Perlita Passive house

by Xavier Gaucher / 2019-06-17 19:54:01 / Internacional / 5830 / EN

Primary energy need :

81.3 kWhpe/m^2.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^2 Superficie útil
Construction/refurbishment cost : 540 000 €
Number of Dwelling : 1 Dwelling
Cost/m2 : 2741.12 €/m^2

Certifications :

Certifiée Maison Passive Passivhaus Institut | classic | plus | premium |

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 buildingsaround the globe in all climate zones, to deliver ahigh 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**, adrought 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 EUIbelow 39 kWh/m²/yr**, which is the maximum total energy consumption allowed for a Passive House. Both certification from the Passive House Institute and from the Living BuildingChallenge 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

https://passivehouse.com/
Passive House consulting to ePHiciency + PH Certification (in progress)

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^2.year

Primary energy need for standard building : 296,00 kWhpe/m^2.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^2.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^2.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 in located in the Atwater Village district of Los Angeles, a fully developed area.

Land plot area : 711,00 m^2

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 : Table 'c21_spain.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 = '10'

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

NFRC and PHI rated

Costs

Construction and exploitation costs

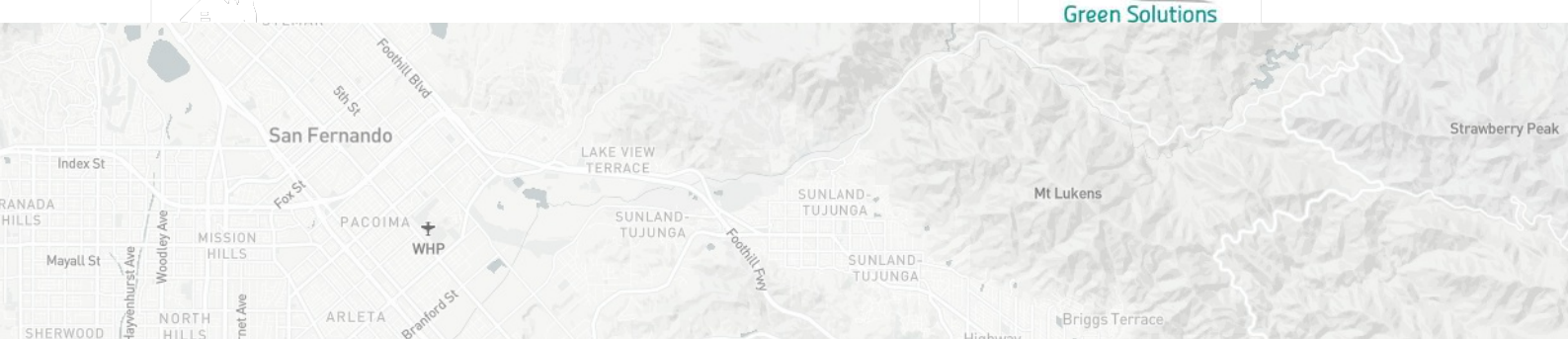
Total cost of the building : 540 000 €

Contest

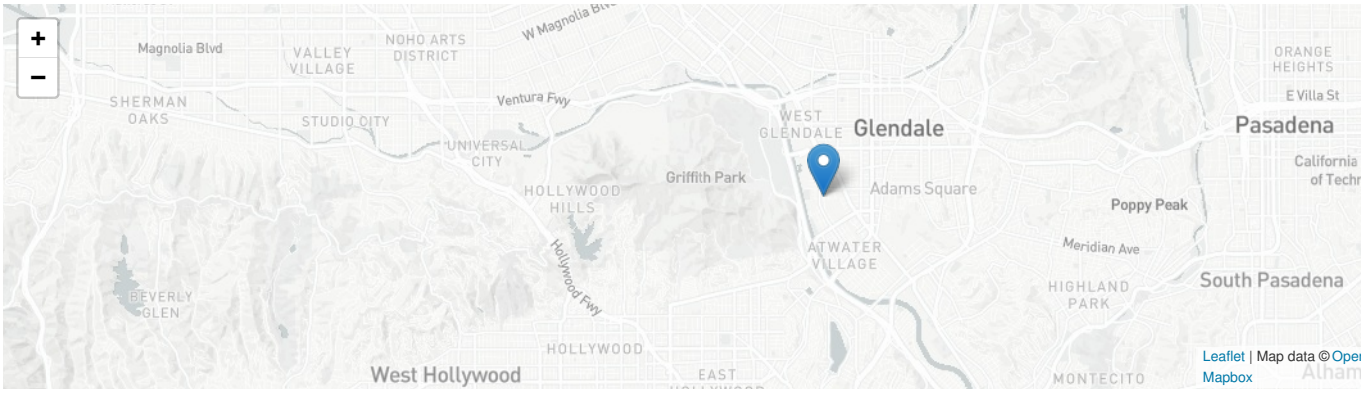
Reasons for participating in the competition(s)

- comfort with very low energy consumption: 39 kWh/m²/yr
- only 12 solar panels
- black water and grey water pipes separated

Building candidate in the category



Users' Choice



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