Analysis

climate change: what does it mean?

solar analysis / atrium typology

Years:
- Yearly average temperature is above 10°C/50°F

Average temperature of each month:
- Average temperature of all months is below 10°C/50°F

Köppen-Geiger climate:
- Cfb (moderate sea climate)

Energy Concept

Legend: Energy Concept
1. Sedum roof (insulation of roof)
2. Water pump / distribution installation
3. Water filter (rainwater)
4. UV filter for water sterilization
5. Helofyte filter (3rd floor SW corner of building)
6. Bottom water basin (building climatization)
7. Top water basin (public space)
8. Heat pump
9. Heat pump
10. PV cells powering HP
11. Heat pump
12. Concrete slab activation (low radiation)

Legend: Edelweiss Data Sheet
1. Material density (volumetric)
2. Specific heat storage capacity
3. Specific heat capacity

Summer Situation

Winter Situation

Facade Treatment

North West facade with shallow recesses
South West and South East facade with horizontal solar shading
North East facade with shallow recesses
North West facade with vertical solar shading

Napoli, IT

Brussels, BE

Napoli, IT

Brussels, BE

Average solar radiation energy: 1.366 kW/m² = 1366 J/(s.m²)

Average daily radiation energy: 1.366 kW/m² = 1366 J/(s.m²)

Concrete: 0.88 J/(g.K)
Water: 4.1813 J/(g.K)
Material density:
- Volumetric: 2.060 J/(cm³.K)
- Physical: dimension 130 mtrs * 45.0 mtrs * 38.7 mtrs

Total yearly precipitation: 5,038 m³ or 810 mm per m²

Total yearly precipitation: 5,848 m³ or 940 mm per m²

Average storage energy: 1°C/5°C

AR3Ap130-1 MSc 3 Public Realm - Brussels Design Studio

Student Number 1525433

Peter de Ruijter

Studio Teachers: M. Riedijk, A. Van den Dobbelsteen, N. Deboutte

Source: Wikipedia.com

Source: Weatherbase.com

Source: Weatherbase.com

Source: Gaisma.com

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