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BCA 2012 Section J1 to J8 Compliance report – 8178/12

Proposed Class 5 Building
Professional Consulting Rooms

9 Gormly Ave,
Wagga Wagga NSW

NOTE: This report is to be read in conjunction with –

1. GPG Architecture & Design Drawings No. A1202-0001; A1202-1001; A1202-1002; A1202-3001; A1202-3002 & A1202-7001 dated 16/7/2012.

"DTS" ENERGY EFFICIENCY COMPLIANCE REPORT			
BUILDING CLASS	CLIMATE ZONE	JOB DESCRIPTION	DATE
5	4	Proposed New Professional Consulting Rooms - 9 Gormly Ave, Wagga Wagga NSW	10/07/12
BCA CLAUSE		MINIMUM COMPLIANCE FOR EACH SECTION	PROPOSED BUILDING
BUILDING FABRIC J.1			
J 1.1	Application of part	<p>Apply to building envelope of a class 2 to 9 building other than -</p> <ul style="list-style-type: none"> a Class 7,8 or 9b building that does not have a conditioned space; or an atrium or solarium that is not conditioned and is separated from the remainder of the building by an envelope. 	<p>The building envelope for the purpose of Section J includes internal and external walls, floor and roof areas and has been shown highlighted in the attached floor plan at Annex A.</p>
J 1.2	Thermal construction General	<p>Where required, insulation must comply with AS/NZS 4859.1 and be installed so that it-</p> <ul style="list-style-type: none"> abuts or overlaps adjoining insulation other than at supporting members such as studs, noggings, joists, furring channels and the like where the insulation must butt against the member; and forms a continuous barrier with ceilings, walls, bulkheads, floors or the like that inherently contribute to the thermal barrier; and does not affect the safe or effective operation of a service or fitting. <p>Where required, reflective insulation must be installed with-</p> <ul style="list-style-type: none"> the necessary airspace to achieve the required R-Value between a reflective side of the reflective insulation and a building lining or cladding; and the reflective insulation closely fitted against any penetration, door or window opening; and the reflective insulation adequately supported by framing members; and each adjoining sheet of roll membrane being- <ul style="list-style-type: none"> overlapped not less than 50 mm; or taped together <p>Where required, bulk insulation must be installed so that-</p> <ul style="list-style-type: none"> it maintains its position and thickness, other than where it crosses roof battens, water pipes, electrical cabling or the like; and 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 	<p>Where applicable Installation of Reflective and bulk insulation must be in accord BCA J1.2 and comply with AS/NZS 4859.1</p>

BUILDING FABRIC J.1 (cont)			
J 1.3a	Roof & Ceiling	<p>Climate 4 - must achieve a total R-value downwards depending on Solar absorptance (SA) as follows:</p> <ul style="list-style-type: none"> SA less than 0.4 = R3.2 downwards; SA greater than 0.4 but less than 0.6 = R3.7 downwards; & SA greater than 0.6 = R4.2 downwards (Ref. table J1.3a) <p><u>Note:</u> Thermal break criteria: A roof that has metal sheet roofing fixed to metal - purlins, rafters or battens; that does or does not have a ceiling lining fixed directly to the same metal framing must have a thermal break with an R-value no < R0.2 installed between the metal roofing and the metal frame.</p>	<p><u>New Roof & Ceiling Construction:</u></p> <ul style="list-style-type: none"> Metal Clad Roof 20° pitch (Ventilated) - Double-sided foil sisalation & R3.5 Bulk insulation to flat or raked ceilings. <p>- will achieve a total system R-Value >R3.7* downwards.</p> <p><u>Notes:</u></p> <ul style="list-style-type: none"> *Due to Roof Colour: Shale Grey, SA = 0.43 Thermal break - N/A to timber purlins. The above systems can be replaced with equivalent insulation systems that achieve a total system of R3.7 downwards
J 1.3b	Adjustment for loss of ceiling insulation	Due to operational or safety reasons associated with Exhaust fans, flues or recessed down lights the area of required ceiling insulation is reduced, the remaining ceiling insulation area must be increased in accord with table J1.3b	R3.5 bulk insulation to ceilings will comply See attached Ceiling Penetration Data Sheet at Annex B
J 1.4	Roof lights	Roof lights must have U & SHGC values in accord with Table J1.4.	Roof Lights comply see Roof Light Calculations at Annex C
J 1.5	Walls	<p>Climate 4 to 6 - External Walls must achieve a minimum system R value of 2.8</p> <p>Note -Minimum R-value can be reduced-</p> <ul style="list-style-type: none"> For a wall with surface density 220kg/m² by 0.5; and For a wall that is - <ul style="list-style-type: none"> facing the south orientation by 0.5; or shaded with a projection angle of - <ul style="list-style-type: none"> 30° to 60° by 0.5; more than 60° by 1.0. <p>Internal Walls must achieve a minimum system R value of 1.8</p> <p>Note - Minimum R-value is N/A to enclosed unconditioned spaces with mechanical ventilation < 1.5 air changes / hr of outside air. (Ref. tables J1.5a &b)</p> <p><u>Note:</u> Thermal break criteria: Steel framed walls with light weight external cladding such as weatherboards, fibre cement or metal sheeting with or without an internal lining that is fixed directly to the <u>same</u> steel frame must have a thermal break of not less than R0.2 installed between the cladding & metal frame (Ref J:1.5 e)</p>	<p><u>New Wall Construction:</u></p> <ul style="list-style-type: none"> Brick Veneer / Foil sisalation/ R2.5 bulk insulation achieves a system value > R2.8 Weatherboard cladding / Foil sisalation/ R2.5 bulk insulation achieves a system value > R2.8 <p><u>Notes:</u></p> <ul style="list-style-type: none"> All above wall constructions are considered to have a cavity frame/batten to suit the insulation system with an internal plasterboard lining. The system must be installed to the manufacturer's specifications. Thermal break - N/A to timber frames.
J 1.6	Floors	<p>Climate 4</p> <ul style="list-style-type: none"> Unenclosed Suspended floors must achieve a total system R-value of R2.0 (Ref. Table J1.6b) N/A - Enclosed Suspended floor or Concrete Slab on ground 	<p><u>Floor Construction:</u></p> <ul style="list-style-type: none"> N/A Concrete slab on ground

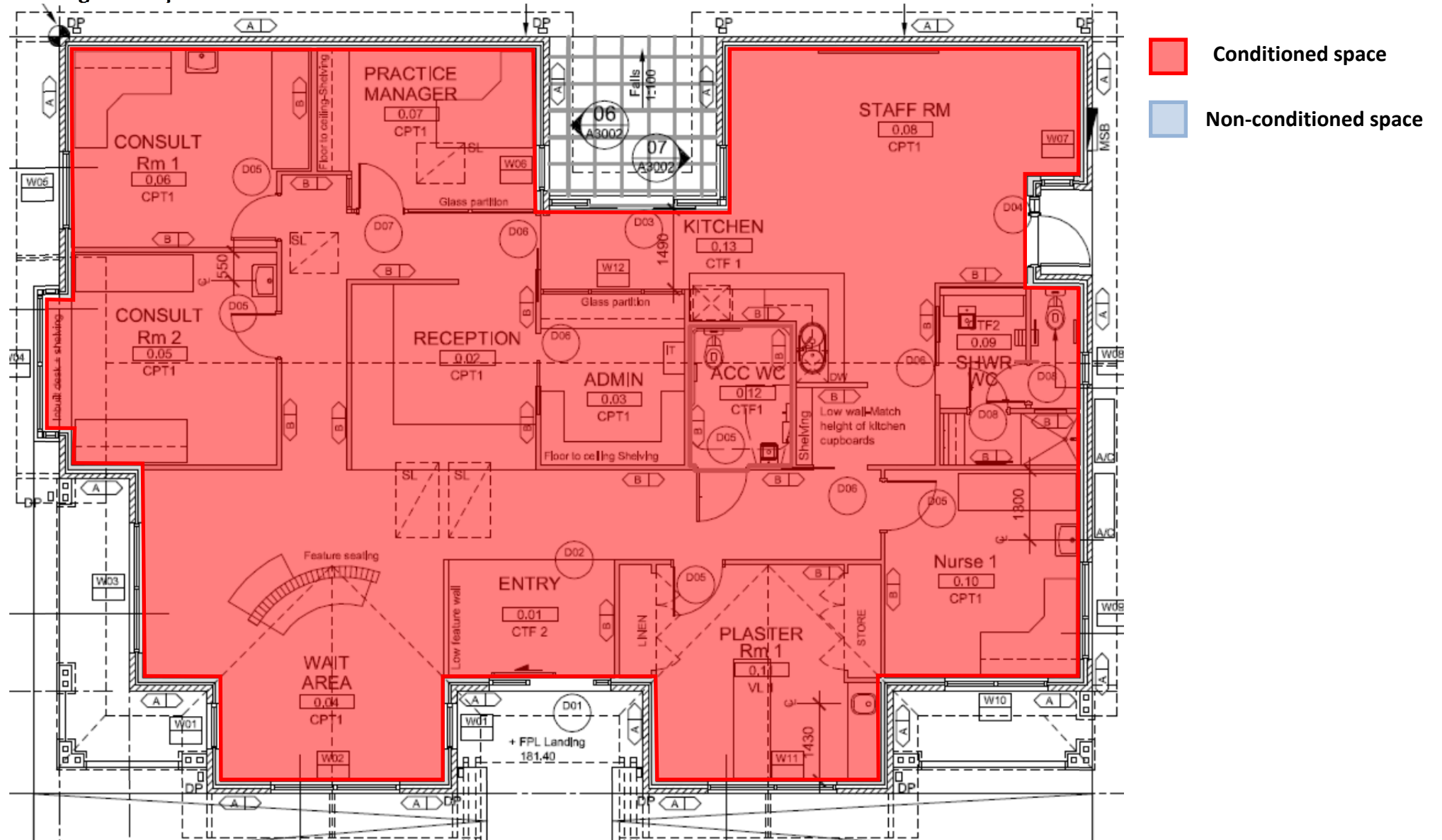
EXTERNAL GLAZING J.2			
J 2.4	Glazing to conditioned space	<p>Constants for conductance and solar heat gain (Ref BCA glazing calculator)</p> <p>Notes:</p> <ul style="list-style-type: none"> The tolerance for Glazing values used in the BCA glazing calculator are : <ul style="list-style-type: none"> U-values must be equal to or less than those stated. SHGC values to be within +/- 10% Only applicable to glazing in conditioned space <u>or</u> unconditioned areas that are beside conditioned spaces in accord with table J1.5b. 	<p>Refer to the attached BCA glazing calculator report at Annex D Glazing Type used as proxy - Veivco aluminium frames as follows-</p> <p>Doors -</p> <ul style="list-style-type: none"> Hinged - 50 Series, 6.38_{mm} Comfort Plus clear, AWS-033-20 <p>Windows -</p> <ul style="list-style-type: none"> Sliding - 601 Series, 6.38_{mm} Comfort Plus clear, AWS-022-18 Fixed - 400 Series 6.38_{mm} Comfort Plus clear, AWS-027-12 Double Hung - 613 Series 6.38_{mm} Com. Plus clear, VAN- 002-17 Louvre - 525 series, 6_{mm} Evantage clear, AWS-058-03 <p><u>Note:</u></p> <ul style="list-style-type: none"> Or equivalent glazing with U & SHGC values as per report.
BUILDING SEALING J.3			
NSW J 3.1	Application of part	<p>Buildings mechanically conditioned are to be sealed</p> <p>Excluding -</p> <ul style="list-style-type: none"> where the only means is evaporative cooling, or there is sufficient pressurisation to prevent infiltration, or parts of buildings that cannot be fully enclosed. 	<p>The conditioned building envelope is to be sealed</p> <p>Note: existing building</p>
J 3.2	Chimneys / flues	Chimneys & flues to have dampers	N/A
J 3.3	Roof lights	All roof lights must have capability of being sealed	Roof lights are sealed
J 3.4	Windows / doors	All external doors and windows leading into a conditioned space must be sealed, exceptions to windows complying with AS/2047, fire doors and roller shutters	External swinging doors to have air infiltration seals; and All windows sealed as per manufacturers standards
J 3.4d	An entrance to a building	Must have an airlock, self-closing door or the like if leading to a conditioned space >50m ²	Self-closing door has been provided to main entry. N/A - D03, D04 conditioned space < 50m ²
J 3.5	Exhaust fans	Within a conditioned space must be fitted with a sealing device	All new exhaust fans to have self-closing dampers
J 3.6	Roof / walls / floors	Building construction required to minimise air infiltration	New construction Gaps & cracks sealed in accord with J3.6
J 3.7	Evaporative coolers	Must be fitted with self closing damper when serving a heated space, or in a habitable room or public place in Climate zone 4 to 8	If fitted must have self closing damper
PART J:4 ****			
Clause blank in BCA - N/A			

AIRCONDITIONING & VENTILATION SYSTEMS J:5			
J 5.1		Clause blank in BCA	Note: This Section only applies to conditioned spaces. A conditioned space is likely to be heated or cooled.
J 5.2	Capabilities / options	A/C & Ventilation system capabilities	
J 5.2 a(i)(ii)	Time switches	Unit to be inactivated when unoccupied & if fitted with outside return air dampers, these must be able to close when system is turned off	A/C unit to be programmable & if fitted with outside return air dampers, these must be able to close when system is turned off
J 5.2 a(iv)	Ducting	Duct work to be insulated & sized according to Specification J5.2	If fitted New ductwork is to be insulated as follows: <ul style="list-style-type: none"> • Within a Conditioned space - R-value R1.0min; • Exposed to Direct sunlight - R3.0 min; and • All Other locations - R2.0 min.
J 5.2 a (v)	Serving more than one SOU, air-conditioning zone or area with different heating & cooling needs	When serving more than one SOU, zone or area with different heating and cooling needs must- <ul style="list-style-type: none"> • Thermostatically control the temperature of each SOU • Not control the temperature by mixing actively heated air with actively cooled air • Limit reheating to not more than 7.5K at the supply air rate for the space served. 	The System must have the following to comply: <ul style="list-style-type: none"> • Separate Thermostatic controls to each zone • Not mix actively heated air with actively cooled air • Limit reheating to not more than 7.5K at the supply air rate for the space served • To be determined by mechanical engineer/ installer/ supplier
J 5.2 a (vii)	Outdoor economy cycle	Climate zone 4 to 8 An Air conditioning unit / system, if providing Mechanical ventilation must have an outdoor economy cycle if the system's capacity is over 35kW _r .	To be determined by A/C engineer if unit / system capacity is over 35kW _r .
J 5.2 a (ix)	Fan Motor shaft power	If Air flow rate is >1000L/s the system is not to exceed the Internal load for equipment & people in accord with Table J5.2a. <u>Note</u> - Does not apply to fans in packaged air -conditioning plant complying with J5.4(c).	To be determined by mechanical engineer if Airflow rate is >1000L/s. N/A to Packaged A/C units <65kW_r
J 5.2b	Mechanical ventilation system	A mechanical ventilation system must be capable of being inactivated when unoccupied and must comply with AS 1668.2 and AS/NZS 3666.1 (Ref. F4.5b & J5.2b) When serving a conditioned space not provide in excess of the minimum quantity required by part F4 by >50%. Note: exemptions at J5.2b(ii)(A)(B) &(C)	All ventilation systems will be capable of being inactivated when room / space is unoccupied. When serving a conditioned space not provide in excess of the minimum quantity required by Part F4 by more than 50% other than by conditions stated at J5.2b(ii)(A)(B) &(C) To be determined by mechanical engineer
J 5.2b(iii)	Fan motor power to air flow rate	When the air flow rate is >1000L/s the ventilation system must have a fan motor input power to air flow rate in accordance with table J5.2	To be determined by a mechanical engineer if ventilation system is >1000L/s
J 5.3	Time switches	Power supply to an A/C system with a power load > 10kW _r or 10 kW heating or a ventilation system with an airflow > 1000L/s must be fitted with a time switch control in accord with Specification J6.3	Air conditioning > 10kW _r or 10 kW heating or a ventilation system airflow >1000L/s will be fitted with and controlled by a time switch in accordance with Spec J6.3

AIRCONDITIONING & VENTILATION SYSTEMS J:5 (cont)			
J 5.4	Heating / chilling systems	Systems < 65kW must comply with the Australian Greenhouse Offices Minimum Energy Performance Standards (MEPS). Systems > 65kW must comply with table J5.4. (Ref. J5.4c and BCA Guide J5.2 clause (c))	New Systems < 65kW to comply with MEPS. To be determined by mechanical engineer / supplier
J 5.5	Miscellaneous exhaust systems	Range hood > 1000 L/s must have operator controls to stop & a variable speed fan to reduce energy used; and be designed to minimize the exhausting of conditioned air	N/A if exhaust fans < 1000 L/s
ARTIFICIAL LIGHTING J:6			
J 6.1	Application of part	Clause blank in BCA	
J 6.2b	Artificial lighting	To set the minimum requirements for the level of interior artificial lighting.	Refer to attached DTS Internal Lighting Report at Annex E
		Total Design maximum interior lighting wattages	Total Design (maximum) - 2895.7 watts
J 6.3a.b.c	Interior lighting & power control	Switches must be visible, located so that the lighting can be seen from the switching position and not operate an area > 250m ² in a space < 2000m ² or an area > 1000m ² in a space > 2000m ² (Ref. J6.3c)	All light switches will be visible and located so that the lighting will be seen from the switching position & not operate an area or zone >250m ² .
J 6.3d	Whole building control	95% of interior artificial lighting in a building of more than 250m ² in floor area must be controlled by a time switch or occupant sensing device accord with Specification J6 (Ref. J6.3d)	N/A building under 250m ² .
J 6.3e	Artificial lighting in natural lighting zones	In a Class 5, 6 or 8 building over 250m ² , Artificial lighting a natural lighting zone adjacent windows must be separately controlled from artificial lighting not in a natural lighting zone in the same storey (Ref. J6.3e). Except where - <ul style="list-style-type: none"> • A room is less than 20m², • The rooms natural lighting zone contains less than 4 luminaries, • The luminaries in the natural lighting zone are more than 70% of the luminaries in the room. 	N/A building under 250m ²
J 6.4	Interior decorative & display lighting	Must have separate controls & if lighting exceeds 1kW have a time switch. Window display lighting to be controlled separately from other display lighting.	If fitted must have separate controls & if lighting exceeds 1kW have a time switch in accord with Specification J6-5

ARTIFICIAL LIGHTING J:6 (cont)			
J 6.5	External perimeter lighting	Daylight sensor/ timer must be fitted & if total perimeter lighting exceeds 100w the average light source efficacy must be > 60 L/w <u>or</u> controlled by a motion sensor (Ref.J6.5 (a)) Facade or signage lighting must have separate timer switch (Ref J6.5 (a)(iii)) Note: N/A to emergency lighting	<ul style="list-style-type: none"> • If perimeter lighting, a Daylight sensor / timer must be fitted, • If total perimeter lighting exceeds 100w, the average light source efficacy must be > 60 L/w; <u>or</u> <ul style="list-style-type: none"> • Controlled by a motion sensor. • Facade or signage lighting to have a separate timer switch (Ref. J6.5 & Specification J6-5)
J 6.6	Boiling / chilled water storage	Power supply to Boiling and chilled water storage units to be controlled by timer switch	If installed the power supply to a Boiling or chilled water storage unit is to have a timer switch fitted
HOT WATER SUPPLY AND SWIMMING POOL AND SPA POOL PLANT J:7			
J 7.1		Clause blank in BCA	
J 7.2	Hot water supply	A Hot water system for food preparation & sanitary purposes must be designed & installed in accordance with Section 8 of AS/NZS 3500.4. Exception - Solar hot water supply system climate zone 1, 2, & 3	Hot water systems must be designed & installed in accordance with (Ref. section 8 of AS/NZS 3500.4)
J 7.3 - J 7.4	Swimming/Spa pool heating and pumping		N/A - No Swimming/Spa pool heating and pumping
MAINTENANCE ACCESS J:8			
J 8.1	Application of part	N/A to Class 2 and Class 4 part of building	As below.
NSW J 8.2	Maintenance access	Access for maintenance must be provided to all new services as follows: <ul style="list-style-type: none"> • adjustable or motorised shading devices, • time switches and motion detectors, • room temperature thermostats, • plant thermostats such as on boilers or refrigeration units, • outside air dampers and control valves, • reflectors, lenses and diffusers of light fittings, • heat transfer equipment, and • plant using on-site renewable energy or reclaimed energy. 	Access for maintenance must be provided to all new services as follows: <ul style="list-style-type: none"> • time switches and motion detectors, • room temperature thermostats, • plant thermostats such as on boilers or refrigeration units, • outside air dampers, • reflectors, lenses and diffusers of light fittings, • heat transfer equipment, and • adjustable or motorised shading devices.
J 8.3a	Facilities for energy monitoring building with a floor area of more than 500m ²	A building with a floor area of more than 500m ² must have the facility to record the consumption of gas and electricity	N/A Building less than 500m ²
J 8.3b	Facilities for energy monitoring with a floor area of more than 2500m ²	A building with a floor area of more than 2500m ² must have the facility to individually record the energy consumption of - Air-conditioning plant; artificial lighting; appliance power; central hot water supply; internal transport devices(lifts etc) where more than one is serving the building; and other ancillary plant.	N/A to Building less than 2500m ²

Building Envelope - Conditioned and Non-conditioned areas



BCA J1.3b Ceiling Insulation Penetration Data Sheet				
Building Name & Address		Proposed New Professional Consulting Rooms - at 9 Gormly Ave, Wagga Wagga NSW		
RECESSED EXHAUST FANS or LIGHT FITTINGS				
Round penetration *		Dia. (m²)	Qty	Penetration size (m²)
Exhaust fans		0.3	3	0.21
D1 - Down lights		0.3	31	2.19
Square penetration *		Length (m²)	Width (m²)	Penetration size (m²)
T5 Troffer light		0.3	1.2	3.96
Total area of ceiling insulation penetrations		6.36	m ²	2.87% **
Ceiling insulation area		221.5	m ²	
** Insulation needs to be adjusted only if the total area of penetration is greater than 0.5%. Note: Ceiling Penetrations must not exceed 5% of the total ceiling area.				
REQUIRED CEILING INSULATION				
Roof Construction - Total R-value to comply		R 3.7 downwards (SA = >0.4 <0.6)		
Minimum bulk insulation to ceiling to achieve compliance		R 1.6 bulk insulation to ceilings Note: Double-sided foil sisalation to roof		
Percentage of ceiling area uninsulated		2.87%		
Adjusted R-value to comply with table J1.3b		> R2.0 bulk insulation will comply		
Notes:				
<ul style="list-style-type: none"> - *The penetration size is determined by measuring the area of the penetration in m². - Penetration size includes clearance to insulation from lighting and transformers - Requirements in accord with BCA 2012 Section J1.3 & Table J1.3b. - SA = Solar Absorptance of roof colour is to be less than 0.6. Roof colour - medium. 				

BCA J1.4(b) Roof Light Calculations										
Building Name & Address					Proposed New Professional Consulting Rooms - 9 Gormly Ave, Wagga Wagga NSW					
Building Class					Class 5					
Calculations - Proposed % of Roof light to served rooms or space							Calculations - Roof Shaft Index for each Roof light			
No.	Room / space	Length	Width	Qty	Roof light area	Floor Area served	= % of floor area served	Average Height of shaft (m ²)	Avg. dia. opening at ceiling (m ²)	= Roof Light shaft Index
1	Reception/wait	1.4	0.78	2	2.184	62.97	3.47 *	1.45	1.09	1.33
2	Corridor	0.7	0.55	1	0.39	11.3	3.41	1.70	0.625	2.72
3	Manager	0.7	0.55	1	0.39	11.9	3.24 *	1.70	0.625	2.72
* The Proposed Total Roof light % is less than 5% of the area served. The Roof lights need to comply with BCA Table J1.4										
Required Thermal performance for Proposed Roof lights as per BCA Table J1.4***										
No.	Room / space	Roof Light Shaft index	Floor area served%	Roof Light Shaft index	Required Thermal performance					
1	Reception/wait	1.33	3% to 4%	1.0 to less than 2.5	Total U-Value not > than 4.3 SHGC not > 0.69					
2	Corridor	2.72	3% to 4%	2.5 and more	Total U-Value not > than 4.3 SHGC not > 0.83					
3	Manager	2.72	3% to 4%	2.5 and more	Total U-Value not > than 4.3 SHGC not > 0.83					
Proposed Thermal performance for Roof lights										
No.	Room / space	Manufacturer	Model	U- Value	Solar Heat Gain Coefficient					
1	Reception/wait	Velux	VSE; WERS-VEL-001-01	2.9**	0.29**					
2	Corridor	Velux	FS; WERS-VEL-002-01	2.7**	0.33**					
3	Manager	Velux	FS; WERS-VEL-002-01	2.7**	0.33**					
Notes:										
** WERS Certified Product Directory AFRC values.										
*** Calculations and Requirements in accord with BCA 2012 Table J1.4										
1. The roof light shaft index is determined by measuring the distance from the centre of the shaft at the roof to the centre of the shaft at the ceiling level and dividing it by the average internal dimension of the shaft opening at the ceiling level (or the diameter for a circular shaft) in the same units of measurement.										
2. The total area of roof lights is the combined area for all roof lights serving the room or space.										
3. The area of a roof light is the area of the roof opening that allows light to enter the building.										
4. The thermal performance of an imperforate ceiling diffuser may be included in the Total U-Value of the roof light.										

BCA Glazing Calculator Report

Report from Job # 8178 - GlazingCalc_2012_VolOne_Excel2010_v3-00

printed 13/07/2012

BCA VOLUME ONE GLAZING CALCULATOR (first issued with BCA 2012)

Building name/description

Proposed New Professional Consulting Rooms - 9 Gormly Ave, Wagga Wagga NSW

Application

other

Climate zone

4

Storey

Ground

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A	49.2m ²		55.4m ²		51.8m ²		55.4m ²		
Option B									n/a
Glazing area (A)	10.6m ²		18.6m ²		17.5m ²		9.08m ²		

Number of rows preferred in table below

26 (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 U-Value (AFRC)	SHGC (AFRC)	P (m)	H (m)	P/H	G (m)	Heating (S _{in})	Cooling (S _c)	Area used (m ²)	Element share of % of allowance used
1	D01	E		2.05	1.20		4.4	0.49	2.000	2.100	0.95	0.05	0.27	0.44	2.46	11% of 100%
2	D01 Sides	E		2.05	1.70		4.2	0.59	2.000	2.100	0.95	0.05	0.27	0.44	3.49	17% of 100%
3	W01 dh	N		1.88	0.85		5.0	0.48	1.400	1.900	0.74	0.02	0.41	0.38	1.60	9% of 51%
4	W02 dh	E		2.14	2.41		5.0	0.45	0.800	2.150	0.37	0.01	0.81	0.74	5.16	28% of 100%
5	W01 dh	S		1.88	0.85		5.0	0.48	0.800	1.800	0.44	-0.08	0.86	0.79	1.60	10% of 88%
6	W03 dh	S		1.88	2.41		5.0	0.48	1.400	1.800	0.78	-0.08	0.77	0.69	4.53	26% of 88%
7	W03 Above FW	S		0.74	2.41		4.2	0.61	0.500	0.860	0.58	0.12	0.88	0.83	1.78	8% of 88%
8	W04 Sides FW	S		1.45	1.68		4.2	0.61	0.400	1.500	0.27	0.05	0.92	0.87	2.44	12% of 88%
9	W04 Middle dh	S		1.45	0.88		5.0	0.48	0.400	1.500	0.27	0.05	0.92	0.87	1.28	8% of 88%
10	W04 Side FW	E		1.45	0.30		4.2	0.55	0.800	1.500	0.53	0.05	0.68	0.63	0.44	2% of 100%
11	W04 Side FW	W		1.45	0.30		4.2	0.61	0.800	1.500	0.53	0.05	0.71	0.64	0.44	5% of 46%
12	W05 dh	S		2.14	1.44		5.0	0.48	0.800	3.500	0.23	1.36	1.00	0.99	3.08	19% of 88%
13	W06 dh	N		2.15	0.85		5.0	0.48	1.000	2.800	0.36	0.65	0.99	0.92	1.83	24% of 51%
14	W06 Above FW	N		0.55	0.85		4.2	0.61	1.000	0.700	1.43	0.15	0.03	0.28	0.47	3% of 51%
15	D03	W		2.05	1.57		4.4	0.50	2.000	2.800	0.71	0.75	0.92	0.83	3.22	36% of 46%
16	D03 Sides FW	W		2.05	1.63		4.2	0.61	2.000	2.800	0.71	0.75	0.92	0.83	3.34	41% of 46%
17	D03 Above FW	W		0.65	3.20		4.2	0.61	2.000	0.700	2.86	0.05	0.00	0.26	2.08	19% of 46%
18	D03 Side dh	S		2.05	1.02		5.0	0.48	1.000	2.800	0.36	0.75	0.97	0.96	2.09	13% of 88%
19	D03 fw above dh	S		0.65	1.02		4.2	0.61	1.000	0.700	1.43	0.05	0.69	0.59	0.66	3% of 88%
20	W07 dh	E		2.14	0.60		5.0	0.48	1.100	2.140	0.51	0.00	0.70	0.65	1.28	7% of 100%
21	D04	N		2.39	1.00		4.4	0.50	1.450	2.390	0.61	0.00	0.65	0.46	2.39	16% of 51%
22	D04 Side FW	N		2.39	0.33		4.2	0.61	1.450	2.390	0.61	0.00	0.65	0.46	0.79	6% of 51%
23	W08 lvr	N		1.45	0.61		5.0	0.43	0.800	1.500	0.53	0.05	0.73	0.51	0.88	6% of 51%
24	W09 dh	N		1.45	1.81		5.0	0.48	0.500	2.300	0.22	0.85	1.00	0.96	2.62	37% of 51%
25	W10 sw	E		1.20	1.93		5.0	0.56	1.400	1.100	1.27	-0.10	0.07	0.36	2.32	11% of 100%
26	W11 dh	E		1.45	2.41		5.0	0.48	0.800	2.150	0.37	0.70	0.97	0.95	3.49	24% of 100%

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 J6.2b Interior Lighting Calculations							
Building Name & Address		Proposed New Professional Consulting Rooms, Wagga Wagga NSW					
Building Class		5					
Storey		Ground					
ID	Room / Space	Area	Ceiling Height	Lighting Control	Wattage allowance	Illumination Power Allowance / room	Design Power Load
1	Consultation Room 1	15.70	2.70	N/A	10	253.1	112.0
2	Consultation Room 2	16.60	2.70	N/A	10	265.9	112.0
3	Practice Manager	11.90	2.70	N/A	9	177.4	112.0
4	Entry/Reception/Wait Areas	74.90	2.70	N/A	8	876.7	228.0
5	Plaster Room 1	18.50	2.70	N/A	10	294.4	112.0
6	Nurse 1	14.05	2.70	N/A	10	228.2	112.0
7	Shower WC	8.66	2.70	N/A	6	88.0	48.0
8	Staff Room / Kitchen	42.50	2.70	N/A	8	526.5	96.0
9	Acc WC	4.94	2.70	N/A	6	52.2	12.0
10	Admin	8.75	2.70	N/A	9	133.2	56.0
Total Design Maximum Wattage						2895.7	1000.0
Average Wattage per m²						13.4	4.6
Total Lighting Area m²						216.5	
Notes:							
<ul style="list-style-type: none"> Total Design Power load must not exceed Total Illumination Power allowance / room for BCA J 6.2b compliance to be achieved. Room Aspect Ratio has been used to calculate Illumination power density adjustment factor as per Table 6.2c. Total design wattage includes lamp wattages, transformers, ballast and control gear; Lighting Control refers to any devices like motion detectors etc. The above requirements do not apply to: <ul style="list-style-type: none"> Emergency Lighting; MEPS compliant transformers, ballast and control gear; Specialist processes such as an operating theatre, fume cupboard, clean room etc; Lighting for performances such as theatrical or sporting; and A heater where the heater also emits light. 							