# PRELIMINARY ECOLOGICAL APPRAISAL AND GREEN INFRASTRUCTURE STATEMENT

OAK VIEW CHAPEL LANE, WREXHAM

13 May 2024

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# 1 INTRODUCTION

## 1.1 Background Information

1.1.1 Sambrook Associates Ltd was instructed by Cassidy and Ashton to undertake a Preliminary Ecological Appraisal (PEA) in relation to the installation of eight timber pods on land at the back of Oak View, Chapel Lane, Wrexham.

1.1.2 As part of the Appraisal, a site walk-over of the Site and a desktop study were undertaken in 2024. This report provides the results of these, as well as an appraisal of the potential effects the proposed development may have on biodiversity, and recommendations for further survey, mitigation and enhancement, where required. A Green Infrastructure Statement is also included in this report.

1.1.3 The aim of the appraisal is to provide sufficient ecological information to inform the planning application. The objectives of the study were to:

- Provide baseline information on the current ecological features both on-site and in the immediate surrounding area (up to 30m where accessible);
- Identify the presence or potential presence of any protected species or habitats and provide an appraisal of potential effects that the proposed development may have on these;
- Identify the proximity of any sites designated for nature conservation interest and provide an appraisal of potential effects that the proposed development may have on these; and
- Provide recommendations for further survey work and / or mitigation measures if required and present opportunities for habitat enhancement.

1.1.4 In consideration of the nature and location of the proposed work all key sites, habitats and species are considered in this report.

## 1.2 Site Description

1.2.1 The Site is located in a rural setting to the south of the village of Bronington. The site is a large field with trees at the back of a residential property adjacent to Fenn's, Whixhall and Bettisfield Mosses.

1.2.2 The proposed development is hereby referred to as the Site and comprises the land within the red-line boundary. The walk-over survey covered an area greater than this (where access permitted) for mobile species such as great crested newts, badgers, water vole and otter and to look at how nearby habitats may influence the use of the site by bats.

# 2 LEGISLATION AND PLANNING POLICY

2.1.1 Many sites, animals and plants are protected by European and/or UK legislation either because of their decline across Europe and the UK or due to the persecution they have placed upon them by negligent or illegal acts such as baiting or trade. Legislation is also in place to prevent the spread of introduced or non-native invasive species and harmful weeds. When undertaking an appraisal of a proposed development, such legislation is taken into account as follows.

- **European:** Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive'); and Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds (codified version of Directive 79/409/EEC as amended) (the 'Birds Directive').
- **UK (England & Wales):** The Conservation of Habitats and Species Regulations 2017, as amended (the 'Habitat Regulations') which transposes the Habitats Directive in UK law. Since 1st January 2021, the UK is no longer a member of Europe but since the Habitats Directives are embedded into UK statute, The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 was published and still applies in England and Wales; The Wildlife and Countryside Act 1981 (as amended); the Countryside and Rights of Way Act (CRoW) 2000; the Protection of Badgers Act 1992; the Natural Environment and Rural Communities Act (NERC) (2006) and the Environmental Protection Act (EPA) 1990.

2.1.2 Species such as bats, great crested newts, otter, water vole, reptiles, birds and badgers are all protected to varying degrees under this legislation.

2.1.3 The Environment (Wales) Act 2016 introduced an enhanced biodiversity and resilience of ecosystems duty (Section 6 Duty). This duty applies to public authorities in the exercise of their functions in relation to Wales and will help maximise contributions to achieving the well-being goals. The Nature Recovery Action Plan supports this legislative requirement to reverse the decline in biodiversity, address the underlying causes of biodiversity loss by putting nature at the heart of decision-making and increasing the resilience of ecosystems by taking specific action focused around the 6 objectives for habitats and species.

2.1.4 In addition to legislation, there are also national and local planning policies pertaining to the protection of biodiversity. Planning Policy Wales (PPW) Edition 12 (February 2024) requires the planning system to have a key role in helping to reverse the decline in biodiversity and increasing the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement. Development plan strategies, policies and development proposals must consider the need to:

- support the conservation of biodiversity, in particular the conservation of wildlife and habitats;
- ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;

- ensure statutorily and non-statutorily designated sites are properly protected and managed;
- safeguard protected and priority species and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil, including peat;
- secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks;
- provide measurable biodiversity net benefit which is secured through the production and implementation of a Green Infrastructure Statement which comprises a commitment to biodiversity gain through the creation and long term management of valuable habitats.

2.1.5 To accompany the PPW, Technical Advice Note 5 (TAN5) demonstrates how local authorities, developers and stakeholders can deliver sustainable development that does not result in losses to biodiversity and takes the opportunity to protect and enhance it. Denbighshire council also have their own guidance and local policy to promote ecological resilience in their decision making.

2.1.6 Under the NERC Act, local authorities (and other public bodies) have a duty to conserve biodiversity. The Act confers responsibility on the local authority to take the protection of priority habitats and species (as listed in Section 41) into consideration when making a planning decision. Habitats listed in this section include eutrophic standing waters, rivers, lowland meadows and lowland mixed deciduous woodland. Species listed in this section include great crested newt *Triturus cristatus*, sky lark *Alauda arvensis*, hedgehog *Erinaceus europaeus*, otter *Lutra lutra*, soprano pipistrelle *Pipistrellus pygmaeus* and red squirrel *Sciurus vulgaris.* Full habitats and species' lists can be found at the Natural History Museum website, nhm.ac.uk or jncc.defra.gov.uk.

2.1.7 The RSPB's Birds of Conservation Concern 3' (Eaton et al., 2009) is also taken into consideration when undertaking this appraisal.

# 3 METHODOLOGY

## 3.1 Introduction

3.1.1 To inform this Ecological Appraisal, a site walk-over survey was conducted on 13 February 2024 which comprised recording of habitats within the Site. The survey also included potential for protected and notable species, and invasive species such as Japanese knotweed *Fallopia japonica* and Himalayan balsam *Impatiens glandulifera*. In addition to this, a desk-top study was also undertaken.

## 3.2 Desk-top Study

3.2.1 The desktop study involved publicly available data searches for statutory and non-statutory sites, legally protected species and other features of interest within a 1km radius of the site. The centre of the site (Ordnance Survey Grid Reference SJ48803805) was used for the data search.

3.2.2 The following sources were searched for information about the Site:

- Defra's 'MAGIC' website;
- Google Earth;
- Bing Maps; and
- Wrexham Council website.

## 3.3 Walk-over Survey

3.3.1 The purpose of the survey was to determine:

- the habitats present;
- legally protected species potentially present;
- the presence of invasive plant and animals;
- any potential constraints to development; and
- any requirement for additional ecological surveys.

3.3.2 The weather was cool with an average temperature of 5°C.

3.3.3 The Site and immediately adjacent areas (up to 30m) were searched for evidence of protected species that may occur in this area such as bats, birds, great crested newts *Triturus cristatus*, , reptiles, otters *Lutra lutra*, and water vole *Arvicola amphibious* and any invasive plants or animals.

3.3.4 Photographs are included within this report. Plant names follow the third edition of the New Flora of the British Isles (Stace, 2010). The common name of the plant is stated first and is followed by the Latin name, on the first occasion that it is used. Only the common name is used subsequently.

## 3.4 Limitations

3.4.1 No significant limitations were encountered during the survey. The full list of grassland species could not be identified due to the time of year and short mown management but broad habitat type could be identified.

# 4 RESULTS

## 4.1 Introduction

4.1.1 This section provides a commentary on the data collected during the desk-top study and survey undertaken in 2024.

## 4.2 Desk-top Study

4.2.1 The site is adjacent to the boundary of:

- Fenn's Whixall & Bettisfield Mosses National Nature Reserve;
- Midland Meres & Mosses Phase 2 Ramsar;
- Fenn's Whixall Bettisfield Wem & Cadney Mosses SAC;
- Fenn's Whixall Bettisfield Wem and Cadney Mosses SSSI;

4.2.2 The main habitat type for which the area is designated is lowland raised bog and this habitat and its associated habitats including wet woodland, wet peaty fields, heathland and Teesdalia grassland support a range of birds, mammals, reptiles, amphibians and invertebrates.

4.2.3 Wetland birds such as curlew *Numenius Arquata*, lapwing *Vanellus vanellus*, snipe *Gallinago gallinago*, teal *Anas Crecca* and shoveler *Anas Clypeata* breed within the designated site. Barn owl *Tyto alba*, tawny owl *Strix Aluco*, hen harrier *Circus cyeius*, peregrine *Falco peregrinus*, merlin *Falco columbarius*, hobby *Falco Subbuteo*, marsh harrier *Circus Aeruginosus*, long-eared owl *Asio otus* and short-eared owl *Asio Flammeus* hunt and forage. Cuckoo *Cuculus Canorus*, warbler *Parulidae sp.,* nightjar *Caprimulgus europaeus*, golden plover *Pluvialis apricaria*, ruff *Philomachus pugnax* and yellowhammer *Emberiza citrinella* are resident throughout times of the year. Adders *Vipera berus*, slow worm *Anguis fragilis* and common lizard *Zootoca vivipara* are known to inhabit the designated sites, as well as badger, water vole and otter.

4.2.4 The proposed site is located close to the England/Wales border and so Impact Risk Zones have also been included here. The proposed Site falls within a SSSI/SAC/SPA/Ramsar Impact Risk Zone. Impact risk zones are used by Local authorities to assess planning applications for likely impacts on SSSIs, SACs, SPAs and Ramsar sites in England. However, the proposed development type is not included in the planning proposal categories that would trigger the necessity for the planning authority to consult with Natural England i.e. it is considered that this development type is unlikely to impact upon the nearby designated sites. Notwithstanding this, it is pertinent to seek clarification with NRW.

4.2.5 The Council planning portal did not reveal any pertinent information and there do not appear to be any current adjacent developments that would likely cause any in-combination effects with the proposed Site.

## 4.3 Walk-over Survey

4.3.1 The site comprises one large field which is compartmentalised into two sections by a line of mature trees. The western section closest to the residential property will contain the car park, solar panels, bin store and an access path leading to the eastern section, behind the line of trees, where the eight timber pods will be located.

4.3.2 The western section of the field was previously a very overgrown Christmas tree plantation which had recently been felled so the ground was disturbed and with scattered tree felling debris and without any significant botanical interest. There is an existing grass pathway which leads off the main driveway, along the northern boundary and into the eastern section of the field.

4.3.3 The ground cover of the eastern section of the field was damp amenity grassland comprising grasses (unidentified species), white clover *Trifolium repens* and moss likely *Rhytidiadelphus squarrosus* with scattered oak *Quercus robur* and silver birch *Betula pendula* saplings. There was some felled tree debris.

4.3.4 Along the northern boundary of the field is mainly post and wire fence with intermittent overgrown and defunct hedgerow with trees. Towards the eastern end, the boundary morphs into a gorse *Ulex europaeus* hedgerow approx. 0.5m high and 0.75m in width. Towards the western end, the boundary comprises a tall conifer hedge. Trees within this hedgerow comprise Scot's pine *Pinus sylvestris* (multiple), oak (multiple) and a single cherry *Prunus avium*.

4.3.5 Along the eastern boundary which is the boundary between the site and the designated sites and also the southern boundary, there are mainly mature oak trees with silver birch and coniferous trees.

4.3.6 No evidence of non-native invasive or harmful weeds such as Japanese knotweed or Himalayan balsam was identified during the survey.

4.3.7 Some of the trees to the site boundaries could support **bats**. There are two oak trees on the northern boundary at grid ref SJ48693811 that support potential roosting features in the form of a knot hole and broken limbs. The site provides excellent foraging and commuting opportunities and is well connected to the wider landscape, including the designated sites where there are ample foraging and roosting opportunities.

4.3.8 The trees and conifer hedgerow on the boundaries provide limited nesting bird opportunities. Bird species recorded during the survey include blue tit *Cyanistes Caeruleus*, song thrush *Turdus Philomelos*, robin *Erithacus rubecula*, wren *Troglodytes troglodytes*, long-tailed tit *Troglodytes troglodytes*, great tit *Parus Major* and dunnock *Prunella Modularis*. Song thrush and dunnock are amber listed in The Birds of Conservation Concern 5.

4.3.9 The site supports suitable terrestrial habitat for **great crested newts**; there are no ponds within the site and there do not appear to be any open ponds within 250m of the site. However, the adjacent designated sites comprise bogs, scrapes and ditches and also ponds beyond the 250m radius from the site which may support great crested newts. The terrestrial habitats of the

adjacent designated sites provide optimum habitat for GCN and there would be no reason for GCN to travel considerable distance to find shelter and foraging opportunities within the proposed site.

4.3.10 The site supports **hedgehogs** but no signs of either species was identified during the survey. Nevertheless, they may well traverse the site on a transient or regular basis, if they are present in the wider area.

4.3.11 The site supports suitable terrestrial habitat for **reptiles** in the form of foraging, basking and sheltering opportunities. Reptiles are known to be present in the adjacent designated sites, but it is unlikely that slow worm or adder would be found within the proposed site.

4.3.12 The site does not support suitable habitat for **otter** or **water vole** but both species are known to be present in the adjacent designated sites. Given the lack of suitable habitat on site and the limited nature of the proposed works, otter and water vole are highly unlikely to be present on the site, or affected by the works and are not considered further.

4.3.13 Photographs of the site are provided in Table 4.1 below.

**Table 4.1: Photographs of the Site**

| | |
|---|---|
| Proposed car park area | Looking south along proposed pathway area towards site |
|  |  |
| Existing pathway along northern boundary | Pathway as it heads past the line of trees and into the eastern section of the field |
|  |  |
| Pathway as it opens out into the eastern section | Pathway as it opens out into the eastern section |
|  |  |

| | |
|---|---|
| Eastern section | Eastern section and line of trees |
|  |  |
| Eastern section, south east corner | Eastern section, eastern boundary |
|  |  |
| Eastern section, eastern boundary | Eastern section looking west towards the entrance |
|  |  |
| Northern boundary hedgerow | Oak trees on northern boundary with bat potential |

| | |
|---|---|
|  |  |
| Oak trees on northern boundary with bat potential | Oak trees on northern boundary with bat potential |
|  |  |
| Western section with central line of trees and southern boundary in background | Central line of trees |
|  |  |
| | |

## 4.4 Appraisal of Potential Effects

4.4.1 The proposal comprises:

- the installation of a car parking area for eight cars
- the installation of 8 concrete pads (4no. approx. 6x3.3m and 4no. approx. 8x4m)
- the installation of a bin store
- the installation of a 21KW solar array comprising 48 panels
- wildflower meadow creation
- planting of native trees

4.4.2 The **designated sites** adjacent to the proposed site receive the highest level of protection in the UK. They are recognised as habitats of European value. Similarly, they support protected and notable species of value in a European context.

4.4.3 There is no requirement to consult with Natural England (since the site is on the boundary of England and Wales, there is a need to consider both Natural England and Natural Resources Wales in the decisions for consultation) since the site is not within the planning categories that would trigger the need for consultation i.e. none of the elements of this development would be considered to apply unnecessary pressure or impact upon the designations. There may be a need to consult with NRW.

4.4.4 The proposed works will not directly or indirectly impact upon the designated sites during construction. This is due to the low scale of proposed works. The site and the designated sites are buffered by a public footpath and trees, and the installation of the pods is not expected to give rise to any impacts beyond the proposed site boundary.

4.4.5 It is, however, recognised that the designated sites support sensitive habitats and species that are vulnerable to damage and disturbance from leisure activities. It is reasonably assumed that the proposed development will attract guests who may wish to visit the designated sites with bikes, scooters and dogs, for example, and it is these types of activities that can cause damage to habitats and disturbance to fauna such as nesting birds, particularly ground nesting birds such as lapwing. It is therefore recommended that guests are provided with information about the designated sites on individual pod notice boards or welcome folders. The information must contain dos and don’ts regarding sticking to clearly marked pathway, not venturing off paths, keeping dogs on a lead and picking up dog foul immediately.

4.4.6 **Habitats:** All boundary features, central line of trees, scattered trees and the majority of grassland within the eastern section will be retained. These will also be protected from damage by delivery vehicles and machinery during the pod installation period by steel rod and warning tape along

the length of the access pathway and around the edge of the site. This will prevent vehicles and machinery from straying off designated paths. Track matting will also be considered where necessary to limit damage and compaction to ground flora and underlying soils. As a minimum, good site management should be implemented in line with the Considerate Constructors Scheme, Code of Considerate Practice. Key principals of good management to protect habitats include:

- Being organised, clean and tidy; always net skips to prevent materials and rubbish from blowing around the site and onto adjacent habitats.
- Identifying, managing and promoting environmental issues.
- Seeking sustainable solutions, and minimising waste, carbon footprint and resources.
- Minimising the impact of vibration, and air, light and noise pollution.
- Protecting the ecology, the landscape, wildlife, vegetation and water courses.

4.4.7 The grassland pathway between the proposed car park and eastern section where the pods are to be located will also be retained and any damaged caused by pod delivery vehicles will be limited by track matting (where required) and reseeded so that a permanent grass pathway is maintained. There are no hardcore tracks proposed.

4.4.8 The car park area will be constructed within existing species poor amenity grassland currently managed as lawn. Approximately 240m² of this will be lost. There are no significant effects from the loss of this grassland, and in any case this will be readily compensated in the landscaping proposals (see below).

4.4.9 The pods require the installation of concrete pads with a total loss of approx. 207m² of damp amenity grassland. This will also be readily compensated by the landscape proposals.

4.4.10 To compensate for the loss of habitat and to replace the Christmas tree plantation that has recently been felled, it is proposed to plant 250 native trees to include hornbeam *Carpinus betulus*, oak, beech *Fagus sylvatica*, birch *Betula pendula* and larch *Larix decidua* within the western section of the field. The proposal also includes the creation of an approximate area of 6000m² of species rich flower meadow. Soil samples will be taken to assess soil nutrient composition and an appropriate seedmix will be sown. To ensure the long-term viability of the newly created habitat, it will be managed in the long term.

4.4.11 Overall, the site offers opportunities for protected and notable species, such as foraging birds, bats, GCN, reptiles, hedgehog . But the boundaries are the most useful to most species for nesting, roosting, foraging and commuting.

4.4.12 The proposed works will not affect potential roosting features, including the two oaks trees along the northern boundary since all boundaries will remain intact and protected with warning tape during construction. Foraging and commuting opportunities will remain post development and foraging will improve given the sowing of the species wildflower meadow. There is no requirement for bat surveys of these trees since they will not be impacted by the proposed works.

4.4.13 If it is necessary to install some low-level lighting to the outside of the pods for health and safety reasons, the lighting scheme must be sensitive to the requirements of bats (and other species) and designed in accordance with the current guidance jointly issued by the Institution of Lighting Professionals and Bat Conservation Trust; Guidance Note 08/18: Bats and Artificial Lighting in the UK.

4.4.14 **Great crested newts:** The likelihood of great crested newts and other amphibians being present and affected by the proposed works is unlikely since the nature of the development is of limited impact and that impact is readily mitigated; allied to the location of the development being at some distance from ponds. There will be some loss of short mown amenity grassland which is suitable but not highly valuable to great crested newts, given it provides foraging opportunities but no shelter from predators; this will be compensated by the planting of the wildflower meadow. The potential for impacts on GCN and other amphibians is unlikely. Nevertheless, as a highly precautionary approach, a Reasonable Avoidance Measures strategy is devised to ensure works are undertaken to further reduce the likelihood of harm to GCN and other amphibians and to prevent the Site becoming more attractive to amphibians during the course of the works.

- Any minor excavations will be backfilled overnight, capped at the ends (in the case of ducts) or if left open overnight, the surfaces are to be smoothed and a means of escape (a ramp) provided.
- Any excavated materials requiring storage should be stored on pallets raised off the ground, or otherwise compacted/modified to prevent plant growth and cracks that could be exploited by GCN. Any materials stored on the ground should be checked for GCN presence by an ecologist prior to re-use elsewhere on site.
- All on-site debris and stored materials should be dismantled and removed carefully as amphibians may be present, if a suspected great crested newt is found, a photograph is to be taken and sent to the retained ecologist for advice.
- Any materials arising from the development should be removed from site as soon as possible and should not be stored on site to prevent amphibians from using the materials for shelter.
- If amphibians, reptiles or any other animal is discovered at any point, works must stop immediately, and the ecologist is to be contacted for further advice.

4.4.15 No further survey work for great crested newts is required.

4.4.16 No active **bird** nests were identified in the vegetation, but it is possible birds may nest in the boundary features at some point between the survey and start of proposed works. It is advised that the disturbance and/or destruction of breeding birds and their nests is illegal under the Wildlife and Countryside Act 1981 (as amended). If any nests are built between the survey and the outset of works, and the nest is likely to undergo any disturbance, an ecologist should be contacted for advice. If nests are identified, the nests must remain intact and undisturbed until

young have fledged. Any vegetation required to be removed, must be done outside of the nesting bird season which includes the months of March to August inclusive, unless the vegetation is first checked by an experienced ecologist and no nests are found.

4.4.17 and it is important not to cut off valuable habitat by the erection of impenetrable boundary features such as solid wooden fences and walls without gaps. Providing natural boundary markers such as hedgerows and tree lines, or post and rail fencing, allow mammals open access to areas that they use. During construction, it is pertinent to cover any excavations overnight or fit a means of escape such as a ramp at 45° angle to prevent animals becoming trapped. Similarly, any pipes or culverts in storage should be capped to prevent animals taking refuge within them. Post-construction, the site will remain available as a foraging resource for both species.

4.4.18 **Reptiles:** the site provides suitable habitat for sheltering, hibernating and basking and it is possible common reptiles such as grass snake *Natrix natrix*, are present within the site. The areas where reptiles could potentially be present will be retained so there will not be a loss in valuable habitat for this species group. The GCN RAMs will also cover protection of reptiles during the construction period.

4.4.19 **Enhancement:** The proposed scheme includes the installation of bat and bird boxes which will provide a net gain in roosting and nesting opportunities. The following boxes are proposed:

- 3no. wooden bird nest boxes (suitable for passerines) are to be installed on suitable trees to the boundaries, at least two metres off the ground to reduce risk of predators and human interference.
- 3no. Beaumaris Woodstone bat box or similar to be installed on suitable trees to the boundaries, at least 3 metres off the ground and out of direct sunlight.

4.4.20 To address the impacts identified above, mitigation and compensation will be implemented to ensure that there is no net loss of biodiversity in the long term. See Green Infrastructure Statement in Section 5.

4.4.21 **Site contractors, directors, owners, other personnel and their agents are reminded that many species and habitats are protected by law, and to kill, injure or harm such species and their habitats is a criminal offence. Custodial sentences and/or large financial penalties are expected if you break the law. Protected species and habitats commonly found on development sites include (but not limited to):**

- **bats including their roosts in buildings and trees;**
- **birds including their nests;**
- **great crested newts including their areas of shelter such as hedgerows, ponds and natural and artificial habitats such as log and rubble piles; and**

- **which can be damaged or destroyed up to 25m from the sett entrance.**

# 5 GREEN INFRASTRUCTURE STATEMENT

## 5.1 Assessed Losses

5.1.1 The proposed development will result in the loss of:

- 450m² of short mown amenity grassland.

## 5.2 Proposed Biodiversity Net Benefit

5.2.1 The proposed development includes a soft landscaping scheme which will be created with a biodiversity focus. The Site Layout Proposed plan (Cassidy + Ashton, 04/04/2024, P3), shows the location of the wildflower meadow and tree planting on the southern part of the western section. Within this area, the following will be undertaken:

- Creation of approx. 6000m² of wildflower grassland by sowing a wildflower seed mix; composition to be confirmed following soil sampling.
- Planting of 250no. trees comprising hornbeam, oak, beech, birch and larch.
- Install 3no. wooden bird nest nest box or similar, comprising a mix of 32mm, 26mm and oval holes.
- Install 3no. Beaumaris Woodstone bat box or similar.

5.2.2 The above habitats will be created and managed as per the specification below.

| Habitat Creation Specification & Management Plan | |
|---|---|
| **Notes** | All operatives will be appropriately trained, certified and qualified to undertake the tasks required. All work is to be carried out in accordance with the relevant British Standards, Codes of Practice and Legislation. |
| **Proposed Habitats:** | Seedmix to be confirmed pending soil analysis.<br><br>Tree Species: 250no. comprising hornbeam, oak, beech, birch and larch of approximate equal no. Girth/Dia: 12-14cm, Height: 350-425cm, Root Zone: RB. |
| **Ground Preparation** | Create a planting bed to a depth of 1m and fill with subsoil (700mm) and topsoil (300mm). This will be a sufficient depth the support trees and also be suitable for the creation of the grassland. Topsoil to be the top layer which should be raked to produce a fine tilth. |
| **Sowing/Planting** | Trees are to be planted first, and then the grassland can be sown.<br><br>**Trees:**<br>Tree pits of at least 75cm diameter greater than the roost system and no deeper than the container shall be excavated and the sides well scarified to prevent smearing.<br><br>The root system of the tree should be wetted prior to planting. The tree should be planted at the correct depth taking into account the position of the root flare and the finished level - the rootball or root stem transition should be level with the existing host soil or surface. The base of the rootball should typically sit on subsoil, for larger rootballs the subsoil will sit around the lower portion of the rootball.<br><br>Tree pits should be backfilled with 1 part excavated topsoil and 2 parts tree planting compost. At each stage the fill should be firmed in to eliminate all air pockets under and around the root system, but with care being taken not to excessively compact the soil. The final layer should not be consolidated.<br><br>Apply a general-purpose slow release fertiliser (at the rate of 75gm/m2) and Tree Planting and Mulching Compost at the rate of (20litres/m2) are to be incorporated into the top 150mm of topsoil during final cultivations.<br><br>All trees are to be double staked with 75mm dia stakes with rubbers and spacers. Stakes should be driven at least 300mm into the ground before planting the tree, taking care to avoid underground services and cables etc. and should typically be one third the height of the tree stem above ground. Staked trees shall be secured to stakes with suitable proprietary rubber tree ties and spacers.<br><br>Immediately after planting, but before applying the bark mulch, all trees should be saturated. |

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|---|---|
| | **Grassland:**<br>Seed to be sown in the autumn (September to October) or spring (March-April) providing there is sufficient warmth and moisture. The seed must be surface sown and is to be applied by machine or preferably broadcast by hand. Press the seeds into the ground and if necessary, cover with a layer of topsoil, not exceeding 1cm in depth. During the establishment phase, in very dry conditions, the seed beds may need irrigation. Sowing rate to be confirmed pending seed mix selection. |
| **Year 1 Management** | **Trees:**<br>Top up mulch to ensure a 50mm layer around tree bases is maintained. Replace any dead, dying, damaged stock with same species of similar size. Adjust ties and stake as and when required; the need for this must be checked annually.<br><br>**Grassland:**<br>Most of the sown meadow species are perennial and are slow to establish. Soon after sowing there will be a flush of annual weeds which can look unsightly, but they will offer shelter to the sown seedlings, are great for insects, and they will die before the year is out. Cut the annual weeds in August, then remove and compost. This will reveal the young meadow, which can then be kept short by mowing through to the end of March of the following year. Dig out any residual perennial weeds such as docks. |
| **Year 2-30 Management** | **Trees:**<br>Top up mulch to ensure a 50mm layer around tree bases is maintained. Replace any dead, dying, damaged stock with same species of similar size. Adjust ties and stake as and when required; the need for this must be checked annually.<br><br>From Year 3, check for the need to prune to encourage a good shape.<br><br>**Grassland:**<br>In the second and subsequent years, grassland will be managed by traditional meadow management based around a main summer cut in combination with autumn and possibly spring mowing.<br><br>The meadow grassland is not to be cut from late April through to late August to give the sown species an opportunity to flower. After flowering in August mow to a height of c 50mm. Leave the arisings to dry and shed seed for 3 days then remove from site, or compost.<br><br>Mow the re-growth through to late autumn/winter to c 50mm and again in spring, if needed. |

# 6 CONCLUSION & RECOMMENDATIONS

6.1.1 The site has been the subject of a Preliminary Ecological Appraisal in 2024 which concludes that the Site, particularly the boundaries, is/are of ecological value to protected and notable species, but direct impacts on these species is unlikely to occur.

6.1.2 The avoid effects on designated sites the following is recommended.

- **Recommendation:** guests are provided with information about the designated sites on individual pod notice boards or welcome folders. The information must contain dos and don'ts regarding sticking to clearly marked pathways, not venturing off paths, keeping dogs on a lead and picking up dog foul immediately.

6.1.3 The avoid effects on boundary habitats the following is recommended.

- **Recommendation:** good site management is implemented in line with the Considerate Constructors Scheme, Code of Considerate Practice.
- **Recommendation:** barrier fencing such as steel rod and warning tape is installed at the outset of site works to protect boundary features.

6.1.4 The following requirements are made in respect of bats.

- **Recommendation:** a bat sensitive lighting scheme should be designed in accordance with the current guidance jointly issued by the Institution of Lighting Professionals and Bat Conservation Trust; Guidance Note 08/18: Bats and Artificial Lighting in the UK.
- **Recommendation:** 3no. Beaumaris Woodstone bat box or similar to be installed on suitable trees to the boundaries, at least 3 metres off the ground and out of direct sunlight.

6.1.5 The following recommendations are made in respect of great crested newts and reptiles.

- **Recommendation:** the RAMs strategy in Section 4 is implemented at the outset of the proposed construction work.
- **Recommendation:** if a GCN is found during the course of construction, work must stop immediately, a clean bucket or other protective covering placed over the animal (allowing a small gap to allow the animal to escape, but detract from susceptibility to predators), and the retained ecologist contacted for advice. A derogation licence from Natural Resources Wales may be required before works can continue.

6.1.6 The following recommendations are made in respect of birds.

- **Recommendation:** to prevent impacts on nesting birds, any work that may affect vegetation shall occur outside of the nesting bird season i.e. not during the months of March through to August inclusive. If vegetation removal is required during this time, the vegetation shall first be checked by a competent Ecologist and only if no nests are found can vegetation be

removed. If nests are found, they will remain in-situ and undisturbed until the young have fledged.

- **Recommendation:** it is recommended that three wooden bird nest boxes (suitable for passerines) are installed on the mature trees.

6.1.7 The following recommendations are made in respect of mammals, particularly badger and hedgehog.

- **Recommendation:** to prevent harm to mammals, excavations are to be covered overnight or fitted with a means of escape. Pipes and culverts in storage are to be capped at both ends.

- **Recommendation:** to prevent valuable foraging resources being cut off, boundary markers should remain penetrable to mammals. Natural features such as hedgerows or fence or walls with gaps allowing access are recommended.

6.1.8 To provide a biodiversity net benefit, the following recommendation is made.

- **Recommendation:** the ecological landscaping scheme is to include the sowing of species rich wildflower meadow and planting of trees as per the specification provided in Section 5 above.

6.1.9 Taking into consideration these recommendations, long term negative effects on biodiversity are not anticipated and the proposed development actually gives rise to biodiversity enhancement opportunities within the Site, improving biodiversity at a local level.

# 7 REFERENCES


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