BIODIVERSUM in Remerschen

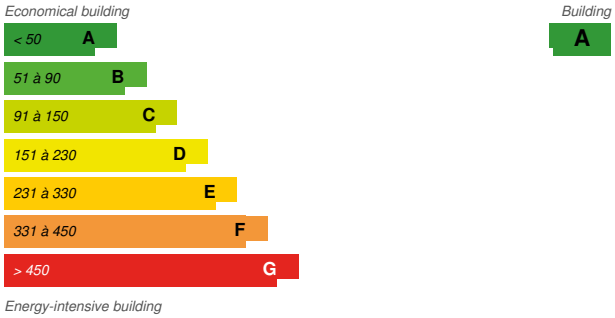
by Lucas Karmann / 2017-06-01 17:15:36 / Luxembourg / 15751 / FR

Primary energy need :

35 kWhep/m^2.an

(Calculation method : RGD du 31 août 2010 - bâtiment fonctionnel)

ENERGY CONSUMPTION



Building Type : Museum
Construction Year : 2015
Delivery year : 2016
Address 1 - street : L-5441 REMERSCHEN, Luxembourg
Climate zone : [Dfb] Humid Continental Mild Summer, Wet All Year

Net Floor Area : 1 600 m^2
Construction/refurbishment cost : 3 900 000 €
Cost/m2 : 2437.5 €/m^2

Proposed by :

General information

The Biodiversum Reception Center is located in Remerschen on the edge of the Haff Réimech Nature Reserve. Set in a building of remarkable architecture by the Valentiny hvp architects office, the Biodiversum is the starting point for several discovery trails around the ponds of "Haff Réimech". It also offers exhibitions to the public inside the building throughout the year as well as activities for school classes and various themed workshops to discover the richness of this wetland.

The reception center is open to all public and includes the following areas:

- Permanent exhibitions on topics related to environmental awareness, such as the protection of birds, biodiversity and the evolution of the nature reserve
- A multipurpose room for temporary exhibitions and events related to nature
- A room for school classes and meetings
- The offices of the reception center

Data reliability

Self-declared

Stakeholders

Stakeholders

Function : Contractor

Administration Bâtiments Publics

Function : Structures calculist

SGI Ingenieure Junglister

Function : Thermal consultancy agency

BETIC S.A.

Owner approach of sustainability

The building is a wooden construction. The construction is referenced in the Cradle to Cradle approach.

Architectural description

Located in the Haff Réimech nature park, the project benefits from the reconquest by the fauna and flora of the industrial site of Remerschen. The designers of Biodiversum, a center dedicated to biodiversity, have stabilized a peninsula and have taken advantage of the lake's water to prescribe a geothermal heating system. The building takes the form of a boat hull returned to the shore. It stretches over 62 m long and rises in R + 2, but its impact on the landscape is reduced because the ridge is lowered to the ground and the ground floor is partially buried. The north gable, it widens and presents a large curtain facade to offer a panoramic view on the plan of water. The hull of the building is divided into eight bays in order to carry the intermediate floors. However, no portico can be perceived under the vault: a mesh of diagonal lines constitutes the support of the interior cladding while ensuring the bracing of the framework. This ogive folding grid was built with four layers of Douglas blades in 3 cm thickness. It receives planks of the same wood, spaced 10 mm apart to absorb the sound. The entire wooden construction represents a volume of 500 m^3. The vault opens on the outside by fifteen narrow bays which evoke as much the gills of the fish as the visors of the small observatory windows. These randomly animate the garment which uniformly covers the main nave. The red cedar cladding, sometimes painted in tavaillons, evokes a vernacular architecture of a different age. On the western side of the hall, the cafeteria offers an unobstructed view of the pond, through a glass façade compartmentalized in diamond, reminiscent of the main fishnet.

Energy

Energy consumption

Primary energy need : 35,00 kWhep/m^2.an

Primary energy need for standard building : 166,00 kWhep/m^2.an

Calculation method : RGD du 31 août 2010 - bâtiment fonctionnel

Real final energy consumption

Real final energy consumption/m2 : 147 798,00 kWhef/m^2.an

Year of the real energy consumption : 2 016

Renewables & systems

Systems

Heating system :

- Geothermal heat pump
- Low temperature floor heating

Hot water system :

- No domestic hot water system

Cooling system :

- No cooling system

Ventilation system :
- Natural ventilation
- Nocturnal ventilation

Renewable systems :
- Heat pump (geothermal)

Environment

GHG emissions

GHG in use : 41,00 $KgCO_2/m^2/an$

Life Cycle Analysis

Eco-design material : Wood Construction

Products

Product

Heating floor

OPAL SYSTEMS

Rue de l'Industrie, 11 B-1400 Nivelles Tél. : +32 (0)67 688 288 Email : info@opal-systems.be

http://www.opal-systems.be/fr/

Product category : Génie climatique, électricité / Chauffage, eau chaude

One of the special features of the OPAL SYSTEMS solution lies in the direct contact between the pipes, the diffusers and the floor covering. A milled groove in prefabricated panels fixed to the floor welcomes metal profiles and pipes which it is then sufficient to "clip" by a pressure of the foot. The diffusion of heat is most optimally ensured by specific diffusers and a mesh of expanded metal which, in combination with the tile or parquet adhesive, arms the whole structure. The upper cap is therefore no longer necessary. This new heat transmitter reduces the energy consumption for the heating of buildings in the residential and tertiary sector, both in new construction and renovation. It ensures superior thermal comfort with the best systems currently available on the market and allows the installations to achieve high overall efficiencies thanks to its greater reactivity and its operation at low temperature.

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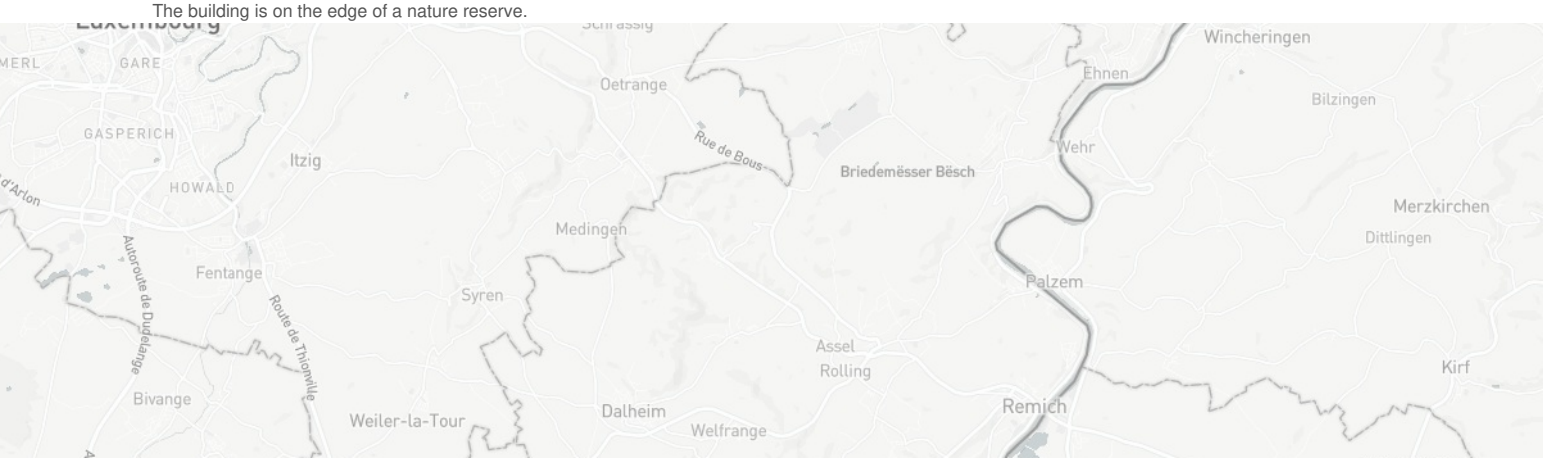
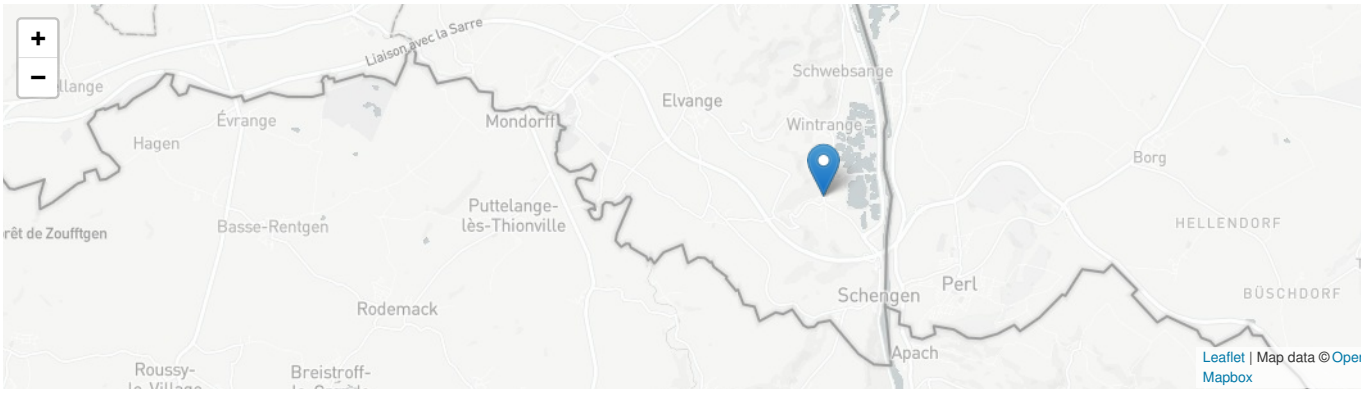
Costs

Urban environment

The building is on the edge of a nature reserve.



Contest



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