

Our Ref: 20ABC02

11 February 2021

ABC Planning P/L Shop 4 500 Elizabeth Street SURRY HILLS NSW 2010

Attention: K Richards

Dear Kite

Re: Fauna Ecologist Review on habitat creation measures Large Bent-winged Bat at 120C Old Canterbury Road, Summer Hill

Travers bushfire & *ecology* has been engaged to provide ecological review and advice regarding habitat creation measures for Large Bent-winged Bat proposed for a multi-level residential unit block at the above address in response to pre-DA comments from Inner West Council. The subject site is shown on Figure 1.



Figure 1 – Subject site

TBE Environmental Pty Ltd ABN 85 624 419 870 www.traversecology.com.au



Comments provided from Council are as follows:

The proposal is located within a significant/strategic Biodiversity corridor with the Inner West LGA. As such amended documentation addressing and responding to the requirements of the biodiversity Act 2016 are recommended to be submitted. In particular this documentation should address and respond to the potential impact of the development on the flight path of the threatened eastern bent-wing bat.

Response: The Biodiversity Conservation Act 2016 guides an assessment on threatened biodiversity and the potential impacts from development. This legal framework will determine if a development will cause a significant impact on biodiversity and outlines subsequent measures of avoidance, minimization and then offsetting of impacts under the Biodiversity Offsetting Scheme.

Travers bushfire & ecology were not engaged to prepare a Biodiversity Assessment Report as part of this submission which I limited to review and advice. It is understood that an ecological assessment has been previously undertaken for the proposal. The development is not expected to trigger offsetting due to triggering the clearance of native vegetation exceeding the threshold nor is the site mapped as contain biodiversity values.

As the development proposal does not impact on any important maternal roosting habitat or any known other structural roost, then a test of significance assessment, if undertaken, would likely conclude a not significant impact on this species on Large Bent-winged Bat. It is likely that comments relating to the flight path of this species have potentially arisen out of recordings during the initial site ecological surveys. Only a wind farm close to a breeding or high use roost may potentially impact on flight paths for this species. This development is static nonmoving structure and consequently Microbats will avoid it through sonar echolocation.

Council's comments go on to state:

In order to ensure minimal impact on the flight path of the eastern bent-wing bat it is recommended that the topmost roof of the building (roof of level 8) be amended to incorporate a green roof. Such an amendment will ensure resting and bio-diversity opportunities for this and other species and assist to off-set any habitation loss experienced by the re-development of the existing land parcel.

Response: *Travers bushfire & ecology* has reviewed the following documentation:

- Existing Tree Plan (Fox Johston 2020)
- Survey Plan (Stone Mason & Artist 2019)
- Arborist Report (Rain Tree Consulting 2020)
- Landscape Plan (*McGregor Coxall* 2020)

Following this a site visit was undertaken by Corey Mead (Fauna Ecologist) with Joppe Veul (*McGregor Coxall*) and Jamie Howeson (*The Yard 120c* Project Manager) on Friday the 5th February.



It is also understood that the residential flat building is proposed with the following landscaping, as also demonstrated in the Landscape Plans:

- 21.68% (424m²) of the site to be deep soil zone, which accommodates an extensive landscaped setting, perimeter plantings within the pocket park, common open space areas on Levels 1, 3, 4, 6, and for the Level 7 green roof garden.
- Landscaping includes the pocket park at the northern end of the perimeter planting, and landscaped common areas on Levels 1, 3, 4, 6, plus the landscaped Level 7 green roof area site, with a total of 482.5m2 (24.66%) of soft landscaping provided. This consists of a mixture of shrubs, ferns, grasses, and groundcovers.

The Landscape Plans also provide a preliminary review of sourced hides for insects to encourage potential microbat prey species habitat as well as an example of microbat and bird roosting/nesting designs incorporated into building structures.

The preliminary effort in consideration to the Large Bent-winged Bat is likely to fall short of council expectations based on their request for the top most roof to incorporate a 'green roof'. Fringing gardens are instead provided on the second top floor surrounding a living/social space and the upper roof with no plantings.

Records of the Large Bent-winged Bat within the Sydney and inner suburbs shows activity concentrated along riparian and associated vegetated areas. This may have prompted council's requests for the site to provide supplementary habitat to the adjacent GreenWay. The GreenWay is a 5.8km environmental and active travel corridor linking the Cooks River at Earlwood with the Parramatta River at Iron Cove. It mostly follows the route of the Inner West Light Rail and Hawthorne Canal. State and local government funding has now been secured to complete the southern section of the GreenWay from Parramatta Road through Lewisham West and Dulwich Hill to the Cooks River.

Further to this the Marrickville DCP 2011 Biodiversity Map identifies the complete site as both a wildlife corridor and as part of the Long-nosed Bandicoot endangered population of the Inner West Protection Area.

Council's argument to facilitate a green roof space for 'resting' opportunities for the species is unfounded given that the species does not utilise such habitat for roosting or resting and there is no demonstrated evidence that roosting locations are set proximate to any particular vegetated gardens. This is also particularly given that this species is well known to occupy urbanised and city landscapes and forage along streetlights more than other microbats, particularly threatened species. Such gardens may alternatively provide prey species habitat and thus provide foraging benefits if designed correctly.

Therefore, *Travers bushfire & ecology* can support the current extent of the proposed vegetated landscaping as outlined in the Landscape Plan provided the following additional elements can be incorporated further into the design:

i. The insect housings investigated and provided in landscape plans thus far are European and likely accommodate mostly diurnal flying insects. It should be emphasised here that the Large Bent-winged Bat is alternatively a specialist hunter of flying nocturnal insects, predominantly moths. Therefore further investigations are

20ABC02



required to support the selected vegetation and soil base that support moths in all its lifecycle stages.

McGregor Coxall Senior Landscape Architect Joppe Veul has commenced this further research based on our site discussions with beneficial findings that moths need nectarproducing flowing plants to eat, as well as food plants for their larvae (caterpillars). A diverse garden is critical and local indigenous plants are best. The ABC Gardening Australia episode on moths suggested:

- Bottlebrushes (*Melaleuca* spp., syn *Callistemon* spp.)
- Melaleucas (*Melaleuca* spp.)
- Blue hibiscus (*Alyogyne hueglii*)
- Grevilleas (*Grevillea* cv.)
- Grasses

These plant species may be further incorporated into the planting schedule. Mulch is also noted of importance as some moth species can lay their eggs in it for later larvae feeding. Therefore untreated mulch is recommended as the soil substrate cover for much of the landscaping areas. Mulch has other values in maintaining moisture within the soil and preventing colonisation by competing weeds.

ii. The residential block design provides a steep western aspect frontage to the GreenWay corridor, whilst the remaining public interfaces are tiered. This steep western aspect is ideal to incorporate roosting options for subterranean microbats into the structure itself at various levels.

It is recommended that a 2m² vertical microbat apartment housing block is designed to be attached to the face of the building. The material used, whilst being durable, should allow for good internal insulation and protection from varying external temperatures. This bat housing block is to provide various entry types between 15-25mm slits or 30mm hole entries into a range of internal housing dimensions. Vertical faces below and around entries are to be rough surfaces to allow landing on the exposed face, climbing inside as well as into the deeper dark crevices within. The internal dimensions should vary in width between 60-400mm but allow no more than 6mm between internal faces.

The concept is to basically permit a range of different options for the bats to select the housings most preferred. These bat apartment blocks are to be replicated for each level of the building along the western aspect so that they are available at various levels. Such an aspect is ideal for obtaining late day heating before the bats emerge at night.

The bat apartment blocks are to be placed on the external vertical face of the building and be unobstructed and undisturbed. They may be any external colour and architectural design that may be either discrete or a bold feature to the building, as long as they permit the right climbing, entry and internal features described.

The effort to incorporate these bat roosting opportunities into the building design does not guarantee that they will be taken up. The design does however demonstrate to council a clear intent to provide more than foraging benefits to the species. Successful microbat roosting habitats within building structures has been previously investigated and some successful designs should be sourced and incorporated into the design.



- iii. The building provides a sub-floor area (basement) as well as site entry bridges that also provide opportunities to mount similar microbat roosting houses in the underside areas. Large Bent-winged Bats show a high preference to roosting in crevices in the underside of structures such as under bridges and in the ceiling joins of stormwater culverts. Again, these could be prefabricated housings with the same surface and size specifications that could be mounted at variable locations away from any public access spaces. Such designs likely exist and could be modelled. The intent to again supplement habitat with roosting opportunities in addition to the garden areas.
- iv. Lighting that attracts moths should also be investigated and accommodated where possible in the public spaces requiring light. Whilst the sub-floor areas and the underside of bridges should remain dark with little lighting spill-over where possible.
- v. Ground level entry into the sub-floor areas of the building along the western side should permit for available surface shelter habitat for Long-nosed Bandicoot accessed to and from the adjacent GreenWay corridor. These should also be variable in dimensions but generally permit small hole and crevice entries of approximately 200mm high and internal shelter areas with internal linings such as waterproof carpet.
- vi. The microbat housings and subfloor spaces should be monitored for use by microbats and bandicoots in separate seasons at least for 2 years following the installation.
- vii. The design of the abovementioned structures should be reviewed by an experienced fauna ecologist before finalisation and installation locations also verified.

If you require any further information please do not hesitate to contact the undersigned on (02) 4340 5331 or at <u>info@traversecology.com.au</u>

Yours faithfully

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