Data Centre - 57 Station Road Seven Hills

BCA Assessment

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Report Information

Project	BCA Assessment
Title	Data Centre - 57 Station Road Seven Hills
Report Reference	211180 - BCA
Report Date	1 April 2022
Prepared By	LCI Consultants Melbourne Office Level 2 616 St Kilda Road Melbourne 3004
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REVISION SCHEDULE

Revision	Date	Issue Name	Author	Authorised
0	1 April 2022	SSDA	HVR	HVR

Executive Summary

Development Overview

The proposed development is the construction of a The proposed construction of a multi-storey Data Centre at 57 Station Road, Seven Hills, NSW 2148, Australia.

Compliance Summary

We have reviewed preliminary architectural and services design documents (60% stage) for compliance with the current building assessment provisions, including (but not limited to) the following:

(a) Environmental Planning and Assessment Act 1979

(b) Environmental Planning and Assessment Regulation 2000

(c) Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021

(d) Building Code of Australia 2019 Amdt 1

(e) The Disability Access to Premises (Buildings) Standard 2010.

The report is intended as an overview of the relevant provisions of the BCA for assistance only. Detailed drawings and associated review will still be required as the final design is developed.

The assessment of the design documentation has revealed that the following areas are required to be assessed against the relevant performance requirements of the BCA.

The submission for consent will need to include verification from a suitably accredited fire safety engineer.

The assessment of the design documentation has revealed that the following areas are required to be assessed against the relevant performance requirements of the BCA.

Proposed variations from the BCA DtS Provisions and relevant Performance Requirements.

No	DtS Provision	Performance Solution	Relevant Performance Requirement
1	C2.3, C2.4	The building being a Class 7, that contains more than 2 storeys. The minimum unobstructed width of 6m with no part of its furthest boundary more than 18m from the building and in no part of the 6 m width be built upon or used for any purpose other than vehicular or pedestrian movement.	CP1, CP2 CP9
2	D1.4	no point on a floor must be more than 20 m from an *exit*, or a point from which travel in different directions to 2 *exits* is available, in which case the maximum distance to one of those *exits* must not exceed 40 m, exceeds 51m (Colo 01 cell 01). Exit doors are to be provided in COLO 1, cell 2, 4.	DP4, DP6 & EP2.2
3	D1.5	Distance between alternative exits (level) with the data halls exceeds 60 m, and is up to ~83 m	DP4, DP6 & EP2.2
4	E1.4	Removal of fire hose reels within the data halls	EP1.1
5	E4.8	Exit sign heights will exceed the maximum allowable to 2.7m above finished floor level	EP4.1, EP4.2

No	DtS Provision	Performance Solution	Relevant Performance Requirement
6	F2.3	Separate sanitary facilities for males and females be provided for Class 5 and 7 building which are to be provided throughout the building on each floor	FP2.1
7	N/A	A roof and external wall (including openings around *windows* and doors) must prevent the penetration of water that could cause unhealthy or dangerous conditions, or loss of amenity for occupants; and undue dampness or deterioration of building elements	FP1.4

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1 Introduction

1.1 Property details

The proposed construction of a multi-storey Data Centre at 57 Station Road, Seven Hills, NSW 2148, Australia, The site has an area of 2.57ha.

The proposed development comprises of the construction of single data halls and generator rooms. The assessment report is based upon the review of the design documentation listed in Table 1.3 of this Report.

The report is intended as an overview of the relevant provisions of the Building Code of Australia for assistance only. Detailed drawings and associated review will still be required as the final design is developed.

1.2 Regulatory Framework

The applicable provisions of the Environmental Planning and Assessment Act 1979, Environmental Planning and Assessment Regulation 2000, Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 and the Building Code of Australia 2019 Amdt 1.

The version of the BCA applicable to the development, is version that in place at the time of the application to the Certifying authority for the Construction Certificate. For the purposes of this Report, BCA 2019 Amdt 1 has been utilised as the version of the BCA applicable at the time of preparation this Report.

1.3 Building Code of Australia

The mandatory requirements in the Building Code of Australia (BCA) are the Performance Requirements. The BCA is a performance-based document, with the option of compliance by prescriptive measures – Deemed-to-Satisfy provisions (DtS), formulating an Alternative Solution which demonstrates compliance with the Performance Requirements or is equivalent to the DtS provisions, or is a combination thereof, this is detailed in Figure 1.1 below.

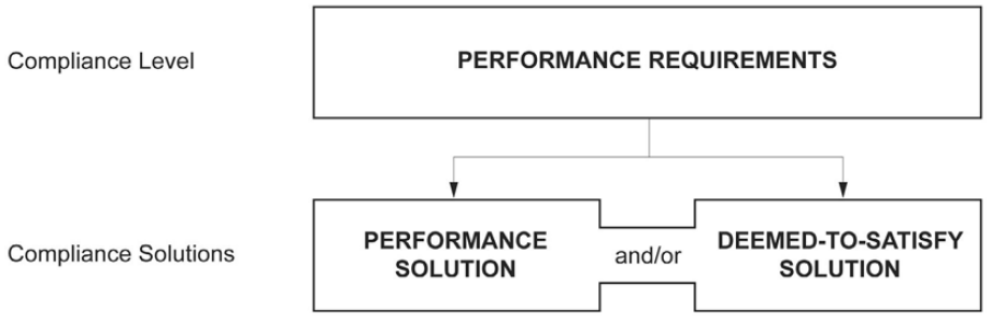

Figure 1.1: Building Code of Australia Compliance Options

1.4 Preliminaries

The relevant BCA criteria applicable to this building is itemised in Table 1.1 and Table 1.2 below as nominated as a reference point.

Table 1.1: BCA Reference Criteria

BCA Criterion	Building Characteristics
Building Classification (BCA A3.2)	Class 7b Class 5
Rise in Storeys (BCA C1.2)	Four (4)[1]
Type of Construction (BCA C1.1), based on rise in storey	Type Aor Type C (if large, isolated building[2])
Effective Height (BCA A1.1)	> 25 m effective height

Table 1.2: Floor Area

Level	Classification	Floor Area (m^2)	Volume	Population number
One (considered 2 storey)	5 & 7b	6,190~m^2	TBD	TBD
Two	5 & 7b	6,190~m^2	TBD	TBD

The floor areas are to be confirmed by the architect.

1.5 Documents

Table 1.3: Floor Area

Details	Project Number	Drawing No	Rev	Date	Discipline
Architectural	4591-00	SEARS-arsk0001	a01	28 March 2022	DEM Architects
Architectural	4591-00	SEARS-arsk0002	a01	28 March 2022	DEM Architects

[1] Based on the drawings having an internal storey height (level 1) of more than 6 m, considered to be the equivalent to 2 storey therefore 3 storey building.

[2] Does not apply to this building as the rise in storey is great than 2 storey a Performance Solution and Fire Authority Consent required

Architectural	4591-00	SEARS-arsk0003	a01	28 March 2022	DEM Architects
Architectural	4591-00	SEARS-arsk0004	a01	28 March 2022	DEM Architects
Architectural	4591-00	SEARS-arsk0005	a01	28 March 2022	DEM Architects
Architectural	4591-00	SEARS-arsk0006	a01	28 March 2022	DEM Architects
Architectural	4591-00	SEARS-arsk0007	a01	28 March 2022	DEM Architects
Architectural	4591-00	SEARS-arsk0008	a01	28 March 2022	DEM Architects

1.6 Structural

All structural works are to comply with the applicable requirements of BCA Part B1, this includes verification method BV2, and relevant Australian Standards.

Prior to the issue of the final documents, independent structural certification is required to be provided, including determination of the importance level of the development.

All structural elements shall be designed and certified by a professional Structural Engineer (NPER) in accordance with these BCA requirements.

Where a Building Solution is proposed to comply with the Deemed-to-Satisfy Provisions, Performance Requirement BP1.1 to BP1.3 are satisfied by complying with B1.1, B1.2, B1.4 and BP5. In addition, the professional Structural Engineer is to certify the fire resistance level of all structural elements in accordance with AS 3600.

1.7 Development Approval

A Development Approval to be provided for the development.

1.8 Fire resistance

1.8.1 Fire Rated Construction

The building should be constructed in accordance with the relevant provisions of Specification C1.1 of the BCA applicable to Type A Construction (4 storey) or Type C (Performance Solution) is it satisfy the requirements of large, isolated buildings or Performance Solutions, refer to Table 1.4 and Table 1.5.

Table 1.4 -Type A Construction - FRL of building elements

Building element	**Class of building — FRL: (in minutes)** *Structural adequacy/Integrity/Insulation*	
	5	**7b**
EXTERNAL WALL (including any column and other building element incorporated within it) or other external building element, where the distance from any fire-source feature to which it is exposed is—		
For loadbearing parts—		
less than 1.5 m	120/120/120	240/240/240
1.5 to less than 3 m	120/90/90	240/240/180
3 m or more	120/60/30	240/180/90

For non-loadbearing parts—		
less than 1.5 m	-/120/120	-/240/240
1.5 to less than 3 m	-/90/90	-/240/180
3 m or more	-/-/-	-/-/-
EXTERNAL COLUMN not incorporated in an external wall—		
For loadbearing columns	120/–/–	240/–/–
For non-loadbearing columns	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	120/120/120	240/240/240
INTERNAL WALLS		
Fire-resisting lift and stair shafts—		
Loadbearing	120/120/120	240/240/240
Non Loadbearing	-/120/120	-/120/120
Bounding public corridors, public lobbies, and the like—		
Loadbearing	120/–/–	240/–/–
Non Loadbearing	–/–/–	–/–/–
Between or bounding sole-occupancy units		
Loadbearing	120/–/–	240/–/–
Non Loadbearing	–/–/–	–/–/–
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion		
Loadbearing	120/90/90	240/120/120
Non Loadbearing	–/90/90	–/120/120
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES		
and COLUMNS—	120/–/–	240/–/–
FLOORS	120/120/120	240/240/240
ROOFS	120/60/30	240/90/ 60

Table 1.5 -Type C Construction - FRL of building elements

Building element	**Class of building — FRL: (in minutes)** *Structural adequacy/Integrity/Insulation*	
	5	**7b**
EXTERNAL WALL (including any column and other building element incorporated within it) or other external building element, where the distance from any fire-source feature to which it is exposed is—		
For loadbearing parts—		
less than 1.5 m	90/90/90	90/90/90
1.5 to less than 3 m	60/60/60	60/60/60
3 m or more	-/-/-	-/-/-
EXTERNAL COLUMN not incorporated in an external wall, where the distance from any *fire-source feature* to which it is exposed is		

Less than 1.5m	90/–/–	90/–/–
1.5 to less than 3m	–/–/–	–/–/–
3m or more	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/90/90	90/90/90
INTERNAL WALLS		
Bounding public corridors, public lobbies, and the like	60/60/60	–/–/–
Between or bounding sole-occupancy units	60/60/60	–/–/–
ROOFS	–/–/–	–/–/–

1.8.2 Fire Compartmentation (BCA C1.1)

Based upon the rise in storeys and use of the building, the building is required to be Type. Construction in accordance with Type B or Type C construction of Specification C1.1 of the Building Code of Australia 2019 Amdt 1.

The building has been assessed on the basis of the following fire separation/ compartmentation within the development.

The maximum floor area and volume limitations of a fire compartment as nominated in the deemed to satisfy provisions are referred to in Table 1.6:

Table 1.6 - BCA Assessment data

Classification	**Type B**		**Type C**	
	Maximum floor area (m2)	Maximum Volume (m3)	Maximum floor area (m2)	Maximum Volume (m3)
7b	3500	21,000	2,000	12,000
5	5500	33,000	3000	18,000

The overall building/development exceeds the above areas/volumes for Type C and as such it is proposed to be treated as a large, isolated building with a vehicular perimeter access around the entire building. A Performance Solution is required that will require approval from the Fire Rescue NSW

1.8.3 Compartment Size

A potential variation to BCA prescriptive maximum compartment in relation to both maximum area and volume (2000 m² and 12,000 m³ respectively for Type C) for the subject building based on the preliminary architectural drawings. Final confirmation is required on the FRL (fire rating) between each Data Hall as this will determined the compartment sizes.

Other passive fire protection issues that will need to be addressed in detailed documentation phase include:

(a) Emergency Power supply

(b) Emergency generators

(c) Electrical supply, Battery rooms

(d) Hydrant pumps

1.8.4 Large - isolated buildings

The building should be constructed generally in accordance with the relevant provisions of Specification C1.1 of the BCA applicable to Type A or Type C Construction if it complies (consent) with as a large, isolated building.

The size of a fire compartment in a building exceeds that specified in Table 1.6 based on that the building is:-

(a) protected throughout with a sprinkler system,

(b) provided with a perimeter vehicular access having an open space that is to be wholly within the allotment except that any road, river, or public place adjoining the allotment, but not the farthest 6 m of it may be included

(c) vehicle access must be capable of providing continuous access for emergency vehicles to enable travel in a forward direction from a public road around the entire building

(d) access road must have a load bearing capacity and unobstructed height to permit the operation and passage of *fire brigade* vehicles;

(e) not be used for the storage or processing of materials

(f) not be built upon, except for guard houses and service structures (such as electricity substations and pump houses) which may encroach upon the width of the space if they do not unduly impede fire-fighting at any part of the perimeter of the allotment or unduly add to the risk of spread of fire to any building on an adjoining allotment.

(g) The distance between different fire compartments needs to comply with Table 1.7.

Table 1.7 - Distance between external walls and associated openings in different fire compartments (if proposed)

Angle between walls	Minimum distance
0° (walls opposite)	6
more than 0° to 45°	5
more than 45° to 90°	4
more than 90° to 135°	3
more than 135° to less than 180°	2
180° or more	Nil

The above requirements would only be applicable where it is proposed to separate the building into different fire compartments to achieve Type C construction, noting that for large, isolated building option is taken then this would not be applicable.

As the building exceeds 2 storey's the concession as a large-isolated building cannot be used as a DtS requirements and will require a Performance Requirements, refer to Table 1.8.

Table 1.8 – Large isolated building

Performance Clause	Deemed to Satisfy (DtS	DtS Requirements
CP1, CP2 CP9	C2.3, C2.4	The building being a Class 7, that contains more than 2 storeys. The minimum unobstructed width of 6m with no part of its furthest boundary more than 18m from the building and in no part of the 6 m width be built upon or used for any purpose other than vehicular or pedestrian movement.

1.8.5 Protection of Openings

The DtS provisions of the BCA requires that openings within building elements are required to have an FRL, whilst this is not an issue, if the requirements is to have an FRL (client requirements) then it will need to comply with the following.

(a) Penetrations through fire rated walls to be protected either by a tested prototype (e.g. fire collar, fire damper, etc) or be installed within a fire rated shaft achieving an FRL.

(b) Provide self-closing -/60/30 fire doors to the doors opening to FRL walls.

(c) Access hatches to be provided within the walls / ceilings where fire collars, fire dampers etc are required to be provided therefore ensure that maintenance access is provided.

1.8.6 Fire Hazard Properties

Clause C1.10 requires materials and assemblies to comply with Fire Hazard Properties as outlined in Specification C1.10. Details are required as part of the architectural specifications, refer to Table 1.9.

Table 1.9 – Wall and ceiling lining materials (material groups permitted

Class of building	Fire-isolated *exits* and fire control rooms	Public corridors	Specific areas	Other areas
Class 5 (Office)	Walls: Group 1 Ceilings: Group 1	Walls: Group 1, 2, 3 Ceilings: Group 1, 2, 3	Walls: Group 1, 2, 3 Ceilings: Group 1, 2, 3	Walls: Group 1, 2, 3 Ceilings: Group 1, 2, 3
Class 7 (Data cell)	Walls: Group 1 Ceilings: Group 1	Walls: Group 1, 2, 3 Ceilings: Group 1, 2, 3	Walls: Group 1, 2, 3 Ceilings: Group 1, 2, 3	Walls: Group 1, 2, 3 Ceilings: Group 1, 2, 3

Rigid and flexible ductwork in a Class 2 to 9 building must comply with the fire hazard properties set out in AS 4254.1 and AS 4254.2

In lift cars, the materials floor linings and floor coverings must have a *critical radiant flux* not less than 2.2 and wall and ceiling linings must be a Group 1 material or a Group 2 material in accordance with AS 5637.1.

1.9 Egress Provisions

1.9.1 Exit requirements.

The locations of the proposed exits indicate that the deemed to satisfy requirements in terms of travel distances, distances between alternative exits and egress widths are non-compliant, refer to Table 1.10 . A Performance Solution by means of a fire engineering solution is required.

Exit door are to open in direction of travel, the external exit door between COLO 1 Cell 1 and Cell 3

The location of exits should not exceed 60m for Class 5 and 7b.

Table 1.10 – Egress requirements

Performance Clause	Deemed to Satisfy (DtS)	DtS Requirements
DP4, DP6 & EP2.2	D1.4	no point on a floor must be more than 20 m from an *exit*, or a point from which travel in different directions to 2 *exits* is available, in which case the maximum distance to one of those *exits* must not exceed 40 m, exceeds 51m (Colo 01 cell 01). Exit doors are to be provided in COLO 1, cell 2, 4
DP 4, DP6 & EP2.2	D1.5	Distance between alternative exits (level) with the data halls exceeds 60 m, and is up to ~83 m.

The exits shall be located to not be more than 60m apart and not closer than 9m.

1.9.2 Distance of travel to an Exit.

No point on a floor must be more than 20 m from an *exit*, or a point from which travel in different directions to 2 *exits* is available, in which case the maximum distance to one of those *exits* must not exceed 40m, refer to

Table 1.11 egress paths, noting the distance between both sides are the same.

Table 1.11 - Distance of Travel

Level	Location	BCA Maximum	Comments
1	Data centre	20m to a single exit or point of choice and where two exits are provided, a maximum of 40m to one of those exits.	Max distance measured 41.29 & 48.43m through data area if a door is provided between electrical room and data hall Or Max distance measured 51.72m through data area and office/secure area and 83.04mthrough the data area.
2	Data centre	20m to a single exit or point of choice and where two exits are provided, a maximum of 40m to one of those exits.	Max distance measured 58.68m & 48.43m through data area if a door is provided between electrical room and data hall Or Max distance measured 51.72m through data area and office/secure area and 83.04mthrough the data area.

There are a number of extended travel distances to the middle of the data hall which will require fire engineering performance solution, refer to Table 1.10.

Provide layout of the platforms on the roof for the mechanical plants

1.9.3 Dimensions of Exits

Minimum dimensions of 1.0m and 2.0m height to be provided within exits, with the paths of travel should provide a minimum width of 1.0m (note that all maintenance access, cat walks, etc may comply with AS1657 in which case a 600mm clear width is required).

Doorways are permitted to contain a clear opening width of the required width of the exit minus 250mm, with a height of 1.98mm as part of egress requirements. Access for persons with disability requires a clear doorway opening width of 850mm (i.e. minimum 920mm doors).

1.9.4 Slip Resistance

Provide details on the slip resistance of stairway treads and ramp surfaces, refer to Table 1.12. The requirements are as follows:-

Table 1.12 – Slip Resistance

Application	Dry surface conditions	Wet surface conditions
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

1.10 Sanitary facilities

To determine the number of sanitary facilities required details are required from the occupier/owner on the number of persons that will occupy the building. The number of facilities required are listed in

There is a requirement for separate sanitary facilities for males and females be provided for Class 5 and 7 building which are to be provided throughout the building on each floor. It is noted that unisex toilet are provided which will require a Performance Solution. Refer to Table 1.14

Table 1.13 – Facilities

	Closet Pans		Urinals		Washbasins	
	Design Occupancy	**Number**	**Design Occupancy**	**Number**	**Design Occupancy**	**Number**
Male Employees	1 - 20 >20	1 Add 1 per 20	1 – 10 11 – 25 26 – 50 >50	0 1 2 Add 1 per 50	1 – 30 >30	1 Add 1 per 30
Female employees	1 – 15 >20	1 Add 1 per 20	N/A	N/A	1 – 20 >20	1 Add 1 per 20

Table 1.14 - Separate sanitary facilities

Performance Clause	Deemed to Satisfy (DtS)	DtS Requirements
FP2.1	F2.3	Separate sanitary facilities for males and females be provided for Class 5 and 7 building which are to be provided throughout the building on each floor

1.11 Fire Services

1.11.1 Hydrants

A system of Fire Hydrants is required to be provided in accordance with BCA Clause E1.3 and AS2419.1-2005 required to be provided. Please provide pressure and flow calculations for review.

It is anticipated that two fire hydrant hose lengths will be required to provide coverage. This is to be assessed as a fire engineered performance solution.

1.11.2 Fire Hose Reels

A Fire Hose Reel System is required (data hall) to BCA Clause E1.4 and AS2441-2005. Fire hose reels are to be located within 4m of exits and provide coverage within the building based on a 36m hose length. Where required, additional fire hose reels shall be located internally as required to provide coverage.

It is proposed the fire hose reels are to be deleted from the data halls, refer to Table 1.15. This is to be assessed as a fire engineered performance solution. It should be noted that fire hose reel are not to extend through any fire and/or smoke walls.

Table 1.15 – Hose Reel requirements

Performance Clause	Deemed to Satisfy (DtS)	DtS Requirements
EP1.1	E1.4	A fire hose reel system must be provided, to serve the whole building where one or more internal fire hydrants are installed or where internal fire hydrants are not installed, to serve any fire compartment with a floor area greater than 500m^2. fire hose reels are to be installed in accordance with AS 2441. Removal of fire hose reels within the data halls

1.11.3 Portable extinguisher

The provision of portable fire extinguishers is required to BCA Clause E1.6 and AS2444-2001, provide layout details. Fire extinguishers are to be located in accordance with AS 2444.

1.11.4 Automatic Sprinkler Protection

Sprinklers are proposed throughout the building, provide a floor plan layout of the sprinkler system. The Sprinkler system is to be in accordance with AS2118.1 2017. Further information is required.

1.12 Exit Signs and Emergency Lighting

Emergency Lighting and Exit Signs indicating exit location paths of travel to exits to be provided in accordance with AS2293.1-2018.

Due to the nature of the project it is anticipated the exit sign heights will exceed the maximum allowable to 2.7m above finished floor level, this is the be assessed through a fire engineered Performance Solution.

1.13 Disability requirements

1.13.1 Access for people with disability

Access for people with disability shall be provided to and within the building in accordance with the requirements of Clause D3.2, D3.3 and D3.4 of the BCA 2019 Amendment 1.

Access for persons with a disability is to be provided to and within all areas normally used by the occupants, which includes the Data halls and office area. Confirmation is required from the stakeholders as the appropriateness of these areas for access areas.

Parts of the building required to be accessible shall comply with the requirements of:-

(a) AS1428.1-2009 General Requirements for Access – New Building Work;

(b) AS1428.4-2009 Tactile Ground Surface Indicators

(c) AS2890.6-2009 Car Parking for People with Disabilities

The BCA prescribes access to be provided to and within the building as follows:

(a) The principle public entry and at least 50% of all other entrances

(b) From designated car parking spaces for the use of occupants with a disability

(c) All areas used by the public.

In buildings over 500m^2 in floor area, a non-accessible entrance must not be located more than 50m from an accessible entrance and where a pedestrian entry contains multiple doors, the following is required:-

(a) Entrance containing not more than 3 doors, at least one of the door leaves must be accessible.

(b) As the entrance contains more than 3 doors, not less than 50% of the door leaves must be accessible.

A building required to be accessible is required to be equipped with either AS1428.1 compliant lift or 1428.1 compliant ramp.

Within the building the following are required;

(a) Door circulation space as per AS1428.1 Clause 13.3

(b) Doorways must have a clear opening of 850mm.

(c) 1.8m wide passages (passing spaces) must be provided at maximum of 20m intervals.

(d) Carpet pile height of not more than 11mm to an adjacent surface

(e) Any glazed capable of being mistaken for a doorway or opening must be clearly marked (or contain chair rail, hand rail or transom as per AS 1288 requirements)

Clarification to be provided that the stairs of the building providing egress are not to be used as pedestrian entrances. Where they are, then compliance is not achieved with the prescriptive provisions of Part D3.2 that requires no less than 50 % of all pedestrian entrances to be accessible, including the principal pedestrian entrance and other pedestrian entrances not to be located more than 50m from an accessible entrance.

1.13.2 Car parking

1 car space for every 100 carparking spaces is required to be accessible car parking spaces to comply with AS 2890.6-2009.

A 'shared zone' of minimum 5400mm x 2400mm is required adjacent to accessible car parking spaces, protected with a bollard. Details are required on the drawings.

1.13.3 Tactile Indicators

Tactile indicators are required to be provided to warn occupants of all stairs (except Fire Isolated stairs) and ramps regardless of public nature or private environment and where an overhead obstruction occurs less than 2.0m above the finished floor level.

1.13.4 Accessible Sanitary Facilities

An accessible unisex sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only and provided in accordance with AS 1428.1-2009 and must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary towels.

The minimum accessible unisex sanitary compartment to be provide as follows 1 on every storey containing sanitary compartments; and where a storey has more than 1 bank of sanitary compartments containing male and female sanitary compartments, at not less than 50% of those banks.

At each bank of toilets where there is one or more toilets in addition to an accessible unisex sanitary compartment, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428.1-2009 must be provided for use by males and females.

Where male sanitary facilities are provided at a separate location to female sanitary facilities, accessible unisex sanitary facilities are only required at one of those locations.

Further detailed drawings should be provided indicating all accessible facilities. It is noted that accessible sanitary facilities have been proposed but no ambulant facility has been indicated. Please provide revised details showing compliance.

1.13.5 Signage

Provide design details and specifications which is to include:-

(a) Sanitary Facility Identification Signs (note that they are to comply with BCA Specification D3.6 and include the use of Braille, Tactile, etc and be placed on the wall on the latch side of the facility)

(b) Hearing Augmentation System

(c) Identify each door required by BCA Clause E4.5 to be provided with an exit sign, stating 'EXIT' and 'Level" number

(d) Directional / Way Finding signs to the Lifts, Sanitary Facilities, etc

1.14 Weatherproofing of external walls

It is noted that there are no Deemed-to-Satisfy Provisions for this Performance Requirement in respect of external walls. Performance Requirement FP1.4 which relates to the prevention of the penetration of water through external walls, must be complied with. A performance solution is required or an application to the BAB.

1.15 Light and Ventilation

Natural Ventilation is required to be provided to rooms at a rate of 5% of the floor area in openings or alternatively, mechanical ventilation is required in accordance with AS1668.2-2012. Provide details and calculations to verify compliance is achieved.

Artificial lighting complying with AS1680.0-2009 is to be incorporated in the final detailed.

1.16 Energy Efficiency

The proposed development shall comply with Part J of the BCA. Provide details to confirm compliance, either by DtS or by the verification method. Certification from an appropriately qualified engineer should be provided for either option with a report / computations outlining how compliance is achieved.

1.17 Additional Information required prior to the construction certificate being issued

There are a number of matters that are required to be addressed prior to Construction Certificate being issued however it is considered that it should not cause a design change to the building.