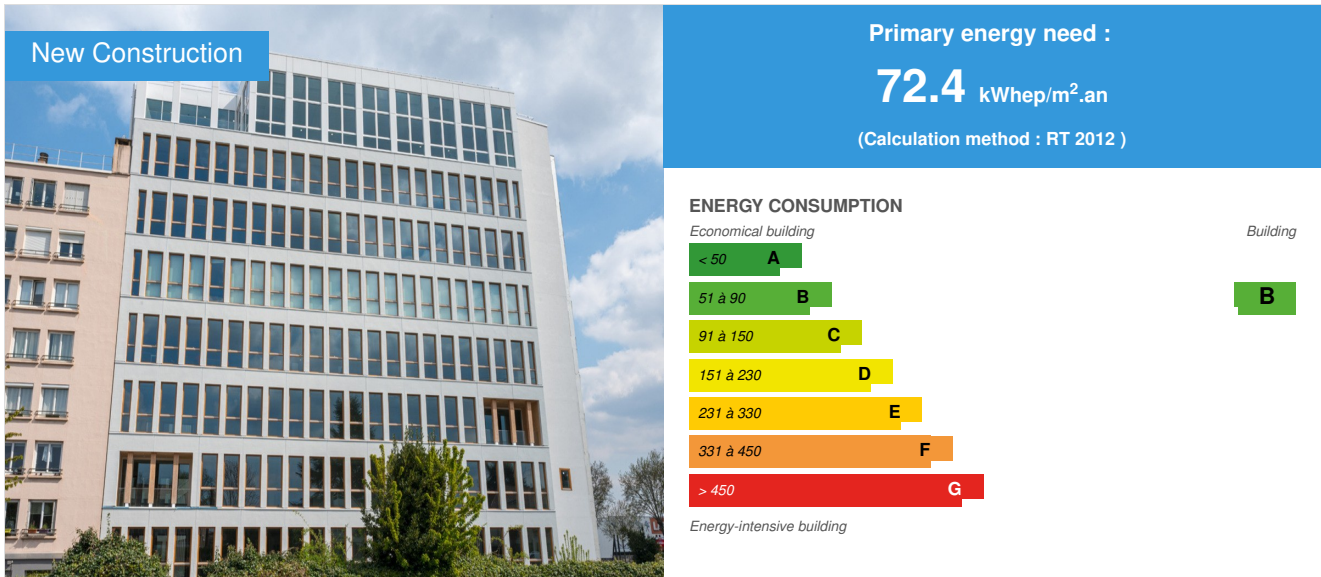


Green Oak Building

by Lionel SENAN / © 2021-05-27 00:00:00 / France / © 6297 / FR



Building Type : Office building < 28m
Construction Year : 2021
Delivery year : 2021
Address 1 - street : 32-34 Avenue Aristide Briand 94110 ARCUEIL, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 10 592 m² Autre type de surface nette
Construction/refurbishment cost : 21 803 083 €
Cost/m2 : 2058.45 €/m²

Certifications :



General information

Green Oak, office building located at 32-34 Avenue Aristide Briand, 94100 Arcueil, composed of 9 levels including a ground floor of services (conference, co-working space) and 8 office levels (each floor being divided in two lots) for a total surface area of approximately 10,000 m², as well as 5 basement levels (technical rooms and car parks).

Loggias accessible to all levels except on R + 1 and two terraces on R + 6 and R + 7 on the Avenue Aristide Briand side, as well as a roof partly equipped with photovoltaic panels complete this building.

Then, this project has a central core made up of 4 quadruplex elevators and a staircase common to the two commercial lots. The partitions (ceiling, facade and technical) are 1.35 m and the clear heights are 2.75 m with an office depth of around 5 m.

This low-carbon operation targets HQE, WELL and BREEAM certifications and also the E + C-, Effinergie +, Biosourcé building and Wired Score labels.

The health and comfort of occupants have been part of our priority, 85% of the surfaces of this building are effectively lit in the first day. The facade is made of a wooden structure and materials with a very low carbon footprint, resulting from the recycling sector. Sustainability was one of our main objectives, supported by an environmental example, allowing Green Oak to be part of a concrete vision of the modern, creative and sustainable city.

Sustainable development approach of the project owner

*Kaufman & Broad's ambition is to **build a sustainable quality of life for all** . We create housing, offices, logistics platforms, hotels, student or senior residences, urban projects, everything that constitutes the city of today and tomorrow by adopting a responsible behavior towards for our customers, our employees and all of our stakeholders.*

We implement the challenges of ecological transition and the national low-carbon strategy in our operations to reduce its carbon footprint, in particular:

- Offer alternatives or complement to the practice of the private car and promote **sustainable mobility** ,
- Integrate **renewable energies** ,
- Develop the implementation of low-carbon materials and components, reused and / or biobased, in a logic **of circular economy** ,
- Promote **new urban uses and services** for social inclusion, quality of life, preservation of biodiversity.

The Green Oak project is fully in line with this approach. A reflection was conducted to assess the efficiency of different scenarios and solutions to minimize the carbon impact of the structure while achieving an attractive and welcoming operation. The use of biobased materials, including partial use of wood in structure, and the use of re-used materials, have proven to be effective arbitrations on three main issues:

- preserve the project economy, and orient it towards the lowest carbon solutions,
- maximize the carbon impact,
- develop the architectural qualities, integration and use of the operation.

For the Green Oak project, the decisions taken benefited from feedback from other eco-designed buildings, such as:

- the Silva project in Bordeaux for the implementation of bio-based materials: a tower in the primary structure comprises more than 66% of wood, as part of a technological challenge supported by the Nouvelle Aquitaine region and ADEME;
- the Hyatt hotel complex in Roissy for the implementation of reuse materials: reuse of concrete from the existing infrastructure for road networks.

The Green Oak project thus advances, concretizes and extends concepts already tested, in a subsequent logic of replicability.

Architectural description

The Green Oak project aims to integrate nature into the office building. By using colors and materials imbued with nature, users will be able to work in healthier spaces.

The hall, through large crossing perspectives, makes the link between the main avenue, the offices, the tree-lined courtyards and the allotment gardens on the opposite side of the avenue.

The interior courtyards make it possible to offer crossing and shallow office floors in order to maximize the entry of natural light.

The beauty is amplified even inside the office floors by the reduction of corridors without natural light. This suppression allows natural light to enter deeper into the building.

The wooden supporting structure is left bare inside, the wooden facade joinery and oak wall cladding, bring a natural look to the office tops.

Finally, the creation of loggias and terraces makes it possible to gain height over the city and offer spaces open to the outside.

See more details about this project

Photo credit

Mathieu BOUNTY

Stakeholders

Contractor

Name : KAUFMAN & BROAD

Contact : Mme Claire SANTOS, csantos@kjetb.com, 06.08.22.56.66

<https://www.kaufmanbroad.fr/>

Construction Manager

Name : CALQ

Contact : Mme Mathilde BERY, greenoak[a]calq.fr, 06.65.59.35.88

<https://www.calq.fr/>

Stakeholders

Function : Designer

Mootz / Pelé Architectes

M. Erik MOOTZ, mootz[a]mootz-pele.com, 06.19.58.69.00

<http://www.mootz-pele.com/>

Monitoring of the operation

Function : Manufacturer

MOBIUS

M. Noé BASCH

<https://www.mobius-reemploi.fr/>

Supply of reused slabs

Function : Assistance to the Contracting Authority

ELITHIS SOLUTION

Mme Farah BOUDAUD, farah.boudaoud[a]elithis.fr

<http://www.elithis.fr/>

AMO Environnement - Monitoring of certifications and labels

Contracting method

Off-plan

Energy

Energy consumption

Primary energy need : 72,40 kWh_{ep}/m².an

Primary energy need for standard building : 115,70 kWh_{ep}/m².an

Calculation method : RT 2012

Breakdown for energy consumption : Heating: 94,195 kWh_{EF} / Domestic hot water: 26,974 kWh_{EF} / Cooling: 10,276 kWh_{EF} / Lighting: 61,860 kWh_{EF} / Auxiliaries: 103,837 kWh_{EF}

Real final energy consumption

Final Energy : 28,06 kWh_{ef}/m².an

Envelope performance

Envelope U-Value : 0,79 W.m⁻².K⁻¹

More information :

- Solar glazing factors: 38%, 56% and 62% - Energy monitoring (GTB and metering by energy / use / rental lot)

Indicator : I4

Air Tightness Value : 1,09

More information

Energy improvement recommendations: Ventilation maintenance: - The air inlets and exhaust vents must be cleaned regularly (every 6 months minimum); - The ventilation boxes must be checked at least every 3 years by a professional. Maintenance of climatic engineering installations: - A maintenance contract for heating production, cooling production and domestic hot water production equipment should be set up in order to ensure regular and efficient maintenance thereof. This will ensure long-lasting and optimum operation of the equipment.

Renewables & systems

Systems

Heating system :

- Heat pump
- Fan coil

Hot water system :

- Heat pump

Cooling system :

- Reversible heat pump
- Fan coil

Ventilation system :

- Natural ventilation
- compensated Air Handling Unit

Renewable systems :

- Solar photovoltaic

Renewable energy production : 5,48 %

Environment

Urban environment

The Green Oak building, located Avenue Arisitide Briand in Arcueil, whose location is at the heart of local development projects, enjoys a prime location. A location effectively privileged by the transport infrastructure projects of Greater Paris, thus ultimately allowing better accessibility of the district.

Despite everything, this district remains very well served today, since it is surrounded by four stations (Verdun Sud, Laplace, Arcueil-Cachan and Bagneux) with metro lines 4 and 15 (Grand Paris) as well as the RER line. B.

Added to this, the centrality of the building, located between the ZAC de la Vache Noire and the ZAC Victor Hugo, thus offering it real attractive potential. And many shops nearby, including the Vache Noire Shopping Center, also allow users quick access to services and amenities.

Finally, an aqueduct and vegetable gardens border the west facade of the building, bringing calm and greenery to users of the latter.

Products

Product

RE-USE TECHNICAL FLOOR

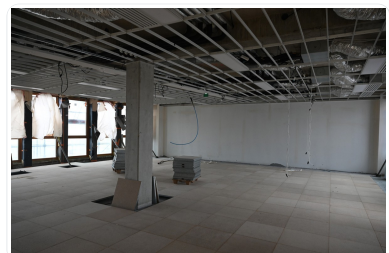
MOBIUS

M. Noé BASCH

<https://www.mobius-reemploi.fr/>

Product category : Second œuvre / Revêtements de sol

- 7,850 m² of reused raised floor area. Raised raised access floor in self-supporting assembly. Reuse unfinished raised access floor comes in the form of removable tiles measuring 600 x 600. These raw tiles are made up of: a panel of high-density agglomerated wood particles of varying thickness a sheet steel tray treated folded on the underside sui goes up on the peripheral sides 0.5 mm thick. Reference life: 25 years. All the components of the slabs are recovered by Mobius, namely: the high density chipboard chipboard panel the folded sheet steel tray. Reused technical laminate floor in self-supporting assembly The raw reused raised access floor is in the form of removable slabs measuring 600 x 600. These laminated slabs consist of: a panel of high density chipboard particles of variable thickness d 'a tray in treated sheet steel folded on the underside sui goes up on the peripheral sides of 0.5 mm thickness with rigid polyvinyl chloride (PVC) seals with a laminated upper face. It was assumed that the laminated slabs rest directly on the heads of the jacks in a self-supporting assembly with plenum not exceeding 500 mm.



No difficulty was raised, Mobius is a responsible player, managing its products and owning a structured subsidiary, which has made it easier for us to integrate re-used floors on site. This solution was therefore very quickly accepted by the stakeholders of the project since it was important to promote reuse on the site with regard to our environmental approach.

Costs

Reuse : same function or different function

Batches concerned by reuse :

- Facades
- Raised floors
- others...

For each batch : Reused Materials / Products / Equipments :

Reused false floor slabs

- Dimensions of reused tiles: 600 x 600

Reused materials rate :

- Reuse slabs: 7,850 m² of reused false floor area (100% for the lot concerned)

Field of use and material origin :

- For reused false floor slabs

All the slabs come from the reuse sector. Mobius collects its slabs when the office buildings are demolished. These materials were doomed to destruction. This product therefore becomes responsible. Regarding traceability, Mobius keeps track of its slabs, from collection to re-installation of the elements.

Product production steps:

- Recovery on deconstruction sites - Packaged products
- Transport to Mobius workshops
- Valuation

Environmental assessment

Impacts avoided : water, waste, CO₂ :

On this project, the reuse of the false floor made it possible to avoid:

The emission of 509.8 tonnes of CO₂ eq

The production of 347.2 tonnes of waste

The use of 6,123 m³ of water

Social economy

Social economy and professional integration :

3,789 hours of professional integration were carried out on the Green Oak project from July 1, 2019 to April 30, 2021. Professional integration is part of a contractual context with the seller of the land.

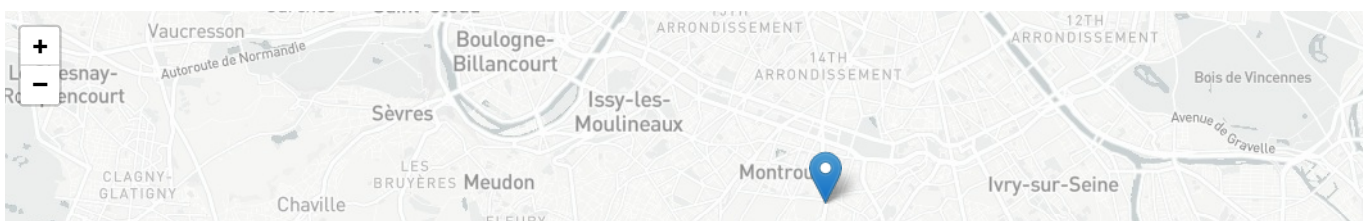
Carbon

Life Cycle Analysis

Material impact on GHG emissions :

1001

Contest





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