Western Sydney University, Milperra Campus

Hollow Offset Replacement Strategy and Nest Box Management Plan

Mirvac Residential

19 December 2024

Final

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Report No. 23021RP4

The preparation of this report has been in accordance with the brief provided by the Client and has relied upon the data and results collected at or under the times and conditions specified in the report. All findings, conclusions or commendations contained within the report are based only on the aforementioned circumstances. The report has been prepared for use by the Client and no responsibility for its use by other parties is accepted by Cumberland Ecology.

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Glossary

Terminology	Description
BC Act	NSW *Biodiversity Conservation Act 2016*
CEEC	Critically Endangered Ecological Community
Council	Canterbury-Bankstown City Council
DA	Development Application
DCP	Development Control Plan
DBH	Diameter at Breast Height
EEC	Endangered Ecological Community
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
GPS	Global Positioning System
ha	Hectares
LEP	Local Environment Plan
LGA	Local Government Area
m	Metre
NSW	New South Wales
Study Area	2 and 2A Bullecourt Avenue, Milperra NSW
the 'Client'	Mirvac Residential
the 'Plan'	this Hollow Offset Replacement Strategy and Nest Box Management Plan
the 'Project'	The redevelopment of the Western Sydney University, Milperra Campus

1. Introduction

Cumberland Ecology has been commissioned by Beveridge Williams, on behalf of Mirvac Residential (the 'client'), to prepare a Hollow Offset Replacement Strategy and Nest Box Management Plan (the 'Plan') for the redevelopment of the Western Sydney University, Milperra Campus located at 2 and 2A Bullecourt Avenue, Milperra NSW (hereafter referred to as the 'study area') (**Figure 1**). The redevelopment of the Western Sydney University Milperra Campus (hereafter referred to as the 'project') is proposed to be conducted in stages in accordance with the project's masterplan and will ultimately involve the subdivision of land into residential lots, park areas, a neighbourhood centre containing a childcare centre, and associated infrastructure (roads, drainage basins).

The staged project will comprise the following components:

- Subdivision and construction of residential dwellings;
- Construction of a main 'connector' road to the existing road network;
- Vegetation removal;
- Tree protection works for retained trees within the residential sub-division;
- Earthworks (including cut and fill works) and remediation of contaminated soil;
- Construction of roads and infrastructure;
- Construction of bio-detention basins for stormwater management; and
- Landscaping.

The preparation of this Plan was developed utilising the ecological assessments previously prepared by Cumberland Ecology for earlier stages of the project which detail the existing biodiversity values within the study area (Cumberland Ecology 2024).

1.1. Planning Proposal

Following the approval of the Planning Proposal lodged by the client for the rezoning of the Western Sydney University Milperra Campus, it was rezoned R1 – General Residential, B1 – Neighbourhood Centre, C2 – Environmental Conservation and RE1 – Public Recreation (Elton Consulting 2023). The Environment and Heritage Group (EHG) provided advice and recommendations for the rezoning following its approval, a number of which are applicable to biodiversity and have been included in the *Canterbury-Bankstown Development Control Plan 2023* (Canterbury-Bankstown DCP) (Canterbury-Bankstown LGA 2023).

The Canterbury-Bankstown DCP includes a specific clause (Clause 11.13) that applies to the entire university campus. The ecological objectives of the clause are to ensure that any proposed development will not detrimentally affect the environment and ensure that satisfactory measures are incorporated to mitigate any impacts arising from the proposed development.

The mitigation measures relevant to this Plan are as follows:

***C18**: A Vegetation Management Plan (VMP) is prepared and implemented by a suitably qualified bush regenerator for the rehabilitation, management and long-term maintenance of any retained Cumberland Plain Woodland. Prior to felling trees, a nest box management plan must be prepared which includes details on:*

- *The number, size, type and location of tree hollows to be removed.*

***C19**: The size, type, number and location of where the replacement nest boxes and/or compensatory artificial hollows using a HollowHog tool are to be installed based on the results of the pre-clearing survey. Prior to felling trees, a suitably qualified ecologist must endeavor to individually remove sections of a tree containing a hollow or other habitat features for relocation and reuse by the project:*

- *Trees with hollows should be lopped in such a way that the risk of injury or mortality to fauna is minimised, such as top-down lopping, with lopped sections gently lowered to the ground, or by lowering whole trees to the ground with the 'grab' attachment of the machine;*
- *Where it is not possible to remove a tree hollow/habitat feature prior to felling the tree, native fauna should first be removed before tree felling and the hollow bearing trees may then be pushed over to avoid damage to hollows.*

***G1:** Prior to removing any hollow-bearing trees, compensatory nest boxes and/or artificial hollows using a HollowHog tool are to be installed within the C2 zoned areas of the site. The size of nest box/artificial hollow is to reflect the size and dimension of the hollow removed.*

***G2**: Nest boxes should be monitored for repair/maintenance/replacement requirements for a minimum of five years. At the end of the five years, the applicant needs to provide the results of the nest box monitoring and their use or lack thereof to the consent authority and provide recommendations for the ongoing use of the nest boxes and any future maintenance requirements.*

This Plan outlines a strategy for offsetting hollow-bearing trees that have been identified for removal within the study area as part of the project through the installation and monitoring of nest boxes, in accordance with the Canterbury-Bankstown DCP.

1.2. Purpose

This Plan sets out the framework for mitigating the loss of hollow-bearing trees associated with the clearing activities required for the project, and has been prepared in accordance with conditions C18, C19, G1 and G2 of the Canterbury Bankstown DCP (Canterbury-Bankstown LGA 2023). The primary objective of this Plan is to detail suitable nest box requirements to minimise impacts on native hollow-dependant fauna species in the study area.

Specifically, this Plan aims to:

- Provide a description of the existing vegetation and ecological values within the study area;

- Minimise impacts on native biodiversity, especially on hollow-dependent fauna, by outlining the appropriate number of nest boxes to be installed within the 'conservation area' (**Figure 1**) prior to clearing to mitigate the loss of hollow-bearing trees; and
- Outline monitoring and reporting requirements and responsibilities.

1.3. Background

The study area is located entirely within the suburb of Milperra in the Canterbury-Bankstown Local Government Area (LGA) and is located approximately 20 kilometres (km) west of the Sydney Central Business District. The study area, which covers an area of approximately 19.7 hectares (ha), is generally bounded by an industrial estate to the north and east, the M5 Southwest Motorway to the south, and residential development to the west. The northeast of the study area, which is zoned C2 – Environmental Conservation, contains an area of good-quality remnant Cumberland Plain Woodland vegetation which will hereafter be referred to as the 'conservation area' (**Figure 1**).

The majority of the study area has been modified as a result of historical agricultural use, with it most recently being used as a university campus. It currently comprises university buildings, including residential student 'halls', access roads, carparks, open spaces and an active childcare centre. Aside from the remnant native vegetation occurring in the conservation area to the northeast, the remaining vegetation in the study area comprises canopy species of Cumberland Plain Woodland over an entirely exotic, manicured garden understorey, native planted woody vegetation, exotic woody plantings and exotic grassland surrounding the cleared areas. Native vegetation occupies a total of approximately 4.92 ha, which represents 24.94% of the study area and includes approximately 1.83 ha of planted native vegetation.

1.4. Biodiversity Values of the Study Area

1.4.1. Hollow-bearing Trees

Thirty (30) hollow-bearing trees have been identified within the study area which provide potential shelter, roosting, and nesting habitat for a range of mammals, birds, reptiles, and frogs (**Figure 2**). Eight (8) hollow-bearing trees within the study area have been identified in the arborist report to be removed (Temporal Tree Management 2024).

1.4.2. Vegetation Communities

Two (2) separate native vegetation communities were recorded in the study area. The vegetation occurring within the study area consists of Plant Community Types (PCT) 3320 Cumberland Shale Plains Woodland, in varying condition states, and Cumberland Red Gum Riverflat Forest. Cumberland Shale Plains Woodland conforms to the threatened ecological community (TEC) Cumberland Plain Woodland in the Sydney Basin Bioregion (Cumberland Plain Woodland) which is listed as a Critically Endangered Ecological Community (CEEC) under the NSW *Biodiversity Conservation Act 2016* (BC Act) and Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). Cumberland Red Gum Riverflat Forest conforms to the TEC River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (River-Flat Eucalypt Forest) which is listed as an Endangered Ecological Community (EEC) under the BC Act and a CEEC under the EPBC Act.

Table 1 below identifies the vegetation communities occurring within the study area as assessed for earlier stages of the project.

Table 1 Vegetation communities within the study area

PCT	Vegetation Community	BC Act	EPBC Act	Study Area (ha)
3320	Cumberland Shale Plains Woodland – Intact	CEEC	CEEC	1.39
3320	Cumberland Shale Plains Woodland – Mown	CEEC	CEEC	0.15
3320	Cumberland Shale Plains Woodland – ExoticGround	CEEC	CEEC	0.85
3320	Cumberland Shale Plains Woodland – Canopy	CEEC	CEEC	0.64
4025	Cumberland Red Gum Riverflat Forest – Canopy	EEC	CEEC	0.06
-	Planted Native Vegetation			1.83
-	Exotic Vegetation			2.05
-	Exotic Dominated Grassland			6.51
-	Cleared Areas			6.25
			Total	**19.73**

Cumberland Plain Woodland exists within the study area in a variety of condition states. The conservation area contains all instances of intact Cumberland Plain Woodland, and the majority of the mown and exotic ground condition states. This area provides the best quality habitat for threatened fauna species, hence it being retained for conservation. Outside of the conservation area, the study area largely consists of canopy trees, either remnant, planted or exotic, over an entirely exotic understorey, that is maintained as a manicured garden. The vegetation within the study area also supports specific habitat features that provide foraging, shelter and breeding opportunities for fauna.

Fauna habitat features present within the study area include:

- Terrestrial habitat features such as ground and shrub layer vegetation, leaf litter and logs;
- A total of 30 hollow-bearing trees; and
- Blossom-producing trees and shrubs.

The project is due to remove eight hollow-bearing trees from the study area. **Table 2** below contains details of the hollow-bearing trees within the study area to be removed for the project, and at what stage their removal is predicted, and **Figure 3** shows the location.

Table 2 Details of hollow-bearing trees to be removed

Tree ID*	Species	Height (m)	DBH (cm)	Stage of Removal
170	*Eucalyptus sideroxylon*	15	28	Stage 6
179	*Eucalyptus saligna*	23	53	Stage 6

Tree ID*	Species	Height (m)	DBH (cm)	Stage of Removal
230	*Eucalyptus saligna*	18	58	Stage 6
277	*Eucalyptus tereticornis*	18	78	Stage 6
280	*Eucalyptus tereticornis*	16	52	Stage 2
372	*Angophora floribunda*	13	33	Stage 4
403	*Eucalyptus moluccana*	16	23	Stage 5
422	*Eucalyptus sideroxylon*	19	46	Stage 4

**Tree ID according to arborist report*

The size and number of hollows per tree is not yet known, but these will be confirmed during the pre-clearance assessment of the study area.

1.4.3. The Conservation Area

The conservation area has been identified as the location where the nest boxes and salvaged tree hollows will be installed and where any fauna rescued during the clearing process will be released (see **Figure 1**). The vegetation within the conservation area consists of Cumberland Plain Woodland that is to be managed and enhanced under a Vegetation Management Plan (VMP). Cumberland Plain Woodland provides suitable habitat for all threatened species considered to have the potential to occur within the study area. Suitable trees for the installation of nest boxes and salvaged tree hollows have been identified within the conservation area, however the final number of suitable trees will be confirmed during the pre-clearance assessment of the study area.

1.5. Fauna Species

Fauna species considered to have the potential to utilise habitat with the study area are well known as a number of surveys have been undertaken within the study area and surrounds by Cumberland Ecology (Cumberland Ecology 2024) and Eco Logical (Ecological 2022). Commonly occurring hollow dependent species previously recorded within the study area include Sulphur-crested Cockatoos (*Cacatua galerita*), Little Corellas (*Cacatua sanguinea*) and Rainbow Lorikeets (*Trichoglossus haematonotus*). Based on the results of ecological assessments undertaken by Cumberland Ecology within the study area, threatened fauna species considered to have the potential to utilise the hollows within the study area are limited to the species listed in **Table 3**.

Table 3 Hollow-dependent threatened fauna potentially occurring within the study area

Scientific Name	Common Name	BC Act Status	EPBC Act Status
Mammals			
Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	V	-
Miniopterus australis	Little Bentwing- bat	V	-
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	-
Myotis macropus	Southern Myotis	V	-
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	-

Scientific Name	Common Name	BC Act Status	EPBC Act Status
Scoteanax rueppellii	Greater Broad-nosed Bat	V	-
Birds			
Glossopsitta pusilla	Little Lorikeet	V	-
Neophema pulchella	Turquoise Parrot	V	-
Ninox strenua	Powerful Owl	V	-

Status: V = vulnerable

2. Hollow Offset Replacement Strategy

2.1. Hollow Bearing Trees

Hollow-bearing trees within the study area and the locality provide suitable shelter, roosting and nesting habitat for a range of mammals, birds, reptiles and frogs. Hollows vary greatly in size and for the purpose of this Plan have been categorised as either small (<10 cm), medium (10.1 – 20 cm) or large (>20 cm). Within the study area, a total of eight hollow-bearing trees have been identified for removal. The details of the hollow-bearing trees to be removed are provided in **Table 2**. Additional hollow-bearing trees are present within the study area and the locality, including the conservation area.

The loss of hollow-bearing trees as a result of the project are to be offset through the salvage and relocation of existing tree hollows as well as the installation of nest boxes into the conservation area (see **Figure 1**). The conservation area was chosen in accordance with the Canterbury-Bankstown DCP, and will be ideal for nest box installation due to the following:

- Being located within the study area;
- Being in area that is proposed to be retained and managed under a VMP; and
- Comprising Cumberland Plain Woodland that provides suitable habitat for all species (including threatened species) considered to be potentially impacted by the project.

2.2. Salvage and Reinstatement of Hollows

Typically, the use of salvaged hollows can be utilised to offset the loss of hollows; however, the exact number of suitable existing hollows that are salvageable will not be known until clearing of the trees to be removed. Although the salvage of existing hollows will be prioritised, it is likely that nest boxes will also be required to be installed to offset the hollows removed during clearing.

As nest boxes need to be installed prior to clearing, all of the hollows to be removed will be offset using nestboxes, and any salvaged hollows would be supplementary to the nestboxes. During the clearing of vegetation, any suitable hollows will be salvaged and stockpiled (where possible) in an appropriate area (i.e. cleared exotic grassland) so they can be utilised to offset the loss of hollows from the study area.

2.3. Installation of Nest Boxes

Nest boxes are used to mimic natural hollows and are to be implemented as an additional offset measure to compensate for the loss of hollow-bearing trees within the study area. Nest boxes are to be installed within the conservation area to provide supplementary habitat for hollow-dependent fauna. As there are many different sized hollows in trees, there is no one-size fits all nest box. Nest boxes commonly used include:

- Small and large arboreal mammal boxes (possum and glider boxes);
- Microbat boxes; and
- Small and large bird boxes (parrot, owl and cockatoo boxes).

To compensate for the loss of hollows within the study area, nest boxes will be used which are representative of the hollows being removed. This is discussed further in in **Chapter 3**.

3. Methodology

This chapter provides details on the methodology to be used for the salvage and reinstatement of tree hollows in the conservation area and details of the quantity, size, design and installation of nest boxes.

3.1. Salvage and Reinstatement of Hollows

Following clearing of hollow-bearing trees in the study area, they will be inspected by the project ecologist to ensure no fauna is present. Subsequently, the trees will be cut into sections that permit the recovery of suitable hollow resources. The project ecologist is to direct an appropriately accredited chainsaw operator in these works. Salvaged hollows are to be stockpiled in an appropriate area until relocation into the conservation area.

3.2. Nest Box Installation

3.2.1. Number and Type of Nest Boxes

Clause 11.13 of the Canterbury-Bankstown DCP identifies a minimum replacement ratio of 1:1 (nest boxes: hollows removed) within the study area. For the project, tree hollows will be salvaged and replaced as a priority, however these will be supplementary to the nestboxes, as the nestboxes will be installed prior to vegetation clearing.

The project will remove eight hollow-bearing trees. It is therefore proposed to offset this removal by installing approximately eight tree hollows, nest boxes or artificial hollows using the HollowHog tool within the conservation area. The exact number of hollows to be removed, and therefore hollows and nest boxes to be replaced, will be confirmed during the pre-clearance assessment of the study area.

It has been determined that microbats and threatened birds are the most likely affected threatened fauna to be impacted by the removal of hollows within the study area. However, it is likely that some hollows are occupied by common species, and so it is proposed that nest boxes also be installed for non-threatened species that may utilise these hollows. The tree hollow preferences of the hollow-dwelling threatened fauna species, as well as non-threatened species are presented below in **Table 4**. These species are considered to be the most likely to be affected by the project. **Table 4** also provides recommended dimensions for the installation of tree hollows and nest boxes based on target species.

Table 4 Tree hollow preferences of hollow-dependent fauna

Fauna Species (Common Name)	Hollow Type	Equivalent Nest Box Type	Internal Dimensions (mm)	Depth of Chamber (mm)	Entrance Diameter (mm)	Preferred Hollow Height Range (m)
Eastern Coastal Free-tailed Bat	Small	Microbat	N/A	400	30 hole/20 slot	3 to 5
Little Bentwing-bat	Small	Microbat	N/A	400	30 hole/20 slot	3 to 5
Large Bent-winged Bat	Small	Microbat	N/A	400	30 hole/20 slot	3 to 5
Southern Myotis	Small	Microbat	N/A	400	30 hole/20 slot	3 to 5

Fauna Species (Common Name)	Hollow Type	Equivalent Nest Box Type	Internal Dimensions (mm)	Depth of Chamber (mm)	Entrance Diameter (mm)	Preferred Hollow Height Range (m)
Brushtail Possum	Large	Possum	240 x 400	N/A	90-150	3 to 5
Ringtail Possum	Large	Possum	250 x 400	N/A	60-90	3 to 5
Sugar Glider	Large	Glider	250 x 400	N/A	50	3 to 5
Rainbow Lorikeet	Medium	Small Parrot	120 x 400	N/A	30	3 to 5
Little Lorikeet	Medium	Small Parrot	120 x 400	N/A	50	3 to 5
Powerful Owl	Large	Large Owl	500 x 800	N/A	200	10+

A minimum of eight hollows or nest boxes will be installed within the conservation area. The tree hollow and nest box type will be selected based on the number and type of hollows to be removed as well as the hollow-dependent fauna that have been recorded in surrounding areas and considered as the most likely to be impacted by the project (see **Table 4**).

3.2.2. Location of Nest Boxes

Salvaged tree hollows and nest boxes are to be installed within areas of Cumberland Plain Woodland in the conservation area, located in the north-eastern part of the study area. The conservation area is approximately 1.5 ha in size and nest boxes are to be distributed throughout the conservation area within suitable recipient trees to be identified during the pre-clearance assessment of the study area. Trees considered suitable to receive a nest box and/or salvaged hollow will need to meet the following criteria:

- DBH greater than 30 cm;
- No significant hollows present;
- Native and living; and
- Within an area that provides suitable refugia (e.g. shade/cover).

The criteria identified above was developed with consideration of Cumberland Ecology experience in the installation of tree hollows and nest boxes.

The installation of all tree hollows and nest boxes will be undertaken with the guidance from the project ecologist. In addition to the installation of tree hollows and nest boxes, the conservation area will also be used as the relocation site for fauna species captured during the clearing phase of the project as it will be entirely retained under the Planning Proposal.

3.2.3. Installation of Hollows and Nest Boxes

The following process is recommended for installing nest boxes and/or artificial hollows:

- Nest boxes and/or artificial hollows are to be installed within any tree within land zoned as C2: Environmental Conservation deemed suitable by the project ecologist;
- Nest boxes and/or artificial hollows are to be installed in native trees with a minimum DBH of 30 cm that do not already have significant hollows; and
- A 40 mm to 50 mm thick layer of wood shavings is to be placed in the base of the nest boxes and/or artificial hollows to simulate decaying hollows and provide extra insulation for fauna.

Nest boxes and/or artificial hollows will be installed in the following manner (refer to **Figure 4** for diagram of setup):

- Any artificial hollows created using the HollowHog tool will utilise appropriate salvaged hollows removed during tree clearing. The installation of artificial hollows is to be completed by a suitably qualified HollowHog contractor under ecological supervision;
- All tree hollows and nest boxes are to be set at a minimum height of 4 m above the ground;
- Any nest boxes/salvaged logs installed will be attached to the tree using the "Habisure" system, which involves:
    - A length of 3.15 mm plastic-coated soft fencing wire will be passed through the nest box and around the tree trunk;
    - Wire must be folded into at least four folds about 60 millimetres tall and 15 millimetres apart at the sides of the box to allow for tree growth;
    - Where the wire is in contact with the tree trunk or branch it must be threaded through a length of garden hose to protect the tree;
    - Where possible the wire around the tree will pass over a branch behind the trunk, although nest boxes can be installed directly on a straight-stemmed tree; and
    - Nest boxes are to be positioned on the south-west to north-east side of tree trunks to avoid hot afternoon sun and the box opening should be positioned in a direction that minimises exposure to wind and rain.
- Details of each nest box and/or artificial hollows will be recorded and include:
    - Nest box and/or artificial hollows number;
    - Nest box and/or artificial hollows type;
    - Photographs of nest box and/or artificial hollows; and
    - Global Positioning System (GPS) location.

All tree hollows and nest boxes will be installed following confirmation of number of hollows during the pre-clearing assessments associated with the project in order to provide replacement habitat for any fauna initially displaced.

4. Monitoring, Maintenance and Reporting

4.1. Monitoring

Nest boxes and hollows that have been installed on trees in the conservation area will be monitored annually for a period of five years, providing a total of five monitoring sessions. Following the completion of year two monitoring, monitoring frequency will be reviewed in consultation with the Canterbury-Bankstown City Council ('Council'). All monitoring will occur outside of the winter months to increase detection of target fauna and decrease the risk of disturbing microbats in torpor. Monitoring surveys will consist of an external inspection and internal inspection of each nest box and tree hollow with binoculars and/or a pole mounted inspection camera. Information collected during each monitoring survey will include:

- Date;
- Nest box/hollow number;
- GPS coordinates;
- Internal and external photograph;
- Evidence of fauna occupancy (e.g. species observed entering or exiting the box/hollow, chew marks, scratch marks on the box/hollow, debris on ground and droppings or whitewash under the box/hollow. If identified the species and number of individuals observed;
- Presence of feral animal activity (e.g. feral bees, Common Myna etc);
- Assessment of nest box/hollow condition (i.e. termite damage, evidence of rot and condition of fastenings); and
- Identification of maintenance requirements.

To maintain consistency between monitoring surveys, the Nest Box Monitoring Proforma provided in **Appendix A** will be utilised.

4.2. Maintenance and Reporting

A brief and concise report will be prepared following the completion of each monitoring event. This report will provide a summary of the monitoring results and also document any maintenance actions and/or recommendations required. This report will be submitted to the client and Council concurrently. The client/ landowner (or their representative) is responsible for ensuring maintenance is undertaken. The client/landowner or their representative will notify Council once any maintenance works recommended have been completed.

Damaged nest boxes and tree hollows are to be taken down and repaired on site where possible or an alternative one of similar type added. If the nest box or hollow needs to be removed, then a replacement nest box is to be installed until repairs are completed.

If nest boxes and tree hollows show evidence of being occupied by feral animals (e.g. Honeybees) they will be removed and/or modified to prevent occupation by such species. If removal/modification is deemed unsafe,

then the nest box/hollow will be replaced with the same size nest box in a nearby relocation. Specific details of appropriate measures to be implemented relating to feral animals will be provided within the recommendations of each monitoring report.

5. References

Canterbury-Bankstown LGA. 2023. Canterbury-Bankstown Development Control Plan 2023.
Cumberland Ecology. 2024. Biodiversity Development Assessment Report for the Western Sydney University Milperra Campus: Stage 2.
Ecological. 2022. Western Sydney University Milperra Campus Redevelopment Ecological Assessment
Elton Consulting. 2023. Planning Proposal, Western Sydney University Milperra.
Temporal Tree Management. 2024. Western Sydney University Milperra Campus Arboricultural Impact Assessment Report

APPENDIX A :

Nest Box Condition Monitoring Proforma

Nest Box Monitoring Proforma

Site Name: _____ Date: _____ Recorders: _____

Nest Box No.	**Nest Box Type**	**External Observations** (Scratches/chew marks/other signs of occupancy)	**Internal Observations**			**Condition Monitoring**			**Notes/Action Required**
			Species (incl. pest species e.g. bees)	Nesting Material Present?	Potential/Predicted Species	Fastenings and hardware	Timber	Position in Tree	

FIGURES

Legend

- Study Area
- Conservation Area

Image Source: Nearmap © (2024) Dated: 22/7/2024
Data Source: Sixmaps Clip & Ship, DCS Spatial Services
NSW Department of Customer Services

cumberland ecology

Spatial Reference: GDA 1994 MGA Zone 56

0 20 40 80 120 160 m

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Figure 1. The study area and conservation area

Figure 2. Location of hollow-bearing trees within the study area

Figure 3. Location of hollow-bearing trees to be removed within the study area

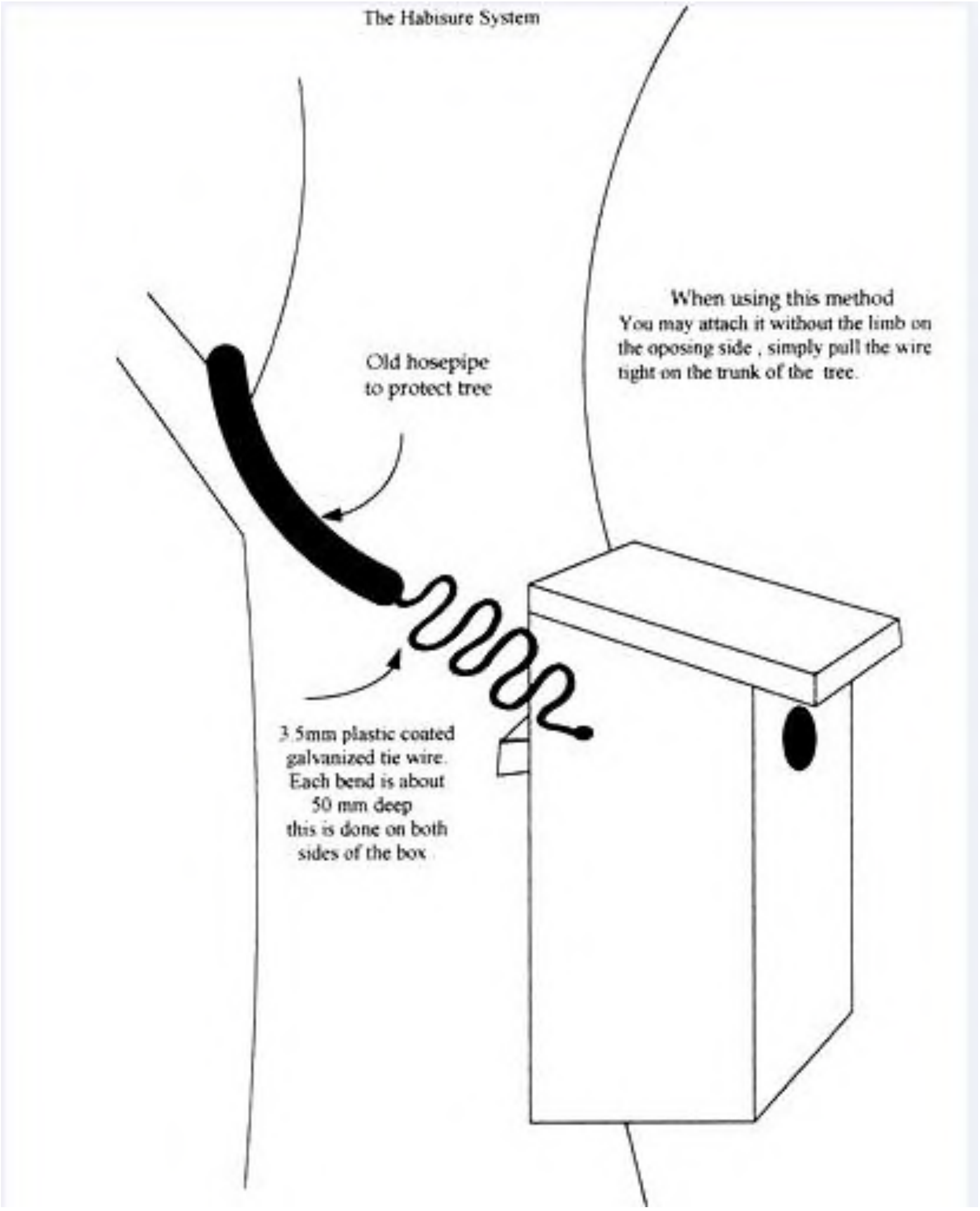

Figure 4. Nest box installation diagram