

Appendix No. 5

BCA ANALYSIS – PART J

BUILDING CODE OF
AUSTRALIA ANALYSIS

PART J

**NEW WAREHOUSE, OFFICE
&
SHOWROOM**

AT

**LOT 34 OF DP 1036699
60 JACK WILLIAMS DRIVE
PENRITH NSW 2570**

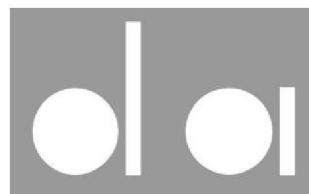
FOR

CREST OFFICE INTERIORS

JUNE 2013

DUTAILLIS | ARCHITECTS

EDUCATION COMMERCIAL INDUSTRIAL
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**Part J
General**

The building is located in Penrith, New South Wales, Climate Zone: 6 (Six).

The building is a Class:

- 1a A single dwelling.
- 1b A boarding house, guest house or hostel.
- 2 A building containing 2 or more sole occupancy units each being a separate dwelling.
- 3 A residential building, other than a Building of Class 1 & 2.
- 4 A dwelling in a building that is a Class 5, 6, 7, 8 or 9.
- 5 An office building used for professional or commercial purposes, excluding buildings of Class 6, 7, 8 or 9.
- 6 A shop or other building for the sale of goods by retail or the supply of services direct to the public
- 7 A building which is a car park or for storage or display of goods or produce for sale by wholesale.
- 8 A laboratory, or a building in which a handicraft or process for the production, assembling, altering, repairing, packing, finishing, or cleaning of goods or produce is carried on for trade, sale or gain.
- 9a A building of a public nature; a health care building.
- 9b An assembly building, including a trade workshop, laboratory or the like in a Primary School or Secondary School.
- 10a A non-habitable building being a private garage, carport, shed or the like.
- 10b A structure being a fence, mast, antenna, retaining or free standing wall, swimming pool or the like.

This project has been analysed using the Deemed to Satisfy provisions of Part J of the Building Code of Australia. Verification methods JV1, JV2, JV3 are not applicable. This report concerns only the proposed new residential & educational building at the site.

J 1.0 BUILDING FABRIC

J.1.1 General Commentary

This building is required to comply with this section of the Building Code of Australia for the conditioned parts of the building and the envelope of the conditioned space.

J 1.2 Thermal Construction General

Comply with AS/NZs 4859.1.

This building will comply with the general requirements of this section regarding the correct installation of insulation. The contractors installing the insulation will be required to provide details of their installation methods.

J 1.3 Roof and Ceiling Construction

This building is required to have a thermal break between the metal deck and metal battens/purlins. The use of blanket insulation between the roofing and the metal battens satisfies this requirement.

The building is required to have a total roof and ceiling R-Value of R3.2 with the direction of heat flow downwards.

In addition, the ceilings may have areas where the ceiling insulation is reduced for exhaust fans, flues or recessed lighting. The area of uninsulated ceiling cannot exceed 5% of the ceiling area. Insulation will be adjusted to meet the total R-Value noted in Table J1.3b in proportion to the loss of ceiling insulation.

From Specification J 1.3 the typical R-Value of the roofing is less than 0.36 prior to any insulation installation for an unventilated roof space. The installation of blanket insulation and R4.0 ceiling batts fulfils this Total R-Value requirement.

J 1.4 Roof Lights

There are no roof lights proposed for the conditioned part of this project.

J 1.5 Walls - External

The building uses a Concrete external wall system with plasterboard lining on furring channels for the inner walls of the conditioned space.

Accordingly, the external walls of the building is required to achieve the following:-

- 1) achieve a minimum total R-Value of 1.4
- 2) satisfy glazing energy index Option B of table J2.4a

From the Specification J1.5 Wall Construction Schedule the typical wall system with plasterboard lining would have an R-Value of less than 0.12. It is proposed to use foil faced rigid cellular insulation sheet with an air space and furring channel to meet the minimum R-Values. Products such as “Foil Board” or “Kingspan Kooltherm K10” should be used.

Walls – Other

The building has walls between conditioned and non conditioned space. These walls are required to achieve the following:-

- 1) Achieve a minimum R- Value of 1.8
- 2) For enclosed areas with not more than 1.5 air changes per hour the R-Value of the wall is reduced R1.0

From the specification J1.5 wall construction schedule the typical wall system with plasterboard lining would have an R-Value of less than 0.12. It is proposed to use foil faced rigid cellular insulation sheet with an air space and furring channel to meet the minimum R-Values. Products such as “Foil Board” or “Kingspan Kooltherm K10” should be used.

J 1.6 Floors

The building is generally a concrete slab on ground with no in slab heating proposed.

The floor between the first floor and the Carpark is required to be insulated. The carpark is not fully enclosed or restricted to 1.5 air changers per hour. Accordingly the floor is required to achieve a minimum total R-Value of 2.0

From specification J1.6 Floor ConstructionSchedule the typical floor system would have an R-Value of less than 0.3. It is proposed to line the underside of the floor with foil faced cellular insulation sheets to meet the minimum R-Values. Products such as “Foilboard” or “Kingspan Kooltherm K10” should be used.

J 2.0 EXTERNAL GLAZING

J 2.1 This building is required to comply with this section of the Building Code of Australia.

J 2.2 This section is not applicable.

J 2.3 This section is not applicable.

J 2.4 The glazing has been calculated using the Australian Building Code Board's provided spreadsheet. Energy Index Option B has been used to match the insulation requirements of Part J1.5. (Refer Appendix A) An allowance of +0.5 for the U-Values has been included for standard aluminium frames. The selected glazing is to be as follows:-

East facing glazing: Minimum glazing to be 6.38mm Grey glazing equal to Viridian Sunenergy Laminate to provide a minimum U-Value of 4.1 and a SHGC of 0.44.

North facing glazing: Minimum glazing to be 6.38mm Clear glazing equal to Viridian Sunenergy Laminate to provide a minimum U-Value of 4.1 and a SHGC of 0.58.

West facing (Internal) glazing: Minimum glazing to be 6.38mm clear glazing equal to Viridian VLam to provide a minimum U-Value of 5.7 of a SHGC of 0.79.

J 3.0 BUILDING SEALING

J 3.1 The building is required to comply with this section of the Building Code of Australia for conditioned parts only.

J 3.2 Chimneys and Flues

There is no solid fuel heating and related chimneys or flues. No action required.

J.3.3 Roof Lights

There are no roof lights to the conditioned space. No action required.

J.3.4 External Doors and Windows

Seals are to be provided to external doors and windows in compliance with J3.4(a).

The main entrance to the building will be equipped with a self closing door (automatic door) in compliance with J3.4(d).

J.3.5 Exhaust Fans

Miscellaneous individual exhaust fans to areas such as bathrooms, domestic kitchen areas and habitable rooms are to be equipped with self closing dampers.

J.3.6 Construction of Roofs, Walls and Floors.

The construction is slab on ground with plasterboard walls and a suspended ceiling to the conditioned space. Lining systems will be close fitting and sealed at all junctions with skirtings, architraves and the like. This satisfies Clause (a) and (b).

J.3.7 Evaporative Coolers

The building is not fitted with evaporative cooling.

J 4.0 AIR MOVEMENT

J 4.1 This section does not apply to this building. No action required.

J 5.0 AIR-CONDITIONING AND VENTILATOR SYSTEMS

Air conditioning and mechanical ventilation will be provided to the building. This is in addition to the cross ventilation measures. The following applies where air conditioning is selected:

Office & Stair Lobby:

The office and stair lobby is a conditioned space with reverse cycle air conditioning connected to supply and return ductwork in the ceiling. Ducting for the supply is a combination of rigid and flexible ductwork. The system capacity will exceed 35kW_r.

Showroom:

The showroom is a conditioned space with reverse cycle air conditioning connected to supply and return ductwork in the ceiling. Ducting for the supply is a combination of rigid and flexible ductwork. The system capacity will exceed 35kW_r.

Warehouse:

The warehouse is not a conditioned space as no heating or cooling will be provided. Natural ventilation will be provided.

Carpark:

The carpark is not a conditioned space as no heating or cooling will be provided. Natural ventilation will be provided.

Fire Isolated Exit:

The fire isolated exit stair and corridor will be provided with an automatic air pressurisation system.

Toilet Facilities & Tea Room:

Mechanical ventilation will be provided to the toilet facilities and tea rooms.

J.5.1 This section is not applicable.

J 5.2 For a building required to comply with this section the following applies.

Air-Conditioning requirements.

- a. Each level will have its own controls to allow unused parts of the building to be made inactive (compliant with J5.2(a)(i)).

- b. Make up air will be equipped with dampers that close when the air conditioning system is inactive (compliant with J5.2(a)(ii)).
- c. No sole occupancy units (compliant with J5.2(a) (iii)).
- d. Supply/return ductwork will be sealed and insulated in accordance with Specification J5.2 (compliant with J5.2 (a)(iv)).
- e. The air conditioning for each level will be zoned separately. Each area will be separately thermostatically controlled, not be controlled by mixing actively heated or cooled air and limit reheating in accordance with J5.2 (a)(v)(A)(B)(C).
- f. Variable speed fans for air supply will be used except for package air conditioning units (compliant with J5.2 (a) (vi)).
- g. An outdoor air economy cycle is required for air conditioning units that exceed 35kwr (compliant with J5.2(a)(vii)(A)(B)).
- h. Not a class 3 building. (compliant with J5.2(a)(viii)).
- i. The system has a capacity greater than 1000 l/s and will be required to comply with Table J5.2a “Maximum fan power” (compliant with J5.2(a)(ix)). This table is duplicated on the following page:-

Table J5.2a Maximum fan power

Air-conditioning sensible heat load (W/m ² of the floor area of the conditioned space)	Maximum fan power (W/m ² of the floor area of the conditioned space)	
	For a building of not more than 500 m ² floor area	For a building of more than 500 m ² floor area
Up to 100	4.1	6.4
101 to 150	7.3	10.4
151 to 200	10.5	14.1
201 to 300	17.1	21.5
301 to 400	23.6	28.4

Notes: For more than 400 W/m² internal load –
 (a) in a building of not more than 500 m² floor area, use 0.07 W of fan power for each Watt of internal load; and
 (b) in a building of more than 500 m² floor area, use 0.09 W of fan power for each Watt of internal load.

- j. The above table does not apply for the power required for the following:-
 (A) An energy reclamation system that preconditions outside air.
 (B) Process related components such as high efficiency particulate filters.

Mechanical Ventilation Requirements

- a. All mechanical ventilation will be equipped with controls to limit its use to times when the building is occupied (compliant with J5.2(b)(i)).
- b. The mechanical ventilation serving the conditioned space will not exceed the minimum quantity required by Part F4 by more than 20% (compliant with J5.2b(ii) (A)). This does not include the following:-
 (aa) Unconditioned outside air to provide free cooling;
 (bb) Balance air to suit required mechanical ventilation; or
 (cc) An energy reclamation system that preconditions outside air.
- c. The building does not have an occupancy that exceeds one (1) per square meter and accordingly the mechanical ventilation has no requirement for energy recovery or modulation of the system.

- d. Any mechanical ventilation air flow not provided by air-conditioning that exceeds 1000 l/s will be required to meet certain criteria (Compliant with Clause J5.2(b)(iii)(A)). These are as follows:-
 - (aa) Fan power to air flow ratio of 0.5 watts/(l/s); or,
 - (bb) Fan power to air flow ratio of 0.75 watts/(l/s) with filters;
- e. Items d. above does not apply for the power required for the following:-
 - (C) An energy reclamation system that preconditions outside air.
 - (D) Process related components such as high efficiency particulate filters.

J 5.3 Programmable time switches will be provided to the air-conditioning units of greater than 10kW_r, ventilation systems with an air flow greater than 1000l/s and any heating system of more than 10kW_r.

- J 5.4**
- (a) The air-conditioning system does not use water based equipment for heating or cooling system (compliant with J5.4(a))
 - (b) The air-conditioning system does not use a gas fired heater (compliant with J5.4(b)(i)).
 - (c) The air-conditioning system for the individual areas of the building are a package system. Package air-conditioning equipment of not less that 65kW_r must comply with table J5.4c “Minimum energy efficiency ratio for package air-conditioning equipment” This table is duplicated below:-

Table J5.4c Minimum energy efficiency ratio for packaged air-conditioning Equipment

Equipment	Minimum energy efficiency ratio (W/W ^{input power})	
	65 kW _r to 95 kW _r capacity	More than 95 kW _r
Air-conditioner – cooling	2.70	2.80
Heat pump – cooling	2.60	2.70

- (d) The air-conditioning system does not use a refrigerant chiller (compliant with J5.4(d)).
- (e) The air-conditioning system is not required to comply with fan motor power limits (compliant with J5.4(e)).
- (f) The air-conditioning system does not use a cooling tower (compliant with J5.4(f)).
- (g) The air-conditioning system does not use a closed circuit cooler. (compliant with J5.4(g)).
- (h) The air-conditioning system does not use an evaporative cooler. (compliant with J.5.4(h))
- (i) The air-conditioning system does not use a spray water pump (compliance with J5.4(i)).



J 5.5 The building does not have a commercial kitchen or other variable demand exhaust requirements. No action required.

J 6.0 **ARTIFICIAL LIGHTING AND POWER**

J 6.1 This section applies to the full extent of this building.

J 6.2 See Appendix B for Table J6.2

The Aggregate Design Illumination Power Load is 37961 watts or approximately 17.56 watts/m². The lighting for the interior of the building will not exceed this total power load. The electrical contractor is to select fittings accordingly and certify that the installation complies with this total power load.

J 6.3 **Interior Artificial Lighting and Power Control**

Light switches must be located in the room they service or directly adjacent to the room they service in a visible accessible location (J6.3(c)).

All other requirements of this section are not applicable to this project.

J 6.4 **Interior Decorative and Display Lighting**

This section is not applicable.

J 6.5 **Artificial Lighting around the Perimeter of a Building**

External lighting is on a daylight sensor or time switch. The selected luminaries will be required to use lamps with an efficacy greater than 60 lumens/watt.

J 6.6 **Boiling Water and Chilled Water Storage Units**

Boiling water and chilled water storage units will be controlled with a time switch in accordance with specification J6. This should be a programmable time switch on the individual circuit of the above unit.

J 7.0 **HOT WATER SUPPLY**

J 7.1 Not used.

J 7.2 A hot water system for food preparation and sanitary purposes will be designed and installed in accordance with Section 8 of AS 3500.4.

J 7.3 Not applicable.

J 7.4 Not applicable.

J 8.0 ACCESS FOR MAINTENANCE

J 8.1 The building must comply with this section of the Building Code of Australia.

J 8.2 Access is provided for plant and equipment and components in this building.
This is to include the following items:-

- (a) Adjustable or motorised shading devices.
- (b) Time switches.
- (c) Motion detectors.
- (d) Room temperature thermostats.
- (e) Plant room thermostats on equipment such as boilers or refrigeration units.
- (f) Motorised air dampers and control valves.
- (g) Reflectors, lenses and diffusers of light fittings.
- (h) Heat transfer equipment.
- (i) On-site renewable energy systems or equipment.

J 8.3 The building must include a facility to record the consumption of gas and electricity.

**SUMMARY AND CHECKLIST**

The following items will be required. These are items not currently noted on the Drawings for this project.

		Design Information provided prior to construction	Inspected During Construction	Required at or Before Completion
J1	BUILDING FABRIC			
1	Contractor to provide details of the installation of insulation to conform to the BCA.	x		
2	Thermal separation of metal roof/metal battens.		x	
3	Insulation to the roof/ceiling to scheme a minimum Total R-Value of R3.2		x	
4	Insulation to the external walls to achieve minimum Total R-Value of R1.4		x	
5	Insulation to the common walls to unconditioned space to achieve a minimum Total R-Value of R1.8			
6	Insulation to the first floor to achieve min. Total R-Value of R2.0		x	
J2	EXTERNAL GLAZING			
1	Glass Certificate for energy efficiency requirements and safety glazing.			x
J3	BUILDING SEALING			
1	External doors to have door seals.	x	x	
2	Main entry door to include automatic door.		x	
3	Bathroom exhaust fans to have self closing dampers.	x	x	
4	General enclosure.		x	
J5	AIR CONDITIONING AND VENTILATION			
1	Contractor to provide details of air conditioning units.	x		
2	Areas must have individual controls with time switches and temperature controls.	x		
3	Make up dampers to be provided. Contractor to provide detail.	x	x	
4	Compliance with Table J5.2a required for air conditioning. Contractor to provide details.	x	x	
5	Contractor to certify air conditioning and heating to be in full compliance with the Building Code of Australia			x
6	Contractor to provide details of exhaust fans and mechanical ventilation.	x		
7	Time switch to be provided to ventilation system.		x	
8	Contractor to certify ventilation to be in full compliance with the Building Code of Australia.			x
J6	LIGHTING AND POWER			
1	Building internal lighting must not exceed the maximum illumination power density. Certified by Contractor.			x
2	An occupant activation device is required for all toilets, air locks, stairs and corridors. A movement sensor should be used.	x	x	
3	Room lighting on individual switches for all areas.		x	
4	External lighting must be on a time switch or daylight sensor.		x	
5	External lights must have an average light source efficacy of not less than 60 lumens/watt. Contractor to certify.			x
6	Boiling water and chilled water storage units on a time switch.		x	
J7	HOT WATER SUPPLY			
1	Contractor to certify compliance with Section 8 of AS 3500.4	x		x
J8	ACCESS FOR MAINTENANCE			
1	All plant and equipment must be accessible.	x	x	
2	A facility to record gas and electricity consumption must be provided.	x		x

APPENDIX A

Australian Building Code Board's Glazing Spreadsheets

BCA VOLUME ONE GLAZING CALCULATOR (first issued with BCA 2013)

Building name/description

5642 - Crest Office Interiors - Level 1 - Issue A

Application

showroom display

Climate zone

6

Storey

1

Facade areas

N	NE	E	SE	S	SW	W	NW	internal
								80m²
68.6m²		79.5m²						n/a

Option A

Option B

Glazing area (A) 5.4m²

Glazing area (B) 17.7m² 42.9m²

Number of rows preferred in table below

12 (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 (m ²)	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 (m ²)	Element share of % of allowance used
1	Window W3a		E	0.90	5.30		4.6	0.44	0.900	0.900	1.00	0.00	0.35	0.44	4.77	10% of 98%
2	Window W3b		E	1.80	5.30		4.6	0.44	0.900	1.800	0.50	0.00	0.71	0.66	9.54	23% of 98%
3	Window W4a		E	0.90	5.30		4.6	0.44	0.900	0.900	1.00	0.00	0.35	0.44	4.77	10% of 98%
4	Window W4b		E	1.80	5.30		4.6	0.44	0.900	1.800	0.50	0.00	0.71	0.66	9.54	23% of 98%
5	Window W5a		E	0.90	5.30		4.6	0.44	0.900	0.900	1.00	0.00	0.35	0.44	4.77	10% of 98%
6	Window W5b		E	1.80	5.30		4.6	0.44	0.900	1.800	0.50	0.00	0.71	0.66	9.54	23% of 98%
7	Window W7		N	1.80	4.92		4.6	0.58	0.200	1.800	0.11	0.00	0.97	0.90	8.86	50% of 74%
8	Window W8		N	1.80	4.92		4.6	0.58	0.200	1.800	0.11	0.00	0.97	0.90	8.86	50% of 74%
9	Window W11	internal		1.80	1.00		6.2	0.79			2.00	0.00	0.55	0.55	1.80	33% of 23%
10	Window W12	internal		1.80	1.00		6.2	0.79			2.00	0.00	0.55	0.55	1.80	33% of 23%
11	Window W13	internal		1.80	1.00		6.2	0.79			2.00	0.00	0.55	0.55	1.80	33% of 23%
12																

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



BCA VOLUME ONE GLAZING CALCULATOR (first issued with BCA 2013)

Building name/description

5642 - Crest Office Interiors - Level 2 - Issue A

Application

showroom display

Climate zone

6

Storey
1

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A									80m ²
Option B	68.6m ²		79.5m ²						n/a

Option A

Option B

Glazing area (A) 3.6m²

Glazing area (B) 17.7m² 42.9m²

Number of rows preferred in table below

11 (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 (m ²)	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 (m ²)	Element share of % of allowance used
1	Window W8a		E	0.90	5.30		4.6	0.44	0.900	0.900	1.00	0.00	0.35	0.44	4.77	10% of 98%
2	Window W8b		E	1.80	5.30		4.6	0.44	0.900	1.800	0.50	0.00	0.71	0.66	9.54	23% of 98%
3	Window W9a		E	0.90	5.30		4.6	0.44	0.900	0.900	1.00	0.00	0.35	0.44	4.77	10% of 98%
4	Window W9b		E	1.80	5.30		4.6	0.44	0.900	1.800	0.50	0.00	0.71	0.66	9.54	23% of 98%
5	Window W10a		E	0.90	5.30		4.6	0.44	0.900	0.900	1.00	0.00	0.35	0.44	4.77	10% of 98%
6	Window W10b		E	1.80	5.30		4.6	0.44	0.900	1.800	0.50	0.00	0.71	0.66	9.54	23% of 98%
7	Window W11		N	1.80	4.92		4.6	0.58	0.200	1.800	0.11	0.00	0.97	0.90	8.86	50% of 74%
8	Window W12		N	1.80	4.92		4.6	0.58	0.200	1.800	0.11	0.00	0.97	0.90	8.86	50% of 74%
9	Window W14	internal		1.80	1.00		6.2	0.79			2.00	0.00	0.55	0.55	1.80	50% of 15%
10	Window W15	internal		1.80	1.00		6.2	0.79			2.00	0.00	0.55	0.55	1.80	50% of 15%

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if inputs are valid



BCA VOLUME ONE GLAZING CALCULATOR (first issued with BCA 2013)

Building name/description

5642 - Crest Office Interiors - Level G - Issue A

Application

showroom display

Climate zone

6

Storey

G

Facade areas

N	NE	E	SE	S	SW	W	NW	internal
		71.5m ²						n/a

Option A

Option B

Glazing area (B) 14.3m²

Number of rows preferred in table below

5 (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 (m ²)	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 (m ²)	Element share of % of allowance used
1	Door D1		E	2.70	5.30		6.2	0.79	3.000	2.700	1.11	0.00	0.28	0.41	14.31	100% of 54%
2																
3																
4																
5																

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if inputs are valid



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APPENDIX B

Australian Building Code Boards Lighting Spreadsheet

Building name/description

5642 - Crest Office Interiors - Issue A

Classification

Class 7a

Number of rows preferred in table below

30

(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	Fixed Dimming Percentages		Design Lumen Depreciation Factor	Adjustment Factor Two	Fixed Dimming Percentages		Design Lumen Depreciation Factor	System Illumination Power Load Allowance	Lighting System Share of % of Aggregate Allowance Used
							Adjustment Factors	% of floor area controlled	% of full power	Adjustment Factors	% of floor area controlled	% of full power				
1	Warehouse	999.0 m ²	127 m	11.0 m	10 W	Storage with shelving higher than 75% of the height of the aisle lighting								13500 W	4% of 1%	
2	Car Park	328.9 m ²	94 m	3.0 m	25 W	Carpark - entry zone (first 20 m of travel)								9239 W	11% of 1%	
3	Stair Lobby - G	32.6 m ²	23 m	3.0 m	15 W	Entry lobby from outside the building								741 W	7% of 1%	
4	Fire Corridor - G	25.1 m ²	44 m	3.0 m	8 W	Corridors	(c) Motion detector							513 W	4% of 1%	
5	Fire Stair - G	4.4 m ²	10 m	3.0 m	8 W	Corridors	(b) Motion detector							71 W	4% of 1%	
6	Tea Room - G	12.2 m ²	14 m	2.4 m	6 W	Toilet, locker room, staff room, rest room and the like	(d) Motion detector							214 W	3% of 1%	
7	WC - G	2.2 m ²	6 m	2.4 m	6 W	Toilet, locker room, staff room, rest room and the like	(d) Motion detector							43 W	3% of 1%	
8	Corridor - G	2.0 m ²	6 m	2.4 m	8 W	Corridors								29 W	4% of 1%	
9	Comms - G	1.1 m ²	5 m	2.4 m	5 W	Plant room								11 W	2% of 1%	
10	Office - 1st	306.5 m ²	95 m	3.0 m	9 W	Office - artificially lit to an ambient level of 200 lx or more								3208 W	4% of 1%	
11	Foyer - 1st	33.3 m ²	23 m	3.0 m	8 W	Corridors								403 W	4% of 1%	
12	Fire Stair - 1st	11.9 m ²	15 m	3.4 m	8 W	Corridors	(c) Motion detector							234 W	4% of 1%	
13	Hall - 1st	11.1 m ²	21 m	2.7 m	8 W	Corridors	(c) Motion detector							227 W	4% of 1%	
14	WC1 - 1st	7.2 m ²	11 m	2.7 m	6 W	Toilet, locker room, staff room, rest room and the like	(d) Motion detector							135 W	3% of 1%	
15	WC2 - 1st	7.2 m ²	11 m	2.7 m	6 W	Toilet, locker room, staff room, rest room and the like	(d) Motion detector							135 W	3% of 1%	
16	Cleaner - 1st	2.8 m ²	7 m	2.7 m	5 W	Service area, cleaner's room and the like								25 W	2% of 1%	
17	Comms - 1st	1.3 m ²	5 m	2.7 m	5 W	Plant room								13 W	2% of 1%	
18	Access WC - 1st	5.4 m ²	9 m	2.7 m	6 W	Toilet, locker room, staff room, rest room and the like	(d) Motion detector							102 W	3% of 1%	
19	Showroom - 2nd	327.3 m ²	95 m	3.0 m	22 W	Retail space including a museum and gallery whose purpose is the sale of objects								8183 W	10% of 1%	
20	Foyer - 2nd	33.1 m ²	23 m	3.0 m	8 W	Corridors								402 W	4% of 1%	
21	Fire Stair - 2nd	11.9 m ²	15 m	3.4 m	8 W	Corridors	(c) Motion detector							234 W	4% of 1%	
22	Hall - 2nd	7.0 m ²	13 m	2.7 m	8 W	Corridors	(c) Motion detector							143 W	4% of 1%	
23	Access WC - 2nd	5.4 m ²	9 m	2.7 m	6 W	Toilet, locker room, staff room, rest room and the like	(d) Motion detector							102 W	3% of 1%	
24	Comms - 2nd	1.5 m ²	5 m	2.7 m	5 W	Plant room								15 W	2% of 1%	
25	Elec. - 2nd	1.5 m ²	5 m	2.7 m	5 W	Plant room								15 W	2% of 1%	

Main Menu

LIGHTING CALCULATOR FOR USE WITH J6.2(b) VOLUME ONE (First issued with NCC 2012)

Multiple Lighting Systems Calculator

Help screen

Building name/description

5642 - Crest Office Interiors - Issue A

Classification

Class 7a

Number of rows preferred in table below

30 (as currently displayed)

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							Adjustment Factors	% of floor area controlled	% of full power	Adjustment Factors	% of floor area controlled	% of full power				
26	Bev. - 2nd	1.5 m ²	5 m	2.7 m	5 W	Service area, cleaner's room and the like							15 W	2% of 1%		
27	Cleaner - 2nd	0.9 m ²	4 m	2.7 m	5 W	Service area, cleaner's room and the like							9 W	2% of 1%		
28																
29																
30																

Total 224 W

Total 37961 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.

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