TI KOAD

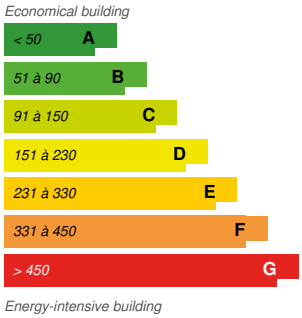
by Marie-Laure Marquet / 2013-03-06 16:25:10 / France / 11376 / FR

Primary energy need :

43 kWhep/m².an

(Calculation method : RT 2005)

ENERGY CONSUMPTION



Building Type : Collective housing > 50m
Construction Year : 2012
Delivery year :
Address 1 - street : 300 route de Clisson 44 120 VERTOU, France
Climate zone : [Cfc] Marine Cool Winter & summer- Mild with no dry season.

Net Floor Area : 2 373 m²
Construction/refurbishment cost : 3 543 889 €
Cost/m2 : 1493.42 €/m²

General information

The 3 floor Building made from solid wood built by the company Mureko is located in Vertou in the outskirts of Nantes (44) in an area between the road to Clisson, the rue des Ecoles and the road Fontenelle, and limited to south by primary and elementary schools Henri Lesage.

This 8270 m2 land, owned by Vertou is located in the heart of an urban area under development, itself integrated in an important area of the city of Vertou since there are more than 5000 inhabitants in Beautour.

This building is part of a program with 100% social housing, made of 62 units, divided into four housing blocks: 45 social housing units and 17 units in social home ownership.

The building is in an urban area, designed to reduce its environmental footprint, aiming in particular to promote energy independence. It also aims to promote eco-citizenship residents promoting their conception of responsible behavior and respect for our environment. As such, the site will have an "eco-point" in the center of the plot, consisting of underground containers for the collection of voluntary and selective wet waste, dry waste and glass.

This building is part of the eco-district concept initiated by the town of Vertou based on a comprehensive approach to urban architectural, environmental and energy issues.

Sustainable development approach of the project owner

Maximum search of a North / South direction - Compactness of the frame to ensure good insulation and less energy expenditure. - The enhanced and continuous external thermal insulation. - All units have an extension outside: add-on balcony. - All units are " duali-aspect dwellings ", which ensures natural ventilation. -

Accessibility for people with reduced mobility or disabilities: all the collective housing have an accessible lift. - The 3 floor housing (32 flats) is also equipped with solar panels for hot water. - dry networks are favored with respect to the materials: the use of wood for the entire architectural project: renewable material, durable, with low environmental impact and low nuisance during construction ...

Architectural description

Register the project in a neighborhood relationship: create a soft East / West link from the street Henri Lesage to the street Fontenelle and a North / South link between the bottom of the eco-district and the road Clisson. This helps promote the "soft links" inside the area with a special focus on "shared spaces" (between public space and private space). - Limit impervious surfaces and maintain a bio plant diversity including the establishment of a rational density of the built environment. The project attaches great importance to green spaces and the quality of their implementation. For example: Create a ditch draining to retain rainwater promoting their penetration into the soil and thus avoiding soil leaching. - Limit the influence of the cars on the site and enhance green spaces: the parking is strictly on the ground for the small group, and underground for the big collective group, and an air entry is available for individual dwellings (houses or intermediate housing). - Designing homes as comfortable as possible and respectful of the environment and promoting 'typological' diversity of housing: small collective groups, houses in accession or intermediary housing .... - Ensure a reasonable density of the "built" environement in order to remain "wide area" and maximally preserve the green areas on the site: the whole "Ti Koad" area has only 4 built spaces.

Building users opinion

Often used to live in housing overheated, some people have experienced a period of adjustment for the temperature inside their apartment.
Regarding housing, the living environment, the enthusiasm was general among the inhabitants.

See more details about this project

http://www.vertou.fr/fr/information/31183/un-eco-quartier-2012

Stakeholders

Stakeholders

Function : Contractor

Atlantique Habitations

Allée Jean Raulo - BP 335 44803 SAINT-HERBLAIN Cedex Tél : 02.51.80.67.67 - Fax : 02.51.80.67.6

http://www.atlantique-habitations.fr/

Function : Construction Manager

Forma 6 S.A

6 Bis, rue de l'Ouche de Versailles BP 30209 44002 NANTES Cedex 1 Tél. 02.40.29.47.25 - Fax. 02.40.29.40.50

http://www.architecture-forma6.fr/site.php

Function : Company

Techniques et chantiers

72 Bd de Strasbourg 49000 ANGERS Tél. 02.41.66.14.25 - Fax. 02.41.66.14.30 E-mail : t-et-c@wanadoo.fr

http://www.techniquesetchantiers.fr/site/

Function : Thermal consultancy agency

Isocrate

6 rue des Sassafras - BP 701 44301 NANTES CEDEX 3 Tél. 02.51.89.77.50 - Fax. 02.51.89.03.78 E-mail : infos@isocrate.com

http://www.isocrate.com

Function : Construction company

Mureko

32, rue de la dutée 44800 Saint HERBLAIN Tél. 02.51.83.13.93 – Fax. 02.51.83.96.98

http://www.mureko.com

Function : Structures calculist

Arest

ZA de la Forêt 8 rue de Chante-Merle - BP 7 44140 LE BIGNON Tél. 02.40.26.26.00 - Fax. 02.40.26.02.13 E-mail : infos-nantes@arest.fr

http://www.arest.fr

Function : Company

Acoustibel

22, rue de Turgé 35310 CHAVAGNE Tél. 02.99.64.30.28 - Fax. 02.99.64.27.72 E-mail : acousti.belrenne@wanadoo.fr

http://www.acoustibel.fr/

Function : Certification company

promotelec

0825042022

http://www.labelperformance.promotelec.com

Contracting method

General Contractor

Type of market

Realization

Energy

Energy consumption

Primary energy need : 43,00 kWhep/m^2.an

Primary energy need for standard building : 84,00 kWhep/m^2.an

Calculation method : RT 2005

Breakdown for energy consumption : Heating: 10 ECS: 18 Lighting: 7 Auxiliary: 8

Envelope performance

Envelope U-Value : 0,49 W.m^{-2}.K^{-1}

More information :
THERMAL CHARACTERISTICS OF HOUSING:
Vertical walls:
-Exterior walls insulated from the outside: Compounds 16.1 cm Solid wood type MUREKO (R = 1.70 m2 ° C / W) 100mm + PES company STO or equivalent, R = 2.60 m2 ° C / W .
Up = 0.22 W/m2 / ° C
-Exterior walls insulated from the outside: Compounds 16.1 cm Solid wood type MUREKO (R = 1.70 m2 ° C / W)
+ 140mm PES company STO or equivalent, R = 3.70 m2 ° C / W. Up = 0.18 W/m2 / ° C
Location: MI.
Walls of local non heaters: Compounds of + insulation concrete inside a doubling PSE type TH32 100 10, company BPB PLACO or equivalent, R = 3.15 m2 ° C / W.
Location: LC1, LC2, INTER.
Up = 0.29 W/m2 / ° C Walls on local non heaters: Compounds of + insulation concrete exterior by doubling the PSE type
10 100 TH32, or equivalent company BPB PLACO, R = 3.15 m2 ° C / W. Up = 0.29 W/m2 / ° C
Location: LC1 side ramp.

Building Compactness Coefficient : 0,33

Indicator : I4

Air Tightness Value : 0,32

Renewables & systems

Systems

Heating system :

- Condensing gas boiler

Hot water system :

- Condensing gas boiler
- Solar Thermal

Cooling system :

- No cooling system

Ventilation system :

- Humidity sensitive Air Handling Unit (Hygro B

Smart Building

BMS :
no

Smartgrid :
no

Environment

Urban environment

Land plot area : 1 970,00 m^2

The eco-district as a whole is to ensure a reasonable density of the "built" environment in order to remain "wide area" and preserve as much green space on the site The principle of eco-district also lies in its social dimension, on the offering of spaces designed in close connection with their urban environment.Ti Koad is located near structural axes and public transport: road to Clisson , bus line No. 42, Busway line and train station near San Sebastian. Proximity to public transport networks is thus in line with the environmental objective of the project, which focuses in particular on the development of soft transport modes.

Costs

Construction and exploitation costs

Renewable energy systems cost : 30 000,00 €

Carbon

GHG emissions

Methodology used :
carbon balance

GHG before use : 1 217 000,00 $KgCO_2$ /m^2

The carbon footprint for the construction phase for the company Mureko compared with traditional construction methods does not include the use of the building or its life.

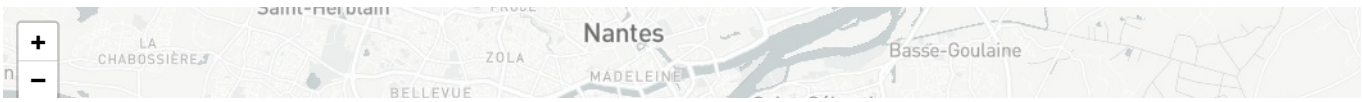
Life Cycle Analysis

Material impact on energy consumption : 28,00 kWhEP

Eco-design material : The laminated wood panel (spruce): This is a board made of solid wood planks, stacked in layers crossed at 90 ° and glued together over their entire surface. The glue used in the assembly of plates together is an adhesive based on polyurethane without formaldehyde. The panels do not emit VOCs (volatile organic compounds).

https://www.construction21.org/france/data/sources/users/1446/ezco-matezriau.docx

Contest



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