91-93 McIntosh Road, Narraweena.

SECTION J REPORT

DESIGN STATEMENT TO BCA A2.2

This report relies on supplied documentation for assessment in regards to adopting measures contributing to deemed-to-satisfy of designed and built deliverables. It is our opinion that the project can be constructed to satisfy the requirements of the Building Code of Australia.

Document control

Rev	Date	Description
A	12th Oct 2018	Issue to PCA

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Energy Efficiency

In response to concerns over global warming, the Australian Government announced in July 2000 that agreement had been reached with industry and State and Territory Governments to adopt a two-pronged approach to reducing greenhouse gas emissions from buildings. The first approach was the introduction of mandatory minimum energy performance requirements through the Building Code of Australia (BCA), and the second approach was the encouragement of best practice voluntary initiatives by industry. Industry was supportive of this two-pronged approach, taking the view that building-related matters should be consolidated in the BCA wherever possible.

Given the importance of the energy performance of buildings to overall national greenhouse gas emissions performance, the Australian Building Codes Board (ABCB) and the Australian Greenhouse Office signed a Memorandum of Understanding to jointly develop the BCA Energy Efficiency Provisions.

The Energy Efficiency Project was endorsed under the National Framework for Energy Efficiency (NFEE), an agreement between all Australian Governments established to improve energy efficiency. The objective of NFEE is to unlock the significant economic potential associated with increased implementation of energy efficiency technologies and processes to deliver a least cost approach to energy efficiency in Australia.

To enable the effective involvement of stakeholders in the development of the BCA Energy Efficiency Provisions, several committees and working groups comprising representatives from a range of government, industry and community organisations were developed.

At specific stages of the project, the ABCB sought the views of the wider community. This process was undertaken when the ABCB released the Directions Report on the Energy Efficiency Project (2001), and on the release of Regulation Documents (RDs) and Regulatory Impact Statements (RISs). Any proposed annual changes to the BCA are also made public prior to finalisation.

Energy efficiency requirements are now incorporated in the Building Code of Australia. In Volume 1, it is Section J, hence the "Section J Report".

This report undertaken under JV1. Deemed to satisfy.

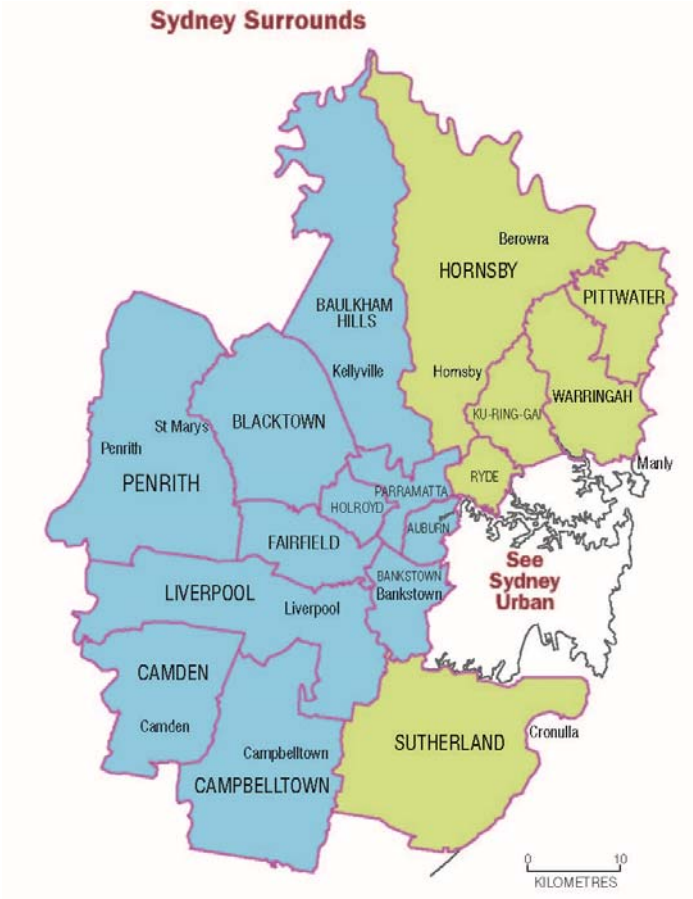
CONTENTS

Section J review

Application

Base building	**Section J affected**
Apartments common areas	Section J affected Section J complements BASIX and NatHERS
Apartments SOU	Section J affected Section J complements BASIX and NatHERS

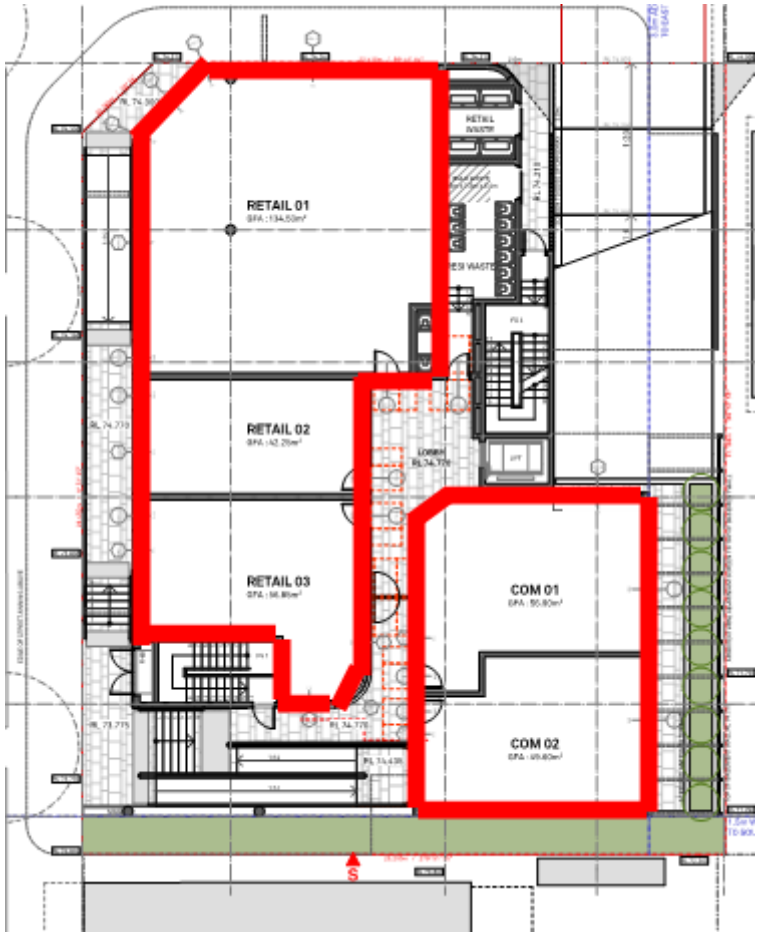
Climate Zone check



		Remarks
Climate zone:	6	Light blue

Conditioned spaces (likely to be heated or cooled)

Space	Conditioned	Non-conditioned
Base building	**X**	**-**
Carparking	**-**	**X**


RETAIL 01
RETAIL 02
RETAIL 03
COM 01
COM 02

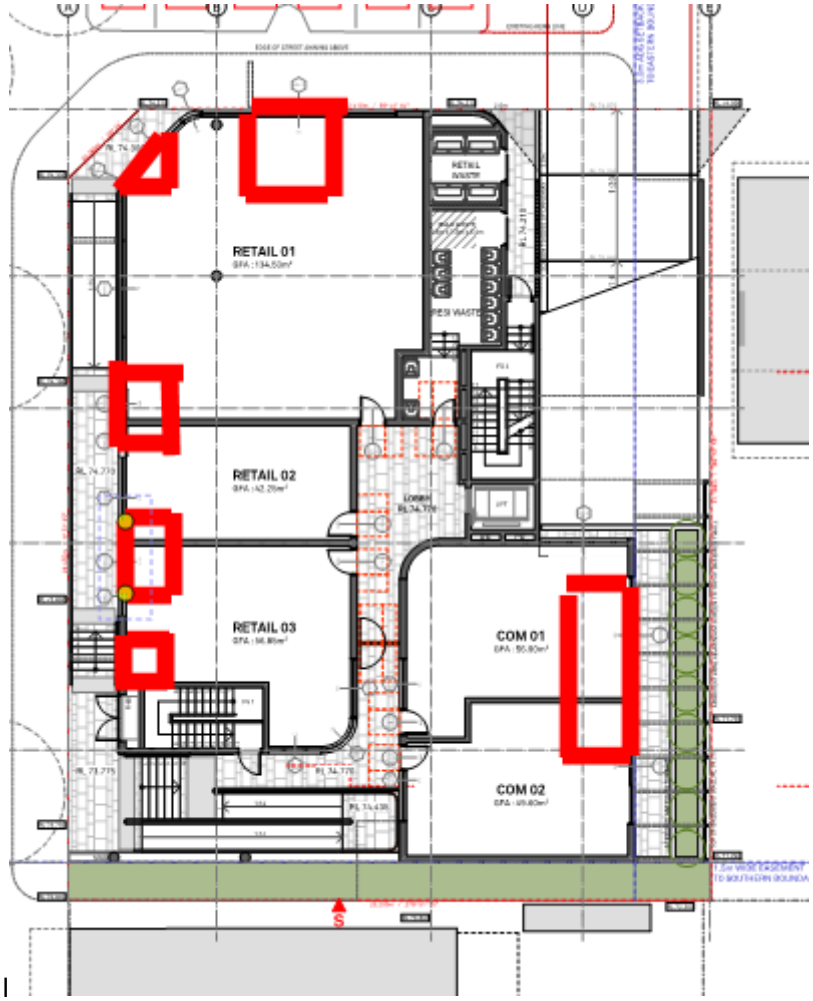
1. PART J1 BUILDING FABRIC -base building

		Action by applicant	Certifier action
J1.1		Applies	Note
J1.2	**Insulation to wall or roof *if metal framed*** (to simulate insulation equivalence to timber frame)	To AS/NZS 4859.1 Selection / branding / installation Provide thermal breaks between metal framing and cladding or roofing. DTS are • 15mm styrene • 25 timber OR mass insulation at fixings.	Certify that the installation is deemed to satisfy
	Continuity	Abut or overlap adjoining insulation other than at supporting members to form a continuous barrier with ceilings, walls, bulkheads, floors or the like; and not affect the safe and effective operation of services.	Certify that the installation is deemed to satisfy
	Reflective surfaces	Provide effective air film to reflective surfaces.	Certify that the installation is deemed to satisfy
	Door and window openings	Provide close fitting to any door or window opening; be adequately supported; and adjoining sheet of roll membrane must be overlapped not less than 50 mm or taped together.	Certify that the installation is deemed to satisfy

		Action by applicant	Certifier action
	Bulk insulation	Install bulk insulation 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.	Certify that the installation is deemed to satisfy

Climate zone 5	Dark colour	Action by applicant	Certifier action
J1.3 **Concrete roof**	**Roof/ceiling insulation** Required total R-value ……R 4.2 down Concrete roof ……..R 0.46	Provide R 3.74 insulation between roof finish and ceiling.	Certify that the installation is deemed to satisfy

	Item	R-value	Remarks
1	**Outdoor air film**	0.04	
2	**Waterproof membrane**	0.03	
3	**Roof insulation**	-	To be determined
4	**Solid concrete**	0.15	
5	**Roof insulation**	-	To be determined
6	**Ceiling air space**	0.15	
7	**Ceiling insulation**	-	To be determined
8	**Plasterboard ceiling lining**	0.06	
9	**Indoor air film**	0.11	
	Total without insulation	**0.46**	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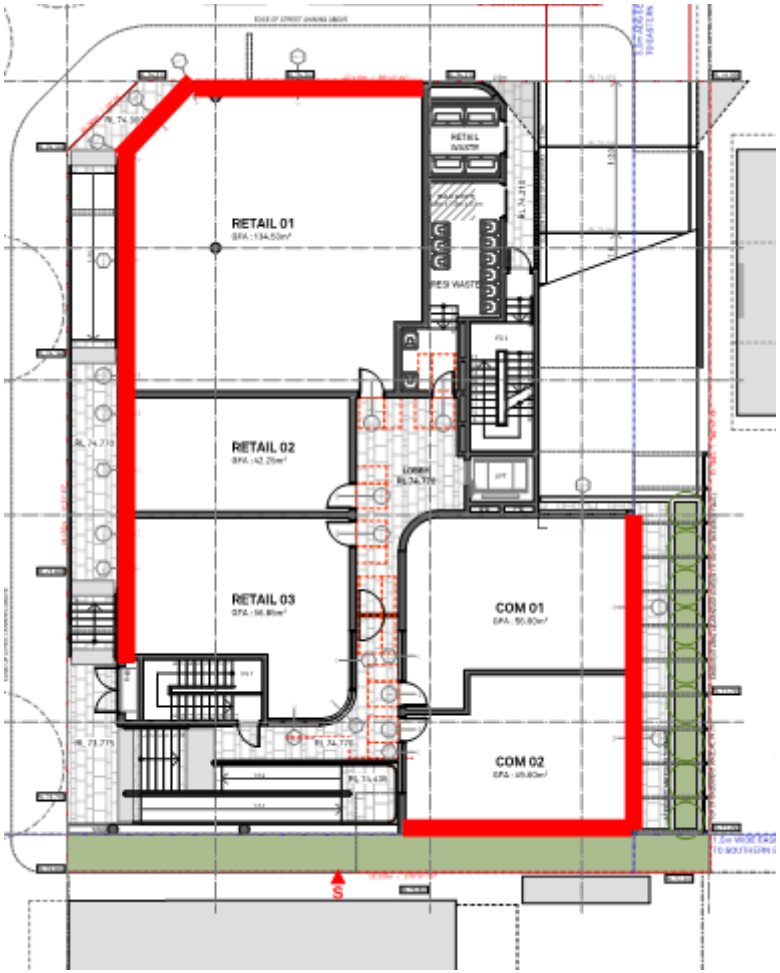
RETAIL 02
RETAIL 03
COM 01
COM 02

		Action by applicant	Certifier action
J1.4	**Roof lights**	Not applicable	Note

		Action by applicant	Certifier action
J1.5	**External walls – insulation** Total R-value required R 2.8	Note	Certify that the installation is deemed to satisfy
Typical options	BV walls ……..R 0.48 Cavity brick …….R 0.51 Conc block ……..R 0.54 Framed walls ……..R 0.42 200 Hebel ……R 2.39 80mm PIR ……..…R 4.15 RC or AFS/Dincell ..…..R 0.48	Provide R 2.3 insulation Provide R 1.5 insulation Provide R 2.3 insulation Provide R 2.4 insulation Provide R 0.4 insulation None Provide R 1.8 insulation.	Certify that the installation is deemed to satisfy


RETAIL 01
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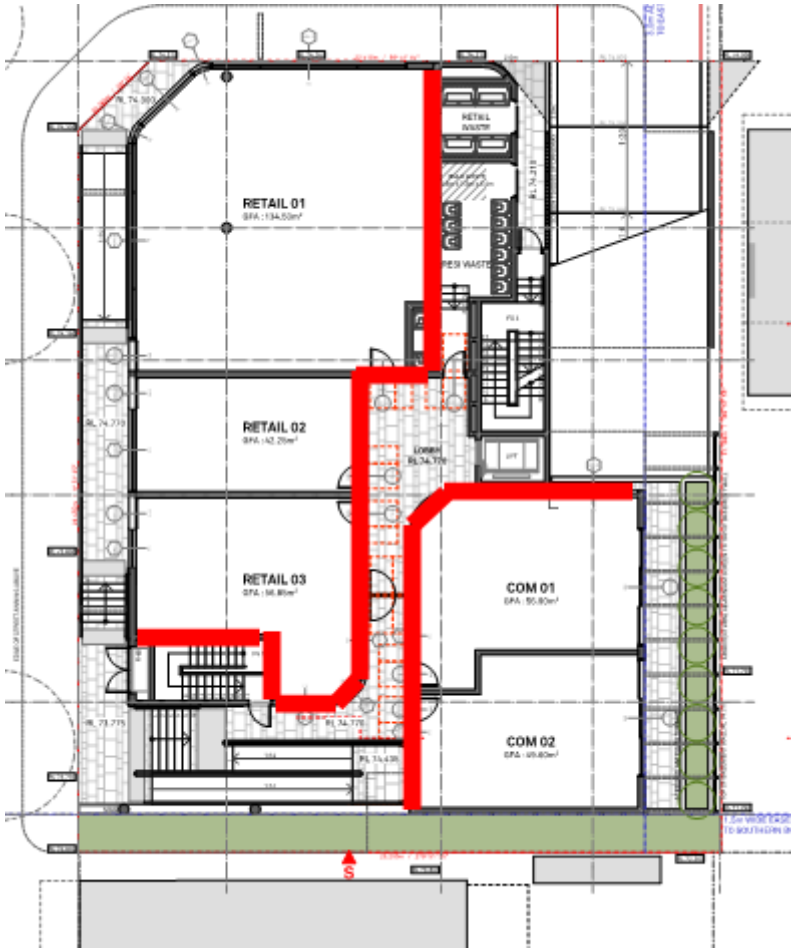
RETAIL 03
COM 01
COM 02

		Action by applicant	Certifier action
J1.5	Internal walls to unconditioned Required total R-value R1.0	Note	Note
Typical options	Stud wall ……..R 0.5 Masonry wall ……R 0.6 100 Hebel …….R 1.4 AFS/Dincel wall ……...R 0.48	Provide R 0.5 insulation Provide R 0.4 insulation Provide nil insulation Provide R 0.5 insulation	Note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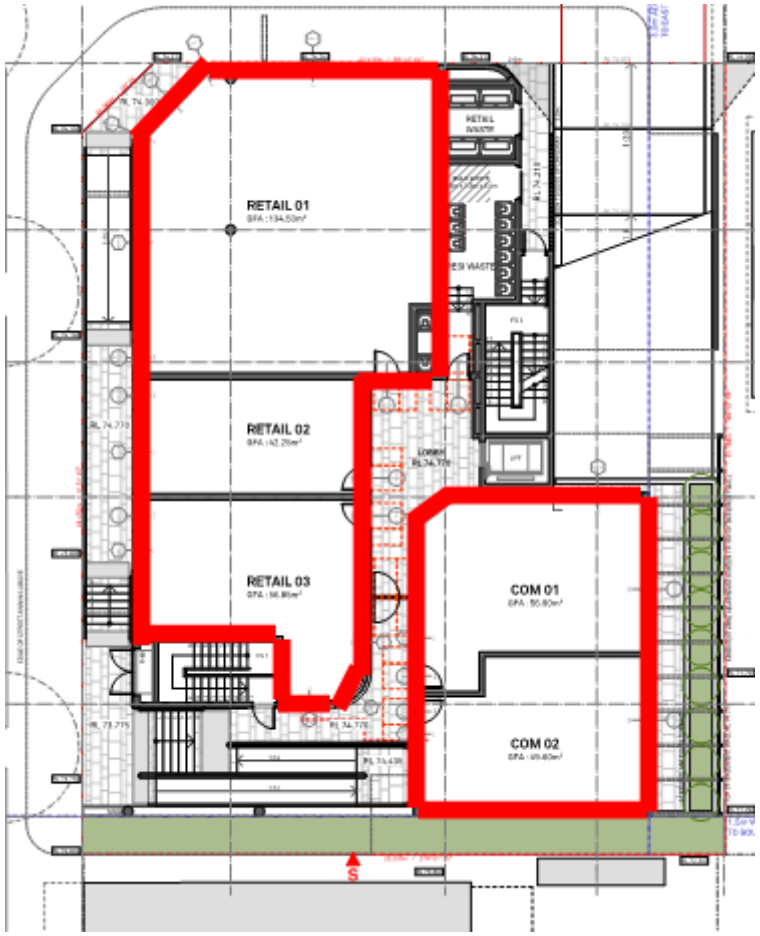
RETAIL 03
COM 01
COM 02

		Action by applicant	Certifier action
J1.6	**Floor insulation.** **Where > 1.5 ACH** Total floor R2.0 required		Typically enclosed rooms without mechanical ventilation. Note: As separation of Building Class, acoustic insulation may be required pursuant to Part F5.
	RC Floor R 0.3	Provide R 0.7 insulation.	Certify that the installation is deemed to satisfy

	Item	R-value	Remarks
1	**Indoor air film**	0.16	
2	**Solid concrete floor**	0.10	E.G. 150 RC = 0.15/1.44 = R 0.10 300 RC = 0.30/1.44 = R 0.20
3	**Insulation**	-	To be determined
4	**Outdoor air film**	0.04	
	Total without insulation	**0.30**	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RETAIL 03
COM 01
COM 02

2. PART J2 EXTERNAL GLAZING -base building

		Action by applicant	Certifier action
	Total window performance i.e. glass AND frame.	Select from http://www.wers.net/werscontent/certified-products-commercial or use their search engine http://www.wers.net/werscontent/search-commercial-products Do not use +/- 10% rule!	Check and certify manufacturer's certificates if complies. Manufacturer's window data ***MUST MATCH*** U and SHGC values in the following calculator. **VALIDATION** Provide data of selected windows to Assessor for validation (see bottom of cover page).

NCC VOLUME ONE GLAZING CALCULATOR (first issued with NCC 2014)

HELP

Building name/description: CAPRAL CAP-058-014 double glazed ComfortPlusNeutral to South [Retail 03 and Com 02]

Application: shop display

Climate zone: 5

Storey: G

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A	44.2m²		40.8m²		20m²		74.8m²	17m²	
Option B									n/a
Glazing area (A)	*27.5m²*	.....	*25.9m²*	.....	*16.7m²*	.....	*33.5m²*	*8.91m²*	

Number of rows preferred in table below: 10 *(as currently displayed)*

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS								SHADING		CALCULATED OUTCOMES OK (if inputs are valid)					
Glazing element		Facing sector		Size			Performance		P&H or device		Shading		Multipliers		Size	Outcomes
ID	Description (optional)	Option A facades	Option B facades	Height (m)	Width (m)	Area (m²)	Total System U-Value (AFRC)	Total System SHGC (AFRC)	P (m)	H (m)	P/H	G (m)	Heating (S_H)	Cooling (S_C)	Area used (m²)	Element share of % of allowance used
1	Com 01 single clear	N		2.70	2.40		6.1	0.75	2.200	2.700	0.81	0.00	0.28	0.34	6.48	24% of 59%
2	Ret 01 single clear	N		2.70	7.80		6.1	0.75	2.200	2.700	0.81	0.00	0.28	0.34	21.06	76% of 59%
3	Ret 01 single clear	NW		2.70	3.30		6.1	0.75	2.200	2.700	0.81	0.00	0.45	0.41	8.91	100% of 66%
4	Ret 03 CAP-058-014	S		2.70	2.70		4.3	0.47	*2.200*	4.500	*0.00*	*1.80*	*1.00*	*1.00*	7.29	44% of 88%
5	Com 02 CAP-058-014	S		2.70	3.50		4.3	0.47	2.200	1.000	2.20	-1.70	0.64	0.54	9.45	56% of 88%
6	Ret 01 single clear	W		2.70	7.80		6.1	0.75	2.200	2.700	0.81	0.00	0.49	0.50	21.06	63% of 78%
7	Ret 02 single clear	W		2.70	3.00		6.1	0.75	2.200	2.700	0.81	0.00	0.49	0.50	8.10	24% of 78%
8	Ret 03 single clear	W		2.70	1.60		6.1	0.75	2.200	2.700	0.81	0.00	0.49	0.50	4.32	13% of 78%
9	Com 02 single clear	E		2.70	3.60		6.1	0.75	2.200	1.000	2.20	-1.70	0.00	0.25	9.72	38% of 62%
10	Com 01 single clear	E		2.70	6.00		6.1	0.75	2.200	1.000	2.20	-1.70	0.00	0.25	16.20	63% of 62%

IMPORTANT NOTICE AND DISCLAIMER IN RESPECT OF THE GLAZING CALCULATOR

The Glazing Calculator has been developed by the ABCB to assist in developing a better understanding of glazing energy efficiency parameters. While the ABCB believes that the Glazing Calculator, if used correctly, will produce accurate results, it is provided "as is" and without any representation or warranty of any kind, including that it is fit for any purpose or of merchantable quality, or functions as intended or at all. Your use of the Glazing Calculator is entirely at your own risk and the ABCB accepts no liability of any kind.

if inputs are valid

3. PART J3 BUILDING SEALING - base building

		Action by applicant	Certifier action
J3.1	Evaporative cooler.	Not applicable	Note.
J3.2	Otherwise seal building if provided in the building		Note

4. PART J4 AIR MOVEMENT – not used

		Action by applicant	Certifier action
J4.0		None	Note

5. PART J5 AIR CONDITIONING. -base building

		Action by a/c designer at CC and thereafter	Certifier action
J5.1		Not used	Note
J5.2	When not occupied	• Capable of being deactivated. • Dampers close when a/c deactivated. • Ductwork sealed and insulated. • Capable of controlling temperature during sleeping periods. • Fan power to Table J5.2.	Refer separate report by a/c designer Certify that the installation is deemed to satisfy

		Action by a/c designer at CC and thereafter	Certifier action
J5.3	Time Switch		Refer separate report by a/c designer Certify that the installation is deemed to satisfy
5.4	Applies if Heating And Cooling System installed		Refer separate report by a/c designer Certify that the installation is deemed to satisfy
5.5	Applies if Miscellaneous Exhaust Systems installed		Refer separate report by a/c designer Certify that the installation is deemed to satisfy

6. PART J6 ARTIFICIAL LIGHTING AND POWER -base building

		Action by applicant	Certifier action
6			Certify that the installation is deemed to satisfy Refer also lighting designer certifications for compliance with Illumination code Part F4.
6.2		Submit to BCA, completed calculations from the following spreadsheet http://www.abcb.gov.au/Resources/Tools-Calculators/Lighting-Calculator	Refer separate report by lighting designer

		Action by applicant	Certifier action
			Certify that the installation is deemed to satisfy
6.3	Room or space	Provide individually operated switch or other device control unless SOU for people with disability or aged. Locate	Refer separate report by lighting designer Certify that the installation is deemed to satisfy
	Switch controls location	In visible position in room serviced or adjacent room.	
	Time switch	To Specification J6	Refer separate report by lighting designer Certify that the installation is deemed to satisfy
6.4	Interior Decorative & Display Lighting	Not applicable	Refer separate report by lighting designer Certify that the installation is deemed to satisfy
6.5	Perimeter lighting	Control by a • daylight sensor or a • programmable time switch.	Refer separate report by lighting designer Certify that the installation is deemed to satisfy
	When the perimeter lighting load exceeds 100W	the light source efficacy must not be less than 60 Lumens/W or Controlled by a motion detector in accordance with Specification J6	Refer separate report by lighting designer

		Action by applicant	Certifier action
			Certify that the installation is deemed to satisfy
	Decorative lighting		Refer separate report by lighting designer Certify that the installation is deemed to satisfy
6.6	Boiling Water and chilled water storage units		Refer separate report by lighting designer Certify that the installation is deemed to satisfy

Main Menu

LIGHTING CALCULATOR FOR USE WITH J6.2(b) VOLUME ONE (First issued with NCC 2014)

Multiple Lighting Systems Calculator | Help screen

Building name/description: 91-93 McIntosh Road NARRAWEENA

Classification: Class 6

Number of rows preferred in table below: 6 *(as currently displayed)*

ID	Description	Floor area of the space	Perimeter of the space	Floor to ceiling height	Design Illumination Power Load	Space	Adjustment Factor One				Adjustment Factor Two				OVERALL DESIGN PASSES	
							Adjustment Factor One	Dimming Percentages		Design Lumen Depreciation Factor	Adjustment Factor Two	Dimming Percentages		Design Lumen Depreciation Factor	System Illumination Power Load Allowance	Lighting System Share of % of Aggregate Allowance Used
							Adjustment Factors	% Area	% of full power		Adjustment Factors	% Area	% of full power			
1	Basement	642.0 m²	104 m	2.6 m	200 W	Carpark - general									3852 W	26% of 7%
2	Retail 01	135.0 m²	46 m	2.7 m	200 W	Retail space including a museum and gallery whose purpose is the sale of objects									3453 W	26% of 7%
3	Retail 02	49.0 m²	31 m	2.7 m	100 W	Retail space including a museum and gallery whose purpose is the sale of objects									1540 W	13% of 7%
4	Retail 03	57.0 m²	34 m	2.7 m	100 W	Retail space including a museum and gallery whose purpose is the sale of objects									1766 W	13% of 7%
5	Com 01	62.0 m²	31 m	2.7 m	100 W	Office - artificially lit to an ambient level of less than 200 lx									579 W	13% of 7%
6	Com 02	40.0 m²	26 m	2.7 m	80 W	Office - artificially lit to an ambient level of less than 200 lx									406 W	10% of 7%
				Total	780 W									*Total*	11596 W	

IMPORTANT NOTICE AND DISCLAIMER IN RESPECT OF THE LIGHTING CALCULATOR

The Lighting Calculator has been developed by the ABCB to assist in developing a better understanding of lighting energy efficiency parameters. While the ABCB believes that the Lighting Calculator, if used correctly, will produce accurate results, the calculator is provided "as is" and without any representation or warranty of any kind, including that it is fit for any purpose or of merchantable quality, or functions as intended or at all. Your use of the Lighting Calculator is entirely at your own risk and the ABCB accepts no liability of any kind.

if inputs are valid

7. PART J7 SWIMMING POOL & SPA – not applicable

		Action by applicant	Certifier action
7.2		None	Note

8. PART J8 ACCESS FOR MAINTENANCE -base building

		Action by applicant	Certifier action
8.2	Provide access to any operable controls.	Inclusions Times switches Thermostats Air dampers Light fittings Heat transfer equipment	Certify that respective controls are in place.

9. NSW J(A)1 BUILDING FABRIC – apartments

	Deemed to satisfy	Action by applicant	Certifier action
Insulation	Thermal construction to J1.2	To AS/NZS 4859.1 Selection / branding / installation	Certify that the installation is deemed to satisfy
	Thermal breaks to external metal framing.	Provide thermal break DTS are • 15mm styrene • 25 timber OR mass insulation at fixing Note: also applies to spandrel panels or curtains walls where no window.	Certify that the installation is deemed to satisfy
Ceiling insulation	Compensating insulation loss	Adjust to the following table unless otherwise indicated by NatHERS	Certify that the installation is deemed to satisfy

Table J1.3b ADJUSTMENT OF MINIMUM R-VALUE FOR LOSS OF CEILING INSULATION

Percentage of ceiling area uninsulated	Minimum R-Value of ceiling insulation required to satisfy J1.3(a)							
	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
	Adjusted minimum R-Value of ceiling insulation required to compensate for loss of ceiling area insulation							
0.5% to less than 1.0%	2.8	3.4	4.0	4.7	5.4	6.2	6.9	[illegible]
1.0% to less than 1.5%	2.9	3.6	4.4	5.2	6.1	7.0	[illegible]	
1.5% to less than 2.0%	3.1	3.9	4.8	5.8	6.8	[illegible]		
2.0% to less than 2.5%	3.3	4.2	5.3	6.5	[illegible]			
2.5% to less than 3.0%	3.6	4.6	5.9	Not Permitted				
3.0% to less than 4.0%	4.2	5.7	[illegible]					
4.0% to less than 5.0%	5.0	[illegible]						
5.0% or more	[illegible]							

Note: Where the minimum *R-Value* of ceiling insulation *required* to satisfy J1.3(a) is between the values stated, interpolation may be used to determine the adjusted minimum *R-Value*.

		Action by applicant	Certifier action
Floor edge insulation	Slab on ground heated.	NA	Note

10. NSW J(A)2 BUILDING SEALING - apartments

		Action by applicant	Certifier action
Building sealing			Note

11. NSW J(A)3 AIR CONDITIONING AND VENTILATION SYSTEMS - apartments

		Action by applicant	Certifier action
	Must be capable of being deactivated • when the sole-occupancy unit, building or part of the building served is not occupied; and • where the air-conditioning unit or system has motorised outside air and return dampers, close the dampers when the air-conditioning unit or system is deactivated	Provide deactivation feature as required.	Certify that the installation is deemed to satisfy

		Action by applicant	Certifier action
	• have any supply and return ductwork sealed and insulated in accordance with Specification J5.2		
	A time switch	Applies to common areas such as common corridors, common rooms, service and plant rooms and the alike. Not required if serves only one sole occupancy unit.	Certify that the installation is deemed to satisfy

12. NSW J(A)4 HEATED WATER SUPPLY - apartments

		Action by applicant	Certifier action
		Refer Plumbing Code o	Certify that the installation is deemed to satisfy

13. NSW J(A)5 ACCESS FOR MAINTENANCE - apartments

		Action by applicant	Certifier action
	Provide access to • adjustable or motorised shading devices; and • time switches and motion detectors; and • room temperature thermostats; and	Ensure that all devices are accessible.	Certify that the installation is deemed to satisfy

		Action by applicant	Certifier action
	• plant thermostats such as on boilers or refrigeration units; and • motorised air dampers and control valves; and • reflectors, lenses and diffusers of light fittings; and • heat transfer equipment		

END OF REPORT