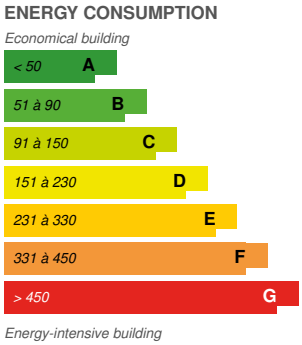
Envie le Labo: a building demonstrating reuse

by Nesrine DANI / 2021-05-27 00:00:00 / France / 4430 / FR

Primary energy need :
kWhep/m².an
(Calculation method : RT 2012)



Building Type : Other building
Construction Year : 2019
Delivery year : 2020
Address 1 - street : 10 Rue Julien Lacroix 75020 PARIS, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 553 m² Autre type de surface nette
Construction/refurbishment cost : 1 500 000 €
Cost/m2 : 2712.48 €/m²

General information

Located in Paris 20th district (Ménilmontant), in the heart of the working-class districts, Envie Le Labo aims to provide practical solutions to citizens to support them towards an eco-responsible and inclusive lifestyle.

The building of the Envie network wishes to promote a circular economy at the service of citizens. With a 70% wood frame, it extends over three floors. On the ground floor, a store is intended to welcome customers with a repair shop for small household appliances, while the upper floors are made up of offices, meeting and entertainment spaces. On the roof is a green roof.

A place of exchange and learning

The objective was to offer a space where people can have their household appliances repaired but also discover the circular economy and get engaged. Thus, educational visits and free thematic workshops around the fight against waste are organized to encourage exchanges around the circular economy. Additionally, 44 beacons scattered around the building allow visitors to explain the composition as well as the origin of reused and recycled materials and objects. They are listed on floor plans located at each level for easy reference.

A strong intention to reuse

Resulting from the end of stock of construction companies and donations from deconstruction (bricks, toilets, mirrors ...), a strong commitment of the Envie Federation was to choose mainly - if not only - materials from the reuse. In total, 19.6 tonnes of new elements were be avoided. A large part of the elements come from the Ile-de-France region (or at most 120km), always in a desire to favour short circuits.

Sustainable development approach of the project owner

Supported by the Envie Federation, a non-profit association, the project has chosen not to be part of a certification process for economic reasons.

On the other hand, it was essential for Envie to demonstrate that it is possible to build and develop more environmentally friendly places with a tight budget.

A strong commitment to a sober and ecological building

As a pioneer in the circular economy since 1984, it was essential that Envie Le Labo reflect the values and know-how of the Envie network.

Three levers were activated for a circular building:

- **Reduce** thanks to raw finishes (little painting, no false ceiling, few baseboards and formwork)

- **Reuse** construction materials and objects without transformation: doors, handles, radiators, toilets, sinks, bricks ...

- **Re-employ** materials to make furniture and partitions (counters, glass roof, coffee table, etc.)

According to the assessment of the circularity of the building carried out by the Evea design office with the support of ADEME Ile-de-France relating to the finishing work and the fitting out of the building:

- 6.9 tonnes of new elements were not used thanks to **the avoidance of materials** (materials not discarded at the end of the building's life because they were not used)
- 2.3 tonnes of new elements were avoided thanks to **re-employ** (materials kept and used again for a different purpose)
- 10.4 tonnes of new elements avoided thanks to **reuse** (materials not discarded and used again for their original use)

In total, 19.6 tonnes of new elements were avoided .

The material recycling rate is 6.1 tonnes, which is significant.

In addition, a green roof has been installed: it allows the retention of rainwater, to keep a cooler temperature during heat waves as well as to promote biodiversity within it.

Local supply and in favor of the social and solidarity economy

Much of the sourcing of materials was done in a short circuit:

a total of 59% of the materials used for the finishing work and interior fittings come from France, including 35% from Ile-de-France. Most of the materials chosen to make the furniture and partitions have traveled less than 120km. In all, over 180 used furniture and refurbished appliances were purchased locally.

Some of the insulation is also bio-based while others are made from recycled cotton.

Envie had recourse to two educational projects and two integration projects as well as to a local Social and Solidarity Economy joinery to manufacture custom furniture and partitions from recycled materials.

Architectural description

The building has a wooden frame with 70% of its structure coming from sustainably managed forests (PEFC). In the same way, a wooden cladding covers the exterior facades made up of reclaimed wood (4 different species from the end of the building site).

The remaining 30% are in concrete blocks for economic reasons.

Unfortunately, the deconstruction of the historic garage did not allow material to be recovered. The original slab was not kept as planned either, for foundation reasons.

Large bay windows and windows and beautiful ceiling heights promote natural lighting, which is also beneficial in terms of energy savings.

Few finishes make it possible to avoid false ceilings, plinths and formwork. Very few paints have been used: all the fermacell, bricks and cinderblock walls have been kept rough.

A partition placed in mezannine, and made from 39 washing machine portholes and wood from an old beam and old windows, constitutes the centerpiece of the building as a demonstrator of the circular economy.

If you had to do it again?

We would be accompanied by a re-employment AMO.

See more details about this project

https://www.envie.org/envielelabo/
https://www.construction21.org/france/articles/h/retour-d-experience-envie-le-labo-le-reemploi-a-tous-les-etages.html
http://materiauxreemploi.com/envie-le-labo-un-nouveau-batiment-demonstrateur-du-reemploi-dans-le-20e-arrondissement-de-paris-visite-par-hannah-hofte/

Photo credit

Stakeholders

Contractor

Name : Fédération Envie
Contact : Nesrine DANI
https://www.envie.org/

Construction Manager

Name : Urban Act
Contact : Alexandre BOUTON
https://www.urban-act.com/

Stakeholders

Function : Company

Union Technique du Bâtiment (UTB)

Thomas Coquin

https://www.utb.fr/
General Enterprise

Function : Others

Studio Idaë

Isabelle DAERON

https://www.studioidae.com/
Design of layout plans, signage design, scenography, educational path, exterior signs, graphic identity

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Function : Others

Contracting method

Lump-sum turnkey

Energy

Energy consumption

Calculation method : RT 2012

Renewables & systems

Systems

Heating system :
- Individual gas boiler

Hot water system :
- Individual electric boiler

Cooling system :
- Reversible heat pump

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

Renewable systems :

- No renewable energy systems

Environment

Urban environment

The Envie Le Labo building is located in the 20th arrondissement, a popular district of Paris (Belleville-Amandiers district), in Ménilmontant. Previously there was an untapped garage on one level at this location.

The Envie Federation benefited from an opportunity to gain access to land through the establishment of a 40-year construction lease with Paris Habitat.

The location completely corresponded to our expectations, in a district with a strong social mix and very dynamic in terms of citizen initiatives.

It was also a strong desire of the citizens of the 20th district to see a new associative place grow rather than a supermarket establishment project.

Also, in terms of deconstruction, there was only one garage on an existing level.

Products

Product

SAS Minimum

https://www.sasminimum.com/

Product category : Second œuvre / Peinture, revêtements muraux

Costs

Construction and exploitation costs

Total cost of the building : 1 500 000 €

Circular Economy

Reuse : same function or different function

Batches concerned by reuse :

- Facades
- Locksmithing-Metalwork
- Indoor joineries
- Floorings
- Partitions
- Plumbing
- others...

For each batch : Reused Materials / Products / Equipments :

FLOOR AND WALL COVERINGS

Reused flexible floor coverings

Hard floor coverings: reused tiles

Hard wall coverings: splashbacks and reused wall tiles

INTERIOR PARTITIONS AND JOINERY

Interior partitions: reused bricks and partitions made from reused washing machine portholes, wood, windows and glass

Interior joinery: doors and door handles

EQUIPMENT

FURNITURE AND APPLIANCES:

- dishwasher, coffee machine, refrigerator, tables, desks, chairs, armchairs, office chairs, stools, cupboards

- custom furniture made from 100% wood, reclaimed polycarbonate and washing machine drums: counters, shelves, bookcase, coffee table, low cabinets

CLADDING / INSULATION

Cladding: reused wood cladding

Reused materials rate :

FLOOR AND WALL COVERINGS

Soft floor coverings: 44% reused carpets or 0.7 tonnes of reused materials or 182m2

Coating of hard floors: 100% of the tiles reused, i.e. 26m2

Hard wall coverings: 100% of the splashbacks and wall tiles reused, i.e. 14m2

INTERIOR PARTITIONS AND JOINERY

Interior partitions: 8.7% (by mass) of partitions made from reused materials (wood, glass, windows) and reused (bricks), ie 3.5 tonnes.

Interior joinery: 8% of doors and handles reused, ie 0.78 tonnes or 5 standard doors and 3 door handles.

EQUIPMENT

FURNITURE AND APPLIANCES: 73% (by mass) come from reuse (64%) and reuse (9%), which represents 204 items in total (including 180 from reuse and 24 items from reuse).

Plumbing equipment: 18% (by mass) of reused radiators i.e. 0.1 tonnes reused or 3 steel water radiators

Sanitary equipment: 75% reused: WC, washbasins, mixer taps, kitchen sink and professional sink either 0.15 tonnes reused, or 1 kitchen sink with built-in cabinet, 1 professional sink (plunge type), 1 WC, 1 sink, 3 mixer taps, 1 PMR bar and 2 mirrors.

CLADDING / INSULATION

Cladding: 90% of the cladding comes from reuse, i.e. 2.4 tonnes (= 211m2): This is wood from 4 different species.

Field of use and material origin :

FLOOR AND WALL COVERINGS

Resilient floor coverings: 44% (on the surface) of reused materials. This is a carpet made from 42% recycled carbon neutral raw material from the supplier's end of stock.

Coating of hard floors: 100% of the tiles reused from the end of stocks of Ile-de-France construction sites.

Hard wall coverings: 100% of the splashbacks and wall tiles reused from the end of stocks of Ile-de-France construction sites.

INTERIOR PARTITIONS AND JOINERY

Interior partitions: 8.7% (by mass) of partitions made from reused materials (wood, glass, windows) and reused (bricks) from Ile-de-France.

Interior joinery: 8% of doors and handles reused from the end of stocks of Ile-de-France construction sites.

EQUIPMENT

Furniture and household appliances: 73% (by mass) come from reuse (64%) and reuse (9%), which represents 204 items in total (including 180 from reuse), all recovered in Ile-de-France .

Plumbing equipment: 18% (by weight) of re-used radiators from the end of stocks of Ile-de-France construction sites.

Sanitary equipment: WC, sinks, grab bar and mirrors from the deconstruction of the former Ecole Centrale de Chatenay Malabry site, mixer taps from the end of stocks from a construction site in Paris, kitchen sink from the worksite life base and professional sink purchased from an online platform.

CLADDING / INSULATION

Cladding: 90% of the cladding comes from reuse: This is wood from 4 different species coming from the end of stocks of Ile-de-France construction sites.

Environmental assessment

Impacts avoided : water, waste, CO2 :

In terms of waste, we were able to avoid having to resort to 19.6 tonnes of new elements through raw finishes, reuse and reuse.

CF MFA type circularity report by Evea

The reuse of materials on this project (excluding partitions and reused furniture) made it possible to avoid:

The emission of 15.7 tonnes eq CO2

Consumption of 4,031 m3 of water

The production of 12 tonnes of waste

Social economy

Social economy and professional integration :

It was important for Envie to collaborate with other charitable actors. We called on 9 structures of the social and solidarity economy.

Part of the finishing work was manufactured by integration sites and educational sites, like the glass roof on the ground floor, made up of wood and glass recovered then assembled specifically for the building, or the ground floor counters and kitchen furniture made from wood recovered by the Initiatives Solidaires integration project, which also manufactured the kitchen furniture.

Household appliances were provided by Envie.

Some furniture was manufactured by the Emmaus Défi integration site.

Atelier TAC made shelves, bookcases and a coffee table.

Finally, two educational projects run by Extramuros and the Fondation Jeunesse Feu Vert made it possible to manufacture reception and workshop counters, benches and planters.

We have also collaborated within the framework of our supply of reusable furniture with Label Emmaus, Co-recycling and Emmaus Coup de main.

Contest

Reasons for participating in the competition(s)

Envie Le Labo is distinguished by a sober and eco-responsible construction and layout:

- By limiting our functional and aesthetic needs to the essentials (raw finishes) and by prioritizing recovery as much as possible (reuse and recycled), we were able to avoid having to resort to **20 tonnes of new elements**, representing **45%** of all the materials and objects intended for the interior fittings of this building. It is in particular the elements below, coming from less than 120km, which could be reused and recycled:
  - The exterior cladding, coming from an end of stock of the general contractor. The facades have thus been redesigned using the 4 charcteristics and the dimensions of the elements available;
  - The office-store dividing wall made with 39 washing machine portholes, old windows and oak beams from 1910;
  - A 4-part glass roof made by a work integration site from wood and glass recovered from the Cluny museum;
  - Carpets coming from the end of stock of the company “Interface”;
  - WCs and sanitary devices from the old central school in Chatenay-Malabry (provided by the Réavie and Eiffage Aménagement association) and from the life base;
  - Reused kitchen and professional sinks;
  - Tiles and earthenware from the end of stock of construction sites;
  - Glass partitions formed from reused windows;
  - Second-hand radiators;
  - Bricks from deconstruction in Aubervilliers, found via the Cycle-Up platform;
  - Numerous pieces of furniture recovered via associative networks such as Emmaüs;
  - Doors and handles recovered during deconstruction.

A review of the building's circularity was carried out by the Evea design office, with the support of ADEME Ile-de-France. According to this study:

- Thanks to the **avoidance of materials** (materials not discarded at the end of the building's life because they were not used), 6.9 tonnes of new elements were avoided.
- Through **materials not thrown away and used again for a different purpose** , 2.3 tonnes of new elements were avoided.
- Thanks to **materials not discarded and used again for their initial use** , 10.4 tonnes of new elements were avoided.
- The rate **of recycled raw materials** in the building's finishing work perimeter is 14%, or 6.1 tonnes.

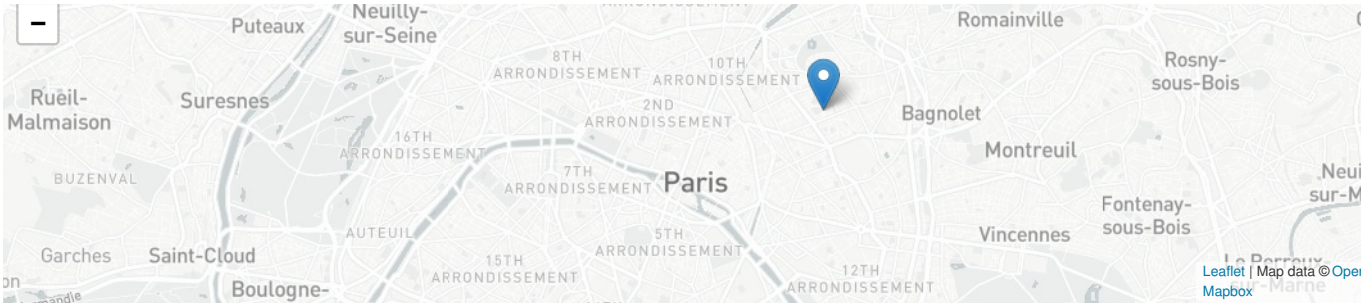
In addition, **70%** of the building structure is made of PEFC wood.

The building also has a **green roof** to lower the temperature during heat waves as well as to avoid saturation of the sewage network.

Finally, a **local supply** has been favored with 35% by mass (i.e. 13.2 tons) of the materials used for the finishing work coming from the Ile-de-France region, and the exclusive recourse **to actors of the social and solidarity economy** for the manufacture of custom-made circular furniture.

Building candidate in the category

Prix du public



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