E.Leclerc Center of Quimper

by Antoine Horellou / 2017-06-08 16:31:10 / Frankreich / 8254 / FR

Primary energy need :

599 kWhep/m².an

(Calculation method :)

ENERGY CONSUMPTION

Economical building *Building*

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

Energy-intensive building

Building Type : Supermarket - Hypermarket
Construction Year : 1988
Delivery year : 2015
Address 1 - street : 29000 QUIMPER, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 6 097 m²
Construction/refurbishment cost : 120 000 €
Number of Visitor : 50 Visitor
Cost/m2 : 19.68 €/m²

Proposed by :

COOL ROOF

General information

The E.Leclerc Center of Quimper is a classic shopping center, built in 1988.
The E.Leclerc Center in Quimper chose the Cool Roof reflective thermal paint to paint its roof in white to limit the heat of the building.

A white roof "Cool Roof" returns the heat of the sun, limiting the heat on the roof of the building, and therefore inside the building. It is a simple and effective solution to improve the comfort of non-air-conditioned buildings. to limit air conditioning expenses for air-conditioned buildings

Case study :

E. Leclerc of Quimper; 6097m2; 120k € of paint (supplied / asked)

10 days of construction on the roof (without any hindrance for the store)

Result = 20k € saving of electricity consumption / year + prolongation lifetime of the roof.

Internal rate of return measured by 28%

Sustainable development approach of the project owner

For more than ten years, the SAS Kervilly has a permanent will to reduce its carbon footprint and implement a HQE policy with its services, its collaborators with its commercial and associative partners and to "test" in situ experiments improving our energy consumption. In three years, consumption has decreased by more than 45% over the period from 1250Kva to 750 Kva to date. It is one of the first stores to have changed its refrigerants to best fit future bonds, one of the first to change its lighting methods for a transition to full LEDs.

It is especially the only food surface of this size (6097m2) to realize a "cool roof", the biggest of Europe, which ensures a very high energy efficiency (see article http://www.construction21.org/ France / articles / en / rooftop-cost-to-save-lenergie.html).We want and need to continue in these steps and exchange to improve our approach HQE purpose of this application.

Architectural description

The building is a classic shopping center of 6097m2 built in 1988. The roof, not renovated since the construction, is sandwich panel steel tank / insulation / bilayer bitumen and suffering from microcracks. In 2015, the decision was made to try to apply a thermal reflective elastomer paint type "cool roof".

Building users opinion

The owner is delighted with the savings and media spinoffs.
Building users have a better sense of ambient air quality, especially in summer due to the non-start-up of cooling units.

If you had to do it again?

The center E.Leclerc has planned to paint an additional 1000m2.

See more details about this project

http://www.coolroof-france.com

Stakeholders

Contractor

Name : Dovesiamo
Contact : fla@dovesiamo.com

Construction Manager

Name : CoolRoof-France
Contact : Antoine Horellou, ahorellou@coolroof-france.com
http://www.coolroof-france.com

Stakeholders

Function : Company

Corre SARL

ent.corre@orange.fr

Application of a white reflective thermal paint to return the heat and thus improve the thermal comfort of buildings or reduce air conditioning expenses.

Energy

Energy consumption

Primary energy need : 599,00 kWhep/m^2.an

Primary energy need for standard building : 300,00 kWhep/m^2.an

Calculation method :

CEEB : -0.0025

Initial consumption : 599,00 kWhep/m^2.an

Real final energy consumption

Final Energy : 565,00 kWhef/m^2.an

Real final energy consumption/m2 : 565,00 kWhef/m^2.an

Year of the real energy consumption : 2 015

Envelope performance

Renewables & systems

Systems

Heating system :

- Heat pump

Hot water system :

- Individual electric boiler

Cooling system :

- Reversible heat pump

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- No renewable energy systems

Environment

Urban environment

Commercial area of Gourvilly Quimper

Products

Product

Cool Roof France

Cool Roof France

contact@coolroof-france.com

http://www.coolroof-france.com

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 = '12'

Cool Roof offers an innovative ecological reflective thermal paint, which reflects the heat.
Respectful of the environment, it is light, resistant and easily applied on all types of roofs.
A white roof "Cool Roof" returns the heat of the sun, limiting the heat on the roof of the building, and therefore inside the building.
The building manager can thus:
- save up to 30% energy
- plug the roof microcracks
- all without having to modify the structure of its building

Owners of large commercial, industrial or institutional buildings seek this kind of simple, affordable, direct energy efficiency solution, thus avoiding overloading the production of cold.

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 = '29'

Costs

Construction and exploitation costs

Total cost of the building : 120 000 €

Energy bill

Forecasted energy bill/year : 272 000,00 €

Real energy cost/m2 : 44.61

Real energy cost/Visitor : 5440

Carbon

Life Cycle Analysis

Material impact on GHG emissions :
1128

Material impact on energy consumption : 119 000,00 kWhEP

Contest

Reasons for participating in the competition(s)

This building has the largest Cool Roof in France. The most innovative aspect of the renovation is the application of thermal reflective paint on the roof.

A white roof reflects about 85% of the sunlight that reaches it and heats up a few degrees more than the outside air temperature. On the other hand, a black roof can heat up to over 80 ° C.

It is therefore a simple and effective solution to improve comfort, limit air conditioning expenses.

The strong points of a cool roof:

- · Reduce energy bills by reducing the need for air conditioning,
- · Improve thermal comfort for spaces that are not air-conditioned,
- · Improve the performance of roofing equipment (air conditioner, solar panels ...)
- · D Decrease the temperature of the roof, which prolongs its life because it undergoes no more important changes of temperatures.

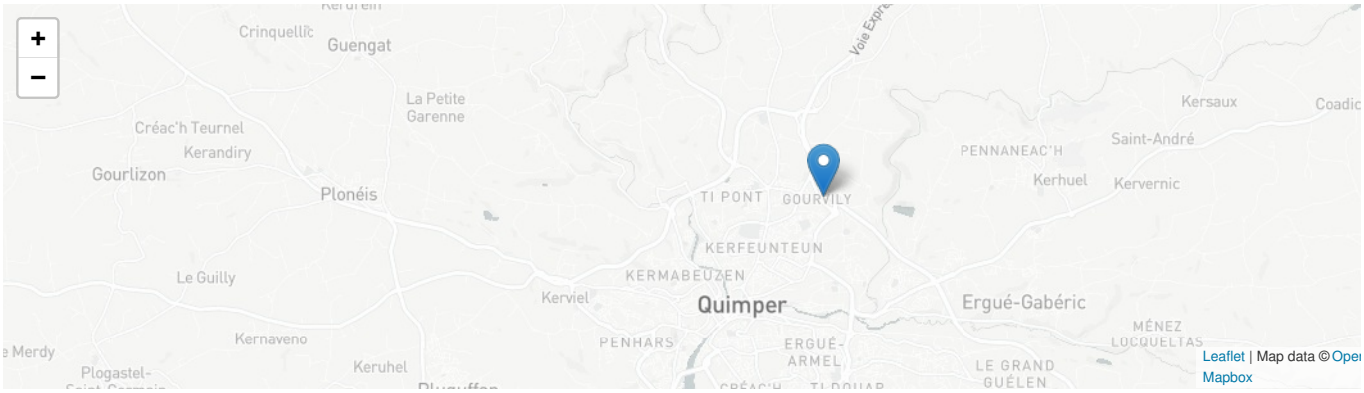
NB: The RTex, RT2012 and LEED certification include in their calculation the solar absorption of horizontal walls. Coolroofing is widely used in the USA but very little used in Europe.

Building candidate in the category

Energie & Climats Tempérés

Coup de Cœur des Internautes

Prix des Etudiants



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