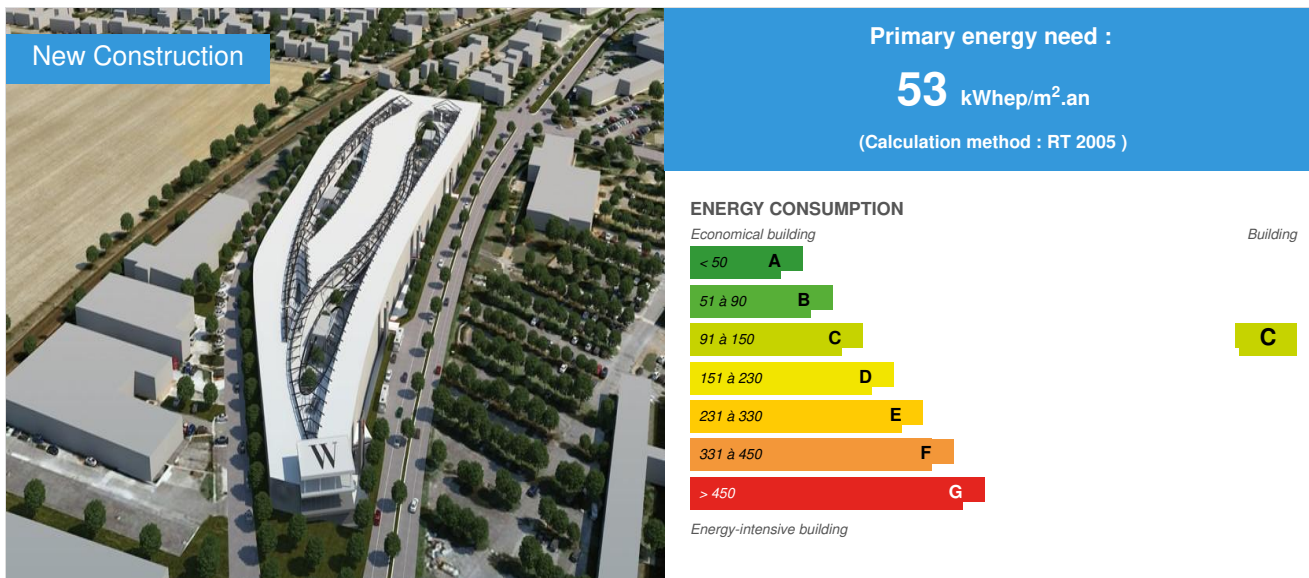


## One Nation

by Frédéric RONFORT / 2015-05-27 22:35:42 / France / 13141 / FR



**Building Type** : Other commercial buildings  
**Construction Year** : 2013  
**Delivery year** : 2013  
**Address 1 - street** : 1, rue du Président Kennedy 78340 LES CLAYES SOUS BOIS, France  
**Climate zone** : [Cfb] Marine Mild Winter, warm summer, no dry season.

**Net Floor Area** : 25 328 m<sup>2</sup> SHON  
**Construction/refurbishment cost** : 55 000 000 €  
**Cost/m2** : 2171.51 €/m<sup>2</sup>

**Certifications :**



### General information

One Nation is a shopping center "outlet" dedicated to ETDE luxury fashion brands. It is located in Clayes-Sous-Bois, west of Paris and near the Palace of Versailles (less than 10 km).

The architect took into account the life cycle of the building in the long term. Hence the shopping center is built on a regular grid of concrete for easy modulation how businesses are distributed and to adapt over time to new shop concepts and to the future needs of visitors.

The public areas are open to the outside and protected from the weather with a beautiful glass roof. This eliminates the air conditioning and heating consumptions in common areas.

Heating is provided by two gas condensing boilers equipped with modulating burners with oxygen regulation.

Air conditioning consumptions represents the largest energy use (before heating). It was optimized through chilled water production groups allowing free chilling

for the building. The indoor air is treated with air handling units incorporating energy recovery exchangers with a thermal efficiency of 85%.

To increase the floor area ratio by 20%, the building was designed following the CERTIVEA repository "NF Commercial or Sports Buildings with HPE."

In order to achieve this goal, the Energy Performance and Associated Quality level is assessed and all measures have been taken to meet this standard and make this "outlet" a Low Consumption Building.

## Sustainable development approach of the project owner

The Owner wanted an exemplary building in terms of energy performance and achieve a commercial complex that is a showcase dedicated to sustainable development, while meeting the expectations of future tenants in terms of environmental quality. The objective was to show that, even in the context of a shopping center that has a bad reputation regarding its regular environmental footprint, we can make efforts to preserve the planet by choosing ingenious systems to save energy.

## Architectural description

The architecture of One Nation Paris was designed by the firm of architects AWO. The architect, Gregory Genaux designed the mall around the light and natural lighting. This building has a contemporary architecture, sleek design, raw materials: the envelope of One Nation Paris "is organized around three elliptical and majestic patios, enrolled in a set of curves defining the visitor walks. These shapes of glass and concrete and free fluids create, in every corner of the building, luxurious bright and grandiose spaces, ."

## See more details about this project

<http://www.onation.fr>

## Stakeholders

### Stakeholders

Function : Thermal consultancy agency

Bureau d'Etudes Alain Garnier

Frédéric Ronfort

<http://www.be-garnier.fr>

### Type of market

Realization

## Energy

### Energy consumption

Primary energy need : 53,00 kWh/m<sup>2</sup>.an

Primary energy need for standard building : 113,00 kWh/m<sup>2</sup>.an

Calculation method : RT 2005

### Envelope performance

Envelope U-Value : 0,74 W.m<sup>-2</sup>.K<sup>-1</sup>

## Renewables & systems

### Systems

Heating system :

- Condensing gas boiler

Hot water system :

- Individual electric boiler

#### Cooling system :

- Water chiller

#### Ventilation system :

- Double flow heat exchanger

#### Renewable systems :

- Other, specify

Renewable energy production : 30,00 %

#### Other information on HVAC :

##### HEATING OF COMMERCIAL SPACES

Heating is provided by two gas condensing boilers with modulating gas burners with oxygen control.

##### VENTILATION OF SPACES

The indoor air is treated with air handling units incorporating energy recovery exchanger with a thermal efficiency of 85%.

When the outside temperature drops below 12 ° C, we produce chilled water without turning on the compressor of the water chiller groups: water is directly cooled by the outside air. The whole air-conditioning systems (networks, cassettes, winnable units, ...) have been dimensioned to operate in a 13/18°C water regime to maximize the free-chilling rather than in a 6/12°C. water regime.

#### Solutions enhancing nature free gains :

La consommation dû à la climatisation qui représente le plus gros poste énergétique (loin devant la consommation de chauffage) a été optimisée grâce à des groupes de production d'eau glacée permettant un fonctionnement en free-chilling.

## Smart Building

#### BMS :

A centralized technical management system is used to manage heat and cold production, monitor the energy consumption of the building and manage the lighting of the mall

## Environment

### Urban environment

One Nation is located in the local commercial area "Grand Plaisir". An upscale shuttles service was set up from Versailles and the Paris Opera House in Paris during the week and on weekends. Specializing in fashion and luxury brands, it includes shops dedicated to streetwear, lifestyle and sport, premium brands (Armani, Courrèges, Zadig & Voltaire, Cacharel, etc ...) and restoration with 3 restaurants and 2 chocolatiers.

Structured on 2 levels, the center and its shops offer 90 collections from the previous season prices "outlet".

## Products

### Product

Chilled water unit with Free Cooling

Climaveneta

Monsieur Philippe Pineau

<http://www.climaveneta.com/EN/>

Product category : Génie climatique, électricité / Ventilation, rafraîchissement

Outdoor unit for the production of chilled water, equipped with semi-hermetic screw compressors dedicated for the use of R134a.

High efficiency of operation of the chiller.



These ice water production units are equipped with FREE COOLING batteries. When the cooling load demand is continuous during the winter season or in any case when the outside temperature is less than the return liquid temperature of the installation.

In FREE-COOLING mode the fluid is cooled by the outside air, reducing the work of compressors; can even cancel completely the work of the compressors.

This process allows energy savings without compromising user comfort

## Costs

## Construction and exploitation costs

Renewable energy systems cost : 900 000,00 €

### Contest

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

Shopping centers generally need significant amounts of energy (occupations, significant artificial lighting, etc...). More specifically, energy consumptions are related to air conditioning (enormous even in winter) to the point where air conditioning consumptions exceeds heating consumptions.

Alain Garnier engineering consultants looked for a way to reduce these consumptions by implementing production units of chilled water, allowing free chilling in the building.

This method, produces cold by using the difference of temperature with the outside to trigger a natural cooling, without switching compressors on.

### Building candidate in the category

