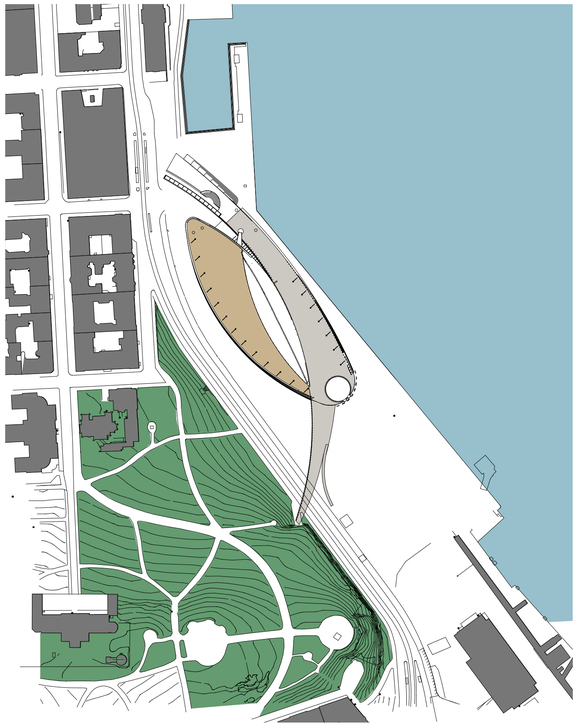
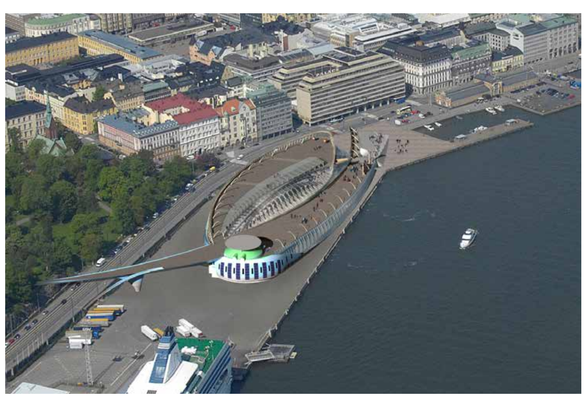
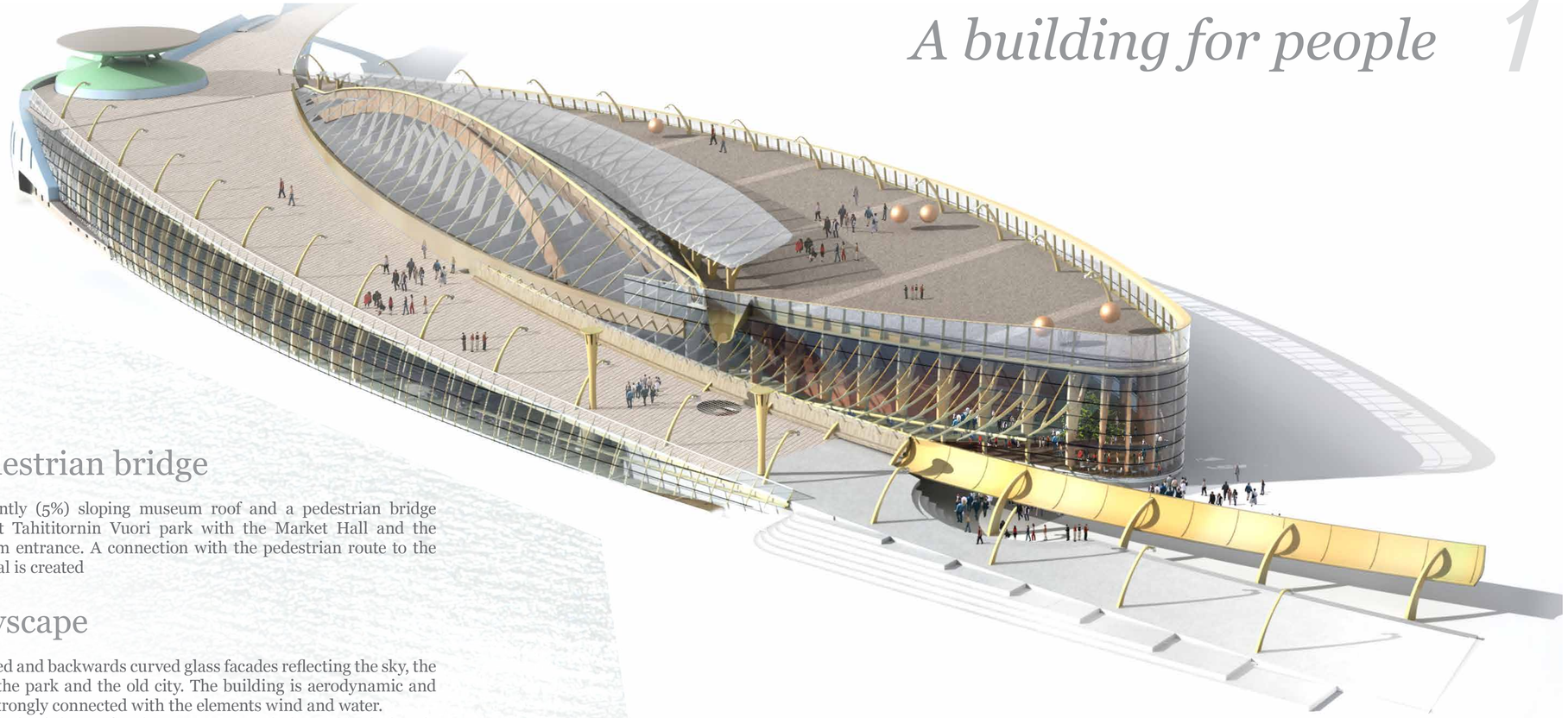
A building for people







Pedestrian bridge

The gently (5%) sloping museum roof and a pedestrian bridge connect Tahititornin Vuori park with the Market Hall and the museum entrance. A connection with the pedestrian route to the terminal is created

Cityscape

Rounded and backwards curved glass facades reflecting the sky, the water, the park and the old city. The building is aerodynamic and fluid, strongly connected with the elements wind and water.
The heigth of the roofl evel is 11 meters and above this deck only transparant glass structures are placed. The sculptural roof elements connect the museum with the scale and detail of the old city. The main form is simple. The sophistication is in the details.

Maritime

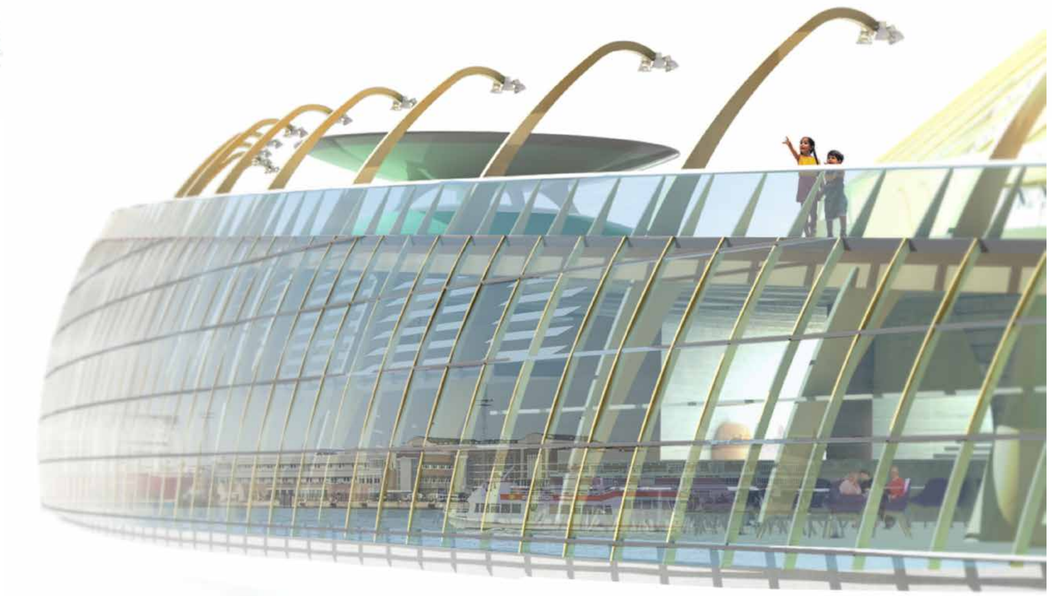
The hull shape, the size of the building and the striking wing disk on top emphasize affinity with a harbour site.
The building is moored and connected with the shore by a pedestrian bridge. The curved wooden columns shine through and resamble a boat frame.
On the south side the loading docks and installations are situated. By creating a more industrial look here, the building connects with the harbour activity

Colours

The steel parts are painted in nuances of ochre of the colourful facades of Helsinki. In combination with wood and clay, this will create a warm atmosphere.
The boat facade on the south is finished with durable and ecolgical plating in different colours. The lower part is warm-grey to connect the building with the ground. On top a grey-blue that resembles the water, then a light blue like the sky and the disk on top is green as the copper of the towers in the city.

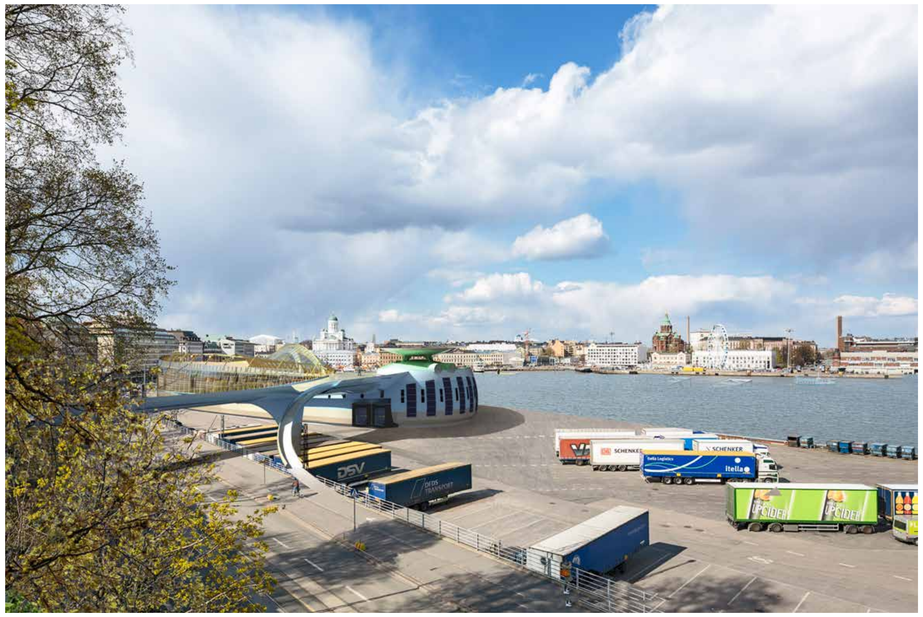
Entrance square

The north side is minimal in dimensions to prevent the entrance from being shady and cold. The entrance itself has a glass roof.
The visitors are guided by a long extended roofconstruction. This roof is designed to create an enclosed space in front of the entrance, without blocking the connection with the water.

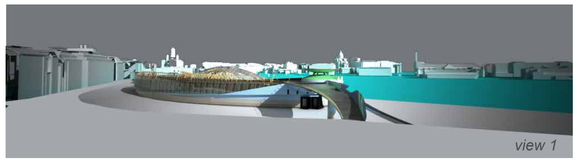


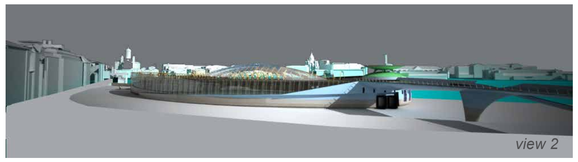
At night

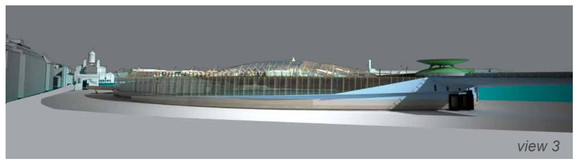
During the dark winter days the building shows it's interior. The arcs are lit and the LED facade shows a subtle movement of colours as if the building mimics colourful water reflections. In between the curved wooden colums in the facade, the clay walls are just visible. the building is an open and living place.



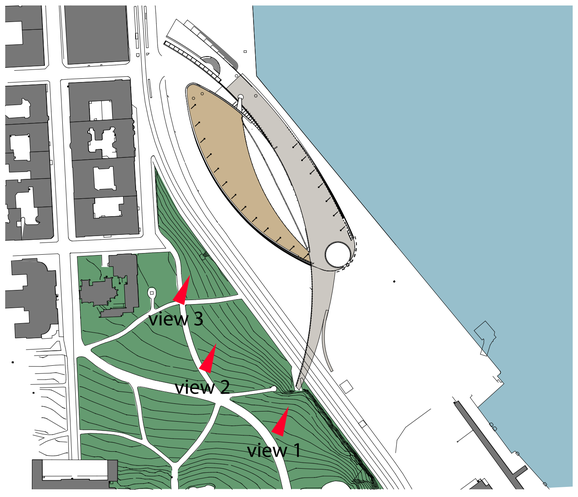
The building is moored and connected with the shore by a pedestrian bridge

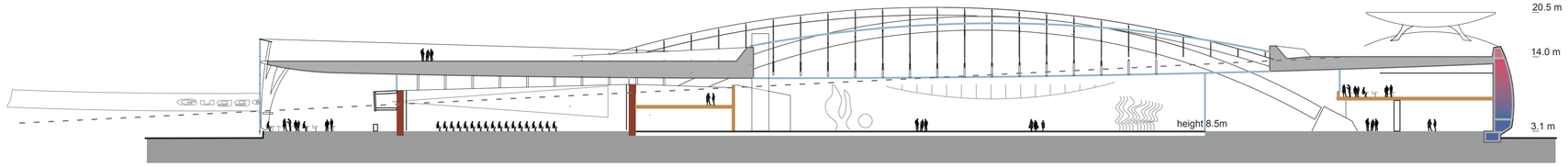




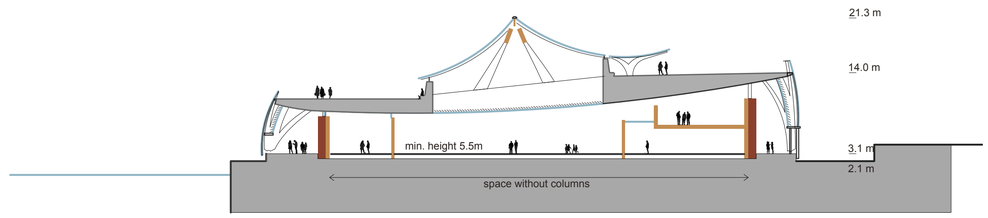


Study showing different views from the park





section A



section B

Atrium

The atrium and main exhibition hall is the heart of the museum. From the entrance the atrium is not visible and from the restaurant there is just a sneak preview.
The space will be so well lit by the 1400 m² rooflight that it gives the impression of being outside. there are no city noises or clatering dishes from the restaurant. The atmosphere is quiet and serene.
The atrium is also very practical. Trucks and heavy equipment can directly enter the exhibition space. On the sides a space between the wall and the ceiling is left open to create transparancy and contact with the trees in the park.

Wooden arcs

By using two massive wooden arcs to support the roof the 4000 m2 of exhibition space is free of columns. The ceiling height is about 7 meters.
The arcs support the glass covering the rooflight. The amount of light entering can be regulated. At night the rooflight is closed with an insulating layer. The arcs and sculpted construction will form the eye-catcher of the museum.

Roof deck

The roof is divided in two parts. The first is the pedestrian route with ample space for outside exhibitions. Alongside a long bench with a glass roof, gives visitors a place to sit and look over the water. A second bench around the chimney of the woodstove in the restaurant is warmed when the fire is burning. The roof is a place to be. The second part is a big terrace for events and outdoor exhibitions, enclosed by a glass facade on the west and a glass roof on the east side to protect the terrace from the climate.
The roof terrace can be opened towards the southside to let visitors enter directly from the pedestrian route. The terrace is also accesible with an elevator and stairs in the centre of the museum.
With a surface of 3500 m² this is a place big enough for an art market or concert.

Wood construction

The roof construction is entirely made with laminated wooden beams and columns. In the entrance zone some steel is used to create more transparency.
The museum walls are made with dry stacked, curved wooden segments to create a sturdy wall for every possible use. If necessary the entire wall can be removed.
The first floor is made of massive laminated wooden floor elements.

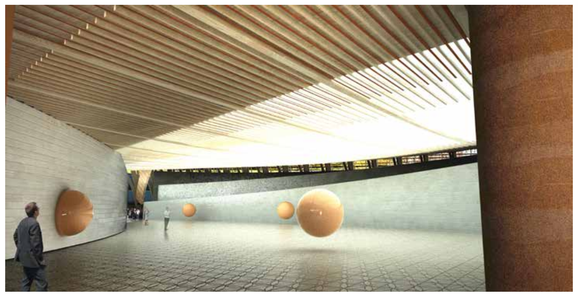
Curved walls

All the walls in the museum are slightly curved. This gives a pleasant and more spacious impression. The walls seem to be longer than they really are.
The main interior walls around the exhibition hall and auditorium are one meter thick rammed earth with water tubes inside. The relatively cold radiation temperature of the outer glass wall is compensated by heating the massive inner wall. The clay walls and unpainted wooden ceiling and columns regulate humidity and give a good acoustic and ambiance.

A warm interior

Entrance hall and information desk

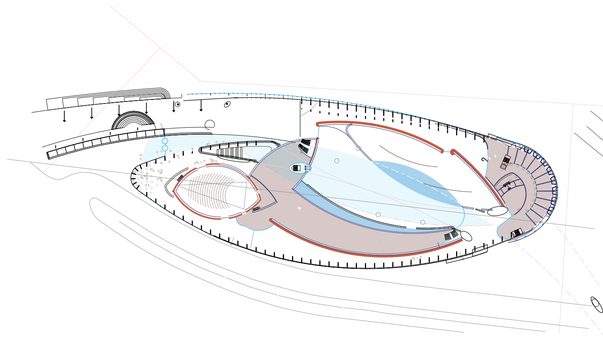
East corridor and entrance to the central exhibition hall

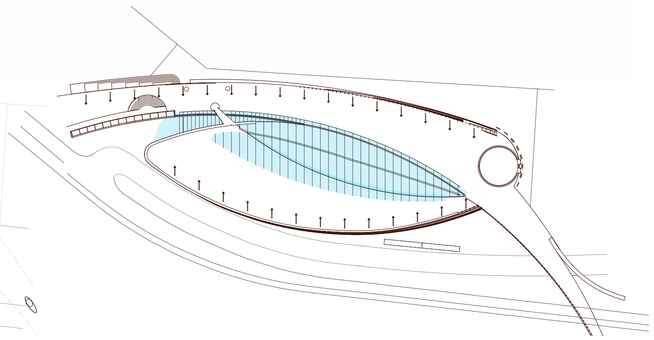


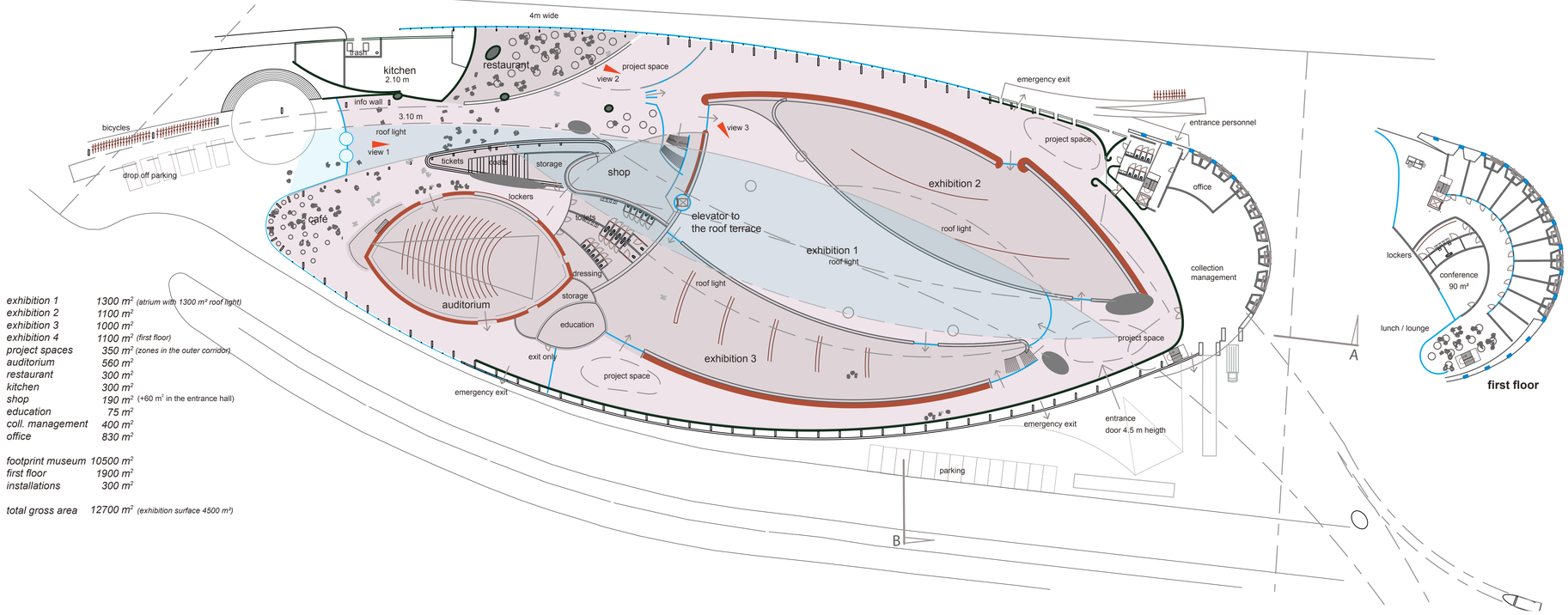
exhibition hall 1

Comfort

In the entrance view the wood fire in the restaurant is visible when you enter the building on a cold day. The museum should feel like a warm and friendly place. A place where you can feel at home. Around the chimney on the roof deck a bench is warmed with the heat of the hot stove gases.



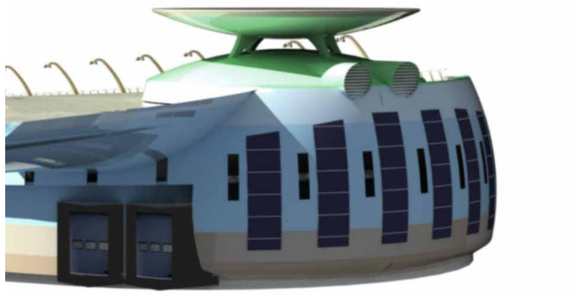




first floor

exhibition 1	*1300 m² (atrium with 1300 m² roof light)*
exhibition 2	*1100 m²*
exhibition 3	*1000 m²*
exhibition 4	*1100 m² (first floor)*
project spaces	*350 m² (zones in the outer corridor)*
auditorium	*560 m²*
restaurant	*300 m²*
kitchen	*300 m²*
shop	*190 m² (+60 m² in the entrance hall)*
education	*75 m²*
coll. management	*400 m²*
office	*830 m²*
footprint museum	*10500 m²*
first floor	*1900 m²*
installations	*300 m²*
total gross area	*12700 m² (exhibition surface 4500 m²)*

A roof entirely made of wood



Climate facade and loading docks

Earth walls

Wooden floor elements

5 layers of wood are connected to form the columns

Flexibilty

The building is designed for maximal flexibility. The restaurant, bar and auditorium can function seperately from the museum.
The building is in fact one big roof. The interior can be altered and ajusted to future needs.

Life cycle

If the building is at the end of it's life cycle, there is no need to demolish it. A wooden building can be disassembled. All the planks in the roof can be re-used to create the roof surface of a new building. There is also no need to throw away columns or beams. The clay walls can be loaded in a truck. Just add water to build a new wall somewhere else. Even the insulation can be re-used without the need to recycle it.

Climate

The building is very well insulated. The roof is filled with 50cm of wood fibre panels. The glass facade is made up of three layers. In the air chambres, rotating slats are placed. The exterior of a slat is heat absorbing. The interior is heat reflecting. The middle layer is insulating. On cold winternights the slats can be turned to close the facade. The lower part of the glass facade is equiped with heat reflecting roll curtains.

Building cost

The museum is a combination of rough or unfinished materials combined with beautiful details. The square meters count most in the cost calculation, not the details.
The construction is completly prefabricated. With the aid of 3D computer software all the components can be manufactured so that a saw is no longer needed on the building site. Just a wrench and screw-gun will do.

Facades

The wood structure is covered with glass. The facade has no details on the outside that need maintenance. The glass is laminated and cold bent to reduce the amount of glass used. The facade is curved backwards and therefore reflects the sky. This reduces the visual impact of the building. The facade continues above the roof deck to create a wind shield. On the southside durable and ecolgical panels are used .

Climate facade

On the south side a climate installation is integrated in the facade. This installation consists of 5 elements. The most visible part is the wing shaped disk on top of the roof. With a little breeze the disk creates a lower air pressure underneath. In this way air is extracted from the building without the use of mechanical equipment.
The second part are vertical cold shafts, where water is vapourized in the downward outgoing air stream. The water is warmed with the outgoing air and this water is used to heat the ground mass underneath the building.
The third part of the facade are rising warm shafts behind the dark vertikal windows. The shafts are surounded by mass and heated with the sun. The upwards movement of the heated air creates extra draught for the ventilation system. The heated air can be guided through the vapour shafts to extract energy.
The fourth part are solarpanels to heat water directly. The warmth is stored in a -ground mass battery-.
The last element of the climate facade are the glass air chambres in the east and west facade, on top of the roof and the air space inside the roof construction. The building is ventilated through these spaces, extracting warmth and storing it in the ground.
A computersystem measures all the temperatures. By closing or opening flaps it is possible to prepare the incoming air. In summer the air can be cooled with water. In winter the air can be warmed with water guided through the -ground mass battery-.

Ground mass battery

Underneath the building a large portion of the ground surface acts as a battery to store heat. Thousands of tons of earth are well insulated and water tubes are passing through to store or to collect energy. During summer the earth battery is charged and during winter the warmth is extracted to heat the clay walls, the floors and the incomming air. The building is built in close contact with the earth. This will garantee a very stable interior temperature despite the very light roof structure. The floors and clay walls can also be cooled with water if nescessary.

Limited use of concrete

Compared with traditional building, very little concrete is used. Cement is very energy intensive and also the use of sand to make concrete should be limited because of the environmental impact. Concrete is therefore only used in the foundation of the columns.
The floor is made up of a thick layer of rough gravel. This layer is ventilated. On top a layer of rigid woodfibre insulation is layed. then a mixture of clay, sand and gravel with watertubes. The top layer is a thin layer of hemp fibre cement to create a stable under layer for the stone tiles.

Computer floor

The museum floor is a sturdy variant of a computer floor. The floor is made up of 10 cm thick pine wood tiles, with an oak wood top layer. The tiles can be removed to service or change the climate installation tubes. Cables of electric powered sculptures can be hidden underneath. The tiles can be removed to fit in a tile with an uplighter.