Renovation of the Pacific Tower at La Défense

by Lucile Pothier / 2018-03-15 14:30:20 / France / 11941 / FR

Primary energy need :

88 kWhep/m².an

(Calculation method : RT existant)

ENERGY CONSUMPTION

Economical building *Building*

< 50	A
51 à 90	B
91 à 150	C
151 à 230	D
231 à 330	E
331 à 450	F
> 450	G

Energy-intensive building

Building Type : High office tower > 28m
Construction Year : 1992
Delivery year : 2017
Address 1 - street : 11-13 cours valmy 92800 PUTEAUX, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 60 715 m² SHON
Construction/refurbishment cost : 47 000 000 €
Cost/m2 : 774.11 €/m²

Certifications :

General information

With a surface area of approximately 53,000 m², the "PACIFIC" Tower was completed in 1992 and is located in the business district of Paris-La Défense. Originally named "JAPAN TOWER", the tower was designed by architect Kisho Kurokawa and symbolizes the Franco-Japanese rapprochement. The building is inspired by both traditional European architecture and Japanese style. Its slender circular arc shape, consisting of two wings connected by a multi-storey bridge, is reminiscent of European architecture, while the tea room and Japanese garden on the top floor are reminiscent of the architect's origins.
Acquired in June 2013 by the group TISHMAN SPEYER, this multi-tenant tower has been the subject of several phases of renovation depending of the different tenants since 2014. The last phase of work was received in October 2017 and concerned the renovation of 17,000 m² of trays (more than 30% of the total area). The tower is now completely renovated and its interior design redesigned to create workspaces, occupant services and relaxation meeting the expectations of users more demanding in terms of functionality, comfort and environmental quality.

Sustainable development approach of the project owner

The PACIFIC Tower is the subject of an environmental approach aimed at obtaining and maintaining the HEQ exploitation label. This certification, achieved in 2016 with the "Excellent" rating for the intrinsic quality of the building and for the quality of its management (Axis 2), testifies to the building's performance in terms

of its impact on the environment, energy consumption, on the comfort and health of the occupants. This approach builds on the positive experience and know-how of TISHMAN SPEYER in sustainable development, which focuses on applying environmentally responsible practices globally. The group is developing eco-responsible management practices and methods that focus on energy savings, water conservation and waste reduction.

Architectural description

The PACIFIC Tower is a high-rise building with 26 levels of superstructure and 3 levels of infrastructure. It develops a total surface SHON of 60.715 m² and a total useful surface of 52.972 m². The building consists of 2 separate towers named "Paw East" and "Paw West", which meet by a bridge from the 19th floor. It has two main facades: the first is flat to the northwest, the second is curved southeast.
The building has been designed for tertiary use exclusively. Each of the legs contains a technical core allowing access by elevators or stairs to the private office floors of the different floors.
The premises are distributed as follows:
-The lower levels (RR-1, RR0 and RR+1) are home to technical HVAC rooms, a service area (209-seat auditorium, fitness room, shared-use meeting rooms), as well as the inter-company restaurant and its annexes. -The ground floor consists essentially of the reception area for each leg and offices. A security post is located between the two towers.
-The mezzanine and the upper levels are then split between the 2 legs East and West, whose configuration is identical. The mezzanine consists mainly of offices and technical premises. Levels R+1 to R+18 are globally identical. The East and West legs consist of a central core that includes AHU's technical rooms, elevators, toilets and circulations. This core is surrounded by office surfaces.
-From R+19, the East and West legs meet and form a single level. The office area becomes larger.
-From R+20 to R+23, the central core of the tower gives way to skylights leading to a terrace.
-Finally, the R+24 has the distinction of having a Lounge area with cafeteria and main access to the terrace and the Japanese garden.

See more details about this project


Stakeholders

Stakeholders

Function : Contractor

Tishman Speyer Pacific SCI

Philippe Minh

http://fr.tishmanspeyer.com/properties/tour-pacific

Function : Designer

Kisho Kurokawa

http://www.kisho.co.jp/

Function : Assistance to the Contracting Authority

H3C Energies

Lucile Pothier

http://www.h3c-energies.com/

Function : Certification company

Certivéa

01 40 50 29 09

http://www.certivea.fr

Energy

Energy consumption

Primary energy need : 88,00 kWhep/m^2.an

Primary energy need for standard building : 149,00 kWhep/m^2.an

Calculation method : RT existant

Initial consumption : 136,00 kWhep/m^2.an

Envelope performance

More information :

The structure is concrete isolated from the outside. The insulation is composed of rockwool panels, 70mm thick and having a thermal resistance of approximately 1.75m².K/W. The south facade consists of prefabricated concrete panels fixed on the frame and whose double glazing is equipped with interior blinds. The north facade, curtain wall type, consists of glazed panels with a reflective outer film and attached to a steel secondary structure.

Renewables & systems

Systems

Heating system :

- Urban network

Hot water system :

- Urban network

Cooling system :

- Urban network

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- No renewable energy systems

Other information on HVAC :

Heating: The building is supplied with heat by the district heating network Enertherm. Plate heat exchangers allow the production of hot water for the entire site. The heating emission is carried out by Air Handling Units (1 CTA per leg and per level) supplying pre-treated air terminal fan coil units equipped with hot water and chilled water batteries. Individual control boxes allow each user to act on their comfort over a range of +/- 2°C. These boxes can also manage other functions (lighting, blinds).
Hot water: The Enertherm district heating network also supplies hot water production for the compagny restaurant. The sanitary floors are equipped with decentralized electric cumulus.
Refreshment: The building is supplied with cold by the Enertherm urban ice water network, for the air conditioning of the premises and some computer rooms. Plate exchangers allow the production of chilled water for the entire site. Independent cold groups have also been installed by tenants for specific cooling needs (inverters, technical rooms, computer rooms, etc.). The cold emission is carried out by Air Handling Units supplying pre-treated air with terminal fan coils equipped with hot water and chilled water coils. Individual control boxes allow each user to act on their comfort over a range of +/- 2°C. These boxes can also manage other functions (lighting, blinds).
Ventilation: The air handling units are supplied with fresh air through four heat pipes, located on the roof, whose function is to recover the heat contained in the extracted air to preheat the fresh air in winter, and to cool the air nine in summer. On the other hand, 17 air handling units provide air conditioning in specific areas (restaurant, auditorium, meeting rooms ...). Ventilation management in certain rooms with variable occupancy (meeting rooms, etc.) is controlled by CO2 sensors, in order to adjust the fresh air flow as needed.

No system of renewable energy production on the site. However, the tower is fed by the Enertherm hot and cold water networks, whose energy mix includes a share of renewable energies. In addition, the tower supplies itself, for the electricity supply of its common parts, with electricity of renewable origin.

Smart Building

BMS :

The tower is equipped with a Building Management System (BMS) for the control and management of all HVAC equipment (from production to transmission), lighting control and technical alarms .

Environment

Urban environment

The Pacific Pacific Tower enjoys a privileged location within the Valmy District in La Défense. The building is open to the animation of Cours Valmy, an urban place welcoming shops, restaurants ... and close to the Grande Arche and the shopping center Les Quatre Temps. The Tower is located 400 meters from the main transport center (Line 1 metro, RER A, bus lines, SNCF West) and close to many roads (A14 motorway, ring road N13, D23 and D914)

Products

Product

Deployment of LED technology for lighting

Asteri

contact@asteri.fr

http://www.asteri.fr/

Product category : Génie climatique, électricité / Eclairage

The luminaires selected for the office trays are LED units with a unit power of 40 W. They are equipped with photosensitive cells allowing a gradation of the brightness according to the needs. Individual control boxes also allow users to control the lighting.
Reference: DINO LED PSF TE 40W VO

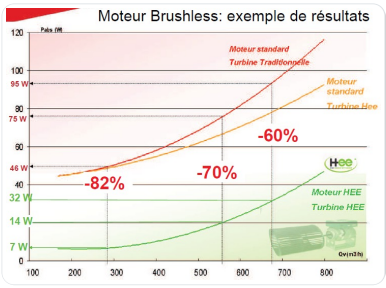
Implementation of transmitters equipped with low consumption motors

CIAT

+33(0)4 79 42 42 42

http://www.ciat.fr/

Product category : Génie climatique, électricité / Chauffage, eau chaude



The selected fan coil units are equipped with High Energy Efficiency (HEE) motors, which are low consumption motors that can reduce energy consumption by up to 80%. They also have other advantages: more flexibility in the choice of speeds, longer life, greater comfort ...
Reference: CONFORT LINE 14B HEE - model U

These fan coils are equipped with hot and cold water batteries. This is a recessed ceiling model, positioned in a regular pattern to facilitate the development of trays.

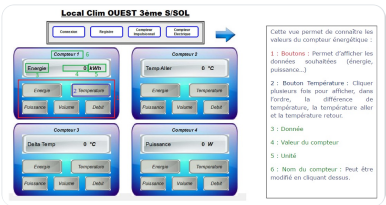
Implementation of smart meters

Itron & Siemens

https://www.itron.com/fr/technology/product-services-catalog/products/1/8/a/flostar-m

http://w3.siemens.com/mcms/sensor-systems/fr/instrumentation-de-process/mesure-de-debit/induction-magnetique/champ-constant/transmetteurs-de-mesure/pages/sitrans-f-m-mag-5000.aspx

Product category :



Establishment of remote reading of all meters, present and added, on the existing PCVUE supervision. The supervision makes it possible to visualize the raw index of each meter, to calculate the daily, monthly, annual consumption. The export of all these data is possible over the desired period. In addition, alarms in case of overshoot have been set at the water meters of the consumer stations, compared to a high threshold according to defined time periods. These alarms can quickly identify a water leak and locate it on the site.

Costs

Health and comfort

Water management

Consumption from water network : 18 855,00 m^3

Water Consumption/m2 : 0.31

Water Consumption/Work station : 4.1

Indoor Air quality

comfort (too hot / too cold / problems of odors, noises ...).

Contest

Date Export : 20230313013530