"La Maison qui déménage"

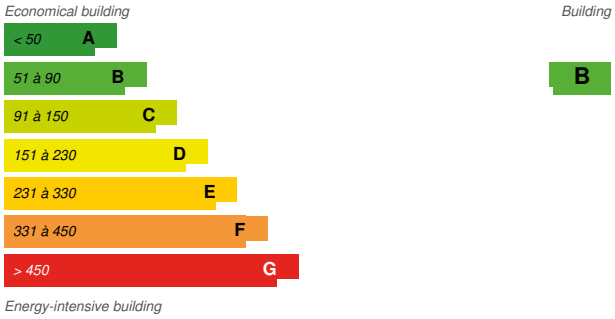
by Damien Cacouault / 2018-05-15 10:53:21 / France / 10414 / FR

Primary energy need :

50 kWhep/m².an

(Calculation method : RT 2012)

ENERGY CONSUMPTION



Building Type : Isolated or semi-detached house
Construction Year : 2014
Delivery year : 2015
Address 1 - street : 78350 JOUY-EN-JOSAS, France
Climate zone : [Cwb] Mild, dry winter, cool and wet summer.

Net Floor Area : 40 m²
Construction/refurbishment cost : 85 000 €
Number of Dwelling : 4 Dwelling
Cost/m2 : 2125 €/m²

Certifications :

General information

AgilCare, a pioneer in renewable construction

Today in France, nearly a third of the waste produced comes from the construction of buildings. The still mostly masonized construction methods no longer correspond to **waste reduction issues** and do not sufficiently take into account the overall life cycles of buildings (construction, maintenance, upgrading, destruction).
With this in mind, AgilCare has developed an innovative solution for buildings of high environmental quality, evolving with the needs and uses of its occupants.

Consisting **of wood elements for customizable construction** , the buildings developed by AgilCare are designed to be assembled, disassembled and reassembled, on site or elsewhere, in one form or otherwise. **Producing no waste, AgilCare's buildings are the first to integrate their reuse from their conception and therefore propose a "circular economy" approach thought from the outset. The house that is moving**

This new method of renewable construction was tested for the first time in 2014 in partnership with Habitat and Humanism. This first experiment demonstrated that AgilCare was able to build eco-designed buildings without waste or imprint. After being exposed for a whole summer in the Parc de la Villette in Paris, "The house that moves" was disassembled and then re-assembled in Jouy-en-Josas where she now hosts a family.

Scaling needed for a proven solution

Since this first successful experiment, AgilCare has continued its development and has been able to build other buildings with these unique features. The issue today is to build buildings up to 4 floors and can accommodate businesses, administrations, classrooms or even offer collective housing.

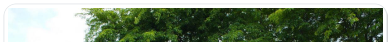
Sustainable development approach of the project owner

The ambition of this "Moving house" project was to produce a functional proof of concept demonstrating our ability to build a housing building, respecting all standards, dismountable and rea ssemblable elsewhere.
Successfully completed, this proof of concept has made it possible to demonstrate that it is possible to build buildings of high architectural and environmental quality that create no waste an d leave no imprint on the site.
Constructed from softwood structure class C24 for the frame, arases and chaining, origin France (PEFC, FSC), the elements arranged (Nano) allowing the construction - deconstruction of t he "House that moves" - constitute the frame, walls, floors and roof of the building. This structural innovation is the solution that allows us to build buildings:
- 100% reusable,
- zero ecological footprint,
- autonomous.

Architectural description

The landscaping of the "Moving House" created by AgilCare is sober and respectful of its environment. Consisting of a large majority of wood and having a portion of metal cladding, it offers a high-quality on-site integration, not suggesting that this building is designed to be disassembled if necessary. The wood, used inside and outside the building, offers an unprecedented comfort of use. Synonymous with comfort and authenticity, wood offers many significant assets to preserve health (antimagnetic, healthier air since the air is naturally ventilated, does not emit harmful gases and toxic compounds, regulates humidity by absorbing and restoring the water vapor ...). Natural insulation and sound conductor, it allows real savings of heating energy and air conditioning.

See more details about this project



Stakeholders

Contractor

Name : Habitat et Humanisme Ile-de-France
https://www.habitat-humanisme.org/associations/habitat-humanisme-ile-de-france/

Construction Manager

Name : Univers et Conseils
Contact : a.marechaux@univers-conseils.com / 06.82.35.30.41
http://www.univers-conseils.com/

Stakeholders

Function : Designer

Contracting method

General Contractor

Type of market

Realization

Energy

Energy consumption

Primary energy need : 50,00 kWhep/m^2.an
Primary energy need for standard building : 200,00 kWhep/m^2.an

Calculation method : RT 2012

CEEB : 0.0018

Envelope performance

More information :

Quality of use: Modular 2D Agile - Low volume packaging
Assemblable process Disassembled - palletized.
Quick assembly
Environmental qualities: Biosourced or recycled products with technical advice (Certified NF Environment at least)
Processes from Biosourcés Bois LC products - PEFC / FSC label
Solid wood frame: LVH - NF EN 14279
int. : Fermacell and OSB 3 - Products from Cellulose and Wood Recycling (IBR Label, Institute for Baubiology)
Performance: Superior to thermal regulations
Thermal
Comfort summer and winters: Wood fiber with strong phase shift (10h) against 2h for a wool of green.
R (Thermal resistance): Compliance sup. Rt 2012 according to walls - 5.50

More information

RT 2012 has not been calculated because the building area is less than 50 m² During its construction, deconstruction and reconstruction, we use very little energy because all the elements are assembled on site and by hand. It is therefore not necessary that a machine emitting CO2 is present. The only time we consume energy is during the manufacturing of the elements and their transportation.

Renewables & systems

Systems

Heating system :

- Combined Heat and Power
- Electric radiator

Hot water system :

- Other hot water system

Cooling system :

- No cooling system

Ventilation system :

- humidity sensitive Air Handling Unit (hygro A
- Double flow heat exchanger

Renewable systems :

- Other, specify

Thermodynamic water heater

Environment

Urban environment

Land plot area : 400,00 m^2

Built-up area : 10,00 %

Installed for 3 months in the Parc de la Villette in Paris, the "House that moves" was disassembled to be reassembled in Jouy-en-Josas. Today, this house is occupied by a family of 4 people. Located in a residential area of the city, it fits perfectly into the landscape consisting of a fairly rich vegetation. Located on an old wasteland, it was quickly built thanks to its self-supporting system allowing a fast construction without imprint. Its sober and elegant architecture allowed it to be very positively welcomed by the inhabitants of the district who had to undergo, neither the nuances of the building site, nor the arrival of a building destructuring the landscape.

Products

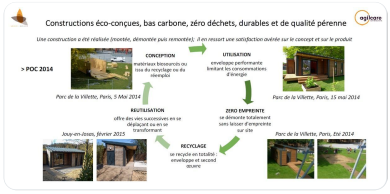
Product

The Nano

Univers et Conseils

Pascal Colné - 06 09 24 67 82 / p.colne@univers-conseils.com

http://www.univers-conseils.com/



Product category : Table 'c21_china.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 = '6'

Nano® is the elementary brick that allows us to offer a renewable building, capable of being deconstructed and rebuilt. This innovative solution reconciles quality and flexibility of the building, for perennial or temporary solutions.
In concrete terms, the Nano® is the building block of our buildings. Nano® is an eco-designed, one-piece and self-supporting wall element forming a structure.
Its technical design allows it to meet the standards characterizing an eco-designed good. Its thermal qualities, its mode of production, the origin of the wood which constitutes it (PEFC channel), its acoustic qualities and its simplicity of assembly make it a product of a high quality.
Inside, likewise for partitions and for the "second work", electricity and plumbing are "agile". Depending on the needs and evolution of the building, they are designed to offer the flexibility to evolve with the building.
Protected by a patent, the Nano® can be a solid wall, such as a wall with window, or a door, an opening, a terrace element ...
Manufactured in factories where quality control is standardized, the Nano® is a solution already tested and approved.

Quality of use: Modular 2D Agile - Low volume packaging
Assemblable process Disassembled - palletized.
Quick assembly
Environmental qualities: Biosourced or recycled products with technical advice (Certified
NF Environment at least)
Processes from Biosourcés Bois LC products - PEFC / FSC label
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Nano, the elementary brick that reconciles quality and flexibility of the building, for permanent or temporary solutions.

Costs

Construction and exploitation costs

Global cost : 85 000,00 €

Global cost/Dwelling : 21250

Health and comfort

Indoor Air quality

Building: monobloc assembly modules, assembled wood, forming a self-supporting structure and including insulation for plan-cher, facades and roof terrace not accessible

- Softwood structure class C24 for frameworks, arches and chaining, origin France (PEFC / FSC)

- Bracing by organic bonding process panels - Moisture diffusion and vapor brake panels - Insulation by cellulose wadding in-sufflée for horizontal modules or pre-cut wood fiber roll for verticals (thermal phase shifts between 10 and 12 hours)

Comfort

Health & comfort :

Joinery in laminated pine wood 3 ply lattice-cross

- Opening width = 68 mm with double thermal and sound seal

- Curtain bead with invisible fixings

- Paint finish RAL 7016 (anthracite gray)

- Silver hardware

- Water rejection profile at the bottom of alumi- nium glazing

- Ironwork and locksmiths tested according to DIN 18251-3

- Multi-point cremone with safety rollers

- Anodized aluminum thermal break supports and thresholds (Ht 25 mm for windows, 17 mm for sliding bay and 20 mm for entry door)

- Double-glazed low-emissivity double glazing with argon gas 4FE / 20Arg WE / 4, thickness = 28 mm certified CEKAL and Effinergie-certified

- Thermal performance: 1.4W / m².K <Uw <1.8 W / m².K

- Road sound reduction index RA, tr = 28 dB

- Air Water Wind classification: A4 / E6B / VB2

Acoustic comfort :

Triple low-emissivity glazing with argon gas 6FE / 10Arg / 4 / 10Arg / 4FE, thickness = 34 mm CEKAL certified and Effinergie-certified

- Thermal performance: 1.1W / m².K <Uw <1.5 W / m².K following wood and dimensions

- Sound reduction index at road traffic RA, tr = 35 dB

- Air Water Wind classification: A4 / E6B / VB2

Carbon

GHG emissions

Building lifetime : 30,00 année(s)

The life of the building is identical to a classic building, that's why we guarantee them 30 years

Life Cycle Analysis

Eco-design material :

Our approach starts with the selection of raw materials. All the wood used are PEF certified.

The elements are then machined and assembled to shape the Nano (put Nano logo)

Nano is our elementary brick with a dimension of 1.25 m by 2.5 m for the walls. It can be a board, a facade, a roof ...

Nano is the element that allows our buildings to be RENEWABLE

Assembly and lifting are then done on site.

Built on piles, without slab on the ground (no need to waterproof the ground), our buildings are realized very quickly (5 days of construction).

But their greatest interest is to be designed to be completely disassembled, leaving no imprint or waste on the site.

Because all the Nano will be able to be reused to build new building.

Contest

Reasons for participating in the competition(s)

Eco-designed low environmental footprint Building

The buildings produced with the innovations developed by AgilCare meet all the standards of responsible construction. The wood used, its method of transformation, the materials used, the processes put in place ... have all been chosen to minimize the environmental footprint induced by the construction of these buildings.

All our buildings built comply with the different standards and regulations governing construction in France (including RT 2012, DTU 31.2, NF C15-100, etc.). Their conformity has been established and guaranteed by independent Technical Design Offices.

The eco-friendly construction method is guaranteed by:

- Materials: Short and French die / bio-sourced or from recycling / quality and robustness
- Resource: energy saving / water management / no environmental impact
- Process: sustainable, simple and economical / completely reusable / waste free / without imprint

Building candidate in the category

Building candidate in the category

Energie & Climats Tempérés

Coup de Cœur des Internautes

Prix des Etudiants

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