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Taronga Conservation Society Australia
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Mosman NSW 2088

Email: ddjikic@zoo.nsw.gov.au

Attention: Daniel Djikic

**RE: BCA Assessment – DA Submission R4.0
Taronga Zoo Sumatran Tiger Adventure**

1.0 Introduction

This statement has been provided to accompany the Development Application submission to the Department of Planning. An assessment of the proposed works for the Taronga Zoo Sumatran Tiger Adventure at Taronga Zoo has been undertaken against the Deemed-to-Satisfy provisions of the relevant sections of the BCA. The assessment has found a number of minor non-compliances that will be addressed prior to the issue of the Construction Certificate.

2.0 Description of work

The following works are proposed in relation to the development:

- Demolition of the existing carnivore exhibit;
- Construction of a new carnivore exhibit for large cats (tiger, lions, leopards, etc). The new exhibit will include:
 - 3 exhibit areas;
 - Interpretative Sumatran Village to facilitate learning about humans living with tigers;
 - Holding dens;
 - Containment fences;
 - Landscaping, including new tropical vegetation;
 - Milling and seating areas;
 - Interpretative and directional signage;
 - Two new exhibit pedestrian pathways;
 - Keeper safe corridors;
 - Exhibit enrichment devices and visitor viewing areas;
 - Ranger outpost;
 - Office and staff amenities; and
 - Animal food preparation area / equipment store.
- Rebuild and re-orientate the end of the existing accessible ramp (as it meets ground level) to align with the two new exhibit pathways. Services will be relocated, upgraded and augmented, where required.

3.0 Statutory framework

3.1 New Work

Clause 145 of the Environmental Planning and Assessment Regulation 2000 (EPAR) requires that all new work comply with the current requirements of the Building Code of Australia (BCA).

3.2 Disability (Access to premises – Buildings) standards 2010

As of 1st May 2011, any works being undertaken by the building owner that require a building approval must comply with the relevant provisions of the Disability (Access to Premises - Building) Standards 2010. The Premises Standard applies to:

- All new building work;
- A new part of an existing building; and
- The 'affected part' of an existing building.

The Premises Standard defines the 'affected part' as follows:

- The principal pedestrian entrance of an existing building that contains a new part; and
- Any part of an existing building that contains a new part, that is necessary to provide a continuous accessible path of travel from the entrance to the new part.

The 'affected part' of a building must be upgraded to comply with the new access requirements where work is proposed to any of the areas referenced above.

For the purposes of this assessment, the 'affected part' is:

1. From the entry to the proposed exhibits ('Airplane Experience') via the viewing areas (Tiger Exhibit 01, 02 & 03) and on exit from the 'Supermarket'; and
2. From the front entry of the office portion accessed from the public viewing area to the Tiger dens.

Our assessment below incorporates the new access requirements under the Disability (Access to premises-Buildings) Standards 2010.

4.0 BCA assessment and identified non compliances

BCA Classification

Office: Class 5

Public viewing areas (arrival building, mid-point building and exit building): Class 9b

Animal dens: Class 10a

Animal containment: Class 10b

No.	Requirements to satisfy BCA
The assessment below identifies the BCA compliance items which need to be considered and addressed as part of the detailed design for the proposed development. The assessment is based on the architectural drawings listed in Appendix A.	
Arrival Building (Airplane Experience)	
1.	The treads and risers to the stairway entry are to comply with the below requirements of Clause D2.13: <ul style="list-style-type: none"> • Riser – Max 190mm, Min 115mm • Going – Max 355mm, Min 250mm • Risers which do not have any openings that would allow a 125mm sphere to pass through between the treads
2.	The tread or landing surface of the entry stairway is to have a slip resistance rating of P4 or R11 in accordance with Table D2.14.
3.	The nosing or landing edge strip of the entry stairway is to have a slip resistance rating of P4 in accordance with Table D2.14.
4.	The threshold of the entry and exit doorway of the building must not incorporate a step in accordance with Clause D2.15.
5.	The stairway entry is required to have handrails to both sides and tactile indicators as shown in the below diagram from AS1428.1-2009:

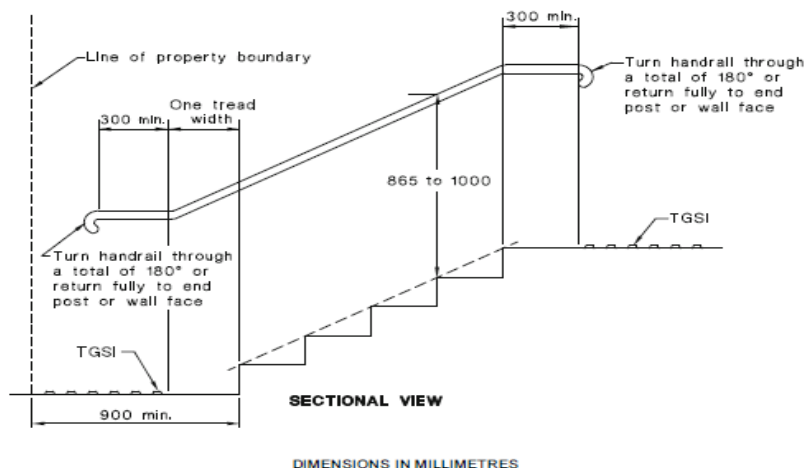
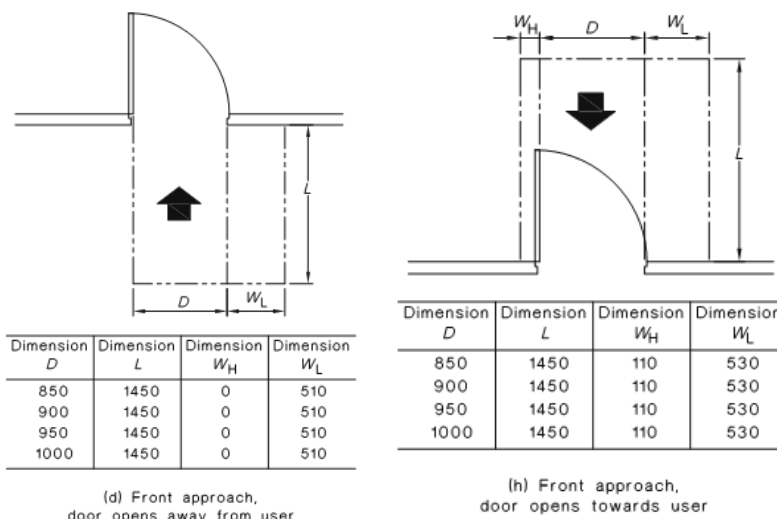


FIGURE 26(A) STAIRWAY LOCATION AND HANDRAIL EXTENSIONS AT BOUNDARY

6. The exit doorway is required to have door circulation spacing in accordance with Figure 31 of AS1428.1-2009. Required door circulation is shown below:



Exit Building (Supermarket)

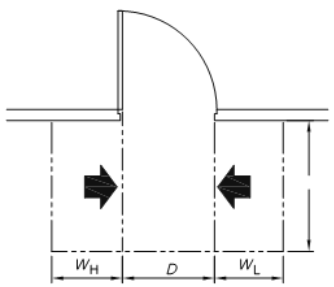
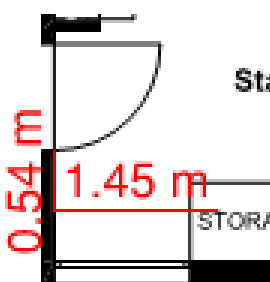
- Clause D2.19 requires the automatic sliding doors to the entry and exit to open automatically if there is a power failure to the door and have the capacity to be opened manually under a force of not more than 110N if there is a malfunction or failure of the power source.

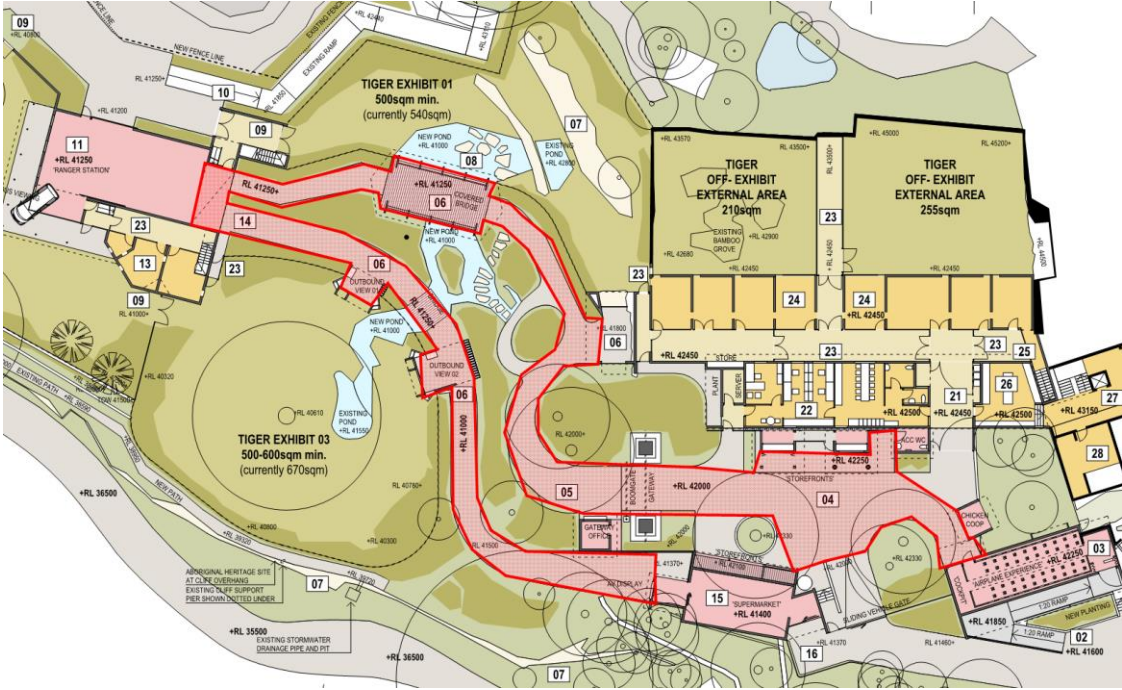
Midpoint Building (Ranger Station)

- At least one (1) keeper access ladder is required to comply with the going and riser requirements of a stairway in accordance with Clause D2.13.
- At least one (1) keeper access ladder is required to have a handrail on one side as required by Clause D2.17.
- The alternative keeper access ladder is required to comply with the requirements of AS1657.

Village Shops

- The accessible WC is required to comply with the requirements of AS1428.1-2009.
- The doorway into the shop area is required to have door circulation spacing in accordance with AS1428.1-2009. A minimum of 1240mm clear is required in front of the doorway as shown below.

	<p>Currently the clearance is 1030mm.</p>  <table border="1" data-bbox="285 535 628 669"><thead><tr><th>Dimension D</th><th>Dimension L</th><th>Dimension W_H</th><th>Dimension W_L</th></tr></thead><tbody><tr><td>850</td><td>1240</td><td>560</td><td>660</td></tr><tr><td>900</td><td>1210</td><td>510</td><td>660</td></tr><tr><td>950</td><td>1175</td><td>460</td><td>660</td></tr><tr><td>1000</td><td>1155</td><td>410</td><td>660</td></tr></tbody></table> <p>(c) Either side approach, door opens away from user</p>	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
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																		
Office / Tiger Dens																					
1.	All doorways that are within the office and lunchroom area are required to be readily openable without a key from the side that faces a person seeking egress by a single hand downward action on a single device which is located between 900mm and 1.1m from the floor.																				
2.	<p>The doorway leading from the Staff Lunchroom to the Open Plan Office is required to have 1450mm clearance in front of the doorway as required by AS1428.1-2009. Currently the storage unit encroaches on the required space.</p> 																				
3.	The accessible WC/shower is required to comply with the requirements of Section 15 of AS1428.1-2009.																				
4.	The additional WC is required to be an ambulant cubicle in accordance with Section 16 of AS1428.1-2009.																				
5.	Portable fire extinguishers are required to be installed to the kitchen area in accordance with AS2444 and Clause E1.6 of the BCA.																				
6.	The existing emergency lighting system is required to be upgraded to comply with AS2293.1-2005 and Clause E4.2 of the BCA.																				
7.	All exit signs are required to be upgraded to comply with AS2293.1-2005 and Clause E4.5 of the BCA.																				
Overall																					
1.	<p>The treads and risers to the reconfigured stairway between the tiger dens and existing staff area are to comply with the below requirements of Clause D2.13:</p> <ul style="list-style-type: none">Riser – Max 190mm, Min 115mmGoing – Max 355mm, Min 250mmRisers which do not have any openings that would allow a 125mm sphere to pass through between the treads																				
2.	The tread or landing surface of the reconfigured stairway between the tiger dens and existing staff area																				

	is to have a slip resistance rating of P4 or R11 in accordance with Table D2.14.
3.	The nosing or landing edge strip of the reconfigured stairway between the tiger dens and existing staff area is to have a slip resistance rating of P4 in accordance with Table D2.14.
4.	<p>The inbound and outbound access ways (highlighted in RED below) are required to comply with the requirements of AS1428.1-2009. A list of key items to consider in detailed design are below:</p> <ul style="list-style-type: none"> • All ramps and paths are to have a gradient no steeper than 1:20; • A minimum 1000mm clear path of travel throughout; • Slip resistant surface. <p>The proposed plans are capable of complying subject to inclusion of the additional details as identified above.</p> 
5.	Stormwater drainage design shall be in accordance with AS/NZS 3500.3
6.	Roof coverings are to comply with the relevant Australian Standards as per Clause F1.5.
7.	Sarking type materials used for weatherproofing of roofs and walls must comply with AS/NZS 4200 Parts 1 and 2.
8.	Lighting shall be provided throughout the building to comply with AS1680.0 in accordance with the requirements of Clause F4.4 of the BCA.
9.	Ventilation shall be provided throughout the buildings by means of natural ventilation complying with Clause F4.6 or mechanical ventilation complying with the requirements of AS1668.2 as required by Clause F4.5 of the BCA.
10.	All buildings are required to comply with the Energy Efficiency requirements of Section J.

It is advised that further assessment will be required to be undertaken prior to the issue of a Construction Certificate for the development to ensure compliance with the Building Code of Australia.

5.0 Fire safety schedule

Measure	Standard of Performance
Emergency lighting	BCA Clause E4.2, E4.4 and AS 2293.1 – 2005

Measure	Standard of Performance
Exit signs	BCA Clause E4.5, NSW E4.6, E4.8 and AS 2293.1 – 2005
Portable fire extinguishers	BCA Clause E1.6 and AS 2444 – 2001

If you have any queries please do not hesitate to contact me on (02) 9283 6555.

Kind regards,



Paul Curjak
Building Regulations Consultant
Steve Watson & Partners Pty Ltd

Appendix A

Drawing No.	Drawing Title	Issue	Date	Drawn by
A-SD-101	Managers Office – Plan	C	09.03.15	Lahznimmo Architects
A-SD-102	Managers Office – Section	C	09.03.15	Lahznimmo Architects
A-SD-103	Open Plan Office Area	C	09.03.15	Lahznimmo Architects
A-SD-104	Staff Lunchroom	C	09.03.15	Lahznimmo Architects
A-SD-105	Staff Amenities	C	09.03.15	Lahznimmo Architects
A-SD-106	Tiger Dens	C	09.03.15	Lahznimmo Architects
A-SD-107	Tiger Dens – Plan and Section	C	09.03.15	Lahznimmo Architects
A-SD-108	Tiger Dens – Details	B	09.03.15	Lahznimmo Architects
A-SD-109	Loading / Keeper Access	B	09.03.15	Lahznimmo Architects
A-SD-110	Food Preparation	B	09.03.15	Lahznimmo Architects
A-SD-111	Server / Plant	B	09.03.15	Lahznimmo Architects
A-SD-200	Mid-Point Building – Ground Plan	C	09.03.15	Lahznimmo Architects
A-SD-200B	Mid-Point Building – Level 1 Plan	C	09.03.15	Lahznimmo Architects
A-SD-201	Mid-Point Building – Elevations	C	09.03.15	Lahznimmo Architects
A-SD-202	Mid-Point Building – Sections	C	09.03.15	Lahznimmo Architects
A-SD-203	Mid-Point Building – Sections	C	09.03.15	Lahznimmo Architects
A-SD-204	Mid-Point Building – Keeper Areas	A	28.01.15	Lahznimmo Architects
A-SD-205	Mid-Point Building – Public Areas	A	28.01.15	Lahznimmo Architects
A-SD-210	Arrival Building Plan	A	09.03.15	Lahznimmo Architects
A-SD-211	Arrival Building Section	A	09.03.15	Lahznimmo Architects
A-SD-212	Arrival Building Elevation	A	09.03.15	Lahznimmo Architects
A-SD-220	Exit Building – ‘Supermarket’	A	09.03.15	Lahznimmo Architects
A-SD-221	Exit Building - Section	A	09.03.15	Lahznimmo Architects
A-SD-222	Exit Building – Elevation – East	A	09.03.15	Lahznimmo Architects
A-SD-223	Exit Building – Elevation – South	A	09.03.15	Lahznimmo Architects
A-SD-230	Village Shops	A	09.03.15	Lahznimmo Architects
A-SD-240	Inbound Viewing – Tiger Patrol Camp	A	09.03.15	Lahznimmo Architects
A-SD-241	Inbound Viewing – Tiger Patrol Camp	A	09.03.15	Lahznimmo Architects
A-SD-250	Inbound Viewing – Bridge	A	09.03.15	Lahznimmo Architects
A-SD-260	Outbound Viewing – Plan	A	12.03.15	Lahznimmo Architects
A-SD-261	Outbound Viewing – Sections	A	12.03.15	Lahznimmo Architects
A-SD-1200	Existing Site Plan	C	20.01.15	Lahznimmo Architects
A-SD-1201	Existing Level 1 + 2 Plan	B	07.01.15	Lahznimmo Architects
A-SD-1400	Proposed Site Plan	H	12.03.15	Lahznimmo Architects
A-SD-1401	Proposed Roof Plan	G	12.03.15	Lahznimmo Architects
A-SD-3000	Site Sections	C	20.01.15	Lahznimmo Architects