

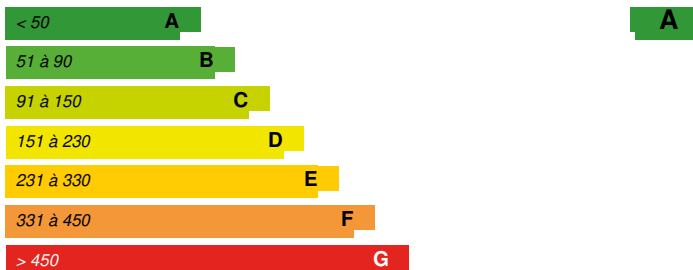
# Restaurant KOH

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Renovation

2



**Building Type** : Restaurant  
**Construction Year** : 2018  
**Delivery year** : 2018  
**Address 1 - street** : C/Pujades 133b 08005 BARCELONA, España  
**Climate zone** : [Csb] Coastal Mediterranean - Mild with cool, dry summer.

**Net Floor Area** : 122 m<sup>2</sup>  
**Construction/refurbishment cost** : 200 000 €  
**Number of Place** : 30 Place  
**Cost/m2** : 1639.34 €/m<sup>2</sup>

## General information

In the center of the "Poblenou" neighborhood of Barcelona (22@), the "Koh" restaurant has been renovated, following the EnerPhit / Passivhaus protocol. "Koh" means "island" in Thai, and thus reflects the idea of the owner, of creating a quality site in different aspects: quality of the food, quality of the interior design and quality of the interior environment. In addition to these virtues perceived by the consumer, the fact of creating a site with very low energy consumption, with its direct advantages for the owner and indirect for the environment also stands out.

EnerPhit provides a protocol for buildings with very low energy consumption, combined with high thermal comfort. It is calibrated to achieve optimal energy rehabilitation in the life cycle of the building. In other words, the initial construction costs and energy consumption savings are valued throughout the life of the building.

The economic analysis of the offers of several contractors has shown that the extra cost to reach this standard is relatively low, of 5% in the case of the awarded contractor. The annuity that the promoter will pay (sum of mortgage and energy consumption) is from the first year lower compared to a less efficient variant, according to the Spanish building technical code. Our main strategies of action have been: continuous thermal insulation throughout the enclosure, Passivhaus type windows for warm weather, double flow ventilation with Passivhaus certificate, high air tightness and heat pump for heat and cold.

See more details about this project

<http://www.energiehaus.es/proyecto/restaurante-koh/#1499327110643-a2e5060f-0141ab4d-bfae6604-bdefd725-a76e0835-723dff07-4297>

Data reliability

Self-declared

## Stakeholders

## Contractor

Name : Energiehaus Arquitectos  
Contact : info@energiehaus.es  
<http://www.energiehaus.es>

## Construction Manager

Name : Decorner  
<http://www.decorner.es/>

## Stakeholders

Function : Developer  
Enrique del Olmo

## Contracting method

General Contractor

## Owner approach of sustainability

"Koh" means "island" in Thai, and thus reflects the idea of the owner, to create a quality site in different aspects: quality of the food (the excellent ramen, by the way), quality of the interior design (with photos of photographer Enrique del Olmo) and quality of the interior environment (EnerPhit designed by Energiehaus Arquitectos). In addition to these virtues perceived by the consumer, the fact of creating a site with very low energy consumption, with its direct advantages for the owner and indirect for the environment also stands out.

## Architectural description

The main difference between a "conventional" and passive restaurant lies in the quality of the interior environment. Its parameters are indoor temperature, relative humidity, absence of air movement and absence of noise from the thermal conditioning system. In a passive restaurant the typical discomfort of the air conditioners that drive with high speed the air to set the interior spaces is missing. The passive restaurant does have a diffusion system of fresh air, combined (in our case) with a heat pump. But due to the very low demands of heat or cold, this system works at very low speeds, so that the user does not perceive them. The ventilation of air coming from the exterior works in a continuous way through some "heat recovery" of high quality (certified by the Passivhaus Institut). These recuperators filter the outside air so that most of the pollens and air particles (traffic etc.) do not enter the interior rooms. Another advantage of a passive restaurant is the absence of cold or heat radiation through the windows or large air infiltrations. Of course, the best way to understand this concept of comfort is to visit the restaurant and experience this feeling with the direct and subjective experience that each one has of comfort.

## Energy

### Energy consumption

Primary energy need : 100,00 kWhpe/m<sup>2</sup>.year  
Primary energy need for standard building : 100,00 kWhpe/m<sup>2</sup>.year  
Calculation method :  
Final Energy : 295,00 kWhfe/m<sup>2</sup>.year  
Initial consumption : 100,00 kWhpe/m<sup>2</sup>.year

### Envelope performance

Envelope U-Value : 0,60 W.m<sup>-2</sup>.K<sup>-1</sup>  
More information :  
U facade 0,7  
U Cover 0.28  
U flooring 0.85  
U installed windows 1.24

Indicator : EN 13829 - n50 » (en 1/h-1)  
Air Tightness Value : 4,00  
[Test blower door](#)

## Renewables & systems

### Systems

Heating system :

- Heat pump

Hot water system :

- Individual electric boiler

Cooling system :

- VRV Syst. (Variable refrigerant Volume)

Ventilation system :

- Free-cooling
- Double flow heat exchanger

Renewable systems :

- No renewable energy systems

Other information on HVAC :

The distribution of air is solved with a single network of impulse ducts for ventilation and air conditioning.

Solutions enhancing nature free gains :

The ventilation system includes a bypass for the free-cooling controlled domotically with the outside temperature.

## Products

### Product

Ventaclim Superconfort

ventaclim

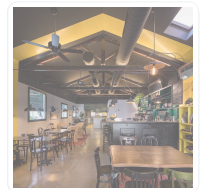
94 672 24 58

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

Product category :

Thermal transmittance  $U_w$  [W / m<sup>2</sup>K] 1,0

Positive for comfort



Atrea Duplex 1600 Flexi

Atrea

info@alb.es

<https://www.alb.es/index.php>

Product category :

Dual flow ventilation system with high efficiency heat recovery

Passivhaus Certificate



## Costs

## Building Environmental Quality

### Building Environmental Quality

- indoor air quality and health
- comfort (visual, olfactive, thermal)
- energy efficiency

## Contest

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

The restaurant KOH is the first refurbished in Barcelona of a gastronomic following the EnerPhit criteria. This international seal is the adaptation of Passivhaus for the case of rehabilitation. EnerPhit provides a protocol for buildings with very low energy consumption, combined with high thermal comfort. It is calibrated to achieve optimal energy rehabilitation in the life cycle of the building. In other words, the initial construction costs and energy consumption savings are valued throughout the life of the building. The restaurant KOH, which opened its doors at the end of February 2018, is being monitored by the team of Energiehaus, to be able to check that the adapted strategies and solutions really turn into the expected values of low consumption (kWh) and thermal comfort and health (ppm CO<sub>2</sub>).

The economic analysis of the offers of several contractors has shown that the extra cost to reach this standard is relatively low, of 5% in the

case of the awarded contractor. The annuity that the promoter will pay (sum of mortgage and energy consumption) is from the first year lower compared to a less efficient variant, according to the Spanish building technical code. Our main strategies of action have been: continuous thermal insulation throughout the enclosure, Passivhaus type windows for warm weather, double flow ventilation with Passivhaus certificate, high air tightness and heat pump for heat and cold.

### Building candidate in the category



Energía & Climas Temperados



Premio de los Usuarios

