

1 Objective/Aim

This report has been written in order to confirm fabric performance and glazing performance requirements for the RACF and common areas of Building 4 of the Cardinal Freeman Age Care facility in order to demonstrate compliance with BCA Section J1 Fabric and J2 – Glazing through Deemed to Satisfy compliance route. The BCA 2012 Glazing Calculator has been used in order to determine compliance of the current design. Note: a sensitivity analysis was undertaken to demonstrate that the BCA 2012 Glazing Calculator was equivalent to the 2010 version for climate zone 5.

2 Summary of Results

The fabric and glazing requirements are given below:

Fabric compliance requirements are given as R values for the total construction.

External Walls to meet R2.8

Internal envelope walls (ie separate conditioned from non-conditioned space) to meet R1.0

Roof to meet R3.2 (upper surface solar absorptance of roof not to exceed 0.4)

Floor - no thermal performance requirement unless heated

Glazing requirements are quoted as U-value and Solar Heat Gain Coefficient (SHGC). Glazing properties are inclusive of both frame and glazing and uses reasonable glazing properties for all facades. Based on the current design and the drawings available, glazing properties allowed on each facade are outlined below:

Facade	Basement		Ground Floor		First Floor		Second		Third	
	U-value	SHGC	U-value	SHGC	U-value	SHGC	U-value	SHGC	U-value	SHGC
RACF										
North			6.0	0.6	6.0	0.6	6.0	0.6	6.0	0.6
North shopfront			6.0	0.6	6.0	0.6	6.0	0.6	6.0	0.6
South			6.0	0.6	6.0	0.6	6.0	0.6	6.0	0.6
East	6.0	0.37	6.0	0.4	6.0	0.48	6.0	0.45	6.0	0.46
West			4.6	0.41	4.6	0.43	4.6	0.43	4.6	0.37
Building 4										
North	6.0	0.55	6.0	0.6						
East			6.0	0.43						
East entrance	6.0	0.6	6.0	0.6						

The proposal is capable of complying with BCA Section J1 and J2 in detailed design phase.

If uniformity in glass type throughout the building is preferred, the team can undertake JV3 modelling during detailed design stage in which compliance can be achieved via an alternative to the Deemed-to-Satisfy method.

The Swimming pool room in Building 4 is a non-conditioned space and is not considered to be compliant with fabric and glazing requirements. However the wall between the pool room and the rest of the building then becomes the envelope and is required to have an insulating value of R1.0.

3 Methodology

The following AJ+C drawings (first issued 19 September, latest revision 12, 15, 18 and 19 October) have been used in order to determine compliance with Section J2 – Glazing:

Plans: DA2101-F- DA2106-F, DA2122-E, SK121005.1-5

Elevations: DA3102_B, DA3103_B, DA3104-E, DA3105_B, DA3106-B.

The buildings included in this analysis are buildings classified under the following BCA building classes:

- Class 9c: Aged care building
- Class 9a and 9b: Health-care and assembly buildings

Residential buildings (Class 1, 2 or 3) are not assessed for Section J1 and J2 compliance as they are analysed under BASIX.

The following buildings are those assessed under this analysis: RACF and Building 4.

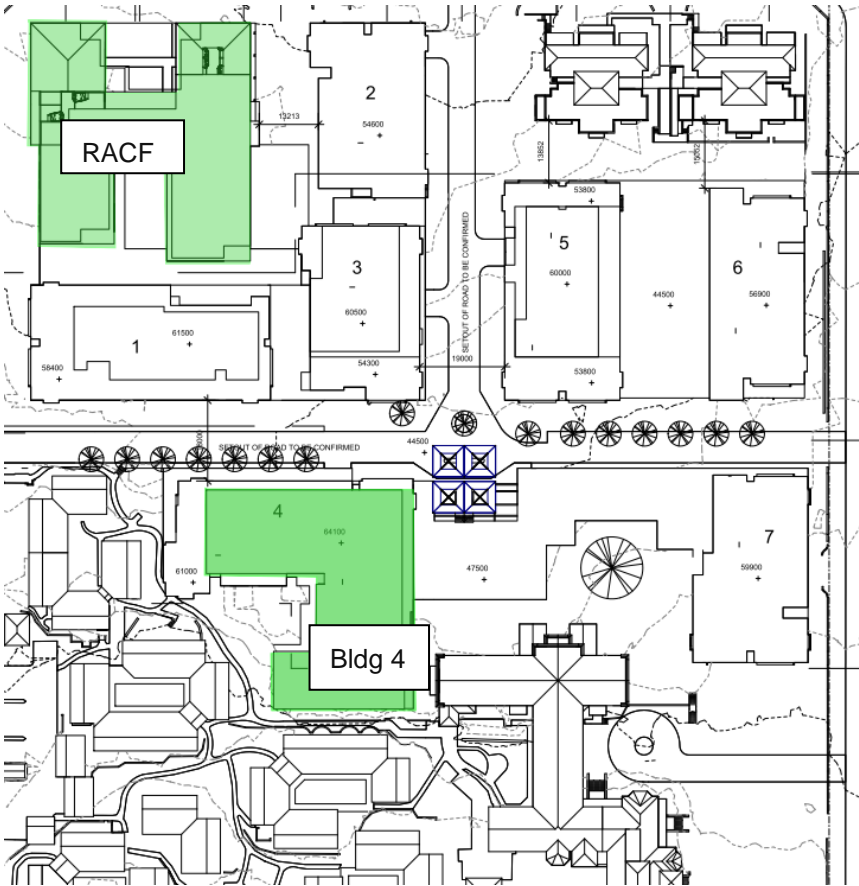


Figure 1: Site plan showing buildings assessed under this analysis

RACF Building

The RACF building is a high care unit with individual rooms and central living spaces. Each of the facades of the building were analysed based on the elevations shown below. Assumptions:

- Horizontal shading devices are assumed to be 500mm deep set immediately above the window
- West and East punched windows all have horizontal shading devices
- Vertical shading devices are ignored due to limitations of the BCA Glazing calculator

Mark-ups of elevations show assumed glazing areas and dimensions as confirmed by AJ+C Architects.

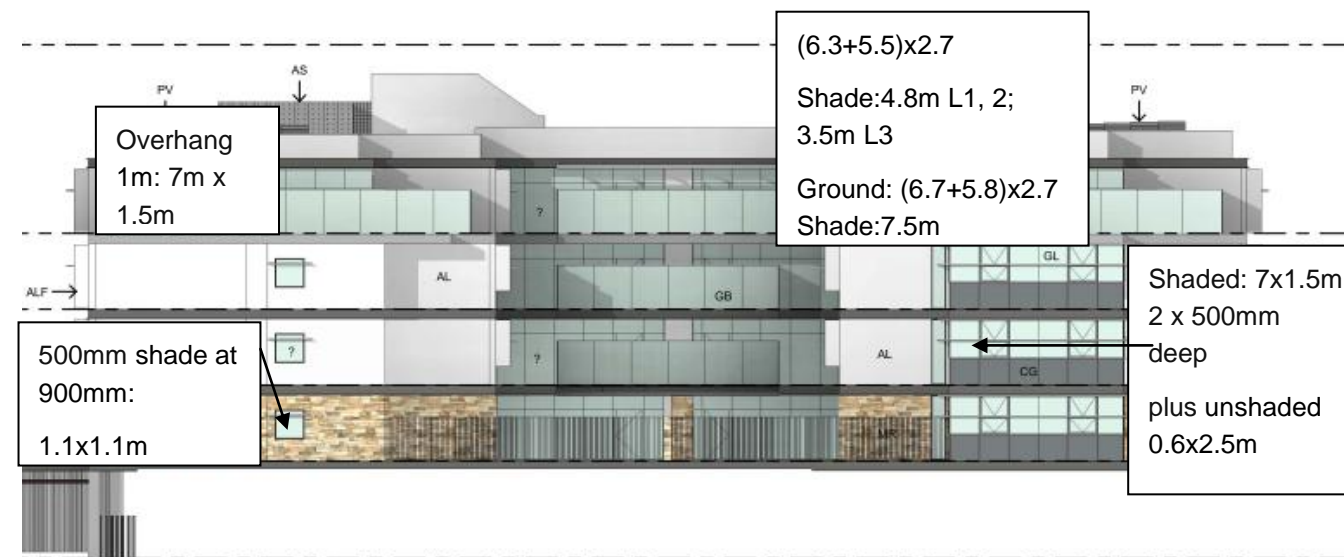


Figure 2: North Elevation

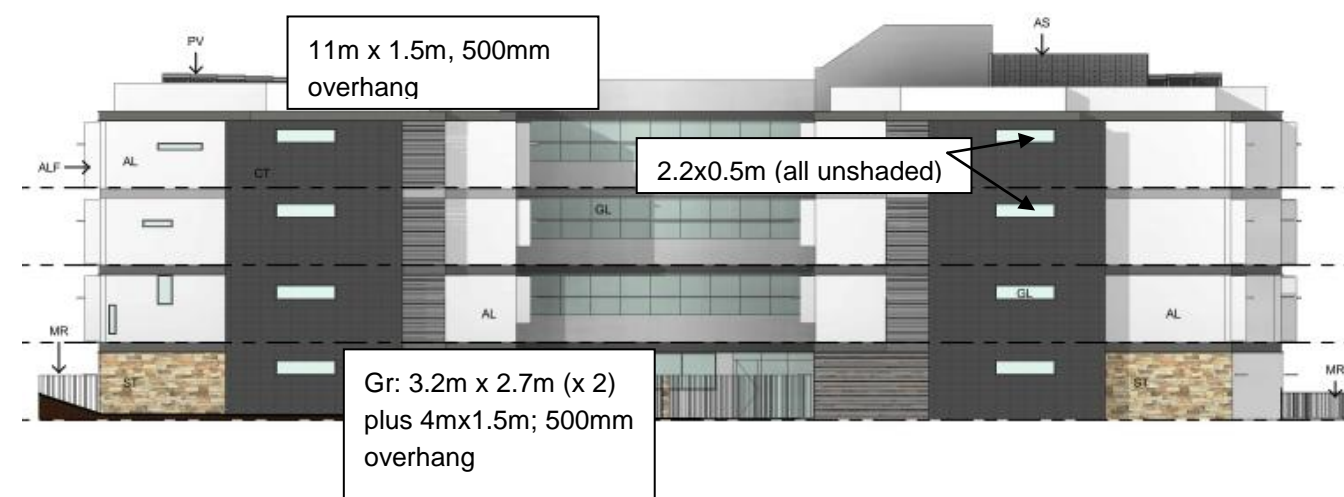


Figure 3: South Elevation

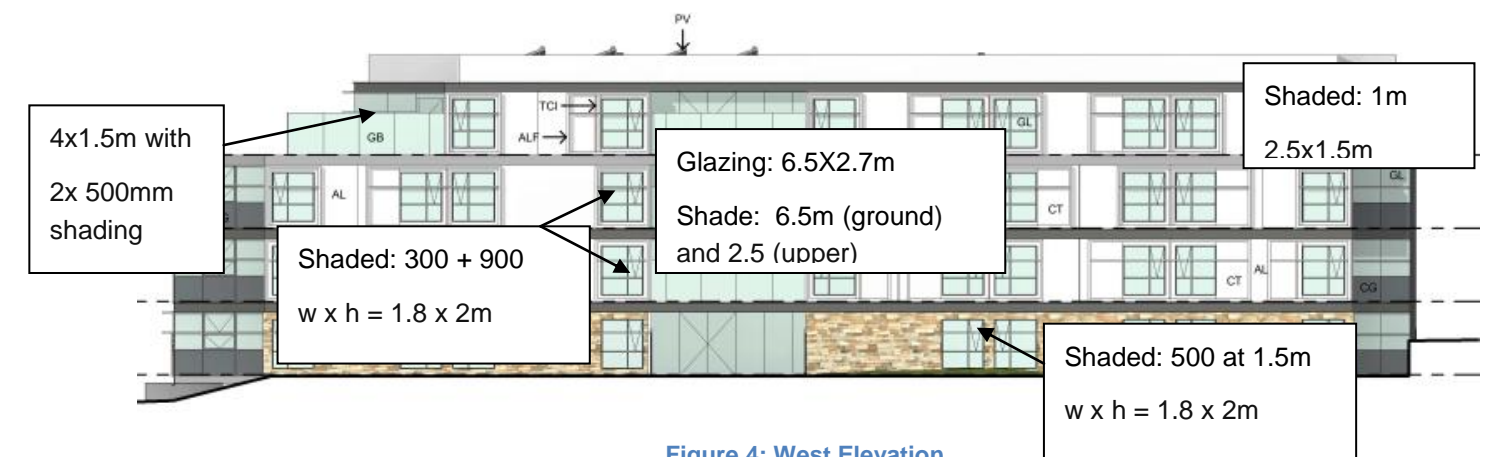


Figure 4: West Elevation

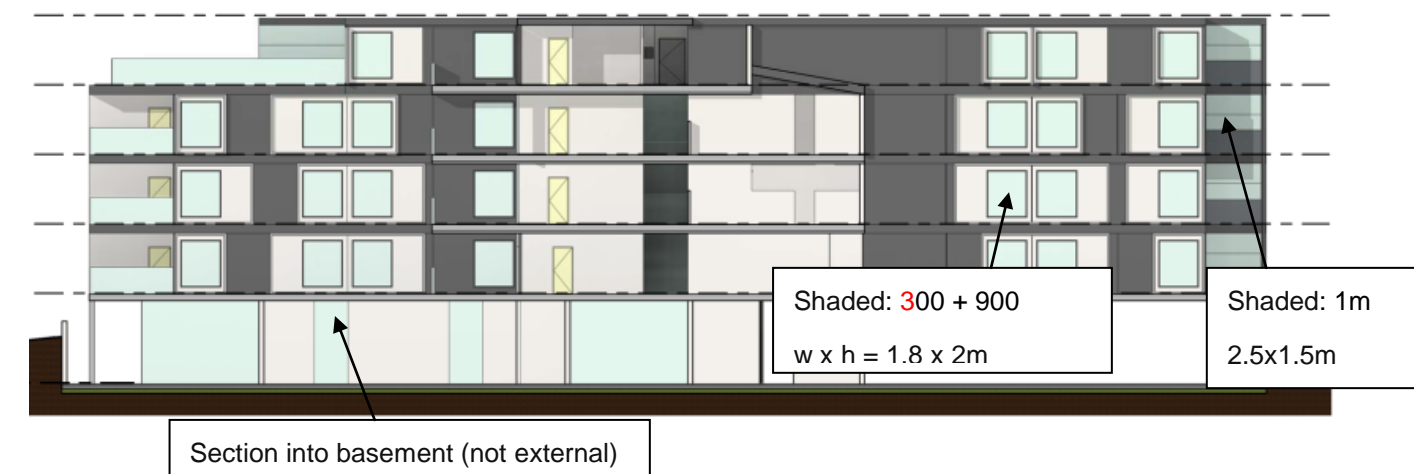


Figure 5: Additional Western facade in the 'courtyard'

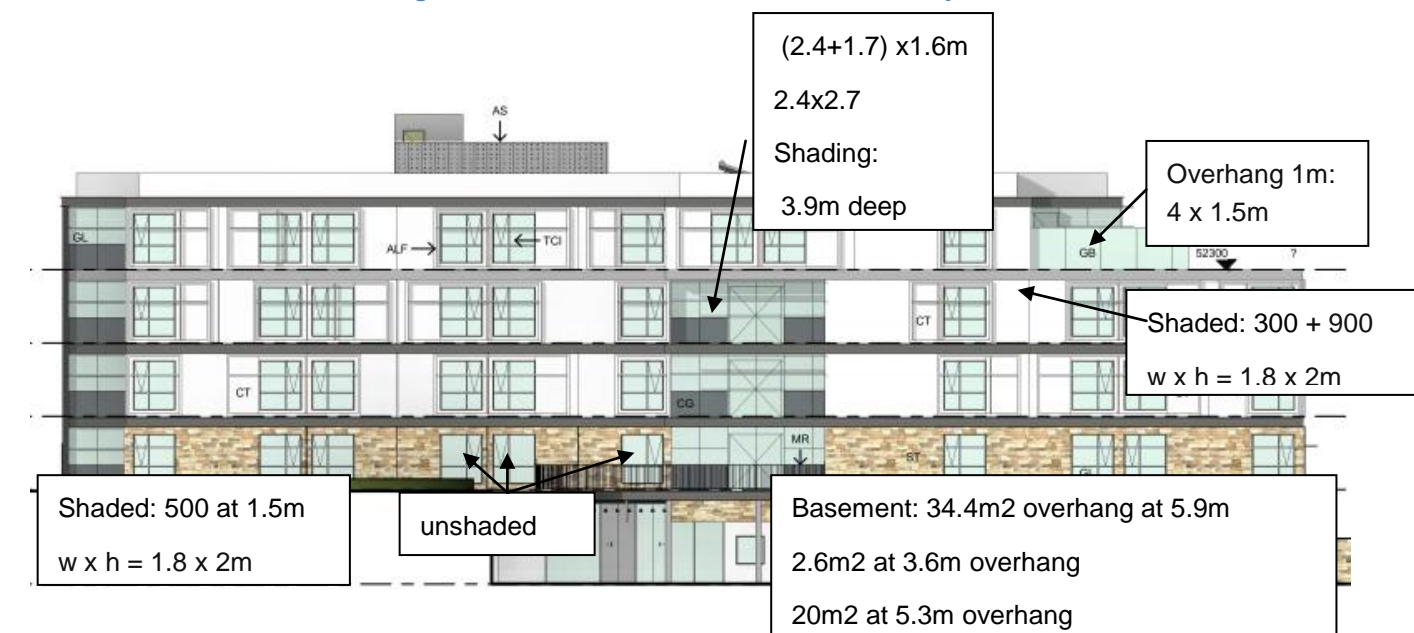


Figure 6: East Elevation



Figure 7: Additional Eastern facade in the 'courtyard'

Mark-ups of elevations show assumed glazing areas and dimensions.

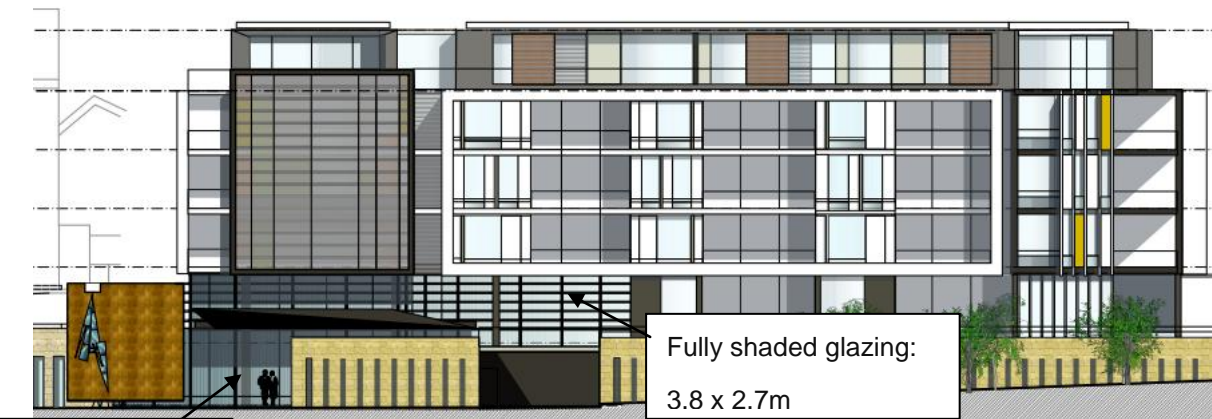


Figure 9: Building 4 North elevation

Building 4

Building 4 is a multi-purpose building with residential units as well as community spaces. Only the communal meeting spaces on the ground floor are assessed under section J1 and J2. The residential units are assessed under BASIX. The extract from drawing below shows the space assessed:

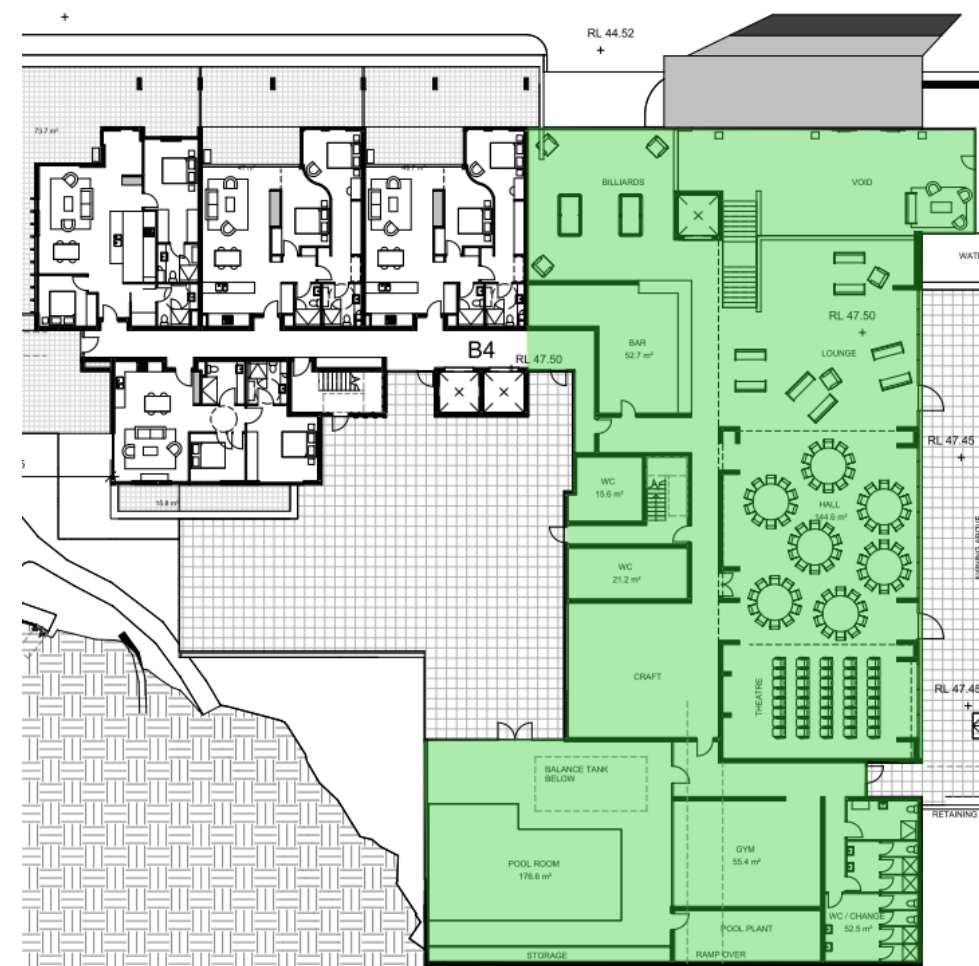


Figure 8: Ground floor plan of Building 4 showing communal areas assessed

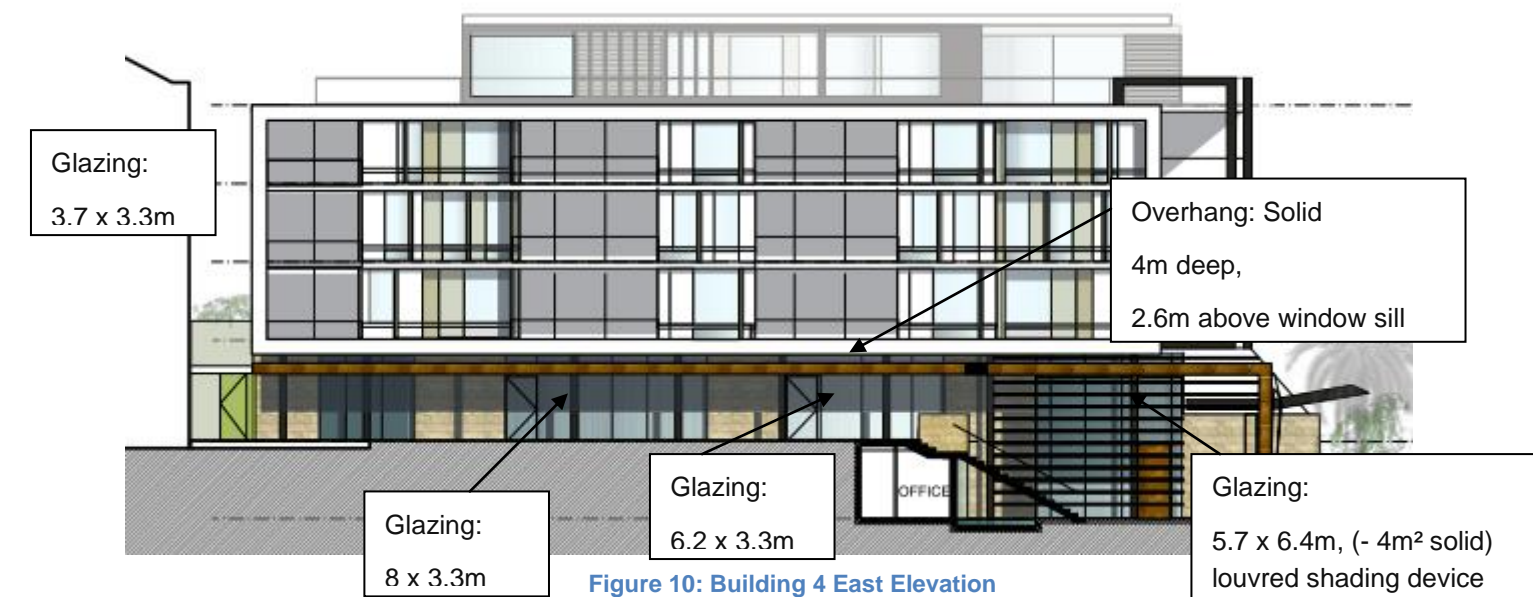


Figure 10: Building 4 East Elevation



Figure 11: Building 4 West Elevation

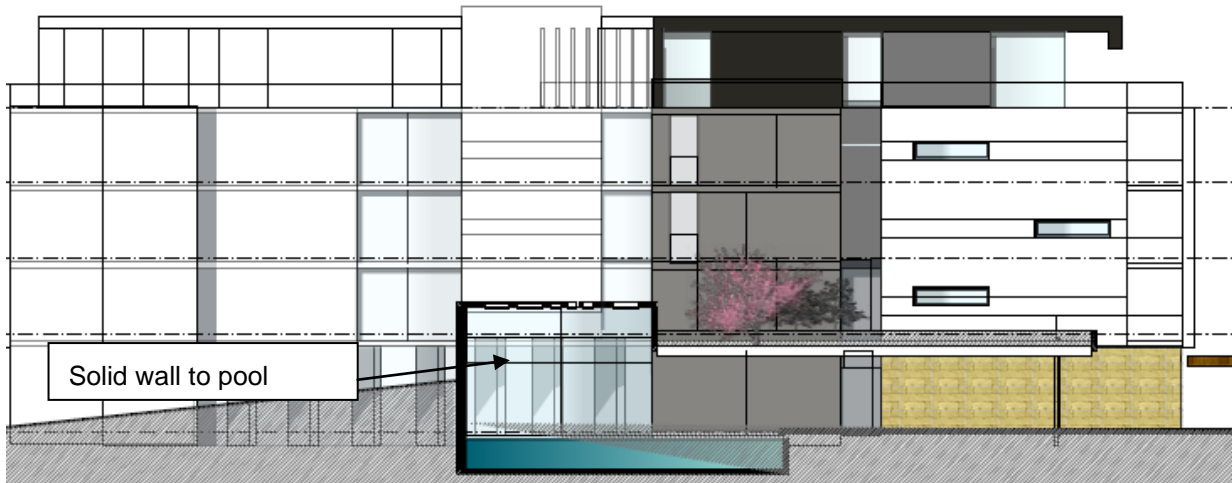


Figure 12: Building 4 South Elevation

4 Results

The investigation has determined reasonable glazing properties for all facades. Based on the current design and the drawings available, the fabric and glazing properties allowed on each facade are outlined below:

Fabric compliance requirements:

External Walls to meet R2.8

Internal envelope walls (ie separate conditioned from non-conditioned space) to meet R1.0

Roof to meet R3.2 (upper surface solar absorptance of roof not to exceed 0.4)

Floor - no thermal performance requirement unless heated

The table below provides full window properties (glass plus frame) for compliant design.

Facade	Basement		Ground Floor		First Floor		Second		Third	
	U-value	SHGC	U-value	SHGC	U-value	SHGC	U-value	SHGC	U-value	SHGC
RACF										
North			6.0	0.6	6.0	0.6	6.0	0.6	6.0	0.6
North shopfront			6.0	0.6	6.0	0.6	6.0	0.6	6.0	0.6
South			6.0	0.6	6.0	0.6	6.0	0.6	6.0	0.6
East	6.0	0.37	6.0	0.4	6.0	0.48	6.0	0.45	6.0	0.46
West			4.6	0.41	4.6	0.43	4.6	0.43	4.6	0.37
Building 4										
North	6.0	0.55	6.0	0.6						
South			6.0	0.6						
East			6.0	0.43						
East entrance	6.0	0.6	6.0	0.6						
West			6.0	0.6						

The glazing properties can likely be met by single glazed tinted glass in standard frames and low-e laminate glass on the Western facades. Note that performance criteria are for full window configurations (glass plus frame).

Specific requirements for the building 4 swimming pool:

The swimming pool space is an unconditioned zone (fresh air only) of a building of class 9b. Because of this, the external facade of the swimming pool room does not need to comply with section J1 (building fabric) and J2 (glazing). However, the internal wall between the pool room and adjacent spaces becomes the envelope and therefore must have an R-value of at least R1.0

5 Conclusions

The BCA glazing analysis was undertaken and the proposed glazing performance criteria provided in this report. Proposed changes are identified and the resulting window performance provided. In addition, the thermal performance requirements for solid portions of the envelope are provided.

The glazing assumed is based primarily on a low-cost option (single pane, tinted or low-e laminate with standard aluminium frame). More costly glazing configurations, such as doubled glazed units, may provide performance although it is unlikely that clear glass constructions will be possible on the East and West given the current design.

The current proposal is capable of complying with BCA Section J1 and J2 in detailed design phase.

If uniformity in glass type throughout the building is preferred, the team can undertake JV3 modelling during detailed design stage in which compliance can be achieved via an alternative to the Deemed-to-Satisfy method. This may allow more flexibility in glazing options.



In addition, a swimming pool cover should be installed to cover the pool at night to reduce water and heat loss from the pool.

6 Glazing Calculator Outputs

The following figures present screen-shots of the BCA Glazing Calculator showing inputs and outputs.

RACF:

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

Building name/description: **RACF building**

Storey: **Basement**

Application: **Class 9c aged care**

Climate zone: **5**

Facade areas:

	N	NE	E	SE	S	SW	W	NW	internal
Option A			130m ²						
Option B									n/a

Glazing area (A): 57m²


Number of rows preferred in table below: **17** (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 _w)	Cooling (S _c)	Area used (m ²)	of % of allowance used
1	Basement 1	E		3.50		20.00	6.0	0.37	5.300	3.600	1.47	0.10	0.03	0.32	20.00	26% of 100%
2	Basement 2	E		1.10		2.60	6.0	0.37	3.600	3.600	0.00	2.50	1.00	1.00	2.60	9% of 100%
3	Basement 3	E		2.60		34.40	6.0	0.37	5.900	3.600	1.64	1.00	0.58	0.54	34.40	65% of 100%
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																

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.

Copyright © 2012 – Australian Government, State and Territory Governments of Australia. All Rights Reserved

if inputs are valid 

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

Building name/description

RACF building

Storey

Ground

Application

Class 9c aged care

Climate zone

5

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A	143m ²		289m ²		160m ²		301m ²		
Option B									n/a

Glazing area (A)

47m² 90.9m² 25.5m² 88.7m²

Number of rows preferred in table below

21 (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 g (S _H)	Cooling g (S _C)	Area used (m ²)	of % of allowance used
1	Single window	N		1.10	1.10	1.21	6.0	0.60	0.500	0.900	0.56	-0.20	0.70	0.49	1.21	6% of 42%
2	Shop glazing	N		2.70	12.50	33.75	6.0	0.60	7.500	2.700	2.78	0.00	0.00	0.19	33.75	29% of 42%
3	Shaded strip glazing	N		1.50	7.00	10.50	6.0	0.6	1.000	1.500	0.67	0.00	0.54	0.42	10.50	45% of 42%
4	Tall narrow	N		2.50	0.60	1.50	6.0	0.60				0.00	1.00	1.00	1.50	20% of 42%
5	Shaded S strip	W		1.50	2.50	3.75	4.6	0.41	1.000	1.500	0.67	0.00	0.61	0.57	3.75	4% of 96%
6	Shop front	S		2.70	6.40	17.28	6.0	0.60	0.500	2.700	0.19	0.00	0.94	0.91	17.28	68% of 66%
7	Shaded punched window	W		2.00	16.20	32.40	4.6	0.41	0.500	1.500	0.33	-0.50	0.84	0.77	32.40	43% of 96%
8	Shop front	W		2.70	6.50	17.55	4.6	0.41	6.500	2.700	2.41	0.00	0.00	0.26	17.55	14% of 96%
9	Shaded punched	E		2.00	12.60	25.20	6.0	0.40	0.500	1.500	0.33	-0.50	0.83	0.77	25.20	33% of 100%
10	Shaded shopfront	E		2.70	2.40	6.48	6.0	0.40	3.900	2.700	1.44	0.00	0.04	0.32	6.48	4% of 100%
11	Courtyard shaded	W		2.00	12.60	25.20	4.6	0.41	1.200	2.000	0.60	0.00	0.66	0.60	25.20	28% of 96%
12	Courtyard shaded	E		2.00	14.40	28.80	6.0	0.40	1.200	2.000	0.60	0.00	0.63	0.59	28.80	29% of 100%
13	Courtyard Shaded strip	W		1.50	2.50	3.75	4.6	0.41	1.000	1.500	0.67	0.00	0.61	0.57	3.75	4% of 96%
14	shaded strip glazing	W		1.50	4.00	6.00	4.6	0.41	1.000	1.500	0.67	0.00	0.61	0.57	6.00	7% of 96%
15	Shaded S strip	E		1.50	2.50	3.75	6.0	0.40	1.000	1.500	0.67	0.00	0.56	0.56	3.75	4% of 100%
16	Courtyard Shaded strip	E		1.50	2.50	3.75	6.0	0.40	1.000	1.500	0.67	0.00	0.56	0.56	3.75	4% of 100%
17	Courtyard Shaded strip	E		1.50	3.70	5.55	6.0	0.40	1.000	1.500	0.67	0.00	0.56	0.56	5.55	5% of 100%
18	Strip	S		1.50	4.00	6.00	6.0	0.60	0.500	1.500	0.33	0.00	0.89	0.84	6.00	23% of 66%
19	Odd windows	S		0.50	4.40	2.20	6.0	0.60				0.00	1.00	1.00	2.20	9% of 66%
20	central strip	E		1.60	4.10	6.56	6.0	0.40	3.900	1.600	2.44	0.00	0.00	0.25	6.56	3% of 100%
21	Unshaded punched	E		2.00	5.40	10.80	6.0	0.40				0.00	1.00	1.00	10.80	19% 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

Copyright © 2012 – Australian Government, State and Territory Governments of Australia. All Rights Reserved

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

[HELP](#)

Building name/description: **RACF building**

Application: **Class 9c aged care** Climate zone: **5**

Storey: **Ground**

Facade areas	N	NE	E	SE	S	SW	W	NW	internal
Option A	143m²		289m²		160m²		301m²		
Option B									n/a

Glazing area (A): 48.3m² 89.1m² 29.7m² 93.6m²


Number of rows preferred in table below: **17** (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 U-Value (AFRC)	SHGC (AFRC)	P (m)	H (m)	P/H	G (m)	Heating g (S _u)	Cooling g (S _c)	Area used (m²)	of % of allowance used
1	Single window	N		1.10	1.10	1.21	6.0	0.60	0.500	0.800	0.63	-0.30	0.62	0.45	1.21	5% of 48%
2	Shop glazing	N		2.70	13.00	35.10	6.0	0.60	3.900	2.700	1.44	0.00	0.00	0.22	35.10	39% of 48%
3	Shaded strip glazing	N		1.50	7.00	10.50	6.0	0.6	1.000	1.500	0.67	0.00	0.54	0.42	10.50	39% of 48%
4	Tall narrow	N		2.50	0.60	1.50	6.0	0.60				0.00	1.00	1.00	1.50	17% of 48%
5	Shaded S strip	W		1.50	2.50	3.75	4.6	0.41	1.000	1.500	0.67	0.00	0.61	0.57	3.75	4% of 100%
6	Unshaded shop front	S		2.70	11.00	29.70	6.0	0.60				0.00	1.00	1.00	29.70	100% of 78%
7	Shaded punched window	W		2.00	18.00	36.00	4.6	0.41	1.400	2.000	0.70	0.00	0.58	0.56	36.00	37% of 100%
8	Shop front	W		2.70	7.00	18.90	4.6	0.41	1.000	2.700	0.37	0.00	0.82	0.74	18.90	23% of 100%
9	Shaded punched	E		2.00	18.00	36.00	6.0	0.47	1.400	2.000	0.70	0.00	0.53	0.54	36.00	40% of 99%
10	Shaded shopfront	E		1.60	7.00	11.20	6.0	0.47	1.000	1.600	0.63	0.00	0.61	0.58	11.20	13% of 99%
11	Courtyard shaded	W		2.00	12.60	25.20	4.6	0.41	1.400	2.000	0.70	0.00	0.58	0.56	25.20	26% of 100%
12	Courtyard shaded	E		2.00	14.40	28.80	6.0	0.47	1.400	2.000	0.70	0.00	0.53	0.54	28.80	32% of 99%
13	Courtyard Shaded strip	W		1.50	2.50	3.75	4.6	0.41	1.000	1.500	0.67	0.00	0.61	0.57	3.75	4% of 100%
14	shaded strip glazing	W		1.50	4.00	6.00	4.6	0.41	1.000	1.500	0.67	0.00	0.61	0.57	6.00	6% of 100%
15	Shaded S strip	E		1.50	2.50	3.75	6.0	0.47	1.000	1.500	0.67	0.00	0.56	0.56	3.75	4% of 99%
16	Courtyard Shaded strip	E		1.50	2.50	3.75	6.0	0.47	1.000	1.500	0.67	0.00	0.56	0.56	3.75	4% of 99%
17	Courtyard Shaded strip	E		1.50	3.70	5.55	6.0	0.47	1.000	1.500	0.67	0.00	0.56	0.56	5.55	6% of 99%

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



Copyright © 2012 – Australian Government, State and Territory Governments of Australia. All Rights Reserved

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

Building name/description

RACF building

Storey

First

Application

Class 9c aged care

Climate zone

5

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A	143m ²		289m ²		160m ²		301m ²		
Option B									n/a

Glazing area (A)

37.5m² 88.4m² 19.7m² 92.3m²

Number of rows preferred in table below

20 (as currently displayed)

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.

Copyright © 2012 – Australian Government, State and Territory Governments of Australia. All Rights Reserved

if inputs are valid

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

Building name/description

RACF building

Storey

Second

Application

Class 9c aged care

Climate zone

5

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A	143m ²		289m ²		160m ²		301m ²		
Option B									n/a

Glazing area (A)

45.1m² 89.1m² 19.1m² 92.3m²

Number of rows preferred in table below

20 (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 _h)	Cooling (S _c)	Area used (m ²)	of % of allowance used
1																
2	Single window	N		1.10	1.10	1.21	6.0	0.60	0.500	0.900	0.56	-0.20	0.70	0.49	1.21	6% of 43%
3	Tall narrow	N		2.50	0.60	1.50	6.0	0.60				0.00	1.00	1.00	1.50	19% of 43%
4	shaded strip	N		1.50	7.00	10.50	6.0	0.60	1.000	1.500	0.67	0.00	0.54	0.42	10.50	43% of 43%
5	Shopfront	N		2.70	11.80	31.86	6.0	0.60	4.800	2.700	1.78	0.00	0.00	0.20	31.86	31% of 43%
6	Shaded punched window	W		2.00	18.00	36.00	4.6	0.43	1.200	2.000	0.60	0.00	0.66	0.60	36.00	40% of 99%
7	Shaded strip	W		1.50	4.00	6.00	4.6	0.43	1.000	1.500	0.67	0.00	0.61	0.57	6.00	6% of 99%
8	Shopfront	W		2.70	6.50	17.55	4.6	0.43	2.500	2.700	0.93	0.00	0.41	0.47	17.55	17% of 99%
9	Shaded S strip	W		1.50	2.50	3.75	4.6	0.43	1.000	1.500	0.67	0.00	0.61	0.57	3.75	4% of 99%
10	Courtyard shaded	W		2.00	12.60	25.20	4.6	0.43	1.200	2.000	0.60	0.00	0.66	0.60	25.20	28% of 99%
11	Courtyard strip shaded	W		1.50	2.50	3.75	4.6	0.43	1.000	1.500	0.67	0.00	0.61	0.57	3.75	4% of 99%
12	Punched shaded	E		2.00	18.00	36.00	6.0	0.45	1.200	2.000	0.60	0.00	0.63	0.59	36.00	41% of 100%
13	Courtyard shaded	E		2.00	14.40	28.80	6.0	0.45	1.200	2.000	0.60	0.00	0.63	0.59	28.80	33% of 100%
14	Shaded S strip	E		1.50	2.50	3.75	6.0	0.45	1.000	1.500	0.67	0.00	0.56	0.56	3.75	4% of 100%
15	Shopfront	E		1.60	7.00	11.20	6.0	0.45	1.000	1.600	0.63	0.00	0.61	0.58	11.20	12% of 100%
16	Courtyard strip S shade	E		1.50	2.50	3.75	6.0	0.45	1.000	1.500	0.67	0.00	0.56	0.56	3.75	4% of 100%
17	Courtyard strip shaded	E		1.50	3.70	5.55	6.0	0.45	1.000	1.500	0.67	0.00	0.56	0.56	5.55	6% of 100%
18	Strip	S		1.50	11.00	16.50	6.0	0.60	0.500	1.500	0.33	0.00	0.89	0.84	16.50	86% of 49%
19	Odd windows	S		0.50	4.40	2.20	6.0	0.60				0.00	1.00	1.00	2.20	12% of 49%
20	Odd windows2	S		0.30	1.20	0.36	6.0	0.60				0.00	1.00	1.00	0.36	2% of 49%

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.

Copyright © 2012 – Australian Government, State and Territory Governments of Australia. All Rights Reserved

if inputs are valid

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

Building name/description

RACF building

Storey

Third

Application

Class 9c aged care

Climate zone

5

Option A

Option B

Facade areas	N	NE	E	SE	S	SW	W	NW	internal
Option A	143m ²		243m ²		160m ²		241m ²		
Option B									n/a

Glazing area (A_g)

52.9m² 73.5m² 19.2m² 83.9m²

Number of rows preferred in table below

18 (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 g (S _w)	Cooling g (S _c)	Area used (m ²)	of % of allowance used
1	Shaded strip	N		1.50	14.00	21.00	6.0	0.60	1.000	1.500	0.67	0.00	0.54	0.42	21.00	65% of 57%
2	shopfront	N		2.70	11.80	31.86	6.0	0.60	3.500	2.700	1.30	0.00	0.00	0.23	31.86	35% of 57%
3	Shaded punched window	W		2.00	14.40	28.80	4.6	0.37	1.200	2.000	0.60	0.00	0.66	0.60	28.80	37% of 98%
4	Balcony	W		1.50	4.00	6.00	4.6	0.37	1.000	1.500	0.67	0.00	0.61	0.57	6.00	7% of 98%
5	Shopfront	W		2.70	6.50	17.55	4.6	0.37	6.500	2.700	2.41	0.00	0.00	0.26	17.55	16% of 98%
6	Shaded S strip	W		1.50	2.50	3.75	4.6	0.37	1.000	1.500	0.67	0.00	0.61	0.57	3.75	5% of 98%
7	Courtyard shaded	W		2.00	9.00	18.00	4.6	0.37	1.200	2.000	0.60	0.00	0.66	0.60	18.00	23% of 98%
8	Courtyard strip unshaded	W		1.50	2.50	3.75	4.6	0.37	1.000	1.500	0.67	0.00	0.61	0.57	3.75	5% of 98%
9	Courtyard balcony	W		1.50	4.00	6.00	4.6	0.37	1.000	1.500	0.67	0.00	0.61	0.57	6.00	7% of 98%
10	Shaded S strip	E		1.50	2.50	3.75	6.0	0.46	1.000	1.500	0.67	0.00	0.56	0.56	3.75	5% of 100%
11	Balcony	E		1.50	4.00	6.00	6.0	0.46	1.000	1.500	0.67	0.00	0.56	0.56	6.00	8% of 100%
12	Punched shaded	E		2.00	16.20	32.40	6.0	0.46	1.200	2.000	0.60	0.00	0.63	0.59	32.40	45% of 100%
13	Courtyard shaded	E		2.00	10.80	21.60	6.0	0.46	1.200	2.000	0.60	0.00	0.63	0.59	21.60	30% of 100%
14	Courtyard strip shaded	E		1.50	2.50	3.75	6.0	0.46	1.000	1.500	0.67	0.00	0.56	0.56	3.75	5% of 100%
15	Courtyard balcony	E		1.50	4.00	6.00	6.0	0.46	1.000	1.500	0.67	0.00	0.56	0.56	6.00	8% of 100%
16	Strip	S		1.50	11.00	16.50	6.0	0.60	0.500	1.500	0.33	0.00	0.89	0.84	16.50	86% of 50%
17	Odd windows	S		0.50	4.40	2.20	6.0	0.60				0.00	1.00	1.00	2.20	12% of 50%
18	Odd windows2	S		0.30	1.70	0.51	6.0	0.60				0.00	1.00	1.00	0.51	3% of 50%

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.

Copyright © 2012 – Australian Government, State and Territory Governments of Australia. All Rights Reserved

if inputs are valid

Building 4:

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

Building name/description: **Building 4**

Application: **Class 9c aged care** Climate zone: **5**

Storey: **Basement**

Facade areas:

	N	NE	E	SE	S	SW	W	NW	internal
Option A	68m ²		48m ²						
Option B									n/a

Glazing area (A): 18m² 18.2m²


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 U-Value (AFRC)	SHGC (AFRC)	P (m)	H (m)	P/H	G (m)	Heating (S _w)	Cooling (S _c)	Area used (m ²)	of % of allowance used
1											ROW SKIPPED (OK if intentional)					
2											ROW SKIPPED (OK if intentional)					
3	Entrance glazing	E		3.20	5.70	14.24	6.0	0.60	device		2.00	0.00	0.00	0.25	18.24	100% of 82%
4	Entrance glazing	N		3.00		18.00	6.0	0.55	4.000	4.200	0.95	1.20	0.92	0.61	18.00	100% of 98%
5																
6																
7																
8																
9																
10																
11																
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.

Copyright © 2012 – Australian Government, State and Territory Governments of Australia. All Rights Reserved

if inputs are valid 

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

Building name/description: **Building 4**

Application: **Class 9c aged care** Climate zone: **5**

Storey: **Ground**

Facade areas:

	N	NE	E	SE	S	SW	W	NW	internal
Option A	93m²		154m²		56.8m²		72.6m²		
Option B									n/a

Glazing area (A): 73m² 77.3m² 7.02m² 7m²

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 (m²)	Total U-Value (AFRC)	SHGC (AFRC)	P (m)	H (m)	P/H	G (m)	Heating (S _u)	Cooling (S _c)	Area used (m²)	of % of allowance used
1	Full height glazing	E		3.30	17.90	59.07	6.0	0.43	4.000	2.600	1.54	-0.70	0.03	0.31	59.07	74% of 98%
2	Billiard room glazing	N				28.00	6.0	0.60	device		2.00	0.00	0.00	0.19	28.00	38% of 40%
3	Entrance glazing	E		3.20	5.70	18.24	6.0	0.60	device		2.00	0.00	0.00	0.25	18.24	26% of 98%
4	Entrance glazing	N		3.00		45.00	6.0	0.60	device		2.00	0.00	0.00	0.19	45.00	62% of 40%
5											ROW SKIPPED (OK if intentional)					
6											ROW SKIPPED (OK if intentional)					
7	craft glazing	W		0.70	10.00	7.00	6.0	0.60				0.00	1.00	1.00	7.00	100% of 67%
8	Corridor glazing	S		2.70	2.60		6.0	0.60				0.00	1.00	1.00	7.02	100% of 52%
9																
10																
11																
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.

Copyright © 2012 – Australian Government, State and Territory Governments of Australia. All Rights Reserved

if inputs are valid 