WAVE - VINCI Energies headquarters

by David DESABLENCE / 2019-05-03 10:04:39 / Francia / 10927 / FR

Primary energy need :

43 kWhep/m^2.an

(Calculation method : RT 2012)

ENERGY CONSUMPTION

Economical building — *Building*

< 50	A	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 : Office building < 28m
Construction Year : 2018
Delivery year : 2019
Address 1 - street : 8 Avenue des SAULES 59160 LOMME, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 1 723 m^2
Construction/refurbishment cost : 3 300 000 €
Cost/m2 : 1915.26 €/m^2

Certifications :

breeam effinergie LABEL R2S READY2SERVICES DÉLIVRÉ PAR CERTIVEA

Proposed by :

VINCI IMMOBILIER

General information

At the heart of the EURATECHNOLOGIES district in Lille, VINCI Immobilier operates the regional headquarters of VINCI Energies.
The building called WAVE is a technological showcase that enhances the well-being of occupants and demonstrates the new uses of a Smart Building.
#IOT #smart #energies #health # efficiency # R2S

Sustainable development approach of the project owner

VINCI Immobilier has programmed the demonstrator building at the VINCI Energies regional headquarters

The stated intention of the spirit of the building is to highlight the new technologies adapted to the tertiary sector: IOT / Control of building facilities by smartphone or web. The user is at the center of the building design. The driving principle is "Measure to improve": Installation of sensors / actuators that allow a permanent optimization of the consumption of the frame and an optimal use of the utilities. (Ex: Activation of heating according to occupation of spaces, lighting on detection

of presence and luminosity) Analysis of the interaction between occupant and frame. Free night cooling for automatic refresh of the interior. "Water Micro stop".

Architectural description

Optimum brightness by full height window. Renunciation to be air conditioned using athermic windows. Concrete in structure + brick facing. Motorized and intelligent blinds controlled according to the weather. DECK bamboo terrace planted with local species simple maintenance, which operates the link between the buildings of the program and promotes the "connections" human. Landscaped patio on the edge of the ground floor offices. Reasoned watering of green spaces. Brick local perennial. Large room with soft mobility (bike rack + electric bike station). Natural ventilation of car parks by moucharabieh. Roof in capacity to receive photovoltaic panels.

Building users opinion

Building delivered in June 2019. No feedback yet

If you had to do it again?

Basically nothing would change. Nevertheless, the lessee could be more involved upstream of the design of the program to better understand the utilities development (eg access management), renewable energy and non-planned home consumption, equipment to develop IRVE.

See more details about this project

http://www.vinci-immobilier-entreprise-commercial.com/programme/euratech-lot-14-lille/
maquette BIM

Photo credit

VINCI Energies / David DESABLENCE

Stakeholders

Contractor

Name : VINCI IMMOBILIER
Contact : Stéphane MAZUY Directeur Regional Hauts de France
http://www.vinci-immobilier-institutionnel.com/

Construction Manager

Name : Cabinet BABIN + RENAUD / Architecte du programme "triptic" dont fait parti le Bâtiment WAVE
Contact : Eric BABIN Architecte e.babin[at]babin-renaud.com

Stakeholders

Function : Contractor representative

Vinci ENERGIES France Tertiaire Nord Est

Eric PLUMEY / Directeur Général

https://www.vinci-energies.com/
Engineering design and use

Function : Company

Smart Building Energies

Frédéric THOUOT / chef d'entreprise

https://www.smart-building-energies.com
Design of a building dedicated WEB platform (DATA + EXPLOITATION)

Function : Company

DELPORTE

Jean Christophe LUTIAU / chef d'entreprise

https://www.delporte.fr/
Electricity CFO CFA

Function : Company

SANTERNE FLUIDES

Stéphane CARRE / chef d'entreprise

HVAC / Plumbing

Function : Company

LESOT

Pascal NACINOVICH / chef d'entreprise

ENR / Photovoltaic system installation in self-consumption

Function : Company

NAE

Pierre VANDERBEKEN / chef d'entreprise

Access Control / Security / Intrusion Detection

Function : Designer

ARP Astrance

Arnaud FERRAND / directeur aménagement

https://arp-astrance.com/
Council Well-being at work / Interior fittings / Ergonomics

Function : Construction company

HOLBAT / GCC

http://www.gcc-groupe.com/fr/page/construction.html
Structural work / fenced.

Contracting method

Separate batches

Type of market

Table 'c21_italy.rex_market_type' doesn't exist

Energy

Energy consumption

Primary energy need : 43,00 kWhep/m^2.an

Primary energy need for standard building : 77,00 kWhep/m^2.an

Calculation method : RT 2012

Breakdown for energy consumption : Heating: 11.4 / DHW: 6 / Lighting 10.3 / Ventilation 15 / Hydraulic 0.2 /

Envelope performance

Envelope U-Value : 0,22 $W.m^{-2}.K^{-1}$

More information :
Concrete + external insulation + facing brick.

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

Air Tightness Value : 0,80

Users' control system opinion :

Not applicable before one year of use.

More information

The building will be occupied in August 2019. the listing will be updated after one year of use.

Renewables & systems

Systems

Heating system :
- Condensing gas boiler
- Radiant ceiling

Hot water system :
- Other hot water system

Cooling system :
- No cooling system

Ventilation system :
- Free-cooling
- Double flow heat exchanger

Renewable systems :
- Solar photovoltaic

Renewable energy production : 10,00 %

30 photovoltaic panels, mark REC reference Twin Peak 2 of 290Wc, are installed on the terrace of the building, for a total power of 8.7 kWp. The Fronius SYMO inverter is equipped with a Datamanager card for the return of information from the installation to the WEB WAVE platform developed by SBE.
The production of these panels is re-injected onto the electrical panel in order to be fully consumed.

Solutions enhancing nature free gains :
Vitres Athermiques / orientation SUD / Automatisation des stores / Appareils éclairages gradables et Détection de présence.

Smart Building

BMS :
GTB controllable via a dedicated WEB platform built with Microsoft AZURE.
All systems described are connected to GTB:
Smartphone access control (progressive elimination of badges)
Photovoltaic EN self-production
Dimmable LED lighting
Presence, temperature and brightness sensors
Control of the HVAC by users via their Smart Phone.
Reservation of meeting rooms coupled with Outlook.
Global parking management with IOT (real-time occupancy tracking) and booking coupled with Outlook.
Measurement of energy consumption.
IRVE intelligent.
Reconfiguration of actuator sensors in case of re-partitioning spaces Via the WEB platform (Modularity / Flexibility)
Use of wireless / battery-free objects. (Switches / Door Openings / Meeting Room / Lighting Room Configuration)
Augmented Reality for visitors to the building since the reception.
BIM operating
FTTD
Data analysis with IA. (Decrease of consumption / improvement of uses)

Smartgrid :
Instant self-consumption via photovoltaic panels.

Users' opinion on the Smart Building functions :

The presentation to the occupants of the WEB platform for the use of building functionality has generated a lot of interest. The application will have to be simple and user-friendly.

A strong sense of pride emerges from having a contemporary building and using the latest techniologies.

Environment

Urban environment

Land plot area : 3 300,00 m^2

Built-up area : 3 100,00 %

Green space : 600,00

Euratechnologies is the first French incubator (150 projects per year). The district includes 300 companies and 4,000 employees. The TRIPTIC program, which

includes the WAVE building, is part of this ecosystem dedicated to innovation and entrepreneurship actors. Two metro stations 10 minutes. A regional station and a European station 15 minutes by public transport. An international airport 20 minutes. At the heart of the European Metropole de Lille, which has 90 municipalities and 1.2 million inhabitants.

Products

Product

WAVE COMPUTER PLATFORM

Smart Building Energies

Frédéric THOUOT / Chef d'entreprise

https://www.smart-building-energies.com

Product category : Table 'c21_italy.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 = '29'

SBE aggregates all HVAC data, CFO CFA, IT, Access and Security Security, to provide building users with a WEB / CLOUD control service for building components.

The concept "All in one" appealed to users.
The ease of Smartphone (dedicated App) allows a quick start of all the features of the building.

WAGO / AUTOMATE of control of the technical organs of the building

WAGO

https://www.wago.com/fr/

Product category : Table 'c21_italy.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 = '31'

PLCs are the first part of the order of the technical organs via the WEB, and necessary for the reassembly of the DATAs necessary for the operation of the web platform WEB management of the facilities of the building.

Microsoft AZURE

MICROSOFT

https://azure.microsoft.com/fr-fr/free/cloud-services/

https://azure.microsoft.com/fr-fr/overview/what-is-azure/

Product category : Table 'c21_italy.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 = '29'

The design of the WAVE Building Management Service WEB platform was under construction with the MICROSOFT AZURE Bricks.

Users of the platform quickly understood that the services developed were "customized" specifically for them. It is a flexible and simple way to answer all their requests for building management.

Central access control.

VANDERBILT

https://vanderbiltindustries.com/fr/produits/controle-dacces

Product category : Table 'c21_italy.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 = '31'

The access control center of the building is piloted in WEB version, being able to associate the badges and any other system like the QR code or the smart phone.

The multiplication of the possibilities of systems of access opening is appreciated by all (Badges, telephone, QR code). the simple management and WEB access rights is a plus that allows good management of badges that can "go astray".

Costs

Construction and exploitation costs

Reference global cost : 1 900,00 €

Renewable energy systems cost : 35 000,00 €

Reference global cost/Work station : 1900

Total cost of the building : 3 300 000 €

Additional information on costs :
Program including underground parking, a shared terrace and a common hall.

Health and comfort

Indoor Air quality

Analysis of the air quality by sensor connected to the building management platform. COZY AIR.

Comfort

Health & comfort :

Dimmable lighting. Natural brightness by bay window full height. Over-ventilation. Free automatic night cooling.

Adjustable and motorized sun breezes. DECK terrace open to offices, landscaped gardens. Access staircase gently sloping to promote walking.

Acoustic comfort :

Installation of a particular carpet associated with a ceiling ceiling whose Coefficient of sound absorption is 0.95.

Daylight factor : Baie vitrée pleine Hauteur. Brise soleil motorisés.

Carbon

GHG emissions

GHG in use : 3,00 $KgCO_2/m^2/an$

Methodology used :
RT 2012

Building lifetime : 30,00 année(s)

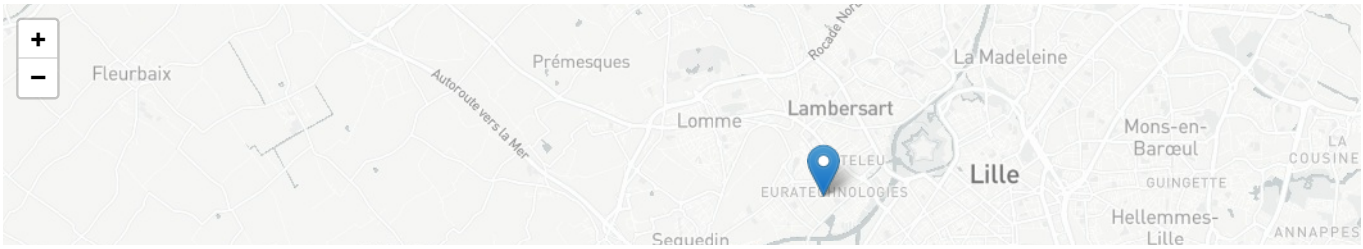
Contest

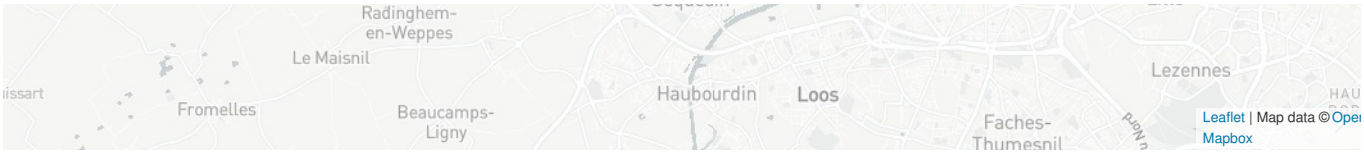
Reasons for participating in the competition(s)

The WAVE building, which houses the Regional headquarters of VINCI Energies, is the result of a great collaboration between **VINCI Immobilier, VINCI Energies** and all the players involved in the design of this building. Imagined, thought out and realized in **perfect collaboration between all the companies, integrating the technical solutions very early on,** this project was carried out in an efficient way to obtain such a result.

WAVE is a SMART BUILDING dedicated to the **well being** of the occupants. It is **simple, effective and "seamless"** for users. It is labeled **BREEAM Very GOOD, EFFINERGIE + and R2S for connectivity.** (First building labeled Hauts de France) The **tranquility** that develops this workspace deserves its place in the competition **SANTE CONFORT** tertiary buildings. It is our first tertiary building which will allow a reasonable porosity between **place of life and workplace** , which responds to a demand more and more assertive users. (Tele work, flexibility of spaces, pleasure and joy of life)
The emphasis has been placed on the "natural" comfort it provides to the occupants: Brightness, geographic location, optimal acoustics, intelligent parking control, dedicated and customized building management WEB platform that was invented in partnership with **Microsoft AZURE** , An ENR system for the self-consumption and recharging of IRVE, A sprinkling of reasoned vegetation, management of lighting and heating according to occupation, management of workspaces according to the presence rate to optimize the M² , a particular Olfactive atmosphere, an Artistic decoration of "circulations" renewed regularly.
A **WEB + SmartPhone application** has been invented so that each resident can access the **functionalities of the services** : Parking, lighting, Thermie, reservation of spaces, status of the state of charge of electric vehicles, bike reservation within the company fleet. Finally, **WAVE** is designed to provide you with all **the data on its operation** and its evolution, in order to be able to establish its permanent "health book" and **to improve its energy performance.**

Come visit it, we will make aprtager our solutions!





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