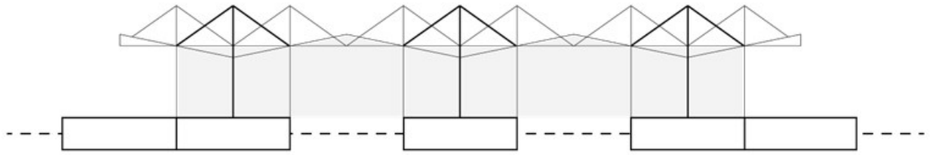
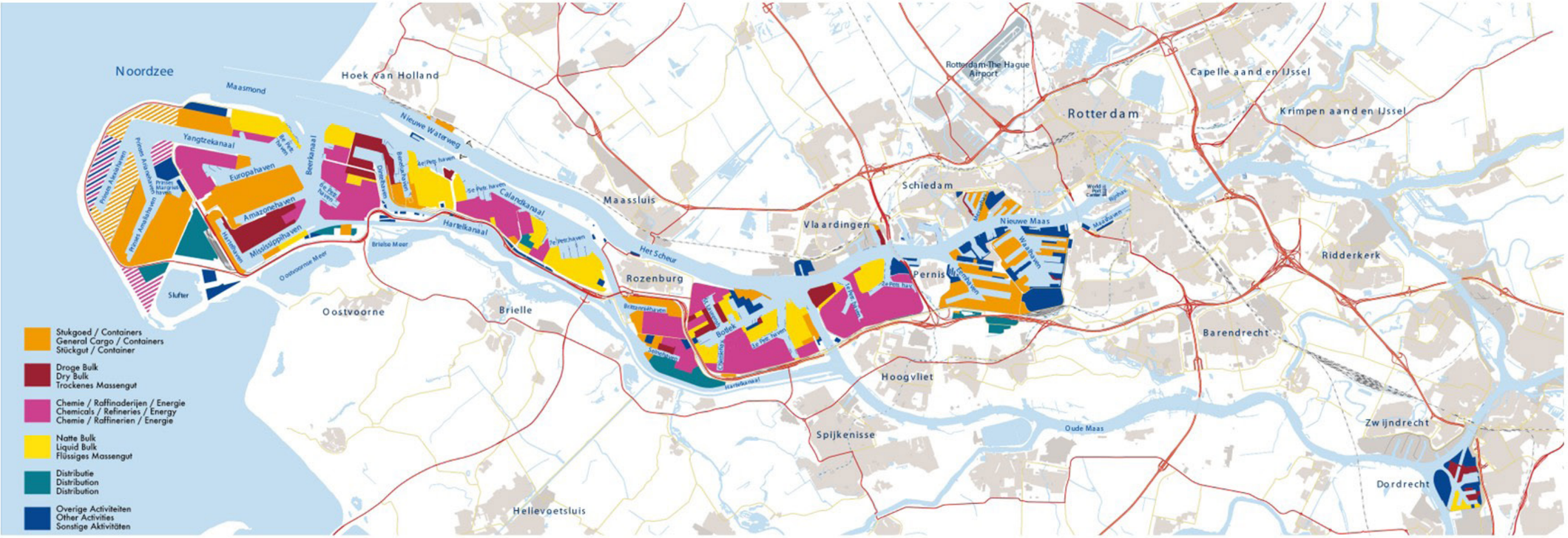
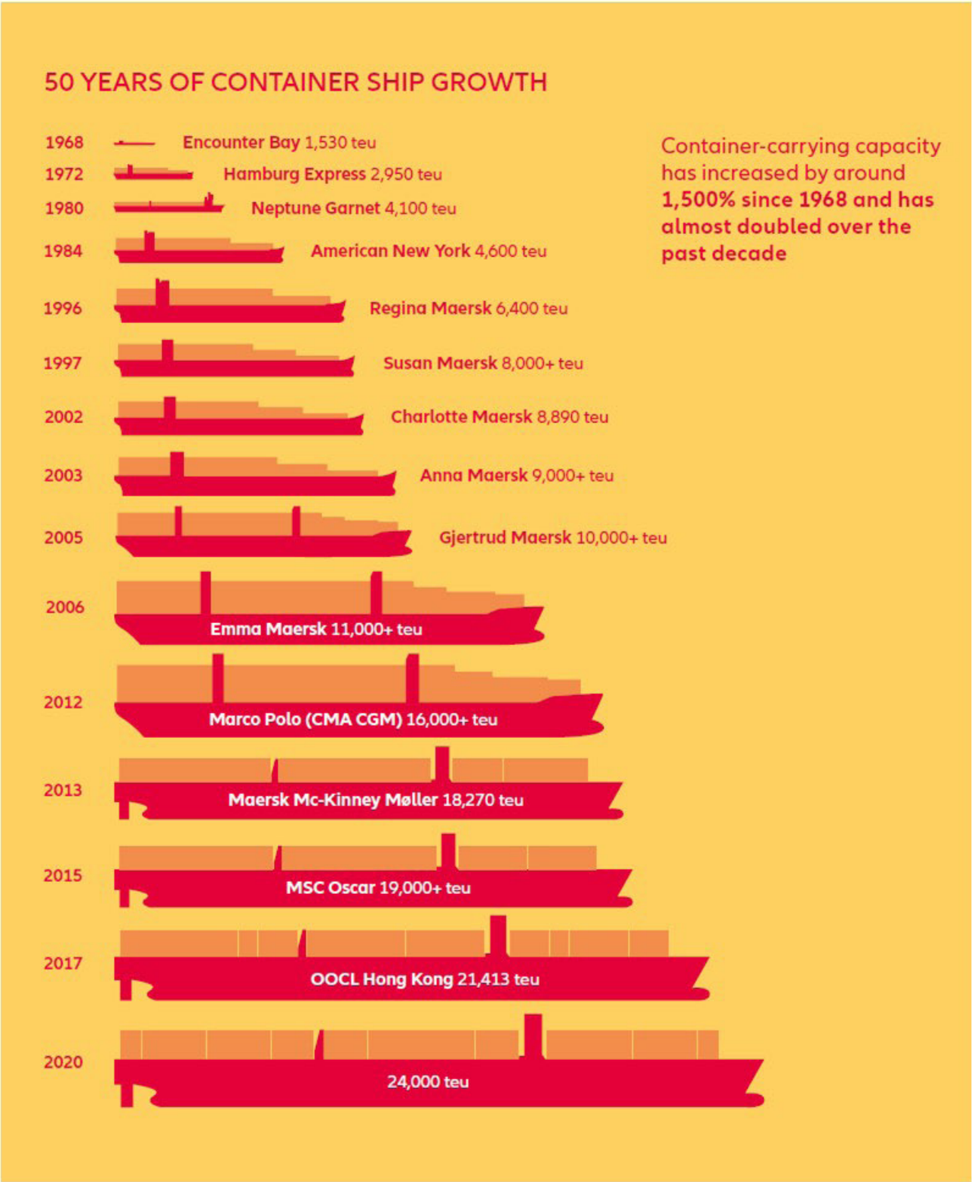


Floating Haven

: Floating Maritime Terminal Office

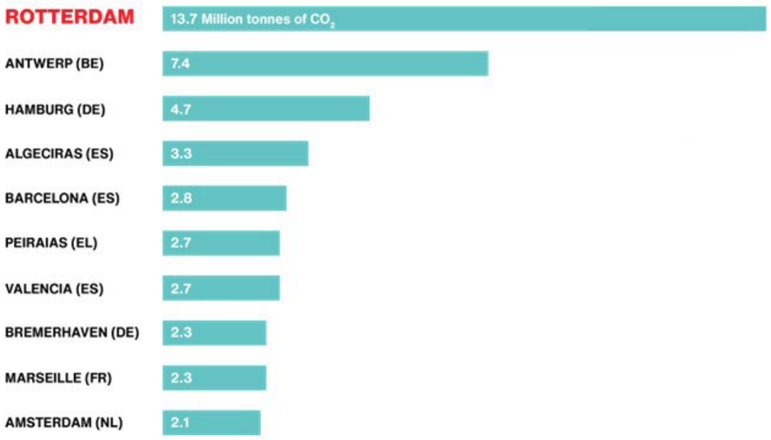
June Choi


Noordzee
Maasmond
Hoek van Holland
Nieuwe Waterweg
Yangtzekanaal
Europahaven
Amazonehaven
Mississippihaven
Beerkanaal
Hartelkanaal
Calandkanaal
Brielse Meer
Oostvoornse Meer
Slufter
Oostvoorne
Brielle
Maassluis
Rozenburg
Botlek
Vlaardingen
Schiedam
Pernis
Nieuwe Maas
Rotterdam
Rotterdam-The Hague Airport
Capelle aan den IJssel
Krimpen aan den IJssel
Ridderkerk
Barendrecht
Hoogvliet
Spijkenisse
Oude Maas
Zwijndrecht
Dordrecht
Hellevoetsluis
Stukgoed / Containers
General Cargo / Containers
Stückgut / Container
Droge Bulk
Dry Bulk
Trockenes Massengut
Chemie / Raffinaderijen / Energie
Chemicals / Refineries / Energy
Chemie / Raffinerien / Energie
Natte Bulk
Liquid Bulk
Flüssiges Massengut
Distributie
Distribution
Distribution
Overige Activiteiten
Other Activities
Sonstige Aktivitäten

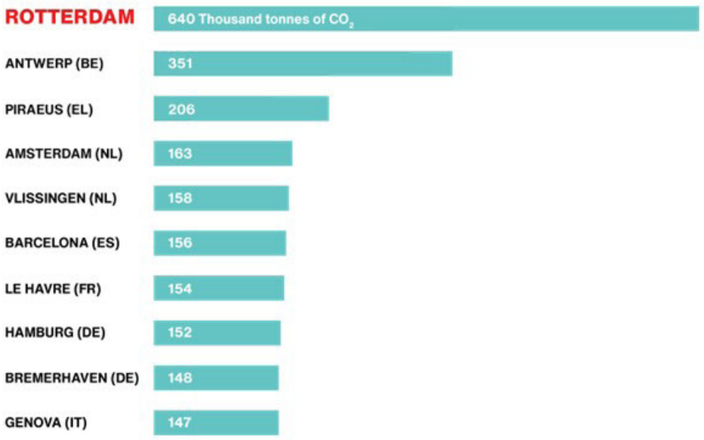

50 YEARS OF CONTAINER SHIP GROWTH
1968 Encounter Bay 1,530 teu
1972 Hamburg Express 2,950 teu
1980 Neptune Garnet 4,100 teu
1984 American New York 4,600 teu
1996 Regina Maersk 6,400 teu
1997 Susan Maersk 8,000+ teu
2002 Charlotte Maersk 8,890 teu
2003 Anna Maersk 9,000+ teu
2005 Gjertrud Maersk 10,000+ teu
2006 Emma Maersk 11,000+ teu
2012 Marco Polo (CMA CGM) 16,000+ teu
2013 Maersk Mc-Kinney Møller 18,270 teu
2015 MSC Oscar 19,000+ teu
2017 OOCL Hong Kong 21,413 teu
2020 24,000 teu
Container-carrying capacity has increased by around 1,500% since 1968 and has almost doubled over the past decade

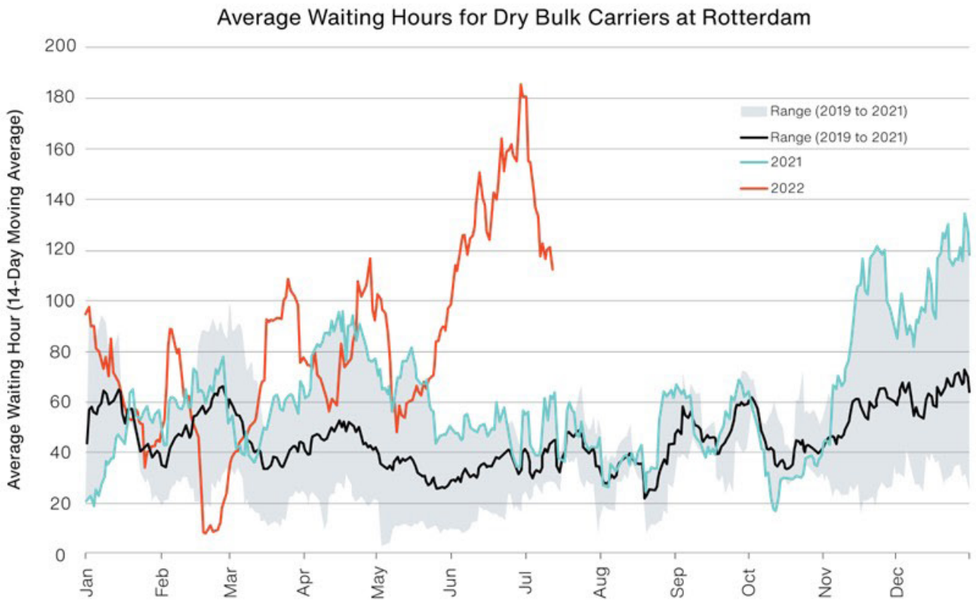

EVERGREEN

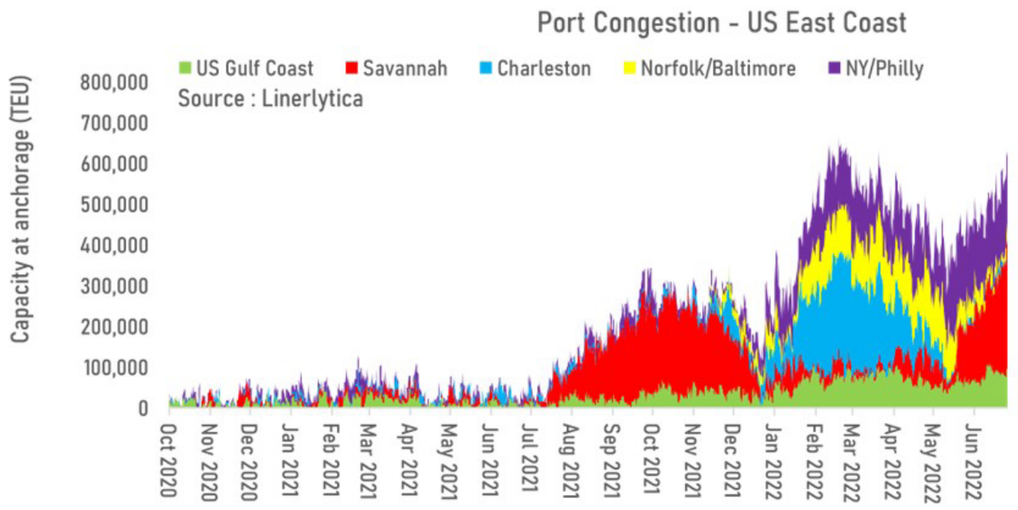
Most Polluting European Ports

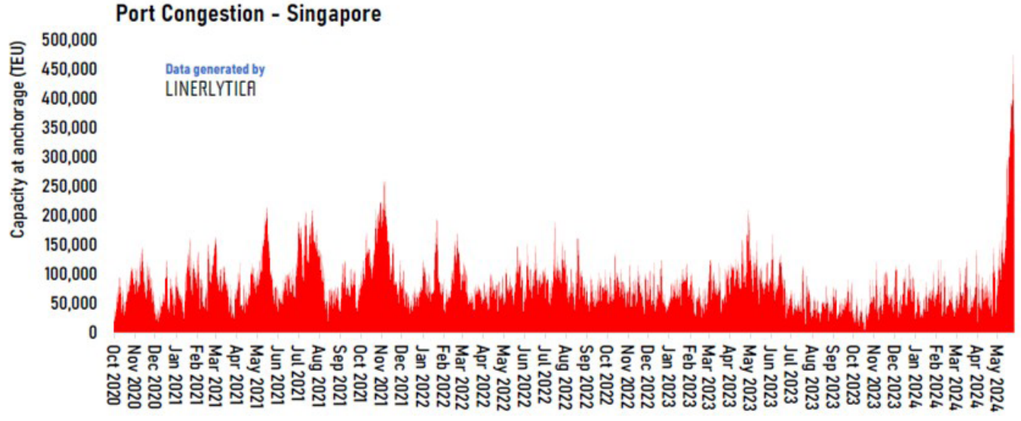


Emissions from Ship Activities at Port






Port Congestion - US East Coast
US Gulf Coast
Savannah
Charleston
Norfolk/Baltimore
NY/Philly
Source : Linerlytica
Capacity at anchorage (TEU)
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
Oct 2020
Nov 2020
Dec 2020
Jan 2021
Feb 2021
Mar 2021
Apr 2021
May 2021
Jun 2021
Jul 2021
Aug 2021
Sep 2021
Oct 2021
Nov 2021
Dec 2021
Jan 2022
Feb 2022
Mar 2022
Apr 2022
May 2022
Jun 2022


Port Congestion - Singapore
Data generated by
LINERLYTICA
Capacity at anchorage (TEU)
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
Oct 2020
Nov 2020
Dec 2020
Jan 2021
Feb 2021
Mar 2021
Apr 2021
May 2021
Jun 2021
Jul 2021
Aug 2021
Sep 2021
Oct 2021
Nov 2021
Dec 2021
Jan 2022
Feb 2022
Mar 2022
Apr 2022
May 2022
Jun 2022
Jul 2022
Aug 2022
Sep 2022
Oct 2022
Nov 2022
Dec 2022
Jan 2023
Feb 2023
Mar 2023
Apr 2023
May 2023
Jun 2023
Jul 2023
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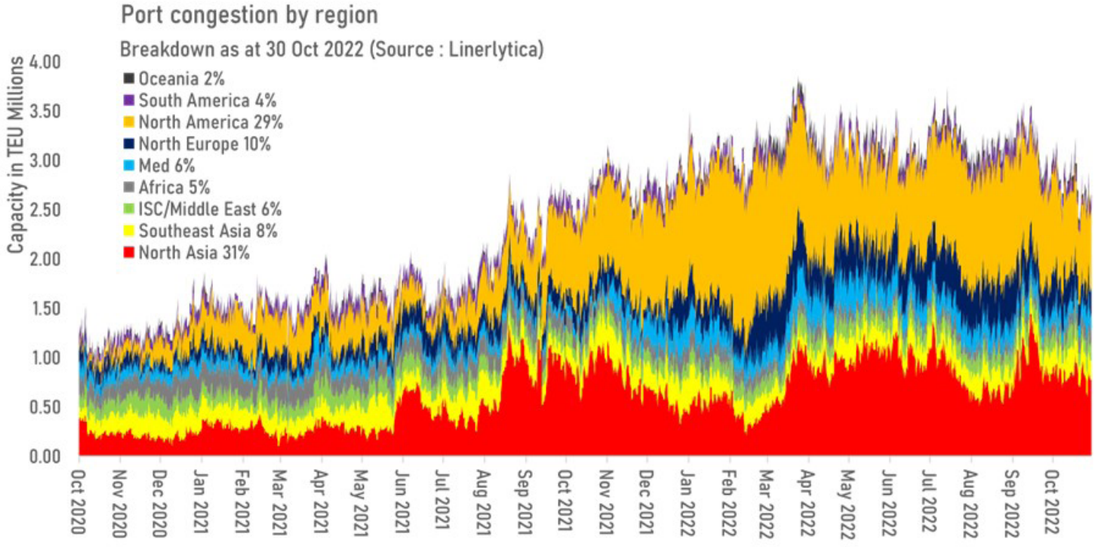
Sep 2023
Oct 2023
Nov 2023
Dec 2023
Jan 2024
Feb 2024
Mar 2024
Apr 2024
May 2024

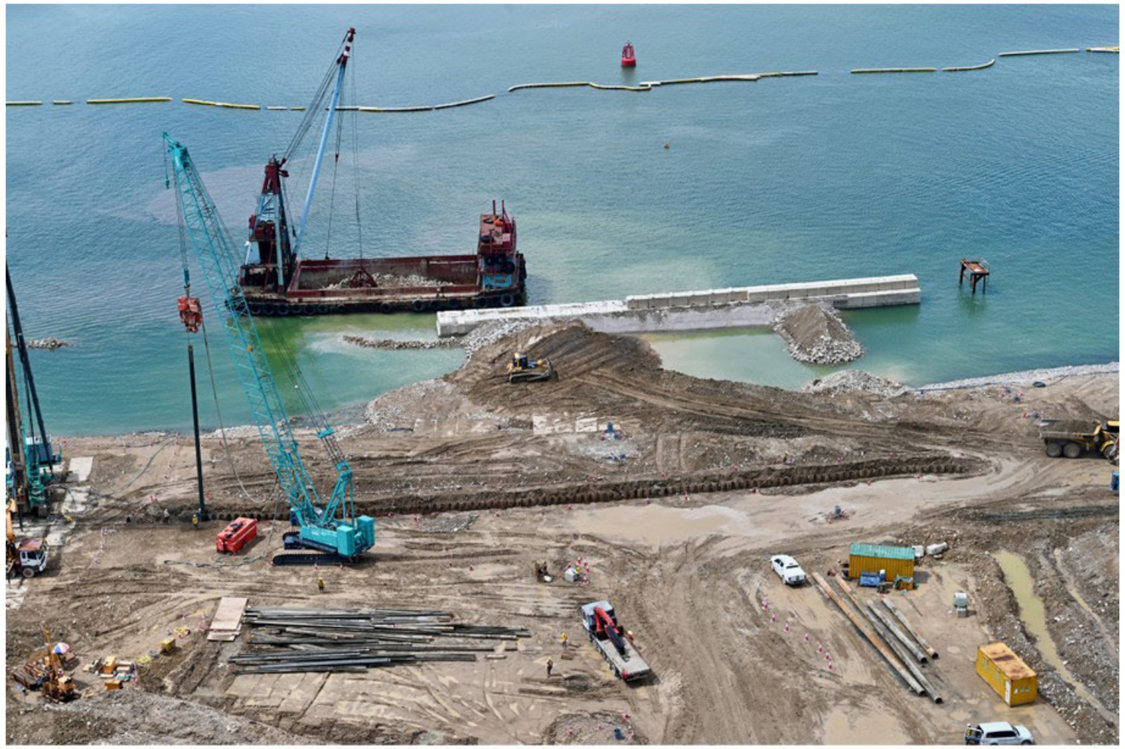

Port congestion by region
Breakdown as at 30 Oct 2022 (Source : Linerlytica)
Oceania 2%
South America 4%
North America 29%
North Europe 10%
Med 6%
Africa 5%
ISC/Middle East 6%
Southeast Asia 8%
North Asia 31%
Capacity in TEU Millions
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Oct 2020
Nov 2020
Dec 2020
Jan 2021
Feb 2021
Mar 2021
Apr 2021
May 2021
Jun 2021
Jul 2021
Aug 2021
Sep 2021
Oct 2021
Nov 2021
Dec 2021
Jan 2022
Feb 2022
Mar 2022
Apr 2022
May 2022
Jun 2022
Jul 2022
Aug 2022
Sep 2022
Oct 2022

Zuid-Holland wil in 2027 besluit over uitbreiding Maasvlakte in zee

22 mei, 12:23

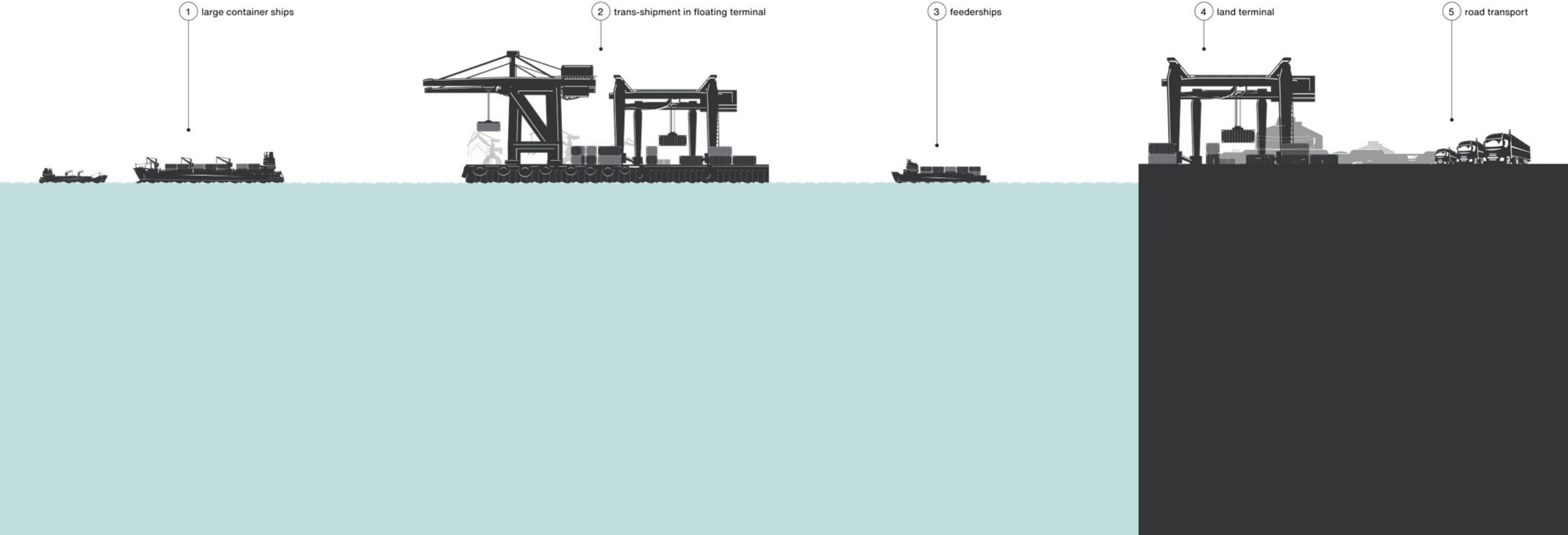
De provincie Zuid-Holland hoopt dat in 2027 een besluit valt over de mogelijke uitbreiding van de Maasvlakte. De provincie organiseert komende maandag een symposium, waar 140 vertegenwoordigers van betrokken partijen discussiëren over zeewaartse uitbreiding van de Rotterdamse haven. Het havengebied is in de afgelopen zeventig jaar al twee keer vergroot door voor de westkust grote hoeveelheden zand op te spuiten.


PSMNEWS.MV



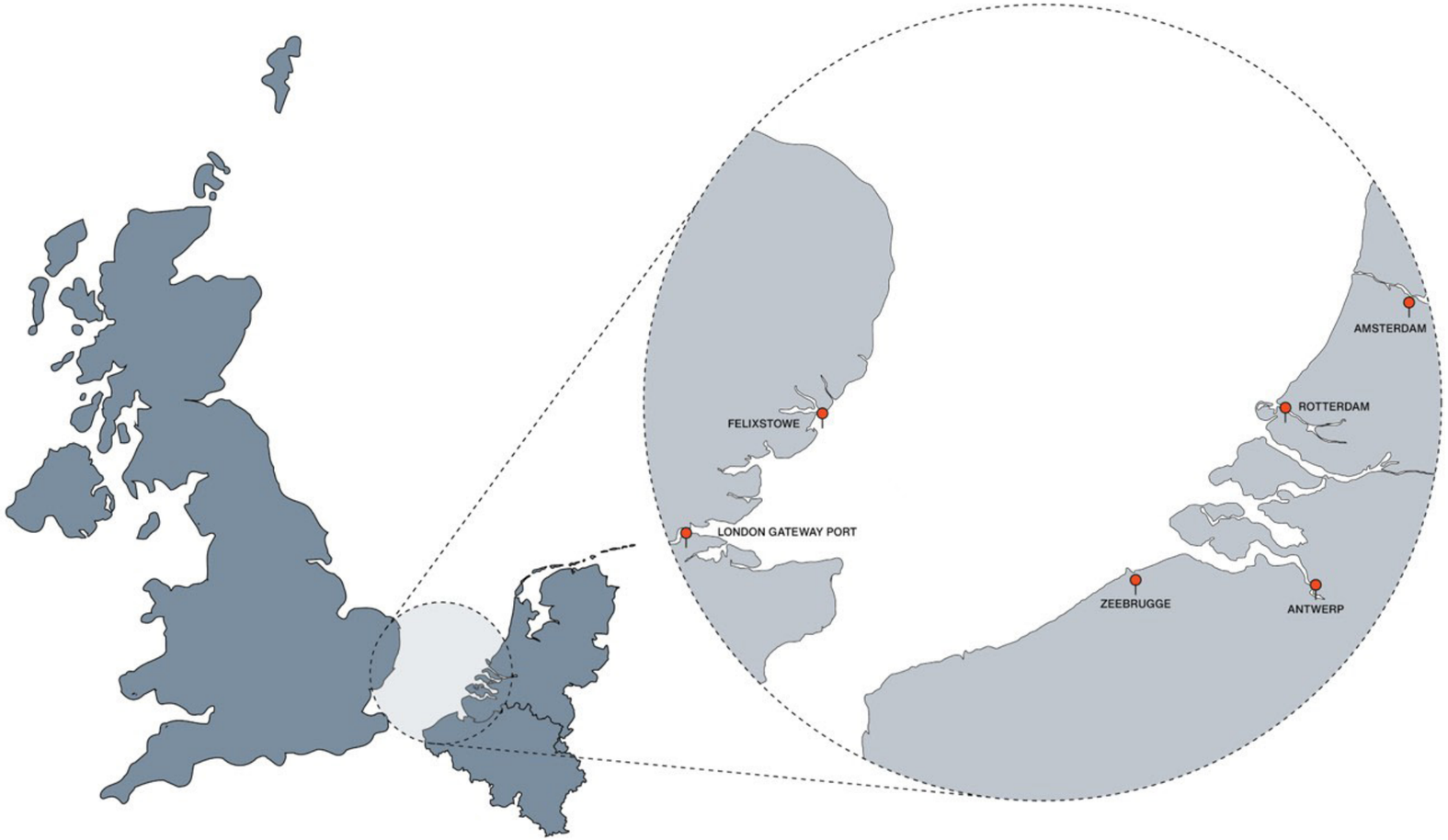
What if we could move part of the terminal offshore?

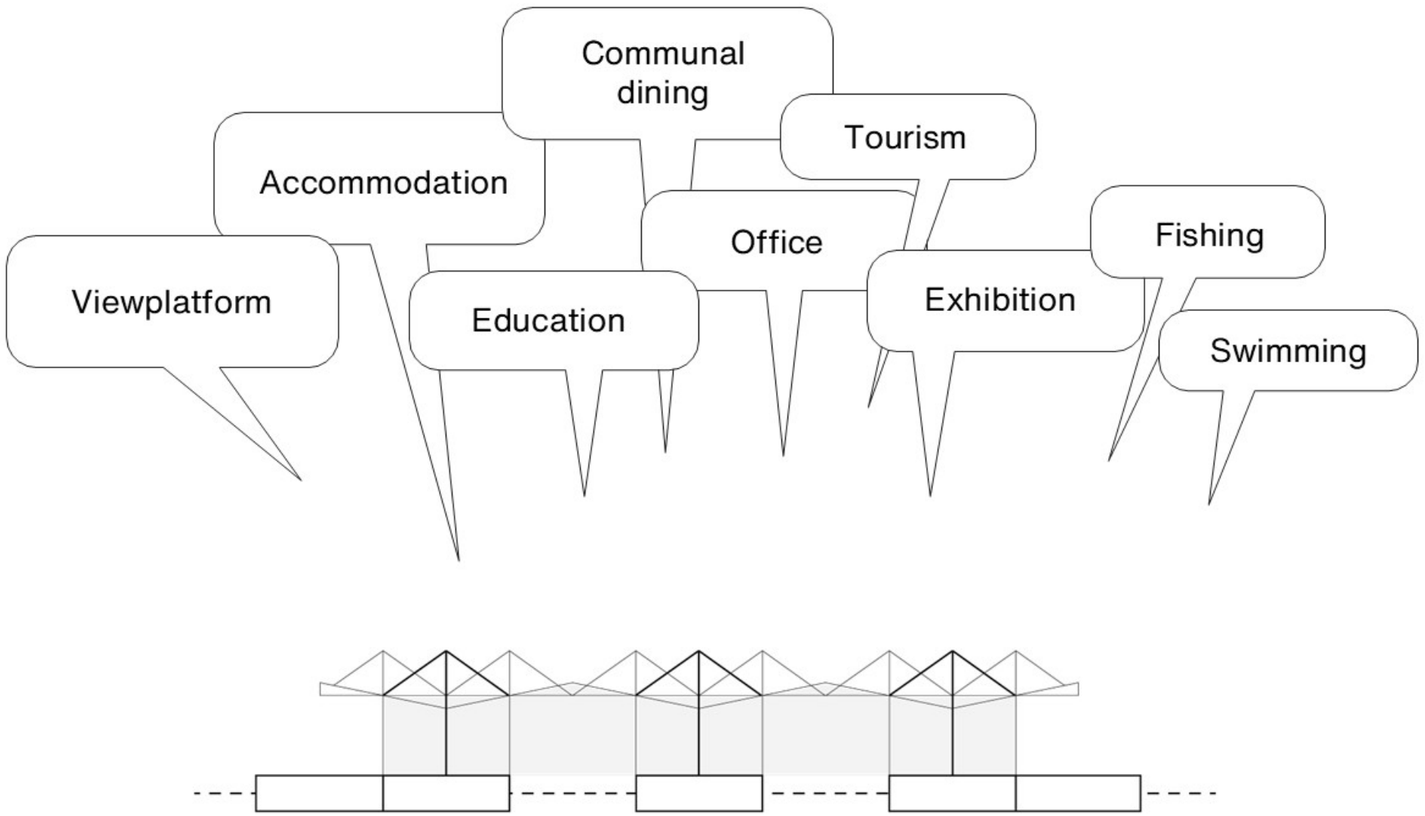

STFT


1 large container ships
2 trans-shipment in floating terminal
3 feederships
4 land terminal
5 road transport

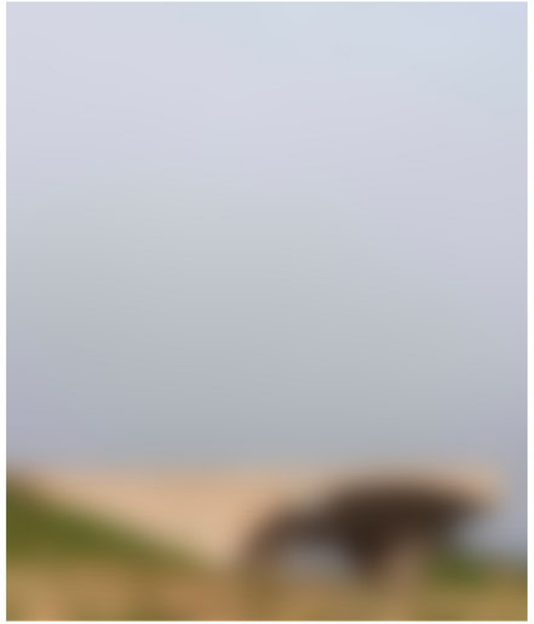
SCALABILITY

ADDED MOVED EXPANDED


FELIXSTOWE
LONDON GATEWAY PORT
AMSTERDAM
ROTTERDAM
ZEEBRUGGE
ANTWERP


Communal dining
Tourism
Accommodation
Office
Fishing
Viewplatform
Education
Exhibition
Swimming

SITE SPECIFIC



SITE SPECIFIC?


Delivery
Global
Checklist
Export
KG
Delivery
LOGISTIC
24
Industry
Time
Import
Service
Support
24

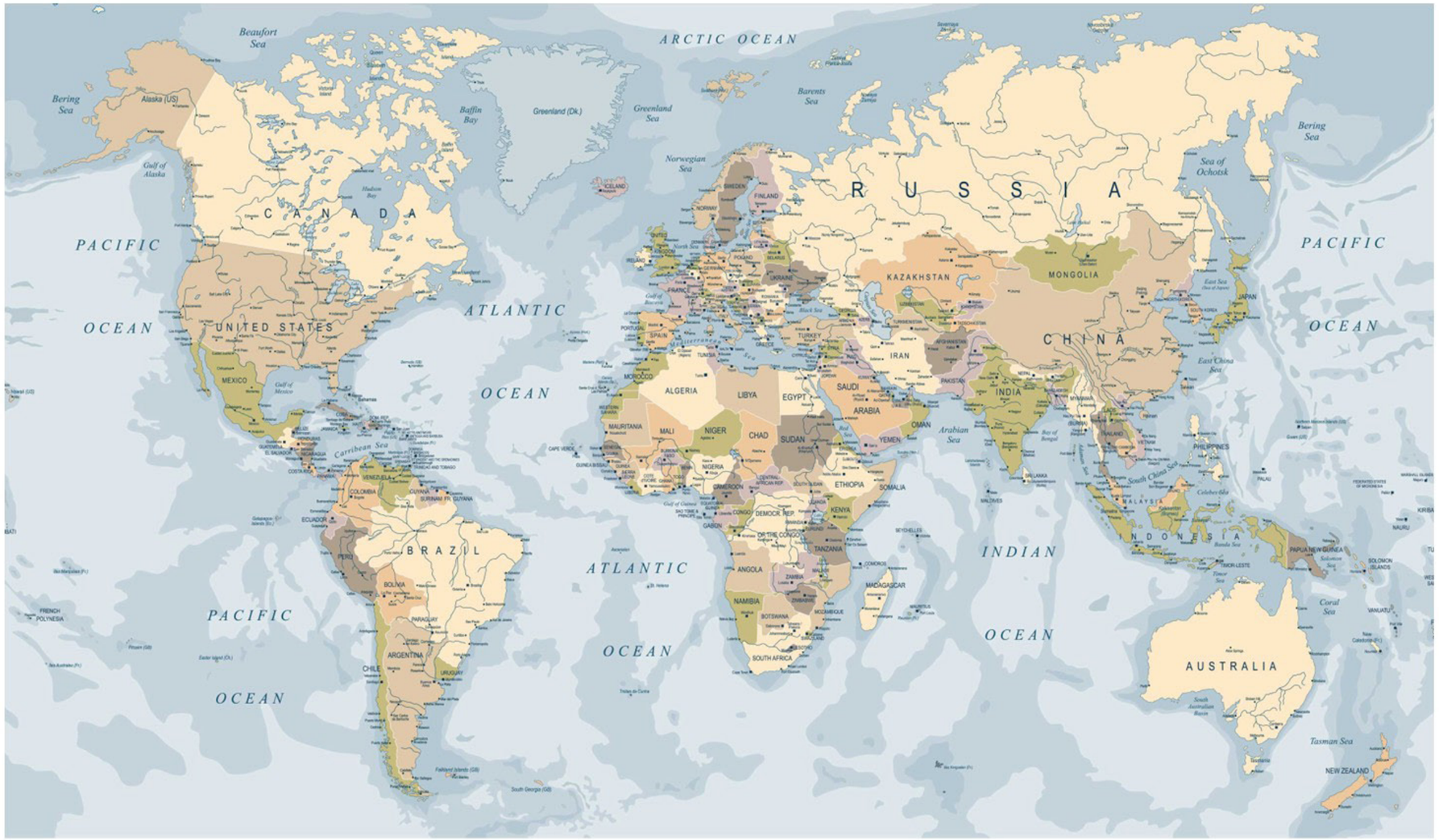
This project is not **site-specific**. It is **system-specific.**

scale, program, structure, environmental strategies

derived from the logic of offshore port operations

What can only exist here?

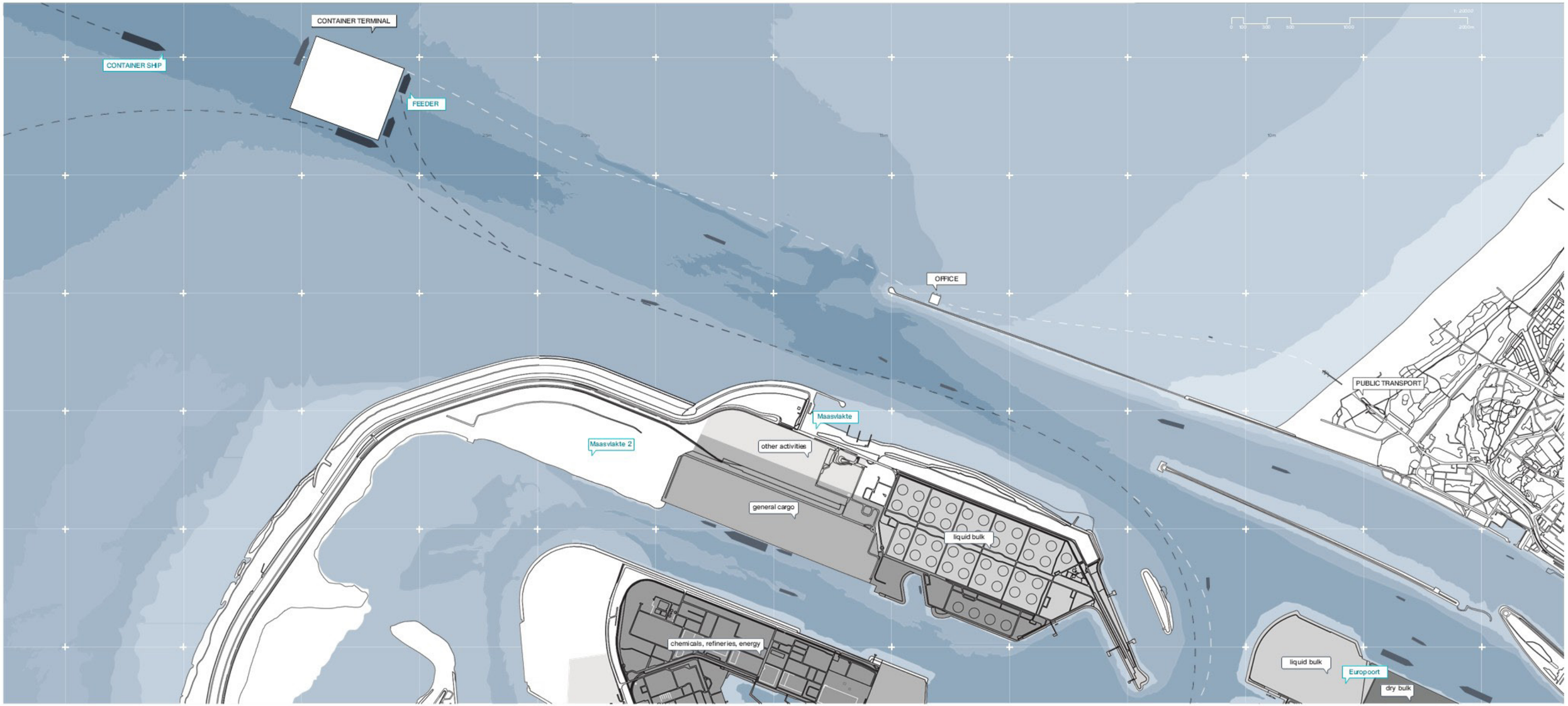
What must exist everywhere?

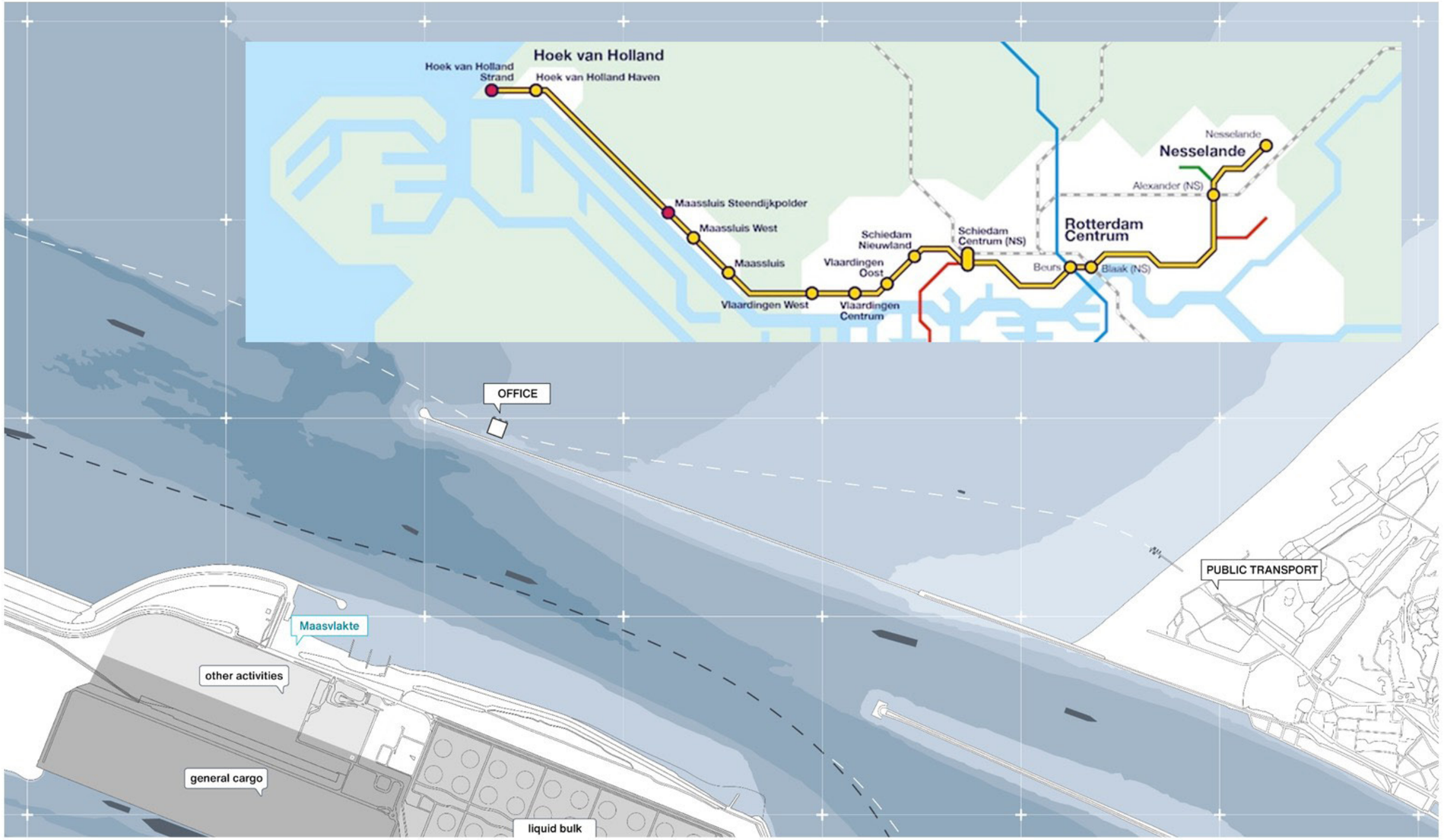

ARCTIC OCEAN
Beaufort Sea
Bering Sea
Alaska (US)
Gulf of Alaska
Baffin Bay
Greenland (Dk.)
Greenland Sea
Barents Sea
Norwegian Sea
Hudson Bay
CANADA
RUSSIA
Sea of Ochotsk
Bering Sea
PACIFIC
OCEAN
UNITED STATES
MEXICO
Gulf of Mexico
Caribbean Sea
ATLANTIC
OCEAN
KAZAKHSTAN
MONGOLIA
CHINA
East Sea
JAPAN
East China Sea
IRAN
PAKISTAN
INDIA
ALGERIA
LIBYA
EGYPT
SAUDI ARABIA
OMAN
YEMEN
Arabian Sea
MAURITANIA
MALI
NIGER
CHAD
SUDAN
ETHIOPIA
SOMALIA
KENYA
PHILIPPINES
VIETNAM
THAILAND
MALAYSIA
INDONESIA
South China Sea
Celebes Sea
Bay of Bengal
SRI LANKA
MALDIVES
BRAZIL
PERU
BOLIVIA
PARAGUAY
ARGENTINA
CHILE
URUGUAY
COLOMBIA
VENEZUELA
GUYANA
SURINAME
ECUADOR
ATLANTIC
OCEAN
ANGOLA
NAMIBIA
BOTSWANA
ZAMBIA
TANZANIA
MOZAMBIQUE
MADAGASCAR
SOUTH AFRICA
INDIAN
OCEAN
AUSTRALIA
PAPUA NEW GUINEA
Coral Sea
Tasman Sea
NEW ZEALAND
PACIFIC
OCEAN
FRENCH POLYNESIA

System specific doesn’t mean location is irrelevant.

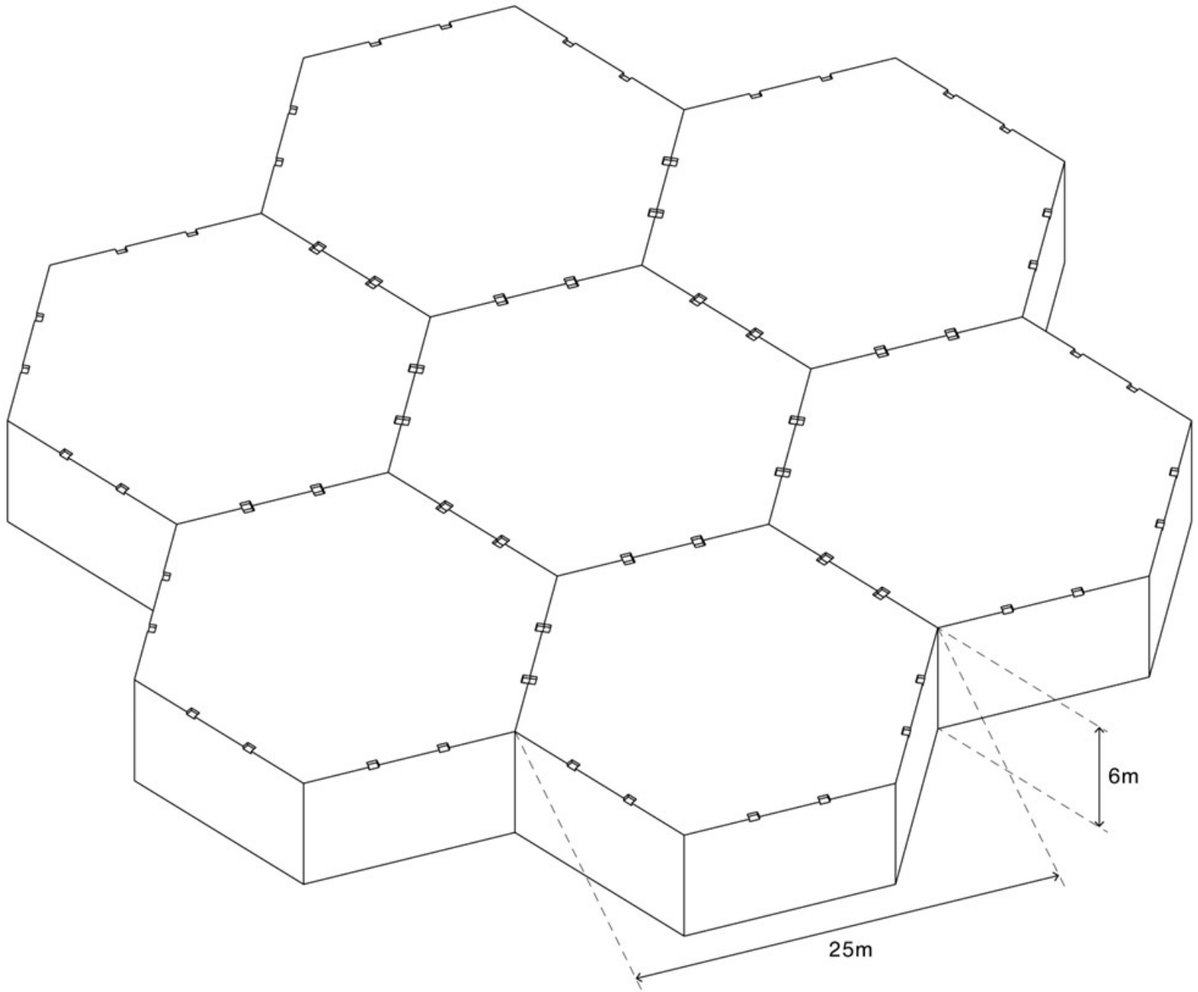
It means it is **flexible,** but still **intentional.**

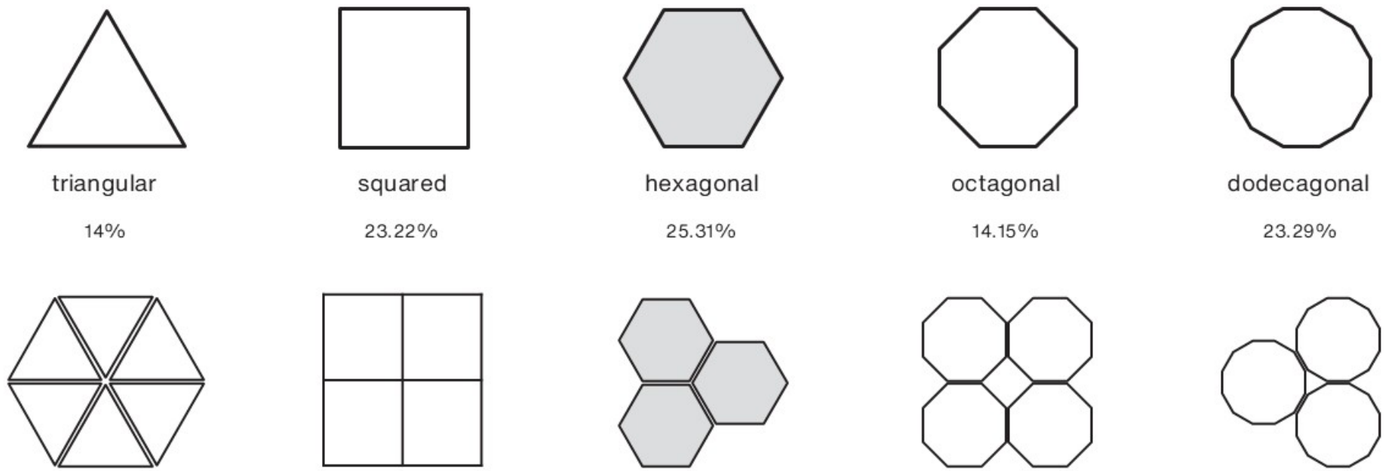
Floating Haven


CONTAINER TERMINAL
CONTAINER SHIP
FEEDER
OFFICE
PUBLIC TRANSPORT
Maasvlakte
Maasvlakte 2
other activities
general cargo
liquid bulk
chemicals, refineries, energy
liquid bulk
Europoort
dry bulk


Hoek van Holland
Hoek van Holland Strand
Hoek van Holland Haven
Maassluis Steendijkpolder
Maassluis West
Maassluis
Vlaardingen West
Vlaardingen Centrum
Vlaardingen Oost
Schiedam Nieuwland
Schiedam Centrum (NS)
Beurs
Blaak (NS)
Rotterdam Centrum
Alexander (NS)
Nesselande
Nesselande
OFFICE
PUBLIC TRANSPORT
Maasvlakte
other activities
general cargo
liquid bulk

coming from the land


6m
25m



EL-Shihy, A. A. (2024). A new approach for configuring modular floating cities: assessing modular floating platforms by means of analytic hierarchy process. City, Territory and Architecture, 11(1). https://doi.org/10.1186/s40410-024-00228-6

SEA KEEPING

- offer superior wave resistance and structural stability

MODULARITY

- allows infinite expansion with seamless interlocking

SPACE UTILIZATION

- maximize land use efficiency

MINIMIZED GAP

- connect tightly to adjacent modules without leaving unused spaces

SIX-DIRECTIONAL CONNECTIVITY

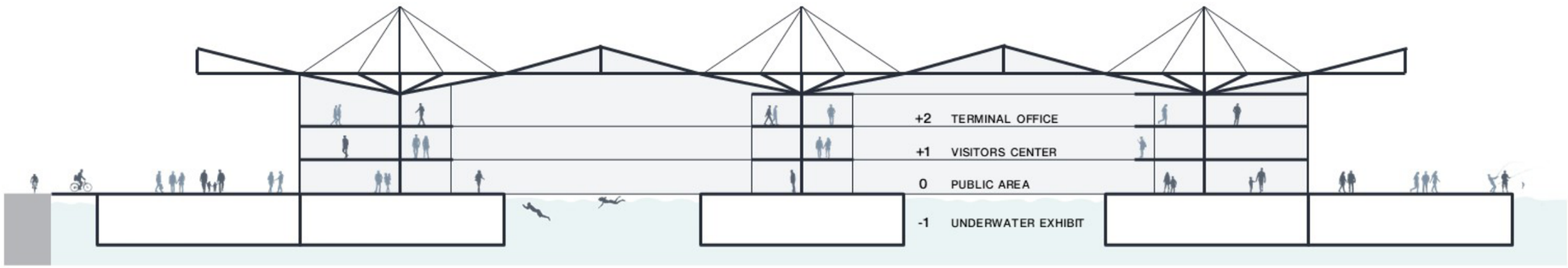
- enable flexible layouts and efficient circulation

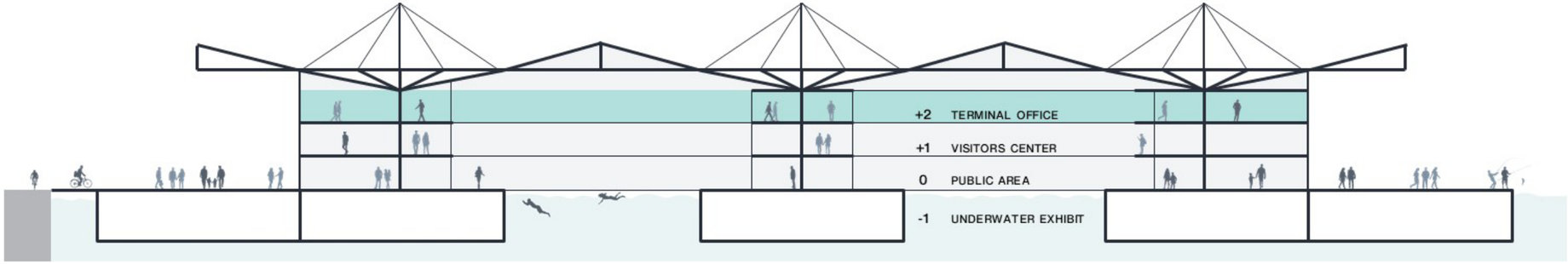
COST EFFICIENCY

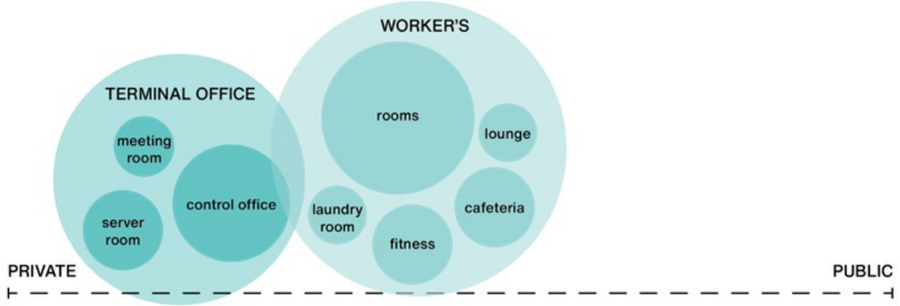
- expansion costs are reduced by up to 23% compared to other shapes

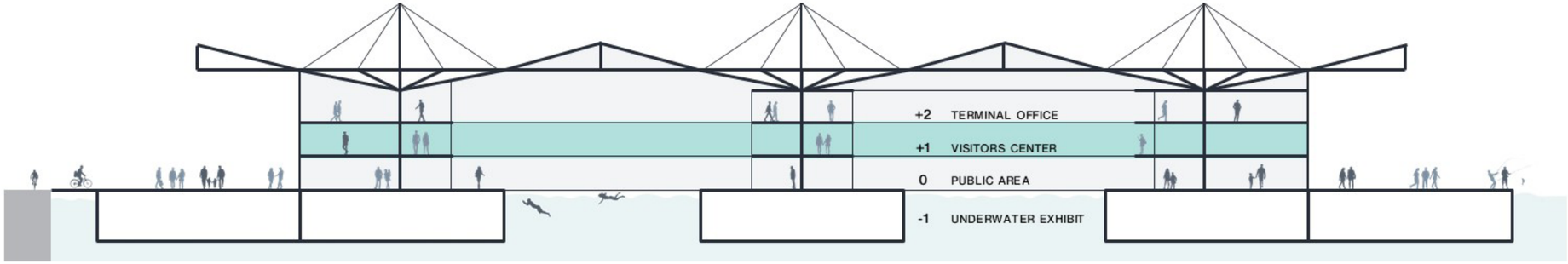
STANDARDIZED PRODUCTION

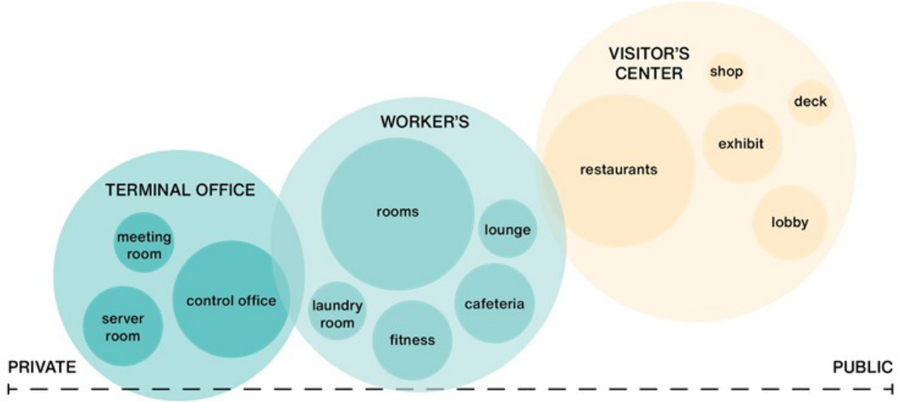
- manufacturing time is reduced by 37%, enhancing scalability

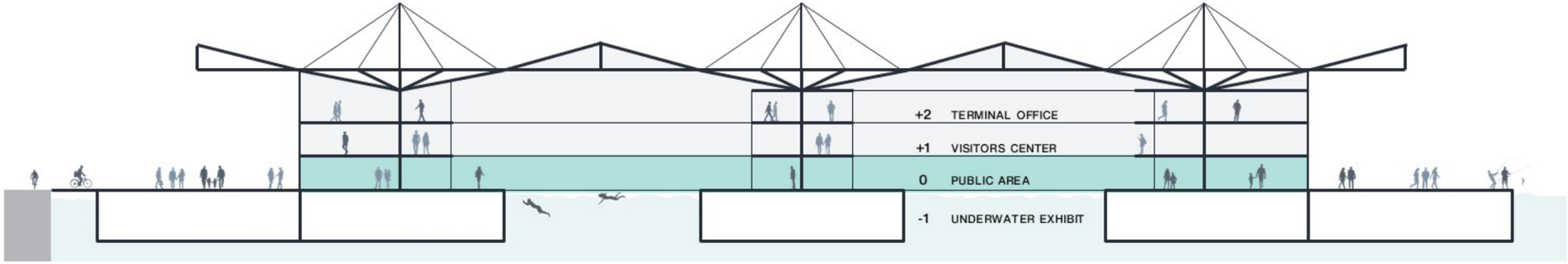

+2 TERMINAL OFFICE
+1 VISITORS CENTER
0 PUBLIC AREA
-1 UNDERWATER EXHIBIT

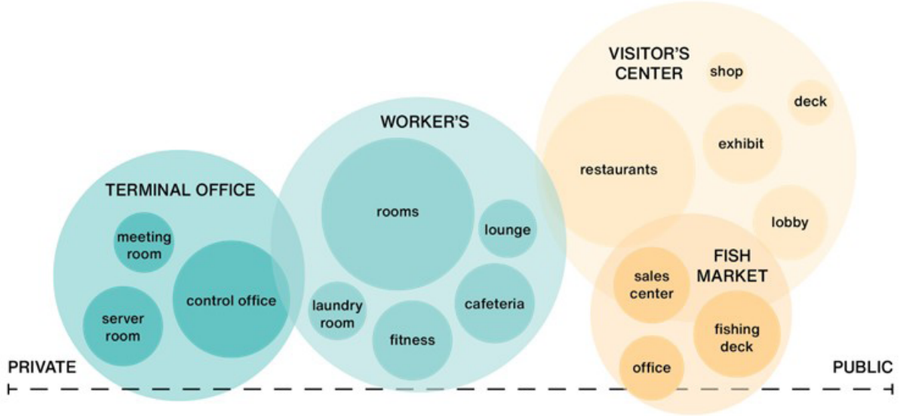

+2 TERMINAL OFFICE
+1 VISITORS CENTER
0 PUBLIC AREA
-1 UNDERWATER EXHIBIT

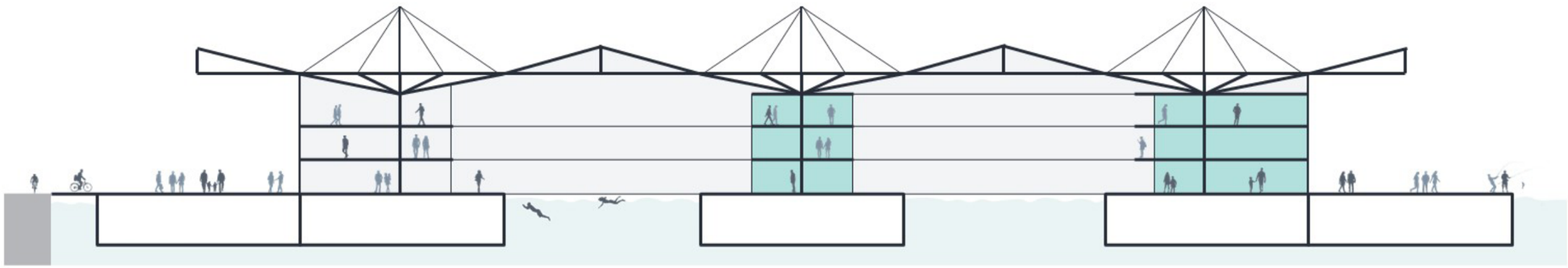

WORKER'S
TERMINAL OFFICE
meeting room
control office
server room
rooms
lounge
laundry room
cafeteria
fitness
PRIVATE
PUBLIC

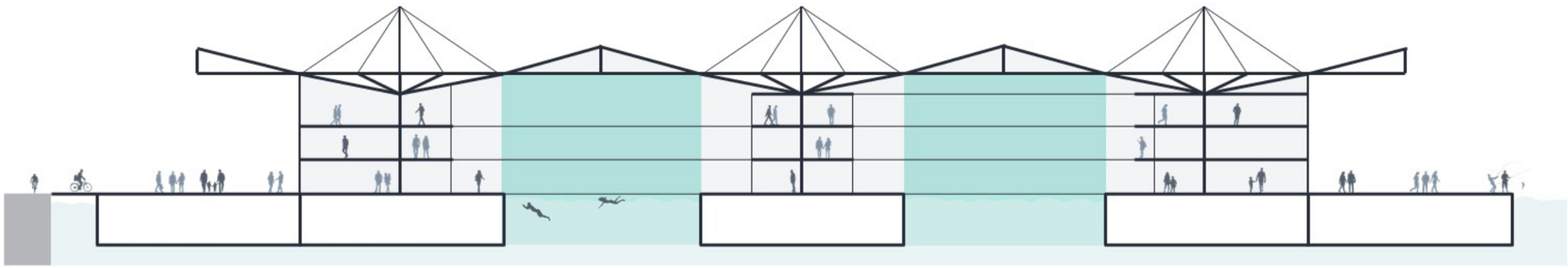

+2 TERMINAL OFFICE
+1 VISITORS CENTER
0 PUBLIC AREA
-1 UNDERWATER EXHIBIT

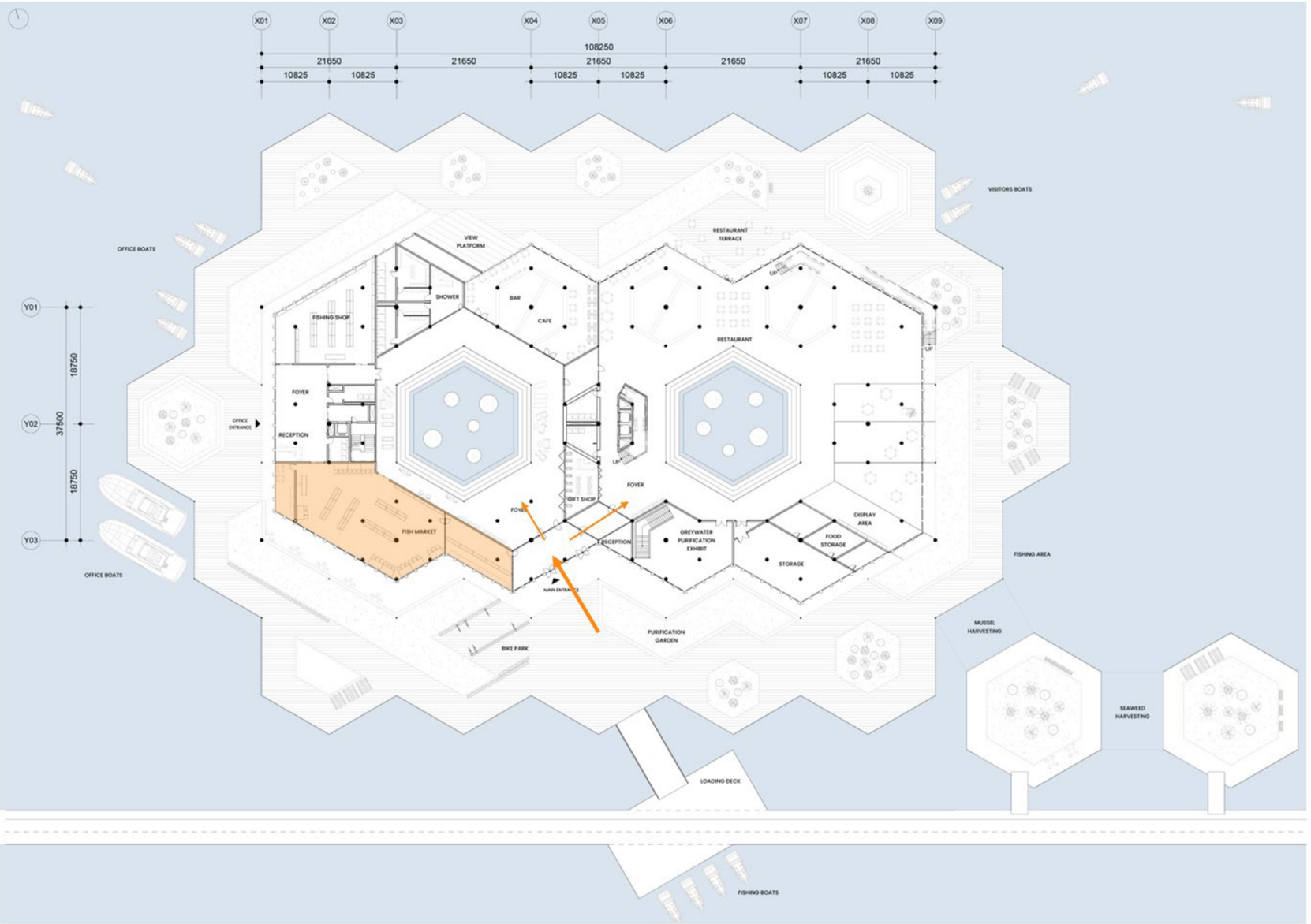

VISITOR'S CENTER
shop
deck
exhibit
restaurants
lobby
WORKER'S
rooms
lounge
cafeteria
laundry room
fitness
TERMINAL OFFICE
meeting room
control office
server room
PRIVATE
PUBLIC


+2 TERMINAL OFFICE
+1 VISITORS CENTER
0 PUBLIC AREA
-1 UNDERWATER EXHIBIT


VISITOR'S CENTER
shop
deck
exhibit
restaurants
lobby
WORKER'S
rooms
lounge
cafeteria
laundry room
fitness
TERMINAL OFFICE
meeting room
control office
server room
FISH MARKET
sales center
fishing deck
office
PRIVATE
PUBLIC






X01
X02
X03
X04
X05
X06
X07
X08
X09
108250
21650
10825
Y01
Y02
Y03
18750
37500
OFFICE BOATS
VISITORS BOATS
VIEW PLATFORM
RESTAURANT TERRACE
SHOWER
BAR
CAFE
FISHING SHOP
RESTAURANT
FOYER
RECEPTION
OFFICE ENTRANCE
LIFT
GIFT SHOP
FISH MARKET
GREYWATER PURIFICATION EXHIBIT
DISPLAY AREA
FOOD STORAGE
STORAGE
MAIN ENTRANCE
FISHING AREA
MUSSEL HARVESTING
PURIFICATION GARDEN
BIKE PARK
SEAWEED HARVESTING
LOADING DECK
FISHING BOATS

Species

There might be more species you can catch in this location or in the area, but the current page and description focusses on these fish species.

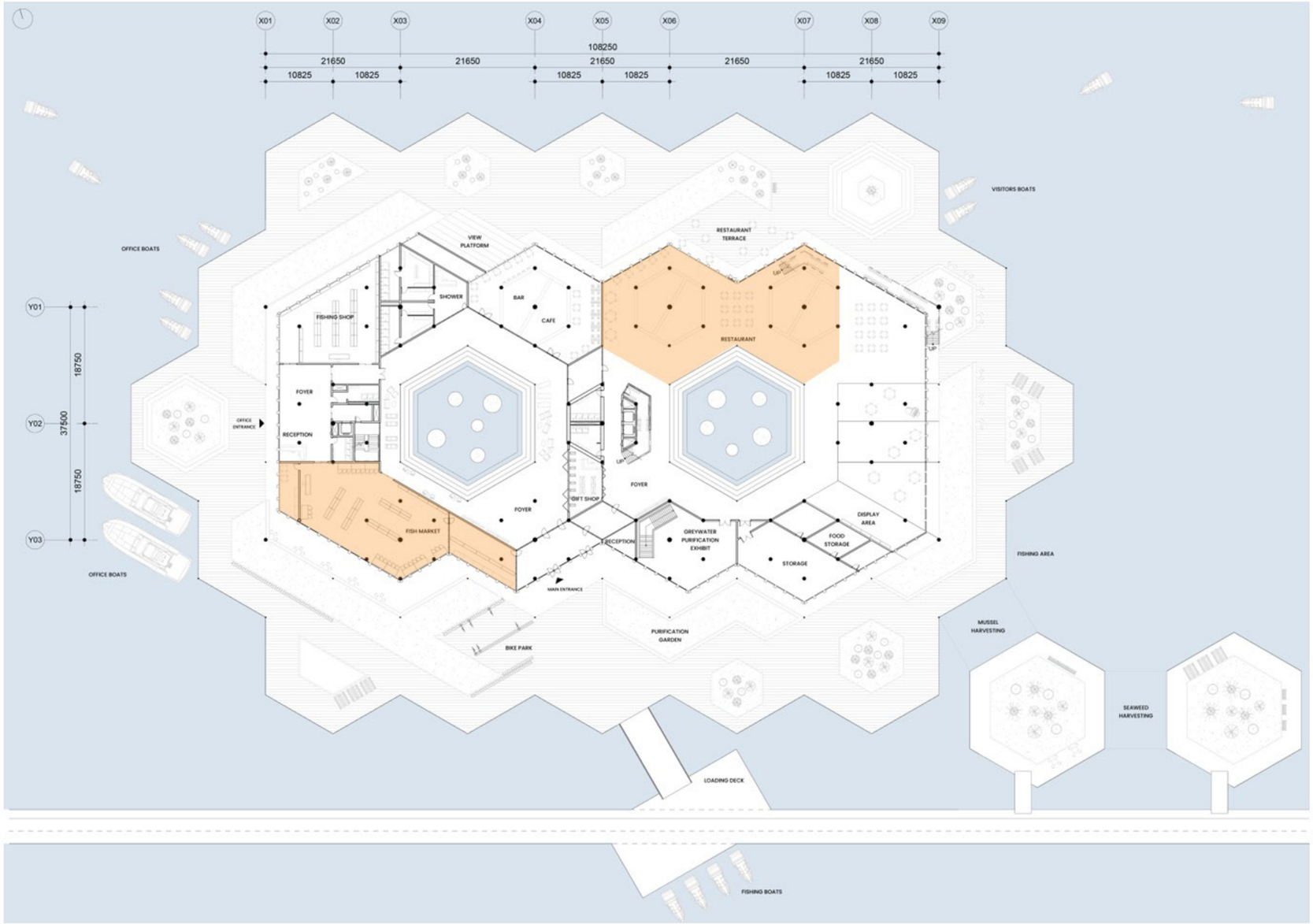
Sea bass
Dicentrarchus Labrax
Saltwater

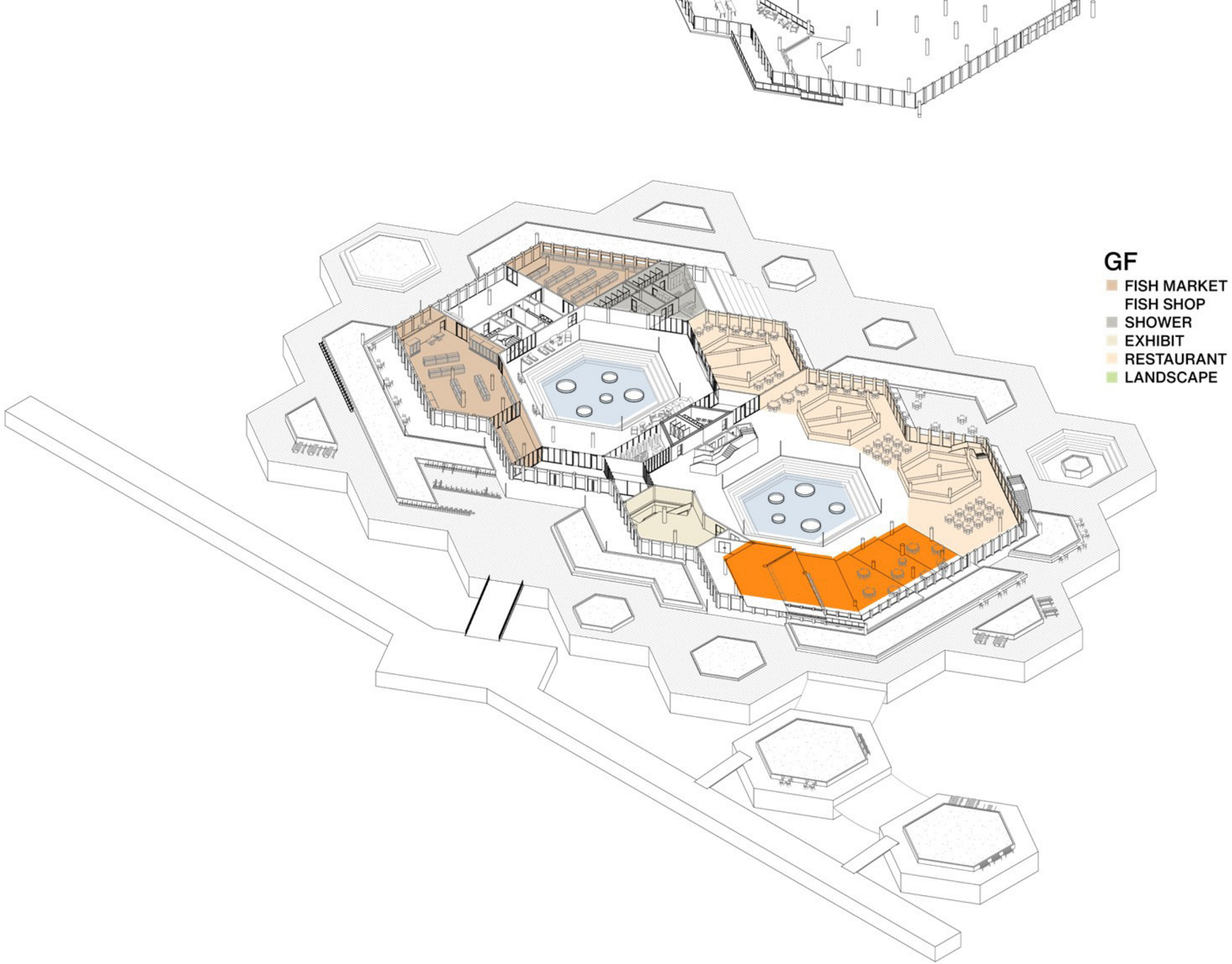
Sea Trout
Salmo Trutta Trutta
Freshwater Saltwater

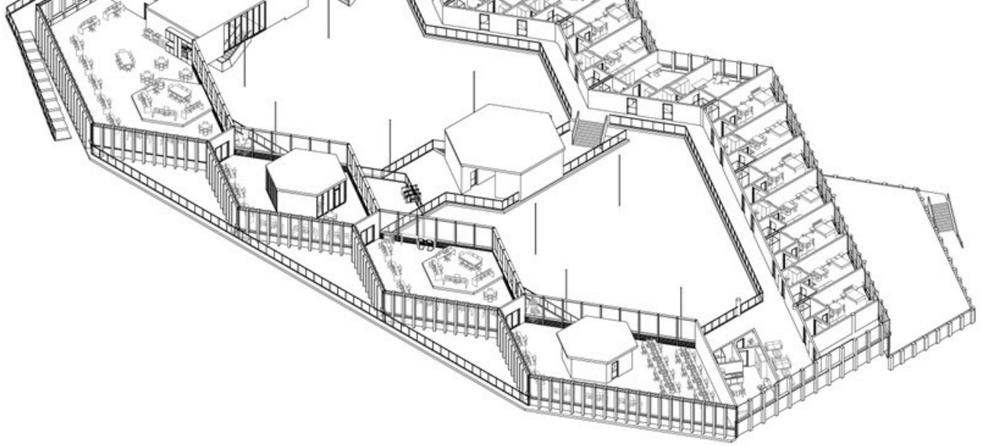
Twaid shad
Alosa Fallax
Saltwater

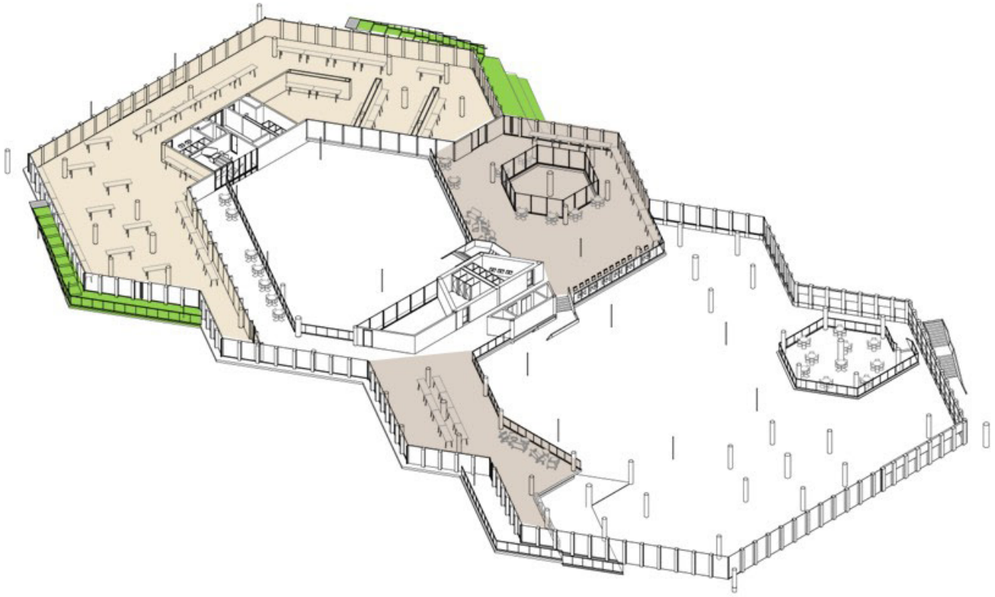
fishing zone nearby

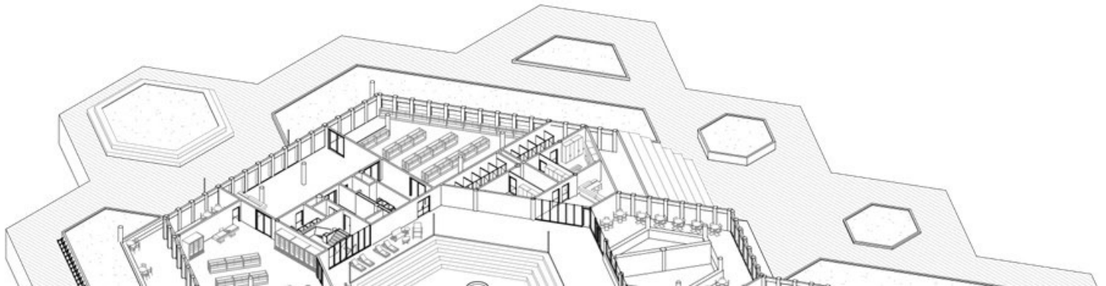
view from the fishing zone

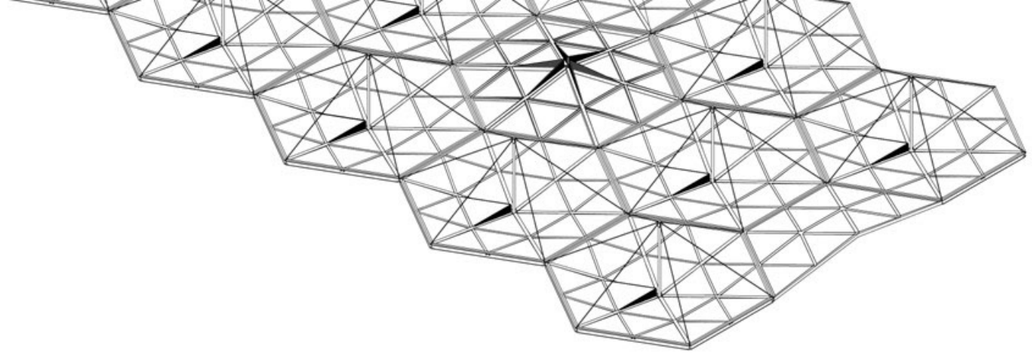

X01
X02
X03
X04
X05
X06
X07
X08
X09
108250
21650
21650
21650
21650
21650
10825
10825
10825
10825
10825
10825
Y01
Y02
Y03
37500
18750
18750
OFFICE BOATS
OFFICE BOATS
VISITORS BOATS
VIEW PLATFORM
RESTAURANT TERRACE
SHOWER
BAR
CAFE
FISHING SHOP
RESTAURANT
FOYER
OFFICE ENTRANCE
RECEPTION
FOYER
GIFT SHOP
FOYER
FISH MARKET
RECEPTION
GREYWATER PURIFICATION EXHIBIT
STORAGE
FOOD STORAGE
DISPLAY AREA
MAIN ENTRANCE
FISHING AREA
MUSSEL HARVESTING
PURIFICATION GARDEN
BIKE PARK
SEAWEED HARVESTING
LOADING DECK
FISHING BOATS

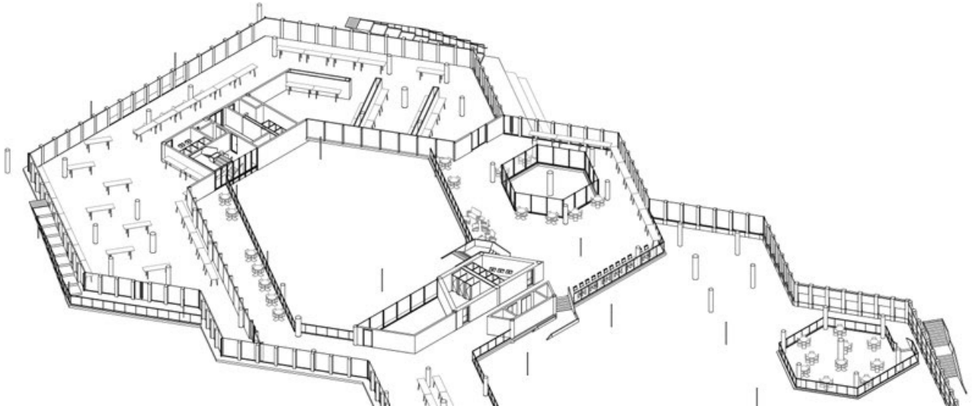

GF
FISH MARKET
FISH SHOP
SHOWER
EXHIBIT
RESTAURANT
LANDSCAPE





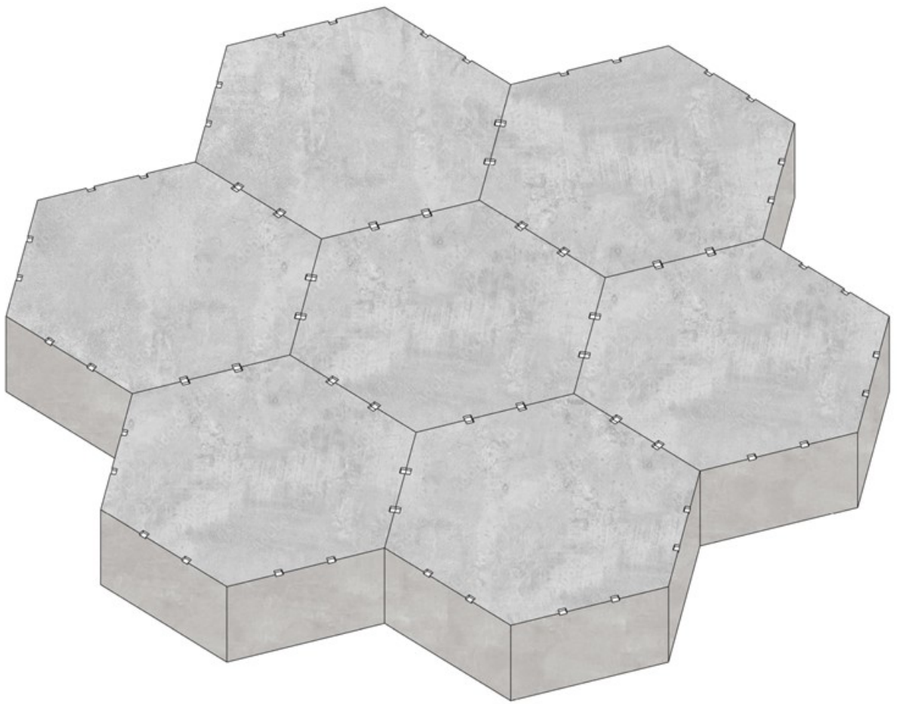


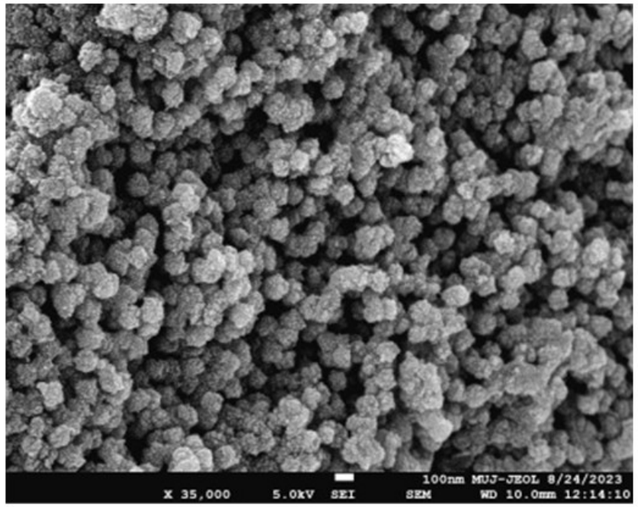


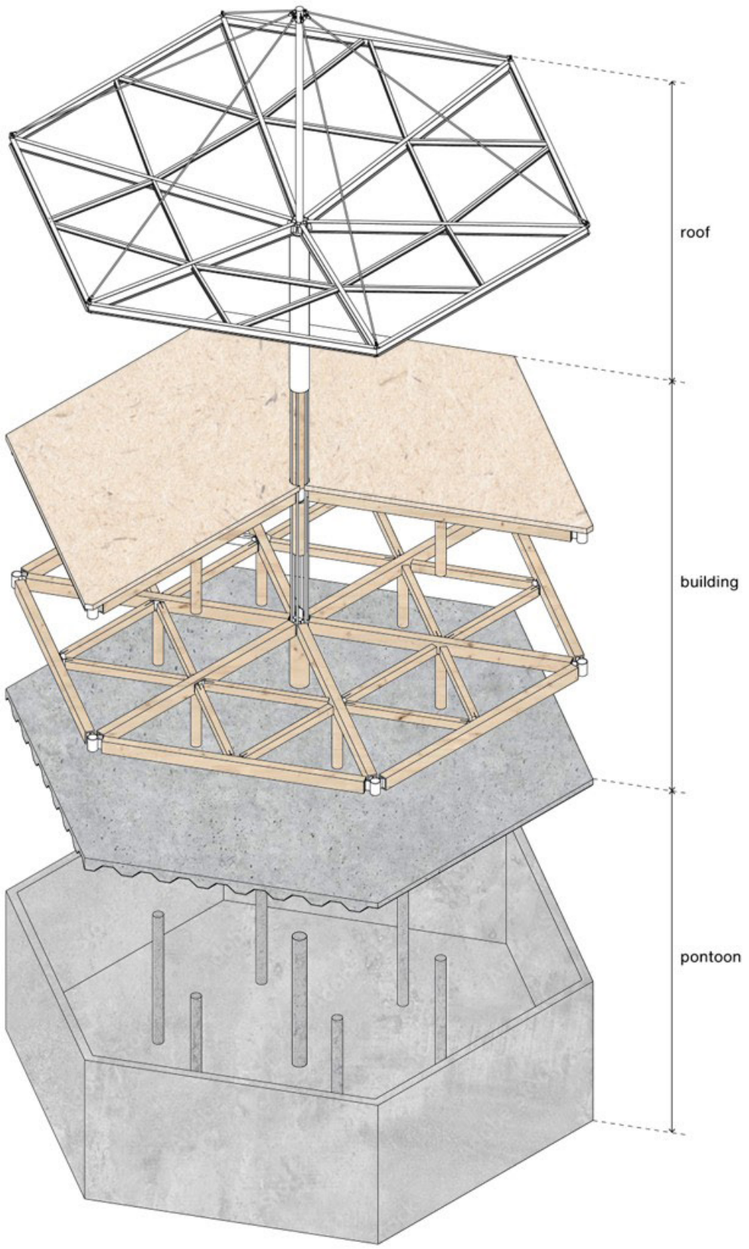


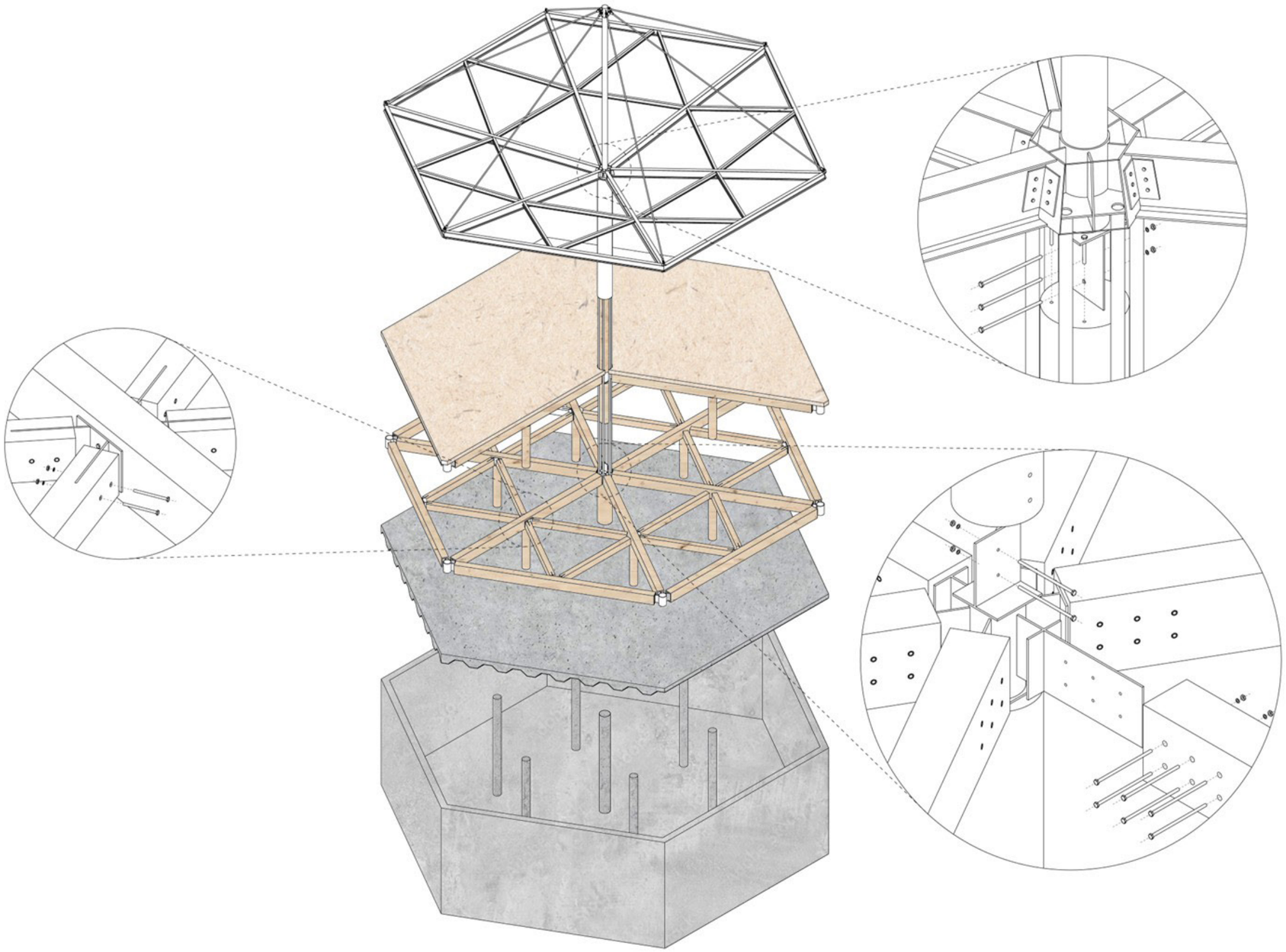
view from exhibition space

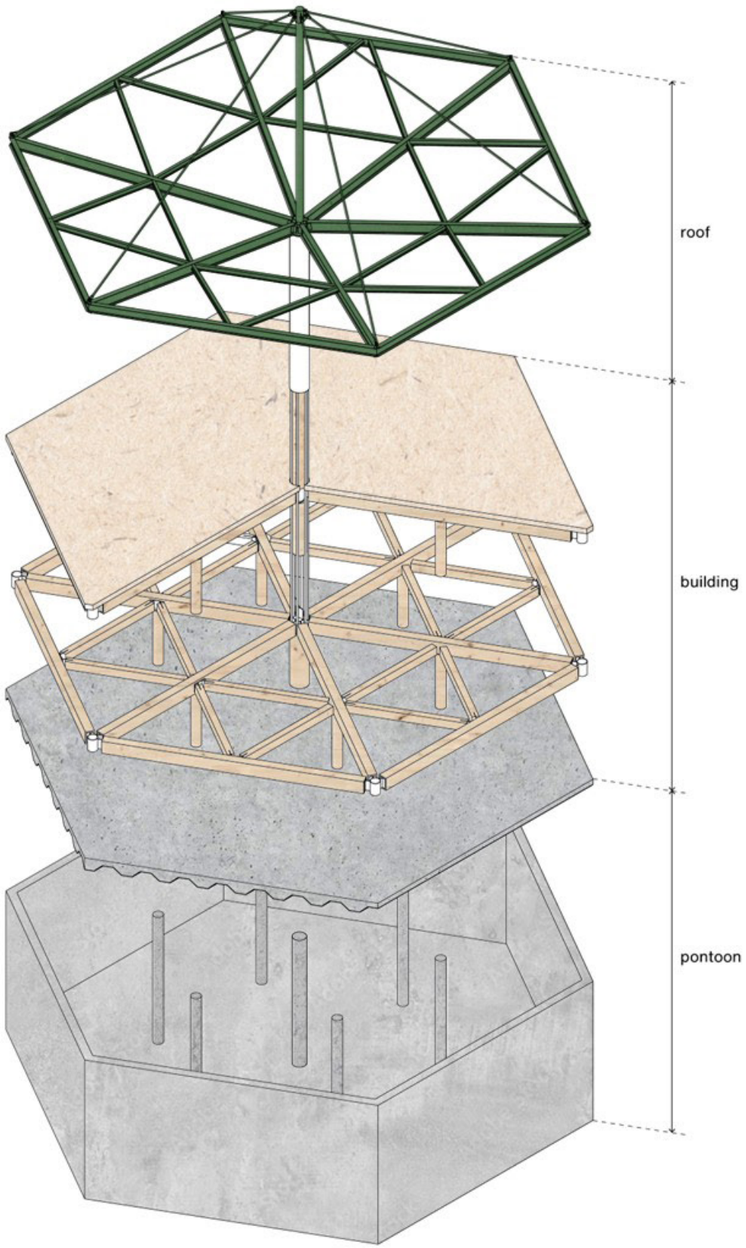
Structure



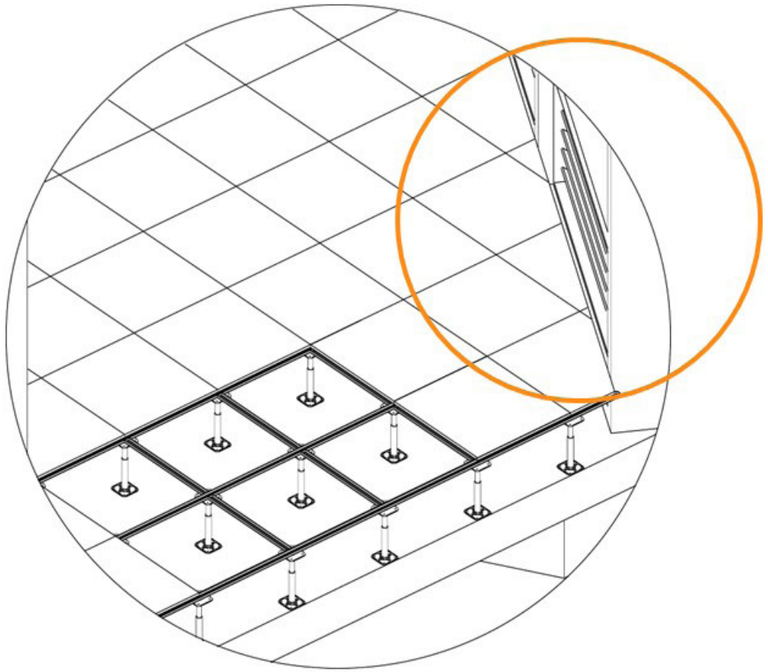

100nm MUJ-JEOL 8/24/2023
X 35,000 5.0kV SEI SEM WD 10.0mm 12:14:10

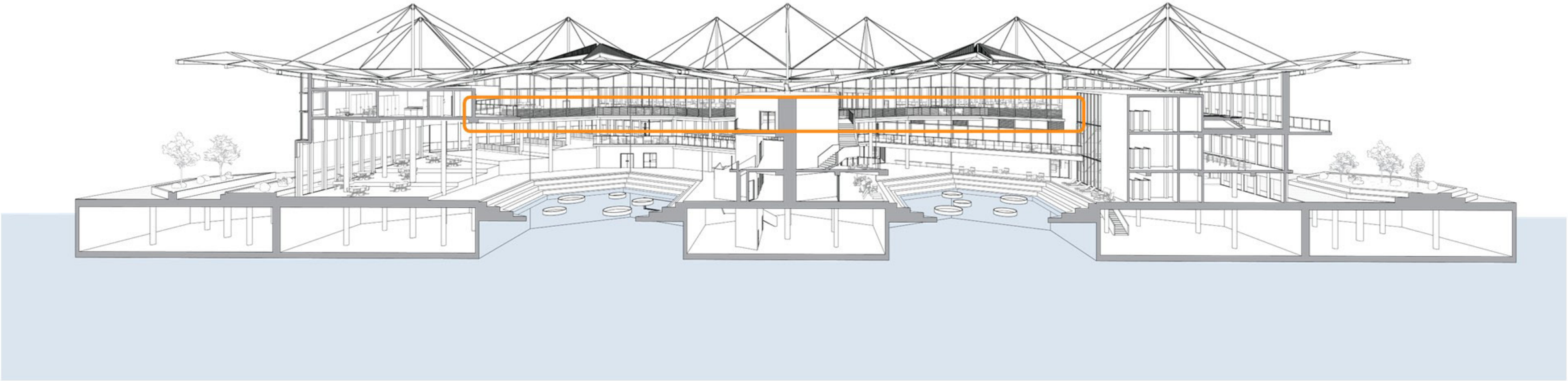

roof
building
pontoon

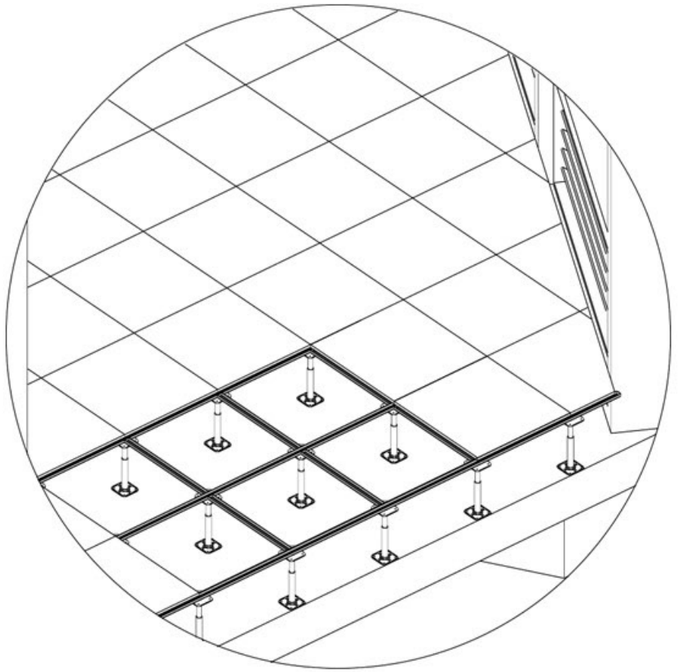


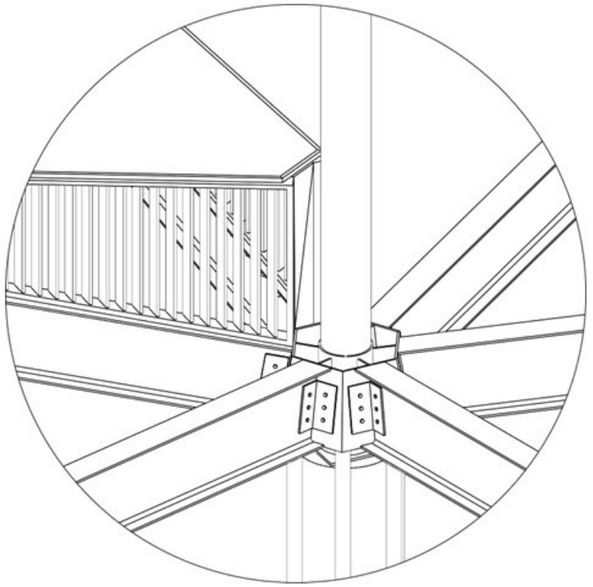

roof
building
pontoon

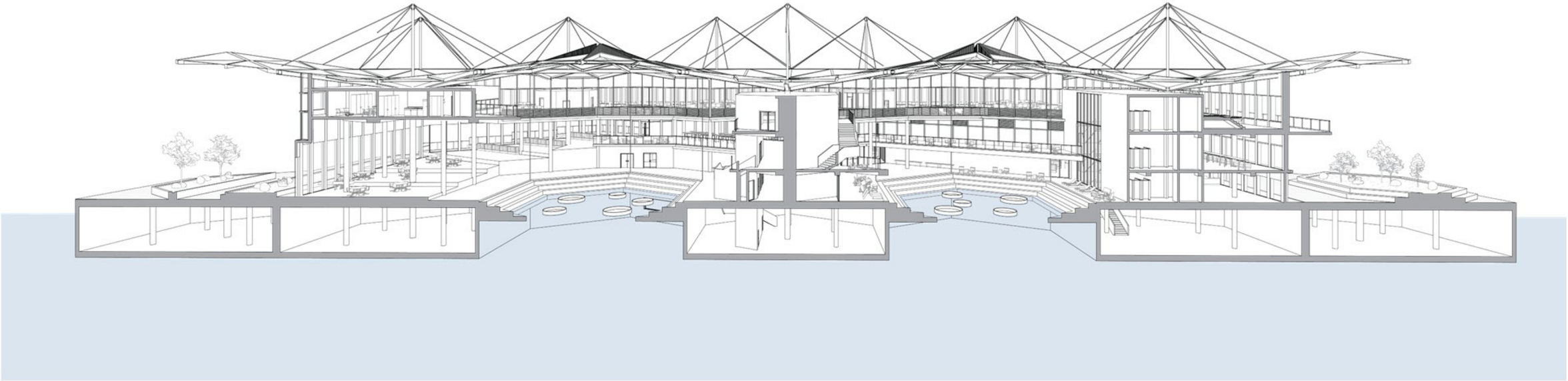
view from restaurants

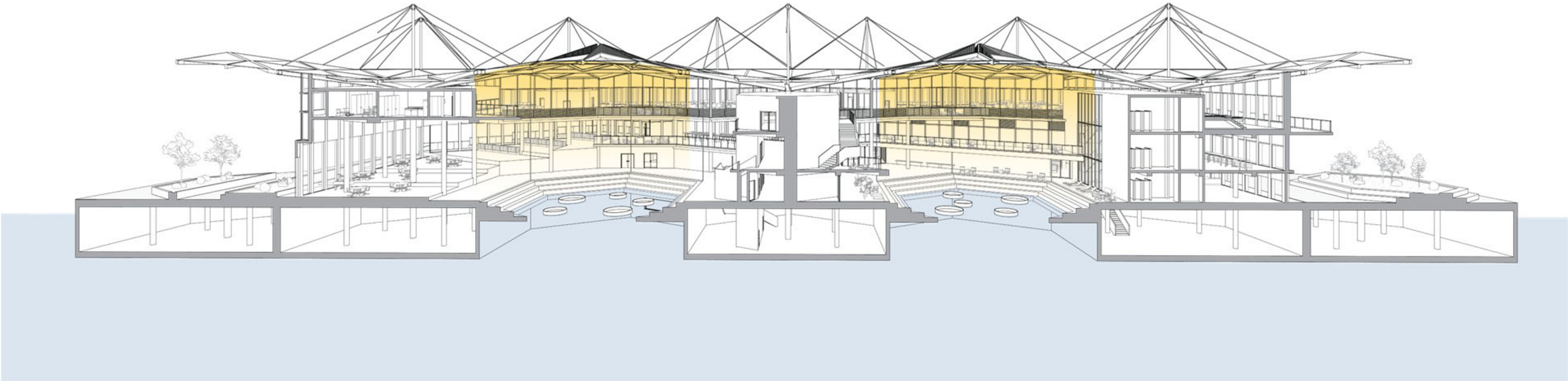




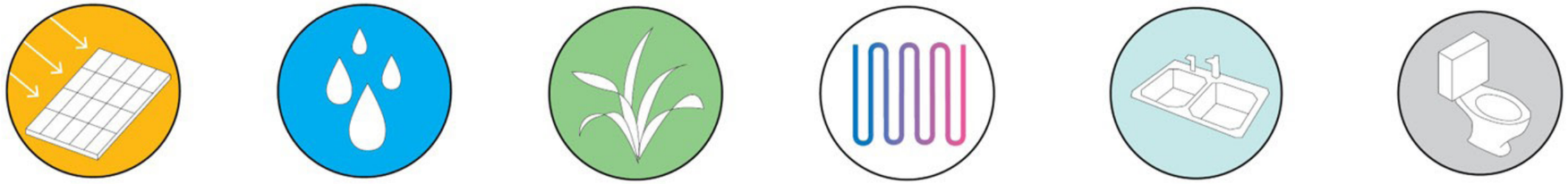


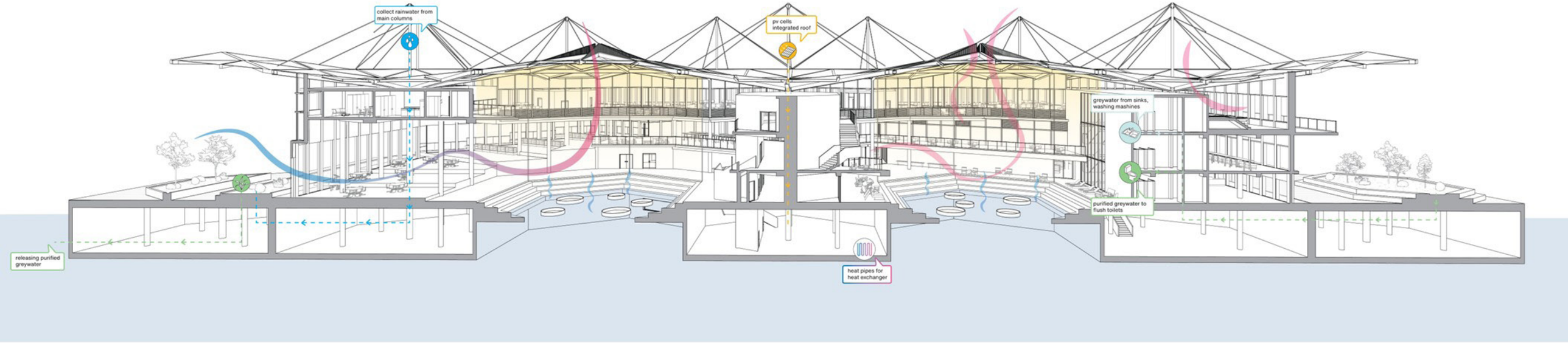


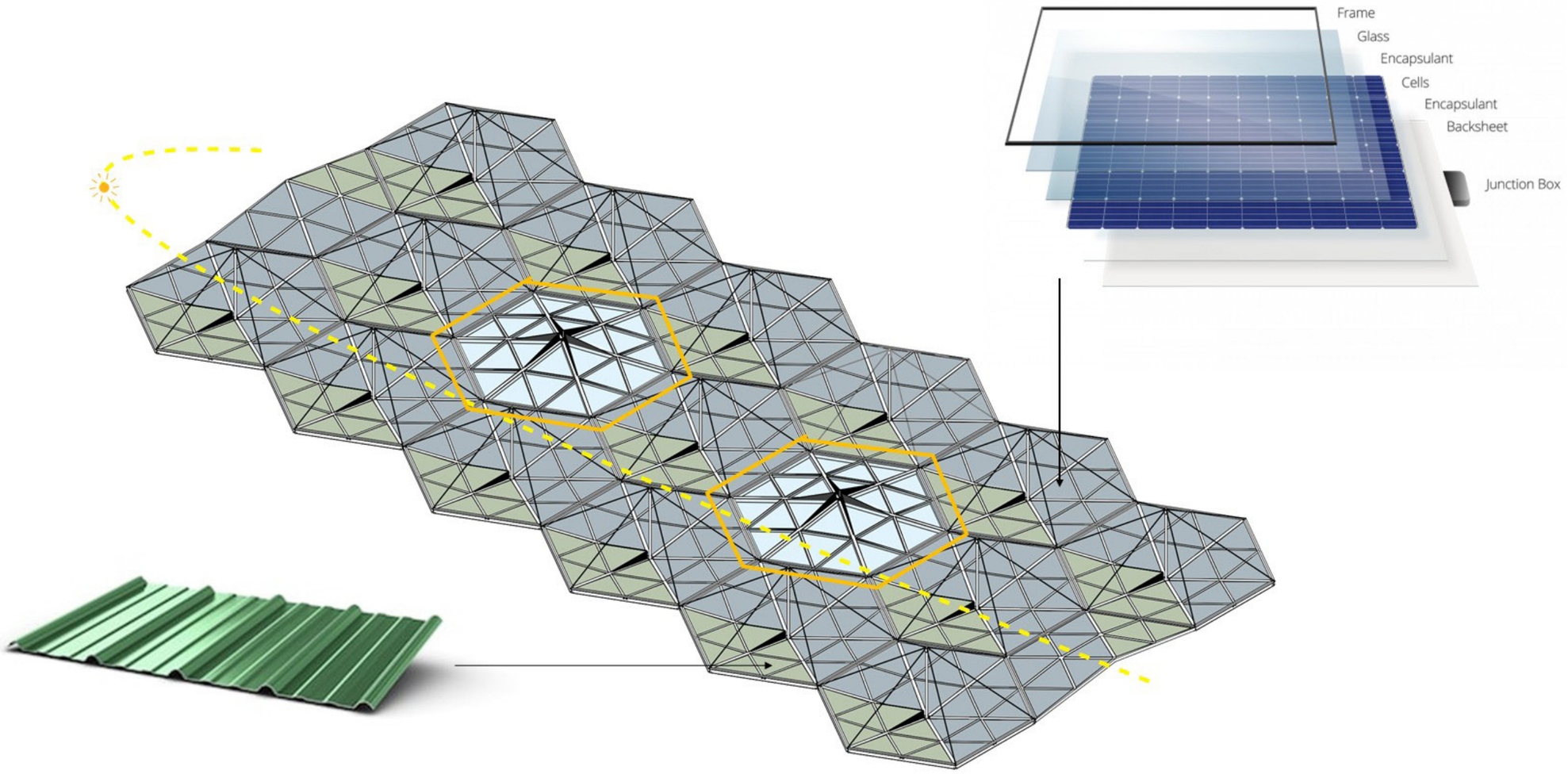


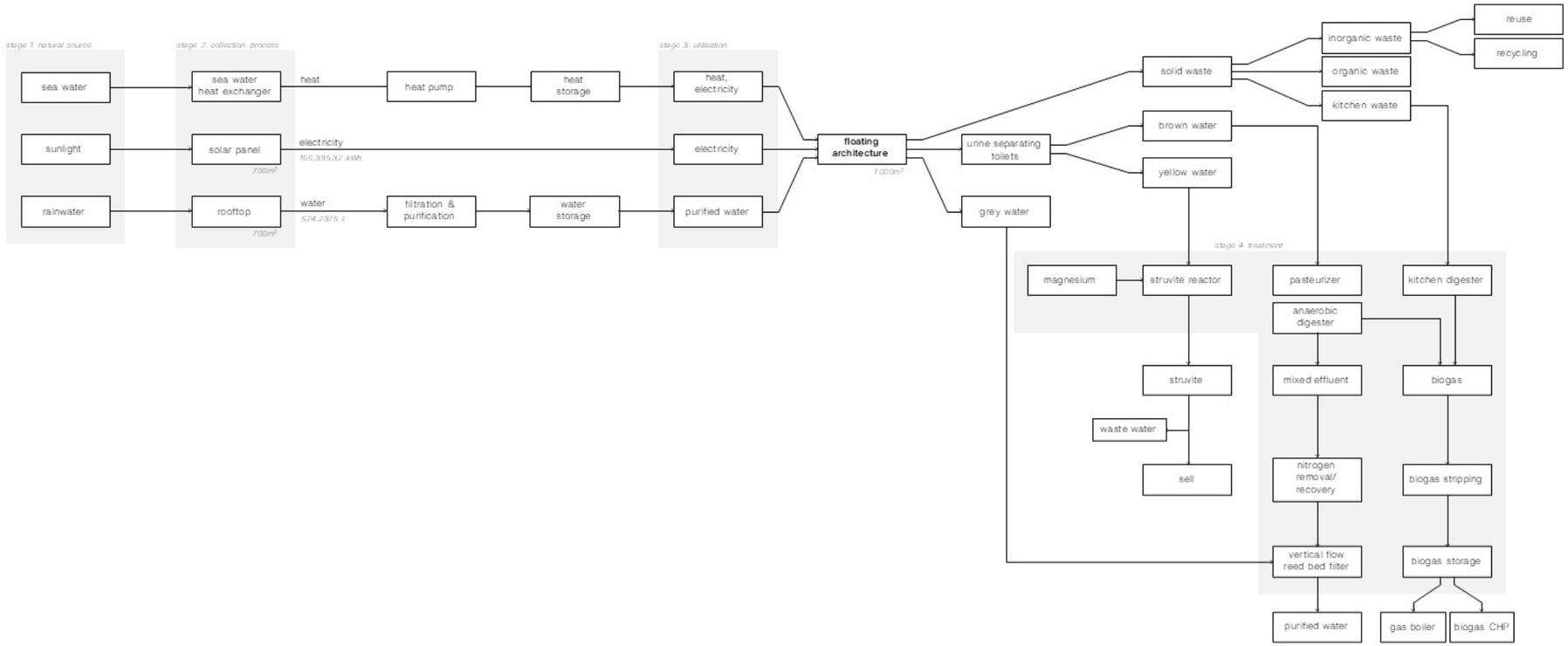


Sustainability and Energy Strategy




collect rainwater from main columns
pv cells integrated roof
greywater from sinks, washing mashines
purified greywater to flush toilets
releasing purified greywater
heat pipes for heat exchanger


Frame
Glass
Encapsulant
Cells
Encapsulant
Backsheet
Junction Box



Rainwater Collection

Qyear = 0.0371 × 24 × 365 = 325 m^3

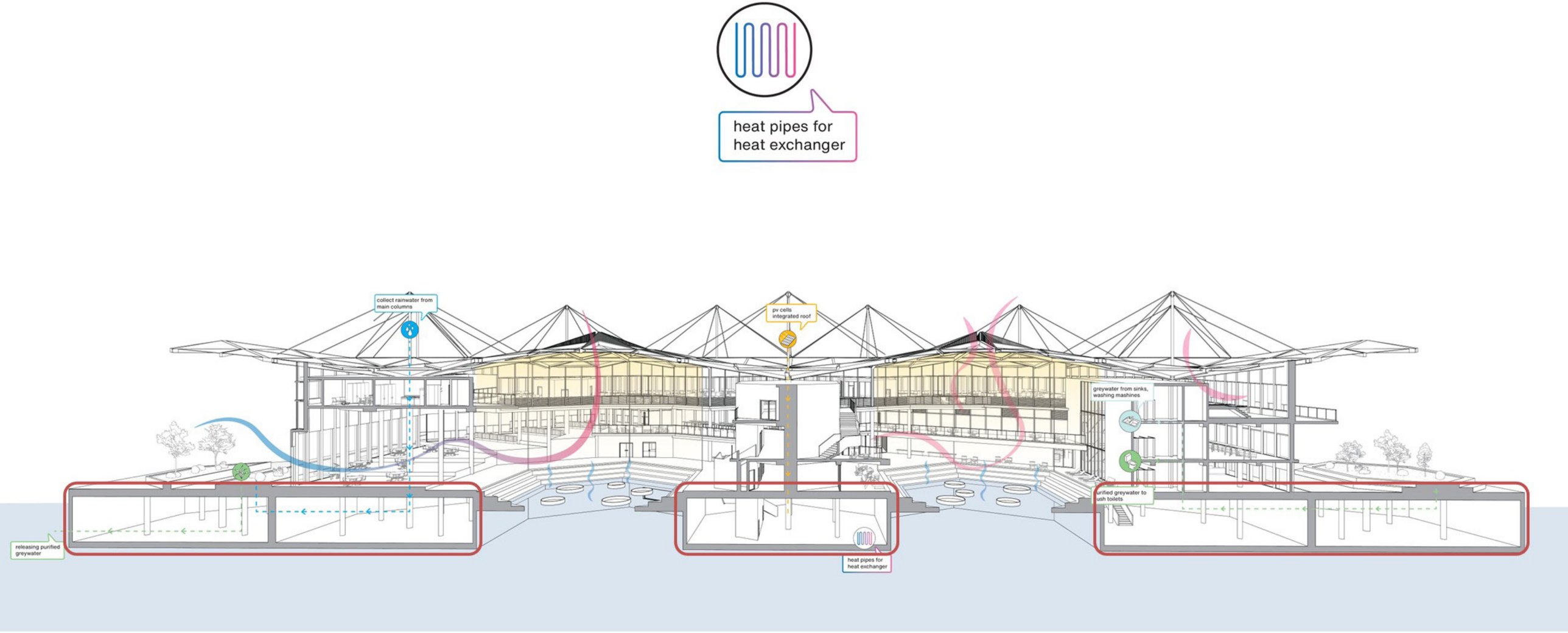
Solar Power

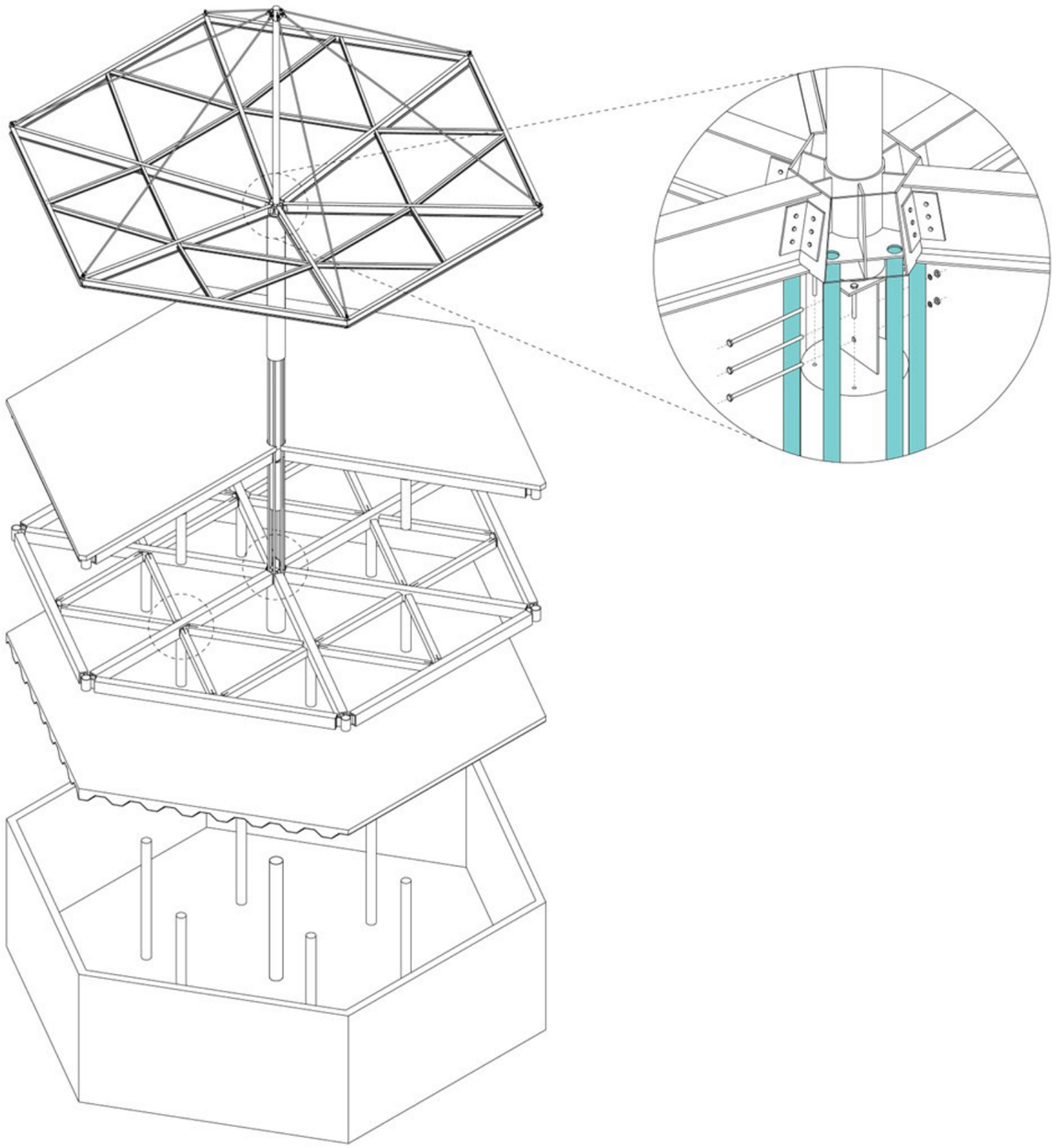
E = (13.1 × 256) × 0.15 × 1344.55 × 0.8 = 541,089.9456 kWh/year

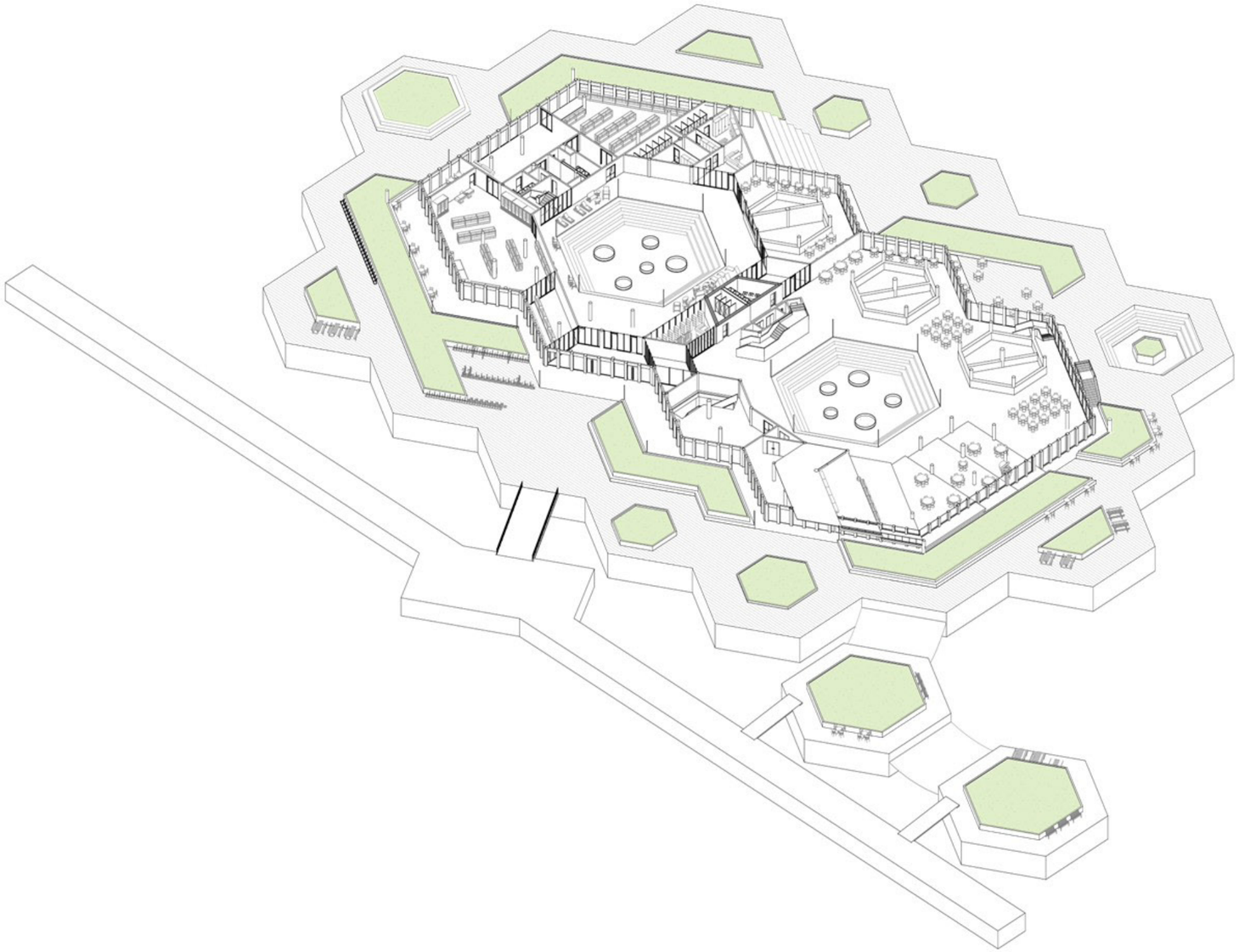
Estimated Annual Electricity Consumption

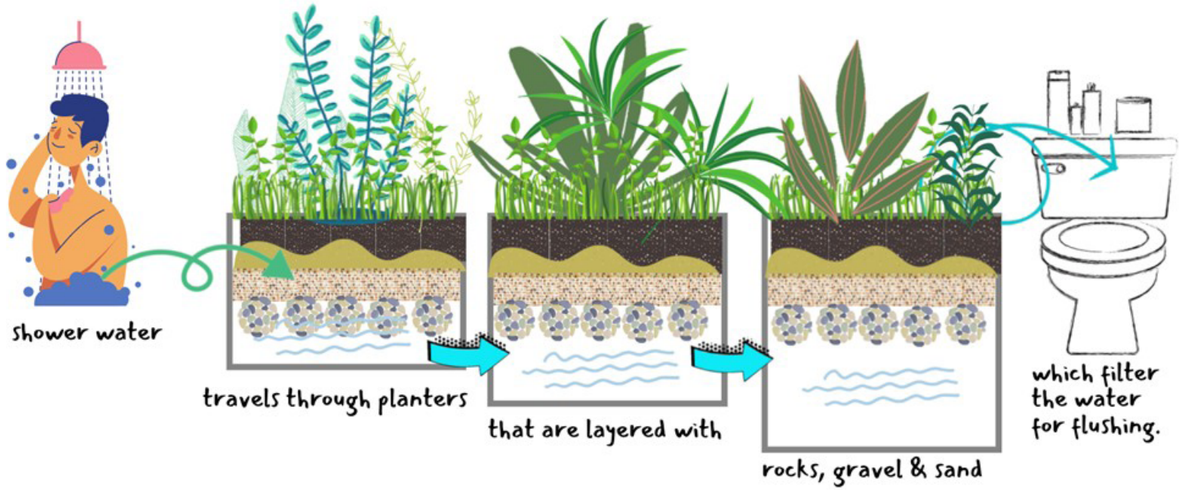
Office: 72,000 ~96,000
Accomodation: 50,000
Restaurants: 195,000 ~ 260,000
Cafe and Bar: 20,000
Exhibitions: 30,000

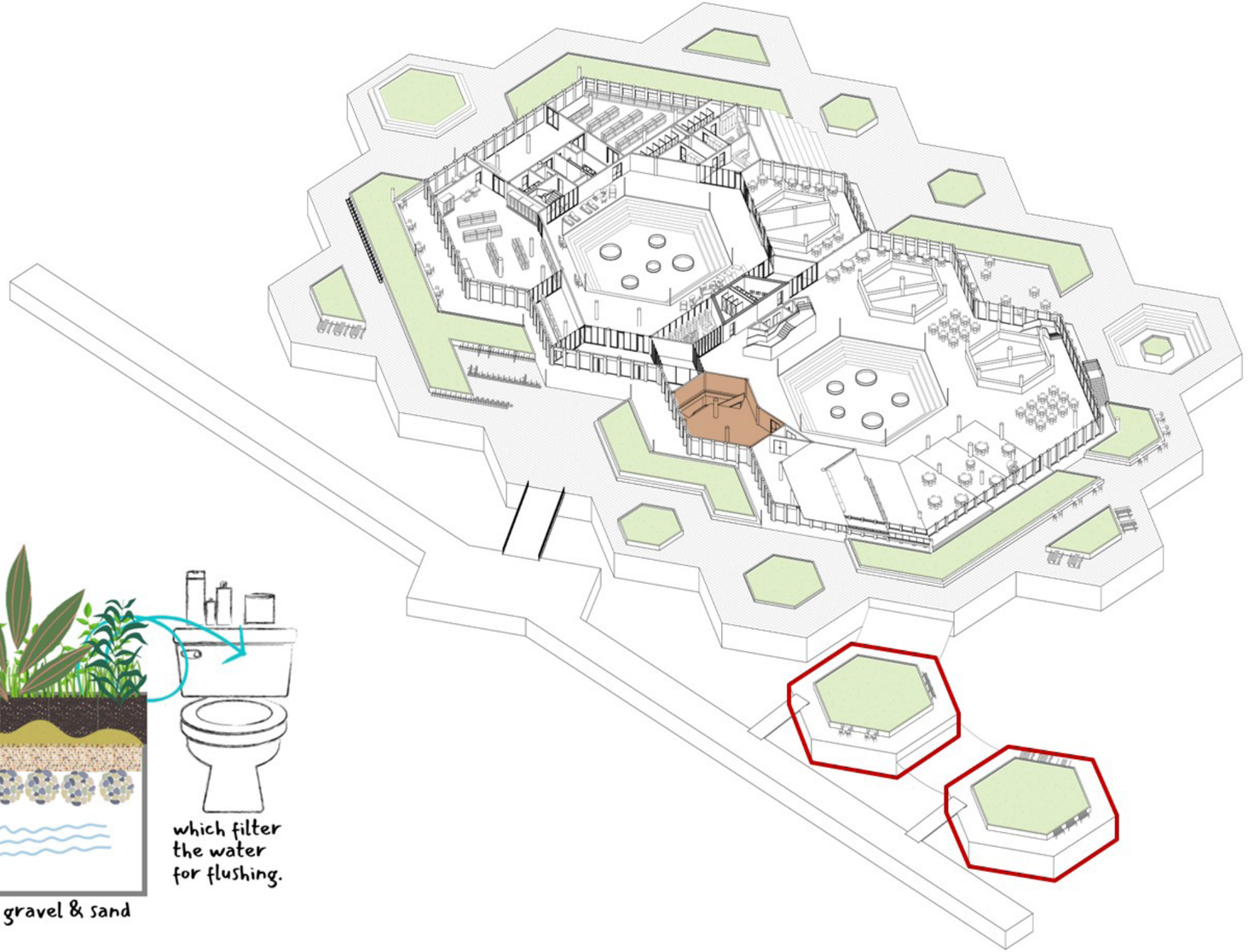
Total: 367,000 ~ 456,000 kWh

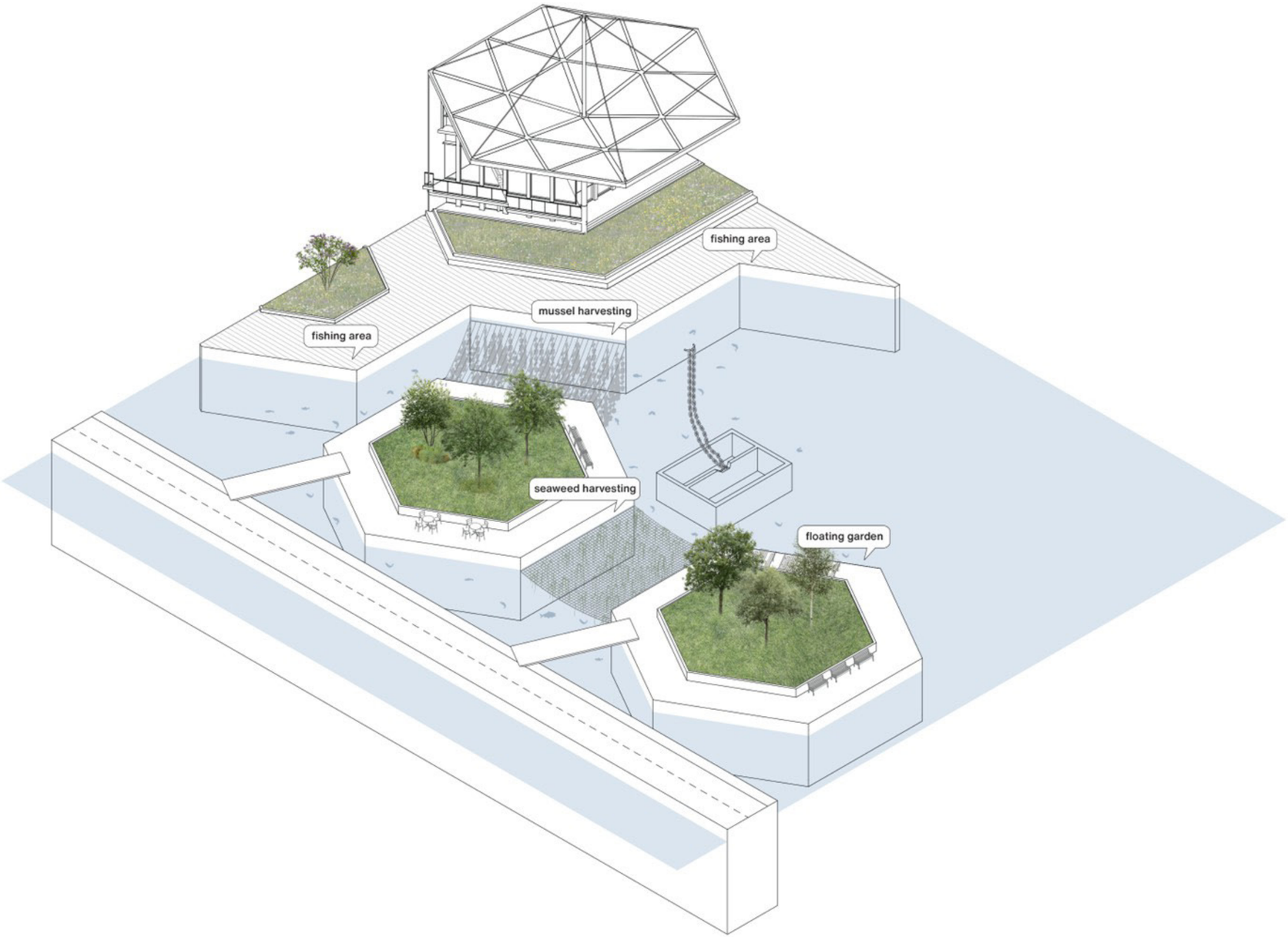

heat pipes for
heat exchanger
collect rainwater from
main columns
pv cells
integrated roof
greywater from sinks,
washing mashines
urified greywater to
ush toilets
releasing purified
greywater
heat pipes for
heat exchanger





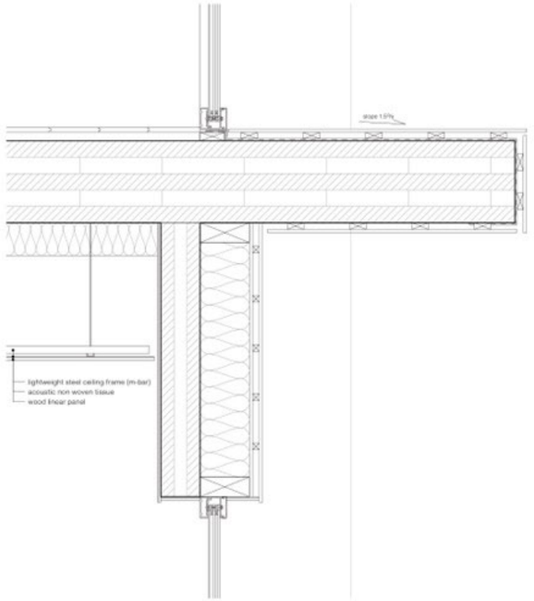

shower water
travels through planters
that are layered with
rocks, gravel & sand
which filter
the water
for flushing.



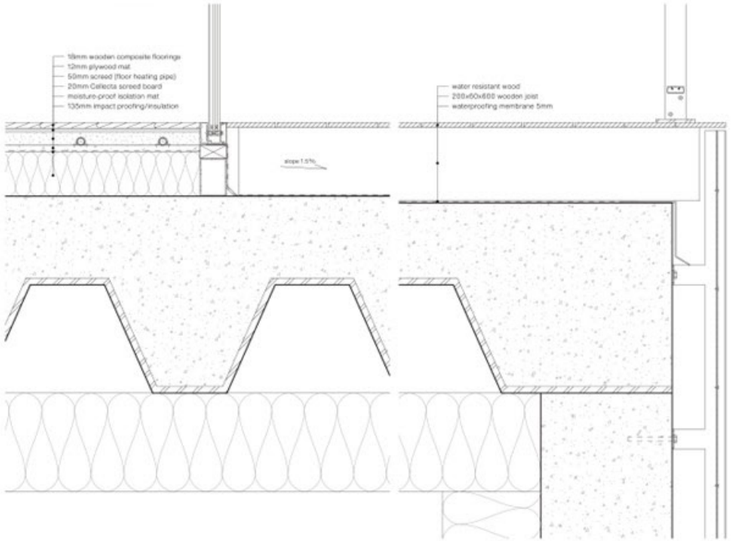

fishing area
mussel harvesting
fishing area
seaweed harvesting
floating garden

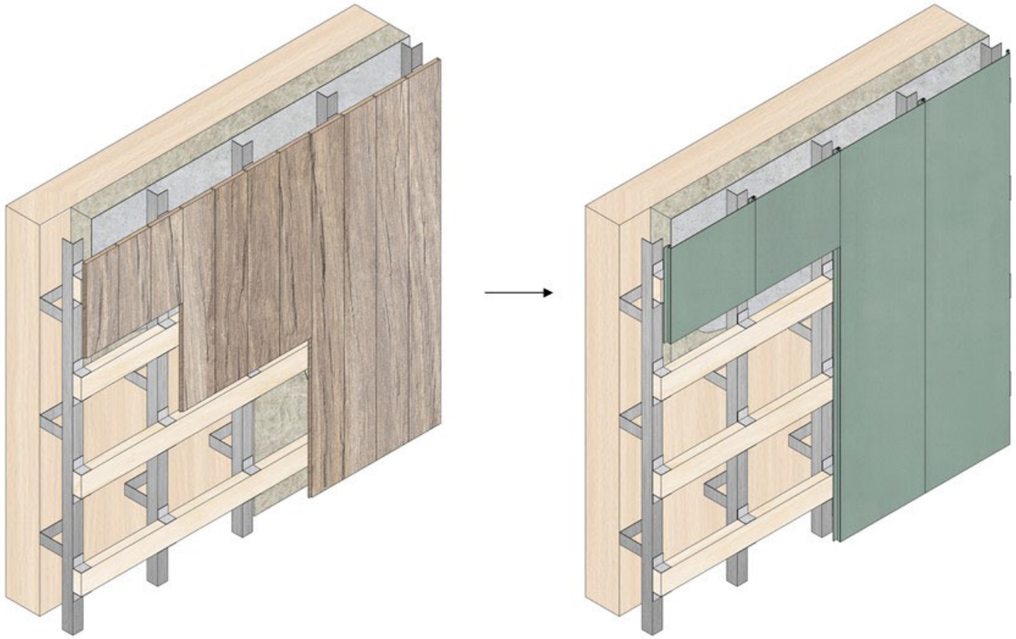
Façade

C. First Floor Facade (1:10)

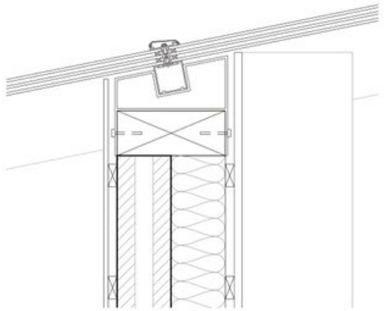


D. Facade to Pontoon (1:10)

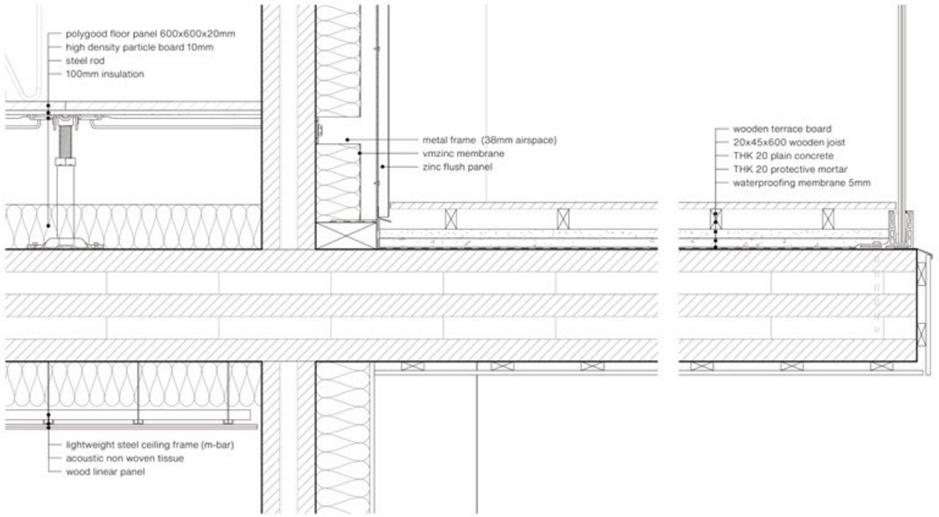




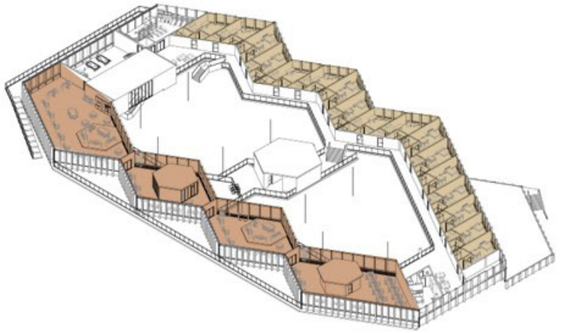
A. Facade to Roof (1:10)

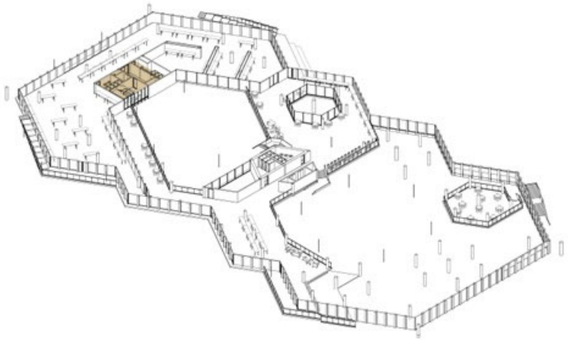


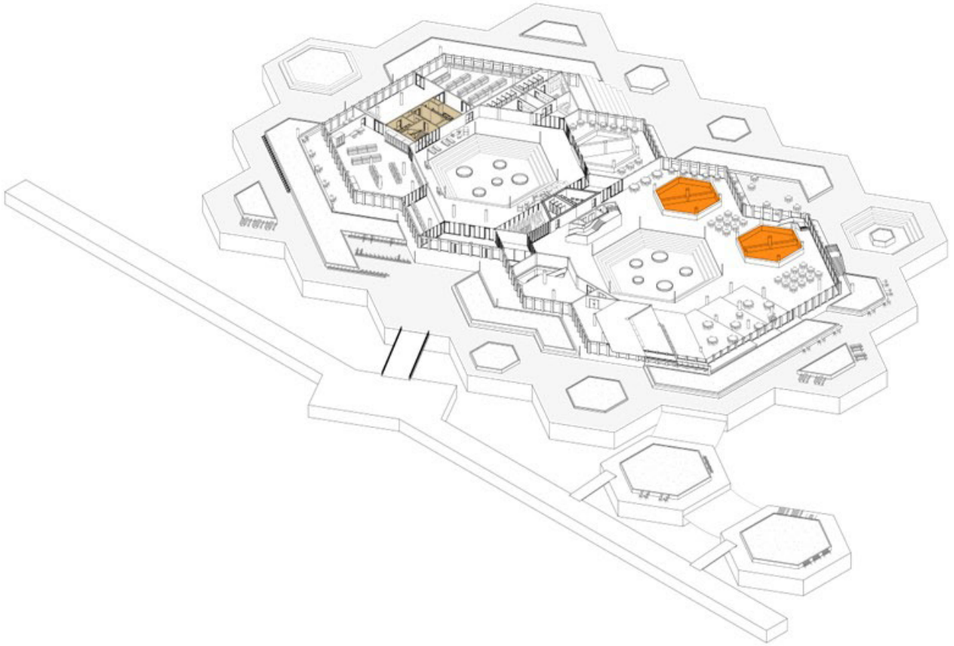
B. Second Floor Facade and Terrace (1:10)



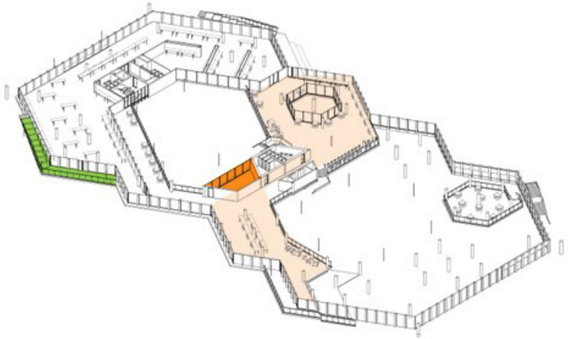
coming from the terminal

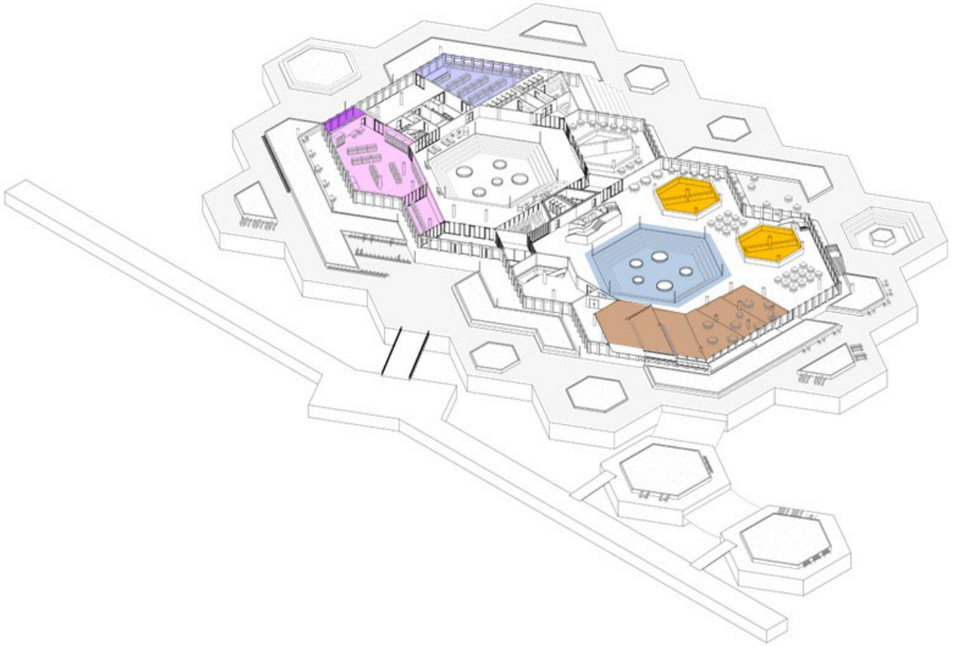






view of the entrance





Floating Haven _ Floating Maritime Terminal Office