



ecosupport

Providence Hill,
Bursledon

Bat Mitigation Strategy
(Condition 14)

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Client:
Foreman Homes

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Report	Bat Mitigation Strategy (Condition 14)
Site Name	Land off Providence Hill, Bursledon, Southampton
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Client	Foreman Homes
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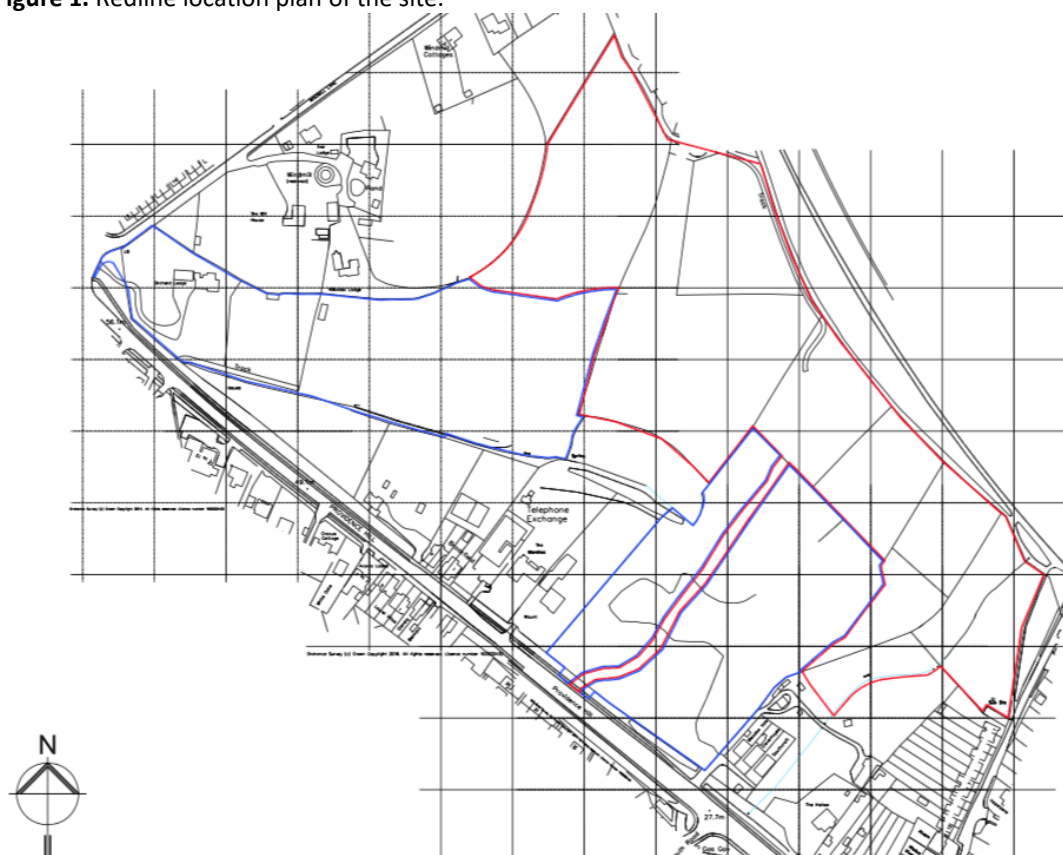
1.0 INTRODUCTION

Ecosupport Ltd was commissioned by Foreman Homes to produce this bat mitigation strategy to discharge condition 14 of the outline approval for up to 92 new dwellings (application number O/17/81166) at the land off Providence Hill, Bursledon, SO31 8AU (**Fig 1**). This condition states the following :

“Prior to the commencement of development a detailed bat mitigation strategy shall be submitted informed by a climbing, endoscope and / or emergence survey of the trees suitable for bat roosts (as agreed with the Local Planning Authority in advance); and a plan showing the locations of bat boxes for mitigation and enhancement together with timing of their provision and a monitoring regime; - the extent and location of at least one dark corridor adjacent to the SINC to provide prime bat foraging habitat; and - a lighting plan that protects the foraging corridors used by bat species and along riparian corridors. The development shall accord with these approved details.

Reason: To ensure bat roosts and foraging and commuting corridors are protected. “

Figure 1. Redline location plan of the site.



2.0 RELEVANT LEGISLATION AND POLICY

2.1 Legislation

2.1.1 *The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019*

This transposes the EU Habitats Directive (Council Directive 92/43/EEC) into UK domestic law. It provides protection for sites and species deemed to be of conservation importance across Europe. It is an offence to deliberately capture, kill or injure species listed in Schedule 2 or to damage or destroy their breeding sites or shelter. It is also illegal to deliberately disturb these species in such a way that is likely to significantly impact on the local distribution or abundance or affect their ability to survive, breed and rear or nurture their young.

The EU Exit instrument makes changes to the three existing instruments which transpose the Habitats and Wild Birds Directives so that they continue to work (are operable) upon the UK's exit from the European Union (EU). These include The Conservation of Habitats and Species Regulations 2017 and The Conservation of Offshore Marine Habitats and Species Regulations 2017. This instrument also amends section 27 of the Wildlife and Countryside Act 1981 to ensure existing protections continue.

The intention is to ensure habitat and species protection and standards as set out under the Nature Directives are implemented in the same way or an equivalent way when the UK exits the EU. There is no change to policy.

Sites designated under the Nature Directives previously contributed to the EU's Natura 2000 network. A national site network is created to retain the concept of a UK network of sites. The 'national site network' is defined as including Natura 2000 sites designated prior to EU exit and those Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) designated post EU Exit.

Current references to "European site", "European Marine Site", "Special Area of Conservation" and "Special Protection Area" are retained as there is no operability reason for these to change.

Management objectives are established for the national site network. Appropriate authorities are required to manage, and where necessary, adapt the national site network in cooperation with each other to meet the network's management objectives. The management objectives are to:

- i. maintain or restore habitats and species listed in the Habitats Directive to a favourable conservation status; and
- ii. contribute, in their area of distribution, to ensuring the survival and reproduction of wild birds and securing compliance with the overarching aims of the Wild Birds Directive.

2.1.2 The Wildlife and Countryside Act (1991 as amended)

The Wildlife and Countryside Act (1991 (as amended) is the primary piece of legislation by which biodiversity is protected within the UK. Protected fauna and flora are listed under Schedules 1, 5 and 8 of the Act. They include all species of bats, making it an offence to intentionally or recklessly disturb any bat whilst it is occupying a roost to intentionally or recklessly obstruct access to a bat roost.

2.1.3 The Countryside and Rights of Way Act (2000)

This Act places a duty on Government Ministers and Departments to conserve biological diversity and provides policy with stronger powers relating to wildlife crimes.

2.1.4 Natural Environment and Rural Communities Act (2006)

This places a duty on authorities to have due regard for biodiversity and nature conservation during the course of a development.

2.2 Policy

2.2.1 National Planning Policy Framework (NPPF) 2021

Section 15 of the National Planning Policy Framework (NPPF) 'Conserving and enhancing the natural environment' states that planning policies and decisions should contribute to and enhance the natural environment. They should do this by protecting and enhancing sites of biodiversity and minimising impacts on and providing net gains for biodiversity, including establishing coherent ecological networks.

The plan states to protect and enhance biodiversity plans should identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks. This includes the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them. Plans should identify the protection and recovery of priority species and opportunities for securing measurable net gains for biodiversity.

When determining planning applications, local planning authorities should apply the following principles:

- if significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact;
- development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

- development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

3.0 BASELINE

3.1 Methods

3.1.1 Preliminary Roost Assessment

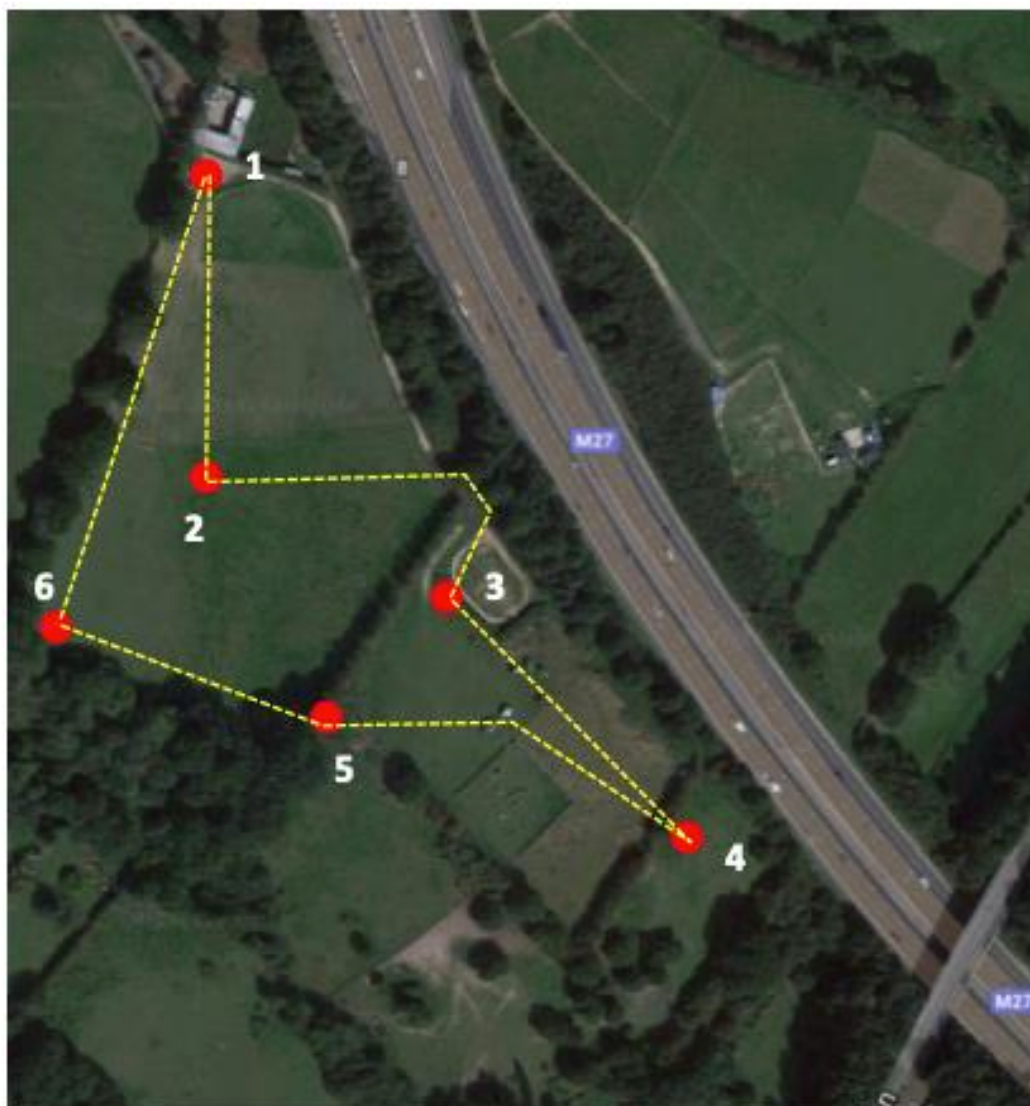
A ground-based assessment of the suitability of the trees on site for roosting bats was undertaken by Adam Jessop (NE class level 2 bat licence number 2015-13366-CLS-CLS) during August 2016 and updated in July 2022 (again by Adam Jessop). This involved the use of 8 x 42 close focus binoculars along with a Clulite torch for closer inspection of any features identified. The survey was informed by the AIA produced by Sapling Arboriculture and the new Bat conservation Trusts (BCT) *Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd Edition* (Collins (ed), 2016).

Whilst on site a general assessment of the habitat's suitability for foraging and commuting bats was also undertaken in accordance with BCT guidelines (Collins (ed) 2016).

3.1.2 Activity Transect

For a development where the habitat has been assessed as being of low – moderate quality for foraging and commuting bats, the current Bat Conservation Trusts (BCT) *Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd Edition* (Collins (ed) 2016) suggest activity transect surveys should be conducted throughout the active season (one visit per month April – October 2018) to qualitatively assess the bat activity within the site. Based on the sites area and available habitat one transect was considered sufficient to suitably cover all areas with a total of 6 listening points used (**Fig 2**).

Figure 2. Walked transect route (dashed yellow line) with numbered listening points (red dots) used. Both clockwise and anticlockwise routes were taken.



Approximately 20 minutes was spent at each listening point during which passes of species were noted. Any passes recorded whilst walking between points was also noted. Both a Bat Box duet heterodyne and Anabat frequency division (for analysis of calls via sonogram) detector was employed during all surveys. All surveys were carried out by Adam Jessop BSc (Hons) MSc (Natural England class level 2 licence number 2015- 13366-CLS-CLS), Dean Swensson (2015-18675-CLS-CLS), Joe Carter and Aaron Domblides.

3.1.3 Static Data Collection

An additional aspect of the recommended bat monitoring within the new BCT guidelines is for static detectors to be placed at different locations around along the transect route for 5 consecutive nights each month (April – October 2018). The detector used for this was an Anabat Express and the locations of the statics during different months is provide below (**Fig 3**) (***NB there were issue with the detector during the April and July deployments so there are no points given for that month***).

Figure 3. Locations of Anabat Express static detectors across the site. Blue = May, Orange = June, Red = August, Yellow = September and Black = October.



3.2 Results

3.2.1 Preliminary Roost Assessment (2022)

As per the Tree Protection Plan produced by Sapling (2017, drawing reference J2862.13), a number of trees are proposed to be removed on-site. Some of these have already been removed (such as part of the group in the SW corner as per **Fig 4**) and the ones that remain were all considered to be of negligible roost potential based on an absence of features (see **Fig 4**). The only tree considered to have PRFs was T354 (a mature *Quercus* spp) (shown in **Fig 4**) although this is being retained.

NB there are a number of mature trees present within the Windmill Woods SINC although at this stage, it isn't clear if any of these will need to be removed for management purposes and so a PRA was not undertaken.

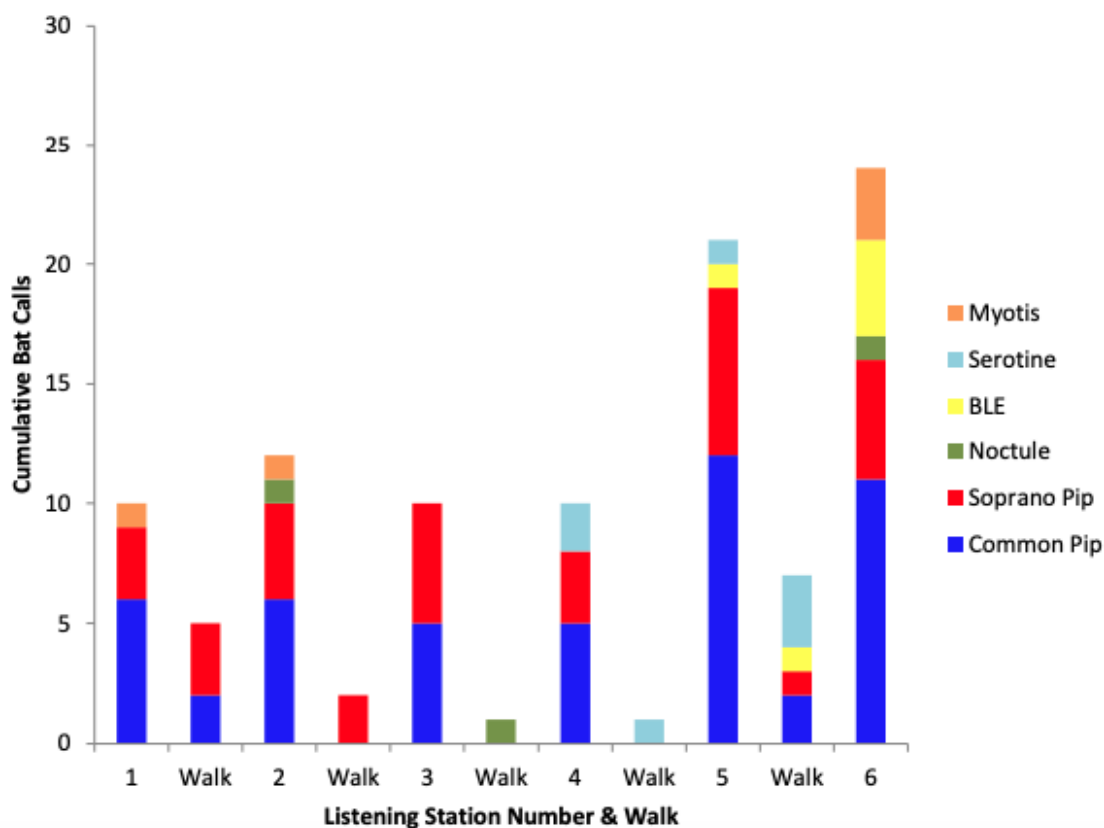
Figure 4. The group of trees proposed for removal in the SW corner. A number of these have already been removed to facilitate the spoil heap that was placed in this area from the phase 1 construction works. The trees that remain were all considered to be of **Negligible** roost potential based on their immature. T354 was considered to be of **Moderate** roost potential although is being retained / protected (**NB if any works to this tree are proposed, an ecologist will first need to be consulted**).



3.2.2 Activity Transects (2018)

Foraging activity was most frequently recorded at points 5 and 6 adjacent to the Windmill Woods SINCR where the best habitat is located and the greatest diversity of species was also noted here (**Fig 5**).

Figure 5. Graphical representation of the number and species composition of bat recordings noted during the walked transects at the different listening points (along with walks in-between) from all the surveys (April – September results totalled).



3.2.3 Static Data Collection (2018)

During the static data sampling, the same assemblage of species were recorded (Common and Soprano Pipistrelle, Brown Long-eared, Serotine, Noctule and *Myotis* spp.) with Common Pipistrelle bats the most commonly recorded.

3.3 Evaluation

Common and Soprano Pipistrelle and Brown Long-eared bats are considered to be the more common species, whereas Noctule and Serotine are classified as rarer bats. Similarly, the majority of *Myotis* species fall within the rarer category in England (Wray et al 2010). No roosts were identified on or adjacent to the site. Guidance on valuing bat foraging and commuting habitat is provided by Wray et al (2010), which uses a points-based system. Using this system, the site scores 21 points for commuting and foraging bats (see **Table 1**) and is correspondingly considered to be of County value (though it's only just within the threshold for this classification at 21).

Table 1. Valuation of habitat for (a) commuting and (b) foraging bats after Wray et al. (2010). The points scored by the site are indicated in bold / italic type.

Species	Number of Bats	Roosts Nearby	Habitat Features
(a) Commuting habitat			
Common (2)	Individual bats (5)	None (1)	Absence of (other) linear features (1)
		<i>Small number (3)</i>	Un-vegetated fences and large field sizes (2)
Rarer (5)	<i>Small numbers (10)</i>	Moderate number/not known (4)	<i>Walls, gappy or flailed hedges, isolated well grown hedges, moderate field sizes (3)</i>
		Large number of roosts or close to a SSSI for the species (5)	Well grown and well connected hedges, small field sizes (4)
<i>Rarest (20)</i>	Large numbers (20)	Close or within a SAC for the species (20)	A complex network of well-established hedges, small fields and rivers/ streams (5)
(b) foraging habitat			
Common (2)	Individual bats (5)	None (1)	Industrial or other site without established legislation (1)
		<i>Small number (3)</i>	Suburban areas or intensive arable land (2)
<i>Rarer (5)</i>	<i>Small numbers (10)</i>	Moderate number/not known (4)	<i>Isolated woodland patches, less intensive arable and/or small towns/villages (3)</i>
		Large number of roosts or close to a SSSI for the species (5)	Larger or connected woodland blocks, mixed agriculture and small villages/hamlets (4)
<i>Rarest (20)</i>	Large numbers (20)	Close or within a SAC for the species (20)	Mosaic of pasture, woodlands and wetland areas (5)

4.0 LIKELY ECOLOGICAL IMPACTS IN ABSENCE OF MITIGATION

4.1 Introduction

The CIEEM guidelines (CIEEM 2018) require that the potential impacts of the proposals should be considered in absence of mitigation. In order for a significant adverse effect to occur, the feature being affected must be at least of local value. However, in some cases, features of less than local value may be protected by legislation and/or policy and these are also considered within the assessment. Although significant effects may be identified at this stage of the assessment, it is often possible to provide appropriate mitigation.

4.2 Site Preparation and Construction

The site has been identified as being of county importance for commuting bats. In the absence of mitigation, the loss of foraging resources and any disruption to commuting routes would likely have a ***moderate adverse impact*** at the ***county*** level of significance.

4.3 Site Operation

The development will result in an increase in lighting within the general area from street lights and external lights on the new houses. This can affect the behaviour, particularly foraging, of nocturnal wildlife. Therefore, an ***adverse impact is likely*** at ***county*** level.

5.0 MITIGATION AND COMPENSATION

5.1 Introduction

The chapter is divided into two sections, dealing with mitigation and enhancement. Mitigation refers to measures that can be undertaken to avoid or reduce ecological impacts, for example by timing works to avoid periods when bats are roosting. Enhancements result in a gain for bats compared to the baseline.

5.2 Mitigation

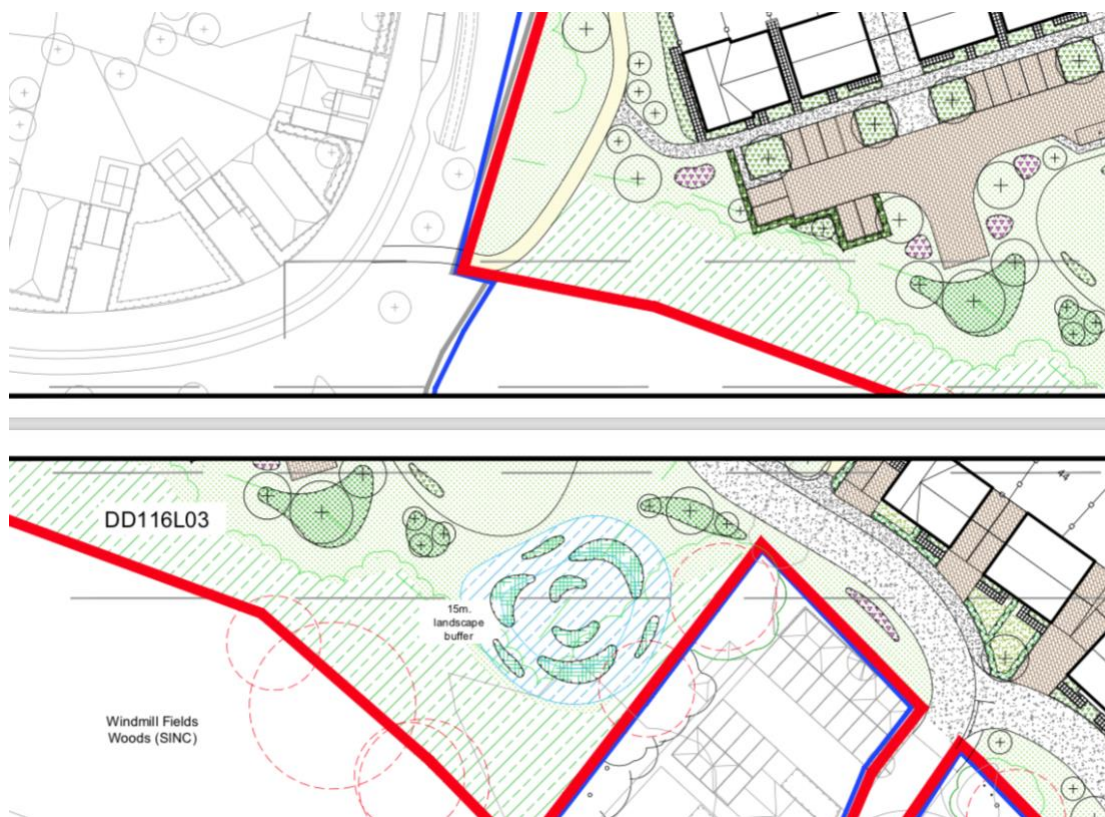
5.2.1 SINC Buffer / Green Infrastructure

In line with Natural England / Forestry Commission England's' *Standing Advice For Ancient Woodland and Veteran Trees* (2014), a 15m buffer will be enforced (i.e. incorporated into the layout) adjacent to the Windmill Field Woods SINC (designated for remnant ancient woodland). No development works will take place within this area and it will be fenced off prior to any construction works commencing (with appropriate signage) to ensure the SINC is adequately protected. This approach has been adopted in the adjoining development sites and will help to reduce any cumulative impacts. The Landscape Management Plan (Deacon Design, 2020) outlines the extent of the buffer in **Fig 6** below and this will be planted up to create 'woodland edge' habitat. To deter cat predation within the woodland (or small mammals and birds) the following species mix will be used:

- Hawthorn (*Crataegus monogyna*)
- Blackthorn (*Prunus spinosa*)
- Hazel (*Corylus avellana*)
- Holly (*Illex aquifolium*)
- Dog Rose (*Rosa canina*)
- Guelder Rose (*Viburnum lanata*) and
- Honey Suckle (*Lonicera periclymenum*)

Once mature, these species will form a near impenetrable barrier which will prevent cats moving through it and into the woodland (and is more natural than the use of a fence). The native shrub will be planted in the first 10m of the buffer with the remaining 5m left to develop as tussocky grassland creating a more natural transition from grassland to shrub into the woodland.

Figure 6. The 15m buffer shown in the Landscape Management Plan (Deacon Design, 2020) adjacent to the Windmill Woods SINC. This will be planted up with native shrubs to create a more natural 'woodland edge' habitat.



5.2.2 Green Infrastructure

A key aim of this development (in conjunction with the adjacent developments at Orchard Lodge and Providence Hill) is to establish a landscape scale approach to the GI of the sites and to maintain habitat connectivity (as far as is practicable) between existing resources. The areas of GI within this development (and how they link into the adjacent Providence Hill development) is shown in **Fig 7** below. Existing tree lines / hedgerows will be reinforced with native species planting to either plug any gaps or increase the size of the hedge (where necessary). Where breaks in existing hedgerows / tree lines are required for roads, standard trees will be planted as close as allowed either side so as they mature, some form of arboreal linkage will be formed to restore the contiguous nature of the features. ***These areas will be protected as dark corridors with further information on this outlined in section 5.2.3.***

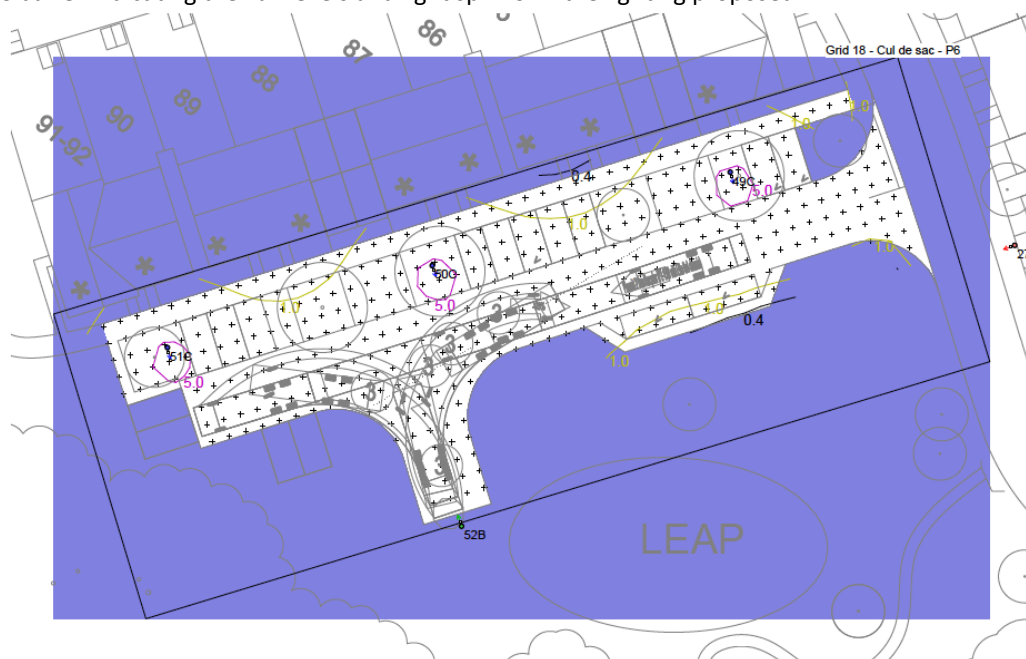
Figure 7. The GI across the site with the red arrows indicating key habitats linkages as existing or to be created / enhanced on this and the adjoining Providence Hill development. These areas will form the 'dark corridors' for foraging and commuting bats with a larger zone adjacent to the SINC.



5.2.3 Lighting

A lighting strategy for the site has been prepared by Enerveo (2022) and this document provides information of the lux levels at various locations around the site. As can be seen in **Fig 8** below, in the area adjacent to the SINC buffer, the levels do not exceed 0.4 Lux.

Figure 8. Screenshot from a section of the Outdoor Lighting Report (Enerveo, 2022) adjacent to the SINC buffer indicating the Lux levels and light spill form the lighting proposed.



5.3 Enhancements

5.3.1 Bat Boxes

To act as an ecological enhancement, half of the new dwellings (46 minimum) will have Ibstock (<https://ibstockbrick.co.uk/kevington/eco-products/>) (or similar) bat boxes integrated into the gable ends of the dwellings. These boxes should ideally be orientated to be gain some degree of sunlight exposure. In addition to this, the following bat boxes will also be erected on trees present on-site (***NB the models recommended (Vivara)¹ have been changed due to the intermittent availability of Schwegler bat boxes***):

- 8 No Vivara pro harlech woodstone bat box
- 4 No Vivara pro miramare large woodstone bat box
- 8 No Vivara pro large multi chamber woodstone bat box

These boxes will be erected by or under the supervision of an ecologist to ensure they are erected in an appropriate location (see **Fig 9** for locations)

NB, a year after development is complete, the bat boxes will be subject to monitoring. A licensed bat worker will inspect the bat boxes and records will be submitted to Hampshire Bat Group.

¹ <http://www.vivarapro.co.uk/Bats>

Figure 9. Site layout with the indicative locations of the woodcrete bat boxes (20 No) and indicated by the red dots) that will be erected on suitable trees within the site.



6.0 REFERENCES

Bat Conservation Trust / Institute of Lighting Professionals (2018) *Guidance Note 08/18 Bats and Artificial Lighting in the UK*

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK & Ireland

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