10 STAR BUILDING ASSESSMENTS

ENERGY AND SUSTAINABILITY DESIGN CONSULTANTS

- **BASIX Assessments, Single dwelling, Multi dwelling, Alterations, and additions**
- **NatHERS Assessments- Single dwelling, Multi dwelling, Multi unit**
- **NCC 2022, Volume 2, Part 3.12 DTS compliance reports**
- **NCC 2022, Volume 1, Part J, DTS compliance reports**
- **NCC 2022, Volume 1, Part J, Verification JV3 compliance reports**

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Quality Management

Revision	**01**
Remarks:	Final
Date:	Thursday, March 13, 2025
Prepared by:	Adam Clarke
Checked by:	ACC
Authorised by:	ACC
Project number:	658.0 ESD-JV3-040325-TAREE
Report number:	001.
File reference:	

Client	**Consultant**
ARCHEWELL	

Contents

1 Introduction and Methodology

Purpose of Report

10 Star Building Assessments has carried out a Section J Energy Efficiency analysis for the proposed

Class 3 LAHC care residence

The purpose of this report is to provide a statement pertaining to the building envelope performance requirements necessary to comply with the J1V3 provisions of Section J of Volume One of the National Construction Code (NCC) 2022.

Parts J5-8 are not included in the scope of this report and will require compliance certification from the relevant engineer or specifier

All models and calculations have been conducted assuming compliance with these parts of the NCC 2022.

It is not the purpose of this report to assess the building for any aspects of compliance other than the aspects above

Assessment Method

The assessment below has been broken down into the following two sections in order to clearly demonstrate compliance.

Deemed to Satisfy (DTS) Solution – an initial assessment specifically based on the NCC Section J 'Deemed to Satisfy' elemental method. This is also known as the Reference Building.

Performance Solution – a solution using one of the Section J Verification Methods, in this case J1V3, verification using a Reference Building. This has been done with Speckel which offers greater flexibility with regards to Fabric requirements.

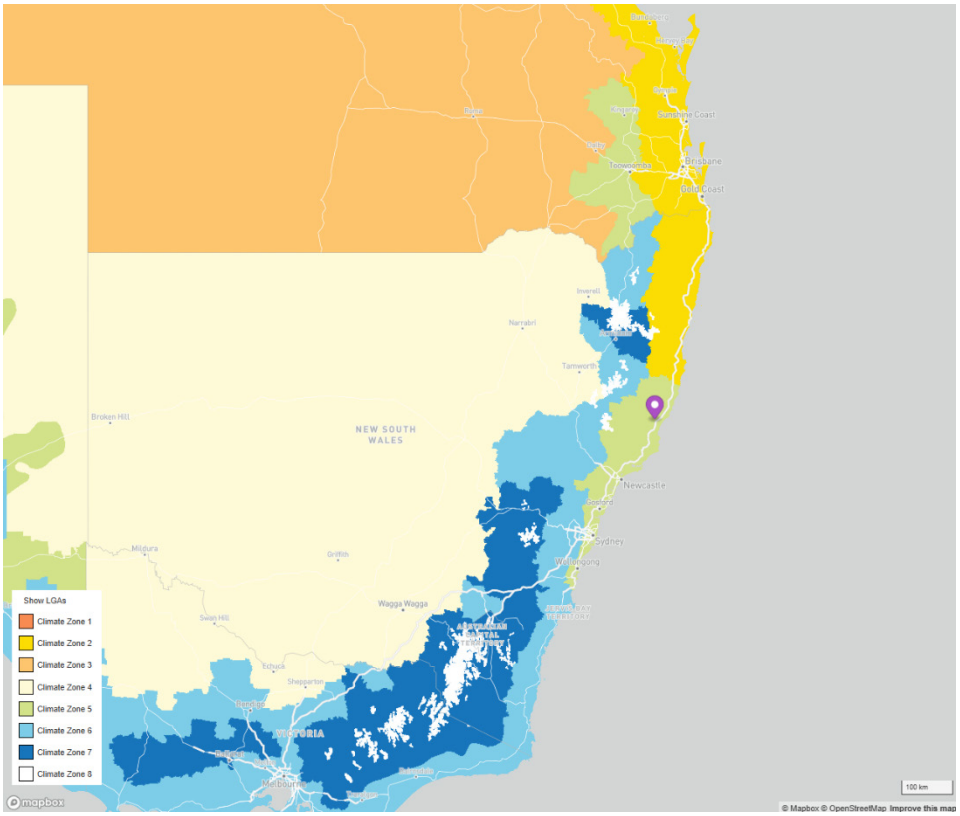
Building Classification

Under Part A6 *G1-G12 of the Building Code of Australia*, the proposed building alteration is recognized as a Class 3 building.

Sources of Information

The following sources of information were used to undertake the Section J analysis:

- Architectural drawings:
- Section J of the Building Code of Australia (2022)
- Speckel Energy software



1.1 Site Plan


Jim The Computer Man
Home Care Experts by Calvary Taree...
Wireman auto electrics
Little Wynter St
Wynter St
Commerce St
Taree Court H
Flett St
Wynter St
Wynter St
Ormsby House
Richardson St
Commerce St
Manning Va
Medical Pra
Flett St
Richardson St
Commerce St
Mortgage Choice Broker in Taree &...
Albert Ln
Flett St
Albert St
Agino
Taree Radiators
Commerce
Albert St
Fotheringham St
Flett St

2.1 Part J1 – SUMMARY OF COMPLIACNE

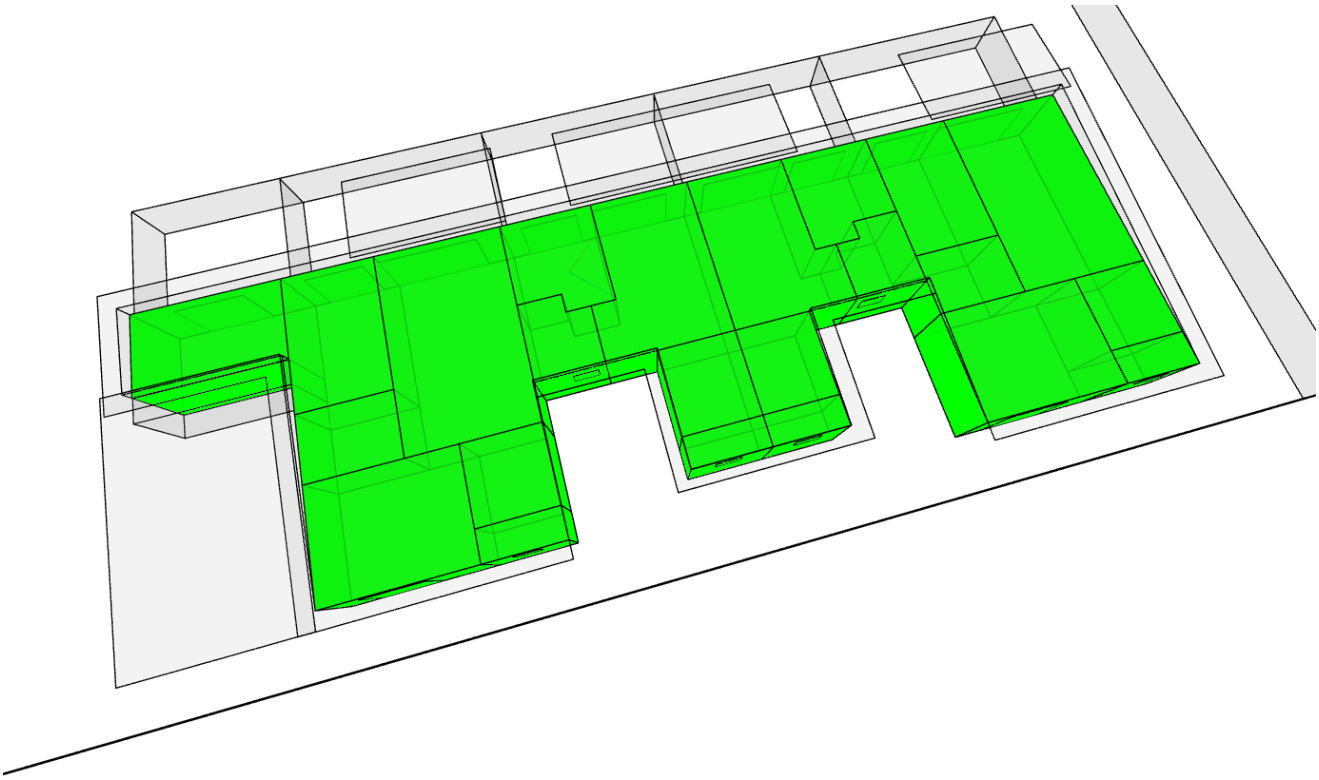
The building fabric specification for the Performance Solution is summarized in the Table below. Elements of the building envelope shown in the 'Reference' column are assumed to comply with the DTS provisions specified in NCC Section J and the results are presented in Appendix C

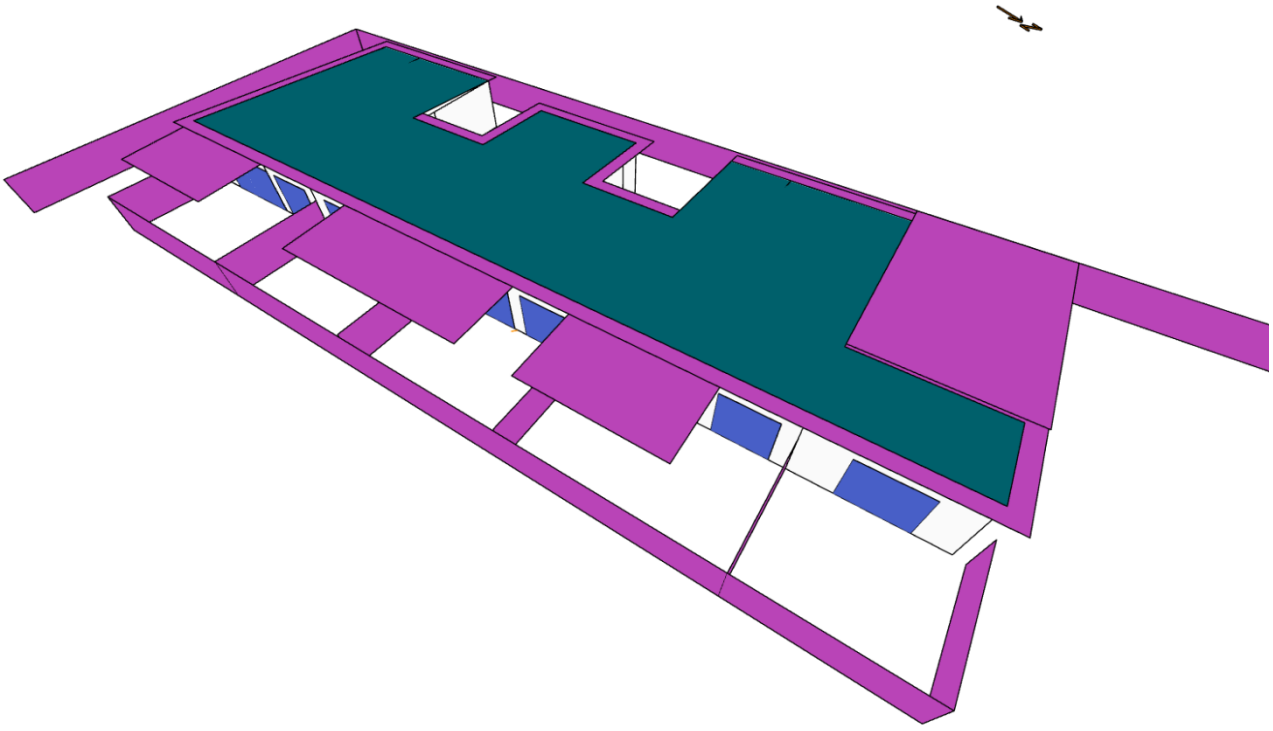
A list of compliant specifications is shown in the table below

.

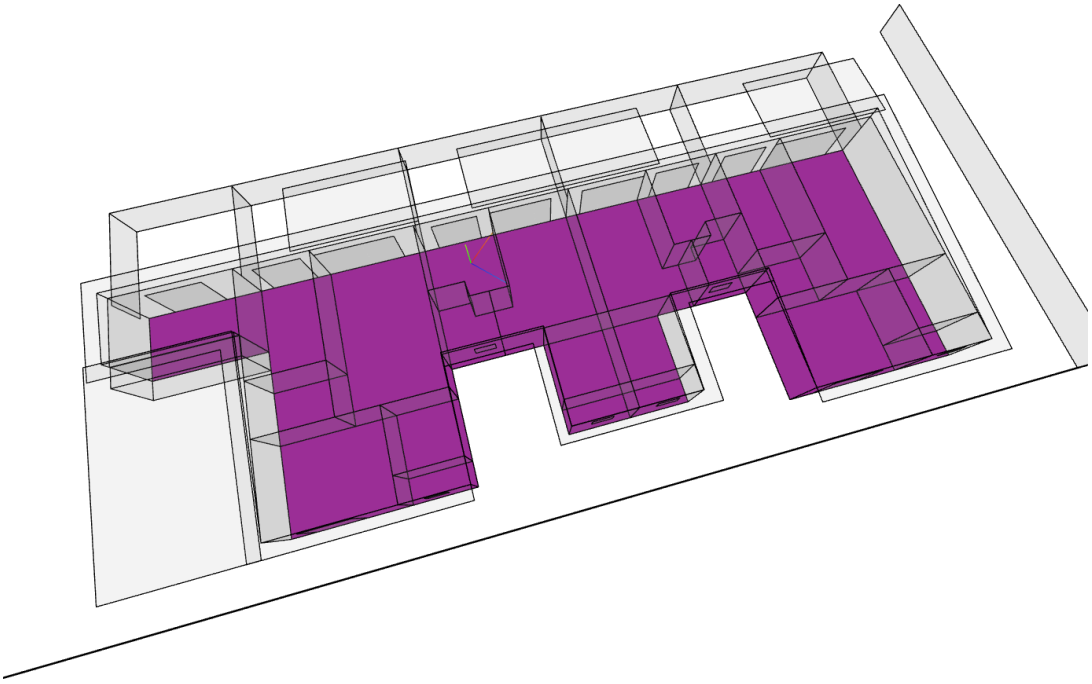
NCC 2022 DTS MIN REQUIREMENTS			
WALLS	R1.0		
FLOORS	R2.0		
CEILING	R3.7		
ROOF	R3.7		
WINDOWS	5.66	0.20	
SYLIGHTS			
NCC 2022 DTS SUMMARY			
	Total R Value		**COMPLIANT Y / N**
NEW OR ALTERED WALLS			
External Walls - Axon clad Class 4 Vapour barrier (R-value: 2.5 m².K/W)	R1.76		Y
NEW FLOORS			
Concrete slab on ground Measure to incl Table S39C2b R-Value of soil in contact with a floor	R1.73		Y
NEW OR ALTERED CEILING / ROOF			
Roof - 55mm Anticon Blanket (existing) **Ceilings** Knauf Insulation Earthwool® Ceiling Batt Conductivity: 0.050 W/(m.K) (R-value**: 2.5**m².K/W)	R3.74		Y
NEW WINDOWS	**U VALUE**	**SHGC**	
600 x 900 Sliding windows	4.6	0.44	Y
2100 x 2100 sliding windows	4.6	0.44	
2100 x 2100 Sliding doors	4.38	0.46	
Louvres	4.86	0.42	
SKYLIGHTS			
RENEWABLE ENERGY			

PART J1 – THERMAL LINE

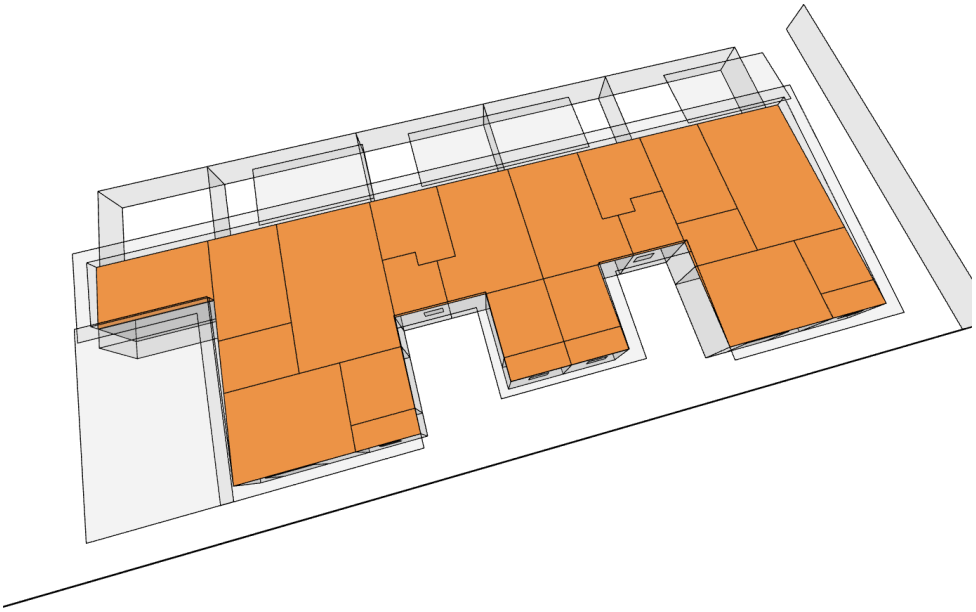




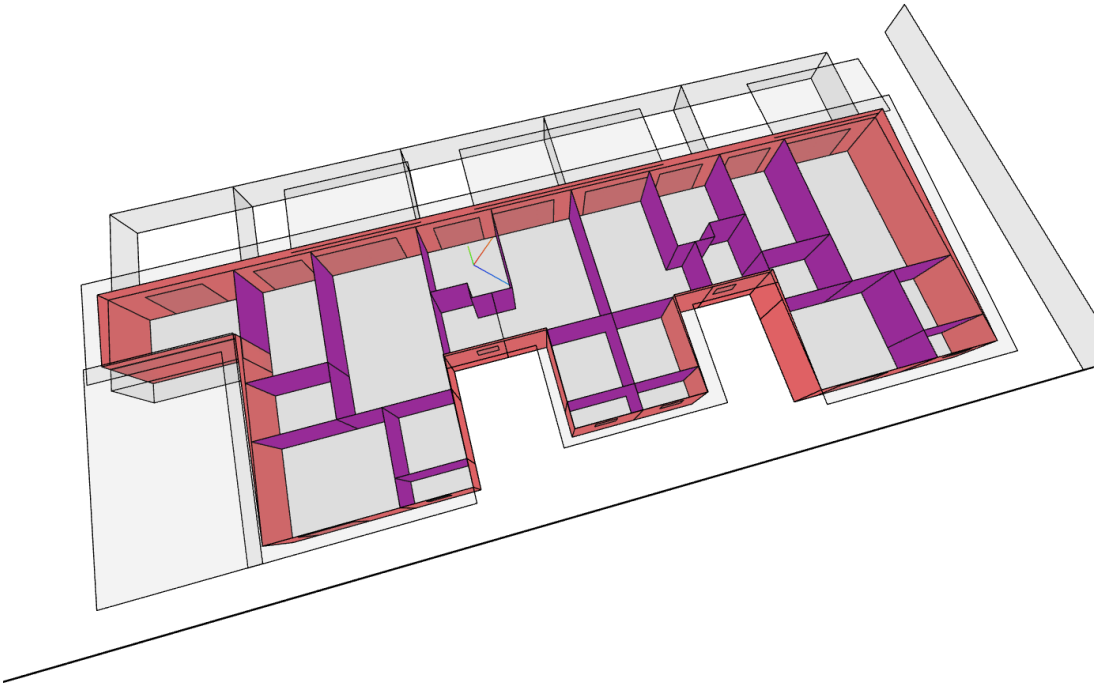
PART J1 – FLOOR



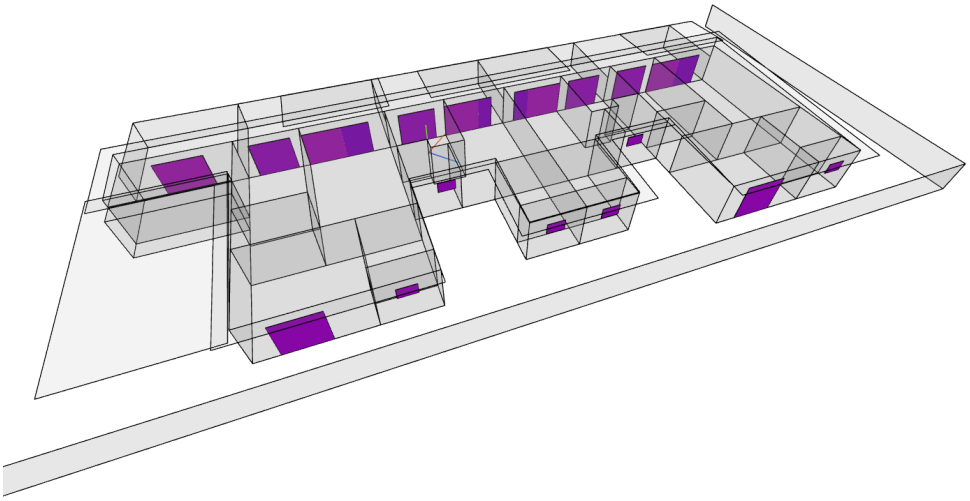
PART J1 – CEILING



PART J1 – WALLS



PART J1 – WINDOWS



PART J1 – SKYLIGHTS

Legal Statement

The development is assessed to achieve the stated rating only if it is built in accordance with the specifications listed above, the NCC, and according to the plans provided to 10SBA. Energy consumption and/or emissions estimates are intended for comparative purposes only and are based on certain simplifications and assumptions. The modelling estimates follow the prescribed method for NCC Part JV3 and are not intended to predict actual energy consumption during operation of the building.

The recommended glazing specification is suitable for NCC compliance, but no consideration has been given to meeting other requirements such as system sizing, daylight, thermal comfort, acoustics, or aesthetics. A holistic review and discussion on the facade solution are outside the scope of this report. This assessment only enables a broader range of glazing thermal performance (U-value and SHGC as noted herein) and all other DTS requirements of the NCC Section J still apply. This report does not constitute a comprehensive Section J review.

This document and its attachments should be included with all building documentation submissions. This report will need to be issued to the Relevant Building Surveyor (RBS) along with the building permit application, working drawings and specifications. The working drawings and specifications shall include the specifications required to achieve the rating, as listed above. Any variation to the design or construction of the development will deem this Assessment void unless the variations are assessed by 10SBA. Please contact 10SBA if there are any questions or variations that are required.

10SBA is not responsible for any loss or damage arising directly or indirectly from the use of this Assessment in circumstances where there has been a variation to the design or construction of the development which has not been assessed by 10SBA. To the extent permitted by law, 10SBA excludes all liability, including any liability for negligence or for any loss including indirect or consequential damages, arising directly or indirectly from the use of this JV3 Assessment in circumstances where there has been a variation to the design or construction of the development which has not been assessed by 10SBA.

Definitions

Carpark
A building that is used for the parking of motor vehicles but is neither a private garage nor used for the servicing of vehicles, other than washing, cleaning or polishing.

Conditioned space
Volume One, a space within a building, including a ceiling or under-floor supply air plenum or return air plenum, where the environment is likely, by the intended use of the space, to have its temperature controlled by air-conditioning.

Envelope
Section J in NCC Volume One, the parts of a building's fabric that separate a conditioned space or habitable room from the exterior of the building; or a non-conditioned space including the floor of a rooftop plant room, lift-machine room or the like; and the floor above a carpark or warehouse; and the common wall with a carpark, warehouse or the like.

Glazing
Section J of Volume One, a transparent or translucent element and its supporting frame located in the envelope; and includes a window other than a roof light.

Reference building
A hypothetical building that is used to calculate the maximum allowable annual greenhouse gas emissions for the common area of a Class 2 building or a Class 3 to 9 building.

Reflective insulation
A building membrane with a reflective surface such as a reflective foil laminate, reflective barrier, foil batt or the like capable of reducing radiant heat flow.

Total R-Value
The sum of the R-Values of the individual component layers in a composite element including any building material, insulating material, airspace, thermal bridging and associated surface resistances, expressed in m2.K/W.

Total System Solar Heat Gain Coefficient (SHGC)
The fraction of incident irradiance on a wall-glazing construction or a roof light that adds heat to a building's space;

Total System U-Value
The thermal transmittance of the composite element allowing for the effect of any airspaces, thermal bridging and associated surface resistances, expressed in Wm-2K-1

END OF REPORT

This report has been prepared by 10 Star Building Assessments.

Member of:

Australian Building Sustainability Association, (ABSA)

Design Matters (DM)

Master Builders Association (MBA)

Signed

Adam Clarke

Thursday, March 13, 2025

End of Report

APPRENDIX – J1V3 Performance Report

J1V3 Building Assessment

National Construction Code 2022 - Volume 1

Project	LAHC TAREE
Address	10 Richardson St, Taree NSW 2430, Australia (31.91° S, 152.45° E)
Date	2025-03-13, 11:53 AM
Author	Adam Clarke (10 Star Building Assessments) admin@10sba.com
Scope	National Construction Code 2022
Performance Requirements	J1P1 Energy Use
Assessment Process	A2G2 Performance Solution Clause (2)(b)(i)
Building Class	3
Climate Zone	5
Storeys	1
Floor to Floor Height	2590 mm

Using Speckel

Speckel provides various calculations in line with the National Construction Code 2022 - Volume 1 - Section J Energy Efficiency. These calculations are tested in line with all applicable NCC equations or NCC referenced primary or secondary documents, for them to represent an accurate Performance Solution against the Performance Requirements - J1P1 Energy Use. A Performance Solution must be shown to comply with the relevant Performance Requirements through one or a combination of Assessment Methods. Speckel is a valid Assessment Method by comparison with the Deemed-to-Satisfy Provisions of each relevant area.

Project

This performance-based design brief (PBDB) has been developed in collaboration with key stakeholders as part of a proposed performance-based design and approval process. When completed, the PBDB becomes the platform upon which the proposed

design is constructed.

Modeller	Adam Clarke
Reviewer	Adam Clarke
Building owner or owner's representative	ARCHEWELL
Builder or project manager	ARCHEWELL
Relevant design process practitioners	BRD GROUP
Appropriate approval authority, including building surveyors	MID COAST COUNCIL

The purpose of this PBDB is to record fundamental activities and outcomes of the performance-based design process, as agreed during key stakeholder negotiations. When the PBDB is finalised, all critical activities and outcomes would have been identified. Consequently, the design process can be commenced with a high degree of confidence that, provided the requirements of the PBDB are achieved, the proposed design is likely to be approved.

Proposal summary	The purpose of this PBDB is to record fundamental activities and outcomes of the Performance based design process, as agreed during key stakeholder negotiations. When the PBDB is finalised, all critical activities and outcomes would have been identified. Consequently, the design process can be commenced with high degree of confidence that, provided the requirements of the PBDB are achieved, the proposed design is likely to be approved.
Proposed solution	The Proposed Solution is to undertake a J1V3 Verification using a reference building assessment to meet the Performance Requirements of JP1 - Energy Use.
Nominated applicable Performance Requirement(s)	JP1 Energy Use
Agreed analytical assessment processes	Undertaking a J1V3 Verification using a reference building assessment using EnergyPlus (ANSI/ASHRAE Standard 140) and Specification JVb.

Agreed acceptance criteria	As per JV3 Verification using a reference building assessment, it will determine that the annual greenhouse gas emissions of the proposed building are not more than the annual greenhouse gas emission of the reference building.
Required scope of supporting evidence	Plan Reference

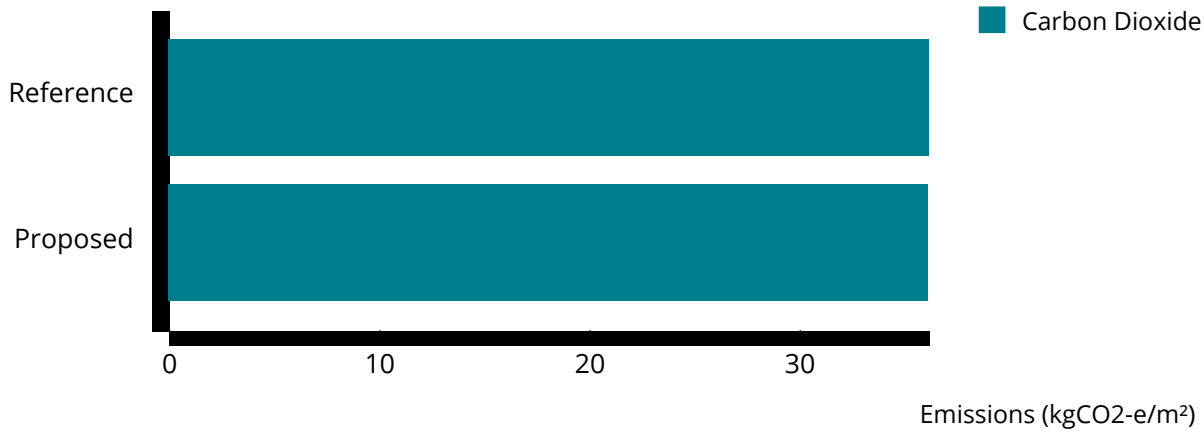
Results

The National Construction Code (NCC) specifies minimum performance standards for the energy efficiency of buildings through the Building Code of Australia (BCA) Volume 1, Section J. To enable flexibility in the architectural design of the building, a Performance Solution has been used to comply with the Performance Requirement - J1P1.

The Assessment Method, 'J1V3 Verification using a reference building' has been used and is an Alternative Solution for the Building Fabric only. As such, a Proposed Building with the proposed fabric has been modelled as part of this approach, to compare against the Reference Building services.

Building Emissions

To meet the acceptance criteria, annual Supplied Energy emissions must be less than **36.18** kgCO2-e/m². Based on a treated floor area of 284.96 m², the simulated building achieved **36.12** kgCO2-e/m², **meeting** the acceptance criteria.



Thermal Comfort (PMV)

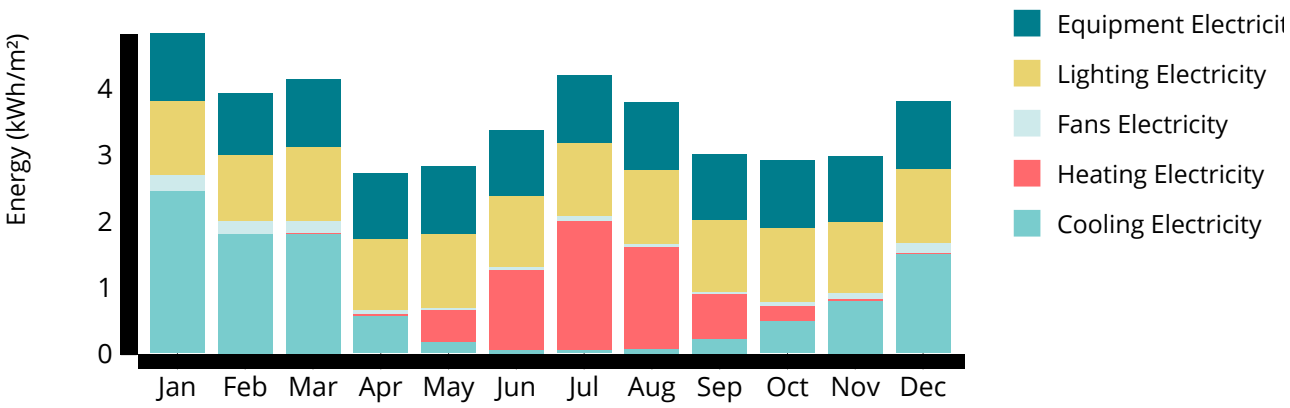
To meet the acceptance criteria, **95** % of total area across the assessed zones must meet the conditions:

- zone thermal comfort (pmv) is between -1.0 and 1.0 PMV
- for at least 98 % of hours
- when above 20 % occupancy

A total area of 248.27 m² across 15 zones were assessed, where zones of **100.00** % area achieved the conditions, **meeting** the acceptance criteria.

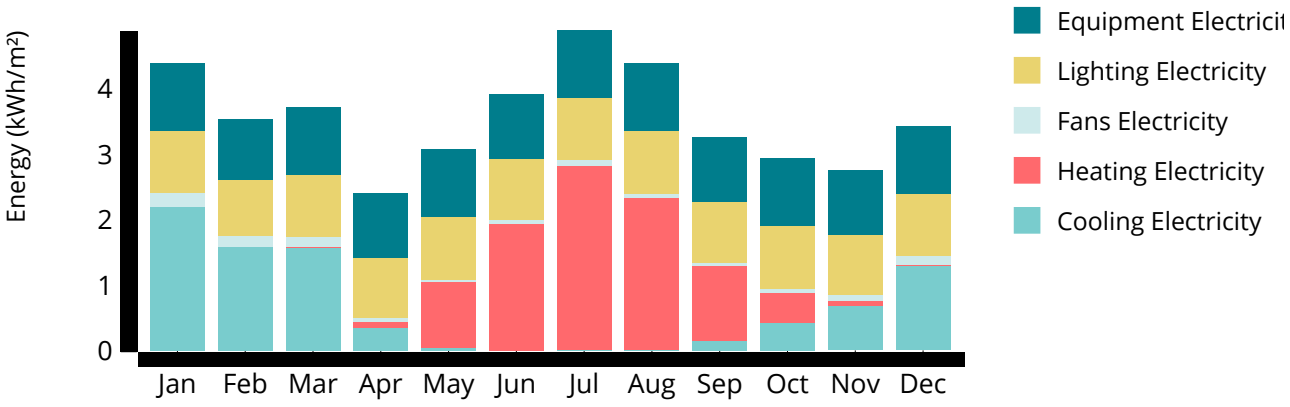
Building Meters

Proposed



Meter	Energy (kWh)	Energy (kWh/m²)	Peak (kW)	Time
Cooling Electricity	2853.15	10.01	8.12	14 Jan 16:15
Heating Electricity	1746.71	6.13	2.91	5 Jul 04:00
Fans Electricity	353.08	1.24	0.39	14 Jan 16:30
Lighting Electricity	3731.40	13.09	1.06	1 Jan 06:15
Equipment Electricity	3430.24	12.04	1.00	1 Jan 07:15

Reference



Meter	Energy (kWh)	Energy (kWh/m²)	Peak (kW)	Time
Cooling Electricity	2363.43	8.29	7.96	14 Jan 16:15
Heating Electricity	2805.45	9.85	3.41	5 Jul 05:15
Fans Electricity	332.81	1.17	0.38	14 Jan 16:30

Meter	Energy (kWh)	Energy (kWh/m²)	Peak (kW)	Time
Lighting Electricity	3203.00	11.24	0.91	1 Jan 06:15
Equipment Electricity	3430.24	12.04	1.00	1 Jan 07:15

Method

Approach

- The National Construction Code (NCC) specifies minimum performance standards for the energy efficiency of buildings through the Building Code of Australia (BCA) Volume 1, Section J.
- To enable flexibility in the architectural design of the building, a Performance Solution has been used to comply with the Performance Requirement - J1P1.
- The Assessment Method, J1V3 verification using a reference building, has been used and is an Alternative Solution for the Building Fabric only. As such, a Proposed Building with the proposed fabric has been modelled as part of this approach to compare against the Reference Building services.
- To meet acceptance criteria, the Proposed Building with the proposed fabric Greenhouse Gas (GHG) emissions must be no greater than the Reference Building services.
- Greenhouse gas emission factors are selected according Vol 1 Specification 34 Modelling Parameters for J1V3 Table S34C3 Greenhouse Gas Emissions Factors (kgCO2-e/GJ). In the case of the ACT, an exception is made where a greenhouse gas emission factor of nil is provided, as the national emission factors are not applied as they do not take into account investments in renewable electricity generation in the National Electricity Market.
- When the Simulated Shading Multipliers feature is enabled, each window is simulated in EnergyPlus twice, to compare a completely unshaded window, to a window affected by attached shading, building self-shading, and surrounding structures. The multiplier is based on the ratio of shaded versus unshaded annual average external incident solar radiation, limited between 0.0 and 1.0.

Assumptions / Limitations

- Parts J3, J5, J6, J7, J8 and J9 are not part of this assessment.
- Specification 33 Additional requirements - General is only met for provisions (a) General Thermal Construction and (b) for Floor Edge Insulation. All other provisions (c - n) are not part of this assessment.
- Specification 34 Modelling parameters for J1V3 S34C1 Scope, S34C2 Reference building and S34C3 Proposed building and reference building have been used to form the basis of the Method of Assessment.
- S34C4 Services Proposed and Reference Building is not part of this assessment as the minimum performance requirements of the services are not included.
- To ensure the reference building can be calculated, windows are limited to a maximum of 99% window-to-wall ratio (WWR).

Inputs

The NCC 2022 - Vol 1 contains technical design and construction requirements for all commercial buildings and their associated structures.

Building Class	3
Wall Area (m²)	227.81
Window Area (m²)	62.27
Ceiling Area (m²)	304.82
Floor Area (m²)	304.82
Window-Wall Ratio (%)	21.47

Levels

Level	Drawing	# Zones	Floor Area (m²)	Wall (m²)	Window (m²)
1	Overall plan	23	304.8	227.8	62.3

Zones

Level	Zone	Area (m²)	Volume (m³)	Treated Area (m²)
1	16. U1 - OOA	6.91	16.52	6.91
1	13. U2 - OOA	7.68	18.37	7.68
1	12. U3 - OOA	7.98	19.08	7.98
1	14. U4 - Bath	7.26	17.35	7.26
1	15. U4 - OOA	7.18	17.17	7.18
1	17. U1 - Bath	6.74	16.11	6.74
1	6. U4 - Bed 2	18.74	44.78	18.74
1	21. U4 - Pdr	2.59	6.19	2.59
1	19. U3 - Bath	5.99	14.32	5.99
1	22. U3 - Pdr	2.59	6.19	2.59
1	23. U2 - Pdr	2.49	5.96	2.49
1	5. U1 - Bed	19.23	45.97	19.23

Level	Zone	Area (m²)	Volume (m³)	Treated Area (m²)
1	20. U1 - pdr	2.75	6.57	2.75
1	18. U2 - Bath	6.27	14.98	6.27
1	8. U1 - Bed 2	15.36	36.70	15.36
1	11. U2 - Bed 1	11.21	26.80	11.21
1	10. U3 - Bed	11.28	26.97	11.28
1	7. U4 - Bed 1	15.82	37.80	15.82
1	9. Common room	14.96	35.75	14.96
1	1. U4 - Kit	33.06	79.02	33.06
1	3. U3 - Kit	23.28	55.64	23.28
1	4. U2 - Kit	23.07	55.14	23.07
1	2. U1 - Kit	32.50	77.67	32.50
		284.96		284.96

Walls

Total System R-values of all walls include the effects of thermal bridging, which are calculated in accordance with AS/NZS 4859.2 and NZ 4214:2006 (as per J4D3 Thermal Construction — General (5)) or are stated values.

For the purpose of the Reference Building, the wall total system R-value of the wall-glazing construction has been calculated in accordance with J4D6 Walls and Glazing and Specification 37 Calculation of U-Value and solar admittance.

Proposed	Title	Class	R-Value (m²K°/W)	Area (m²)
External	Concept	3	1.76	227.81
Reference	**Title**	**Class**	**R-Value (m²K°/W)**	**Area (m²)**
External	Concept	3	1.00	227.81

Ceilings

Proposed	Title	Class	R-Value (m²K°/W)	Area (m²)
Exposed to Unconditioned	Concept	3	3.74	304.82

Reference	Title	Class	R-Value (m²K°/W)	Area (m²)
Exposed to Unconditioned	Concept	3	3.70	304.82

Floors

Total system R-values of all floors include the effects of thermal bridging are calculated in accordance with AS/NZS 4859.2, NZ 4214:2006 and Section 3.5 of CIBSE Guide A (as per J4D3 Thermal Construction — General (5)) or are stated values

For the purpose of the Reference Building, the floor total system R-value has been assumed in accordance with J4D7 Floors.

Proposed	Title	Class	R-Value (m²K°/W)	Area (m²)
Bottom	Concept	3	1.73	304.82
Reference	**Title**	**Class**	**R-Value (m²K°/W)**	**Area (m²)**
Bottom	Concept	3	2.00	304.82

Windows

Total system U-values of all windows include the effects of thermal bridging at the frame, which are calculated in accordance with ISO 15099, as per J4D3 Thermal Construction — General (5).

For the purpose of the Reference Building, the glazing total system U-value and solar admittance of the wall-glazing construction has been calculated in accordance with J4D6 Walls and Glazing and Specification 37 Calculation of U-Value and solar admittance.

Proposed	Title	Class	U-value	SHGC	Area (m²)
External	2100 SW	3	4.60	0.44	26.46
External	2100h SD	3	4.38	0.46	22.68
External	600h SW	3	4.60	0.44	3.26
External	louvres	3	4.86	0.42	9.87
Reference	**Title**	**Class**	**U-value**	**SHGC**	**Area (m²)**
External	2100 SW	3	5.66	0.20	26.46
External	2100h SD	3	5.66	0.20	22.68
External	600h SW	3	5.66	0.20	3.26

Reference	Title	Class	U-value	SHGC	Area (m²)
External	louvres	3	5.66	0.20	9.87

Climate

The climate file AUS_NSW_Taree.AP.957840_TMYx.2007-2021, located at Taree.AP, NSW AUS, was used for simulations. This file was sourced from Climate.OneBuilding, an online repository collated from public sources. http://www.climate.onebuilding.org/.

Occupants

Occupant density (m²/person) are stipulated in each thermal zone, subject to the function and purpose of the space. Internal heat gains for the Reference and Proposed Reference Building occupant densities are identical.

Space	Building Class	Activity	Occupancy Density	Clothing	Air Velocity (m/s)
Default	3	Hotel	10.0	0.7	0.1

Lighting

Lighting power density (W/m²) is stipulated in each thermal zone, subject to the function and purpose of the space. Internal heat gains for the Reference Building lighting power density are as per NCC 2019 Vol 1 - Table J6.2a.

Space	Building Class	Space	W/m²
Default	3	Hotel	5.0

Equipment

Equipment density (W/m²) are stipulated in each thermal zone, subject to the function and purpose of the space. Internal heat gains for the Reference and Proposed Reference Building equipment density are identical.

Space	Building Class	Space	W/m²
Default	3	Hotel	8.0

Air-Conditioning

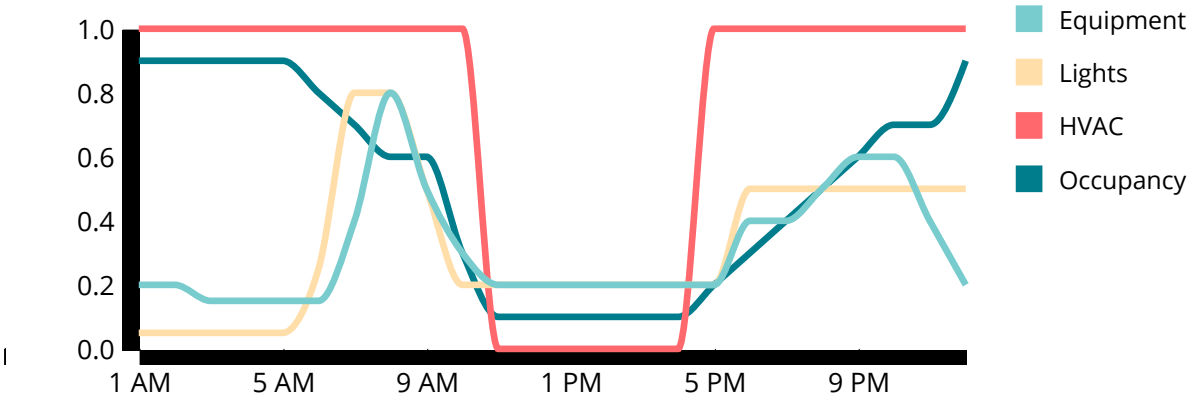
As a fabric only assessment, air-condition equipment and mechanical ventilation rates for the Reference and Proposed Building are identical. Minimum mechanical ventilation is required as per Part F6P3 Outdoor air supply.

Thermostat Details

Space	Building Class	Space	Cooling Set Point (°C)	Heating Set Point (°C)
Default	3	Hotel	24.0	20.5

Profiles

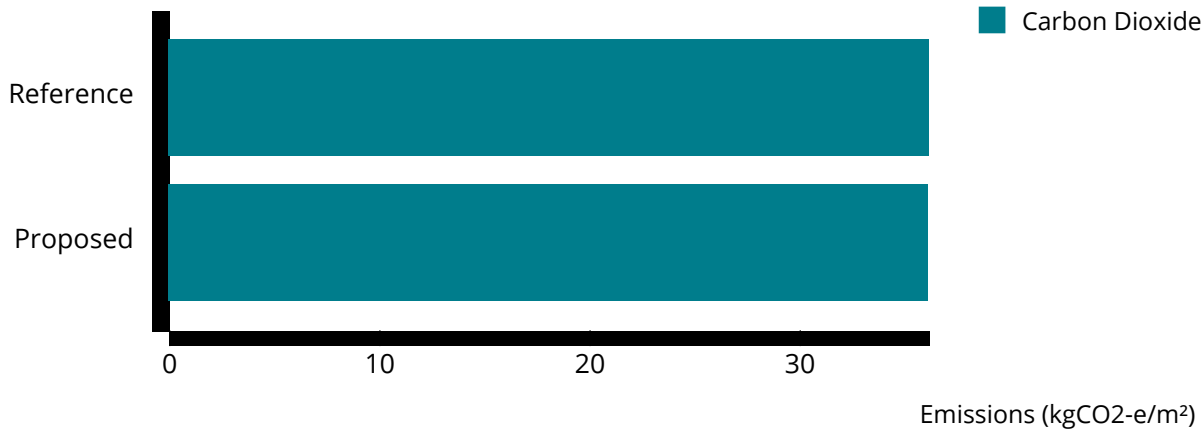
Space - Default
All Days



Detailed Results

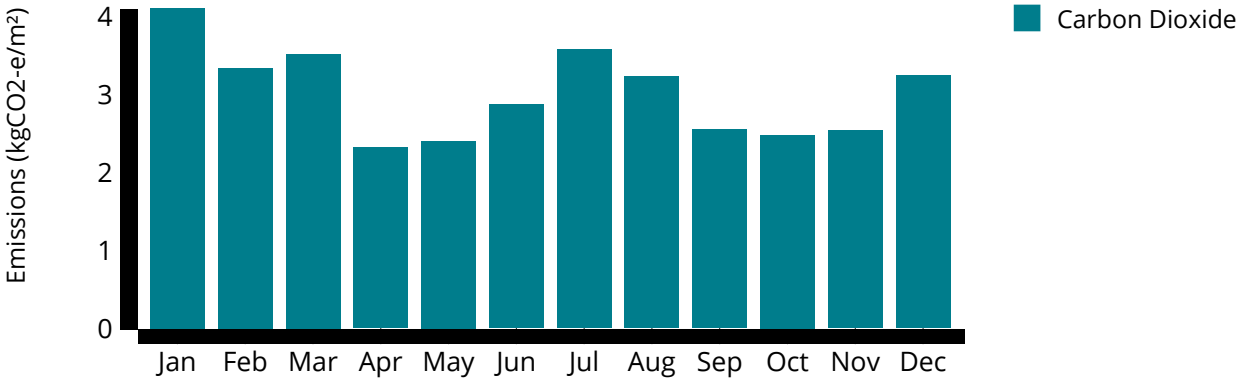
Building Emissions

To meet the acceptance criteria, annual Supplied Energy emissions must be less than **36.18** kgCO2-e/m². Based on a treated floor area of 284.96 m², the simulated building achieved **36.12** kgCO2-e/m², **meeting** the acceptance criteria.



Greenhouse gas emission factors have been nominated as **236.00** kilogram / GJ for electricity , and **51.53** kilogram / GJ for natural gas.

Proposed



Meter	Emissions (kgCO2-e)	Emissions (kgCO2-e/m²)
Emissions	10292.53	36.12

Electricity Purchased

Period	Energy (kWh)	Energy (kWh/m²)	Peak (kW)	Time
Jan	1376.83	4.83	9.03	14 Jan 16:15

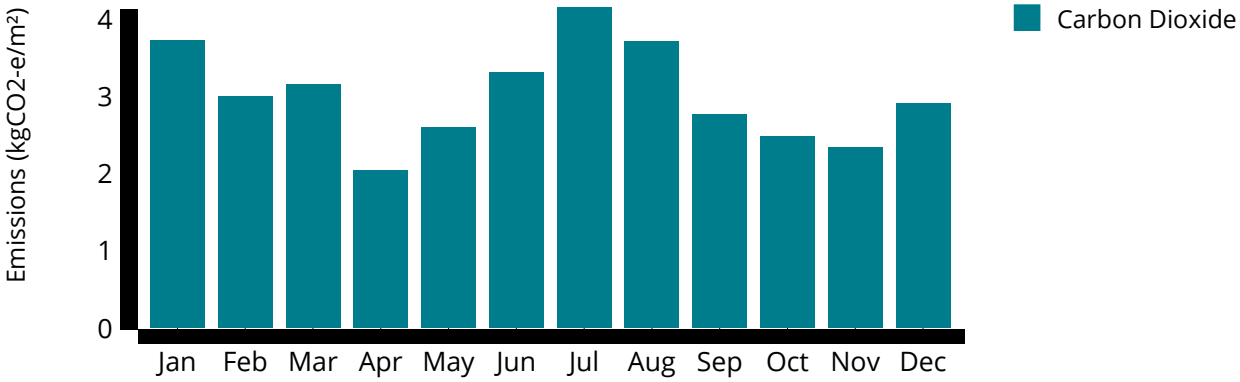
Period	Energy (kWh)	Energy (kWh/m²)	Peak (kW)	Time
Feb	1118.73	3.93	8.48	7 Feb 16:30
Mar	1178.75	4.14	8.52	3 Mar 16:30
Apr	776.23	2.72	4.12	20 Apr 07:00
May	805.19	2.83	3.07	11 May 08:00
Jun	960.68	3.37	3.87	22 Jun 07:15
Jul	1197.98	4.20	4.79	5 Jul 07:30
Aug	1081.00	3.79	4.26	18 Aug 06:30
Sep	854.83	3.00	4.31	18 Sep 16:15
Oct	830.83	2.92	6.10	4 Oct 16:15
Nov	848.54	2.98	4.25	21 Nov 16:15
Dec	1084.98	3.81	7.46	7 Dec 16:30
Total	12114.57	42.51	9.03	14 Jan 16:15

Gas Demand

The simulated building did not include Gas Demand.

Reference

The Reference Building simulated results are shown below, which sets the acceptance criteria threshold.



Meter	Emissions (kgCO2-e)	Emissions (kgCO2-e/m²)
Emissions	10309.84	36.18

Electricity Purchased

Period	Energy (kWh)	Energy (kWh/m²)	Peak (kW)	Time
Jan	1248.41	4.38	8.81	14 Jan 16:15
Feb	1006.38	3.53	8.25	6 Feb 16:30
Mar	1057.57	3.71	8.34	3 Mar 16:30
Apr	684.77	2.40	3.74	5 Apr 16:15
May	871.35	3.06	3.65	21 May 06:15
Jun	1112.14	3.90	4.43	22 Jun 07:15
Jul	1390.94	4.88	5.24	5 Jul 07:30
Aug	1244.86	4.37	4.66	18 Aug 06:30
Sep	926.91	3.25	4.30	14 Sep 06:30
Oct	832.54	2.92	5.97	4 Oct 16:15
Nov	785.43	2.76	4.09	3 Nov 07:00
Dec	973.64	3.42	7.16	7 Dec 16:30
Total	12134.93	42.58	8.81	14 Jan 16:15

Gas Demand

The simulated building did not include Gas Demand.

Thermal Comfort (PMV)

To meet the acceptance criteria, **95** % of total area across the assessed zones must meet the conditions:

- zone thermal comfort (pmv) is between -1.0 and 1.0 PMV
- for at least 98 % of hours
- when above 20 % occupancy

A total area of 248.27 m² across 15 zones were assessed, where zones of **100.00** % area achieved the conditions, **meeting** the acceptance criteria.

Level	Zone	Area (m²)	Assessed (Hrs)	Pass (Hrs)	Ratio	Pass
1	16. U1 - OOA	6.91	6205	6199	99.90	✓
1	4. U2 - Kit	23.07	6205	6205	100.00	✓
1	3. U3 - Kit	23.28	6205	6205	100.00	✓
1	1. U4 - Kit	33.06	6205	6205	100.00	✓
1	9. Common room	14.96	6205	6132	98.82	✓
1	7. U4 - Bed 1	15.82	6205	6187	99.71	✓
1	10. U3 - Bed	11.28	6205	6161	99.29	✓
1	11. U2 - Bed 1	11.21	6205	6147	99.07	✓
1	8. U1 - Bed 2	15.36	6205	6184	99.66	✓
1	5. U1 - Bed	19.23	6205	6176	99.53	✓
1	6. U4 - Bed 2	18.74	6205	6178	99.56	✓
1	15. U4 - OOA	7.18	6205	6197	99.87	✓
1	12. U3 - OOA	7.98	6205	6200	99.92	✓
1	13. U2 - OOA	7.68	6205	6196	99.85	✓
1	2. U1 - Kit	32.50	6205	6205	100.00	✓
					Pass	✓

Level	Zone	Area (m²)	<-1	-1 to -0.5	-0.5 to 0	0 to 0.5	0.5 to 1	>1
1	16. U1 - OOA	6.91	6.0	1901.0	931.0	2823.0	544.0	0.0

Level	Zone	Area (m²)	<-1	-1 to -0.5	-0.5 to 0	0 to 0.5	0.5 to 1	>1
1	13. U2 - OOA	7.68	9.0	1852.0	935.0	2977.0	432.0	0.0
1	12. U3 - OOA	7.98	5.0	1627.0	1050.0	2929.0	594.0	0.0
1	15. U4 - OOA	7.18	8.0	1906.0	936.0	2837.0	518.0	0.0
1	6. U4 - Bed 2	18.74	27.0	2432.0	892.0	1860.0	994.0	0.0
1	5. U1 - Bed	19.23	28.0	2321.0	918.0	1901.0	1036.0	1.0
1	8. U1 - Bed 2	15.36	1.0	1766.0	1039.0	2108.0	1271.0	20.0
1	11. U2 - Bed 1	11.21	1.0	1900.0	1012.0	1877.0	1358.0	57.0
1	10. U3 - Bed	11.28	1.0	1865.0	1058.0	1971.0	1267.0	43.0
1	7. U4 - Bed 1	15.82	1.0	1703.0	1119.0	2149.0	1216.0	17.0
1	9. Common room	14.96	6.0	1615.0	1024.0	2209.0	1284.0	67.0
1	1. U4 - Kit	33.06	0.0	1505.0	1148.0	2829.0	723.0	0.0
1	3. U3 - Kit	23.28	0.0	1529.0	1161.0	2854.0	661.0	0.0
1	4. U2 - Kit	23.07	0.0	1603.0	1020.0	2696.0	886.0	0.0
1	2. U1 - Kit	32.50	0.0	1677.0	1102.0	2698.0	728.0	0.0

Shading Multiplier

Each window of the reference building has been simulated to determine the ratio of shaded versus unshaded annual average incident radiation. These results supersede the values determined by the deemed-to-satisfy process to develop the reference building.

Level	Area (m²)	Heading (°)	Shaded (W/m²)	Unshaded (W/m²)	Multiplier
1	5.04	44.0	124.57	132.60	0.94
1	4.41	44.0	123.43	132.60	0.93
1	4.41	44.0	123.27	132.60	0.93
1	4.41	44.0	123.52	132.60	0.93
1	4.41	224.0	60.68	73.55	0.82
1	4.41	44.0	123.36	132.60	0.93
1	4.41	44.0	123.35	132.60	0.93
1	4.41	44.0	122.53	132.60	0.92
1	4.41	44.0	123.13	132.60	0.93
1	4.41	44.0	120.29	132.60	0.91
1	4.41	224.0	61.09	73.55	0.83
1	3.15	44.0	113.85	132.60	0.86
1	3.15	44.0	123.41	132.60	0.93
1	1.89	44.0	123.32	132.60	0.93
1	1.68	44.0	123.35	132.60	0.93
1	0.54	224.0	55.93	73.55	0.76
1	0.54	224.0	56.84	73.55	0.77
1	0.54	224.0	40.39	73.55	0.55
1	0.54	224.0	57.29	73.55	0.78
1	0.54	224.0	55.80	73.55	0.76
1	0.54	224.0	35.74	73.55	0.49

Building Class 3

Method Two

AC Energy Threshold	17.09
U-Value Threshold (W/m².K)	2.00
Reference Window U-Value (W/m².K)	5.66
Reference Window SHGC	0.20
Reference Wall R-Value (m².K/W)	1.00
Total Area (m²)	290.08
Window-Wall Ratio	0.21

Method One - North Aspect

Reference Window U-Value (W/m².K)	2.81
Reference Window SHGC	0.20
Reference Wall R-Value (m².K/W)	1.00
Solar Admittance Threshold	0.10
U-Value Threshold (W/m².K)	2.00
Solar Admittance Weighting	1.88
Aspect Area (m²)	90.91
Window-Wall Ratio	0.55

Title	Heading (°)	U-value (W/m²K°)	SHGC	Area (m²)	SC
2100 SW	44.0	5.66	0.20	4.41	0.92
2100 SW	44.0	5.66	0.20	4.41	0.93
2100 SW	44.0	5.66	0.20	4.41	0.93
2100 SW	44.0	5.66	0.20	4.41	0.93
2100h SD	44.0	5.66	0.20	4.41	0.91
2100h SD	44.0	5.66	0.20	8.82	0.93
2100h SD	44.0	5.66	0.20	4.41	0.93
2100h SD	44.0	5.66	0.20	5.04	0.94
louvres	44.0	5.66	0.20	3.15	0.86
louvres	44.0	5.66	0.20	3.57	0.93

Title	Heading (°)	U-value (W/m²K°)	SHGC	Area (m²)	SC
louvres	44.0	5.66	0.20	3.15	0.93

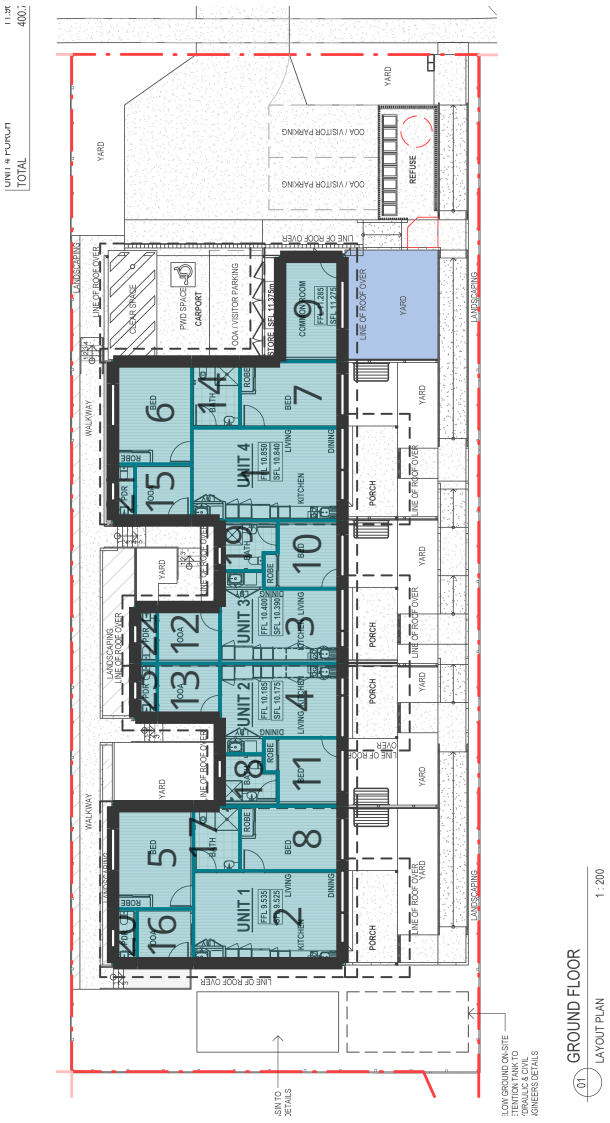
Method One - South Aspect

Reference Window U-Value (W/m².K)	5.80
Reference Window SHGC	0.81
Reference Wall R-Value (m².K/W)	1.40
Solar Admittance Threshold	0.10
U-Value Threshold (W/m².K)	2.00
Solar Admittance Weighting	0.00
Aspect Area (m²)	90.91
Window-Wall Ratio	0.13

Title	Heading (°)	U-value (W/m²K°)	SHGC	Area (m²)	SC
2100 SW	224.0	5.66	0.20	4.41	0.82
2100 SW	224.0	5.66	0.20	4.41	0.83
600h SW	224.0	5.66	0.20	0.54	0.76
600h SW	224.0	5.66	0.20	0.54	0.76
600h SW	224.0	5.66	0.20	0.54	0.77
600h SW	224.0	5.66	0.20	0.54	0.78
600h SW	224.0	5.66	0.20	0.54	0.49
600h SW	224.0	5.66	0.20	0.54	0.55

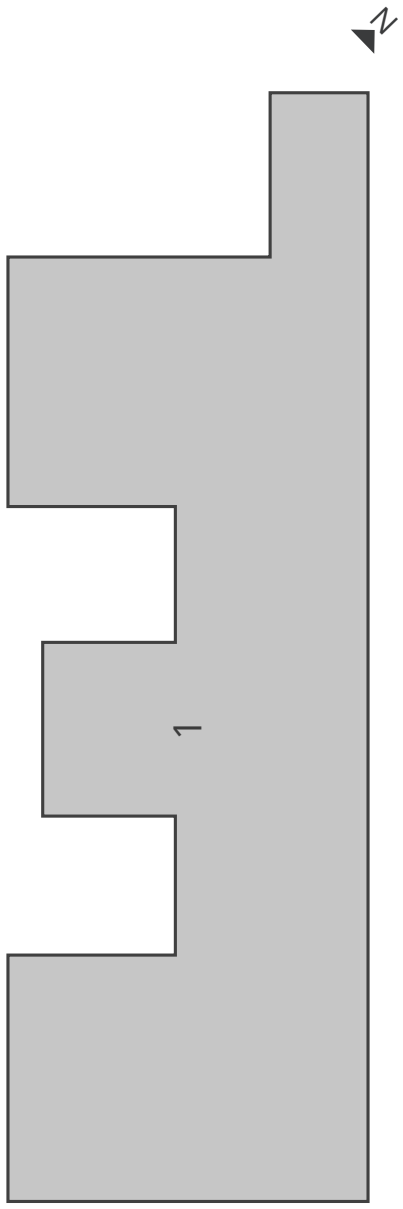
Drawings

Level 1 - Overall plan



Thermal Line Windows Class 3

Level 2 - Untitled Roof



■ Unconditioned

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APPRENDIX – PLANS

DOCUMENTATION SCHEDULE

000 SERIES DRAWINGS

2280 CD001 COVER PAGE

100 SERIES DRAWINGS

2280 CD100 DEMOLITION PLAN
2280 CD101 OVERALL SITE PLAN / EXTERNAL WORKS
2280 CD102 OVERALL LAYOUT PLAN
2280 CD103 LAYOUT PLAN
2280 CD104 LAYOUT PLAN
2280 CD107 SETOUT / WALL TYPE PLAN
2280 CD108 SETOUT / WALL TYPE PLAN
2280 CD115 ROOF PLAN
2280 CD116 ROOF PLAN

200 SERIES DRAWINGS

2280 CD201 OVERALL ELEVATIONS
2280 CD202 ELEVATIONS
2280 CD203 ELEVATIONS
2280 CD204 ELEVATIONS
2280 CD205 SECTIONS
2280 CD206 SECTIONS
2280 CD207 PERSPECTIVES