Admission ticket

FEE: 1 UNSUSTAINABLE THING
OR € 5.00

One person

Friday 28/01/11 10:30 AM

by Peter de Ruijter

stud. nr. 1525433
Paul Otlet’s Vision (1929)
Achieve world peace through the collection of knowledge
The Challenge of the 21st Century

Sustainability
What is going on?
mining non renewable resources
photo: Bert K@flickr.com
throw away culture
photo: meptsed@flickr.com
The Result
natural habitat destruction

photo: Greenpeace@flickr.com
excessive rainfall / flooding

photo: Cbeyond Houston@flickr.com
increased average temperatures
Limited Consciousness on the impact of our lives’ choices
I Claim
we have yet to understand sustainability
sustainability
is NOT an END STATE
IS a process, an attitude, a way of perception, an agenda for learning
Sustainability sets interrelationships between:

man made material world
biosphere
symbolism
socio cultural background
sustainability

biosphere

man made world

socio cultural background

perception / consciousness

symbolism
need to deepen our consciousness of Man’s interrelation with the Biosphere by using all 5 senses
hearing
sight
smell
taste
touch
The Mundaneum of the 21st Century

- is a space to install and support the process of learning
- triggers all five senses (raises perception)
- deepens our consciousness on the relationship between Man and Biosphere
Where?
Public - individual citizen / visitor of Brussels
How?
- function as a platform to achieve ACTION
- ‘mode of being’ as a contemporary example of a sustainable approach to which people can relate their respective lives

in other words:

building community/learning/action, show an appreciation for natures resources by incorporating sustainable energy cycles, and materials
inspired by history - but not with the down sides
forward looking - but not at cost of buy-in
contemporary / part of the learning process
1. Energy Concept
building climatization
local natural resource - rain water

1. available
   - 810 - 940 mm rain / annum
   - 5,038 - 5,848 m³

2. perceivable
   hear, sight, smell, taste, touch

3. suitable
   symbol
   educational purposes
   energy concept
   public space
energy concept - water

1. rain water
2. sedum roof planting
3. water distribution installation
4. UV filter
5. helofyte filter
6. top water basin 1320 m³
7. bottom water basin 1320 m³
8. HE
9. CSA
10. PV Panel
11. (CSA) Concrete Slab Activation
   - low temp radiative heating (25 - 35 °C)
   - high temp radiative cooling (14 - 18 °C)
12. cycle input

6220.8 m² plot size
810 - 940 mm rain/annum
5.038 - 5.947 m²/annum
1500 m²
20% water retention;
280 m³ water
5.568 m³ water renewal rate = 2.1
475 m³
20% water retention;
89 m³ water;
layer 1000 - 1200 mm

summer: warm
winter: cool
summer: cool
winter: warm

Peter de Ruijter, stud. #: 1525433
Studio Teachers: M. Riedijk, A. Van den Dobbelsteen, N. Deboutte
1. water purification system
2. water basins - temperature difference

winter situation
3. concrete slab activation

winter situation
symbolic shape

Midrand water tower, Johannesburg, (SA)

Tinsley cooling towers, Sheffield (UK)
radial structure
Facade treatment
- deep recesses NW/SW/SE (2700 mm)
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- horizontal solar shading SW/SE
Facade treatment
- deep recesses NW/SW/SE (2700 mm)
- horizontal solar shading SW/SE
- vertical solar shading NW
Facade treatment
- deep recesses NW/SW/SE (2700 mm)
- horizontal solar shading SW/SE
- vertical solar shading NW
- no solar shading NE
2. Materialization
selection criteria

building ‘nature’; durability / thermal mass

1. - renewable OR bio-degradable
   - locally sourced

2. - re-usable / recyclable
   - lowest embodied energy
   - use recycled content
**materials**

- concrete
- slate
- glass (window panes)
- acrylic glass
- Flax (Linum usitatissimum) insulation
- local oak
- local pine
- rainwater
- helofyte (reed)

- thermal mass
- locally sourced
- use recycled content
- lowest embodied energy
- recyclable
- durable
- biodegradable
- use recycled content
- re-usable
- biodegradable
- renewable
- biodegradable
- re-usable
- thermal mass
- biodegradable
- renewable

- locally sourced
- durable
3. Learning Route
3 parts

1. confront: trigger perception / senses
2. reflect: incorporate / ‘digest’
3. explain / apply: what is sustainability, how can you ACT?
organization around atrium
organization diagram

South East Facade

North East Facade

North West Facade

South West Facade

- Pool / Rest
- Library
- Conference
- Workshop
- Workshop
- Taste
- Biosphere
- Entrance

- Pool / Rest
- Library
- Cafe
- Office
- Sight
- MMW
- Hear
- Support
- Logistics

- Pool / Rest
- Library
- Conference
- Touch
- Symbolism
- Smell
- Restaurant
- Auditorium

- Library
- Conference
- Socio Cult
- Helofyte
- Workshop
- Entrance
1st floor - hear
section hear exhibition space
2nd floor - smell
section smell exhibition space
3rd floor - helofyte
section helofyte filter
4th floor - taste
section taste exhibition space
5th floor - sight
section sight exhibition space
technical detail vegetation wall
6th floor - touch
section touch exhibition space
7th floor workshops offices
9th floor
conference ctr
library
10th floor
library
11th floor
restaurant
pool
technical detail roof floor / water basin
technical detail water basin / ETFE
8th floor
conference ctr
cafe
technical detail exhibition hall facade
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Thank You