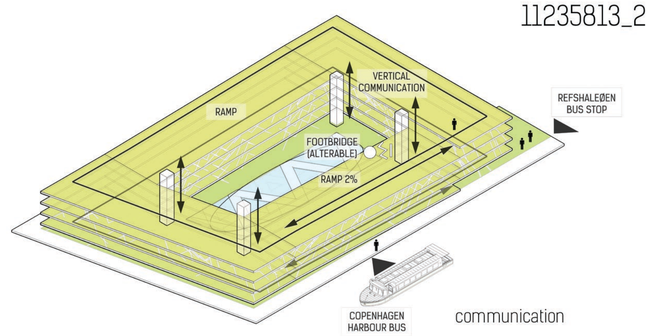
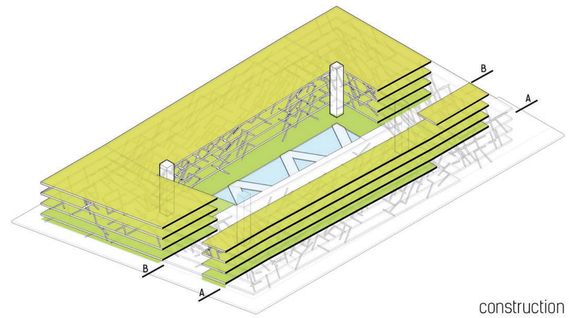
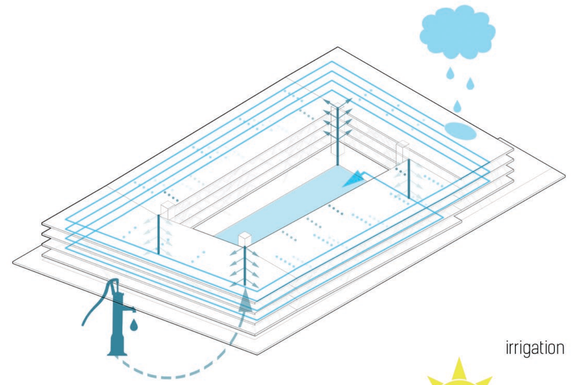


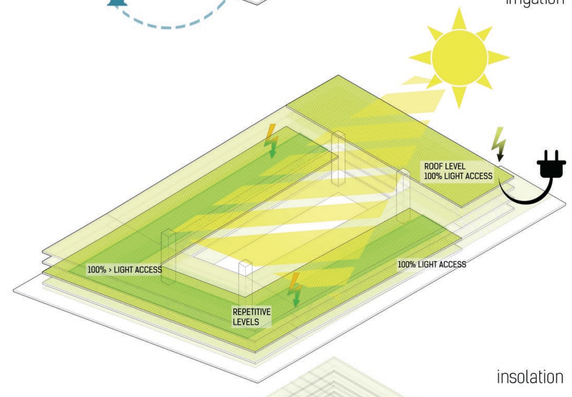

communication



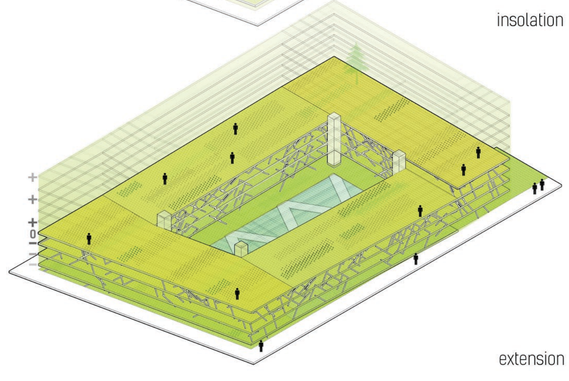

construction



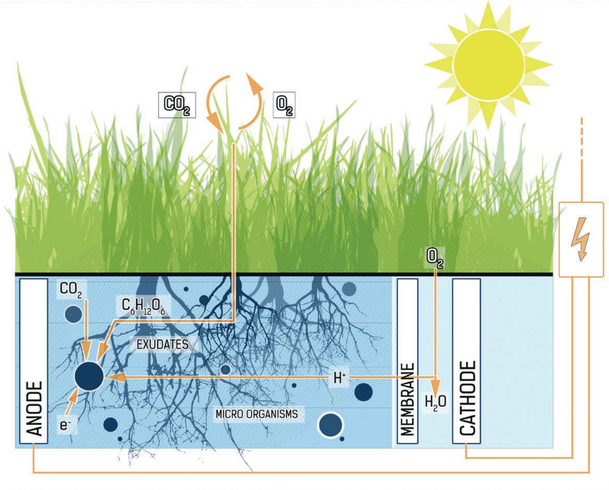
irrigation



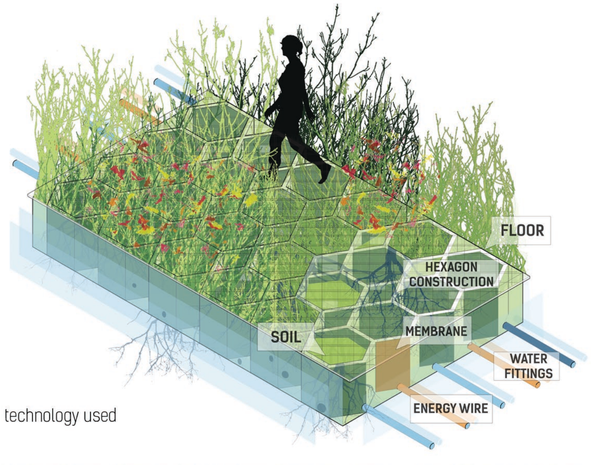

insolation



extension




The Plant-Microbial Fuel Cell principle was discovered and patented in 2007 by the Environmental Technology Group at Wageningen University.
The Plant-Microbial Fuel Cell draws electricity from the soil while the plants continue to grow. Plants produce organic material during photosynthesis process. The roots excrete up to 70 % of this material into the soil. Bacteria around the roots break down the organic residue, thereby forming a new source of electricity. The degradation processes causes electrons to be released.




technology used

System can currently generate 0.4 Watt per square metre of plant growth. In future, bio-electricity from plants could produce as much as 3.2 Watt per square metre of plant growth. This would mean that a roof measuring 100 m2 would generate enough electricity to supply a household (with an average consumption of 2,800 kWh/year). Plants of various species could be used, including grasses such as common cordgrass and, in warmer countries, rice.

COMMUNICATION

Entrance to the building is coordinated with the location of public transport - the circular and the water.
Communication in the interior of the building is provided by a team of ramps with a slope of 2%. The property is complemented by two divisions sanitary communication, where there are toilets and staircases and elevators. They provide comfort and safety of users. In addition, there has been performed a footbridge through the water tank which is easy to modify - depending on the needs it can be varied in size and shape.

CONSTRUCTION

There has been proposed a construction which consists of a steel truss and ceiling space based on the construction in the shape of hexagons.

IRRIGATION

The plants will be watered by two systems: gravitational which is associated with the distribution of channels rainwaters and a mechanical using pump. There has been proposed a water reservoir inside the pier, which in addition to aesthetic and recreational facilities will be a reservoir of rain water used for irrigation plants.

INSOLATION

It is proposed to use many plant species. The attentions should be paid to the allocation of the species and its plantings on platforms to optimally utilize solar energy. To optimize the process of generating energy from plants, it is suggested to plant species which need less solar energy in places that will have weaker sun exposure.