DE CENTRALE

aE Femke Groot



SITEPLAN



SCALES OF ASSEMBLY

100 150 200m

DECENTRALIZED DATACENTRE CONCEPT



600

CLIMATE DIAGRAM

AIR 1) Fresh warm air from below (prevent condensation)

HEAT (10) Liquid cooled datacentre used to heat air and water

2 Fresh dry warm air from above

3 Exhaust air below

4 Dry air pushes humid air down to pool

5 Air handeling unit preheated by servers

WATER 6 Rainwater reservoir (14) Solar energy collection

(7) Rainwater used for toilet flushing

8 Helophyte filter filters port water

(9) Filtering and storage of biologically filtered

(11) Pool filter with heat exchange from servers (12) Aquifier thermal storage 13 High Rc value

ENERGY

15 Flexible sun shading

WINTER Ventilation type D.

Most of the server heat is consumed by the pool heating system, any access heat is stored in the aquifer thermal storage.

Solar shades are rolled up to use as much heat from the sun.

Doors between pools can be closed to prevent heat loss between areas with different temperatures.



10) 6 (5)(12)

SEASONAL CHANGES

SUMMER Ventilation type D.

Servers are disconnected when desired heat is reached. Access heat is transported to the underground ATES storage and can be used by buildings connected to the microgrid heating network in the area.

Solar shades can be rolled down to prevent extra heat. Doors to the inner garden can be opened for natural ventilation.



HELOPHYTE PARK

INLET ZONE Removes coarse sediment witg gravel. Regulates flow into macrophyte zone.

MACROPHYTE ZONE Significant coverage of aquatic planting 80% from various species. Water treatmet through sedimentation, filtratrion, absorption, biological ad chemical translocatin. Habitat for small animals and insects. **HIGH FLOW BYPASS** AND SWIMMING AREA

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Water buffer swimming area with filtered harbour water.

RAINWATER COLLECTION 7.500 m2 roof used for water collection (almost 5.000.000 L per year.)

M . A

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FACADE FRAGMENT

CONSTRUCTION

REFERENCES





1:20 0 20 40 60 80cm







SECTIONS









ELEVATIONS









South elevation 1:200

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