


City multi-media library

by Pascal BRUNEL-ORAIN / 2014-02-20 00:00:00 / France / 17695 / FR

Renovation



Primary energy need : **74.7** kWhep/m².an
(Calculation method : RT 2005)

ENERGY CONSUMPTION

Economical building Building

< 50	A	
51 à 90	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 : Library, documentation center
Construction Year : 2013
Delivery year : 2013
Address 1 - street : 21, Rue des Prés 78480 VERNEUIL-SUR-SEINE, France
Climate zone :

Net Floor Area : 448 m² SHON RT (fr)
Construction/refurbishment cost : 1 748 000 €
Number of Seat : 146 Seat
Cost/m2 : 3901.79 €/m²

Certifications :



General information

Performing a public building aiming for LEED Gold certification

Sustainable development approach of the project owner

V.3 LEED Gold level

Architectural description

Transformation of a barn into a city multi-media library

Replacement of the roofing
Repair of the frame
Solar photovoltaic canopy
Wooden superstructure
O'Portune wood floors, insulation cellulose wadding
TECHNAL aluminum exterior joinery breaking thermal bridges
Rainwater collection
Drilling vertical Geothermal heat pump system

Stakeholders

Stakeholders

Function : Contractor

Monsieur le Maire - Philippe TAUTOU

Mairie - 6 bld André Malraux - 78480 VERNEUIL sur Seine

<http://www.ville-verneuil-sur-seine.fr/>

Function : Designer

Pascal BRUNEL-ORAIN

PBO ARCHITECTURE - Péniche CALYX - 48, quai Aristide Briand - 78510 TRIEL-sur-Seine

<http://www.pboarchi.fr>

Function : Assistance to the Contracting Authority

Jean-Baptiste YAGUIYAN

OGER INTERNATIONAL - 70, rue Saint-Denis - 93582 SAINT-OUEN cedex

<http://www.ogerinternational.com>

Function : Others

Marc LOUWERS

IMPEDANCE - 80, Domaine de Montvoisin - 91 400 Gometz-la-Ville

Contracting method

Separate batches

Type of market

Global performance contract

Energy

Energy consumption

Primary energy need : 74,70 kWhep/m².an

Primary energy need for standard building : 154,70 kWhep/m².an

Calculation method : RT 2005

Breakdown for energy consumption : - Heating kWhep 5.35 / m²

- yearCooling kWhep 18.05 / m² / year

- Lighting kWhep 35.34 / m² / year

- Auxiliary ventilation kWhep 33.01 / m² / year

Initial consumption : 75,00 kWhep/m².an

Real final energy consumption

Final Energy : 35,00 kWhep/m².an

Envelope performance

Envelope U-Value : 0,39 W.m⁻².K⁻¹

More information

Measurements and verification of energy consumption between 6 and 18 months after delivery of the building

Renewables & systems

Systems

Heating system :

- Geothermal heat pump

Hot water system :

- Individual electric boiler

Cooling system :

- Geothermal heat pump

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- Solar photovoltaic
- Heat pump (geothermal)

Renewable energy production : 15,40 %

Environment

Urban environment

Green space : 26,00

The building is located in the old center of the town.

4 bus stops in walking a distance less than 400m, with over 200 daily bus passes.

10 services within 800m.

Near residential areas with a density greater than 25 dwellings per hectare.

Products

Product

Rustic tile colors Mesnil

Terreal

documentation@terreal.com

<http://www.terrealcouverture.com/>

Product category : Structural work / Carpentry, cover, tightness

In addition to its thickness and its robustness, Rustic tile TERREAL owns a Solar Reflectance Index pupil (IRS = 31) answering all the requirements of LEED Platinum repos. The IRS is an index to estimate the solar radiation that is reflected by the tile. If the tile retransmits much of the received solar radiation, the amount of heat transmitted to the interior of the building will be limited. According to the same logic, the surface temperature of the roof will also be less high. From a more technical point of view, the comfort of summer is taken into account through the Solar Factor (S). Given its dependence to the reflectance of the wall and its insulation, it will imperatively increase the IRS and thermal insulation (R) to ensure true comfort summer.

Enter the LEED framework, also demonstrate that the french players, Ile 100% in this case, have a know-how which can be exported to the international despite the specificities of the French regulation. This choice of material has been approved by the Architect of Buildings of France Ile de France.



Ceramic flooring NOA

Novoceram

contact@novoceram.fr

<http://www.novoceram.fr/produit/noa>

Product category : Management / Others

Noa comes from technology glazed porcelain colored body and benefited Ecolabel certification and ISO 14001. His label of emissions into the air inside is A +.



Geothermal heat pump

Climasol Wavin

wavin@wavin.fr

Product category : HVAC, électricité / heating, hot water

Equipped with heated floors, refreshing the ground floor and upstairs, with some space heaters, the media library gets most of its energy from a geothermal drilling is under a parking lot, a few meters of the building. 49 meters deep, the water has a drilling recovered 12-13 Å° C which is then reintroduced into the water by means of two reinjection wells. In the meantime geothermal energy is recovered by a heat pump reversible Climasol Wavin a heat output of 40kW (coeff. power: about 4). The heat pump supplies all the heat and battery of the central air handling double-flow diffusers.

Swegon RX Gold - Central air handling a rotary heat exchanger -

Swegon

info@swegon.fr

<http://www.swegon.com/>

Product category : HVAC, électricité / ventilation, cooling

Central air handling a rotary heat exchanger CTA - complete with a direct drive fans blowing and extraction filters blowing and extraction and rotary heat exchanger.- The thermal efficiency, heat recovery up to 85%.- Air flow up to 50,400 mÅ³ / h.- Regulation of variable rotor speed.- Recuperation of energy coolingTwo new sizes (7 and 11) and a fan optimizes offer more freedom to choose exactly the unit size and model of fan adapted to the needs of the installation. And therefore, even more opportunites to optimize the energy performance of the project.The most striking novelty is the revolutionary system of regulation, IQlogic. Besides many intelligent and user-friendly functions, much more powerful options are proposed for communication and remote control from a main control system, a laptop, a tablet or a mobile phone. This regulation system can be equipped with additional modules to increase the functions.All GOLD units have the characteristics and advantages of GOLD unique concept: work simplification and guarantee reliable performance.The GOLD are for ventilation comfort.- Depending on the version selected, GOLD units can be built in office buildings, schools, nurseries, public buildings, shops, residential buildings, etc..- EC technology for all sizes- Integrated control system for greater simplicity of installation- Full range of accessories optimized for GOLD global optimization performance and time saving installation- Eurovent Certification with guaranteed data- All units are tested before delivery - reliability is guaranteed!High efficiency energetics and efficient heat recovery of the GOLD RX (04-35 sizes, and 50) were Certified Passive House. This makes it unique in the world GOLD, becoming the first CTA to students air flow rates (<9000 mÅ³ / h) that meets the requirements of the Passive House certification.Rotary heat exchanger REConomic- Rotating aluminum wheel having a plurality of small gaps- Systems of extremely efficient heat recovery, with ever higher performance 80%



Thanks to the central processing air, mediatheque recovered nearly 80% of energy

Photovoltaic Glass Bay SunEwat

AGC

<http://www.veral-agc.com/>

Product category :

SunEwat XL is a laminated safety glass in which are encapsulated polycrystalline photovoltaic cells. It responds to the dual function of producing electricity and building element



Wooden carrier floor O'PORTUNE with Schilliger wood

ECOTIM CBS/CBT

<http://www.cbs-cbt.com/Ecotim/fr/index.html>

Product category : Finishing work / flooring

society ECOTIM CBS / CBT factory floors O'PORTUNE with FSC wood in SCHILLIGER. O'PORTUNE is constructive YSTEM for floors up to 12 meters wide scope without support. Is of solid wood boards maximum section 75 x 225 mm. Boards screwed or nailed in a staggered manner, thus raising performance floor without increasing its weight. Creation of a partially isotropic screwing decking Kerto kind slab panels. Offer underside acoustic ceiling joists exposed appearance. Can prefabrication factory as to assemble in situ slabs.



Water management

Water Self Sufficiency Index : 0.58

Water Consumption/m2 : 0.06

Water Consumption/Seat : 0.17

Consumption from water network : 25,10 m³

Consumption of harvested rainwater : 34,20 m³

Establishment of a system to recover rainwater for toilets, except children ones with a 2000l drip of rainwater. The method of calculating the total water consumption of the building is based on occupation and annual consumption of equipment.

Indoor Air quality

Indoor Air Quality plan during construction and prior to occupancy. Smoking area outside the building. Minimum ventilation rates in occupied spaces. Products and building materials within the sealing system with limited VOC. Products and resins without formaldehyde urea.

Carbon

GHG emissions

GHG in use : 2,00 KgCO₂/m²/an

Contest

