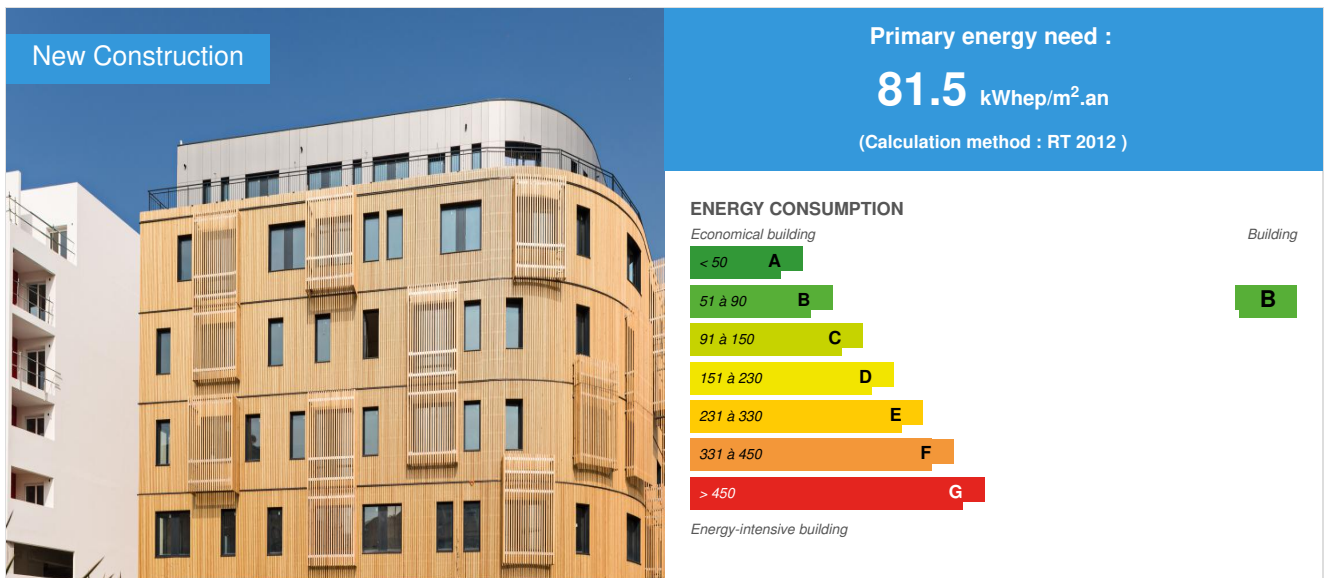


## MARSEILLE YWOOD DOCKS FREE

by Stéphane Bouquet / 2015-05-11 15:12:09 / Francia / 18071 / FR



**Building Type** : Office building < 28m  
**Construction Year** : 2014  
**Delivery year** : 2015  
**Address 1 - street** : 13003 MARSEILLE, France  
**Climate zone** :

**Net Floor Area** : 3 637 m<sup>2</sup>  
**Construction/refurbishment cost** : 4 770 000 €  
**Number of Work station** : 175 Work station  
**Cost/m2** : 1311.52 €/m<sup>2</sup>

**Certifications :**



**Proposed by :**



### General information

The Ywood building of the "Les Docks Libres" operation is part of an overall operation. With 7 storeys, it is the highest office building in France with a CLT constructive process, a solid wood structure. The location of the project between Euromed 1 and Euromed 2, makes it a real piece of city. The building is located at an urban intersection at the entrance of Metro National. It articulates the southern island of the operation at the crossing of existing roads. The implantation continues the facades of National Boulevard in order to create a withdrawal on a small square at the intersection with Cassin street. This square will allow to install a public space with trees at the foot of the building. It is a unique building in a dense urban center, where wood, a living material, finds its place in contrast with the surrounding buildings.

**Sustainable development approach of the project owner**

The building is built with the CLT construction method. There are many advantages to the CLT method:

- short delivery times,
- carbon footprint is reduced by 50%,
- clean construction site.

Thermal insulation is external. The gain on the Bbio coefficient is 48%. The gain on the primary energy consumptions reaches 38%. We wanted to obtain the BDM (Sustainable Mediterranean Buildings) label for the construction stage. The windows are fitted with adjustable sun breakers (except on the northern facade). The roof of the building is widely vegetated and beehives will be set up in green spaces.

Monitoring of consumption goes well beyond regulatory requirements and a metrology system will optimize energy consumptions.

Anomalies in water consumptions can be detected.

LED lighting has been generalized on the building with presence detection. The light is dimmed depending on daylight. The elevators are equipped with a system to recover energy. In addition, the Effinature label method was applied during the design stage. Effinature is the first label in the world to deal with the preservation and enhancement of biodiversity in the real estate sector.

## Architectural description

Built with the technology of interlaced/glued solid timber panels BBS (BINDERHOLZ group), for floorings and bearing facade walls. The building consists of a glazed based, the exterior facades are covered with larch wood lath. The windows are equipped with electric turnable aluminum blades sun-breakers. The last storey stands a little in the back create a large accessible terrace. Office floors are 15.30m wide (useful surface) and can be divided into 3 lots. Particular attention was paid to the energy consumption of the building throughout the construction method and equipments to achieve a RT 2012 level -38%. The ergonomics and flexibility of use of the building were integrated well in advance of the design.

## Building users opinion

"Foncière Inea was a pioneer in 2013 by positioning itself on one of the 1st major solid timber construction project with the Ywood label: L'Ensoleillée, located at the gates of Aix-en-Provence, this innovative 7000m<sup>2</sup> office building was quickly praised by users, confirming our confidence in solid timber construction, rarely used in France in spite of its great assets, especially for eco-responsibility. With this success, we have continued to invest in timber construction by acquiring Les Docks Libres. This project completes our commitment to the new metropolis of Aix-Marseille-Provence where we have assets for around € 60 million, or 14% of our patrimony."

Arline GAUJAL-Kempler, CEO of Foncière INEA.

"Moving our regional headquarters marks a new step in the commitment of Nexity in Marseille. Thanks to the involvement of all employees, we can move into the Ywood building. Living in a timber built office requires from us that we consider our workplace more responsibly, by revisiting our usual behavior. This eco-guide will be our instructions to consult without moderation. Welcome to the heart of Free Docks " - Christian DUBOIS - President Nexity Provence Promotion"

"Les Docks Libres fulfill a dual role:

- Social because of its location in a fast evolving district that deserves our investment.
- Architectural because bringing wood in an urban environment is a true biodiversity bet.

To date, Ywood built the the tallest timber office building in France in Marseille and we are very proud of this performance, achieved thanks to all the professional expertise of our partners. Living wood is the future. We believe in it!" - Stéphane Bouquet - Directeur Nexity Ywood.

## If you had to do it again?

Improving the interface between the various stakeholders and technical service providers. Using BIM for example.

## See more details about this project

<http://polebdm.eu/>

LES DOCKS LIBRES

### Stakeholders

### Stakeholders

Function : Contractor

NEXITY

M. Stéphane BOUQUET, Directeur Ywood

<http://www.nexity.fr/immobilier/entreprises/nos-realisations/bureaux-bois-ywood/docks-libres-marseille>

Function : Designer

CARTA ASSOCIES

<http://www.carta-associies.com>

Function : Investor

FONCIERE INEA

Arline GAUJAL-KEMPLER

<http://fonciere-inea.com/>

Function : Thermal consultancy agency

TEP2E

<http://tep2e.fr/site/index.html>

Function : Thermal consultancy agency

BG INGENIEURS CONSEIL

<http://www.bg-21.com/fr>

Accompanying BDM

Function : Structures calculist

MATHIS

Frank Mathis

<http://www.mathis.eu/fr/>

Function : Construction Manager

SEPROCI

Eric Moineau

Function : Other consultancy agency

QUALICONSLT

M. Valériani

Control office

Function : Certification company

EFFINATURE

Cédric PLANTAZ

<http://www.effinature.fr/doku.php>

Function : Other consultancy agency

EUROPACTE

Jacques TESTA

SPS

## Contracting method

Off-plan

## Energy

### Energy consumption

Primary energy need : 81,50 kWh/m<sup>2</sup>.an

Primary energy need for standard building : 132,00 kWh/m<sup>2</sup>.an

Calculation method : RT 2012

Breakdown for energy consumption : Heating: 15%

Cooling: 32%

Hot Water: 18%

Lighting: 13%

Auxiliaries and ventilation: 22%

## Real final energy consumption

Final Energy : 40,00 kWh/m<sup>2</sup>.an

## Envelope performance

Envelope U-Value : 0,63 W.m<sup>-2</sup>.K<sup>-1</sup>

More information :

Solid timber panels, rock wool external insulation.

Aluminum joinery Uw: 1.8

Aluminum sun breakers on the whole building except on the northern facade.

Building Compactness Coefficient : 0,17

Indicator : n50

Air Tightness Value : 1,83

## More information

The Ywood Docks Libres offices are equipped of an energy monitoring system that goes well beyond the 5 uses of the RT2012 (French thermal regulation). The heat pump is equipped with a thermal energy metering that will allow us to reconstruct the COP (Coefficient of Performance). We will also measure the efficiency in energy recovery of the central handling air unit through the acquisition of the blowing and return air temperatures.

Internal temperature recorders will follow the behavioral component quite essential operating phase.

## Renewables & systems

### Systems

Heating system :

- Heat pump
- Fan coil

Hot water system :

- Individual electric boiler

Cooling system :

- Reversible heat pump
- Fan coil

Ventilation system :

- Single flow
- Double flow heat exchanger

Renewable systems :

- No renewable energy systems

## Smart Building

BMS :

The building has a BMS allows the analysis of consumption and management forecasts.

## Environment

### Urban environment

Land plot area : 1 117,00 m<sup>2</sup>

Built-up area : 63,00 %

Green space : 190,00

Many choices (including the facade and the species planted) were made with the goal to be the least impacting on the environment as possible (local tree species requiring little water) + green roofs. Beehives are planned for green spaces. Associated species of honey plants will participate the development of biodiversity on this site, formerly an industrial wasteland.

These hives also have an educational purpose: they will be located on the groundfloor and therefore accessible to neighborhood schools.

## Products

### Product

Binderholz BBS

BINDERHOLZ

Mr Jeremy KESMAECKER

<http://www.binderholz.com>

**Product category :** Table 'c21\_italy.innov\_category' doesn't exist  
SELECT one.innov\_category AS current,two.innov\_category AS parent  
FROM innov\_category AS one  
INNER JOIN innov\_category AS two ON one.parent\_id = two.id  
WHERE one.state=1 AND one.id = '6'

The BBS is a multilayer panel, comprised entirely of solid timber. By crossing and gluing layers, meaning by alternating orientation of the wood longitudinally and transversely, dimensional variations and woodworking ensuing become negligible. The requirements of a modern building material are thus fully met. The BBS is also a solid timber finite element, which is both insulating, carrier and fire-proof. It also ensures good sound insulation and allows a quick boxing up of the building and has a positive effect on the well-being of users.

Constituted 99.4% of wood and 0.6% of glue, BBS is a monolithic material. It allows to design and build with ease, and all the details are solved without difficulty. Statistics and physics calculations are easily established and verifiable. No construction complexity. These panels were used at Les Docks Libres for walls, high and intermediate floors. They have a PEFC label.

Users appreciate the aesthetic appearance of solid timber panels and above all testify to the feeling of well-being it provides.



## Costs

## Health and comfort

### Indoor Air quality

Upstream prescription of materials (flooring, woodstains, paint, ...) with an A + labeling for VOC regulations. When this was possible, the materials used are subject to EPD.

### Comfort

**Measured thermal comfort :** Des sondes d'ambiances sont prévues sur chacun des niveaux avec une relève sur le système de GTB

**Acoustic comfort :** The choice of arrangements have been made for the sake of optimum acoustic comfort:

- The false ceiling slabs have an alpha w 0.9
- The carpet has an alpha w of 0.15 and a reduction in impact sound 24 dB
- The flooring is treated with a sound-resilient material and a screed.

## Carbon

### GHG emissions

**GHG in use :** 2,00 KgCO<sub>2</sub>/m<sup>2</sup>/an

**Methodology used :**

Carbon footprint

**GHG before use :** 168,00 KgCO<sub>2</sub>/m<sup>2</sup>

**Building lifetime :** 30,00 année(s)

**, ie xx in use years :** 84

**GHG Cradle to Grave :** 346,00 KgCO<sub>2</sub>/m<sup>2</sup>

ADEME carbon footprint. Scope: design, construction, operation, decommissioning. Source ADEME emissions factors V6 + INIES.

### Life Cycle Analysis

## Contest

### Reasons for participating in the competition(s)

Les "Docks Libres" (Free Docks) in Marseille is an office building with a solid wood structure, the highest in France. It is exemplary because of:

- its energy efficiency with a carbon footprint reducing by half GHG emissions compared to classic construction methods ;
- its adaptation to users, allowing the energy efficiency to be maintained during the usage phase of the building.

The comfort of the employees in an innovative ecodesigned wood building, that's the challenge we wanted to take up to fight against climate change while preserving the well-being of the users at their workplace.

### Building candidate in the category



Bas Carbone



**Green Building  
Solutions** Awards 2016

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Coup de Coeur des Internautes

