3 contiguous detached houses in Saint Max (54)

by Marie-Laure Aubriot / 2014-06-20 00:00:00 / France / 6427 / FR

Primary energy need :

45.75 kWhep/m².an

(Calculation method : RT 2005)

ENERGY CONSUMPTION

Economical building *Building*

< 50	A
51 à 90	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 : 2012
Delivery year : 2012
Address 1 - street : 5 rue du maréchal Foch. 54130 ST MAX., France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 585 m² SHON
Construction/refurbishment cost : 966 000 €
Cost/m2 : 1651.28 €/m²

Certifications :

Proposed by :

General information

- Certified BBC Effinergie 2005
- LQE 2013 prize winner

This project replaced a fallow land (former car garage) located in the city center of Saint-Max. The objective was to create three individual units for rental under a law operation "Scellier green". The accommodations received the BBC (Low Energy Building) RT 2005 label and are accessible for disabled people. The desire was to highlight the wood construction in a project of atypical houses while densifying the plot. The use of recycled products was favored by the fact that contractors were also entrepreneur who made the structure.

Sustainable development approach of the project owner

LQE 2013 prizewinner

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Hygrothermal confort
- Search for inertia (slab + screed, high density insulating)
- Efficient airtightness, elimination of thermal bridges
- Perspirates walls
- Blind integrated to double glazing
- No felling of cold walls
- Overventilation by opening the windows
- Double flow CMV with enthalpy regulator

Acoustic confort
- Separation of structures between the houses
- Reinforced insulation between party wall

Visual confort
- Terraces opening on the inside gardens
- Indirect lighting

Architectural description

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Orientation: north/east - south/west

See more details about this project

http://www.lqe.fr/home/upload/fiches/Fiches3MaisonsIndividuellesSaintMax.pdf

Stakeholders

Stakeholders

Function : Contractor

SCI 5 rue maréchal Foch

Function : Other consultancy agency

ABM Energie Conseil

http://www.abmec.fr/

Function : Thermal consultancy agency

NRJ DIAGS

http://www.nrjdiags.fr/

Function : Company

Maddalon Frères

http://www.maddalon.fr/

Function : Company

Boonen

http://www.boonen-sas.com/

Function : Company

Idéal Plafond

http://www.idealplafond.com/

Function : Company

Menuilor

http://www.menuilor.com/

Function : Designer

Atelier MPA Maddalon Piquemil Architecture

http://www.atelier-mpa.com/

Function : Company

Sarl Frédéric Villemet

Function : Company

ECDA

Type of market

Global performance contract

Energy

Energy consumption

Primary energy need : 45,75 kWhep/m^2.an

Primary energy need for standard building : 104,00 kWhep/m^2.an

Calculation method : RT 2005

CEEB : 0.0001

Envelope performance

More information :
- Insulation:
Lower floors: polystyrene (slab UP 0.19) and polyurethane (3 cm heating floor).
Intermediate floors: glass wool (20 cm) and polyurethane (3 cm heating floor).
Walls: Wood wool (8 + 15 cm).
Interior walls: glass wool (12 + 12) and mineral wool (4 cm).
Roofing: polyurethane (10 cm) and glass wool (20 cm).

- Glazing: Low emissivity argon-filled double glazing. Integrated blinds.

Indicator : EN 13829 - q50 » (en m3/h.m3)

Air Tightness Value : 0,18

More information

Needs of primary energy calculated from the average of the 3 Houses' primary energy consumption:
House 1: 11 Kg.eqCO2 sqm/year
House 2: 7.49 Kg.eqCO2 sqm/year
House 3: 7.49 Kg.eqCO2 sqm/year

Renewables & systems

Systems

Heating system :
- Condensing gas boiler
- Water radiator
- Low temperature floor heating

Hot water system :
- Condensing gas boiler
- Solar Thermal

Cooling system :
- No cooling system

Ventilation system :
- Humidity sensitive Air Handling Unit (Hygro B
- Double flow heat exchanger

Renewable systems :

- Solar Thermal

Other information on HVAC :

MAINTENANCE
- Technical equipment grouped in laundries
- Easy access to equipment

Environment

Urban environment

Land plot area : 585,00 m^2

- City center, close to public transportation
- On the site of a former garage
- Dense urban environment

Costs

Construction and exploitation costs

Cost of studies : 96 000 €

Total cost of the building : 966 000 €

Health and comfort

Water management

WATER MANAGEMENT
- Roofs.
- Equipment hydro-economes.

Indoor Air quality

Air quality
- Double flow CMV
- Healthy finishing materials (Ecolabel): water paint, solid oiled oak parquet, water-based varnish, stoneware
- Filters F7 for double flow CMV
- Entry of fresh air on the garden side

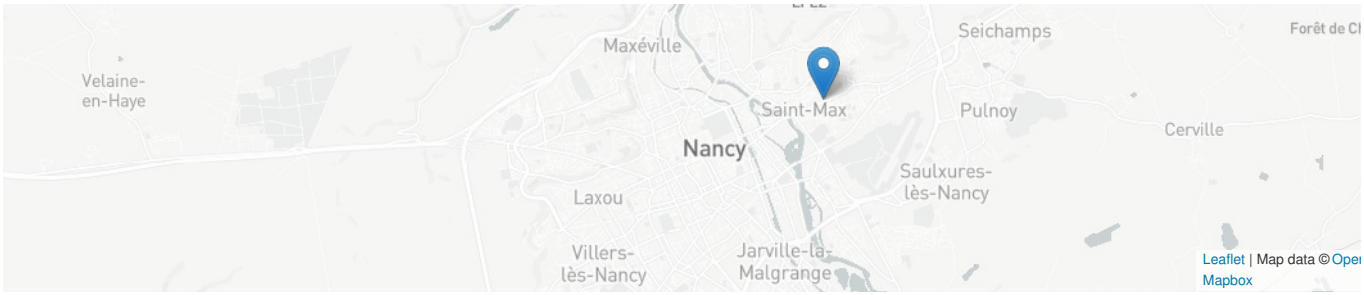
Carbon

GHG emissions

GHG in use : 8,77 $KgCO_2/m^2/an$

Life Cycle Analysis

Eco-design material : - Wood;
- Wood wool;
- Recycled wood



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