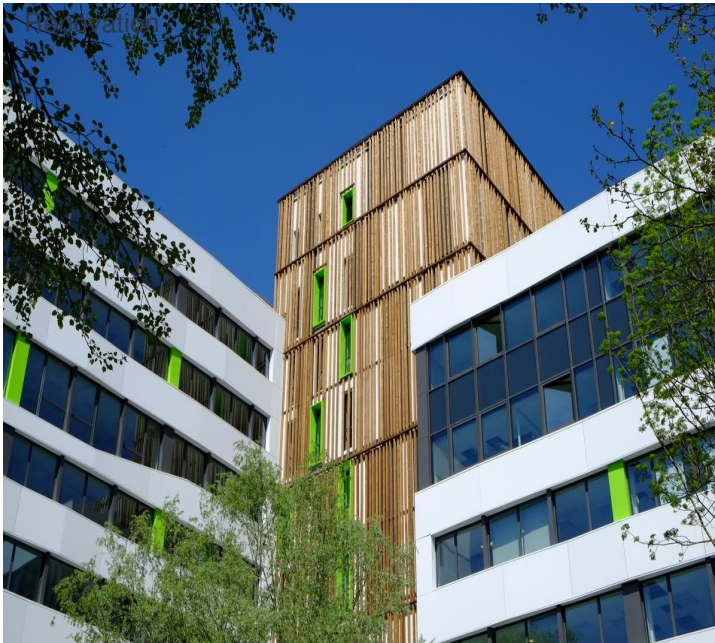
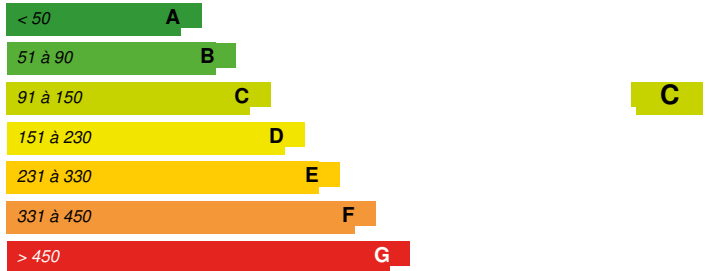


# The Albero

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**Building Type** : High office tower > 28m  
**Construction Year** : 1979  
**Delivery year** : 2018  
**Address 1 - street** : 3 rue du centre 78280 GUYANCOURT , France  
**Climate zone** : [Cfb] Marine Mild Winter, warm summer, no dry season.

**Net Floor Area** : 10 500 m<sup>2</sup>  
**Construction/refurbishment cost** : 12 600 000 €  
**Number of Work station** : 900 Work station  
**Cost/m<sup>2</sup>** : 1200 €/m<sup>2</sup>

## General information

- use of prefabricated wood module from an innovative constructive principle: PANOBLOC by techniwood Ecologia.
- PANOBLOC with aluminum exterior carpentry and pre-insulated
- rupture of the thermal bridges on the facade.
- quick assembly of the wall coat.
- perfect water and air tightness by self-control of the joints between the wood module and the vapor barrier.
- recycling of building materials
- implementation of larch wood mesh up to 30 m in height.
- energy efficiency of building BBC renovation
- using wood decking to mark the new entrance through a footbridge of 23m
- use of wood for the design of the main entrance hall (reception desk and wall and ceiling siding)

## Sustainable development approach of the project owner

Our project of rehabilitation, modernization and requalification of the architectural envelope is part of this urban dynamic as much by its singular aestheticism as by the proposed living environment wanted healthy and pleasant to live for future users. Sequences of access are revisited from the outside to work stations and places of relaxation by revealing and optimizing the potential of this obsolete office building. With these ambitious stakes, our response is also accompanied by a remarkable attitude. For its environmental commitments with regard to the procedure for repairing the facades. The use of materials with low CO2 emissions and an implementation limiting the impact of various nuisances on-site, will manage a very efficient result to limit energy consumption. It is with these challenges of requalification urban, modernization of living spaces and efficient technical solutions but also economic that our project stands out to become a new urban unifying piece in this neighborhood in the making!

## Architectural description

This office complex develops 8195 m<sup>2</sup> of floor space. A current office tray represents 929 m<sup>2</sup> including sanitary areas. The building can benefit from an accessible terrace with wooden decking and partially vegetated on the 7th floor of the building B (with a southern exposure which is protected from the prevailing winds coming from the West) These 3 building bodies have surfaces managed in condominium:

- 209 parking spaces in the basement on 3 levels
- green spaces in southern and northern part.
- an inter-company restaurant on the ground floor of building C1

The alternation of glazed strips and solid bands with variable geometry breaks with the traditional image of the conventional office building and gives a graphic and dynamic appearance to the facades. A unique response in the district. This architectural composition of the treatment of lighters gives a vibration to the facade by creating games of shadows and lights throughout the day and seasons. The facade cladding of 3 bodies of buildings oriented differently compared to the cardinal points gives to see a dynamic and subtle veture which makes the specificity of these offices. This abstract composition is perceptible from the outside and the inside and from all angles of view.

## Building users opinion

building very pleasant to live, architecture giving serenity to the living environment

## If you had to do it again?

we would do it again

See more details about this project

## Stakeholders

### Contractor

Name : KEYSTONE et BC France MOE

Contact : olivier Cantié / 06 16 42 29 29

<http://www.bcfrance.com>

### Construction Manager

Name : Agence Vincent Rocques Architecte

Contact : Vincent Rocques / 0661891300

<https://www.vincentrocquesarchitectes.com>

### Stakeholders

Function : Thermal consultancy agency

SECOTHERM

Monsieur Maridet / 0660612357

<http://www.secotherm.fr>

Fluid and thermal study desk / HQE

### Contracting method

Separate batches

### Type of market

Table 'c21\_algeria.rex\_market\_type' doesn't exist

## Energy

### Energy consumption

Primary energy need : 64,00 kWhep/m<sup>2</sup>.an

Primary energy need for standard building : 118,00 kWhep/m<sup>2</sup>.an

Calculation method :

Initial consumption : 246,00 kWhep/m<sup>2</sup>.an

### Envelope performance

More information :

The constructive principle of the new facades is to implement, on the supporting structure of the buildings, wood clad walls which embark the glazed frames and the cladding of the opaque parts. This technical approach of the procedure of the assembly of the facades makes it possible

to answer the flexibility of future development of the offices with a frame "on board of the outside joineries of 1.35 m". This choice also emphasizes a strong environmental approach to optimize user comfort over time.

Exterior insulation according to a wood frame wall principle incorporating all facade devices (aluminum exterior carpentry, fiberglass-fiber insulation and wood-based composite finish siding) in order to ensure a perfect fit. water and air tightness, ultimately guaranteeing low energy consumption.

## Renewables & systems

### Systems

Heating system :

- Heat pump

Hot water system :

- Heat pump

Cooling system :

- Reversible heat pump

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- Heat Pump on geothermal probes

## Environment

### Urban environment

Green space : 1 500,00

the site of intervention is on a set of office buildings of the 1970s. This building consists of a set of 3 building blocks takes place along the Center Avenue in Guyancourt in Yvelines. From the point of view of its urban form, its position remains emblematic. It is located on a strategic and attractive axis compared to its proximity to access with various modes of transport, in connection with the periphery of the Parisian crown.

The various buildings present on site form a co-ownership that shares basement car parks and common green spaces. The site is in an urban environment and in continuity of tertiary buildings organized along an urban axis largely landscaped with large trees. A pedestrian walk takes place under the trees along this axis. In the upper part of the site passes railways and road nodes. This high area of the Avenue du Center remains close to public transport and in particular from the station RER and SNCF Guyancourt:

- line C7 47 minutes from the center of Paris with Châtelet les Halles station
- SNCF station (N lines from Paris -Montparnasse and U from La Défense)
- 91-06 and 91-10 express lines from Guyancourt to Massy TGV station and Orly airport

The geographical and urban location of this building remains in a dynamics and rhythm relevant to everyday life for the future users. Its privileged position along the Avenue du Center and in the bow of this urban composition of the 80s, is a strategic situation in term of visibility and communication to display a new modernity to this urban piece. The backing on this urban axis already has large administrative headquarters making it a dynamic and attractive place.

- **At the heart of existing green spaces**

The public space at the foot of the "Quadrants" presents sober and qualitative landscaping through the presence of the planted mall and mature trees. These urban developments along Center Avenue and the pedestrian path are protected and away from cars. They tend to value the pedestrian approach to the office building. This landscaping potential is reinforced with condominium green spaces that can, once redesigned, participate in the new architectural and urban expression of our project. These green spaces leading to the main entrance of the offices will emphasize a strong environmental environment. and pleasant to live for all employees. Thus, we propose from the main entrance, flower beds and grasses blooming with the seasons. These choices of plants will contribute to make the link with the architectural device in feet of facade "treated with blades of wood making clear" to manage the intimacy between the outside and the inside of the rooms of conferences ... the views will be filtered and soft.

## Products

### Product

PANOBLOC

TECHNIWOOD \_ ECOLOGIA

Dominique PELISSIER | Directeur développement / 06 11 75 11 69

<http://www.techniwood.fr/fr/solutions-techniques/panobloc/presentation>

Product category : Gros œuvre / Charpente, couverture, étanchéité  
Optimized industrial production



Panobloc® panels are manufactured on a fully automated production line allowing the integration of all the joinery, siding, fastening and occultation components during the process, ensuring a superior and constant quality of the finished wall.

The production line includes a set of equipment representing in total more than 25 technological innovations and 9 international patents: Planer, Cutting, Processing, Edder, Lengthening, HotDog, Paneling, Gantry, Gluing machine, Press, Machining, Lift-Transshipment, Joining Line Joinery, Cladding / Siding Installation Line, Coating Projection Line, Drying Line, Transfer / Loading Line.

#### Performances

The new Panobloc® construction system is characterized first and foremost by its performance. The concept of offset cross-mesh combined with a completely industrial manufacturing process allows Panobloc® panels to perform much better than current construction solutions.

#### Economic performance

- > Gain on the construction period from several weeks to several months.
- > Gain on the overall cost of the wall. Deleting some components
- > Gain of surface up to 6% with equivalent real performances
- > Building sustainability: commitment guaranteed performance over time
- > Superior and constant quality of the industrial wall (insulation, carpentry and facing)
- > Simple, fast and controlled implementation guaranteeing watertightness. Significant rigidity of the panel facilitating its handling, patented integrated assembly, authorized installers ...

#### Ecological Performance

- > Environmental Certification: Minergie P- Eco (International Label)
- > Renewable natural materials: bio sourced material, healthy material (class A), 100% renewable, air quality
- > Carbon footprint: low carbon (-16.5 Kg / CO<sub>2</sub> / M<sup>2</sup>), negative carbon footprint (low carbon -16.5 Kg / CO<sub>2</sub> / M<sup>2</sup>), significant carbon sink
- > Sustainable Development: 100% French Manufacturing, Wood Supply France, short supply chain, territorial development
- > Optimized management of resources: Reduced consumption of wood, waste limitation
- > Green building sites: limitation of workers on site and equipment (scaffolding ...), limitation of nuisances (waste, noise, pollution, parking, rotation trucks ...)

#### Energetic performance

- > Suppression of thermal bridges:
  - \_ Gain of 20 to 30% thermal performance at equal thickness.
  - \_ Actual value = Theoretical value (no settlement, rigid and fixed insulation strips).
  - \_ Sustainable performance over time (CPE)
- > Very fire resistant: EI \* = 72 mn, E \* = 91 mn, REI \*\*: 45 mn
- > Mechanical performance (Bracing Fv, Rk: 62 KN, Compression Fc, o, Rk 73,8 KN / Ml) \*\*
- > Air / Water / Wind Sealing (AEV 0,5 M3 / h.m<sup>2</sup> under pressure 900Pa \*)
- > Acoustics (Front acoustic attenuation index Rw + Ctr from 35 to 55 dB, Lateral transmission index Dn, f, w from 50 to 70 dB)
- > Seismic France Whole
- > Curtain wall 5 ply 32RV \*\* structural wall 7 ply

This product and its implementation by prefabrication workshop allowed a simple and effective installation on the site. The presence of wood always gives healthy working conditions that are pleasant to live in after work.

## Costs

### Construction and exploitation costs

Cost of studies : 600 000 €

Total cost of the building : 12 000 000 €

## Health and comfort

### Comfort

Health & comfort :

The interior design has been worked in a concern for comfort and ergonomics in the workplace. Natural light is optimized by more generous openings. The artificial light has been judiciously treated to enhance the clarity of the spaces, especially at elevator levels.

## Carbon

### GHG emissions

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

GHG before renovation: 13 kgCO<sub>2</sub> / m<sup>2</sup> / year

### Life Cycle Analysis

Eco-design material :

see the PANOBLOC principle

For information we have all the information to complete the information above and below requested.

## Contest

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

- Use of prefabricated wood module from an innovative constructive principle: PANOBLOC by techniwood Ecologgia.
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- rupture of the thermal bridges on the facade.
- quick mounting of the wall coat.- perfect water and air tightness by self control of the joints between wood module with the vapor barrier.
- recycling of building materials
- implementation of larch wood mesh up to 30 m in height.
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### Building candidate in the category



Bas Carbone



Coup de Cœur des Internautes



Prix des Etudiants



