Envirotecture

48 Kalang Road
Elanora Heights NSW 2101
02 9913 3997

Date: 28th May 2024

We have completed our Development Application stage Passive House certification assessment of the proposed dwelling to be constructed at:

71 Pitt Road, North Curl Curl, NSW 2099

I hereby attest that I have performed a preliminary assessment of the above project based upon the document list below. If constructed as documented and if an air tightness result of 0.6ACH50 is achieved, then the building can meet the Passive House standard.

Please note that certification will only be granted if the building is realised according to the design parameters given in the documents and PHPP calculation including achieving an air tightness result of 0.6ACH50 or less.

Changes to proposed insulation levels, glazing and window frame performance may compromise the energy balance / results of the project.

The following key documents were reviewed as part of the assessment:

DRAWING LIST

SHEET NUMBER	SHEET NAME	SHEET SIZE	REVISION	DATE
A3 10.01	COVER PAGE	ISO A3	1	27/05/24
A3 11.01	SITE PLAN	ISO A3	1	27/05/24
A3 11.03	SITE ANALYSIS	ISO A3	1	27/05/24
A3 20.01	DEMOLITION PLAN	ISO A3	1	27/05/24
A3 21.01	GROUND FLOOR PLAN	ISO A3	1	27/05/24
A3 21.02	FIRST FLOOR PLAN	ISO A3	1	27/05/24
A3 21.03	ROOF PLAN	ISO A3	1	27/05/24
A3 30.01	ELEVATIONS: NORTH + WEST	ISO A3	1	27/05/24
A3 30.02	ELEVATIONS: SOUTH + EAST	ISO A3	1	27/05/24
A3 40.01	SECTIONS: 1 + 2	ISO A3	1	27/05/24
A3 40.02	SECTIONS: 3 + 4	ISO A3	1	27/05/24
A3 60.02	SHADOW DIAGRAMS - JUNE 21	ISO A3	1	27/05/24
A3 63.01	EROSION AND SEDIMENT CONTROL PLAN & WASTE MANAGEMENT PLAN	ISO A3	1	27/05/24
A3 70.01	WINDOW SCHEDULE: GROUND FLOOR	ISO A3	1	27/05/24
A3 70.11	WINDOW SCHEDULE: FIRST FLOOR 01	ISO A3	1	27/05/24
A3 70.12	WINDOW SCHEDULE: FIRST FLOOR 02	ISO A3	1	27/05/24
A3 71.01	DOOR SCHEDULE	ISO A3	1	27/05/24
A3 90.01	BASIX	ISO A3	1	27/05/24
A3 90.02	BASIX DIAGRAMS	ISO A3	1	27/05/24
A3 91.01	DCP COMPLIANCE - SITE AREAS	ISO A3	1	27/05/24
A3 91.02	DCP COMPLIANCE - HEIGHT PLANE	ISO A3	1	27/05/24
A3 92.01	EXTERNAL MATERIALS, COLOURS AND	ISO A3	1	27/05/24
A3 100.01	PERSPECTIVES	ISO A3	1	27/05/24

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The performance specifications are summarised here: -

Summary				Average U-value	Radiation gains	Radiation load
Temp.-zone	Thermal envelope Areas [m²]	Area group	Group no.	[W/(m²K)]	Heating period [kWh/a]	Cooling period [kWh/a]
	210.20	**Treated floor area**	1		6 months	12 months
A	**12.21**	**North windows**	2	**1.390**	**990**	**1237**
A	**12.14**	**East windows**	3	**1.384**	**666**	**868**
A	**21.61**	**South windows**	4	**1.362**	**617**	**1410**
A	**10.44**	**West windows**	5	**1.423**	**491**	**1251**
A	**0.00**	**Horizontal windows**	6			
A	**0.00**	**Exterior door**	7			
A	**277.78**	**External wall - ambient**	8	**0.290**	**215**	**582**
B	**0.00**	**External wall ground/basement**	9			
A	**132.22**	**Roof / ceiling - ambient**	10	**0.172**	**35**	**227**
B	**129.40**	**Floor slab / basement ceiling**	11	**0.278**		
	0.00		12			
	0.00		13			
	0.00		14			
	Thermal bridges, length [m]			Ψ [W/(mK)]		
A	**122.09**	**Thermal bridges ambient**	15	**0.040**		
P	**54.74**	**Perimeter thermal bridges**	16	**0.040**		
B	**0.00**	**Thermal bridges FS/BC**	17			
Building element towards neighbour, [m²]				[W/(m²K)]		
I	**0.00**	**Building element towards neighbour**	18			
	Total thermal envelope [m²]			[W/(m²K)]		
	595.80	Average U-value of thermal envelope:		**0.377**		

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The expected final Passive House results of the completed building are outlined below:

Passive House-Verification

PHPP

Building:	71		
Street:	Pitt Road		
Postcode/City:	2099	North Curl Curl	
Province/Country:	NSW	AU-Australia	
Building type:	1-Freestanding single family house		
Climate data set:	AU1011a-Sydney, Altitude corrected		
Climate zone:	5: Warm	Altitude of location:	12 m
Home owner / Client:	Rob & Cass Sims		
Street:			
Postcode/City:			
Province/Country:			

Architecture:	Envirotecture		
Street:	48 Kalang Road		
Postcode/City:	2101	Elanora Heights	
Province/Country:	NSW	AU-Australia	
Energy consultancy:	Envirotecture		
Street:	48 Kalang Road		
Postcode/City:	2101	Elanora Heights	
Province/Country:	NSW	AU-Australia	

Mechanical engineer:			
Street:			
Postcode/City:			
Province/Country:			
Certification:			
Street:			
Postcode/City:			
Province/Country:			

Year of construction:	2024	Interior temperature winter [°C]:	20.0
No. of dwelling units:	1	Internal heat gains (IHG) winter [W/m²]:	2.3
No. of occupants:	3.1	Specific heat capacity [Wh/K per m² TFA]:	60
		Interior temp. summer [°C]:	25.0
		IHG summer [W/m²]:	2.3
		Mechanical cooling:	x

Specific building characteristics with reference to the treated floor area

				Criteria	Alternative criteria	Fullfilled?[2]
	Treated floor area m²	210.2				
Space heating	Heating demand kWh/(m²a)	5.75	≤	15	-	Yes
	Heating load W/m²	7.18	≤	-	10	
Space cooling	Cooling & dehum. demand kWh/(m²a)	10.93	≤	17		Yes
	Frequency of overheating (> 25 °C) %	-	≤	-		-
	Frequency of excessively high humidity (> 12 g/kg) %	0.00	≤	10		Yes
Airtightness	Pressurisation test result n_{50} 1/h	0.6	≤	0.6		Yes
Moisture protection						
	Smallest temperature factor $f_{Rsi=0.25\ m²K/W}$ -	0.70	≥	0.10	0.00	Yes
Thermal comfort	All requirements fulfilled? -					Yes
	U-value W/(m²K)		≤	1.87		
	U-value W/(m²K)		≤	1.30		
	U-value W/(m²K)		≤	1.40		
	U-value W/(m²K)		≤	1.02		
Non-renewable Primary Energy (PE)	PE demand kWh/(m²a)	112	≤	-		-
Primary Energy Renewable (PER)	PER demand kWh/(m²a)	49	≤	60	60	Yes
	Renew. energy generation (in rel. to projected building footprint area) kWh/(m²a)	0	≥	-	-	

[2] Empty field: data missing; '-': No requirement

I confirm that the values given here have been determined following the PHPP methodology and based on the characteristic values of the building. The PHPP calculations are attached to this verification.

Passive House Classic? Yes

Best regards,

Andy Marlow
Certified Passive House Designer