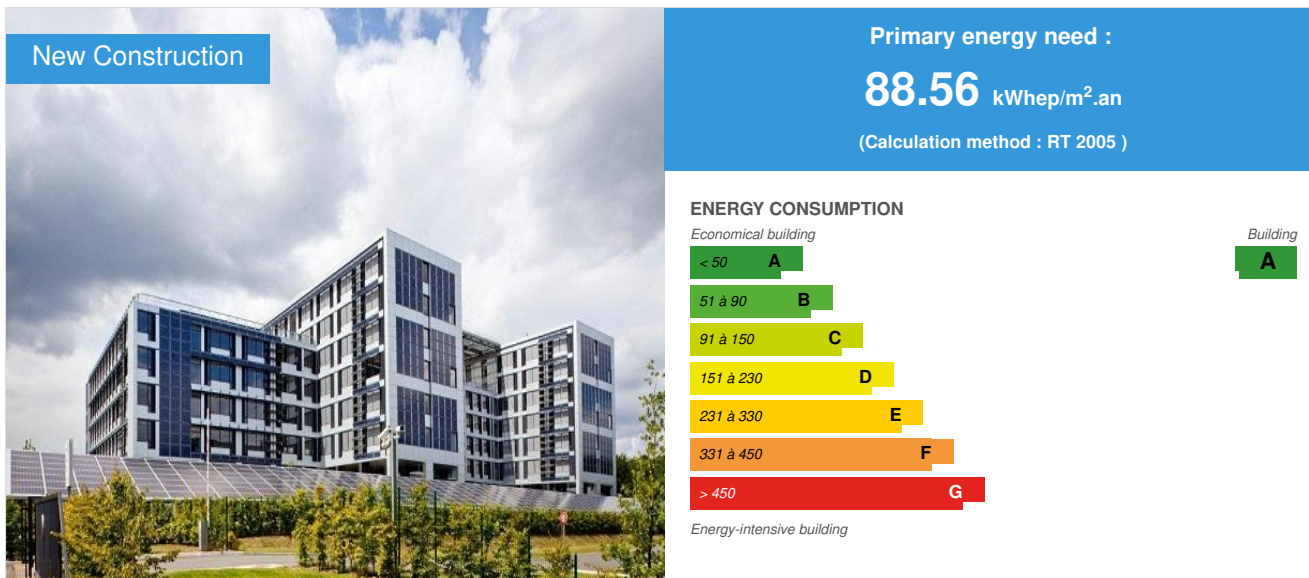


## GREEN® OFFICEÂ MEUDON

by Alexandre CARTIER / © 2012-03-22 10:13:14 / France / 13540 / FR



**Building Type** : Office building < 28m  
**Construction Year** : 2011  
**Delivery year** : 2011  
**Address 1 - street** : 11, Avenue Maréchal Juin 92 MEUDON, France  
**Climate zone** : [Cfb] Marine Mild Winter, warm summer, no dry season.

**Net Floor Area** : 23 300 m<sup>2</sup> SHON  
**Construction/refurbishment cost** : 100 000 000 €  
**Cost/m<sup>2</sup>** : 4291.85 €/m<sup>2</sup>

**Certifications :**



**Proposed by :**



### General information

concept of avant-garde, signed Bouygues Immobilier. Green Office® Meudon with an area of 23,300 sq.m. building is the first major positive energy in France. Located between the technological center of Velizy and the forest of Meudon, the building, which was designed by Ion Enescu's architects Ateliers 115, was acquired by Scor. It is the subject of the first energy performance contract private. Steria, a leading European IT services company, is headquartered FRANCE. A choice that allows the company to implement a strong civic commitment, with an optimized energy budget and to provide its 1,300 employees a wellness involving new responsibility of each. The concept, based on bias combining energy optimization, comfort and welfare of users, features many innovations without involving additional costs for users and investisseurs. Au center of the device: - a centralized system of control energy unreported; - a compensation device consumption by renewable energy production and use of passive energy principles; - an architectural bias favoring natural light, the thermal and acoustic insulation, 100% natural ventilation in summer ...

### Sustainable development approach of the project owner

Green Office® Meudon Office an area of 23,300 m<sup>2</sup> SHON is the first large-scale building has positive energy in France. Between the technological pole of Velizy

and the forest of Meudon, the building, which was designed by Ion Enescu's architects Ateliers 115, was acquired by SCOR. It is the subject of the first energy performance contract deprives. Steria, a leading European IT services company, is headquartered FRANCE. A choice that allows a company to set 'implement a strong civic commitment, with an optimized energy budget and offer its 1,300 employees a new wellness involving the responsibility of each. The concept, based on bias combining energy optimization, comfort and well-being of users, features many innovations without involving additional costs for users and investors. In the center of the device:-A centralized system control ENERGY inedit;-A compensation device consumption by renewable energy production and application of the principles of passive energy;-An architectural bias privileging the natural light, the thermal and acoustic insulation, 100% natural ventilation in Summer '

## Architectural description

According to the principles of bioclimatic architecture, Green OfficeÂ® Meudon has been designed with a bias resolutely turned to the limitation of energy requirements, including those related to lighting. Arranged mostly in parallel, buildings benefit from a north-south orientation allowing an optimal daylighting and sunlight reduces the interior spaces. Their depth, 13.50 m was limited, allows a fitting out of offices in all the first day and therefore benefit from the natural light but also to allow thermal comfort by natural ventilation in Summer. The bay windows represent 40% of the total area of the facade to promote light transmission and solar gain. A central core, oriented east-west, the liaison of all body building. It contains health groups, service shafts, elements of vertical circulation and some offices oriented to the east. To avoid installing an energy efficient air conditioning, Bouygues Immobilier has chosen to naturally cool the offices of Green OfficeÂ®. And the facade is constantly adapting to the needs of heating and cooling of the building based on climatic periods.

## See more details about this project

<http://www.green-office.fr>

## Stakeholders

### Stakeholders

Function : Contractor

BOUYGUES IMMOBILIER - CARTIER Alexandre

a.cartier@bouygues-immobilier.com

<http://www.green-office.fr>

Function : Construction Manager

ATELIERS 115 ARCHITECTES - ENESCU Ion

n.vignau@ateliers115.fr

<http://www.ateliers115.fr>

Function : Thermal consultancy agency

ARCOBA - MAYAUD Damien

damien.mayaud@icade-arcoba.fr

<http://www.icade.fr/activites/promoteur-projets-immobiliers/icade-acteur-plan-conception-ingenierie-immobiliere/icade-arcoba-ingenierie-projet>

Function : Assistance to the Contracting Authority

TRIBU - BORNAREL Alain

tribu.conseil@wanadoo.fr

<http://www.tribu-concevoirdurable.fr>

Function : Certification company

Certivéa

certivea@certivea.fr

<http://www.certivea.fr/>

## Contracting method

Off-plan

## Energy

### Energy consumption

Primary energy need : 88,56 kWh/m<sup>2</sup>.an

Primary energy need for standard building : 106,53 kWh/m<sup>2</sup>.an

Calculation method : RT 2005

Breakdown for energy consumption : Heating: 23.1; Lighting: 10.6; Ceiling fan: 0.3; Breakdown: 4.7; Refresh: 1.7; Elevators: 1.9; Utilities: 3.9; Office: 11; Parking: 4.8

## Real final energy consumption

Final Energy : 62,00 kWh/m<sup>2</sup>.an

## Envelope performance

Envelope U-Value : 0,60 W.m<sup>-2</sup>.K<sup>-1</sup>

Indicator : I4

Air Tightness Value : 1,00

## Renewables & systems

### Systems

Heating system :

- Combined Heat and Power

Hot water system :

- Other hot water system

Cooling system :

- No cooling system

Ventilation system :

- Natural ventilation
- Nocturnal Over ventilation
- Double flow heat exchanger

Renewable systems :

- Solar photovoltaic
- Biomass boiler

Renewable energy production : 114,00 %

### Smart Building

BMS :

GTC includes 18000 points

## Environment

### Urban environment

Between the technological pole of Velizy and the forest of Meudon, Green Office is rooted in a rich and innovative department, in the heart of an area particularly well served. Companies specialized in advanced technology represent over a third (32.5%) of staff. With industry, these two sectors comprise 56.5% of jobs in the town. Cotyant many prestigious companies, Green Office offers a new quality of life and an ideal balance between city and nature. A privileged environment within a business park of 1.2 million square meters. Meudon-Velizy: 750 000 m<sup>2</sup> of commercial activities. An exceptional natural setting. The proximity of the Velizy 2 shopping mall for extra comfort. The tram will link in 2014, the terminus of the 13 stations "À Chatillon Montrouge" to Transilien SNCF Viroflay Right Bank via the RER C line has Viroflay Left Bank in 40 minutes.

## Products

### Product

VELUM

BOUYGUES IMMOBILIER - ARCOBA

Product category :

The VELUM is a suspended ceiling meet several criteria: sound absorption; lighting with presence detection and probe brightness, has hot water radiant heating.



BIOMASS BOILERS COGENERATION VEGETABLE OIL

COGENGREEN

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

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

The boilers burn the capacity oil vegetable residues resulting from rape and produce 100% of the needs of hot and 55% of electric needs to the scale of one year.



EPC - Energy Performance Contracting

BOUYGUES IMMOBILIER - EXPRIMM

<http://www.exprimm.fr/>

Product category :

First CPE for a commercial building with guaranteed support for the tenant.

LMO - OPENING OF MOTOR BREAKDOWN

BOUYGUES IMMOBILIER - TRIBU - ARCOBA

Product category : Gros œuvre / Système passif

LMOs involved a passive design of the building controlled by the opening of the doors.



## Costs

### Construction and exploitation costs

Renewable energy systems cost : 8 000 000,00 €

## Carbon

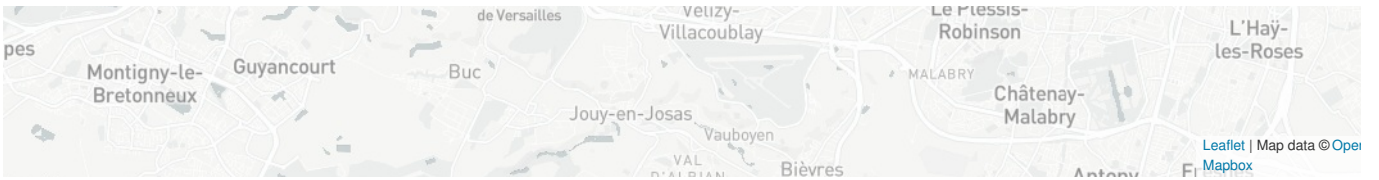
### GHG emissions

GHG in use : 83,50 KgCO<sub>2</sub>/m<sup>2</sup>/an

Methodology used :

perimeter: construction + energy + + displacement of end of life 30 years





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