Fascination

Climate Change
Global Resource Depletion
"Global warming is not a conqueror to kneel for but a challenge to rise to. A challenge we must rise to."
- Joe Lieberman -

"Sustainable is everything future generations want to inherit, use and maintain"
- Jón Kristinsson -

"Global warming is real. It is happening today. It is being charted by our satellites. It is being charted by our scientists. It is being charted by those of us in this body, and I think the real key is if we are ready to admit that fact and take action to make the necessary conversion."
- Diane Feinstein -

"Thinking in terms of green-blue networks provides the ingredients for solving urban and climatic challenges by building with nature"
- Jacques Leenen -
Awareness of climate change and sustainability!
How to build a sustainable floating pavilion that provides awareness of climate change and sustainability?
Location

Markermeer
Concept

Sustainability = Awareness
Sustainability = Flexibility
Sustainability = Zero waste
Sustainability = Right choice of materials
Sustainability

Awareness

Conscious
- Presentation room
- Meeting room
- Exhibition room

Unconscious
- Fish bassin
- Herb- and vegetable garden
- Constructed wetland

WC
Office
Room for cultural activities
Entrance
Outdoor space
Restaurant
Kitchen

THE FLOATING FUTURE

Sustainability = Awareness
Sustainability = Flexibility
Sustainability = Zero waste
Sustainability = Right choice of materials
Research and Design

Construction
Facade
Interior
Climate design
What: A floating pavilion...

Where: on the Markermeer...

How: in a sustainable way.
 +/- 300 M2

- Presentation room
- Meeting room
- Office
- Exhibition
- Room for cultural activities
- Entrance
- Restaurant
- Kitchen
- Installations
- WC
THE FLOATING FUTURE

RESEARCH & DESIGN
A: Boiler
B: Evaporator
C: Expansion Value
D: Heat Exchanger
Winter sun: 1
Adaptable facade element: 2
Thermal stack effect: 3
Radiant floor: 4
Water source loop: 5
Operable vents: 6
Cooled air by vaporized water: 7
Wind driven natural ventilation: 8
Winter sun: 1
Adaptable facade element: 2
Thermal stack effect: 3
Radiant floor: 4
Water source loop: 5
Operable vents: 6
Cooled air by vaporized water: 7
Wind driven natural ventilation: 8
Winter sun: 1
Adaptable facade element: 2
Thermal stack effect: 3
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Winter sun: 1
Adaptable facade element: 2
Thermal stack effect: 3
Radiant floor: 4
Water source loop: 5
Operable vents: 6
Cooled air by vaporized water: 7
Wind driven natural ventilation: 8
Sprin/Autumn sun: 1
Adaptable facade element: 2
Thermal stack effect: 3
Radiant floor: 4
Water source loop: 5
Operable vents: 6
Cooled air by vaporized water: 7
Wind driven natural ventilation: 8

THE FLOATING FUTURE

+10°C

+20°C

+5°C
Sprin/Autumn sun: 1
Adaptable facade element: 2
Thermal stack effect: 3
Radiant floor: 4
Water source loop: 5
Operable vents: 6
Cooled air by vaporized water: 7
Wind driven natural ventilation: 8
1. Spring/Autumn sun
2. Adaptable facade element
3. Thermal stack effect
4. Radiant floor
5. Water source loop
6. Operable vents
7. Cooled air by vaporized water
8. Wind driven natural ventilation

NORTH

SOUTH

+10°C

+20°C

+5°C

THE FLOATING FUTURE

RESEARCH & DESIGN
NORTH

Summer sun: 1
Adaptable facade element: 2
Thermal stack effect: 3
Radiant floor: 4
Water source loop: 5
Operable vents: 6
Cooled air by vaporized water: 7
Wind driven natural ventilation: 8
Summer sun: 1
Adaptable facade element: 2
Thermal stack effect: 3
Radiant floor: 4
Water source loop: 5
Operable vents: 6
Cooled air by vaporized water: 7
Wind driven natural ventilation: 8

THE FLOATING FUTURE

+21°C
+24°C
+13°C
Summer sun: 1
Adaptable facade element: 2
Thermal stack effect: 3
Radiant floor: 4
Water source loop: 5
Operable vents: 6
Cooled air by vaporized water: 7
Wind driven natural ventilation: 8
Summer sun: 1
Adaptable facade element: 2
Thermal stack effect: 3
Radiant floor: 4
Water source loop: 5
Operable vents: 6
Cooled air by vaporized water: 7
Wind driven natural ventilation: 8
A: Constructed wetland
B: Water pump with filter
Rain water: 1
Rain water storage: 2
Ballast water storage: 3
Grey water use: 4
Rain water: 1
Rain water storage: 2
Ballast water storage: 3
Grey water use: 4
Conclusion

Sustainability = Awareness
Sustainability = Flexibility
Sustainability = Zero waste
Sustainability = Right choice of materials
Sustainability = Awareness

Conscious:
- Exhibition room
- Presentation room
- Meeting room

Unconscious:
- Constructed wetland
- Fish basin
- Herb/vegetable garden
- Composting toilet
- Ventilation chimney
- PV-panels
- Difference interior and exterior
Sustainability = Flexibility

- The division of the pavilion into zones, groups and components
- The division of the façade into elements
- Flexibility in floor plan
Orientation
Energy by pv-panels
Natural ventilation
Use of rainwater

Sustainability = Zero waste
Sustainability

Right choice of materials

Exterior:
- PV panels
- Glass
- Polycarbonate
- Aluminium
- Recycled plastic bottles
- Fibre-reinforced plastic

Interior:
- Wood
- Linoleum
- Loam
Thank you:

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