# CONSTRUCTION21

## **RESPIRO**

by benjamin masse / (1) 2015-07-07 11:03:00 / France / (2) 15352 / 🍽 FR



Construction Year : 2015 Delivery year : 2015 Address 1 - street : 83-85 rue Henri Barbusse 92735 NANTERRE, France Climate zone : [Cfc] Marine Cool Winter & summer- Mild with no dry season.

Net Floor Area : 11 183 m<sup>2</sup> Construction/refurbishment cost : 51 000 000 € Number of Work station : 859 Work station Cost/m2 : 4560.49 €/m<sup>2</sup>

Certifications :



Proposed by :



General information

This building of 11 200m<sup>2</sup>, is located on the historic site of old rusk "Heudebert", old Nanterre. It becomes the new headquarters of the company **GTM Bâtiment**. While maintaining part of it original façades, this renovation is a key element of this area urban renewal. Modernes, bright, spacious, bright and comfortable, offices will include a canteen, a cafeteria and indoor (gym) and outdoor (garden, planted terraces) wellness facilities.Certified BREEAM, HQE and BBC (Low energy building), this project has also been part of a "intrinsic energy performance warranty" process to enhance its biodiversity. This process was developed in a parternship with **The National Museum of Natural History**.

### Sustainable development approach of the project owner

"Foncière des Régions" as general contractor is committed through its policy on its green heritage: The offices represent 65% of share heritage of the group. The policy of sustainable development of Foncière des Régions is reflected in particular by a continuous improvement of environmental performance of this office

#### park, throughout the life cycle of buildings.

This approach places the comfort and health of the user to the center and takes into account all the environmental dimensions: choice of locations, equipment and materials, based on life cycle assessment (LCA - to measure and reduce the impact) or the digital building modeling (BIM - to optimize the control of each step). "Foncière des Régions" has met one year ahead , the goal of holding 50% of Legacy Land Offices Franc at the end of 2015. This park "greening" strategy of Foncière des Régions is also deployed in other activities of the group products.

#### Architectural description

This building of 11,200 sqm, located on the historic site of the old rusk Heudebert in the old Nanterre, becomes the new headquarters of the company "GTM Bâtiment". While retaining some of the original façades, this renovation is a key element of the urban renewal district. Modern, bright and spacious, these offices include a company restaurant and a cafeteria on the ground floor. The building rests on a basement level sheltering 193 parking spaces.

#### Building users opinion

The building is comfortable thanks to: Its internal lighting atmosphere. Its qualities of acoustic isolation from the street as between spaces It best hygrothermal comfort with the use of reversible radiant ceiling It quality green spaces including a roof terrace Olfactory comfort guaranteed by ventilation rates higher than the minimum regulatory, and the use of materials with low VOC emissions

#### See more details about this project

Chttp://www.foncieredesregions.fr/solutions/bureaux/patrimoine\_en\_developpement/respiro\_nanterre

#### Stakeholders

#### **Stakeholders**

Function : Construction company GTM Bâtiment

http://www.gtm-batiment.fr

Function : Certification company CERTIVEA

certivea@certivea.fr - 01 40 50 29 09

Attp://www.certivea.fr/

#### Contracting method

Lump-sum turnkey

#### Energy

#### **Energy consumption**

Primary energy need : 69,18 kWhep/m<sup>2</sup>.an Primary energy need for standard building : 184,51 kWhep/m<sup>2</sup>.an Calculation method : RT 2005 Breakdown for energy consumption : Heating: Cooling 52.5% 3.9% Production ECS: Fans 7%: 20.7% Lighting: 10.8% Auxiliary: 5.1%

#### Real final energy consumption

Final Energy : 66,76 kWhef/m<sup>2</sup>.an

#### Envelope performance

Envelope U-Value : 0,55 W.m<sup>-2</sup>.K<sup>-1</sup>

More information : High thermal inertia building with its exterior insulation. Thermal insulation of the current wall on the outside provided by 180 mm insulation with Lambda 0.032 W / (mK) giving a Up = 0.17 W / (m<sup>2</sup>.K). Reinforced sunscreen on exposed facades (BSO).

Indicator : 14 Air Tightness Value : 0,80

Users' control system opinion : - Widget - Display consumption on TV - multi-business controls (lighting, heating, blinds)

#### More information

Followed by GTB end consumption through an extended commissioning. The construction process also participate in a certification "OXYGEN", an ecocommitment of Vinci Construction France, which secured the building performance in its operation.

#### Renewables & systems

#### **Systems**

#### Heating system :

- Gas boiler
- Water radiator
- Electric heater
- Radiant ceiling
- Fan coil

#### Hot water system :

- Individual electric boiler
- Solar Thermal

#### Cooling system :

- Water chiller
- Fan coil
- VAV Syst. (Variable Air Volume system)
- VRV Syst. (Variable refrigerant Volume)
- Radiant ceiling

#### Ventilation system :

- compensated Air Handling Unit
- Double flow heat exchanger

#### Renewable systems :

Solar Thermal

Renewable energy production : 5,60 %

#### **Smart Building**

#### BMS :

Regulation and Building Management System (GTB) energy efficient class A. Implementation of environmental awareness of the user devices including a dynamic display of global consumption, batch and office. Setting up a portal

Users' opinion on the Smart Building functions : Individual control systems available to offer users an optimized ergonomics to quickly and simply act on all comfort parameters. The touch tablet, provides an icon that indicates the impact of the set of variations on the energy efficiency of the building

#### Environment

#### Urban environment

#### Green space : 2 221,00

The project is in a highly urbanized environment with shops, services and transport nearby

#### Products

#### **Product**

#### TOPAGER

http://topager.com

#### http://topager.com

Product category : Structural work / Carpentry, cover, titghtness

On this pilot project, the two roof levels were treated differently:

The first level is an accessible roof terrace with a semi-intensive type of vegetation with many biodiversityfriendly developments (bundles of firewood, wetlands, stones, sand). This level also features a roof garden to sensitize users of biodiversity and urban agriculture.

The second level roof (roof technology) was treated by the implementation of an innovative unplanted substrate allowing colonization by spontaneous vegetation. This level also has bird nest boxes and bat.

The product was created through the involvement of all stakeholders of the project and is very well received by users, aware of the improvement of the living environment that this development represents.

#### Energy recovery

#### FRANCE AIR

http://www.france-air.com/

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Product category : HVAC, électricité / ventilation, cooling Heat recovery unit dedicated to professional kitchens

Product well accepted by the project stakeholders

#### Costs

#### Health and comfort

#### Indoor Air quality

Air flow regulating devices according to the CO2 concentration in the high occupancy areas.

#### Comfort

Health & comfort : Terminal processing device by reversible radiant ceiling technology offering different advantages: - reduced air speeds - Homogeneity of temperature in space - optimized Perceived temperature - dust brewing Limitation

#### Carbon

#### **GHG** emissions

GHG in use : 6,00 KgCO<sub>2</sub>/m<sup>2</sup>/an Methodology used : Calculation method RT CSTB

#### Contest

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

Santé et Confort :

- Parce que GTM Bâtiment est sur cette opération à la fois co-promoteur (via sa filiale dédiée ADIM Concepts, et en partenariat avec la Foncière des Régions), constructeur, et futur utilisateur du bâtiment : le confort des collaborateurs a été placé au cœur de la réflexion depuis l'esquisse jusqu'aux contrats d'exploitation et maintenance.

- La Biodiversité est présente dans la conception du bâtiment : avec une parcelle végétalisée à près de 40% et des terrasses végétalisées accessibles comprenant un potager collaboratif, un travail collaboratif avec le MNHN a permis de préconiser des aménagements favorisant l'accueil et le maintien d'une faune





et d'une flore locale tout en minimisant les impacts des équipements techniques du projet

- La recherche d'un optimum entre confort thermique et lumineux a été trouvé afin de répondre aux exigences des certifications HQE et BREEAM

Smart Buildings :

- Mise en place d'OXYGEN, la démarche d'éco-conception de VINCI Construction France qui vise à garantir la performance intrinsèque des bâtiments. Avec un affichage personnalisé de ses consommations en temps réel, l'utilisateur est sensibilisé à l'impact de son comportement sur la performance globale du bâtiment.



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