


## RenovActive

by Sabine Pauquay / 2015-07-06 11:15:37 / Belgique / 7751 / FR

Extension + refurbishment



Primary energy need :  
**57.7** kWhep/m<sup>2</sup>.an  
(Calculation method : )

**ENERGY CONSUMPTION**

Economical building Building

< 50	A	
51 à 90	B	<b>B</b>
91 à 150	C	
151 à 230	D	
231 à 330	E	
331 à 450	F	
> 450	G	

Energy-intensive building

**Building Type** : Isolated or semi-detached house  
**Construction Year** : 1921  
**Delivery year** : 2015  
**Address 1 - street** : 1070 ANDERLECHT, Belgique  
**Climate zone** : [Cfb] Marine Mild Winter, warm summer, no dry season.

**Net Floor Area** : 95 m<sup>2</sup> NGF  
**Construction/refurbishment cost** : 190 000 €  
**Number of Dwelling** : 1 Dwelling  
**Cost/m<sup>2</sup>** : 2000 €/m<sup>2</sup>

Proposed by :



### General information

#### Building users opinion

Building occupied for 1 month, the occupants are delighted

#### See more details about this project

<http://renovactive.velux.be>

#### Data reliability

Assessor

### Stakeholders

**Function :** Contractor representative

Velux

sabine.pauquay@velux.com

<http://velux.be>

Organization of studies and renovation + financing

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**Function :** Company

Troubleyn NV

info@troubleyn.net

<http://www.troubleyn.net>

Completion of work and coordination of certain subcontracted works

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**Function :** Designer

ONO Architectuur

jonas.lindekens@ono-architectuur.be

<http://ono-architectuur.be>

development of the renovation concept

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**Function :** Thermal consultancy agency

Daidalos Peutz

Friedl.Decock@daidalos.be

<http://daidalos.be>

Thermal and durability advice

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**Function :** Contractor

Foyer Anderlechtois

foyeranderlechtois@foyeranderlechtois.brussels

<http://foyeranderlechtois.be>

renovation

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### Contracting method

General Contractor

### Owner approach of sustainability

certification Active House label

### Architectural description

Renovation of a three-facade house dating from the 1920s to bring it to high energy standards, while maximizing comfort. Aesthetic research linked to the original image of the garden city (characteristic of Brussels)

### Energy consumption

**Primary energy need :** 57,70 kWh/m<sup>2</sup>.an

**Primary energy need for standard building :** 202,24 kWh/m<sup>2</sup>.an

**Calculation method :**

**CEEB :** 0.0008

**Final Energy :** 131,00 kWh/m<sup>2</sup>.an

**Breakdown for energy consumption :**

Heating: 44.7 kWh / m<sup>2</sup>.an hot water: 17.4 kWh / m<sup>2</sup>.an --> total consumption gas: 62.1 kWh / m<sup>2</sup>.an Fans: 3.1 kWh / m<sup>2</sup>.an Pumps: 2 , 9 kWh / m<sup>2</sup>.year Lighting:

3,7 kWh / m<sup>2</sup>.year Kitchen: 10,5 kWh / m<sup>2</sup>.year Laundry: 3,8 kWh / m<sup>2</sup>.year Multimedia: 6,0 kWh / m<sup>2</sup>.year photovoltaic production: -5,8 kWh / m<sup>2</sup>.an --> total electrical consumption: 24,2 kWh / m<sup>2</sup>.an

#### More information :

Actual consumption and performance will be measured during the first two years of occupation.

Initial consumption : 1 300,00 kWh/m<sup>2</sup>.an

## Envelope performance

Envelope U-Value : 0,31 W.m<sup>-2</sup>.K<sup>-1</sup>

#### More information :

Total heat transfer coefficient: 84.8 W / K average U-value of windows: 1.08 W / m<sup>2</sup>.KU slab on floor: 0.14 W / m<sup>2</sup>.KU existing exterior insulated facades: 0, 15 W / m<sup>2</sup>.KU new facades extension: 0.11 W / m<sup>2</sup>.KU roof sloping: 0.13 W / m<sup>2</sup>.K

Building Compactness Coefficient : 1,50

Indicator : n50

Air Tightness Value : 2,90

Users' control system opinion : The building has been occupied for a month

## Renewables & systems

### Systems

#### Heating system :

- Condensing gas boiler
- Water radiator
- Low temperature floor heating

#### Hot water system :

- Condensing gas boiler

#### Cooling system :

- No cooling system

#### Ventilation system :

- Natural ventilation
- Nocturnal ventilation
- Nocturnal Over ventilation
- compensated Air Handling Unit

#### Renewable systems :

- Solar photovoltaic

Renewable energy production : 6,00 %

[☞ Photovoltaic panels 4.86 m2 orients south - 900 Wp](#)

#### Other information on HVAC :

Hybrid ventilation that combines mechanical ventilation with natural ventilation in mid-season and summer. This natural ventilation allows free cooling to ensure summer comfort and avoid any air conditioning.

#### Solutions enhancing nature free gains :

The windows facing north-east are equipped with triple glazing. The windows are oriented to the south-east and south-west are equipped with double glazing. The solar protections are mobile (external blinds) to allow the solar contributions in winter.

## Smart Building

#### BMS :

Connection of the mechanical ventilation system and the motorization and management of the windows. They open automatically in certain indoor and outdoor conditions.

## Environment

### Urban environment

Urban suburbs

## Products

### Product

VELUX automated roof windows

VELUX

velux-be@velux.com

<http://velux.be>

**Product category :** Table 'c21\_germany.innov\_category' doesn't exist SELECT one.innov\_category AS current,two.innov\_category AS parentFROM innov\_category AS oneINNER JOIN innov\_category AS two ON one.parent\_id = two.idWHERE one.state=1AND one.id = '10'

Automated roof windows involved in ventilation strategy

Great ease of installation and operability by the occupants



## Costs

### Energy bill

Forecasted energy bill/year : 1 090,00 €

Real energy cost/m2 : 11.47

Real energy cost/Dwelling : 1090

## Carbon

### GHG emissions

GHG in use : 12,20 KgCO<sub>2</sub>/m<sup>2</sup>/an

Methodology used :

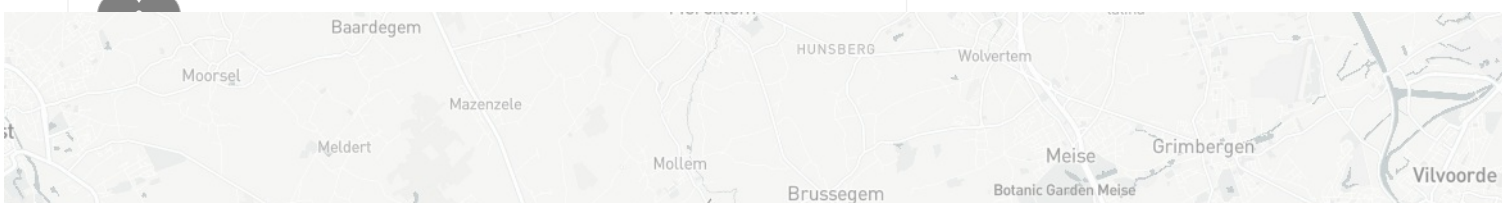
WE Bruxelles

## Contest

### Building candidate in the category

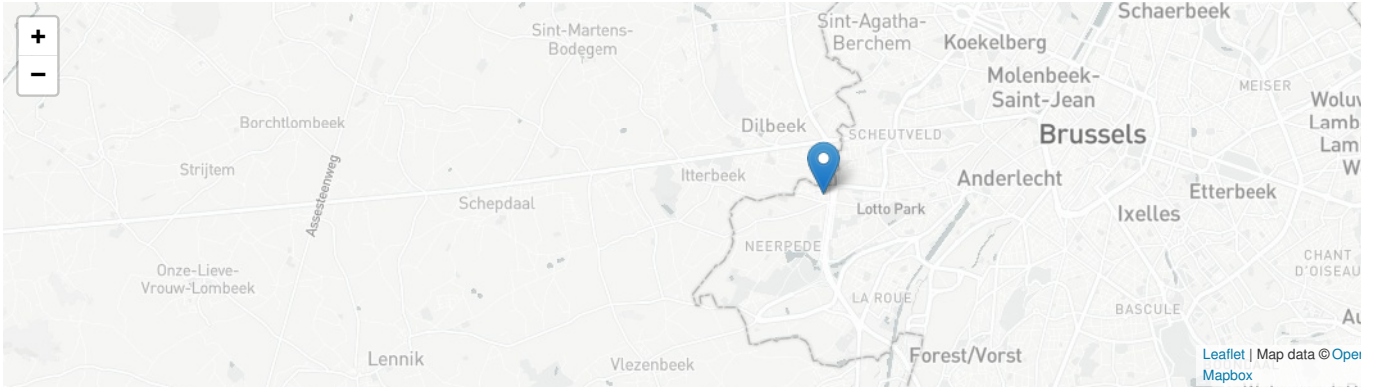


Energie & Climats Tempérés





Coup de Cœur des Internautes



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