

# PRELIMINARY ECOLOGICAL APPRAISAL

## GILLIES HILL



**DATE:** 31 MAY 2023

**CONTRACT REF:** CVN04.23.2760

**SITE LOCATION:** TORBEX, CAMBUSBARRON, STIRLING, FK7 9PQ

**OS GRID REF:** NS 7790 9186

**CLIENT:** CAMBUSBARRON VILLAGE NURSERY

**ECHOES ECOLOGY LTD**

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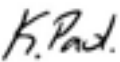
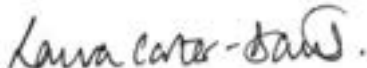
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## Document Control

Version	Date	Prepared By	Approved By
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The information which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

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## Executive Summary

Gillies Hill is in Torbex, Cambusbarron, Stirling, FK7 9PQ, OS grid reference NS 7790 9186. It is the intention of Cambusbarron Village Nursery subject to planning permission being approved, to construct a childcare facility on the east side of Gillies Hill (hereafter referred to as the Site).

Echoes Ecology Ltd was appointed by Cambusbarron Village Nursery to carry out a Preliminary Ecological Appraisal of the Site. Habitats within the Site, and where possible up to 100 metres (m) outwith the boundary (together referred to as the survey area), were surveyed. An assessment of the survey area was completed on 09.05.2023.

The Site is located within the community woodland, which is a mixed species woodland with areas of Sitka (*Picea sitchensis*) plantation and stands of deciduous and mixed plantation. There was limited understorey in all of the stands, and limited ground layer to the west. The central area and the deciduous stand to the east were the most biodiverse.

The Site of Special Scientific Interest (SSSI), Sauchie Craig Wood, is located 1.6 kilometres (km) west of the Site. There are no hydrological connection to Gillies Hill, therefore Sauchie Craig Wood will not be impacted by the works.

There are records for common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*), common toad (*Bufo bufo*), hedgehog (*Erinaceus europaeus*) and red squirrel (*Sciurus vulgaris*) with 2km of the Site.

There was no field evidence of protected species found during the survey. There is suitable habitat for nesting birds and commuting and foraging for bats. If proposed works are to be undertaken during the breeding bird season (March to September inclusive), then any areas of the Site that need to be cleared of vegetation must be shown to be free of nesting birds prior to works commencing. There are no other recommended surveys.

Native bluebells were present throughout the Site. Bluebells are listed on Schedule 8 of the Wildlife and Countryside Act, 1981 where they are given protection from collecting from the wild for sale. The bluebells should be retained within the woodland.

Non-native species such as Spanish bluebells (*Hyacinthoides hispanica*) and montbretia (*Crocsmia x crocosmiiflora*) were located within the woodland. The Code of Practice on Non-Native Species must be adhered to and any soil that may contain non-native plant material must be moved in line with this good practice guidance (Scottish Government, 2012).

An Ecological Constraints and Opportunities Plan is presented in Section 7 of this report and summarises the constraints and opportunities for ecological enhancements at the Site.

## Section 1 - Introduction

### 1.1 Contract Overview

- 1.1.1 Gillies Hill is in Torbex, Cambusbarron, Stirling, FK7 9PQ, OS grid reference NS 7790 9186. The Site is located within the community woodland, which is a mixed species woodland with areas of Sitka (*Picea sitchensis*) plantation and areas of deciduous and mixed plantation. There are the ruins of a walled garden to the west of the Site which is being developed into a community garden. The majority of the habitat surrounding the Site outwith the woodland is farmland, a mixture of arable and pastoral. Cambusbarron village is situated 0.5 kilometres (km) north and north-east of the Site. There are number of small burns and ponds within Gillies Hill, the River Forth is 2km to the north and the North Third Reservoir is 3km south-west of the Site. For a Location Plan of the Site refer to Appendix I.
- 1.1.2 It is the intention of Cambusbarron Village Nursery, subject to planning permission being approved, to construct a childcare facility on the east side of Gillies Hill. The proposal is for a new building including classrooms, storage and sheltered external space. Permission has not been granted yet for the building so there is currently no timescale for the works to be undertaken. For a potential plan of the proposed development refer to Appendix II.
- 1.1.3 Echoes Ecology Ltd was appointed by Cambusbarron Village Nursery to carry out a Preliminary Ecological Appraisal at the Site.
- 1.1.4 Qualifications and competencies of the author and surveyors are provided in Appendix III.
- 1.1.5 The following documents were provided to Echoes Ecology Ltd in order to assist in carrying out this contract:
- Cambusbarron Village Nursery Development Plan
  - Cambusbarron Village Nursery Business Plan
  - Maps of Gillies Hill Community Woodland
  - Proposed floor plan and image of nursery.

### 1.2 Survey Aims

- 1.2.1 The aims of the survey were:
- To complete a desk study to identify protected or notable sites, habitats or species in the vicinity of the Site
  - To record the broad habitat types across the Site and assess their importance
  - To carry out an initial assessment (Habitat Suitability Index) of water bodies within the Site and a buffer of 250m around the Site to determine the potential for use by great crested newts (*Triturus cristatus*). A 250m buffer was used due to the lack of records within a 2km of great crested newts and the discrete nature of the proposed works.
  - To assess the likely presence of protected and notable species at the Site
  - To identify any ecological constraints
  - To recommend any further ecological surveys that may be required
  - To identify opportunities for ecological enhancement.

## Section 2 - Relevant Policy

### 2.1 National Planning Framework 4

- 2.1.1 National Planning Framework 4 includes policies aiming to protect biodiversity and natural assets, promote expansion and connectivity of blue and green networks and protect and expand forests, woodland and trees, with the over-riding aim of ensuring development will secure positive effects for biodiversity (Scottish Government, 2023). Key points from the policies are outlined below.
- 2.1.2 Policy 3 relates to biodiversity and states the following:
- Development proposals will contribute to the enhancement of biodiversity, including where relevant, restoring degraded habitats and building and strengthening nature networks and the connections between them. Proposals should also integrate nature-based solutions, where possible.
  - Proposals for local development will include appropriate measures to conserve, restore and enhance biodiversity, in accordance with national and local guidance. Measures should be proportionate to the nature and scale of development.
  - Any potential adverse impacts, including cumulative impacts, of development proposals on biodiversity, nature networks and the natural environment will be minimised through careful planning and design. This will take into account the need to reverse biodiversity loss, safeguard the ecosystem services that the natural environment provides, and build resilience by enhancing nature networks and maximising the potential for restoration.
- 2.1.3 Policy 4 relates to natural places and states the following:
- Development proposals that affect a site designated as a local nature conservation site or landscape area in the LDP will only be supported where:
    - Development will not have significant adverse effects on the integrity of the area or the qualities for which it has been identified; or
    - Any significant adverse effects on the integrity of the area are clearly outweighed by social, environmental or economic benefits of at least local importance.
  - Development proposals that are likely to have an adverse effect on species protected by legislation will only be supported where the proposal meets the relevant statutory tests. If there is reasonable evidence to suggest that a protected species is present on a site or may be affected by a proposed development, steps must be taken to establish its presence.
- 2.1.4 Policy 6 relates to forestry, woodland and trees and states the following:
- Development proposals that enhance, expand and improve woodland and tree cover will be supported.
  - Development proposals will not be supported where they will result in:
    - Any loss of ancient woodlands, ancient and veteran trees, or adverse impact on their ecological condition
    - Adverse impacts on native woodlands, hedgerows and individual trees of high biodiversity value, or identified for protection in the Forestry and Woodland Strategy
    - Fragmenting or severing woodland habitats, unless appropriate mitigation measures are identified and implemented in line with the mitigation hierarchy
  - Development proposals on sites which include an area of existing woodland or land identified in the Forestry and Woodland Strategy as being suitable for woodland creation will only be supported where the enhancement and improvement of woodlands and the planting of new trees on the site (in accordance with the Forestry and Woodland Strategy) are integrated into the design.

### 2.2 Stirling Local Development Plan

- 2.2.1 The Stirling Local Development Plan (LDP) Policy A. Placemaking and Implementing the Spatial Strategy 1.1: Site Planning (Stirling Council, 2018), states that all new development should contribute to the quality of the surrounding buildings and natural environment.

- 2.2.2 Policy A1.3: Green Infrastructure and Open Space, states that developments should safeguard existing green infrastructure and contribute to the Central Scotland Green Network principles, and local Green Network.
- 2.2.3 Policy C. Conservation of Historic and Natural Heritage 7.2: Development within and out with Conservation Area states that developments should preserve or enhance the character, appearance and setting of the area and that features should be retained which contribute to the character of an area.
- 2.2.4 Policy C8.1 Biodiversity Duty. Developments will only be supported if they do not create a significant loss of biodiversity and that if loss is to occur provision should be made to maintain species populations and/or create or enhance habitat to ensure the status quo is maintained.
- 2.2.5 Policy C9.3: Landscaping and Planting in Association with Development states that existing landscape and features which contribute to the local character and biodiversity should be identified and safeguarded.
- 2.2.6 Policy D. Managing and Utilising Local Resources 10.1: Development Impact on Trees and Hedgerows. Trees and hedgerows which contribute to local amenity and/ or nature conservation should be protected.

### **2.3 Scottish Biodiversity Strategy**

- 2.3.1 The Nature Conservation (Scotland) Act 2004 places a 'Biodiversity Duty' on public bodies to further the conservation of biodiversity and it requires Scottish Ministers to designate one or more strategies for the conservation of biodiversity as the Scottish Biodiversity Strategy. 'Scotland's Biodiversity: It's in Your Hands - A strategy for the conservation and enhancement of biodiversity in Scotland' (Scottish Executive, 2004) and '2020 Challenge for Scotland's Biodiversity' (Scottish Government, 2013) together form the Scottish Biodiversity Strategy. There is a new strategy proposed to be delivered in 2023 which will supersede the 2020 Challenge strategy.

### **2.4 Scottish Biodiversity List**

- 2.4.1 The Scottish Biodiversity List (SBL) was published in 2005 and last updated in 2012 (NatureScot, 2020). The aim of the list is to help public bodies carry out their 'Biodiversity Duty', as required by the Nature Conservation (Scotland) Act 2004, by identifying the species and habitats which are the highest priority for biodiversity conservation in Scotland.

### **2.5 Local Biodiversity Action Plan**

- 2.5.1 Local Biodiversity Action Plan (LBAP) Partnerships were established in the UK following the ratification of the Convention on Biological Diversity in 1992. Each local partnership publishes biodiversity action plans which identify the habitats or species selected as priorities for targeted conservation work. The survey area is situated within Stirlingshire, for which the current LBAP is encompassed within the Alive with Nature Plan 2021-2045 (Stirling Council, 2021).



## Section 3 - Methodology

### 3.1 Survey Methodology

- 3.1.1 The survey methods employed were taken from 'Guidelines for Preliminary Ecological Appraisal' (CIEEM, 2017) and 'Handbook for Phase 1 Habitat Survey - A Technique for Environmental Audit' (JNCC 2010).

### 3.2 Desk Study

- 3.2.1 A search for nearby designated sites, protected species and species listed on the Scottish Biodiversity List was carried out. This desk study allowed for data within a 2km radius of the Site to be considered and assisted in evaluating the ecological value of habitats and features present within the survey area. Due to the habitats located within the site, an extended 20km radius for Special Protection Areas (SPAs) was not considered necessary. The following resources were consulted:
- Scottish Biodiversity List (NatureScot, 2020)
  - NBN Atlas (NBN Atlas Partnership, 2023)
  - SiteLink (NatureScot, 2023)
  - Echoes Ecology Ltd's 'ScoMam' Database (a database of over 6,000 records of protected species collected by Echoes Ecology Ltd and associate surveyors over 10 years of surveys).

### 3.3 Preliminary Ecological Appraisal (PEA)

- 3.3.1 A PEA was carried out on 09.05.23 by Heather Simpson CEnv MCIEEM and Kay Paul Qualifying member of CIEEM. The weather was dry, with 50% cloud cover, Force 1 wind (Beaufort scale) and a temperature of 16°C.
- 3.3.2 All habitats within the Site were surveyed, plus a buffer of up to 100 metres (m) outwith the Site boundary, where access permitted. Target Notes were used to identify the presence and location of features of particular interest or those too small to map. The abundance of each plant species was recorded using the DAFOR scale (D= Dominant, A= Abundant, LA= Locally Abundant, F= Frequent, O= Occasional, R= Rare. Habitat features indicating the presence, or likely presence, of protected species or other species of nature conservation were also noted.
- 3.3.3 Habitats were mapped using ArcGIS software in line with Phase 1 habitat survey methodology. Aerial photography and OS maps were referred to with a view to aid in the assessment of boundary features and habitat boundaries.
- 3.3.4 A GPS, and digital camera were used to help map and document the habitats and a hand lens x10 and x20 and plant ID books were used to identify plant species.
- 3.3.5 Nomenclature used for higher plants was taken from Stace (2019) and for bryophytes, Blockeel *et al.* (2021).

### 3.4 Limitations to Survey Work

- 3.4.1 A comprehensive species list could not be compiled due to the time of year of the survey. However, the species list obtained was sufficient to determine the habitats present.

## Section 4 - Desk Study Results

### 4.1 Scottish Biodiversity List (SBL)

4.1.1 Species listed in the SBL which may be present within or around the Site are as follows:

- Daubenton's bat (*Myotis daubentonii*)
- Whiskered bat (*Myotis mystacinus*)
- Natterer's bat (*Myotis nattereri*)
- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Brown long-eared bat (*Plecotus auritus*)
- European hedgehog (*Erinaceus europaeus*)
- Otter (*Lutra lutra*)
- Water vole (*Arvicola amphibius*)
- Pine marten (*Martes martes*)
- Red squirrel (*Sciurus vulgaris*)
- Great crested newt (*Triturus cristatus*)
- Slow worm (*Anguis fragilis*)
- Common lizard (*Zootoca vivipara*)
- Adder (*Vipera berus*)
- Common toad (*Bufo bufo*)
- Birds associated with (deciduous and coniferous woodland, farmland and gardens).
- Invertebrates associated with (deciduous and coniferous woodland).

### 4.2 Local Biodiversity Action Plan

4.2.1 There are no specific priority habitats and species highlighted within Action for Nature.

### 4.3 Designated Sites

4.3.1 A search for nearby designated sites was carried out in May 2023. The only statutory designated site located within 2km is Sauchie Craig Wood SSSI, which is located 1.6km to the west. Full details of the designated site is shown in Table 4.1 below.

Table 4.1 - Search results for nearby designated sites (NatureScot, 2023)

Name and Distance from Site	Details
Sauchie Craig Wood: 1.6km to the west.	Designation: SSSI An area of mixed ash woodland.

### 4.4 Protected Species

4.4.1 The NBN Atlas and ScoMam were consulted for records of protected species in May 2023, the results of which are shown in Table 4.2 below. It should be noted that a lack of records should not be interpreted as an indication that these species are not present in the area.

Table 4.2 - Resources search results for protected species (only records from the last 10 years are displayed)

Species	Record type*	Location
Common toad	Record provided by IRecord, accessed through NBN Atlas website <sup>2</sup>	2km to the east of the Site

Species	Record type*	Location
Western European hedgehog	Records provided by HogWatch Scotland Project, accessed through NBN Atlas website <sup>1</sup>	2km to the south-east of the Site
Badger ( <i>Meles meles</i> )	Word of mouth and local websites	Within Gillies Hill Community Woodland
Soprano pipistrelle	Record provided by BCT Field Count, accessed through NBN Atlas website <sup>1</sup>	2km east of the Site
	ScoMam roost record	Within 2km of the Site
Common pipistrelle	Records provided by SNH Bat Casework records 2015-2016 and Field surveys for BCT, accessed through NBN Atlas website <sup>1</sup>	2km east and 1km north of the Site
	ScoMam roost record	Within 2km of the Site
Red squirrel	154 records provided by The Scottish Squirrel Database accessed through NBN Atlas website <sup>2</sup>	Within all of the 2km radius, focused in the woodland to the north-west of the site
Pipistrelle species ( <i>Pipistrellus</i> sp.)	ScoMam roost record	Within 2km of the Site
Chiroptera species	ScoMam roost record	Within 2km of the Site
<p><b>Notes:</b>            * The Data Provider, Original Recorder (where identified), and the NBN Trust bear no responsibility for any further analysis or interpretation of that material, data and/or information.</p> <p><sup>1</sup>dataset covered by an Open Government Licence (OGL): <a href="http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/">http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/</a></p> <p><sup>2</sup>data set covered by a Creative Commons with Attribution 4.0 Licence (CC-BY): <a href="https://creativecommons.org/licenses/by/4.0/legalcode">https://creativecommons.org/licenses/by/4.0/legalcode</a></p>		

## Section 5 - Field Survey Results

### 5.1 Habitats within the Survey Area

- 5.1.1 The Phase 1 habitat survey map is presented below in Figure 5.1 and Target Notes are presented in Table 5.1.
- 5.1.2 The survey area (Site plus 100m buffer) consisted of four areas of different woodland and a walled garden to the south-west, managed by the Cambusbarron Community Development Trust.
- 5.1.3 The central area where the nursery is planned to be located consisted of wet/dry deciduous woodland (Figure 5.2), with a wet dip in the centre (Figure 5.3). There was a more open area to the west, currently the children's play area (Figure 5.4). The species list obtained during the survey is provided in Target Note (TN) 1 for the wet woodland and TN 2 for the open area.
- 5.1.4 The woodland to the west was deciduous plantation dominated by sycamore (*Acer pseudoplatanus*) (TN 3 and Figure 5.5).
- 5.1.5 To the north-west was the most mature stand within the survey area. A mixed coniferous/deciduous plantation (TN4, Figure 5.6) consisting of larch (*Larix decidua*), Douglas fir (*Pseudotsuga menziesii*), birch (*Betula sp.*) and rowan (*Sorbus aucuparia*).
- 5.1.6 The woodland to the east is also dominated by sycamore but had a more species rich ground layer than the other woodland areas (TN5, Figure 5.7).
- 5.1.7 In all areas, wood-sorrel (*Oxalis acetosella*) was identified (Figure 5.8). This is an ancient woodland indicator species, showing this area has been wooded for a considerable length of time. The survey area except the stand to the east is classed as long-established woodland (of plantation origin), Ancient Woodland Inventory, Scotland (Scottish Government, 2023).

### 5.2 Non-Native Plant Species

- 5.2.1 Non-native species such as Spanish bluebells (*Hyacinthoides hispanica*) and montbretia (*Crocsmia x crocosmiiflora*) were located within the woodland.

### 5.3 Protected Plant Species

- 5.3.1 Native bluebells were present throughout the Site. Bluebells are listed on Schedule 8 of the Wildlife and Countryside Act, 1981 where they are given protection from collecting from the wild for sale.

### 5.4 Bats

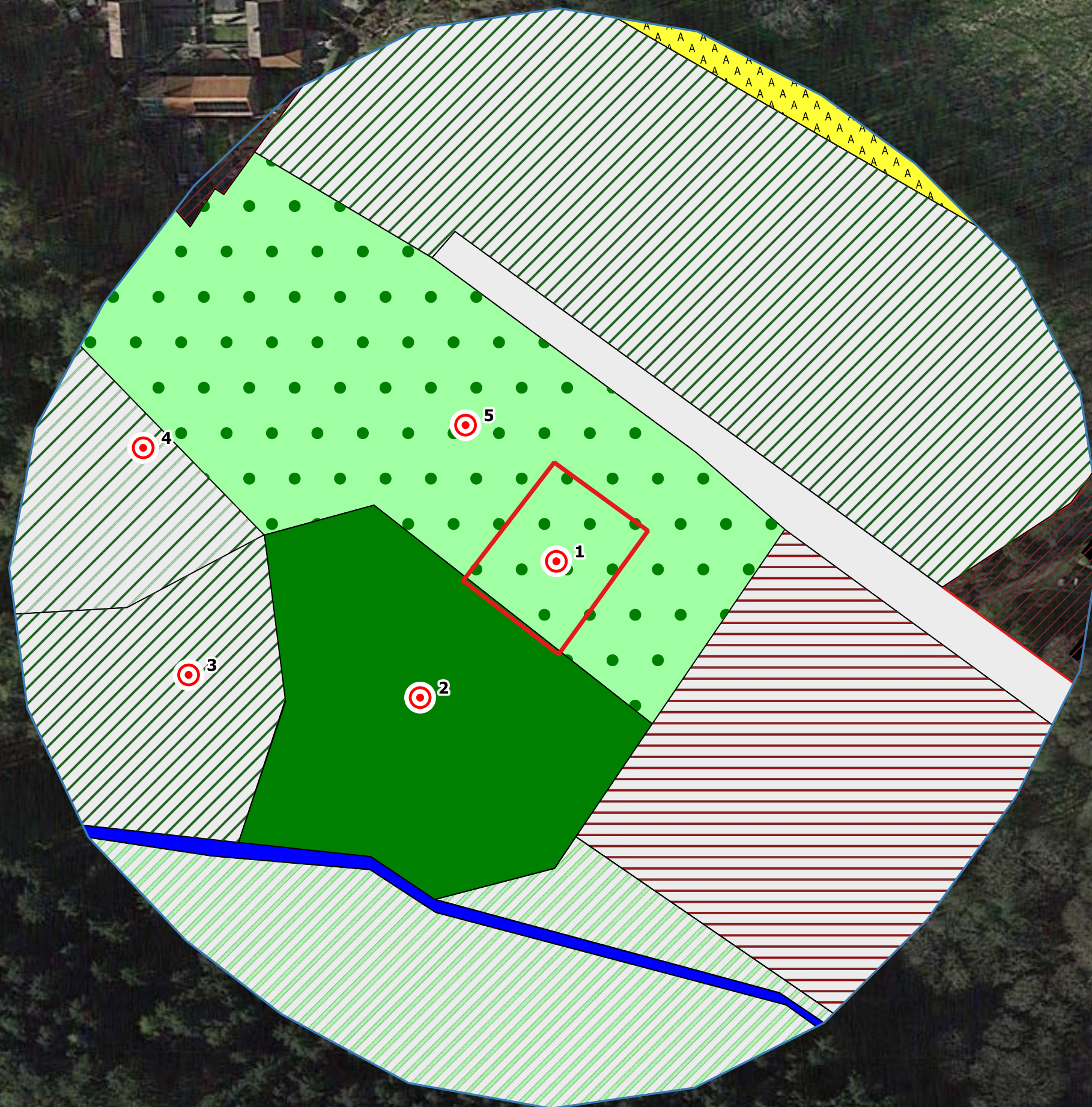
- 5.4.1 There were no mature trees located within the survey area which had bat roost potential. Bats may use the woodlands for foraging and commuting, and the community garden and water bodies for foraging.

### 5.5 Badger

- 5.5.1 No conclusive badger field signs were found during the walkover survey, although the surrounding woodland habitats are suitable for use by badger. The proposed works would not disturb the surrounding area outside of the 100m buffer therefore badgers are not considered further in this report.

*Figure 5.1 - Phase 1 habitat survey map*





### Key

-  Potential site area
-  100m buffer
-  Target Note
-  Open broadleaved woodland - semi-natural
-  Broadleaved woodland - plantation
-  Coniferous woodland - plantation
-  Mixed woodland - semi-natural
-  Mixed woodland - plantation
-  Stream
-  Grassland/new housing development
-  Walled garden
-  Buildings
-  Track
-  Residential

1:1000 @ A3

0 10 20 30 m



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### Preliminary Ecological Appraisal (PEA)

### Potential Cambusarron Village Nursery Site, Gillies Hill



Table 5.1 - Target Notes

TN	OS Grid Reference	Description																																																																																																												
1	NS 7790 9186	Birch and sycamore with scattered larch, willow and hawthorn. Wet dip in the middle created a wet/dry patch of biodiverse woodland (Figure 5.2). The species list obtained during the survey is outlined below:																																																																																																												
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## 5.6 Otter and Water Vole

5.6.1 The watercourse to the south-west of the Site is a small stream with no vegetation and gradual sloping banks, therefore had limited potential for water vole. Due to the nature of the work

planned a survey buffer of 250m was considered suitable for otters. There were no ponds located within this buffer and no watercourses which would offer suitable resting areas or food sources. The watercourses would be unlikely to be used by otter for commuting and therefore there is limited potential otter within the Site. These species are not considered further in this report.

## **5.7 Red Squirrel**

5.7.1 There are numerous historical field records of red squirrel within the woodland, but none within the survey area. During the survey no field signs were found and the trees within the survey area had limited potential for dreys, therefore red squirrels are not considered further in this report.

## **5.8 Pine Marten**

5.8.1 The coniferous plantation may provide suitable habitat, but there are no historical records for pine martens and there were no field signs found within the survey area. Therefore, pine marten are not considered further in this report.

## **5.9 Amphibians**

5.9.1 There are no records of great crested newt within 2km of the Site. The water bodies which could potentially provide suitable habitat are situated over 250m away from the Site. A 250m buffer was considered adequate due to the lack of records and discrete nature of the works. Therefore, this species is not considered further in this report.

5.9.2 The woodland within the survey area would provide limited habitat for toads which are an SBL priority species, due to the lack of water bodies and understorey. Due to the nature of the works there is limited potential for impact on this species, therefore it is not considered further in this report.

## **5.10 Reptiles**

5.10.1 There was limited suitable habitat within the survey area and no historical records of reptiles. The numerous dead wood piles could be used as refuges and hibernacula. There were no reptile sightings during the survey and due to the discrete nature of the works these species are not considered further in this report.

## **5.11 Birds**

5.11.1 The habitat within the Site boundary is such that it would be expected to hold potential for bird species associated with woodland and scrub. Species recorded during the survey included woodpigeon (*Columba palumbus*), blackbird (*Turdus merula*), robin (*Erithacus rubecula*), great tit (*Parus major*), wren (*Troglodytes troglodytes*), chaffinch (*Fringilla coelebs*), chiffchaff (*Phylloscopus collybita*), blue tit (*Cyanistes caeruleus*), and magpie (*Pica pica*).

## **5.12 Invertebrates**

5.12.1 The taller swards of grassland and plants associated with the wetland could provide suitable food plants for larval moths and butterflies, and the wildflowers will provide sources of nectar for foraging pollinators.

## **5.13 Hedgehog**

5.13.1 The woodlands could provide suitable habitat for hedgehog, which is an SBL species. As there is to be limited impact on the woodland the proposed building is not considered to have an adverse impact upon this common and widespread SBL species. Therefore, hedgehog is not considered further within this report.

*Figure 5.2 - Central wet/dry woodland (TN1).*



*Figure 5.3 - Wet area in the wet/dry woodland.*



*Figure 5.4 - Open area by the children's play area (TN2).*





*Figure 5.5 - Woodland to the west of the Site (TN3).*



*Figure 5.6 - Mixed woodland to the north-west (TN4)*



*Figure 5.7 - Sycamore dominated woodland to the east (TN5).*



*Figure 5.8 - Wood sorrel.*



*Figure 5.9 - Suggested location for nursery.*



## Section 6 - Discussion

### 6.1 Ecological Constraints and Required Mitigation

- 6.1.1 The following ecological constraints associated with the Site are listed in paragraphs 6.2 to 6.6 below. Legislation with regards to these species is presented in Appendix IV.

### 6.2 Designated Sites

- 6.2.1 Sauchie Craig Wood, a SSSI for mixed ash woodland, is located 1.6km to the west of the Site.
- 6.2.2 As there are no hydrological connections between Gillies Hill and this protected site, it will not be impacted upon by the proposed works. There are no ecological constraints with regards to designated sites.

### 6.3 Habitats

- 6.3.1 There are no priority habitats within the survey area.
- 6.3.2 As the location of the nursery has not been finalised yet, it is recommended that the area of wet woodland (NS 7790 9186) is avoided as it is the most species rich area of the Site and has the greatest potential for enhancement.
- 6.3.3 The two locations which would cause the least impact on the habitats would be the grassland area by the current children's play area NS 7787 9183 (TN2), and the area that has already been disturbed by the felling operations NS 7787 9190. These two areas are both less biodiverse than the central wet area so therefore would be most suitable for development.
- 6.3.4 If either of these two areas were used then due to the nature of the proposed works there would be limited impact on the habitats within the area. Therefore the potential loss habitats is not considered to have a significant adverse ecological impact and there are no ecological constraints regarding the value of the habitats.

### 6.4 Non-Native Plant Species

- 6.4.1 Non-native species were present within the woodland. The potential works may result in the spread of non-native plants and it should be noted that it is an offence to cause any non-native plant species to grow in the wild.
- 6.4.2 The Code of Practice on Non-Native Species (Scottish Government, 2012) must be adhered to. Any soil that may contain any non-native plant material must be moved in line with this good practice guidance. Removing regeneration of non-natives, deadheading plants after they have flowered and using root barrier fabrics can all help to contain the spread of non-native plants.

### 6.5 Protected Plant Species

- 6.5.1 Native bluebells were present throughout the Site. Bluebells are listed on Schedule 8 of the Wildlife and Countryside Act, 1981 where they are given protection from collecting from the wild for sale. The bluebells should be retained within the woodland.

### 6.6 Bats

- 6.6.1 Within the survey area there were no potential roost features. Although the habitat is suitable for foraging and commuting bats, as the Site cover less than 1 hectare (ha) no significant adverse impact is predicted due to habitat loss. However, inappropriate lighting could have impacts that extend beyond the Site boundary. If artificial lighting is unavoidable, measures must be taken to prevent light trespass into surrounding habitats. Artificial light is known to cause a significant



impact on local bat populations in terms of commuting routes across the landscape, habitat connectivity, as well as insect prey availability and foraging habits (Voigt *et al.*, 2018). Where possible, 'warm white' spectrum (<2700 Kelvin) or wavelengths peaking higher than 550nm should be used, rather than 'cool white' (>5700 Kelvin) lights (Institution of Lighting Professionals, 2018). Whilst the Site is under construction lights should be switched off during the night. Any permanent lighting that is to be installed should be directional and pointing away from the surrounding habitats to avoid the light overspill and resulting impacts on invertebrates, potential disturbance to commuting and foraging routes.

## 6.7 Birds

6.7.1 There is potential for nesting birds in the scrub and woodland within the Site. The breeding bird season for the species associated with the habitats on Site runs from March to September. Removal of vegetation during the breeding bird season could lead to the destruction of a nest and potential breach in legislation. If any vegetation removal or felling works are required, it is recommended to be completed outside the breeding bird season (October to February). If this is not possible and works are to commence within the breeding bird season (March to September), then any areas of the Site that need to be worked upon should be shown to be free of nesting birds immediately prior to works commencing.

## 6.8 Further Surveys

6.8.1 If works are to commence within the breeding bird season (March to September inclusive), a nesting bird check should be completed by a suitably qualified ecologist prior to works commencing. Checks would occur as close as possible to the commencement of planned works, and no more than three days prior to such activity. If any evidence of breeding is detected, a suitable buffer would be installed within which no works can occur until the chicks have fledged and the nest is confirmed as inactive.

6.8.2 The survey work reported upon within this document was carried out on during the 09.05.2023. If works at the Site do not commence prior to 09.11.24, then further surveys should be commissioned in order to ascertain that the situation at the Site has not changed and thus the conclusions of this report are still valid.

## 6.9 Opportunities for Enhancement

6.9.1 The Scottish Biodiversity Strategy's objective for species and habitats is to halt the loss of biodiversity and continue to reverse previous losses through targeted action.

6.9.2 Wildflower meadow creation should be considered, where practical. This would involve sowing a wildflower meadow mix (Scotia Seeds MG5 Meadow Mix, or similar) with no fertiliser or topsoil applied during the ground preparation. The seed mix will comprise perennials that may not flower in their first growing season and so there is often a flush of annual weeds. Therefore, during the first growing season the meadow would need to be cut regularly (up to four cuts) to 50mm. In subsequent years, the meadow should only be cut once in autumn (ideally November) for at least a 10 year aftercare period. All arisings from the cuttings should be removed from site. Weeds (e.g. common nettle (*Urtica dioica*), thistle (*Cirsium* sp.), ragwort (*Jacobaea vulgaris*) and docks (*Rumex* sp.)) may need to be treated by either spot spraying with herbicide or pulled up by hand for at least the first three years after creation, but the widespread use of herbicide or pesticide should be avoided. Log, leaf and brash piles could also be incorporated into the wildflower meadow areas to provide a diverse range of habitats.

6.9.3 The Scottish Government's Policy on Control of Woodland Removal (Forestry Commission Scotland, 2009) signals a strong presumption in favour of protecting Scotland's woodland resources and supports the retention and expansion of woodlands. Removal will only be permitted where it would achieve significant and clearly-defined additional public benefits. Where woodland is removed in association with development, developers will generally be expected to provide compensatory planting.



- 6.9.4 The Scottish Biodiversity Strategy's objective for species and habitats is to halt the loss of biodiversity and continue to reverse previous losses through targeted action.
- 6.9.5 Goals for woodland and forestry aim to improve the management of semi-natural woodlands, increase the biodiversity of farmed landscapes, improve riparian habitat, encourage alternatives to clear-felling and extend and enhance native woodlands by developing forest habitat networks. The Scottish Forestry Strategy (2006) set a target to plant 100,000 hectares of new woodland, with at least half of this being native woodland, by 2022.
- 6.9.6 It is recommended that the cut dead wood and sectioned trees are piled in suitable locations at woodland or scrub edges and retained, in order to create refuges and hibernacula for reptiles, as well as increase the biodiversity by providing suitable habitats for a variety of invertebrates and wood-decay fungi.
- 6.9.7 Possible enhancements to the Site could involve the installation of bird boxes of a range of sizes throughout the Site, including a barn owl box positioned at the woodland edge further away from the development, to increase the suitability of the Site for nesting barn owls (a Schedule 1 species) as well as other bird species.
- 6.9.8 The installation of bat boxes would also increase the suitability of the survey area for roosting bats. Woodcrete boxes are recommended and they should be installed on trees at a height of 2-7m above ground in a location where the access is not illuminated by artificial light. Summer roosting bats tend to utilise south to west facing roosts for solar heating, while winter roosts tend to be north facing. As such it is recommended to install boxes in both south to west and north facing locations so that bats can utilise the Site throughout the year.
- 6.9.9 Enlarging the wet areas within the woodland and/or creating a pond and installing scrapes would encourage invertebrates, amphibians and reptiles. Placing a boardwalk over the area would protect the wetland but also enable safe access for members of the public/nursery children.
- 6.9.10 It is recommended that the woodlands be thinned to encourage development of the understorey and ground layer. Possible enhancement with suitable planting such as hazel (*Corylus avellana*), hawthorn (*Crataegus monogyna*) and blackthorn (*Prunus spinosa*) should the understorey not develop naturally.
- 6.9.11 Artificial light is known to cause a significant impact on local bat populations in terms of commuting routes across the landscape, habitat connectivity, as well as insect prey availability and foraging habits (Voigt *et al.*, 2018). Any lighting incorporated into the plans should ensure that it is placed so that it does not illuminate any roost access points or tree lines that may be used by foraging or commuting bats. Where possible, 'warm white' spectrum (<2700 Kelvin) or wavelengths peaking higher than 550nm should be used, rather than 'cool white' (>5700 Kelvin) lights (Institution of Lighting Professionals, 2018).

## Section 7 - Ecological Constraints and Opportunities Plan

### 7.1 Ecological Constraints and Opportunities Plan

7.1.1 The following table (Table 7.1) summarises the ecological constraints and opportunities relating to the development at the Site, for which Cambusbarron Village Nursery and appointed contractors are responsible for delivering.

Table 7.1 - Ecological Constraints and Opportunities Plan

Action Point	Ecological Constraints and Opportunities	Target Date
<b>Ecological Constraints</b>		
AP1	<b>Non-Native Species</b> Non-native species were identified within the Site. The Code of Practice on Non-Native Species (Scottish Government, 2012) should be adhered to and any soil that may contain any non-native plant material should be moved in line with good practice guidance.	During Site clearance
AP2	<b>Protected Plant Species</b> Native bluebells were present throughout the Site. Bluebells are listed on Schedule 8 of the Wildlife and Countryside Act, 1981 where they are given protection from collecting from the wild for sale. The bluebells should be retained within the woodland.	During Site clearance
AP3	<b>Nesting Birds</b> If any vegetation removal or felling works are required, it is recommended to be completed outside the breeding bird season (October to February). If this is not possible and works are to commence within the breeding bird season (March to September), then any areas of the Site that need to be worked upon should be shown to be free of nesting birds prior to works commencing. This should be done through a nesting bird check completed by a suitably qualified ecologist. Checks would occur as close as possible to the commencement of planned works, and no more than three days prior to such activity. If any evidence of breeding is detected, a suitable buffer would be installed within which no works can occur until the chicks have fledged and the nest is confirmed as inactive.	During vegetation removal
AP4	<b>Further Surveys</b> The survey work reported upon within this document was carried completed on 09.05.2023. If works at the Site do not commence prior to 09.11.2024, then further surveys should be commissioned in order to ascertain that the situation at the Site has not changed and thus the conclusions of this report are still valid.	09.11.2024
<b>Ecological Enhancements</b>		
AP5	<b>Wildflower Meadow</b> Wildflower meadow creation should be considered, where practical. This would involve sowing a wildflower meadow mix (Scotia Seeds MG5 Meadow Mix, or similar) with no fertiliser or top soil applied during the ground preparation. The seed mix will be comprised of perennials that may not flower in their first growing season and so there is often a flush of annual weeds. Therefore, during the first growing season the meadow would need to be cut regularly (up to four cuts) to 50mm. In subsequent years, the meadow should only	During and after works

	<p>be cut once in autumn (ideally November) for at least a 10 year aftercare period. All arisings from the cuttings should be removed from site. Weeds (e.g. common nettle (<i>Urtica dioica</i>), thistle (<i>Cirsium</i> sp.), ragwort (<i>Jacobaea vulgaris</i>) and docks (<i>Rumex</i> sp.)) may need to be treated by either spot spraying with herbicide or pulled up by hand for at least the first three years after creation, but the widespread use of herbicide or pesticide should be avoided. Log, leaf and brash piles could also be incorporated into the wildflower meadow areas to provide a diverse range of habitats.</p>	
AP6	<p><b>Deadwood refuge and hibernacula</b>                  Cut dead wood and sectioned trees piled in suitable locations at woodland or scrub edges and retained, in order to create refuges and hibernacula for reptiles.</p>	After works are completed
AP7	<p><b>Installation of bird boxes and bat boxes</b>                  The inclusion bird boxes throughout the Site included a barn owl box, would be beneficial by providing nesting opportunities.</p> <p>Bat boxes are recommended to be installed on the structures or mature trees to increase the suitability of the Site for roosting bats.</p>	After works are completed
AP8	<p><b>Pond/wetland creation and boardwalk</b>                  Enlarging the wet areas within the woodland and/or creating a pond and scrapes would encourage invertebrates, amphibians and reptiles. Placing a boardwalk over the area would protect the wetland but also enable safe access for members of the public/nursery children</p>	During and after the works
AP9	<p><b>Thinning of woodland and planting</b>                  Woodlands to be thinned to encourage development of the understorey and ground layer. Possible enhanced with suitable planting such as hazel (<i>Corylus avellana</i>), hawthorn (<i>Crataegus monogyna</i>) and blackthorn (<i>Prunus spinosa</i>) should the understorey not develop naturally.</p>	After works are completed
AP10	<p><b>Lighting</b>                  Any lighting incorporated into the plans should ensure that it is placed so that it does not illuminate any roost access points or tree lines that may be used by foraging or commuting bats. Where possible, 'warm white' spectrum (&lt;2700 Kelvin) or wavelengths peaking higher than 550nm should be used, rather than 'cool white' (&gt;5700 Kelvin) lights (Institution of Lighting Professionals, 2018).</p>	During and after works

## Section 8 - References

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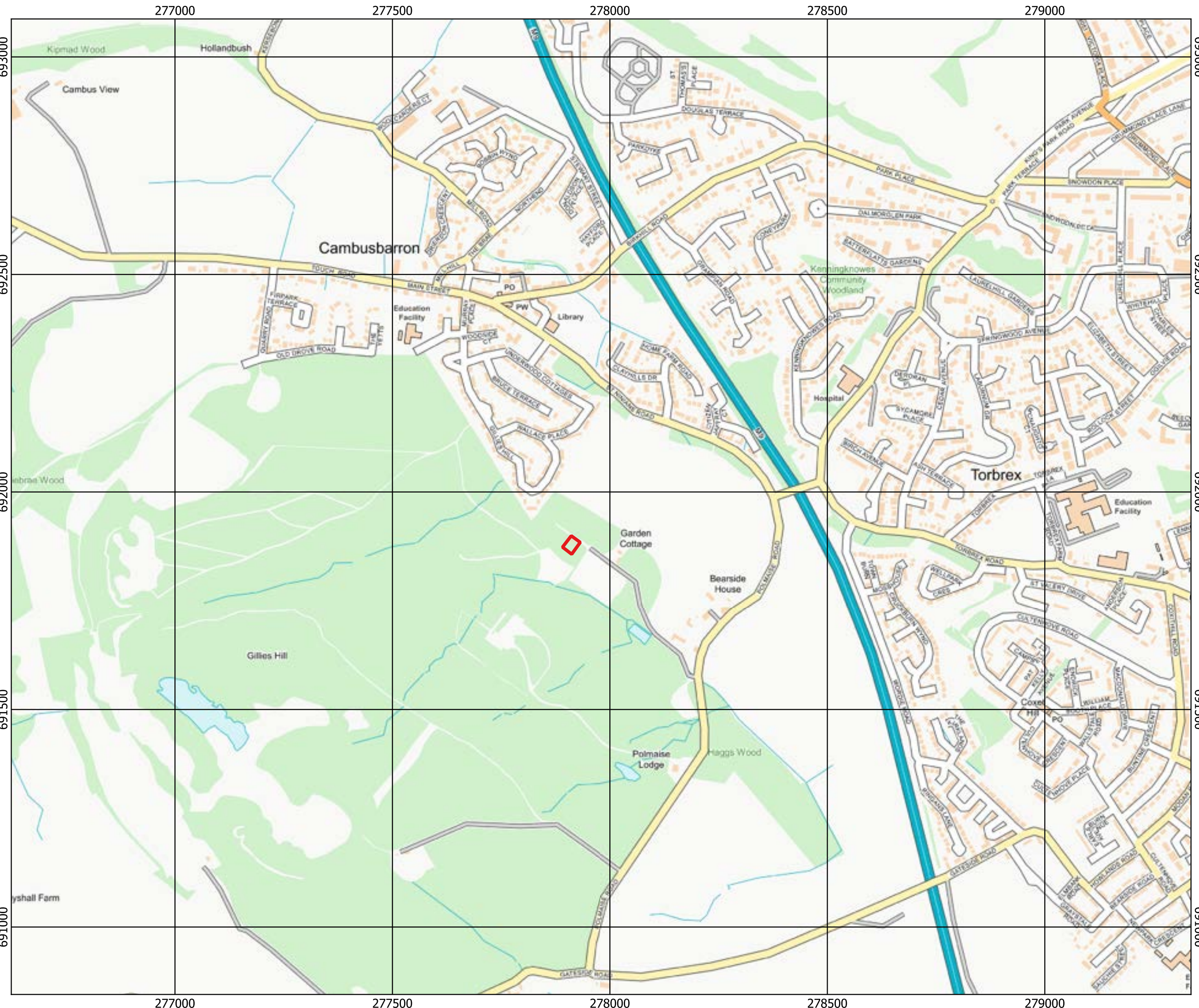
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## **Appendix I: Location Plan**





**Legend**  
 Potential site boundary

1:8000@ A3  
 0 100 200 m  
 

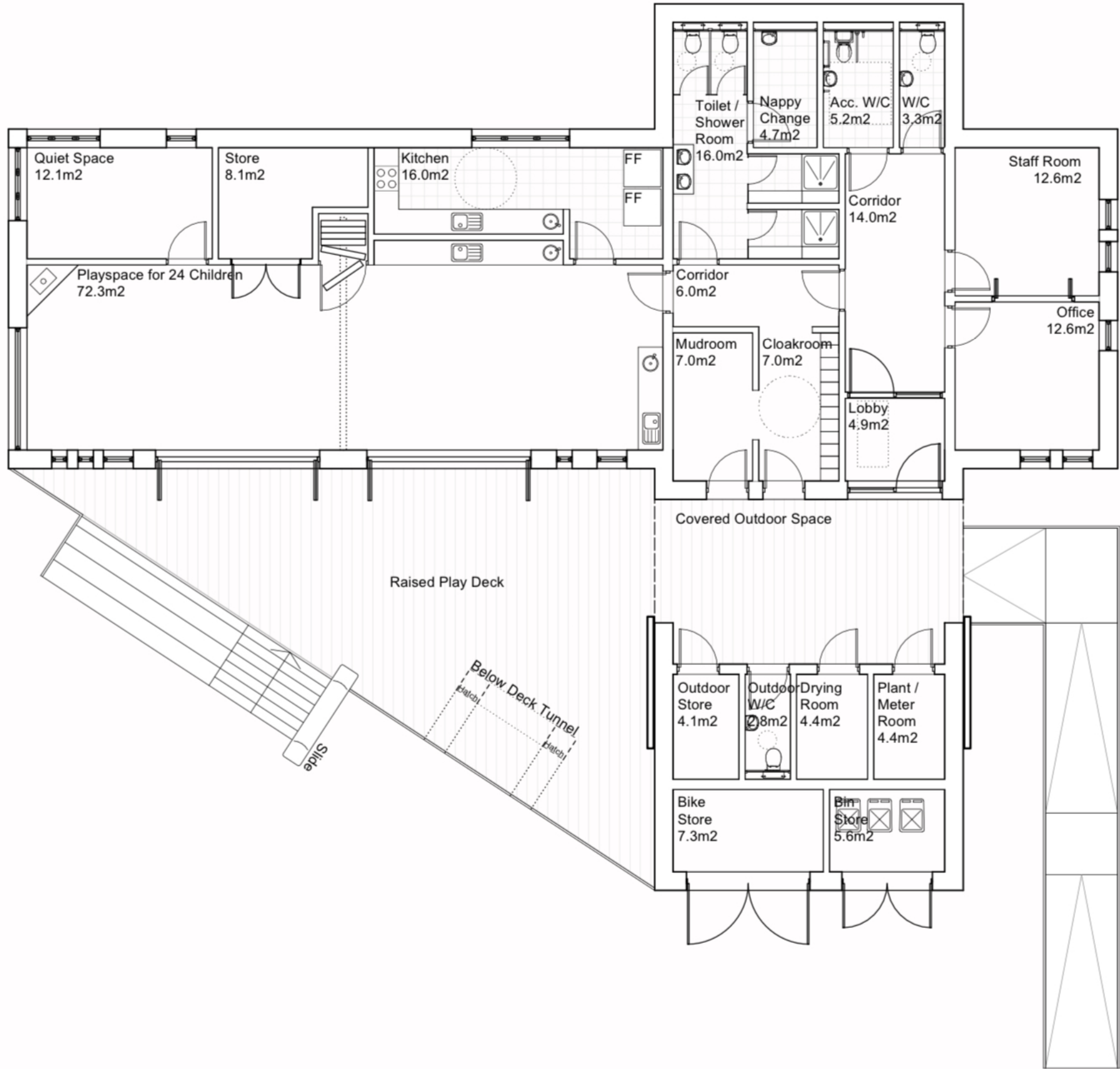
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 Reviewed: HS  
 Ref: CVN04.23.2760 | Revision: A  
 Date: 10/05/2023

**Preliminary Ecological Appraisal (PEA)**  
**Potential Cambusbarrow Village Nursery Site, Gillies Hill**



## **Appendix II: Proposed Works**





### Appendix III: Qualifications and Competencies

III.1.1 The table below contains the relevant qualifications, competencies and experience in relation to the surveyors present on the Site and the author of the report:

*Table III.1: Staff qualifications and competencies*

<b>Surveyor and Role</b>	<b>Qualifications</b>	<b>Relevant Experience</b>
Kay Paul, Author, Lead Surveyor	Qualifying member of CIEEM	Kay is a capable habitat surveyor and has a years' experience of carrying out habitat and species surveys and reporting on surveys.
Heather Simpson, Surveyor	BSc (Hons), MSc, CEnv, MCIEEM	Heather is an accomplished habitat surveyor with over eight years of experience in carrying out Phase 1 and PEAs and reporting on surveys.

## Appendix IV: Relevant Legislation

### IV.1 Wild Plants

- IV.1.1 Wild plants are protected under the following UK Legislation:
- The Conservation (Natural Habitat. &c.) Regulations 1994, as amended
  - The Wildlife and Countryside Act 1981, as amended
- IV.1.2 A small number of wild plants occurring within the UK are regarded as European Protected Species (EPS), under The Conservation (Natural Habitats, &c.) Regulations 1994 as amended. Under these regulations, it is an offence to:
- Intentionally or recklessly pick, collect, cut, uproot or destroy such a plant or anything derived from it. This applies to all stages of the biological cycle.
  - Possess specimens of these plants or derivatives of them.
- IV.1.3 Under Schedule 8 of the Wildlife and Countryside Act 1981 as amended, it is an offence for:
- Any person to intentionally or recklessly pick, uproot or destroy any wild plant included in Schedule 8
  - An unauthorised person to intentionally or recklessly uproot any wild plant not included in Schedule 8.
- IV.1.4 With regards to invasive species, the Wildlife and Natural Environment (Scotland) Act 2011 makes it an offence to cause any non-native plant species to grow in the wild.

### IV.2 Annex I Habitats

- IV.2.1 The Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive) was adopted in 1992 and promotes the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats listed on Annex I of the Directive at a favourable conservation status, introduce robust protection for those habitats of European importance and contribute to a coherent European ecological network of protected sites by designating Special Areas of Conservation (SACs) for habitats listed on Annex I. In applying these measures Member States are required to take account of economic, social and cultural requirements, as well as regional and local characteristics.

### IV.3 Birds

- IV.3.1 Birds are protected under UK and European Legislation, including, amongst others, the following:
- Wildlife and Countryside Act 1981 (as amended)
  - The Nature Conservation (Scotland) Act 2004
- IV.3.2 All wild birds (defined as 'any species which is ordinarily resident in or is a visitor to 'the European Territory of any member state' (of the EU)'), their nests and their eggs are protected by law unless an exception is specified in the legislation.
- IV.3.3 Basic protection afforded to wild birds makes it an offence, unless specifically excluded, to:
- Intentionally or recklessly kill, injure or take a wild bird
  - Intentionally or recklessly take, damage or destroy or otherwise interfere with a nest whilst being built or in use
  - Intentionally or recklessly at any other time take, damage, destroy or otherwise interfere with a nest habitually used by any wild bird included in Schedule A1
  - Intentionally or recklessly obstruct or prevent any wild bird from using its nest
  - Intentionally or recklessly take or destroy an egg of a wild bird
  - Have in possession or control any wild bird, dead or alive, or any part of a wild bird taken in contravention to the Wildlife and Countryside Act 1981 or whilst the Protection of Wild Birds Act 1954 was in force
  - Have in possession any live bird of prey of any species in the world unless it is registered and ringed

- Have in possession or control any bird of a species occurring on Schedule 4 of the Wildlife and Countryside Act 1981 unless registered and in most cases ringed (in accordance with the Secretary of State's regulations)
- Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or in, on or near a nest containing eggs or young, or disturb the dependent young of such a bird.
- Intentionally or recklessly or knowingly cause or allow any wild bird which leks included in Schedule 1 to be disturbed while it is doing so
- Intentionally or recklessly or knowingly cause or allow any wild bird included in Schedule 1A to be harassed
- Use traps to kill, injure or take wild birds.