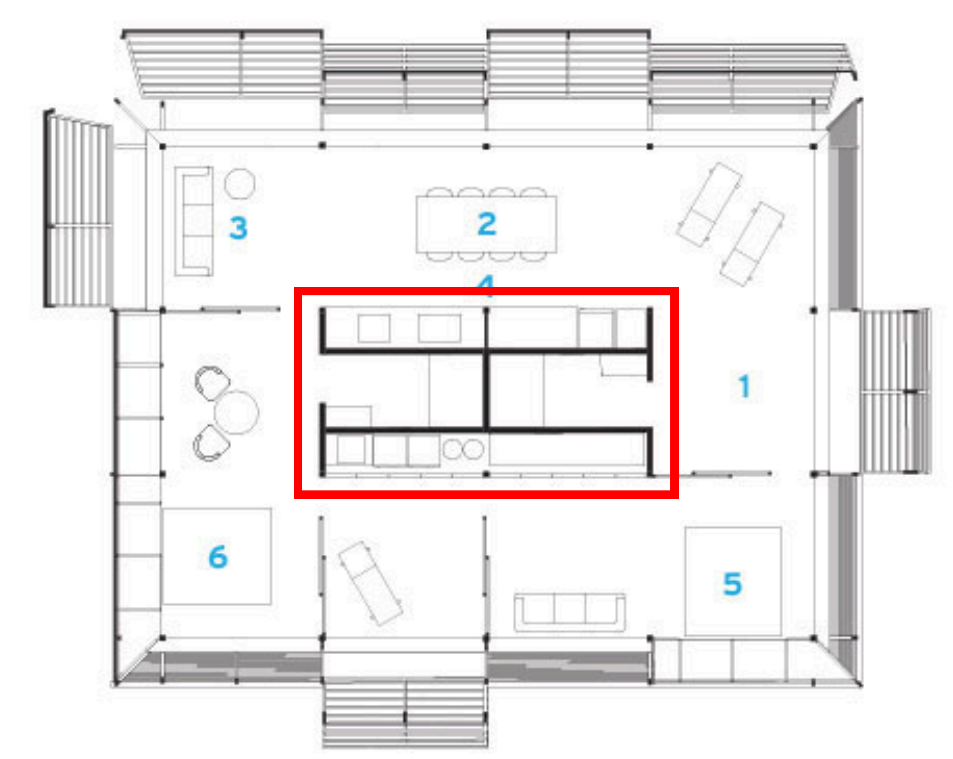


CONFLUENCE LIVING



Group 11
Lars Berends
Finley Jones
Bregtje Kirsten
Melvin Romijn
Marco De Wilde
Eralda Santinho Pratis

NO FOOTPRINT HOUSE



- 1 ENTRANCE
- 2 DINING
- 3 LIVING AREA
- 4 SERVICE CORE
- 5 MASTER BEDROOM
- 6 BEDROOM

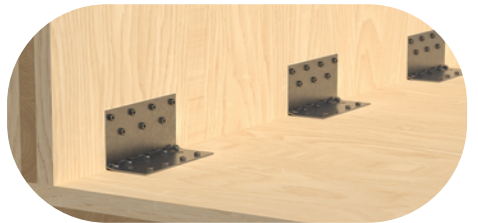


Key takeaways from this reference:

- Central service core
- Overhangs or louvres to block out sunlight when it is unwanted
- Sustainable materials
- Connection with the outdoors through flexible/open facades

PRINCIPLES

- Combination of CLT load-bearing structure and timber frame facade elements.
- Dry connections.
- Concrete pontoons
- Modular core
- Phased just-in-time delivery with temporary storage nearby.
- Building operation on water and on quay.
- Prefab transportable elements



Transport principles

Reduce CO₂ by combining sustainable construction with smart logistics



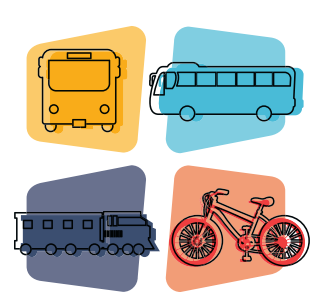
For local transport of materials and equipment.



Transport of large elements



Local suppliers & contractors

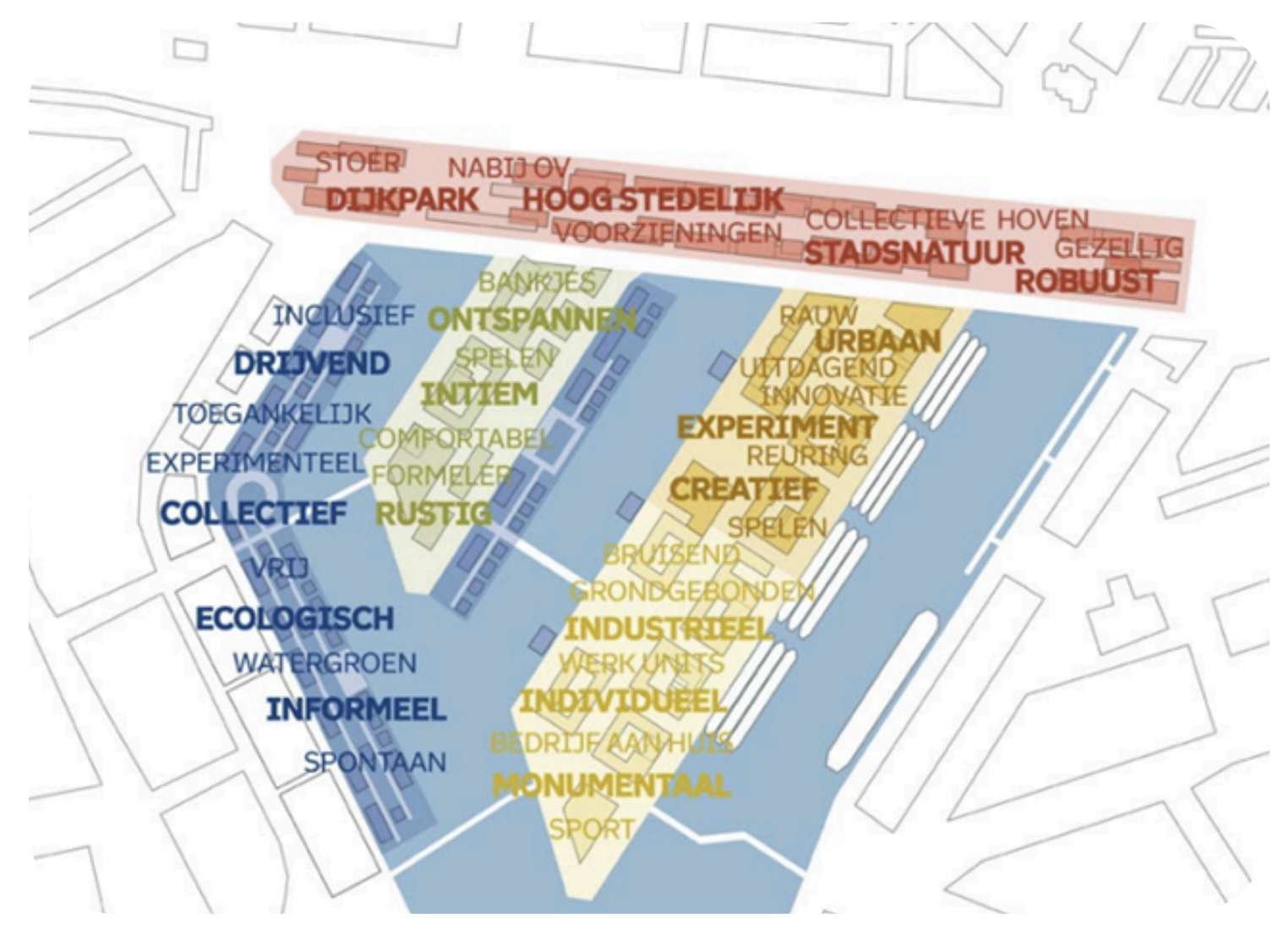


Encourage workers to use bikes or public transport.

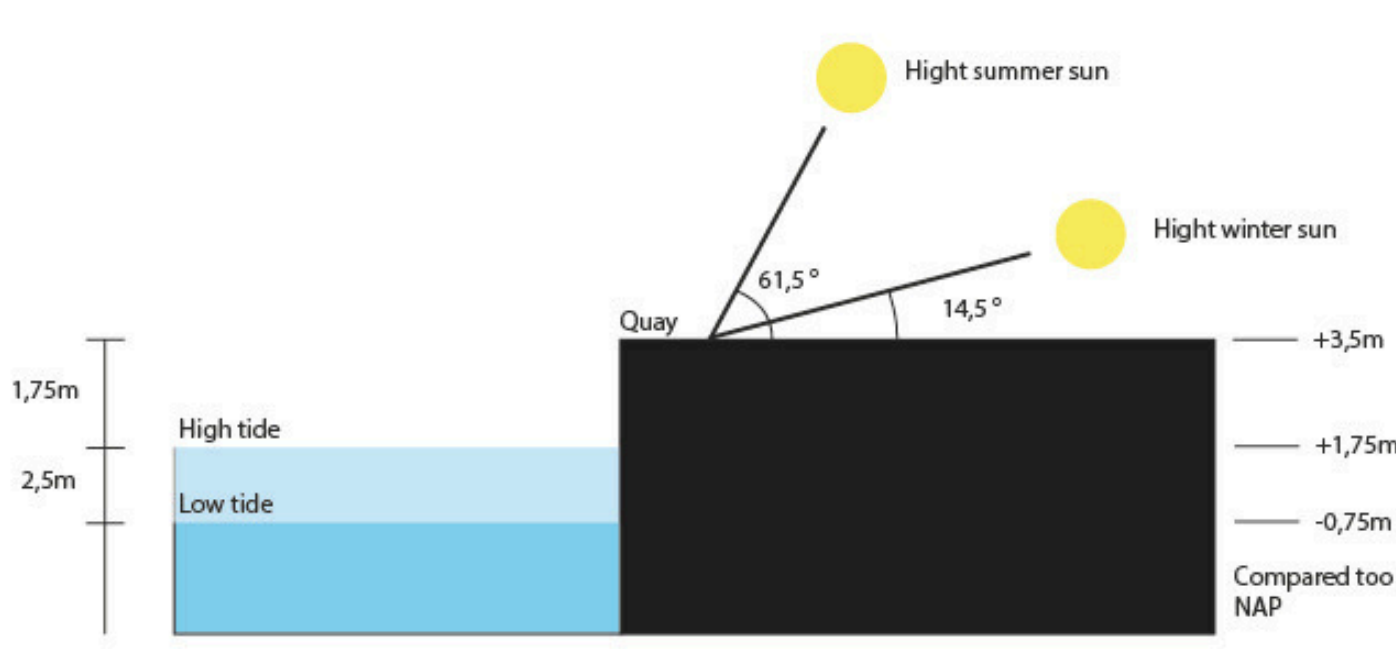
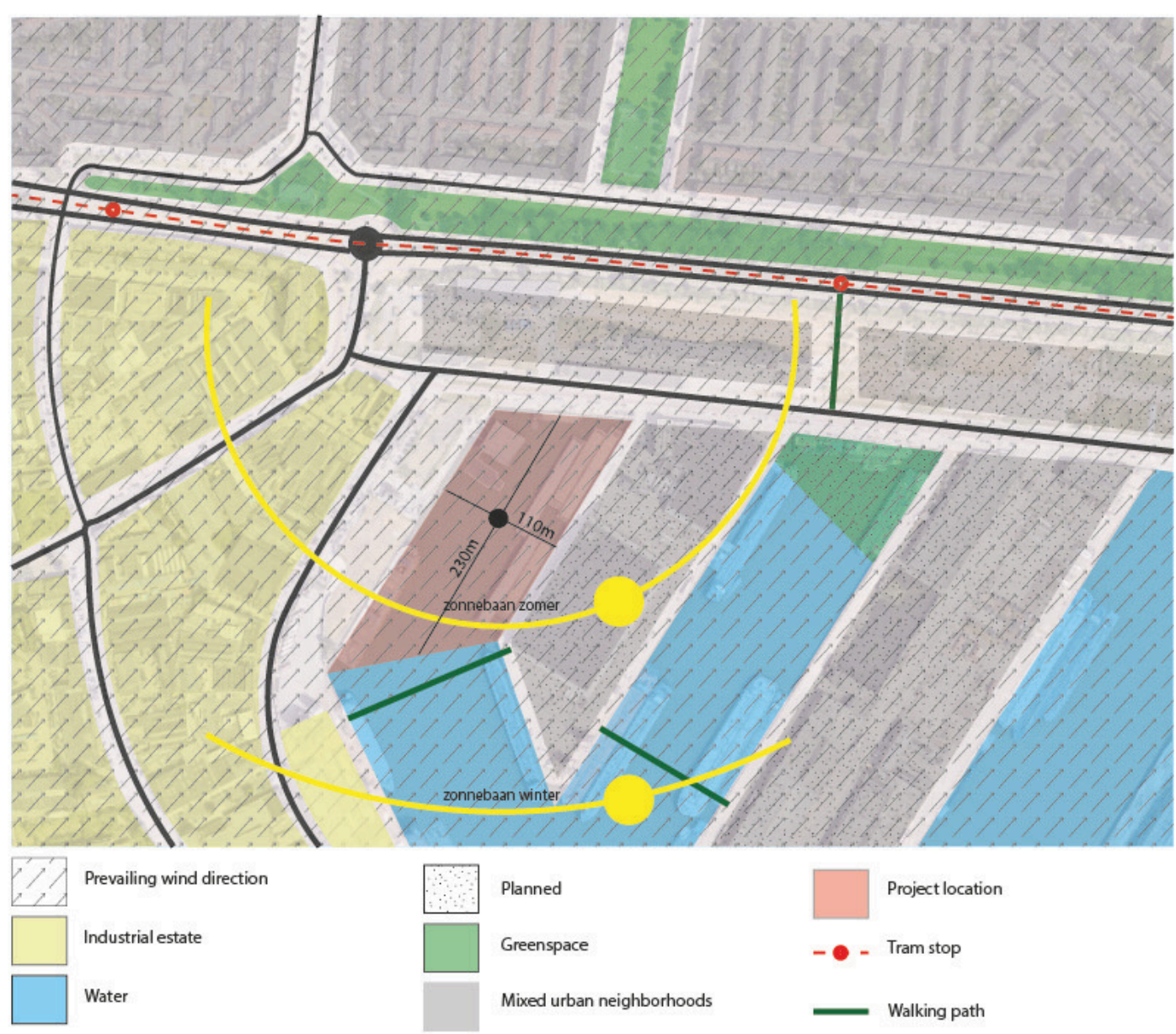


Avoid or limit crane ships and tugboats (high CO₂ emissions).

M4H ROTTERDAM



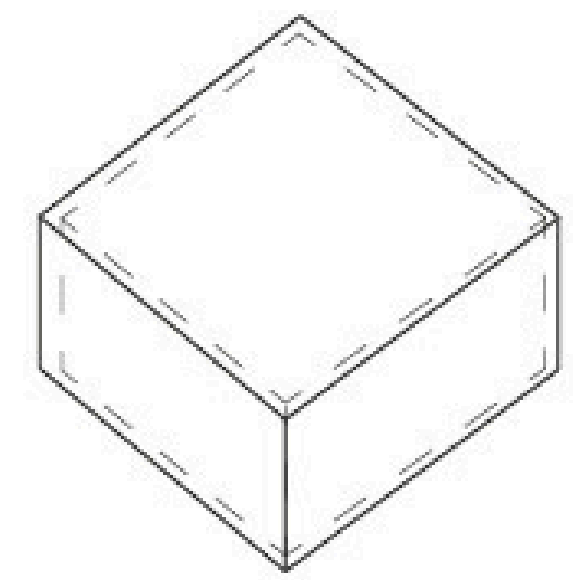
Merwehaven in Rotterdam is the location of this project. It will become a sustainable neighborhood right in the harbor, with a strong focus on sustainability and community.



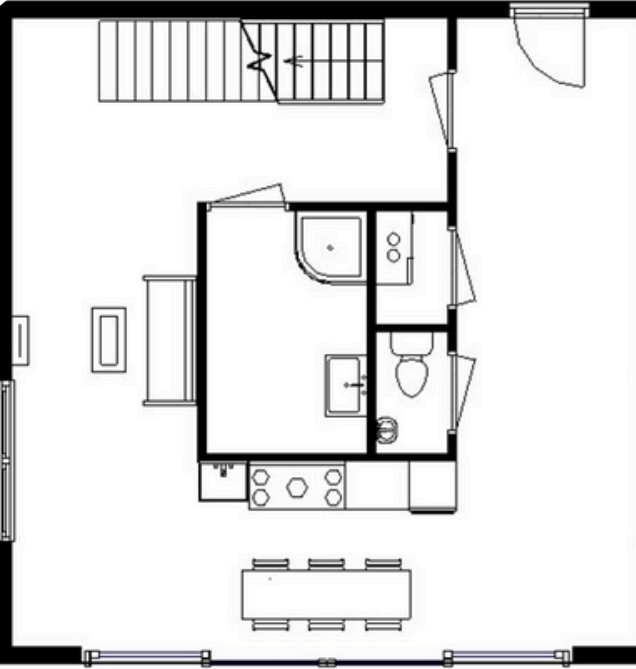
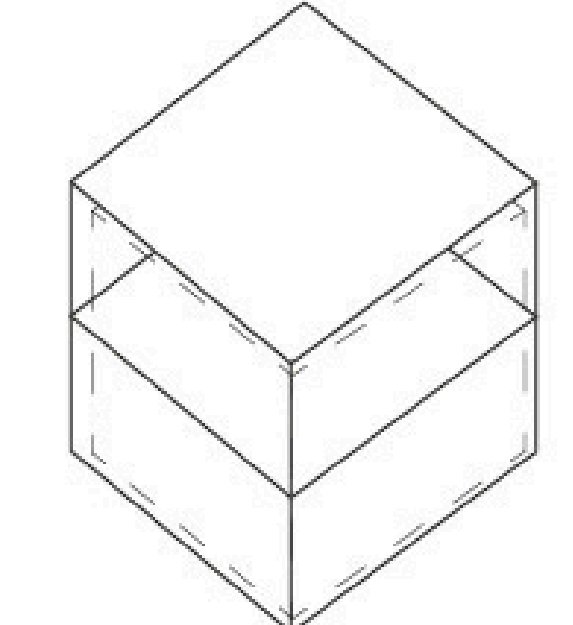
Demands based on,
Tidal Dynamics: The structure needs to adapt to a 2,5m tidal range,
Winter Sun: Capture low winter sun to maximize passive heating and natural light during colder months,
Summer Sun: Architectural elements provide shading from the high summer sun to prevent overheating and ensure comfort.

DESIGN DRAFTS

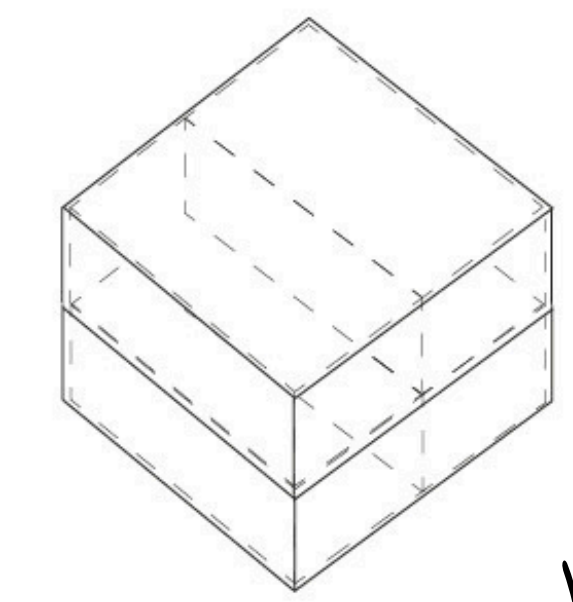
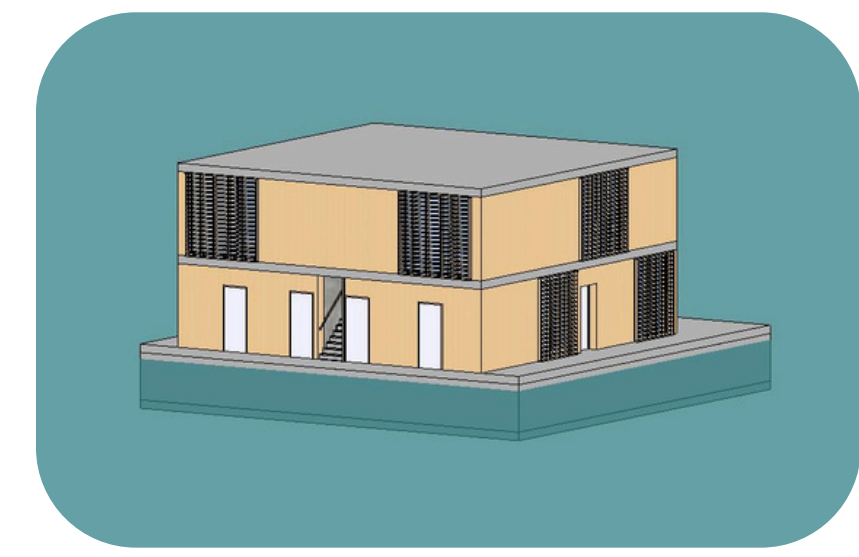
1. Floating bungalow



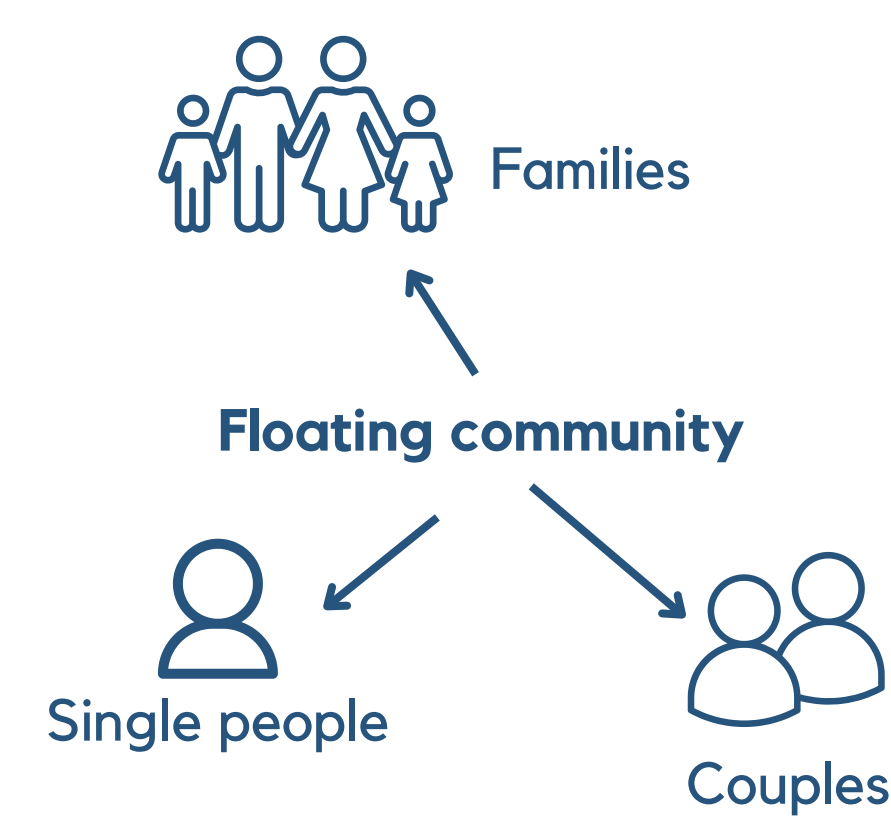
2. Floating family home



3. Floating apartment block

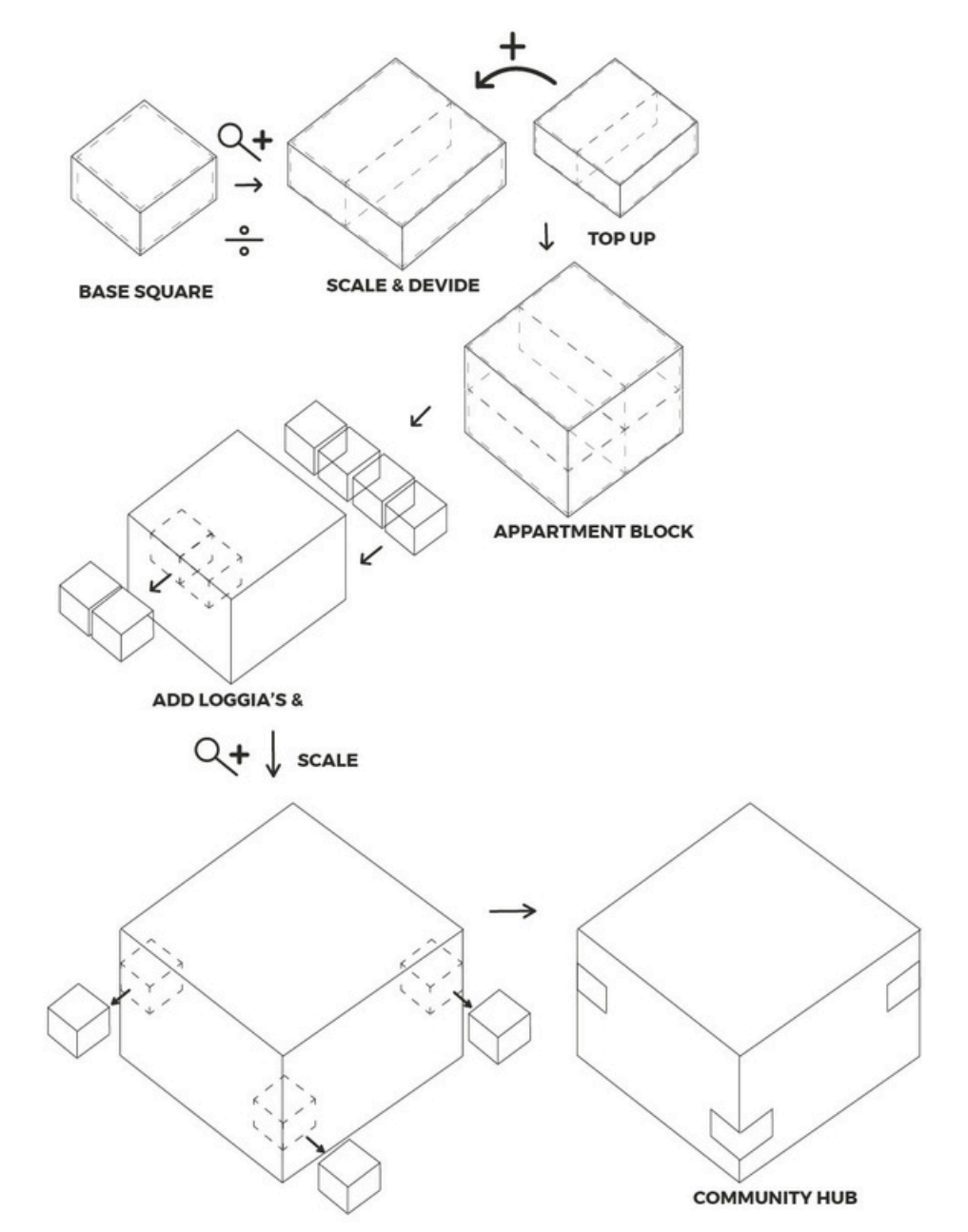


TARGET AUDIENCE

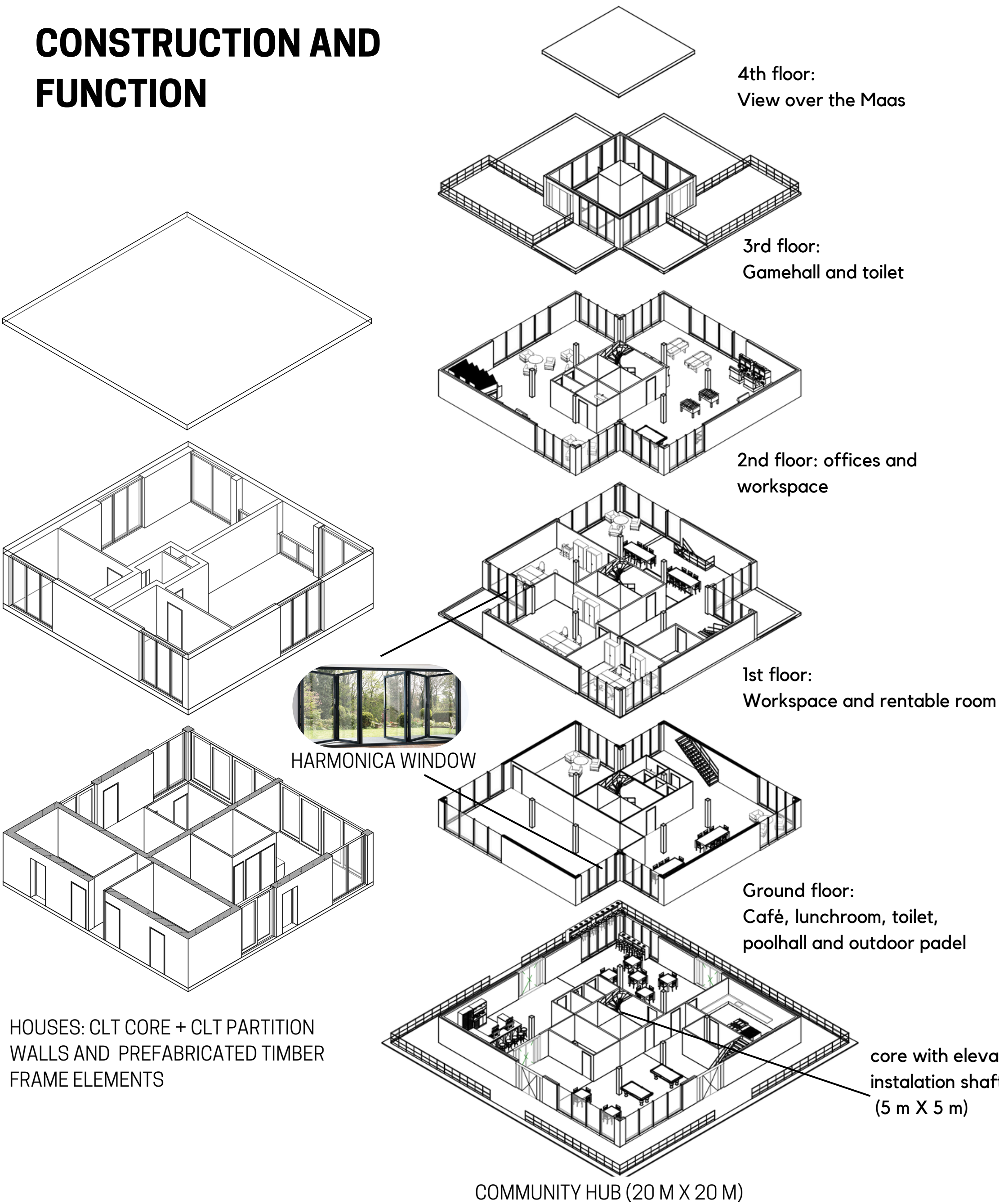


The municipality of Rotterdam aims to create a modern and diverse neighbourhood. We believe that a variety of residents will help achieve this goal. This means our designs must be able to accomodate multiple target groups.

VOLUME SHAPING



CONSTRUCTION AND FUNCTION



HOUSES: CLT CORE + CLT PARTITION WALLS AND PREFABRICATED TIMBER FRAME ELEMENTS



MOORING POOLE

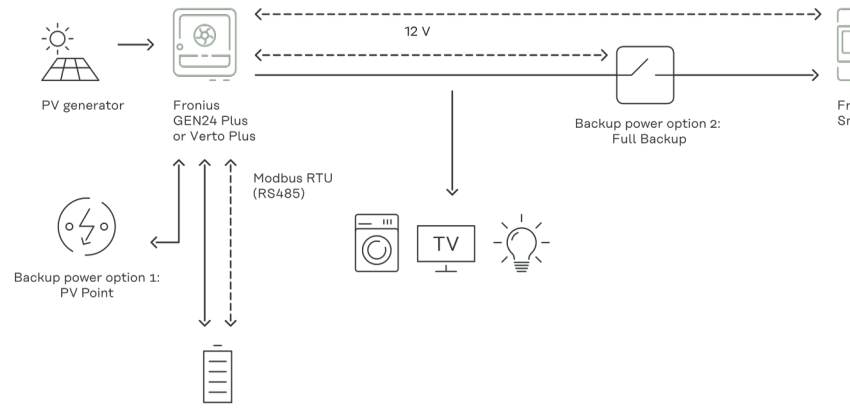


CONCRETE PONTOONS



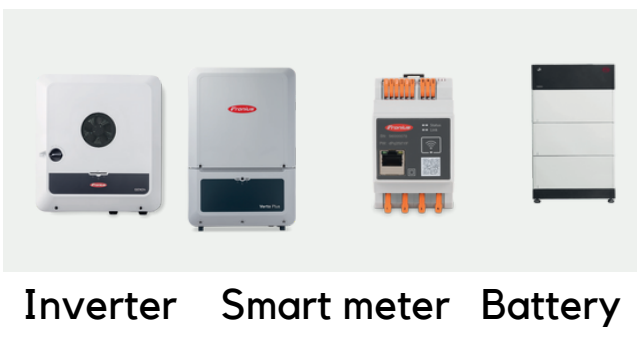
ROOM FOR INSTALLATIONS

INSTALLATIONS (smart grid)

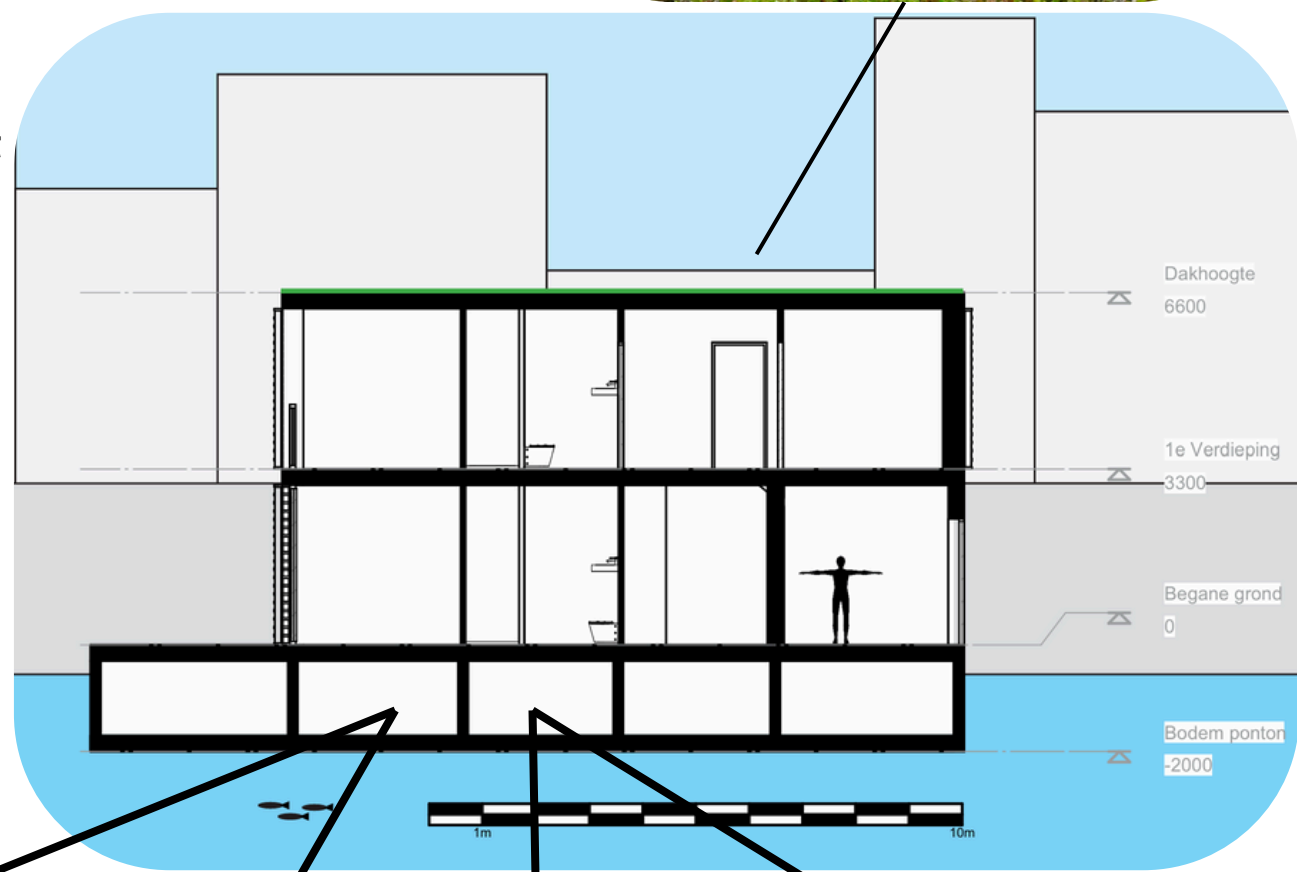


All benefits at a glance

- 01 Use PV energy, even at night
- 02 Demand-based backup power variants
- 03 Simultaneous supply and charging also possible when using backup power
- 04 High self-consumption and self-sufficiency rates
- 05 System efficiency thanks to DC coupling



Inverter Smart meter Battery



Heat pump



Boiler tank (tap water)



Buffer tank (boiler)

SLIDING LOUVRES



LOUVRES SLID OPEN



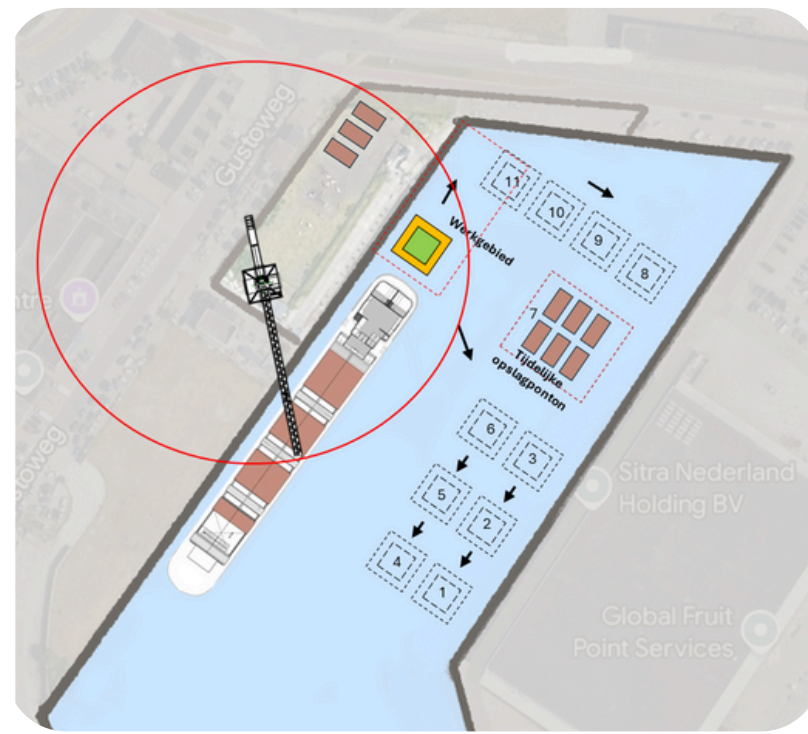
LOUVRES SLID CLOSED

BUILDING METHOD

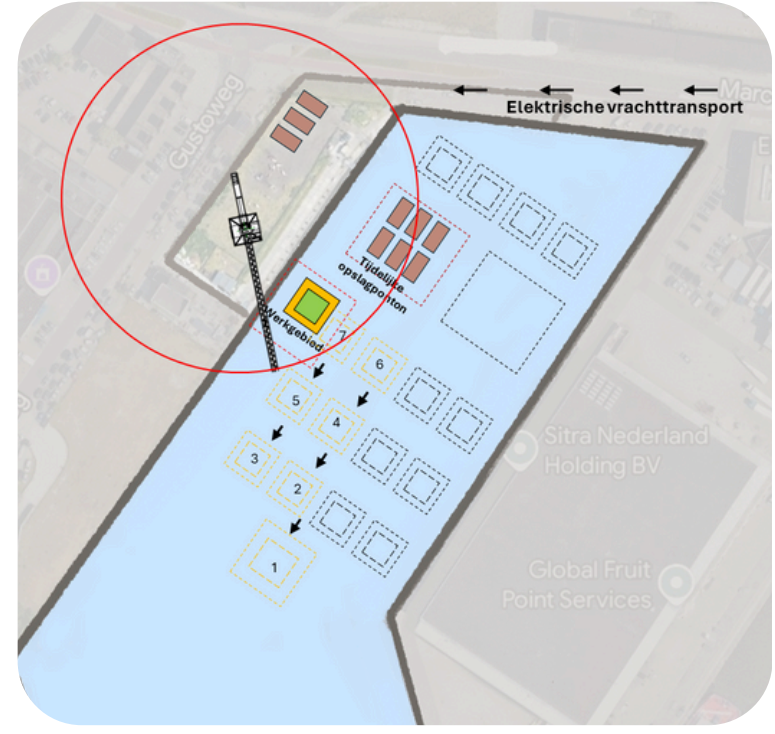
Material delivered by electric inland vessel
Concrete pontoons connected
Mooring piles installed
Prefabricated CLT homes assembled
Homes slid into final position
Cycle repeats



CLT



PHASE 1: DELIVERY BY INLAND VESSEL



PHASE 2: DELIVERY BY ELECTRIC LORRIES

LOGISTICS

AANVOERKAART
CO₂-uitstoot per 100 km



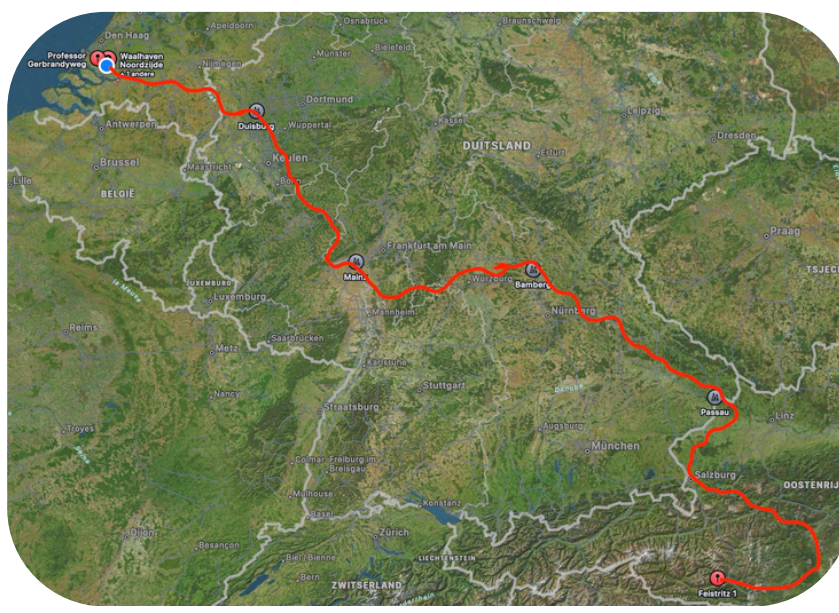
Binnenvaartschip

31,5 g/ton-km



Vrachtwagens

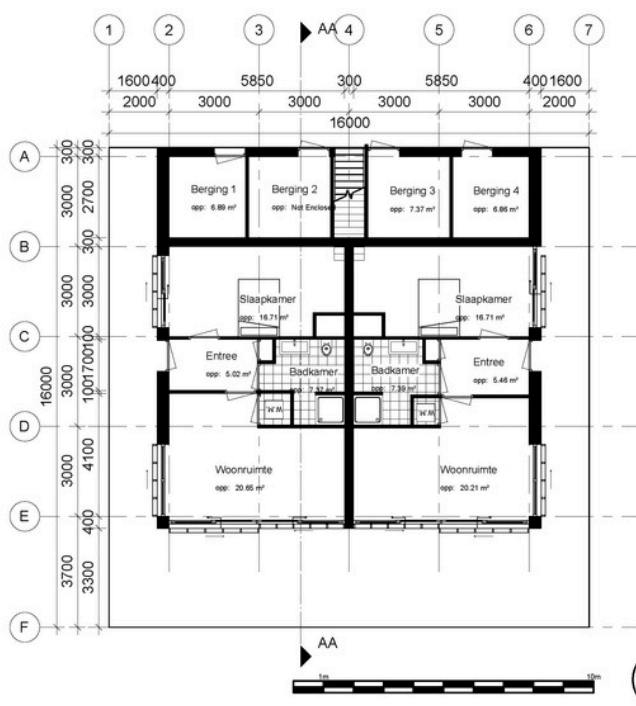
71 g/ton-km



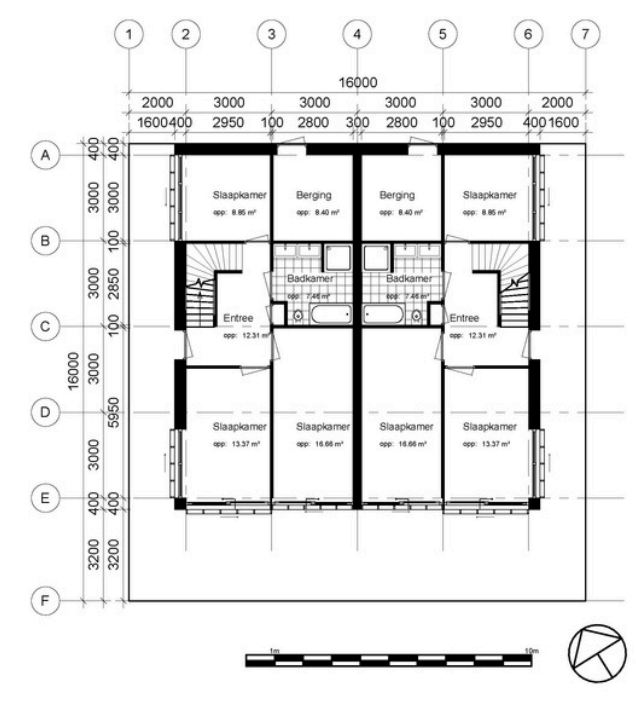
Bouwhub 010 stores materials and equipment, which are delivered in stages by inland vessels and electric lorries.



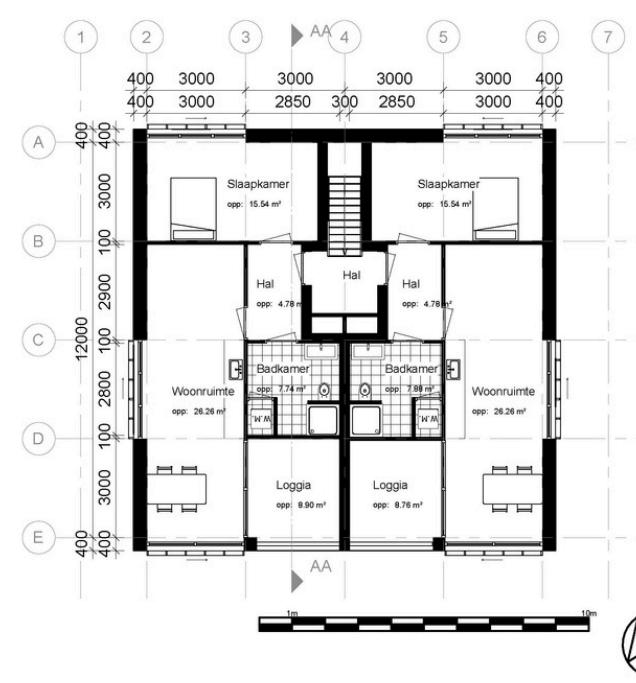
FLOORPLANS



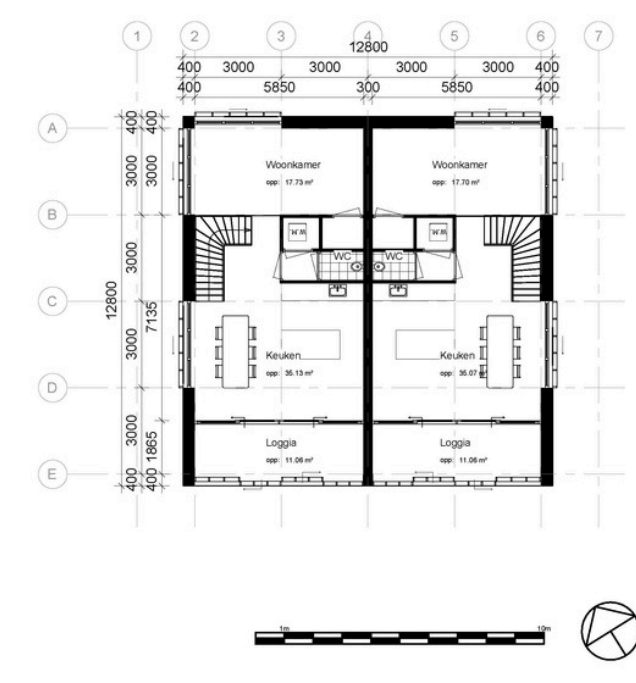
GROUND FLOOR VARIANT 1



GROUND FLOOR VARIANT 2

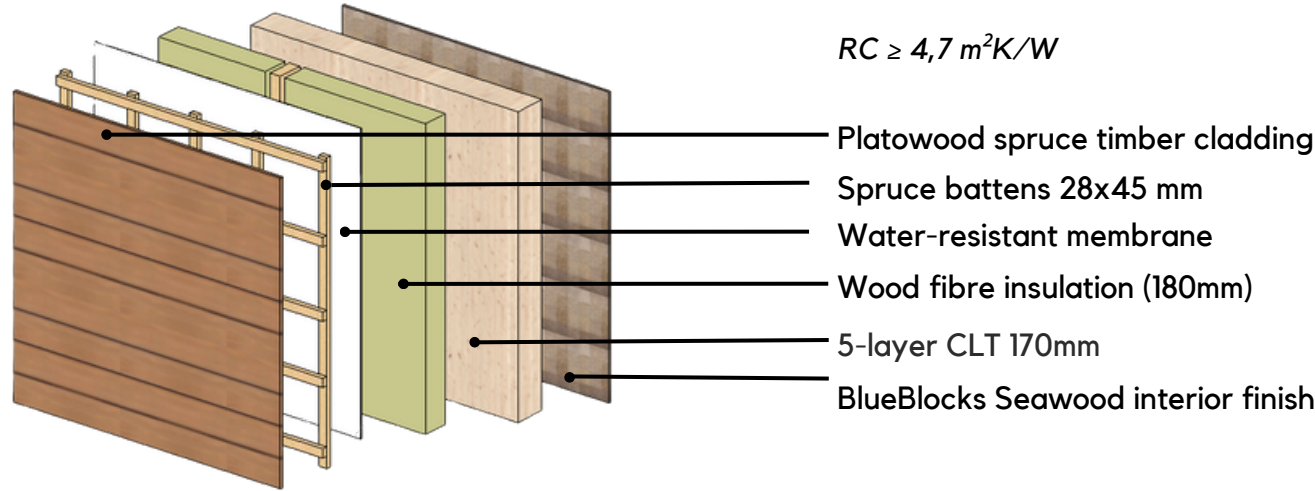


FIRST FLOOR VARIANT 1

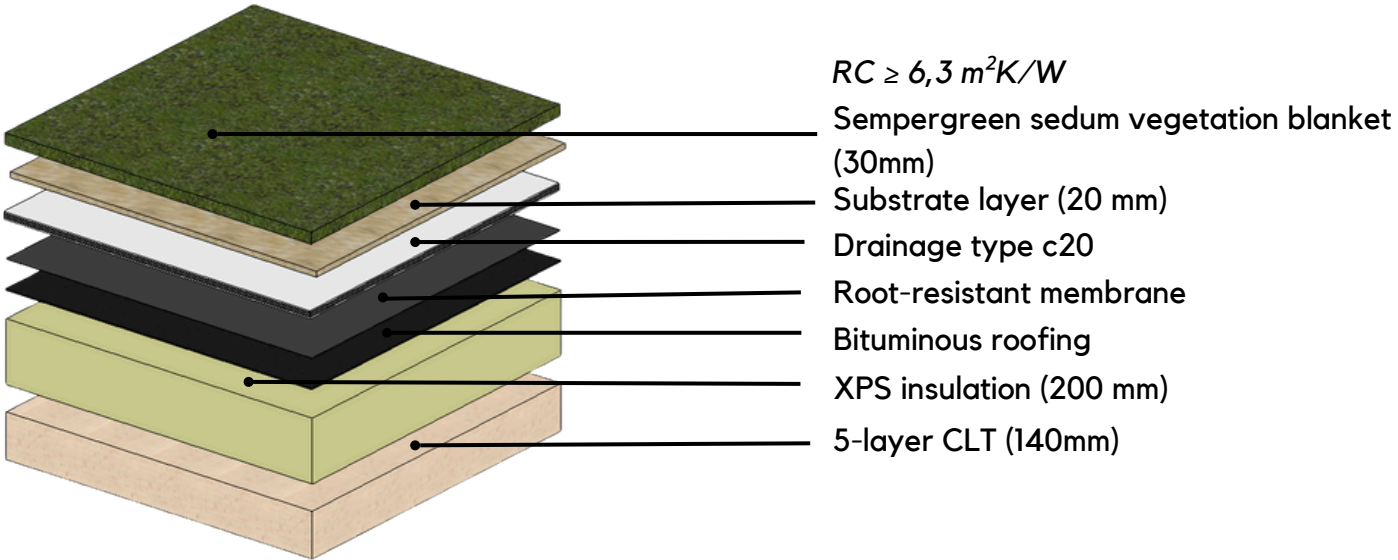


FIRST FLOOR VARIANT 2

WALL CONSTRUCTION



ROOF CONSTRUCTION



RENDERS

