

FORUM BOERHAAVE, HAARLEM

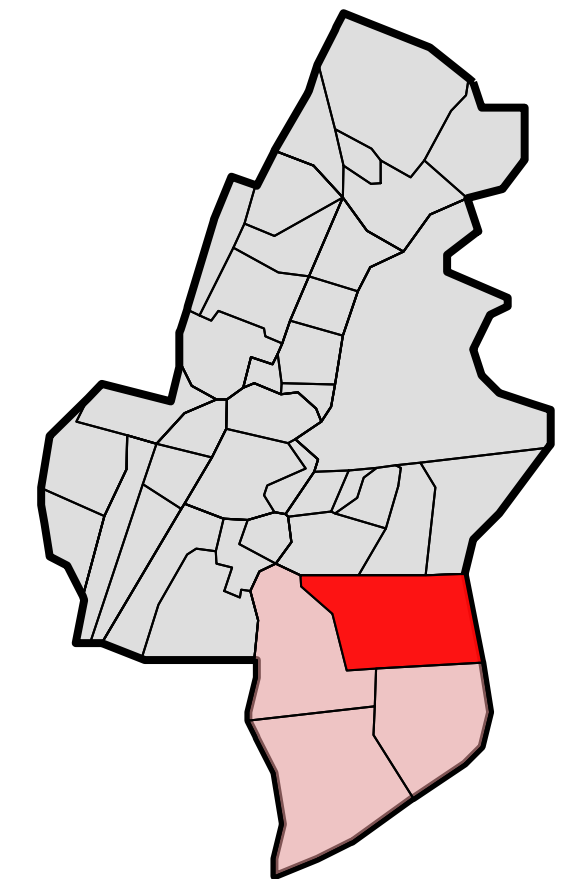


LESLIE ING / AE STUDIO / P5 / 04.07.2023

Architecture Tutor Thomas Offermans / Research Tutor Rik Rozendaal / B&T Tutor Paddy Tomesen



GROTE MARKT, HAARLEM



■ Wijk 09 Schalkwijk
■ Buurt 01 Boerhaavewijk



Photos by Martin de Beun

“The local architecture and urban planning don't foster social cohesion or a strong identity”



BOERHAAVEWIJK UNDER CONSTRUCTION



Photos by Martin de Beun

“We use the same non-renewable materials and unsustainable construction methods as in the 60s”



POPULATION GROWTH OF 23%: FROM 6,490 (2013) TO 7,955 (2022)

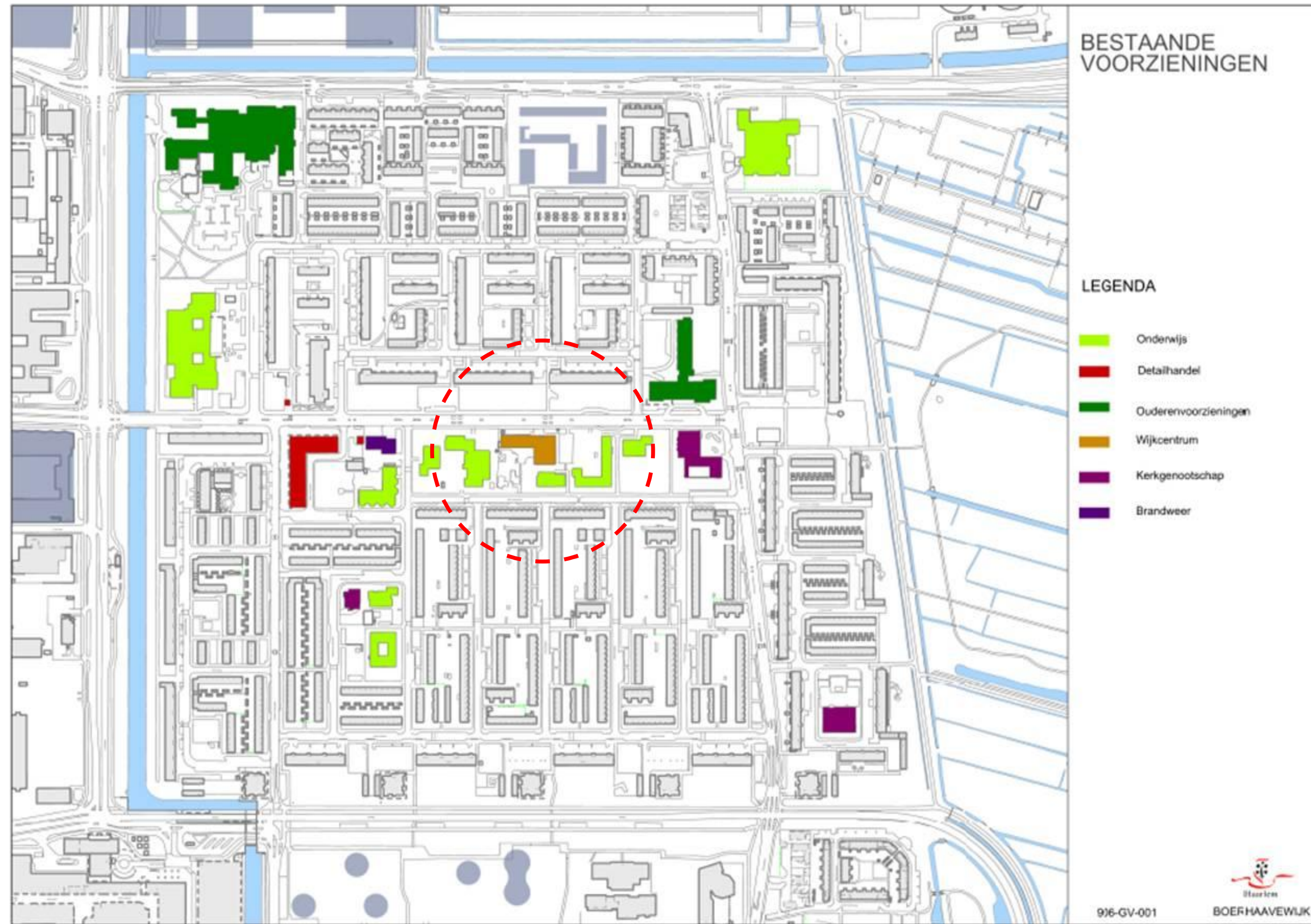
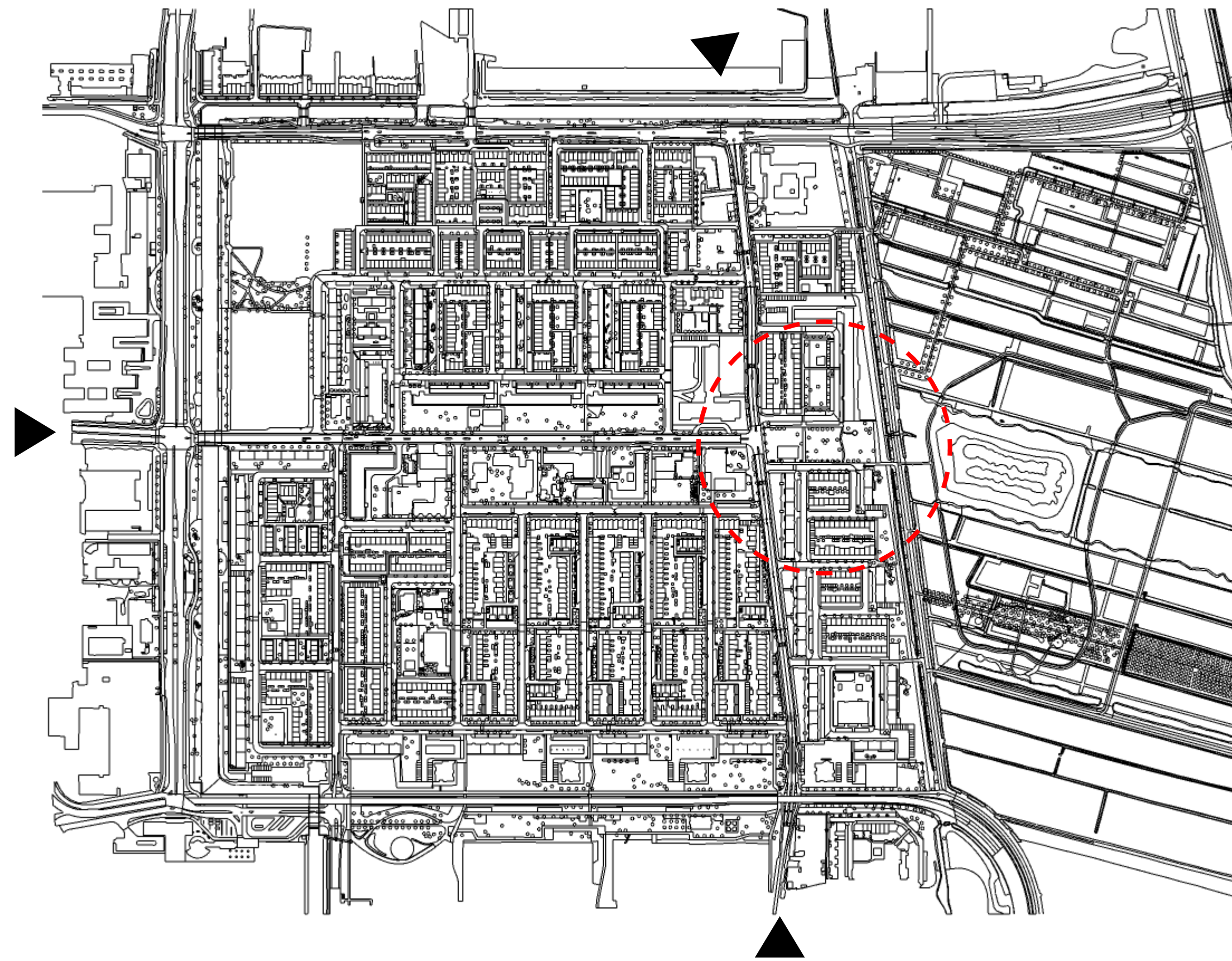
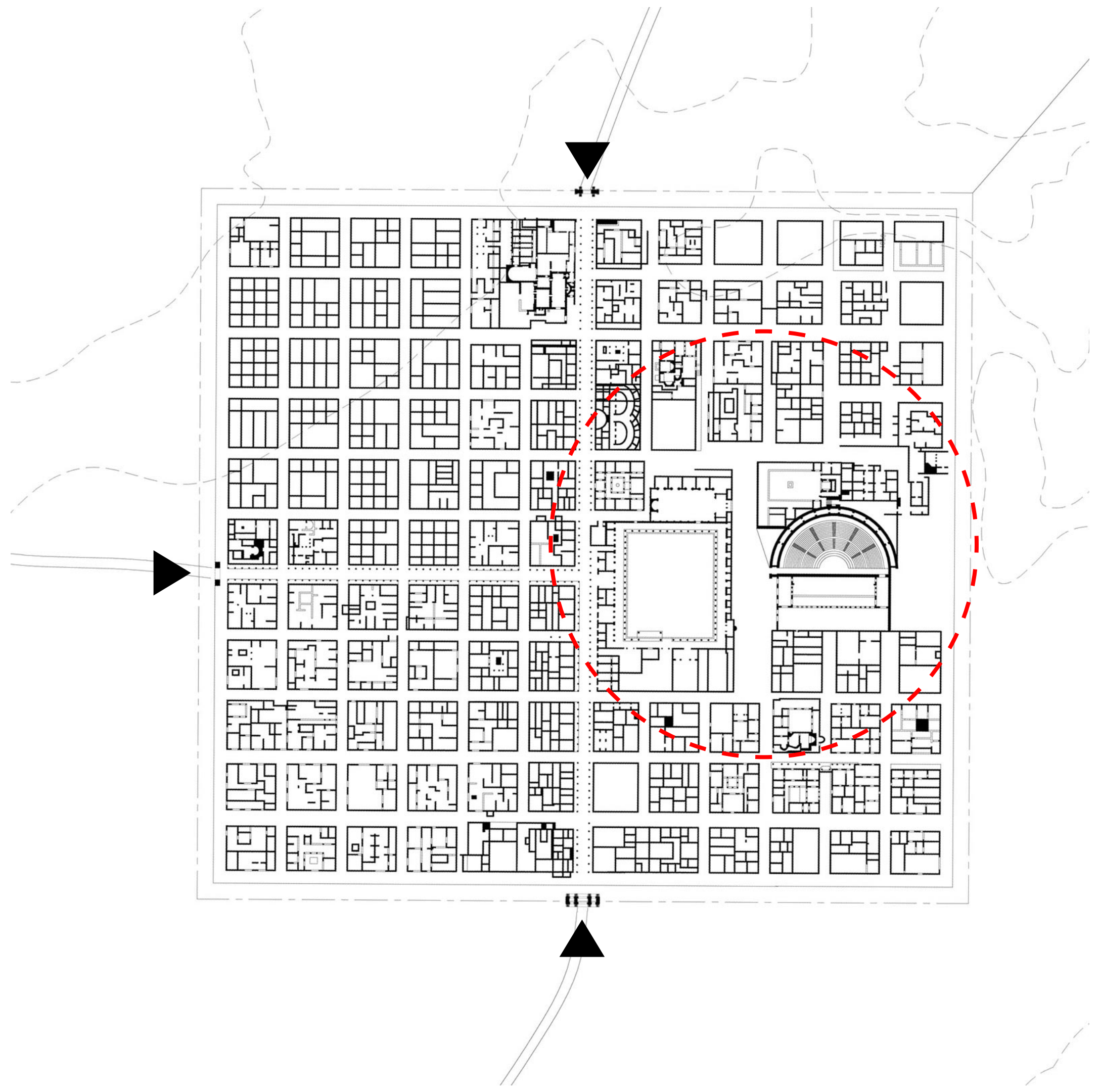


Photo by Dick Klijn

“There is a lack of future-proof public facilities and community spaces”



BOERHAAVEWIJK, HAARLEM, 1960s



TIMGAD, ALGERIA, CIRCA 100 AD

“The design of an iconic and sustainable **forum** in Boerhaavewijk that can adapt to demographic changes”

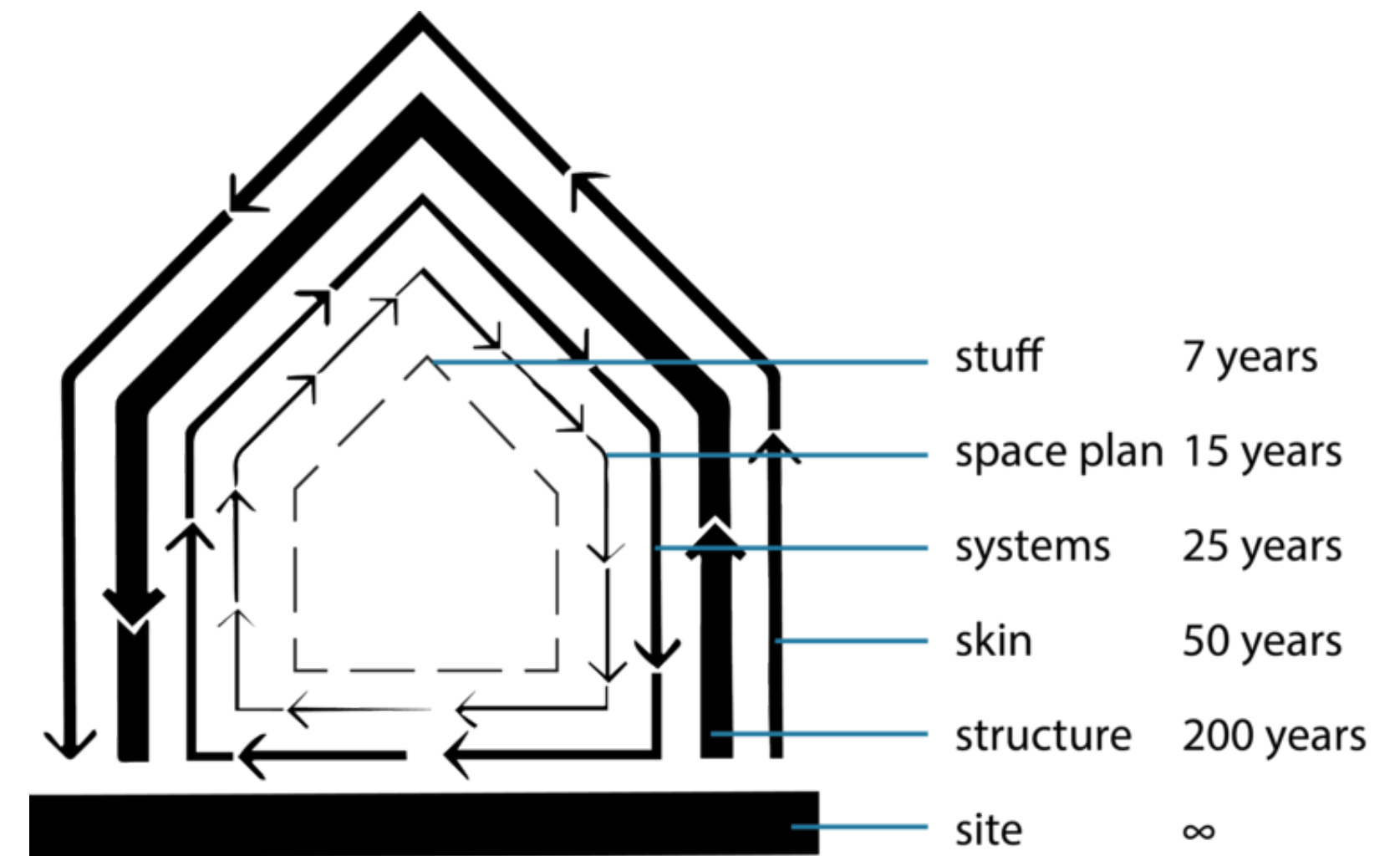
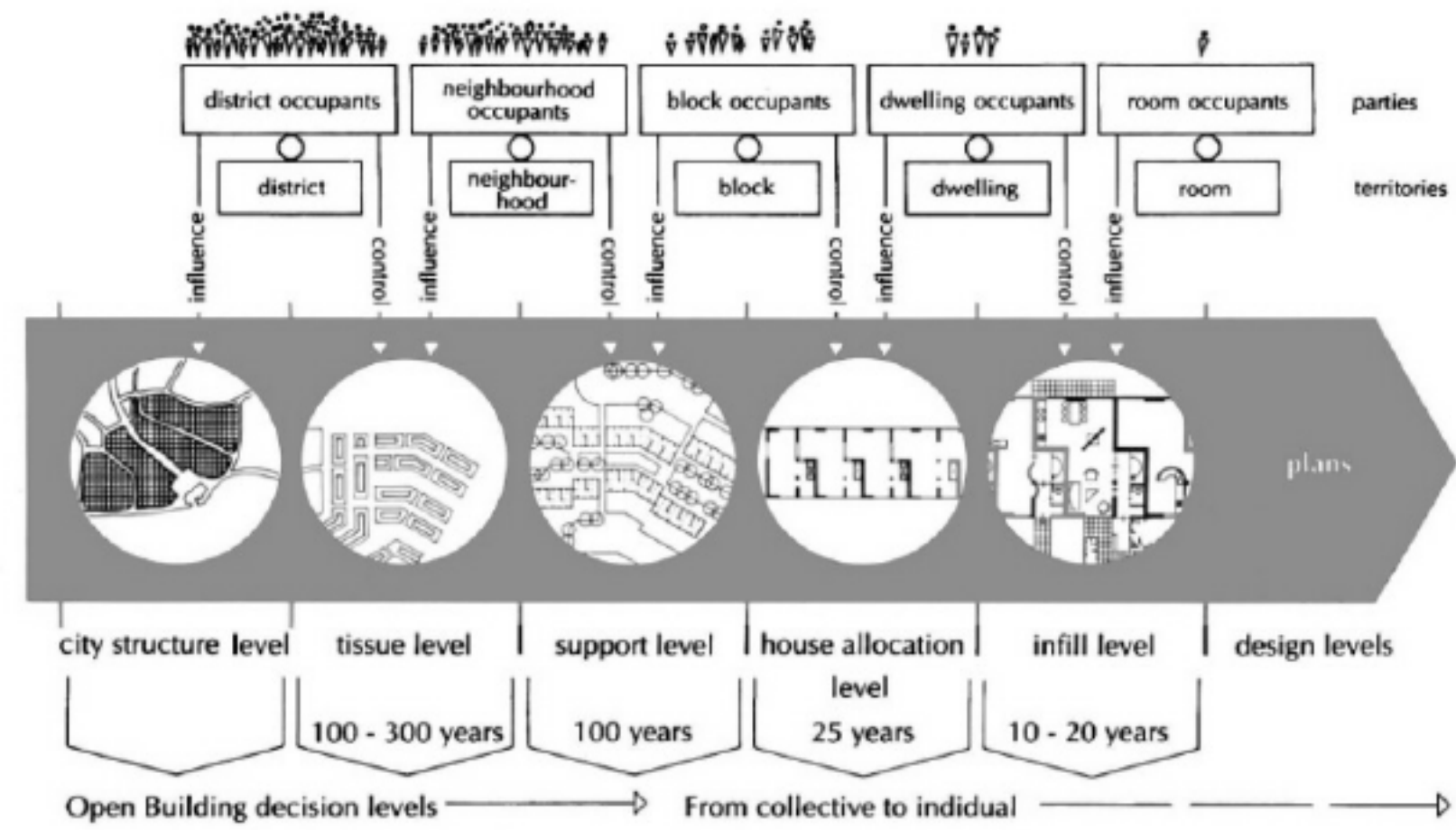
forum noun

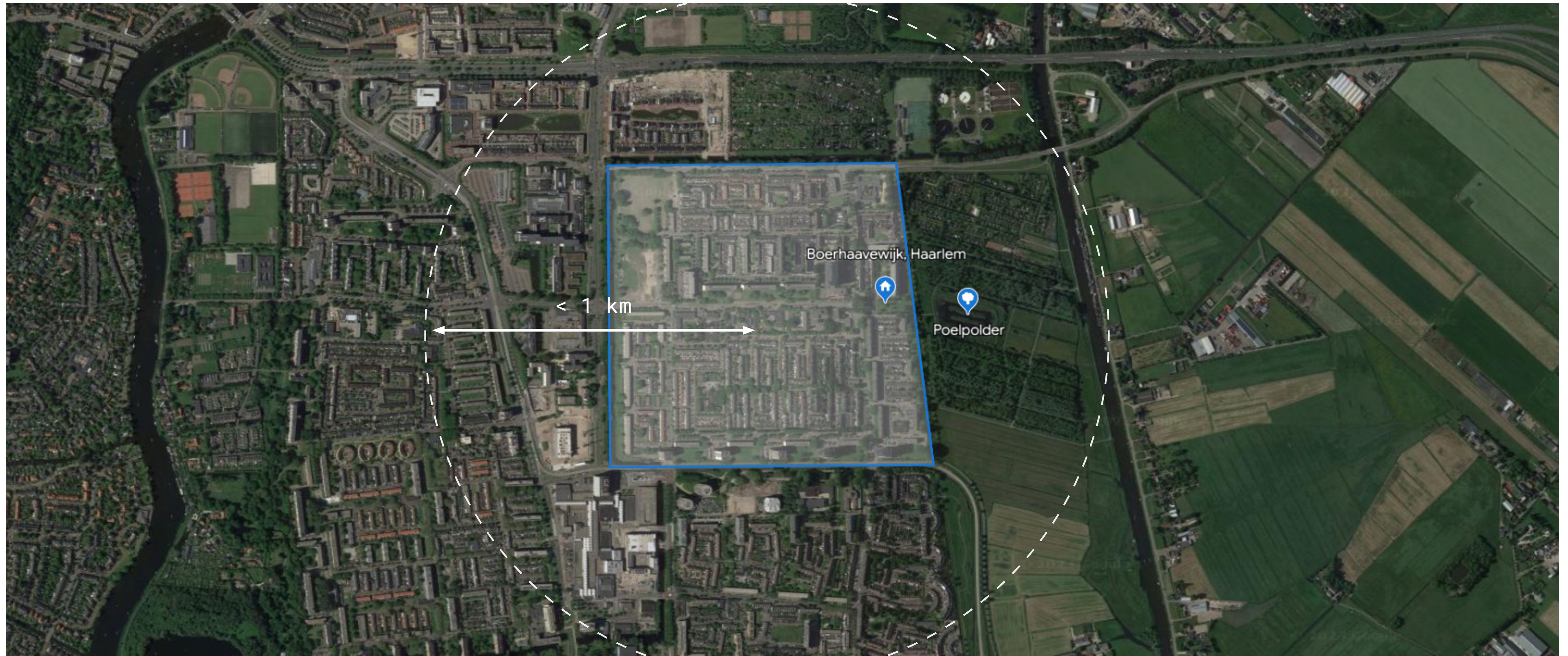
fo·rum 'fôr-əm

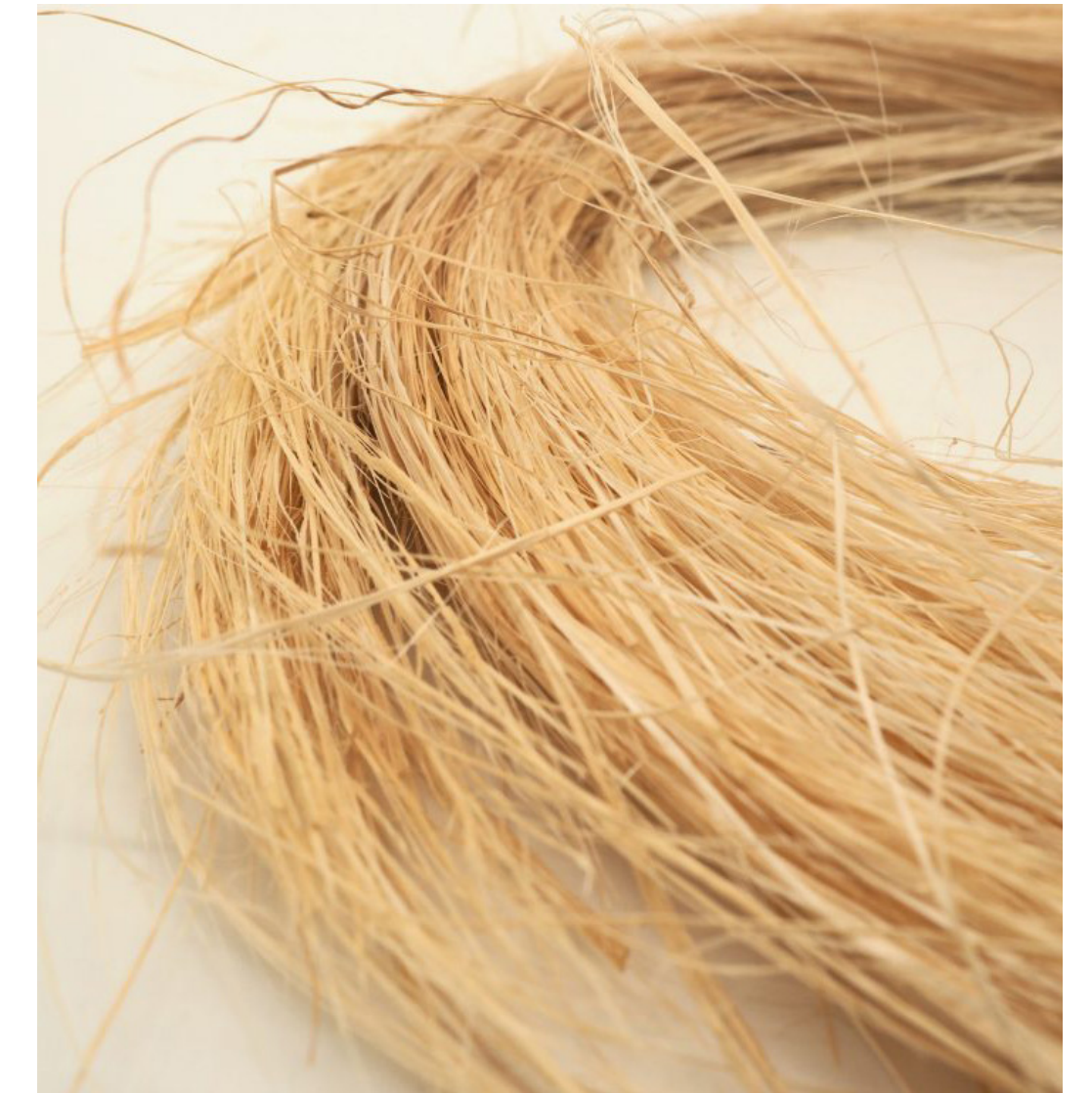
plural **forums** also **fora** 'fôr-ə

[Synonyms of *forum*](#) >

- 1 a** : the marketplace or public place of an ancient Roman city forming the center of judicial and public business
- b** : a public meeting place for open discussion
| The club provides a *forum* for people interested in local history.
- c** : a medium (such as a newspaper or online service) of open discussion or expression of ideas







REED FROM THE POELPOLDER

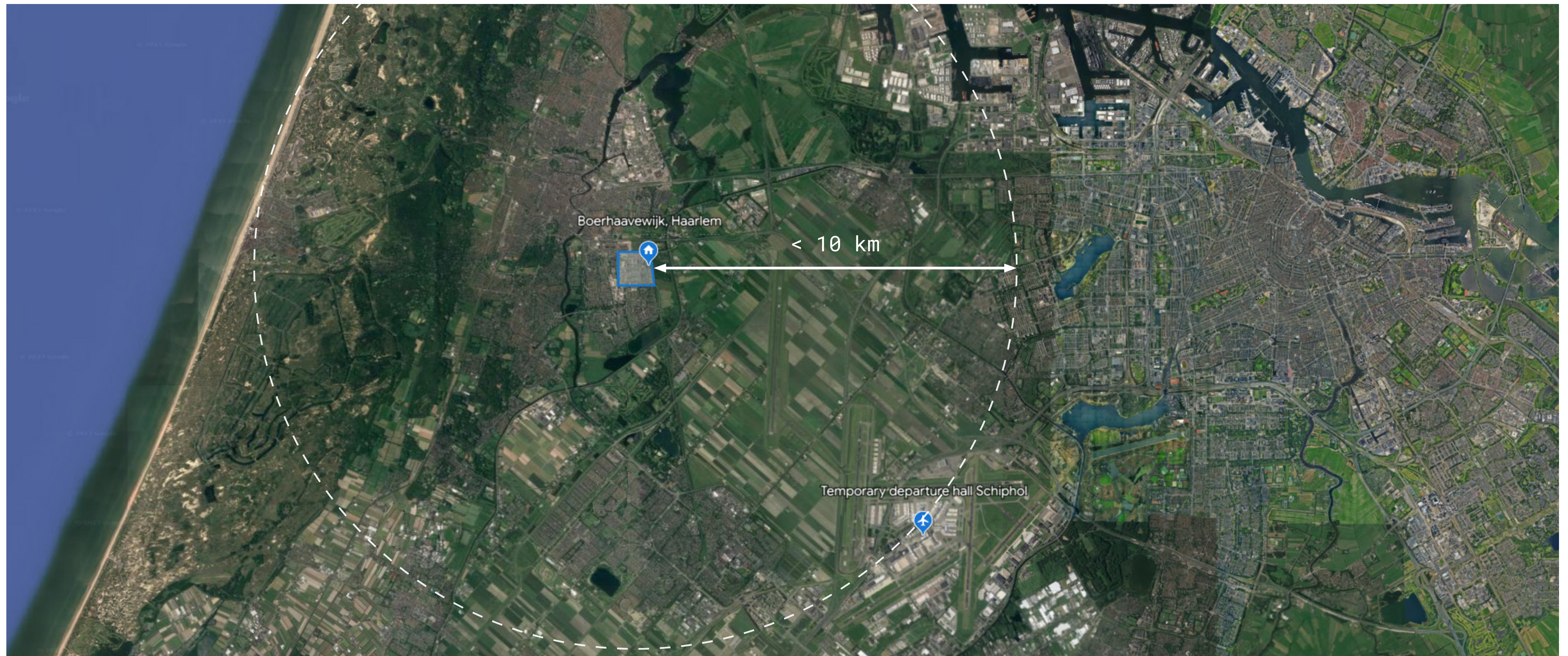


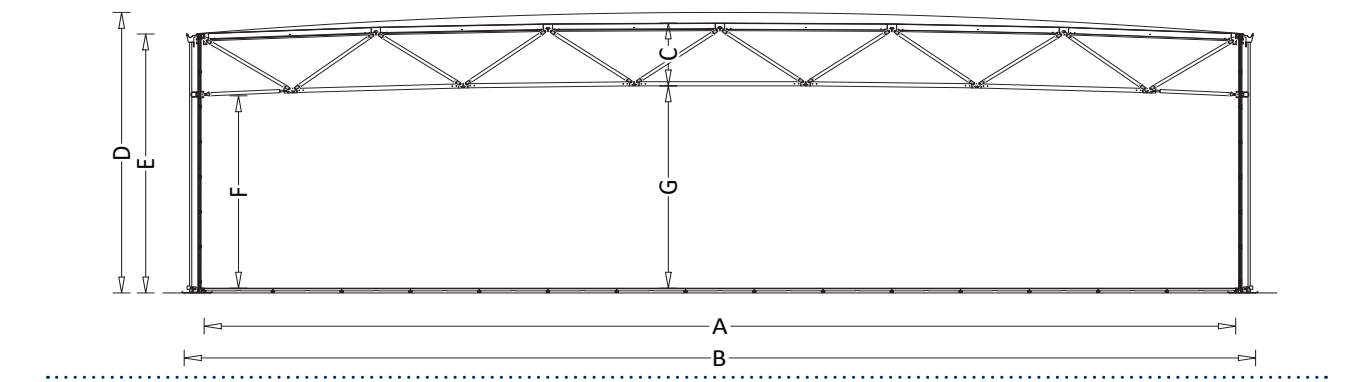


DREDGE FROM THE SPAARNE RIVER

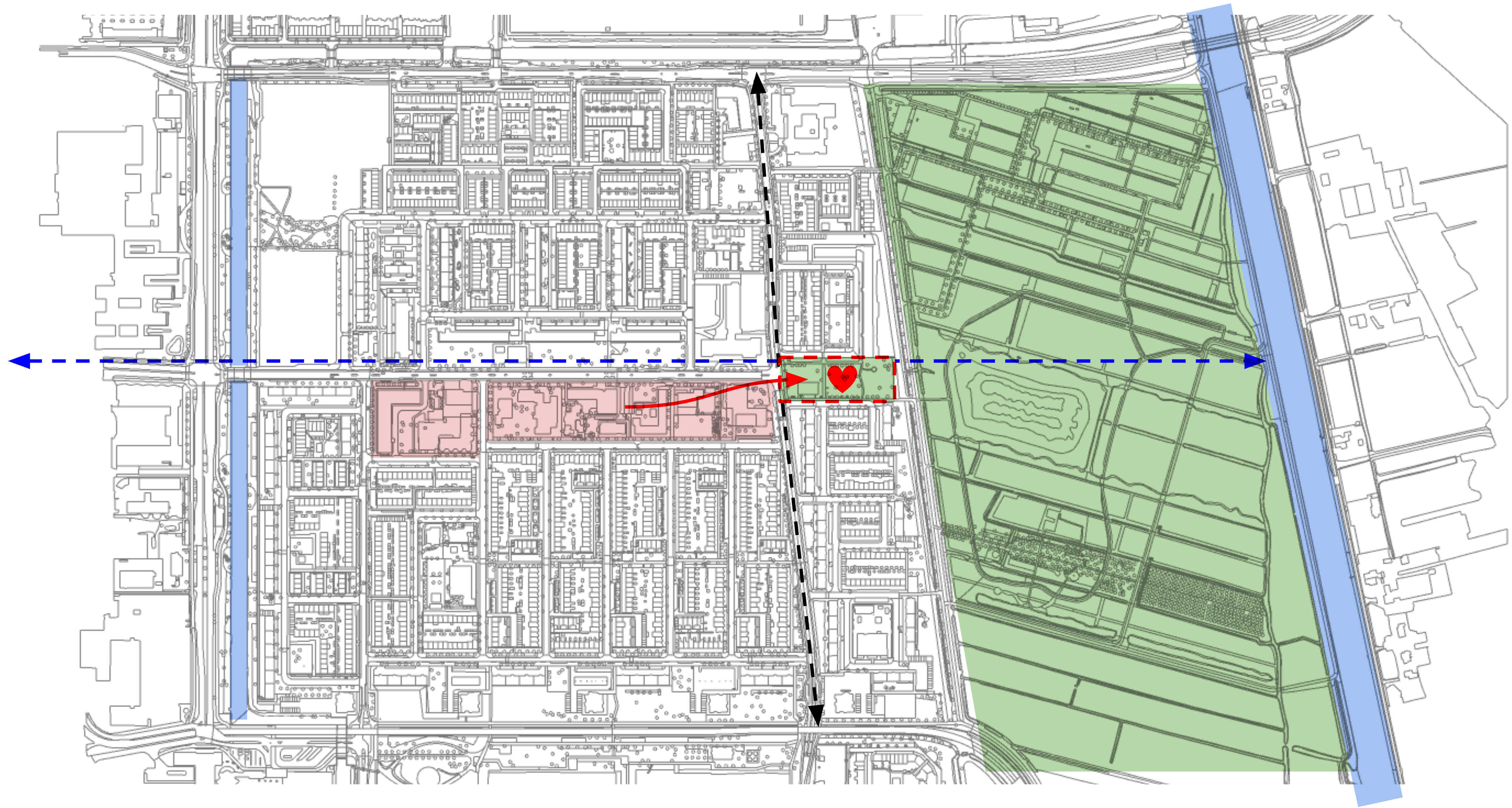


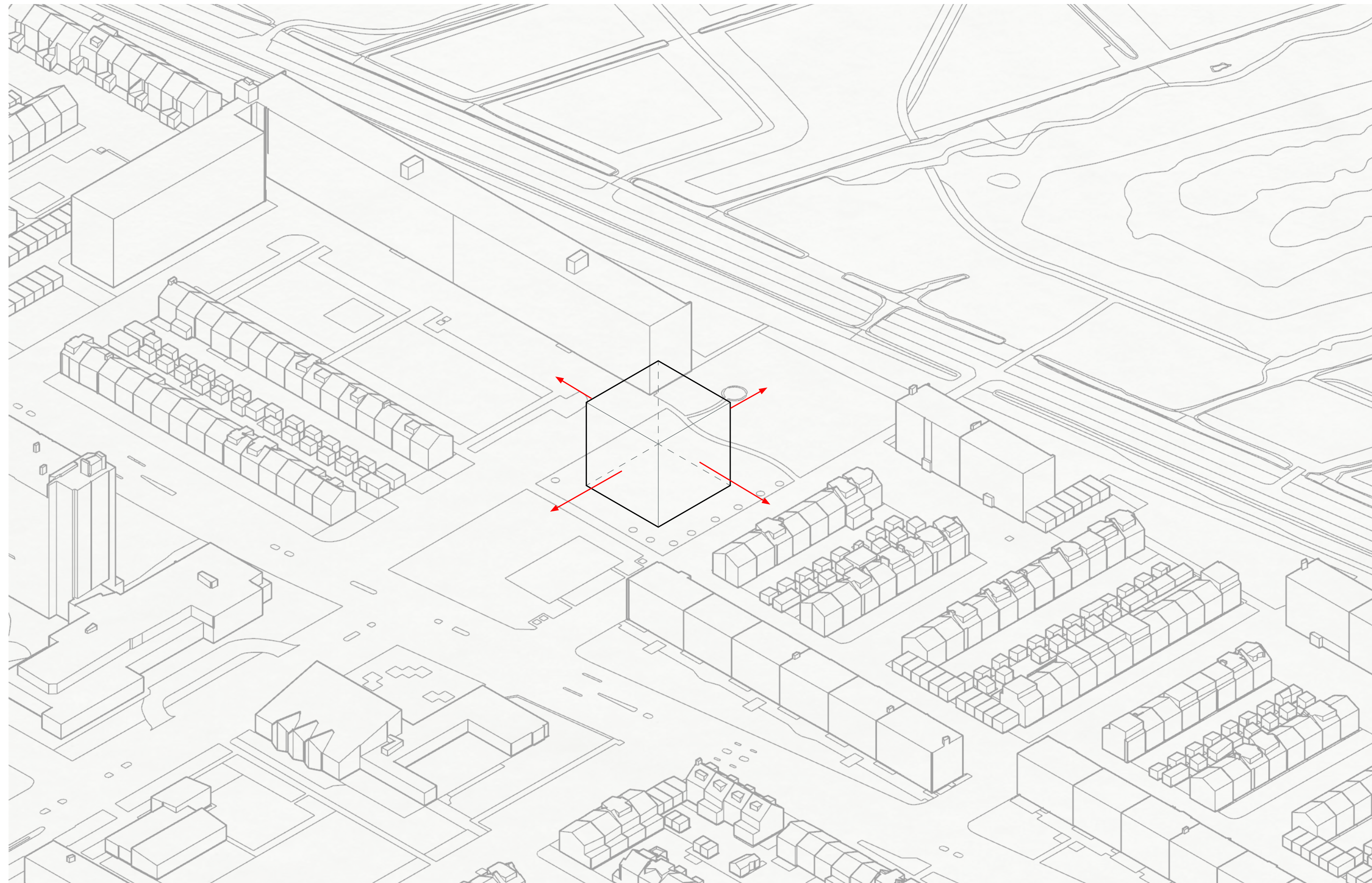






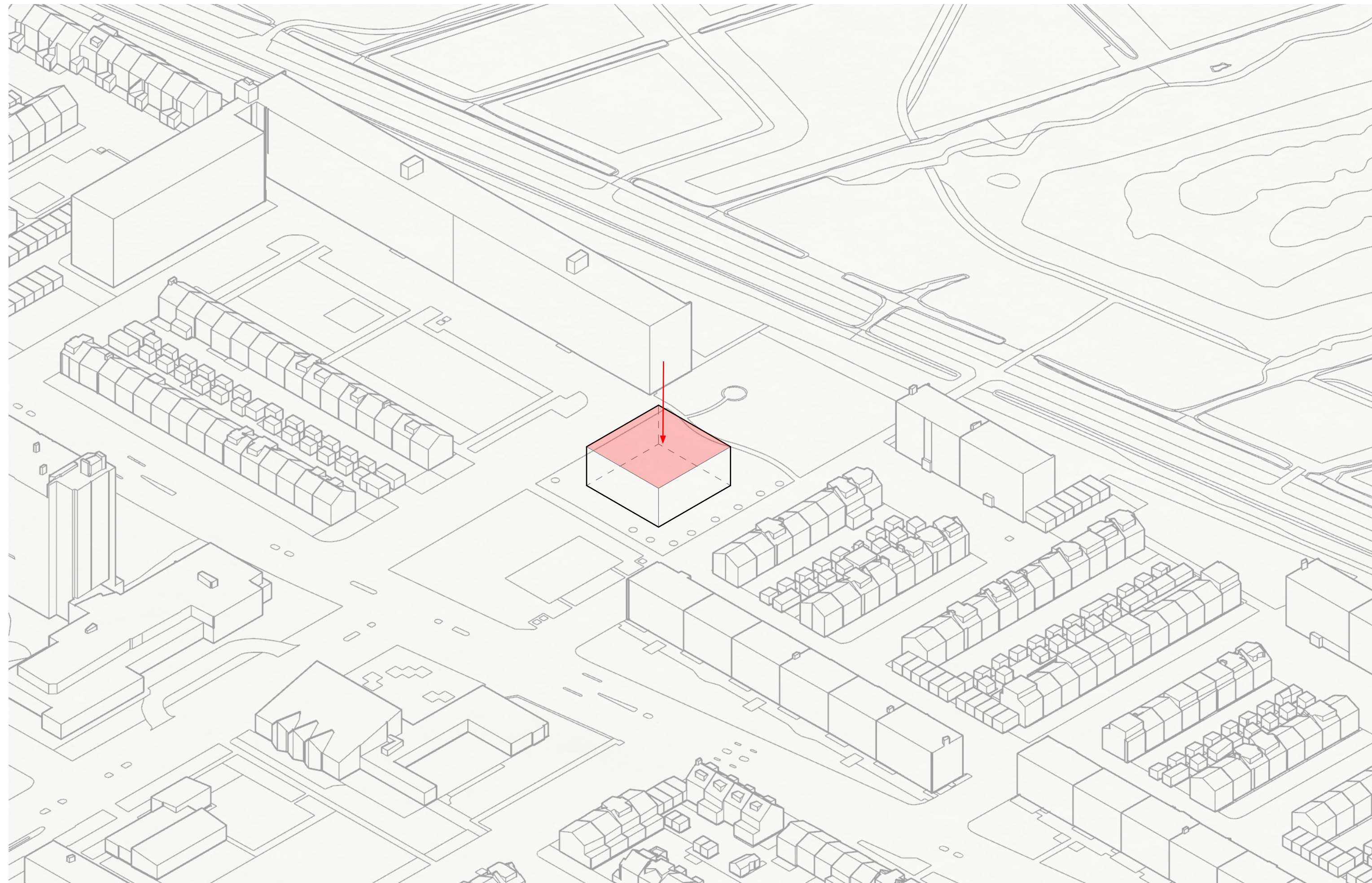
Neptunus Evolution II





Omnidirectional, compact volume

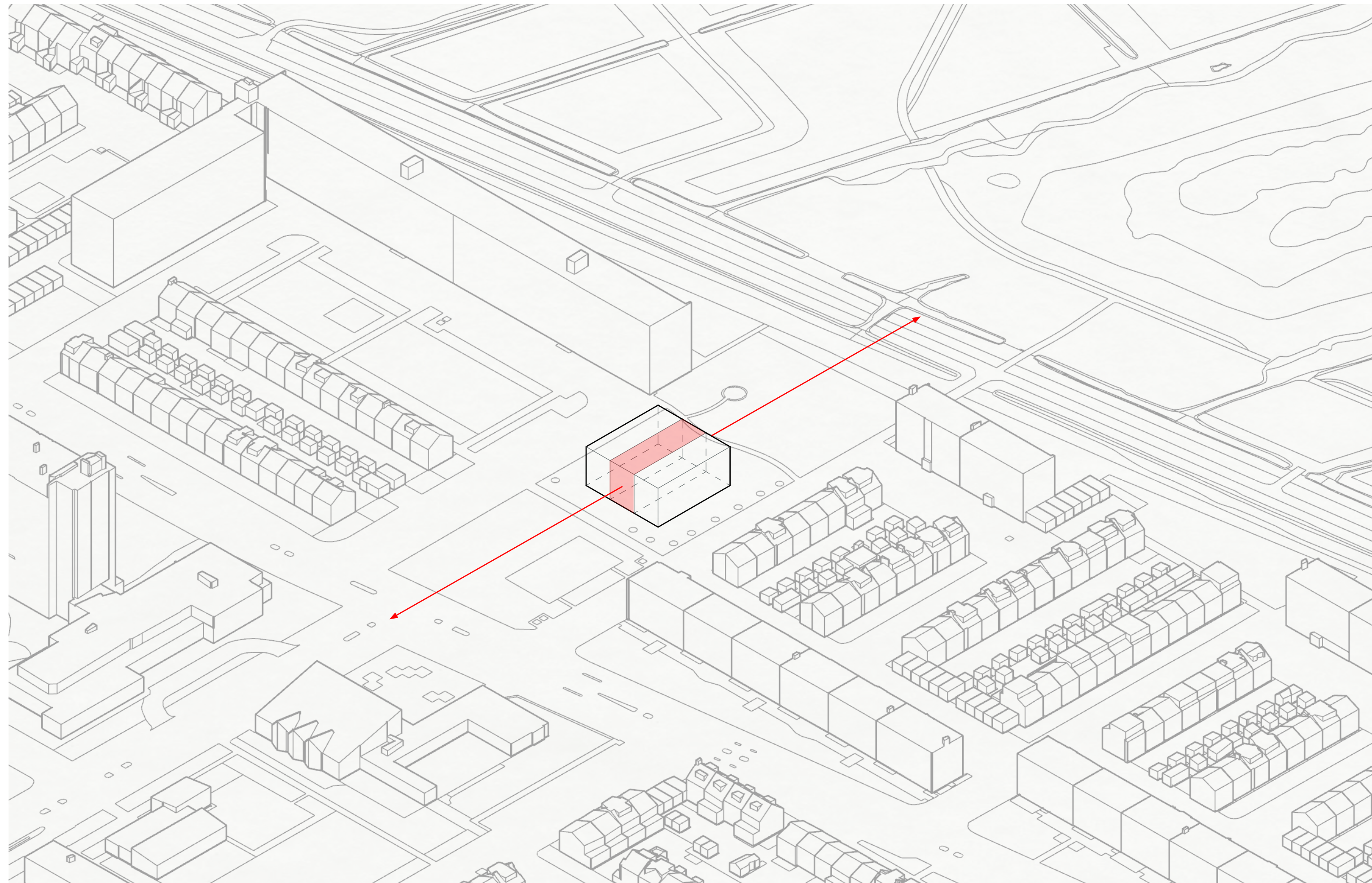
25 m



Lowered height to adjust to context

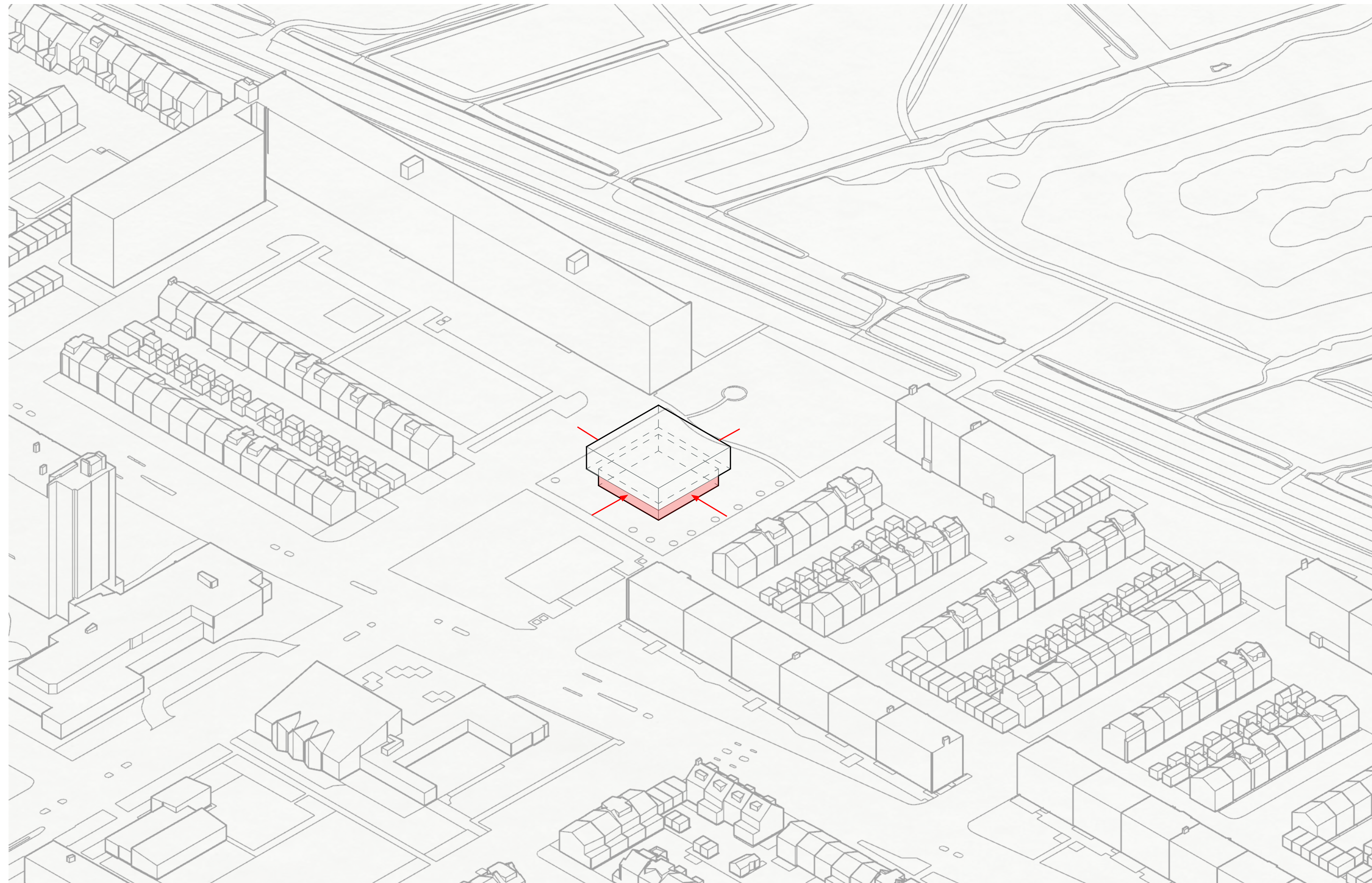
25 m

MASSING STRATEGY



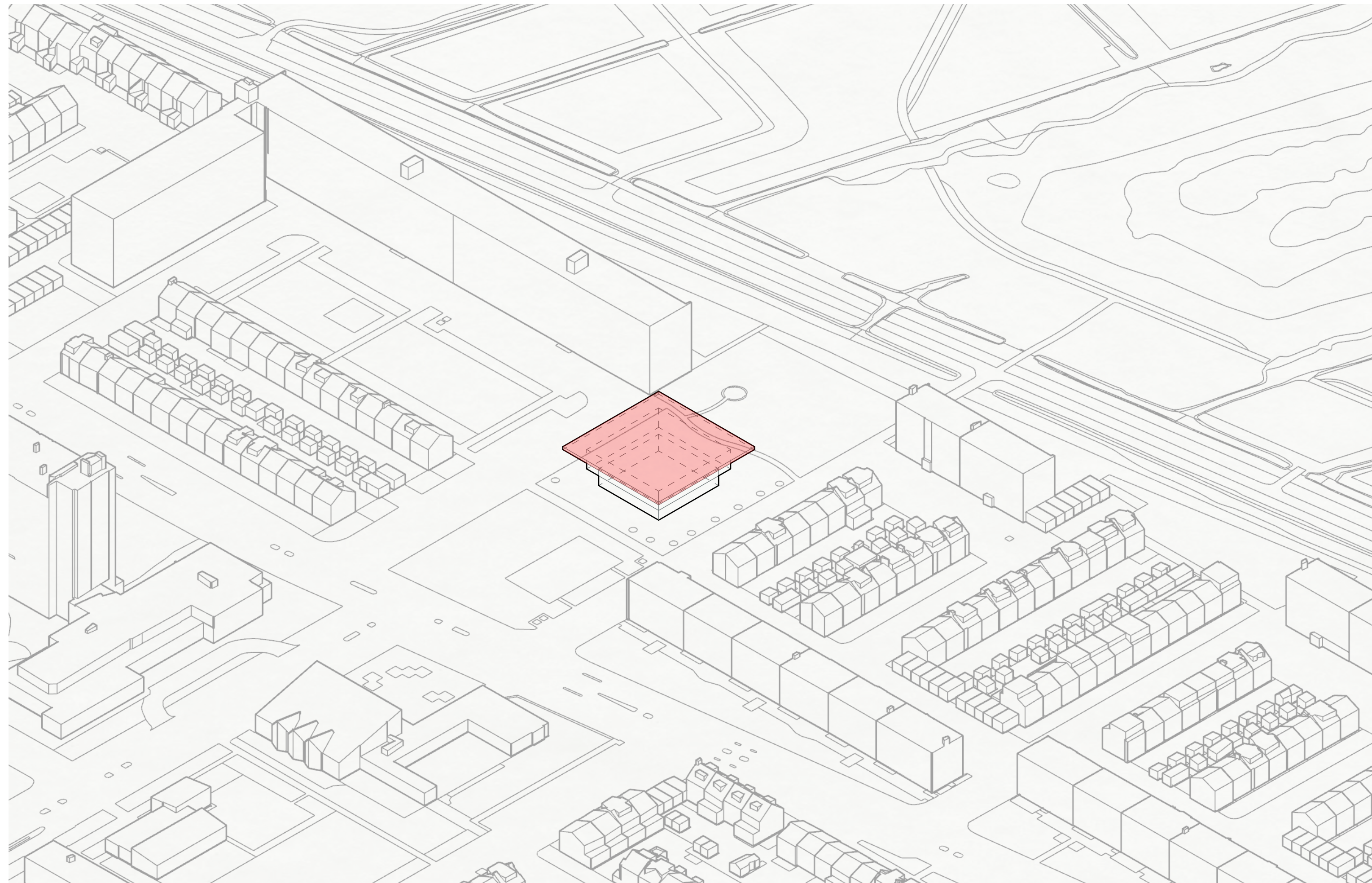
Cutout for atrium to emphasize the central axis

25 m



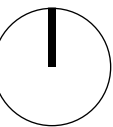
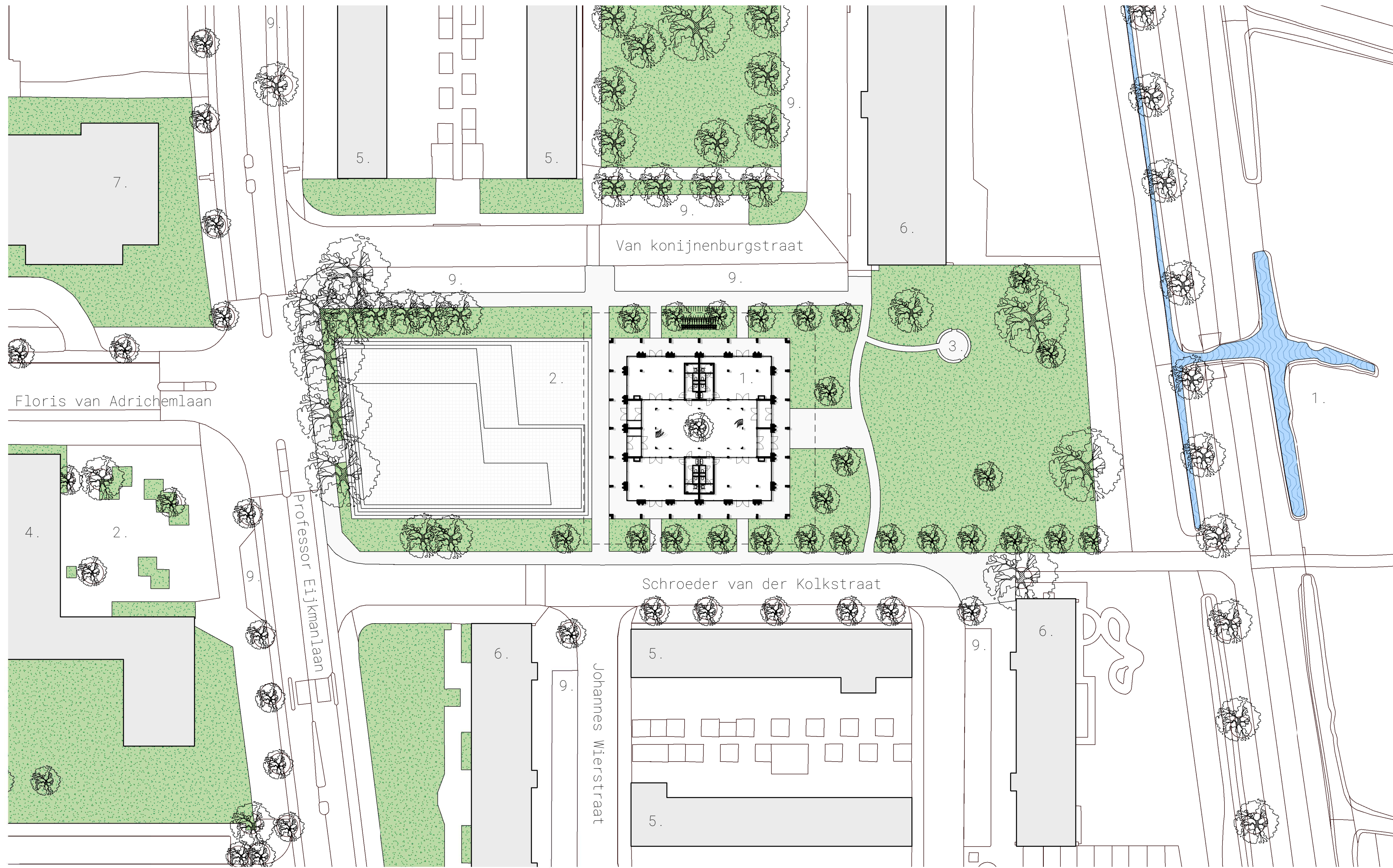
Setback of plinth to improve human scale

25 m



Extended roofline for climate control and to create identity

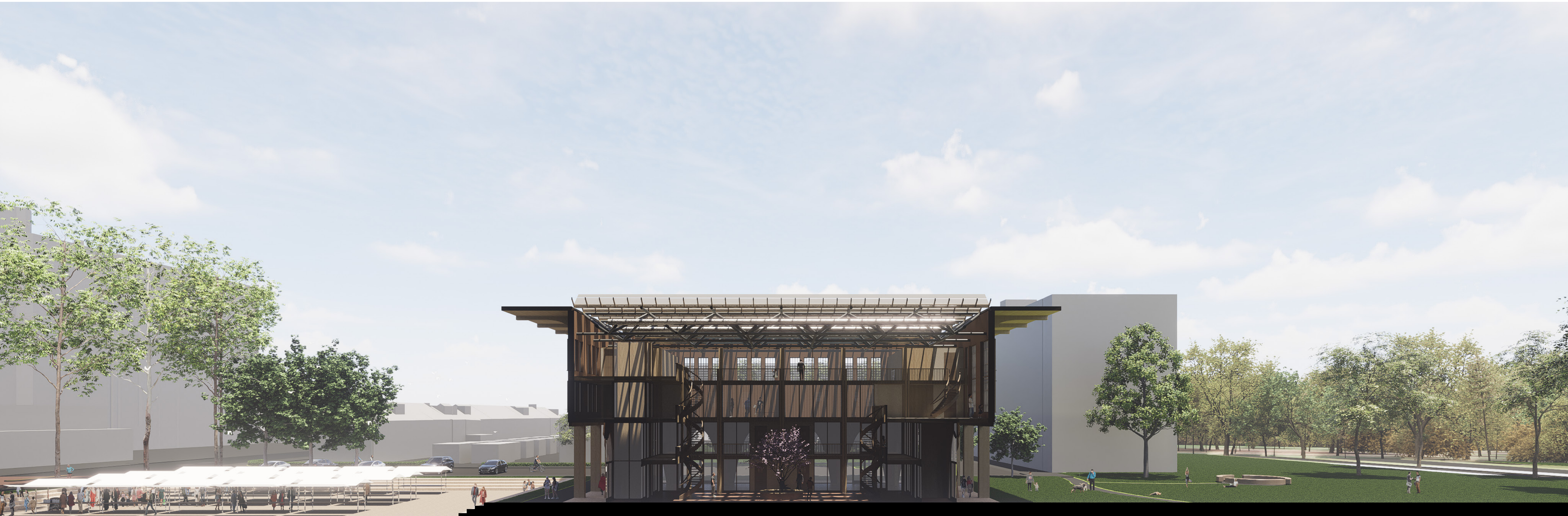
25 m



- 1. Forum Boerhaave
- 2. Water square
- 3. Poelpolder park
- 4. Church
- 5. Terraced housing
- 6. Apartments
- 7. Sint Jacob
- 8. Poelpolder
- 9. Parking

12.5 m

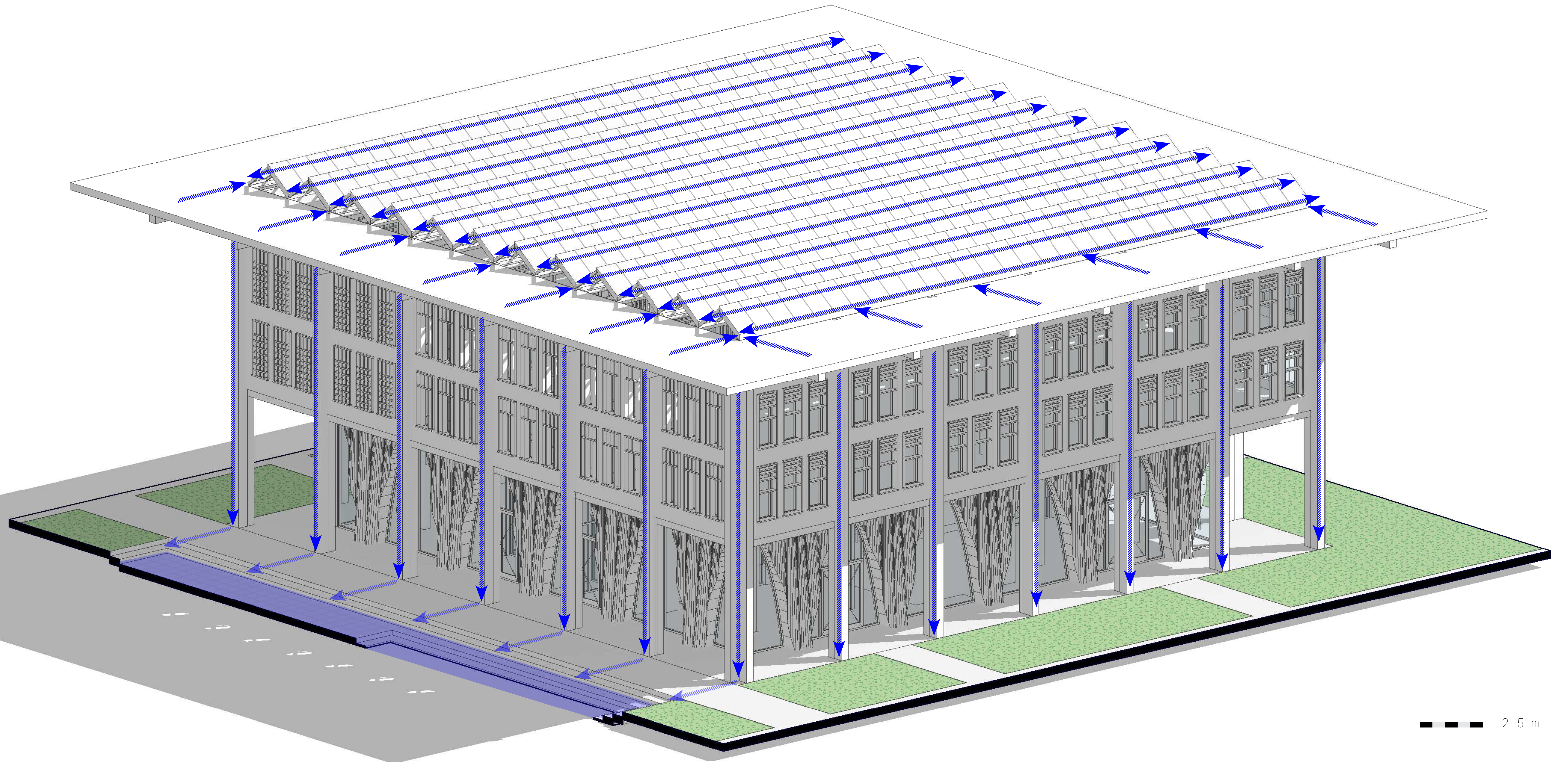
SITE AND CONTEXT



WATER SQUARE

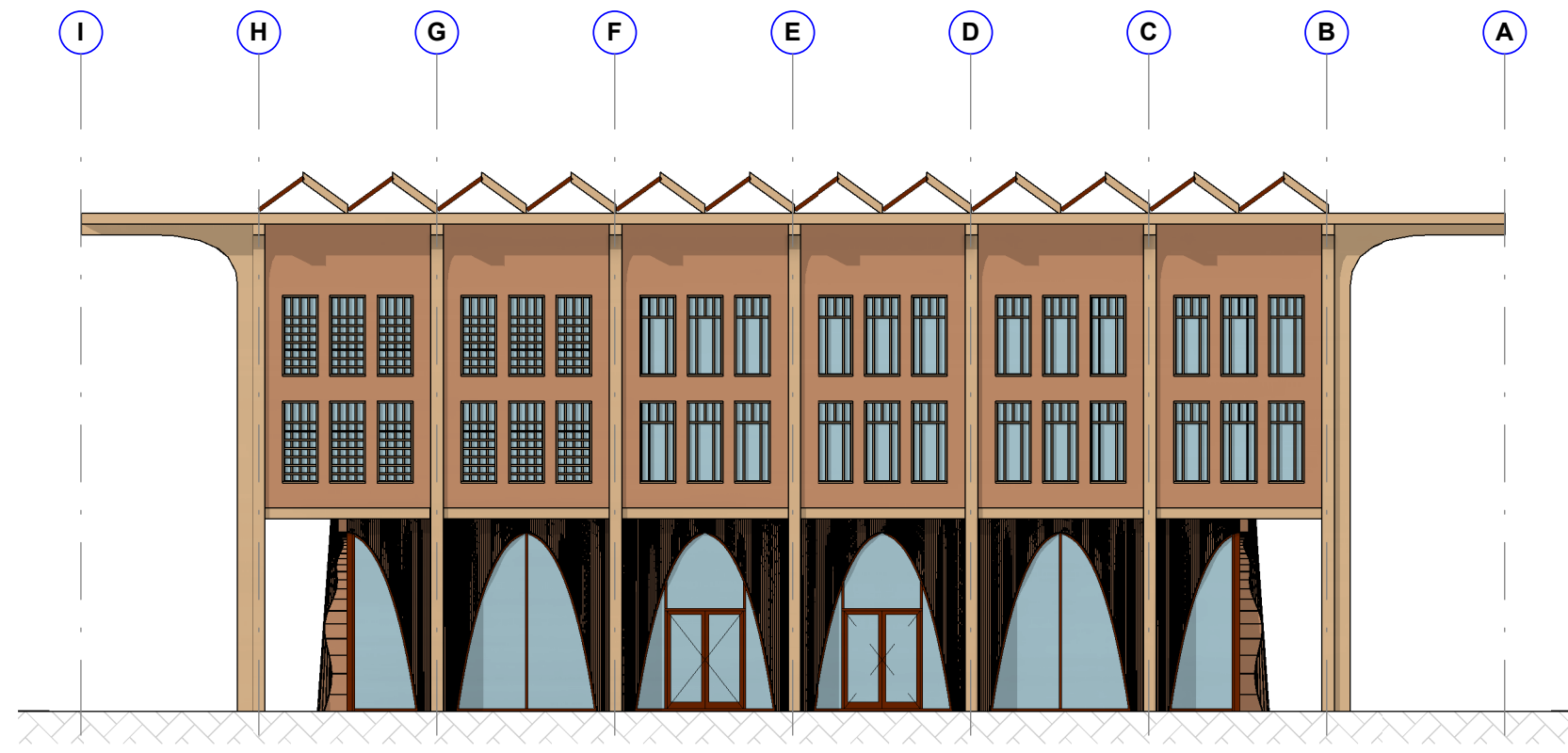
FORUM BOERHAAVE

POELPOLDER PARK

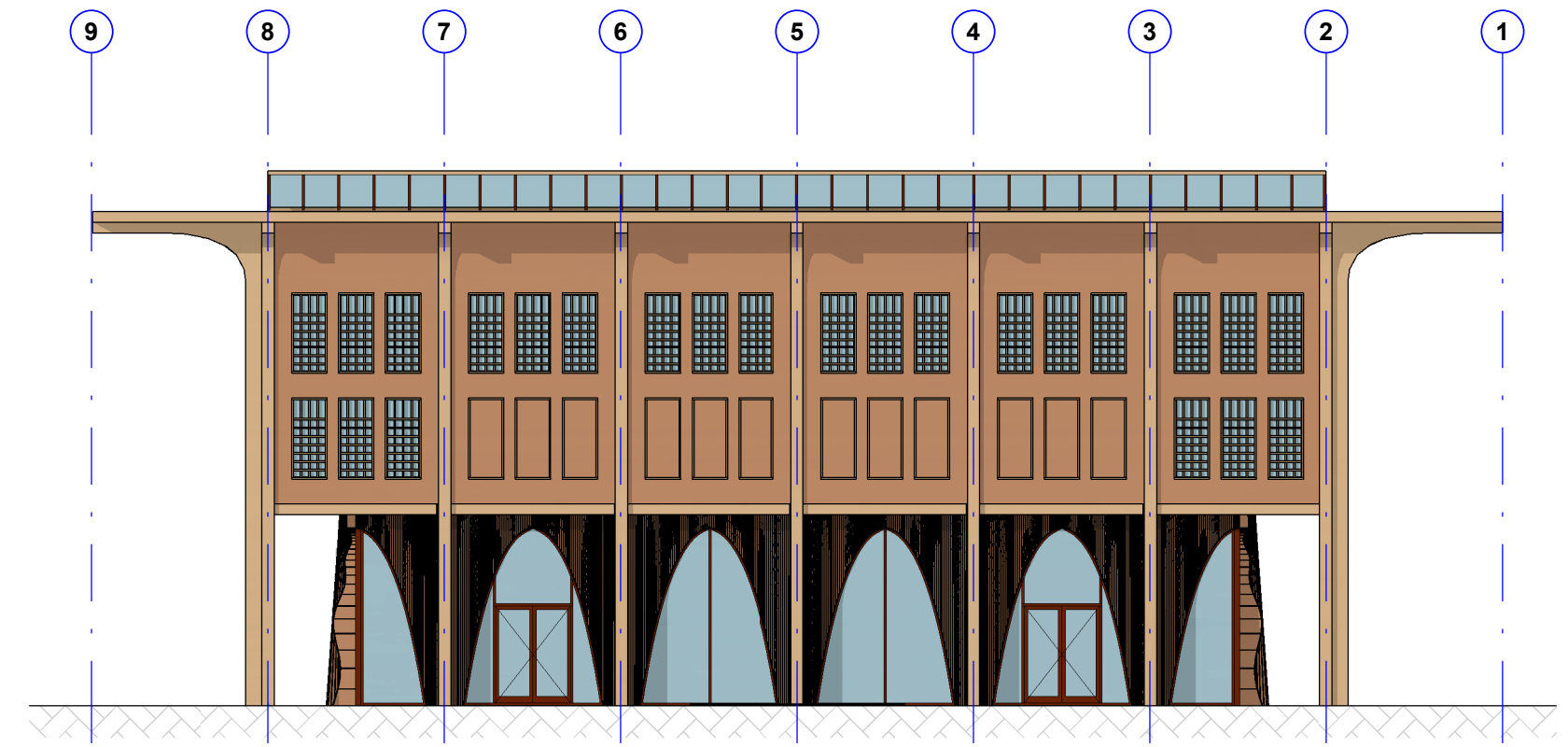


RAINFALL CONCEPT





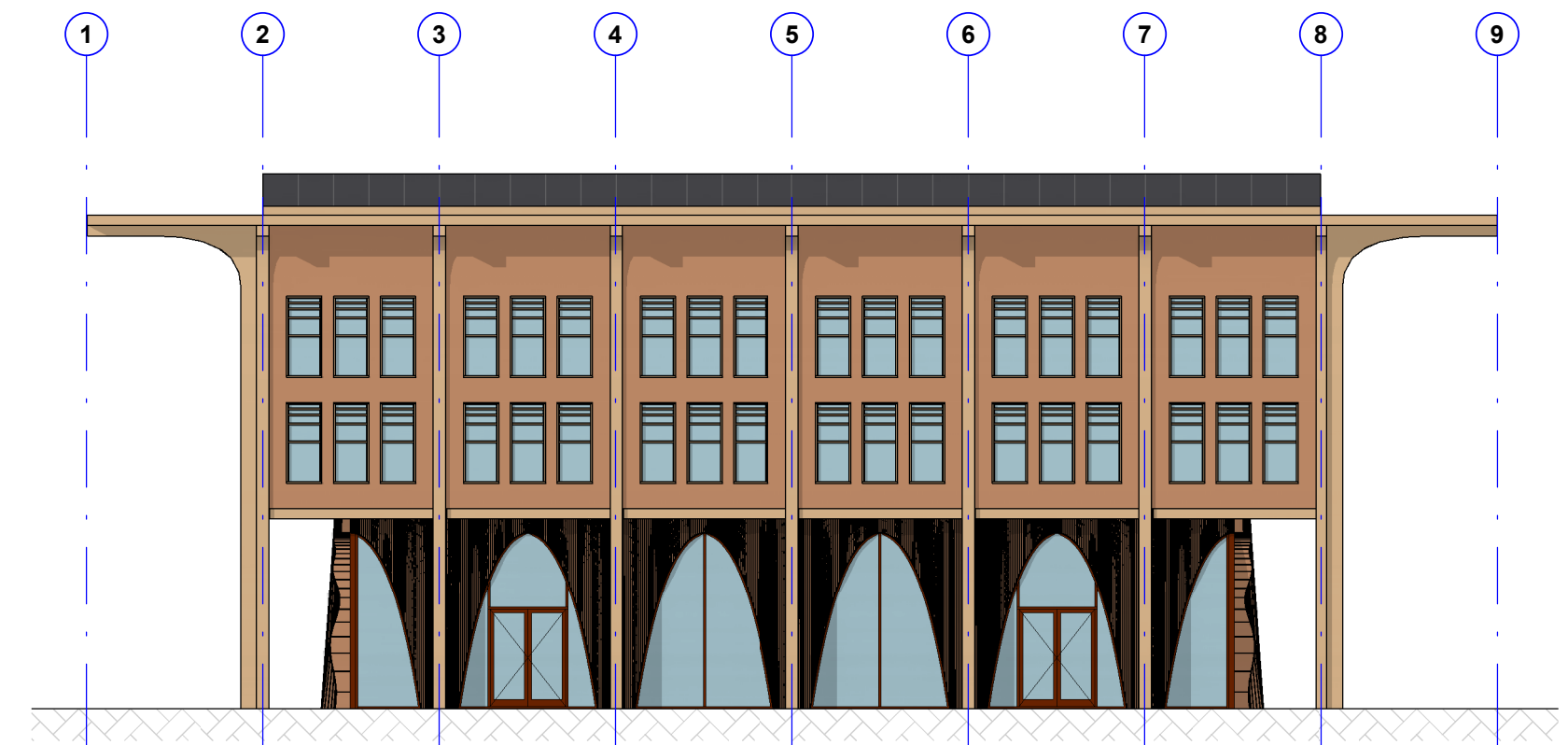
EAST ELEVATION



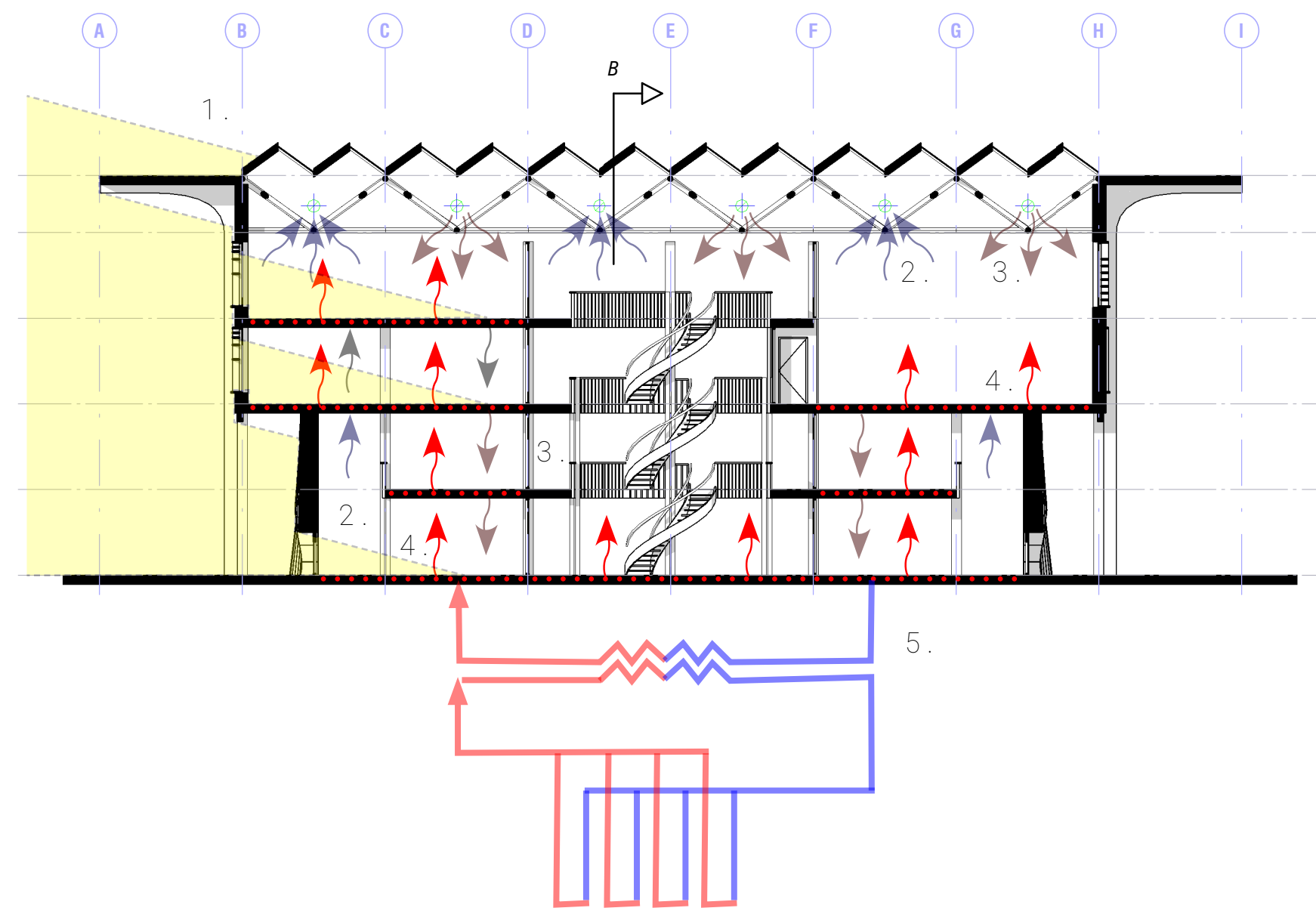
NORTH ELEVATION



WEST ELEVATION

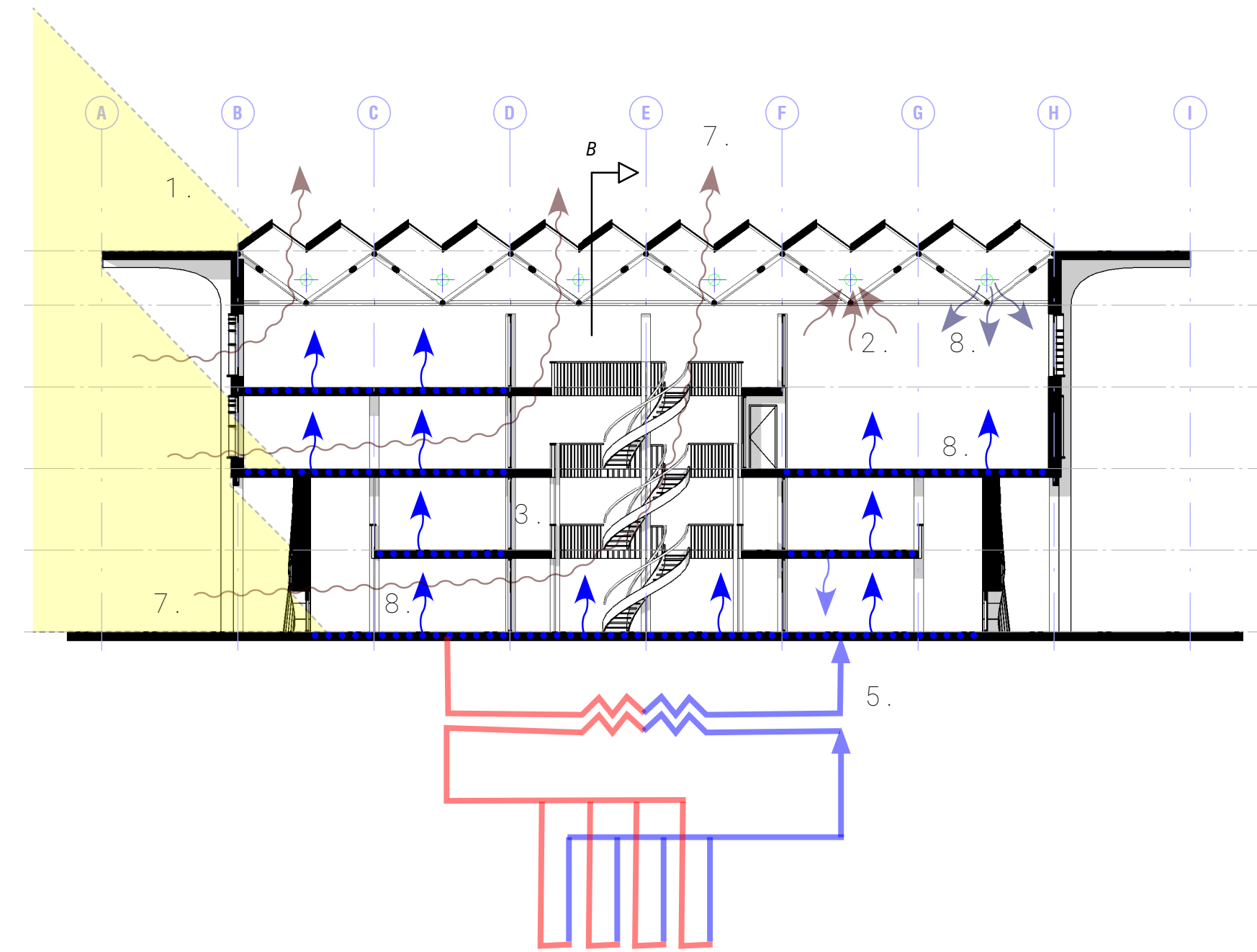


SOUTH ELEVATION



- 1. Solar power
- 2. Air exhaust
- 3. Heated air supply
- 4. Water heated floor
- 5. Ground heat exchanger with heat pump

- 6. Cooled air supply
- 7. Natural ventilation
- 8. Water cooled floor



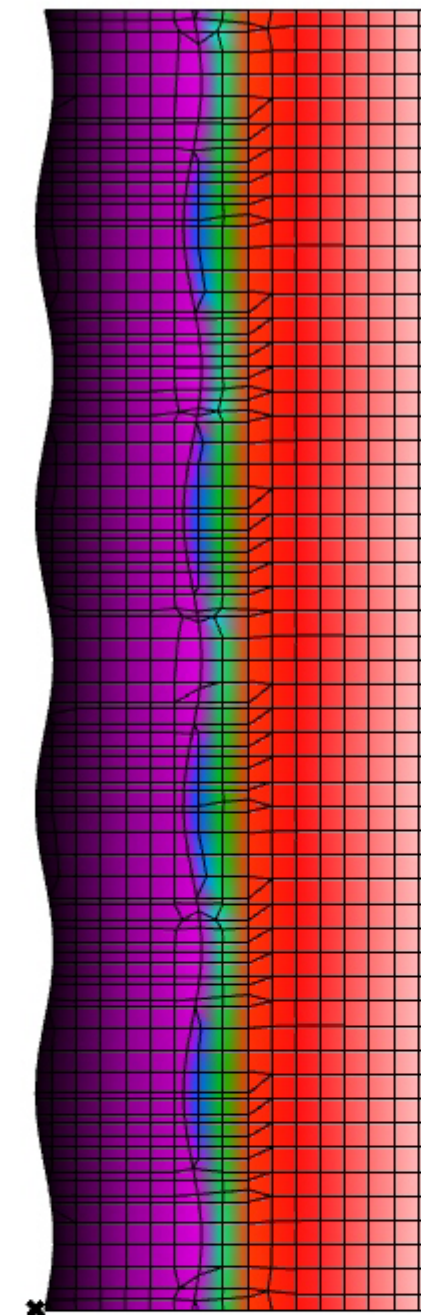
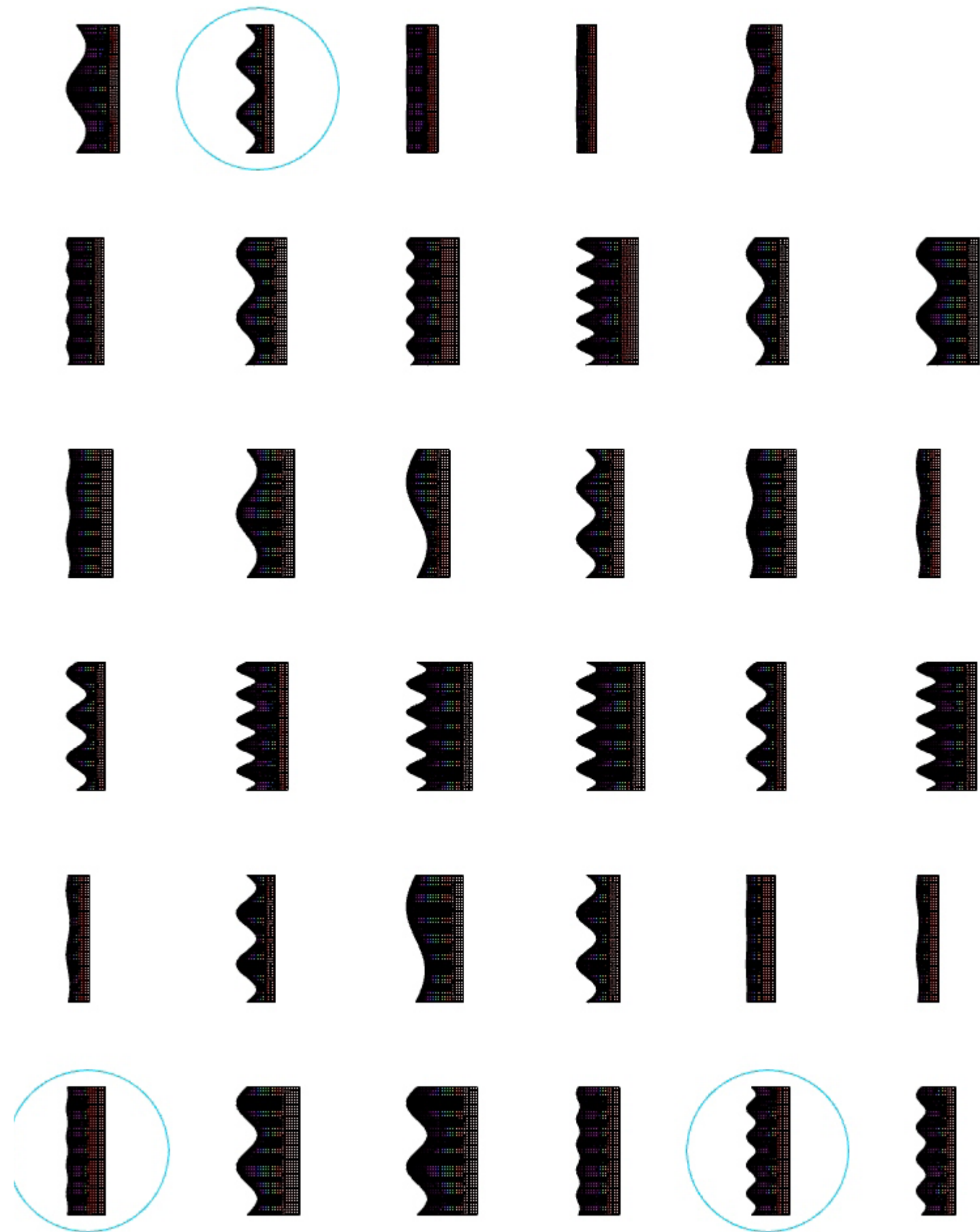
WINTER CLIMATE SECTION WEST

SUMMER CLIMATE SECTION WEST

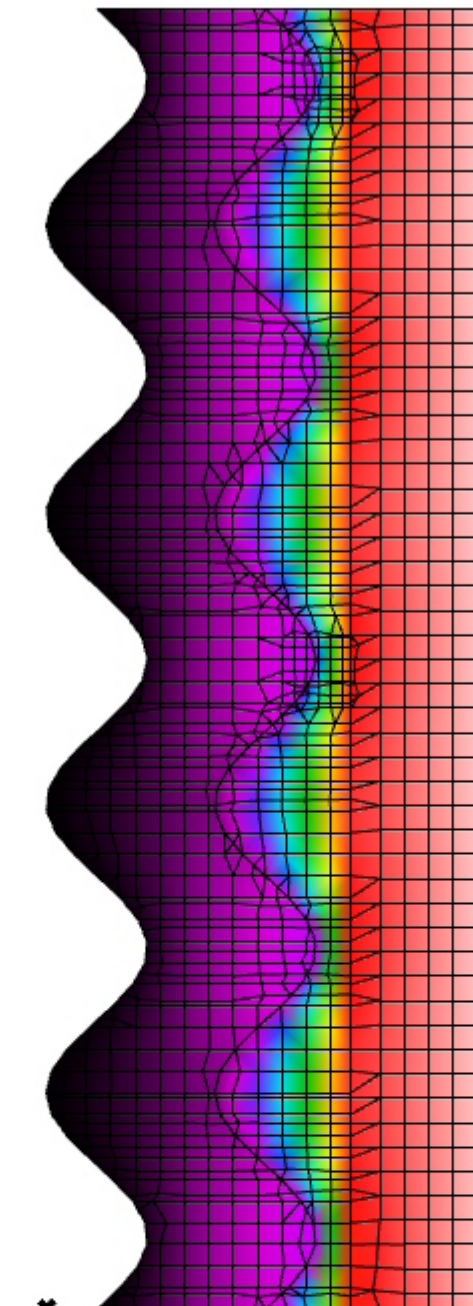




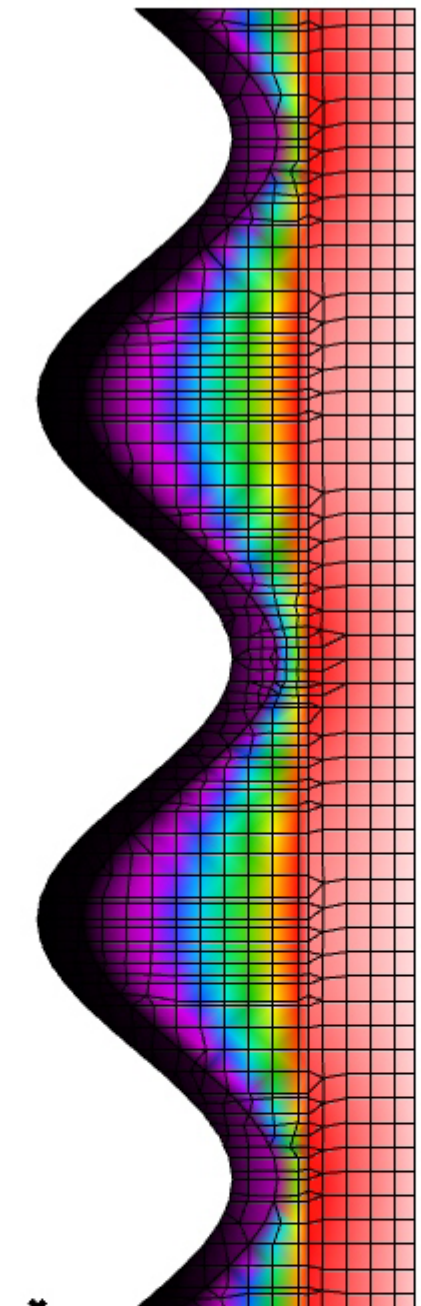




Gen: 19 | Ind: 0
 FV. 1 : 0.922
 FV. 2 : 2.698626
 FV. 3 : 0.00126
 FV. 4 : 0.861342
 FV. 5 : 0.400037
 FV. 6 : 0.117041
 FV. 7 : 0.121268
 Data input 1 : max. thickness: 0,922 m
 Data input 2 : total area: 2,7 m2
 Data input 3 : R-value: 4,5 W/(m2·K)
 Data input 4 : max. displacement ext.: 0,9 cm
 Data input 5 : max. displacement int.: 0,4 cm
 Data input 6 : max.utilization ext.: 8,5 %
 Data input 7 : max.utilization int.: 8,2 %



Gen: 19 | Ind: 6
 FV. 1 : 1.028
 FV. 2 : 2.708633
 FV. 3 : 0.320415
 FV. 4 : 0.420499
 FV. 5 : 0.488403
 FV. 6 : 0.110432
 FV. 7 : 0.121268
 Data input 1 : max. thickness: 1,028 m
 Data input 2 : total area: 2,71 m2
 Data input 3 : R-value: 4,82 W/(m2·K)
 Data input 4 : max. displacement ext.: 0,4 cm
 Data input 5 : max. displacement int.: 0,5 cm
 Data input 6 : max.utilization ext.: 9,1 %
 Data input 7 : max.utilization int.: 8,2 %



Gen: 19 | Ind: 46
 FV. 1 : 0.871
 FV. 2 : 1.852548
 FV. 3 : 0.245319
 FV. 4 : 1.184435
 FV. 5 : 0.93913
 FV. 6 : 0.05547
 FV. 7 : 0.110432
 Data input 1 : max. thickness: 0,871 m
 Data input 2 : total area: 1,85 m2
 Data input 3 : R-value: 4,75 W/(m2·K)
 Data input 4 : max. displacement ext.: 1,2 cm
 Data input 5 : max. displacement int.: 0,9 cm
 Data input 6 : max.utilization ext.: 18 %
 Data input 7 : max.utilization int.: 9,1 %



Cellulose cavity insulation $\lambda = 0.035-0.04$ W/mK



Filtered dredge main substance



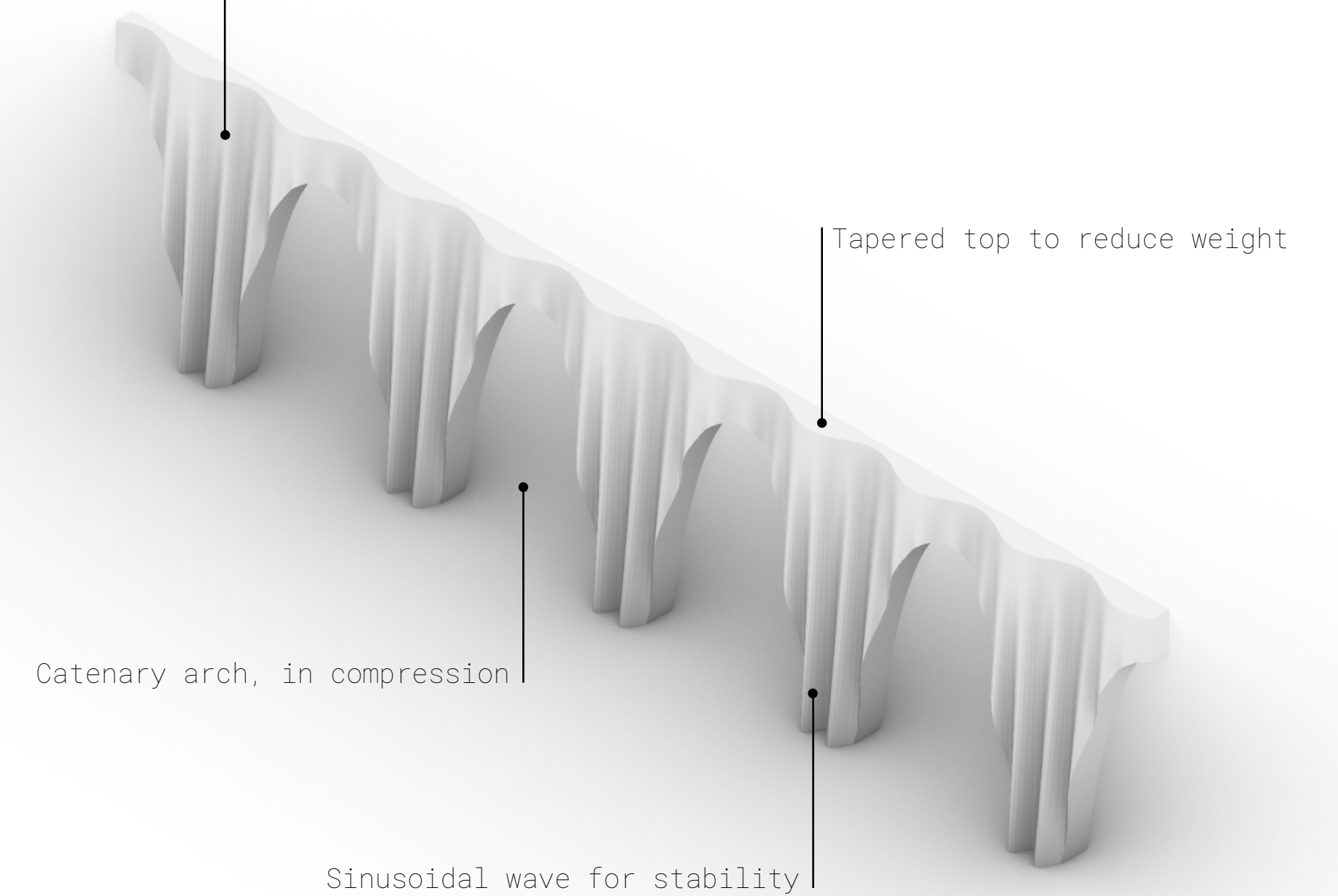
Kaamera biopolymer binder



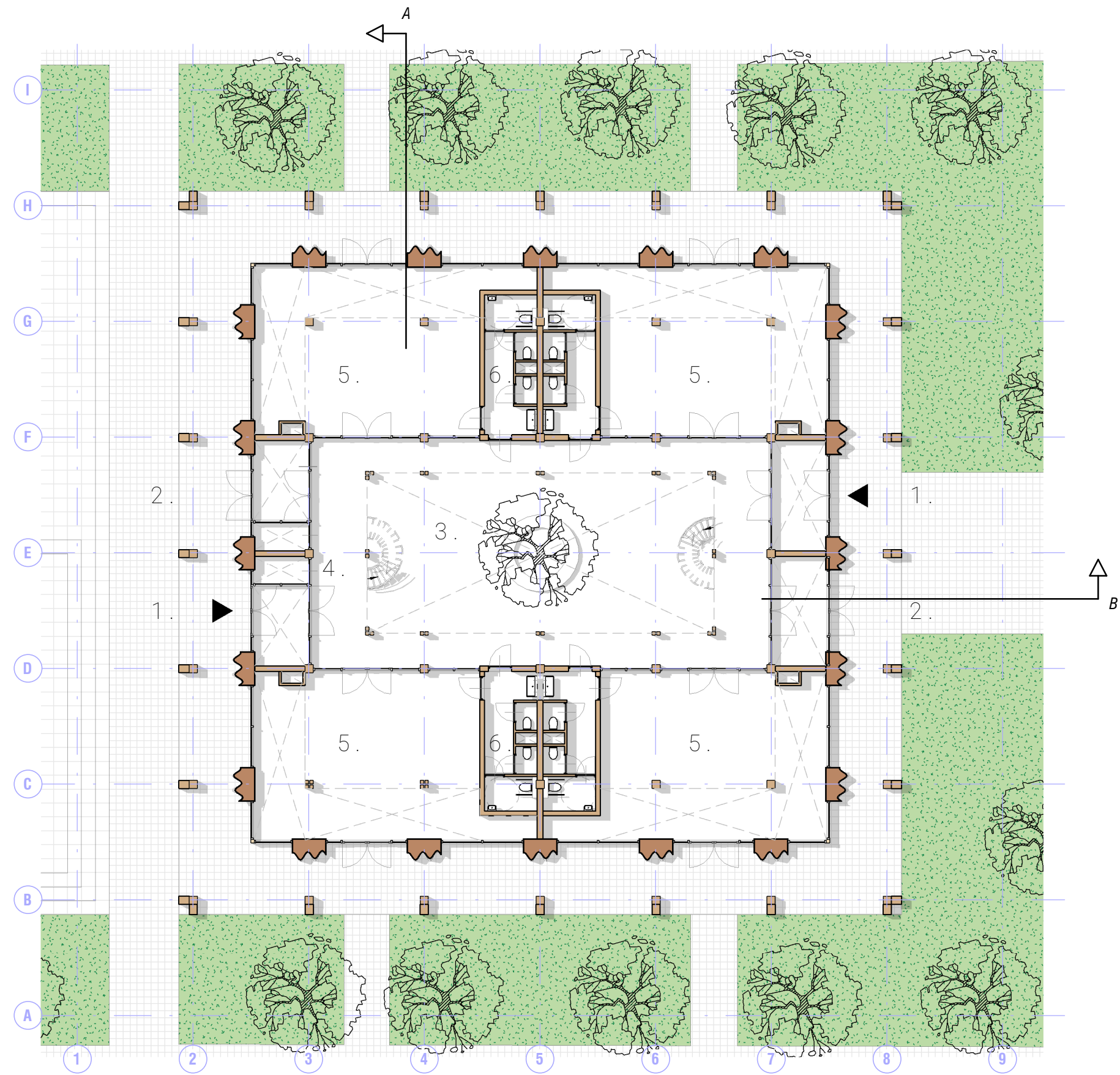
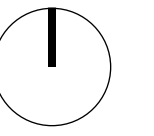
Reed fibre tensile strength reinforcement



Facade expressed as a 'peekable' curtain, inviting users into the building

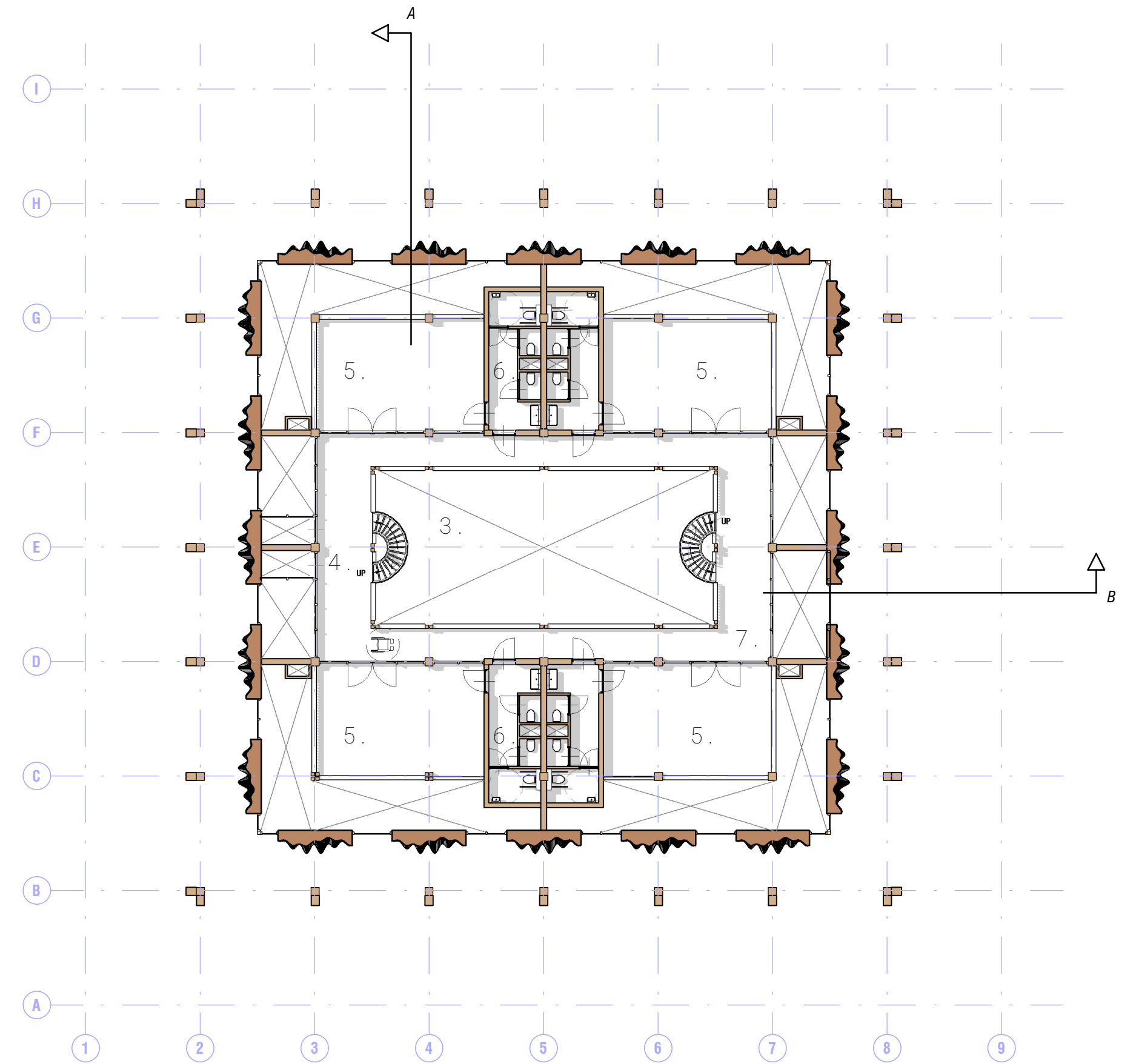






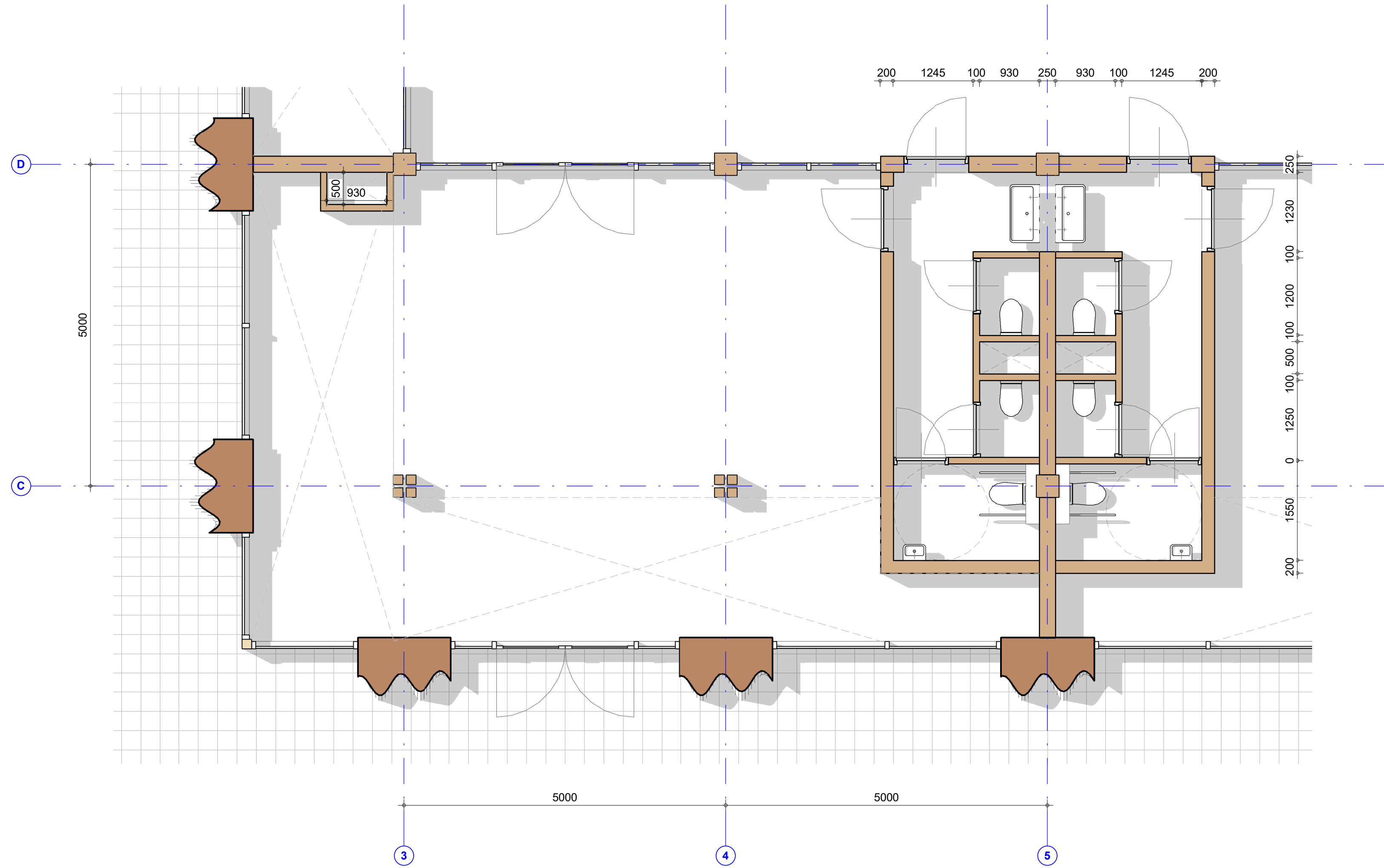
- 1. Entrance
- 2. Exit
- 3. Atrium
- 4. Elevator
- 5. Flexible space
- 6. Toilet facility
- 7. Gallery
- 8. Storage room
- 9. Dressing room
- 10. Technical room

GROUND FLOOR



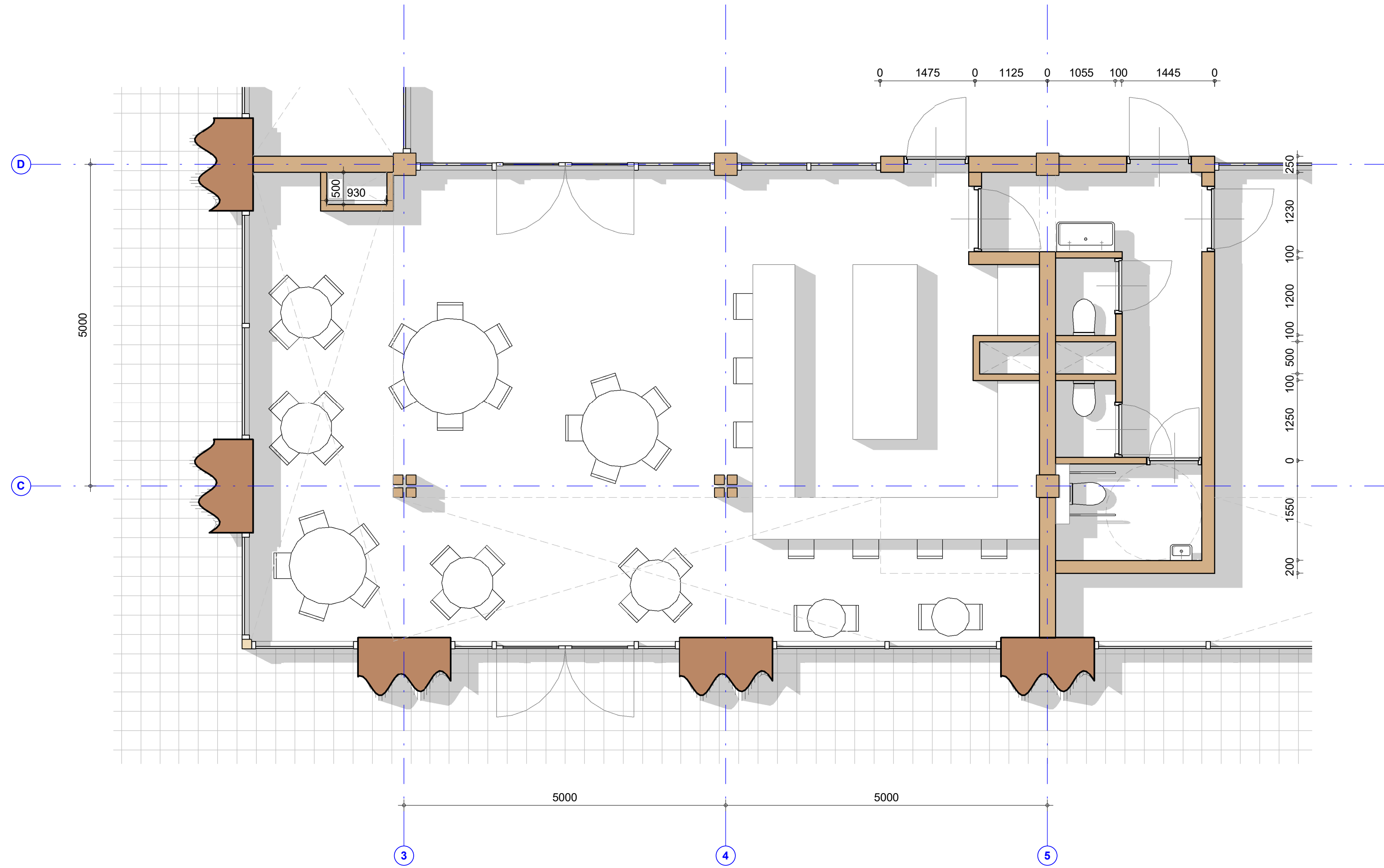
FIRST FLOOR





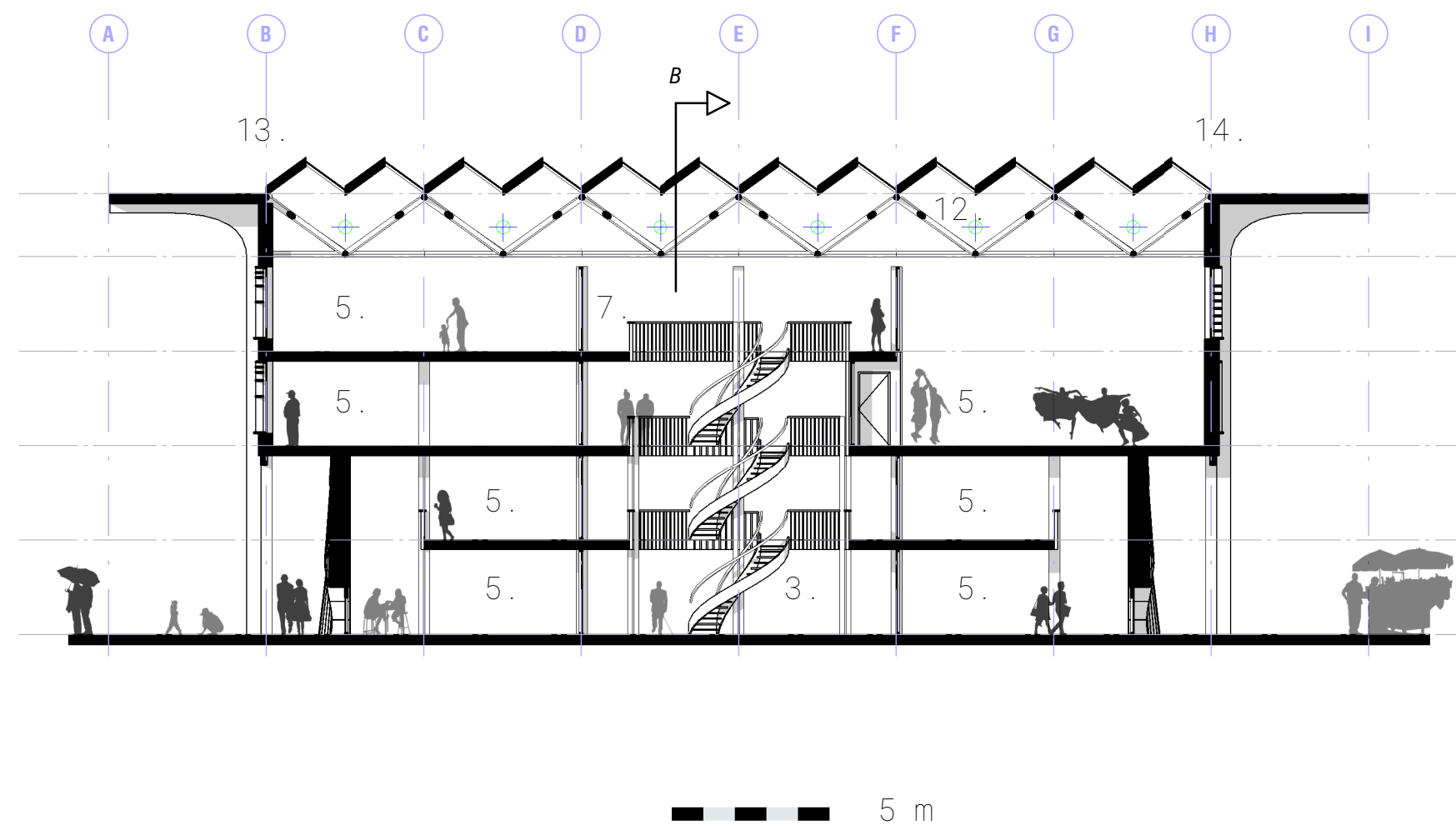
FLEXIBLE FLOOR PLAN EMPTY





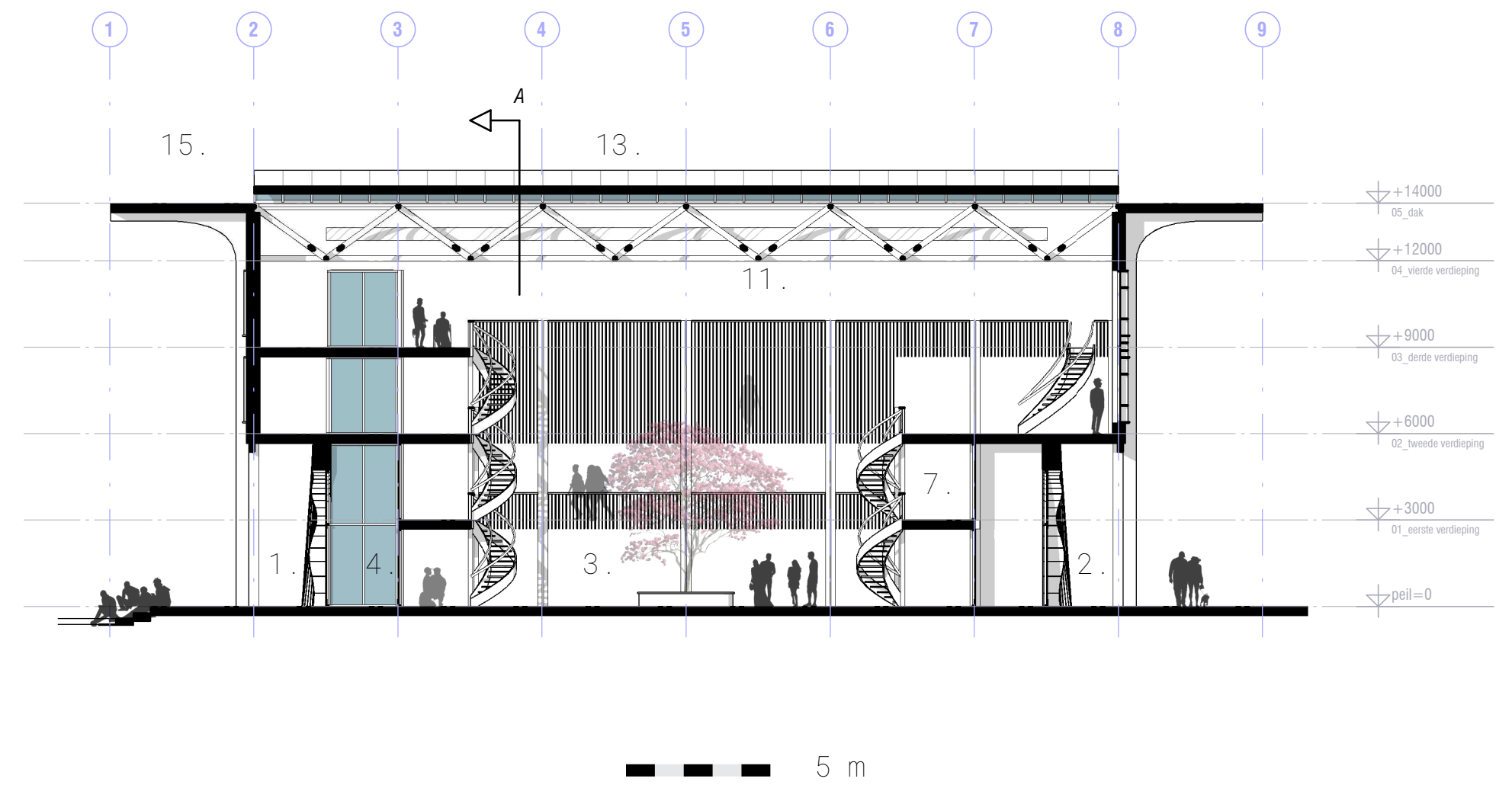
FLEXIBLE FLOOR PLAN CAFE OPTION





SECTION A

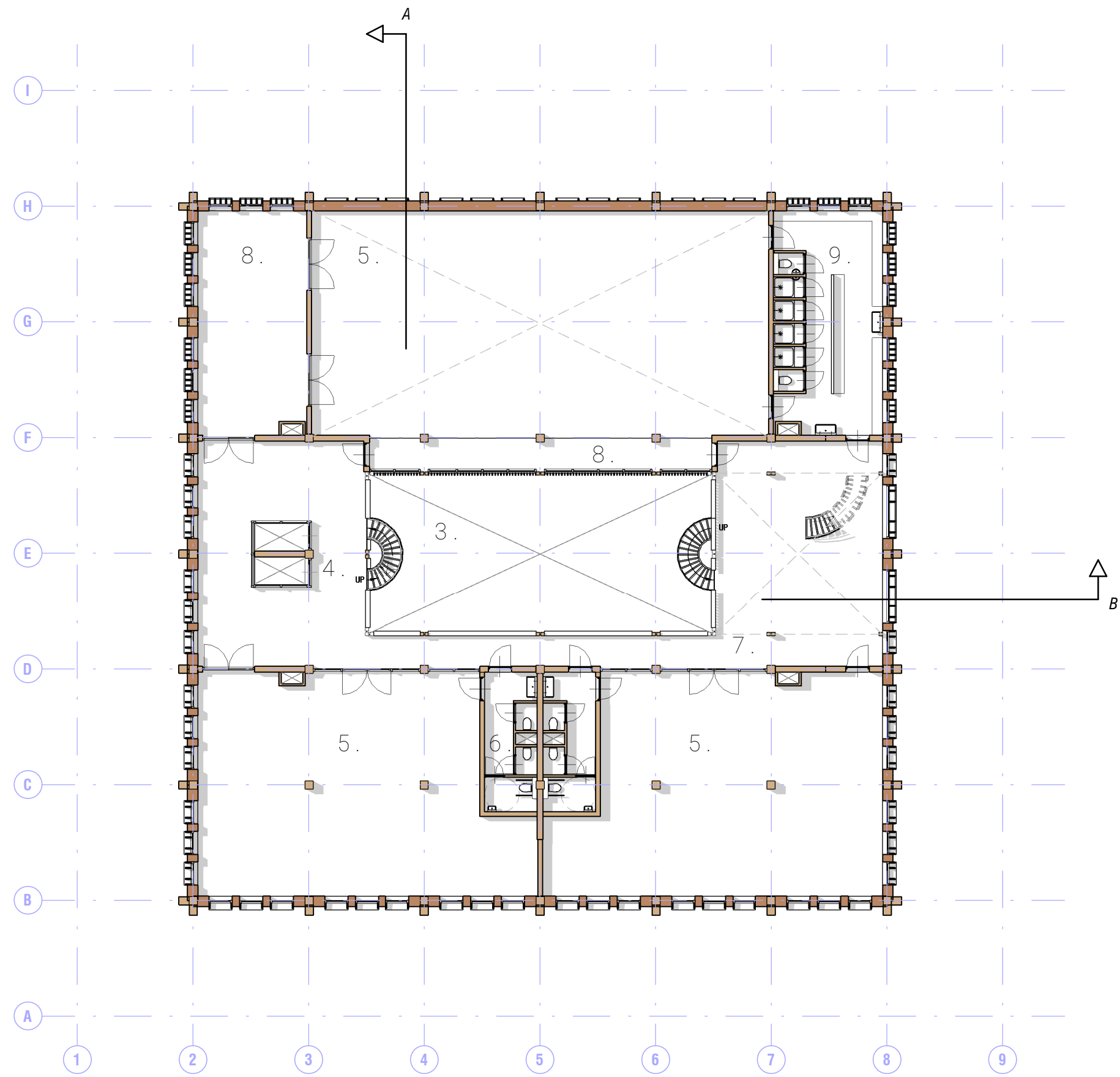
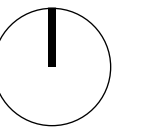
1. Entrance
2. Exit
3. Atrium
4. Elevator
5. Flexible space
6. Toilet facility
7. Gallery
8. Storage room
9. Dressing room
10. Technical room
11. Space Frame
12. Ventilation shaft
13. Solar Panel
14. Glass
15. Cantilevered roof



SECTION B



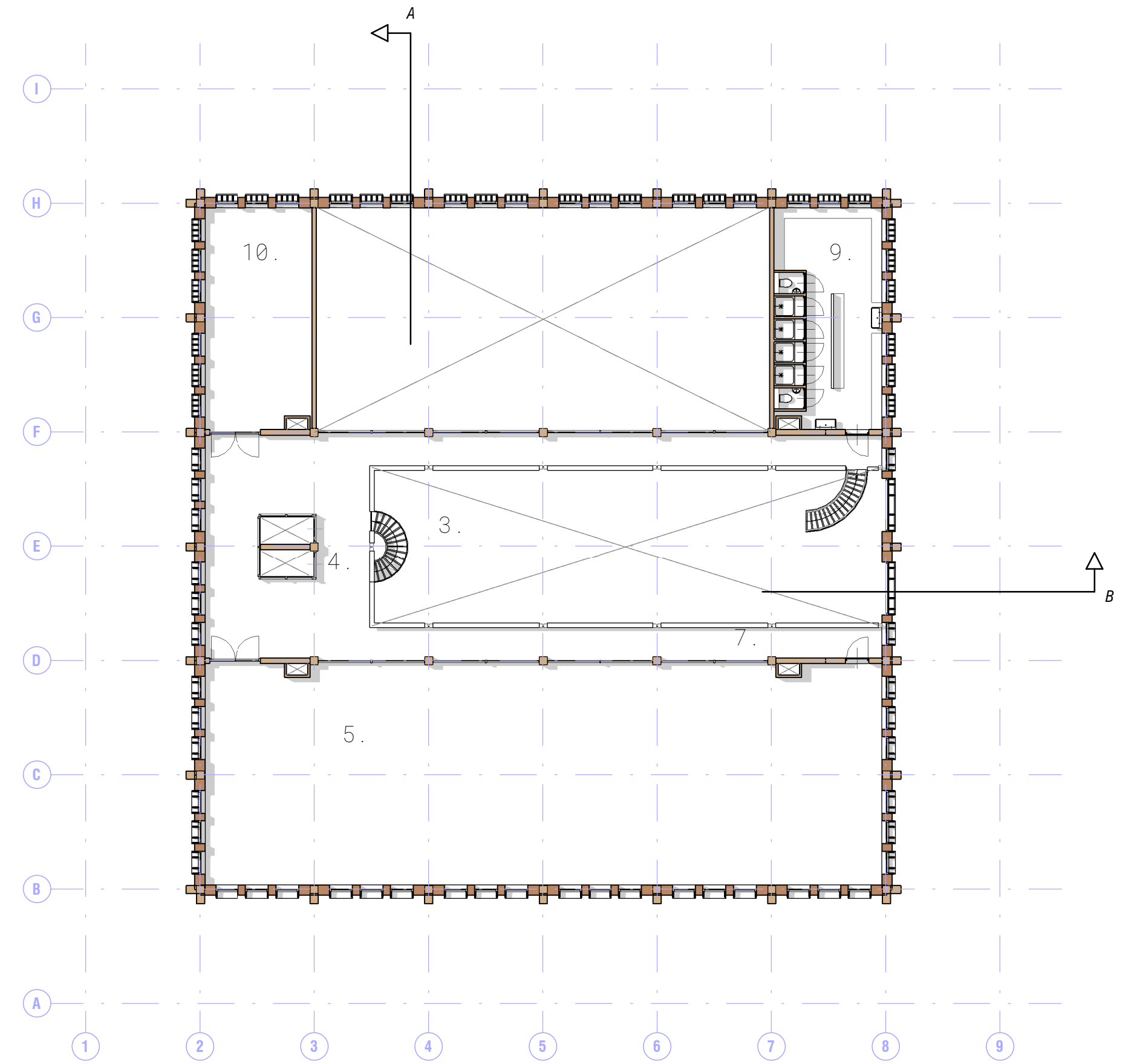




- 1. Entrance
- 2. Exit
- 3. Atrium
- 4. Elevator
- 5. Flexible space
- 6. Toilet facility
- 7. Gallery
- 8. Storage room
- 9. Dressing room
- 10. Technical room

5 m

SECOND FLOOR

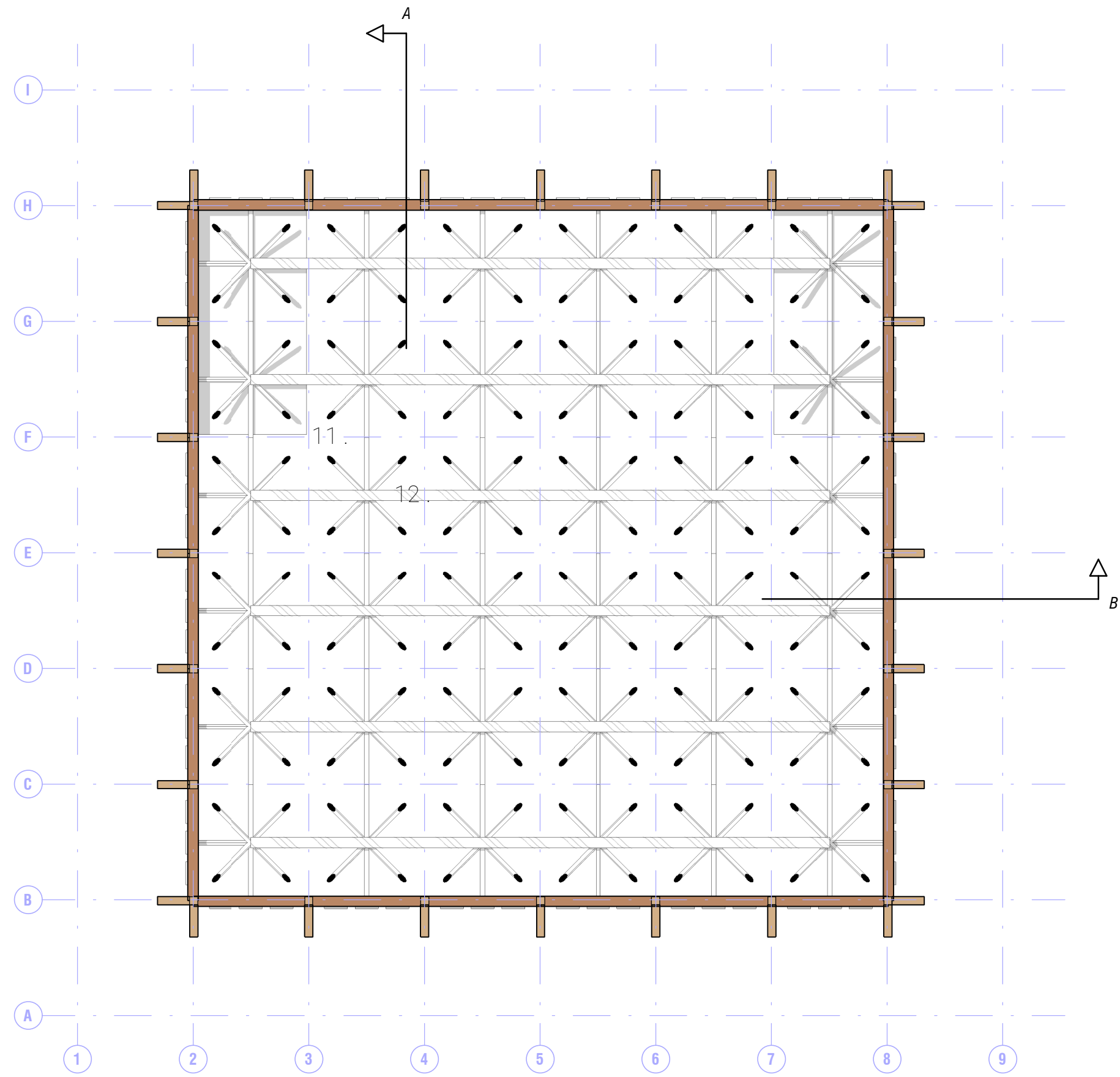
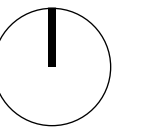


5 m

THIRD FLOOR

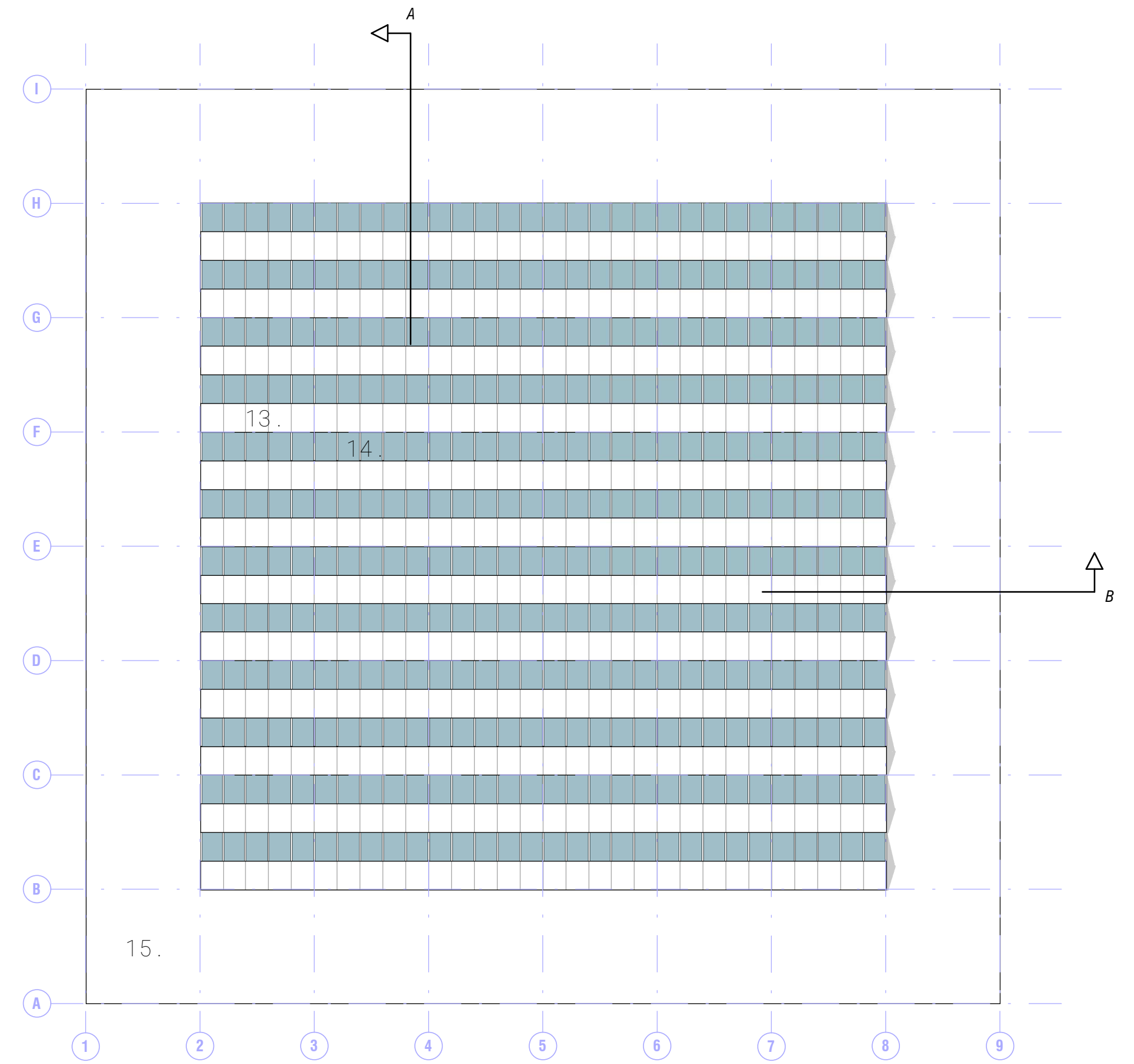






5 m

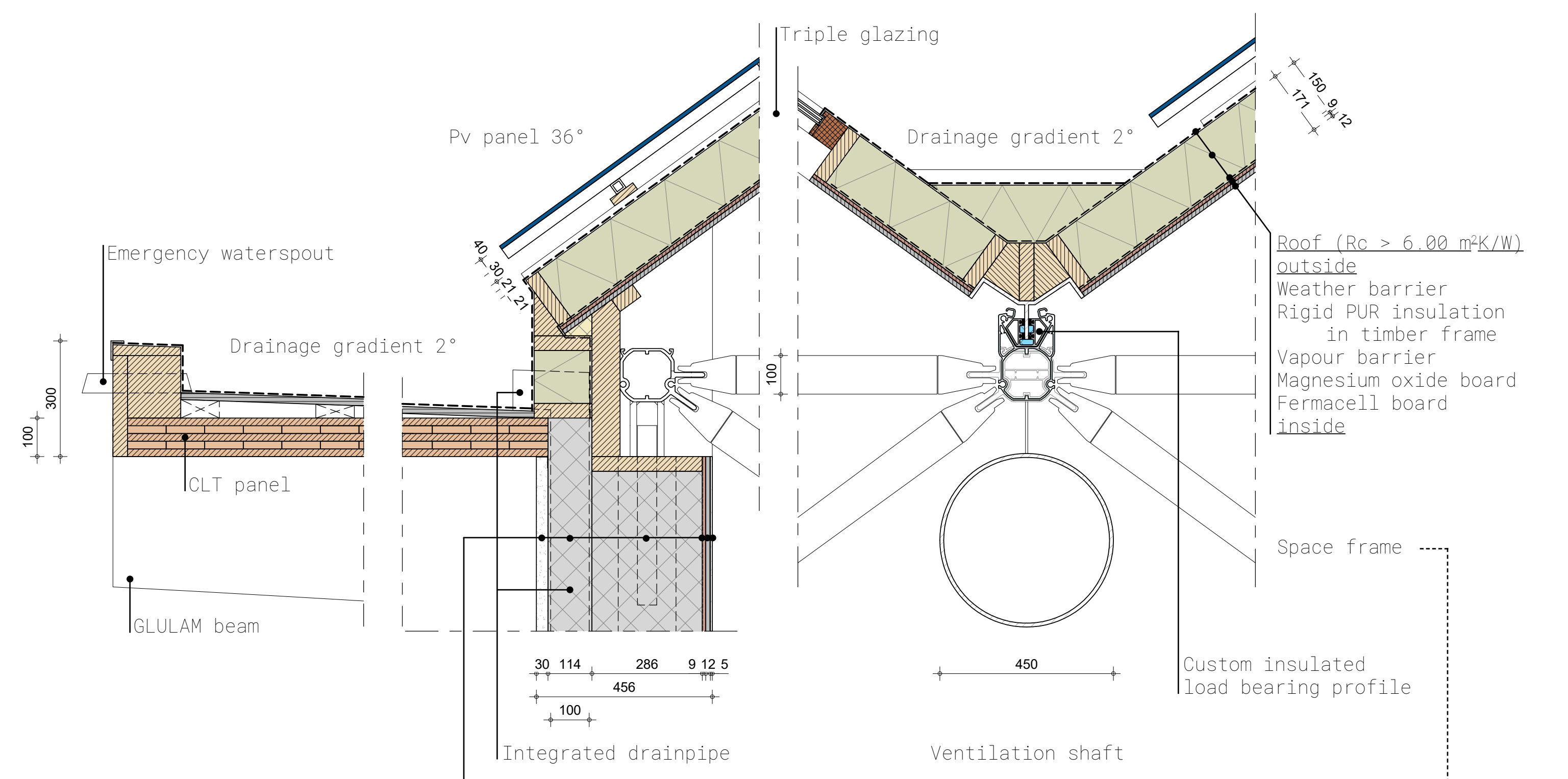
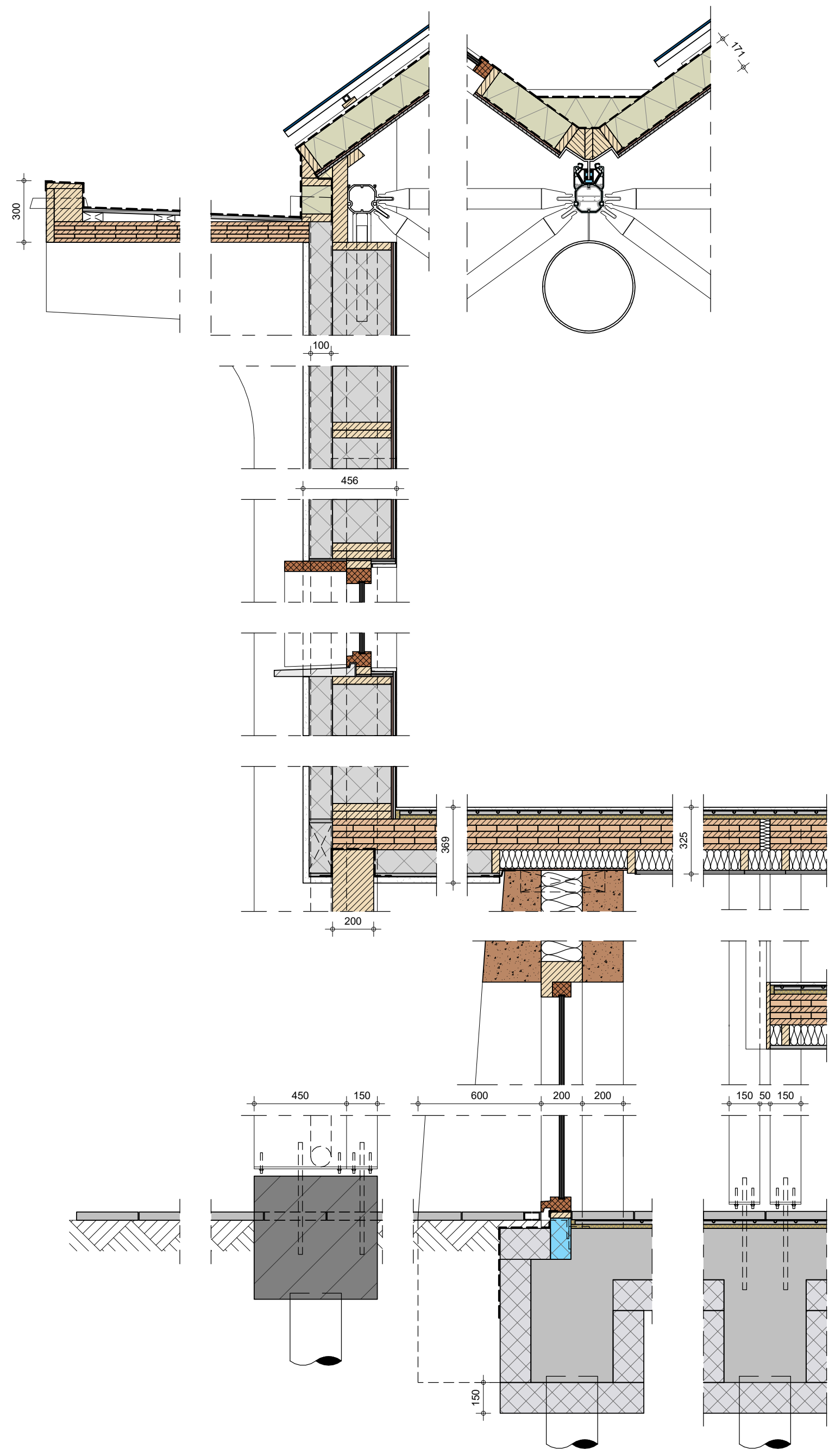
- 11. Space frame
- 12. Ventilation system
- 13. South facing pv panel
- 14. North facing glazing
- 15. Cantilevered roof



5 m

SPACE FRAME

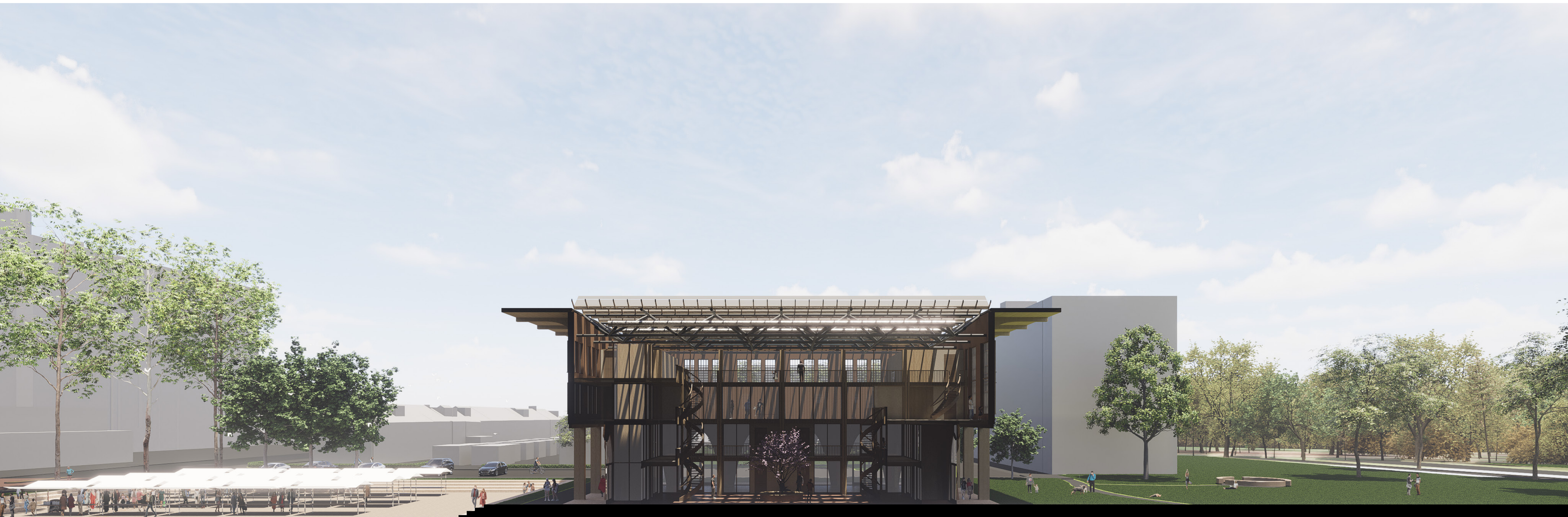
ROOF PLAN



- Facade (Rc 6.67 m²K/W)
 outside
 Lime Plaster
 Hemplime panel
 Hemplime timber frame element
 Magnesium oxide board
 Fermacell
 Mud plaster
 inside



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