


## Perlita Passive house

by [Xavier Gaucher](#) / 2019-06-17 19:54:01 / International / 5711 / EN



Renovation

Primary energy need :

# 81.3

 kWhpe/m<sup>2</sup>.year  
 (Calculation method : Other )

**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** : Isolated or semi-detached house  
**Construction Year** : 2017  
**Delivery year** : 2017  
**Address 1 - street** : 4324 Perlita Avenue CA 90039 LOS ANGELES, USA  
**Climate zone** : [Csa] Interior Mediterranean - Mild with dry, hot summer.

**Net Floor Area** : 197 m<sup>2</sup>  
**Construction/refurbishment cost** : 540 000 €  
**Number of Dwelling** : 1 Dwelling  
**Cost/m2** : 2741.12 €/m<sup>2</sup>

**Certifications :**



### General information

The goal of the Perlita Project is to show a new path for low energy consumption buildings in Los Angeles and in Southern California through realistic, affordable and reproducible solutions.

The **main focus was the energy efficiency**. We followed the PassiveHouse standard path, which is the leading international low energy building standard with more than 85,000 buildings around the globe in all climate zones, to deliver a high level of **comfort with very low energy consumption**.

This strategy allowed us to design a **site Net Zero Energy**, fossil fuel free house, **with only 12 solar panels; 4 panels were added to supply all the required electricity for the annual consumption of an electric car** used for most of the home owners' local commute. A storage battery allows to shave peak hours demand.

Of course, the project **was designed to be water conscious with only low water consumption fixtures**, drought tolerant landscaping and arain garden.

**Black water and grey water pipes were also separated** to easily use the grey water for the yard.

After the first 12 months of operation, the house is one of the most energy efficient building in Los Angeles with a **verified site EUI below 39 kWh/m<sup>2</sup>/yr**, which is the maximum total energy consumption allowed for a Passive House. Both certification from the Passive House Institute and from the Living Building Challenge are in progress.

This project should be the beginning of a new construction paradigm; more than 300 people already toured the house.

## See more details about this project

<https://elrondburrell.com/blog/passivhaus-goldilocks/>

## Photo credit

Video: <https://www.buildwithrise.com/>

Pictures: Xavier Gaucher

## Stakeholders

### Contractor

Name : ePHiciency

Contact : Xavier Gaucher - xgaucher@gmail.com - 4324 Perlita Avenue, Los Angeles CA 90039 - tel: +1 626 524 0505

<http://www.ephiciency.la>

### Construction Manager

Name : ePHiciency

Contact : Xavier Gaucher - xgaucher@gmail.com - 4324 Perlita Avenue, Los Angeles CA 90039 - tel: +1 626 524 0505

<http://www.ephiciency.la>

### Stakeholders

Function : Designer

Arcolution

Eve Reynolds - reynolds.eve@gmail.com - tel: +1 818 915 2219

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

Architect

Function : Designer

HOST

Alain Renk - arenk@me.com - tel: +33 6 20 80 92 60

<http://ubiic.com/host-architects.org/agence.php>

Design Architect

Function : Assistance to the Contracting Authority

Nico design

Matt Bahrami - mattb@nicodesignsinc.com - tel: +1 310 490 5445

<http://www.nicodesignsinc.com>

General Contracting Consultant

Function : Environmental consultancy

Verdical Group

Drew Shula - drew.shula@verdicalgroup.com - tel: +1 818 390 4943

<http://www.verdicalgroup.com>

Living Building Challenge Certification

Function : Thermal consultancy agency

Passive House Institute

Javier Florez - javier.florez@passiv.de - tel: +49 6151 82699 32

Function : Designer

Superjacent

Tony Paradowski - tony@superjacentla.com - tel: +1 323 867 4705

<http://www.superjacentla.com>

Landscaping design

## Contracting method

Build and sell construction

## If you had to do it again?

For our next project, we will make sure to use Passive House solutions which have been validated by experienced Passive House crews; We will also make sure our architect has experience in Passive House design and therefore for the Passive House principles to be integrated as well as possible into the building design; Lastly we will make sure to have every construction details and MEP systems to be 100% design before starting the construction phase, because decisions we made on site were not as efficient and cost effective that the one we would have thought about before the construction phase.

## Building users opinion

Great comfort, indoor air quality and noise reduction from outside noise; And all that without any energy bill!

## Energy

### Energy consumption

Primary energy need : 81,30 kWhpe/m<sup>2</sup>.year

Primary energy need for standard building : 296,00 kWhpe/m<sup>2</sup>.year

Calculation method : Other

CEEB : 0.0004

Breakdown for energy consumption : House: 7784 kWh for 12 months

Electric Vehicle Charger: 1567 kWh for 12 months

Initial consumption : 300,00 kWhpe/m<sup>2</sup>.year

### More information

We finished the first year with \$230 energy credit - Energy bills available upon request

### Real final energy consumption

Final Energy : 39,00 kWhfe/m<sup>2</sup>.year

## Renewables & systems

### Systems

Heating system :

- Heat pump

Hot water system :

- Heat pump

Cooling system :

- VRV Syst. (Variable refrigerant Volume)

Ventilation system :

- Nocturnal ventilation
- Double flow

Renewable systems :

- Solar photovoltaic

- Heat pump

Renewable energy production : 10 071,00 %

13.5 kWh Storage battery - 12 Solar Panels for the house consumption; 4 for the Electric Vehicle.

## Environment

### Urban environment

The house is located in the Atwater Village district of Los Angeles, a fully developed area.

Land plot area : 711,00 m<sup>2</sup>

Built-up area : 0,24 %

Green space : 350,00

## Products

### Product

Windows & Doors

Zola

tel: +1 303 578 0001

<https://www.zolawindows.com>

Product category : Second œuvre / Menuiseries extérieures

A complete range of high efficiency & airtight doors, windows, sliding glass doors

NFRC and PHI rated

## Costs

### Construction and exploitation costs

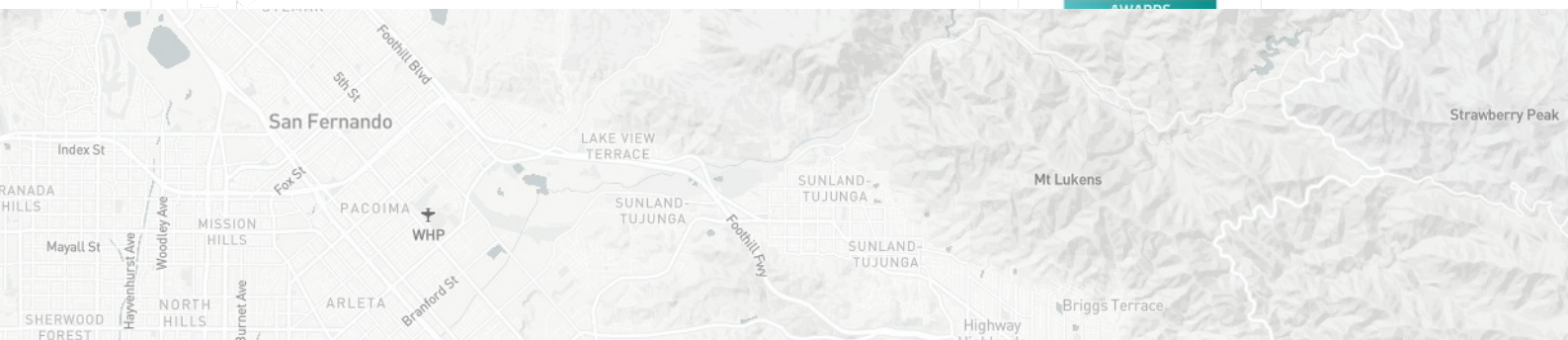
Total cost of the building : 540 000 €

## Contest

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

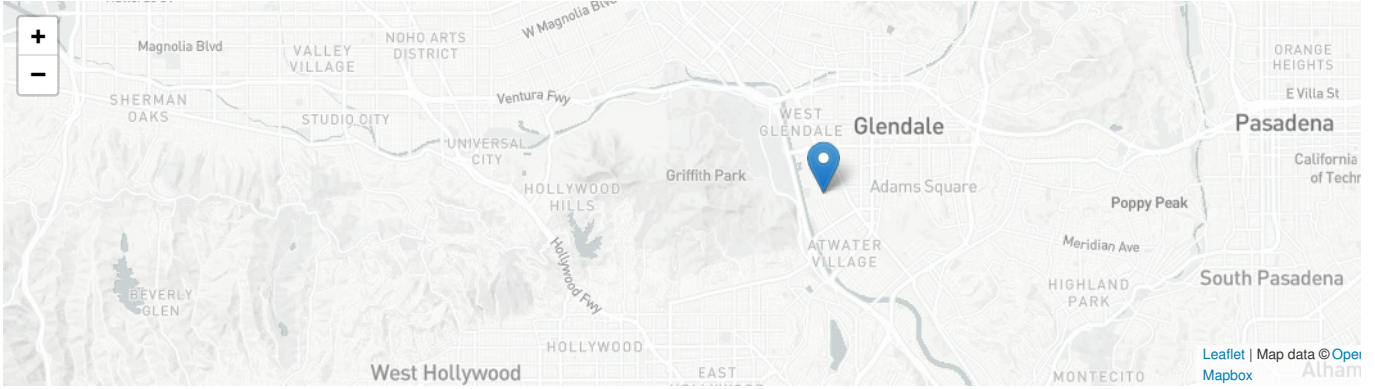
- comfort with very low energy consumption: 39 kWh/m<sup>2</sup>/yr
- only 12 solar panels
- black water and grey water pipes separated

### Building candidate in the category





Users' Choice



Date Export : 20230430165840