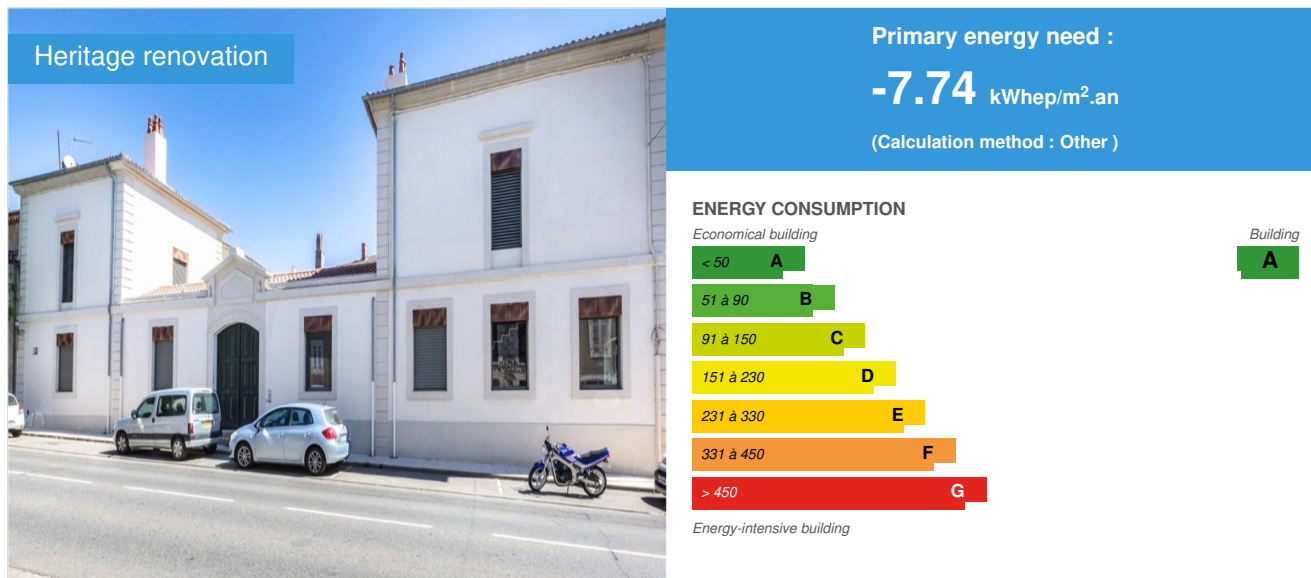


Green Stone - heritage renovation into a positive energy building

by Jean-Baptiste Gilibert / © 2022-06-16 00:00:00 / France / 621 / FR



Building Type : Office building < 28m
Construction Year : 1760
Delivery year : 2016
Address 1 - street : 44 Victor Hugo 32 000 AUCH, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 852 m² SHON RT
Construction/refurbishment cost : 1 450 000 €
Cost/m² : 1701.88 €/m²

Certifications :



General information

Case study proposed and written by Jean-Baptiste Gilibert as part of his Bachelor Real Estate Business Manager course at the Ecole Supérieure des Professions Immobilières (ESPI) in Marseille .

The site has **remarkable energy and environmental performance** . The achievement is a success because it is a **positive energy** heritage building (BEPOS), **low carbon** , and **energy self** -sufficient (E4C2 level of Label E+C-).

It was necessary to respect the character of the place, and preserve the old stone frame of the building. The insulation was therefore done by the roof, the floors and the glazing, without insulating the walls (thickness 60 cm).

In addition, 100 m² of photovoltaic panels have been installed behind the building, as well as a 93 kW battery energy storage unit (lithium and lead), to ensure its

autonomy.

The materials used are totally biosourced and do not reject carbon . One of the resources is even created with the help of local craftsmen from Gers raw earth: raw earth heating partition (Duoterre), providing all the heating, powered by a 40 kW biomass boiler.

It is the first European building located in a protected perimeter to have been converted into a positive energy and 100% autonomous building. In addition, "Pierre Verte" is the national winner of the Ademe* call for research projects "Towards responsible buildings by 2020" (lighting and IT are supplied with direct current directly from photovoltaics), and is the winner of the 2014 Ademe-Région call for projects "Quality economical buildings in Midi-Pyrénées".

*Ademe: Environment and Energy Management Agency

Photo credit

Addenda

Stakeholders

Contractor

Name : SCI Pierre Verte

Contact : Alain Castells, 05.52.66.92.50, amo[at]addenda.fr

Construction Manager

Name : Atelier d'architecture Airoidi

Contact : Frédéric Airoidi, 05.62.61.83.53, atelier[at]ab-architectes.com

<http://www.architecte-gers.com>

Stakeholders

Function : Assistance to the Contracting Authority

ADDENDA

Alain Castells, 05.52.66.92.50, amo[at]addenda.fr

Function : Company

SOCOTEC

04.61.16.49.60

Advice

Function : Other consultancy agency

CARTE (conception assistance recherche thermique électrique)

05.59.68.05.10, M. Abily : abily.carte[at]wanadoo.fr, M. Cazenave : ocazenave[at]wanadoo.fr

Thermal, electricity

Function : Company

BATECO

05.61.47.64.64, bateco[at]bateco.fr

Ecological renovation

Function : Company

MALET

05.61.31.70.70

Function : Company

JUSTUMUS

M. Truilhe Christian, 05.62.63.46.46

Plumbing, air conditioning, climate engineering, renewable energies.

Function : Company

TAUPIAC ELECTRICITE

05.62.05.14.26, contact[at]taupiac-electricite.fr

electrical work, troubleshooting, air conditioning and heating.

Function : Company

ASCENSEURS ET AUTOMATISMES DE GASCOGNE

05.62.60.14.28, contact[at]a-a-g.com

Elevators

Function : Company

DUTREY PEINTURE

05.62.68.99.19

Laying of wallpaper, laying of floating floors, laying of carpet, vitrification of parquet floors, decorative painting

Function : Company

Sols de Gascogne

09.61.45.48.43, laurentmur[at]orange.fr

Production of fluid and liquid screeds

Function : Company

NIN

05.62.60.06.00

Function : Company

Cedrick Pujolle

05.62.35.38.77

Function : Company

Olivier Alquier

Function : Company

DAZEAS

05.62.63.04.88, dazeas[at]wanadoo.fr

exterior carpentry

Function : Company

CUNHA ET CASTERA ALUMINIUM

05.62.61.83.39, cunha.castera[at]wanadoo.fr

Aluminum joinery

Function : Company

LES BATISSEUR D'ARCAMONT

contact[at]batisseurs-arcamont.com

Masonry, framework, roofing, stone cutting and insulation

Function : Company

CONSTRUCTION DE LA TENAREZE

05.62.28.18.12

Function : Company

AMIANTE INGENIERIE

05.34.59.05.96

Energy consumption

Primary energy need : -7,74 kWhep/m².an

Primary energy need for standard building : 178,00 kWhep/m².an

Calculation method : Other

CEEB : 0.0001

Renewables & systems

Systems

Heating system :

- Low temperature floor heating
- Wood boiler

Hot water system :

- Other hot water system

Cooling system :

- No cooling system

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- Solar photovoltaic
- Wood boiler

Environment

Urban environment

Located in the historic center of Auch, this building was a former private mansion, a former school and the Auch gendarmerie before becoming what it is today.

We are thus two steps from the actual city center of Auch and close to public transport and shops (Petit Casino, bakery...).

2 green parks are nearby, the Jérôme Cuzin square with its children's playground and the Allée Baylac garden.

Products

Product

raw earth heating partition

Duoterre

Product category : Second œuvre / Cloisons, isolation

Wooden frame partitions filled with wood fiber and coated with raw earth, patinated with natural pigments and linseed oil.

Costs

Construction and exploitation costs

Total cost of the building : 1 450 000 €

Additional information on costs :

Renovation work = €1,280,000

Positive energy surcharge = €70,000

Additional energy autonomy cost = €100,000

Total = €1,450,000

Contest



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