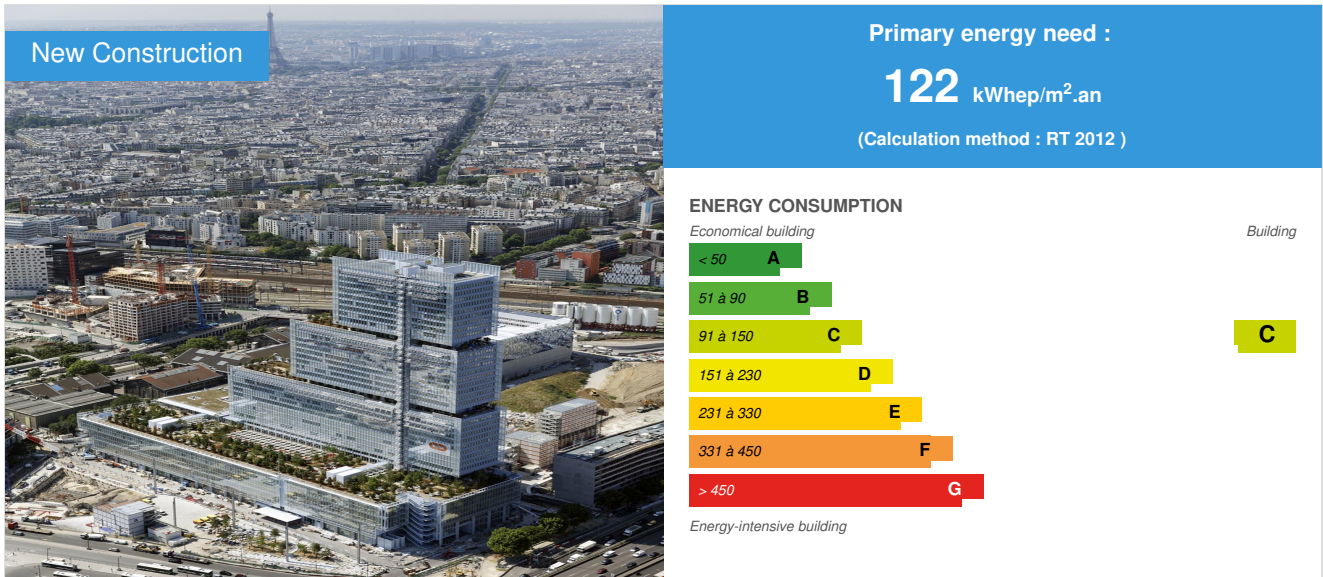


Paris Court

by Charlotte Breuillé / 2018-06-05 16:55:48 / France / 14547 / FR



Building Type : High office tower > 28m
Construction Year : 2017
Delivery year : 2017
Address 1 - street : 2945, avenue de la Porte de Clichy 75017 PARIS, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 110 000 m²
Construction/refurbishment cost : 575 000 000 €
Cost/m² : 5227.27 €/m²

Certifications :



General information

Since the Middle Ages, Parisian justice has been rendered in the famous building that surrounds the Sainte-Chapelle on the Ile de la Cité. Over time, the lack of space has forced many offices to move to various locations throughout the city. The new Tribunal de Paris, built near the Porte de Clichy, brings together in a single building courtrooms and offices of the judiciary.

Reaching a height of 160 meters, it covers an area of approximately 110,000 m² and accommodates up to 8,800 people per day. The building is composed of a 5 to 8 floor pedestal (ERP) which receives and integrates the lower part of the tower.

From the forecourt on the ground floor one reaches the Salle des Pas Perdus which welcomes and distributes the flow of visitors and employees. This large rectangular atrium develops over the entire height of the base, up to 28 meters. This space is completed by two smaller atriums to the south and north, still on the entire height of the pedestal, connected to the ground floor by a large longitudinal corridor through the entire base, from north to south, for 160 meters. From the Salle des Pas Perdus, it is possible to access all public functions and services, as well as the 90 courtrooms.

The eighth floor hosts a 7,000 m² wooded terrace, as well as the staff restaurant which overlooks this large garden from the functional point of view, but also visual, through the glazed facades. On the 19th and 29th floors, the levitating blocks of the tower host hanging gardens, creating a veritable green tower. There

are other semi-outdoor spaces of conviviality in the visible greenhouses of the East facade on double volume, located on the last floors of the low and median blocks.

The building also consists of meeting spaces, relaxation, a staff cafeteria, a library, meeting rooms and about 600 offices.

The vertical and horizontal photovoltaic panels animate the facades (East and West) with a vibration highlighted by the play of light. They also express the will to introduce alternative energies in public buildings. The energy performance of this unit is thus of the highest quality and respects the ambitions of the Paris Climate Plan, as well as the requirements of the 2012 thermal regulations. The HQE certification is also in progress.

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Sustainable development approach of the project owner

One of the main objectives of the project was to put the building in a dynamic of sustainable development:

- The thermal inertia, the use of natural ventilation, the integration of 2,000 square meters of solar panels on the East and West facades, and the recovery of rainwater, testify to an architecture concerned with energy efficiency.
- This building is the first IGH in France to meet the requirements of the Paris Climate Plan. It also complies with the 2012 thermal regulations and HQE certification is in progress. In addition, the building complies with the Clichy Batignolles ZAC Sustainable Development Charter, and an evaluation and monitoring of future building consumption will be implemented.

Building users opinion

Occupants present since April 2018. Good feedback to date

See more details about this project

http://www.eppjp.justice.fr/EPPJP_WEB/FR/PAGE_DD.awp

<https://www.construction21.org/france/data/sources/users/9514/20170613-rapport-audit.pdf>

<http://cityscape.fr/fr/batiment/tribunal-de-paris>

Stakeholders

Contractor

Name : ARELIA - Bouygues Batiment Ile de France

Contact : M. Giovanni Villa

<http://www.bouygues-batiment-ile-de-france.com/>

Construction Manager

Name : Renzo Piano Building Workshop

Contact : M. Bernard Plattner

<http://www.rpbw.com/>

Stakeholders

Function : Construction Manager

SETEC Bâtiment

Mme Pauline Bleicher

<http://www.batiment.setec.fr/fr/>

Contractor for CVCD lots, energy performance, CFO, CFA, fire safety, SSI coordination

Contracting method

Public Private Partnership

Energy

Energy consumption

Primary energy need : 122,00 kWhep/m².an

Primary energy need for standard building : 144,00 kWhep/m².an

Calculation method : RT 2012

Breakdown for energy consumption : - Heating: 21.10 kWhep / m² / year - Refreshment: 13.00 kWhep / m² / year - DHW: 6.40 kWhep / m² / year - Lighting: 19.50 kWhep / m² / year - Auxiliaries: 68.20 kWhep / m² / year

Envelope performance

More information :

Bbio = 97.80 points / Bbio-max = 145.70 points

A bioclimatic building certified HQE®: The Tribunal de Paris is part of the important requirements for the creation of the eco-district Clichy-Batignolles. In this perspective, the challenges of sustainable development have been integrated from the outset of the project, allowing to combine architectural gesture, comfort of users and high energy performance. The use of natural ventilation in the lost room, a high performance crystalline façade to maximize natural lighting while protecting from solar radiation are some of the answers provided by this bioclimatic architecture.

The facade has been the subject of special attention to determine the characteristics of the glazing offering the best compromise between a strong light transmission to promote natural lighting, a reduced solar factor to limit the solar radiation in summer and a low resistance heat to reduce wastage.

The study of each facade according to its orientation made it possible to provide an adapted response in terms of glazing and solar protection.

The Socle that houses the courtrooms is a compact and deep building. The oculi positioned on the roof of the Salle des Pas Perdus and the largely glazed facade along the forecourt let natural light enter the building.

Indicator : EN 13829 - q50 » (en m³/h.m³)

Air Tightness Value : 1,70

More information

Controlled energy expenditure: The quality of the building and the efficiency of the systems have been placed at the heart of the design to optimize energy consumption. An iterative method to find the best optimum among the set of proposed solutions has been put in place. The energy performance of the building is constantly monitored by the Technical Building Management (BMS) which centralises the feedback of all technical equipment. The particularly ambitious metering plan makes it possible to detect and diagnose any drift in consumption. The behavior of the facilities is continuously analyzed by an ultra-comprehensive GTB handling more than 100,000 points. This supervision is capable of automatically ensuring the rescue of faulty installations according to predefined scenarios. It is also an instrument for anticipating anomalies, diagnosis and effective decision support, allowing the operator to manually control the installation.

Renewables & systems

Systems

Heating system :

- Urban network
- Heat pump
- Low temperature floor heating
- Radiant ceiling

Hot water system :

- Urban network

Cooling system :

- Water chiller
- Reversible heat pump
- Floor cooling
- Radiant ceiling

Ventilation system :

- Natural ventilation
- Double flow heat exchanger

Renewable systems :

- Solar photovoltaic

Renewable energy production : 2,00 %

Other information on HVAC :

A centralized ventilation worthy of an industrial building: Two masonry air handling units (ATCs), each composed of 6 fans including 2 in redundancy, delivering a total of 400,000 m³ / h, were created to meet the needs of breakdown of the Ministry of Justice. With a compact architecture, these 2 ACTs have avoided an extra level of basement that would have been located below the groundwater level and would have jeopardized the project's economic model.

A veritable cathedral of more than 50 m² of frontal section each for a length exceeding 15m, these ultra-secure CTAs make it possible to reduce the technical rights of way, to control the budget and to guarantee at all times the availability of all the ventilation.

Photovoltaic panels integrated into the facade: A true signature of the building, photovoltaic panels are an integral part of the architecture of the façade of the IGH, giving it a density, a modénature. Their positioning and orientation have been studied in terms of their electrical production and the heat potential they bring to the facade

Solutions enhancing nature free gains :

Efficacité des systèmes énergétiques : La Salle des Pas Perdus, volume de plus de 25 m de hauteur, est ventilée naturellement en mi-saison. Sa très grande hauteur permet d'utiliser l'effet cheminée par l'aménagement d'entrées d'air en partie basse

Smart Building

BMS :

The behavior of the facilities is continuously analyzed by an ultra-comprehensive GTB handling more than 100,000 points. This supervision is capable of automatically ensuring the rescue of faulty installations according to predefined scenarios. It is also an instrument for anticipating anomalies, diagnosis and effective decision support, allowing the operator to manually control the installation.

Environment

Urban environment

Land plot area : 17 500,00 m²

Built-up area : 17 500,00 %

Green space : 7 650,00

The building stands on an L-shaped area, between the ring road and Martin Luther King Park. The main axis of the building aligns with the north-south diagonal of the park, which structures the ZAC Clichy-Batignolles. Thus, the South facade is oriented towards Paris and the North facade towards Clichy. This diagonal of the park is concretized with a "visual corridor" which, towards the north, between the east facade of the building and the House of the Lawyers, extends until Clichy.

The building is located near the metro Porte de Clichy and will be served from 2020 by Line 14 of the metro. It also has a range of shops nearby (restaurants, cafes, shops) and green space Martin Luther King Park 2 minutes.

Products

Product

Thermo cold pompe

York

M. Martial Delfour

<http://www.york.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 = '3'

Centrifugal liquid cooler with magnetic bearing

Energy recovery: The refrigeration production of 10.5MW is composed of 6 groups magnetic cold bearing last generation coupled to adiabatic dry coolers to increase the yields of the production. One of the groups operates in thermofrigo pump and ensures the valuation of the permanent heat contributions for the heating of the building. Heat recovery is the priority heating source for the energy strategy.

Costs

Construction and exploitation costs

Total cost of the building : 575 000 000 €

Health and comfort

Indoor Air quality

The filter chain of the air handling units is M5 / FRVOF7, where:

- o M5 provides gravimetric pre-filtration
- o Mixed F7, Activated Carbon provides high efficiency filtration combined with an odor filter.

Carbon

GHG emissions

GHG in use : 7,00 KgCO₂/m²/an

Methodology used :
RT2012

Building lifetime : 100,00 année(s)

Contest

Reasons for participating in the competition(s)

Significant energy performance for a building of this size

- Energy strategy designed throughout the building (heat recovery, photovoltaic production of 175 MWh / year, etc.);
- Powerful heating and conditioning systems (partially natural ventilation in offices and in the Salle des Pas Perdus)
- Pro-environmental approach with the storage of rainwater, setting up the SYCTOM network

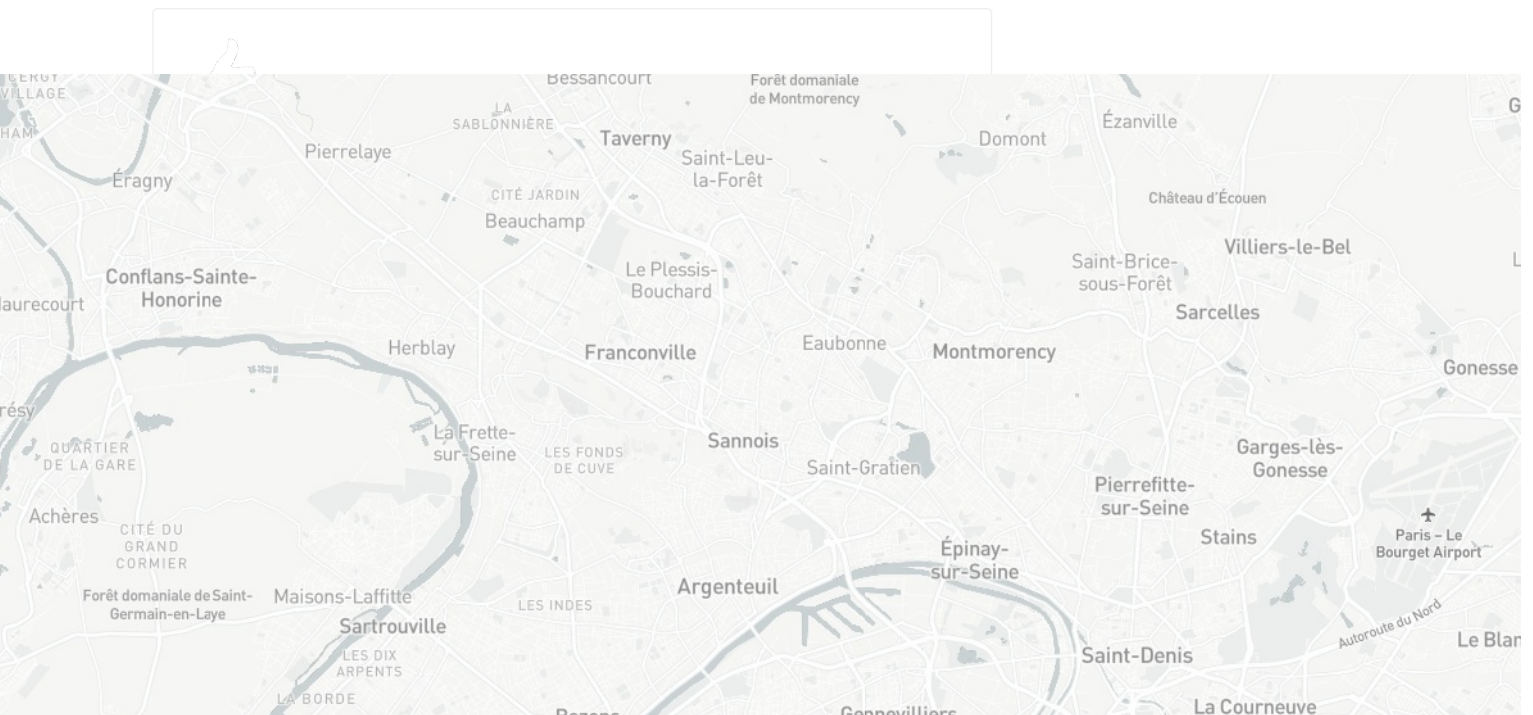
Compliance with a number of environmental regulations :

- Requirements Climate Plan of Paris (1st IGH in France);
- RT 2012;
- Sustainable development charter of the ZAC Clichy Batignolles;
- HQE in progress.

Building candidate in the category



Energie & Climats Tempérés





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