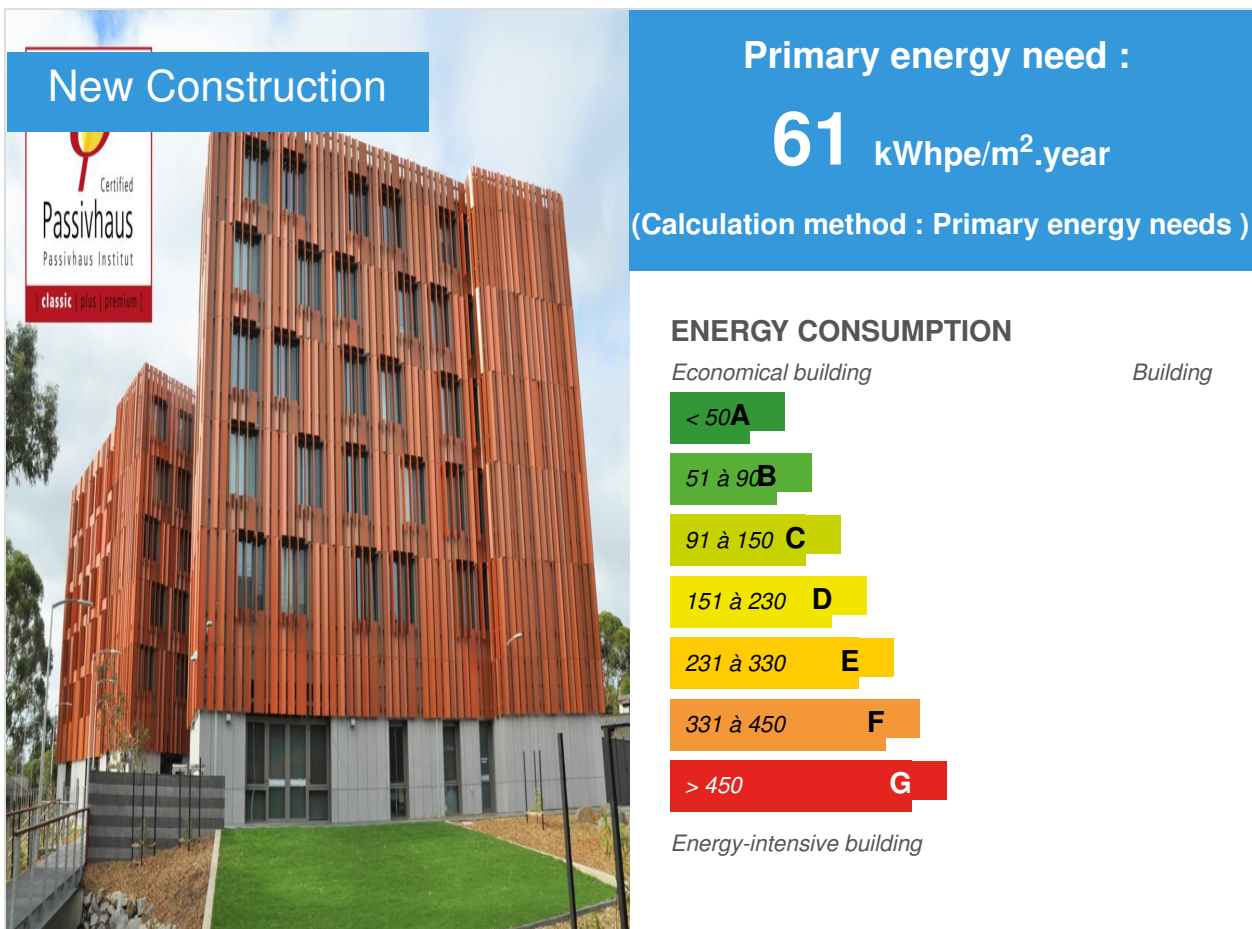


Gillies Hall at Monash University

by Clare Parry / 2019-06-04 00:32:28 / Internacional / 7258 / EN



Building Type : Student residence

Construction Year : 2018

Delivery year : 2019

Address 1 - street : 47-49 Frankston-Flinders Road 3199 FRANKSTON, Other countries

Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 5 185 m²

Construction/refurbishment cost : 21 100 000 €

Number of Dwelling : 152 Dwelling

Cost/m2 : 4069.43 €/m²

Certifications :



Proposed by :



General information

Gillies Hall, at Monash's Peninsula Campus, is Australia's largest Passivhaus building and a significant project for Monash University as it moves to deliver on the ambitious Net Zero initiative. The new student residence is home to 150 students and is innovative for both the Passivhaus target and CLT structure. The project is fossil fuel free, with no gas use on site, and the extensive rooftop solar plant is expected to cut grid electricity use dramatically. The university expects the building to be at least 3 times more efficient than their other halls of residence, and have half of them embodied carbon compared to the industry-standard concrete structure.

The project was subject to a fast-tracked delivery programme of just 20 months, successfully delivered using an Early Contractor Involvement (ECI) process, modular CLT construction and highly engaged team. Certified by Clare Parry at Grün Consulting, the building is set to be [Monash's most efficient building](#).

In addition to rainwater harvesting and water sensitive urban design, the project also includes a landscaped dry-creek bed created to provide additional opportunities for recreation, manage stormwater flows during high-rain events, and connect into the natural waterways of the campus.

Providing 150 student apartments plus two staff dwellings, and a range of collaborative and independent study nooks and communal spaces, the project was designed by Jackson Clements Burrows Architects (JCBA) and built by Multiplex. ESD and building services were provided by AECOM.

[See more details about this project](#)

<https://www.monash.edu/students/news/articles/gillies-hall-new-accommodation-at-peninsula2>

https://passivehouse-database.org/index.php?lang=en#d_5941

Photo credit

All photos copyright Peter Clarke and Jackson Clement Burrows Architects

Stakeholders

Contractor

Name : Multiplex

Contact : Danielle Savio

<https://www.multiplex.global/>

Construction Manager

Name : Monash University

Contact : Rob Brimblecombe

<https://www.monash.edu/>

Stakeholders

Function : Certification company

Grün Consulting

Clare Parry

<https://grunconsulting.com/>

Passive House Building Certifier

Function : Designer

Jackson Clement Burrows Architects

Simon Topliss

<http://jcba.com.au/>

Architects

Function : Thermal consultancy agency

AECOM

Nick Bamford

<https://www.aecom.com/>

Passive House and ESD consulting, Building Services, Structural & Fire Engineering

Contracting method

Other methods

If you had to do it again?

The project was very successful, and utilised an open communication protocol. If we did it again, we would push local suppliers and sub-contractors further to develop local products for this type of high-efficiency products and services.

Energy

Energy consumption

Primary energy need : 61,00 kWhpe/m².year

Primary energy need for standard building : 200,00 kWhpe/m².year

Calculation method : Primary energy needs

Breakdown for energy consumption : Whole of building use, with solar offset on site

Envelope performance

Envelope U-Value : 0,25 W.m⁻².K⁻¹

More information :

Cross laminated timber with external insulation

Building Compactness Coefficient : 1,20

Indicator : n50

Air Tightness Value : 0,53

More information

Currently being monitored, since Jan 2019

Systems

Heating system :

- No heating system

Hot water system :

- Heat pump

Cooling system :

- No cooling system

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- Solar photovoltaic
- Other, specify
- Heat pump

Renewable energy production : 100,00 %

60 kWp solar PV installed on roof, with remaining renewable energy demand from off-site systems

Solutions enhancing nature free gains :

Passivhaus design to optimise free heating (solar and capture of internal heat gains) using heat recovery and high-efficiency envelope

Environment

Urban environment

Outer urban fringe location. The project also includes a landscaped dry-creek bed created to provide additional opportunities for recreation, manage stormwaterflows during high rain events, and connect into the natural waterways of the campus.

Products

Product

ComfoAir XL 4400

Zehnder

<https://www.zehndergroup.com/en>

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 = '19'



ComfoAir XL 3300

Zehnder

<https://www.zehndergroup.com/en>

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 = '19'



Maxi flat 2000

Zehnder - Paul

<https://www.zehndergroup.com/en>

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 = '19'



Maxiflat 600

Zehnder - Paul

<https://www.zehndergroup.com/en>

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 = '19'
```



Costs

Construction and exploitation costs

Total cost of the building : \$34000000 €

Health and comfort

Comfort

Health & comfort : Daylight modelling completed to ensure provision of daylight autonomy with installed windows and extensive shading

Calculated indoor CO2 concentration :

Per Passivhaus principles, expected to remain below 600ppm

Measured indoor CO2 concentration :

TBA

Calculated thermal comfort : Per Passivhaus principles, optimised thermal comfort to ISO 7730 guidelines. Maintained between 20-25degC with ceiling fans, modelled to achieve this for 99.9% hours

Measured thermal comfort : TBA



Acoustic comfort : Engineered to deliver acoustic comfort in line with Passivhaus requirements

Reasons for participating in the competition(s)



This building is part of the Monash University [Net Zero](#) initiative. Health and comfort, as well as economical and sustainable structure are a combined focus.

Carbon emissions are reduced by half thanks to cross-laminated timber. The Gillies Hall is the most energy efficient building ever built in the Monash University. By using rooftop solar panels and an all-electric thermal plant it is also 100 per cent renewable through its use .



Building candidate in the category



Energy & Temperate Climates



Low Carbon



Health & Comfort



Users' Choice

Date Export : 20230503002920