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BCA & ACCESS COMPLIANCE REVIEW

Proposed KCC Redevelopment

Katoomba Christian Convention

DATE_8TH FEBRUAERY 2018

PROJECT NO. 14289

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ISSUED	REVIEW	ISSUED BY
Date. 8th February 2018	Minor revisions to wording to clarify use.	Trevor Eveleigh
Date. 23rd November 2017	Issue for DA Application	Trevor Eveleigh
Date. November 2017	Issue for Review	Trevor Eveleigh

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1.0 INTRODUCTION

1.1 GENERAL

NBRS Architecture have been engaged by Katoomba Christian Convention to develop a design for the redevelopment of the existing site at Cliff Drive Katoomba.

As part of the design process a review has been undertaken of the proposed design against current building regulations and to ensure that the design provides equitable access to all appropriate areas of the facility.
This Report sets out the outcome of the BCA Compliance & Access review, and has been prepared to accompany the Development Approval Application.
The review compares the proposed design, against the requirements set out in the following documents:

- The Building Code of Australia 2016 version (BCA) and
  - The associated relevant standards

The proposed design for the development is represented in the following plans prepared by NBRS Architecture which have been used as part of this review.

Table 1

Drawing No.	Issue	Description
14289 – 00	17/11/17	Cover
14289 – 02	17/11/17	Site Analysis
14289 – 03	17/11/17	Environmental Constraints
14289 – 04	17/11/17	Existing Condition
14289 – 05	17/11/17	Existing Condition
14289 – 06	17/11/17	Master Plan
14289 – 07	17/11/17	Master Plan – Staging
14289 – 08	17/11/17	Zone 1, 2, 3 Plan
14289 – 09	17/11/17	Zone 1 Auditorium + Plaza Ground Plan
14289 – 10	17/11/17	Zone 1 Auditorium + Plaza Level 1Plan
14289 – 13	17/11/17	Zone 2 Eco Lodge 4, 5 & 6 Lower Ground Plan
14289 – 14	17/11/17	Zone 2 Eco Lodge 4, 5 & 6Ground Plan
14289 – 15	17/11/17	Zone 2 Eco Lodge 1, 2 & 3 Ground Plan
14289 – 16	17/11/17	Zone 3 Admin + Café Ground Plan
14289 – 18	17/11/17	Zone 3 Eco Lodge 1, 2 & 3 Ground Plan

1.2 SITE DETAILS

The site for the proposed development is a large parcel of land on Cliff drive Katoomba NSW 2780, includes No's 4A to 4E, 117 and 119 to 119D.
The site details are;

- Lot 5 DP 222736
-

The site is within the Blue Mountains Local Government area and therefore Climate Zone 6.
The existing site is currently used as a Place of Worship and associated accommodation, including a number of existing buildings on the site.
The following figure shows the site and the surrounding area.

Figure 1- Site location

The owners of the site also own the following adjacent sites.

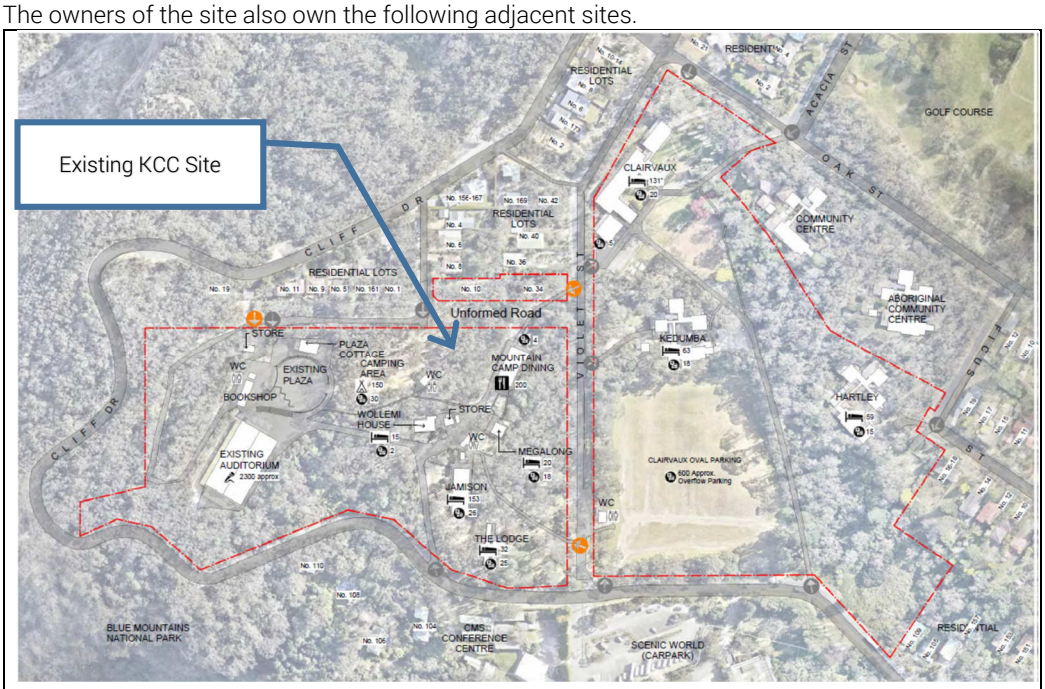


Figure 2- Adjacent Sites

1.3 THE PROPOSAL

The proposal is for the redevelopment of the existing site to expand the existing usage and provide additional accommodation on site.
The use of the site will remain as the existing.
The proposed buildings will include:

- New two storey building, with
  - Auditorium to seat approximately 3500
  - Stage, backstage areas,
  - Green room and dressing rooms.
  - New kitchen and stores
  - New bookshop
  - Associated toilet facilities.
  - 3 double breakout meeting rooms on ground floor
  - 4 breakout meeting spaces on the first floor.
  - Associated covered walkways.

- Reception and office building

- 6 two storey Eco Lodges each with;
  - Accommodation for 192 (6 x 32)
  - Lower level
    - 2 double accommodation suites (4)
    - Breakout meeting room
  - Upper Level
    - 6 Four bed dorm rooms with ensuite (2 are accessible)(24)
    - 2 double accommodation suites (4)
    - Gathering space (Lounge)

- 3 two storey Eco Chalet's, each with;
  - Accommodation for 51 (3 x 17)
  - Lower level
    - 3 triple bed rooms with ensuites (9)
  - Upper Level
    - 2 triple bed rooms with ensuites (6)
    - 1 double, accessible room with ensuite (2)
    - Gathering meeting space.

- Dinning & Administration two storey building, with;
  - Lower level
    - Reception and administration office area.
    - Stores and laundry back of house areas.
    - Café
  - Upper Level
    - Dinning hall,
    - Kitchen and server area
    - Associated foyer and toilet facilities.

1.4 SITE ACCESS

Access to the site is from Violet street to the north and Cliff Drive to the east.
Car parking associated with the centre is also available on the adjacent site to the north of Violet Street.

1.5 BCA REQUIREMENTS

The Building Code of Australia (BCA2016) within the National Construction Code sets out number of Performance Requirements that a building solution must meet to achieve a reasonable level of safety, access to buildings, and functional performance.
Where due to the configuration within individual building or site applications, the detailed design does not meet the Deemed to Satisfy Provisions of the BCA, there is an opportunity for the design to be assessed as an Alternative Solution, against the Performance Requirements of the BCA.
Any Alternative Solutions will be subject to the approval of the Principal Certifying Authority.
The requirements for the building are based on the scale of the building, the number of occupants and the usage of the building.
The building is proposed as a Place of Public Worship with an auditorium that is designed for approximately 3500 occupants.
Due to the large number of occupants expected the facilities have been designed to meet the criteria of a auditorium under part H101 of the NSW variations to the Building Code of Australia (BCA 2016.
The following table sets out the BCA classifications of usage and scale.

1.6 BUILDING HEIGHT, RISE IN STOREYS & EFFECTIVE HEIGHT

Table 2

		Rise in storeys
Auditorium, bookshop & Breakout spaces	Class 9b	2
3 double Breakout spaces	Class 9b	1
Reception	Class 5	1
6 Eco Lodges (Accommodation)	Class 3	2
3 Eco Chalet's	Class 3	2
Dining & Administration Lower level – Administration - Cafe Upper Level – Dining & Kitchen	 Class 5 Class 6 Class 9b	 2

2.0 BCA DEEMED TO SATISFY PROVISIONS

2.1 PART A – FIRE COMPARTMENTS AND FIRE RATINGS

The proposed building is considered as one development with the building split up into different functional areas.
The Administration office areas on the lower level floor are of class 5 usage associated with the main class 9b usage and therefore the building as a whole is considered to be of a Class 9b use.

The following table sets out the relevant BCA classifications of proposed building and construction requirements:

Table 3- Building Details

		Rise in storeys	Type of Construction	Area
Auditorium, bookshop & Breakout spaces	Class 9b	2	(Type B) Type A Proposed	5650
3 double Breakout spaces	Class 9b	1	Part of above	750
Reception	Class 5	1	Type C	130
6 Eco Lodges (Accommodation)	Class 3	2	Type B	6 x 580
3 Eco Chalet's	Class 3	2	Type B	3 x 310
Dining & Administration Lower level – Administration - Cafe Upper Level – Dining & Kitchen	 Class 5 Class 6 Class 9b	 2	 Type B	 900 150 1520

Table 4- Auditorium Building (Class 9b)

KCC Redevelopment - Auditorium			**14289**	**BCA 2016**
KCC				
				Key
Class	**9b - Assembly Building**			Fill in the details
				BCA Requirements
Rise in Storeys	**2**			
Effective Height	-			
			Notes	
Building Floor Area	**5600**	M2	Will require Fire Compartmentation	
			Could be a Large Isolated Building	
Containing Atrium	**No**			
Place of Public Entertainment	**No**		**Stage & Backstage Area**	**1- No Stage**
Basement Car park	**No**	-		
	0			
Class 9B Building Specific use	**7-Other Assembly Buildings**			
	Zone Map		Zone Maps	
Building Location Zone	**Zone 6**	**Western Sydney, South Coast NSW & Hunter Valley**	**NSW**	\\Siza\admin\Reference Documents\BCA\bca2009
			VIC	R:\Reference Documents\BCA\315 Climate Zone
Type of Construction	**B**			
Maximum Compartment				
Area	**5500**	M2		
Volume	**33000**	M3		

Table 5- Accommodation Buildings

KCC Redevelopment - Accommodation			**14289**	**BCA 2016**
KCC				
				Key
Class	**3 - Residential hostels, guest houses,**			Fill in the details
				BCA Requirements
Rise in Storeys	**2**			
Effective Height	-			
Building Floor Area	**1000**	M2		
Containing Atrium	**No**			
Place of Public Entertainment	**No**		**Stage & Backstage Area**	**1- No Stage**
Basement Car park	**No**	-		
	0			
Class 9B Building Specific use				
	Zone Map		Zone Maps	
Building Location Zone	**Zone 6**	**Western Sydney, South Coast NSW & Hunter Valley**	**NSW**	\\Siza\admin\Reference Documents\BCA\bca2009
			VIC	R:\Reference Documents\BCA\315 Climate Zone
Type of Construction	**B**			
Maximum Compartment				
Area	**N/A**	M2		
Volume	**N/A**	M3		

Table 6- Dinning & Administration (Class 9b)

KCC Redevelopment - Dining & Administration			14289	BCA 2016
KCC				
				Key
Class	9b - Assembly Building			Fill in the details
				BCA Requirements
Rise in Storeys	2			
Effective Height	-			
Building Floor Area	2000	M2		
Containing Atrium	No			
Place of Public Entertainment	No		Stage & Backstage Area	1- No Stage
Basement Car park	No	-		
	0			
Class 9B Building Specific use	7-Other Assembly Buildings			
	Zone Map		Zone Maps	
Building Location Zone	Zone 6	Western Sydney, South Coast NSW & Hunter Valley	NSW	\\Siza\admin\Reference Documents\BCA\bca2009
			VIC	R:\Reference Documents\BCA\315 Climate Zone
Type of Construction	B			
Maximum Compartment				
Area	5500	M2		
Volume	33000	M3		

KCC Redevelopment - Café			14289	BCA 2016
KCC				
				Key
Class	6 - Shop, Cafe Restaurants			Fill in the details
				BCA Requirements
Rise in Storeys	1			
Effective Height	-			
Building Floor Area	800	M2		
Containing Atrium	No			
Place of Public Entertainment	No		Stage & Backstage Area	1- No Stage
Basement Car park	No	-		
	0			
Class 9B Building Specific use				
	Zone Map		Zone Maps	
Building Location Zone	Zone 6	Western Sydney, South Coast NSW & Hunter Valley	NSW	\\Siza\admin\Reference Documents\BCA\bca2009
			VIC	R:\Reference Documents\BCA\315 Climate Zone
Type of Construction	C			
Maximum Compartment				
Area	2000	M2		
Volume	12000	M3		

2.2 BUILDING COMPARTMENT AREAS

2.2.1 THE MAIN AUDITORIUM BUILDING

The Auditorium building, breakout spaces, reception, bookshop and toilets are all joined together with covered walkways and therefore are considered to be a single building with a floor area of more than 6,500 m2.

The building due to the use and number of floors is required to be at least a building of Type B construction, however the floor area of the combined building exceeds the maximum permitted for a building of Type B construction. The options to address this would be to either;

1. Change the building type of construction to being of type A, which permits a floor area of up to 8000 m2.
2. Fire separate part of the building so that the floor area is less than the maximum permitted, or
3. Address the building as a large isolated building under clause C2.3 of the BCA which would require;
    - Sprinkler protection of the building.
    - Perimeter vehicle access around the building to BCA Clause C2.4.

Due to the location of the buildings and the contours of the site it would be difficult to provide perimeter vehicle access around the buildings. Therefore addressing the building as a large isolated building would not appear to be feasible.
The significant difference between options 1 & 2 are that a building of type A construction would require:

- Increased fire rating for the floor between the lower and upper levels.
- Spandrel separation between the lower and upper floors.

The maximum permitted floor area for a building of type A construction is 8000m2 or 48000m3, which the building is expected to be less than.

2.2.2 ECO LODGES & ECO CHALETS

The eco lodges and Chalets are accommodations buildings of class 3 use and two storeys in height, which will therefore be required to be of Type B construction. The BCA does not limit the building compartment size of accommodation buildings as each of the individual suites are usually considered to be a Sole Occupancy Unit (SOU) with fire rated walls bounding public corridors or other SOU's.

2.3 BOUNDARY SEPARATION

Where the building is proposed to be located in close to proximity of a site boundary or another building on the same site, the external and façade are required to be fire rated to prevent fire spread to adjacent site building or other buildings on the same site.
The site is bounded by roads and streets on all 4 sides, therefore the buildings are not exposed to a fire source feature within 6m.

The proposed development of the site will contain a number of different building. Due to the proximity of the auditorium to the breakout spaces and the reception they are considered to be part of the same building.
This building is located more than 6m from the accommodation buildings and the accommodation buildings are located more than 6m from the dinning and administration building. Therefore fire rated walls to the perimeter of the buildings is not required.

2.4 BUILDING COMPARTMENTATION

The main Auditorium & Breakout space buildings of Type A construction require FRL 120/120/120 floor by floor fire compartmentation and any open stairway can only connect two floors.
The Dining and administration building of type B construction requires FRL 30/30/30 fire rating of the floor that separates the two levels.
The Eco lodges and chalets require each of the Sole Occupancy Units to be fire separated with a FRL of 60/60/60 from the other areas and other SOU's.

2.5 PART C- FIRE RESISTANCE

The Following table sets out the requirements for fire resistance dependent upon the classification and distance of the building from the site boundaries or other buildings, taken from Clause 3.1 and Table 3 of Specification C1.1.

Table 7 - Auditorium & Breakout Areas - Type A Construction

Fire Rating Required (Part C)				
External Walls	Distance from Boundary/Fire S	**Loadbearing**	Distance from Fire source	**Non-Loadbearing**
(Including columns in walls)	< 1.5 m	120/120/120	< 1.5 m	"-/120/120"
	1.5 to 3 m	120/90/90	1.5 to 3 m	"-/90/90"
	3 to 9 m	120/60/30	More than 3m	"--/--/--"
	9 to 18 m	120/60/30		
	More than 18 m	120/60/30		
External Columns	< 1.5 m	120/--/--		
	1.5 to 3 m	120/--/--		
	More than 3m	120/--/--		
Internal Columns		**120/--/--**		
	Top Floor Columns	**-/-/-**	-	
Fire Wall		**120/120/120**	**Note: 1HR Fire rated stores in a PoPE**	
		Loadbearing		**Non Loadbearing**
Fire Stairs, lifts shafts		**120/120/120**		**"--/120/120"**
		Loadbearing		**Non Loadbearing**
Walls to SOU, & Public Corridors		**120/--/--**		**NA**
Floors		**120/120/120**	**Note: Fire rated spandrel required at perimeter windows/openings unless sprinkler protected.**	
Roofs		**"--/--/--"**	-	
			-	

Table 8 - Accommodation Type B Construction

Fire Rating Required (Part C)				
External Walls	Distance from Boundary/Fire S	**Loadbearing**	Distance from Fire source	**Non-Loadbearing**
(Including columns in walls)	< 1.5 m	90/90/90	< 1.5 m	"-/90/90"
	1.5 to 3 m	90/60/60	1.5 to 3 m	"-/60/30"
	3 to 9 m	90/30/30	More than 3m	"--/--/--"
	9 to 18 m	90/30/--		
	More than 18 m	"--/--/--"		
External Columns	< 1.5 m	90/--/--		
	1.5 to 3 m	90/--/--		
	More than 3m	"--/--/--"		
Internal Columns		**60/--/--**		
	Top Floor Columns	**"--/--/--"**	-	
Fire Wall		**90/90/90**		
		Loadbearing		**Non Loadbearing**
Fire Stairs, lifts shafts		**90/90/90**		**"--/90/90"**
		Loadbearing		**Non Loadbearing**
Walls to SOU, & Public Corridors		**60/60/60**		**"--/60/60"**
Floors		**30/30/30**		
Roofs		**"--/--/--"**	-	
			-	

Table 9 - Dining & Administration - Type B Construction

Fire Rating Required (Part C)				
External Walls	Distance from Boundary/Fire S	**Loadbearing**	Distance from Fire source	**Non-Loadbearing**
(Including columns in walls)	< 1.5 m	120/120/120	< 1.5 m	"-/120/120"
	1.5 to 3 m	120/90/60	1.5 to 3 m	"-/90/60"
	3 to 9 m	120/30/30	More than 3m	"--/--/--"
	9 to 18 m	120/30/--		
	More than 18 m	"--/--/--"		
External Columns	< 1.5 m	120/--/--		
	1.5 to 3 m	120/--/--		
	More than 3m	"--/--/--"		
Internal Columns		**120/--/--**		
	Top Floor Columns	**"--/--/--"**	-	
Fire Wall		**120/120/120**	**Note: 1HR Fire rated stores in a PoPE**	
		Loadbearing		**Non Loadbearing**
Fire Stairs, lifts shafts		**120/120/120**		**"--/120/120"**
		Loadbearing		**Non Loadbearing**
Walls to SOU, & Public Corridors		**120/--/--**		**NA**
Floors		**30/30/30**		
Roofs		**"--/--/--"**	-	
			-	

Applying the details of the table above to the project:

2.5.1 MAIN BUILDING, AUDITORIUM, BREAKOUT,

- Floors will require a FRL of 120/120/120
- Fire rated spandrels are required at the floor perimeter which is above external openings in the floor below.
- Structural elements will require a FRL of 120/--/--
- External structural walls will require a FRL of 120/120/120
- Top floor columns supporting the roof only do not require a FRL
- Any fire isolated stair and any lift shaft, have a FRL of 120/120/120

2.5.2 ACCOMMODATION BUILDINGS

- Floors will require a FRL of 30/30/30
- Walls separating the SOU's and public corridors will require a FRL of 60/60/60
- Structural External walls will require a FRL of 90/30/-- where within 18m of adjacent buildings.

2.5.3 ADMIN & DINING BUILDING

- Floors separating levels will require a FRL of 30/30/30
- Structural External walls will require a FRL of 90/30/-- where within 18m of adjacent buildings.

2.5.4 FLOOR BY FLOOR SEPARATION.

2.5.4.1 MAIN AUDITORIUM & BREAKOUT SPACE BUILDING

As the building is a class 9b building and of Type A Construction, floor by floor fire compartmentation is required, with a FRL of at least 120/120/120.
If a sprinkler protection system is not installed, then fire rated spandrels will be required between floors with a FRL of at least 60/60/60, refer to BCA Clause C2.6.

2.5.5 AUDITORIUM FIRE SEPARATION REQUIREMENTS.

Due to the large number of occupants planned for the Auditorium building it has been designed to meet the requirements for an auditorium under the BCA NSW Part H101 and will require additional fire safety measures, including:

- NSW H101.2 requires that the building be separated from other areas with a fire wall having a FRL of at least 60/60/60.
- NSW H101.3, requires a foyer space of at least 0.25m2 per occupant where auditorium is exhibiting films or conducting live stage productions.
- NSW H101.15 requires a dressing room with a floor area of more than 50m2 to fire separated from other areas with a FRL of 60/60/60.
- NSW H101.16 requires any store room to be fire separated from other areas with a FRL of 60/60/60.
- Exit widths are based on a factor of 1m per 100 occupants as set out within NSW D1.6.

2.6 PART D – ACCESS AND EGRESS

The requirements for access to and egress from a building are dependent upon the number of occupants within the building and their characteristics.

2.6.1 OCCUPANTS

The following table sets out he various areas and the associated occupant numbers, based on BCA Clause D1.13, Table D1.13 & NSW Table D1.13. It is noted that not all areas will be fully occupied at all time, but as a conservatism these occupant numbers are used for the provision of exits and exit paths.

Table 10- Building Details & Occupants

		Rise in storeys	Area	Occupants
Auditorium Building,	Class 9b	2	3350	3500
Bookshop, Kitchen, Facilities (Ground)	Class 9b	2	1200	Incl. in above
Breakout spaces(Level 1)	Class 9b	2	1100	950
Breakout spaces (3 Doubles)	Class 9b	1	750	210 per double.
Reception	Class 5	1	130	13
6 Eco Lodges (Accommodation)	Class 3	2	6 x 580	6 x 32
3 Eco Chalet's	Class 3	2	3 x 310	3 x 17
Dining & Administration				
Lower level – Administration	Class 5	2	900	90
Upper Level – Dining	Class 9b		750	750
& Kitchen	Class 9b		300	30
Toilets & Foyer	Class 9b		470	Incl in above
Café – Seating	Class 6	1	50	50
Kitchen & store	Class 6		100	10

2.6.2 EXITS.

Clause D1.6 of the BCA sets out the required width of exits based on the number of people in the area.

2.6.3 NUMBER OF EXITS AND DISTANCES TO EXITS

A class 9b Assembly building of two storeys is required by Clause D1.2 to have at least two exits from each level with more than 50 occupants.
Refer to the floor plans of the various areas and the exit paths.

Travel distances to exits is set by Clause D1.4 which requires the following:

General Areas

- No point on the floor of each level is to be more than 40m from one of two exits with travel to a point of choice of two exits within 20m or a maximum travel distance of 20m to a single exit.

Accommodation Building

- Entrance door to SOU to be maximum 6m from an exit or a point of choice. Or where there is a single exit at ground level a maximum travel distance of 20m.

2.6.4 AUDITORIUM BUILDING EXITS

NSW Part H101 requires the following additional exit requirements to the auditorium stage:

- Requires a stage and backstage with a floor area of more than 50m2 to have 2 exits, not through the stage proscenium.
- Requires the stage and backstage are to be fire separated from the remainder of the building.

Within the design two exits are required from the stage and backstage areas to meet the BCA requirements.

2.6.5 EXIT WIDTH

The required exit width is based on the number of occupants within the area.

- For class 5 & 9b buildings D1.6 requires an exit width of
  - Minimum 1m for up to 100 occupants
  - Minimum 1m plus 250mm per 25 occupants in excess of 100
  - Minimum 2m plus 500mm per 60 occupants in excess of 200 where the exit involves a stair or 500mm per 75 occupants in excess of 200 where the exit does not involve a stair or ramp greater than 1:12.

- For the Auditorium NSW D1.6 requires that exit width of doorways to be between 1m and 3m wide and that the width required for more than 200 occupants is 2m plus 0.5m per 50 occupants.

2.6.6 EXITS REQUIRED

The following table sets out the various areas and the required exits for the areas based on the number of occupants.

		Rise in storeys	Area	Occupants	Exits Required
Auditorium Building,	Class 9b	2	3350	3500	Min 2. 35 m of exit between 1 & 3m wide.
Bookshop, Kitchen, Facilities (Ground)	Class 9b	2	1200	Incl. in above	Min 2.
Breakout spaces(Level 1)	Class 9b	2	1100	950	9.5 m of exit between 1 & 3m wide
Breakout spaces (3 Doubles)	Class 9b	1	750	210 per double.	Min 2. 2.1m of exit width
Reception	Class 5	1	130	13	1 x 1m
6 Eco Lodges (Accommodation)	Class 3	2	6 x 580	6 x 32	Min 1 x 1m
3 Eco Chalet's	Class 3	2	3 x 310	3 x 17	Min. 1 x 1m
Dining & Administration Lower level – Administration Upper Level – Dining & Kitchen Toilets & Foyer	 Class 5 Class 9b Class 9b Class 9b	2	 900 750 300 470	 90 750 30 Incl in above	 Min 1 x 1m Min. 2, total of 6m Min 1 x 1m
Café – Seating Kitchen & store	Class 6 Class 6	1	50 100	50 10	1 x 1m

2.6.7 EXITS PROVIDED

The following images show the individual buildings and the exits available.

2.6.7.1 AUDITORIUM

The Auditorium requires multiple exits and a total of 35m of exit width for the 3,500 occupants. The individual exit width is to be between 1m and 3m clear through door ways.
Generally a typical double exit door with panic bars will provide a clear exit width of about 1.7m and therefore a total of at least 21 double door exits are required. The current design has a number of exits indicated around the perimeter of the building, as indicated in the following figure, which are to include the necessary exit width 35m.

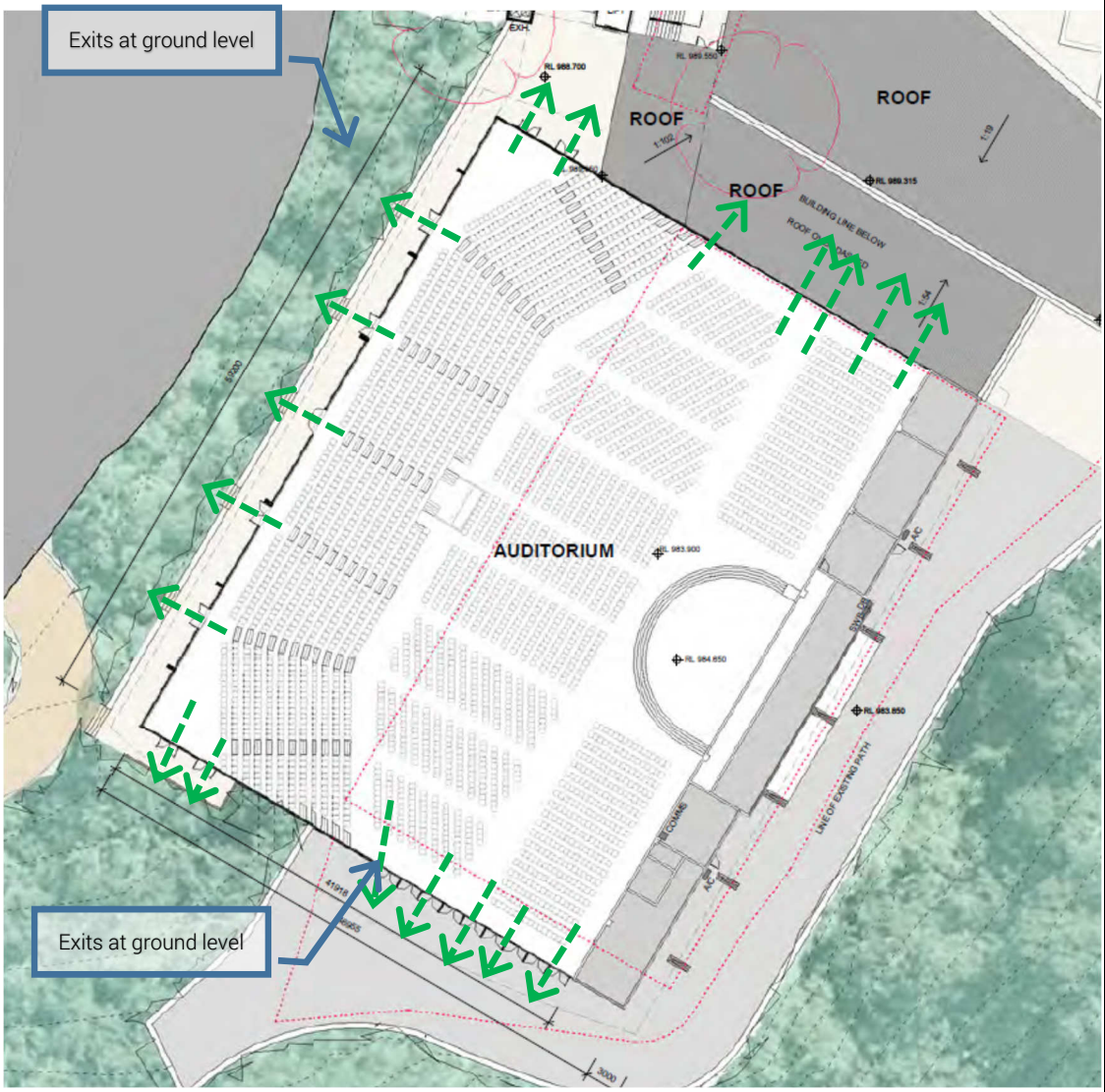


Figure 3 - AUDITORIUM PLAN

2.6.7.2 BREAKOUT AREAS ON LEVEL 1

The two breakout spaces on the upper level have a total of 950 occupants and therefore require multiple exits and a total exit width of at least 9.5m. Assuming each exit has a width of 3m a total of at least 4 exits are required. The current design includes 4 exits, two at ground level and two via stairs to the main terrace and plaza level.

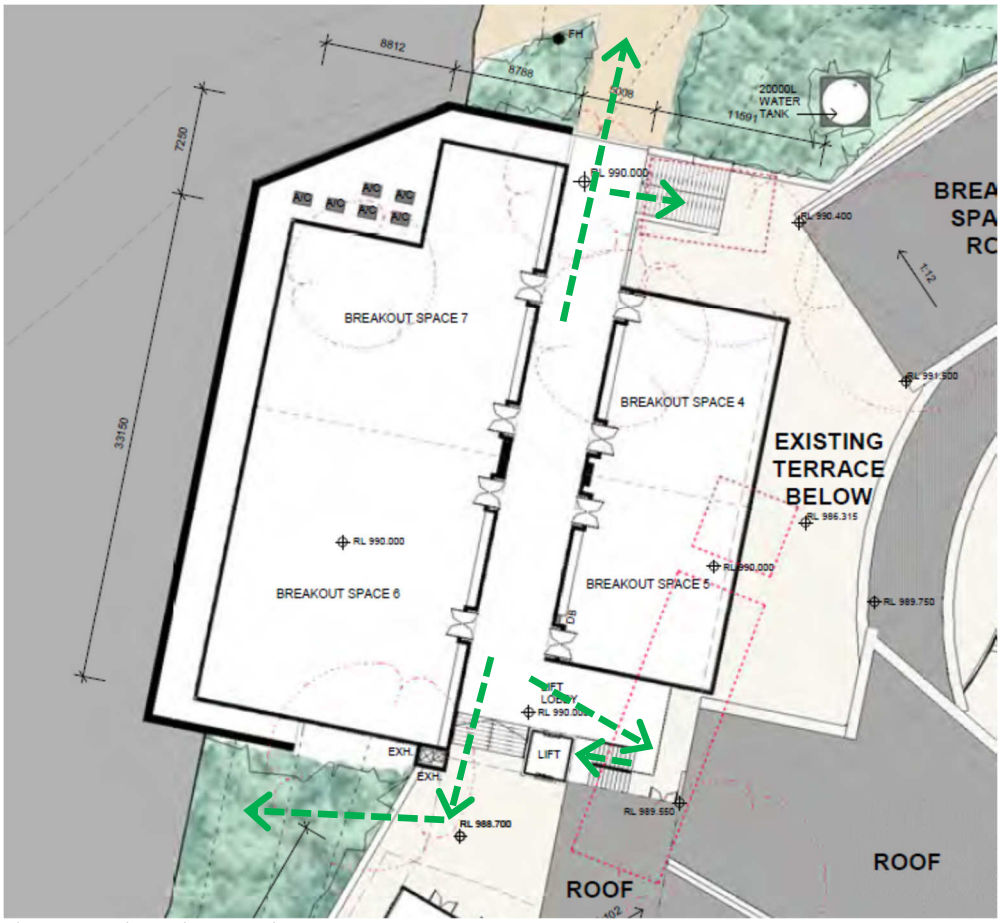


Figure 4 – Level 1 Breakout Area Plan

2.6.7.3 LOWER LEVEL BREAKOUT SPACES

There are three double break out spaces located around the plaza area. Each half of the double space accommodates approximately 105 occupants and is provided with a double door entry that provides an exit directly out to the plaza area. The plaza area is a large open area that is vehicle accessible and therefore can be considered as an open space for evacuation.

A double door entry general has a clear width of 1.6m and therefore will be sufficient for the number of occupants. As each breakout space has two exits the doors are to swing outwards in the direction of exit.

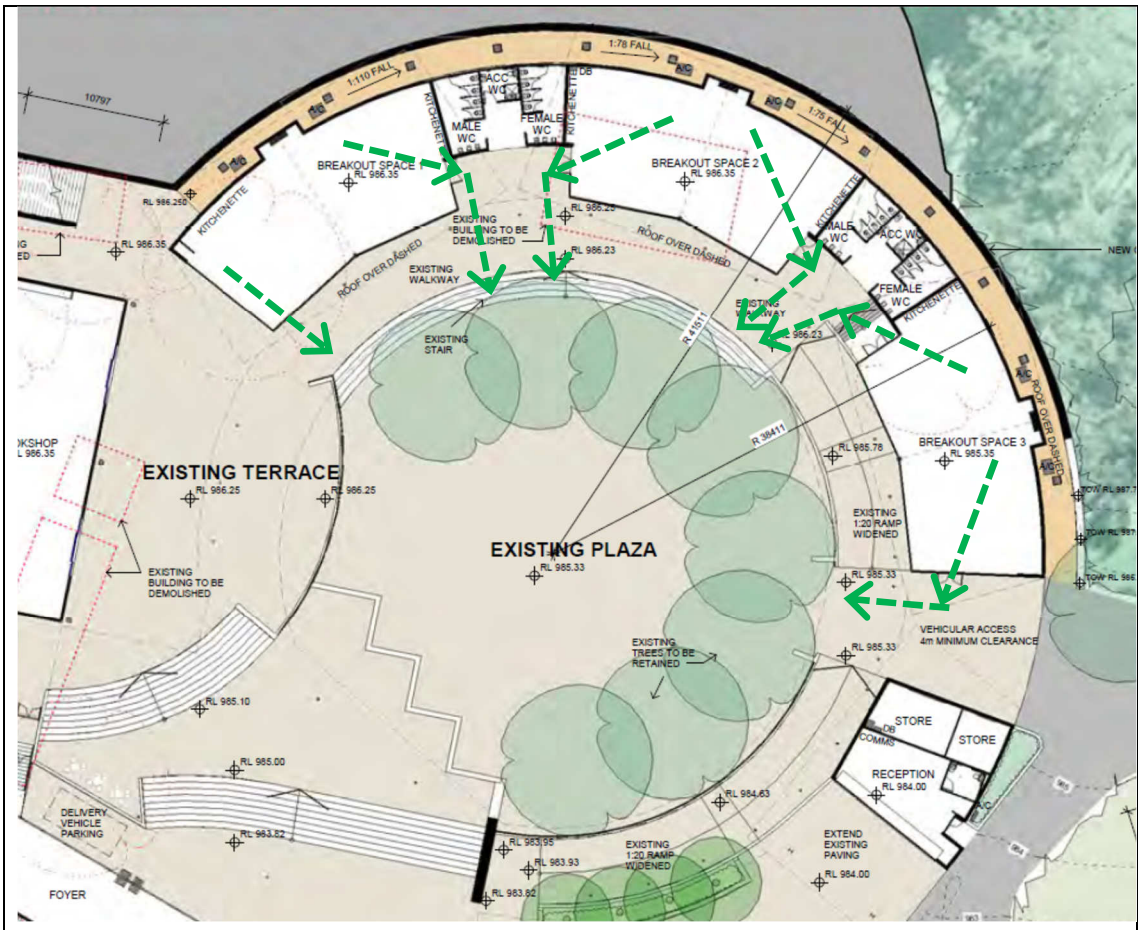


Figure 5 - Breakout Space Plan

2.6.7.4 ECO LODGES.

The upper floor of the Eco Lodges are provided with an entry/exit at each end of the building therefore meeting the exit requirements. The lower level of the Eco Lodges are provided with exits directly to the outside as indicated in the images below.

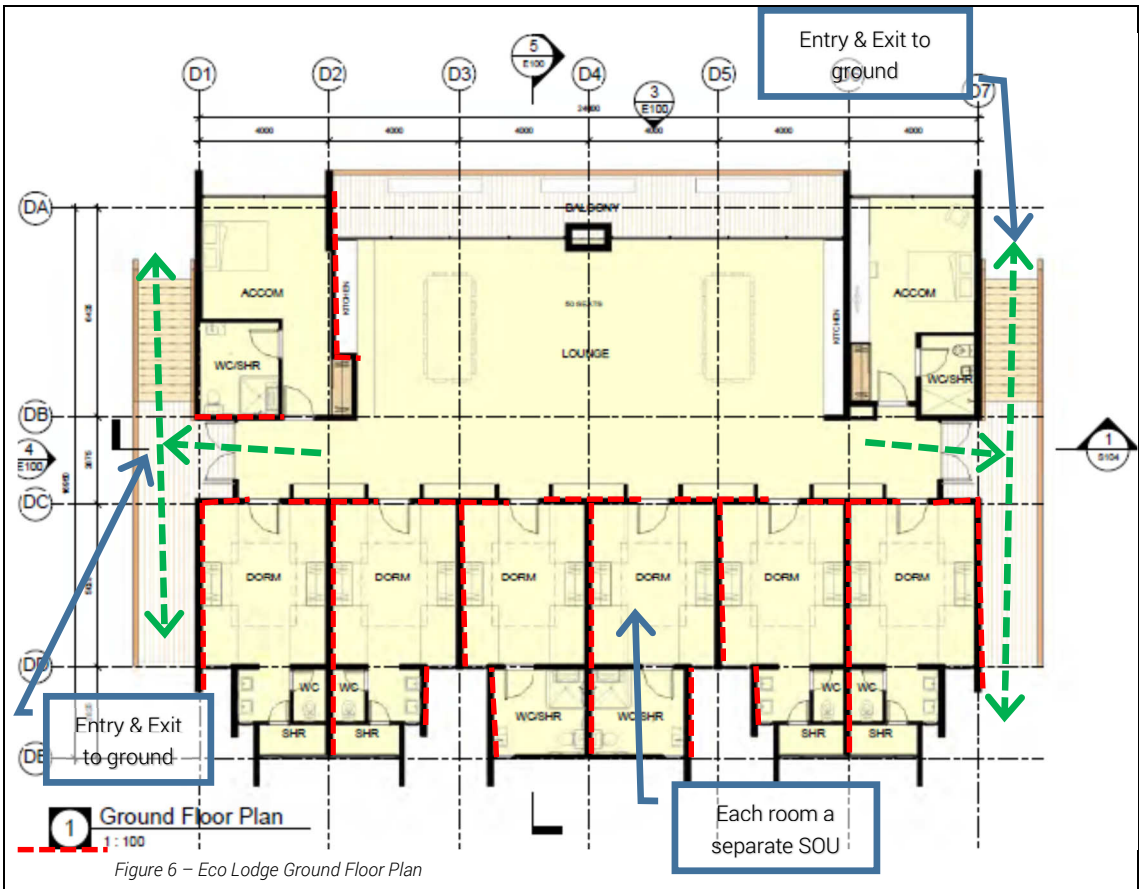


Figure 6 – Eco Lodge Ground Floor Plan

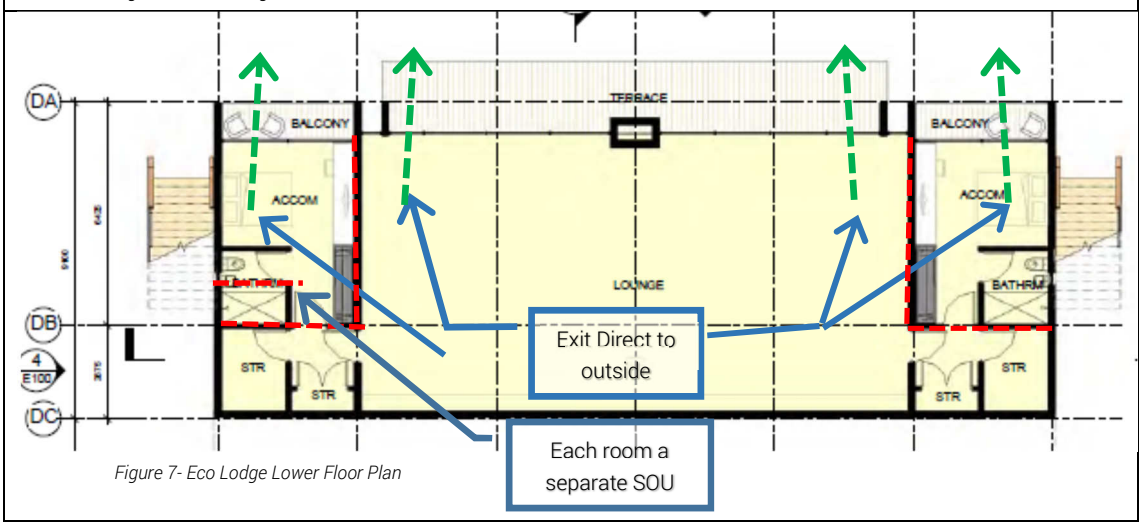


Figure 7- Eco Lodge Lower Floor Plan

2.6.7.1 ECO CHALETS

The upper floor of the Eco Chalets are provided with an entry/exit to one end of the building therefore meeting the exit requirements.
The lower level of the Eco Chalets are provided with exits directly to the outside as indicated in the images below.

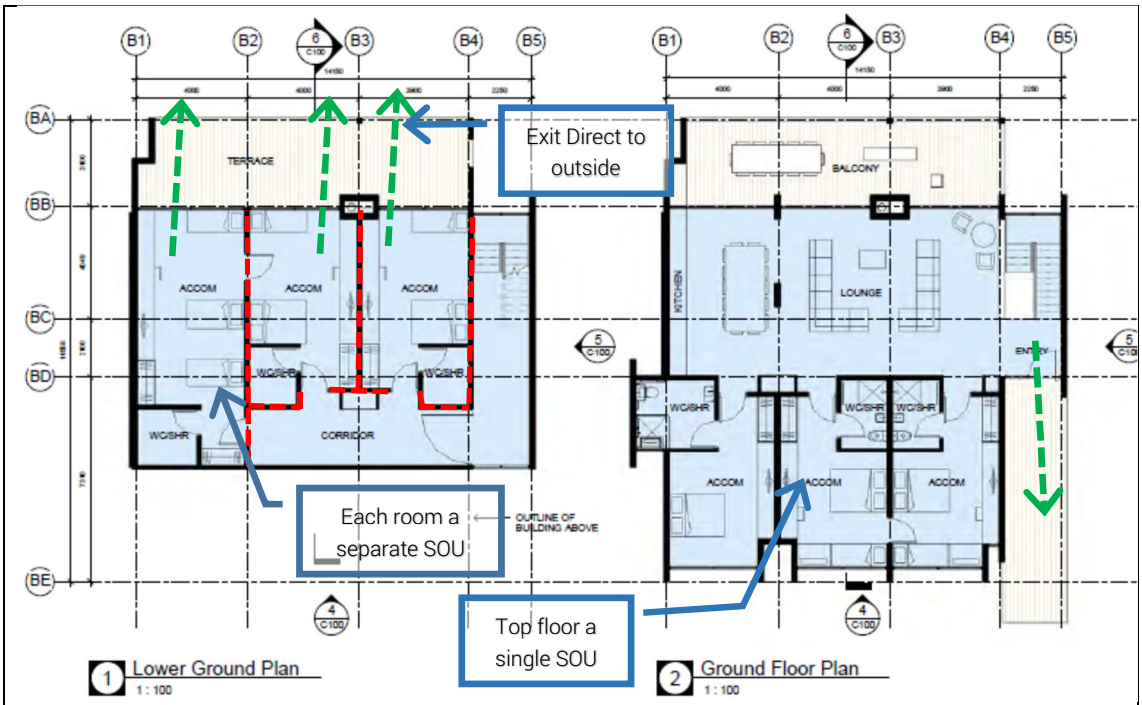


Figure 8- Eco Chalet Floor Plans

2.6.8 CONSTRUCTION OF EXITS PART D2

The stairs and exit paths are to be designed to meet the requirements of Part D2 of the BCA, which will include

- Store rooms or other enclosed spaces under stairs are to be fire rated enclosures (FRL 60/60/60).
- Going lengths and riser heights for the new stair are to meet the following requirements.
  - Riser – Max 190mm high, - Min 115mm high.
  - Going – Max 355mm long, - Min 250mm long
  - 2 x R + G – Max 700mm – Min 550mm.
- Conspicuous nosing to each of the stair treads.
- Threshold height at any external door to be less than 50mm. however to ensure that an accessible path is provided the change in level needs to be less than 6mm and threshold ramps should be included.
- Handrails to be provided to both sides of the new stair, with extensions at the ends to comply with AS1428.1.
- Door locks and latches are to be located between 900mm and 1100mm above the floor.
- Balustrades to edges of landings to be at least 1m high internally and 1.2m high externally.
- Tactile ground surface indicators will be required at the top and bottom of all stairs except enclosed fire stairs.
- Landings ramps and stairs to have the following slip resistant characteristics.

Table D2.14 SLIP-RESISTANCE CLASSIFICATION

APPLICATION	SURFACE CONDITIONS	
	DRY	WET
Ramp steeper than 1:14	P4 or R11	P5 or R12
Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11
Tread or landing surface	P3 or R10	P4 or R11
Nosing or landing edge strip	P3	P4

2.7 PART D3.1 – GENERAL ACCESS REQUIREMENTS

Under the BCA requirements in Part D3.1, an access pathway is required to areas depending upon the usage of the area as indicated in the table below, except as permitted by Clause D3.4.

Applying this requirement to the proposed works, access is required to all areas as indicated in the following table.

Table 11 Access Requirements

USAGE TYPE	BCA REQUIREMENTS(D3.1)	APPLICATION TO DESIGN	COMPLIANCE
Class 9b Assembly	To wheelchair seating spaces provided in accordance with D3.9. To and within all other areas normally used by the occupants, except that access need not be provided to tiers or platforms of seating areas that do not contain wheelchair seating spaces.	Access to be provided to all areas except access not required to all levels of the tiered seating in the Auditorium.	Yes
Class 5 Office	To and within all areas normally used by the occupants	Access to be provided to all areas via lift	Yes
Class 3	Common Areas To and within not less than 1 of each type of room or space for use in common by the residents, including a cooking facility, sauna, gymnasium, *swimming pool*, common laundry, games room, TV room, individual shop, dining room, public viewing area, ticket purchasing service, lunch room, lounge room, or the like.	Lodge- access provided to door of all SOU's on Ground Floor (Upper Level) and to communal gathering space. Chalets – Access provided to door of All SOU's on upper level and to Communal Space.	Yes
Class 3 *Sole-occupancy units*	Not more than 2 *required accessible sole-occupancy units* may be located adjacent to each other.	Lodges – 3 accessible accommodation rooms per lodge 2 dorm rooms located adjacent to each. Chalet – 1 accessible room per building.	Yes
	Where more than 2 *accessible sole-occupancy units* are *required*, they must be representative of the range of rooms available.	Eco Lodges – 3 accessible accommodation rooms per lodge, 2 dorm style rooms & one accommodation suite.	Yes
	If the building or group of buildings contain— 1 to 10 *sole-occupancy units* To and within— 1 *accessible sole-occupancy units*.	Lodges – 10 SOU's per building, Min. 1 SOU per building Required. 3 provided Chalets – 6 rooms per building, Min. 1 SUO per building Required. 1 provided	Yes

2.7.1 PART D3.2 GENERAL BUILDING ACCESS REQUIREMENTS

Part D3.2 of the BCA requires an accessible pathway to be provided from the main street frontage, at least 50% of all entries and the accessible parking space to the building.

Within the proposed design an accessible path will be provided from the street frontage to the main entry of the auditorium building and other building on the site.
The proposed design also includes accessible parking spaces within the new carpark.

Therefore the proposed design meets the Deemed to Satisfy requirements for the provision of an accessible pathway to the building under part D3.2.

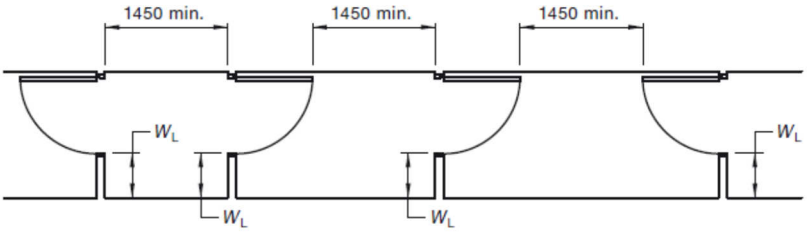
2.7.2 PART D3.3 PARTS OF BUILDING TO BE ACCESSIBLE.

Where access is required under part D3.2 of the BCA, access is required to all areas normally used by the occupants and includes areas such as toilet facilities, meeting rooms and kitchens etc. Access paths, door widths and door clearances are to comply with AS1428.1 - 2009

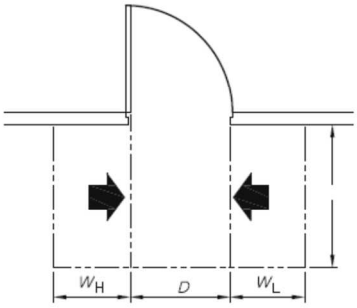
The current design for the room layouts indicate that access will be provided to all areas and all buildings using the lifts indicated .

The following criteria from As1428.1 sets out the requirements for providing access, that should be included within the detailed design:

- All doorways should be minimum 850mm clear (requires min. 920mm leaf doors)
- Provide side clearances to doors as per Figure 31 of AS1428.1 (refer below.)
- Provide lobbies with min 1450mm clear lengths to enable usability. (refer below)
- Passing Bays required along a pathway or corridor at maximum 20m intervals.

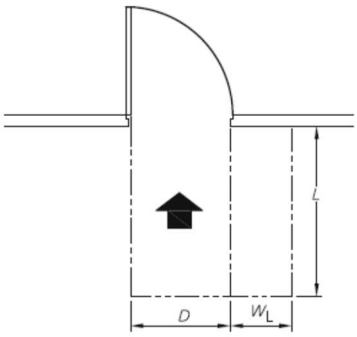


(a) Continuous accessible path of travel



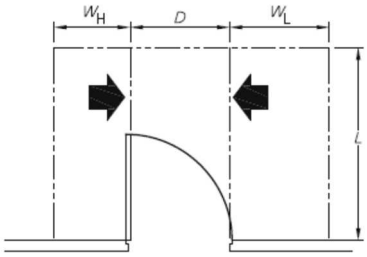
Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1240	560	660
900	1210	510	660
950	1175	460	660
1000	1155	410	660

(c) Either side approach, door opens away from user



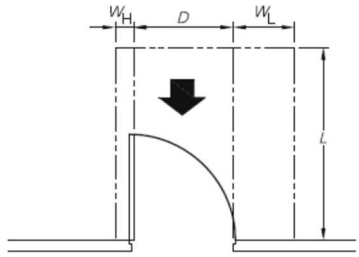
Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1450	0	510
900	1450	0	510
950	1450	0	510
1000	1450	0	510

(d) Front approach, door opens away from user



Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1670	660	900
900	1670	610	900
950	1670	560	900
1000	1670	510	900

(g) Either side approach, door opens towards user



Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1450	110	530
900	1450	110	530
950	1450	110	530
1000	1450	110	530

(h) Front approach, door opens towards user

2.7.3 LIFT

Lifts are included within the design as part of the accessible pathway between the different levels on the site and the different buildings, to meet the DTS requirements.

The following table sets out the dimensions of the lift car that are required based on the rise of the lift.

Lift Requirements						
Lift Travel distance	Less than 12m		Depth	Width	Emergency Lift	Not Required
	Lift Required	Lift Car dimensions	1400mm	1100mm	Streatcher Facilities	Required if effective height > 12m

Additionally a platform lift is included to provide an accessible path up to the main stage.

2.7.4 ACCESSIBLE TOILET FACILITIES

The current concept drawings indicate that accessible facilities will be provided adjacent to the location of other toilet facilities.

The documented design indicates a reasonable area is included for the facilities and the detailed design of the facilities appear to meet the requirements of AS1428.1-2009 would be achievable to meet the requirements of the BCA.

2.7.5 PART D3.5 CAR PARKING

Where car parking is provided part D3.5 of the BCA requires a minimum of 1 accessible space per 50 car parking spaces is to be provided.

It is noted that the adjacent site also contains car parking area that is used as part of the centre function and provides an accessible access to the Administration and Dinning building.

The required number of car parking spaces is set out in the table below which shows that the number of spaces provided meets the Deemed to Satisfy provisions of the BCA.

Stage	Parking Spaces	Required Accessible	Provided Access	Compliance
Zone 1	41	1	2	Yes

2.7.6 PART D3.6 IDENTIFICATION OF ACCESSIBLE FACILITIES, SERVICE AND FEATURES

Part D3.6 requires signage complying with Specification D3.6 to be included within the building in, a number of locations to identify the following:

- All sanitary facilities

- Identification of exit (where exit signage is included.)
- Identification of path to Lift where not evident from entry foyer.

Signage is to be included as part of the detailed design.

2.7.7 PART D3.7 HEARING AUGMENTATION

Part D3.7 requires that where an amplification system within a meeting room of more than 100m^2 a hearing augmentation system is to be installed.
Within the design where sound amplification systems are included a Hearing augmentation system will be required to the main auditorium and any of the breakout spaces/rooms that are provided with an amplification system.

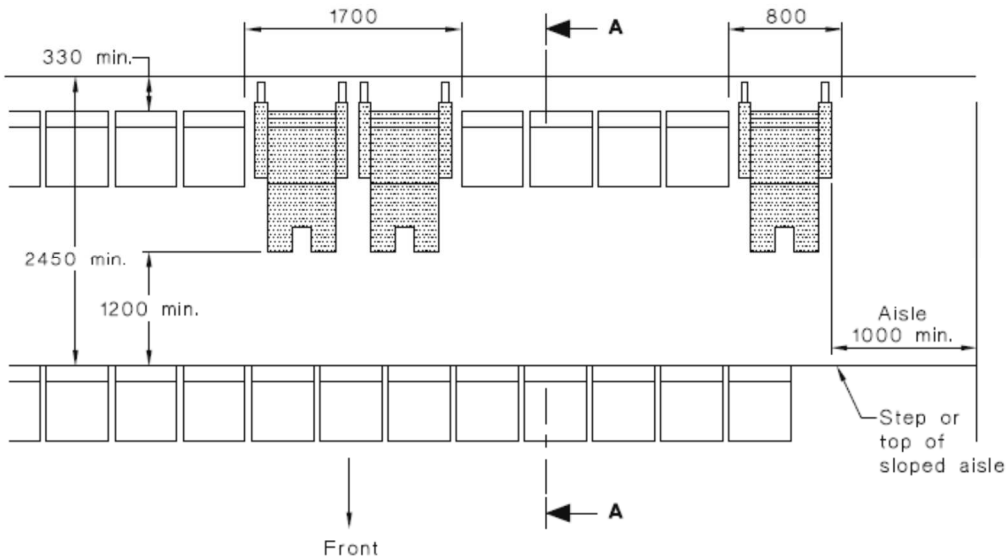
2.7.8 PART D 3.8 TACTILE GROUND SURFACE INDICATORS

Part D3.8 of the BCA requires that tactile ground surface indicators (TGSI's) be installed at the top and bottom of open stairs and ramps to warn occupants of the associated hazard, where the area is to be accessible.
The detailed documented design is to include tactile indicators to the top and bottom of all stairs and ramps to meet the DTS requirements.

2.7.9 PART D3.9 WHEELCHAIR SEATING SPACES IN CLASS 9B ASSEMBLY BUILDINGS.

Clause D3.9 sets out the requirements for the provision of Wheelchair seating spaces within an auditorium and will apply to the proposed auditorium.
For an Auditorium with more than 800 occupants Table D3.9 requires 16 seating spaces plus 1 extra space for each additional 100 occupants above 800.
As the proposed Auditorium has a seating capacity of 3500 occupants at least 43 wheelchair seating spaces will be required spread across the varied seating options, with at least 2 single seats and a maximum of 5 seats grouped together.
Australian Standard AS1428.1 sets out the wheelchair seating space requirements and arrangements that are to be followed in the detailed layout of the auditorium seating.

AS 1428.1—2009 94



PLAN—APPROACH FROM THE FRONT

2.8 PART E – ESSENTIAL FIRE SAFETY MEASURES.

The Essential Fire Safety Measures to be installed in the building are based on the type size and scale of the building,

2.8.1 AUDITORIUM & BREAKOUT SPACE BUILDING

For the Main Auditorium and Breakout space building, the following table sets out the essential fire safety measures that are required.

Essential Fire Safety Measures (Part E)			
Fire Hydrants	Required	Located externally, in fire stairs or next to required stair	
Fire Hose Reels	Required	Within 4m of an Exit	-
Sprinkler Protection	No		-
Carpark	-		
Fire Control Centre	Not Required		
Smoke Hazard Management			
	Above Ground Only Exits	**Basement Level Exits**	
Stair Pressurisation	**No**	-	
Smoke Detection	Required		**Note: Shutdown of ducted air handling system required using detection**
Smoke Exhaust System			
General Area	Smoke Exhauist		
Stage Requirements	**Smoke Exhaust over stage and Two exits from stage required.**		Sprinkler Protection required if Flying Scenery included
Exit Signs & Lighting	Exit signs & Emergency Lighting Required		
SSISEP	SSISEP Required if Theatre or Public Hall		
Sound Systems and Intercom Systems for Emergency Purposes			

The main Auditorium will have a stage and backstage area which is likely to exceed 300m2 in total and therefore the following additional measures would be required:

- Smoke exhaust or smoke and heat vents to the main auditorium as well as the stage area.
- Emergency House lighting controls.
- Aisle lighting to fixed tiered seating area.(Clause H1.7)

2.8.2 ACCOMMODATION BUILDINGS

For the Eco Lodges and Eco Chalets, the following table sets out the essential fire safety measures that are required:

Essential Fire Safety Measures (Part E)			
Fire Hydrants	Required	Located externally, in fire stairs or next to required stair	
Fire Hose Reels	Required	Within 4m of an Exit	-
Sprinkler Protection	No		-
Carpark	-		
Fire Control Centre	Not Required		
Smoke Hazard Management			
	Above Ground Only Exits	**Basement Level Exits**	
Stair Pressurisation	**No**	-	
Smoke Detection	Required		
Smoke Exhaust System			
General Area	Not Required		
	-		
Exit Signs & Lighting	Exit signs & Emergency Lighting Required		
SSISEP	Not Required		
Sound Systems and Intercom Systems for Emergency Purposes			

2.8.3 DINING AND ADMINISTRATION BUILDING

For the Dining and Administration Building, the following table sets out the essential fire safety measures that are required:

Essential Fire Safety Measures (Part E)			
Fire Hydrants	Required	Located externally, in fire stairs or next to required stair	
Fire Hose Reels	Required	Within 4m of an Exit	-
Sprinkler Protection	No		-
Carpark	-		
Fire Control Centre	Not Required		
Smoke Hazard Management			
	Above Ground Only Exits	**Basement Level Exits**	
Stair Pressurisation	**No**	-	
Smoke Detection	Not Required		**Note: Shutdown of ducted air handling system required using detection**
Smoke Exhaust System			
General Area	None		
	-		
Exit Signs & Lighting	Exit signs & Emergency Lighting Required		
SSISEP	SSISEP Required if Theatre or Public Hall		
Sound Systems and Intercom Systems for Emergency Purposes			

2.8.4 CAFE BUILDING

For the Café Building, the following table sets out the essential fire safety measures that are required. It is noted that as the building is less than 300m2 in floor area Fire hydrant and Fire hose reel coverage is not required, however as the building is part of the larger site there would be benefit in providing coverage to this building as part of the system to provide coverage to the adjacent Dining and Administration building.

Essential Fire Safety Measures (Part E)		
Fire Hydrants	Not Required	
Fire Hose Reels	Not Required	-
Sprinkler Protection	No	-
Carpark	-	
Fire Control Centre	Not Required	
Smoke Hazard Management		
	Above Ground Only Exits	Basement Level Exits
Stair Pressurisation	No	-
Smoke Detection	Not Required	
Smoke Exhaust System		
General Area	Not Required	
	-	
Exit Signs & Lighting	May be required	
SSISEP	Not Required	
Sound Systems and Intercom Systems for Emergency Purposes		

2.9 PART F – HEALTH AND AMENITY

2.9.1 PART F1 – DAMP AND WEATHERPROOFING

Part F1 of the BCA requires that the external façade of the building be designed to maintain weatherproofing and prevent water ingress to the building.
This is to be included in the detailed design.

2.9.1 PART F2 – SANITARY AND OTHER FACILITIES

Part F2 of the BCA sets out the required number of toilets to be provided based on the number of people that will be catered for within the building and the use of the building.

2.9.2 PART F2.1 FACILITIES IN RESIDENTIAL BUILDINGS

Clause F2.1 and table F2.1 set out the requirements for facilities to be included in a Class 3 building and requires the following:

- A shower, closet pan and wash basin for each 8 residents.
- A suitable bath for each 30 residents.

Within the design a shower, closet pan and washbasin are included for each dorm or accommodation room as well as at least one of the rooms in each building has access to a bath, therefore sufficient facilities are provided to meet the DTS requirements.

2.9.2.1 MAIN AUDITORIUM BUILDING

For the main Auditorium(3200), the following facilities are required;

Table 12- Facilities for Auditorium and Foyer

Toilet Requirements			Female		Male			
Occupants	Use for toilets	Split /Females	WC	HB	WC	U	HB	Access
3500	R-Public hall 9b over 250 - Patrons	50%	21	10	10	20	10	1
4000	R-Public hall 9b over 250 - Patrons	50%	24	12	11	23	11	1

The current design has facilities located adjacent to the auditorium with,

- Female facilities of 27 Wc's & 31 hand basins plus 1 access wc, shower & Basin..
- Male facilites of 15 Wc's, 16 urinals & 26 hand basins plus 1 access wc,, shower & basin.
- Two access wc's with basin.

The number of facilities provided are more than is required for the 3500 ocupants of the auditorium and therefore meets the DTS requirements.
Additionally facilities are also provided adjacent ot the back stage green room for convienience.

2.9.2.2 BREAKOUT SPACES LOWER LEVEL

The breakout spaces adjacent to the auditorium on the lower level can accommodate up to 630 occupants. The following table sets out the requirements for the number of occupants.

Table 13- Facilities for Breakout spaces

Toilet Requirements			Female		Male			
Occupants	Use for toilets	Split /Females	WC	HB	WC	U	HB	Access
630	R-Public hall 9b over 250 - Patrons	50%	7	3	3	6	3	1

The area is served by two groups of toilets eah with:

- Female facilities of 4 Wc's and 3 handbasins (Total 8 wc's & 6 Hb's)
- Male facilities of 4 Wc's and 3 handbasins (Total 8 wc's & 6 Hb's)
- One access wc & basin.

These breakout spaces are likely to be used mainly by the occupants of the auditorium, however facilities are provided in this area as well.
The number of facilities provided are sufficient for the number of occupants in the area.

2.9.2.3 BREAKOUT SPACES UPPER LEVEL.

The breakout spaces to the upper level adjacent to the auditorium can accommodate 950 occupants.
This area is not provided with any separate failities as it is proposed that the area will be used by the occupants of the adjacent auditorium.

2.9.2.4 TOTAL AUDITORIUM ZONE

The total of the auditorium and the breakout spaces facailites

- Female facilities of 35 Wc's and 37 handbasins.
- Male facilities of 23 Wc's, 16 Urinals and 32 handbasins.
- Seven access wc & basins.

This number of facilities would be sufficient for up to 5700 occupants which is more than will be present on the site.

Table 14- Total potential occupants based on facilities provided.

Toilet Requirements			Female		Male			
Occupants	Use for toilets	Split /Females	WC	HB	WC	U	HB	Access
5700	R-Public hall 9b over 250 - Patrons	50%	32	16	15	31	16	1

Based on the above the current design is provided with sufficient facilites for the number and type of occupants, subject to final detailed design.

2.9.2.5 ACCESSIBLE FACILITIES

In each location of general facilities and accessible facility is located. The detail layout of the accessilbe wc facility appears to meet the layout requirements as set out within AS1428.1.
Both left handed and right handed accessilbe facilities are indicated in the design.

2.10 PART F3 – ROOM SIZES

Part F3 of the BCA requires the following ceiling heights in certain rooms within a building:

- Airlocks bathrooms storerooms, tea prep areas and the like – 2.1m
- General area – 2.4m
- Above stairways, measured vertical above the nosing – 2m
- Auditoriums and corridors leading to auditoriums that accommodate more than 100 occupants – 2.7m, this would apply to auditorium and breakout spaces.

The design appears to be able to meet these requirements.

2.11 PART F4 – LIGHT & VENTILATION

2.11.1.1 LIGHTING

Lighting is required to all rooms in the building. This can be achieved by either natural daylight, or other lighting methods. If daylight is used the area of windows is to be at least 10% of the floor area. Therefore an external window and the size of the windows are to be at least 10% of the floor area of the room served to meet the requirements of Clause F4.1
Each of the accommodation rooms will require windows or skylights to provide natural daylight.

2.11.1.2 VENTILATION

Ventilation is to be provided to all rooms and this can be achieved by either natural ventilation through operable windows and doors or by mechanical ventilation to AS1668. If natural ventilation is to be used then the area of the operable windows should be at least 10% of the floor area of the room.

2.11.2 PART F5 – SOUND INSULATION

The BCA under Part F5 requires sound insulation of walls and floors that separate Sole Occupancy Units from other adjacent SOU's or other spaces within the building. Particularly in Class 2 & 3 buildings.
The following table sets out the insulation requirements which will apply to the walls surrounding the bedrooms in each of the accommodation blocks.

Table 15- Acoustic Insulation Requirements

			SOU Habitable space		SOU bath/ laundry/Kit		Plant/Lift		Public Areas		Ducts/services
Class2 & 3	SOU Habitable space	Floor	50Rw +C	62Ln+C			50Rw +C	62Ln+C	50Rw +C	62Ln+C	40 Rw +C
	SOU Habitable space	Wall	50Rw +C		50Rw +C	Seperate leaves	50Rw	Seperate Leaves	50Rw		
	SOU bath/laundry/kit	Walls	seperate leaves								20 Rw + C
	SOU	Door					Rw 30		Rw 30		

Wall	50 RW +C		45 RW	
	cavity brick with 50mm insulation	Wall	Concrete Blockwork 190mm	
	Cavity brick with 50mm cavity & render both sides		100mm concrete wall	
	brick veneer, 110 brick, 70x35mm studs, 50mm insulation & plasterboard both sides,			
	200mm concrete with one layer of 13mm plasterboard or 13mm render both sides. (Maybe 150mm concrete TBC)			
	230mm brickwork rended both sides.			
Floors	62 Ln+C		45 Rw	
	150mm slab with furing channels, 65mm insulation and plasterboard	Floor	100mm concrete slab	
	200mm concrete slab with carpet & underlay			
	190mm timber joists, R2.5 insulation, furring channels with resilient mounts and 2x16mm FR plasterboard			

2.12 PART H – SPECIAL USE BUILDINGS

Part H of the BCA applies to large auditorium class 9b buildings.
For the main auditorium building, the following will be required, as set out in NSW Section H101.

- The auditorium seating is required to be setout in accordance with Clause H101
- Minimum 950mm back to back row dimensions.
- A maximum of 8 seats served by a single aisle and 16 seats in a row between aisles.
- Up to 24 seats in a row using radiating aisles.
- Aisle lighting and Lighting emergency on switch.
- Fire separation of stage and backstage areas from the auditorium.
- Two exits from stage and backstage areas, not through the proscenium wall.
- Smoke exhaust from stage and backstage areas, with make up supply air.
- Fire separation of store rooms with a FRL of 60/60/60 is required.

2.13 PART J – ENERGY EFFICIENCY

Energy efficiency requirements of the BCA generally apply to part of a building that are air conditioned, which are not of Class 2 usage. NSW Basix legislation applies to the Residential Class 2 buildings

2.13.1 PART J1 – BUILDING FABRIC

The proposed building is class 9b use located in climate zone 6 and will require the following thermal performance of the various parts.

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2.13.2 PART J1.2 THERMAL CONSTRUCTION

The installation of materials associated with the thermal performance of the building are to be in accordance with AS 4859.1.
Assuming that the roofing material colour is a mid to dark colour (Solar Absorbance of 0.6 or more) Then the following table shows the insulation requirements for the roof and ceiling combination for the various zones from Table J1.3a. These values assume that more than 99% of the roof area is insulated.

Table 16

Insulation Requirements (Part J)			External Walls		Suspended Slab if Open Under	Space above /below Encl & witth <1.5 AC/hr		Insulation to Slab on Ground	
Zone 6	Roof & Ceiling	Internal envelope walls							
Roof Colour	R 3.2	space enclosed and vent <1.5AC = R1.0, otherwise R1.8	Total R2.8		R2.0	No Slab Heating	R1.0	No Slab Heating	Nil
Other	Downwards				Downwards	With Slab Heating	R1.25	With Slab Heating	R1.25
	Allows for less than 0.5% of ceiling area to be uninsulated			Other Wall Options		OR Cavity masonry with insulation(total R2.3)			
						or Cavity masonry, 30 degree shaded and insulation (Total R 1.8)			
	Shaft index	Shylight % of floor area	Max SHG Value	Max total U Value		or Cavity masonry, 60 degree shaded and insulation (R1.3)			
Skylight Requirements	< 0.5	4 to 5%	0.34	3.4		Or where space is top hats, Total R1.4 & Glazing option B			

2.13.3 PART J1.3 ROOF AND CEILING INSULATION

The combined roof and ceiling insulation is to give a total R value of R3.2 or more. This is normally achieved by insulation under the roofing and at ceiling level.
Generally the under roof insulation (sarking & Blanket) will have an thermal performance of up to R1.4 which will mean that the ceiling and ceiling insulation will need to have a thermal performance of at least R1.8

2.13.4 PART J1.4 ROOF LIGHTS

Part J1.4 of the BCA sets out specific requirements for roof lights when the area exceeds 1.5% of the floor area and permits skylights to be up to 5% of the floor area.

Skylights are indicated within the kitchen area of the Dining and Administration Building.
The performance requirements for the skylights is based on the proportional area of the skylight to the room that it serves.
There are 7 skylights each with an area of 1m x 2m giving a total area of 14 m2.
The kitchen has a floor area of approximately 275 m2, therefore the skylights are 5% of the floor area and the performance requirements area as set out in the table below.

	Shaft index	Shylight % of floor area	Max SHG Value	Max total U Value
Skylight Requirements	< 0.5	4 to 5%	0.34	3.4

As an example a Velux FMC flat roof skylight has a U value of 2.91 and a SHG value of 0.28 which will the requirements above.

2.13.5 PART J1.5 WALLS

External walls are required to achieve a minimum Total R-Value of at least R2.8.

2.13.6 PART J1.6 FLOORS

Specific thermal performance requirements are set out in Part J1.6 of the BCA for suspended floors with unenclosed perimeters on the lower levels.
If there are any suspended floors that are open below, they will be required to be insulated to prevent heat loss.

2.13.7 PART J2 – EXTERNAL GLAZING

2.13.7.1 PART J2.4 GLAZING METHOD 2

Compliance with Part J2.4 is achieved by analysis of the areas of the external façade and the proportional areas of the external glazing. The analysis is undertaken during the detailed design to show compliance based on the building façade elements and is required as part of the Construction Certificate documentation..
Where the design can not meet the Deemed to Satisfy provisions of Part J an Alternative/ Performance Solution based on a JV3 modelling process may be required subject to final detailed design for the Construction Certificate Application. (Post Development Approval)
A preliminary assessment has been undertaken on the design and indicates that compliance could be achieved based on detailed design.

WINDOWS TYPES				
	GLAZING	Colour	Uw	SHG CW
Commercial Aluminium frame 100mm Capral 900 series sliding glass door	6.38mm Comfort Plus	Neutral	4.4	0.38
Capral 900 series sliding glass door. To windows facing east on Eco lodge1	High Performance Double Glazing		3.1	0.22

2.13.7.2 ECO LODGES

The following three tables show that the current arrangement of the façade and the windows meet the DTS provisions of Part J in the three directions with the Meeting Space facing East, North East and North. All of the positions of the Eco Lodges are within these directions and therefore all proposed Ecolodges meet the DTS provisions for external glazing.

Table 17- Facing East

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

Building name/description: Eco Lodge 1 KCC | Application: Class 3 | Climate zone: 6

Storey: 2

Facade areas	N	NE	E	SE	S	SW	W	NW	internal
Option A	86m²		175m²		86m²		95m²		
Option B									n/a
Glazing area (A)	9.6m²		85.4m²		9.6m²		17.1m²		

Number of rows preferred in table below: 13 (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_{HI})	Cooling (S_{CI})	Area used (m²)	Element share of % of allowance used
1	LG Breakout	E		2.40	13.00		3.1	0.22	2.200	2.400	0.92	0.00	0.41	0.47	31.20	37% of 100%
2	LG Accommodation	E		2.40	4.80		3.1	0.22	2.200	2.400	0.92	0.00	0.41	0.47	11.52	13% of 100%
3	LG Ens	N		1.20	1.00		4.4	0.38	2.000	1.200	1.67	0.00	0.00	0.30	1.20	6% of 32%
4	LG Ens	s		1.20	1.00		4.4	0.38	2.000	1.200	1.67	0.00	0.59	0.57	1.20	14% of 61%
5	GF Gathering	E		2.40	13.00		3.1	0.22	2.200	2.400	0.92	0.00	0.41	0.47	31.20	37% of 100%
6	GF Accommodation	E		2.40	4.80		3.1	0.22	2.200	2.400	0.92	0.00	0.41	0.47	11.52	13% of 100%
7	GF Entry	N		3.00	1.80		4.4	0.38	2.000	3.300	0.61	0.30	0.88	0.64	5.40	45% of 32%
8	GF Entry	S		3.00	1.80		4.4	0.38	2.000	3.300	0.61	0.30	0.87	0.81	5.40	56% of 61%
9	GF Dorm	W		2.70	4.50		4.4	0.38	0.800	2.700	0.30	0.00	0.85	0.80	12.15	71% of 81%
10	GF Bathrooms	W		0.60	3.60		4.4	0.38	0.800	0.700	1.14	0.10	0.33	0.42	2.16	13% of 81%
11	High Level glazing	W		0.50	5.50		4.4	0.38	0.600	0.600	1.00	0.10	0.40	0.45	2.75	16% of 81%
12	High Level glazing	N		0.50	6.00		4.4	0.38				0.00	1.00	1.00	3.00	49% of 32%
13	High Level glazing	S		0.50	6.00		4.4	0.38				0.00	1.00	1.00	3.00	30% of 61%

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Table 18 - Facing North East

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

Building name/description: Eco Lodge 2 KCC | Application: Class 3 | Climate zone: 6

Storey: 2

Facade areas	N	NE	E	SE	S	SW	W	NW	internal
Option A		175m²		86m²		95m²		86m²	
Option B									n/a
Glazing area (A)		91.2m²		8.4m²		17.2m²		9.6m²	

Number of rows preferred in table below: 13 (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_{HI})	Cooling (S_{CI})	Area used (m²)	Element share of % of allowance used
1	LG Breakout	NE		2.40	13.00		4.4	0.38	2.200	2.400	0.92	0.00	0.33	0.41	31.20	34% of 100%
2	LG Accommodation	NE		2.40	6.00		4.4	0.38	2.200	2.400	0.92	0.00	0.33	0.41	14.40	16% of 100%
3	LG Ens	NW		1.20	1.00		4.4	0.38	2.000	1.200	1.67	0.00	0.00	0.31	1.20	11% of 40%
4	LG Ens	SW		1.20	1.00		4.4	0.38	2.000	1.200	1.67	0.00	0.43	0.41	1.20	7% of 100%
5	GF Gathering	NE		2.40	13.00		4.4	0.38	2.100	2.400	0.88	0.00	0.37	0.43	31.20	35% of 100%
6	GF Accommodation	NE		2.40	6.00		4.4	0.38	2.100	2.400	0.88	0.00	0.37	0.43	14.40	16% of 100%
7	GF Entry	NW		3.00	1.80		4.4	0.38	2.000	3.300	0.61	0.30	0.86	0.68	5.40	49% of 40%
8	GF Entry	SE		3.00	1.80		4.4	0.38	2.000	3.300	0.61	0.30	0.82	0.76	5.40	63% of 51%
9	GF Dorm	SW		2.40	4.50		4.4	0.38	1.000	2.400	0.42	0.00	0.80	0.73	10.80	61% of 100%
10	GF Bathrooms	SW		0.60	3.60		4.4	0.38	1.000	0.600	1.67	0.00	0.43	0.41	2.16	13% of 100%
11	High level glazing	SW		0.50	6.00		4.4	0.38	0.500	0.600	0.83	0.10	0.62	0.56	3.00	18% of 100%
12	High level glazing	nw		0.50	6.00		4.4	0.38				0.00	1.00	1.00	3.00	40% of 40%
13	High level glazing	se		0.50	6.00		4.4	0.38				0.00	1.00	1.00	3.00	37% of 51%

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if inputs are valid ✓

Table 19- Facing North

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

Building name/description: Eco Lodge 3 KCC | Application: Class 3 | Climate zone: 6

Storey: 2

Facade areas	N	NE	E	SE	S	SW	W	NW	internal
Option A	175m²		86m²		95m²		86m²		
Option B									n/a
Glazing area (A)	91.2m²		10.3m²		17.3m²		10.3m²		

Number of rows preferred in table below: 13 (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_{HI})	Cooling (S_{CI})	Area used (m²)	Element share of % of allowance used
1	LG Breakout	N		2.40	13.00		4.4	0.38	2.200	2.400	0.92	0.00	0.14	0.37	31.20	34% of 88%
2	LG Accommodation	N		2.40	6.00		4.4	0.38	2.200	2.400	0.92	0.00	0.14	0.37	14.40	16% of 88%
3	LG Ens	W		1.20	1.00		4.4	0.38	2.000	1.200	1.67	0.00	0.14	0.33	1.20	12% of 55%
4	LG Ens	E		1.20	1.00		4.4	0.38	2.000	1.200	1.67	0.00	0.08	0.32	1.20	10% of 46%
5	GF Gathering	N		2.40	13.00		4.4	0.38	2.200	2.400	0.92	0.00	0.14	0.37	31.20	34% of 88%
6	GF Accommodation	N		2.40	6.00		4.4	0.38	2.200	2.400	0.92	0.00	0.14	0.37	14.40	16% of 88%
7	GF Entry	W		3.40	1.80		4.4	0.38	2.000	3.300	0.61	-0.10	0.64	0.61	6.12	57% of 55%
8	GF Entry	E		3.40	1.80		4.4	0.38	2.000	3.300	0.61	-0.10	0.64	0.60	6.12	53% of 46%
9	GF Dorm	S		2.40	4.50		4.4	0.38	0.300	2.700	0.11	0.30	0.98	0.97	10.80	61% of 99%
10	GF Bathrooms	S		0.60	4.50		4.4	0.38	0.300	0.600	0.50	0.00	0.83	0.77	2.70	16% of 99%
11	High Level Glazing	s		0.50	7.50		4.4	0.38	0.600	0.600	1.00	0.10	0.70	0.64	3.75	23% of 99%
12	High Level Glazing	W		0.50	6.00		4.4	0.38				0.00	1.00	1.00	3.00	31% of 55%
13	High Level Glazing	E		0.50	6.00		4.4	0.38				0.00	1.00	1.00	3.00	37% of 46%

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if inputs are valid ✓

2.13.7.3 ECO CHALETS

The following three tables show that the current arrangement of the façade and the windows **do not** meet the DTS provisions of Part J in the three directions with the Meeting Space facing East, North East and North.

To meet the requirements of Part J a Performance solution is to be developed to show compliance utilizing a JV3 assessment and justification.

Table 20- Facing East

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

Building name/description: Eco Chalet 1 KCC | Application: Class 3 | Climate zone: 6

Storey: 2

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A	65m²		91m²		65m²		69m²		
Option B									n/a
Glazing area (A)	0m²	.....	53.9m²	.....	0m²	.....	27m²		

Number of rows preferred in table below: 11 (as currently displayed)

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS									SHADING		CALCULATED OUTCOMES FAILURES (in red italics)					
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	LG Accommodation	E		2.40	9.00		3.1	0.22	3.100	2.400	1.29	0.00	0.19	0.38	21.60	37% of 130%
2	Landing	E		5.00	2.00		3.1	0.22	0.600	5.000	0.12	0.00	0.95	0.92	10.00	24% of 130%
3	LG Ens	E		0.80	0.90		3.1	0.22	1.000	1.100	0.91	0.30	0.67	0.61	0.72	1% of 130%
4	GF Gathering	E		2.40	9.00		3.1	0.22	3.100	2.400	1.29	0.00	0.19	0.38	21.60	37% of 130%
5	GF Accommodation	W		1.60	6.20		3.1	0.22	0.900	1.600	0.56	0.00	0.67	0.63	9.92	37% of 118%
6	GF Accommodation	W		2.40	3.10		3.1	0.22	0.900	2.400	0.38	0.00	0.80	0.74	7.44	28% of 118%
7	High Level glazing	W		0.50	9.60		3.1	0.22	1.500	1.500	1.00	1.00	0.81	0.73	4.80	18% of 118%
8	Entry	W		2.40	2.00		3.1	0.22	1.000	2.400	0.42	0.00	0.77	0.71	4.80	18% of 118%
9		N		0.01	0.01		4.4	0.38				0.00	1.00	1.00	0.00	100% of 1%
10		S		0.01	0.01		4.4	0.38				0.00	1.00	1.00	0.00	100% of 1%
11																

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Table 21 - Facing North East

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

Building name/description: Eco Chalet 2 KCC | Application: Class 3 | Climate zone: 6

Storey: 2

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A		91m²		65m²		69m²		69m²	
Option B									n/a
Glazing area (A)	.....	53.9m²	.....	0m²	.....	24.5m²	.....	0m²	

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

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS									SHADING		CALCULATED OUTCOMES FAILURES (in red italics)					
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	LG Accommodation	NE		2.40	9.00		4.4	0.38	3.000	2.400	1.25	0.00	0.03	0.34	21.60	45% of 96%
2	Landing	NE		5.00	2.00		3.1	0.22	0.600	5.000	0.12	0.00	0.96	0.92	10.00	29% of 96%
3	GF Ens	NE		0.80	0.90		4.4	0.38	1.000	1.100	0.91	0.30	0.71	0.55	0.72	2% of 96%
4	GF Gathering	NE		2.40	9.00		3.1	0.22	3.000	2.400	1.25	0.00	0.03	0.34	21.60	25% of 96%
5	GF Accommodation	SW		1.60	6.20		3.1	0.22	0.900	1.600	0.56	0.00	0.73	0.66	9.92	41% of 140%
6	GF Accommodation	SW		1.60	3.10		3.1	0.22	0.900	2.400	0.38	0.80	0.96	0.95	4.96	20% of 140%
7	High Level glazing	SW		0.50	9.60		3.1	0.22	1.500	1.500	1.00	1.00	0.83	0.75	4.80	19% of 140%
8	Entry	SW		2.40	2.00		3.1	0.22	2.000	2.400	0.83	0.00	0.62	0.56	4.80	20% of 140%
9		SE		0.01	0.01		4.4	0.38				0.00	1.00	1.00	0.00	100% of 1%
10		NW		0.01	0.01		4.4	0.38				0.00	1.00	1.00	0.00	100% of 1%

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Table 22- Facing North

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

Building name/description: Eco Chalet 3 KCC | Application: Class 3 | Climate zone: 6

Storey: 2

Facade areas	N	NE	E	SE	S	SW	W	NW	internal
Option A	91m²		65m²		69m²		69m²		
Option B									n/a
Glazing area (A)	53.9m²		0.01m²		27m²		0.01m²		

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

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS									SHADING		CALCULATED OUTCOMES FAILURES (in red italics)					
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	LG Accommodation	N		2.40	9.00		4.4	0.38	3.000	2.400	1.25	0.00	0.00	0.32	21.60	39% of 95%
2	Landing	N		5.00	2.00		4.4	0.38	3.000	5.000	0.60	0.00	0.61	0.49	10.00	20% of 95%
3	GF Ens	N		0.80	0.90		4.4	0.38	1.000	1.100	0.91	0.30	0.65	0.47	0.72	1% of 95%
4	GF Gathering	N		2.40	9.00		4.4	0.38	3.000	2.400	1.25	0.00	0.00	0.32	21.60	39% of 95%
5	GF Accommodation	S		1.60	6.20		3.1	0.22	0.300	1.600	0.19	0.00	0.93	0.91	9.92	37% of 157%
6	GF Accommodation	S		2.40	3.10		3.1	0.22	0.300	2.400	0.13	0.00	0.96	0.94	7.44	28% of 157%
7	High Level glazing	S		0.50	9.60		3.1	0.22	1.000	1.500	0.67	1.00	0.93	0.88	4.80	18% of 157%
8	Entry	S		2.40	2.00		3.1	0.22	0.600	2.400	0.25	0.00	0.91	0.88	4.80	18% of 157%
9		E		0.10	0.10		4.4	0.38				0.00	1.00	1.00	0.01	100% of 1%
10		W		0.10	0.10		4.4	0.38				0.00	1.00	1.00	0.01	100% of 1%

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2.13.7.1 CAFÉ BUILDING

The following three tables show that the current arrangement of the façade and the windows **do not** meet the DTS provisions of Part J.

To meet the requirements of Part J a Performance solution is to be developed to show compliance utilizing a JV3 assessment and justification.

Table 23- Cafe Building

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

Building name/description: Cafe KCC | Application: Class 3 | Climate zone: 6

Storey: 1

Facade areas	N	NE	E	SE	S	SW	W	NW	internal
Option A		90m²			30m²			30m²	
Option B									n/a
Glazing area (A)		51.3m²			15m²			15m²	

Number of rows preferred in table below: 5 (as currently displayed)

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS									SHADING		CALCULATED OUTCOMES FAILURES (in red italics)					
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	café Wall	NE		2.40	12.00		3.1	0.22	0.700	2.400	0.29	0.00	0.88	0.78	28.80	67% of 97%
2	High Level glazing-Café	NE		1.50	15.00		3.1	0.22	1.000	1.600	0.63	0.10	0.64	0.55	22.50	33% of 97%
3	High Level glazing-Café	NW		1.00	15.00		3.1	0.22	1.500	1.000	1.50	0.00	0.00	0.32	15.00	100% of 104%
4	High Level glazing-Café	S		1.00	15.00		3.1	0.22	0.500	1.000	0.50	0.00	0.83	0.77	15.00	100% of 206%
5																

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2.13.7.1 DINING AND ADMINISTRAITON BUILDING

The following three tables show that the current arrangement of the façade and the windows **do not** meet the DTS provisions of Part J.

To meet the requirements of Part J a performance solution is to be developed to show compliance utilizing a JV3 assessment and justification.

Table 24- Dining and Administration Building

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

Building name/description: Dining & Admin KCC | Application: Class 3 | Climate zone: 6

Storey: 2

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A	400m²		216m²		95m²		65m²		
Option B									n/a
Glazing area (A)	375m²		81.6m²		36.6m²		33.4m²		

Number of rows preferred in table below: 20 (as currently displayed)

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS									SHADING		CALCULATED OUTCOMES FAILURES (in red italics)				
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_w)	Cooling (S_c)	Area used (m²)	Element share of % of allowance used
1	LG Admin	N		3.00	33.00		3.1	0.22	4.000	3.500	1.14	0.50	0.40	0.39	99.00	19% of 99%
2	LG Admin	W		3.00	4.50		3.1	0.22	5.000	3.500	1.43	0.50	0.43	0.45	13.50	40% of 157%
3	GF West Foyer	n		2.40	9.00		3.1	0.22	0.700	2.400	0.29	0.00	0.89	0.73	21.60	9% of 99%
4	GF West Foyer	n		1.50	9.00		3.1	0.22	1.500	1.500	1.00	0.00	0.02	0.35	13.50	3% of 99%
5	GF Dining	N		2.40	40.00		3.1	0.22	0.700	2.400	0.29	0.00	0.89	0.73	96.00	39% of 99%
6	GF Dining	n		1.50	48.00		3.1	0.22	3.000	1.500	2.00	0.00	0.00	0.30	72.00	14% of 99%
7	GF Dining	n		1.60	8.00		3.1	0.22	0.600	1.600	0.38	0.00	0.84	0.65	12.80	4% of 99%
8	GF Dining	n		1.50	40.00		3.1	0.22	3.000	1.500	2.00	0.00	0.00	0.30	60.00	12% of 99%
9	GF Dining	E		1.60	15.00		3.1	0.22	0.700	1.600	0.44	0.00	0.75	0.70	24.00	30% of 85%
10	GF Dining	e		1.50	15.00		3.1	0.22	3.000	1.500	2.00	0.00	0.01	0.29	22.50	25% of 85%
11	GF Dining	E		2.40	9.00		3.1	0.22	0.700	2.400	0.29	0.00	0.85	0.80	21.60	30% of 85%
12	GF Dining	E		1.50	9.00		3.1	0.22	1.500	1.500	1.00	0.00	0.35	0.44	13.50	15% of 85%
13	GF Dining	s		1.60	4.00		3.1	0.22	0.700	1.600	0.44	0.00	0.85	0.79	6.40	18% of 158%
14	GF Dining	s		1.50	4.00		3.1	0.22	1.500	1.500	1.00	0.00	0.70	0.64	6.00	17% of 158%
15	GF Dining	W		1.60	4.00		3.1	0.22	0.700	1.600	0.44	0.00	0.75	0.70	6.40	19% of 157%
16	GF Dining	W		1.50	4.00		3.1	0.22	1.500	1.500	1.00	0.00	0.40	0.45	6.00	18% of 157%
17	High Level glazing Foye	s		0.70	6.00		3.1	0.22	0.500	1.000	0.50	0.30	0.90	0.85	4.20	11% of 158%
18	High Level glazing Foye	s		0.50	40.00		3.1	0.22	0.500	1.000	0.50	0.50	0.90	0.85	20.00	54% of 158%
19	High Level glazing Foye	W		0.50	15.00		3.1	0.22	0.500	1.000	0.50	0.50	0.87	0.80	7.50	22% of 157%
20																

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2.14 PART J3 - BUILDING SEALING

2.14.1 PART J3.3 ROOFLIGHTS

Any roof lights are to be sealed roof lights or if ventilated are to meet the requirements of Clause J3.3.

2.14.2 PART J3.4 WINDOWS AND DOORS

Part J3.4 of the BCA requires seals to be fitted to doors and windows that are part of the conditioned envelope.
Compliance is achieved by specifying windows to comply with AS2047

2.14.3 PART 3.5 – EXHAUST FANS

Exhaust fans to conditioned spaces, where installed, are to be fitted with self closing dampers.

2.15 PART 3.6 - CONSTRUCTION OF ROOFS, WALLS AND FLOORS

Construction documented will comply if linings specified to internal surfaces with sealed junctions by caulking, skirting, architraves, cornices or the like.

2.16 PART 3.7 – EVAPORATIVE COOLERS

Any evaporative coolers installed in the building are to be fitted with self closing dampers to reduce heating loss when not used or during winter.

2.17 PART J5 – AIR CONDITIONING AND VENTILATION SYSTEMS

Compliance with Part J5 is not assessed in this review as the system is designed by the mechanical engineer, who will provide a detailed assessment of the design of the systems

2.18 PART J6 – ARTIFICIAL LIGHTING AND POWER

Compliance with Part J6 is not assessed in this review as the system is designed by the specialist engineer, who will provide a detailed assessment of the design of the systems

2.19 PART J7 – HEATED WATER SUPPLY AND SWIMMING POOL AND SPA PLANT.

Compliance with Part J7 is not assessed in this review as the system is designed by the specialist engineer, who will provide a detailed assessment of the design of the systems.

3.0 CONCLUSION & RECOMENDATIONS

Based on the review of the proposed design, as outlined in the assessment above, it is considered that the proposed design as indicated on the drawings generally meet the relevant Deemed to Satisfy Provisions of the Building Code of Australia 2016 with the exception of the following which will need to be addressed as Performance Solutions as part of the Construction Certificate Application to show compliance with the associated Performance requirement:

Identified Non Compliances

- On a number of buildings due to the size and configuration of the windows proportional to the façade, they do not meet the Deemed to Satisfy Provisions of Part J of the BCA.
  Therefore Part JV3 performance solutions will need to be developed as part of the Construction Certificate Application for the following buildings:
  - Eco Chalets
  - Café Building
  - Dining and Administration Building

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