# Réhabilitation rue de la Huchette

by LM Ingénieur / 2017-03-27 10:41:24 / France / 7690 / FR


**Primary energy need :**

**78.9** kWhep/m².an

**(Calculation method : RT 2005 )**

**ENERGY CONSUMPTION**

*Economical building* — *Building*

| | | |
|---|---|---|
| *< 50* | A | 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** : Collective housing < 50m
**Construction Year** : 2014
**Delivery year** : 2016
**Address 1 - street** : 18 rue de la Huchette 75005 PARIS, France
**Climate zone** : [Cfb] Marine Mild Winter, warm summer, no dry season.

**Net Floor Area** : 607 m² SHON
**Construction/refurbishment cost** : 1 800 000 €
**Cost/m2** : 2965.4 €/m²

**Certifications :**

HABITAT & ENVIRONNEMENT

## General information

The rehabilitation and extension of an 18th century building housing 10 housing units in the heart of historic Paris raises the question of the transformation of an ancient structure and its adaptation to contemporary uses as well as to the normative criteria applied today To construction.

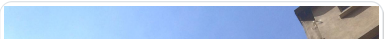
### Sustainable development approach of the project owner

Respect of the City of Paris Climate Plan in rehabilitation.

### Architectural description

The rehabilitation and extension of an 18th century building in the heart of a historic city raises the question of the transformation of an ancient work and its adaptation to contemporary uses. The architectural project, combining both rehabilitation and extension works, was guided by an ecological ambition and strong technical constraints. The method we have developed is between a method known as "Historic Monuments" and an environmental approach.

See more details about this project



## Stakeholders

### Stakeholders

Function : Contractor

RIVP

http://www.rivp.fr/

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Function : Designer

DLA Dumont Legrand

contact@dumont-legrand.fr

http://dumont-legrand.fr/

Project manager

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Function : Other consultancy agency

LM Ingénieur

Laurent Mouly - 13, rue Chapon - 75003 Paris - Tél : 01 40 29 96 92

Design, Structure, Thermal, Envelope

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Function : Other consultancy agency

ATELUX

Atelux - Conflans 13 Rue Clos d'en Haut 78700, Conflans-Sainte-Honorine - Tél : 01.39.72.81.33

http://atelux.fr/

Fluid design office

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Function : Company

Bati-Rénov

Bati-rénov 20 rue Christophe Colomb, 94310 ORLY +33(0)1 80 61 63 00 - courriel@bati-renov.fr

http://www.bati-renov.fr/

General Enterprise

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Function : Company

SMB

Stéphane Maillochon - 02 48 61 45 16

http://maillochon-batiment.fr/

Company hemp concrete and plasters

### Type of market

Realization

## Energy

### Energy consumption

Primary energy need : 78,90 kWhep/$m^2$.an

Primary energy need for standard building : 130,00 kWhep/$m^2$.an

Calculation method : RT 2005

Breakdown for energy consumption : Heating: 49.0 DHW: 29.6 Lighting: 4.3 Auxiliary: 3.0

Initial consumption : 278,90 kWhep/$m^2$.an

## Real final energy consumption

Final Energy : 73,80 kWhef/$m^2$.an

## Envelope performance

Envelope U-Value : 0,71 $W.m^{-2}.K^{-1}$

More information :
Exterior lime / hemp insulation: 4 cm
Existing solid stone: 40 cm
Insulation hemp projected interior: 10 cm
Finish lime / hemp or Fermacell (wet rooms)

Building Compactness Coefficient : 0,78

Indicator : I4

Air Tightness Value : 2,36

# Renewables & systems

## Systems

Heating system :
- Individual gas boiler

Hot water system :
- Individual gas boiler

Cooling system :
- No cooling system

Ventilation system :
- Natural ventilation
- Humidity sensitive Air Handling Unit (Hygro B

Renewable systems :
- No renewable energy systems

Solutions enhancing nature free gains :
Enveloppe performante et durable. Intervention adaptée aux maçonneries existantes. Préchauffage passif et naturel de l'air neuf.

# Environment

## Urban environment

Land plot area : 129,00 $m^2$

Built-up area : 100,00 %

The building was built in the second half of the 18th century. This building is located at the corner of two streets, so it has a façade on the Rue de la Huchette and a façade on the Rue Xavier Privat. The building was once part of the 10th arrondissement of the Sorbonne district. At the beginning of the 19th century, the number 18 of the street of the Huchette corresponded to number 20. The change of number having been made during the second half of the 19th century. The Rue Xavier Privat also underwent a change, it was formerly that of the 3 Chandeliers located in the continuation of the street Zacharie.

# Products

## Product

Tradical Hemp Concrete

Tradical

contact@bcb-tradical.fr

http://www.bcb-tradical.com/fr-beton-de-chanvre-pour-une-isolation-naturelle.html

Product category : Second œuvre / Cloisons, isolation

Contrary to what its name suggests, hemp concrete has nothing to do with traditional concrete. Non-structural, it is an insulating and ecological filling material. Its installation on supporting framework (generally in wood) is apparent to the historical constructive principles of dense urban environments: constructions with pan of wood and pan of iron. Conjugating the qualities of hemp and lime, it is projected horizontally on a temporary or permanent formwork bottom. It ensures a distributed insulation of the construction, significantly reducing thermal bridges. The hygroscopic nature of hemp gives the walls a healthy and natural breathing, avoiding the effect "tight box". Its inert character improves the comfort of summer and winter. Finally, hemp concrete is not limiting and allows to realize all types of facade (wood cladding, zinc, plaster ...) The use of hemp concrete allows an energy sobriety, a sobriety constructive and an environmental sobriety . On this building, Tradical Hemp Concrete is used for 2 applications. In a wall with distributed insulation, it constitutes the walls of the exterior facades walls street and side courtyard. It is applied mechanically in filling between slabs. It is also used in roofing with distributed insulation.

The sensitivity of the developer and the project management team to biosourced materials naturally led them to choose hemp concrete. The skills of the general company in this field have been a real benefit for the project.

## Costs

### Construction and exploitation costs

Cost of studies : 180 000 €

Total cost of the building : 1 700 000 €

## Carbon

### GHG emissions

GHG in use : 12,30 $KgCO_2/m^2/an$

Methodology used :
RT 2005

GHG before use : 151,00 $KgCO_2/m^2$

Building lifetime : 100,00 année(s)

, ie xx in use years : 12.28

GHG Cradle to Grave : 1 381,00 $KgCO_2/m^2$

### Life Cycle Analysis

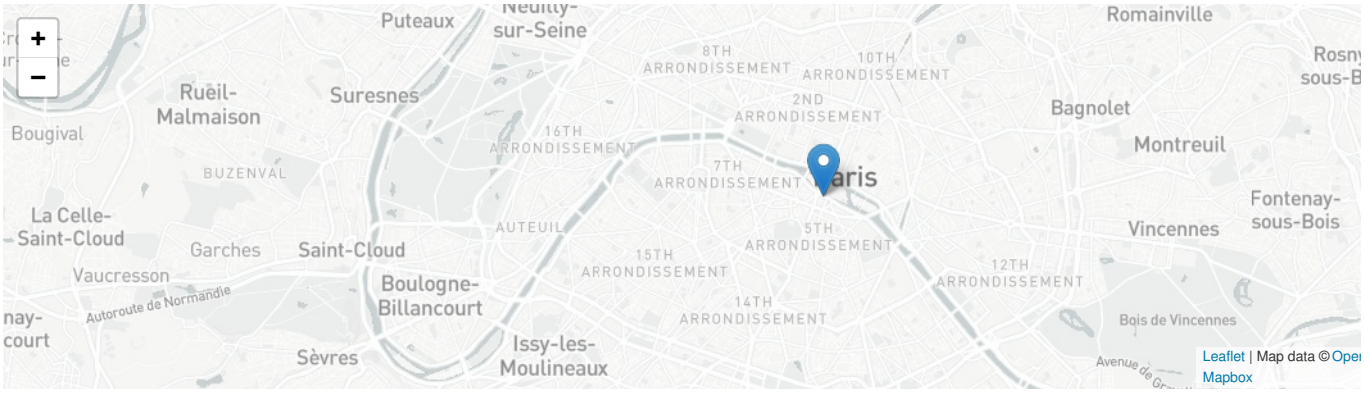
Eco-design material : Insulation of hemp concrete facades Wood joists Wood fiber insulation

## Contest

### Building candidate in the category

Bas Carbone

Coup de Cœur des Internautes

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