

# THE WALL



STANDING BETWEEN US AND HEALTHY  
LIVING IN THE FUTURE

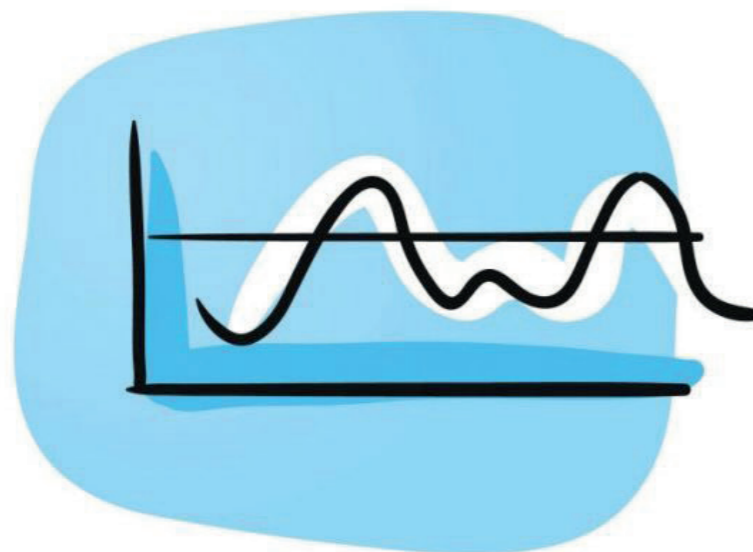


# HEALTH AND CARE COURSE





# DIABETES





**What are architectural and built environment features based on the passive house concept for physical health and mental well-being for Dutch homes?**



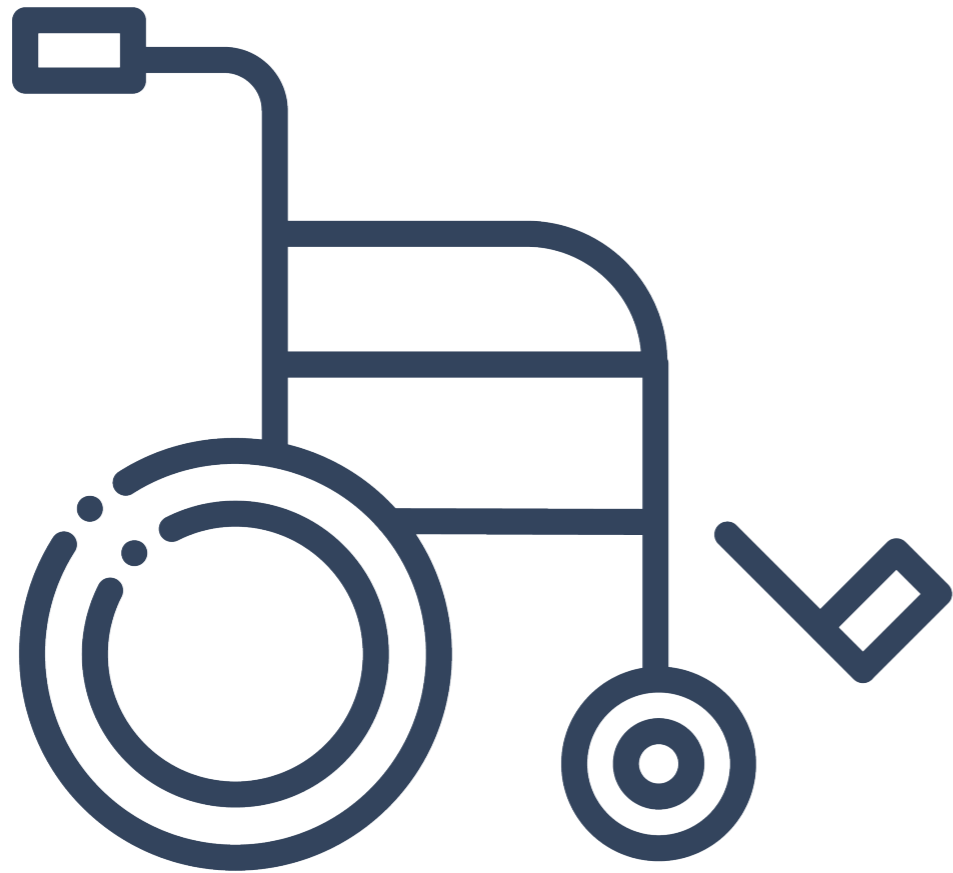
## SUB QUESTION 1

**WHICH ARCHITECTURAL AND BUILT ENVIRONMENT  
FEATURES MAKE A HEALTHY HOME?**



## SUB QUESTION 1

Physical health

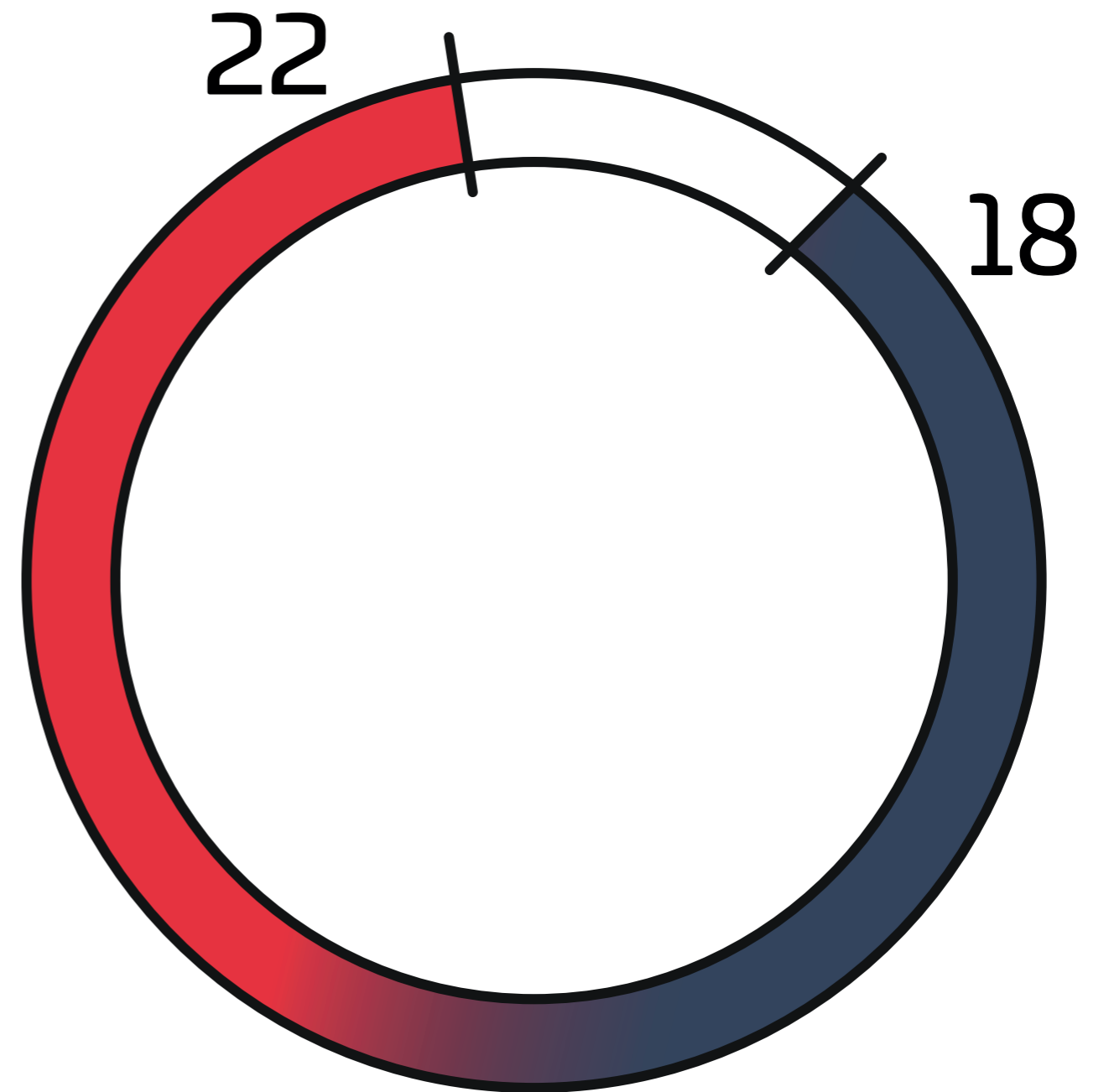
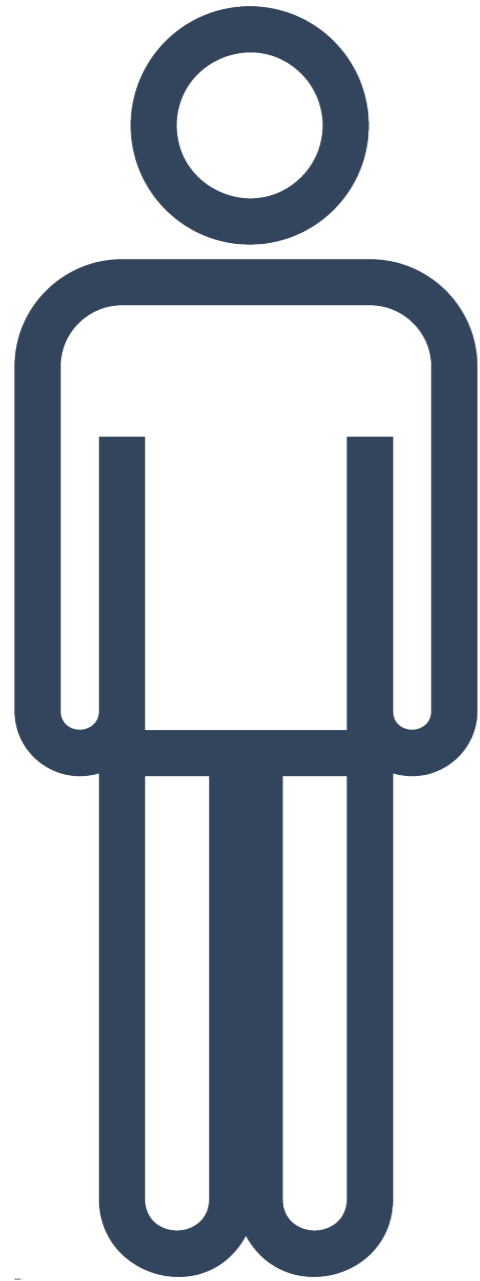


Mental well-being





# SUB QUESTION 1



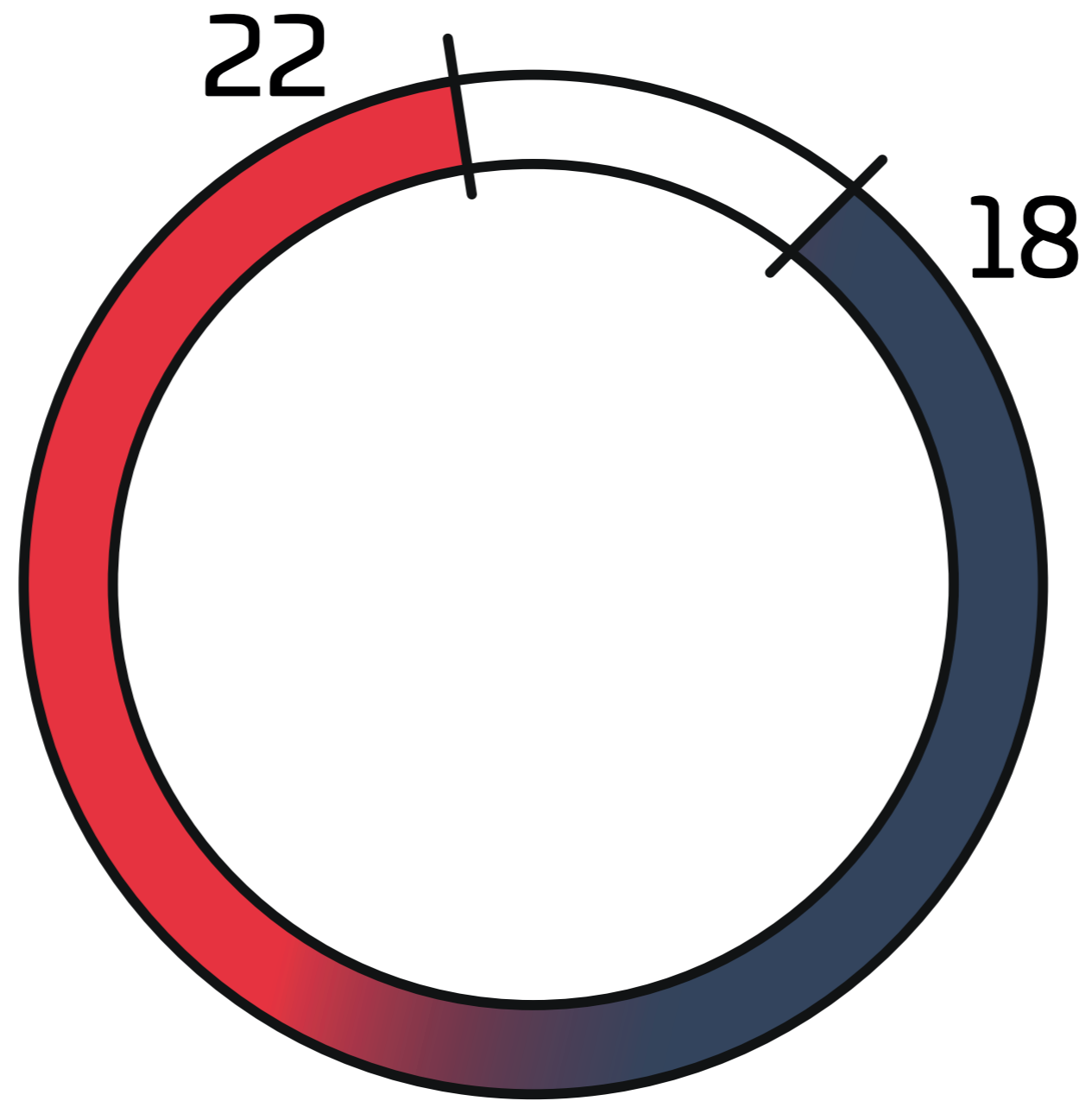


## SUB QUESTION 2

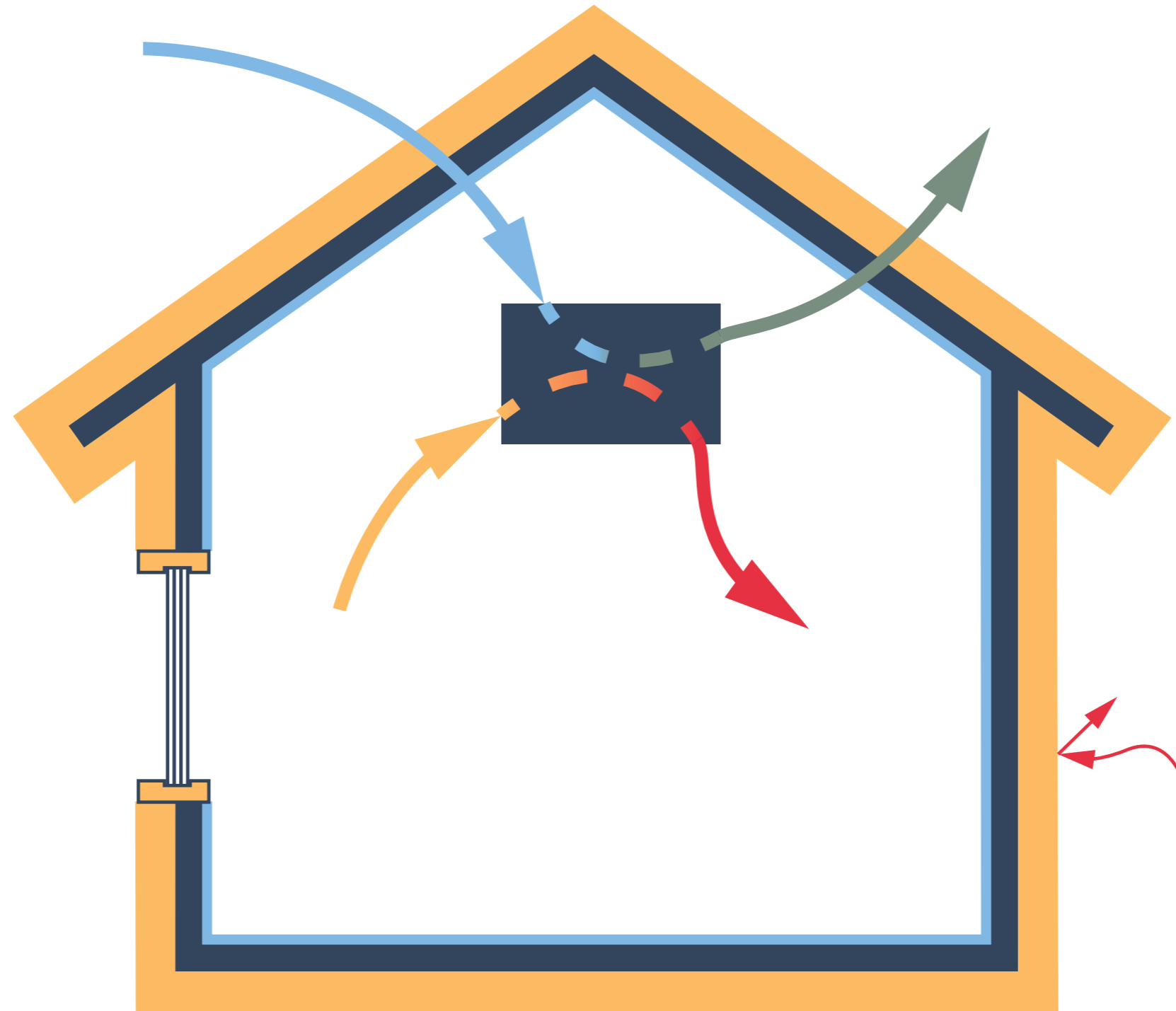
**WHY COULD THE PASSIVE HOUSE CONCEPT BE USED AS  
BASE FOR HEALTHY DESIGN GUIDELINES?**



## SUB QUESTION 2



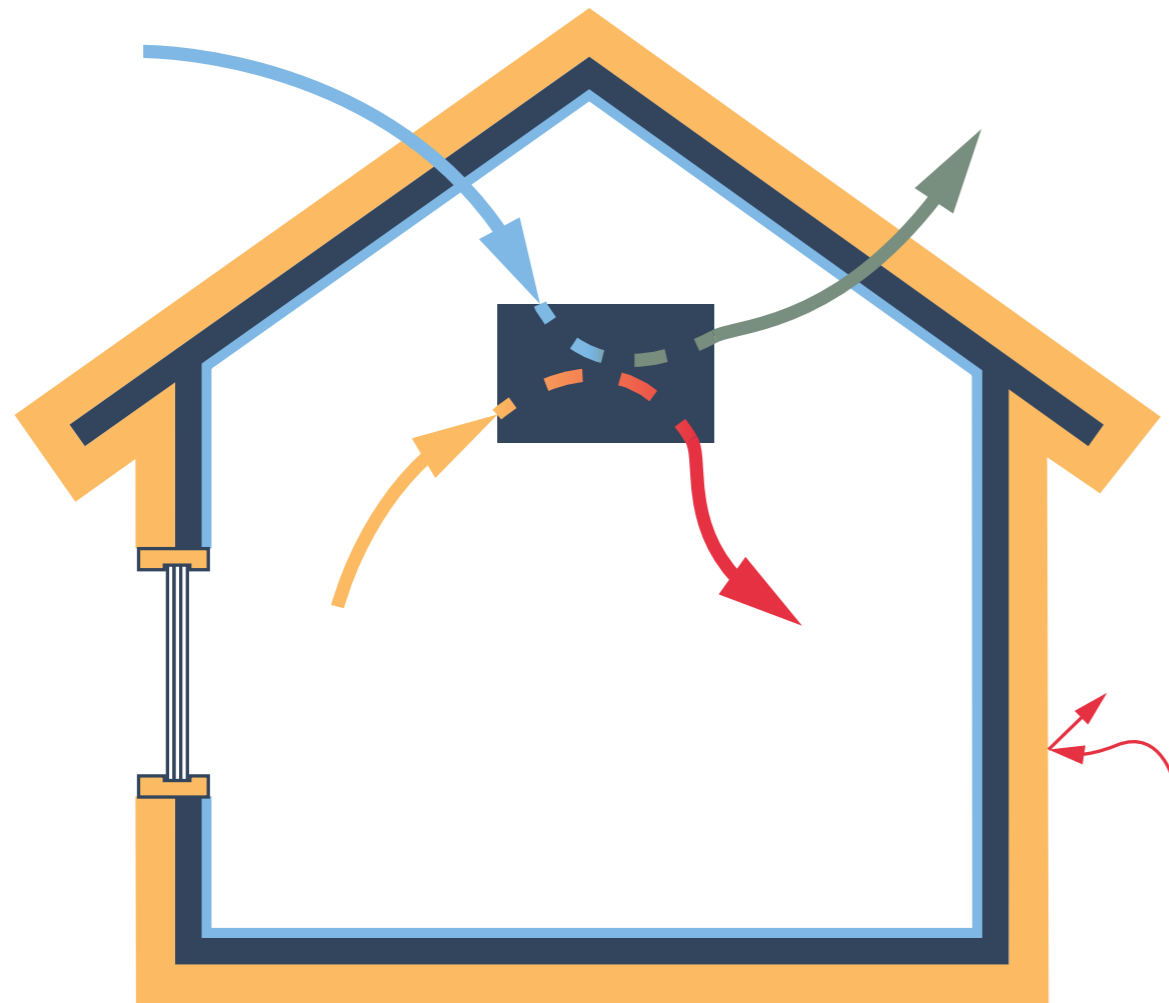
## SUB QUESTION 2



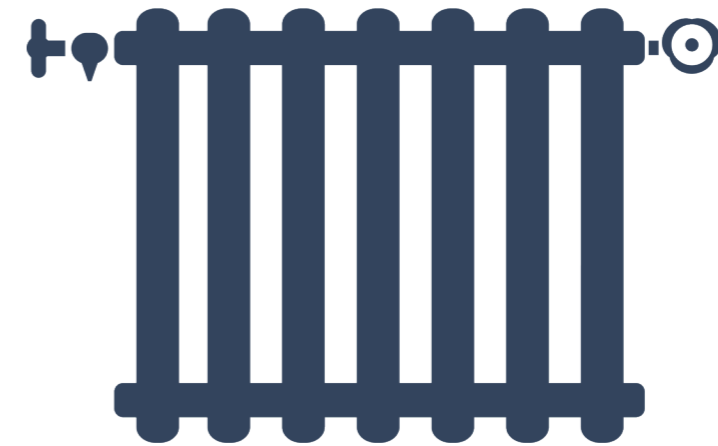


## SUB QUESTION 2

Passive house concept



Additional low heating and cooling



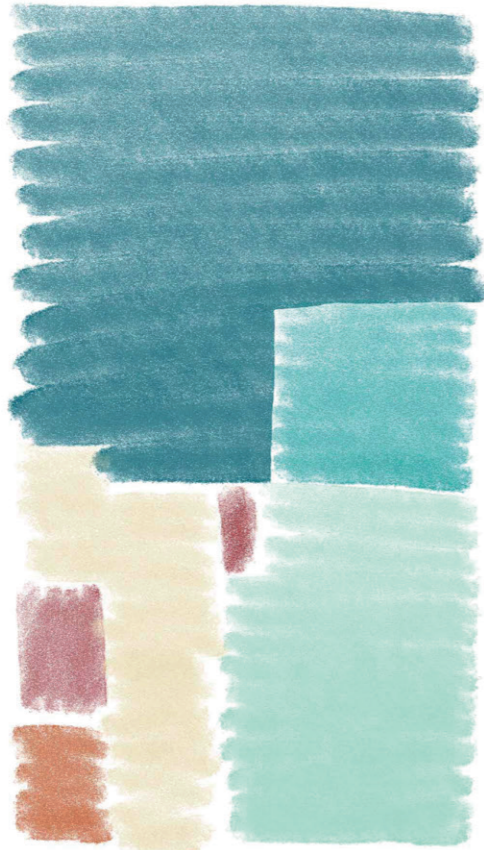
## SUB QUESTION 3







**WHAT ARE THE HEALTH PARAMETERS FOR DIFFERENT  
USER SPACES IN AN AVERAGE DUTCH HOME?**



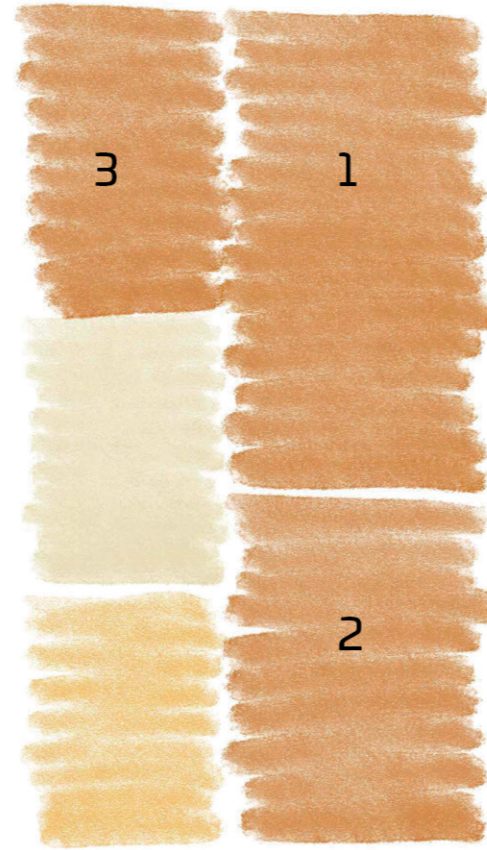
# SUB QUESTION 3






Average ground floor



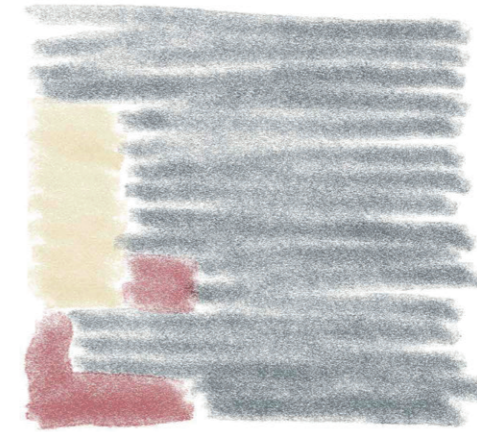
	Dining room	8.68 m2
	Hallway	6.97 m2
	Kitchen	9.36 m2
	Living room	21.85 m2
	Technical room	3.25 m2
	Toilet	1.28 m2



Average second floor



	Bathroom	6.38 m2
	Bedroom 1	14.99 m2
	Bedroom 2	10.74 m2
	Bedroom 3	6.49 m2
	Hallway	6.67 m2

Average attic



	Technical room	2.58 m2
	Unnamed	31.43 m2

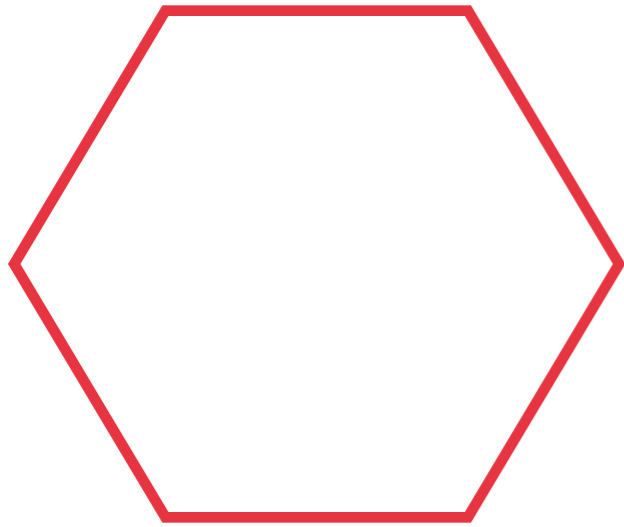
# SUB QUESTION 3

26 Health aspects

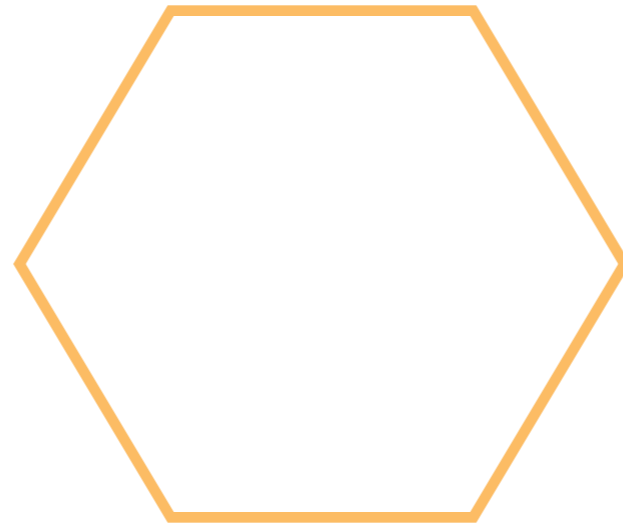




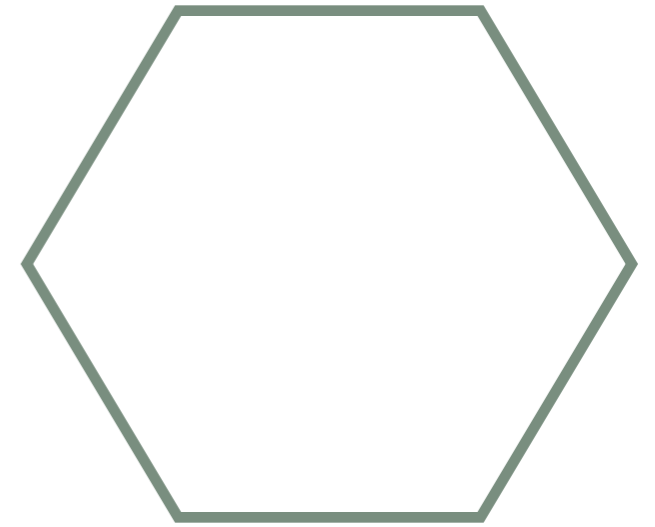
## SUB QUESTION 3



Essential

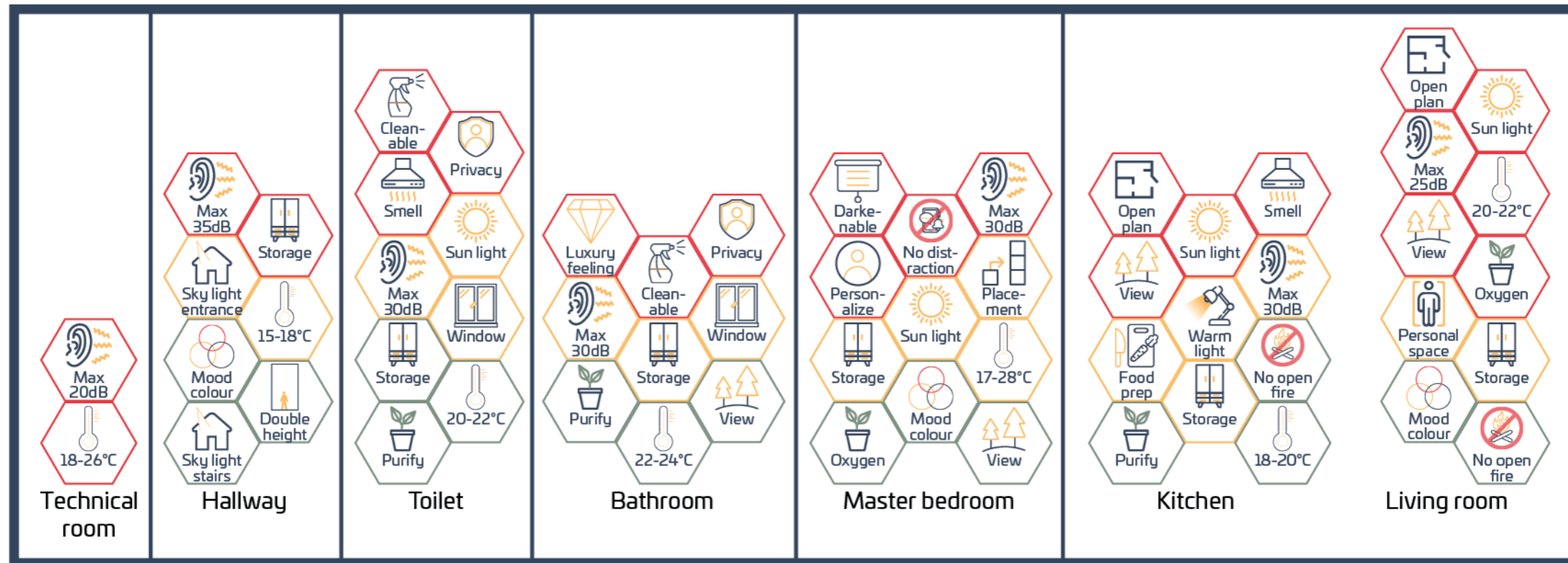


Requested

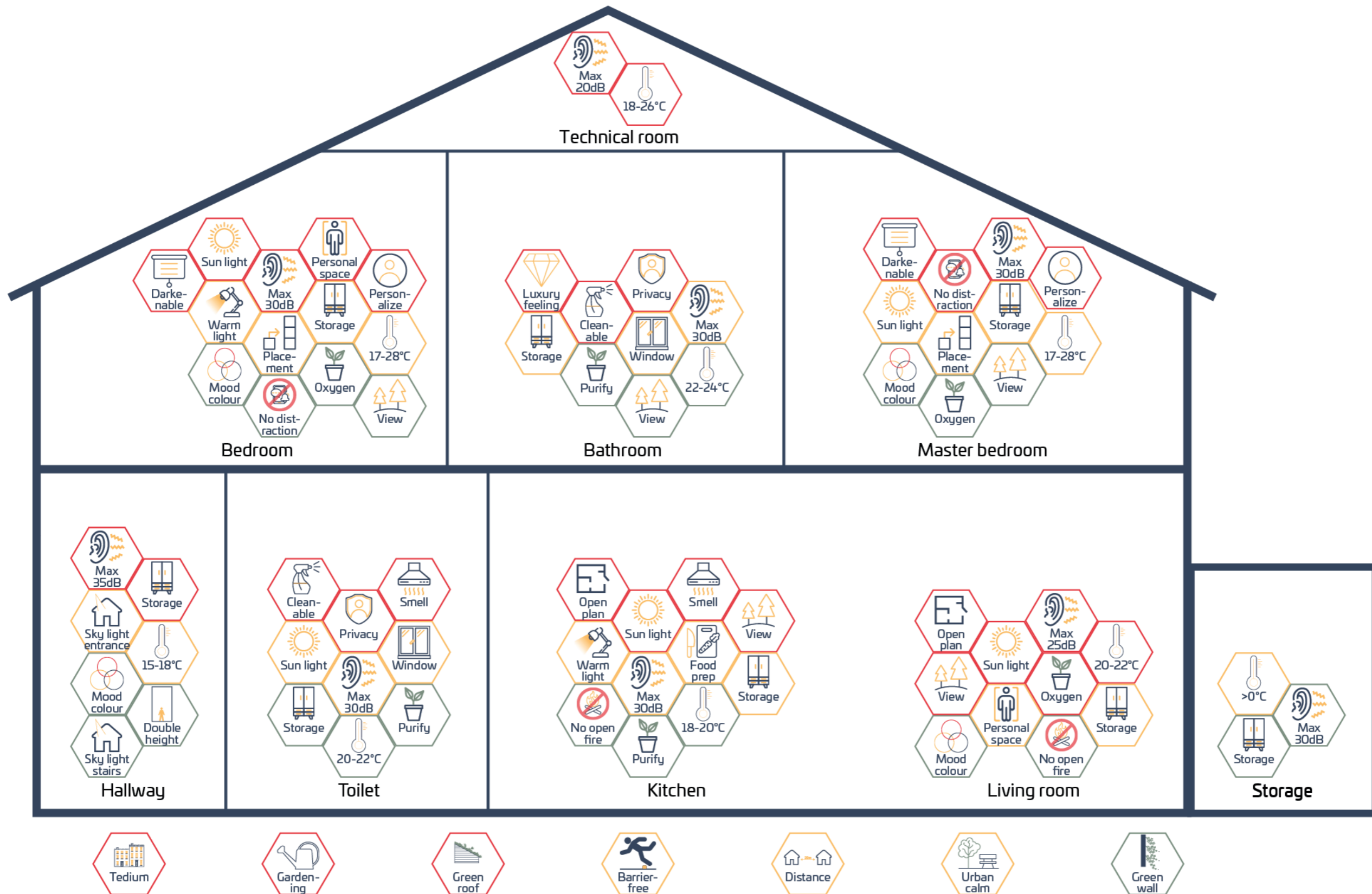


If possible

# CONCLUSION



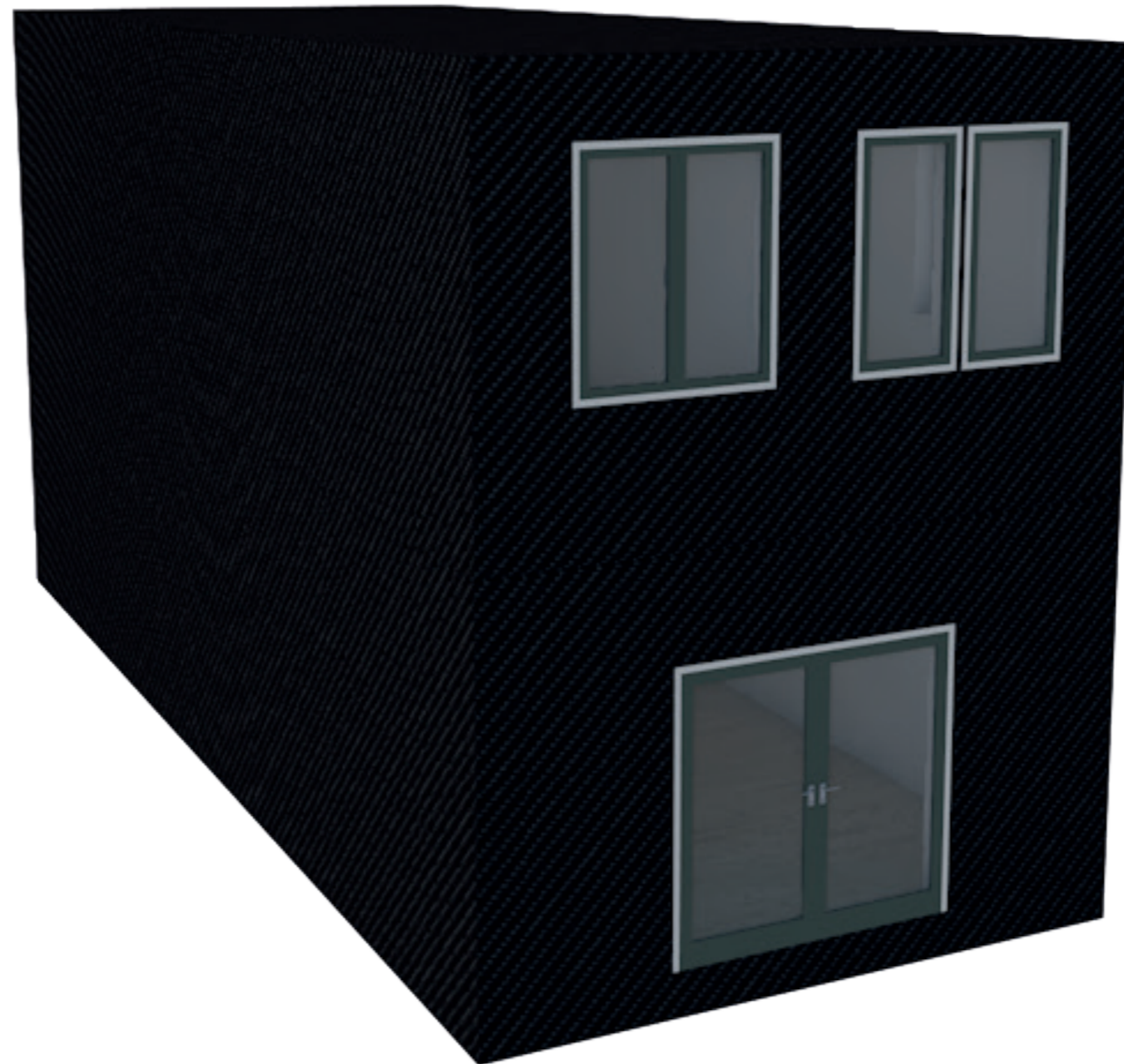
# CONCLUSION





# BOX PRINCIPAL

Personalisation  
Statement  
Carbon fibre

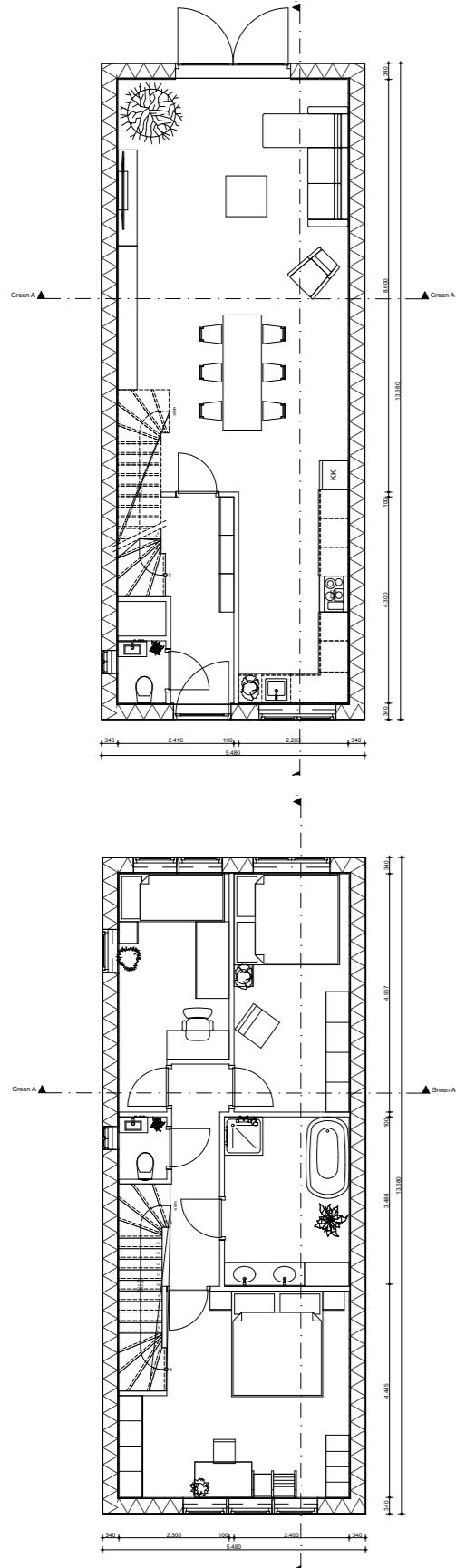


# BOX PRINCIPAL

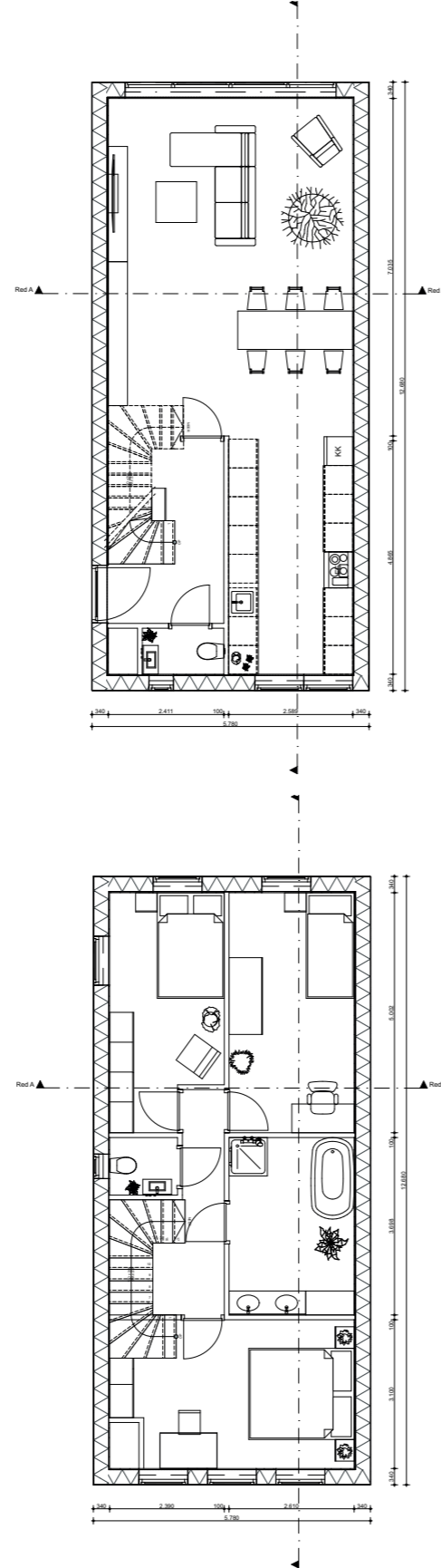


# DWELLING EXAMPLES

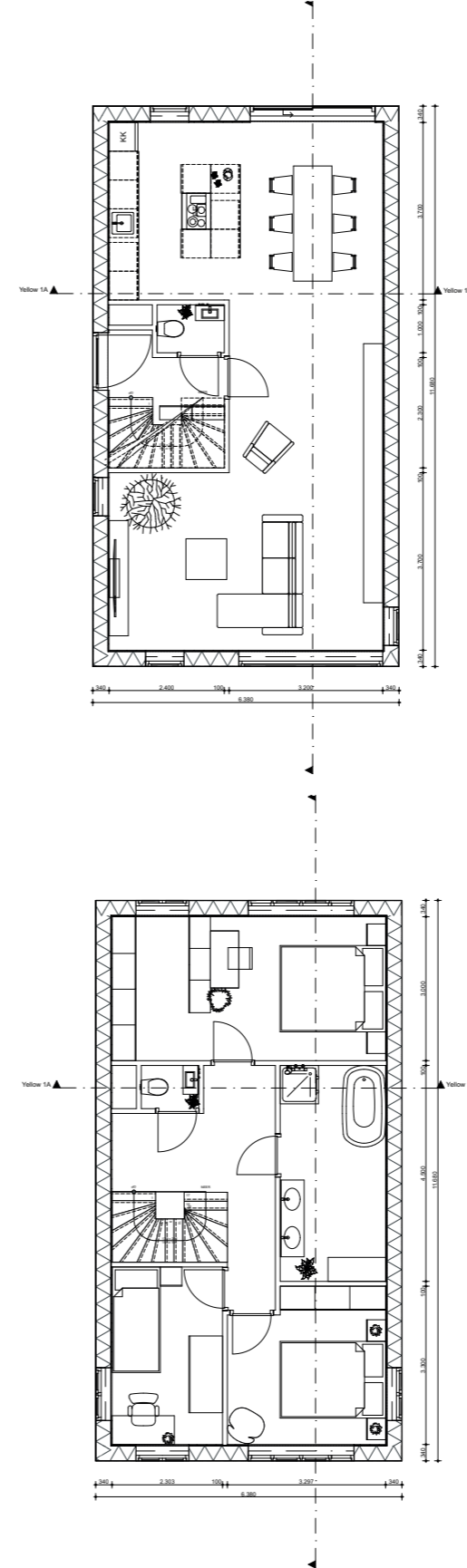
## Green dwelling



## Red dwelling



## Yellow 1.0 dwelling



## Yellow 2.0 dwelling

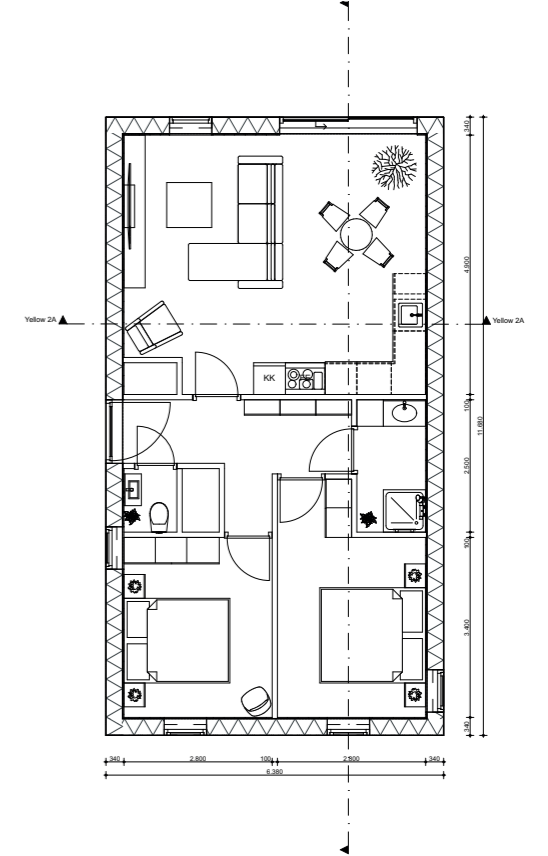


Image 22 Knoppert, J., S., (2023). Green dwelling. Own work

Image 23 Knoppert, J., S., (2023). Red dwelling. Own work

Image 24 Knoppert, J., S., (2023). Yellow dwelling. Own work

Image 25 Knoppert, J., S., (2023). Yellow dwelling. Own work



# DWELLING EXAMPLES



Image 26 Knoppert, J., S., (2023). Green dwelling bedroom. Own work



Image 27 Knoppert, J., S., (2023). Red dwelling freinds. Own work

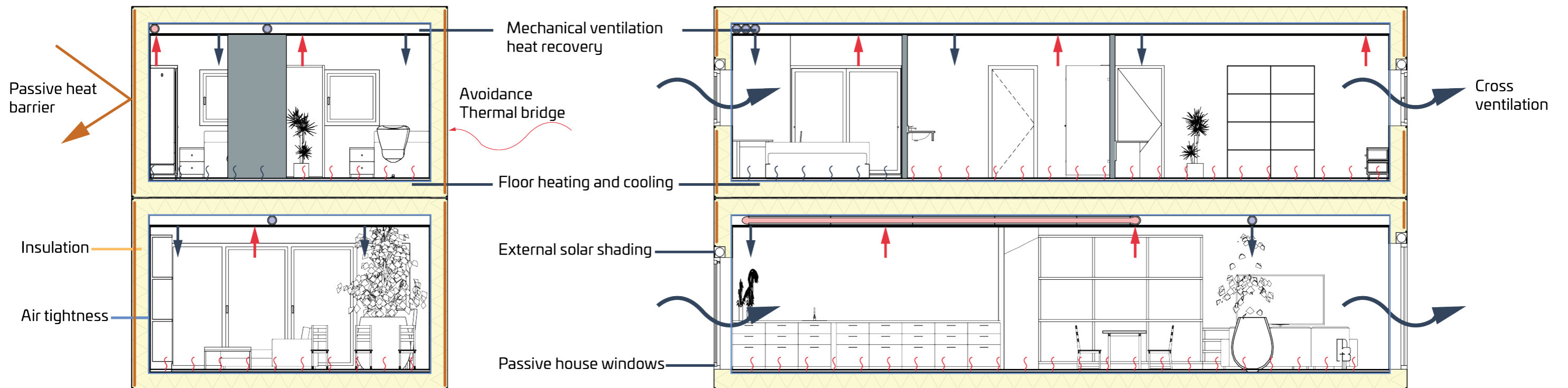


Image 28 Knoppert, J., S., (2023). Yellow dwelling family. Own work



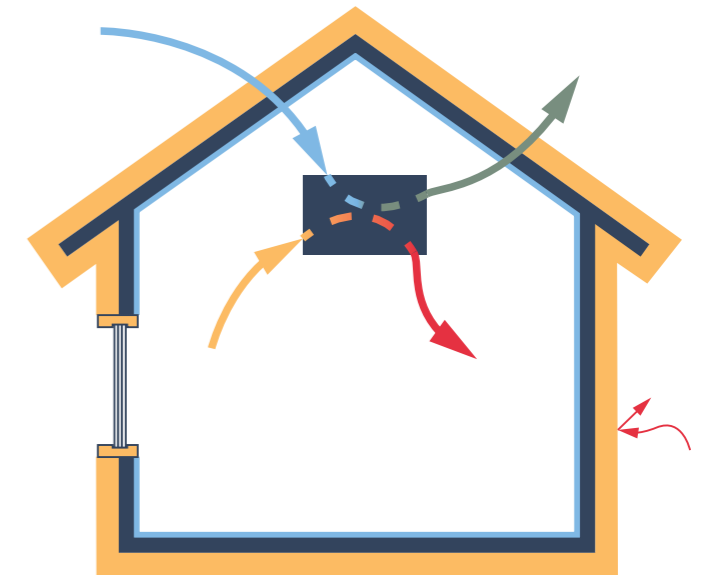
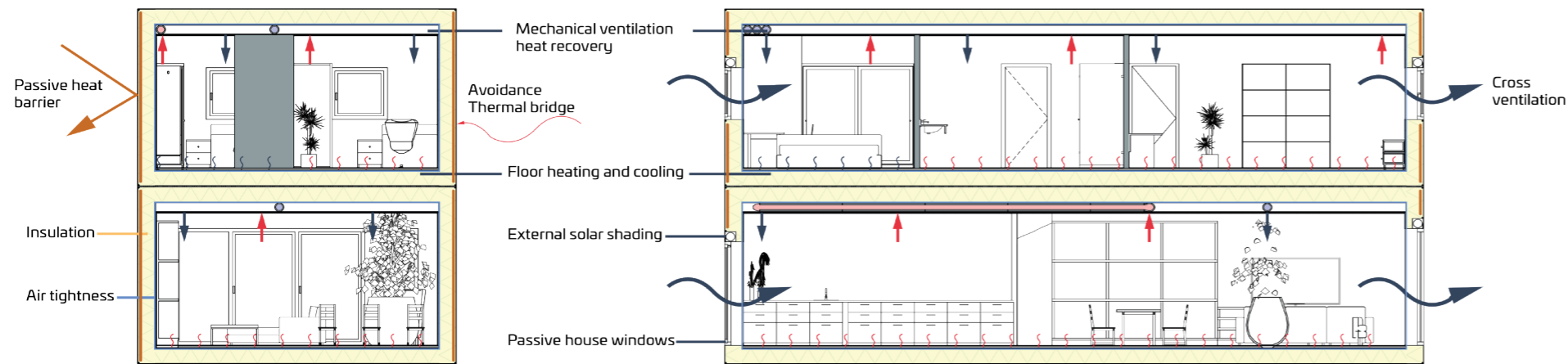
Image 29 Knoppert, J., S., (2023). Yellow dwelling elderly. Own work

# DWELLING CLIMATE



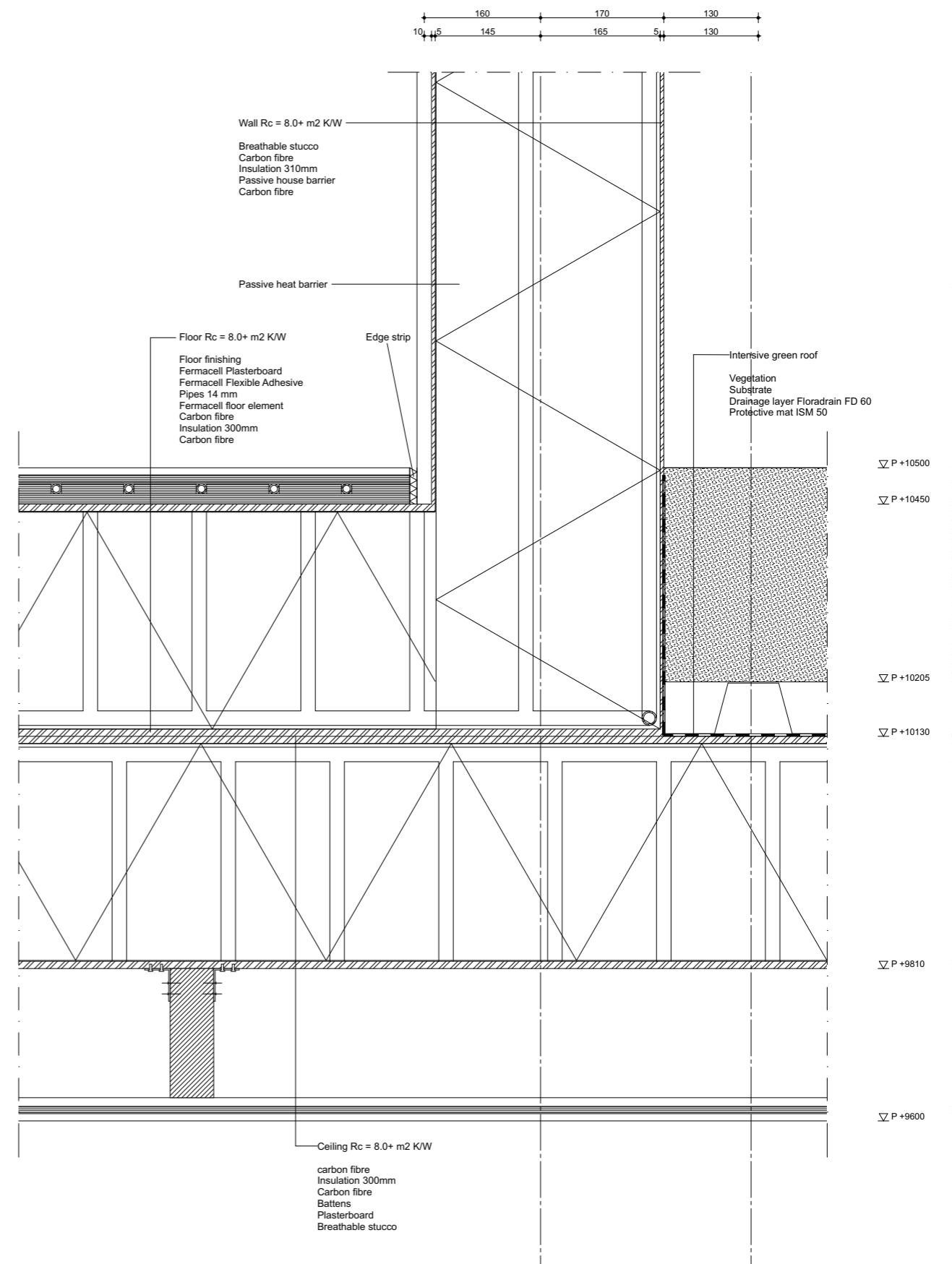
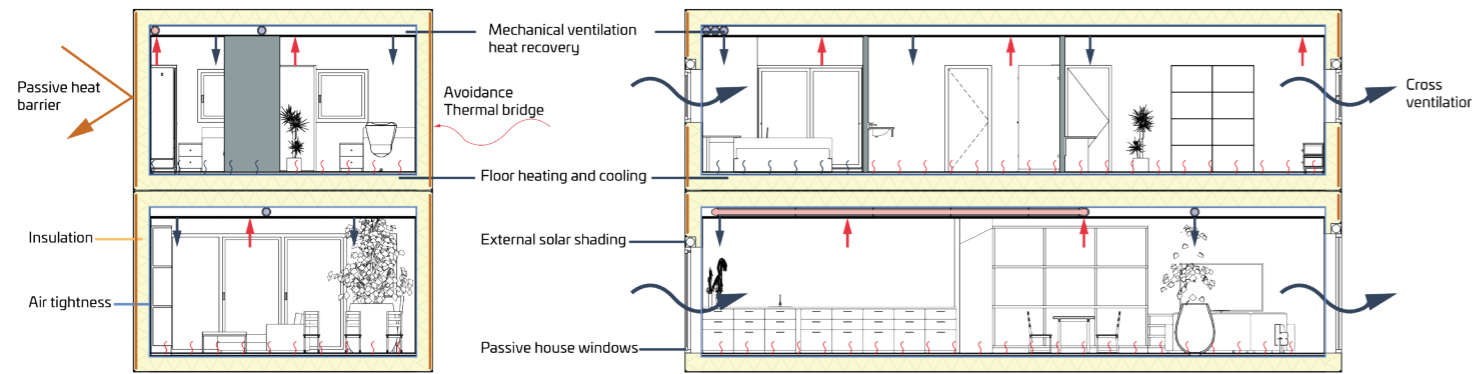


# PASSIVE HEAT BARRIER

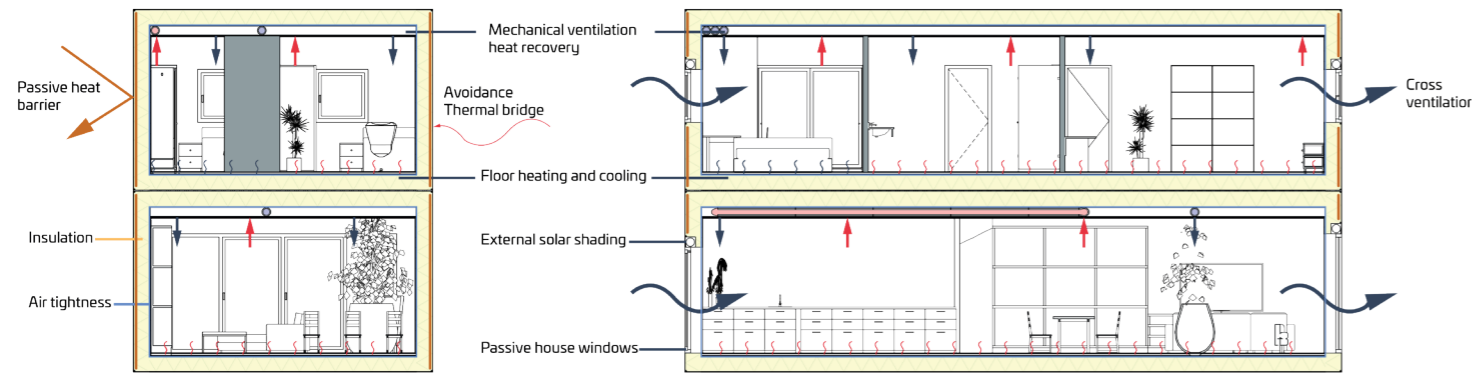




# PASSIVE HEAT BARRIER

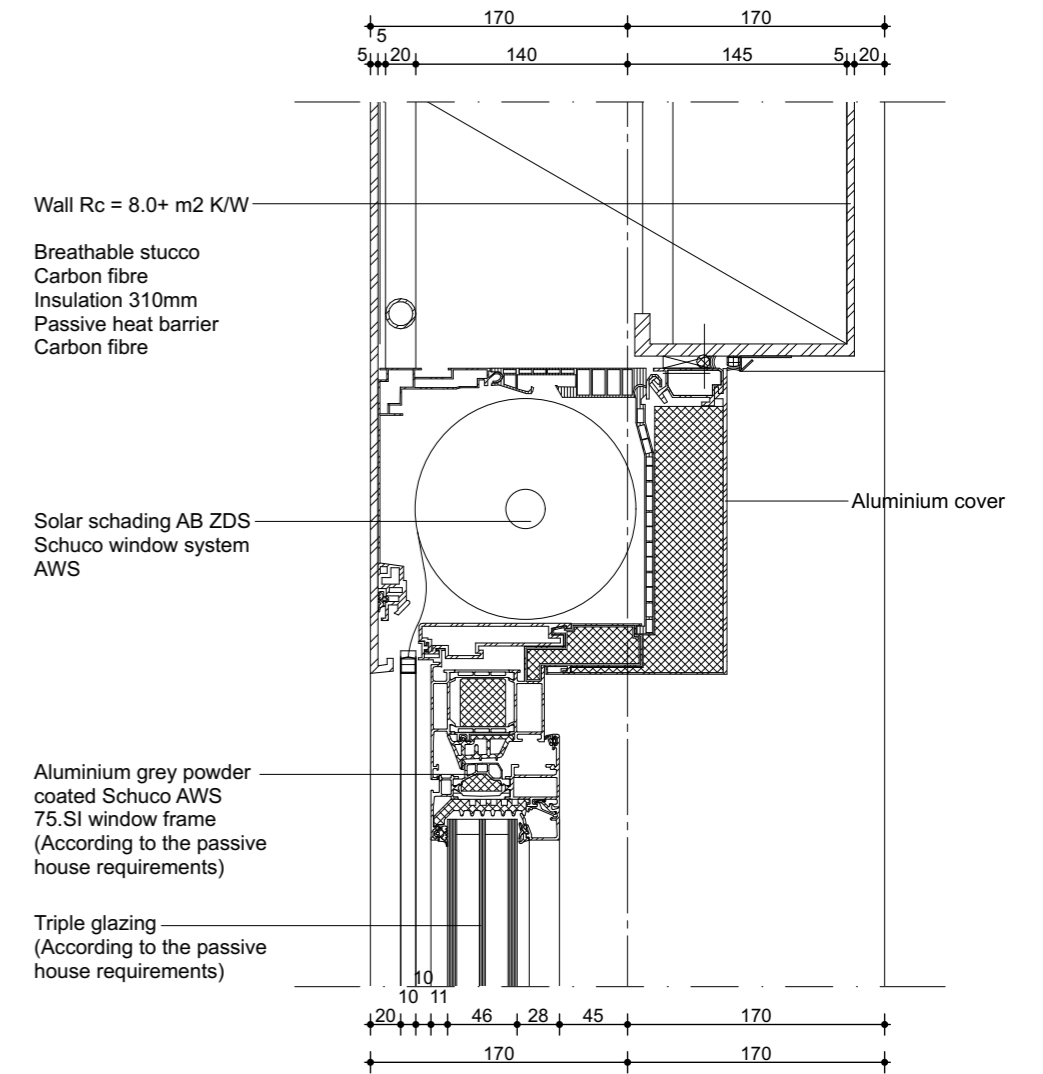


# PASSIVE HEAT BARRIER



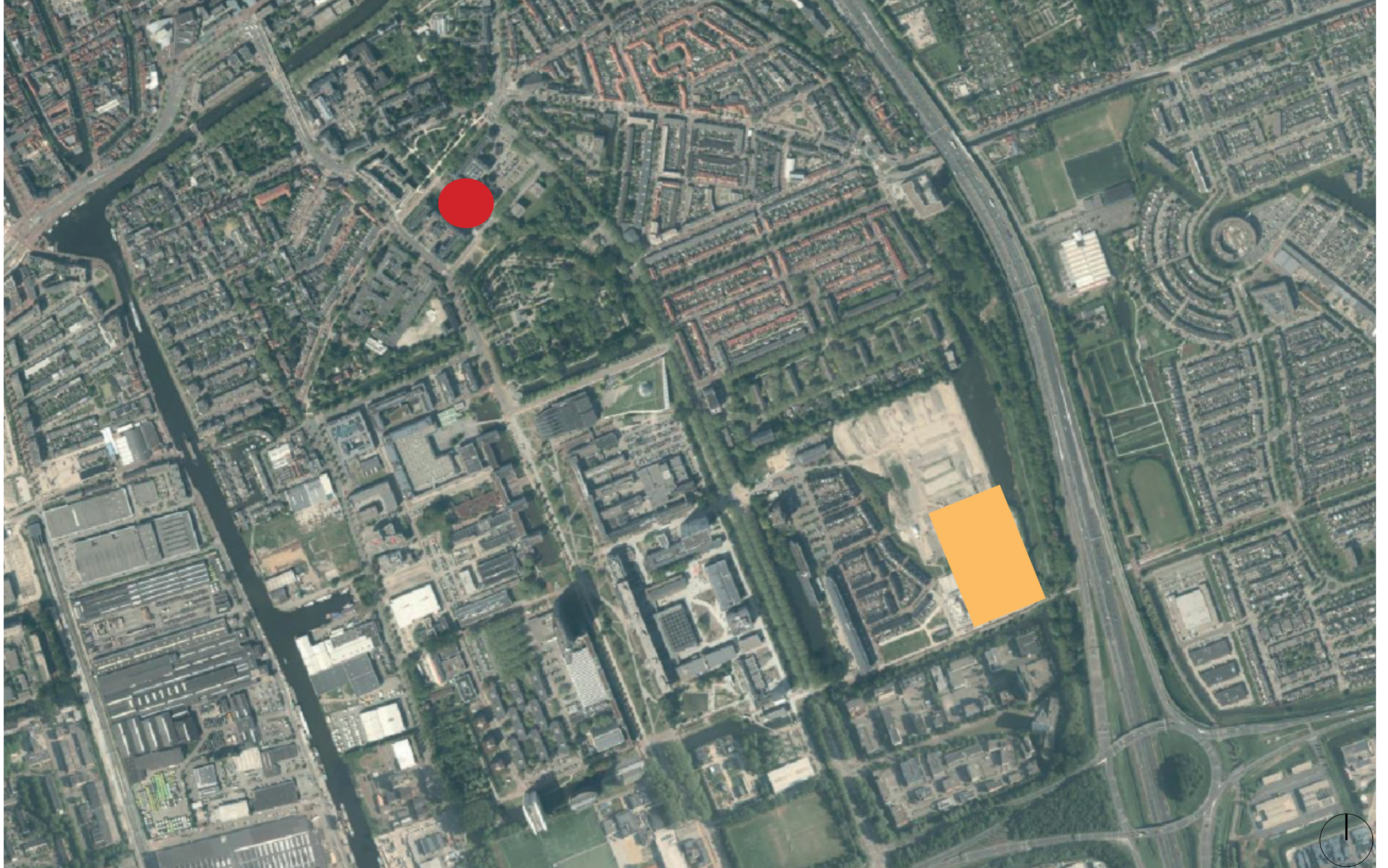
▽ P +5680

▽ P +5470



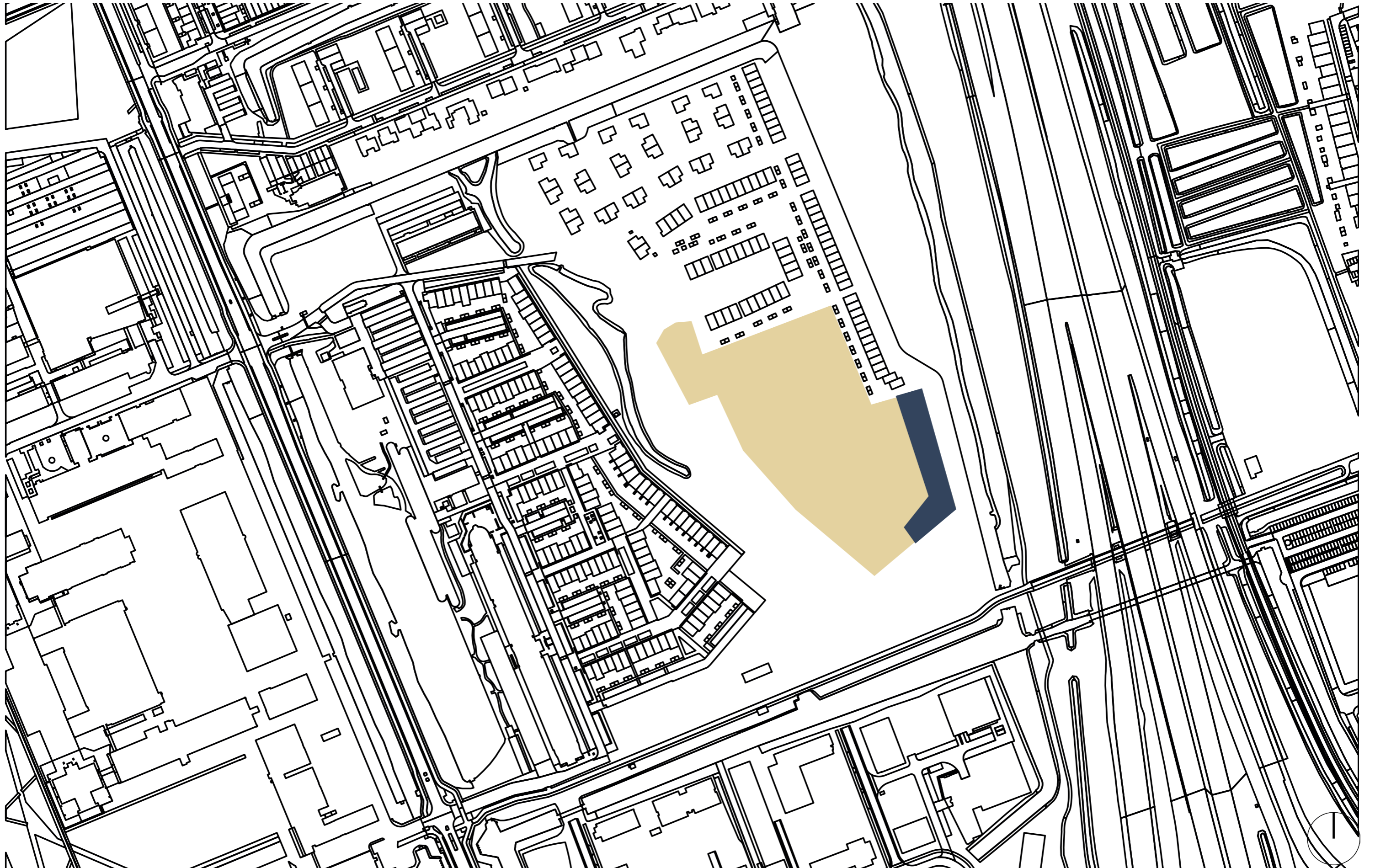


# LOCATION





# GRASBUURT 3





# NOISE

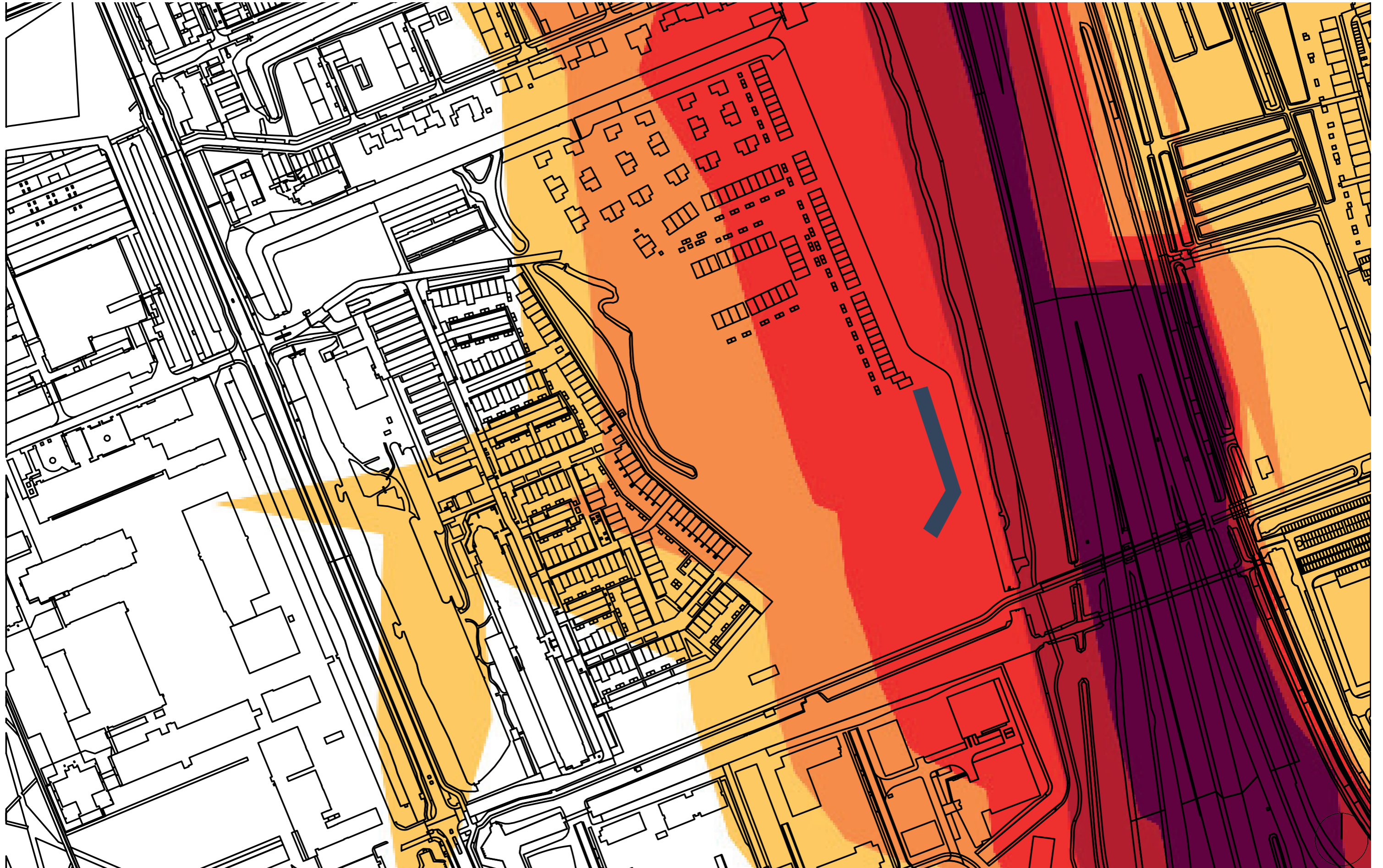
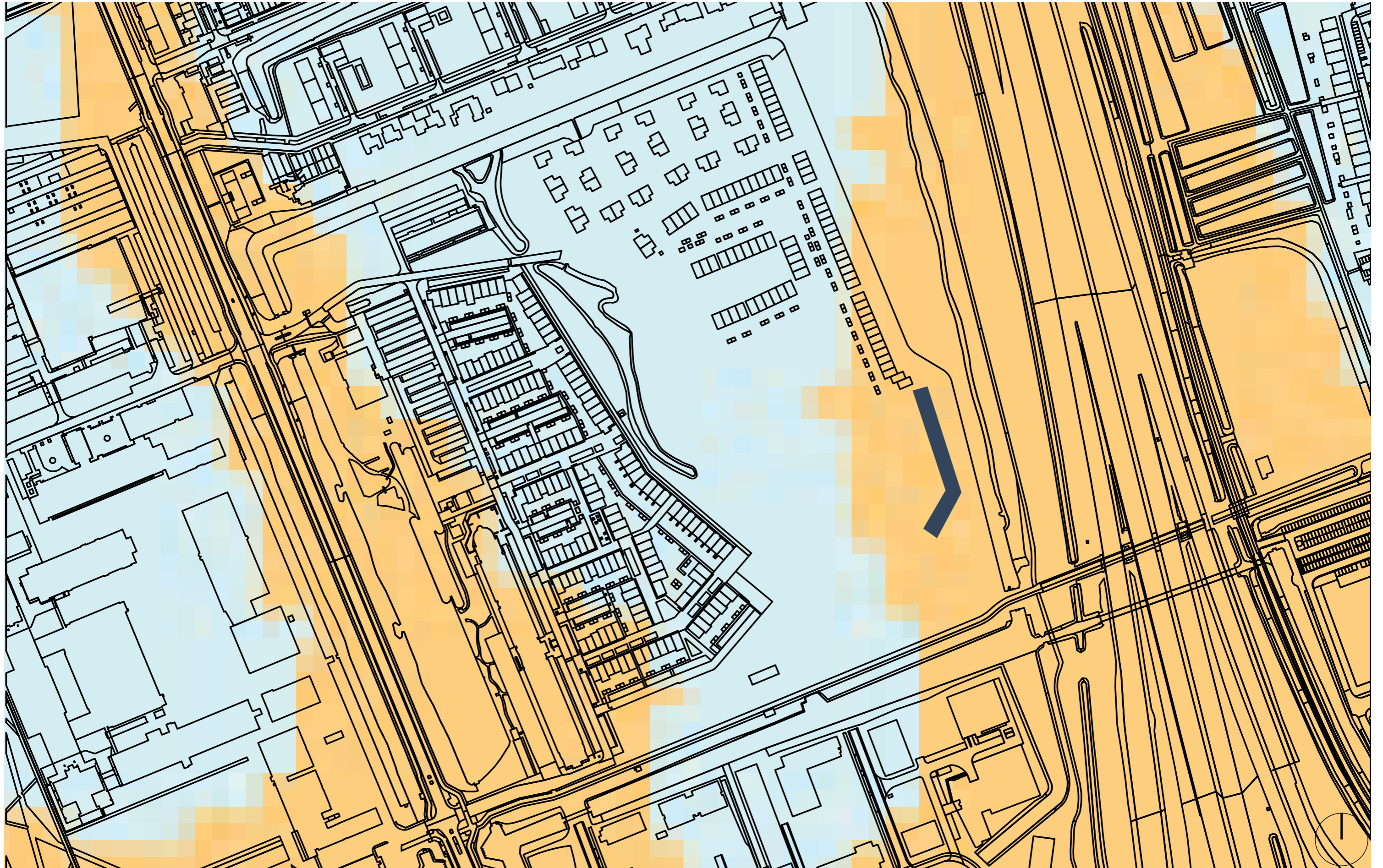


Image 37 Knoppert, J., S., (2022). Noise pollution. Own work



# AIR POLLUTION





# HEALTH

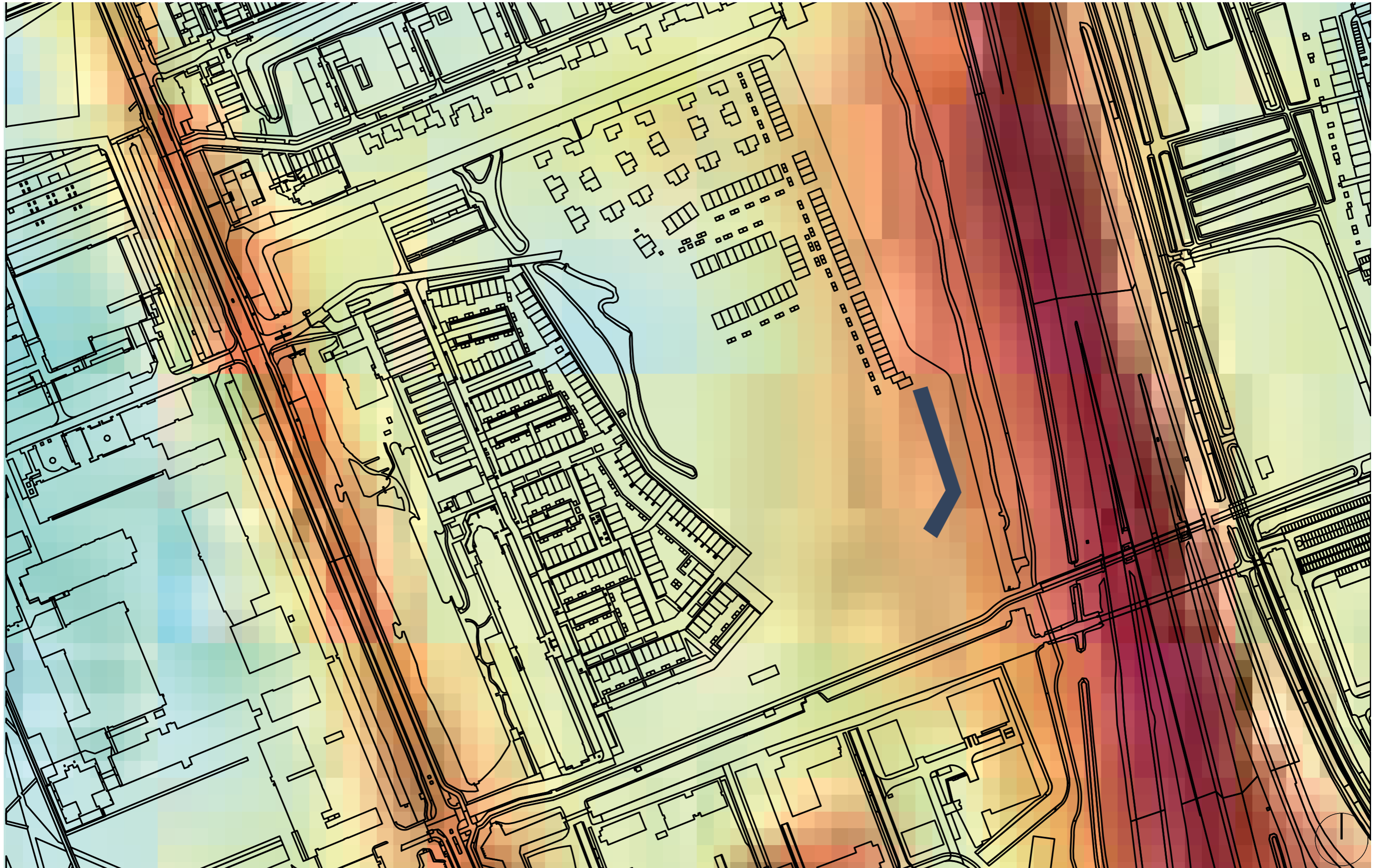
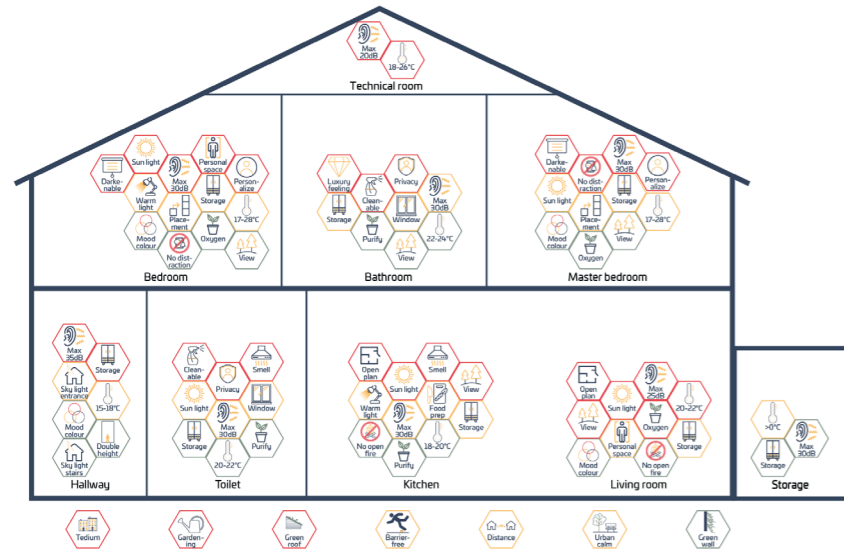


Image 39 Knoppert, J., S., (2022). Noise pollution. Own work

# DESIGN PRINCIPAL

Health guidelines



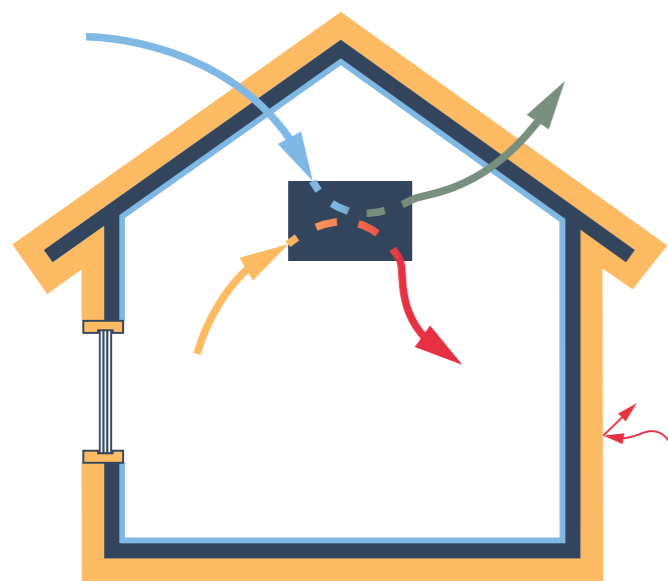
Community



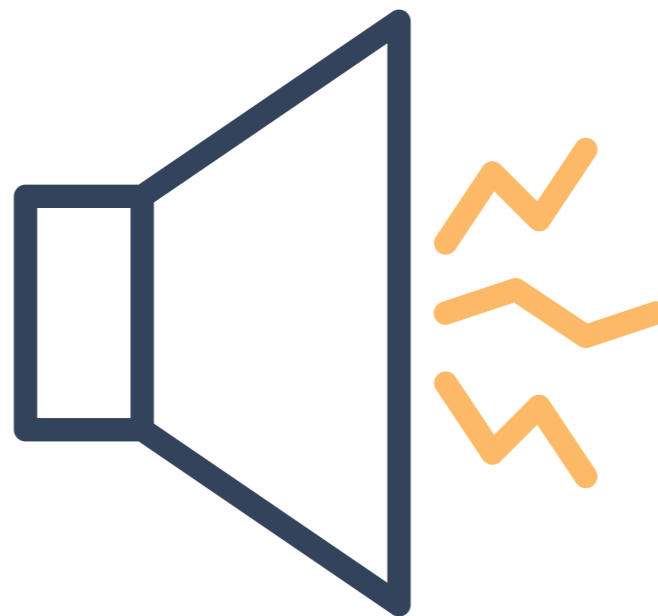
Diversity



Passive house



Noise



Orientation



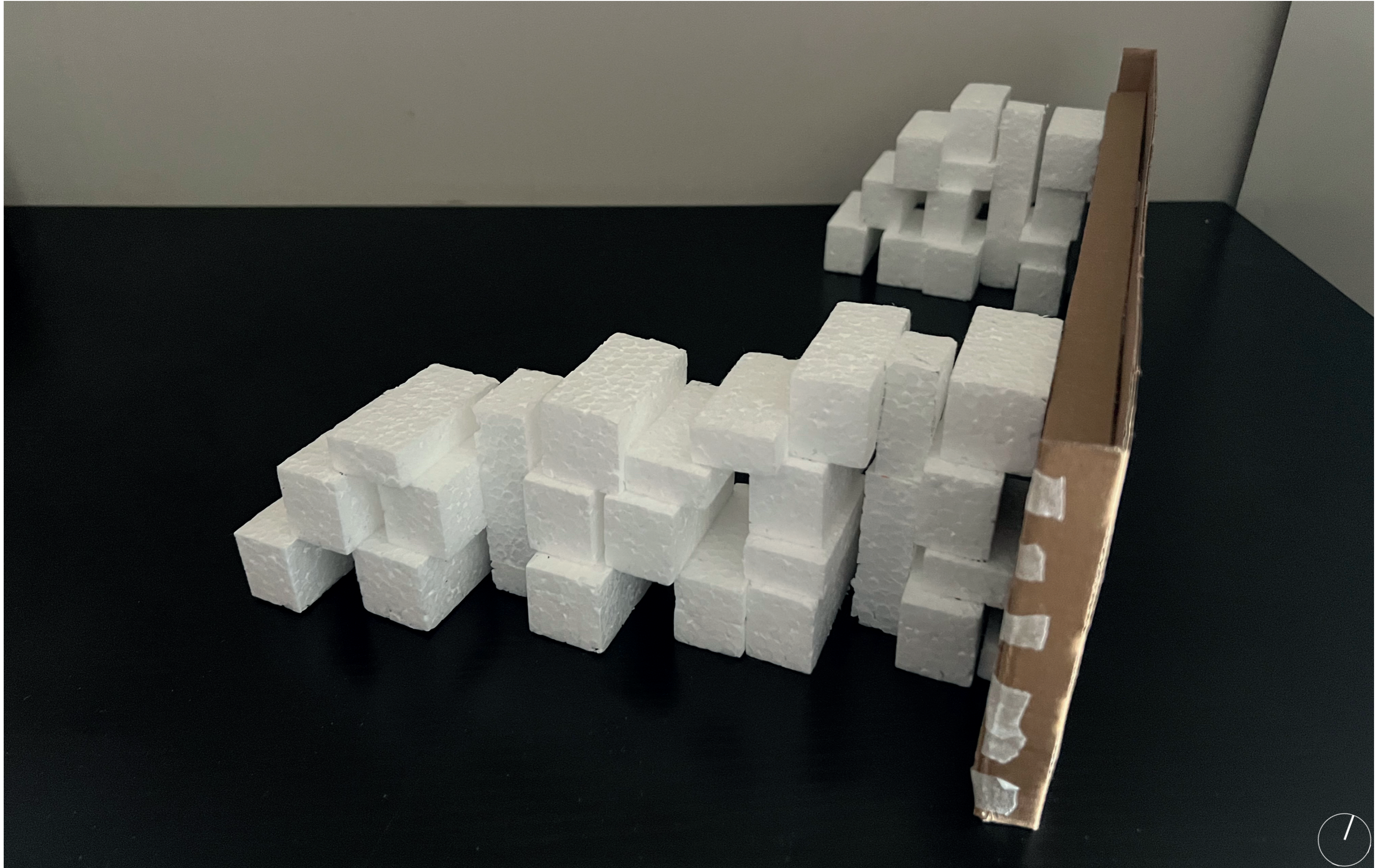


# MASS MODEL



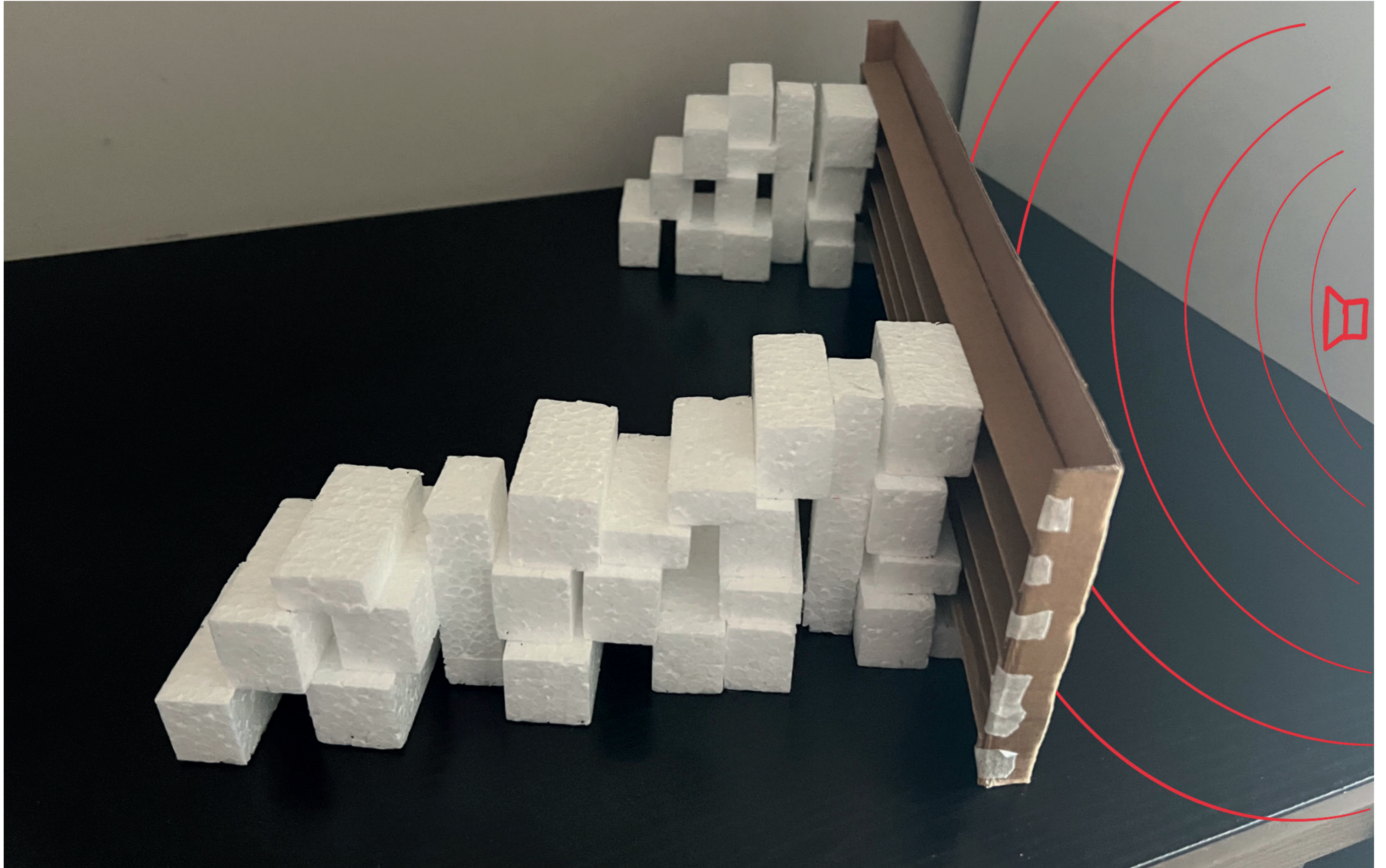


# MODEL





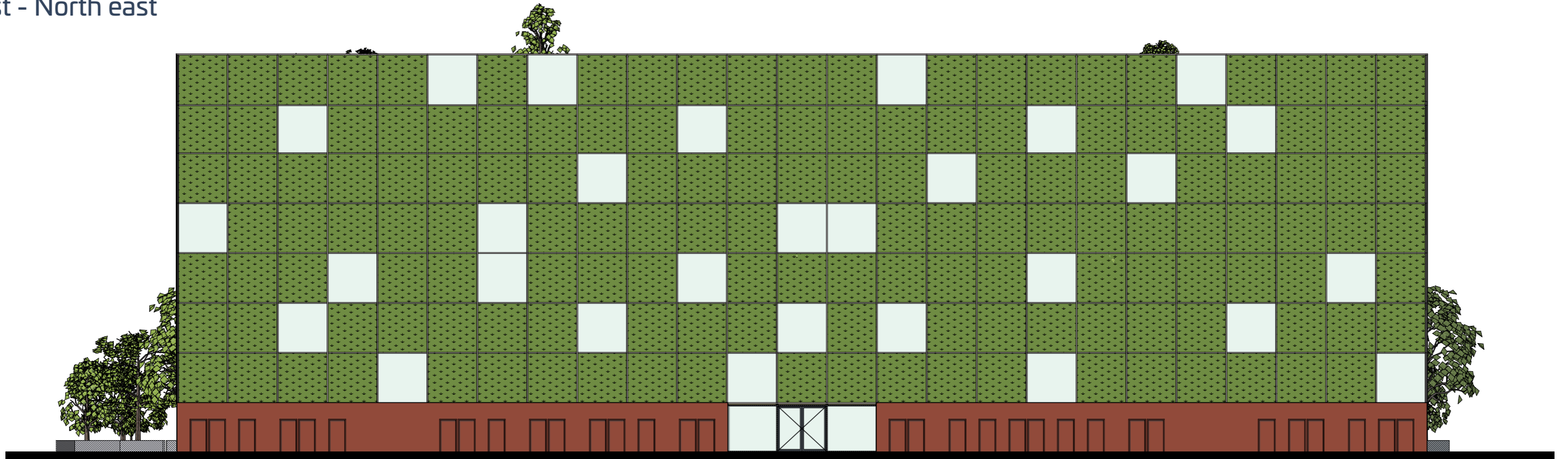
# SOUND WALL





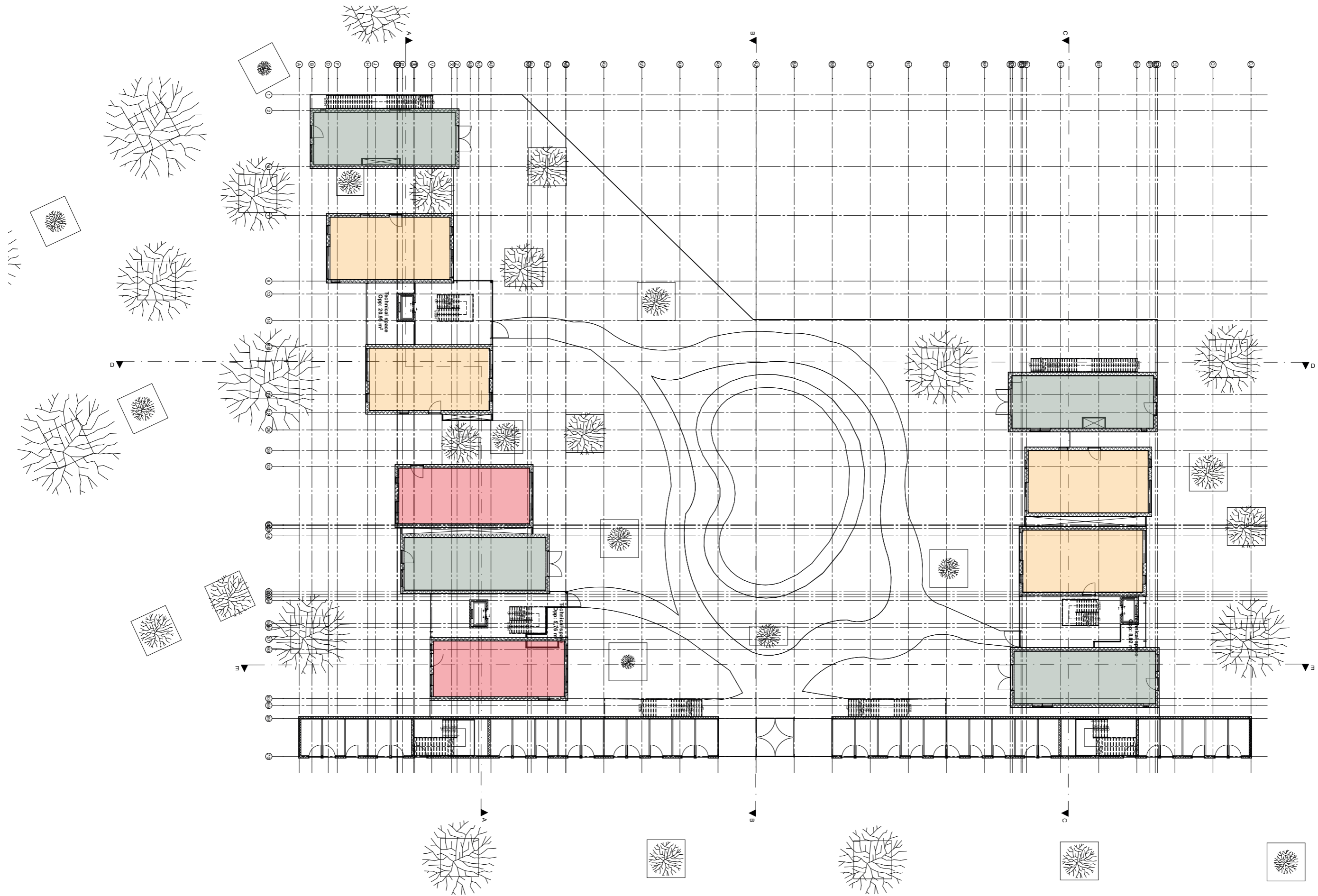
# ELEVATION

East - North east



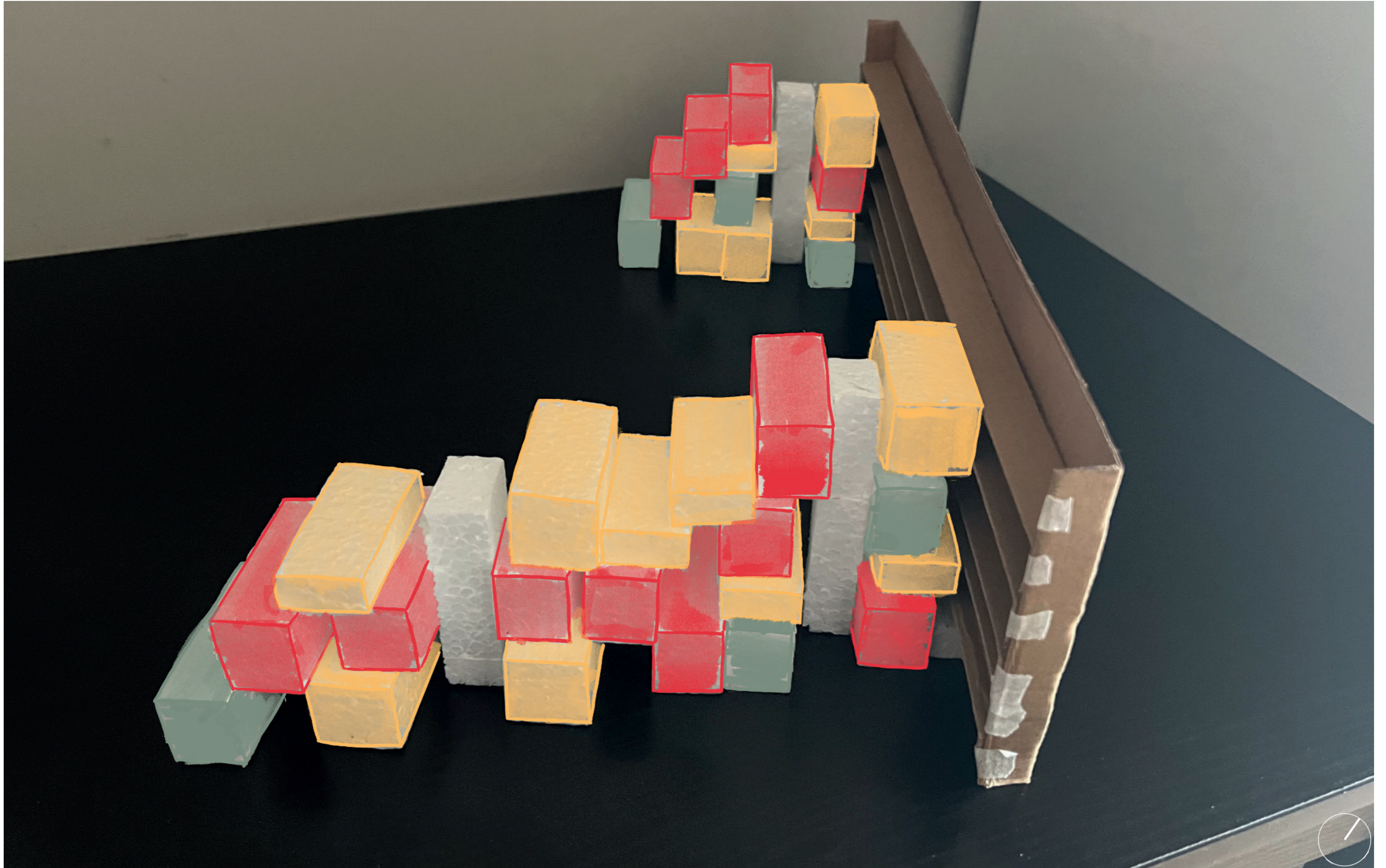


# GROUND FLOOR



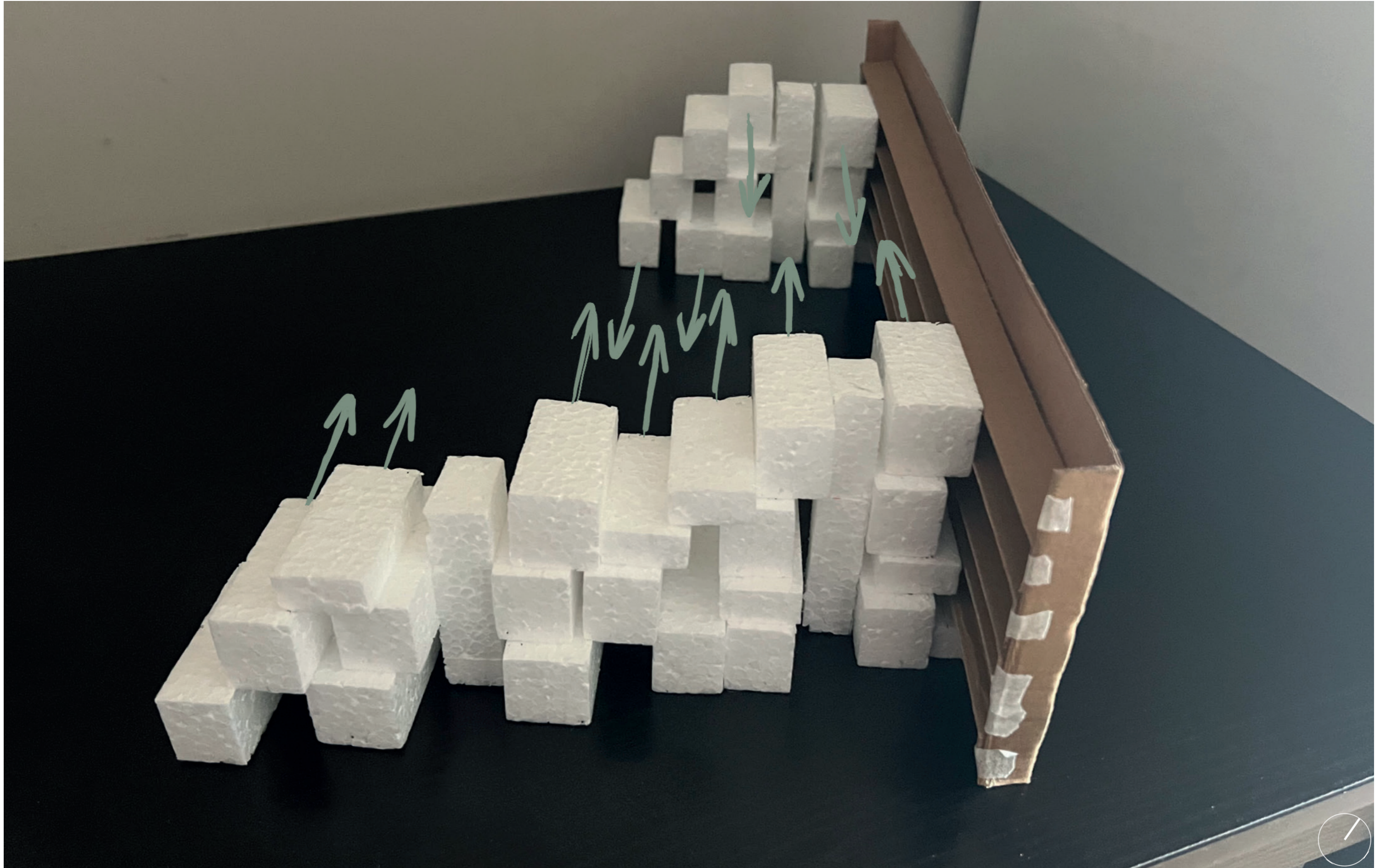


# MODEL



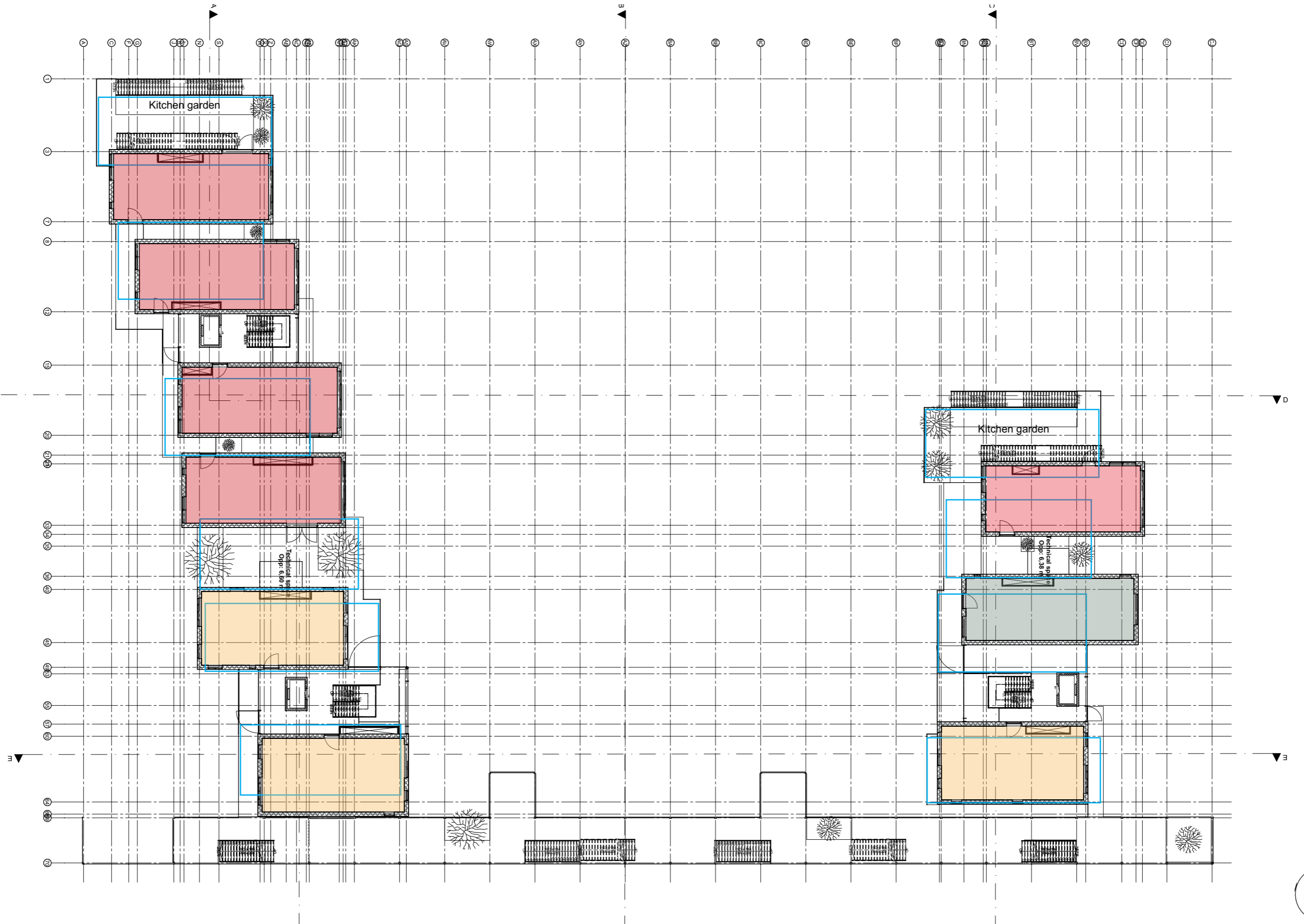


# PRIVACY AND DISTANCE



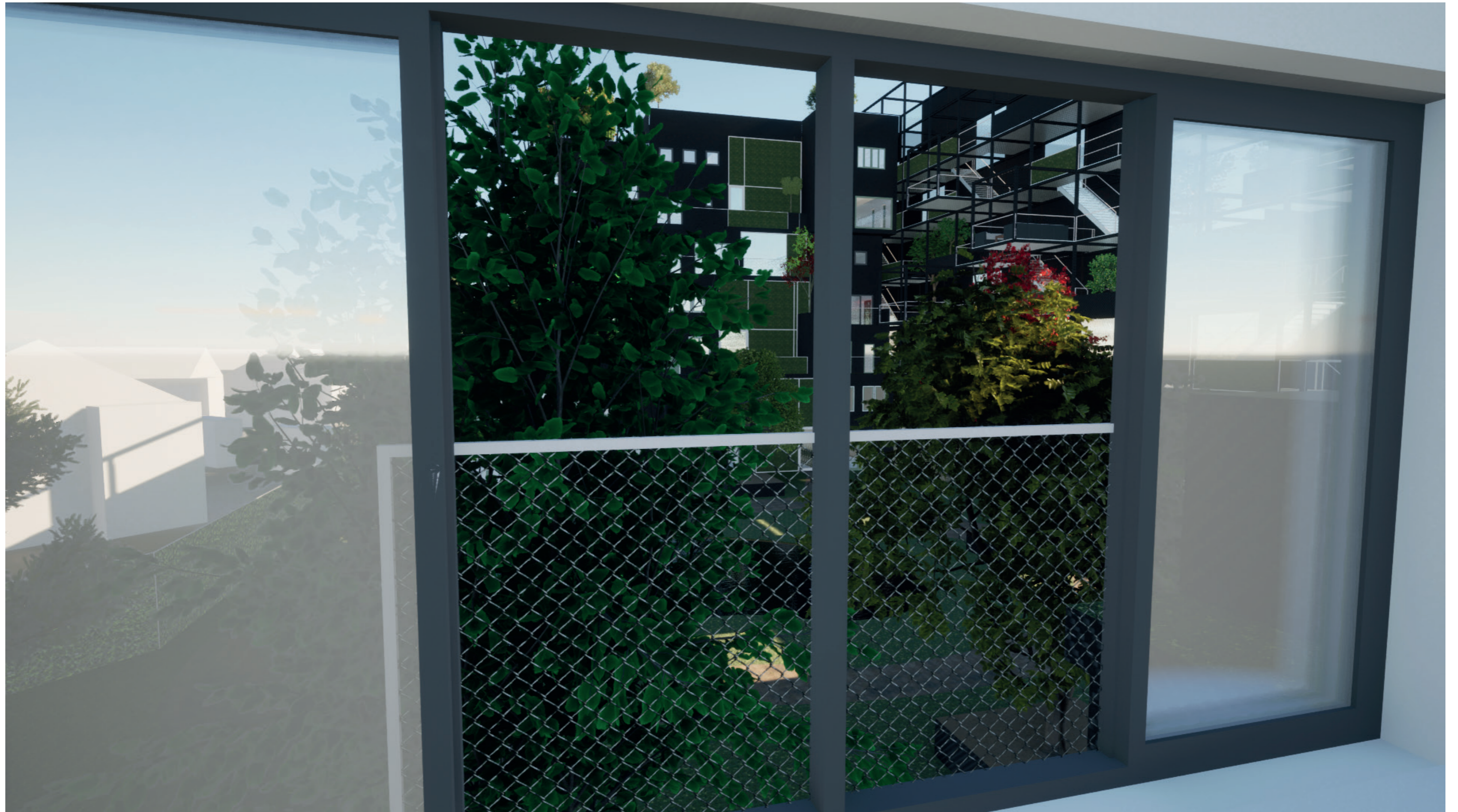


# THIRD FLOOR



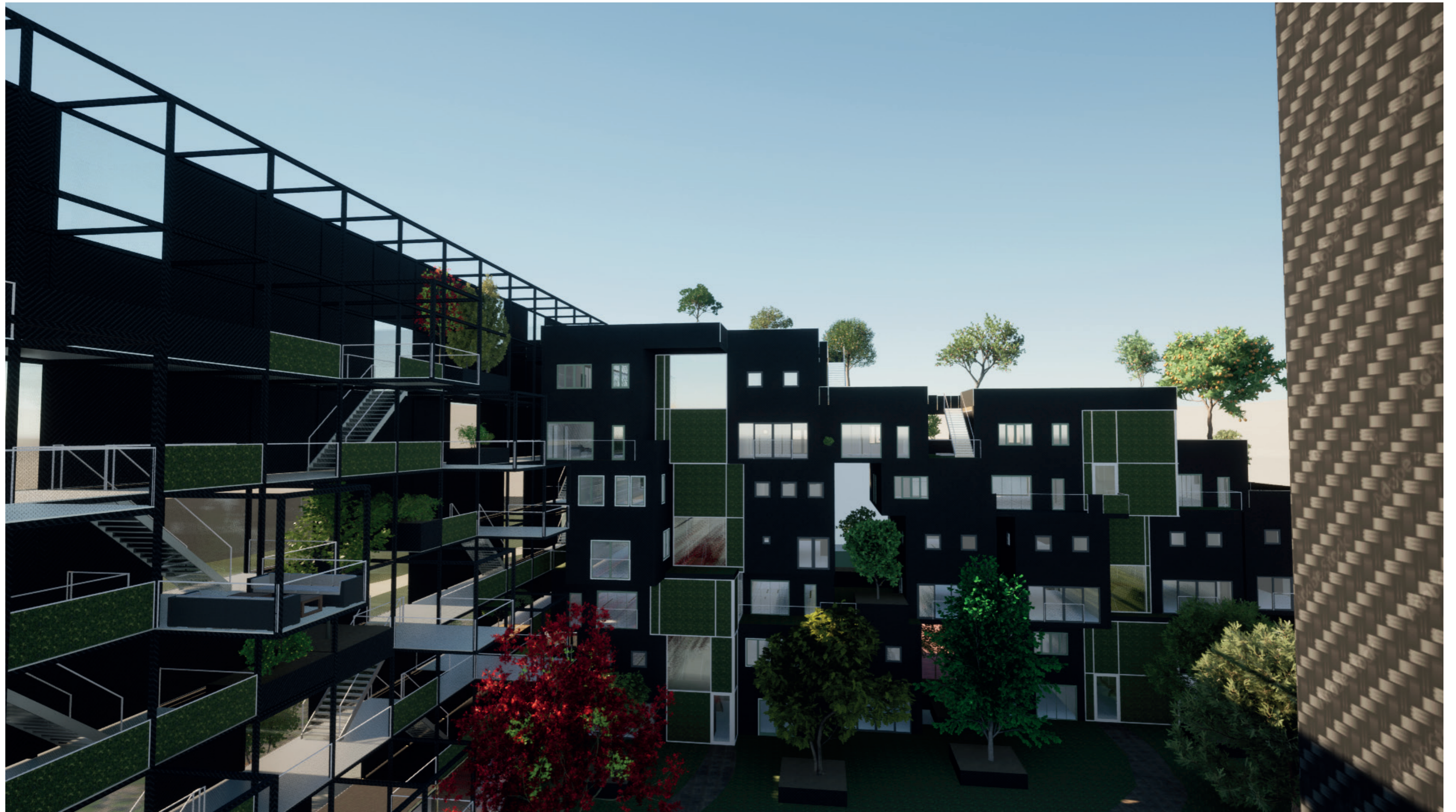


# PRIVACY AND DISTANCE



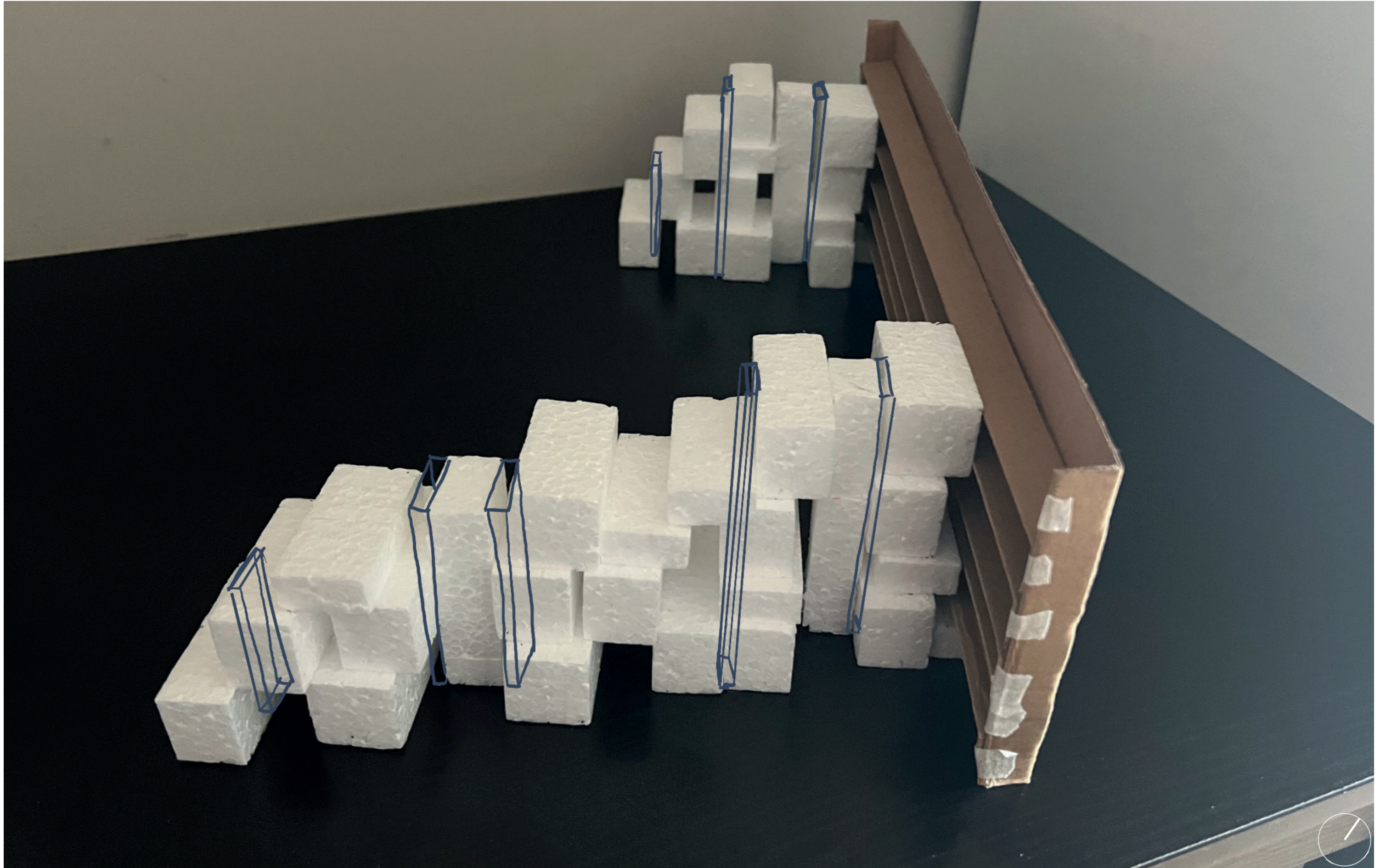


# PRIVACY AND DISTANCE



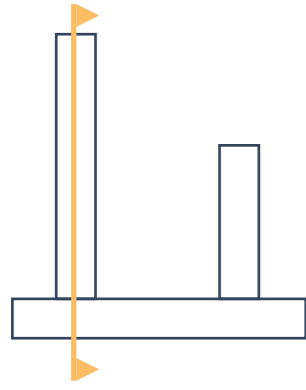


# PIPE SHAFTS





# SECTION AA





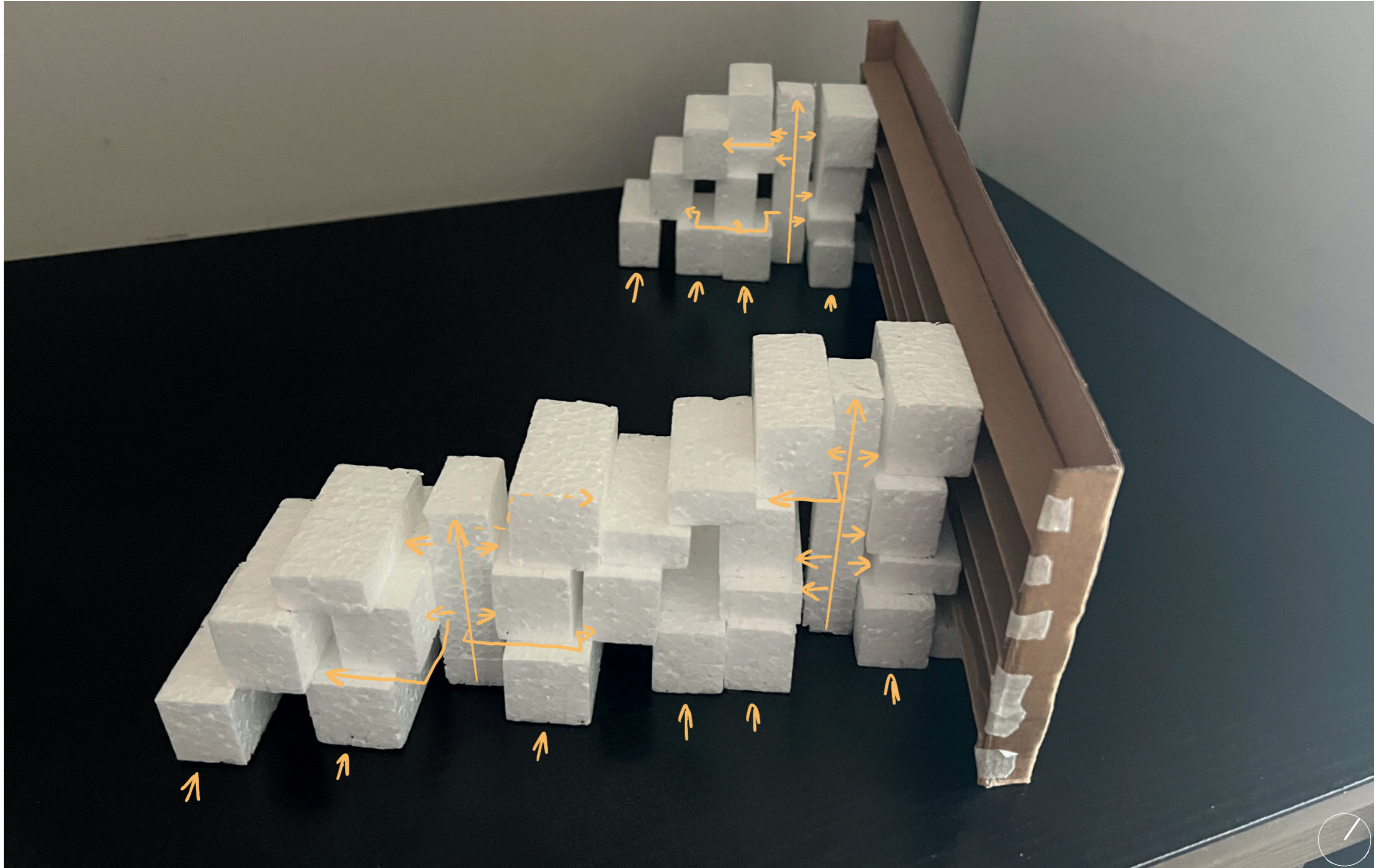
# BUILDING CLIMATE



Image 58 Knoppert, J., S., (2023). building climate winter. Own work



# ROUTING





# THIRD FLOOR





# ROUTING

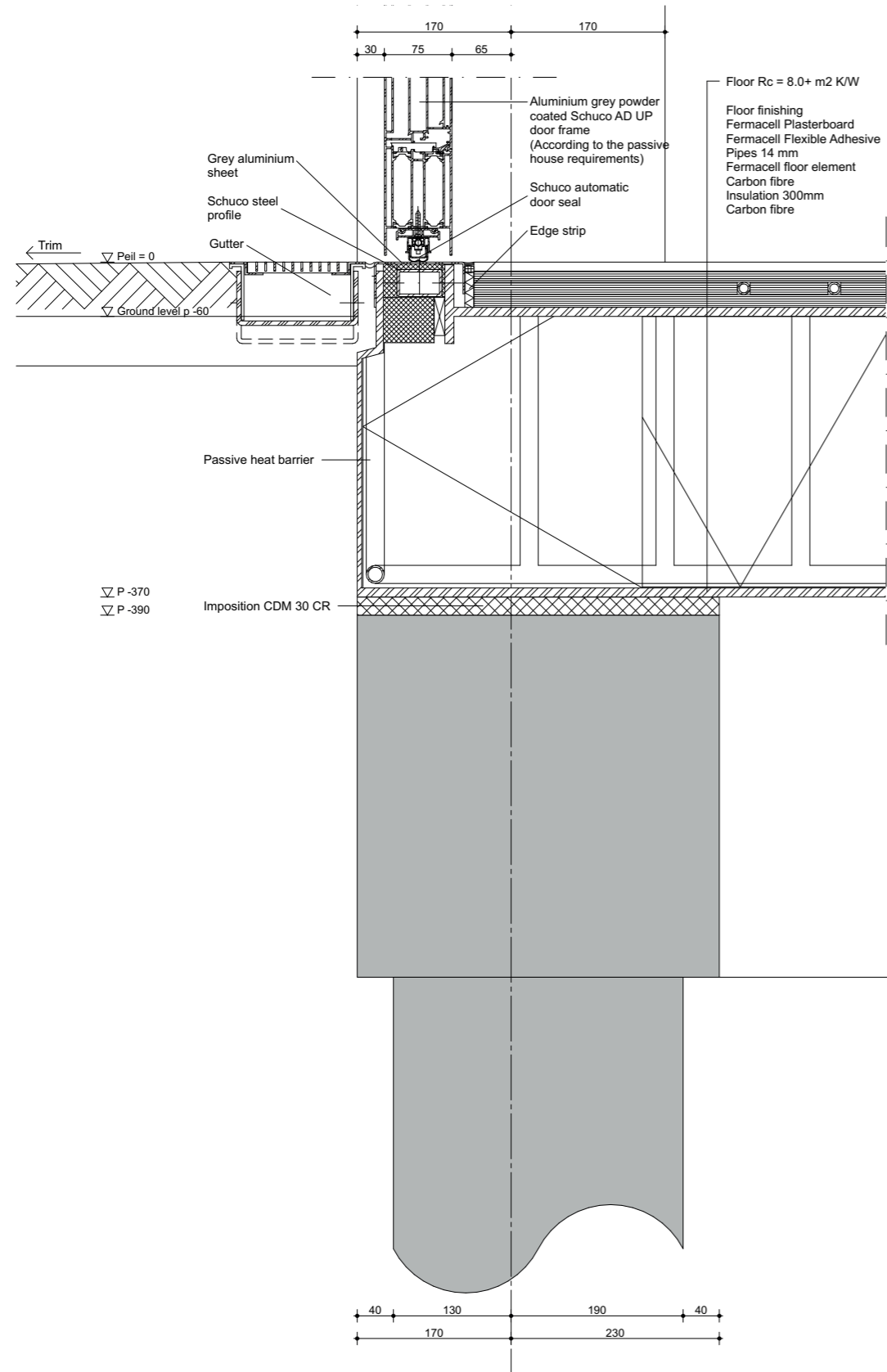


Image 61 Knoppert, J., S., (2023). Detail entrance. Own work

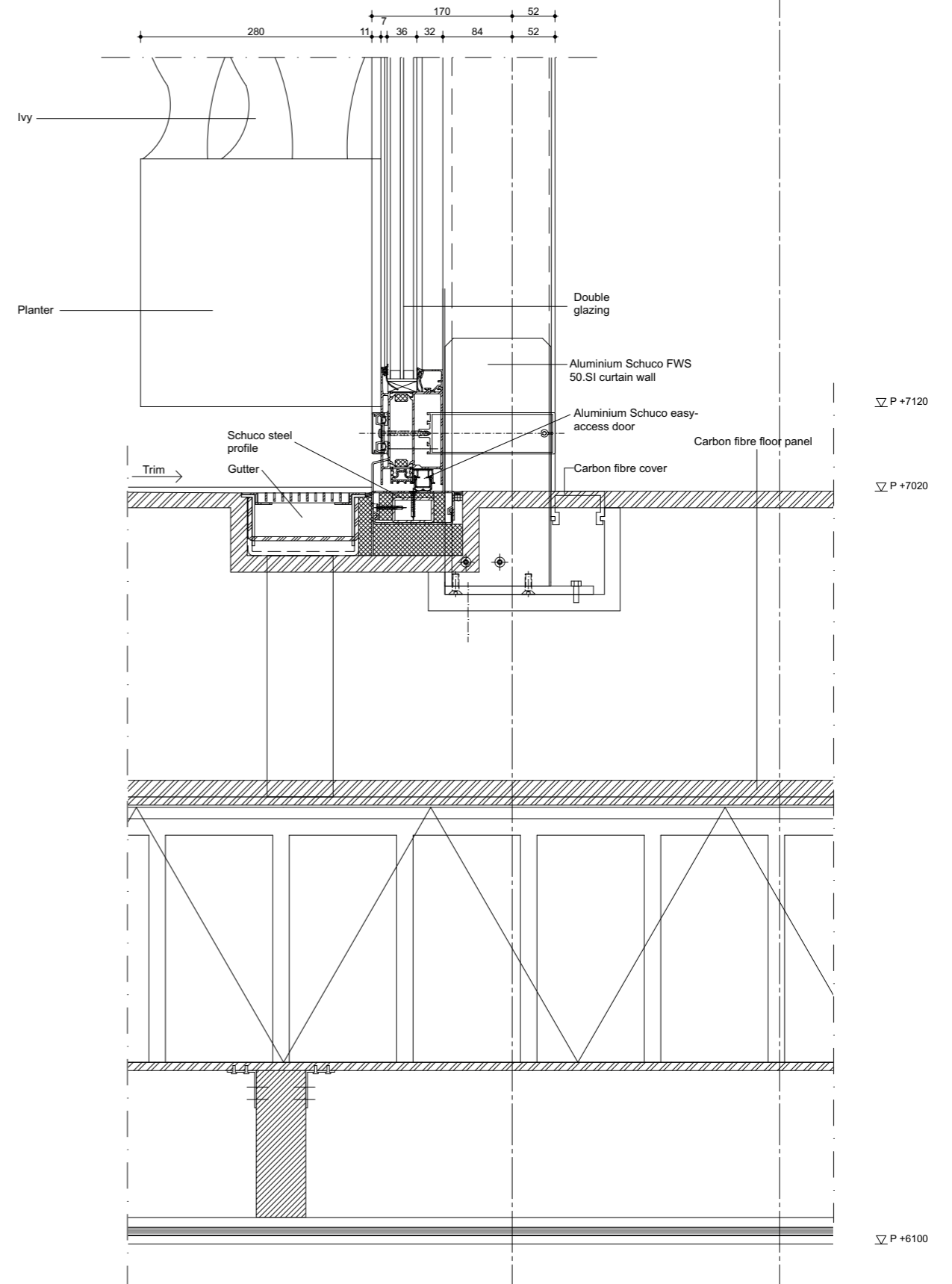
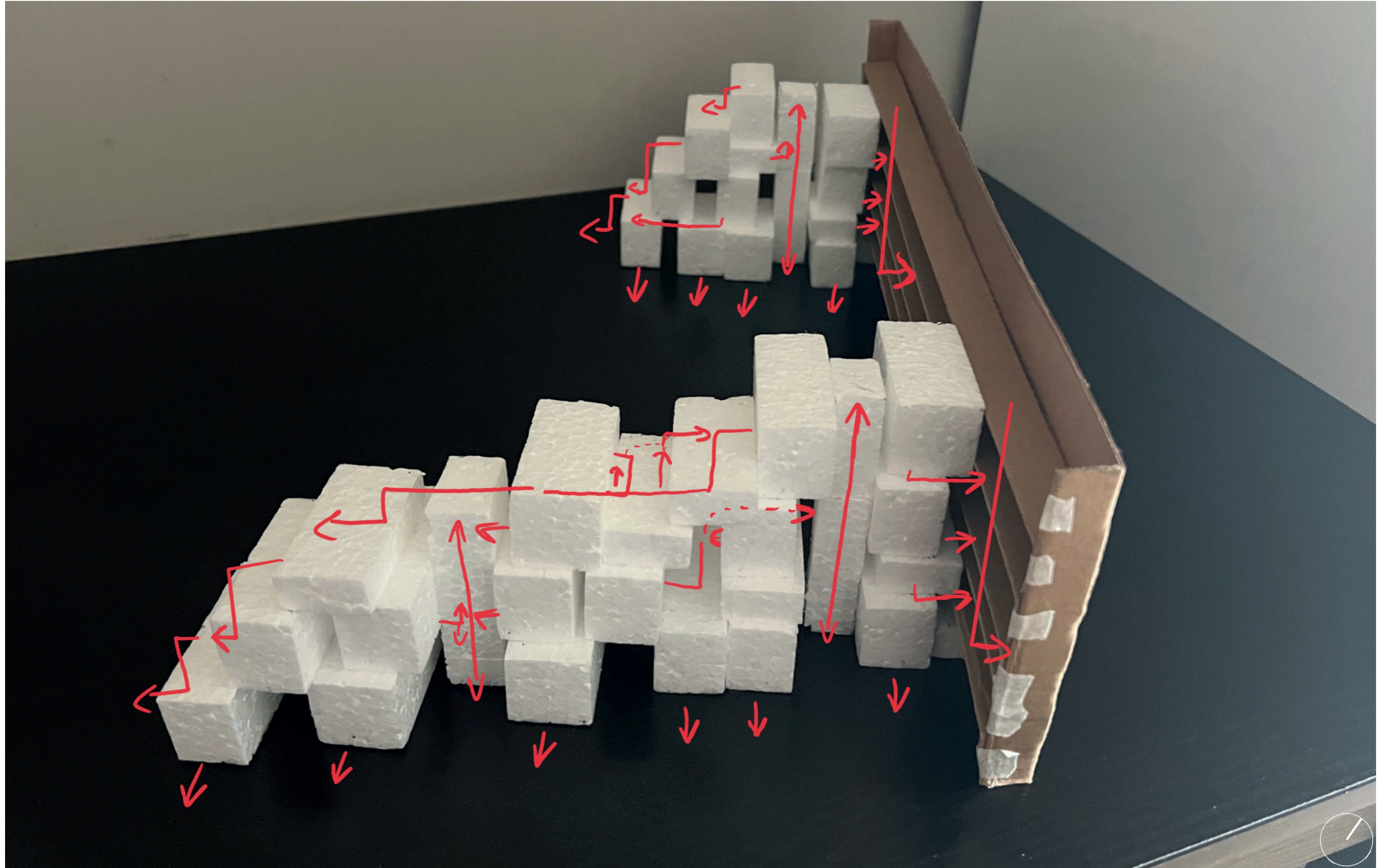


Image 62 Knoppert, J., S., (2023). Detail barrier free. Own work

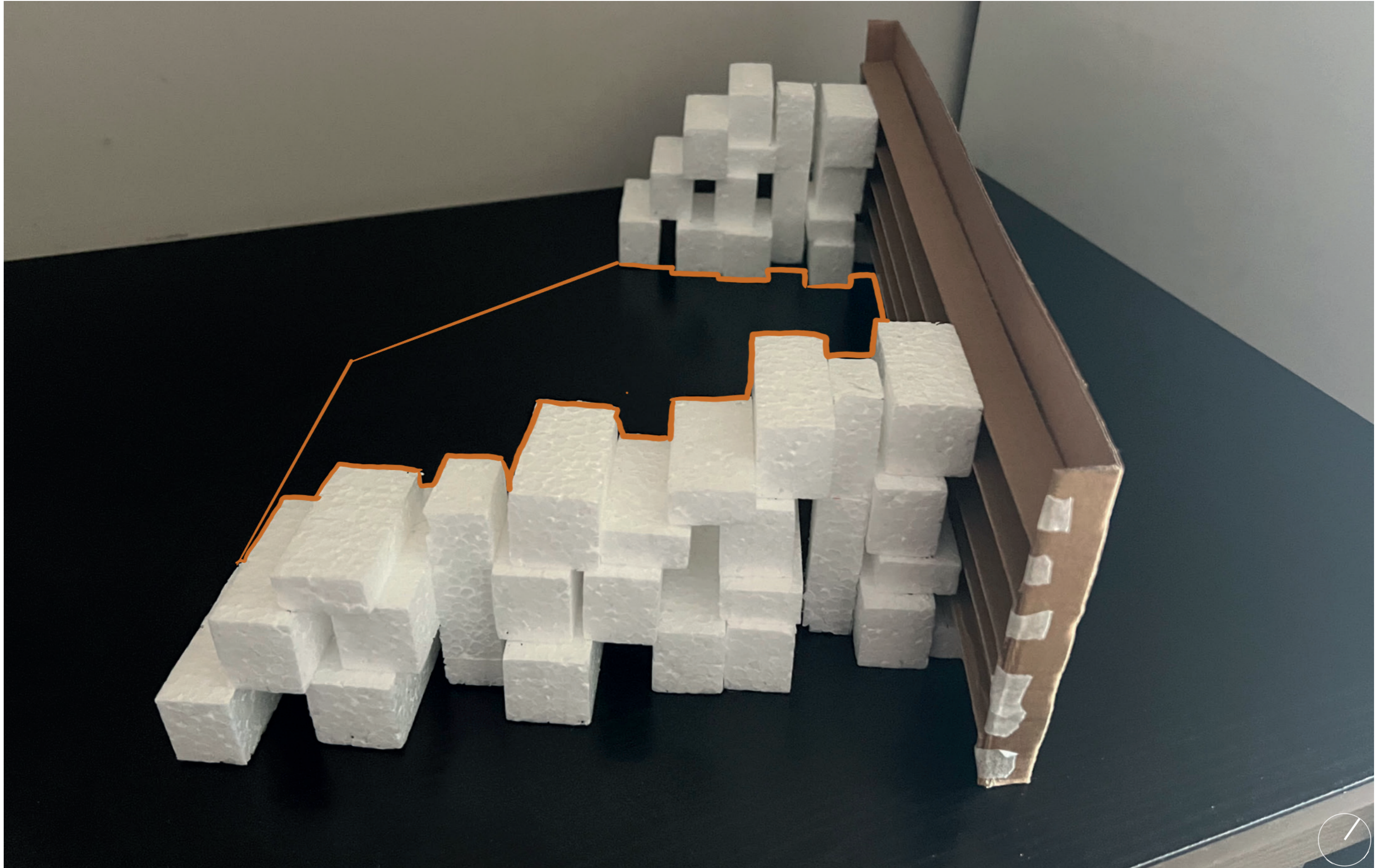


# ESCAPE ROUTING



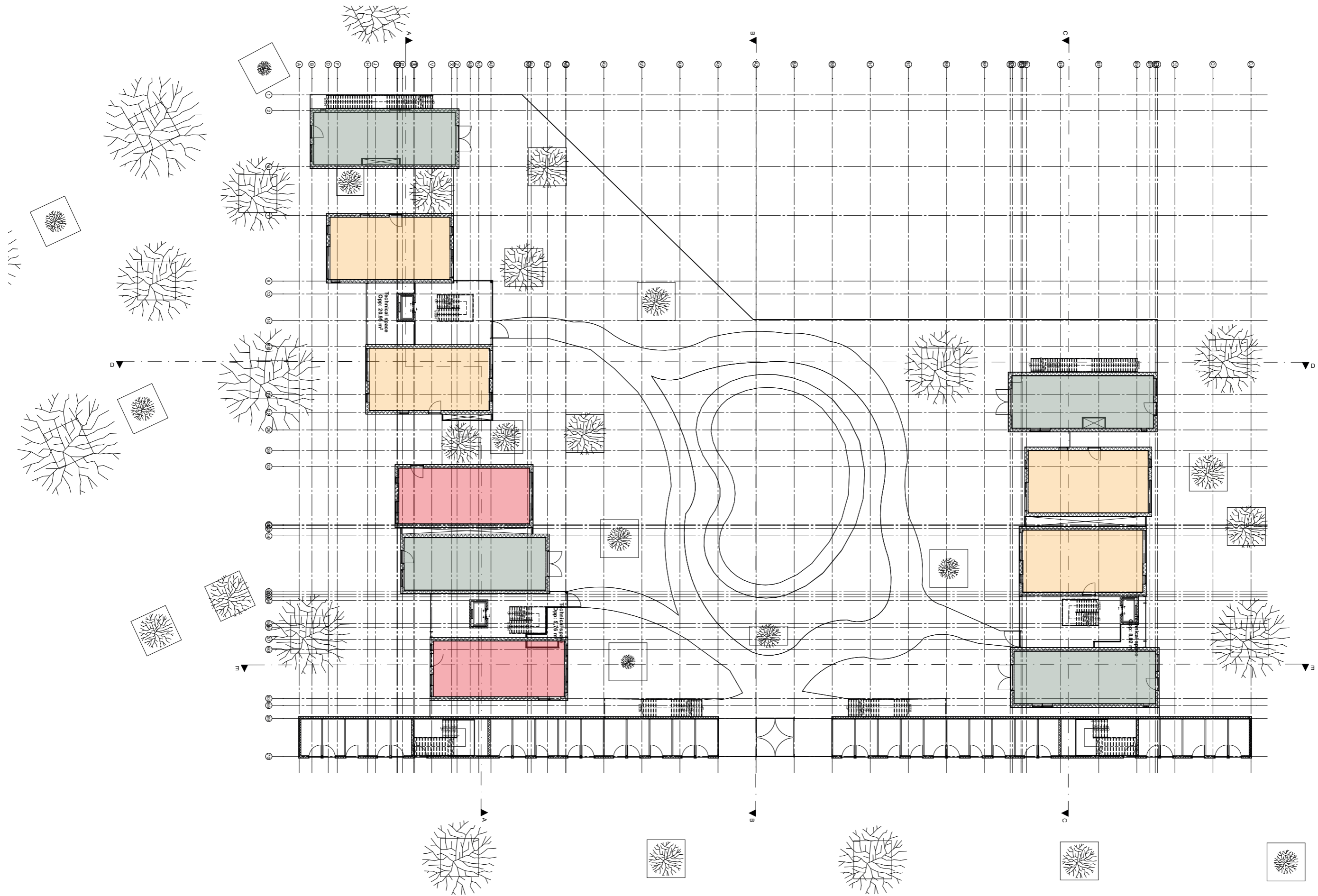


# GREEN SPACE 1: CAMPUS





# GROUND FLOOR



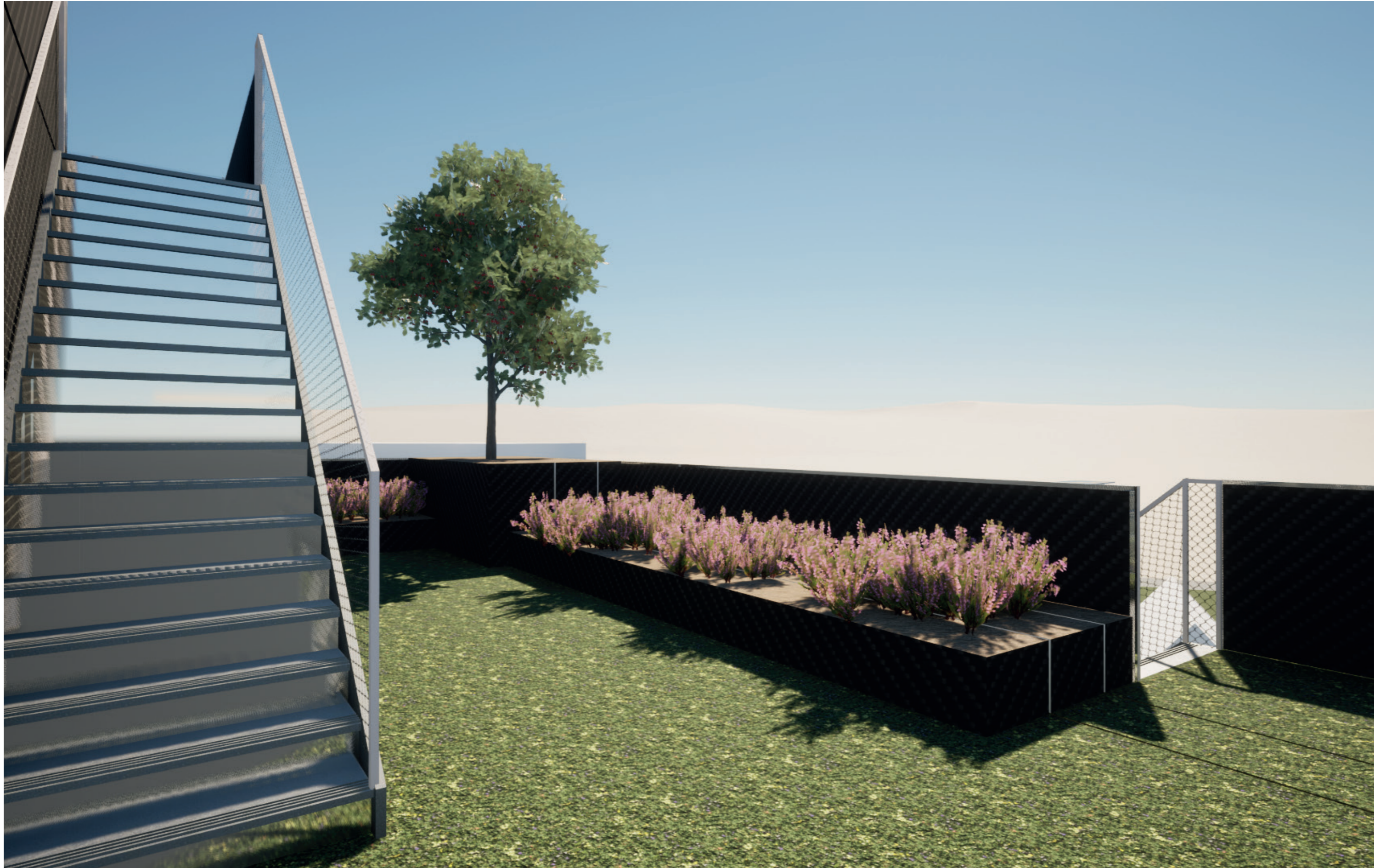


## GREEN SPACE 2: GREEN ROOF



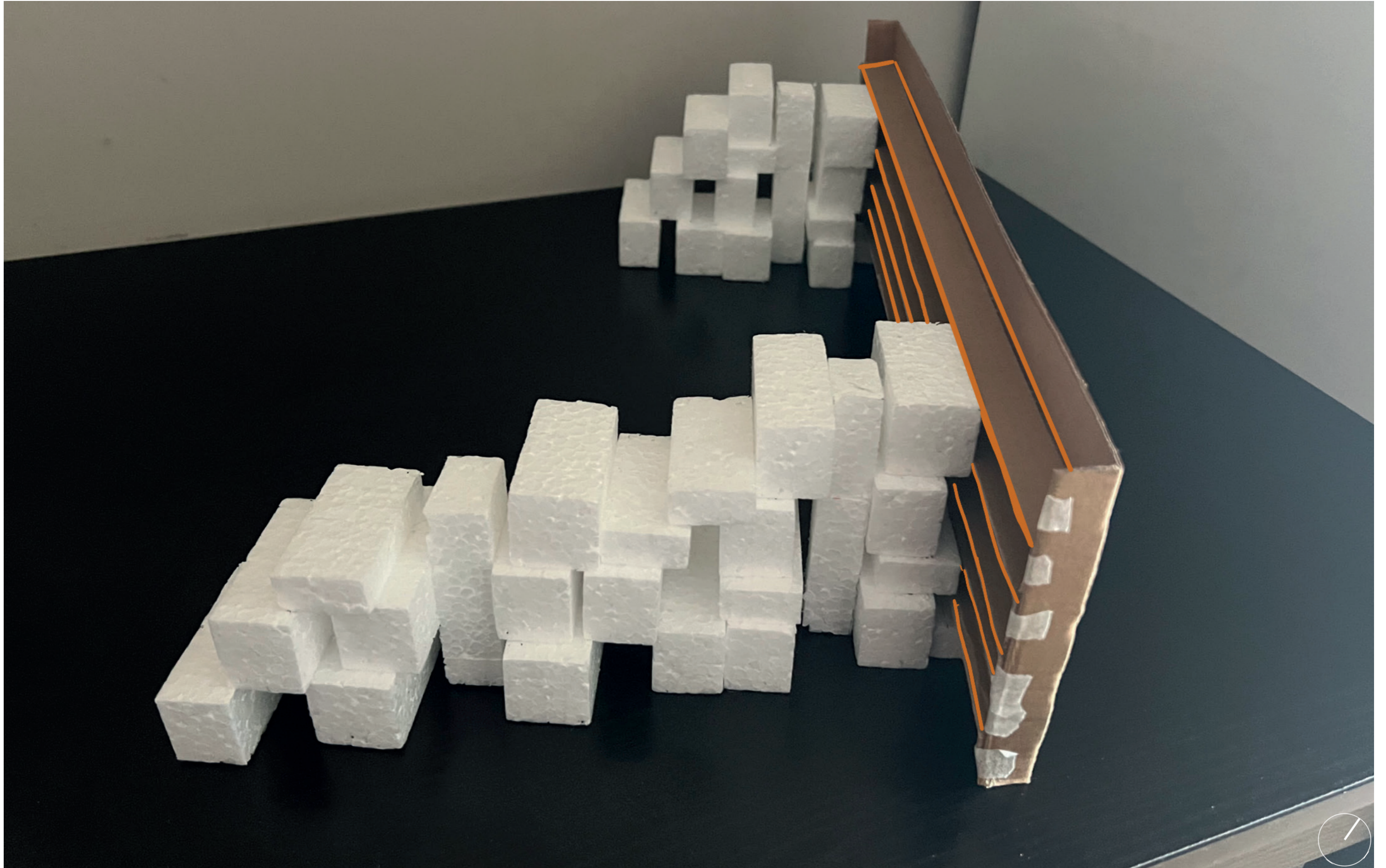


## GREEN SPACE 2: GREEN ROOF



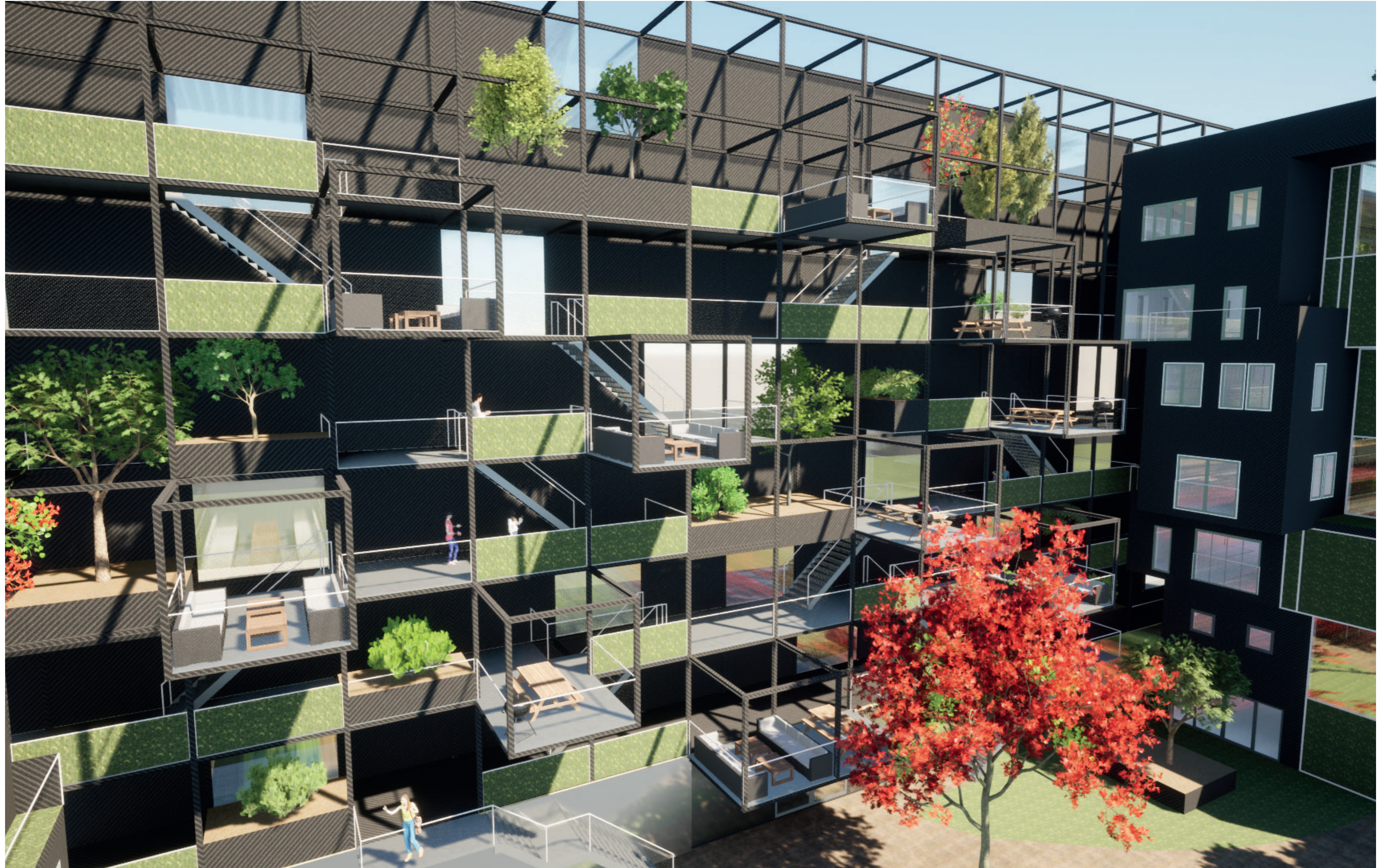


## GREEN SPACE 3: THE WALL



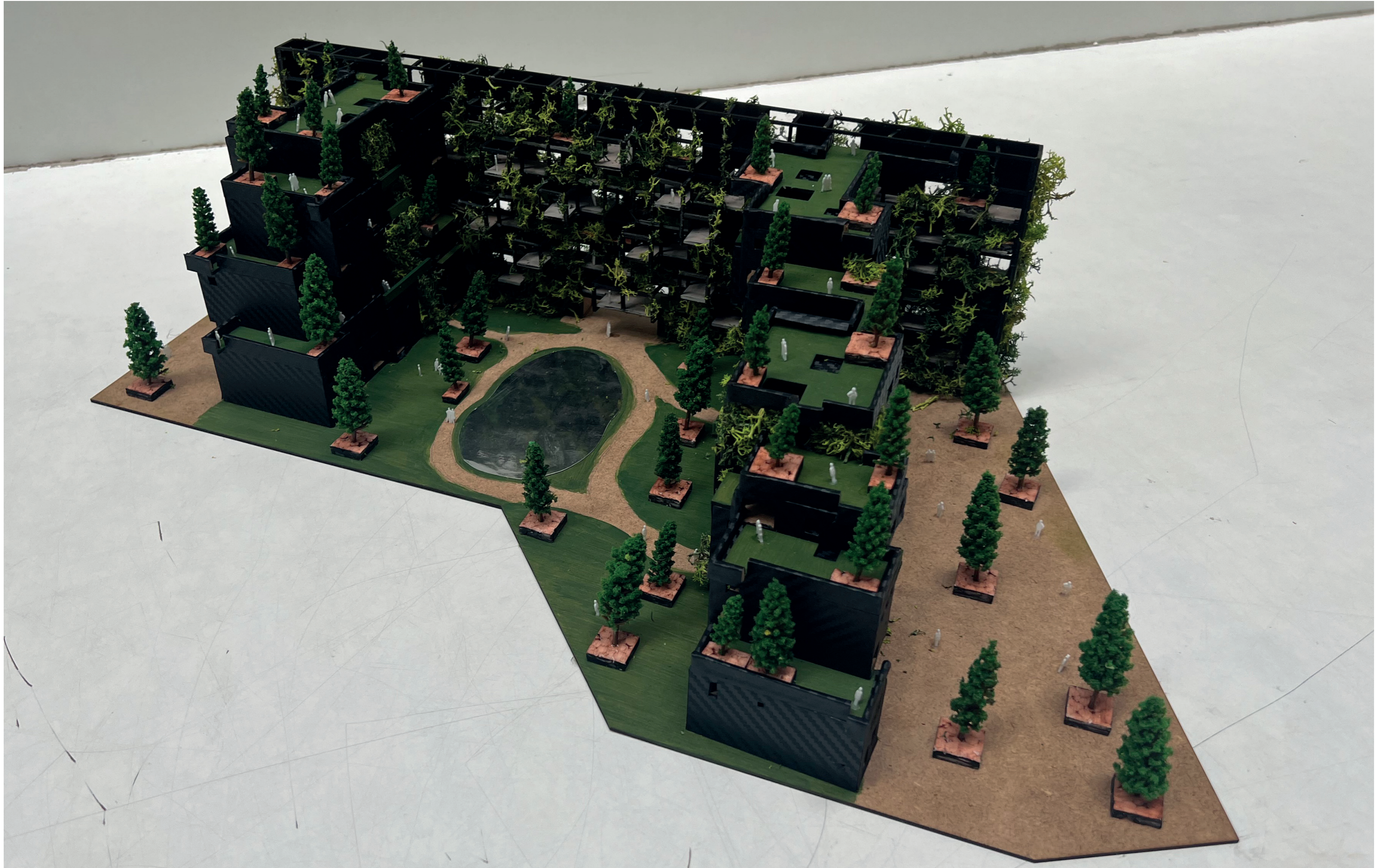


## GREEN SPACE 3: THE WALL





# GREEN SPACE





# FACADE OPENINGS

Row house



Family home



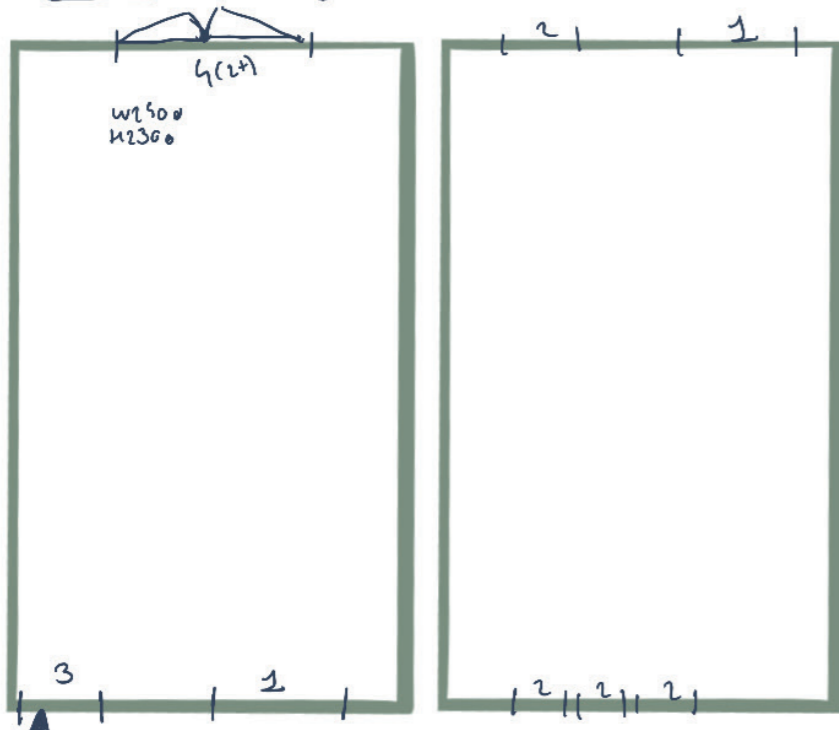
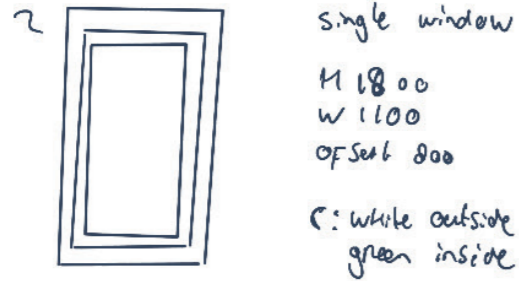
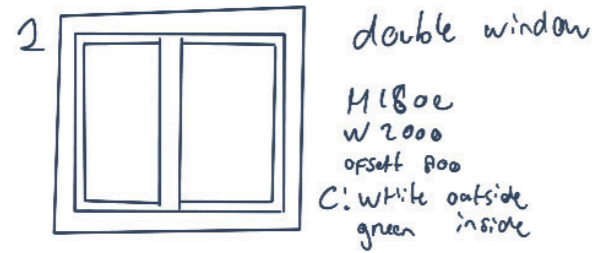
Vila



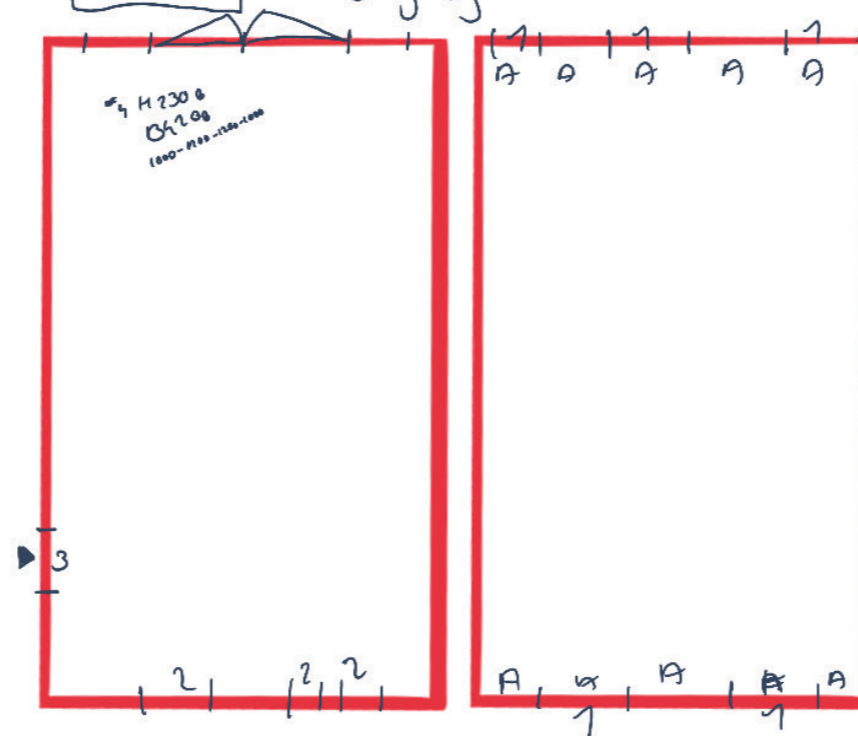
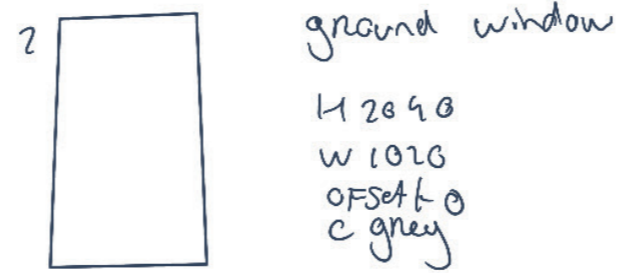
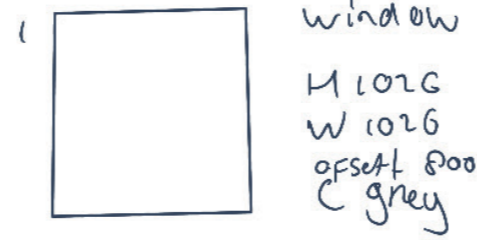


# FACADE OPENINGS

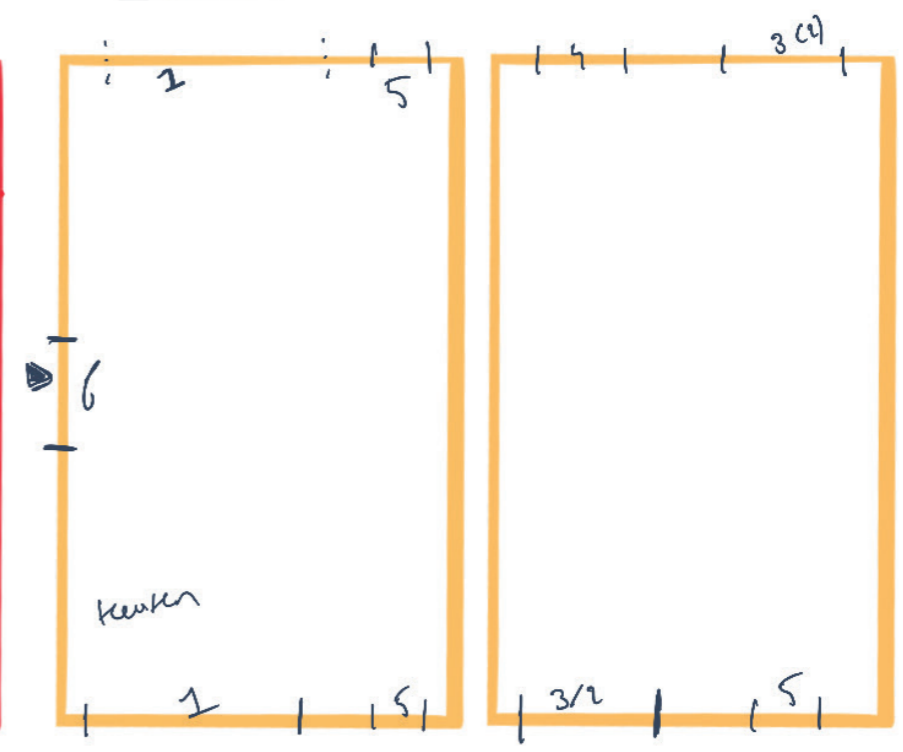
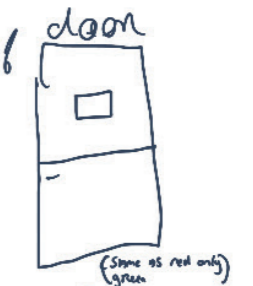
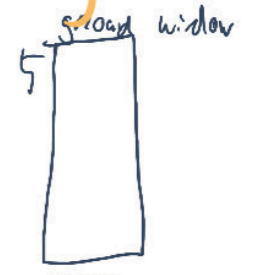
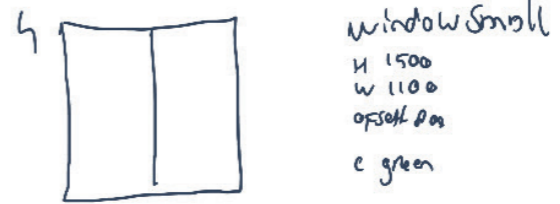
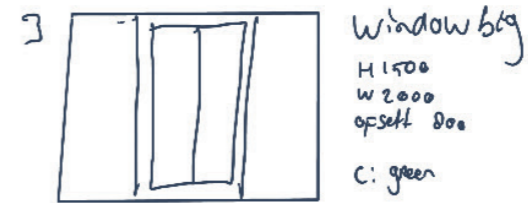
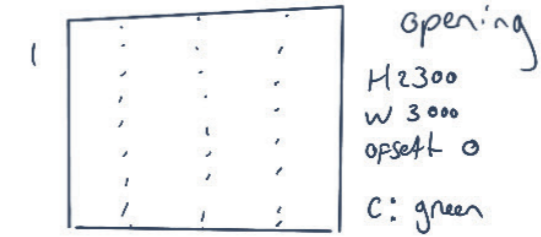
## green dwelling



## Red dwelling



## yellow dwelling





# FACADE OPENINGS MODEL





# PROBLEMS THAT STILL NEED TO BE RESOLVED

Connection between modules  
Fabrication and recycling  
Costs  
Air humidity





An architectural rendering of a modern building with a dark, textured facade. The building features a prominent arched window on the left and a series of balconies and terraces on the right. A man and a woman are standing on a balcony in the foreground, looking out over a courtyard area. The courtyard has a green lawn and a white railing. The overall scene is brightly lit, suggesting a sunny day.

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