



A CIRCULAR REED ISLAND

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Design tutor: Mo Smit

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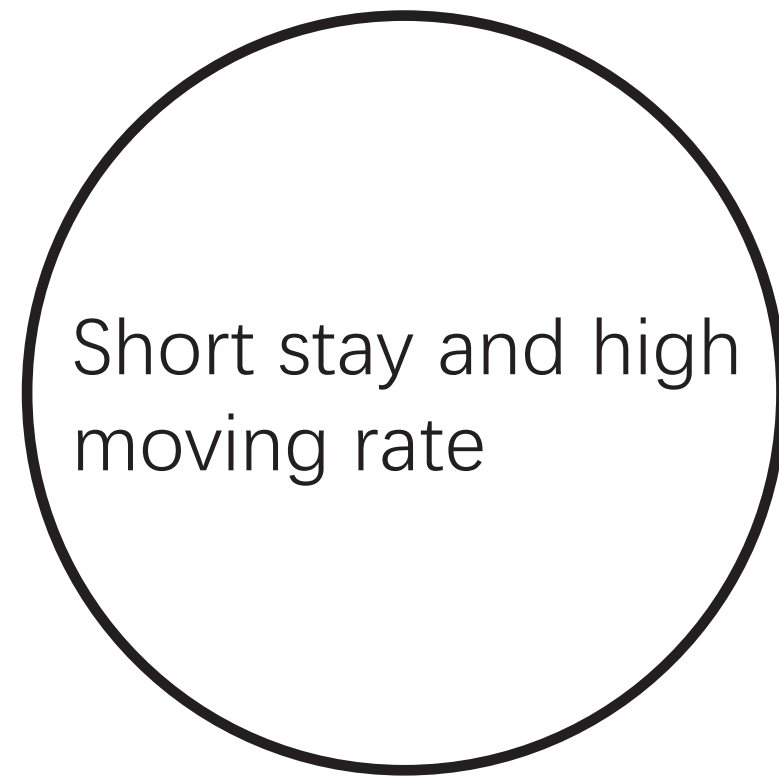
Research tutor: Jos de Krieger

2020.6.23

Problem statement

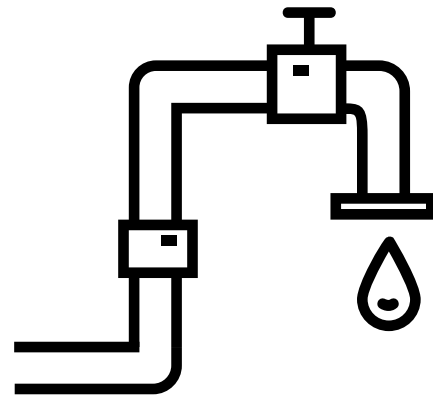


Facilities

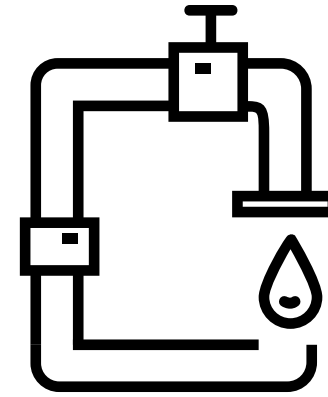
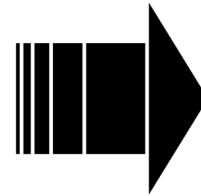


Residents

Problem statement: water consumption

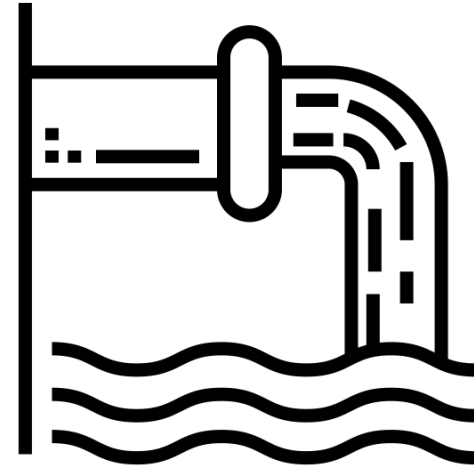


Linear water

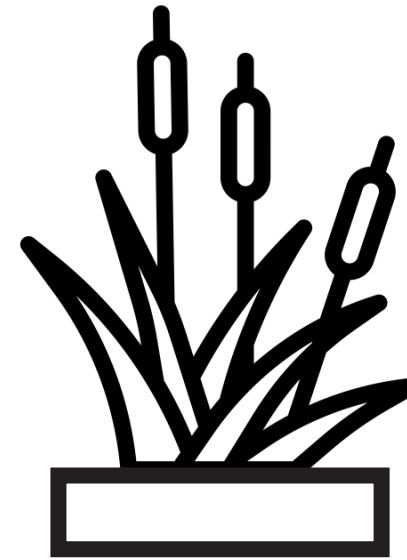
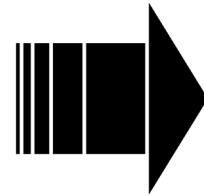


Circular water

Problem statement: treatment method

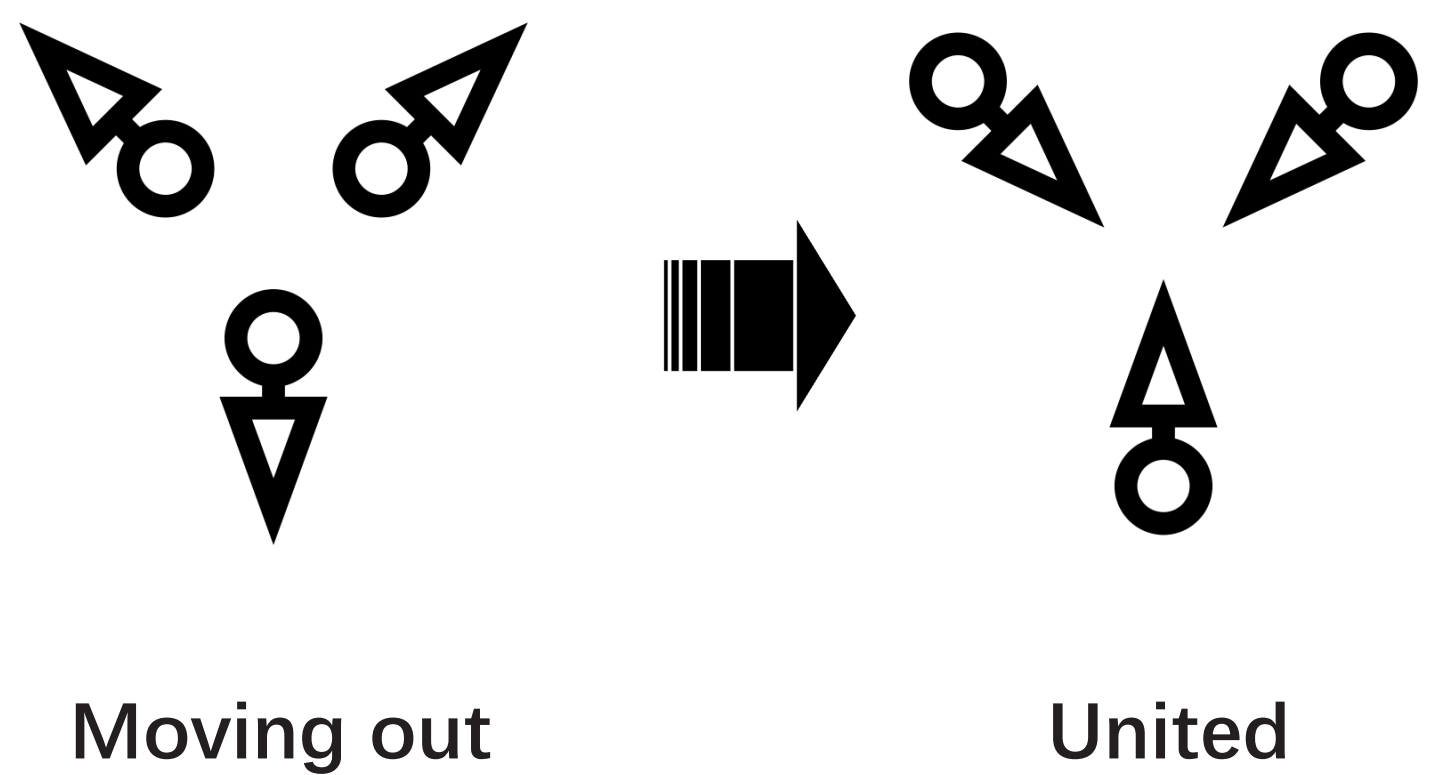


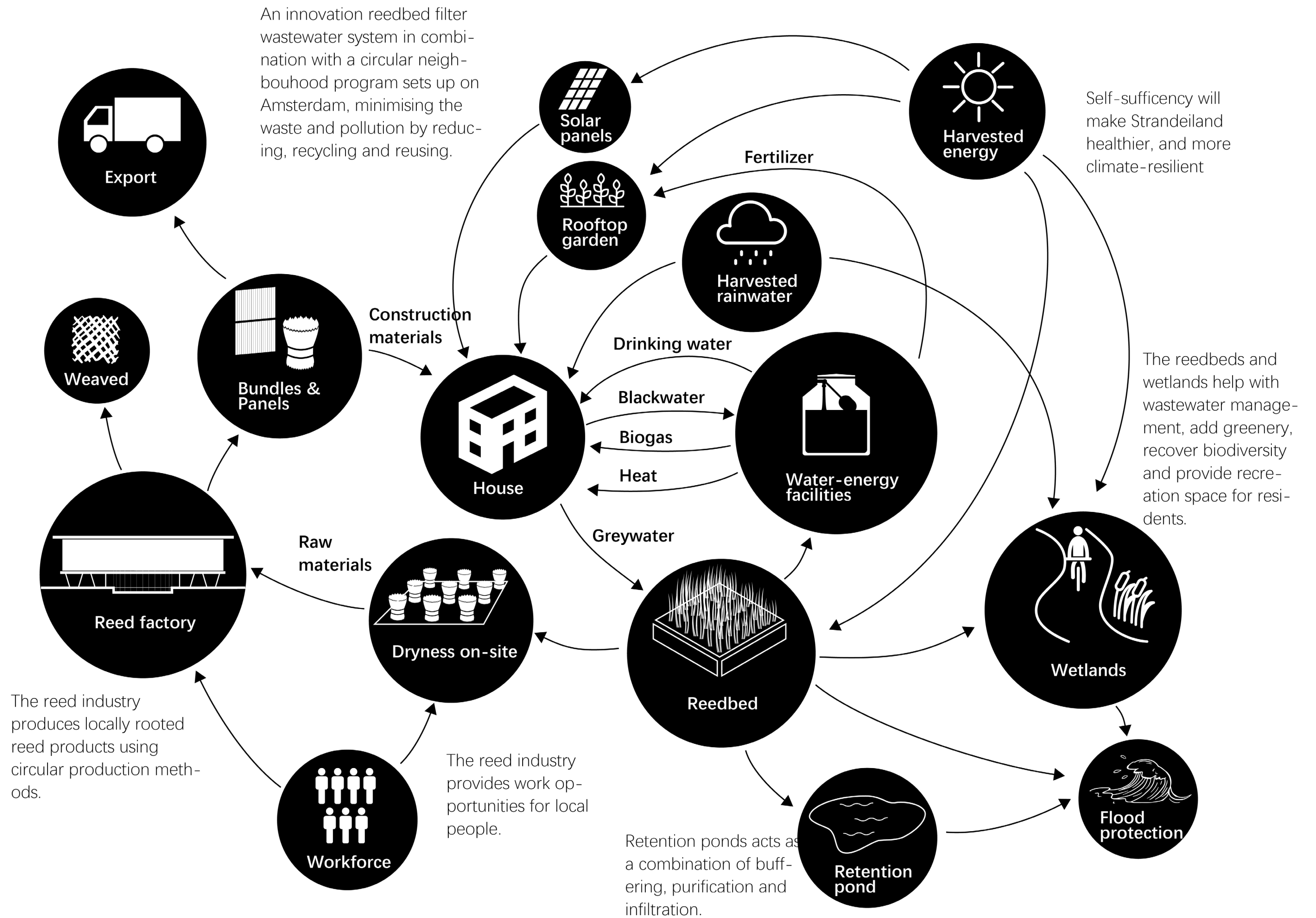
Water plant

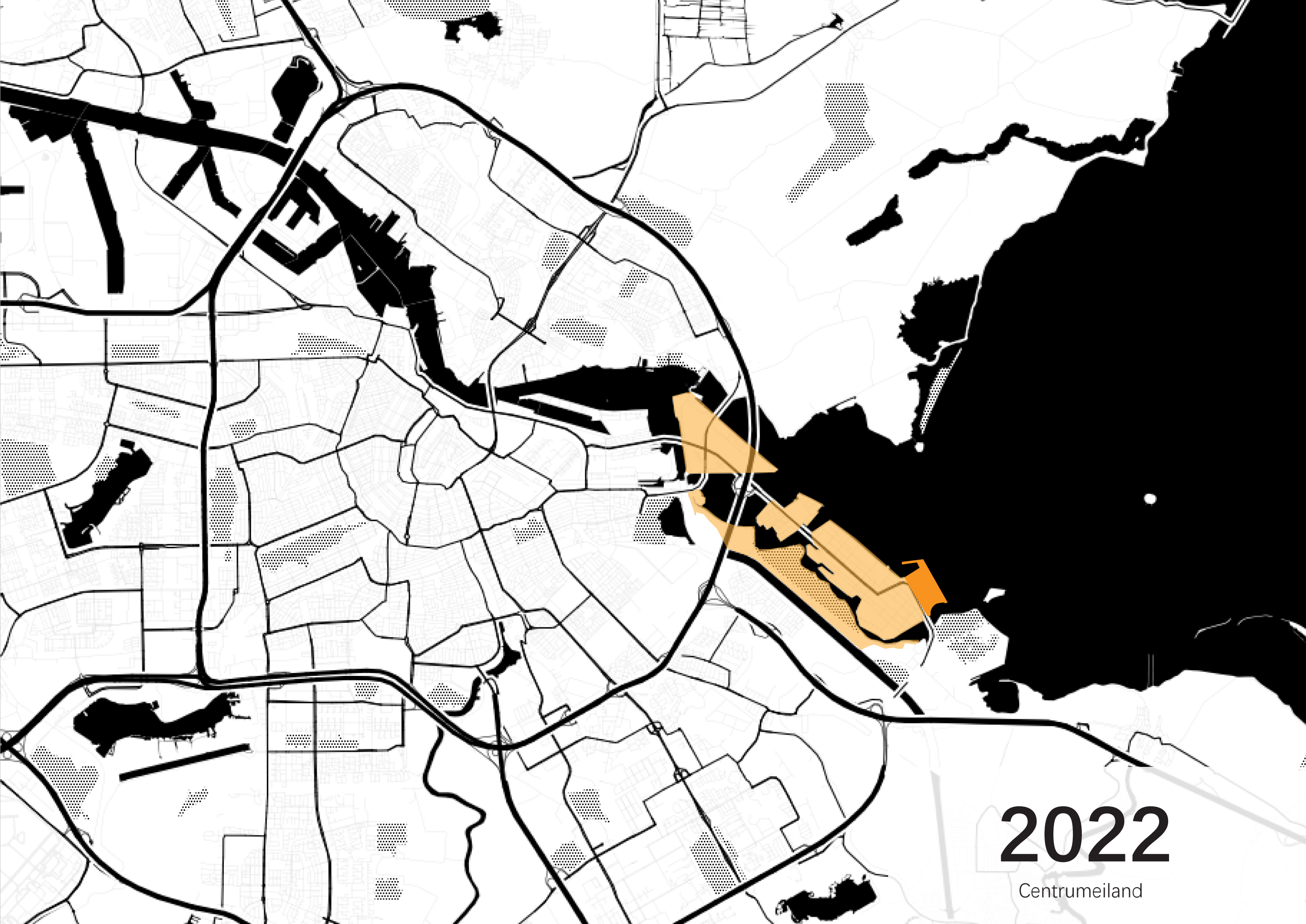


Bio-filter

Problem statement: residents

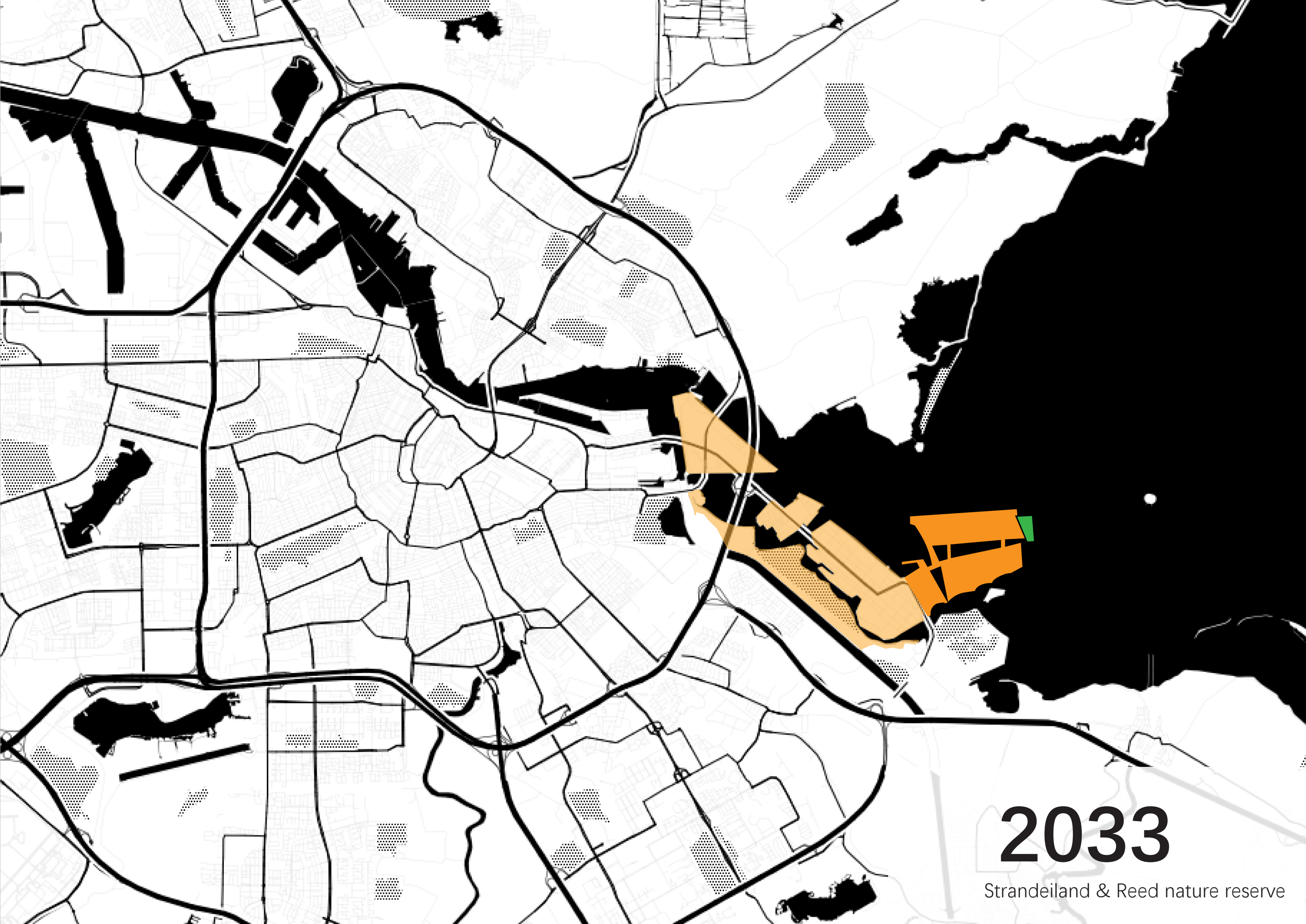






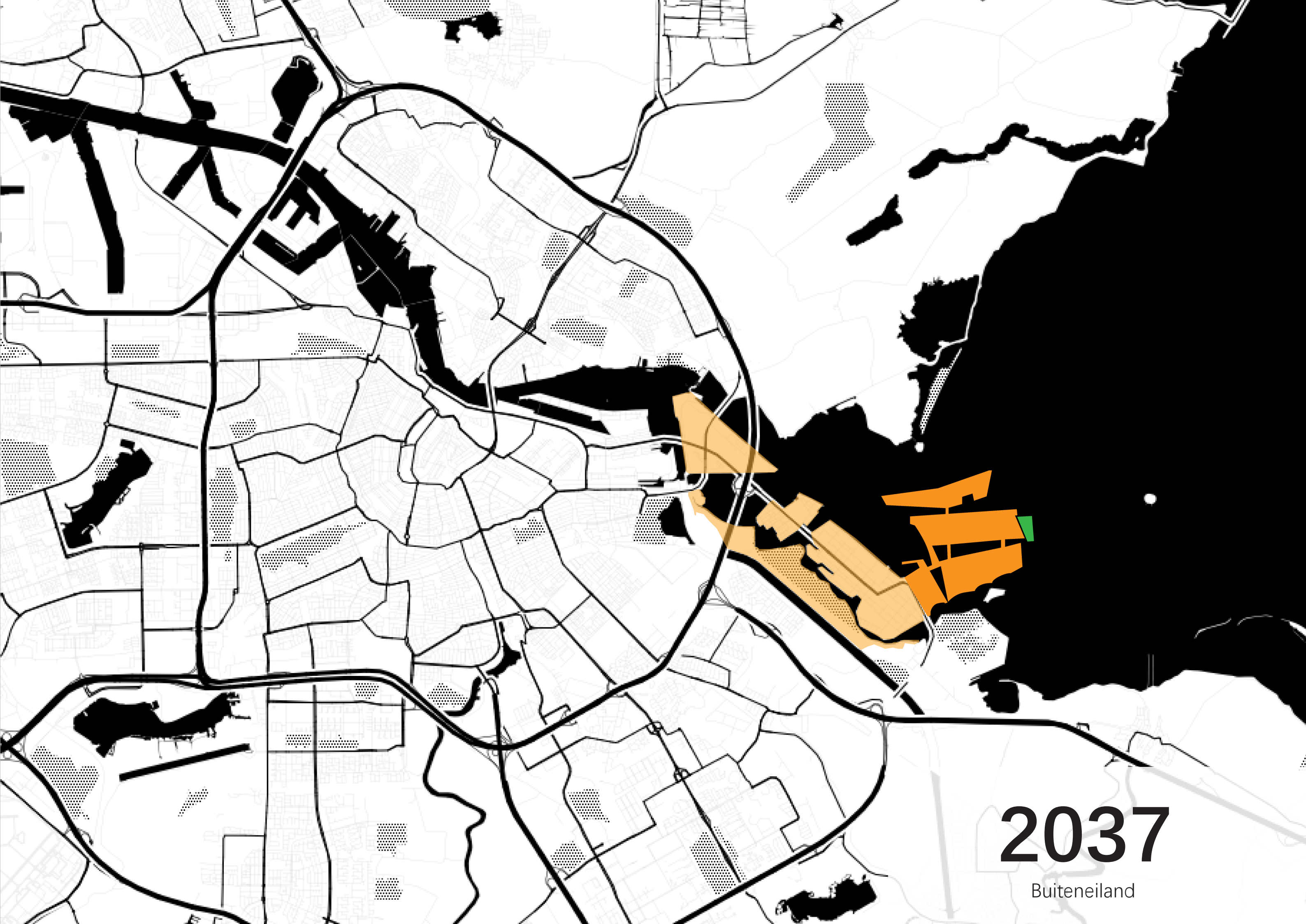
2022

Centrumeiland



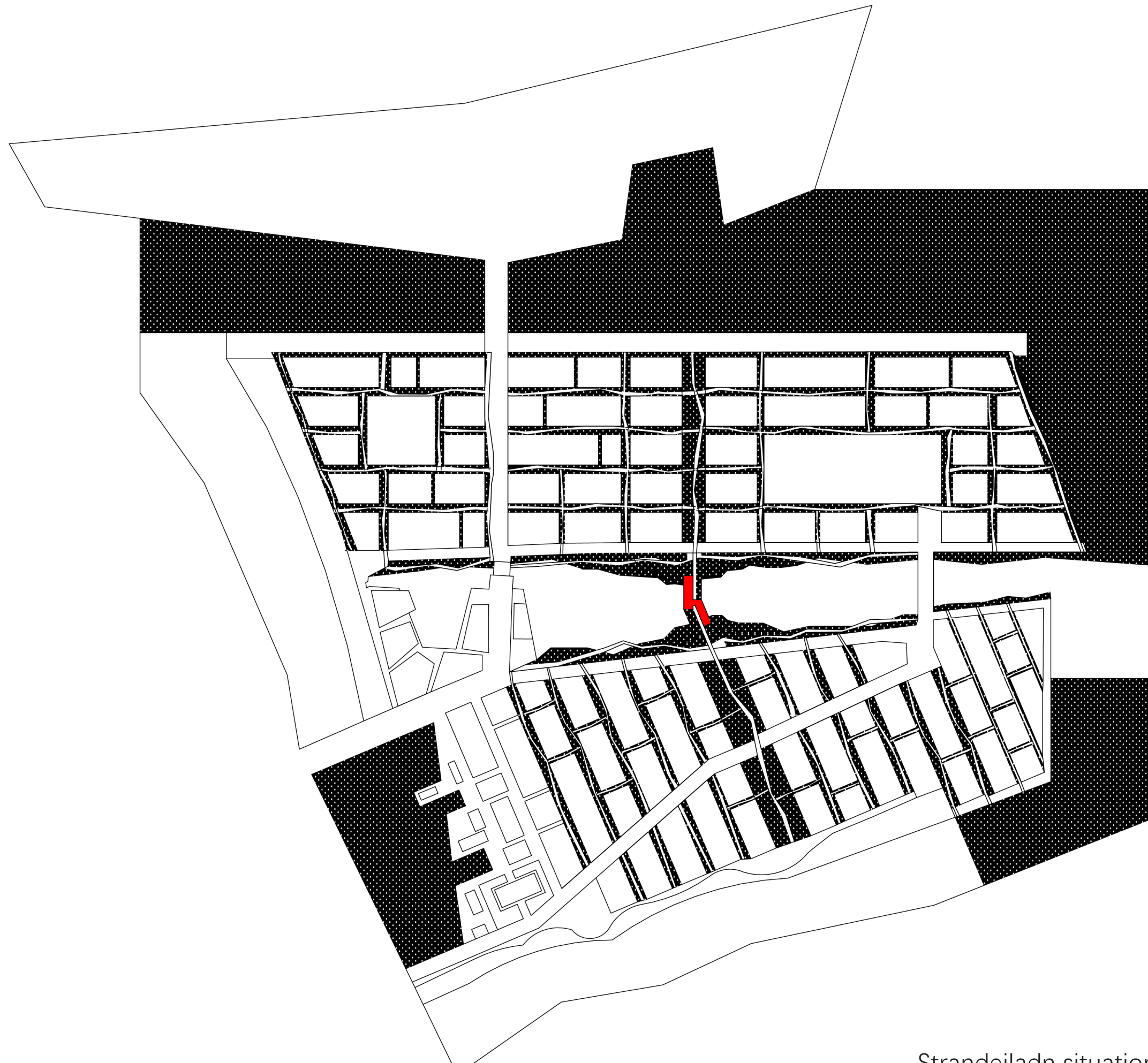
2033

Strandeiland & Reed nature reserve

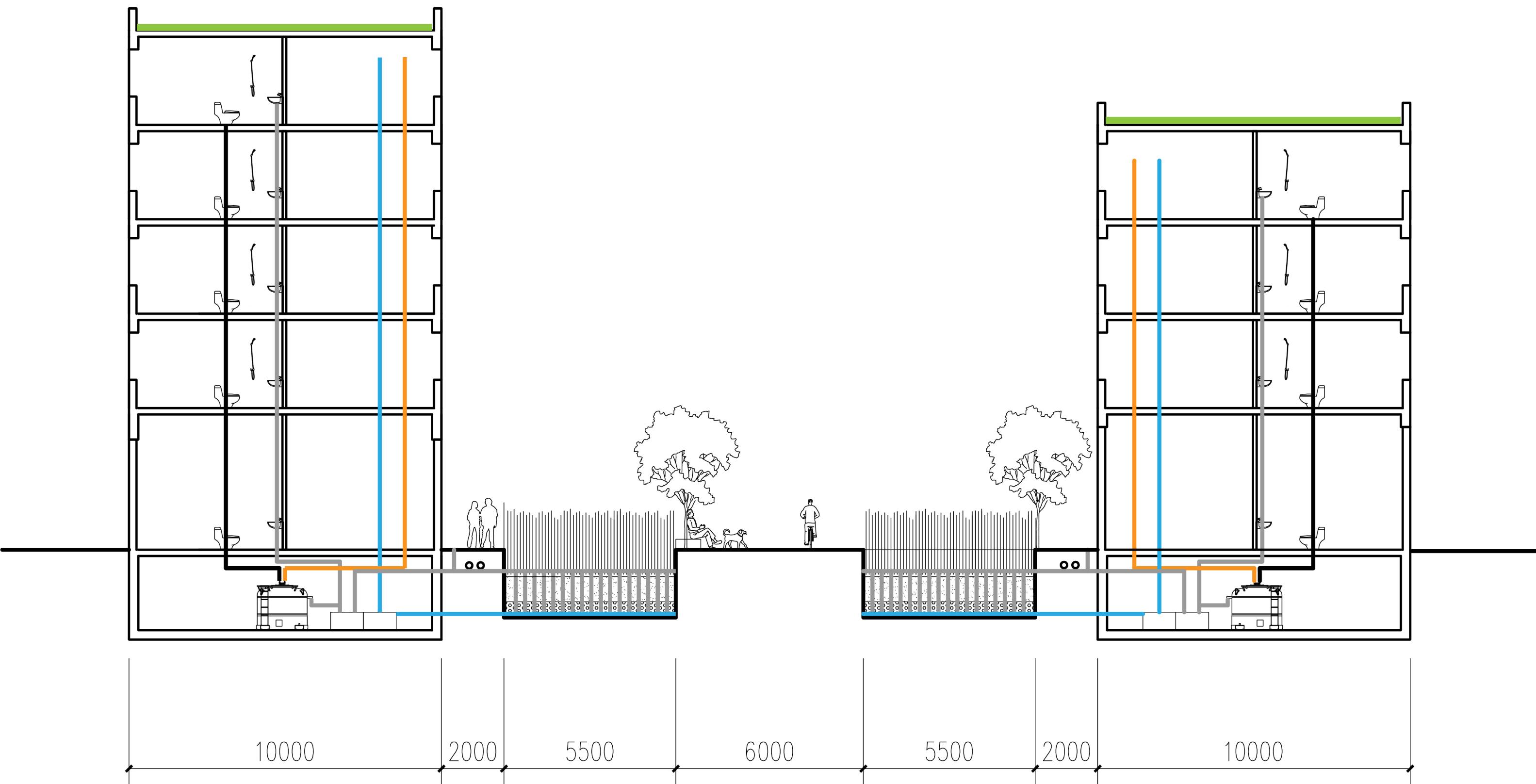


2037

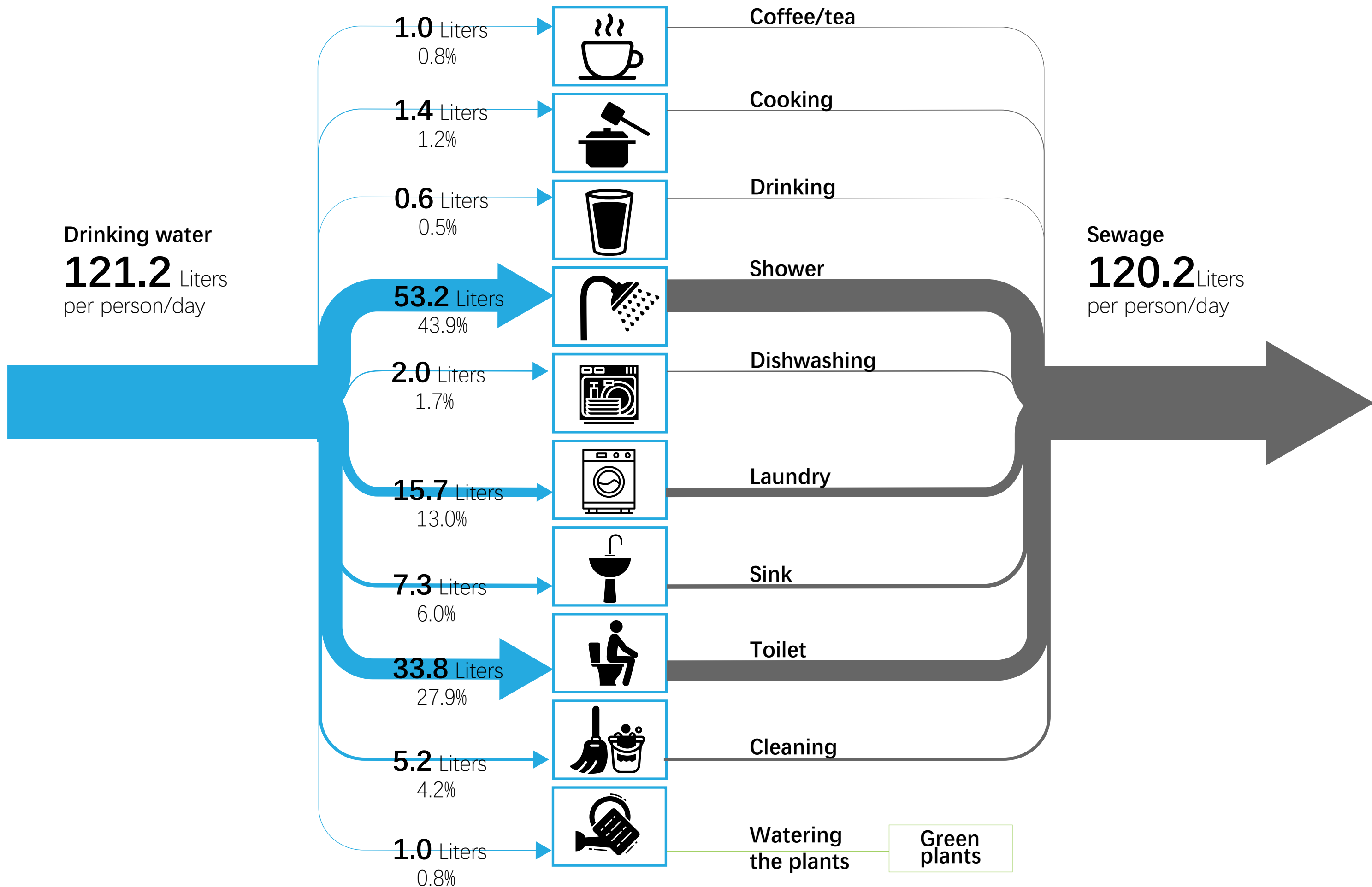
Buiteneiland



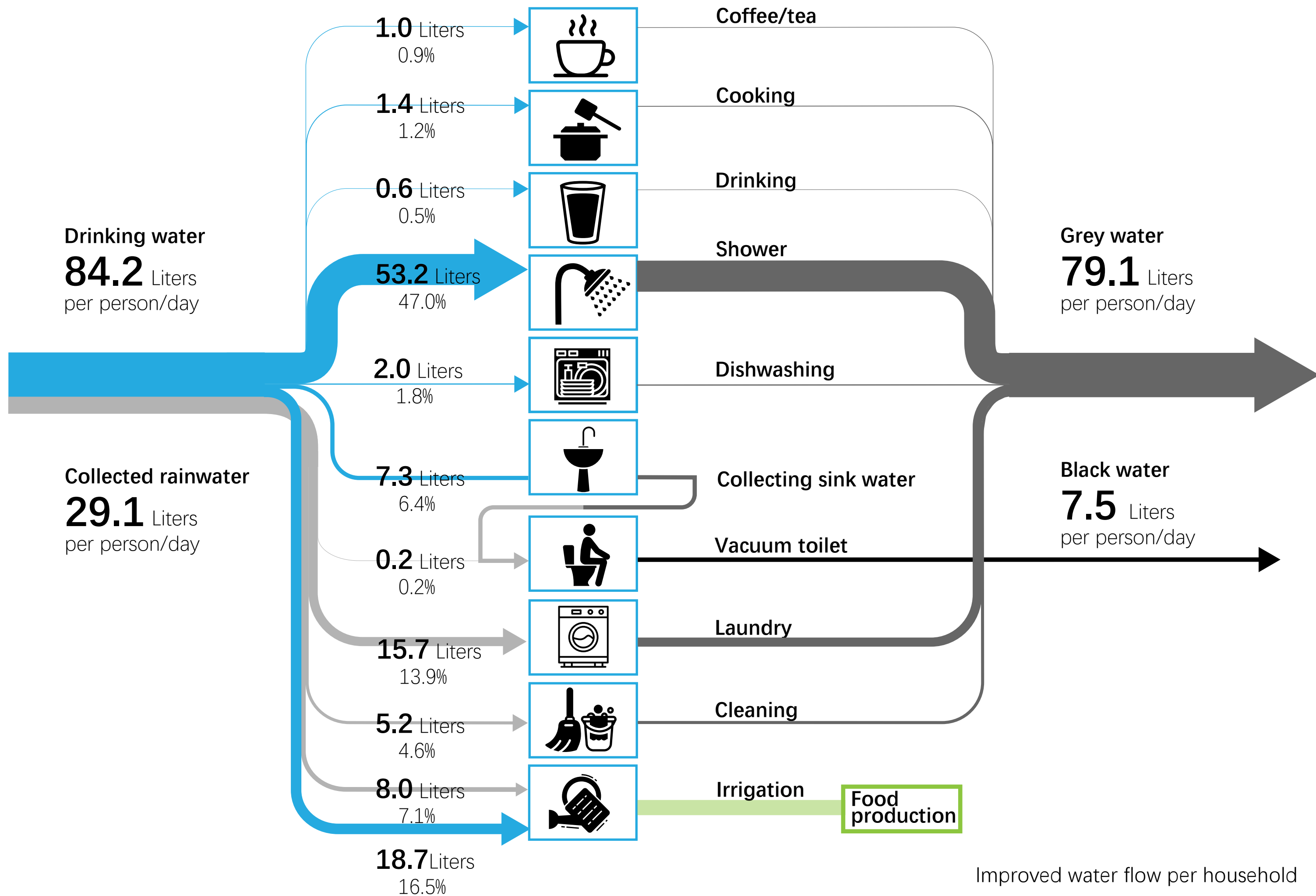
Strandeiladn situational plan 1:7500

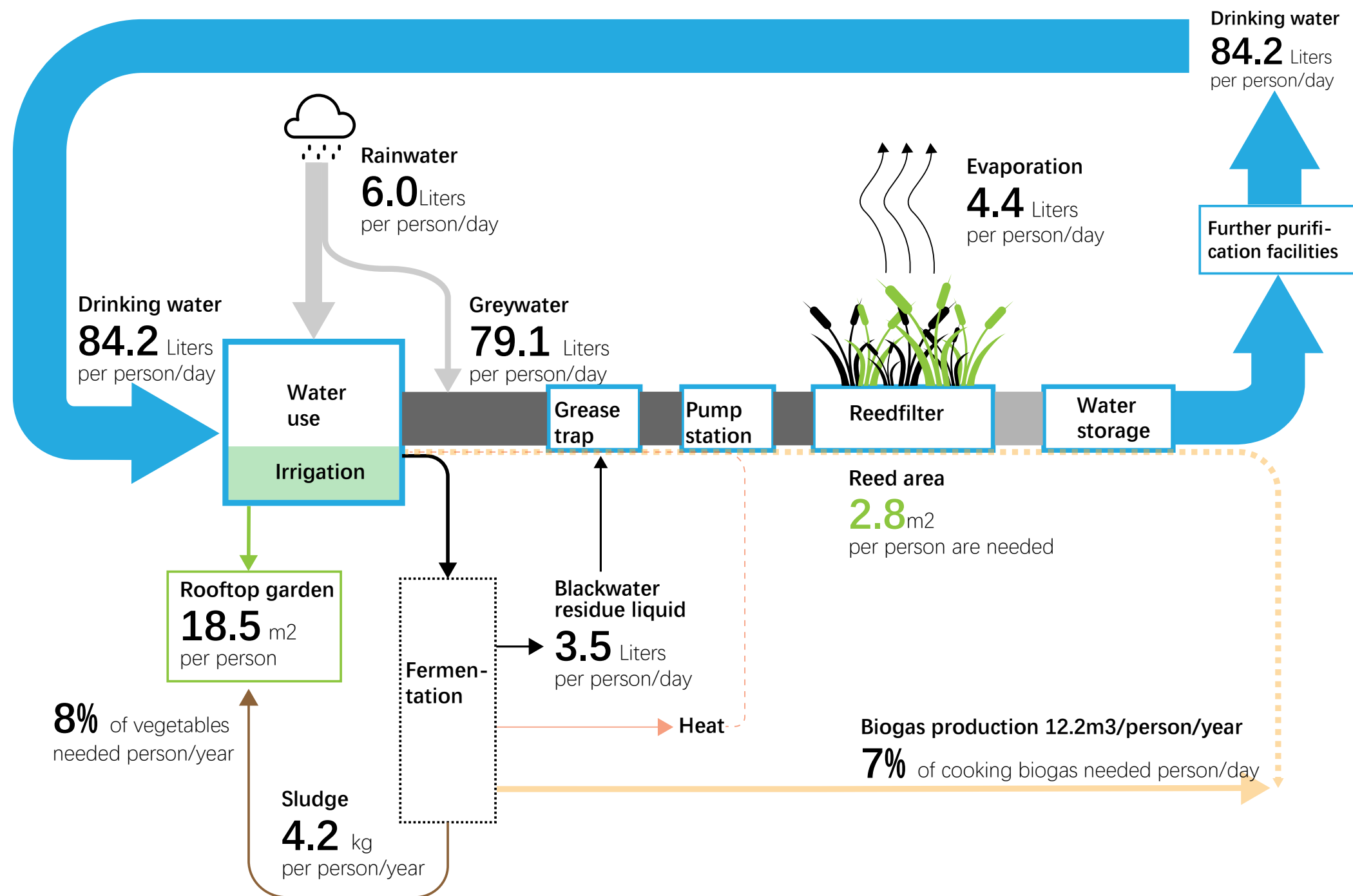


Reed road: Vertical flow reed filter


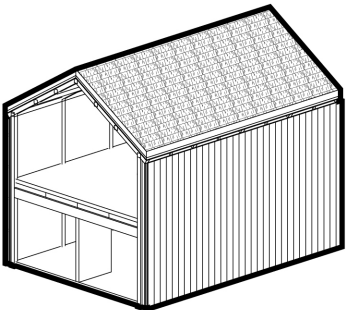

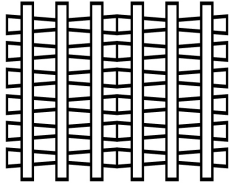



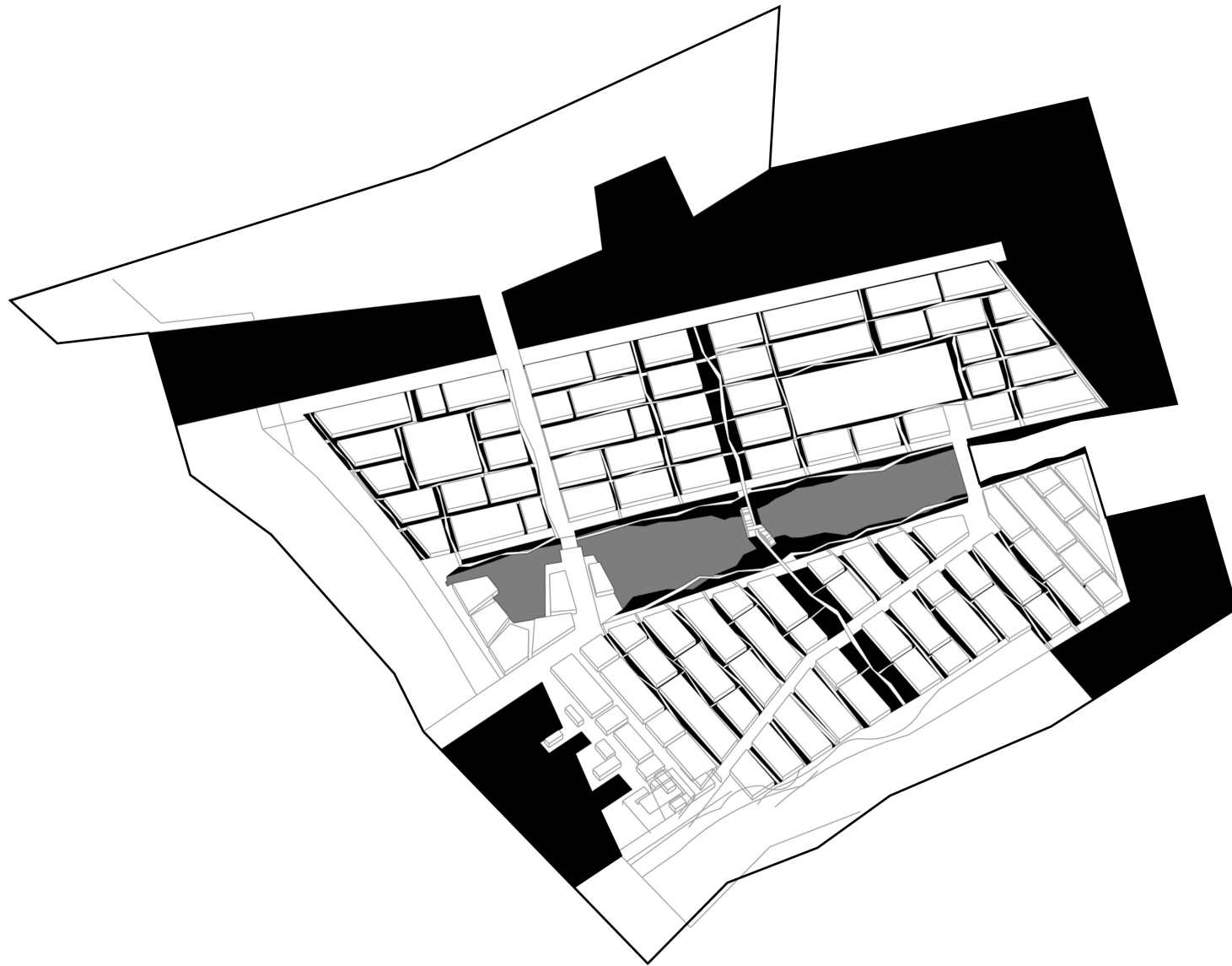
Conventional water flow per household



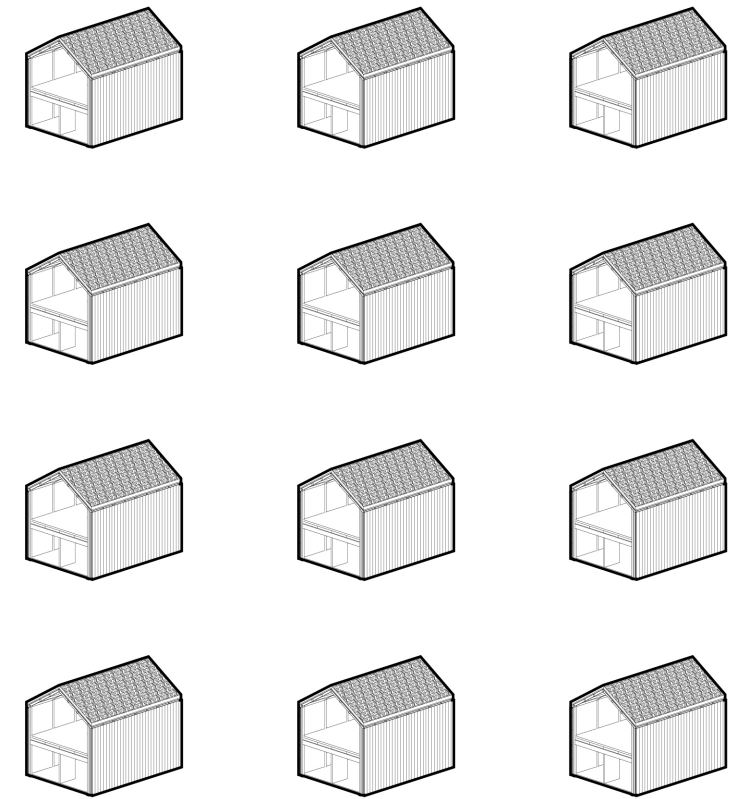


Neighbourhood scale: 100% water self-sufficient/no wastewater outflow

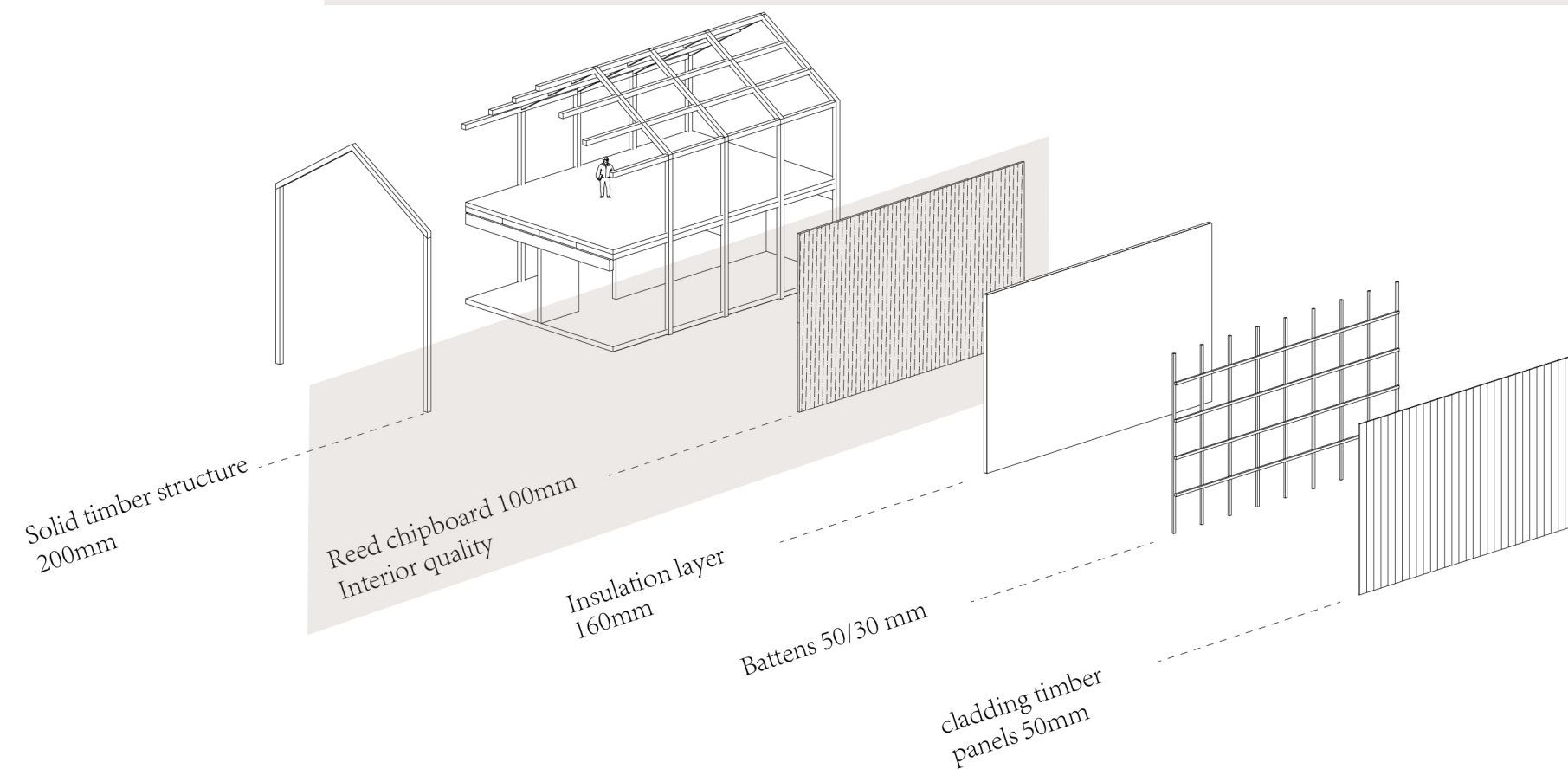
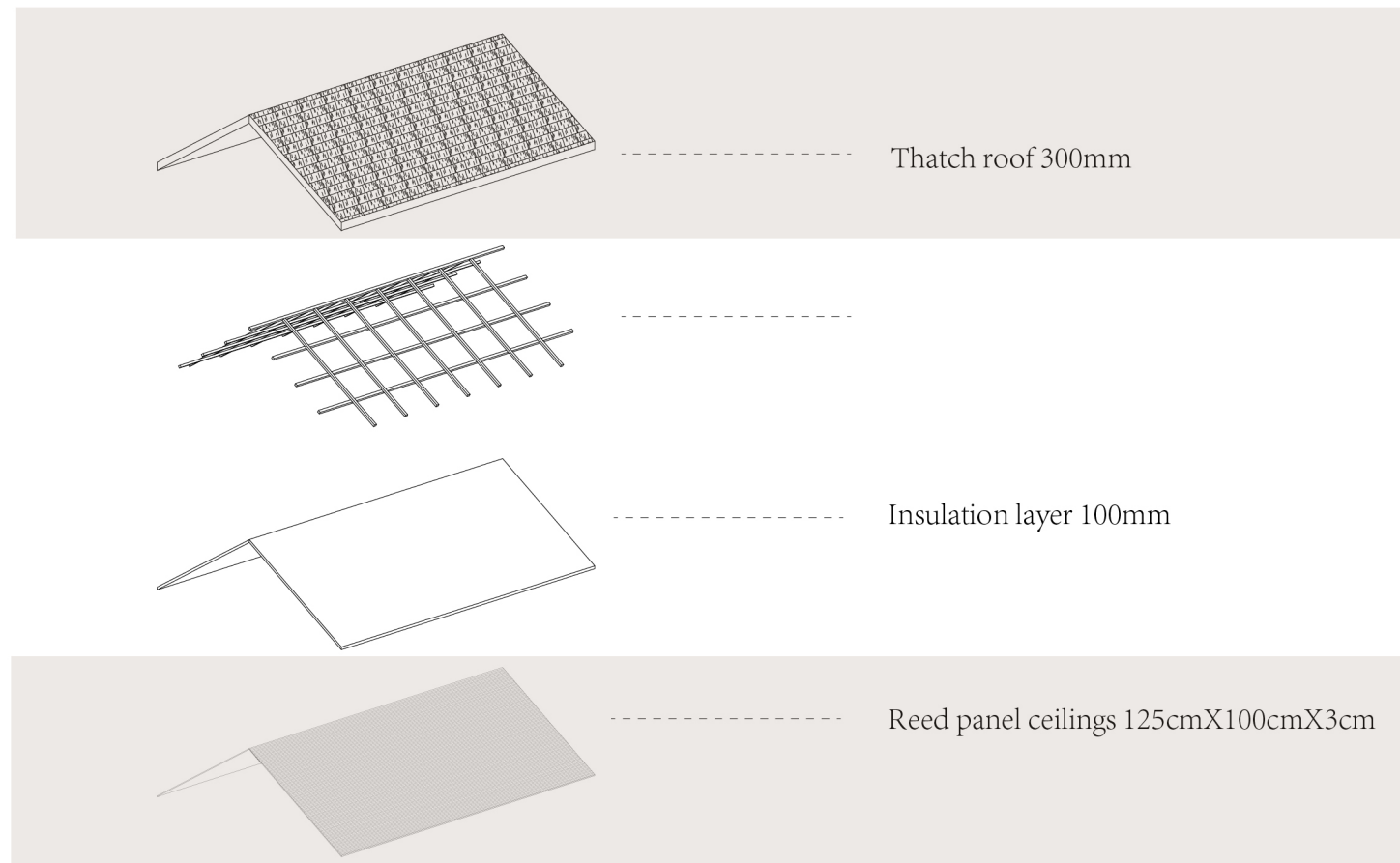
	<div><div><div><div>3.0</div>km/one year</div></div><div>=</div><div><div><div><div>1</div>house</div></div></div></div>		
			
Raw materials required	<div><div>960</div> bundles</div>	<div><div>250</div> bundles</div>	<div><div>300</div> bundles</div>
Size	Circumference X Length 62CM X 170CM	125CM X 100CM X 3CM	110CM X 60CM X 10CM
Reed road length	<div><div>1.9</div> km/one year</div>	<div><div>0.5</div> km/one year</div>	<div><div>0.6</div> km/one year</div>



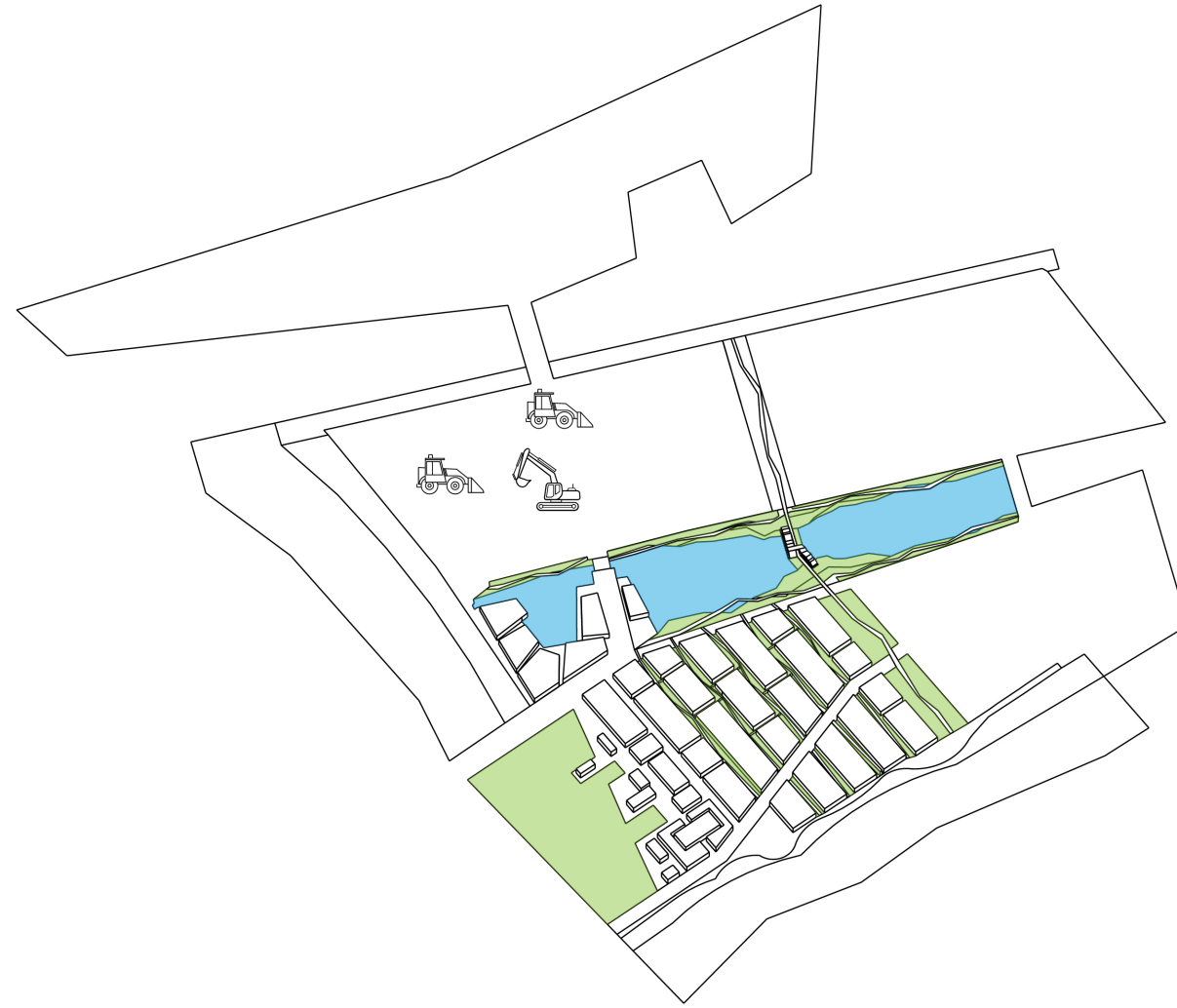
143 km in Strandeiland
reed road & constructed wetlands



48 houses/year



Reed house components



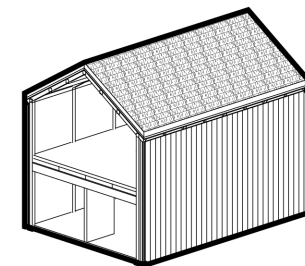
Building Phase 2 (2022-2025)



Phase1
3,500 residents



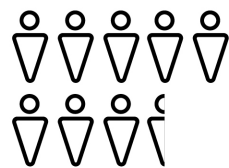
Reed
24.0 km



32 houses



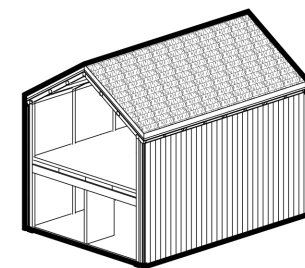
Building Phase 3 (2026-2029)



Phase1+2
8,500 residents



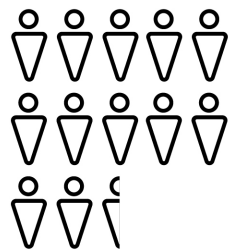
Reed
71.0 km



94 houses



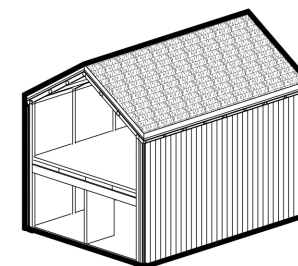
Building Phase 4 (2030-2033)



Phase1+2+3
12,500 residents



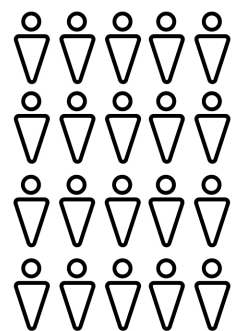
Reed
95.0 km



126 houses



Building Phase 5 (2034-2037)



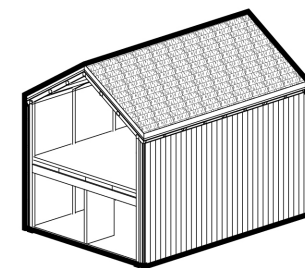
Phase1+2+3+4

20,000 residents

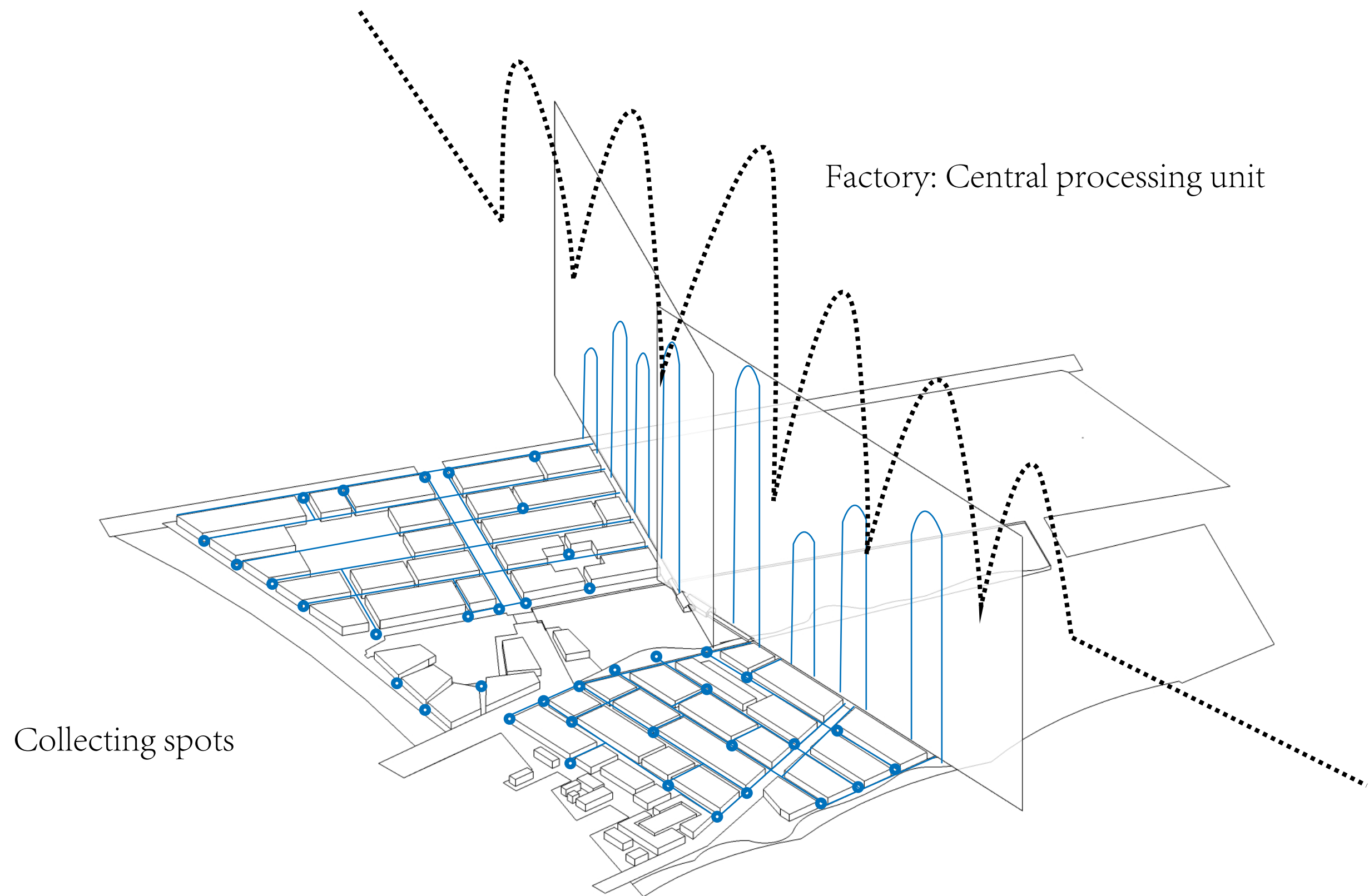


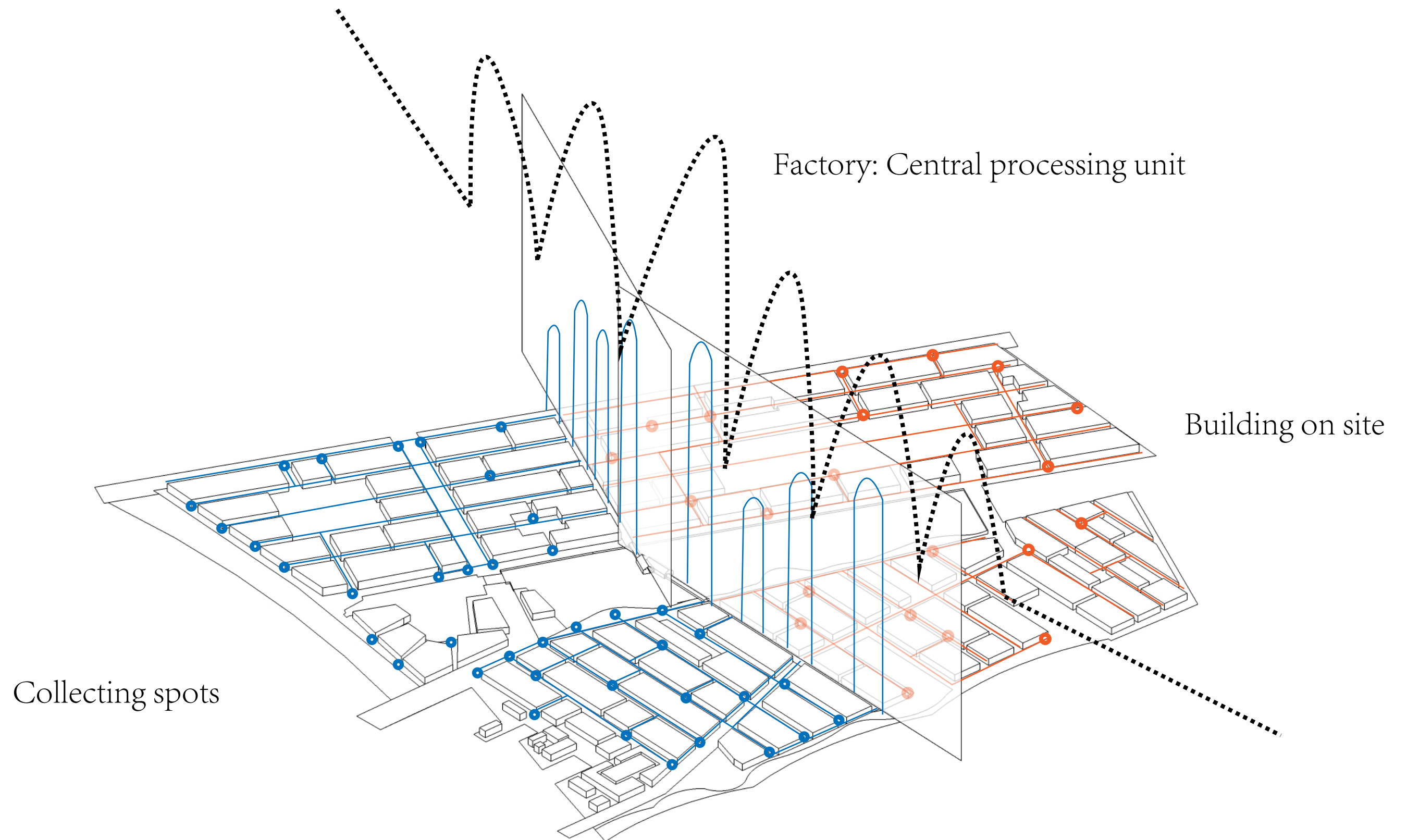
Reed

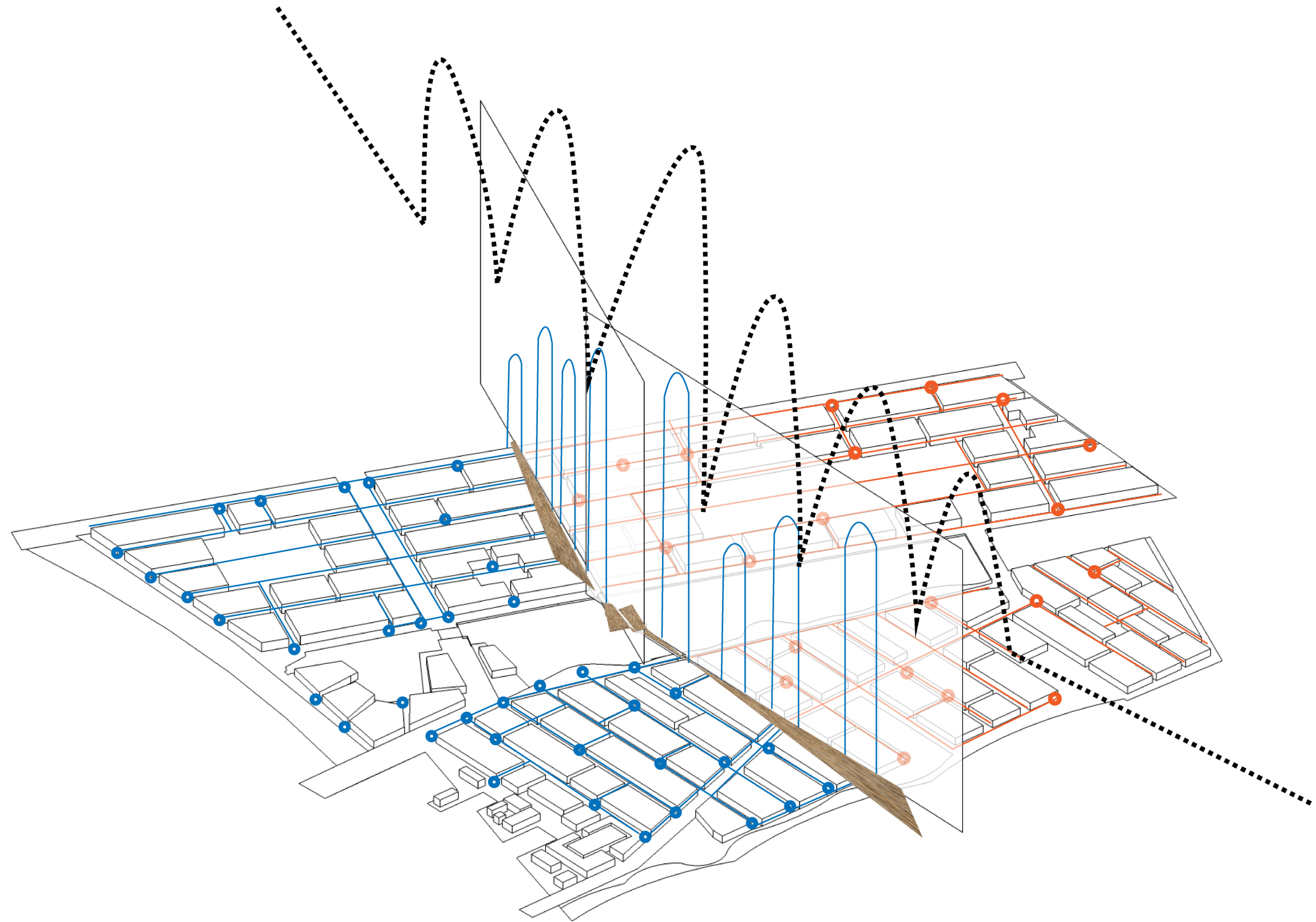
143.0 km

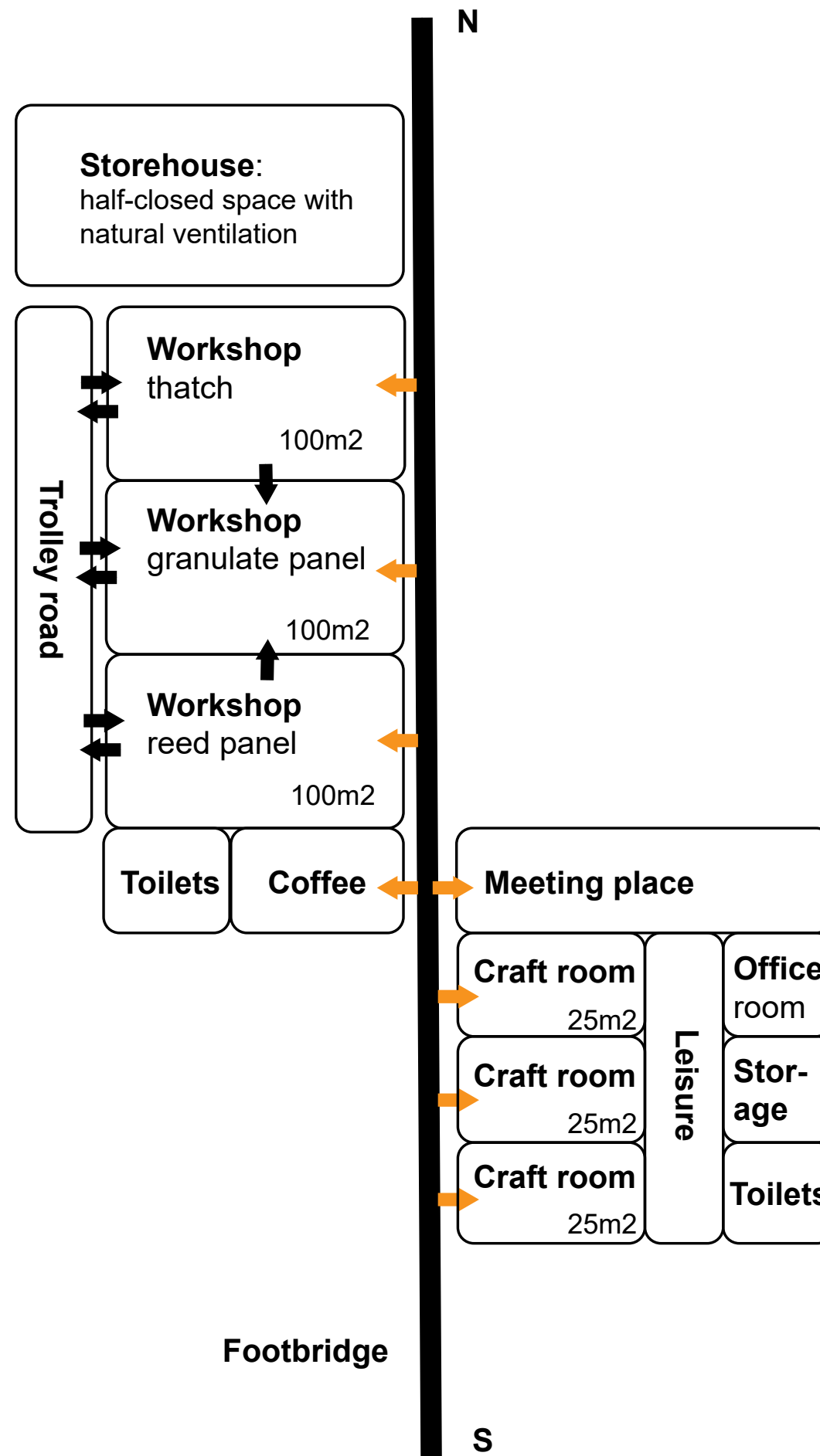


190 houses

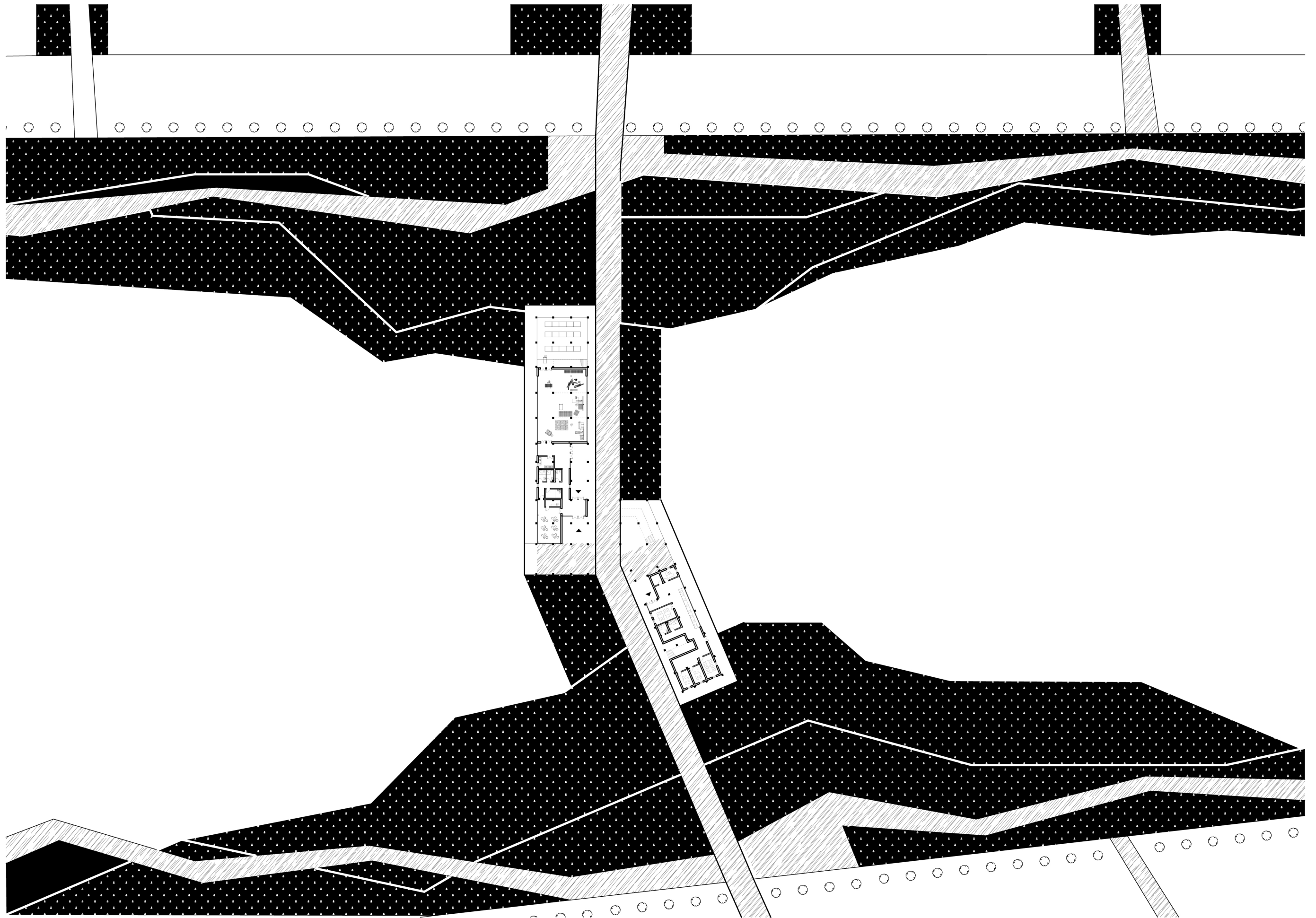




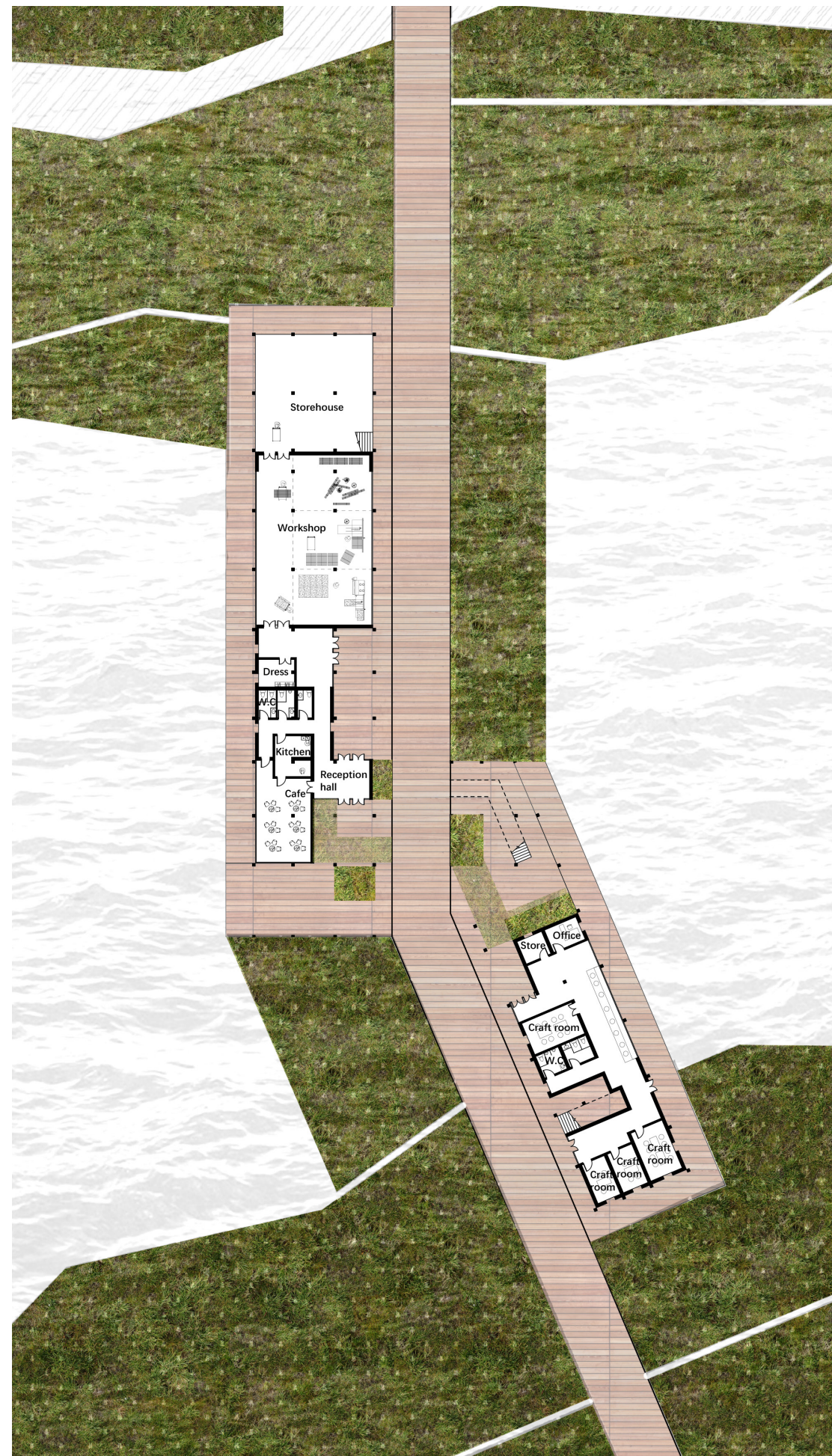




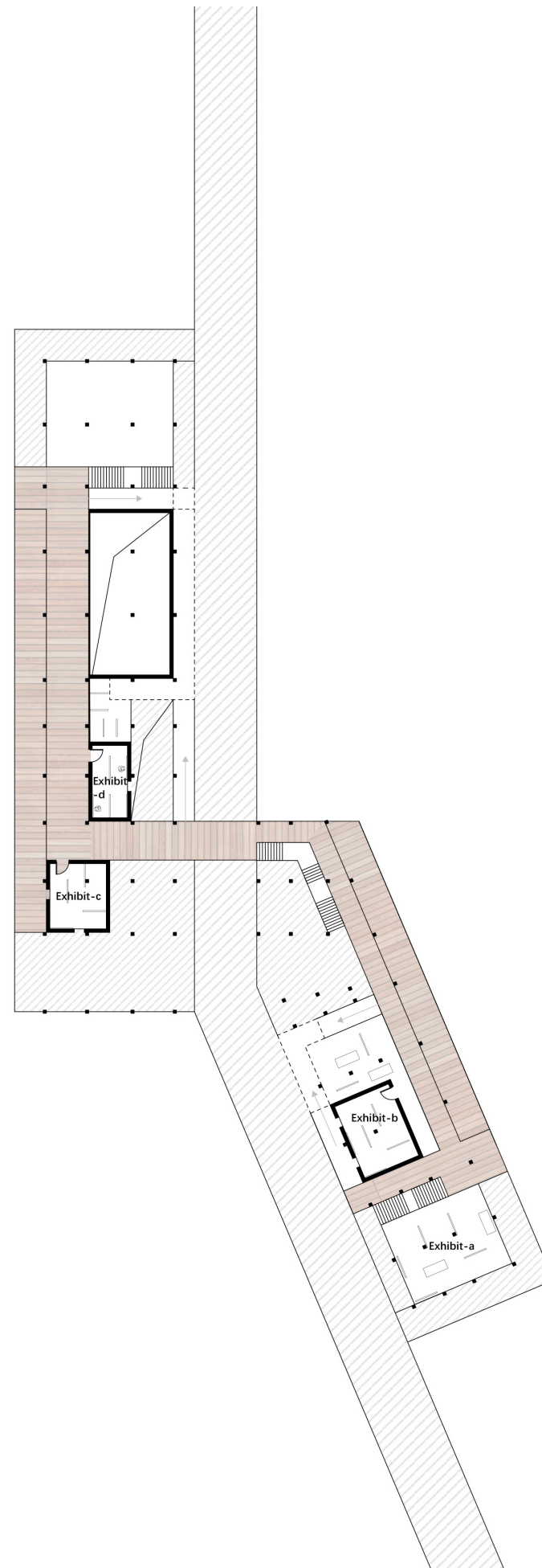
Bubble diagram



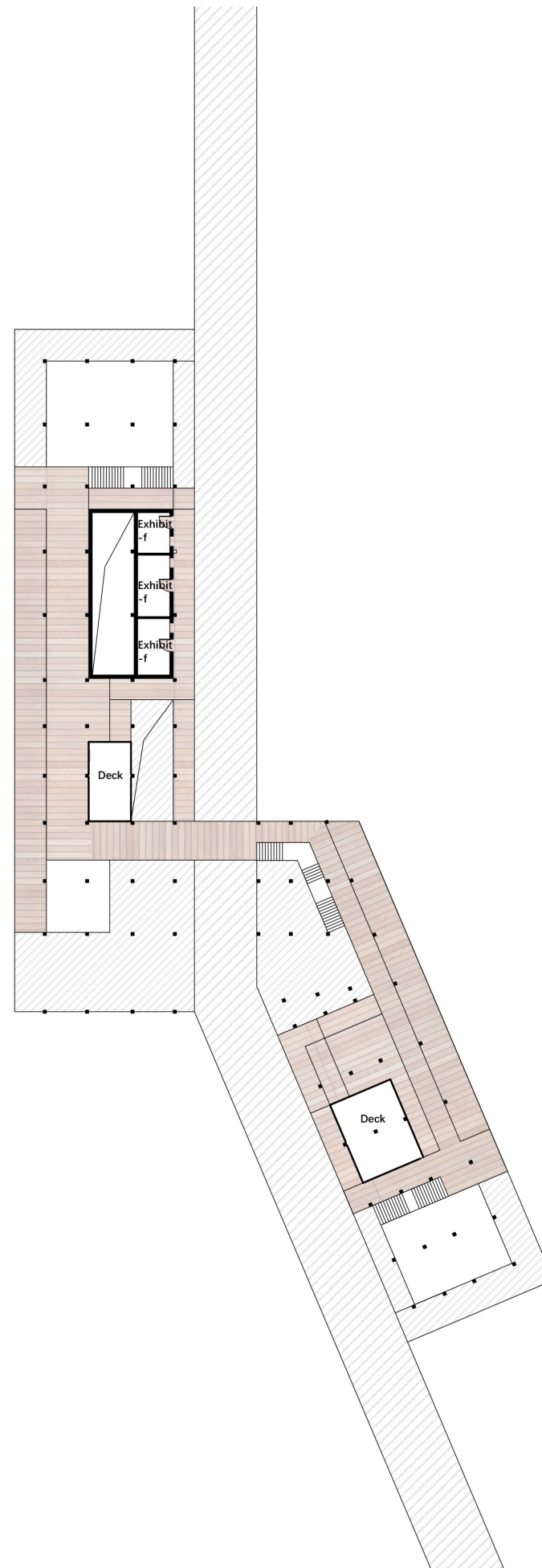
An area landscape of water and reed



Ground floor 1:500



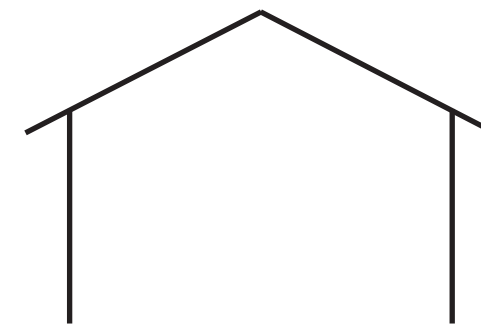
First floor 1:500



Second floor 1:500

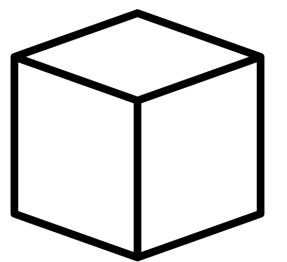


Traditional wood storehouse

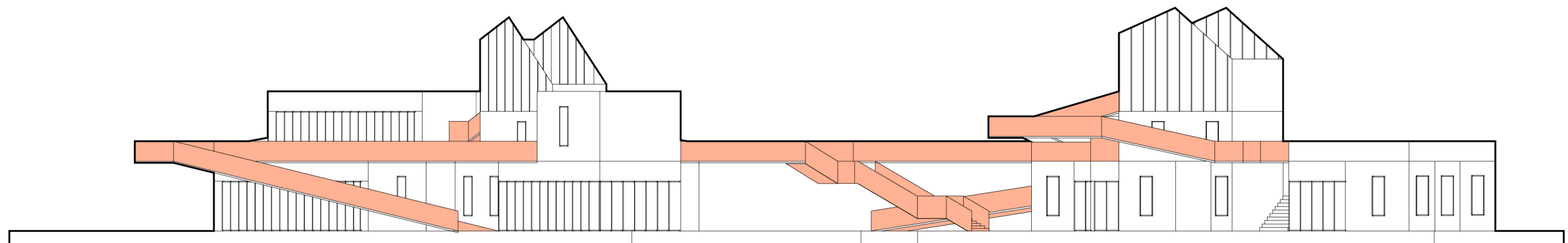
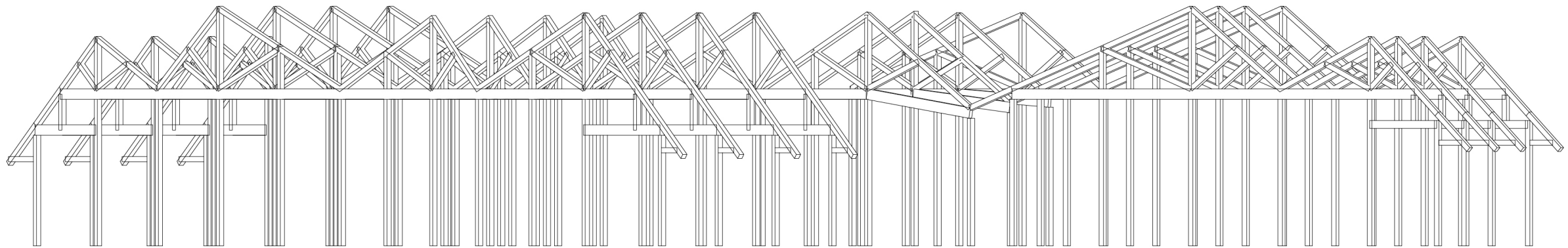
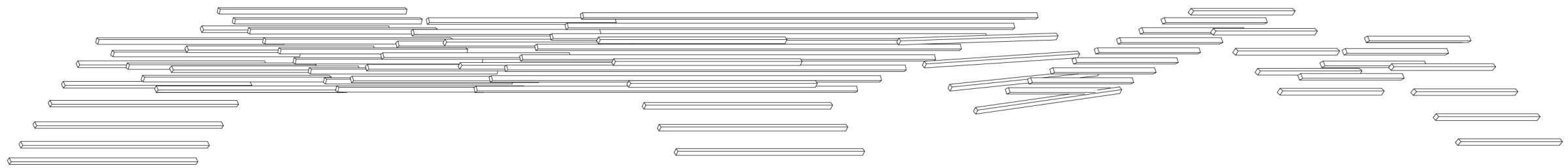
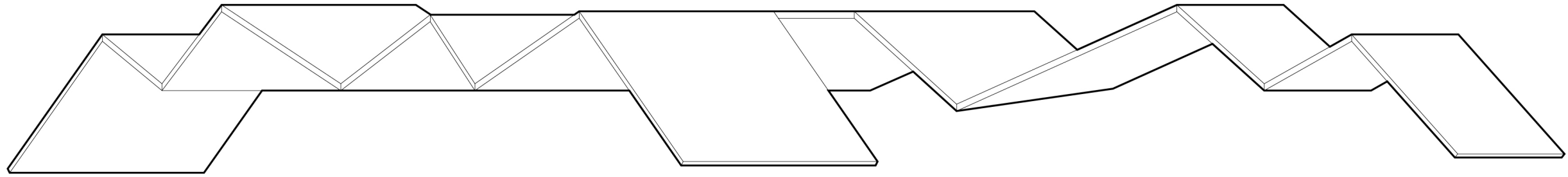


Skeleton

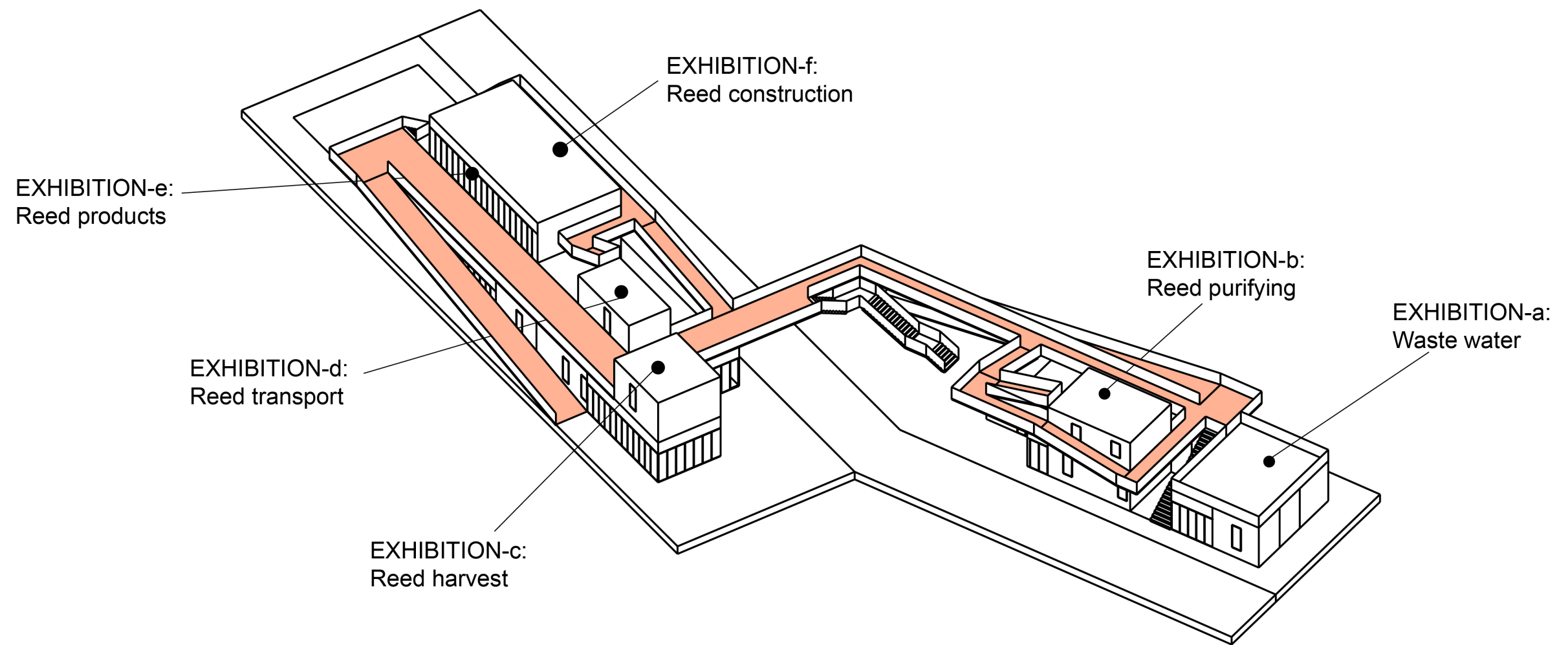
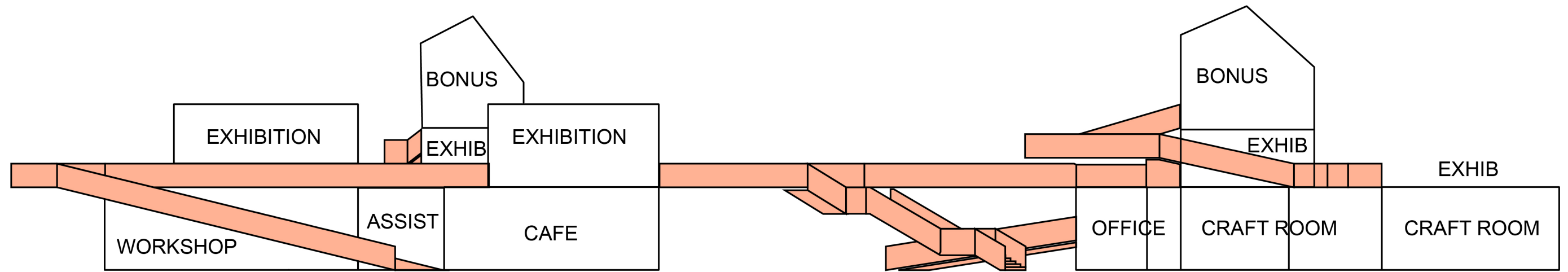
+



Funtional boxes



Structual layer from top to bottom

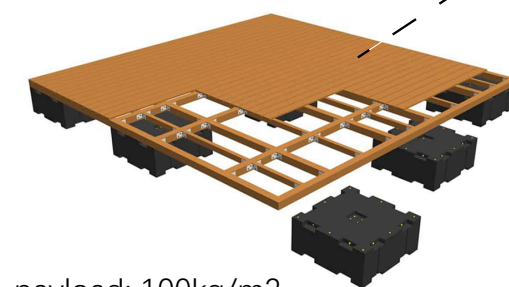
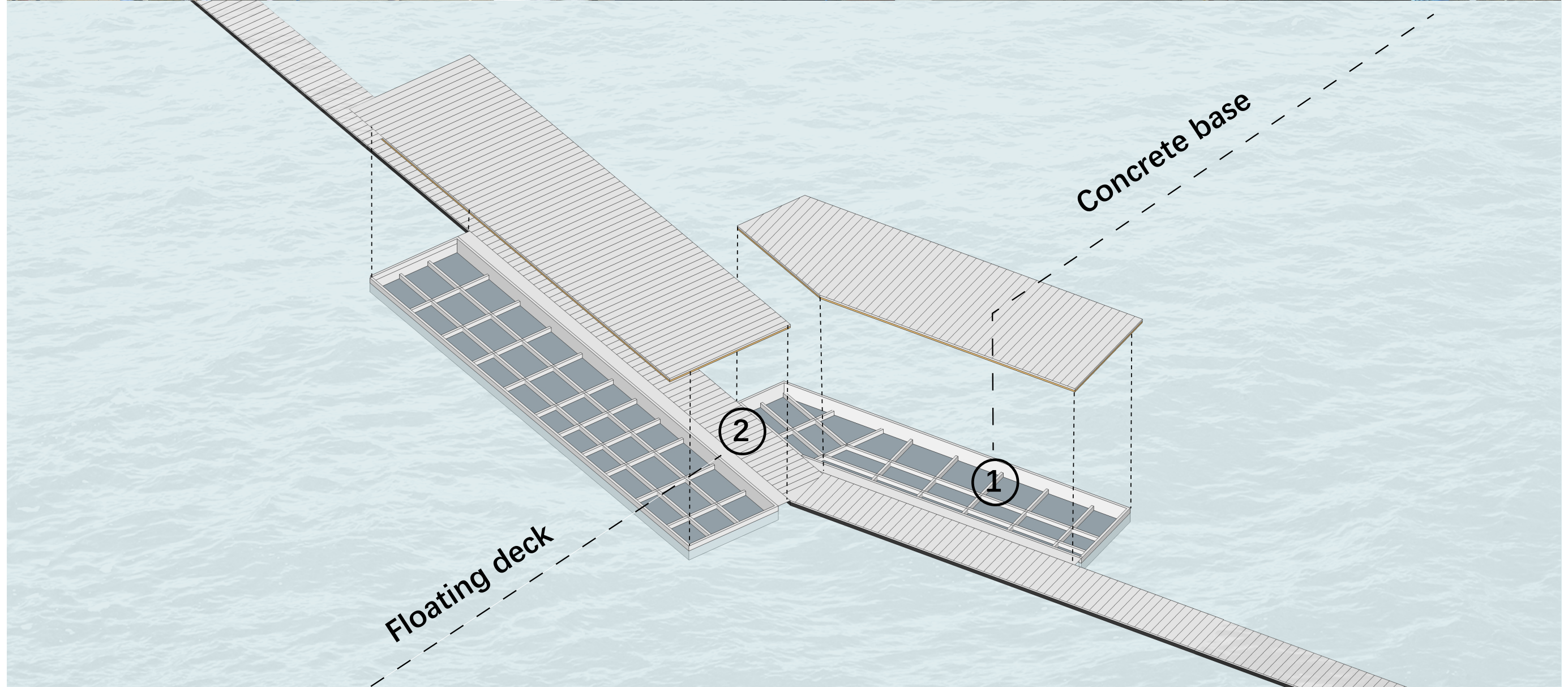


Exhibition route: reed trip

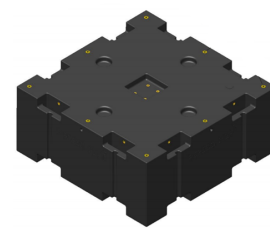


Multi-sectional two-point perspective

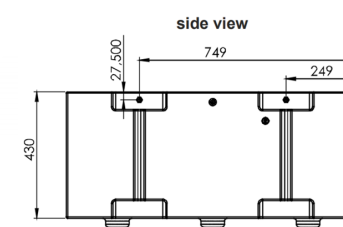
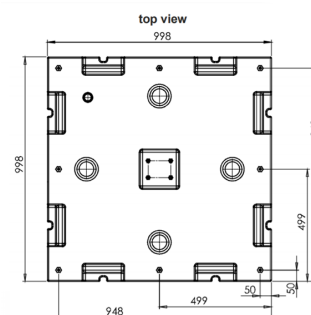




payload: 100kg/m²



plastic floats

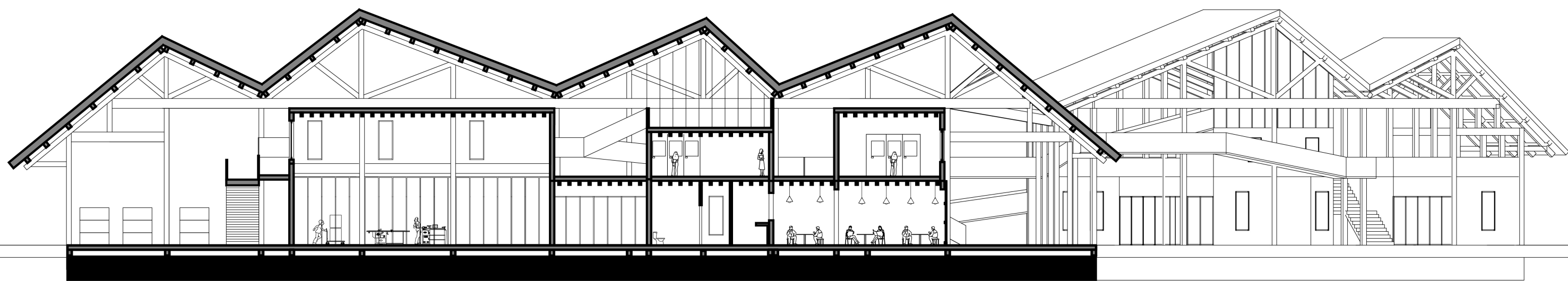


23cm immersion depth



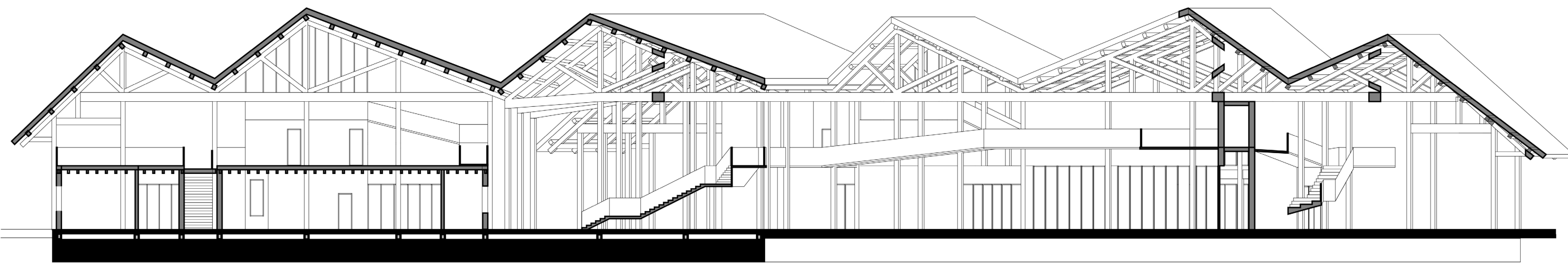
wood planks

Floating system



Section drawing 1: 250

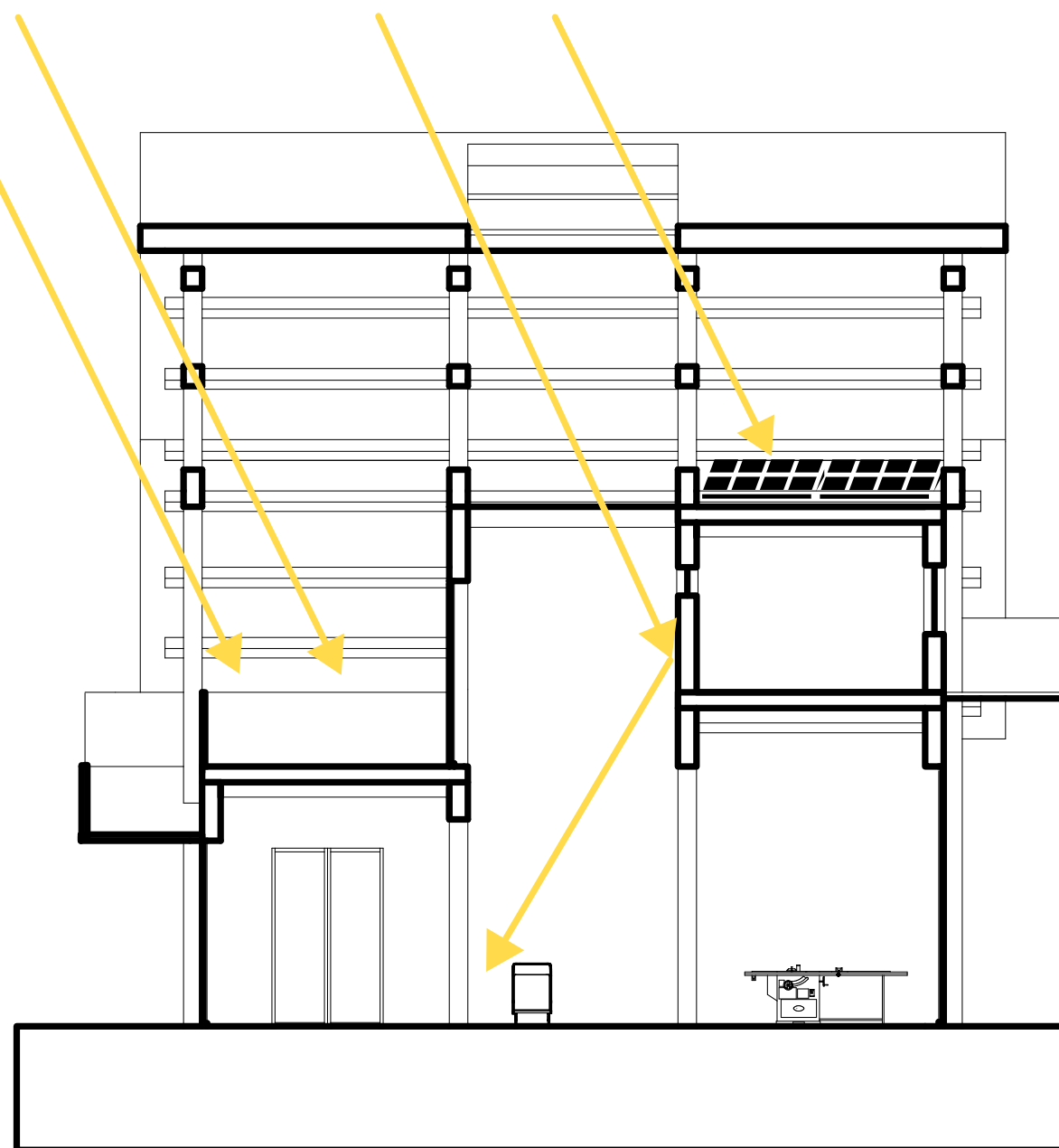
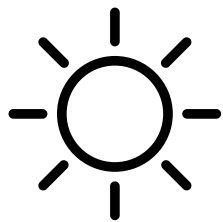




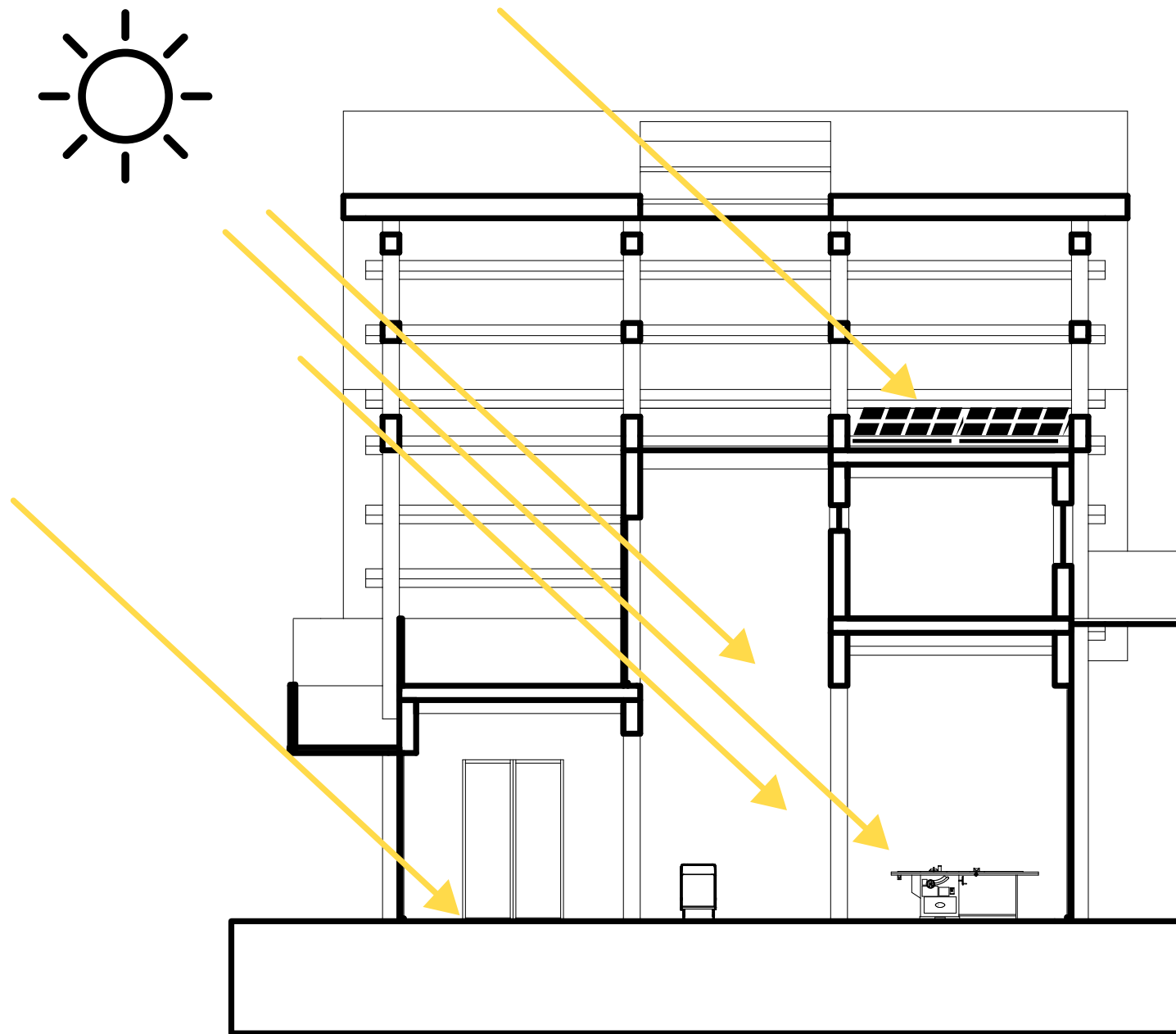
Section drawing 1: 250



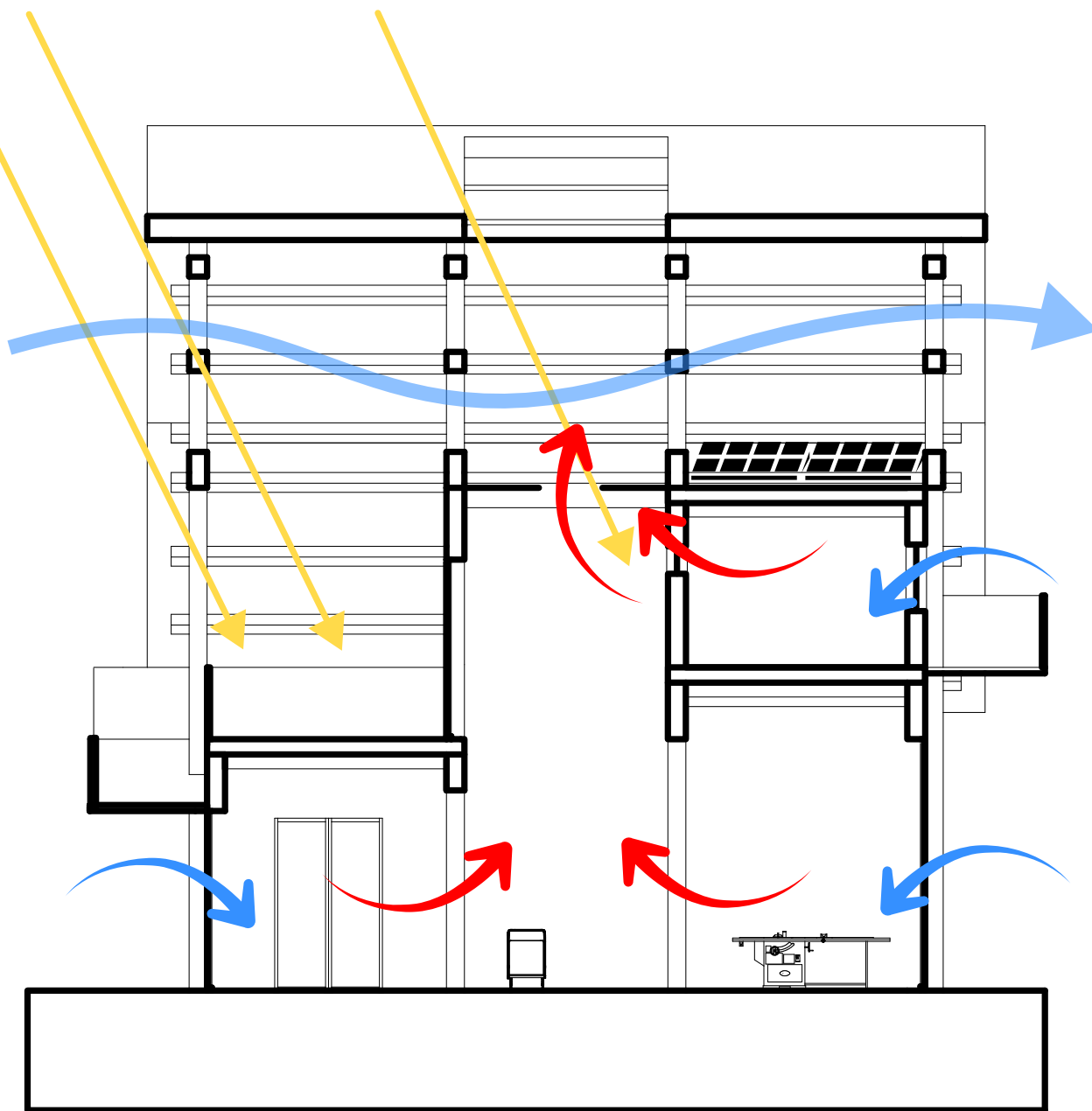
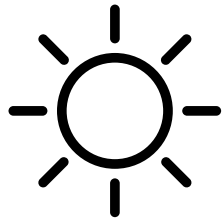
Summer



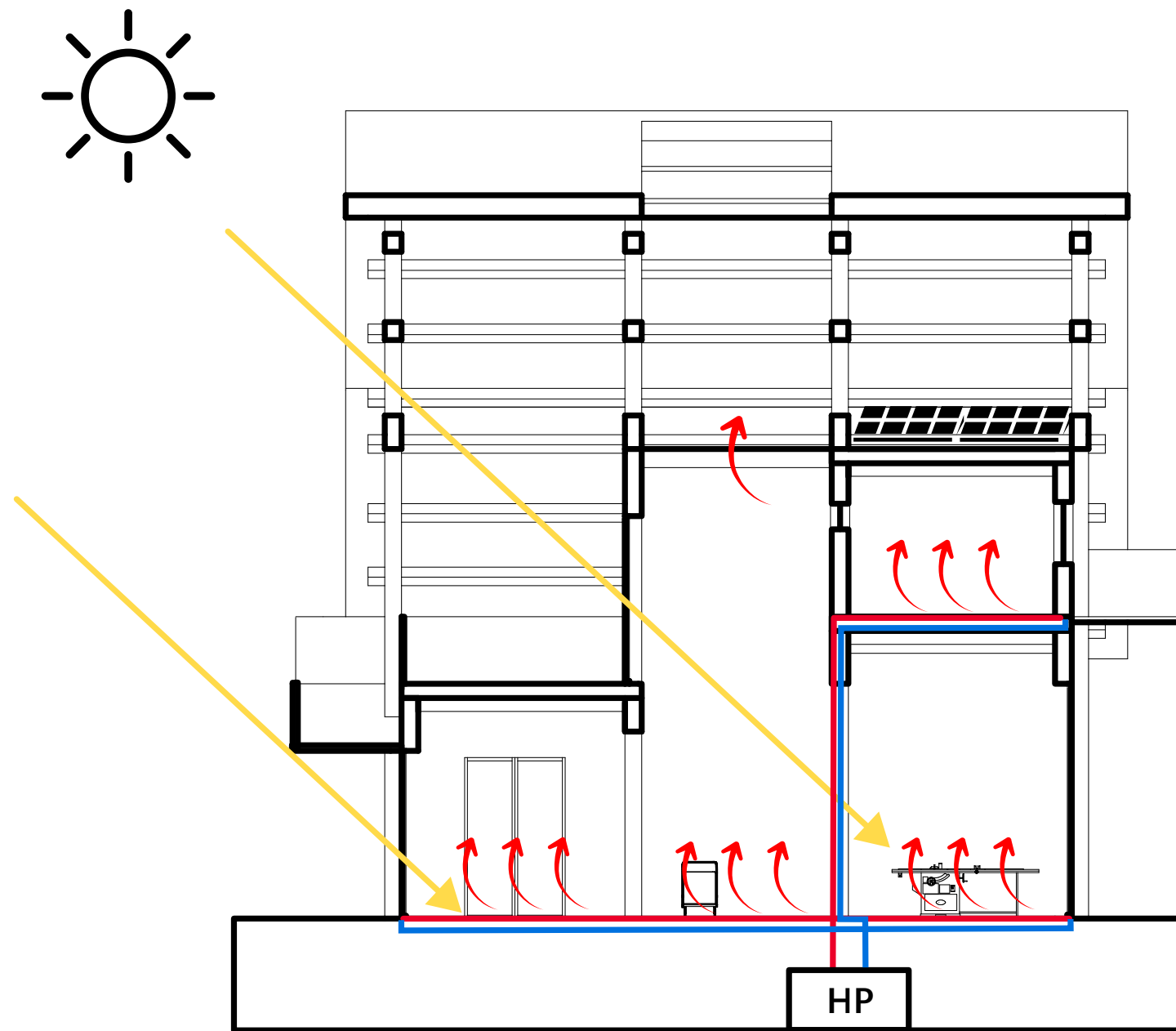
Winter

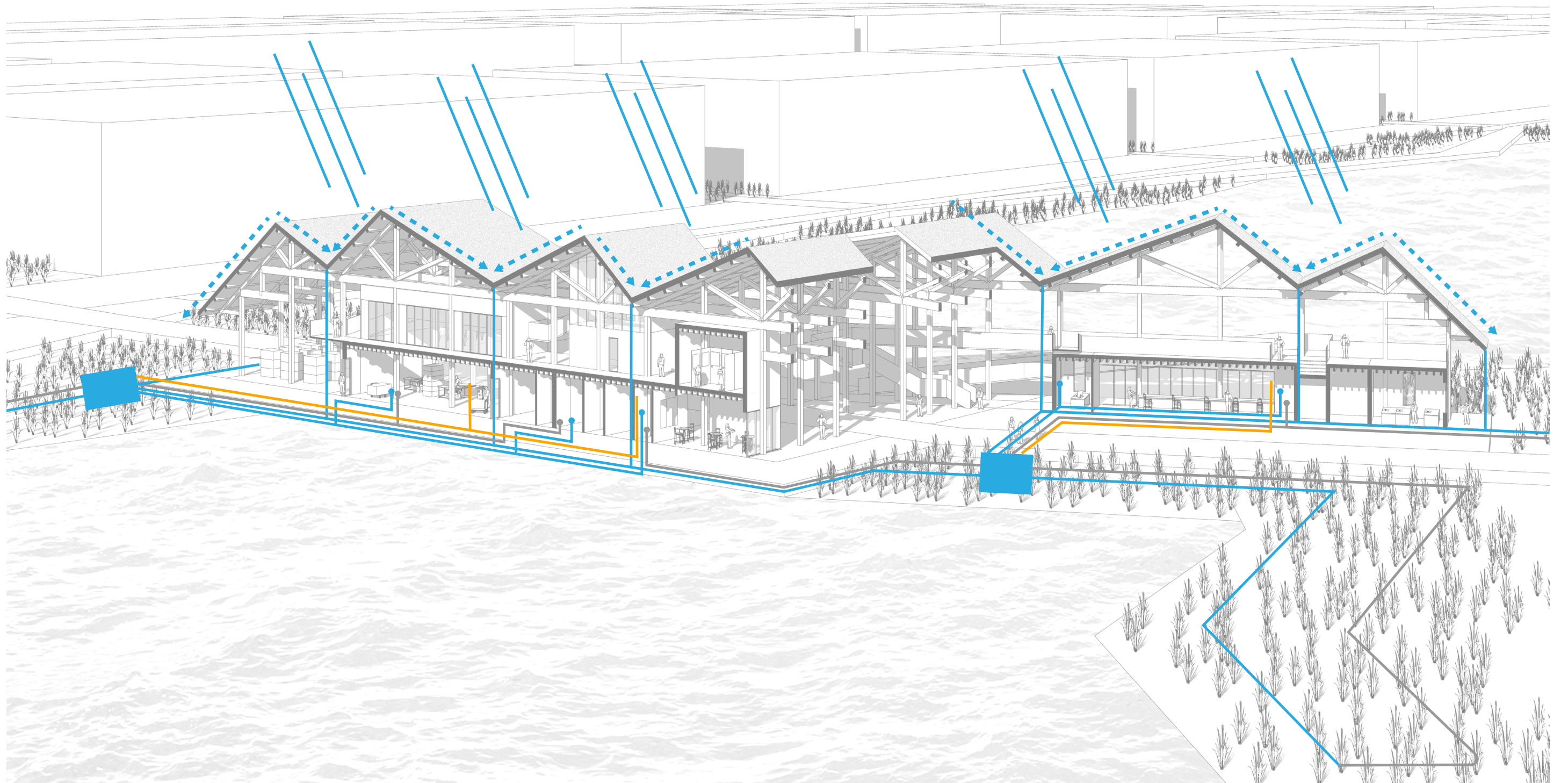


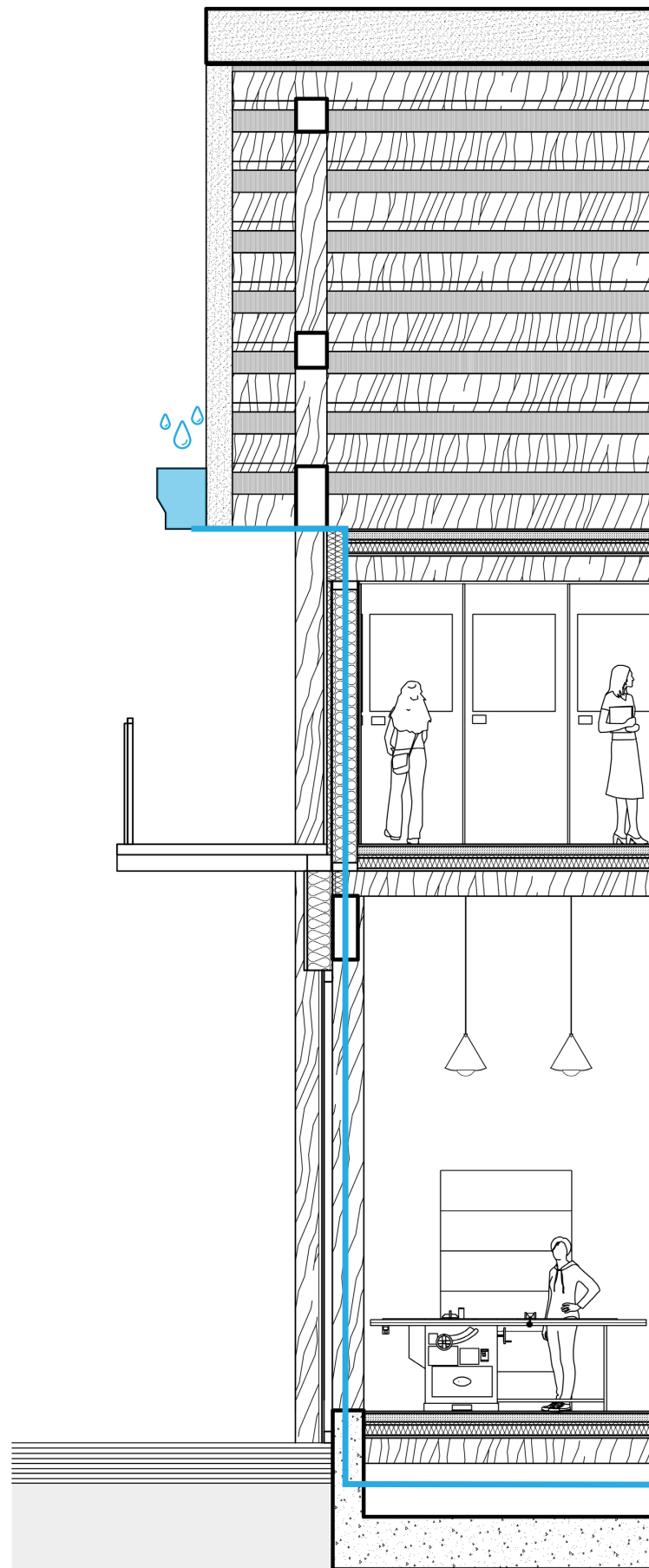
Summer



Winter

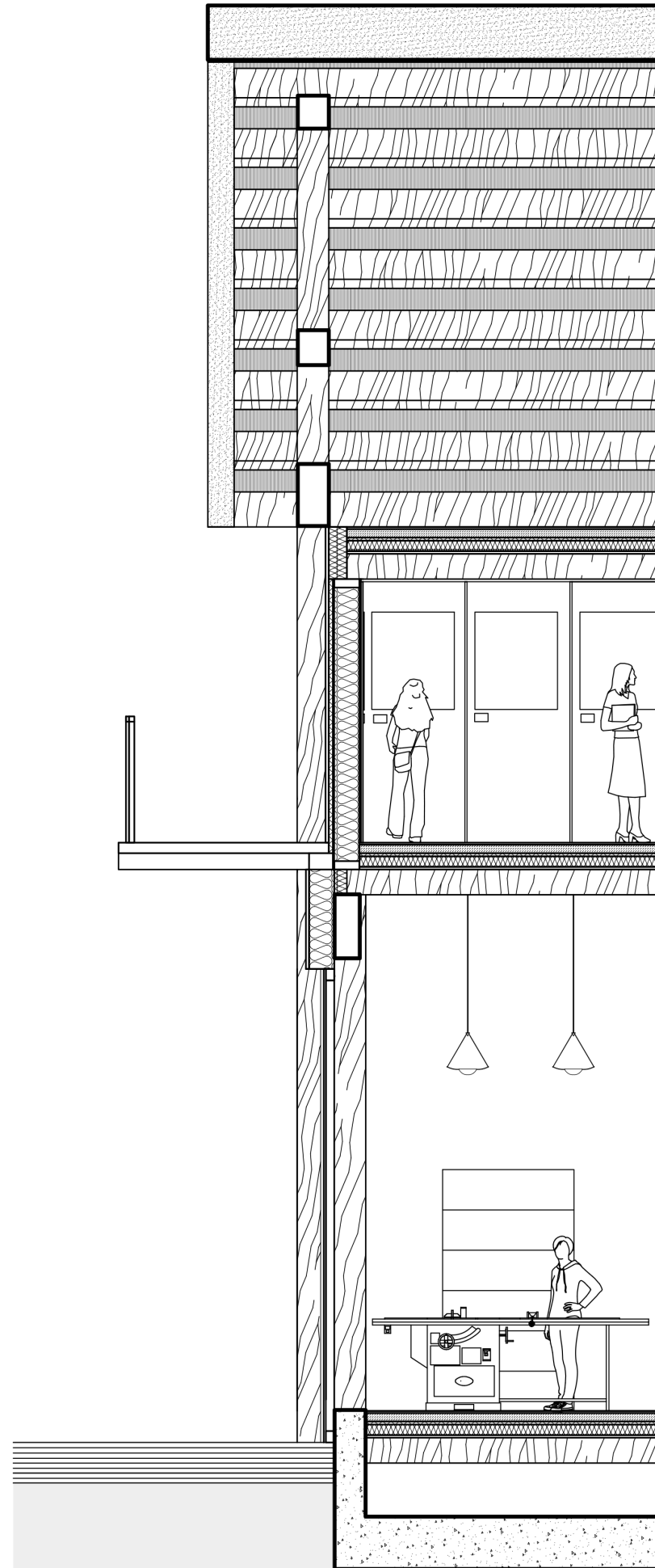
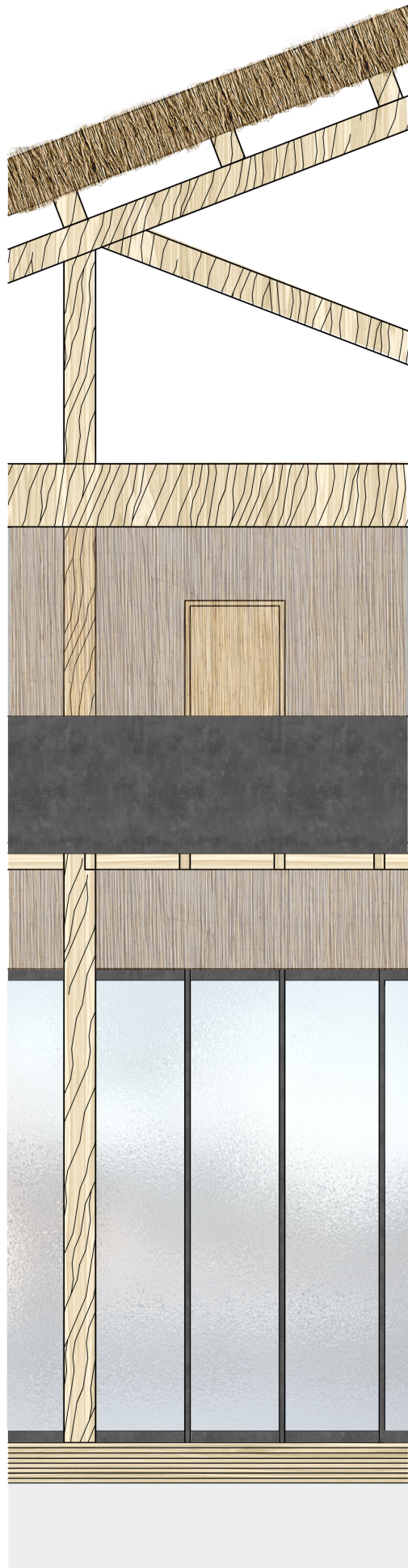


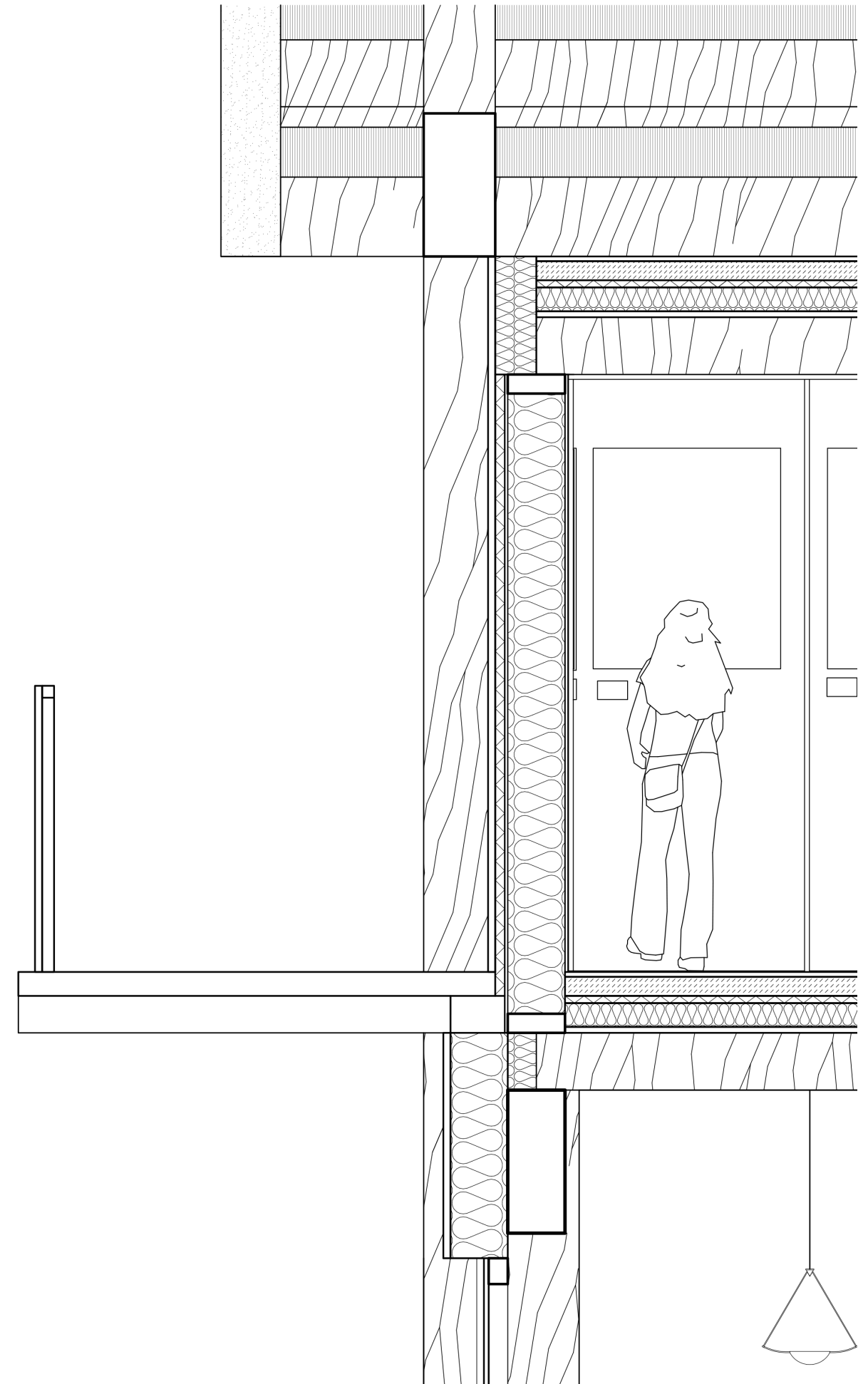
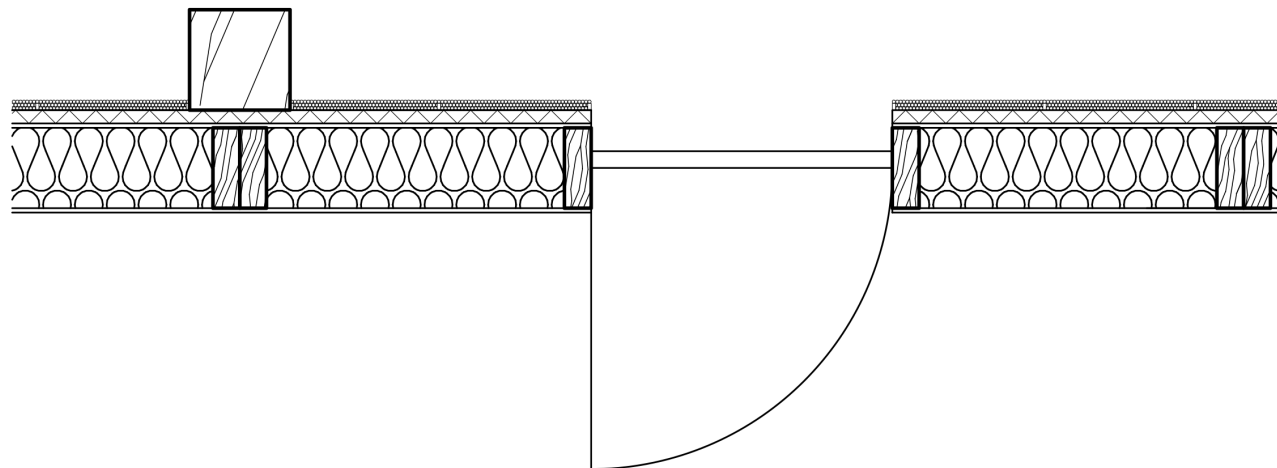
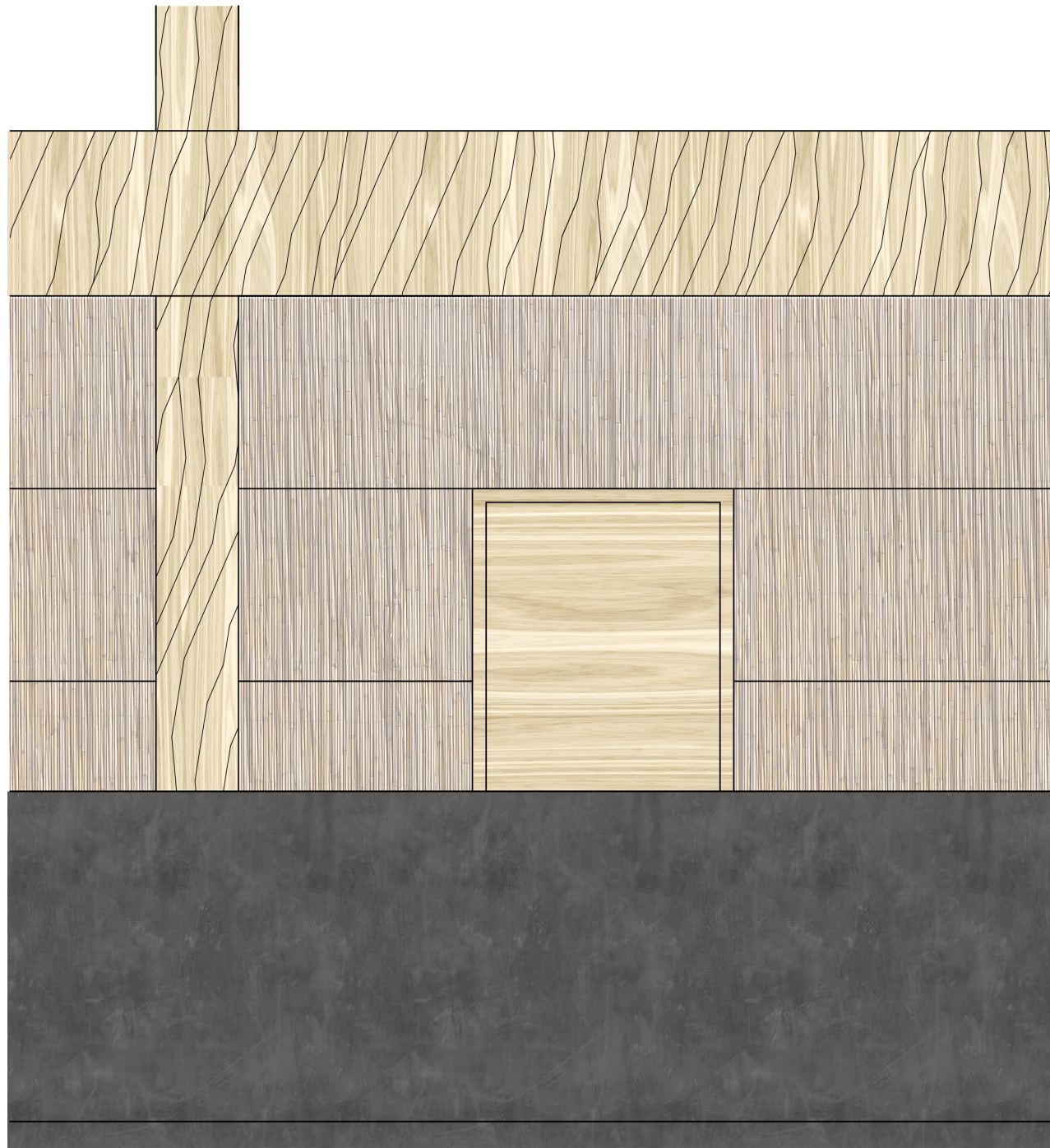












Façade fragments 1: 20

