



PROPOSED RETAIL SPACE 62 Old Barrenjoey Road Avalon Beach 2107

Part J BCA Report

Project name:

PROPOSED RETAIL SPACE 62 Old Barrenjoey Road Avalon Beach 2107

1. DESCRIPTION

The section J (BCA2019) report addresses the proposed retail space at 62 Old Barrenjoey Road Avalon Beach 2107

2. PURPOSE OF THE ASSESSMENT

The purpose of this report is to assess the design proposal against the Deemed-to-Satisfy provisions of the Section J of the NCC (2019), and to clearly outline those areas where the compliance has not been achieved. The Performance Requirement in the report is satisfied entirely by the Deemed-to-Satisfy solution. The report identifies the relevant Deemed-to-Satisfy Provisions of each Section or Part that are subject of the Performance Solution.

3. SCOPE

This Report addresses ONLY matters relevant to Section 'J' of Volume 1 of the BCA (2019) pertaining to the Class 6 and Class 2 (Common) portions of the building.

4. PROJECT LIMITATIONS

This report does not include nor imply any detailed assessment for design, compliance or upgrading for -

(a) Sections B, C, D, E, F, G, H, and I of the NCC;

(b) The structural adequacy or design of the building;

(c) The inherent derived fire-resistance ratings of any proposed structural elements of the building (unless specifically referred to); and

(d) The design basis and/or operating capabilities of any proposed electrical, mechanical or hydraulic fire protection services.

This report does not include, or imply compliance with:

(a) The National Construction Code - Plumbing Code of Australia Volume 3

(b) The Disability Discrimination Act 1992, including the Disability (Access to Premises – Buildings) Standards 2010;

(c) Demolition Standards not referred to by the NCC;

(d) Occupational Health and Safety Act;

5. ASSESSMENT DATA

The following Architectural Plans, for the proposed retail space-62 Old Barrenjoey Road Avalon Beach 2107, are supplied for assessment, according the Section J of the BCA:

- Site Plan
- Floor Plans
- Elevations
- Section

5. ASSUMPTIONS

Assumptions made in the preparation of this report are listed below:

1. The North point marked as True North is taken from the Site plan
2. The building classifications for the retail space is Class 6
3. The information not shown on the plans are assessed as general provisions
4. The requirement for the residential spaces is described in the Nathers/Basix certificates

6. BUILDING CHARACTERISTICS

The proposed retail space is a ground floor of a mix used development consisting of a ground floor and two levels residential space.

The significant spaces in the proposed design have been classified in accordance with the requirements of Clause A3.2 of the BCA and are summarized in the table below. Floor areas have been calculated from the plan.

Retail Store	90	m2
ACC WC	5	m2
Commercial Garbage store	4	m2
Residential. Garbage store	3	m2
HWY to carpark (GF)	18.9	m2
Stairs and common lobby	32.5	m2

7. BUILDING CLASSIFICATION

According the BCA Part A6 (CLASSIFICATION OF BUILDINGS AND STRUCTURES), the major classification of the Retail space is Class 6.

Class 6: a shop or other building for the sale of goods by retail or the supply of services direct to the public, including—

- (a) an eating room, cafe, restaurant, milk or soft-drink bar; or***
- (b) a dining room, bar, shop or kiosk part of a hotel or motel; or***
- (c) a hairdresser's or barber's shop, public laundry, or undertaker's establishment; or***
- (d) market or sale room, showroom, or service station.***

8. CLIMATE ZONE

The proposed project is located at: 62 Old Barrenjoey Road Avalon Beach 2107. In accordance with New South Wales-Climate zone map, Version: VC00031.3, Release Date: Sep 2019, the development is in the Climate Zone 5.

9. SECTION J (NCC 2019) REPORT

This report is based on the Deemed-to-Satisfy Solutions of Section J of the National Construction Code Series Volume 1 - Building Code of Australia, NCC 2019 incorporating the State variations where applicable. Deemed-to-Satisfy Solution as a Performance Solution is used to satisfy the Performance Requirements of the NCC 2019.

Performance Requirements JP1 are satisfied by complying with—

- (a) for reducing the heating or cooling loads—
- of sole-occupancy units of a Class 2 building or a Class 4 part of a building, J0.2 and J0.5; and
 - of a Class 2 to 9 building, other than the sole-occupancy units of a Class 2 building or a Class 4 part of a building, Parts J1, and J3; and
- (b) for air-conditioning and ventilation, Part J5; and
- (c) for artificial lighting and power, Part J6; and
- (d) for heated water supply and swimming pool and spa pool plant, Part J7; and
- (e) for facilities for monitoring, Part J8.

Conclusions

SUMMARY OF SOLUTIONS TO COMPLY WITH SECTION J PERFORMANCE REQUIREMENTS

STATEMENT OF COMPLIANCE

The design documentation as referred to in this report has been assessed against the applicable provisions of Section J of the Building Code of Australia, (BCA2019) and it is considered that such documentation complies or is capable of complying (as outlined above) with that Code.

The following table is a summary of the requirements for compliance with the Section J.

Clause-Description	Status
Roof and wall thermal break	Roof and wall thermal bridges are analyzed with KNAUF-KOMPLI calculator
PART J1 Building fabric	
J1.2 Thermal construction — general	• The insulation must comply with AS/NZS 4859.1 and be installed so that it abuts or overlaps adjoining insulation other than at supporting members such as studs, noggings, joists, furring channels and the like • Reflective insulation must be installed with the necessary airspace to achieve the required R-Value between a reflective side of the reflective insulation and a building lining or cladding. • The bulk insulation must be installed so that it maintains its position and thickness, other than where it is compressed between cladding and supporting members, water pipes, electrical cabling or the like • In a ceiling, where there is no bulk insulation or reflective insulation in the wall beneath, it overlaps the wall by not less than 50 mm.

J1.3 Roof and ceiling construction

For the *climate zone* 5, R3.7 for a downward direction of heat flow.

See the Knauf Report

Required	Additional insulation
R3.70 (downwards) * The solar absorptance of the upper surface of a roof must be not more than 0.45.	1) Concrete Roof Additional insulation: Insulation Space Blanket® R2.5 /See KOMPLI assessment/

- Where, for operational or safety reasons associated with exhaust fans, flues or recessed downlights, the area of required ceiling insulation is reduced, the loss of insulation must be compensated for by increasing the R-Value of insulation in the remainder of the ceiling in accordance with Table 3.12.1.1h. (Table J1.3b)
- Where the insulation goes in the air space and the R-value of the air space is lost, the R value of the required insulation should be increased for the lost R-value
- The surface solar absorptance of the upper surface of a roof must be not more than 0.45.

J1.4 Roof lights

The plans don't show any roof lights
Therefore, the table Table J1.4 is not applicable)

J1.5 Walls and glazing

(a) The *Total System U-Value* of *wall-glazing construction* must not be greater than—
(i) for a Class 2 common area, a Class 5, 6, 7, 8 or 9b building or a Class 9a building other than a *ward area*, U2.0; and
(ii) for a Class 3 or 9c building or a Class 9a *ward area*—
(A) in *climate zones* 1, 3, 4, 6 or 7, U1.1; or
(B) in *climate zones* 2 or 5, U2.0; or
(C) in *climate zone* 8, U0.9.
(b) The *Total System U-Value* of *display glazing* must not be greater than U5.8.
(c) The *Total System U-Value* of *wall-glazing construction* must be calculated in accordance with *Specification J1.5a*
(d) Wall components of a *wall-glazing construction* must achieve a minimum *Total R-Value* of—
(i) where the wall is less than 80% of the area of the *wall-glazing construction*, R1.0; or
(ii) where the wall is 80% or more of the area of the *wall-glazing construction*, the value specified in

Applicable

Walls /Glazing (See KOMPLI assessment)

a) Walls

Average Wall R value including the thermal bridges

- **Concrete walls:** Total R1.44 (m2K/W)

Added wall insulation R2.5 HD

Windows:

	U _v	SHG _c
Shopfront	2.3	0.32
D- to Resid. Units	2.3	0.32
W02 (G02)	3.2	0.5
W03 (G03)	3.2	0.5
W03 (LV1-01)	2.7	0.5
W02 (LV1-02)	2.7	0.5

Walls /Glazing (For details: See the Knauf calculator)

Table J1.5a.

(e) The solar admittance of externally facing wall-glazing construction must not be greater than—
(i) for a Class 2 common area, a Class 5, 6, 7, 8 or 9b building or a Class 9a building other than a ward area, the values specified in Table J1.5b; and
(ii) for a Class 3 or 9c building or a Class 9a ward area, the values specified in Table J1.5c.
(f) The solar admittance of a wall-glazing construction must be calculated in accordance with Specification J1.5a.
(g) The Total system SHGC of display glazing must not be greater than 0.81 divided by the applicable shading factor specified in Clause 7 of Specification J1.5a.

J1.6 Floors

- A floor without an in-slab heating or cooling system must achieve Total R value or R2.0 (Table J1.6)

Required	Additional Insulation
R2.0 (downwards)	R0.61 (downwards) /See the detailed report/

- It was found that, in comparison with conventional 100mm slab-on-ground constructions, waffle pod slabs give average additional R-values of **0.57, 0.60, 0.63 and 0.65** with the 170mm, 230mm, 300mm and 370mm pod heights respectively.

PART J3 Building sealing

J3.2 Chimneys and flues

The chimney or flue of an open solid fuel burning appliance must be provided with a damper or flap that can be closed to seal the chimney or flue.

J3.3 Roof lights

A roof light must be sealed, or capable of being sealed. Roof lights must be constructed with an imperforate ceiling diffuser or the like installed at the ceiling or internal lining level; or a weatherproof seal; or a shutter system readily operated either manually, mechanically or electronically by the occupant

J3.4 Windows and doors

An entrance to a building, if leading to a conditioned space must have an airlock, self-closing door, rapid roller door, revolving door or the like, when serving conditioned space of more than 50m², and which is not a café, restaurant, open front shop or the like.
Weather seals to be installed on all doors and open able windows (other than aluminium), of the envelope of the conditioned space

J3.5 Exhaust fans

An exhaust fan must be fitted with a sealing device such as a self-closing damper or the like when serving a conditioned space, or a habitable room.

J3.6 Construction of ceilings, walls and floors

Ceilings, walls, floors and any opening such as a window frame, door frame, roof light frame or the like must be constructed to minimise the air leakage, when forming part of the envelope. The construction must be enclosed by internal lining systems that are close fitted at the ceiling, wall and the floor junctions. The junctions and penetrations, must be sealed with close fitting architrave, skirting or cornice; or expanding foam, rubber compressible strip, caulking or the like.

J3.7 Evaporative coolers

An evaporative cooler must be fitted with a self-closing damper or the like

PART J5 Air-conditioning and ventilation systems

J5.2 Air-conditioning system control

- The air-conditioning system must be capable of being deactivated when the building or part of a building served by that system is not occupied.
- When serving more than one air-conditioning zone or area with different heating or cooling needs, must thermostatically control the temperature of each zone, not control the temperature by mixing actively heated air and actively cooled air, and limit reheating to not more than:
 - (aa) for a fixed supply air rate, a 7.5 K rise in temperature; and
 - (bb) for a variable supply air rate, a 7.5 K rise in temperature at the nominal supply air rate but increased or decreased at the same rate that the supply air rate is respectively decreased or increased.
- When provides the required mechanical ventilation, where dehumidification control is needed, must have an outdoor air economy cycle if the total air flow rate of any airside component of an air-conditioning system is greater than or equal to the figures in Table J5.2

Table J5.2 Requirement for an outdoor air economy cycle

Climate zone	Total air flow rate requiring an economy cycle (L/s)
2	9000
3	7500
4	3500
5	3000
6	2000
7	2500
8	400

- If the airflow is more than 1000 L/s, must have a variable speed fan when its supply air quantity is capable of being varied.
- When serving a sole-occupancy unit in a Class 3 building, must not operate when any external door of the sole occupancy unit that opens to a balcony or the like, is open for more than one minute.
- Must have the ability to use direct signals from the control components responsible for the delivery of comfort conditions in the building to regulate the operation of central plant
- Must have a control dead band of not less than 2°C, except where a smaller range is required for specialised applications.
- Must be provided with balancing dampers and balancing valves that ensure the maximum design air or fluid flow is achieved but not exceeded by more than 15% above design at each component, or group of components operating under a common control in a system containing multiple components.

	- Each independently operating space of more than 1 000 m2 and every separate floor of the building has provision to terminate airflow independently of the remainder of the system sufficient to allow for different operating times. - Must have automatic variable temperature operation of heated water and chilled water circuits; and When deactivated, must close any motorised outdoor air or return air damper that is not otherwise being actively controlled. - When two or more air-conditioning systems serve the same space they must use control sequences that prevent the systems from operating in opposing heating and cooling modes. - A time switches must be provided to control an air-conditioning system of more than 2 kW_r, and a heater of more than 1 kW heating used for air-conditioning. - The time switch must be capable of switching electric power on and off at variable pre-programmed times and on variable pre-programmed days.												
J5.3 Mechanical ventilation system control	- A mechanical ventilation system must be capable of being deactivated when the building or part of the building served by that system is not occupied - An exhaust system with an air flow rate of more than 1000 L/s must be capable of stopping the motor when the system is not needed, except for an exhaust system in a <i>sole-occupancy unit</i> in a Class 2, 3 or 9c building. <i>Carpark</i> exhaust systems — <i>Carpark</i> exhaust systems must have a control system in accordance with 4.11.2 of AS 1668.2; or 4.11.3 of AS 1668.2. - A time switch must be provided to a mechanical ventilation system with an air flow rate of more than 1000 L/s.												
J5.4 Fan systems	Fans, ductwork and duct components that form part of an <i>air-conditioning</i> system or mechanical ventilation system must comply with the provisions in the J5.4 The fan system compliance, must be checked with the calculator (Beta Calculator_2019_Fan_System_Volume One)												
J5.5 Ductwork insulation	Ductwork and fittings in an air-conditioning system must be provided with insulation complying with AS/NZS 4859.1 and having an insulation R-Value greater than or equal to the Table J5.5 Table J5.5 Ductwork and fittings - Minimum insulation R-Value <table><tr><th>Location of ductwork and fittings</th><th><i>Climate zone</i> 1, 2, 3, 4, 5, 6 or 7</th><th><i>Climate zone</i> 8</th></tr><tr><td>Within a conditioned space</td><td>1.2</td><td>2.0</td></tr><tr><td>Where exposed to direct sunlight</td><td>3.0</td><td>3.0</td></tr><tr><td>All other locations</td><td>2.0</td><td>3.0</td></tr></table> For flexible ductwork the insulation R-Value must be greater than or equal to R1.0.	Location of ductwork and fittings	<i>Climate zone</i> 1, 2, 3, 4, 5, 6 or 7	<i>Climate zone</i> 8	Within a conditioned space	1.2	2.0	Where exposed to direct sunlight	3.0	3.0	All other locations	2.0	3.0
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Within a conditioned space	1.2	2.0											
Where exposed to direct sunlight	3.0	3.0											
All other locations	2.0	3.0											
J5.7 Pump systems	Pumps and pipework that form part of an <i>air-conditioning</i> system must comply with the provisions in the J5.7 The pump system compliance, must be checked with the calculator (Beta Calculator_2019_Pump_System_Volume One)												
J5.8 Pipework insulation	Piping, vessels, heat exchangers and tanks containing heating or cooling fluid, must be provided with insulation, complying with AS/NZS 4859.1. For												

	piping of heating and cooling fluids, having an insulation R-Value in accordance with Table J5.8a. For vessels, heat exchangers or tanks, having an insulation R-Value in accordance with Table J5.8b, and for refill or pressure relief piping, having an insulation R-Value equal to the required insulation R-Value of the connected pipe, vessel or tank within 500 mm of the connection.																								
J5.9 Space heating	A heater used for air-conditioning or as part of an air-conditioning system must be solar heater, gas heater, heat pump heater, or a heater using reclaimed heat from another process such as reject heat from a refrigeration plant																								
J5.10 Refrigerant chillers	An air-conditioning system refrigerant chiller must comply with MEPS and the full load operation energy efficiency ratio and integrated part load energy efficiency ratio in Table J5.10a or Table J5.10b when determined in accordance with AHRI 551/591.																								
J5.11 Unitary air-conditioning equipment	Unitary <i>air-conditioning</i> equipment including packaged air-conditioners, split systems, and variable refrigerant flow systems, must comply with <i>MEPS</i> and for a capacity greater than or equal to 65 kW																								
J6 Artificial lighting and power																									
J6.2 Artificial lighting	- Any halogen lamps must be separately switched from fluorescent lamps. - The aggregate design illumination power load is the sum of the design illumination power loads in each of the spaces served and must not exceed the aggregate design illumination power from the lighting calculator. - The Lighting timers, Motion detectors, Daylight sensors and dynamic lighting control devices, must comply with <i>Specification J6</i> <table border="1"> <thead> <tr> <th>Space</th><th>Maximum illumination power density (W/m²)</th></tr> </thead> <tbody> <tr> <td><i>Carpark - general</i></td><td>2</td></tr> <tr> <td><i>Carpark - entry zone (first 15 m of travel) during the daytime</i></td><td>11.5</td></tr> <tr> <td><i>Carpark - entry zone (next 4 m of travel) during the day</i></td><td>2.5</td></tr> <tr> <td><i>Carpark - entry zone (first 20 m of travel) during nighttime</i></td><td>2.5</td></tr> <tr> <td><i>Corridors</i></td><td>5</td></tr> <tr> <td><i>Entry lobby from outside the building</i></td><td>9</td></tr> <tr> <td><i>Plant room where an average of 160 lx vertical illuminance is required on a vertical panel such as in switch rooms</i></td><td>4</td></tr> <tr> <td><i>Service area, cleaner's room and the like</i></td><td>1.5</td></tr> <tr> <td><i>Toilet, locker room, staff room, rest room and the like</i></td><td>3</td></tr> <tr> <td><i>Stairways, including fire-isolated stairways</i></td><td>2</td></tr> <tr> <td><i>Lift cars</i></td><td>3</td></tr> </tbody> </table>	Space	Maximum illumination power density (W/m ²)	<i>Carpark - general</i>	2	<i>Carpark - entry zone (first 15 m of travel) during the daytime</i>	11.5	<i>Carpark - entry zone (next 4 m of travel) during the day</i>	2.5	<i>Carpark - entry zone (first 20 m of travel) during nighttime</i>	2.5	<i>Corridors</i>	5	<i>Entry lobby from outside the building</i>	9	<i>Plant room where an average of 160 lx vertical illuminance is required on a vertical panel such as in switch rooms</i>	4	<i>Service area, cleaner's room and the like</i>	1.5	<i>Toilet, locker room, staff room, rest room and the like</i>	3	<i>Stairways, including fire-isolated stairways</i>	2	<i>Lift cars</i>	3
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	<i>within a sole-occupancy unit</i>	5
	<i>verandah, balcony or the like attached to a sole-occupancy unit</i>	4
J6.3 Interior artificial lighting and power control	• An occupant activated device, such as a room security device, a motion detector in accordance with Specification J6, or the like, must be provided in the <i>sole-occupancy unit</i> of a Class 3 building. • An artificial lighting switch or other control device must be located in a visible and easily accessed position • Not operate lighting for an area of more than 250 m² if in a Class 5 building or a Class 8 laboratory; or not operate lighting for an area of more than 250 m² for a space of not more than 2000 m²; or 1000 m² for a space of more than 2000 m², if in a Class 3, 6, 7, 8 (other than a laboratory) or 9 building. • 95% of the light fittings in a building or <i>storey</i> of a building, other than a Class 2 or 3 building or a Class 4 part of a building, of more than 250 m² must be controlled by a time switch in accordance with Specification J6; or an occupant sensing device such as a security key card reader that registers a person entering and leaving the building; or a motion detector in accordance with Specification J6. • In a Class 5, 6 or 8 building of more than 250 m², artificial lighting in a natural lighting zone adjacent to windows must be separately controlled from artificial lighting not in a natural lighting zone. • Artificial lighting in a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp, must be controlled by a motion detector in accordance with Specification J6. • Artificial lighting in a foyer, corridor and other circulation spaces of more than 250 W within a single zone; and adjacent to windows, must be controlled by a daylight sensor and dynamic lighting control device in accordance with Specification J6. • Artificial lighting for daytime travel in the first 19 m of travel in a carpark entry zone must be controlled by a daylight sensor in accordance with Specification J6.	
J6.4 Interior decorative and display lighting	• Interior decorative and display lighting, such as for a foyer mural or art display, must be controlled separately from other artificial lighting • Interior decorative and display lighting must be controlled by a time, switch in accordance with Specification J6 where the display lighting exceeds 1 kW. • Window display lighting must be controlled separately from other display lighting	
J6.5 Exterior artificial lighting	• Exterior artificial lighting attached to or directed at the facade of a building, must be controlled by a daylight sensor; or a time switch that is capable of switching on and off electric power to the system at variable pre-programmed times and on variable pre-programmed days	

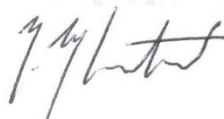
	- When the total exterior artificial lighting load exceeds 100 W, use LED luminaires for 90% of the total lighting load; or be controlled by a motion detector in accordance with Specification J6 - When the exterior artificial lighting is used for decorative purposes, such as façade lighting or signage lighting, must have a separate time switch in accordance with Specification J6.
J6.6 Boiling water and chilled water storage units	Power supply to a boiling water or chilled water storage unit must be controlled by a time switch in accordance with Specification J6
J7.2 Heated water supply	A heated water supply system for food preparation and sanitary purposes must be designed and installed in accordance with Part B2 of NCC Volume Three — Plumbing Code of Australia A heated water service, including any associated distribution system and components, must obtain heating energy from one, or a combination, of the following: (a) A source that has a greenhouse gas intensity up to and including 100 g CO₂-e/MJ of thermal energy load. (b) An on-site renewable energy source. (c) Another process as reclaimed energy.
J8.3 Facilities for energy monitoring	The building is with floor area of more than 500 m². Therefore, it must have an energy meter configured to record the time-of-use, consumption of the gas and the electricity. The building is with floor area of less than 2500 m². Therefore, it doesn't need energy meters configured to enable individual time-of use energy consumption data recording.
Access	Must be provided to all plant, equipment and components that require maintenance

EVIDENCE OF COMPLIANCE CHECK LIST

The purpose of this checklist is to itemise the evidence that should be collected during the construction phase of the project. That will demonstrate how the final building complies with the Energy Efficiency requirements of Section J of the BCA that were identified during the design phase.

Generally, evidence should take the form of delivery receipts, photographs, or signed and dated statements from installers.

Assessor: Zoran Cvetkovski
Thermal Performance Assessor
Home Sustainability Assessor
B.Eng.






THERMAL PERFORMANCE PREDICTION

PROJECT: **RETAIL-62 OLD BARRENJOEY ROAD
AVALON BEACH**

ADDRESS: 62 OLD BARRENJOEY ROAD AVALON BEACH



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PROJECT INFORMATION

PROJECT: RETAIL-62 OLD
BARRENJOEY ROAD AVALON BEACH

CLIMATE ZONE: 5

BUILDING CLASS: 6



METHOD:

This assessment has been calculated in accordance with the Deemed to Satisfy Provisions of the 2019 edition of the National Construction Code of Australia. The assessment has been completed using the information provided by the User and assumes the building is located in Climate Zone 5 and is Building Class 6. The calculation has been completed in accordance with the methodology of AS/NZS 4859.2 (2018) which includes thermal bridging in accordance with NZS 4214 (2006). Air spaces bound by parallel bounding surfaces of varying emissivity are calculated in line with the prescriptive requirements of AS/NZS:4859.2 (2018) and the conductivity of the insulants are adjusted to their mean operating temperature in accordance with the conversion coefficients outlined in ISO 10456:2007.

EXECUTIVE SUMMARY

Section J1.3 compliance summary (Roof and ceiling construction)

Minimum R-Value Requirement	R-Value achieved	Result
KICR430 - Concrete roof with suspended ceiling		
3.7	3.81	PASS

Section J1.5 compliance summary (Wall-glazing construction)

Orientation	Wall construction	Window construction	Average window U-Value	Minimum R-Value Requirement	R-Value achieved	Result	Maximum Solar Admittance	Maximum U-Value	U-Value result	Result
Direct fix metal studs to concrete wall with, plasterboard internally										
North				1.4	1.44	PASS	0.13	2		PASS

* See detailed wall glazing calculators

SPECIFIED MATERIALS

Insulation

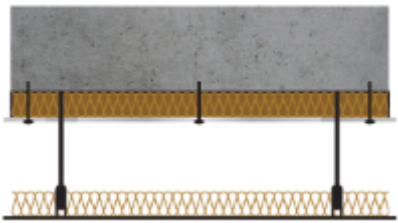
Material	Non-Combustible	Group Number	SMOGRA	Fire Indices	Water Resistant	CodeMark	Eurofins Air Quality	BRANZ Appraised
KICR430 - Concrete roof with suspended ceiling								
Knauf Insulation Space Blanket® R2.5 x 105mm	x			0/0/0/1	x	x	x	x
Direct fix metal studs to concrete wall with, plasterboard internally								
Earthwool® SoundShield Superior Wall batt R2.5HD x 90mm	✓			0/0/0/1		✓	✓	✓

Other Materials

Material	Non-Combustible	Group Number	SMOGRA	Fire Indices
Direct fix metal studs to concrete wall with, plasterboard internally				
92mm Knauf Metal Stud 0.55BMT	✓			

KICR430 - CONCRETE ROOF WITH SUSPENDED CEILING

Requirement	Total	Outcome
R3.70	R3.81	PASS
Heat flow: Summer		



Assumptions

This calculation is valid for the following colours of roof ONLY

Classic Cream™

Evening Haze®

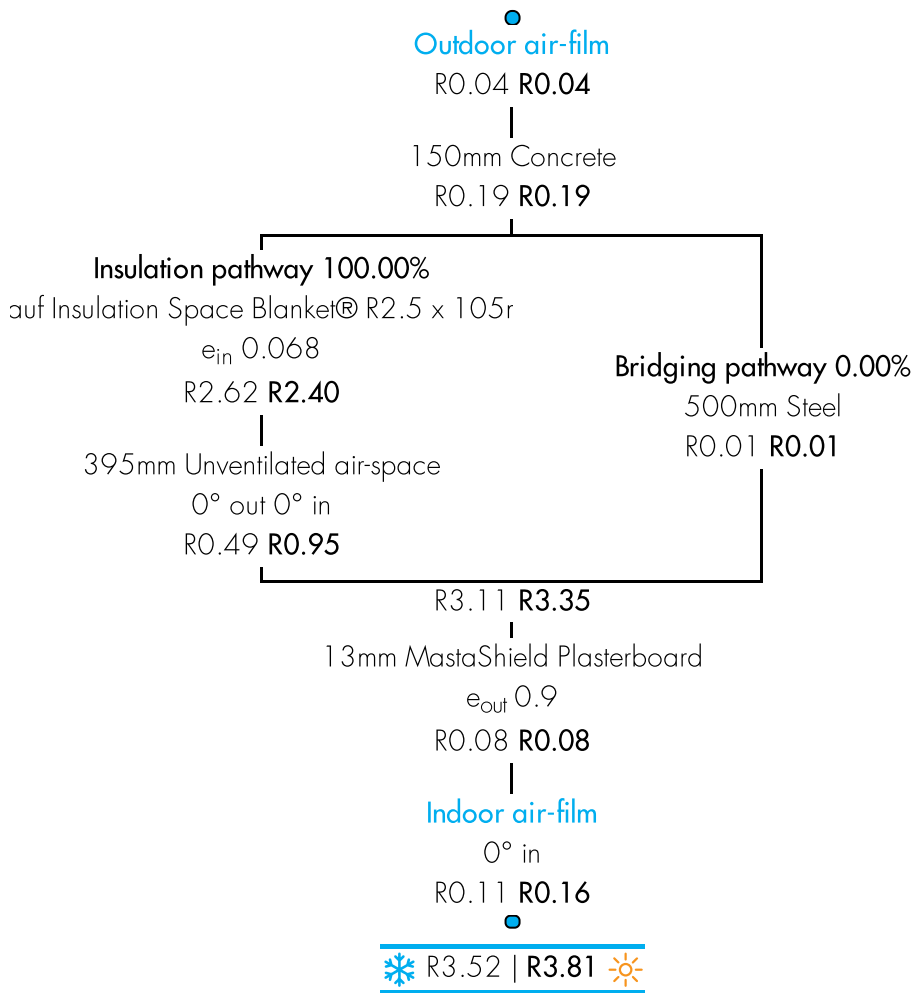
Paperbark®

Shale Grey™

Surfmist®

Note: Zincalume not permissible

X direction centres	Y direction centres	Point connector cross section area
600mm	1200mm	10mm ²

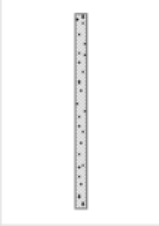


DIRECT FIX METAL STUDS TO CONCRETE WALL WITH, PLASTERBOARD INTERNALLY

Requirement	Total	Outcome
R1.40	R1.44	PASS
≤U2.00		PASS
Heat flow: Summer		

Assumptions

Type



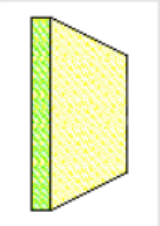
Tilt up Concrete

☐ Externally Insulated

Thickness 200 mm

R 0.14

Insulation

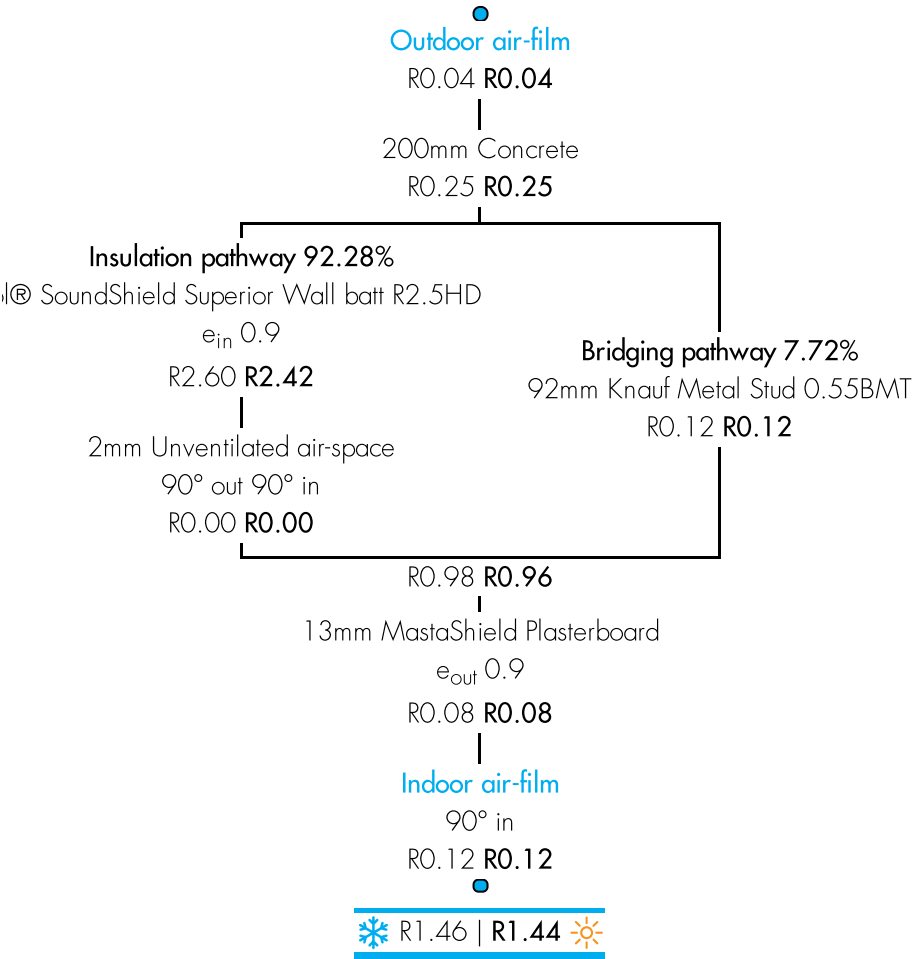


Bulk Insulation

Bulk R 2.5

R 2.50

Wall height	Stud centres	Stud width
3500mm	600mm	35mm



SPECIFICATION CLAUSES

Product	Specification Clause	Web link
Knauf Insulation Space Blanket® R2.5 x 105mm	The insulation shall be Knauf Insulation Space Blanket® with ECOSE® Technology (no added formaldehyde) and laminated to a heavy duty anti condensation foil. R value 2.5, 105mm thick. Insulation must be non-combustible in accordance with AS1530.1, BRANZ appraised to meet provisions of the BCA and certified GreenTag GreenRate Level A.	More Information
Earthwool® SoundShield Superior Wall batt R2.5HD x 90mm	The insulation shall be Earthwool® SoundShield Superior Wall batt with ECOSE® Technology (no added formaldehyde). R value 2.5HD, 90mm thick. Insulation must be non-combustible in accordance with AS1530.1, BRANZ appraised to meet provisions of the BCA and certified GreenTag GreenRate Level A.	More Information

Disclaimer: The information provided in the Kompli™ document is general information only. The software relies on User input to provide a calculation in accordance with AS/NZ 4859.2 and its secondary references. Incorrect information supplied by the User is likely to result in calculations that are not representative of the intended system. The content of the software is only intended as a guide and does not address the particular circumstances of the User. The information on, entered into or produced by the Kompli™ should be verified by a qualified expert specific to your circumstances before being put to use by any person. Product performance claims, such as non-combustibility, are meant as a guide only. Prior to installation or purchase of the Product, the User should request from the relevant certification documents from the Supplier.



Wall Glazing-62 Old Barrenjoey Road-2019

Job Address: 62 Old Barrenjoey Road-2019													
West		Level:		Ground									
	Net WALL Area m2			U wall	Calculations			Total wall glazed area	22.00 m2				
Wall 1	4.386028			0.694444	3.04585			Glass %	80.06				
Wall 2	0			0	0			Wall %	19.94				
Wall 3	0			0	0			Average wall U wall	0.69				
Wall 4	0			0	0			Average glass U wind	2.30				
Wall 5	0			0	0			Total Wall /Glass Uv	1.98	<	2	Pass	Part J 1.5
Wall 6	0			0	0			Total Wall /Glass SA	0.12	<	0.13	Pass	Table J1.5 b&c
Total:	4.386028				3.04585			Wall R	1.44	>	1.4	Pass	Table J1.5a
Window No	Window Height (m)	Window width (m)	Area (m2)	G (m)	H (m)	P (m)	Uv	SHGc	Calculations	G/H	P/H	Sw (Shading multiplier)	Calculations
Shopfront	3.386	4.335	14.67831	0.35	3.736	3	2.3	0.32	33.76011	0.09	0.80	0.47	0.1003463
D- to Res Un.	3.386	0.867	2.935662	0.35	3.736	3	2.3	0.32	6.752023	0.09	0.80	0.47	0.0200693

Job Address: 62 Old Barrenjoey Road-2019													
East		Level:		Ground									
	Net WALL Area m2			U wall	Calculations			Total wall glazed area	20.00 m2				
Wall 1	10.16			0.694444	7.05556			Glass %	49.20				
Wall 2	0			0	0			Wall %	50.80				
Wall 3	0			0	0			Average wall U wall	0.69				
Wall 4	0			0	0			Average glass U wind	3.20				
Wall 5	0			0	0			Total Wall /Glass Uv	1.93	<	2	Pass	Part J 1.5
Wall 6	0			0	0			Total Wall /Glass SA	0.09	<	0.13	Pass	Table J1.5 b&c
Total:	10.16				7.05556			Wall R	1.44	>	1.4	Pass	Table J1.5a
Window No	Window Height (m)	Window width (m)	Area (m2)	G (m)	H (m)	P (m)	Uv	SHGc	Calculations	G/H	P/H	Sw (Shading multiplier)	Calculations
W02 (G02)	2.4	2.8	6.72	0	2.4	2.3	3.2	0.5	21.504	0.00	0.96	0.35	0.0588
W03 (G03)	2.4	1.3	3.12	0	2.4	13	3.2	0.5	9.984	0.00	5.42	0.35	0.0273



Job Address:		62 Old Barrenjoey Road-2019											
East				Level:		First							
	Net WALL Area m2			U wall	Calculations			Total wall glazed area	16.00 m2				
Wall 1	6.235			0.694444	4.32986			Glass %	61.03				
Wall 2	0			0	0			Wall %	38.97				
Wall 3	0			0	0			Average wall U wall	0.69				
Wall 4	0			0	0			Average glass U wind	2.70				
Wall 5	0			0	0			Total Wall /Glass Uv	1.92	<	2	Pass	Part J 1.5
Wall 6	0			0	0			Total Wall /Glass SA	0.11	<	0.13	Pass	Table J1.5 b&c
Total:	6.235				4.32986			Wall R	1.44	>	1.4	Pass	Table J1.5a
Window No	Window Height (m)	Window width (m)	Area (m2)	G (m)	H (m)	P (m)	Uv	SHGc	Calculations	G/H	P/H	Sw (Shading multiplier)	Calculations
W03 (LV1-01)	0.75	1.5	1.125	0	0.75	2	2.7	0.5	3.0375	0.00	2.67	0.35	0.0123047
W02 (LV1-02)	2.4	3.6	8.64	0	2.4	2.3	2.7	0.5	23.328	0.00	0.96	0.35	0.0945

Floor calculation / Slab on ground and subfloor case/

Figure 1		Ratio (Floor area to floor perimeter)	R value of the soil or subfloor (As per the table 2a/2b)
Floor Area (m2)	158	2.47	1.15
Floor Perimeter (m')	64		

Minimum total R value as per the table J1.6 R2.0

FLOOR-Slab on ground

Material	Thicknes (m')	Conductivity	R Value
Indoor air film (Still air)			0.16
Concrete	0.12	1.44	0.08
Insulation (Subfloor or Earth)-As per the Table 2b			1.15
Additional insulation			0.61

2.00

Additional insulation R0.61

Note: It was found that, in comparison with conventional 100mm slab-on-ground constructions, waffle pod slabs give average additional R-values of **0.57, 0.60, 0.63 and 0.65** with the 170mm, 230mm, 300mm and 370mm pod heights respectively.



Non-residential Lighting (Beta)

Class 3 and 5-9 buildings



Main Menu

Help

Multiple Lighting Systems Calculator

Calculator

Building name/description

Audaa-62 Old Barrenjoey Road

Classification

Class 2

applicable only to areas outside of a sole-occupancy unit (SOU).

Number of rows preferred in table below

4

(as currently displayed)

ID	Description	Floor area of the space	Perimeter of the space	Floor to ceiling height	Design Illumination Power Load	Space	Illuminance		Adjustment Factor One			Adjustment Factor Two			Light Colour Adjustment Factors		SATISFIES PART J6.2	
							Designed Lux Level	Recommended Lux Level	Adjustment Factor One	Dimming % Area	Illuminance Turndown	Adjustment Factor Two	Dimming % Area	Illuminance Turndown	Light Colour Adjustment Factor One	Light Colour Adjustment Factor Two	System Illumination Power Load Allowance	Lighting System Share of % of Aggregate Allowance Used
1	HWY to carpark (GF)	18.9	26.2	3.25	151.2	Corridors	These columns do not represent a requirement of the NCC and are suggestions only		Adjustment Factors	Dimming % Area	Illuminance Turndown	Adjustment Factors	Dimming % Area	Illuminance Turndown	Light Colour Adjustment Factor One	Light Colour Adjustment Factor Two	167 W	37% of 91%
2	Stairs and common lobby	32.5	44	3.5	260	Corridors											286 W	63% of 91%
3																		
4																		

Total 411 W

Total 453 W

if inputs are valid



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Non-residential Lighting (Beta)

Class 3 and 5-9 buildings



Main Menu Help Multiple Lighting Systems Calculator

Calculator

Building name/description

Audaa-62 Old Barrenjoey Road

Classification

Class 6

Number of rows preferred in table below

4

(as currently displayed)

ID	Description	Floor area of the space	Perimeter of the space	Floor to ceiling height	Design Illumination Power Load	Space	Illuminance		Adjustment Factor One			Adjustment Factor Two			Light Colour Adjustment Factors		SATISFIES PART J6.2	
							Designed Lux Level	Recommended Lux Level	Adjustment Factor One	Dimming % Area	Illuminance Turndown	Adjustment Factor Two	Dimming % Area	Illuminance Turndown	Light Colour Adjustment Factor One	Light Colour Adjustment Factor Two	System Illumination Power Load Allowance	Lighting System Share of % of Aggregate Allowance Used
							These columns do not represent a requirement of the NCC and are suggestions only		Adjustment Factors			Adjustment Factors						
1	Retail Store	90	46.53	3.25	1260	Retail space including a museum and gallery whose purpose is the sale of objects										1800 W	98% of 70%	
2	ACC WC	5	9.23	2.4	15	Toilet, locker room, staff room, rest room and the like										26 W	1% of 70%	
3	Commenc. Garbage store	4	7.95	2.4	6	Storage										11 W	0% of 70%	
4	Residential Garbage store	3	7.54	2.4	4.5	Storage										9 W	0% of 70%	
Total							1286 W		Total							1846 W		
if inputs are valid																		

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