

**ANGEL PLACE
LEVEL 8, 123 PITT STREET
SYDNEY NSW 2000**

URBIS.COM.AU
Urbis Pty Ltd
ABN 50 105 256 228

23 March 2022

NSW Department of Planning and Environment
12 Darcy Street,
Parramatta, NSW 2150

Attn: Lucinda Craig

Dear Lucinda,

UPPER AUSTRALIA PRECINCT – MOD 2 – RESPONSE TO SUBMISSIONS

This Response to Submissions Report (RtS) has been prepared by Urbis on behalf of Taronga Conservation Society Australia (TSCA, the Applicant) in response to submissions received during the public exhibition of the proposed modification to State Significant Development (SSD) Development Application for the Upper Australia Precinct, Taronga Zoo (SSD-10456-Mod-2).

The Proposal was exhibited from Wednesday 2 March 2022 until Tuesday 15 March 2022. Submissions were received from Mosman Council and Environment, Energy and Science Group (EES). No submissions were received from the public.

To reflect comments from DPE and other government agencies, the following documentation is appended to this letter:

- Reflectivity advice prepared by BlueScope Steel (**Appendix A**)
- Amended Biodiversity Development Assessment Report (BDAR) prepared by Narla Environmental (**Appendix B**)
- Taronga GIS data shapefiles prepared by Narla Environmental (**Appendix C**)

1. AGENCY SUBMISSIONS

The following government agency submissions were received:

- DPE provided no objections to the proposed modification but requested further information in relation to:
 - Tree removal to clarify the number of trees to be removed
 - Confirmation on the light reflectivity of the main exhibit public congregation area within the Koala Treehouse.
- Environment, Energy and Science Group (EES) provided no objections to the proposed modification but requested updated to the Biodiversity Development Assessment Report (BDAR).
- Mosman Council provided no objections to the proposed modification but requested:
 - A condition should be imposed requiring suitable replacement trees to be provided to ensure that the landscaped character of the Zoo is maintained with the dominance of landscaping over the built elements and that the new works are not highly visible from the harbour.
 - A condition should be imposed to ensure that the reflectivity and visibility of the roof is minimised.

2. ADDITIONAL INFORMATION

2.1. TREE REMOVAL

DPE have requested further clarification in relation to Trees 159 and 160. It is confirmed that both trees are to be retained and removal is not requested.

The potential removal of Trees 159 and 160 was supported in the Arboricultural Assessment prepared by Sydney Arbor Trees only where the project Arborist assesses that the trees will not remain viable due to major encroachment into the SRZ. Further early works have occurred on site which have confirmed the trees can be retained during construction.

It is also still noted that it is TSCA's intention to retain all trees proposed for removal if possible. This modification is proposed to ensure that if tree removal is required due to approved construction works, development consent has been approved and adequate tree replacement can be undertaken on site in a timely manner and not impact on construction timing.

Replacement trees are proposed to be planted if tree removal is required within the broader Taronga Zoo site to ensure the cumulative impacts are minimised but will ensure no additional impacts on bushfire risk and current bushfire management measures identified within the SSDA are caused by the modifications. As noted in Mosman Council's submission, a condition requiring suitable tree replacement has been considered and forms part of the modified Condition 41 with trees proposed for removal to be replaced at a 2:1 within the Zoo site.

2.2. REFLECTIVITY

The Koala Treehouse roof is approved to be built from translucent polycarbonate sheet roofing with timber elements, illustrated in **Figure 1**. Condition B7 currently requires all materials used within the project to not exceed 20% visible light reflectivity and to ensure the approved development is designed to minimise glare. Verifying visible light reflectivity is a subjective and complex measurement that is difficult to ascertain for traditional roofing materials. The current modification requests this condition to be removed given the approved development has already been designed to minimise glare.

Figure 1 Photomontage of Approved Koala Treehouse



Source: Lahznimmo

Further information has been sought from BlueScope Steel, the manufacturer of the majority of sheet roofing in Australia to provide further insight into the complexity of measuring reflectivity. As noted in the Reflectivity Advice prepared by BlueScope Steel, enclosed in **Appendix C**:

‘The degree of glare observed will depend, amongst other things, on the age and type of material used, its location, surrounding environment, position and gradient. The particular time of day and year also affect glare due to the constantly changing position of the sun

... BlueScope Steel has no published data on reflectivity values of Colorbond steel or products manufactured from Colourbond steel that can be sensibly be used on their own to ascertain the likelihood of glare from a potential building application.’

The proposed design of the Koala Treehouse remains consistent with the approved development which presents as a low pitch roof (7.5 degrees) facing away from both Bradleys Head Road and Sydney Harbour. The approved materials have been chosen to allow maximum natural light onto the deck while providing cover and dappled diffused light. The main materials are to be Australian hardwood timbers with both natural and charred finish.

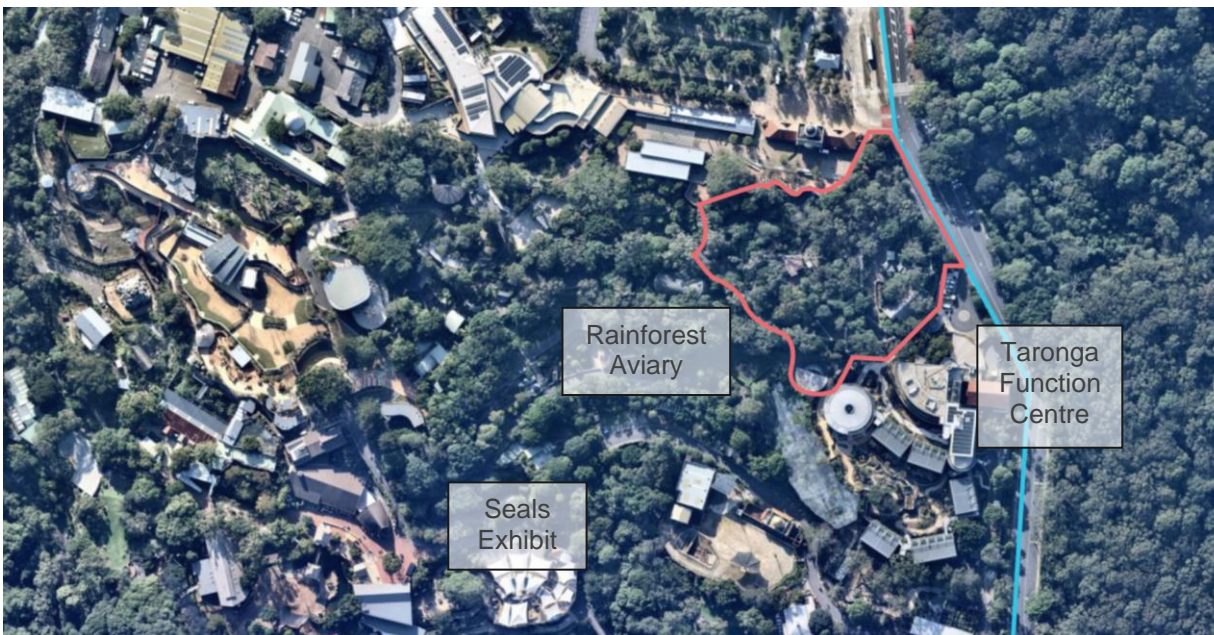
The overall built form remains **within the tree canopy** and is not visible from Sydney Harbour as shown in **Figure 2**. Large, mature trees surround the site including the Rainforest Aviary which is identified as part of the local heritage item 34 under the *Mosman Local Environmental Plan 2012*. Given the heritage significance of the Rainforest Aviary, the tree canopy located in front of the Upper

Australia Precinct is unlikely to be changed. It is also noted that any tree removal proposed as part of any future development applications requires adequate tree replacement within the Zoo site and assessment of visual impacts from Sydney Harbour.

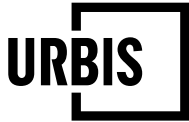
Figure 2 Views of Upper Australia Precinct



Picture 1 View of Upper Australia Precinct from Sydney Harbour
Source: Lahznimmo



Picture 2 Site Aerial with Upper Australia Precinct in red
Source: Urbis



Given the location of the Upper Australia Precinct on the eastern boundary of the site, there are also no residential dwellings in close proximity that would be able to see the Koala House roof.

While the overall reflectivity of the roof is difficult to measure numerically, based on the location and design of the development, the approved Koala Treehouse will not be visible or impact views from Sydney Harbour or neighbouring properties. Overall, the approved development has been designed to minimise glare and the numerical control is not relevant for the site. The proposed modification continues to request the removal of Condition B7.

2.3. BIODIVERSITY

The Biodiversity Development Assessment Report (BDAR) has been updated by Narla Environmental to reflect comments from EES and is enclosed in **Appendix B**. EES also noted that their review of the BDAR was undertaken without access to the GIS data and without access to the case in the BAM-Calculator (BAM-C). A copy of the relevant GIS Data is enclosed in **Appendix C**. The amended report has also been re-submitted to the BAM-C.

2.4. AMENDED CONDITIONS

Based on the submissions received, no changes are requested to the proposed amended conditions of consent from the Modification Report.

While Council has requested a condition should be imposed to ensure that the reflectivity and visibility of the roof is minimised, the overall approved design has already achieved the intended outcome and an additional condition is not considered necessary. It is also noted that the amended conditions already require adequate tree replacement as noted in Council's submission.

3. CONCLUSION

We appreciate DPE's assistance with this modification and we trust this assist with the assessment of the current Section 4.55(2) modification for the Upper Australia Precinct.

If you have any further questions, please do not hesitate to contact myself or Sarah Horsfield on (02) 8424 5146.

Yours sincerely,

A handwritten signature in black ink that reads "Brigitte Bradley".

Brigitte Bradley
Senior Consultant
(02) 8424 5146
bbradley@urbis.com.au