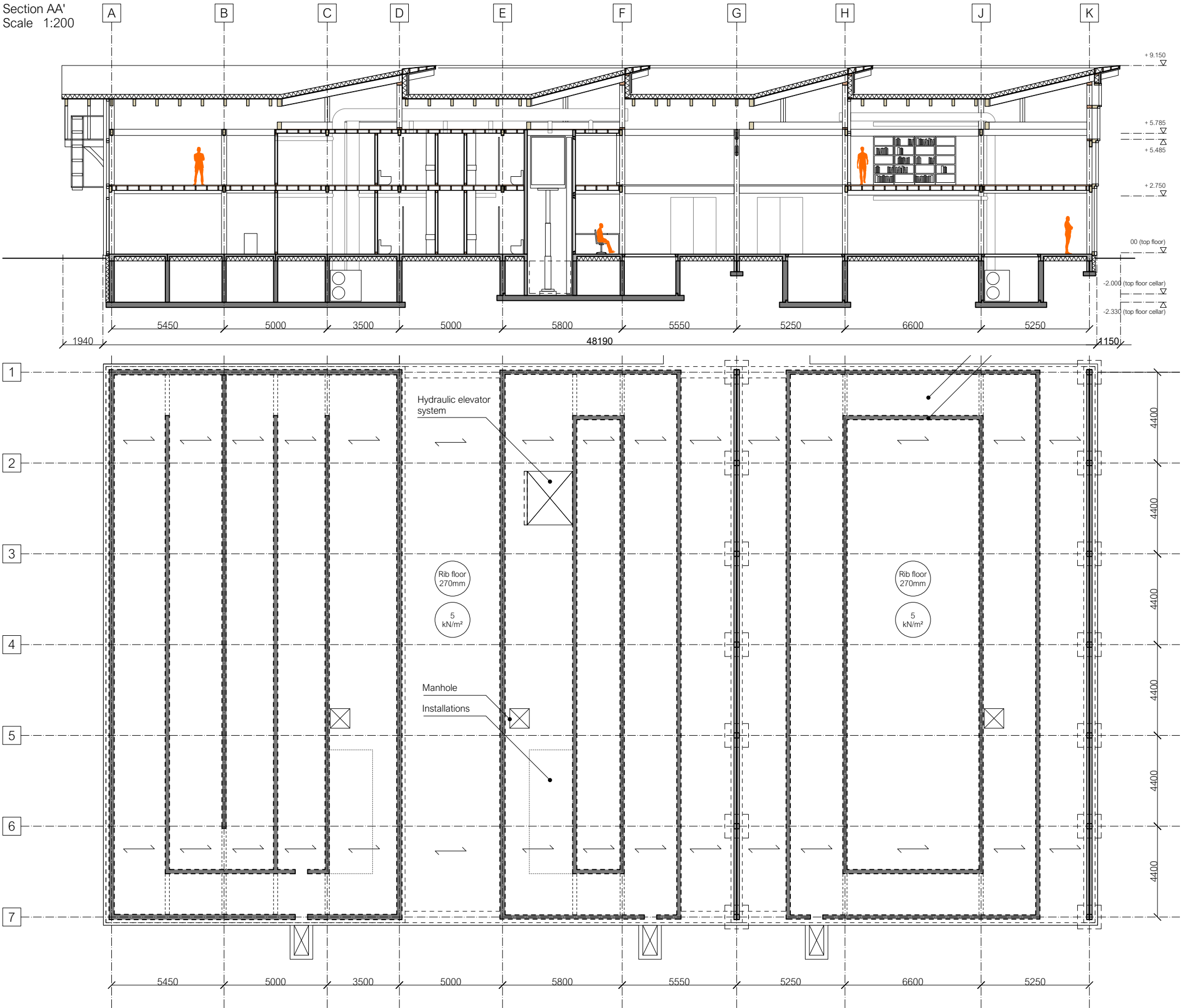
## dimensions





# ecosystem to building system

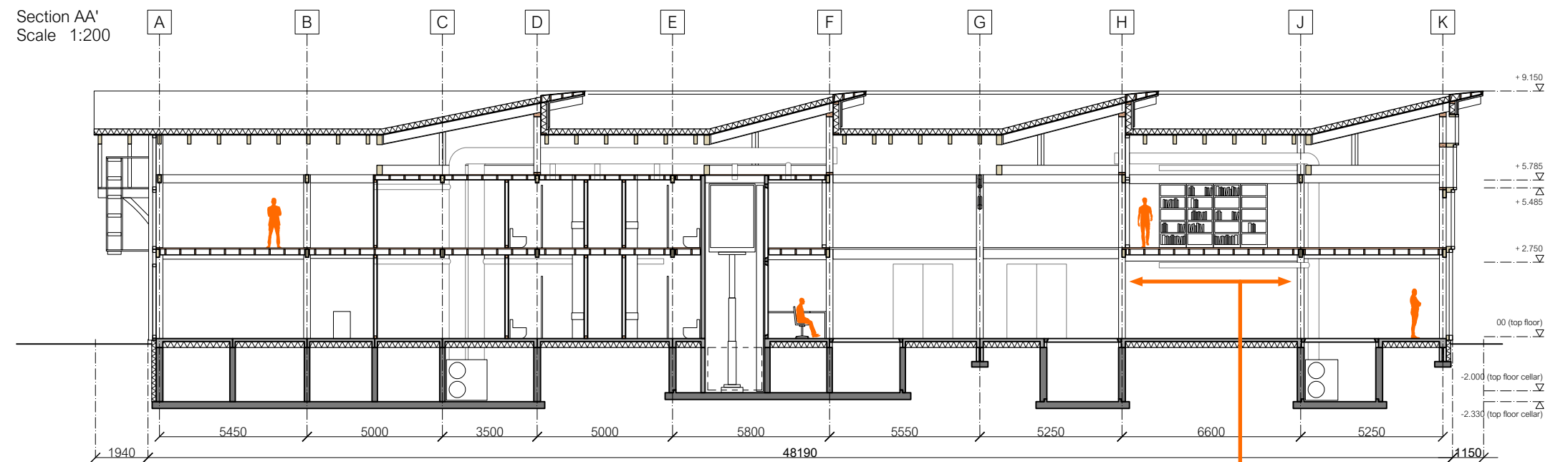
## dimensions





# ecosystem to building system

## dimensions

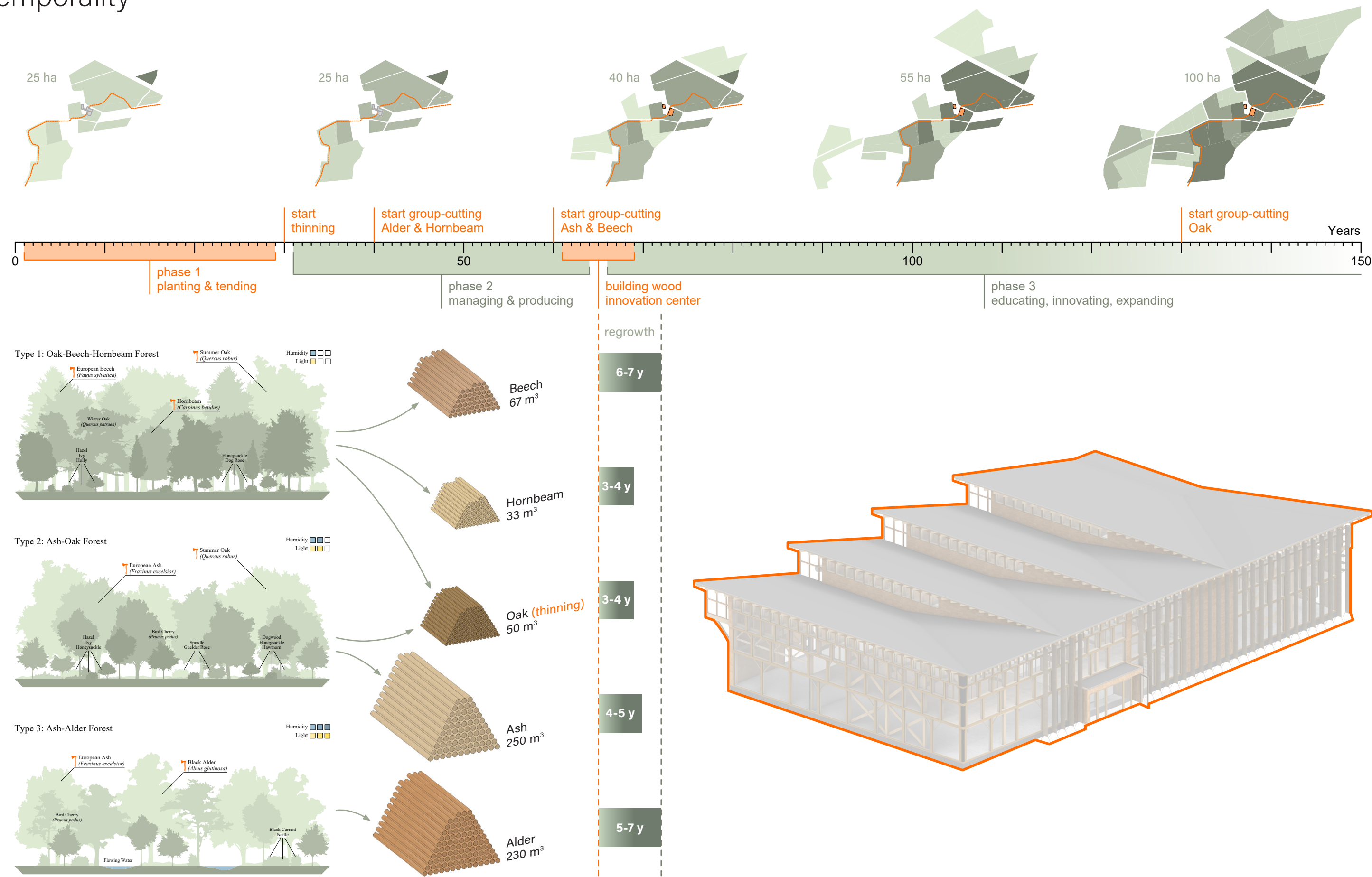


Unmüssig Timber GmbH. (z.d.). Logs: Ash [Photo]. <https://unmuessig-timber.com/en/species/species-ash.html>



# ecosystem to building system

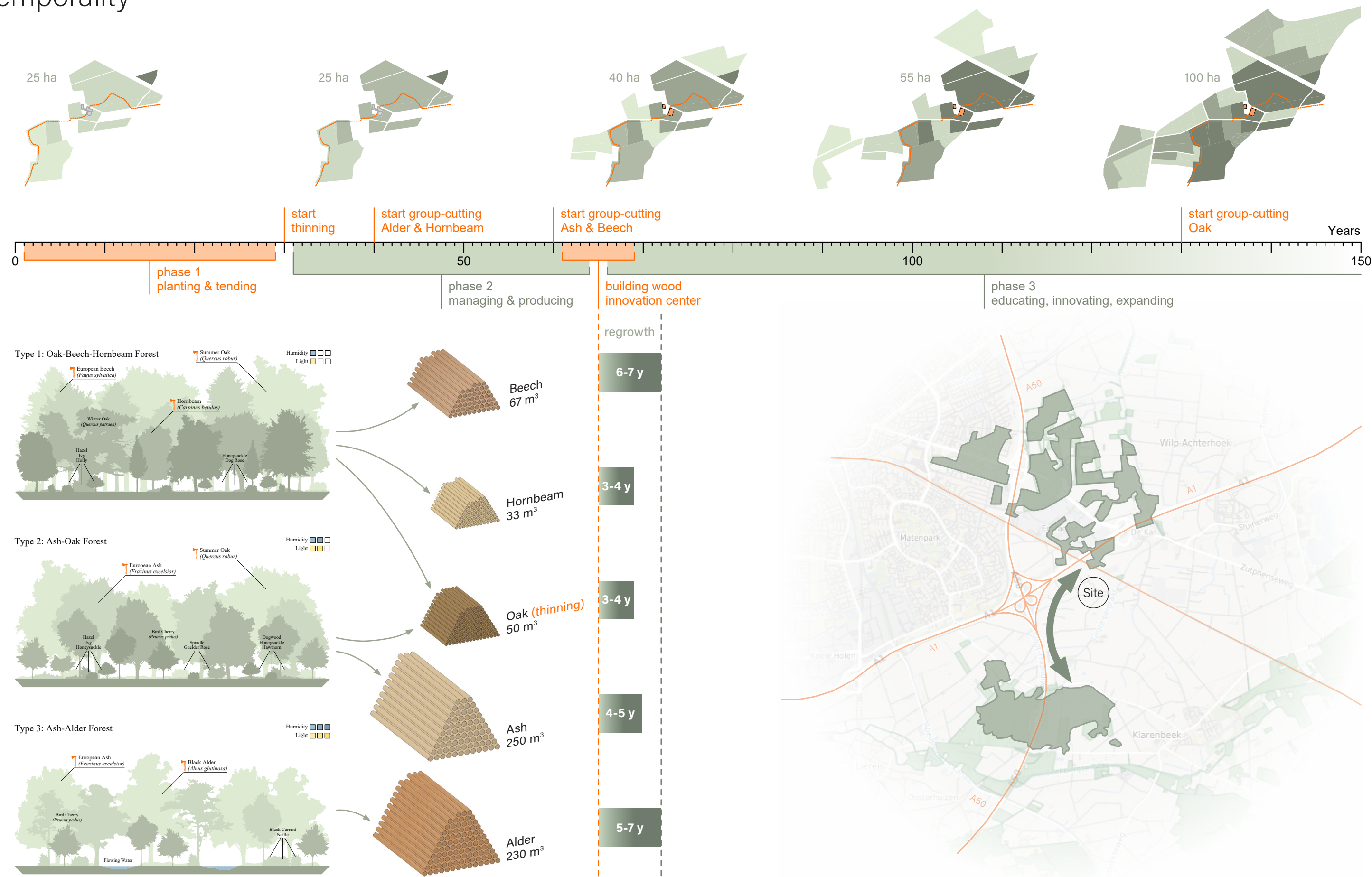
## temporality





# ecosystem to building system

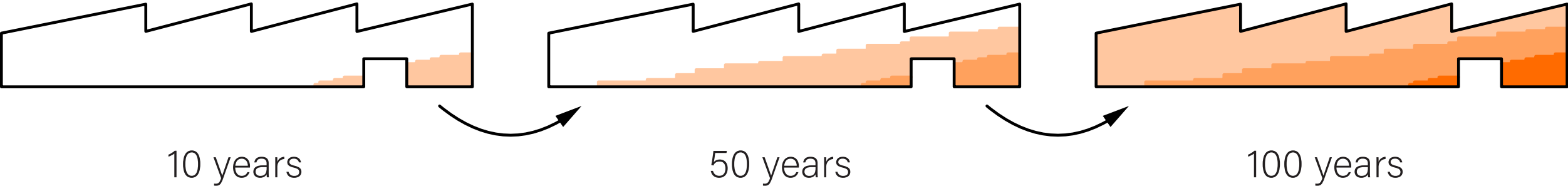
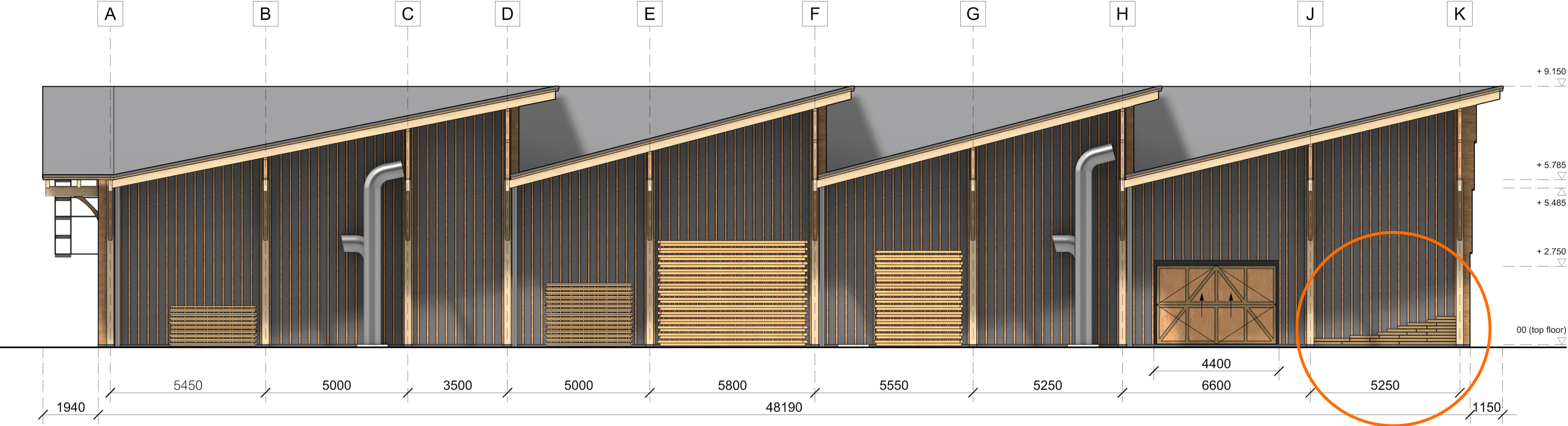
## temporality





ecosystem to building system  
temporality

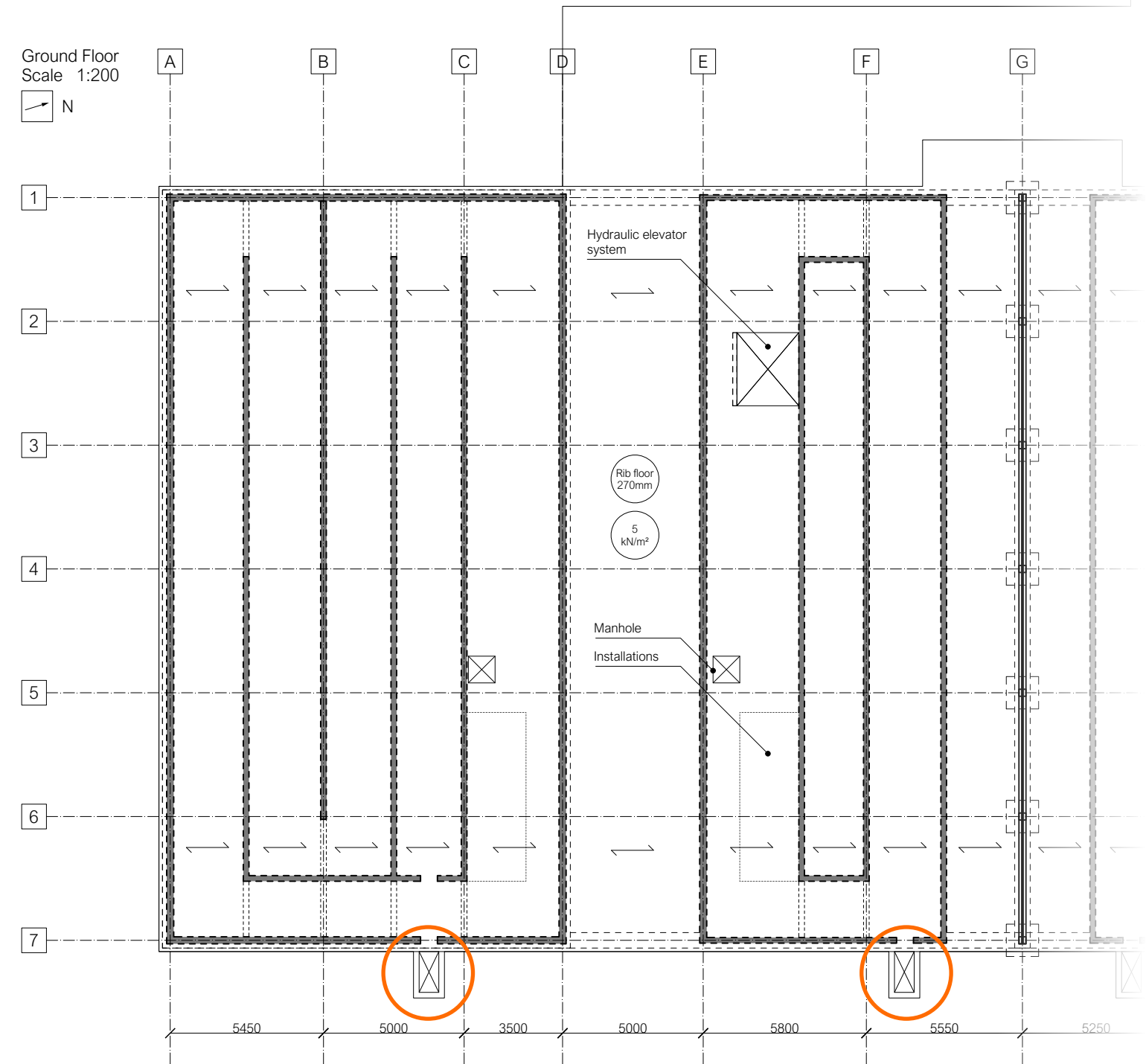
Elevation East





# ecosystem to building system

temporality







temporality  
ecosystem to building system



# ecosystem to building system

temporality



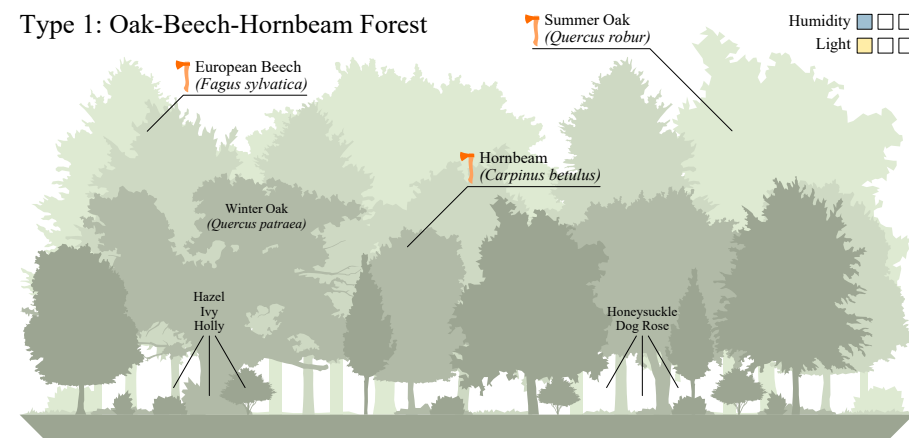
trench silo  
to storage

manure silo  
to biomeiler

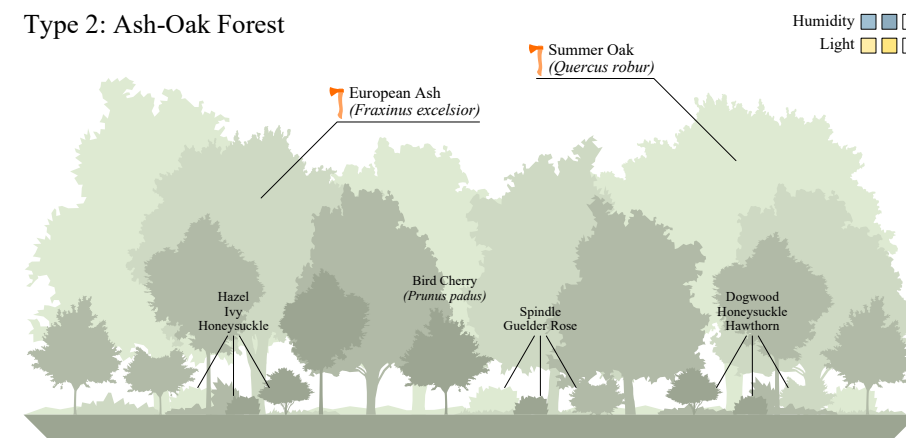
trench silo walls  
to parking facility



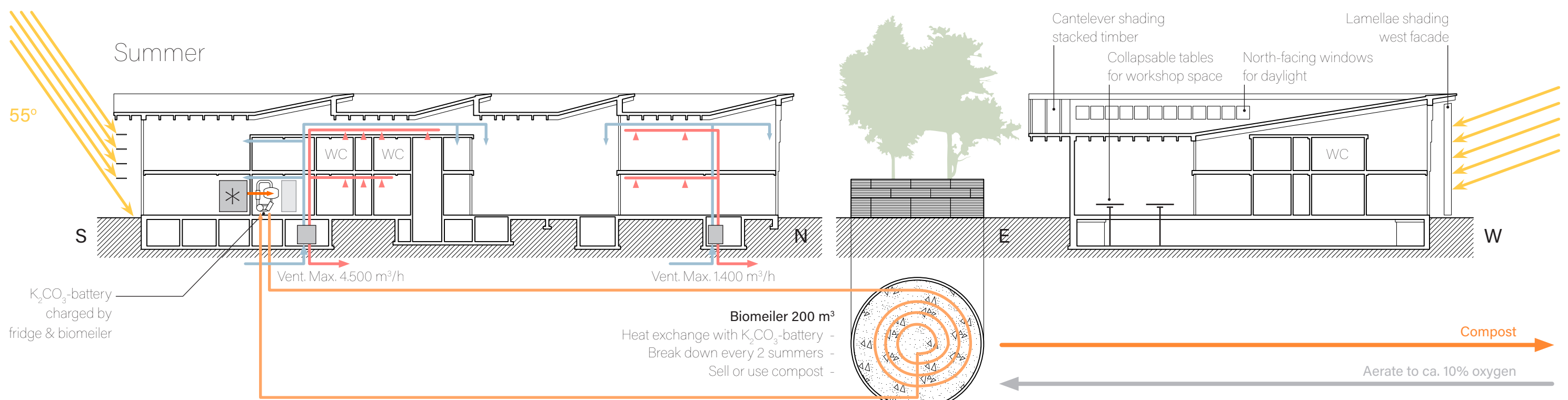
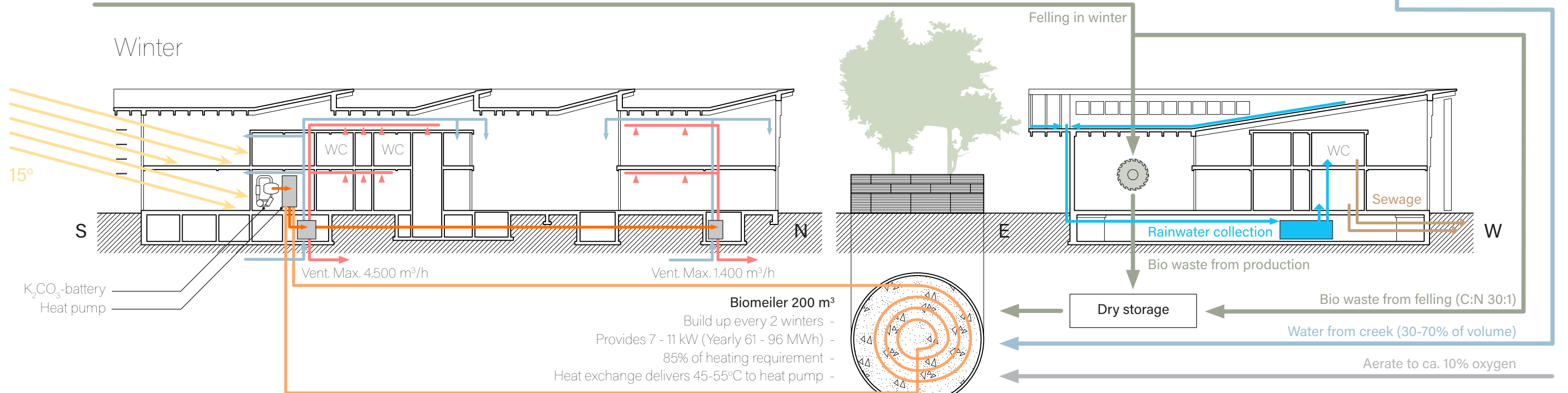
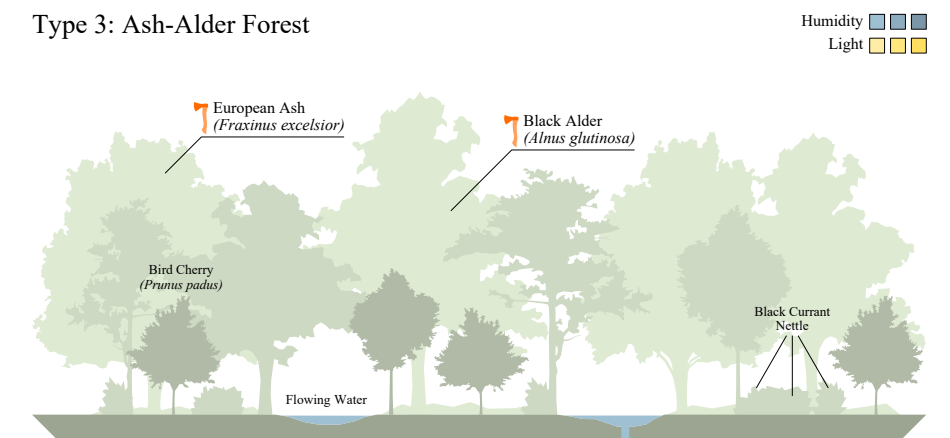
Type 1: Oak-Beech-Hornbeam Forest



Type 2: Ash-Oak Forest



Type 3: Ash-Alder Forest





# Silvae

Wood Innovation Center





public proximity





public proximity





public proximity

Woudhuisroute

Beekbergerwoudroute





Groote Woudhuis



De Rokhorst

Br.

Br.

R.





Grote Woudhuis

Br.

De Rokhorst

Br.



public proximity





public proximity



restaurant  
hiking



production  
innovation

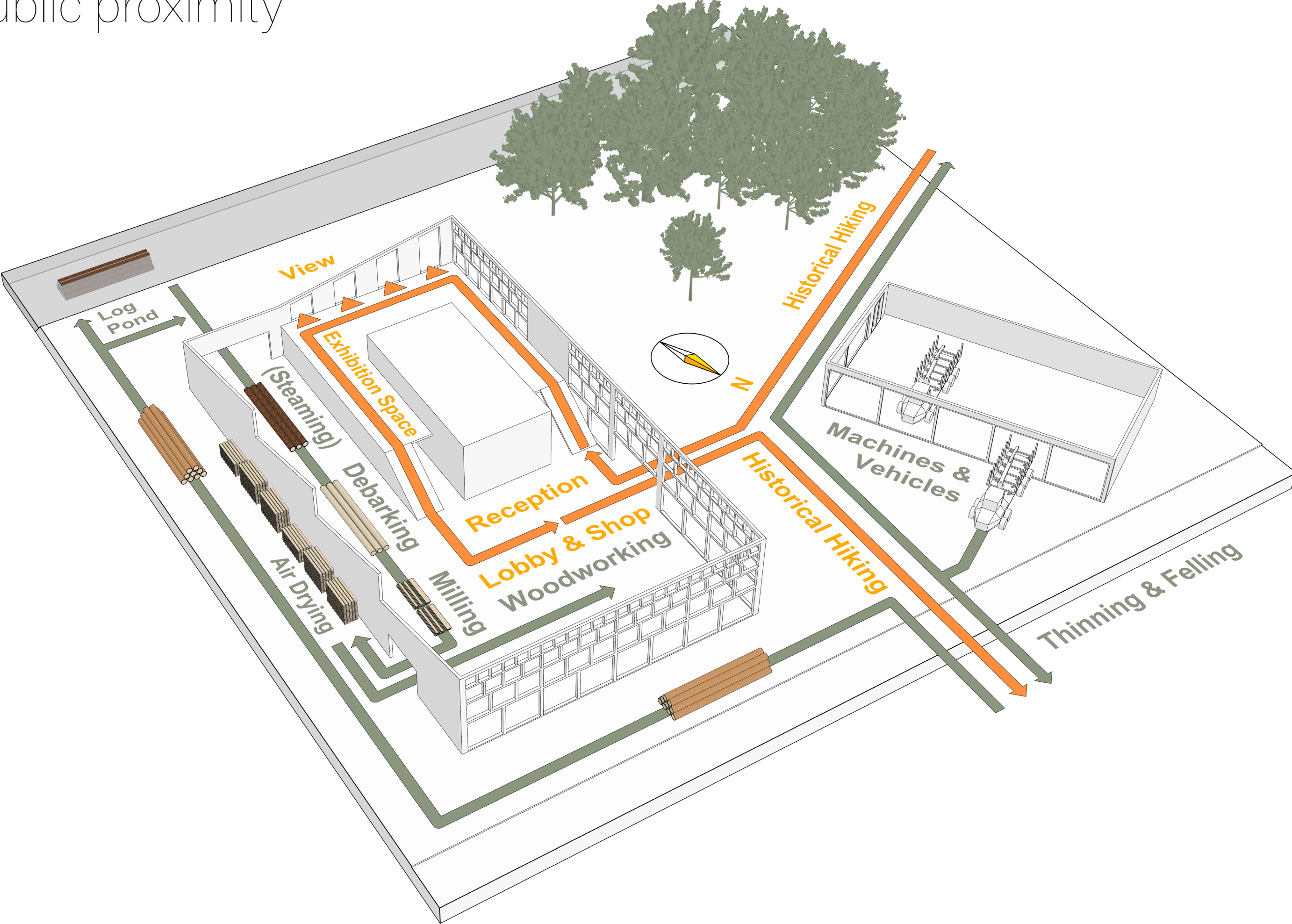


field trips  
workshops  
exhibition





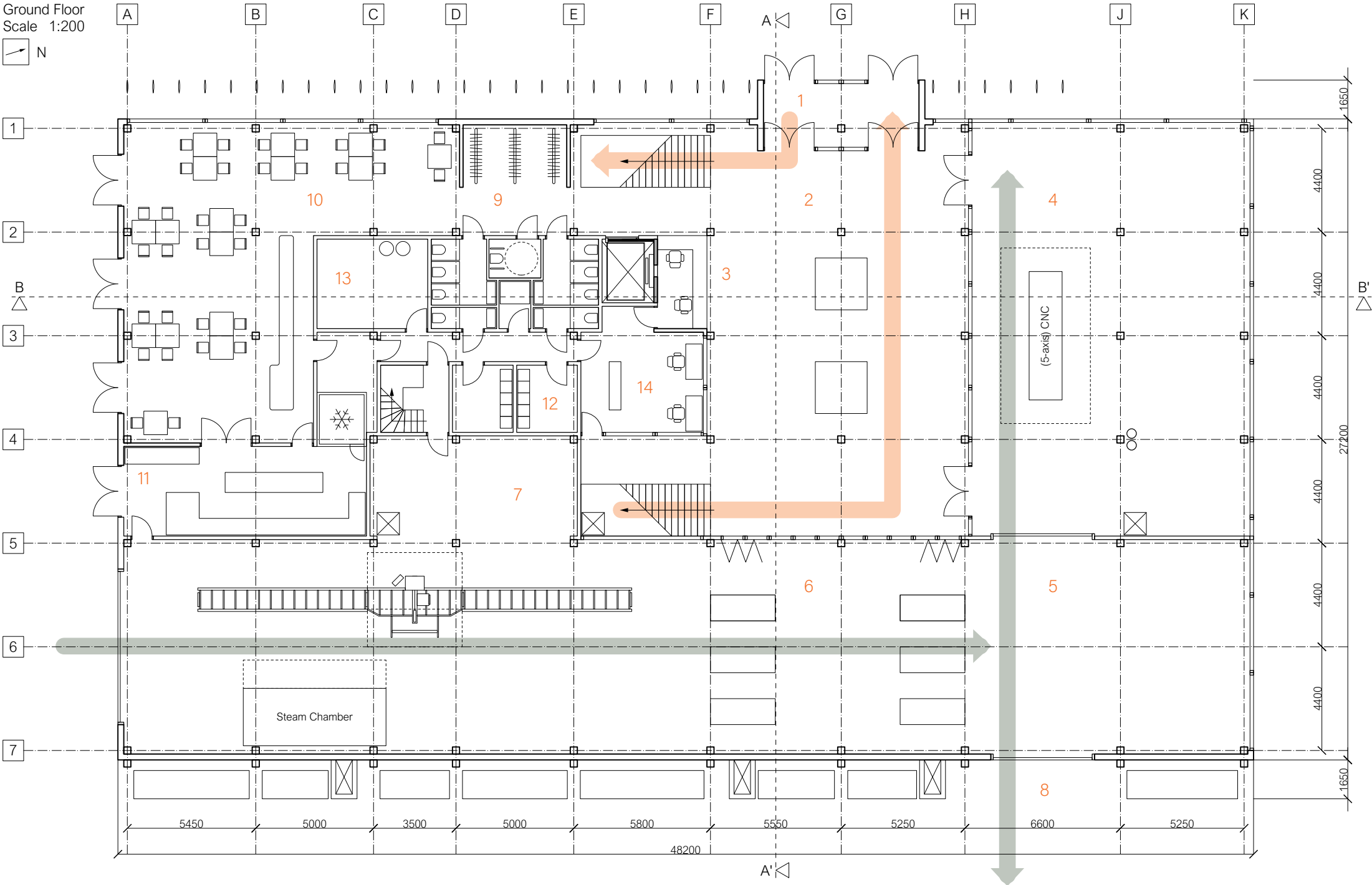
public proximity





public proximity

- 1 Entrance
- 2 Lobby/Shop
- 3 Reception
- 4 Production hall 1
- 5 Production hall 2
- 6 Workshops/Lectures
- 7 Storage
- 8 Timber air drying
- 9 Cloakroom
- 10 Restaurant/Café
- 11 Kitchen
- 12 Locker rooms
- 13 Technical space
- 14 Offices







public proximity



# Agriculture and Architecture







reflection







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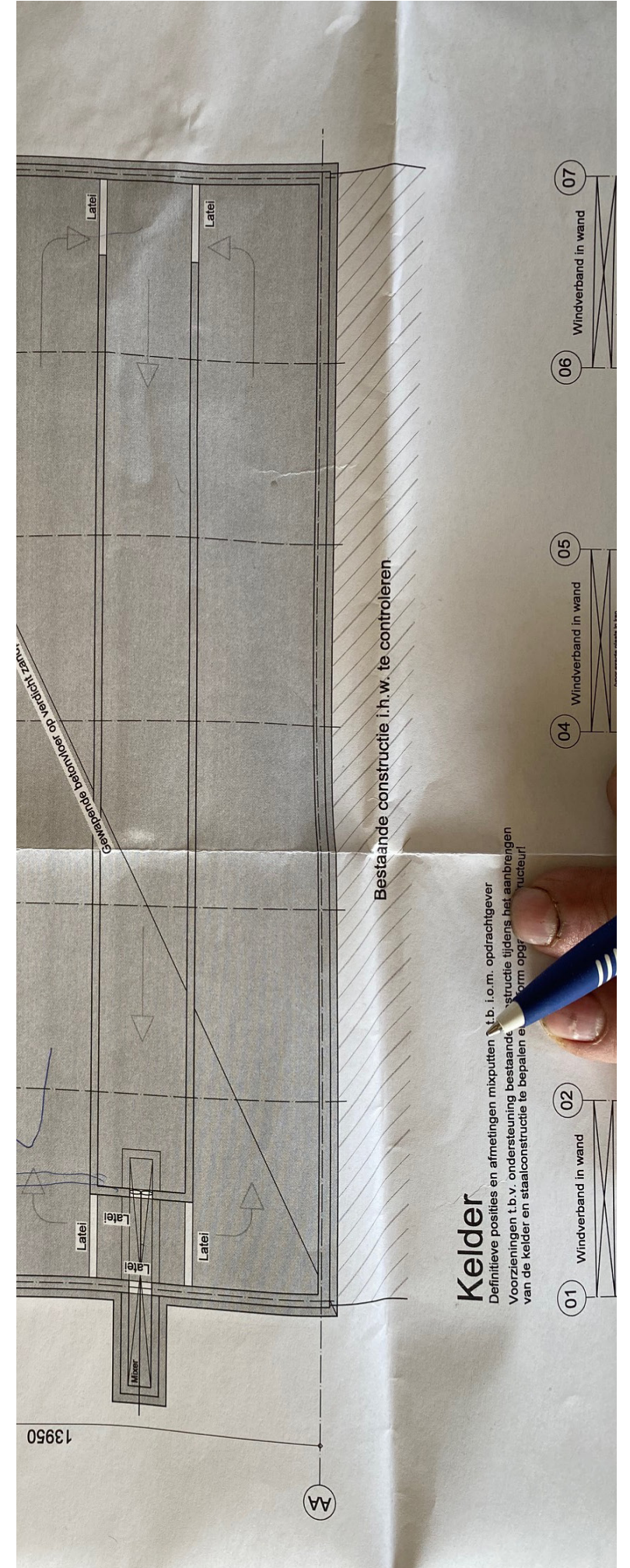
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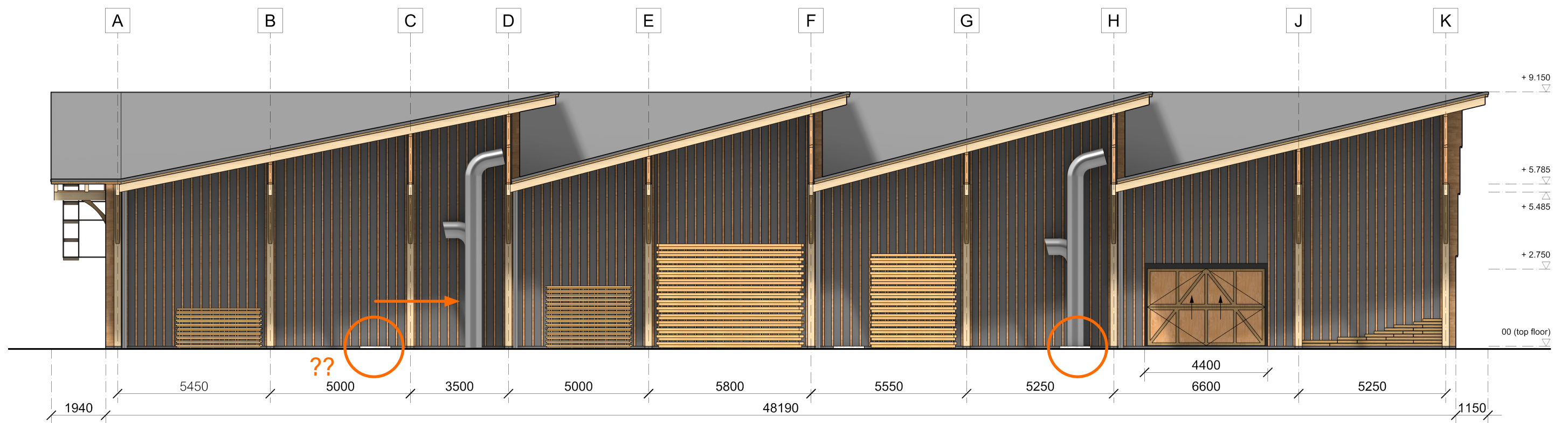
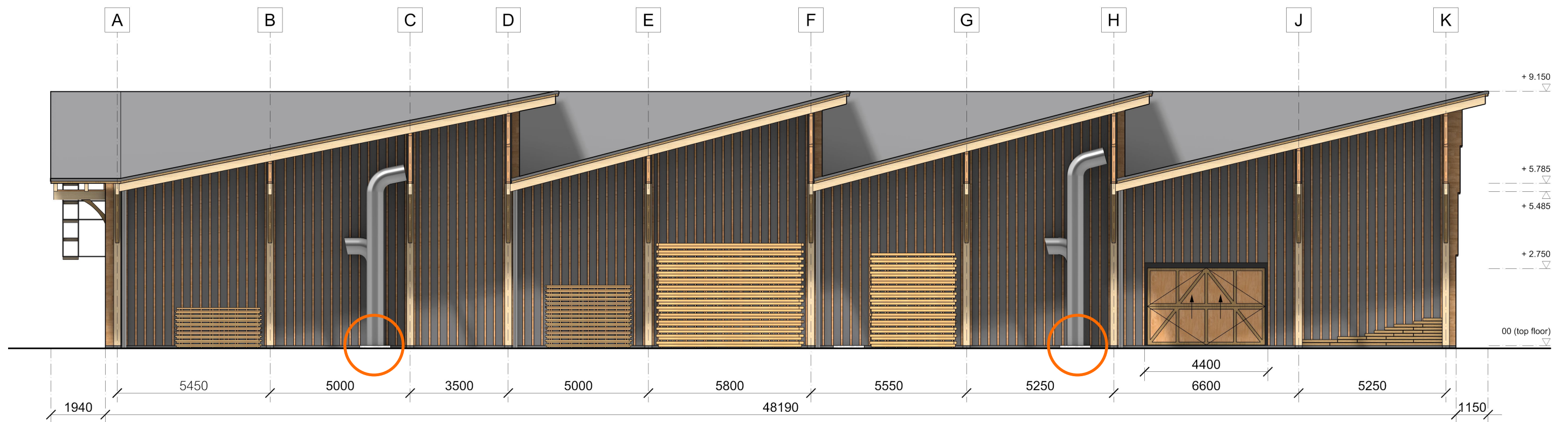
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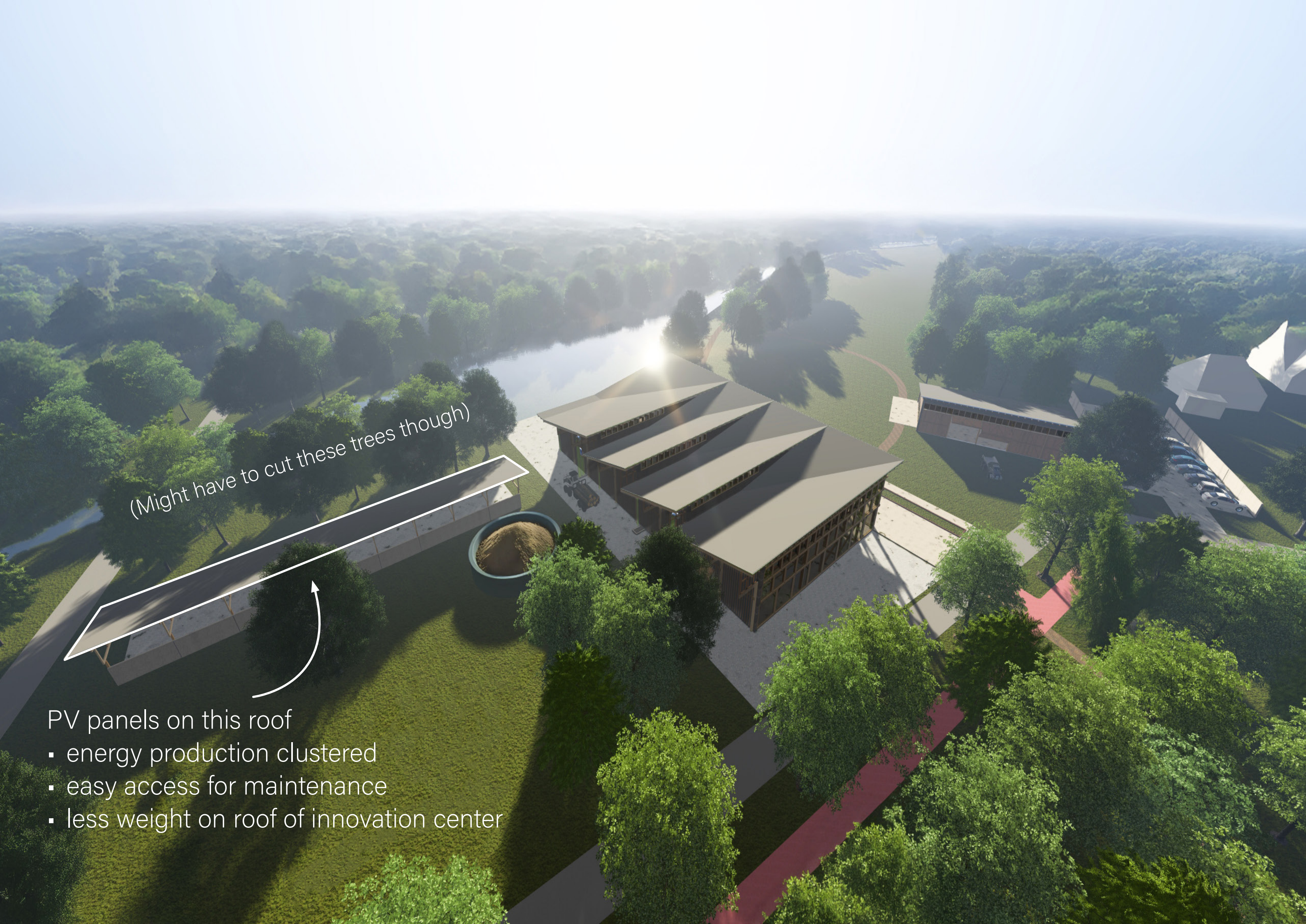












(Might have to cut these trees though)

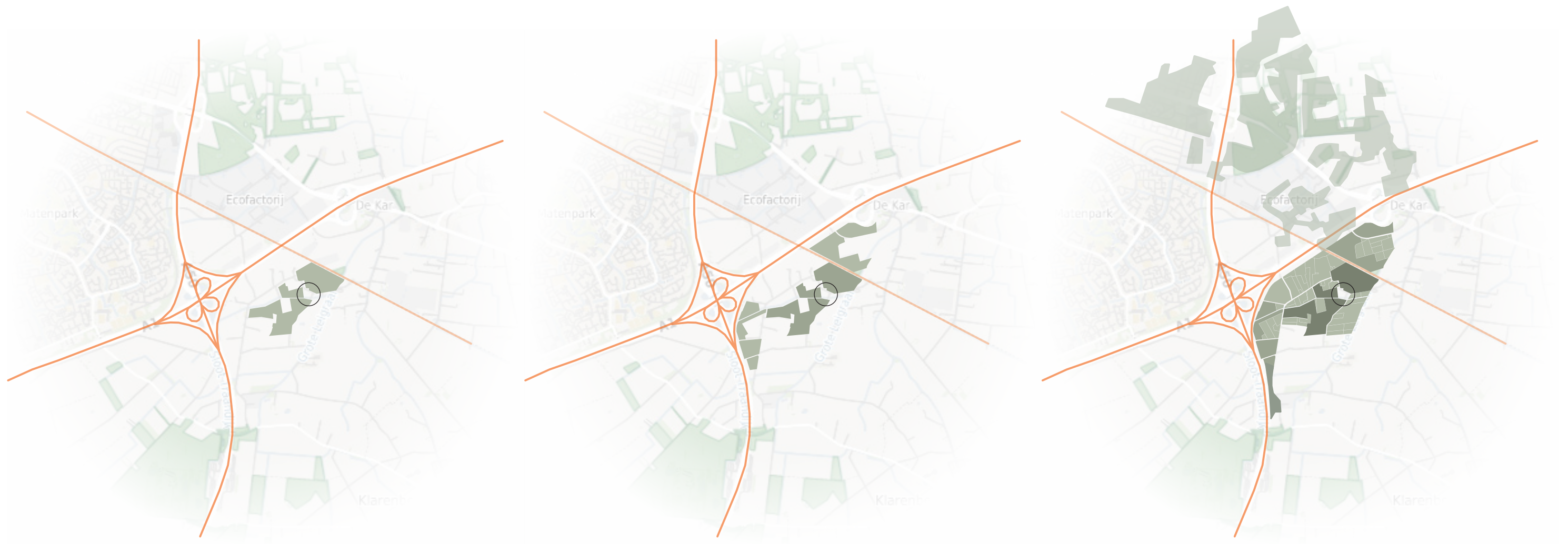
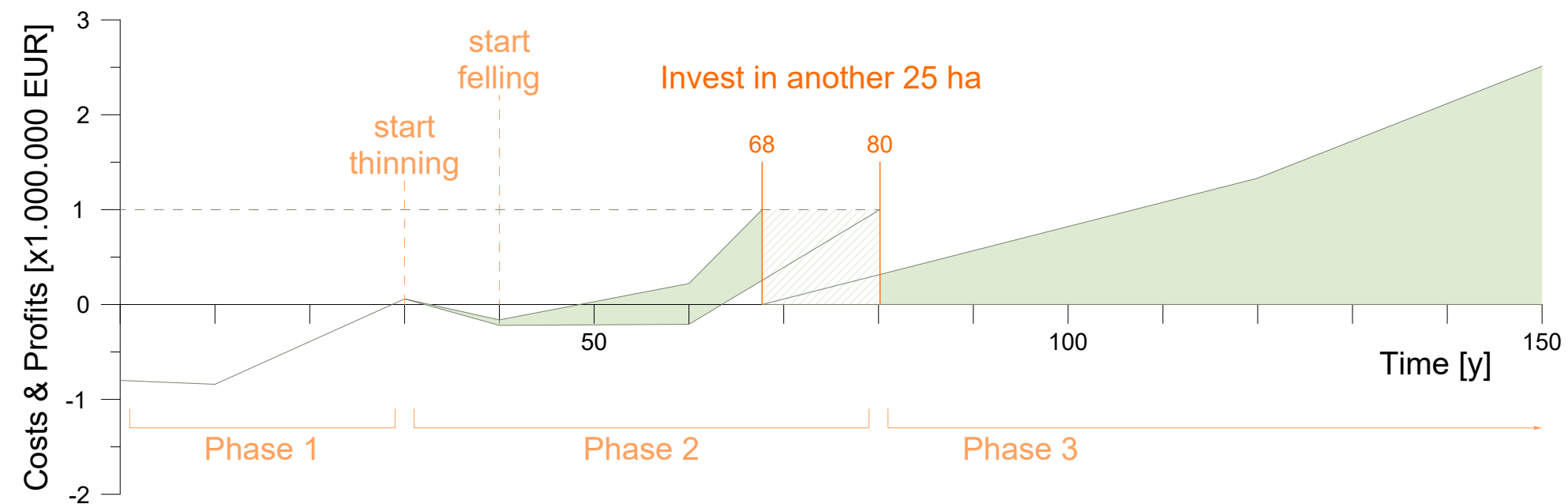
PV panels on this roof

- energy production clustered
- easy access for maintenance
- less weight on roof of innovation center

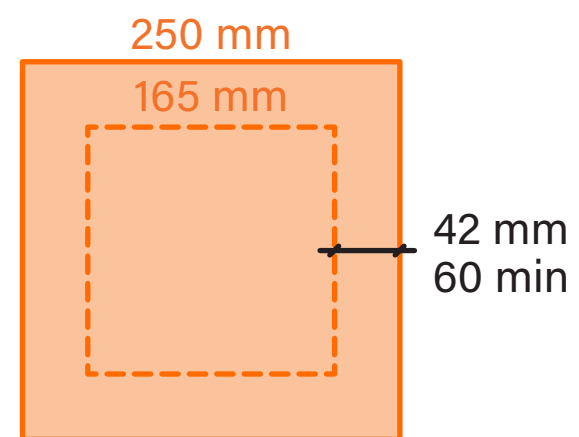
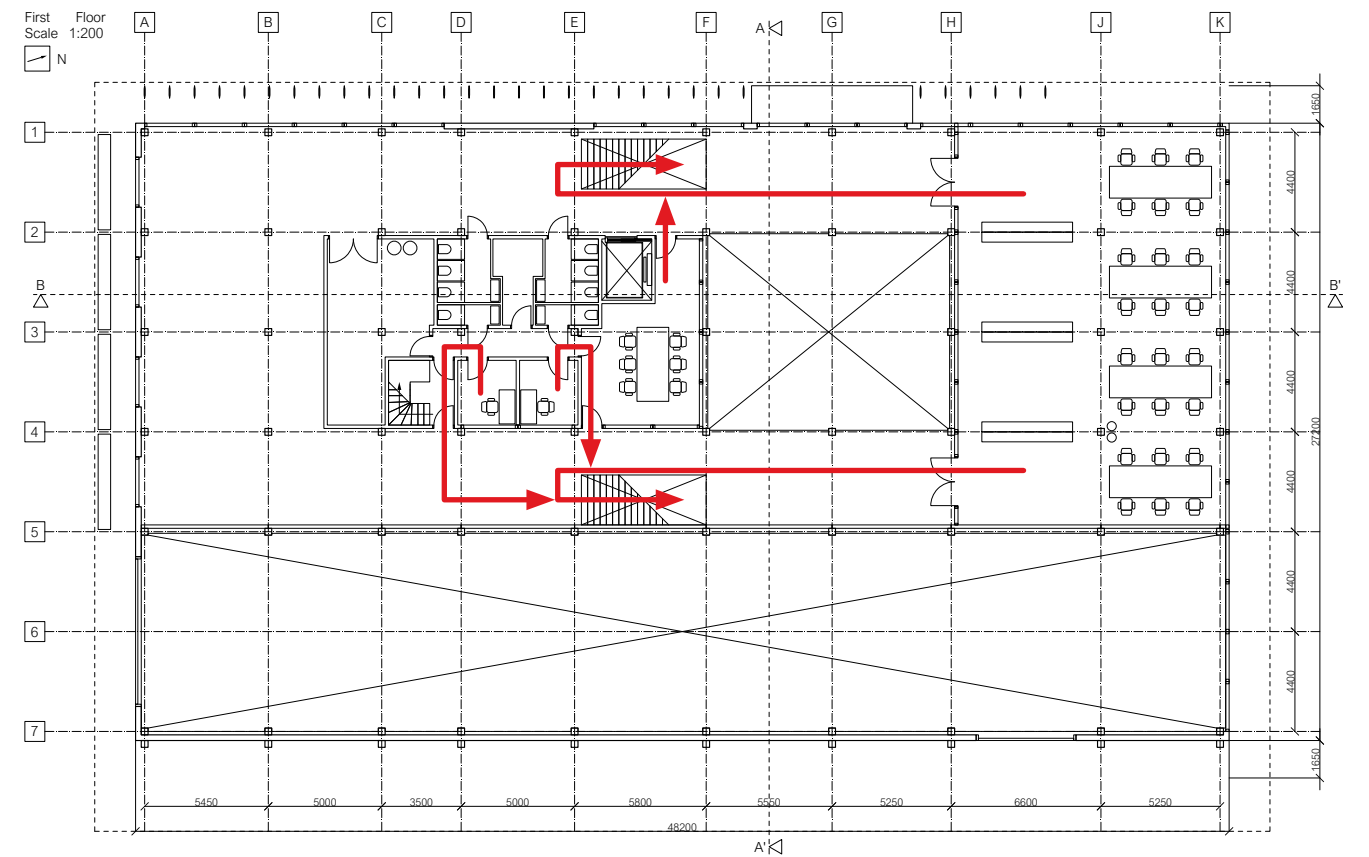
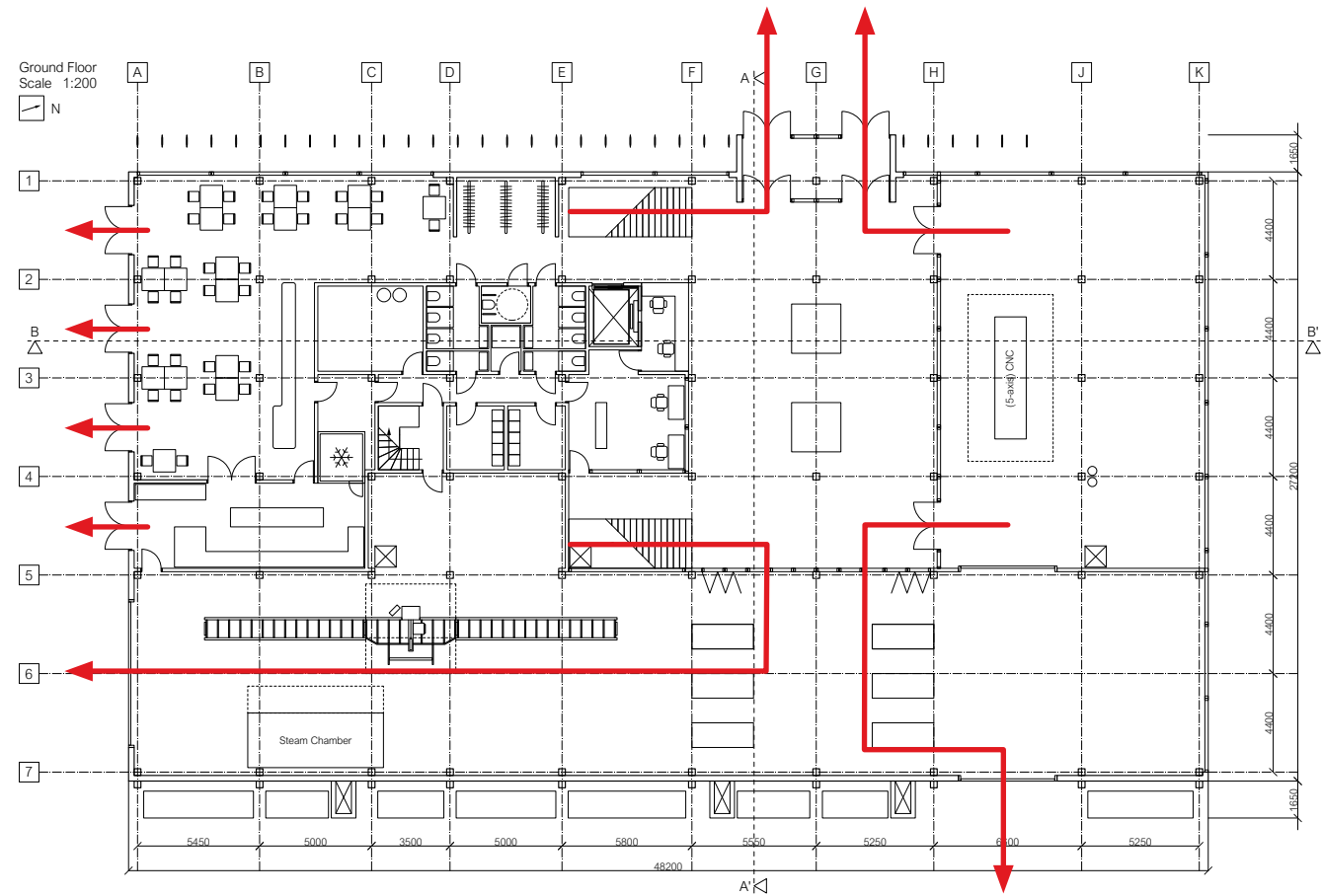


# PHASING

## Indication of financial feasibility

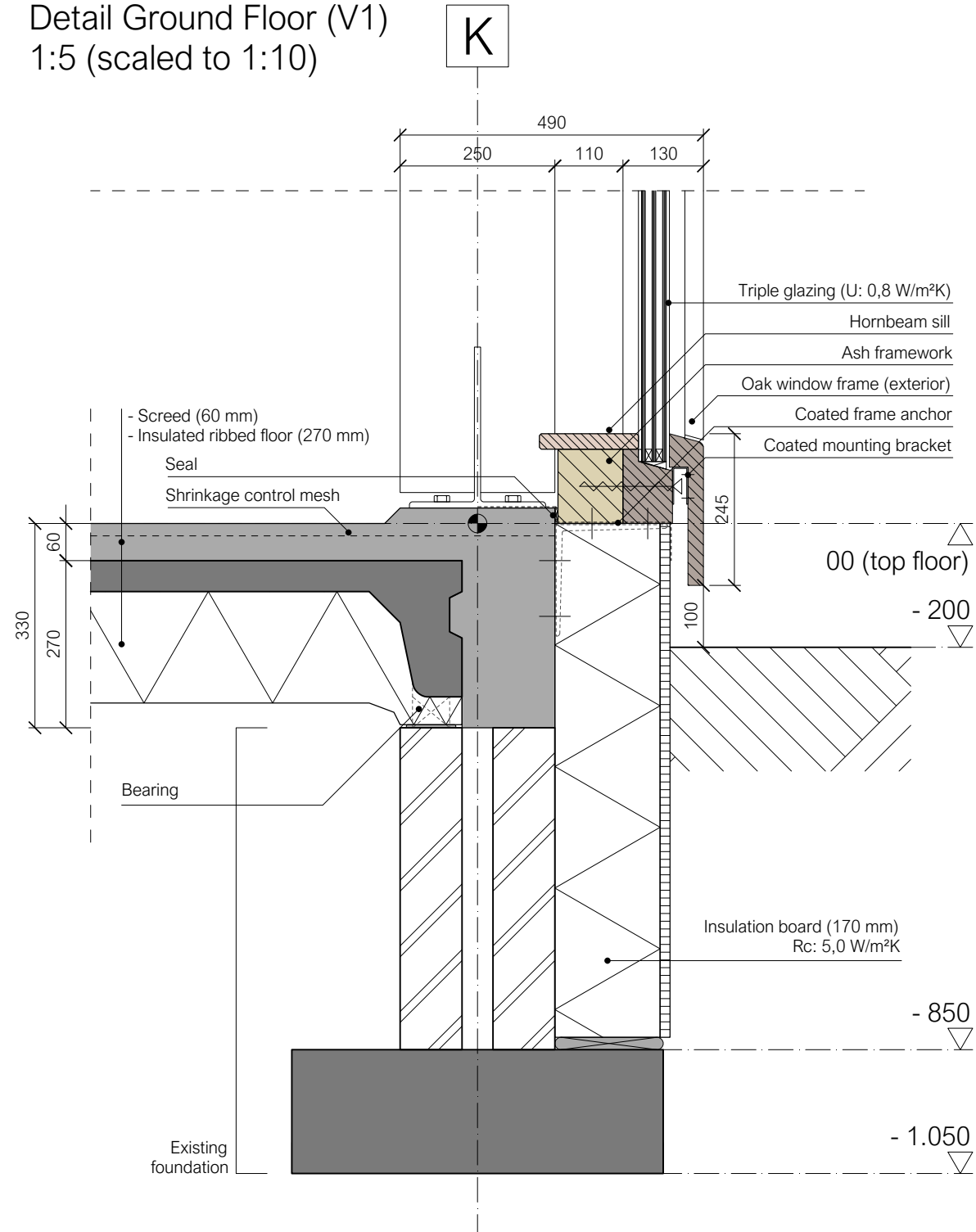




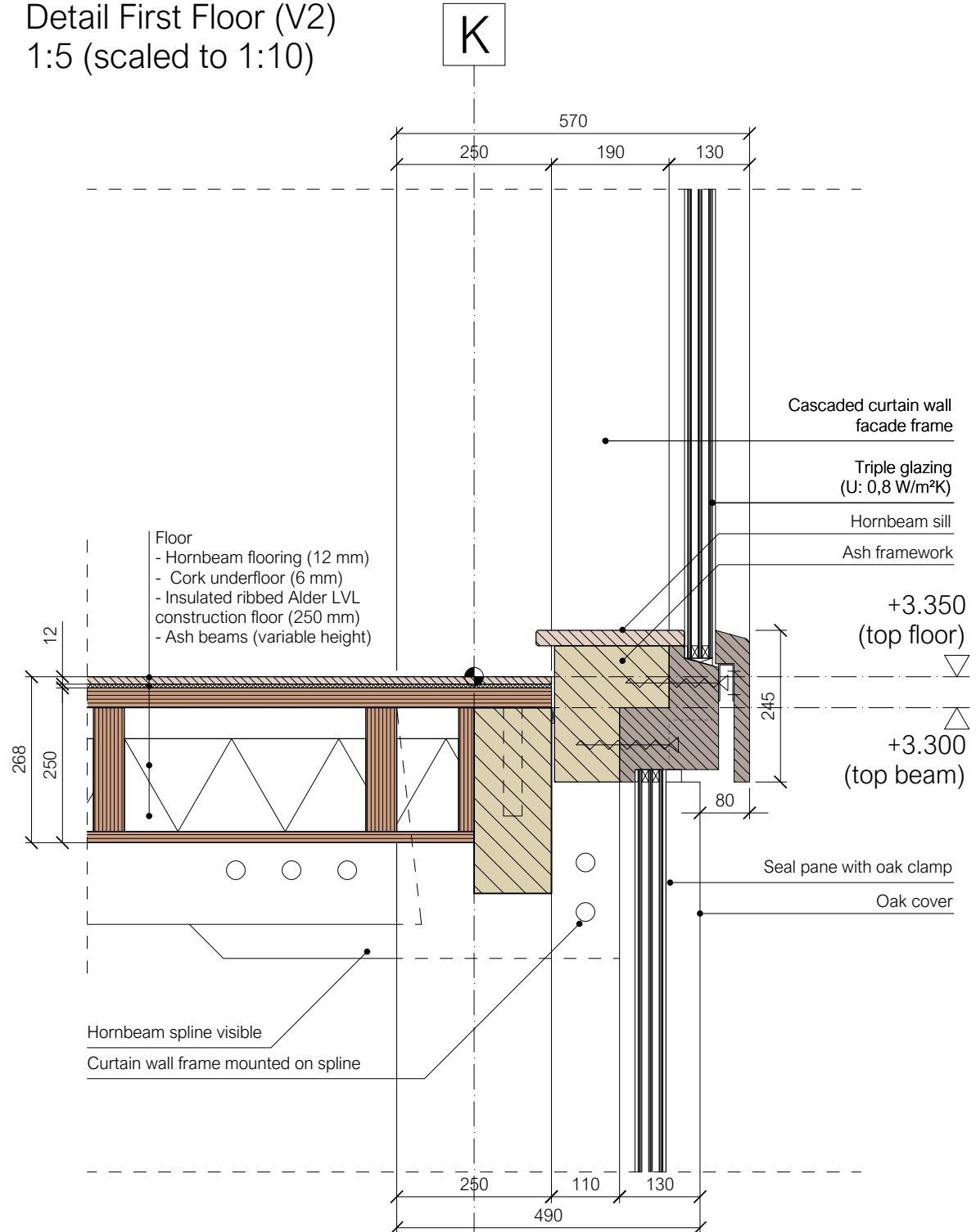




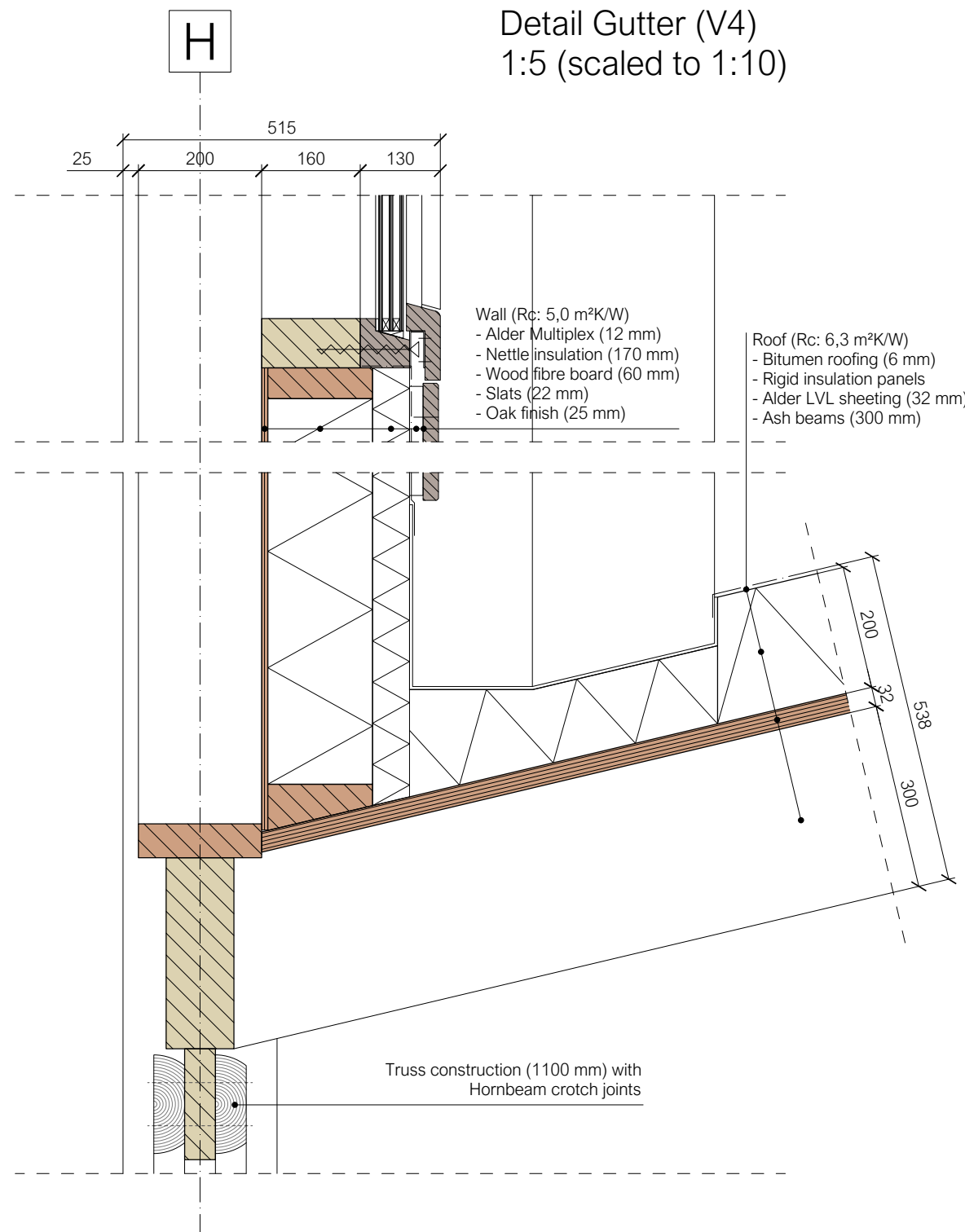
Detail Ground Floor (V1)  
1:5 (scaled to 1:10)



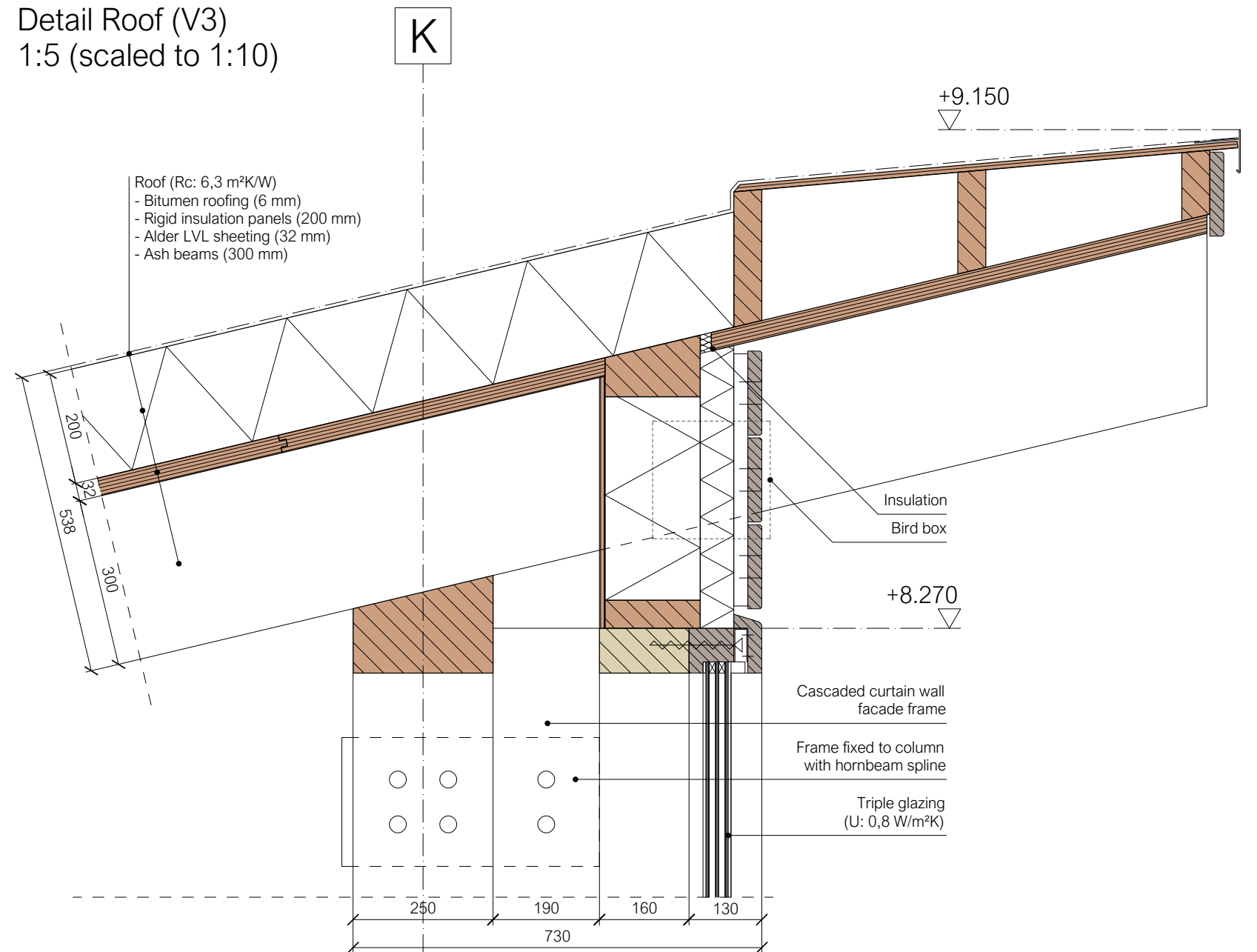
Detail First Floor (V2)  
1:5 (scaled to 1:10)





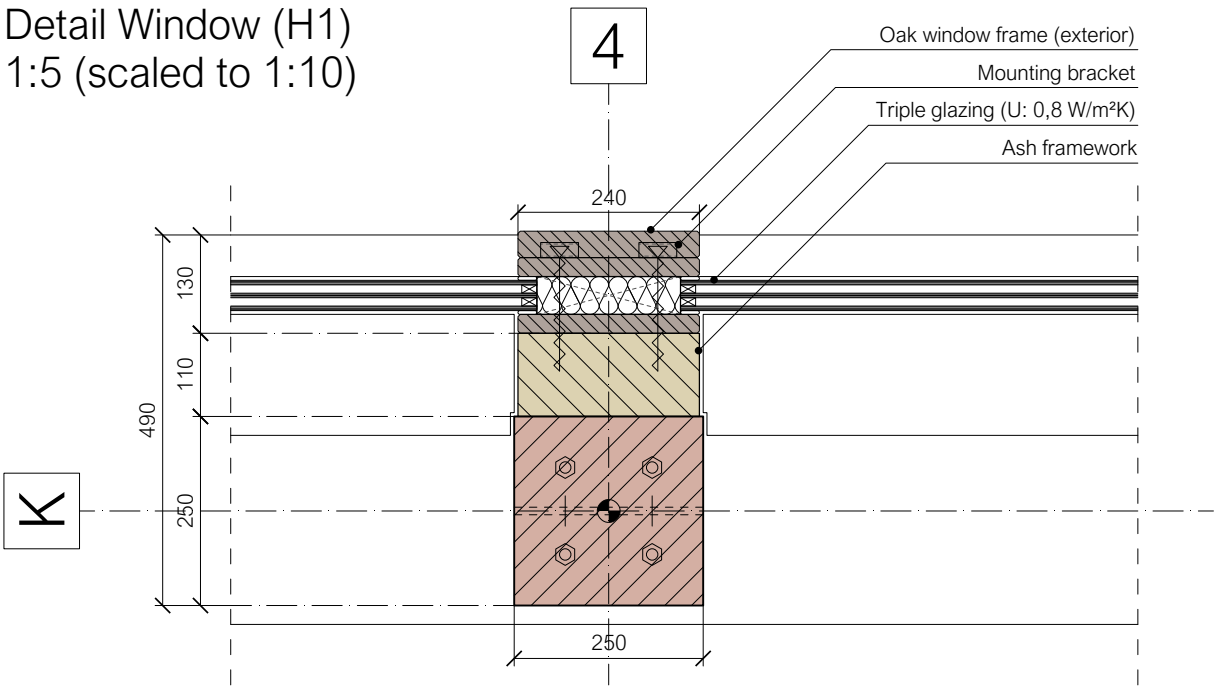


**Detail Roof (V3)**  
1:5 (scaled to 1:10)





Detail Window (H1)  
1:5 (scaled to 1:10)



Detail Window (H2)  
1:5 (scaled to 1:10)

