



## **Preliminary Ecological Appraisal and Biodiversity Net Gain Assessment**

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**LIABILITIES:**

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing. Whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date. This report provides a snap shot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated, only dominant species may be recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

## 1.0 INTRODUCTION

### Background

1.1 The Ecology Partnership was commissioned by Lewis Tennent to undertake a Preliminary Ecological Appraisal (PEA) and Biodiversity Net Gain (BNG) assessment of land at Shinfield Court, Church Lane, Shinfield, Reading, RG7 1HB, hereafter referred to as the 'site' (Figure 1).

1.2 The key objectives of a PEA (CIEEM 2017) are to:

- Identify the likely ecological constraints associated with a project;
- Identify any mitigation measures likely to be required, following the 'Mitigation Hierarchy' (CIEEM 2016; BSI 2013, Clause 5.2);
- Identify any additional surveys that may be required to inform an Ecological Impact Assessment (EcIA); and
- Identify the opportunities offered by a project to deliver ecological enhancement.

### Site Context

1.3 The site (SU 72077 68136) is approximately 0.18 ha and includes a car park with areas of scattered trees and grassland. The wider landscape consists of arable fields with connective hedgerows.



*Figure 1: Site red line boundary and survey area.*

## Proposed Development

- 1.4 The proposed development is for the demolition of the building located within the site and replacing it with a larger community store with access to the site from Church Lane, with areas of associated hard standing (Figure 2).



Figure 2: Site proposals (2024)

## Planning Policies

- 1.5 The outline application was assessed against policy guidance provided by the National Planning Policy Framework, as well as relevant planning policies from the The Wokingham Borough Local Plan which includes a collection of documents including The Wokingham Borough Core Strategy (adopted July 2012). These policies included the following which are considered relevant to ecology, biodiversity and nature conservation:

- **Policy CP7: Biodiversity**
- **Policy CP8: Thames Basin Special Protection Area**

- 1.6 The Environment Bill received Royal Assent on 9<sup>th</sup> November 2021 and is now enacted as the Environment Act 2021. Part 6 (Nature and Biodiversity) and Schedule 14 of the Environment Act 2021 insert a new section 90A and Schedule 7A into the Town and Country Planning Act 1990 (TCPA), which contain the provisions requiring mandatory biodiversity net gain for development granted planning permission

pursuant to the TCPA. These provisions are not yet in force, but once they are enacted through implementing legislation, they will require developments to provide a biodiversity value post-development that exceeds the predevelopment biodiversity value of the onsite habitats by at least 10%. These provisions are not expected to come into force until January 2024 for new planning applications.

- 1.7 The site has therefore been surveyed to assess its ecological value and to ensure compliance with national and local plan policies and other relevant nature conservation legislation including the Wildlife and Countryside Act 1981, Natural Environment and Rural Communities Act 2006, and the Conservation of Habitats and Species (EU Exit) Regulations 2019.
- 1.8 The report has been produced with reference to current guidelines for PEA (CIEEM 2017) and in accordance with BS 42020:2013 Biodiversity – Code of Practice for Planning and Development.

## **2.0 METHODOLOGY**

### **Desktop Study**

- 2.1 A desktop study was completed using an internet-based mapping service ([www.magic.gov.uk](http://www.magic.gov.uk)) for statutory designated sites and an internet-based aerial mapping service ([maps.google.co.uk](http://maps.google.co.uk)) was used to understand the habitats present in and around the site, including identifying habitat linkages and features (ponds, woodlands etc.) within the wider landscape.

### **Phase 1 Habitat Survey and UKHab**

- 2.2 The site was surveyed on 21<sup>st</sup> September 2023 by Alice Bailey BSc (Hons) ACIEEM and Alistair McNaughton BSc (Hons) QCIEEM. The surveyors identified the habitats present, following the standard 'Phase 1 habitat survey' auditing method developed by the Joint Nature Conservancy Council (JNCC) and the UK Habitat classification system (UKHab). The site was surveyed on foot and the existing habitats and land uses were recorded on an appropriately scaled map (JNCC 2010).

### **Additional Protected Species Assessments**

- 2.3 Any evidence of additional protected species was recorded. Standard methods of search and measures of presence, or likely presence based on habitat suitability were used for bats in trees (Collins 2016), breeding birds (BTO 2020), hazel dormice

*Muscardinus avellanarius* (Bright *et al.* 2006), great crested newts (ARG 2010), reptiles (Froglife 2015), badgers *Meles meles* (Creswell *et al.* 1990) and water voles *Arvicola amphibius* (Strachan *et al.* 2011).

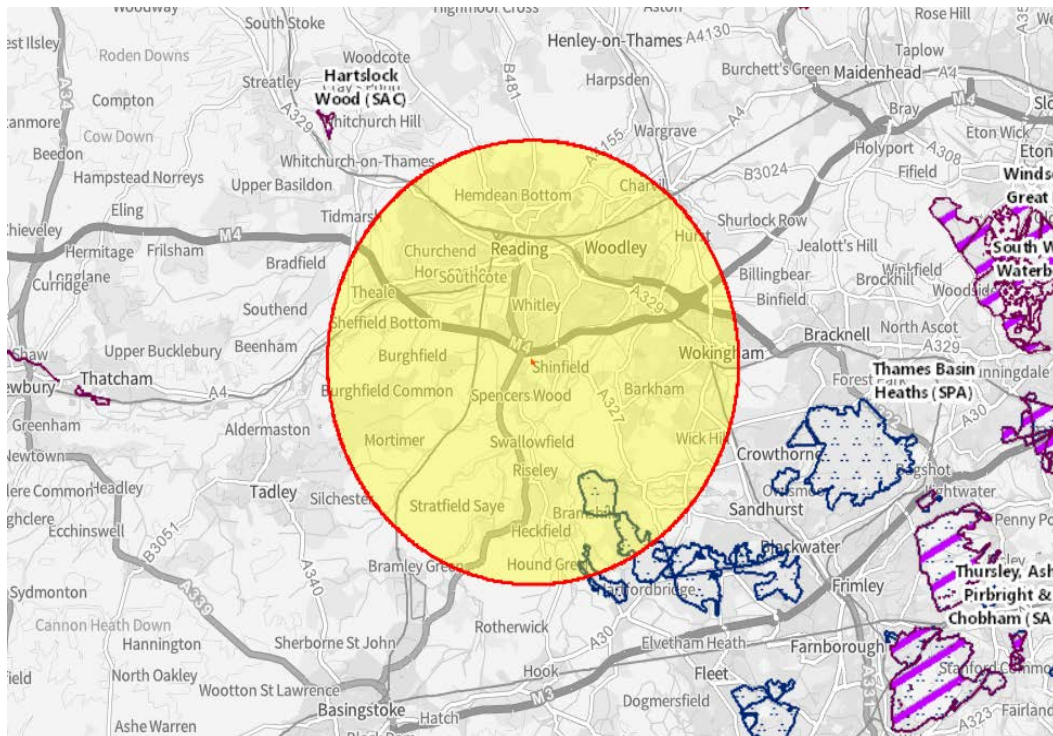
### Limitations

- 2.4 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no single investigation could ensure the complete characterisation and prediction of the natural environment. The site was visited over the period of one site visit, as such seasonal variations cannot be observed and potentially only a selection of all species that potentially occur within the site have been recorded. Therefore, the survey provides a general assessment of potential nature conservation value of the site and does not include a definitive plant species list.
- 2.5 The protected species assessment provides a preliminary view of the likelihood of protected species occurring on-site, based on the suitability of the habitat and any direct evidence on site. It should not be taken as providing a full and definitive survey of any protected species group. The assessment is only valid for the time when the survey was carried out. Additional surveys may be recommended if, on the basis of this assessment it is considered reasonably likely that protected species may be present.

## 3.0 RESULTS

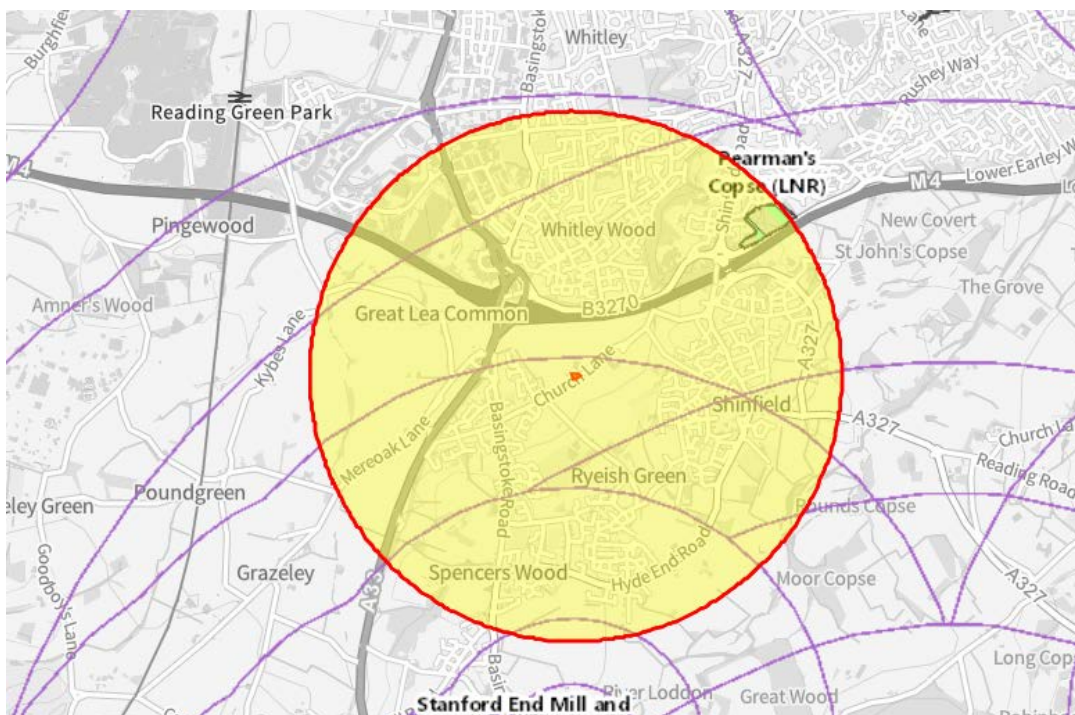
### Desktop Study

- 3.1 There is one international designated site within 10km of the site (Figure 3). Thames Basin Heaths Special Protection Area (SPA) is located c. 5.5km south-west of the site, at this distance the site lies outside of the zone of influence for the Thames Basin Heaths (400m – 5km). Designated for its areas of planted woodland and semi-natural acidic woodland areas, the area is an important breeding habitat for Dartford warblers (*Sylvia undata*), woodlarks (*Lullula arborea*) and nightjars (*Caprimulgus europaeus*).



*Figure 3: International designated sites within 10km of the site.*

- 3.2 There is one statutory designated site within 2km of the site (Figure 4), which is Pearman's Copse Local Nature Reserve (LNR), located c. 1.6km north-east of the site. Designated for its ancient woodland habitats.

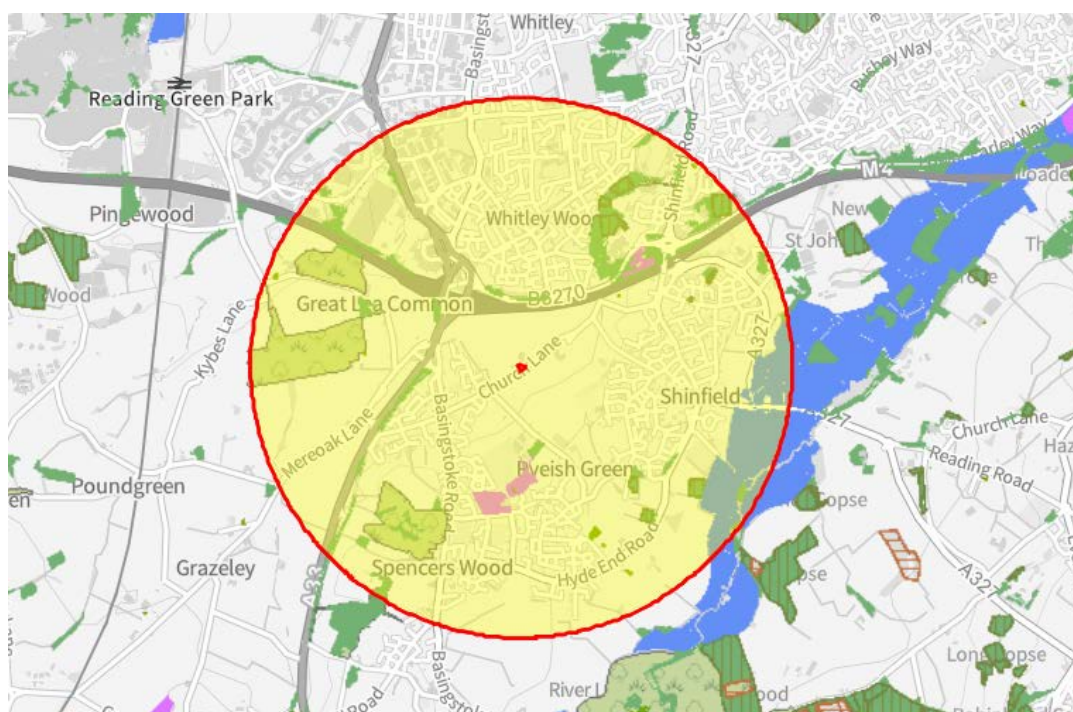


*Figure 4: Statutory designated sites within 5km of the site.*

- 3.3 There are no non-statutory designated sites within 2km of the site.

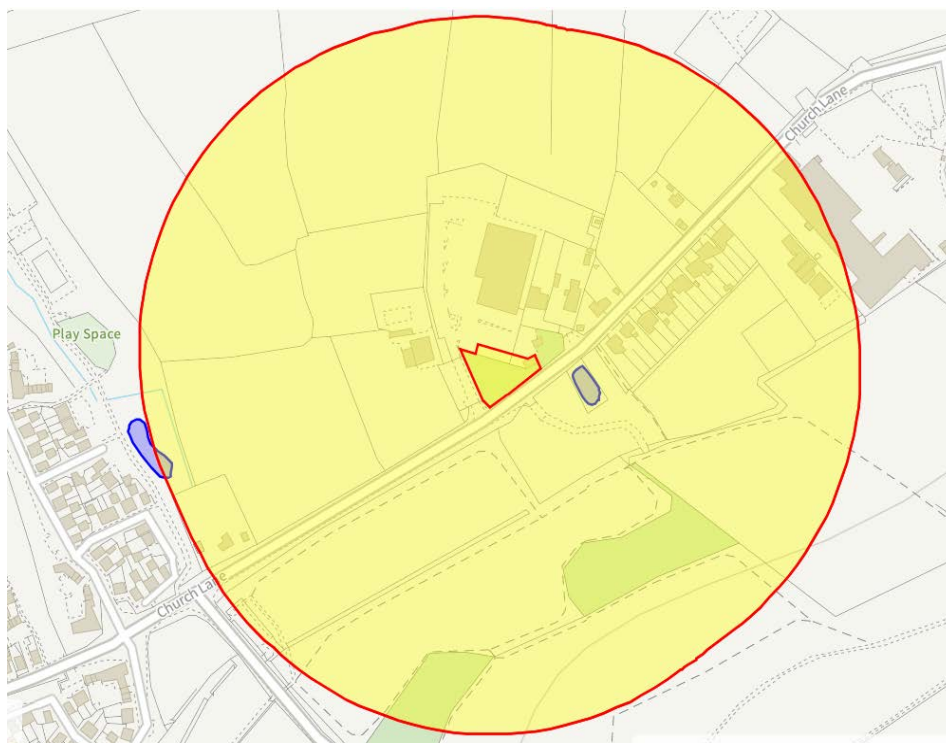
3.4 The priority habitat deciduous woodland is located adjacent to the eastern boundary of the site. There are also several units of priority habitat within 2km of the site (Figure 5), the closest of each type include:

- Deciduous woodland located approximately 530m south-east;
- Ancient and semi natural woodland located approximately 1.1km south-east;
- Traditional orchard located approximately 850m south;
- Woodpasture and parkland located approximately 1km west;
- Coastal and floodplain grazing marsh located approximately 1.6km south-east;
- Good quality semi-improved grassland located approximately 650m south.



**Figure 5: Priority habitat within 2km of the site. Deciduous woodland (green), ancient and semi natural woodland (vertical hatching), traditional orchard (light green), woodpasture and parkland (tree symbols), coastal and floodplain grazing marsh (blue), and good quality semi-improved grassland (pink).**

3.5 OS maps and aerial imagery indicate there are two ponds (P1 & P2) within 250m of the site (Figure 6). Pond 1 is located 25m east of the site across the road, and pond 2 is located 240m west of the site.



**Figure 6: Ponds within 250m of the site boundary.**

3.6 The closest past European Protected Species (EPS) licences for each species are:

- 2015 to 2020 licence for common pipistrelle *Pipistrellus pipistrellus* and brown long-eared *Plecotus auritus*, located approximately 60m south for the destruction of a resting place.
- 2010 to 2012 licence for great crested newts, located approximately 2.5km north for the destruction of a resting place.
- 2018 to 2023 licence for hazel dormice, located approximately 5.3km south for the damage and destruction of a resting place.

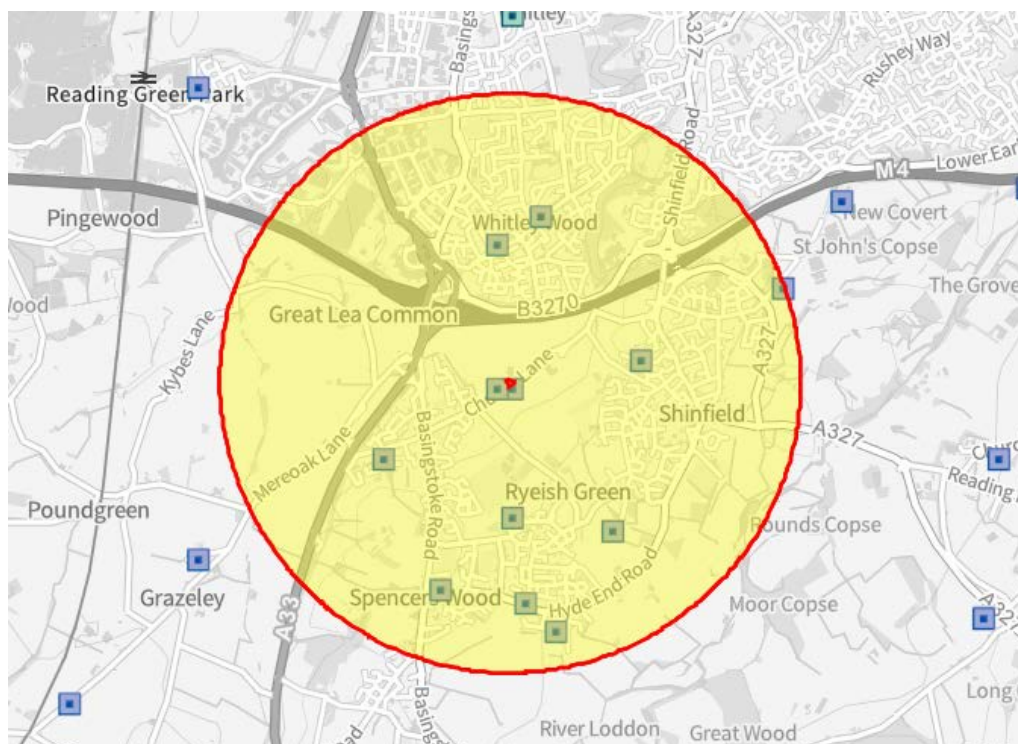


Figure 7: 2km buffer from site and location of EPS licence for bats (blue).

### Phase 1 Habitat Survey

- 3.7 The habitat map is presented in **Appendix 1**, condition assessments in **Appendix 2**, species lists in **Appendix 3** and site photographs in **Appendix 4**.

#### *Hardstanding*

- 3.8 A section to the north of the site consists of a hardstanding car park, with some rare levels common cudweed (*Filago vulgaris*) growing between the bricks laid on the floor.

#### *Buildings*

- 3.9 There was one building located on site, this was a shed used for storage. The shed's walls were constructed of shiplap wood panelling, with many single-paned windows, the roof was constructed of a corrugated bitumen felt material. The interior of the roof was lined with chipboard, the building did not contain a loft void.

#### *Other Neutral Grassland (g3c)*

- 3.10 The m grassland supported a short sward height and contained frequent levels of cat's ear (*Hypochaeris radicata*), cock's foot (*Dactylis glomerata*), red fescue (*Festuca rubra*), ribwort plantain (*Plantago lanceolata*) and creeping buttercup (*Ranunculus repens*).

- 3.11 This grassland was previously assessed as 'modified – good' condition. However, updated metric condition assessment methodology (since the original survey) and it is considered that the site is more consistent with other neutral grassland in 'poor' condition.
- 3.12 *Whilst this habitat is relatively species poor across the site, the dominance of cats ear, cocks foot and red fescue and the limited nature of the perennial rye grass and white clover cover (less than 30% within the sward), and the dominance of cats ear (which accounts for 20% coverage of broadleaved herbs), allows for this grassland to be categorised as other neutral as it passes 3 out of the 4 criteria listed under UK Habs.*

### **Scattered Trees**

- 3.13 The site includes a cluster of scattered trees located in the north-western corner of the site, with other scattered trees located along the eastern boundary of the site. The cluster of trees contained Scots pine (*Pinus sylvestris*) and western red cedar (*Thuja plicata*). The trees located along the eastern boundary included horse chestnut (*Aesculus hippocastanum*), copper cherry (*Prunus serrula*), white willow (*Salix alba*), elm (*Ulmus procera*), purple Norway maple (*Acer platanoides*) and lilac (*Syringa vulgaris*). These scattered trees were condition assessed and were awarded a '**poor**' condition.

### **Hedgerows**

- 3.14 The site supported one hedgerow running down the western boundary of the site. This hedgerow was dominated by cherry laurel (*Prunus lauroceracus*).

### **Bramble Scrub**

- 3.15 There were areas of bramble scrub located around the scattered trees on site. This area was dominated by brambles (*Rubus fruticosus*), with frequent levels of cleavers (*Galium aparine*) and common ivy (*Hedera helix*).

## **Protected Species**

### **Bats**

- 3.16 The trees did not support potential roosting features and the majority are not a sufficient size or age to contain potential roosting features. As such, the trees have '**negligible**' suitability for roosting bats. There was one tree located on site that had a bat box, considering this, that tree has a '**high**' suitability for bats.

- 3.17 The building on site is a storage shed constructed of shiplap wood panelling with a corrugated bitumen felt roof. The inside of the building was well sealed, with the roof space being lined with chip board. The building did not contain a loft void, nor any suitable roosting features for bats. There were many single-paned windows located around the building, meaning that the internal space of the building was well lit during the day. Again, with no possible roof void present and the use of corrugated material on the roof and a lack of evidence of use, the building is considered to be **'negligible'** for roosting bats.

### *Badgers*

- 3.18 During the site visit, there were some droppings found that are suspected to be badger, although this could not be proven. There were no other signs of badger use on site, so it is considered that the site could be used for foraging and commuting by badger. As such, the site has been considered **'low'** potential for badgers.

### *Dormice*

- 3.19 The majority of the site is not suitable for dormice, due to the non-native cherry laurel hedgerow and a lack of linear native hedgerows. The site has limited connectivity to suitable off site habitats and the closest past EPS licence for dormice is located 5.3km south of the site. As such, it is considered that dormice are unlikely to be present within the site and, no further surveys are recommended and the species will not be discussed further within this report.

### *Great Crested Newts*

- 3.20 In terms of terrestrial habitats, the site is considered unsuitable due to the lack of cover from predators and high levels of disturbance.
- 3.21 Pond 1 was not able to be assessed at the time of the survey as it could not be accessed due to the presence of dense vegetation along the edge of the road. Pond 2 was subject to a Habitat Suitability Index (HSI) assessment (Table 2). The suitability index is calculated for each of the ten categories. These are then analysed using the equation below to obtain the geometric mean or HSI score of the ten suitability indices.

$$HSI = (SI_1 \times SI_2 \times SI_3 \times SI_4 \times SI_5 \times SI_6 \times SI_7 \times SI_8 \times SI_9 \times SI_{10})^{1/10}$$

- 3.22 The calculated score will fall within one of several bands, which correspond to a given category for the pond. Table 1 below shows the HSI scores and their corresponding pond suitability category.

**Table 1: HSI scores and pond suitability**

| HSI        | Pond Suitability |
|------------|------------------|
| < 0.5      | Poor             |
| 0.5 - 0.59 | Below Average    |
| 0.6 – 0.69 | Average          |
| 0.7 – 0.79 | Good             |
| > 0.8      | Excellent        |

**Table 2: HSI Score for Pond 2**

| Suitability Indices No. | Feature                           | Pond 2         |
|-------------------------|-----------------------------------|----------------|
| 1.                      | Location                          | 1              |
| 2.                      | Area                              | 1              |
| 3.                      | Permanence                        | 0.1            |
| 4.                      | Water quality                     | 0.67           |
| 5.                      | Shading                           | 1              |
| 6.                      | Presence of waterfowl             | 1              |
| 7.                      | Presence of fish                  | 1              |
| 8.                      | Pond density                      | 0.85           |
| 9.                      | Suitable newt habitat within 250m | 0.67           |
| 10.                     | Macrophyte content*               | 0.5            |
| 10 <sup>th</sup> root*  |                                   | 0.67           |
| Pond Suitability        |                                   | <b>Average</b> |

- 3.23 *\*It should be noted that the assessment was conducted out of the recommended season for Macrophyte and Shading features. However, the presence of woody vegetation around the ponds meant that shading estimates were possible, whilst lack of aquatic vegetation growth meant that Macrophyte content was not. Macrophyte scores were therefore omitted from the calculations, and the '9<sup>th</sup> root' was given for each pond to reflect this.*

### **Birds**

- 3.24 The hedgerow and trees have the potential to support nesting birds.

### ***Reptiles***

- 3.25 The site has negligible opportunities to support reptiles as most of the grassland supports a short sward height and is regularly managed. As such, it is considered that reptiles are unlikely to be present within the site and, no further surveys are recommended and the species will not be discussed further within this report.

### ***Other Species***

- 3.26 Hedgehogs may use the boundary features for foraging and commuting.
- 3.27 Due to a lack of suitable habitat, the site was not considered suitable for other protected species, such as water voles and otters.

## **4.0 DISCUSSION**

- 4.1 The following paragraphs consider the effects of the development on designated sites, priority habitats and protected and priority species. Where the desk study and Phase 1 survey provide sufficient evidence for an assessment of effects on any of these groups to be taken through planning, these are detailed below, the need for additional surveys and when and how these should be completed are summarised, if required.
- 4.2 Provisional recommendations are also given for means to enhance biodiversity net gain, following the principle (CIEEM et al. 2016) of following the mitigation hierarchy of; avoidance, minimisation of loss, compensation on site and biodiversity offset.

### **Effects on Designated Sites**

- 4.3 The site does not fall within or adjacent to any statutory sites.
- 4.4 The closest international designated site is Thames Basin Heaths SPA which is approximately 5.5km southwest. At this distance, it is considered that there are no direct impacts in terms of habitat loss, or indeed the isolation or fragmentation of habitats. Furthermore, the distances involved reduce impacts resulting from changes to lighting, water runoff and impacts resulting from construction.
- 4.5 As the proposals are not for residential development, and for a community store, no other impacts resulting in development are considered likely. As such, the redevelopment of this site will not impact upon the integrity of the SPA.

- 4.6 The closest designated site is Pearman's Copse LNR located approximately 1.6km north-east of the site and the Impact Risk Zones do not indicate the development will have any likely impact on statutory designated sites. There are no non-statutory designated sites within 1km of the site. As such, due to the distance from these designated sites, it is considered the proposed development will have no direct or indirect impact on this site or any other statutory designated sites.

#### **Effects on Priority Habitats**

- 4.7 There are a number of priority habitats within the wider landscape, the closest being deciduous woodland located 530m south-east of the site. Considering the nature and scale of the proposed development no impacts upon the integrity of these habitats is considered.

#### **Effect on On-site Habitats – Biodiversity Net Gain Assessment**

- 4.8 The Statutory Metric (which is the current metric) is used to calculate biodiversity losses and gains for terrestrial habitats within the application area. This metric underpins the Environment Bill's provisions for mandatory biodiversity net-gain in England and defines 'measurable' net gains.
- 4.9 The Biodiversity Metric uses habitat as a proxy for wider biodiversity with different habitat types scoring different values according to their relative biodiversity value. These are dependent on the condition and location of the habitat, in order to calculate 'biodiversity units'.
- 4.10 The site has been assessed in terms of the condition assessment during the PEA in 2023, following the standard metric guidelines. The grasslands were each assessed using the 'condition assessments' as provided in the accompanying DEFRA Metric 4.0 (Ref Natural England Joint Publication JP039 SIBN 978-1-7393362-2-6 March 2023) and the Statutory Biodiversity Metric – Technical Annex 1: Condition Assessment Sheets and Methodology February 2024
- 4.11 The proposed development will remove the current building and some of the area of hardstanding and will also result in the removal of a section of grassland on the site.
- 4.12 The proposed development will also result in new areas of species rich grassland and scrub. The habitat baseline is detailed in Figure 8 (2023) and Figure 9 (2024)

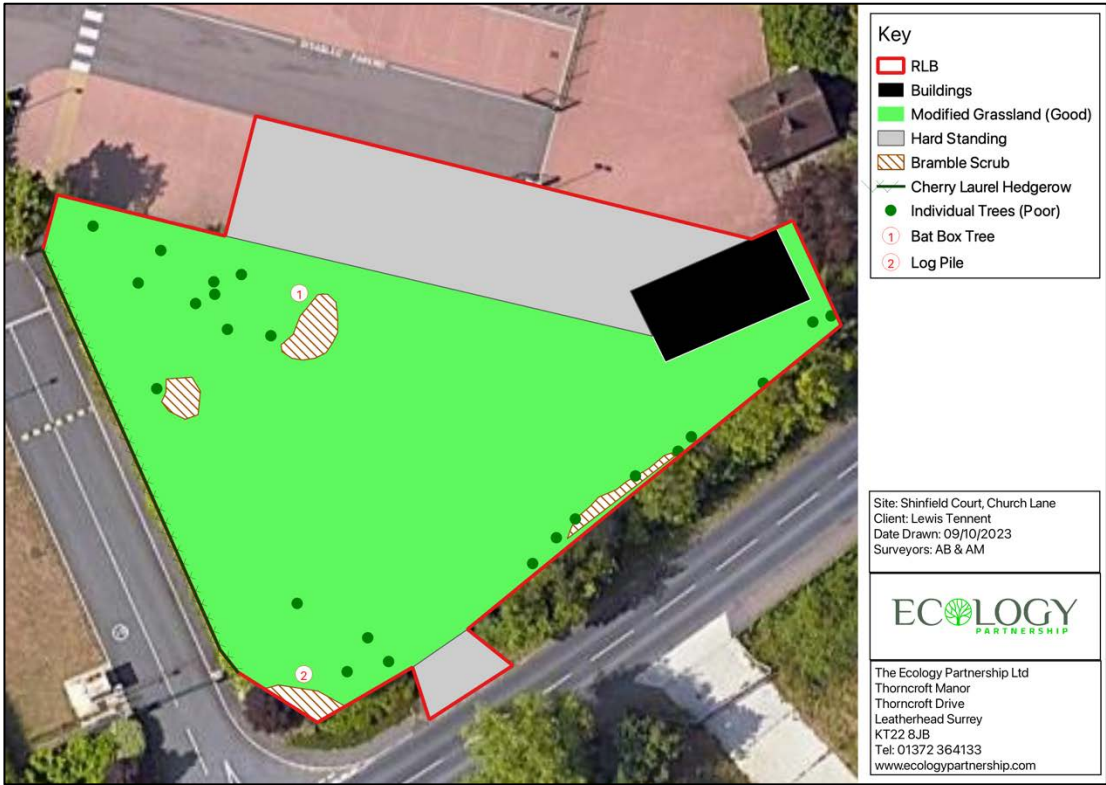


Figure 8: Habitat Baseline 2023



Figure 9: Habitat Baseline 2024

NB there is a change in the red line and the grassland has been reclassified as 'other neutral grassland in poor condition'



Figure 10: Habitat creation 2023



Figure 11: Habitat Creation 2024

- 4.13 The changes to the red line boundary and the layout are shown in Figures 8, 9, 10 and 11. It can be seen that the largest change in the post development habitat creation in 2024, is a larger area of hardstanding. The proposals in 2024 will result in the removal of many of the trees on site, a total of two new trees will be planted.
- 4.14 The building will support an area of green roof. It is considered that this will be sedum roof, and has been classified as 'other green roof' within the Statutory Metric.
- 4.15 It can be seen in Figure 12 below, that the development results in **-31.77%** in habitats and **-10.34%** in linear units.
- 4.16 However, it must be noted that in terms of unit deficit, the units are small, with 0.38 units required to reach 10% net gain and 0.02 linear units. These can be purchased from organisations such as the Environment Bank and the purchase can be secured by condition.

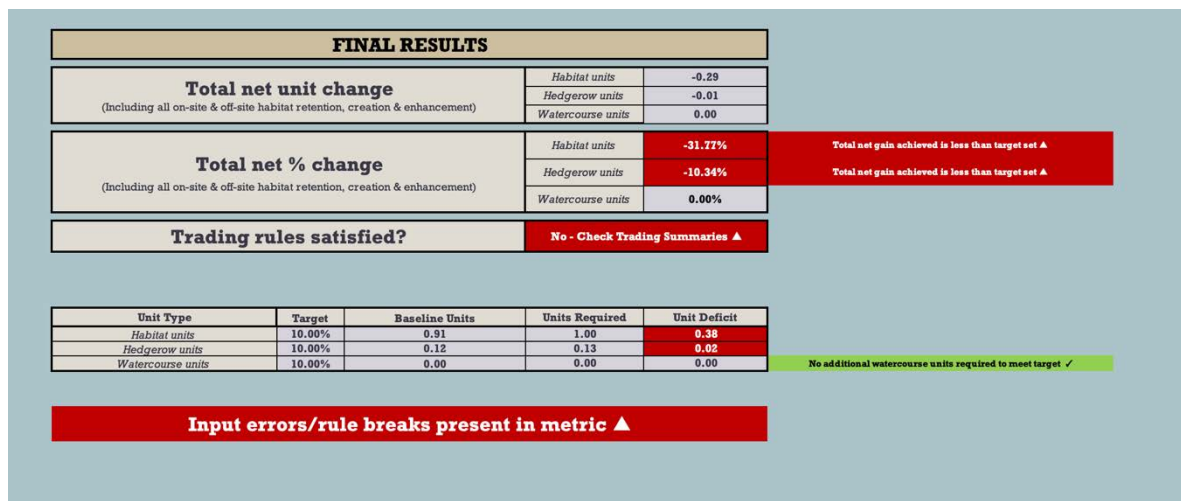


Figure 12: Headline Results – Statutory Metric

## Effects on Protected Species

### Bats

- 4.17 The all trees but one had a '**negligible**' potential to support roosting bats, other than the tree with a bat box which automatically had a '**high**' suitability for bats. The building located on site was considered to have '**negligible**' potential to support bats. As the building is not considered to be suitable for bats, this building can be removed without any further surveys or species specific compensation.

4.18 According to Bat Conservation Trust guidelines, it is important that proportionality is employed when recommending further survey work for bat species on a proposed development site. As stated within section 8.2.7 of the latest survey guidelines (2016), the following points need to be taken into account with regard to planning activity surveys:

- Likelihood of bats being present;
- Likely species concerned;
- Number of individuals;
- Type of habitat affected;
- Predicted impacts of the proposed development on bats;
- Type and scale of proposed development.

4.19 Considering the above and the relatively small scale of the proposals, with the majority of the development located on hardstanding and amenity grassland, and limited suitable habitat removal, it is considered that transect surveys for bats would not be required. Furthermore, it is considered that the development of the site would not impact upon the ecological functionality of the local landscape.

4.20 Any proposed lighting scheme as part of the development must consider bats in the surrounding area as well as site. All bat species are nocturnal, resting in dark conditions in the day and emerging at night to feed. Bats are known to be affected by light levels, which can affect both their roosting and foraging behaviour. This needs to be considered with a sympathetic lighting scheme for the development. Recommendations include:

- Installing lighting only if there is a significant need;
- Using sodium lamps instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics;
- Directing lighting to where it is needed and avoiding light spillage;
- Using baffled lighting where light is directed towards the ground and
- Avoid putting lighting near trees suitable for roosting bats, woodland, trees or hedgerows and angling light away from these linear features which are used by commuting and foraging bats.

#### GCNs

4.21 Pond 2, located 245m west of the site, was considered to have an '**average**' suitability according to the HSI assessment. At this distance and the extent of the proposed works

the GCN risk calculator stated that it is **highly unlikely** that the development would harm GCN.

- 4.22 However, Pond 1 is closer to the site, located across the road, approximately 25m from the redline boundary, albeit the presence of this pond can not be confirmed. The amount of vegetation lost is approximately 0.061ha, with additional areas of hardstanding lost through the development process. At this distance, even this small loss of sub optimal habitat is considered an 'amber' offense likely, see figure 11 below.

| Component                                | Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom) | Notional offence probability |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Great crested newt breeding pond(s)      | No effect                                                                                                                                           | 0                            |
| Land within 100m of any breeding pond(s) | 0.01 - 0.1 ha lost or damaged                                                                                                                       | 0.3                          |
| Land 100-250m from any breeding pond(s)  | No effect                                                                                                                                           | 0                            |
| Land >250m from any breeding pond(s)     | No effect                                                                                                                                           | 0                            |
| Individual great crested newts           | No effect                                                                                                                                           | 0                            |
|                                          | Maximum:                                                                                                                                            | 0.3                          |
| Rapid risk assessment result:            | <b>AMBER: OFFENCE LIKELY</b>                                                                                                                        |                              |

*Figure 11: Licence risk assessment*

- 4.23 However, the pond is separated from the redline boundary by a road. Whilst this road is not a busy road, it supports two lanes, with kerbs and gulley pots, and is considered a reasonable barrier to dispersal. Furthermore, as the habitats within the redline boundary do not support habitats for breeding GCN (i.e. there are no ponds present) and are limited in their potential for supporting foraging or hibernating newts (the habitat are managed), it is considered that there would be no advantage for GCNs to move within the on site habitats.
- 4.24 Where present, great crested newts tend to remain in close proximity to their breeding pond and whilst a maximum routine migratory range has been estimated as approximately 250m from a breeding pond (Franklin, 1993; Oldham and Nicholson, 1986; Jehle, 2000), one study by Robert Jehle, (2000) demonstrated a 'terrestrial zone' of 63m, within which 95% of summer refuges were located. A further study (Jehle, R & Arntzen, JW. 2000) showed that after the breeding season 64% of newts were recorded within 20m of the pond edge.
- 4.22 Research has also found that newts can travel varying distances. Movement and activity of newts from ponds depends on the surrounding habitat. If local refuges and food are abundant in habitats close to the pond, then newts are likely to remain in this area exploiting such resources. In terms of the off-site pond, Pond 1, it is considered

likely that any GCNs that might be present would use the wooded areas surrounding the pond as opposed to the hard-standing and modified and managed grassland present on site.

- 4.25 Research has shown that GCNs have a higher affinity for wooded habitats (Cresswell *et al.*, 2004) since they provide both shelter and humid microclimates to a much greater extent than habitats such as grassland or managed habitat. GCNs use old woodland stumps and piles of old leaves as damp refuge but also take advantage of the heat produced from decomposing plant materials, all of which are not found within the hard-standing areas and modified grassland to be affected.
- 4.26 Taking this into consideration, it is considered that no further surveys are necessary so long as Reasonable Avoidance Measures (RAMS) are carried out when undertaking ground works on site.

***Reasonable Avoidance Measures (RAMS)***

- 4.27 The managed grassland on site is considered to provide sub optimal habitat for GCNs, as GCNs are known to show a preference for woodland habitats, and managed grassland does not provide the humidity and the niches that area associated with their terrestrial requirements. However, GCNs can cross grassland habitats and as such a precautionary method of works has been recommended.
- 4.28 Mitigation for GCN is as follows:
- Any potential refugia within development areas will need to be dismantled by hand or using sensitive machine work under close supervision of an ecologist;
  - Rough grassland and ruderal habitats or scrub and tree line habitats will need sensitive clearance under ecological supervision to ensure GCN are not present. The process entails first a 'sensitive strim' to around 150mm followed by a visual inspection and fingertip search by an ecologist. This is followed by the final cut of the vegetation close to ground level if required;
  - Final clearance works and sensitive soil / tree root removal will also be carried out under the supervision of an ecologist; and
  - Note that some of the cleared plant material can remain on site. Woody arisings can be used to build habitat piles and soft vegetation or grass cuttings can be used to create compost heaps within the retained tree lines on site (as part of the enhancements) since these will benefit GCN during the cooler seasons.

- 4.29 During development work construction materials, as well as skips and pallets, should be stored on hardstanding where possible and furthermore, should be elevated off the ground. This is so that no features are created that GCN could potentially use as refuge habitat.
- 4.30 Where trenches and holes are dug, these should not be left open overnight. GCN (and other amphibians, reptiles and small mammals) may get trapped in vertical-sided trenches. Therefore, where there is a risk of this occurring, the holes should be refilled, or planks of wood should be placed so that any trapped animals may use these to escape.
- 4.31 If a great crested newt is identified on site during works, then the following procedure must be followed;
- If a great crested newt is discovered at the site all works must cease immediately and Natural England and/or a great crested newt licenced ecologist must be contacted immediately to provide further advice.
  - A licence might be required before works can recommence. If so, procedures will be followed to obtain a Natural England European Protected Species Mitigation Licence (EPSML) or the district level licence for the works.
- 4.32 It is considered that if these methods are used on site then it is considered that no individual GCN would be harmed as a result of the proposals.

### *Badgers*

- 4.33 Potential badger excrement was found on site, and as such there is potential for the site to support foraging and commuting badgers. Whilst no badgers setts are present on site and no further surveys are recommended, consideration for badgers in the wider landscape is recommended.
- 4.34 Best practice construction measures should be undertaken to avoid impacting badgers and other mammals, including rabbits which were observed on site. The guidelines are as follows:
- Any trenches or excavations on site should be either covered over at night or a plank of wood placed in to allow any mammals to escape if they were to accidentally fall in.

- Any open pipes or conduits laid should be blocked off each night to prevent any mammals from entering them.
- Disturbances, such as loud noises, vibrations and flood lighting in association with night work should be minimised.

### ***Birds***

- 4.35 It is recommended that vegetation removal is undertaken outside of the breeding bird season (March-September inclusive) or immediately after a nesting bird check by a suitably qualified ecologist. If active nests are identified, works in the vicinity of the nest must cease until the birds have fledged the nest.

### **Ecological Enhancements**

- 4.36 Several enhancements can be made to the final development to further biodiversity net gain. Planning policy also encourages developments to improve biodiversity, therefore some recommended ecological enhancements to be considered are included below.
- 4.37 Bird boxes can be hung on mature trees within the site to increase the number of breeding opportunities. Woodcrete (or similar) boxes (Figure 13) are recommended as they provide better thermal properties, are longer lasting and more durable than wooden boxes. These should be positioned at least 2.5m from ground level.



*Figure 13: 2GR Schwegler Nest Box.*

- 4.38 Bat boxes can be hung on mature trees around the site to create new roosting opportunities. Recommended boxes include:

- Vivara Pro WoodStone Bat Box – A general purpose bat box that supports a range of species (Figure 14). These can be hung on trees in a variety of heights and aspects in order to provide a variety of micro-climates.
- Large Multi Chamber WoodStone Bat Box – This is a multipurpose box designed for larger colonies and a range of bat species including pipistrelles, noctules and brown long-eared bats. These should be hung on mature trees around the site (Figure 14).



*Figure 14: Vivara Pro WoodStone Bat Box (left) and Large Multi Chamber WoodStone Bat Box (right)*

4.39 It is also recommended that log piles are created along the field margins. Log piles offer shelter for hibernating small mammals and insects, as well as a foraging area for some birds. Recommended structures for the log piles are shown in Figure 15 below.



*Figure 15: Examples of log piles that can be made on site.*

## 5.0 IMPACT ASSESSMENT

5.1 This section of the report forms an EcIA (Ecological Impact Assessment) and is designed to quantify and evaluate the potential impacts of the development on habitats and species present on site or within the local area.

*Table 3: Assessment of effects from the proposal after mitigation and compensation*

| Feature                                   | Scale of Importance | Mitigation/Compensation Required                                                                                                                                                                                                           | Residual Effect |
|-------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| International statutory designated sites  | International       | The Thames Basin Heaths (SPA) are located approximately 5.5km from the site, at this distance, the site lies outside the 5km buffer for the SPA.                                                                                           | Not significant |
| Priority habitats                         | National            | The nearest priority habitat is deciduous woodland located approximately 530m south-west of the site, at this distance and the scale of works, no impact is expected.                                                                      | Not significant |
| On site habitats                          | Local               | The proposed development will result in a biodiversity net gain.                                                                                                                                                                           | Not significant |
| Bat (roosting)                            | Local               | Trees retained on site.<br><br>Mitigation/Enhancement in the form of the installation of bat boxes and habitat creation.                                                                                                                   | Not significant |
| Bats (commuting and foraging)             | Local               | Mitigation/Enhancement in the form of the installation of sensitive lighting and native planting.                                                                                                                                          | Not significant |
| Breeding Birds                            | Site                | Mitigating direct harm to nests by removal of any suitable nesting habitat outside of nesting bird season or after a check by a suitably qualified ecologist.<br><br>Mitigation/Enhancement in the form of the installation of bird boxes. | Not significant |
| Badgers                                   | Site                | Construction safeguards should be implemented to avoid impacting badgers that might commute or foraging within the site.                                                                                                                   | Not significant |
| GCNS                                      | Local               | Sensitive clearance and construction safeguards will avoid impacts                                                                                                                                                                         | Not significant |
| Dormice, reptiles, water voles and otters | N/A                 | Considered unlikely to be present on site.                                                                                                                                                                                                 | Not significant |

## 6.0 CONCLUSIONS

6.1 The nearest internationally designated site is Thames Basin Heaths SPA located approximately 5.5km south-west of the site. At this distance, the site lies outside the zone of influence for the SPA (400m – 5km). Furthermore, the development is non residential and therefore no impacts resulting from housing are to occur.

- 6.2 Pearman's Copse LNR is located approximately 1.6km north-east of the site. The Impact Risk Zones indicate the development will not have any likely impact on statutory designated sites. Due to the distances involved, it is considered the proposed development will have no direct or indirect impacts on any designated sites.
- 6.3 The proposed development will result in **-38.06%** in habitats and **-10.34%** in linear units. As such, credits will need to be purchased. This can be secured by condition.
- 6.4 The pond over the road was not possible to access, however, considering the road as a barrier to dispersal, the lack of suitable habitats on site, and the small scale development works, no further surveys are recommended. However, RAMS have been recommended for clearance and construction works. Works must cease if a GCN is identified on site.
- 6.5 During the site visit, there was faeces found that were considered likely to be from badgers, but no other evidence of badger activity such as sett entrances, faeces, or badger hairs, was recorded within the site. As a precaution, it is recommended that precautionary construction measures are implemented to avoid impacting badgers and small mammals that might forage and commute on the site.
- 6.6 Birds may use the woodland and hedgerows for nesting. Any works to these features should therefore be undertaken outside of bird nesting season (March – September inclusive) or after a nesting bird check by a qualified ecologist.
- 6.7 The site supports no suitable habitat for dormice, reptiles, water voles, or otters. Therefore, further surveys for these species groups are not considered necessary.
- 6.8 Recommendations for enhancements have been made within this report, aimed at improving the site's ecological value.

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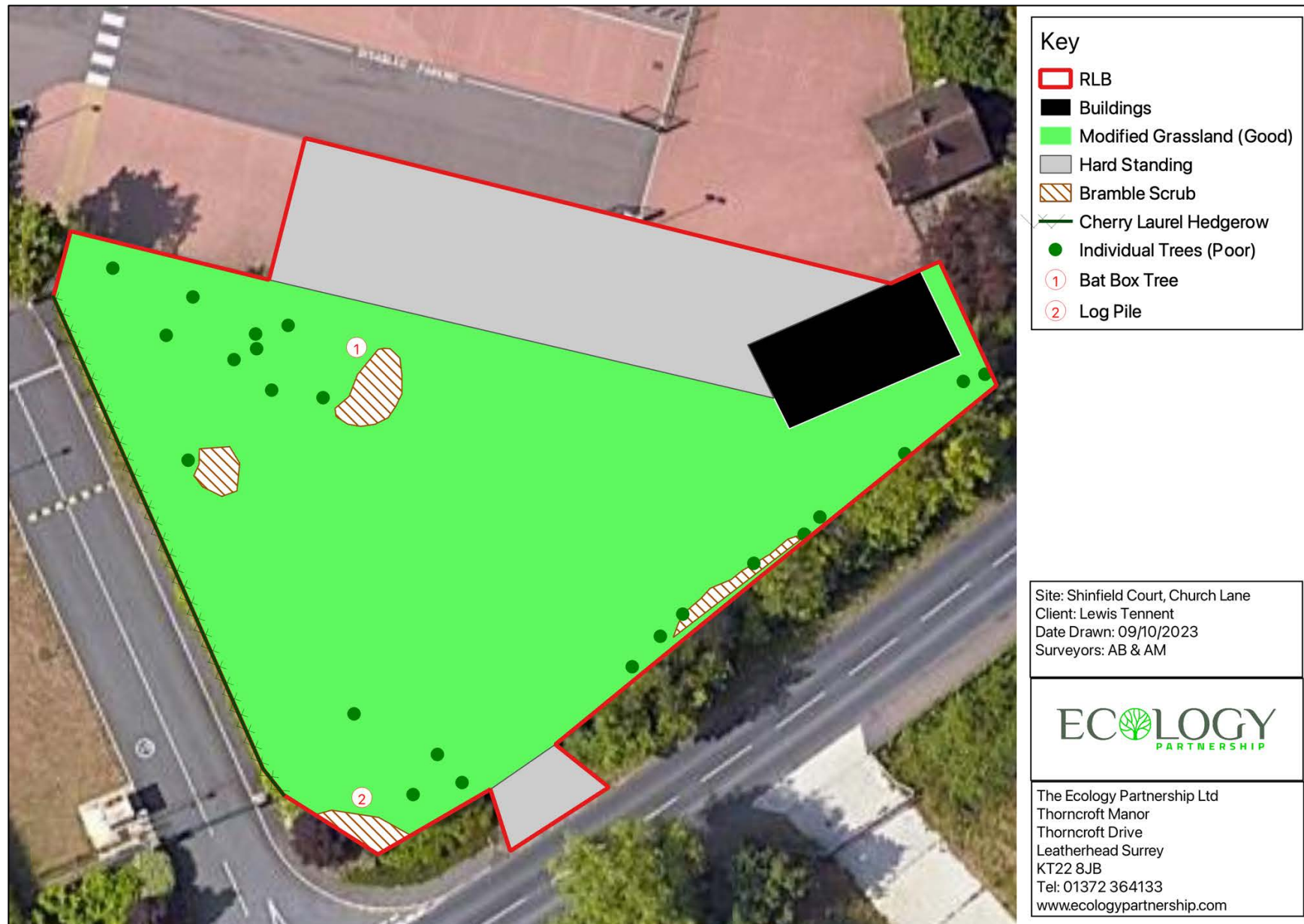
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***Internet resources:***

Google Maps: [www.google.co.uk/maps](http://www.google.co.uk/maps)

Magic Interactive Map: [www.magic.gov.uk](http://www.magic.gov.uk)

## Appendix 1: Habitat Map 2023



## Appendix 2: Habitat Map 2024



## Appendix 3 Condition Assessment

| Condition Sheet: GRASSLAND Habitat Type (medium, high & very high distinctiveness)           |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| UKHab Habitat Type(s): All other grassland types and tall ruderal (ie. not amenity/modified) |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |
| Condition Assessment Criteria                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Grassland 1                            |
| A                                                                                            | The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relative to Footnote 3 suboptimal species which may be listed in the UKHab description). <sup>1</sup><br><br><b>Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.</b>                             | Fail                                   |
| B                                                                                            | Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.                                                                                                                                                                                                                                  | Fail                                   |
| C                                                                                            | Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens <sup>2</sup> .                                                                                                                                                                                                                                                                                                                                    | Pass                                   |
| D                                                                                            | Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.                                                                                                                                                                                                                                                                                                   | Pass                                   |
| E                                                                                            | Combined cover of species indicative of sub-optimal condition <sup>3</sup> and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.<br><br>If any invasive non-native plant species <sup>4</sup> (as listed on Schedule 9 of WCA <sup>5</sup> ) are present, this criterion is automatically failed. | Pass                                   |
| <b>Additional Criterion - must be assessed for all non-acid grassland types</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |
| F                                                                                            | There are 10 or more vascular plant species per m <sup>2</sup> present, including forbs that are characteristic of the habitat type (species referenced in Footnote 3 and 5 cannot contribute towards this count).<br><br><b>Note - this criterion is essential for achieving Good condition for non-acid grassland types only.</b>                                                                                                                 |                                        |
| <b>Condition</b>                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Poor (default condition A fail)</b> |
| Condition Assessment Result                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |
| <b>Good</b>                                                                                  | Passes 5 of 6 criteria, including essential criterion A and F                                                                                                                                                                                                                                                                                                                                                                                       |                                        |
| <b>Moderate</b>                                                                              | Passes 3 or 4 of 6 criteria, including essential criterion A                                                                                                                                                                                                                                                                                                                                                                                        |                                        |
| <b>Poor</b>                                                                                  | Passes 0, 1, 2 criteria of 6 criteria; OR Passes 3 or 4 criteria excluding criterion A and F                                                                                                                                                                                                                                                                                                                                                        |                                        |

**Footnote 1** – Professional judgement should be used alongside the UKHab description.

**Footnote 2** – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches where not exceeding 5% cover.

**Footnote 3** – Species indicative of suboptimal condition for this habitat type include: creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius*, common nettle *Urtica dioica*, creeping buttercup *Ranunculus repens*, greater plantain *Plantago major*, white clover *Trifolium repens* and cow parsley *Anthriscus sylvestris*.

**Footnote 4** – Assess this for distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into the adjacent habitat, by applying professional judgement.

**Footnote 5** – Wildlife and Countryside Act 1981 (as amended)

| Condition Sheet: INDIVIDUAL TREES Habitat Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                          |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| <b>UKHab Habitat Type(s):</b> Urban tree: Covers the following topographical formations most commonly found in urban areas <sup>1</sup> :<br><b>Individual Trees (urban or rural):</b> Young trees over 75mm in diameter at breast height whose canopies are not touching.<br><b>Urban Perimeter / Linear Blocks and Groups (description applied to the urban environment only):</b><br>Groups or stands of trees (size requirement as defined above) within and around the perimeter of urban land. This includes those along urban streets, highways, railways and canals, and also former field boundary trees incorporated into developments. Canopies must overlap continuously. Groups of urban trees that don't match the descriptions for woodland may be assessed within this category. |                                                                                                                                                                                                                                                                                          |        |
| Condition Assessment Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                          | Area 1 |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | The tree is a native species (or at least 70% within the block are native species).                                                                                                                                                                                                      | Fail   |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).                                                                                          | Fail   |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | The tree is mature (or more than 50% within the block are mature).                                                                                                                                                                                                                       | Pass   |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain > 75% of expected canopy for their age range and height. | Fail   |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.                                                                                                                                                      | Fail   |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | More than 20% of the tree canopy area is oversailing vegetation beneath.                                                                                                                                                                                                                 | Pass   |
| Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                          | Poor   |
| Condition Assessment Result                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                          |        |
| Good                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Passes 5 or 6 criteria                                                                                                                                                                                                                                                                   |        |
| Moderate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Passes 3 or 4 criteria                                                                                                                                                                                                                                                                   |        |
| Poor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Passes 2 or fewer criteria                                                                                                                                                                                                                                                               |        |
| <b>Footnote 1 - Veteran trees</b> can be classified if they have four out of the five following features:<br>1. Rot sites associated with wounds which are decaying >400cm <sup>2</sup> ; 2. Holes and water pockets in the trunk and mature crown >5 cm diameter;<br>3. Dead branches or stems >15 cm diameter; 4. Any hollowing in the trunk or major limbs;<br>5. Fruit bodies of fungi known to cause wood decay.                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                          |        |

## Appendix 4: Species Lists

| Common name              | Latin name                    | DAFOR score |
|--------------------------|-------------------------------|-------------|
| <b>Scattered Trees</b>   |                               |             |
| Scots Pine               | <i>Pinus sylvestris</i>       | F           |
| Western Red Cedar        | <i>Thuja plicata</i>          | F           |
| Horse Chestnut           | <i>Aesculus hippocastanum</i> | O           |
| Elm                      | <i>Ulmus procera</i>          | O           |
| Purple Norway Maple      | <i>Acer platanoides</i>       | O           |
| Oak Sapling              | <i>Quercus robur</i>          | R           |
| Copper Cherry            | <i>Prunus serrula</i>         | R           |
| White Willow             | <i>Salix alba</i>             | R           |
| Common Lilac             | <i>Syringa vulgaris</i>       | R           |
| <b>Hedgerow 1</b>        |                               |             |
| Cherry Laurel            | <i>Prunus lauroceracus</i>    | D           |
| <b>Hard Standing</b>     |                               |             |
| Common Cudweed           | <i>Filago vulgaris</i>        | R           |
| <b>Grassland</b>         |                               |             |
| Cat's-Ear                | <i>Hypochaeris radicata</i>   | F           |
| Cock's Foot              | <i>Dactylis glomerata</i>     | F           |
| Red Fescue               | <i>Festuca rubra</i>          | F           |
| Ribwort Plantain         | <i>Plantago lanceolata</i>    | F           |
| Creeping Cinquefoil      | <i>Potentilla reptans</i>     | LF          |
| Yorkshire Fog            | <i>Holcus lanatus</i>         | O           |
| Bristly Oxtongue         | <i>Helminotheca echioides</i> | O           |
| Dove's-Foot Crane's-Bill | <i>Geranium molle</i>         | O           |
| Herb Robert              | <i>Geranium robertianum</i>   | O           |
| Common Daisy             | <i>Bellis perennis</i>        | O           |
| Creeping Thistle         | <i>Cirsium arvense</i>        | O           |
| Perennial Ryegrass       | <i>Lolium perenne</i>         | O           |
| Dandelion                | <i>Taraxacum officinale</i>   | R           |
| Cleavers                 | <i>Galium aparine</i>         | R           |
| Nipplewort               | <i>Lapsana communis</i>       | R           |
| Common Nettle            | <i>Urtica dioica</i>          | R           |
| Stone Parsley            | <i>Sison amomum</i>           | R           |
| Caper Spurge             | <i>Euphorbia lathyris</i>     | R           |
| Black Medic              | <i>Medicago lupulina</i>      | R           |
| Willowherb sp.           | <i>Epilobium sp.</i>          | R           |
| Spear Thistle            | <i>Cirsium vulgare</i>        | R           |
| Forget-Me-Not            | <i>Myosotis sylvatica</i>     | R           |
| Ragwort                  | <i>Jacobaea vulgaris</i>      | R           |
| Groundsel                | <i>Senecio vulgaris</i>       | R           |

|                      |                               |   |
|----------------------|-------------------------------|---|
| Broadleaf Dock       | <i>Rumex obtusifolius</i>     | R |
| Bindweed             | <i>Convolvulus prostratus</i> | R |
| Redshank             | <i>Persicaria maculosa</i>    | R |
| Stinking Iris        | <i>Iris foetidissima</i>      | R |
| <b>Bramble Scrub</b> |                               |   |
| Bramble              | <i>Rubus fruticosus</i>       | D |
| Cleavers             | <i>Galium aparine</i>         | F |
| Common Ivy           | <i>Hedera helix</i>           | F |
| Wood Dock            | <i>Rumex sanguineus</i>       | R |
| Cow Parsley          | <i>Anthriscus sylvestris</i>  | R |
| Bluebell sp.         | <i>Hyacinthoides sp.</i>      | R |

Appendix 5: Site Photographs

|                                                               |                                                                                     |
|---------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <p><b>Photograph 1:</b> Exterior of the building on site.</p> |   |
| <p><b>Photograph 2:</b> Interior of the building on site.</p> |  |

**Photograph 3:** The area of grassland located on site, with some individual trees. Facing the southern boundary.



**Photograph 4:** Cluster of trees located in the north-west corner of the site, comprised of scots pine and western red cedar.



**Photograph 5:** Bat box located on a scots pine within the cluster of trees.



**Photograph 6:** Suspected badger faeces found in the north-west corner of the site.



|                                                                                                   |                                                                                      |
|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <p><b>Photograph 7:</b> Cherry laurel hedgerow running down the western boundary of the site.</p> |    |
| <p><b>Photograph 8:</b> Log pile located in the south-western corner of the site.</p>             |   |
| <p><b>Photograph 9:</b> Area of hardstanding located in the northern aspect of the site.</p>      |  |

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