Railway Pension Nominees Limited

ECOLOGYSOLUTIONS

Part of the ES Group

# The Beehive Redevelopment, Cambridge

# Ecological Assessment

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ecology solutions for planners and developers

**PROTECTED SPECIES**

This report contains sensitive information
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The information contained herein
should not be disseminated without the
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# 1. INTRODUCTION

## 1.1. Background

1.1.1. Ecology Solutions was originally commissioned by Railway Pension Nominees Limited (hereafter referred to as 'the applicant') in January 2021 to carry out Ecological Assessment work at The Beehive Shopping Centre, Cambridge (hereafter referred to as the 'Site'). This scope was extended on behalf of the applicant to allow for continued updated assessments during both 2022 and 2023.

1.1.2. The proposals for the Site are for the redevelopment of the existing retail park to a commercial and office led space. A description of the proposed development is provided below:

*"the demolition and redevelopment of the Beehive Centre, including in Outline Application form for the demolition and redevelopment for a new local centre (E (a-f), F1(b-f), F2(b,d)), open space and employment (office and laboratory) floorspace (E(g)(i)(ii) to the ground floor and employment floorspace (office and laboratory) (E(g)(i)(ii) to the upper floors; along with supporting infrastructure, including pedestrian and cycle routes, vehicular access, car and cycle parking, servicing areas, landscaping and utilities."*

## 1.2. Application Site Characteristics

1.2.1. The Site is located to the east of the city centre of Cambridge (see Plan ECO1). The immediate surrounds of the Site consist of a heavily urbanised setting in the form of roads, warehouses and residential streets. A railway line runs along the eastern boundary of the site with Coldham's Common (a large area of open green space) located to the east beyond the developed areas.

1.2.2. The Site comprises a large retail park, with hardstanding (car park) and large retail buildings making up the vast majority of the Site. Small areas of amenity planting and tree belts, also exist within defined beds within the car park, most of which comprise non-native and ornamental species. At the Site boundaries exists very small areas of amenity grassland, hedgerows and treelines.

## 1.3. Ecological Assessment

1.3.1. This document assesses the ecological interest of the Site as a whole. The importance of the habitats present is evaluated with regard to current guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM)[1].

1.3.2. The report also sets out the existing baseline conditions for the Site, setting these in the correct planning policy and legal framework and assessing any potential impacts which could occur from the proposed development. Appropriate mitigation where necessary is

[1] CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine.* Version 1.1 – Updated September 2019. Chartered Institute of Ecology and Environmental Management, Winchester.

identified such that it will offset any negative impacts and where possible provide for an ecological enhancement of the Site, in accordance with relevant planning policy.

## 2. SURVEY METHODOLOGY

2.1. The methodology utilised for the survey work can be split into three areas, namely desk study, habitat survey and faunal survey. These are discussed in more detail below.

### 2.2. Desk Study

2.2.1. In order to compile background information on the Site and its immediate surroundings Ecology Solutions contacted the Cambridgeshire and Peterborough Environmental Records Centre (CPERC) in both January 2021 and again during October 2022. The records returned from CPERC covered relevant species within 1.5km from the Site, and sites within 2.5km of the Site.

2.2.2. Reference is made to records returned by the data search where relevant throughout this document.

2.2.3. Information on designated sites has also been obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC)[2] database. This information is reproduced at Appendix 1 and shown where appropriate on Plan ECO1.

*Consultation*

2.2.4. To further aid project design, multiple pre-application consultation meetings were held between the project team and Cambridge City Council (CCC). This was further supported by the receipt of formal written advice, in response to EIA scoping opinion.

2.2.5. Ecology was specifically discussed at two pre-application workshops between the project team and relevant officers at CCC (dated March 2022 and October 2022). The feedback received during these meetings, in addition to other relevant correspondence, has been factored into all stages of project design. Additionally, it was confirmed in a January 2023 letter (received from the relevant Ecology Officer at CCC), that based on the site being comprised of "primarily sealed surface habitats", ecology could be scoped out of the Environmental Impact Assessment (EIA), however would still need to be supported by the appropriate level of ecological reporting and assessment (as is the purpose of this document and its appendices).

### 2.3. Habitat Survey Methodology

2.3.1. Ecology Solutions undertook detailed habitat survey work of the Site during January 2021 and October 2022 to ascertain the current ecological value of the land contained within the boundaries of the Site and to identify the main habitats and associated plant species, with notes on fauna utilising the Site.

2.3.2. The Site was surveyed based around a combination of extended Phase 1 survey methodology and UK Habitat Classification (UKHab)

[2] http://magic.defra.gov.uk/

methodology. As recommended by Natural England and Defra, whereby the habitat types present are identified and mapped together with an assessment of the general species composition of each habitat recorded at the time. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential, which may require further survey. Any such areas identified can then be examined in more detail. These updated 2022 habitat surveys also ensured proposals could be analysed for the full purposes of BNG. This included a best fit 'translation' of the habitats to their UK Habitat (UkHab) classification, in addition to the completion of the appropriate Condition Assessment Criteria (CAC).

2.3.3. Using the above method, the Site was classified into areas of similar botanical community types and conditions, the results of which are shown graphically on Plan ECO2.

2.3.4. All the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent at different seasons. However, given the heavily urbanised nature of the Site and lack of semi-natural habitat, it is considered that an accurate and robust assessment has been made, and therefore the timing of the habitat survey work is not considered a constraint.

## 2.4. Faunal Survey

2.4.1. General faunal activity observed during the course of the survey was recorded, whether visually or by call. Specific attention was paid to the potential presence of any protected, rare, notable or Priority species. In addition, specific surveys were undertaken for bats and Badger *Meles meles.*

2.4.2. **Bats.** All trees and buildings within the Site were assessed for their potential to support roosting bats in January 2021 and October 2022. The work was led by an experienced bat worker and aimed to establish the likelihood of presence / absence of bats.

2.4.3. Field surveys were undertaken with regard to best practice guidelines issued by Natural England (2004[3]), the Joint Nature Conservation Committee (2004[4]) and the Bat Conservation Trust (2016[5]).

2.4.4. For a tree to be classed as having some potential for roosting bats it must usually have one or more of the following characteristics:

- obvious holes, e.g. rot holes and old woodpecker holes;
- dark staining on the tree below a hole;
- tiny scratch marks around a hole from bats' claws;

[3] Mitchell-Jones, A. J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.
[4] Mitchell-Jones, A.J. & McLeish, A.P. (Eds.) (2004). *Bat Workers' Manual*. 3rd edition. Joint Nature Conservation Committee, Peterborough.
[5] Bat Conservation Trust (2016). *Bat Surveys – Good Practice Guidelines*. Bat Conservation Trust, London.

- cavities, splits and / or loose bark from broken or fallen branches, lightning strikes etc; and / or
- very dense covering of mature Ivy *Hedera helix* over trunk.

2.4.5. The probability of a building being used by bats as a summer roost site increases if it:

- Is largely undisturbed;
- Dates from pre-20th Century;
- Has a large roof void with unobstructed flying spaces;
- Has access points for bats (though not too draughty);
- Has wooden cladding or hanging tiles; and/or
- Is in a rural setting and close to woodland or water.

2.4.6. Conversely, the probability decreases if a building is of a modern or pre-fabricated design / construction, is in an urban setting, has small or cluttered roof voids, has few gaps at the eaves or is a heavily disturbed premises.

2.4.7. As assessment of the potential value of the Site to foraging and commuting bat species was also made at the time of the habitat survey work.

2.4.8. **Badgers.** Specific surveys were undertaken to search for evidence of Badgers in January 2021 and October 2022. This survey comprised two main elements. The first of these was a thorough search for evidence of Badger setts. For any setts that were encountered each sett entrance was noted and plotted even if the entrance appeared disused. The following information was recorded:

i) The number and location of well used or very active entrances; these are clear from any debris or vegetation and are obviously in regular use and may, or may not, have been excavated recently.

ii) The number and location of inactive entrances; these are not in regular use and have debris such as leaves and twigs in the entrance or have plants growing in or around the edge of the entrance.

iii) The number of disused entrances; these have not been in use for some time, are partly or completely blocked and cannot be used without considerable clearance. If the entrance has been disused for some time all that may be visible is a depression in the ground where the hole used to be and the remains of the spoil heap.

2.4.9. Secondly, Badger activity such as well-worn paths and run-throughs, snagged hair, footprints, latrines and foraging signs was recorded so as to build up a picture of the use of the Site by Badgers.

2.4.10. Consideration has also been given to the potential use of the Site by any other protected or notable species during the surveys undertaken in January 2021 and October 2022.

2.4.11. **Other species.** Throughout all of the above survey work undertaken, the Site was further assessed for its potential use, and value to, other protected and notable species.

# 3. ECOLOGICAL FEATURES

3.1. The Site was subject to an ecological habitat survey by Ecology Solutions in January 2021 and again during October 2022. The vegetation present enabled the habitat types to be satisfactorily identified and an accurate assessment of the ecological interest of the habitats to be undertaken.

3.2. The following main habitat/vegetation types were identified within the Site:

- Developed land; sealed surface (Buildings);
- Developed land; sealed surface (Hardstanding);
- Modified grassland;
- Introduced shrub;
- Urban trees; and,
- Treelines and hedgerows.

3.3. The location of these habitats is shown on Plan ECO2.

3.4. Each habitat present is described below with an account of the representative plant species present where relevant.

3.5. **Developed land; sealed surface (Buildings)**

3.5.1. There are a total of 8 buildings present within the Site. Buildings **B1** to **B4** are all large 'warehouse' style retail buildings with brick walls, large glass windows on all sides and flat corrugated metal sheeting roofs (ranging 8 to 10m in height). All of these buildings remain in good state of repair and are occupied on a daily basis.

3.5.2. Building **B5** is of slightly different design (more modern) with wooden beam struts and well sealed wooden cladding on walls. The roof of B5 dome shaped and comprises metal sheeting in corrugated fashion (8m in height). This is a retail store and again used on a regular basis and in an immaculate state of repair.

3.5.3. Building **B6** is a small security shed located in the north of the Site at the entrance to the complex. This building is single storey (3m high), has well sealed wooden cladding walls and a flat roof with plastic and/or copper cladding overlay at the edges. This building is occupied daily and is in a good state of repair.

3.5.4. The remaining buildings **B7** and **B8** are open structures comprising of a metal frame (no walls) and simple flat roof design (transparent corrugated plastic and/or metal). B7 is used as trolley storage point and B8 a bicycle storage/smoking area.

3.5.5. The buildings themselves are considered to be of negligible ecological significance in their own right.

3.6. **Developed land; sealed surface (Hardstanding)**

3.6.1. The vast majority of the Site consists of hardstanding as illustrated on Plan ECO2. These areas of hardstanding exist in the form of

tarmacked car parking bays, roads and pedestrian walkways. These areas are well maintained and have no ecological significance.

### 3.7. **Modified grassland**

3.7.1. Small areas of modified grassland exists in the north and the west of the Site. Given the commercial use of the Site, these areas are managed on a regular basis with the sward being no higher than 5cm at the time of the survey. As such, the management regime has suppressed species diversity, resulting in very limited botanical interest.

3.7.2. These grassland areas are dominated by Perennial Rye-grass *Lolium perenne* with other species present including Yorkshire Fog *Holcus lanatus*, Common Bent *Agrostis capillaris*, Dove's-foot Cranesbill *Geranium molle*, Smooth Cat's-ear *Hypochaeris glabra*, Chickweed *Stellaria media*, Shepherd's Purse *Capsella bursa-pastoris*, White Clover *Trifolium repens*, Scentless Mayweed *Tripleurospermum inodorum*, Daisy *Bellis perennis*, Ragwort *Senecio jacobaea*, Dandelion *Taraxacum officinale* agg, Ribwort Plantain *Plantago lanceolata*, Broad-leaved Dock *Rumex obtusifolius* and Yarrow *Achillea millefolium*.

3.7.3. Given the heavily supressed nature of the grassland and its regular management, the grassland is considered to be of negligible – low ecological significance.

### 3.8. **Introduced shrub**

3.8.1. There are several areas of amenity planting situated throughout the Site as illustrated on Plan ECO2. In all cases these areas are dominated by Koromiko (*Hebe salicifolia*) and Box *Buxus* sp. with Cherry Laurel *Prunus laurocerasus*, Tutsan *Hypericum androsaemum*, Privet *Ligustrum vulgare*, Cotoneaster *Cotoneaster* sp., Broom *Cytisus scoparius*, Lavender *Lavandula angustifolia* and Ivy *Hedera helix* also present. They are well maintained and subject to consistent management.

3.8.2. Given the general lack of species diversity, heavy management and general setting, they are considered to be of low ecological significance.

### 3.9. **Urban Trees**

3.9.1. There are a number of scattered urban trees situated throughout the Site as illustrated on Plan ECO2. These trees have been planted at regular intervals within the car park, and are all semi-mature. Species presents include London Plane *Platanus × acerifolia*, Sycamore *Acer pseudoplatanus*, Crab Apple *Malus sylvestris*, Wild Cherry *Prunus avium*, Dogwood *Cornus sanguinea*, Ornamental Maple *Acer* sp. and Oak *Quercus robur* (two small specimens only present to immediate north of B1).

3.9.2. Notwithstanding the dominance of non-native species and generally confined / stunted growth (in some instances), the trees are considered to be of moderate ecological significance.

3.9.3. Several lines of trees exist elsewhere on Site, however these are described separately as linear features below.

### 3.10. Treelines and Hedgerows

3.10.1. There are several boundary treelines and hedgerows located around the periphery of the Site. Each are described below.

3.10.2. **H1** is present along the western boundary of the Site behind buildings B3 and B4. Measuring approximately 15m – 20m, it is comprised of semi-mature / mature trees with a relatively gappy and sparse understory. There is no significant hedgerow present, and therefore this feature is recorded as a treeline.

3.10.3. Species present include: Wayfaring Tree *Viburnum lantana* and Blackthorn *Prunus spinosa* frequently recorded, with Sycamore, Ash *Fraxinus excelsior*, Holly *Ilex aquifolium*, Silver Birch *Betula pendula* and Elder *Sambucus nigra* also present. The ground flora of this treeline was sparse at the time of the survey but consists of Nettle *Urtica dioca*, Petty Spurge *Euphorbia peplus*, Wood Spurge *Euphorbia amygdaloides*, Ivy, Cow Parsley *Anthriscus sylvestris*, Burdock *Arctium lappa*, Broad-leaved Dock, Yorkshire Fog, Cleavers *Galium aparine*, Italian Lords-and-Ladies *Arum italicum*, Foxglove *Digitalis purpurea*, Common Field Forget-me-not *Myosotis arvensis*, Ragwort and Wall Lettuce *Lactuca muralis*.

3.10.4. **H2** is present along the southwestern boundary to the south of Building B3. Species present in this treeline include Sycamore, Ash, Dog Rose *Rosa canina*, Silver Birch, Holly, Buddleia *Buddleja davidii* and Cotoneaster. The ground flora of this treeline was dominated by Ivy.

3.10.5. **H3** is present along the north-western boundary of the Site. It is comprised of fairly well spaced trees, measuring approximately 5 – 10m hight. The ground flora of the treeline is comprised of well managed grassland (described above).

3.10.6. Species recorded include: Silver Birch, Wild Cherry, Goat Willow *Salix caprea*, Rowan *Sorbus aucuparia*, Grey Poplar *Populus* × *canescens* and Ash.

3.10.7. The treelines are considered to be of moderate ecological significance.

3.10.8. In addition to the treelines, there is a single hedgerow located within the Site. This is located along the northern boundary of the Site and largely comprise of non-native species (linear shrub planting) with some semi-mature trees.

3.10.9. **H4** is located in the north of the Site. This is an unmanaged hedgerow of a height of approximately 2.5m. This hedge is

dominated by Cherry Laurel and Ivy with Dog Rose, Bramble, Wild Cherry and Stag's-horn Sumac *Rhus typhina* also present. There is also one individual mature Sycamore tree and a mature Willow *Salix* sp. present as standards.

3.10.10. The areas of non-native dominated hedgerow are considered to be of low ecological significance.

## 3.11. Background Records

3.11.1. The desk study returned no records of notable plant species from within the Site as a result of the desk study undertaken with CPERC. The closest record of a notable plant species returned was that of a Four-leaved Allseed *Polycarpon tetraphyllum,* recorded 0.2km to the west of the Site at its closest point in 2012.

## 4. WILDLIFE USE OF THE APPLICATION SITE

4.1. During the surveys undertaken, general observations were made of any faunal use of the Site with specific attention paid to the potential presence of protected or notable species. Specific surveys have been undertaken with regard to bats and Badger.

### 4.2. Bats

4.2.1. All trees within the Site were assessed for their potential to support roosting bats.

4.2.2. Most of the trees within the Site are semi-mature and well managed, particularly those within the car park areas. As such, none of these held any obvious features of which could be of potential value to roosting bats (rot holes, splits and cracks).

4.2.3. The trees within the treelines were also assessed for their potential to support roosting bats. Notwithstanding that these trees are more sheltered than the trees located within the centre of the Sie, the majority were still recorded to be semi-mature with no obvious bat roosting features.

4.2.4. None of the buildings within the Site are considered to be of potential significant value to roosting bats on account of their modern design, their regular use and the fact they are well-lit internally and externally. External inspection of all the buildings did not identify any access points which bats could utilise. Ad hoc internal inspections confirmed that the majority of the buildings remain largely open with no / limited significant internal voids.

4.2.5. On the basis of the above, the Site is considered to be of negligible value to roosting bats.

4.2.6. The site is considered to offer some (albeit very limited) opportunities for foraging and commuting bats, given the linear vegetation at the Site boundaries and some limited green connectivity to the wider area. However, given the urbanised nature of the area, with extensive artificial lighting at night, such opportunities are considered to be extremely sub-optimal and of no significance. In any event, the areas of subjectively better quality (i.e boundary linear areas) are to be entirely retained and improved through the proposed landscaping measures.

4.2.7. **Background records.** The desk study undertaken with CPERC returned several records of bats from the local area. The closest of these came from the same location, roughly 0.2km south of the Site, where a Common Pipistrelle *Pipistrellus pipistrellus,* was recorded in 2018, a Noctule *Nyctalus noctule,* was recorded in 2015 and a Soprano Pipistrelle *Pipistrellus pygmaeus,* was recorded in 2018.

4.2.8. With regards to roosts, the closest record returned as part of the data search was of a Common Pipistrelle maternity roost which was recorded 1.3km north of the Site in 2013. The next closet record was

of a Brown Long-eared Bat *Plecotus auritus,* day roost recorded 1.5km east of the Site in 2015.

4.2.9. Other bat species recorded within the locality (albeit further afield) include Serotine *Eptesicus serotinus,* and Daubenton's Bat *Myotis daubentonii.* Another record of interest is of a Parti-coloured bat *vespertilio murinus,* a vagrant species from Europe, recorded 1.4km east of Site in 1985.

### 4.3. Badgers

4.3.1. No evidence of Badgers such as setts, latrines, snagged hairs, foraging marks or footprints were recorded within the Site during either the January 2021 or October 2022 survey.

4.3.2. Given the lack of evidence of this species within the Site, the urbanised area of the locality and the presence of large areas of hardstanding, the Site is considered to be of negligible value to this species. As such, no further consideration is given to Badgers within this report.

4.3.3. **Background records.** The desk study undertaken with CPERC returned one record of a single individual from a 1km grid square which includes the Site in 2011. The closet recent record was of a single individual 0.76km north of the Site. There is also one record of a sett located 1.8km to the south-west of the Site in 2009.

### 4.4. Great Crested Newts (amphibians)

4.4.1. There are no waterbodies within the Site which could be utilised by breeding amphibians, including Great Crested Newt *Triturus cristatus*. The terrestrial habitats within the Site, being largely comprised of a used car park, are also sub-optimal for this species. There are no suitable waterbodies within 500m of the Site, the closest one of note being 0.6km to the north of the Site (a large waterbody within the northern extension of Coldham's Common). This is further separated from the site by main roads, infrastructure and a railway line.

4.4.2. **Background records.** The desk study undertaken with CPERC did not return any records of Great Crested Newts *Triturus cristatus,* from within the Site boundary. A single record of an individual located approximately 150m from south-western edge of the Site was recorded in 2007.

4.4.3. Whilst this record is in close proximity to the Site, it is not immediately clear where it was recorded or its origin. There are no clear ponds visible and the record was returned from an area of dense houses. Furthermore, for the reasons outlined above the habitats within the Site are considered unsuitable to support this species within either its terrestrial or breeding phase. As such, no further consideration is given to Great Crested Newts within this report.

4.4.4. Other amphibian species recorded within the locality of the Site include Common Toad *Bufo bufo,* and Common Frog *Rana temporaria.*

## 4.5. Reptiles

4.5.1. The habitats present within the majority of the Site do not provide potential opportunities for reptile species, with expansive areas of built form and hardstanding. Whilst there are some areas of amenity grassland, these are all well managed and subject to frequent mowing, and are therefore considered unsuitable to reptile species.

4.5.2. **Background records.** The desk study undertaken with CPERC returned a small number of reptile records within the search area. The closest was that of a Common Lizard *Zootoca vivipara*, approximately 0.7km east of the Site at its closest point in 2016.

4.5.3. Other reptile species recorded within the locality of the Site include Slow Worm *Anguis fragilis* and Grass Snake *Natrix Helvetica.*

4.5.4. On the basis of the habitats recorded within the Site and the lack of recent and frequent records of reptiles in the immediately adjacent areas, no further consideration is afforded to reptiles within this report.

## 4.6. Birds

4.6.1. During the habitat survey work undertaken, notes were made of any use of the Site by birds. The survey visit was conducted by ecologists competent in bird identification through sight and call.

4.6.2. Bird species recorded during the survey include Woodpigeon *Columba palumbus,* Carrion Crow *Corvus corone*, Magpie *Pica pica*, Robin *Erithacus rubecula*, Great Tit *Parus major*, Black Bird *Turdus merula* and Pied Wagtail *Motacilla alba*.

4.6.3. The vast majority of these species were recorded within the treelines at the boundaries of the Site, with little use of the interior of the Site recorded.

4.6.4. **Background records.** The desk study undertaken with CPERC returned a small number of bird species from within the Site boundary. These were of Dunnock *Prunella modularis*, from 2005, House Sparrow *Passer domesticus*, from 2005, Lesser Redpoll *Acanthis cabaret* from 2003 and Red Kite *Milvus milvus*, from 2011.

4.6.5. Additionally, records of Redwing *Turdus iliacus,* and Spotted Flycatcher *Muscicapa striata,* were recorded 0.1km east of the Site in 2006 and 2005 respectively.

## 4.7. Invertebrates

4.7.1. The habitats at the Site are likely to support a range of common invertebrate species, but there is no evidence to suggest that any

protected or notable species would be present due to the heavily developed and regularly managed nature of the site.

4.7.2. **Background records.** The desk study undertaken with CPERC returned with a number of invertebrate records from the local area. The closest was that of a Five-banded Weevil-wasp *Cerceris quinquefasciata,* from approximately 0.32km west of the Site at its closest point, from 2018.

## 4.8. Other protected or notable species

4.8.1. Owing to the well developed nature of the Site and lack of semi-natural habitat, the Site is not considered to be of any significance to any other protected or notable species.

# 5. ECOLOGICAL EVALUATION

## 5.1. The Principles of Site Evaluation

5.1.1. The latest guidelines for ecological evaluation produced by CIEEM proposes an approach that involves professional judgement, but makes use of available guidance and information, such as the distribution and status of the species or features within the locality of the project.

5.1.2. The methods and standards for site evaluation within the British Isles have remained those defined by Ratcliffe[6]. These are broadly used across the United Kingdom to rank sites, so priorities for nature conservation can be attained. For example, current Site of Special Scientific Interest (SSSI) designation maintains a system of data analysis that is roughly tested against Ratcliffe's criteria.

5.1.3. In general terms, these criteria are size, diversity, naturalness, rarity and fragility, while additional secondary criteria of typicalness, potential value, intrinsic appeal, recorded history and the position within the ecological / geographical units are also incorporated into the ranking procedure.

5.1.4. Any assessment should not judge sites in isolation from others, since several habitats may combine to make it worthy of importance to nature conservation.

5.1.5. Further, relying on the national criteria would undoubtedly distort the local variation in assessment and therefore additional factors need to be taken into account, e.g. a woodland type with comparatively poor species diversity, common in the south of England may be of importance at its northern limits, say in the border country.

5.1.6. In addition, habitats of local importance are often highlighted within a local Biodiversity Action Plan (BAP).

5.1.7. Levels of importance can be determined within a defined geographical context from the immediate site or locality through to the International level.

5.1.8. The legislative and planning policy context are also important considerations and have been given due regard throughout this assessment.

[6] Ratcliffe, D A (1977). *A Nature Conservation Review: the Selection of sites of Biological National Importance to Nature Conservation in Britain*. Two Volumes. Cambridge University Press, Cambridge.

## 5.2. Habitat Evaluation

Designated sites

5.2.1. **Statutory sites**. There are no statutory designated sites of nature conservation interest within or adjacent to the Site. The nearest statutory designated sites (designated for their nature conservation interest) are Coldham's Common LNR and Logan's Meadow LNR which are situated approximately 0.4km to the east and 0.47km to the north of the Site respectively (see Plan ECO1).

5.2.2. Coldham's Common LNR is designated due to the unimproved grassland and brookside habitats present. Additionally, the presence of Yellow Meadow Ants *Lasius flavus* ant hills suggests that the land has never been ploughed. The land is currently managed by the Cambridge City Council which aims to protect and enhance the biodiversity on site through the use of grazing as a management tool.

5.2.3. Logan's Meadow LNR qualifies as an area of undeveloped floodplain directly associated with the River Cam County Wildlife Site. Wildlife present include warbler species, a Starling roost in Autumn and tortoiseshell butterflies *Aglais urticae*. The reserve is managed by the Cambridge City Council whose management plans include, recreated the favoured habitat for Otters *Lutra lutra* and pollarding trees to encourage a greater diversity of insects and birds.

5.2.4. The nearest Site of Special Scientific Interest (SSSI) is the Cherry Hinton Pit SSSI, which is located approximately 3.2km south-east of the Site at its closest point (see Plan ECO1).

5.2.5. The Cherry Hinton Pit SSSI is designated due to the presence of four nationally uncommon plant species, three of which, Great Pignut *Bunium bulbocastanum*, Moon Carrot *Seseli libanotis* and Grape Hyacinth *Muscari neglectum*, are listed in the British Red Data Book. Additionally, there are areas of herb-rich chalk grasslands, which is a habitat which has almost disappeared from the eastern counties of England.

5.2.6. The nearest European Protected Site is Eversdon and Wimpole Woods Special Area of Conservation (SAC), which is situated approximately 13km south-west of the Site at its closest point. This site was designated due to the ancient coppice woodland habitat at Eversdon Wood and because of the association between a colony of Barbastelle *barbastella barbastellus* (annex II species), and the Wimpole woods. The woods are used as a foraging area, as well as a location for maternity roosts in the summer.

5.2.7. Given the significant distances between the Site and any nearby statutory sites, with these separated by significant areas of open space, roads and built form, any significant adverse effects during construction (direct or indirect) are considered highly unlikely to arise (either alone or in combination with other plans or projects) and would be more than mitigated for through adoption of appropriate

construction and engineering practices, in line with best practice and legislative requirements.

5.2.8. **Non-statutory.** There are no non-statutory designated sites of nature conservation interest located within or immediately adjacent the Site. The nearest non-statutory site is that of Coldham's Common County Wildlife Site (CWS) which is situated approximately 0.21km east of the Site at its closest point (see Plan ECO1).

5.2.9. Coldham's Common is designated due to the presence of at least eight neutral grassland indicator species. It supports semi-improved, woodland and scrub habitats.

5.2.10. The next nearest non-statutory designated site is the River Cam, located approximately 0.52km north of the Site at its closest point (see Plan ECO1).

5.2.11. The River Cam was designated due to the avoidance of gross alteration by canalisation and / or water quality. Additionally, it has areas of mature pollard willows.

5.2.12. Given the separation between these designated sites and the Site, it is considered that through the adoption of an appropriately designed development scheme and the implementation of best practice during construction phase which accord with the measures set out above in respect of statutory designated sites, any potential direct or indirect adverse effects on these non-statutory sites may be fully mitigated or avoided.

5.2.13. It is considered that the detail of the above measures can be produced in response to a suitable worded planning condition, in the form of a Construction and Environmental Management Plan (CEMP), or similar. This document would outline measures so as to avoid water, air, light and noise pollution during the construction stage.

Water usage

5.2.14. The relevant Water Usage Chapter of the EIA sets out how water use across the site will vary from the current baseline level, across the various phases of development.

5.2.15. In summary, despite a decrease in water use during the construction phase of development, water use on site during the operational phase of the development is expected to be higher than that of the current baseline level.

5.2.16. In order to help mitigate this change, the drainage / water usage strategy for the site has been designed in such a way as to incorporate significant water capture / recycling measures. This being in an effort to significantly reduce the reliance on mains water, in the absence of these measures.

5.2.17. The Water Usage chapter and relevant sections of the DAS outline these measures in more detail, however by way of summary this will include:

- Rain gardens
  - Rain gardens will be created within central areas of the site, these will be graded to allow the capture of run-off water, reducing waste. Additionally, drought resistant species will be utilised to increase resistance during warm weather events.

- Rainwater re-use
  - Captured rainwater will be used (as a minimum) for irrigation of onsite soft landscaping (where required), reducing the reliance on mains water, particularly during periods of drought and during the establishment period (ie.. 2-years), post-planting.

- Response to periods of drought
  - If required and only during periods of excessive drought, a flexible approach will be adopted towards irrigation / landscape water use on site. Additionally, irrigation will be targeted during drought periods, with priority given to more sensitive areas such as Abbey Grove, over other areas of the site.

5.2.18. Further to the above, it is understood that a strategic approach to water use across the Cambridgeshire region is currently being reviewed by the relevant water authorities (i.e. Cambridge Water). Measures set out within the draft Cambridge Water Resources Management Plan (2024) outline that by “2030’s”, significant new infrastructure will be in place to reduce reliance on the identified chalk aquifers, thereby reducing (if not removing entirely) the stress on the relevant associated chalk streams. Whilst details remain draft, additional measures are expected to include the creation of extensive new reservoirs and associated infrastructure. All of which will reduce water stress impacts across the region.

5.2.19. In summary, when considering the measures to be adopted on site in addition to the high-level strategic approach to be set out by Cambridge Water, impacts arising from increased water use are considered to be entirely temporary in duration, and limited to the early stages of the operational phases of development. Once strategic mitigation is in place, any remaining impacts arising as a result of water use on site are expected to be negligible.

<u>Habitats within the Site</u>

5.2.20. The majority of the Site holds very limited ecological value, on account of it comprising an active retail park, including large areas of modern buildings and hardstanding. Additional habitats include amenity planting and some species-poor grassland – all considered to be of extremely limited ecological value. As such, it is considered any losses to these habitats would be of negligible significance.

5.2.21. The features that hold relatively higher value within the Site are the boundary treelines (where these comprise a range of native species), with individual trees and hedgerows also being of some value.

5.2.22. As outlined within the 2023 Design and Access Statement Addendum (August 2024), as provided by Leonard Design Architects (LDA), the vast majority of the boundary treelines will be retained as part of the proposals. Importantly, of the 10 trees located on site covered by Tree Protection Orders (TPO), only two of these will be unavoidably lost, the remaining eight will be retained and incorporated into the design proposals. To avoid potential harm during the construction period, measures such as the use of temporary protective fencing (installed in line with the relevant British standards) and storage of oils, fuels and loose materials away from these habitats will be implemented. Moreover, there is scope to enhance retained habitats through bolster planting with native species (see below).

5.2.23. Where losses to habitats are required to facilitate the emerging development proposals, it is considered that these will be more than mitigated for through the emerging landscape proposals for the Site.

5.2.24. The DAS and accompanying landscape masterplan (provided at Appendix 2) outline the extensive measures to be delivered within the Site as part of the development proposals. These have been based on prolonged collaboration between members of the project team and CCC. Primarily, these will centre around the delivery of four key landscaping areas.

5.2.25. **Brown / green roofs**. A significant portion of roof space will be utilised for the purpose of brown / green roof installation. All areas will be created with the appropriate engineered foundations / layers to ensure that the 'host' buildings can support the material load, remain waterproof and not be susceptible to root ingress. It is recommended that the substrates to be utilised as the growing medium for the living roofs be a suitable blend of soils and / or suitable planting medium (for areas of green roofs), as well as inert aggregate (ranging from crushed concrete to gravels and pebbles) and materials found within the site pre-development such as log piles, wooded material and other organic albeit low nutrient materials (or areas of brown roof) to better reflect the nearby local wildlife habitats. A hardy seed mix comprising a range of drought resistance species (sowed at a low density in order to encourage natural seeding) of a majority local provenance will be chosen as part of detailed design to maximise overall contribution to local biodiversity.

5.2.26. In order to minimise required long-term maintenance (suggested by-annually), it is recommended that a drainage board be installed to provide a means by which the roof can shed excess water. During the establishment period, the roof areas will need to be checked semi-regularly to ensure any dead, diseased or damaged plants / areas can either be removed or resolved. Any undesirable species such as Buddleia should be removed.

5.2.27. Once established, the brown / green roof areas will provide a range of new opportunities for species, particularly invertebrates, across a range of vertical spaces which are currently lacking from the Site.

5.2.28. **Open green space / orchard planting.** A community hub featuring open green space and orchard-style planting will be included within the Site.

5.2.29. Native and / or 'pollinator friendly' options will be chosen so as to maximise their value to ecology whilst also serving as an amenity resource. This will include varieties of fruit tree of local Cambridgeshire origin.

5.2.30. Management of fruit trees will mimic that of a 'traditional orchard', albeit in a heavily urban setting. They will be subject to sensitive management measures that will encourage healthy growth as well as provide ecological benefits. Management of fruiting trees will be low key as the habitat matures, being limited to formative pruning as required to achieve the desired structure/condition of each tree. Whilst maximising tree health and fruit productivity will be a primary aim in long term, consideration will also be given to the retention of 'interest features', such as deadwood or cavities within the trunks, with these offering opportunities to a range of faunal species, not least saprophagous invertebrates.

5.2.31. Once orchard tree planting becomes sufficiently mature (anticipated from year 15 onwards), a small proportion of specimens (no more than 10%) may be seeded with Mistletoe *Viscum album*. Whilst Mistletoe is a hemiparasite, it can be readily sustained on trees (Apple trees being one of the commonest host plants) without causing harm. The presence of Mistletoe will provide a valuable winter berry resource for a range of foraging birds.

5.2.32. **Woodland style planting**. Located predominantly in the north of the Site, areas of 'woodland' style planting will be created. These will be established around retained existing trees, in order to allow for instant verticality. These areas will be further complemented by new tree and shrub planting elsewhere across the Site.

5.2.33. New areas of tree and shrub planting will comprise a range native species befitting to the area and ground conditions. Non-native amenity species will be kept to a minimum, with berry or nut bearing species favoured. Management will be low-key, but will likely include for the implementation of semi-natural management measures such as coppicing and the encouragement of natural sapling generation. Emphasis will be required however to ensure the habitat remains its landscape and amenity value. A significant number of new trees of high ecological value will more than replace those trees to be lost as a result of the development proposals. Exact numbers and types are outlined within the relevant Arboricultural report and DAS.

5.2.34. Within and beneath new areas of tree and scrub planting, areas of wildflower grassland will be created. These will be seeded with a species-rich wildflower mix for areas anticipated to remain largely

dry, or a suitable wetland mix alternative for those areas of periodically wet grassland located adjacent to the central 'wetland' area.

5.2.35. Following initial enhancement and creation, a long-term ecologically minded mechanical cutting regime will then be implemented across target grassland within the Site. This would include for a limitation on cuts (2 / 3 times a year, avoiding the main growing seasons but including a heavy summer 'hay cut' after flowers have set seed). This will be accompanied by more regular mowing within dedicated areas (i.e. central amenity areas) to still provide formal recreational opportunities year-round, however this will be minimised as much as possible to ensure long and diverse swards are heavily present across the Site.

5.2.36. Through the additional use of footpaths, it is considered that excessive recreational pressure (i.e. trampling) on areas of the grassland of increased ecological benefit can be mitigated.

5.2.37. **Boundary areas**. To bolster boundary areas, these will be subject to additional planting and species diversification. Predominantly this will include for boundary treelines. At this stage, it is considered they can be subject to the same management to be prescribed to those 'woodland' style areas.

5.2.38. In summary, the majority of the habitats within the Site are of mostly negligible ecological value. Where habitats of relatively greater ecological value are present in boundary areas, these are to be largely retained where possible. Moreover, clear opportunities exist to deliver substantial new habitats within the Site, as well as realise enhancements to retained habitats, such that qualitative enhancements are realised over the existing situation.

*Biodiversity Net Gain (BNG)*

5.2.39. From a review of the above measures and the habitat proposals for the Site, it is clear that net gains to biodiversity can be achieved on Site. However, in order to directly measure this as is required under the recently adopted Environment Act 2021, the landscaping proposals have been assessed using the DEFRA Statutory Biodiversity Metric Calculator Tool (see Appendix 3).

5.2.40. As the current application is Outline, the calculation has been based on the Illustrative Masterplan for the site, as produced by LDA (Provided at Appendix 2). As set out in detail within this document, mechanisms of delivering on-site habitats (both new and retained / enhanced) have been considered at all stages of project design.

5.2.41. The full methodology, results, and rationale, of the BNG assessment is included under a separate and detailed 'Biodiversity Net Gain Assessment', appended to this report (see Appendix 3).

5.2.42. In summary, this shows that the proposals are set to record a significant net gain of +5.51 habitat units (+75.52%). A net gain of +2.87 hedgerow units (+143.72%).

5.2.43. It is important to note that currently the DEFRA Metric does not take into account other direct, non-habitat, biodiversity measures. For instance, it does not currently take into consideration measures relating directly to protected or notable species, such as the provision of species-rich environments, wetland features and new scrub planting. Additionally, instant enhancements such as the inclusion of bat / bird boxes within areas of built-form and across green spaces is not recognised or rewarded. As such, these additional features (outline above and below) should also be taken into consideration when consideration Biodiversity Net Gain.

5.2.44. Notwithstanding these limitations, it can still be shown that a significant net gain is to be provided on site, well in excess of the +10% minimum gain required by legislation, and still in excess of the +20% minimum gain aspiration set out in emerging CCC policy.

## 5.3. Faunal Evaluation

Bats

5.3.1. **Legislation.** All bats are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and included on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 ("the Habitats Regulations", as amended). These include provisions making it an offence:

- Deliberately to kill, injure or take (capture) bats;
- Deliberately to disturb bats in such a way as to:-
  - Be likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or to hibernate or migrate; or
  - Affect significantly the local distribution or abundance of the species to which they belong.
- To damage or destroy any breeding or resting place used by bats;
- Intentionally or recklessly to obstruct access to any place used by bats for shelter or protection (even if bats are not in residence).

5.3.2. If proposed work is likely to destroy or disturb bats or their roosts Natural England should be consulted, and if necessary, any works carried out under a licence.

5.3.3. **Application Site Evaluation.** Following a repeated review of all trees and buildings, the Site is considered to provide negligible opportunities to roosting bats.

5.3.4. The Site is considered likely to offer some (albeit limited) opportunities for foraging and commuting bats, however these are

considered highly sub-optimal on account of the heavily urbanised and artificially lit nature of the Site.

5.3.5. **Mitigation and Enhancements.** Subject to the retention of existing boundary treelines, it is considered that the redevelopment of the Site will not have an adverse impact on the local bat population.

5.3.6. On the contrary, it is considered that the emerging masterplan has significant scope to drastically improve opportunities for bats, specifically through the provision of new, species-rich habitats. The bolstering of existing boundary vegetation will enhance connectivity across the Site and contribute to green infrastructure of the wider area, whilst habitats such as native scrub planting or species-rich grassland will increase invertebrate prey density for bats.

5.3.7. To avoid potential adverse lighting impacts, the lighting strategy for the development will seek to avoid direct lighting of retained treelines or areas of new planting. Where lighting is necessary, this will be in the form of LED lighting (with a low UV content) with hoods and cowls used to direct lighting away from linear features and retained habitat corridors, such that dark corridors can be retained/created as appropriate. This will ensure that any existing opportunities for bats within the Site will be enhanced post-development.

5.3.8. As a direct enhancement, it is proposed that 6 bat roosting boxes be installed on retained mature trees in sheltered boundary areas. The exact location and specification of which can be identified at the detailed stage of design, however an example list of suitable boxes is provided at Appendix 4.

Birds

5.3.9. **Legislation.** Section 1 of the Wildlife and Countryside Act is concerned with the protection of wild birds, whilst Schedule 1 lists species are protected by special penalties.

5.3.10. **Application Site Evaluation, Mitigation and Enhancements.** There are opportunities for nesting birds in the form of the treelines located at the boundaries of the Site, and to some extent, the vegetation located with the interior of the Site.

5.3.11. As all species of birds receive general protection whilst nesting, to avoid a possible offence, it is recommended that any clearance of suitable nesting vegetation (including tree felling) be undertaken outside of the breeding season (typically, March to August inclusive) or that checks be made for nesting birds by an ecologist immediately prior to removal.

5.3.12. Its considered that any losses to existing nesting bird habitat will be more than offset through the provision of new planting across the Site. Additionally, the provision of fruit / nut bearing tree species will provide a range of food sources through large periods of the year.

5.3.13. Furthermore, a suitable number of integrated (and free hanging) bird boxes will be installed on / in both new buildings and appropriately

mature retained boundary planting. Nesting features will be targeted at species of local importance, including building reliant nesters (e.g. Sparrows, Swifts and Swallows). To maximise use, boxes will be installed at a variety of heights, predominately in locations adjacent to landscaped areas, avoiding areas exposed to excessive sun (e.g. southern aspect). The exact location and number of boxes will be determined at the detailed design stage, in response to a suitably worded planning condition (see Appendix 4 for examples).

Invertebrates

5.3.14. It is envisaged that the incorporation of the landscaping proposals, specifically the areas of species rich grassland, wetland and orchard planting will provide a number of benefits to invertebrate species, post-development.

5.3.15. Where trees / scrubs are to be felled on Site, it is recommended that where possible, cuttings of these be used to form the log-piles to be located across the site, for use by invertebrate species. These are also to be complemented by the inclusion of a series of 'bug hotels' to be placed in strategic locations (exact numbers and design of which will be provided at the detailed stage and / or subject to a suitable worded planning condition).

Other species

5.3.16. For the reasons outline in Section 4 above, the Site is not considered to support any other protected or notable species.

5.3.17. Notwithstanding this, given the inclusion of wildlife friendly habitats within the site, it may become colonised by species such as reptiles and amphibians in the future. Therefore, to provide opportunities within the site (in addition to the direct habitat benefits), it is proposed that a number of hibernacula be proposed throughout the Site, particularly in and adjacent to the wetland and orchard areas. These will provide sheltering opportunities to herpetofauna and small mammals, in particular.

# 6. PLANNING POLICY CONTEXT

6.1. The planning policy framework that relates to nature conservation at the Site is issued at two main administrative levels: nationally through the National Planning Policy Framework (NPFF) and locally through the local planning policies of the Cambridge Local Plan.

6.2. Any proposed development will be judged in relation to the policies contained within these documents that concern nature conservation.

## 6.3. National Policy

National Planning Policy Framework (2023)

6.3.1. The National Planning Policy Framework (NPPF) sets out the Government's requirements for the planning system and was adopted on 27th March 2012 and subsequently revised on the 24 July 2018, 19 February 2019, 20 July 2021, September 2023 and December 2023.

6.3.2. The key element of the NPPF is that there should be "*a presumption in favour of sustainable developmen*t" (paragraphs 10 to 11).

6.3.3. The revised NPPF is comparable to previous versions (which it replaces), including reference to minimising impacts on biodiversity and provision of net gains to biodiversity where possible (paragraph 180) and ensuring that Local Authorities place appropriate weight to statutory and non-statutory nature conservation designations, protected species and biodiversity.

6.3.4. The NPPF also considers the strategic approach that Local Authorities should adopt with regard to the protection, maintenance and enhancement of Green Infrastructure, priority habitats and ecological networks, and the recovery of priority species.

6.3.5. Paragraph 185 to 187 of the NPPF comprises a number of principles which Local Authorities should apply, including:

- encouraging opportunities to incorporate biodiversity in and around developments;
- provision for refusal of planning applications if significant harm cannot be avoided, mitigated or, as a last resort, compensated for; and
- the provision for the refusal for developments resulting in the loss or deterioration of 'irreplaceable' habitats unless the need for, and benefits of, the development in that location clearly outweigh the loss.

6.3.6. National policy therefore implicitly recognises the importance of biodiversity and that with sensitive planning and design, development and conservation of the natural heritage can co-exist and benefits can, in certain circumstances, be obtained.

## 6.4. Local Policy

6.4.1. The current and most relevant local policy in Cambridge is currently made up of the Cambridge Local Plan and supporting planning documents.

*Cambridge Local Plan 2018-2031 (Adopted 18 October 2018)*

6.4.2. The Cambridge Local Plan was adopted on 18 October 2018, replacing the Cambridge Local Plan 2006, and sets out policies and proposals for the future development and spatial requirements of Cambridge for the period 2018 to 2031. Policies relevant to biodiversity and nature conservation are set out below.

6.4.3. **Policy 7: The River Cam** refers to development along the banks of the river. Developments will only be permitted if they preserve and enhance the landscape of the River Cam and, where possible, raise the quality of the river, enhance the natural resources of the river and offer opportunities for re-naturalisation of the river.

6.4.4. **Policy 8: Setting of the city** refers to development on the urban edge of the city. The Council will only support such development if it includes a landscape improvement proposal that enhances biodiversity.

6.4.5. **Policy 27: Site specific development opportunities** states that sites considered suitable for development should be assessed for potential for biodiversity enhancement and the creation of ecological corridors.

6.4.6. **Policy 57: Designing new buildings** states that new buildings will be supported when they can maintain or increase levels of biodiversity in the built environment.

6.4.7. **Policy 59: Designing landscape and the public realm** supports developments which retain, protect and incorporate trees and natural habitats, selecting species to enhance biodiversity using native planting.

6.4.8. **Policy 67: Protection of open space** states that development leading to loss of open space of environmental and / or recreational importance will not be permitted unless satisfactory replacements of equal quality, quantity and access with an equal or better standard to that which is proposed to be lost are provided.

6.4.9. **Policy 69: Protection of sites of biodiversity and geodiversity importance** is concerned with development that is to have an adverse impact on a site of biodiversity or geodiversity importance. Where development is permitted and likely to cause harm, proposals must include measures that minimise harm and provide mitigation and enhancements to the nature conservation value of the site.

6.4.10. **Policy 70: Protection of priority species and habitats** states that development will be permitted which protects priority species and habitats and enhances habitats and populations of priority species.

Any development that is likely to harm populations and habitats will need to provide measures to minimise any ecological harm and ensure achievable mitigation and / or compensatory measures are provided.

6.4.11. **Policy 71: Trees** states that development will be permitted which avoids adverse impacts on trees of value unless there are demonstratable public benefits. The Council details that proposals for development should always preserve, protect and enhance existing trees and hedges and provide appropriate replacement planting, if felling is required.

*Greater Cambridge Sustainable Design and Construction Supplementary Planning Document (Adopted 2020)*

6.4.12. This document sets out Cambridge City Council's guidance on how development should be designed to ensure consideration has been treated on issues such as carbon and energy reduction, water conservation, biodiversity, reduction of light and noise pollution, flood reduction, sustainable drainage methods and heritage assets conservation.

*Greater Cambridge Biodiversity Supplementary Planning Document (Adopted February 2022)*

6.4.13. The biodiversity supplementary planning document sets out how forthcoming development should build quality places, rich in biodiversity and green infrastructure, good for people and nature. This is set out through a series of 'biodiversity issues'. The most relevant of which to the Site are set out below.

6.4.14. **Biodiversity Issue B1 (mitigation hierarchy**) sets out how development needs to follow the mitigation hierarchy (avoid, mitigate, compensate). Where avoidance cannot be delivered, a clear explanation of why alternatives strategies and how mitigation / compensation is appropriate will be required.

6.4.15. **Biodiversity Issue B4 (Conservation and enhancement of biodiversity)** sets out proposals should look to retain areas of increased ecological value, and / or mitigate for impacts through the enhancement of other areas on site.

6.4.16. **Biodiversity Issue B5 (Biodiversity provision in the design of new buildings and open spaces)** sets out how buildings should include for species specific measures. Including the installation of bird boxes on suitable buildings and landscaping, at a pre-determined ratio. Furthermore, native landscaping should be used which would be of particular benefit to biodiversity.

6.4.17. **Biodiversity Issue B6 (provision of biodiverse and living roofs)** sets out how the use of green / brown roofs will be encouraged as a means to maximise biodiversity. They should support diverse habitats of local relevance rather than sedum monocultures.

6.4.18. **Biodiverse issue B7 (Biodiversity Net Gain)** sets out how a +20% BNG is desirable on site, above that of the +10% minimum outlined in national legislation. The measurement of BNG on site should use the most recent Defra biodiversity Metric with all calculations justified.

## 6.5. Discussion

6.5.1. The development proposals for the site would be judged against the policies summarised above. It is considered that the development site is of intrinsically low ecological interest and as such there is significant scope to meet the needs of these policies. It is considered that following the recommendations in this report, any forthcoming development proposals would fully accord with national and local policy and avoid any significant impacts on any designated sites for nature conservation.

6.5.2. The presence or potential presence of protected species is acknowledged and recommendations to enhance the site for these groups put forward. Those habitats of ecological importance have been identified and measures recommended to ensure their protection, where possible. Where losses cannot be avoided, appropriate habitat mitigation has been set out to ensure that a well thought out and ecologically valuable landscaping scheme can be secured. This being proved through the delivery of +75.52% BNG for Area Based Habitats and +143.72% BNG for Linear Based Habitats.

6.5.3. As such there are no overriding ecological reasons why this site should not come forward for development. Indeed, to the contrary, the development of the site offers significant opportunity for betterment in biodiversity terms. Such opportunities for biodiversity enhancement fully accord with the ethos of policy at a national and local level and will contribute to local green infrastructure targets.

# 7. SUMMARY AND CONCLUSIONS

7.1. Ecology Solutions were commissioned by Railway Pension Nominees Limited in January 2021 to carry out Ecological Assessment work at The Beehive Centre, Cambridge. This scope was extended on behalf of the applicant to allow for continued updated assessments during both 2022 and 2023.

7.2. The emerging proposals for the Site are for the redevelopment of the existing retail park to a commercial and office led space.

7.3. There are no designated sites of nature conservation interest within or adjacent to the Site. The nearest statutory designated sites are Coldham's Common LNR and Logan's Meadow LNR which are situated approximately 0.4km to the east and 0.47km to the north of the Site respectively. The nearest non-statutory site is that of Coldham's Common CWS which is situated approximately 0.21km east of the Site at its closest point. The nearest European Protected Site is Eversdon and Wimpole Woods Special Area of Conservation (SAC), which is situated approximately 13km south-west of the Site at its closest point.

7.4. Subject to the implementation of standard mitigation measures and best practice during the construction period, it is considered that any potential adverse impacts on these designated sites would be fully avoided.

7.5. The majority of the Site holds very limited ecological value, on account of it comprising an existing urbanised retail park with heavily managed amenity habits that are of significantly low ecological value.

7.6. Features that hold relatively higher value within the Site are the mature treelines (where these comprise a range of native species). Where habitats of relatively greater ecological value are present, these are to be largely retained as part of the development proposals. Moreover, opportunities exist to deliver substantial new habitats within the Site, as well as realise enhancements to retained habitats, such that qualitative enhancements are realised over the existing situation.

7.7. From the survey work undertaken to date, there is no evidence to indicate any overriding constraints that would prevent the development proposals coming forward. Indeed, it is considered that the emerging proposals will offer significant opportunities to enhance the value of the Site for protected and notable faunal species.

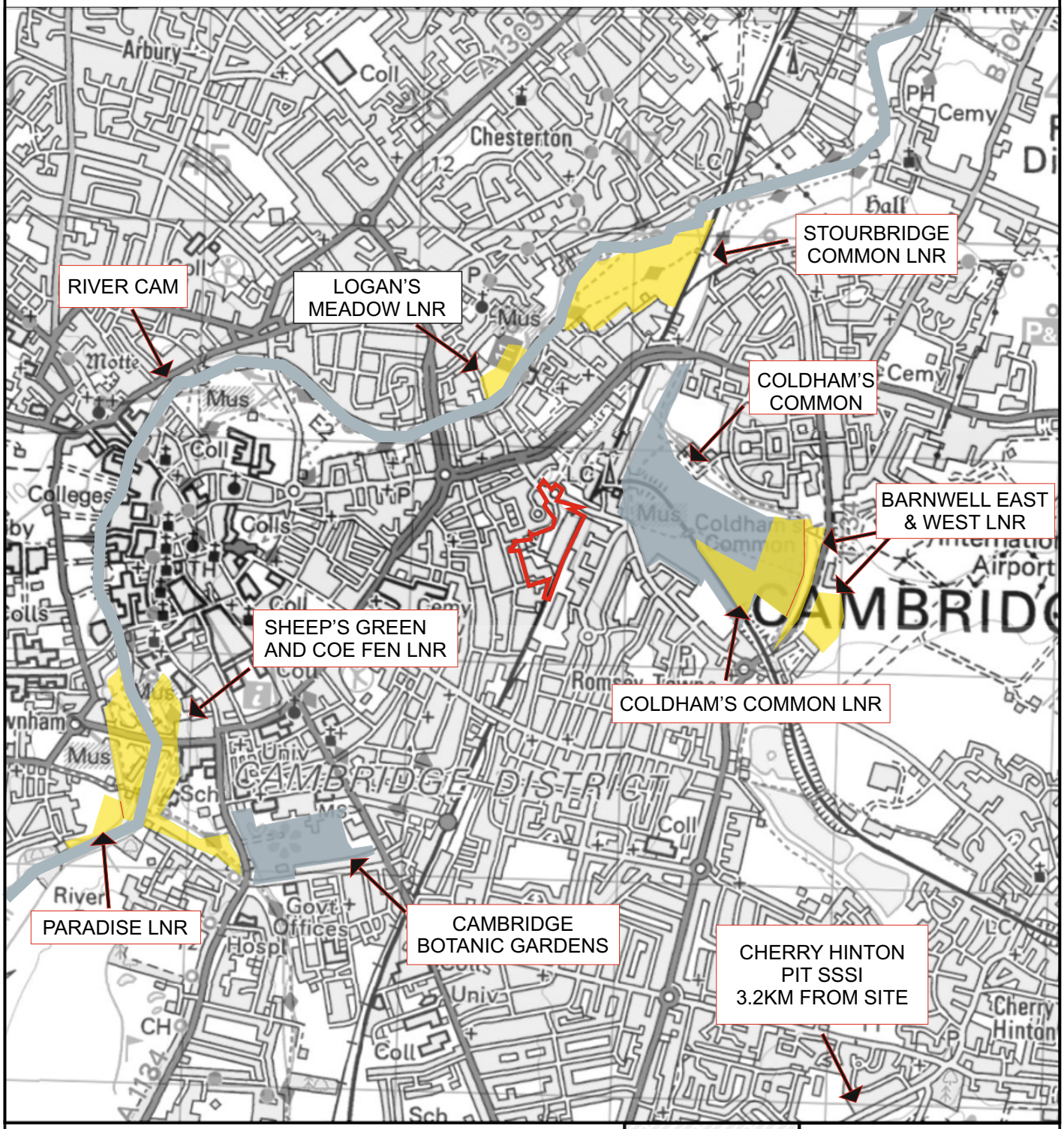
7.8. In conclusion, the Site is of very limited ecological value. The development proposals will retain, enhance and safeguard habitats of comparatively greater ecological value, and will mitigate for losses of habitats through new landscape planting and appropriately managed open space areas. All of which has been designed to be of as high a ecological value as possible.

7.9. Moreover, it is considered that the proposed development would offer enhancements for biodiversity over the existing situation, and would therefore fully accord with current legislation and policy pertinent to ecology and nature conservation.

**PLANS**

**PLAN ECO1**

Site Location and Ecological Designations




KEY:

- APPLICATION SITE BOUNDARY
- LOCAL NATURE RESERVE (LNR)
- COUNTY WILDLIFE SITE (CWS)

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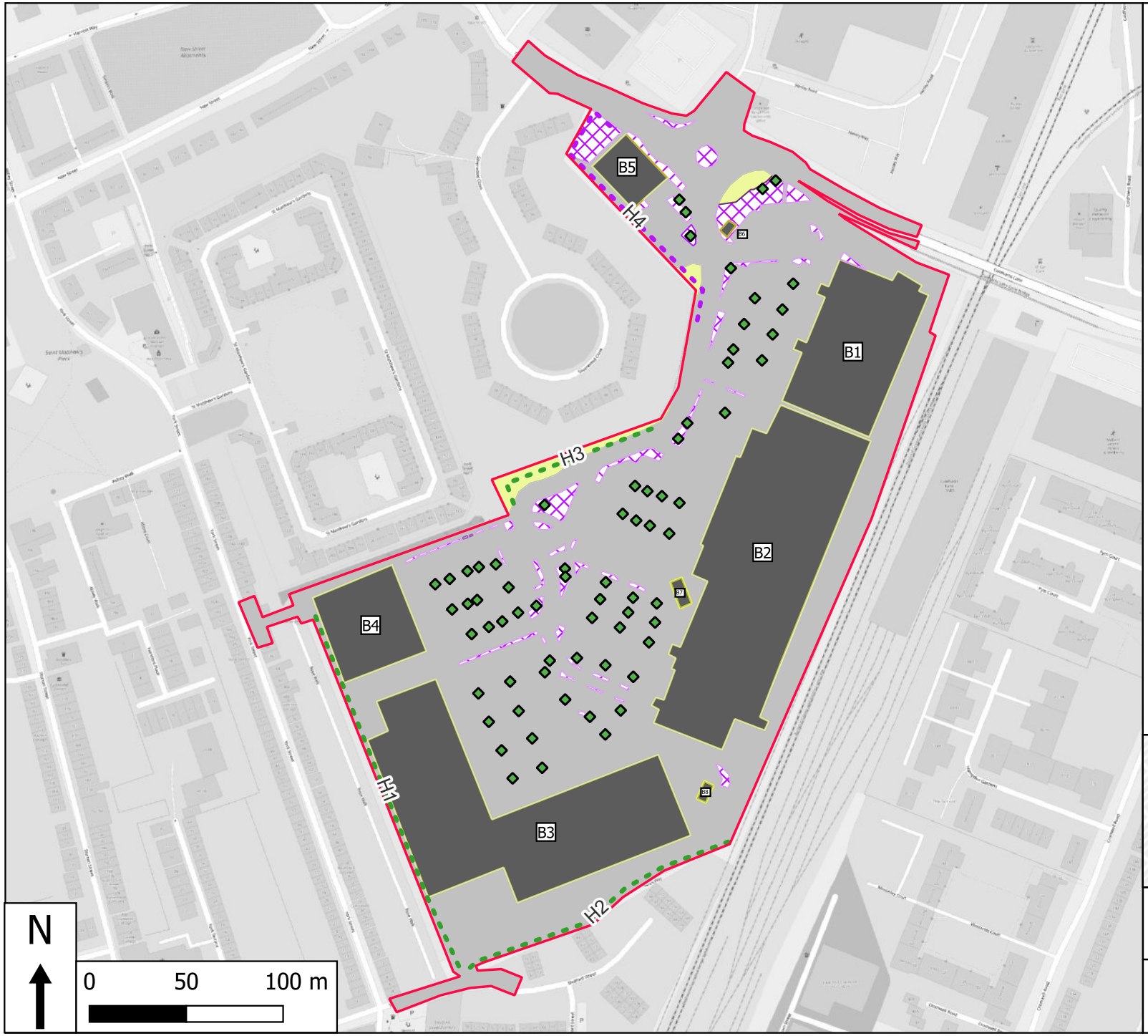
9489: PROJECT OTTER

PLAN ECO1: SITE LOCATION AND ECOLOGICAL DESIGNATIONS

Rev:B
AUG 2024

**PLAN ECO2**

Ecological Features




## Key:

- APPLICATION SITE BOUNDARY
- INTRODUCED SHRUB
- MODIFIED GRASSLAND
- DEVELOPED LAND; SEALED SURFACE (BUILDINGS)
- DEVELOPED LAND; SEALED SURFACE (HARDSTANDING)
- URBAN TREE
- LINE OF TREES
- NATIVE HEDGEROW WITH TREES

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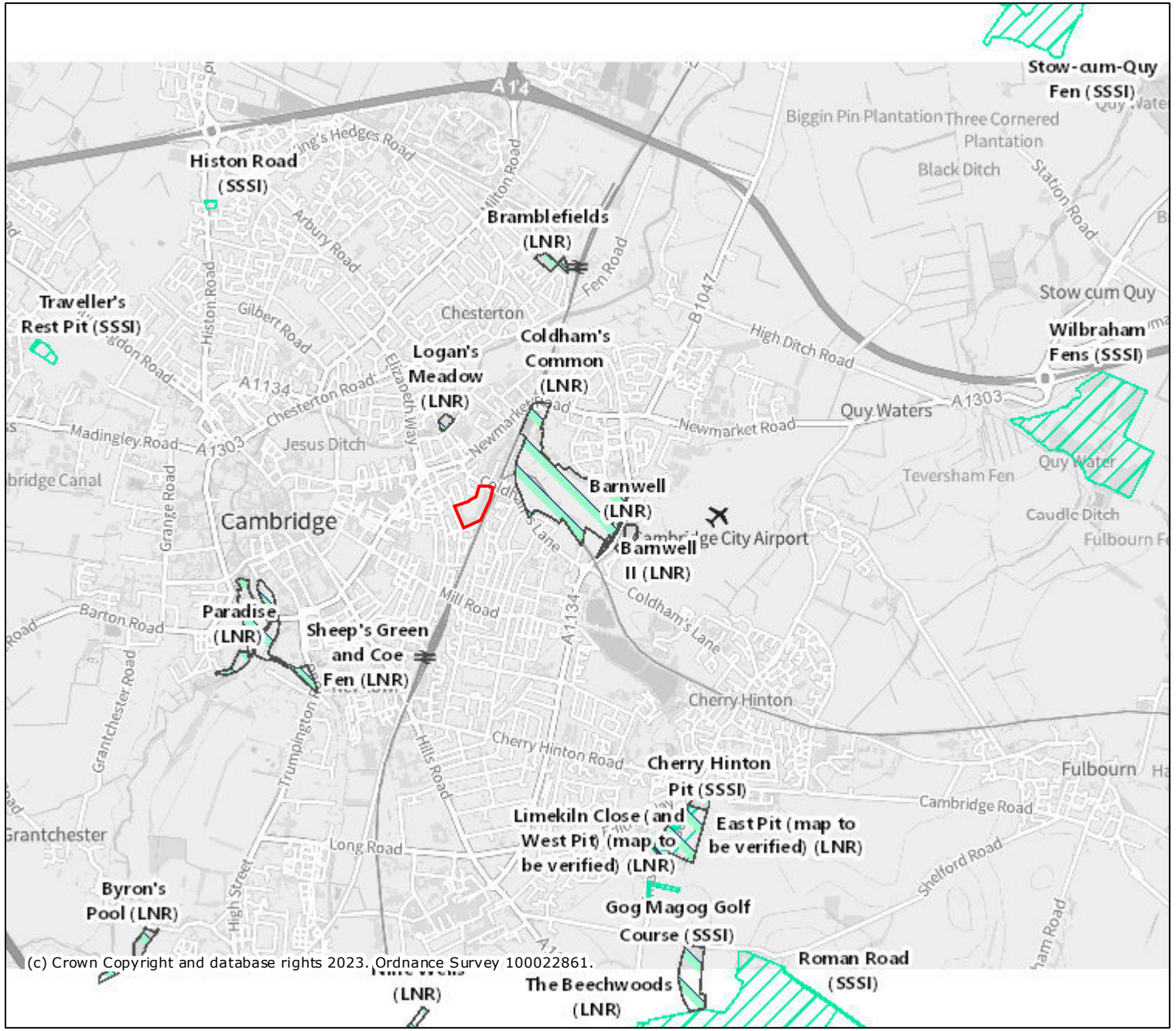
9489: PROJECT OTTER

PLAN ECO2: ECOLOGICAL FEATURES

REV: B
AUG 2024

# APPENDICES

# Appendix 1. Information Returned From MAGiC

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## Legend

- Local Nature Reserves (England)
- Sites of Special Scientific Interest (England)

Projection = OSGB36
xmin = 539100
ymin = 254600
xmax = 556100
ymax = 262400

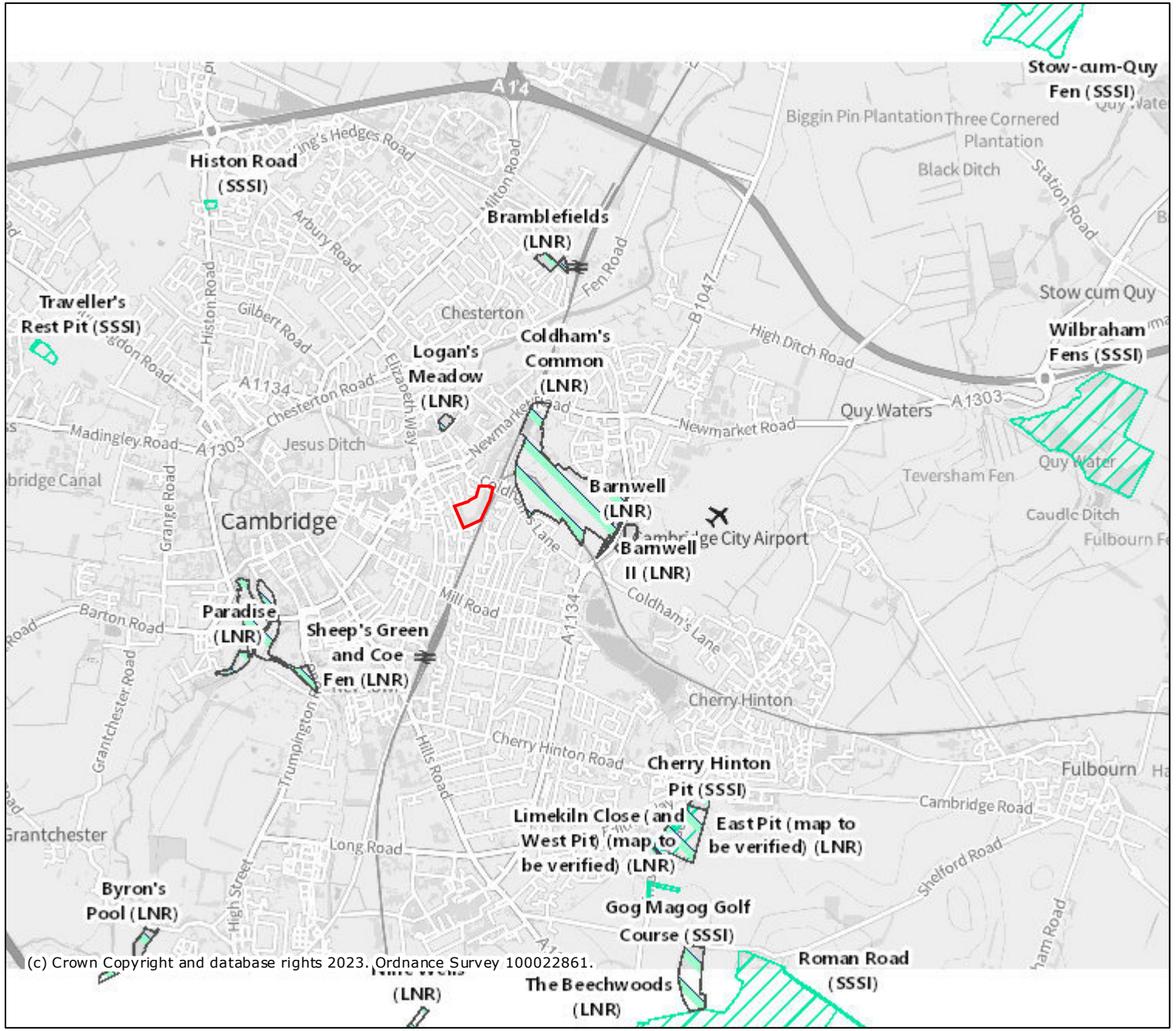
0 1 2
km

Map produced by MAGIC on 2 June, 2023.

# APPENDIX 1

Information Obtained from MAGIC

# Appendix 1. Information Returned From MAGiC




(c) Crown Copyright and database rights 2023. Ordnance Survey 100022861.

## Legend

- Local Nature Reserves (England)
- Sites of Special Scientific Interest (England)

Projection = OSGB36
xmin = 539100
ymin = 254600
xmax = 556100
ymax = 262400

0 1 2
km

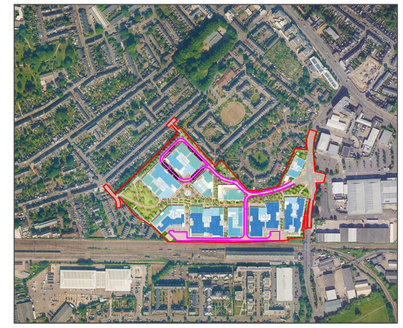
Map produced by MAGIC on 2 June, 2023.

**APPENDIX 2**

Landscape Masterplan

Z:\7775_PROJECT_OTTER\CAD\DRAWINGS\SHEETS\STAGE 2 RESUBMISSION\CAD\PO-LDAD-ZZ-GF-DR-L-000101.DWG


LEGEND



LOCATION PLAN SCALE 1:10,000

SITE BOUNDARY

| REV. | DESCRIPTION | APP. | DATE |
|---|---|---|---|
| P02. | UPDATED WITH HIGHWAYS TRACKING | CI | 01/08/2024 |
| P01. | ISSUED FOR DESIGN FREEZE | CI | 05/07/2024 |

LDĀDESIGN

PROJECT TITLE
PROJECT OTTER

DRAWING TITLE
LANDSCAPE ILLUSTRATIVE COLOUR PLAN

| | | | |
|---|---|---|---|
| ISSUED BY | London | T: 020 7467 1470 | |
| DATE | Jul' 24 | DRAWN | HF |
| SCALE@A2 | 1:1,250 | CHECKED | LS |
| STATUS | Planning | APPROVED | CI |

**DWG. NO PO-LDAD-ZZ-GF-DR-L-000101**

No dimensions are to be scaled from this drawing.
All dimensions are to be checked on site.
Area measurements for indicative purposes only.



Sources Ordnance Survey

**APPENDIX 3**

Biodiversity Net Gain (BNG) Assessment

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# 9489: The Beehive Redevelopment, Cambridge

# APPENDIX 3. BIODIVERISTY NET GAIN ASSESSMENT

## 1. INTRODUCTION

### Background & Proposals

1.1. Ecology Solutions was originally commissioned by Railway Pension Nominees Limited (hereafter referred to as 'the applicant') in January 2021 to carry out Ecological Assessment work at The Beehive Shopping Centre, Cambridge (hereafter referred to as the 'Site'). This scope was extended on behalf of the applicant to allow for continued updated assessments during both 2022 and 2023. This included undertaking a Biodiversity Net Gain (BNG) assessment of the proposals.

1.2. The development proposals for the site are described as follows:

*"the demolition and redevelopment of the Beehive Centre, including in Outline Application form for the demolition and redevelopment for a new local centre (E (a-f), F1(b-f), F2(b,d)), open space and employment (office and laboratory) floorspace (E(g)(i)(ii) to the ground floor and employment floorspace (office and laboratory) (E(g)(i)(ii) to the upper floors; along with supporting infrastructure, including pedestrian and cycle routes, vehicular access, car and cycle parking, servicing areas, landscaping and utilities."*

1.3. Botanical survey work of the Site was undertaken by Ecology Solutions during January 2021 and an update survey was conducted in October 2022. The results of these combined survey efforts have been used to undertake a thorough BNG analysis of the Site, the results of which are outlined in full within this note.

1.4. This note intends to present and analyse the detailed results of the habitat survey work undertaken within the Site, in the context of BNG.

1.5. It does not however intend to provide a replacement for the findings set out within the August 2024 Ecological Assessment (EA), authored for the site by Ecology Solutions. For a much more in-depth analysis of the Sites baseline (including the results of the detailed habitat survey work), impacts and proposals, including relevant legislation, planning policy etc. the reader is minded to refer to the full EA.

### Site Characteristics and Baseline Habitat Summary

1.6. The Site is located in Cambridge, west of Coldham's Common. The Site is bordered by built-form and infrastructure.

1.7. The majority of the Site is comprised of hardstanding and buildings with urban trees and amenity planting placed throughout. Hedgerows and treelines border the application site to the west and south of the site, and small areas of modified grassland are also present. The following habitats (using their UkHab 'best fit' identifier) were recorded during the survey work undertaken.

- Developed land; sealed surface (Buildings);
- Developed land; sealed surface (Hardstanding);
- Modified grassland;
- Introduced shrub;
- Urban trees; and,
- Native hedgerows with trees.

1.8. A full and detailed description of each of the above baseline habitats is outlined in the 2024 EA, whilst also summarised in Table 1 below. The location of the baseline habitats are shown graphically at Plan ECO1.

## 2. BIODIVERSTIY NET GAIN ASSESSMENT METHODOLOGY

2.1. A BNG assessment is a methodology used to assess whether any plan or project is capable of delivering measurable contributions to local biodiversity as a result of the proposals.

2.2. This is achieved by undertaking a review of the measured biodiversity value of the Site prior to construction works (i.e. the baseline), and comparing it to what can be delivered, post-development. The intention being to secure a measurable net gain to biodiversity when compared over the baseline situation.

2.3. This net gain can either be achieved directly through site-based means (i.e. included within the planning boundary), or delivered as an off-site measure through bespoke off-site habitat creation or in certain cases, the purchasing of biodiversity credits through a credit broker.

### Methodology

2.4. In order to undertake a BNG assessment of the Site, the most recent version of the Defra Biodiversity Metric V4 (hereafter, referred to as the 'Metric') has been applied to the Site.

2.5. The methodology for undertaking the BNG is based on the guidance provided within the Technical Supplement and User Guide published by Defra, in addition to the application of professional judgement.

2.6. The Metric works by assigning units to the habitats located within the Site (both baseline and post-development). These units are then used as a proxy to determine the ecological value of the Site.

2.7. The respective credit score of each habitat is gauged by calculating key parameters that influence that habitats reported value. These are as follow:

- Habitat type / distinctiveness;
- Habitat area;
- Habitat condition; and,
- Strategic significance.

2.8. For either created or enhanced habitats, the additional main parameters are applied;

- Habitat target type / distinctiveness;
- Habitat target condition;
- Time till target condition; and,
- Difficulty of creation / enhancement.

2.9. The value for hedgerow / treeline habitats and ditch / watercourse habitats are calculated separately, however follow a similar working methodology as those described for area based habitats above

2.10. The recorded baseline and development proposals for the site have been assessed against the above identified parameters and most recent Condition Assessment Criteria (CAC) provided by Defra. The most recent baseline is outlined in full within the EA (2024), and the post-development proposals for the site are summarised below as well as being highlighted in more detail within the relevant landscape plans and detailed documents produced as part of the 2023 planning application.

2.11. In order to account for the use of UK Habitat Classification system (UKHab) within the Metric, a 'best fit' approach has been taken in order to ensure the most representative Phase-1 habitat type is being utilised for both the baseline and post-development habitats within the Metric. This has been determined using the technical supplements provided within the Metric in addition to guidance published by the UK Habitat Classification Working Group.

**Limitations**

2.12. Biodiversity Metrics provide a way of measuring the biodiversity value of a Site pre-development, and comparing it to what it will be, post-development. This is based on several parameters and the application of the most recent version of the guidance provided. Metric analysis itself does run the risk of becoming limited by the quantifiable workings involved, and the quality of the professional judgement given.

2.13. This is most obviously highlighted by the fact that Metrics do not currently take into consideration measures directly relating to protected or notable species. It is only interested in the proposals from a purely mathematical perspective which is limited solely to habitats. For instance, the provision of a bespoke mitigation strategy that would, for example, see the inclusion of a variety of amphibian habitats to aid population success, will not

necessarily score commensurate with the real value as it will simply assess the habitats in isolation and not that of the bigger picture.

2.14. A further example of this would be that there is no mechanism currently in place that would reward schemes for installing several faunal specific features, such as bat and bird boxes or hibernacula.

2.15. Additionally, Biodiversity Metrics often favour certain habitat types such as those that are typically ‘easier’ to create and in shorter time frames. This can often lead to a situation where project design is stunted due to the fact ambitious projects often run the risk of being penalised due to the perceived difficulty of the habitats being proposed.

2.16. Whilst Biodiversity Metrics can he considered a helpful and guiding tool when assessing the BNG of a site, for a number of reasons including those outlined above, they shouldn’t be the sole approach adopted when considering the validity of the site proposals in the context of local and national biodiversity planning policy.

## 3. BIODIVERSTIY NET GAIN ASSESSMENT RESULTS

3.1. In line with the above methodology, a BNG assessment using the most recent version of the Defra Metric (V4.0) has been undertaken. An outline of the habitat management measures proposed for the site are set out within the updated EA (2024) and supporting landscaping documents. However, by way of summary an overview of the respective measures associated with those habitats to be either created or enhanced, are included within the tables below and shown graphically on Plan ECO1 and ECO2.

3.2. Each table is split into both pre-development (baseline) and post-development (created and enhanced) descriptions relevant to each main measured habitat type; area-based habitats and linear based.

3.3. Owing to the Outline nature of the development proposals, it is anticipated that full and prescriptive details for the management of the post-development habitats can be delivered at the relevant reserved matter stage, subject to an appropriately worded planning condition. Notwithstanding this, the measures set out as part of the BNG assessment are considered to be entirely realistic, precautionary and moreover relevant to the site.

## Area Based Habitats

| | | | Post-development impacts (ha) | | | |
|---|---|---|---|---|---|---|
| **Baseline Habitat** | **Baseline Habitat Condition** | **Baseline area (ha)** | **Enhanced** | **Lost** | **Retained** | **Summary Baseline Condition Notes (Relevant to CAC)** |
| Modified Grassland | *Poor* | **0.0974** | 0.00 | 0.0974 | 0.00 | Small areas of modified grassland exist in the north and the west of the Site. Given the commercial use of the site, these areas are managed on a regular basis with the sward being no higher than 5cm at the time of the survey. As such, the management regime has suppressed species diversity, resulting in very limited botanical interest.<br><br>Given the heavily supressed nature of the grassland and its regular management, the grassland is considered to be in a poor condition. |
| Introduced Shrub | *N/A - Other* | **0.2623** | 0.00 | 0.2623 | 0.00 | Not subject to CAC. |
| Urban Tree | *Moderate* | **0.8224** | 0.00 | 0.3338 | 0.4886 | There are 113 scattered urban trees situated throughout the site of which, upon review of the relevant arboriculture report, 85 are small, and 27 medium, and 1 is large. Remaining trees are considered to form part of the linear based habitats (i.e. treelines/hedgerows) so are therefore considered as part of the linear based assessment.<br><br>Majority of trees remain semi-mature and comprise a large percentage non-native. Large gaps between canopies owing to spacing of trees. Trees heavily impacted by human activity (heavy pruning, hardstanding etc) and are very uniform to feature very few ecological niches.<br><br>On the basis of the above, trees are considered to be in a poor condition, however in order to adopt a precautionary position, moderate has been opted for at this stage. |
| Developed land; sealed surface | *N/A - Other* | **2.5504** | 0.00 | 2.5504 | 0.00 | Areas of built-form. Not subject to CAC. |
| Developed land; sealed surface | *N/A - Other* | **4.6006** | 0.00 | 4.6006 | 0.00 | Areas of hardstanding. Not subject to CAC. |

Table 1. Baseline area habitat descriptions

| Habitat Type | Area (Ha) | Target Condition | Target Condition Notes (Relevant to CAC) |
|---|---|---|---|
| Developed land; sealed surface | **2.9268** | *Condition assessment N/A* | Built-form. Not subject to CAC. |
| Developed land; sealed surface | **2.8606** | *Condition assessment N/A* | Areas of hardstanding / infrastructure (roads etc.). Not subject to CAC. |
| Modified Grassland | **0.0383** | *Moderate* | Areas of seeded wildflower grassland, however, will be subject to more regular maintenance due to location in recreation spaces / areas. Modified Grassland considered best fit but due to encouragement of species diversity through sowing of a species-rich mix, 'Moderate' condition targeted. |
| Other Green Roof | **0.4351** | *Condition assessment N/A* | A significant portion of roof space will be utilised for the purpose of brown / green roof installation. It is recommended that the substrates utilised as the growing medium for the living roofs will be a suitable blend of soils and / or suitable planting medium (for areas of green roofs), as well as inert aggregate (ranging from crushed concrete to gravels and pebbles) and materials found within the site pre-development such as log piles, wooded material and other organic albeit low nutrient materials (or areas of brown roof) to better reflect the nearby local wildlife habitats. It is also recommended that a hardy seed mix comprising a range of drought resistance species (sowed at a low density in order to encourage natural seeding) of a majority local provenance will be chosen as part of detailed design to maximise overall contribution to local biodiversity.<br><br>Final specification will be provided at detailed stage of design, so in the absence of that data, 'Other Green Roof' has been used on a precautionary basis. There are no condition assessment criteria for this category, however, it will be upgraded to 'Biodiverse Green Roof' upon receipt of finalised detail on green roof plans. |
| Other Neutral Grassland [*Orchard planting*] | **0.0493** | *Moderate* | Orchard planting will consist of creating a small area of various native, fruit bearing trees of local varieties, within an area of other neutral grassland created utilising a suitable species-rich seed mix.<br><br>The recommended long-term maintenance of ground flora will include for ecologically minded mechanical cutting regime. This would include for a limitation on cuts (2 / 3 times a year, avoiding the main growing seasons but including a heavy summer 'hay cut' after flowers have set seed).<br><br>Recommended maintenance for the trees will consist of sensitive management measures that will encourage healthy growth as well as provide ecological benefits. Management is recommended to be low key as the habitat matures, being limited to formative pruning as required to achieve the desired structure/condition of each tree. Whilst maximising tree health and fruit productivity will be a primary aim in long term, consideration will also be given to the retention of 'interest features', such as deadwood or cavities within the trunks, with these offering opportunities to a range of faunal species, not least saprophagous invertebrates. |

| | | | |
|---|---|---|---|
| | | | Due to absence of 'urban orchard within the Metric v4.0, and as the habitat will not be a 'traditional orchard' , 'Other Neutral Grassland' is considered the best fit due to the emphasis on the underlying grassland and herb mix. On this basis, a condition of moderate is considered achievable. |
| Introduced Shrub | **0.2298** | *Condition assessment N/A* | No CAC required. |
| Sustainable Drainage System | **0.0457** | *Moderate* | A central amenity 'wetland' (pond) feature will be provided within the south-west of the site.<br><br>The design of the feature will ensure a diversity of aquatic conditions and micro habitats and will be designed to support areas of standing water. A 'pockmarked' pond floor surface will form a design principle and will add micro-habitat diversity, particularly within areas that will be seasonally exposed through drawdown.<br><br>The pond will be managed as a biodiversity resource and will be designed as such. However, given that this will be used as part of the drainage strategy, on a purely on a precautionary basis, 'SuDS' in a moderate condition is considered the best fit. |
| Other Neutral Grassland | **0.7396** | *Moderate* | Areas of species rich grassland will be created beneath tree planting throughout the site and around boundary areas.<br><br>Grassland will be species-rich and characteristic of its habitat type. It will be subject to a conservation mowing regime which will encourage a varied sward and provide ecological niches.<br><br>Given the urban context and the small parcels, moderate condition is considered to be the best fit. |
| Urban Tree | **3.2938** | *Moderate* | A total of 259 individual urban trees will be planted throughout the site, trees planted as part of the linear features are not included in this number as they will be assessed in the created/enhanced linear habitat.<br><br>All individual urban trees will be encouraged to reach, as a minimum, a medium size within a 30-year period, however, on a precautionary basis, a 50-50% split between small and medium trees has been selected at this stage on a purely precautionary basis.<br><br>Various native tree species are to be utilised, with species rich vegetation created beneath. Trees will be managed to create a continuous canopy, with cavities / cracks encourages. On that basis, moderate condition is considered achievable. |
| Rain Garden | **0.1476** | *Good* | Areas of rain garden will be created throughout the site. These will be made up of varied plants, shrubs, and flowers that can tolerate both wet and dry conditions and provide resources for a range of invertebrates. These are to be created and managed as such that invasive and non-native species are absent, therefore good condition is considered to be achievable. |

Table 2. Post-development (created) area habitat descriptions

## Linear Based Habitats

| | | | Post-development impacts (Km) | | | |
|---|---|---|---|---|---|---|
| **Baseline Habitat Type** | **Baseline Habitat Condition** | **Baseline length (km)** | **Enhanced** | **Lost** | **Retained** | **Summary Baseline Condition Notes (Relevant to CAC)** |
| Native Hedgerow with Trees - H1 | *Poor* | **0.1958** | 0.00 | 0.00 | 0.1958 | H1 is present along the western boundary of the site. Measuring approximately 15m – 20m, it is comprised of semi-mature / mature trees with a relatively gappy and sparse understory. There is some hedgerow present, and therefore this feature is recorded as a hedgerow with trees. Given the lack of undisturbed vegetation throughout, and the adverse impacts of human activity (excessive pruning), it is considered that moderate condition is the best fit. |
| Native Hedgerow with Trees - H2 | *Poor* | **0.15** | 0.00 | 0.13 | 0.002 | H2 is present along the southwestern boundary. The ground flora of this feature was dominated by Ivy. Given the lack of undisturbed vegetation throughout, and the adverse impacts of human activity (excessive pruning), it is considered that moderate condition is the best fit. |
| Native Hedgerow with Trees- H3 | *Poor* | **0.1535** | 0.1535 | 0.00 | 0.00 | H4 is located in the north of the site. This is an unmanaged hedgerow of a height of approximately 2.5m, dominated by non-natives species. |

Table 3. Baseline linear habitat descriptions

| **Habitat Type** | **Length (Km)** | **Target Condition** | **Target Condition Notes** |
|---|---|---|---|
| Line of Trees | **0.104** | *Moderate* | Planting of a variety of native tree and shrub species, with the objective of creating a linear feature that is diverse and ecologically robust. In addition to planting trees and scrub species, the ground flora will also be made up of a variety of native species of grasses and wildflowers. Cuts and planting will allow for a wider range of more desirable flowers. Target condition of 'moderate' considered achievable. |
| Line of Trees | **0.055** | *Moderate* | Planting of a variety of native tree and shrub species, with the objective of creating a linear feature that is diverse and ecologically robust. In addition to planting trees and scrub species, the ground flora will also be made up of a variety of native species of grasses and wildflowers. Cuts and planting will allow for a wider range of more desirable flowers. Target condition of 'moderate' considered achievable. |
| Line of Trees | **0.09** | *Moderate* | Planting of a variety of native tree and shrub species, with the objective of creating a linear feature that is diverse and ecologically robust. In addition to planting trees and scrub species, the ground flora will also be made up of a variety of native species of grasses and wildflowers. Cuts and planting will allow for a wider range of more desirable flowers. Target condition of 'moderate' considered achievable. |

| | | | |
|---|---|---|---|
| Line of Trees | **0.13** | *Moderate* | Planting of a variety of native tree and shrub species, with the objective of creating a linear feature that is diverse and ecologically robust. In addition to planting trees and scrub species, the ground flora will also be made up of a variety of native species of grasses and wildflowers. Cuts and planting will allow for a wider range of more desirable flowers. Target condition of 'moderate' considered achievable. |

Table 4. Post-development (created) linear habitat descriptions

| Baseline Habitat Type | Enhanced to | Length (Km) | Condition change | Target Condition Notes |
|---|---|---|---|---|
| Native Hedgerow with Trees (H1) | Native Hedgerow with Trees | **0.195** | *Poor - Moderate* | Enhancement for these linear features will largely consist of planting additional tree species to increase diversity and variety of the treeline, with the objective of creating a linear feature that is more ecologically robust. In addition to planting trees and scrub species, the ground flora will also be altered. Cuts and planting will allow for a wider range of more desirable flowers. Target condition of moderate considered achievable. |
| Native Hedgerow with Trees (H2) | Native Hedgerow with Trees | **0.145** | *Poor - Moderate* | Enhancement for these linear features will largely consist of planting additional tree species to increase diversity and variety of the treeline, with the objective of creating a linear feature that is more ecologically robust. In addition to planting trees and scrub species, the ground flora will also be altered. Cuts and planting will allow for a wider range of more desirable flowers. Target condition of moderate considered achievable. |
| Native Hedgerow with Trees (H3) | Native Hedgerow with Trees | **0.1535** | *Poor - Good* | A similar methodology to the above will be utilised, however there will also be further emphasis on creating a dense and species-rich understory hedgerow. Target condition of good considered achievable. |

Table 5. Post-development (enhanced) linear habitat descriptions

### Results Summary

3.4. The Biodiversity Metric returns the following headlines results for the main development site, when considered in isolation:

| | | Defra BNG Metric Categories | |
|---|---|---|---|
| | | **Area** | **Linear** |
| | | | |
| **Development Site Baseline Results** | Units | 7.3 | 2 |
| | | | |
| **Development Site Post-development Results** | Units | 12.81 | 4.87 |
| | | | |
| | Unit Change | +5.51 | +2.87 |
| | | | |
| | % Change | **+75.52%** | **+143.72%** |

Table 7. Headline BNG results for main development site

3.5. The results of the Biodiversity Metric are shown graphically on Plans ECO1 and ECO2. A full digital version of the relevant Metric has also been submitted as part of this BNG assessment.

## 4. SUMMARY AND CONCLUSIONS

4.1. Railway Pension Nominees Limited in January 2021 commissioned Ecology Solutions to carry out a BNG assessment of the Site proposals.

4.2. This was supported by habitat survey work, updated over consecutive years.

4.3. This accumulated in a BNG assessment being undertaken for the site using the Statutory BNG Defra Metric. This assessment was based upon detailed knowledge of the baseline habitats within the Site, in addition to identifying the post-development habitat measure to be delivered.

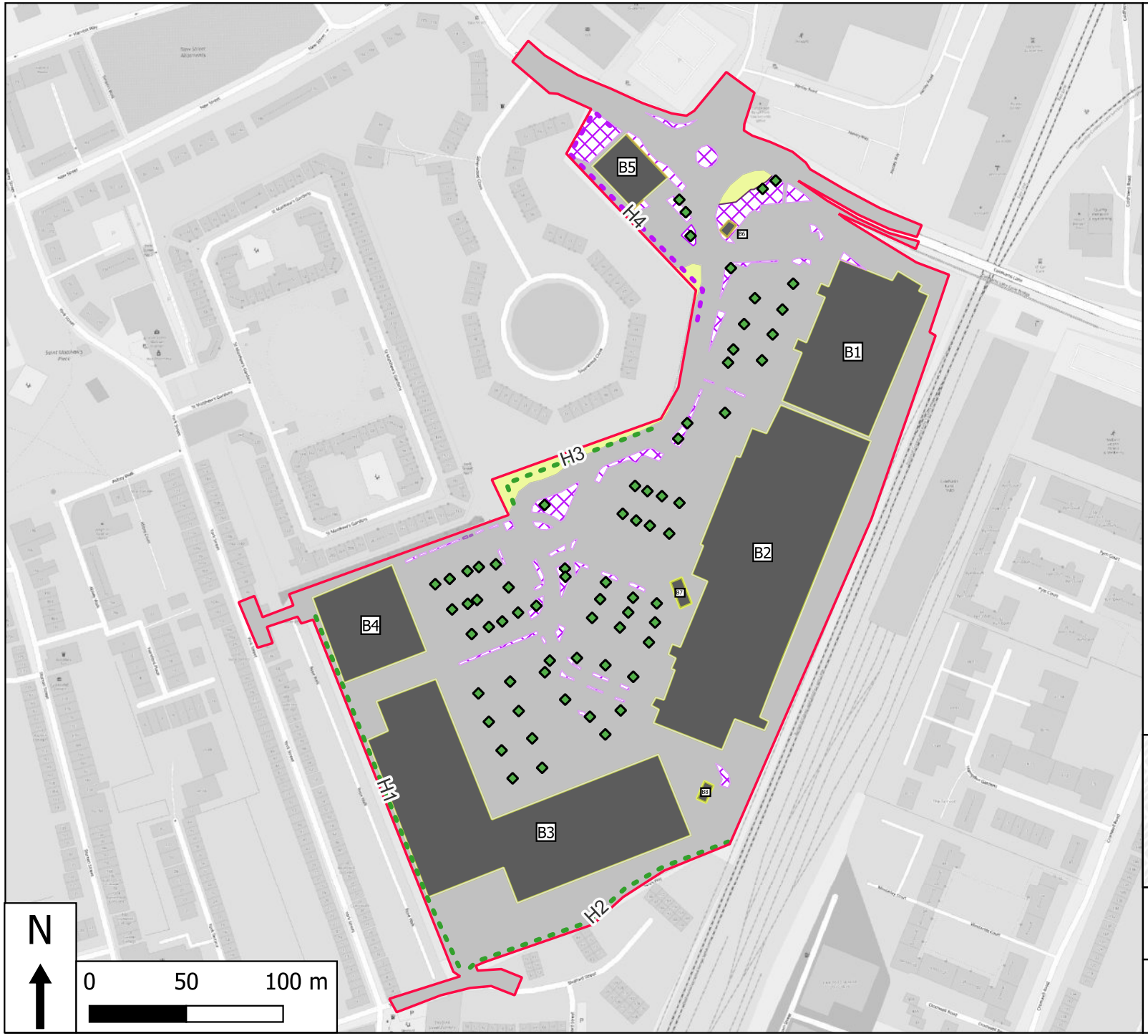
Conclusions

4.4. When considering the most recent survey data and development proposals, the results of the updated BNG analysis work have confirmed that the Site is currently forecast to deliver significant and reliable BNG. This being the case even when a precautionary position has been adopted.

Ecology Solutions

August 2024

Enc.




## Key:

- APPLICATION SITE BOUNDARY
- INTRODUCED SHRUB
- MODIFIED GRASSLAND
- DEVELOPED LAND; SEALED SURFACE (BUILDINGS)
- DEVELOPED LAND; SEALED SURFACE (HARDSTANDING)
- URBAN TREE
- LINE OF TREES
- NATIVE HEDGEROW WITH TREES

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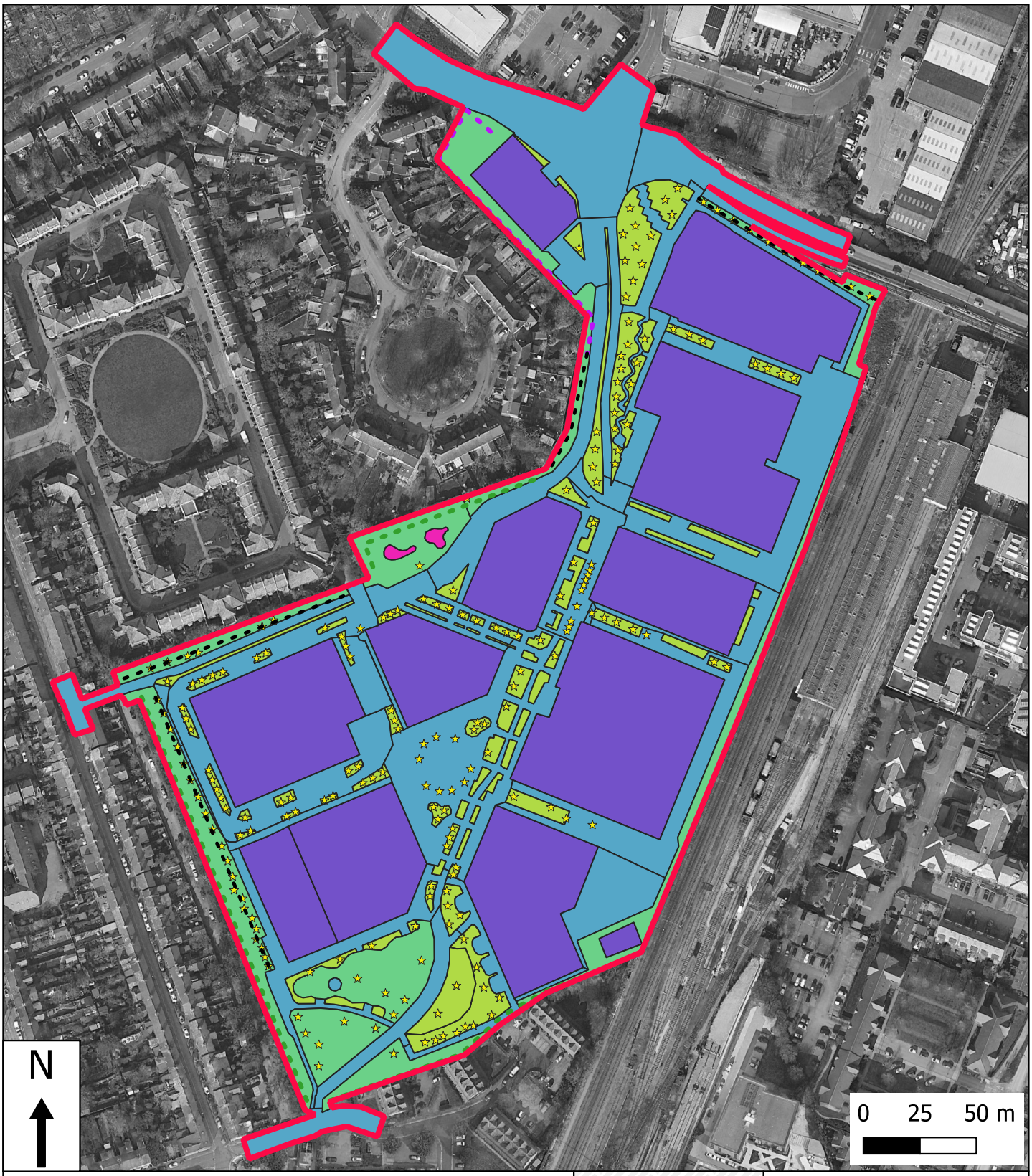
9489: PROJECT OTTER

PLAN ECO1: BNG BASELINE

Rev: A
May
23




- Application Site Boundary
- Created Treeline
- Enhanced Hedgerow with trees
- Enhanced Treeline
- Planted Trees
- Amenity Planting
- Buildings
- Grassland
- Hardstanding
- Ponds

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9489: The Beehive Redevelopment, Cambridge

PLAN ECO 2: BNG POST DEVELOPMENT

Rev: B

AUGUST 2024

## Headline Results

Return to results menu

Scroll down for final results ⚠

| | | | |
|---|---|---|---|
| On-site baseline | *Habitat units* | 7.30 | |
| | *Hedgerow units* | 2.00 | |
| | *Watercourse units* | 0.00 | |
| On-site post-intervention (Including habitat retention, creation & enhancement) | *Habitat units* | 12.81 | |
| | *Hedgerow units* | 4.87 | |
| | *Watercourse units* | 0.00 | |
| On-site net change (units & percentage) | *Habitat units* | 5.51 | 75.52% |
| | *Hedgerow units* | 2.87 | 143.72% |
| | *Watercourse units* | 0.00 | 0.00% |
| Off-site baseline | *Habitat units* | 0.00 | |
| | *Hedgerow units* | 0.00 | |
| | *Watercourse units* | 0.00 | |
| Off-site post-intervention (Including habitat retention, creation & enhancement) | *Habitat units* | 0.00 | |
| | *Hedgerow units* | 0.00 | |
| | *Watercourse units* | 0.00 | |
| Off-site net change (units & percentage) | *Habitat units* | 0.00 | 0.00% |
| | *Hedgerow units* | 0.00 | 0.00% |
| | *Watercourse units* | 0.00 | 0.00% |
| Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement) | *Habitat units* | 5.51 | |
| | *Hedgerow units* | 2.87 | |
| | *Watercourse units* | 0.00 | |
| Spatial risk multiplier (SRM) deductions | *Habitat units* | 0.00 | |
| | *Hedgerow units* | 0.00 | |
| | *Watercourse units* | 0.00 | |

## FINAL RESULTS

| | | |
|---|---|---|
| Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement) | *Habitat units* | 5.51 |
| | *Hedgerow units* | 2.87 |
| | *Watercourse units* | 0.00 |
| Total net % change (Including all on-site & off-site habitat retention, creation & enhancement) | *Habitat units* | 75.52% |
| | *Hedgerow units* | 143.72% |
| | *Watercourse units* | 0.00% |
| Trading rules satisfied? | Yes ✓ | |

| Unit Type | Target | Baseline Units | Units Required | Unit Deficit | |
|---|---|---|---|---|---|
| *Habitat units* | 10.00% | 7.30 | 8.03 | 0.00 | No additional area habitat units required to meet target ✓ |
| *Hedgerow units* | 10.00% | 2.00 | 2.20 | 0.00 | No additional hedgerow units required to meet target ✓ |
| *Watercourse units* | 10.00% | 0.00 | 0.00 | 0.00 | No additional watercourse units required to meet target ✓ |

| Project Name: | Map Reference: |
|---|---|
| A-1 On-Site Habitat Baseline | |

Condense / Show Columns | Condense / Show Rows | Main Menu

| Area habitat summary | |
|---|---|
| Total Net Unit Change | 5.51 |
| Total Net % Change | 75.52% |
| Trading Rules Satisfied | Yes ✓ |

| | Existing area habitats | | | | Distinctiveness | Condition | Strategic significance | Required Action to Meet Trading Rules | Ecological baseline | | | | | | | Bespoke compensation agreed for losses of VHDH or irreplaceable habitat | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ref | Broad Habitat | Habitat Type | Irreplaceable habitat | Area (hectares) | Distinctiveness | Condition | Strategic significance | | Total habitat units | Area retained | Area enhanced | Baseline units retained | Baseline units enhanced | Area habitat lost | Units lost | | User comments |
| 1 | Urban | Introduced shrub | No | 0.2823 | Low | Condition Assessment N/A | Area/compensation not in local strategy/ no local strategy | Same distinctiveness or better habitat required ≥ | 0.52 | | | 0.00 | 0.00 | 0.26 | 0.52 | | |
| 2 | Grassland | Modified grassland | No | 0.0974 | Low | Poor | Area/compensation not in local strategy/ no local strategy | Same distinctiveness or better habitat required ≥ | 0.19 | | | 0.00 | 0.00 | 0.10 | 0.19 | | |
| 3 | Urban | Developed land; sealed surface | No | 2.5504 | V.Low | N/A - Other | Area/compensation not in local strategy/ no local strategy | Compensation Not Required | 0.00 | | | 0.00 | 0.00 | 2.55 | 0.00 | | |
| 4 | Urban | Developed land; sealed surface | No | 4.6006 | V.Low | N/A - Other | Area/compensation not in local strategy/ no local strategy | Compensation Not Required | 0.00 | | | 0.00 | 0.00 | 4.60 | 0.00 | | |
| 5 | Individual trees | Urban tree | No | 0.8224 | Medium | Moderate | Area/compensation not in local strategy/ no local strategy | Same broad habitat or a higher distinctiveness habitat required (≥) | 6.58 | 0.4886 | | 3.91 | 0.00 | 0.33 | 2.67 | | 85 small trees, 27 medium trees, 1 large tree |
| 6 | | | | | | | | | | | | | | | | | |
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| 9 | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | |
| | | Total habitat area | | 8.33 | | | | | 7.30 | 0.49 | 0.00 | 3.91 | 0.00 | 7.84 | 3.39 | | |
| | | Site Area (Excluding area of individual trees, green walls, intertidal | | 7.51 | | | | | | | | | | | | | |

| Total area lost (excluding area of individual trees, green walls and intertidal hard structures) | 7.51 |
|---|---|

| M² to hectares conversion tool: | Select a | Hectares | M² |
|---|---|---|---|
| | | | |

| Project Name: | Map Reference: |
|---|---|
| A-2 On-Site Habitat Creation | |

Condense / Show Columns

Condense / Show Rows

Main Menu

| Area habitat summary | |
|---|---|
| Total Net Unit Change | 5.51 |
| Total Net % Change | 75.52% |
| Trading Rules Satisfied | Yes ✓ |
| Area Check | Area Acceptable ✓ |

| | | | | Distinctiveness | | Condition | | Strategic significance | | | | | Post interv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ref | Broad Habitat | Proposed habitat | Area (hectares) | Distinctiveness | Score | Condition | Score | Strategic significance | Strategic significance | Strategic significance multiplier | Standard time to target condition (years) | Habitat created in advance (years) | |
| 1 | Grassland | Modified grassland | 1.614 | Low | 2 | Moderate | 2 | Area/compensation not in local strategy/ no local strategy | Low Strategic Significance | 1 | 4 | | |
| 2 | Urban | Developed land; sealed surface | 5.889 | V.Low | 0 | N/A - Other | 0 | Area/compensation not in local strategy/ no local strategy | Low Strategic Significance | 1 | 0 | | |
| 3 | Lakes | Ponds (non-priority habitat) | 0.011 | Medium | 4 | Moderate | 2 | Area/compensation not in local strategy/ no local strategy | Low Strategic Significance | 1 | 3 | | |
| 4 | Individual trees | Urban tree | 1.0545 | Medium | 4 | Moderate | 2 | Area/compensation not in local strategy/ no local strategy | Low Strategic Significance | 1 | 27 | | |
| 5 | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| | | Total habitat area | 8.57 | | | | | | | | | | |

| | |
|---|---|
| Site Area (Excluding area of individual trees, green walls, intertidal hard structures) | 7.51 |

| M² to hectares conversion tool: | Select a unit | Hectares | M² |
|---|---|---|---|
| | | | |

ention habitats

| Temporal multiplier | | | | Difficulty multipliers | | | | Habitat units delivered | Comments | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Delay in starting habitat creation | Standard or adjusted time to target condition | Final time to target condition (years) | Final time to target multiplier | Standard difficulty of creation | Applied difficulty multiplier | Final difficulty of creation | Difficulty multiplier applied | | User comments | Planning authority comments | Habitat reference number |
| 0 | Standard time to target condition applied | 4 | 0.867 | Low | Standard difficulty applied | Low | 1 | 5.60 | | | |
| 0 | Standard time to target condition applied | 0 | 1.000 | Low | Standard difficulty applied | Low | 1 | 0.00 | | | |
| 0 | Standard time to target condition applied | 3 | 0.899 | Low | Standard difficulty applied | Low | 1 | 0.08 | | | |
| 0 | Standard time to target condition applied | 27 | 0.382 | Low | Standard difficulty applied | Low | 1 | 3.22 | 259 planted trees at small moderate | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | Total Units | 8.90 | | | |

| Project Name: | Map Reference: |
|---|---|
| B-1 On-Site Hedge Baseline | |

Condense / Show Columns | Condense / Show Rows | Main Menu

| Hedgerow summary | |
|---|---|
| Total Net Unit Change | 2.87 |
| Total Net % Change | 143.72% |
| Trading Rules Satisfied | Yes ✓ |

| | Existing hedgerow habitats | | | Distinctiveness | Condition | Strategic significance | Required Action to Meet Trading Rules | Ecological baseline | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ref | Hedge number | Habitat type | Length (km) | Distinctiveness | Condition | Strategic significance | | Total hedgerow units | Length retained | Length enhanced | Units retained | Units enhanced | Length lost | Units lost |
| 1 | 1 | Native hedgerow with trees | 0.196 | Medium | Poor | Area/compensation not in local strategy/ no local strategy | Same distinctiveness band or better | 0.78 | | 0.196 | 0.00 | 0.78 | 0.00 | 0.00 |
| 2 | 2 | Native hedgerow with trees | 0.15 | Medium | Poor | Area/compensation not in local strategy/ no local strategy | Same distinctiveness band or better | 0.60 | | 0.15 | 0.00 | 0.60 | 0.00 | 0.00 |
| 3 | | | | | | | | | | | | | | |
| 4 | 3 | Native hedgerow with trees | 0.154 | Medium | Poor | Area/compensation not in local strategy/ no local strategy | Same distinctiveness band or better | 0.62 | | 0.154 | 0.00 | 0.62 | 0.00 | 0.00 |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| | | | 0.50 | | | | | 2.00 | 0.00 | 0.50 | 0.00 | 2.00 | 0.00 | 0.00 |

| Project Name: | Map Reference: |
|---|---|
| B-2 On-Site Hedge Creation | |

Condense / Show Columns | Condense / Show Rows | Main Menu

| Hedgerow summary | |
|---|---|
| Total Net Unit Change | 2.87 |
| Total Net % Change | 143.72% |
| Trading Rules Satisfied | Yes ✓ |

| | | Proposed habitats | | Distinctiveness | Condition | Strategic significance | Temporal multiplier | | Difficulty risk multipliers | Hedge units delivered | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ref | New hedge number | Habitat type | Length (km) | Distinctiveness | Condition | Strategic significance | Standard or adjusted time to target condition | Final time to target condition | Final difficulty of creation | | User comments |
| 1 | | Line of trees | 0.05 | Low | Moderate | Area/compensation not in local strategy/ no local strategy | Standard time to target condition applied | 20 | Low | 0.10 | |
| 2 | | Line of trees | 0.09 | Low | Moderate | Area/compensation not in local strategy/ no local strategy | Standard time to target condition applied | 20 | Low | 0.18 | |
| 3 | | Line of trees | 0.1 | Low | Moderate | Area/compensation not in local strategy/ no local strategy | Standard time to target condition applied | 20 | Low | 0.20 | |
| 4 | | Line of trees | 0.13 | Low | Moderate | Area/compensation not in local strategy/ no local strategy | Standard time to target condition applied | 20 | Low | 0.26 | |
| 5 | | | | | | | | | | | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | | | | | | | | | |
| | | | 0.37 | | | | | | | 0.73 | |

| Project Name: | Map Reference: |
|---|---|
| -3 On-Site Hedge Enhancemen | |

Condense/Show Columns | Condense/Show

Main Menu

| Hedgerow summary | |
|---|---|
| Total Net Unit Change | 2.87 |
| Total Net % Change | 143.72% |
| Trading Rules Satisfied | Yes ✓ |

| | Baseline Habitats | Post intervention habitats: Proposed habitat | Change in distinctiveness and condition | | Length (km) | Distinctiveness | Condition | Strategic significance | Temporal multiplier | | Difficulty risk multipliers | Hedge units delivered | Comments | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Baseline ref | Baseline habitat | | Distinctiveness movement | Condition movement | | Distinctiveness | Condition | Strategic significance | Standard or adjusted time to target condition | Final time to target condition (years) | Final difficulty of enhancement | | User comments | Planning authority comments | Habitat reference number |
| 1 | Native hedgerow with trees | Native hedgerow with trees | Medium - Medium | Poor - Moderate | 0.196 | Medium | Moderate | As ea/compensation not in local str ategy/ no local str ategy | Standard time to target condition applied | 6 | Low | 1.42 | | | |
| 2 | Native hedgerow with trees | Native hedgerow with trees | Medium - Medium | Poor - Moderate | 0.15 | Medium | Moderate | As ea/compensation not in local str ategy/ no local str ategy | Standard time to target condition applied | 6 | Low | 1.08 | | | |
| 4 | Native hedgerow with trees | Species-rich native hedgerow with trees | Medium - High | Lower Distinctiveness Habitat - Moderate | 0.154 | High | Moderate | As ea/compensation not in local str ategy/ no local str ategy | Standard time to target condition applied | 5 | Low | 1.65 | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | |
| | | | | | 0.50 | | | | | | | 4.15 | | | |

# APPENDIX 4

Suitable Bat & Bird Box Examples

# Bat Boxes

Schwegler bat boxes are made from 'woodcrete' and have the highest rates of occupation of all types of box.
The 75% wood sawdust, clay and concrete mixture is ideal, being durable whilst allowing natural respiration and temperature stability. These boxes are rot and predator proof and extremely long lasting.
Boxes can be hung from a branch near the tree trunk or fixed using 'tree-friendly' aluminum nails.

## 1FF Bat Box

The rectangular shape makes the 1FF suitable for attaching to the sides of buildings or in sites such as bridges, though it may also be used on trees. It has a narrow crevice-like internal space to attract Pipistrelle and Noctule bats.

*Woodcrete (75% wood sawdust, concrete and clay mixture)*
*Width: 27cm*
*Height: 43cm*
*Weight: 8.3kg*

## 2FN Bat Box

A large bat box featuring a wide access slit at the base as well as an access hole on the underside. Particularly successful in attracting Noctule and Bechstein's bats.

*Woodcrete construction, 16cm diameter, height 36cm.*

## 2F Bat Box

A standard bat box, attractive to the smaller British bat species. Simple design with a narrow entrance slit on the front.

*Woodcrete construction, 16cm diameter, height 33cm.*

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Images and text adapted from manufacturer's website: *https://www.schwegler-natur.de/fledermaus/?lang=en*

# Bird Boxes

Schwegler bird boxes have the highest rates of occupation of all types of box.
They are designed to mimic natural nest sites and provide a stable environment with the right thermal properties for chick rearing and winter roosting. Boxes are made from 'Woodcrete'. This 75% wood sawdust, clay and concrete mixture is breathable and very durable making these bird boxes extremely long lasting.

## 1B Bird Box

This is the most popular box for garden birds and appeals to a wide range of species. The box can be hung from a branch or nailed to the trunk of a tree with a 'tree-friendly' aluminium nail.

*Available in four colours and three entrance hole sizes. 26mm for small tits, 32mm standard size and oval, for redstarts.*

## 2H Bird Box

This box is attractive to spotted flycatcher and black redstarts.

Best sited on the walls of buildings with the entrance on one side.

## 2M Bird Box

A free-hanging box offering greater protection from predators.
Supplied complete with hanger which loops and fastens around a branch.

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# Bird Boxes

Schwegler bird boxes have the highest rates of occupation of all types of box. They are designed to mimic natural nest sites and provide a stable environment with the right thermal properties for chick rearing and winter roosting. Many boxes are made from 'Woodcrete'. This 75% wood sawdust, clay and concrete mixture is breathable and very durable making these bird boxes extremely long lasting.

## 1SP Sparrow Terrace

House sparrows are gregarious and prefer to nest close to each other, so this woodcrete box provides room for three families under one roof. Made from long-lasting, breathable woodcrete. No maintenance required.

*Colour: stone or brown.*
*Dimensions 245 x 430 x 200 mm.*
*Weight 13kg.*
*Designed for fixing to walls*
*(not suitable for fences or sheds*
*due to the weight of the box).*

## No. 16 Swift Box

This nest box is suitable for fixing high under the eaves or under the guttering of a building, either within or attached to external walls. Installation of several units on nearby buildings can assist in the rapid formation of Swift colonies.


*Plant fibre and woodcrete.*
*Interior dimensions 14 x 20 x 30 cm.*
*Exterior dimensions 15 x 21 x 34 cm*

## Habibat Starling Nest Box

This box provides an insulated concrete nesting chamber with a hole that is specifically designed to attract Starlings.

The box is designed to be integrated into the structure of the building and can be supplied with brick, block, stone, wood and rendered faces or can be left unfaced.

*Dimensions: 215 x 215 x 120mm*
*Weight: 3kg*

Images and text adapted from manufacturer's websites:

*www.schwegler-natur.de*
*www.habibat.co.uk*

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