



Preliminary Ecological Appraisal (PEA) Report
KJD Investments Oxford
Land off Sandford Road, Littlemore

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Northamptonshire Office
7-8 Melbourne House
Corbygate Business Park
Weldon, Corby
Northamptonshire
NN17 5JG

01536 408 840
info@lgluk.com

www.lgluk.com



Oxfordshire Office
Greystones House
Burford Road
Chipping Norton
Oxfordshire
OX7 5UY

01608 656 167
info@lgluk.com

www.lgluk.com



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DOCUMENT CONTROL SHEET

Ecological Team	
Jo Alderton FdSC BA(Hons) BSc(Hons) PGDip Law	Business Unit Manager & Ecological Consultant
Sophie Amphlett BSc (Hons) MSc GradCIEEM	Ecological Consultant
Rachel Jackson BSc (Hons)	Graduate Ecological Consultant
Marie Allcoat/Abi Partridge	Project Administrator

REVISION HISTORY

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DISCLAIMER

It should be noted that the information above provides details of the Site's current ecological situation. In the event that the proposed development does not commence within 12 months of the date of this report, further advice should be sought from a suitably qualified ecologist as to whether the information provided requires updating in light of changing ecological conditions.

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1. EXECUTIVE SUMMARY

- 1.1 Lockhart Garratt Ltd was commissioned by KJD Investments Oxford to carry out a Preliminary Ecological Appraisal (PEA) including desk study for Land off Sandford Road, Littlemore for the proposed development of six residential dwellings and associated landscaping and parking.
- 1.2 The Site itself is not subject to any statutory or non-statutory designation. There are two statutory designations within 2km of the Site, and 16 non-statutory designations, the closest being Littlemore Railway Cutting SSSI and OCWS located approximately 400m to the west of the Site. A range of protected mammal and bird species were identified within 2km of the Site by the desk study.
- 1.3 The Preliminary Ecological Appraisal (PEA) was undertaken on the 18th March 2020. The habitat within the Site consisted of improved grassland, ephemeral/short perennial, tall ruderal, buildings and hardstanding and scattered trees.
- 1.4 The report considers the ecological conditions within the site in the context of the proposed erection of six new residential units, with associated parking and landscaping.
- 1.5 Overall it is considered that subject to the implementation of the recommendations and enhancements set out within this report, the overall value of the Site in regard to biodiversity would be increased. Recommendations, in this context, are as follows:
 - Clearance and construction works should be scheduled outside of the main bird breeding season (March to August inclusive). If in the event works need to proceed within this period, then specialist advice from a suitably qualified ecologist should be sought.
 - Boundary features such as scattered trees and connective features should be retained as much as possible within the proposal for the scope of works.
 - Any landscape planting should incorporate native species, including those species known to provide foraging opportunities for breeding birds and nectar sources for invertebrates.
 - Enhancements in the form of bird and bat boxes are also recommended.

2. INTRODUCTION

Terms of Instruction

- 2.1 Lockhart Garratt Ltd has been commissioned by KJD Investments Oxford to undertake an ecological assessment of land at Sandford Road, Littlemore in respect of the proposed development of six residential dwellings and associated landscaping and parking.

Aim of the study

- 2.2 The purpose of this report is to provide an assessment of ecological features present within the site, to identify any ecological constraints and provide appropriate mitigation, compensation and avoidance measures to ensure no net loss in biodiversity as a result of the proposals.

Documents Provided

- 2.3 As background information, the following documentation was provided:

- Proposed Site Plan: 190277 – A – Pr – 90; NCA Architecture; 24/09/19

Site Description

- 2.4 The site is located SP 53678 02666 (hereafter referred to as “the Site”). The assessment covered the whole of the Site, which is approximately 0.17ha in area.
- 2.5 At the time of the assessment the Site mostly comprised improved grassland, building and hard, ephemeral/short perennial, tall ruderal and scattered trees.
- 2.6 The Site is bound by the George Inn and Sandford Road to the west and residential properties with associated landscaping and parking to the north, east and south.
- 2.7 The Site was surrounded by residential properties and amenity buildings as part of the wider residential settlement of Littlemore and wider Oxford suburbs.
- 2.8 The Site location plan is provided below at **Figure 1** and a survey boundary plan is provided below at **Figure 2**.

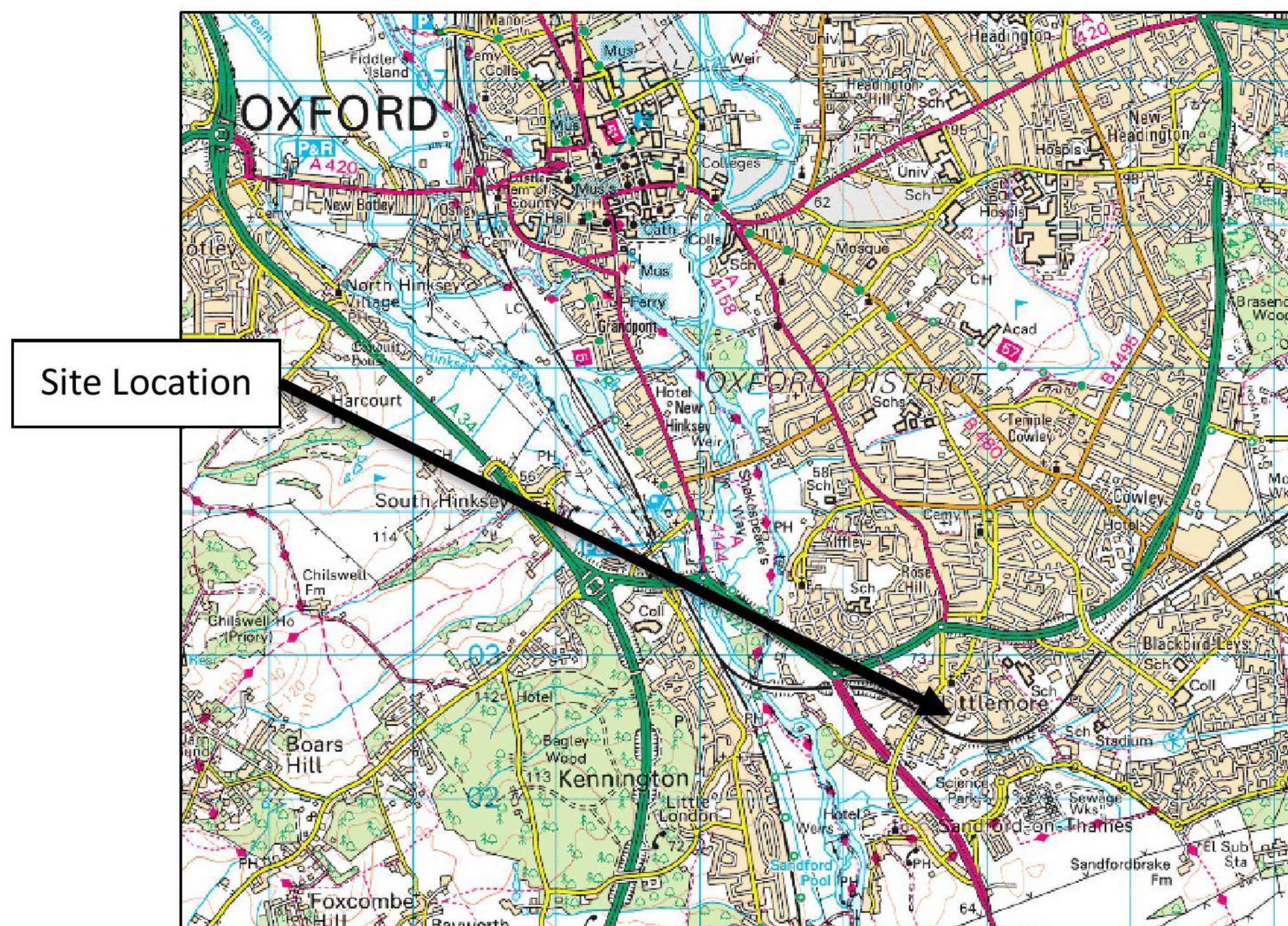


Figure 1: Site Location Plan

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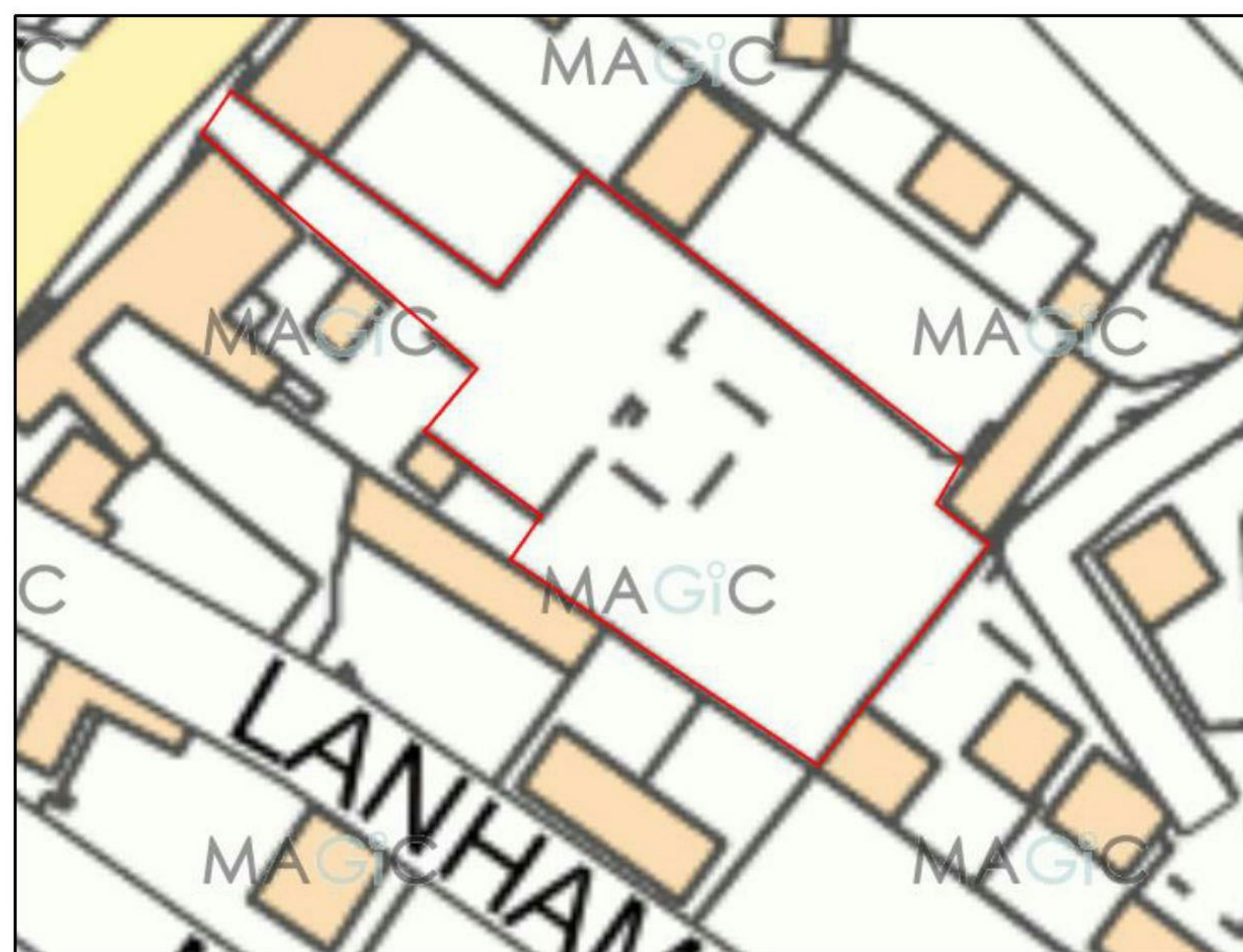


Figure 2: Red line boundary

Proposed Development

- 2.9 The proposed development involves the erection of six residential dwellings with associated landscaping and gardens.

3. METHODOLOGY

- 3.1 The methodology for the ecological assessment was split into three main areas: a desk study, habitat survey and faunal survey. These are discussed in more detail below.

Desk Study

- 3.2 Existing ecological information on the Site and surrounding area was requested from the Thames Valley Environmental Records Centre (TVERC). The purpose of the desk study was to collect baseline information to identify statutory and non-statutory designated sites, legally protected species and species of conservation concern within a 2km radius of the Site in line with CIEEM Guidelines for Preliminary Ecological Appraisal (2017).
- 3.3 A review of online resources, including the Multi Agency Geographic Information for the Countryside (MAGIC) database was also undertaken to establish the ecological context for the Site (accessed 11th March 2020). The MAGIC website was also reviewed to identify any designated sites of European Importance within 2km of the Site.
- 3.4 In addition, Ordnance Survey and aerial mapping was reviewed to identify any ponds within 500m of the Site.

Phase 1 Habitat Survey

- 3.5 A Phase 1 Habitat Survey was undertaken by Sophie Amphlett on the 18th March 2020 in order to ascertain the general ecological value of the Site and to determine the need for further assessment.
- 3.6 The Phase 1 Habitat Survey was undertaken in accordance with standard methodology (JNCC, 2010¹). The Phase 1 methodology involves the classification of habitat types based on vegetation present. The Site was classified into areas of similar botanical community types, with a representative species list provided for each habitat type identified. In addition invasive weeds were also searched for during the Phase 1 Habitat Survey, as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).
- 3.7 The information is presented in accordance with the standard Phase 1 Habitat Survey format with habitat descriptions and a habitat map, provided at **Appendix 1**. In addition, target notes providing supplementary information, for example relating to species, habitat composition, structure and management are also presented on the habitat map.
- 3.8 All of the species that occur within each habitat type would not necessarily be detectable during survey work carried out at any given time of year. The botanical work was undertaken outside of the optimal survey period, however given the habitat types present, it is considered that a robust assessment was undertaken.

Faunal Surveys

- 3.9 General faunal activity was recorded during the PEA field survey, including mammals and birds observed or heard. Specific attention was also paid to the potential presence of any protected, rare or notable species, as described below.

¹ Joint Nature Conservation Committee (2010). Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit.

Bats

Tree Assessment

- 3.13 A preliminary ground-based assessment of all suitable trees located on or immediately adjacent to the study area was undertaken to determine their potential to support roosting bats (for details on the location of trees with bat roost potential refer to highlighted trees on the habitat map in **Appendix 1**).
- 3.14 All suitable features such as cracks and splits in limbs, hollows and cavities, natural holes, woodpecker holes, loose bark and dense ivy were assessed using binoculars and high powered torches where appropriate. Evidence of bat roost themselves, including droppings, feeding remains and urine staining were also searched for during the assessment.

Building Inspection

- 3.15 All buildings within the Site were subject to external inspection to search for evidence of bat activity where safe to do so.
- 3.16 An exterior inspection was undertaken in order to search for any signs of use by bats, such as droppings or staining, and to identify any potential access points. Binoculars were used to inspect any inaccessible areas more closely.
- 3.17 Where no direct or indirect evidence of roosting bats were confirmed, trees and buildings were categorised as being of high, moderate, low or negligible potential to support roosting bats based on the type and number of suitable bat features present, in accordance with best practice guidance, Bat Conservation Trust (2016) Bat Surveys: Good Practice Guidelines 3rd Edition.
- High potential – one or more potential roosting features present within a structure, with enough suitable surrounding commuting and foraging habitat, which is large enough to be able to shelter a large number of bats on a regular basis. These include maternity and hibernation roosts.
 - Moderate potential – one or more potential roosting features present within a structure that is likely to shelter a number of bats, but unlikely to support a roost of conservation status.
 - Low potential – one or more potential roost features present within a structure yet is not surrounded by suitable commuting and foraging habitat and does not provide enough protection and space to shelter a large number of bats. This also includes trees with no visible potential roost features but is of adequate age and structure to offer limited roosting potential.
 - Negligible potential – whereby no evidence of bats was observed and no suitable features for bats are supported, such that their presence is considered negligible.
- 3.18 The evaluation of ecological features and an assessment of likely impacts should be based on available resources and the professional judgement of the ecologist concerned. Ecological value of features should be undertaken in accordance with the approach outlined in the Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018).
- 3.19 A five-point evaluation scale has been applied to assist with the identification of key features of ecological significance in relation to the proposed development. This is an arbitrary scale based upon characteristics of ecological importance as listed in CIEEM (2018), which experience has shown is effective at this level of assessment.
- 3.20 In evaluating ecological features and resources, geographic frame of reference is considered. The value of an ecological feature is determined within a defined geographical frame of reference as detailed in **Table 1**:

Table 1: Classification of the value of ecological features and resources

Value	Importance	Species	Habitat
Very High	International	A regularly occurring population of an internationally important species, which is threatened or rare in the UK, where the population is a critical part of a wider population or where a species is at a critical phase in its life cycle at this scale.	An internationally designated site including SAC, SPA, Ramsar, or one proposed for designation. Sites supporting areas of priority habitats which are scarce at an international level of where it is needed to maintain the viability of a larger area at that level.
High	National	A regularly occurring population / number of a nationally important species which is threatened, or rare, where the population is a critical part of wider population or where a species is at a critical phase in its life cycle at this scale. A regularly occurring population of a nationally important species on the edge of its natural range. A species assemblage of national significance.	A nationally designated site ie SSSI, or one that meets the published criteria. Sites supporting areas of priority habitats which are scarce at a national level or where it is needed to maintain the viability of a larger area at that level.
Medium	Regional / County	A regularly occurring locally significant population of a species listed as being nationally scarce or a county Red Data book or BAP on account of its rarity. A regularly occurring, locally significant number of a regionally / county important species or where the population is a critical part of a wider population or where a species is at a critical phase in its life cycle at this scale. A species assemblage of regional or county significance.	Sites supporting a viable area of a priority habitat which is scarce at a regionally or county level or where is needed to maintain the viability of a larger area. A County designated site or one that meets published criteria. Local Nature Reserves, Local Wildlife Sites / potential Local Wildlife Sites at that level.
Low	Local	A population of a species that is listed in a district BAP because of its rarity in the locality and a species assemblage of local or district significance. A regularly occurring, locally significant number of district importance or where the population is a critical phase in its life cycle at this scale.	Sites / features that are scarce within the local area or district. Areas of habitat considered enriching appreciably the habitat resource within the context of the locality or which buffer those of a more important nature.
Site	Site Only	Species, which are not protected or rare in the local area and are not at a critical phase in its life cycle at this scale.	Habitats of very low importance and rarity but of ecological importance within the Site.

3.21 Ecological features may also be deemed to be of negligible value if they are deemed to be of very low ecological importance and / or rarity.

3.22 Ecological features may be defined as:

- Statutorily protected (Natura 2000, national Nature Reserves, Sites of Special Scientific Interest and Local Nature Reserves) or locally designated sites (local Wildlife Sites or Sites of Importance to Nature Conservation);
- Sites and features of biodiversity value not designated in this way such as ancient woodland; or
- Species of biodiversity value or other significance, including those protected and controlled by law.

4. LEGISLATION AND PLANNING POLICY OVERVIEW

- 4.1 A summary of the legislative and planning context which has been used to inform this ecological assessment is provided below.

Legislation

- 4.2 A number of tiers of legislation protect wildlife and habitats within England and Wales, the highest of which being European legislation. A summary of relevant legislation is provided below:

- The Wildlife and Countryside Act 1981 (as amended).
- The Natural Environment and Rural Communities Act 2006 (NERC).
- The Conservation of Habitats and Species Regulations 2017.

Policy

The planning policy framework that relates to nature conservation in Oxford is provided at two levels: nationally through the National Planning Policy Framework (NPPF) and locally through policies in the Oxford City Council Local Plan.

Local Policy – Oxford City Council Local Plan: Core Strategy 2026

- 4.3 Policy CS12 – Biodiversity

“Development will not be permitted that results in a net loss of sites and species of ecological value. Where there is opportunity, development will be expected to enhance Oxford’s biodiversity.

Sites and species important for biodiversity will be protected:

- *International and national sites (the SAC and SSSIs): These must be protected from any development that will have an adverse impact.*
- *Local sites: No development should have a significant adverse effect upon a site that is designated as having local importance for nature conservation or as a wildlife corridor, save in exceptional circumstances where the importance of the development outweighs the harm, and where it is possible to compensate for the damage caused by providing adequate replacement habitat.*
- *Species and habitats of importance for biodiversity are found across Oxford. These will be expected to be protected from harm, unless the harm can be appropriately mitigated.*

Opportunities will be taken (including through planning conditions or obligations) to:

- *maintain, restore and add to the network of unimproved flood meadows within the Thames and Cherwell flood plains;*
- *deliver Biodiversity Action Plan targets and meet the objectives of Conservation Target Areas;*
- *create links between natural habitats and identify a strategic Oxford habitat network; and*
- *ensure the inclusion of features beneficial to biodiversity (or geological conservation) within new developments throughout Oxford.”*

Biodiversity Action Plan (BAP) and 2006 NERC Act Habitats and Species of Principal Importance

- 4.4 In 2007, the UK Biodiversity Action Plan (BAP) Partnership published an updated list of priority UK species and habitats covering terrestrial, freshwater and marine biodiversity to focus conservation action for species and habitats in the UK. The UK Post-2010 Biodiversity Framework succeeds the UK BAP. The Framework continues the conservation work initiated by the UK BAP following the establishment of the Convention on Biological Diversity in 1992.
- 4.5 The purpose of the Framework is to set a broad structure for conservation across the UK until 2020. In summary:
- To set out a shared vision and priorities for UK-wide activities, in a framework jointly owned by the four countries, and to which their own strategies will contribute;
 - To identify priorities at a UK scale which will help deliver biodiversity targets and the EU Biodiversity Strategy;
 - To facilitate the aggregation and collation of information on activity and outcomes across all countries of the UK; and
 - To streamline governance arrangements for UK-wide activities.
- 4.6 The habitats and species are identified as Habitats and Species of Principal Importance for the conservation of biological diversity in England under Section 41 of the 2006 Natural Environment and Rural Communities (NERC) Act. The NERC Act and NPPF make these species and habitats a material consideration in the planning process.
- 4.7 The Oxford City Council Local Biodiversity Action Plan (LBAP) produced in 2015, lists bees and other pollinators as a priority species and the habitats they require. It also mentions incorporating swift boxes into new building planning designs where possible. The presence of these species and / or habitats within the Site is considered within this report.
- 4.8 The LBAP contains objectives and targets for the species and habitats identified above. They should be considered in regard to the proposed development in order to identify opportunities for avoidance, mitigation and enhancement.

5. DESK STUDY RESULTS

5.1 The full information collected during the desk study from the Thames Valley Environmental Records Centre (TVERC) is presented in **Appendix 1** and summarised below.

Sites of Nature Conservation Interest

- 5.2 The Site itself is not subject to statutory or non-statutory designations.
- 5.3 The records search identified two statutory protected sites and 16 non-statutory sites within 2km of the Site, as summarised in **Table 2**:

Table 2: Summary of Ecology Designations

Designated Site Name	Designation	Proximity	Description
Littlemore Railway Cutting	SSSI	400m west	This locality shows a remarkable deposit of mid-Oxfordian (Jurassic) age of considerable palaeographic and environmental interest. The cutting has exposures of the limestone and clay units of the Littlemore Clay. A key site in studies of sedimentation and facies change in the Oxford reef area.
Iffley Meadows	SSSI	1.3km north-west	This site comprises a series of alluvial flood meadows covering an area of 36ha. The site features diverse grassland species, including the largest population of fritillaries <i>Fritillaria meleagris</i> in the middle Thames area.
Fiddler's Elbow Marsh	LWS	1km south-west	This island lies centrally between two wide channels of the River Thames, just above the Sandford pool. The central area is a reedbed with areas of tall herb vegetation including meadowsweet, nettle and goosegrass, as well as more interesting species such as meadow rue and marsh stitchwort. The banks are fringed with crack willow and areas of grey willow carr. Reed buntings, reed warblers and sedge warblers breed here.
Heyford Hill Lane Pasture	LWS	1km west	This riverside pasture is quite wet and has escaped agricultural improvement through the use of herbicides and fertilizers or ploughing and reseeded. It is rich in wildflowers and has patches of tall wetland vegetation. This type of wet grassland is a national priority for nature conservation. The field has a mixture of grassland and wetland wildflowers. These include the rare snake's-head fritillary, which is found in only a few meadows mainly along or close to the Thames.

Designated Site Name	Designation	Proximity	Description
Bypass Swamp	LWS	1.2km west	This secluded area in the floodplain of the River Thames is kept as an emergency storage area for the sewage pumping station. Most of the area is species-rich tall herb fen with a mixture of reed, greater reedmace, greater pond-sedge and great willowherb. There is a substantial area of sedge bed of greater pond-sedge, with some brown sedge and other species. A pond was dug to enhance the wildlife, this has starwort and common duckweed. The drain along the east of the site is now overgrown.
Wetland South of Iffley Meadows	LWS	1.4km west	This area consists of a variety of swamp habitats and ponds and lies adjacent to Iffley Meadows SSSI. It is predominantly reedbed with areas of scrub and a wooded boundary to the north. It has a network of ditches and includes some small areas of open water.
Bagley Wood	LWS	1.7km west	Ancient woodland site with extensive forestry plantations, both conifer and broadleaved. Current planting being dominated by coniferous soft woods (Corsican pine, Norway spruce, Douglas fir and European larch). The woodland is an important bird site, all three species of woodpecker and marsh tit was seen on the visit, buzzard also breeds in the wood. There are historical records of breeding nightingale for the wood. Site is a traditional breeding site for goshawk, and very important in an Oxfordshire context.
Meadow next to Iffley Meadows	LWS	1.7km north-west	A group of three small fields supporting reedbed habitat species and rough grassland, covering an area of approximately 0.4ha. The site lies adjacent to Iffley Meadows SSSI.
Kennington Pool	LWS	1.9km north-west	Dug in the 19th century as a borrow pit for the construction of the railway, this pool has become noted for its diverse invertebrates, including the very rare glutinous snail. A wide range of invertebrates have been recorded, including four nationally notable beetles.
Kennington Memorial Field	LWS	1.9km south-west	This south facing pasture includes a substantial area of unusually species-rich neutral grassland. Botanically, the most interesting area of the field is the more steeply sloping central area below and around the scrub patches. This area has abundant large ant-hills and a good diversity of grasses and sedges usually associated

Designated Site Name	Designation	Proximity	Description
			with calcareous soil conditions, including upright brome grass, quaking grass and glaucous sedge
Littlemore Railway Cutting	OCWS	400m west	This railway cutting includes a geological SSSI. The embankments have areas of scrub and small open glades of rough grassland with a strong calcareous influence.
Littlemore and Northfields Brook	OCWS	450m south	These minor tributaries of the Thames support populations of Water Vole. The brook is mostly wooded with crack willow and goat willow.
Minchery Farm	OCWS	850m east	This abandoned meadow is bounded by the Littlemore Brook along the northern boundary and a brook that flows into the Littlemore Brook along the western boundary. It consists of woodland with small areas of marshy grassland and swamp communities. The site is part of the Littlemore Brook corridor.
Rivermead Nature Park	OCWS	1km north-west	Rivermead Nature Park is on the eastern bank of the River Thames, opposite Iffley Meadows SSSI. It is mainly wooded with lowland mixed deciduous woodland grading into wet woodland on more waterlogged ground along the drains. There are also areas of rough grassland, scrub and a pond.
Spindleberry Park	OCWS	1.5km south-east	Spindleberry Park is a public park located between Blackbird Leys and Greater Leys towards the southern edge of Oxford. The Northfield Brook runs along the southern edge of the site. Spindleberry Park is mainly wooded with a mixture of broadleaved plantation and more semi-natural woodland along the brook. There is also marginal vegetation along the brook, small areas of rough grassland, tall herb, a pond and small wetland area.
Iffley Meadows	BBOWT Reserve	1.3km north-west	The SSSI name for the reserve is Iffley Meadows. The SSSI is slightly larger than the reserve. These wet meadows crossed by old river channels with willow lined ditches have a rich diversity of wildlife.
Thames and Cherwell at Oxford	CTA	750m south-west	Riverside land along the Thames and Cherwell at Oxford covering an area of approximately 660ha. Extends from Kennington in the south to Botley in the West and as far as the A40 at Marston in the east.
Oxford Heights West	CTA	1.7km west	This complex area encompasses the Oxford Heights from west of the city to Appleton in the west and Frilford in the south west. It also includes Cumnor Hill, Boars Hill and the woodlands to the south.
Key: SSSI: Site of Special Scientific Interest LWS: Local Wildlife Site OCWS: Oxford City Wildlife Site BBOWT: Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust CTA: Conservation Target Area			

Protected Species

- 5.4 Below provides a summary of protected species which have been recorded within 2km of the Site. It should be noted that the absence of records should not be taken as confirmation that a species is absent from the search area.
- 5.5 Records of amphibians, badgers, bats, birds, invertebrates, otter, protected / notable or invasive plants, reptiles and water vole were recorded within 2km of the Site. No notable protected species were recorded within the Site.

Amphibians

- 5.6 One record of great crested newt was received for within 2km of the Site. The record, dated 1970-1979, is located approximately 1km west of the Site. Other amphibians recorded within 2km of the Site include: smooth newt *Lissotriton vulgaris*, common frog *Rana temporaria* and common toad *Bufo bufo*. No records of amphibians were received for within the Site.

Bats

- 5.8 Eight species of bat have been recorded within 2km of the Site, namely common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Noctule *Nyctalus noctula*, Serotine *Eptesicus serotinus*, brown long-eared *Plecotus auritus*, Daubenton's *Myotis daubentonii*, Natterer's *Myotis nattererii* and Barbastelle *Barbastellus barbastellus*. The closest record, dated 2013, relates to a Pipistrelle sp. sighted approximately 150m away from Site at a confidential location. No records of bats were received for within the Site.

Birds

- 5.9 51 species of protected or notable birds were received for within 2km of the Site. No records of protected or notable bird species were received for within the Site.
- 5.10 **Table 3** summarises the species of birds recorded within 2km of the Site:

Table 3: Bird Species Recorded within 2km of the Site

Species / Group	Legislation / Conservation Status
Brambling <i>Fringilla montifringilla</i>	CRoW, WCA 1i
Bunting, Corn <i>Emberiza calandra</i>	NERC S.41, BoCC_red
Crake, Spotted <i>Porzana porzana</i>	BDIR1, CRoW, WCA 1i
Crossbill, Common <i>Loxia curvirostra</i>	CRoW, WCA 1i
Cuckoo <i>Cuculus canorus</i>	NERC S.41, BoCC_red
Dove, Turtle <i>Streptopelia turtur</i>	NERC S.41, BoCC_red
Egret, Little <i>Egretta garzetta</i>	BDIR1, CRoW

Species / Group	Legislation / Conservation Status
Fieldfare <i>Turdus pilaris</i>	CRoW, WCA 1i, BoCC_red
Firecrest <i>Regulus ignicapilla</i>	CRoW, WCA 1i
Flycatcher, Spotted <i>Musciapa striata</i>	NERC S.41, BoCC_red
Goldeneye <i>Bucephala clangula</i>	CRoW, WCA 1i
Goose, Barnacle <i>Branta leucopsis</i>	BDIR1, CRoW
Goose, Greylag <i>Anser anser</i>	WCA 1ii
Goshawk <i>Accipiter gentilis</i>	BDIR1, CRoW, WCA 1i
Gull, Herring <i>Larus argentatus</i>	NERC S.41, BoCC_red
Harrier, Marsh <i>Circus aeruginosus</i>	BDIR1, CRoW, WCA 1i
Hobby <i>Falco subbuteo</i>	CRoW, WCA 1i
Kingfisher <i>Alcedo atthis</i>	BDIR1, CRoW, WCA 1i
Kite, Red <i>Milvus milvus</i>	BDIR1, CRoW, WCA 1i
Lapwing <i>Vanellus vanellus</i>	NERC S.41, BoCC_red
Linnet <i>Linaria cannabina</i>	NERC S.41, BoCC_red
Merlin <i>Falco columbarius</i>	BDIR1, CRoW, WCA 1i, BoCC_red
Nightingale <i>Luscinia megarhynchos</i>	BoCC_red
Osprey <i>Pandion haliaetus</i>	BDIR1, CRoW, WCA 1i
Owl, Barn <i>Tyto alba</i>	CRoW, WCA 1i
Owl, Short-eared <i>Asio flammeus</i>	BDIR1, CRoW
Partridge, Grey <i>Perdix perdix</i>	NERC S.41, BoCC_red
Peregrine <i>Falco peregrinus</i>	BDIR1, CRoW, WCA 1i
Plover, Golden <i>Pluvialis apricaria</i>	BDIR1, CRoW
Pochard <i>Aythya ferina</i>	WCA1i, BoCC_red
Redpoll, Lesser <i>Acanthis cabaret</i>	NERC S.41, BoCC_red
Redstart, Black <i>Phoenicurus ochruros</i>	CRoW, WCA 1i, BoCC_red
Redwing <i>Turdus iliacus</i>	CRoW, WCA 1i, BoCC_red
Skylark <i>Alauda arvensis</i>	NERC S.41, BoCC_red

Species / Group	Legislation / Conservation Status
Sparrow, House <i>Passer domesticus</i>	NERC S.41, BoCC_red
Sparrow, Tree <i>Passer montanus</i>	NERC S.41, BoCC_red
Starling <i>Sturnus vulgaris</i>	NERC S.41, BoCC_red
Swan, Bewick's <i>Cygnus columbianus</i>	BDir1, CRoW, NERC S.41, WCA 1i
Tern, Common <i>Sterna hirundo</i>	BDir1, CRoW,
Thrush, Mistle <i>Turdus viscivorus</i>	BoCC_red
Thrush, Song <i>Turdus philomelos</i>	BoCC_red
Tit, Marsh <i>Poecile palustris</i>	NERC S.41, BoCC_red
Tit, Willow <i>Poecile montanus</i>	NERC S.41, BoCC_red
Wagtail, Grey <i>Motacilla cinerea</i>	BoCC_red
Warbler, Cetti's <i>Cettia cetti</i>	CRoW, NERC S.41, WCA 1i
Warbler, Grasshopper <i>Locustella naevia</i>	NERC S.41, BoCC_red
Whinchat <i>Saxicola rubetra</i>	BoCC_red
Woodcock <i>Scolopax rusticola</i>	CRoW, WCA 1ii, BoCC_red
Woodpecker, Lesser Spotted <i>Dendrocopos minor</i>	BoCC_red
Wryneck <i>Jynx torquilla</i>	CRoW, WCA 1i
Yellowhammer <i>Emberiza citrinella</i>	NERC S.41, BoCC_red

Crustaceans

- 5.11 No records of white-clawed crayfish *Austropotamobius pallipes* were recorded within 2km of the Site. However, nine records of signal crayfish *Pacifastacus leniusculus*, an invasive non-native species, has been found within 2km of the Site. The closest record, dated 2007, was located approximately 1.2km north-west of the Site. It is an offence to release, or allow to escape, any non-native species into the wild in the UK, under the Wildlife and Countryside Act 1981.

Invertebrates

- 5.12 35 records of notable or protected invertebrates were received for within 2km of the Site. This includes three species protected under Schedule 5 of the Wildlife and Countryside Act (1981), including stag beetle *Lucanus cervus*, brown hairstreak *Thecla betulae* and small blue *Cupido minimus*. No notable or protected invertebrates were recorded within the Site.

Otter and Water Vole

- 5.13 30 records of otter and 47 records of water vole were received for within 2km of the Site. The closest record, dated 1999, pertains to a water vole recorded approximately 400m south of the Site near Littlemore Brook OCWS. No records of otter or water vole were received for within the Site.

Plants

- 5.14 Nine protected or notable plant species were received for within 2km of the Site. None of these recorded pertained to the Site. Creeping marshwort *Apium repens*, was recorded historically approximately 1.3km north of the Site – this species is protected under Schedule 8 of the Wildlife and Countryside Act (1981) (as amended) against commercial exploitation only.
- 5.15 In addition to the above, Japanese knotweed *Fallopia japonica*, Indian balsam *Impatiens glandulifera*, Canadian waterweed *Elodea Canadensis*, Nuttall's waterweed *Elodea nuttallii* and water fern *Azolla filiculoides* have been recorded. The closest record, dated 2016, pertains to Indian balsam located approximately 750m north-west of the Site. These are invasive non-native species included on Schedule 9 of the Wildlife Countryside Act (1981), as amended. It is an offence to release, plant or cause to grow in the wild any plant included on this schedule of the Act.

Reptiles

- 5.16 Two species of reptiles have been recorded within 2km of the Site, these being grass snake *Natrix Helvetica* and slow-worm *Anguis fragilis*. The closest record, dated 2005, relates to a sighting approximately 700m east of the Site near the Littlemore Brook OCWS.

Other Species

- 5.17 Other notable species recorded within 2km of Site include brown hare *Lepus auropaeus*, hedgehog *Erinaceus europeaus*, polecat *Mustela putorius*, barbell *Barbus barbus*, brown/sea trout *Salmo trutta*, bullhead *Cottus gobio* and European eel *Anguilla anguilla*.
- 5.18 The closest recorded species, recorded in 2019, pertains to a hedgehog sighted 20m west in a neighbouring garden. All species are listed on the UK List of Priority Species and Species of Principal Importance under Section 41 of the 2006 NERC Act. Barbel, brown trout, bullhead and European eel are also protected under the European Habitat Directive numbers 5 and 2. American mink *Neovison vison* was also recorded approximately 1.2km south-west of the Site. This is an invasive non-native species and is an offence to release, or allow to escape, any non-native species into the wild in the UK, under the Wildlife and Countryside Act 1981.

6. PHASE 1 HABITAT SURVEY RESULTS

- 6.1 The Phase 1 Habitat survey was conducted on 18th March 2020 in good weather conditions (90% cloud cover, Beaufort Scale 3).

Field Survey Limitations

- 6.2 The botanical work was undertaken outside of the optimal survey period, however given the habitat types present, it is considered that a robust assessment was undertaken. Furthermore, access to a building bordering the Site (B1) was not possible, and as such was assessed externally for bat roosting potential from within the Site bounds only.

Habitat Descriptions

- 6.3 The full Phase 1 Habitat Survey Map detailing the location of the above habitats and other features of ecological interest with Target Notes (TN) is presented at **Appendix 1**. The habitat descriptions below should be read in conjunction with this plan and any associated Target Notes.
- 6.4 Habitats identified during the Phase 1 Habitat Survey are detailed below in alphabetical order (not in order of ecological importance):
- Built Environment
 - Ephemeral/short perennial
 - Improved Grassland
 - Scattered Trees
 - Tall Ruderal

Buildings

- 6.5 One building was present along the Site boundary (B1). The use of the building is unknown as access was only permitted externally from within the Site (B1 was located within a private garden). The building is approximately 2m high and of timber construction clad with timber shiplap with a pitched corrugated iron roof. A fascia board was present on the south face of the building and was well sealed against the shiplap.
- 6.6 Overall, the building is considered unsuitable for roosting bats due to the lack of external features based on the assessment undertaken from within the Site.



Figure 3: B1, near the east boundary of the Site

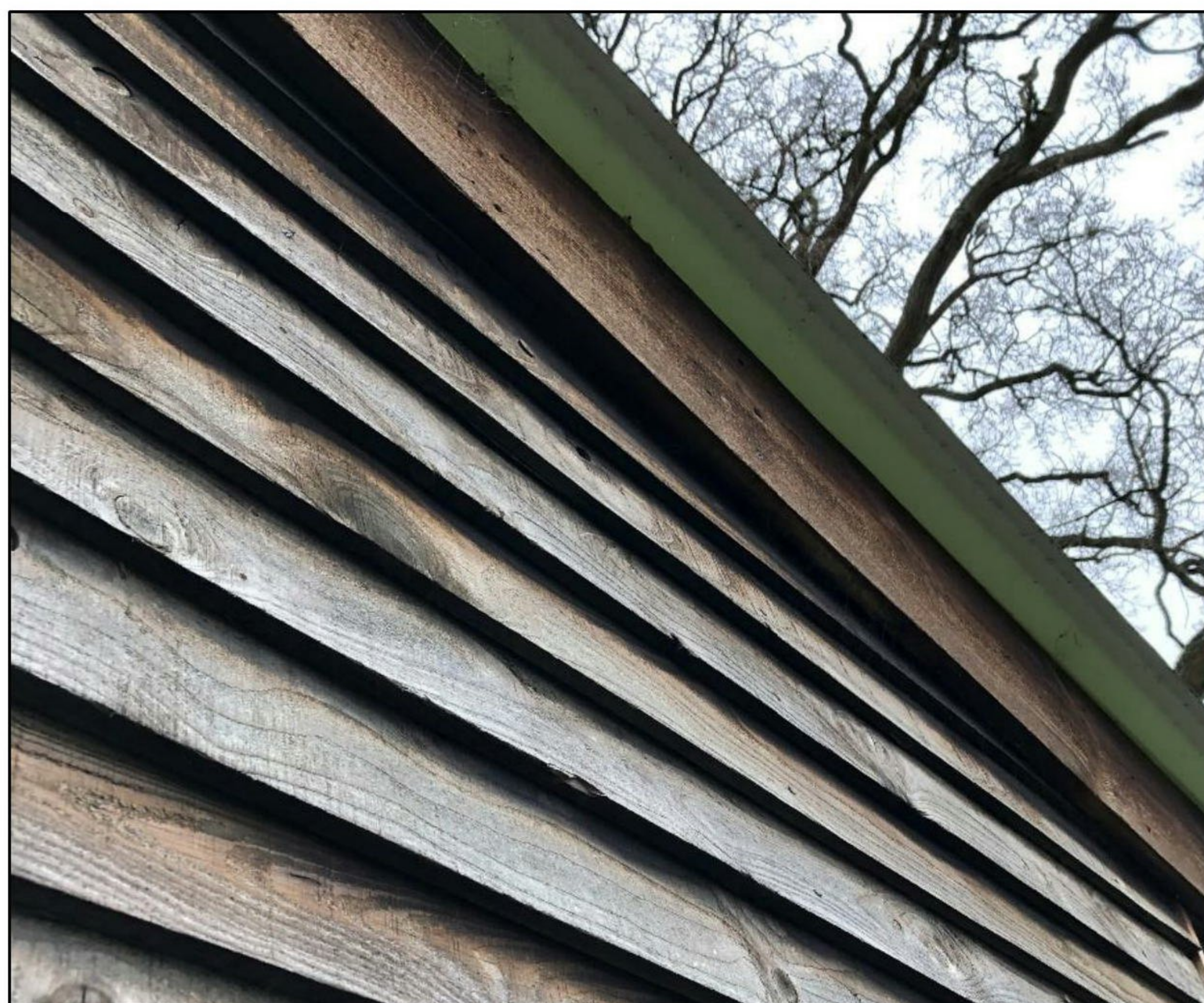


Figure 4: External view of B1 with well-sealed timber shiplap and fascia

Ephemeral/Short Perennial

- 6.7 A linear band of patchy ephemeral/short perennial was present towards the south-east of the Site. This habitat was heavily disturbed and once covered in gravel/hardstanding before being colonised by ephemeral/short perennial.
- 6.8 Species recorded in this habitat included chickweed *Stellaria media*, cleavers *Galium aparine*, cranesbill *Geranium sp.* and groundsel *Senecio vulgaris*.
- 6.9 Overall, the habitat was considered to be of low ecological value.



Figure 5: Ephemeral/short perennial

Improved Grassland

- 6.10 This habitat covered the eastern portion of the Site and did not show any signs of being maintained.
- 6.11 Species recorded within this habitat included annual meadow grass *Poa annua*, perennial rye grass *Lolium perenne*, wall barley *Hordeum murinum*, creeping buttercup *Ranunculus repens*, early dog violet *Viola reichenbachiana*, lords and ladies *Arum maculatum*, cleavers, common daisy *Bellis perennis*, mouse ear *Cerastium fontanum*, spotted medick *Medicago arabica*, yarrow *Achillea millefolium*, ground ivy *Glechoma hederacea*, ragwort *Jacobaea vulgaris*, spurge *Euphorbia sp.* and moss coverage of 30%.
- 6.12 Spanish bluebell *Hyacinthoides hispanica* was also found in this habitat along the north-east boundary fence. This is a Schedule 9 invasive species and should be removed from Site prior to work commencing.
- 6.13 Overall, this habitat is considered to be of low ecological value.



Figure 6: Improved grassland

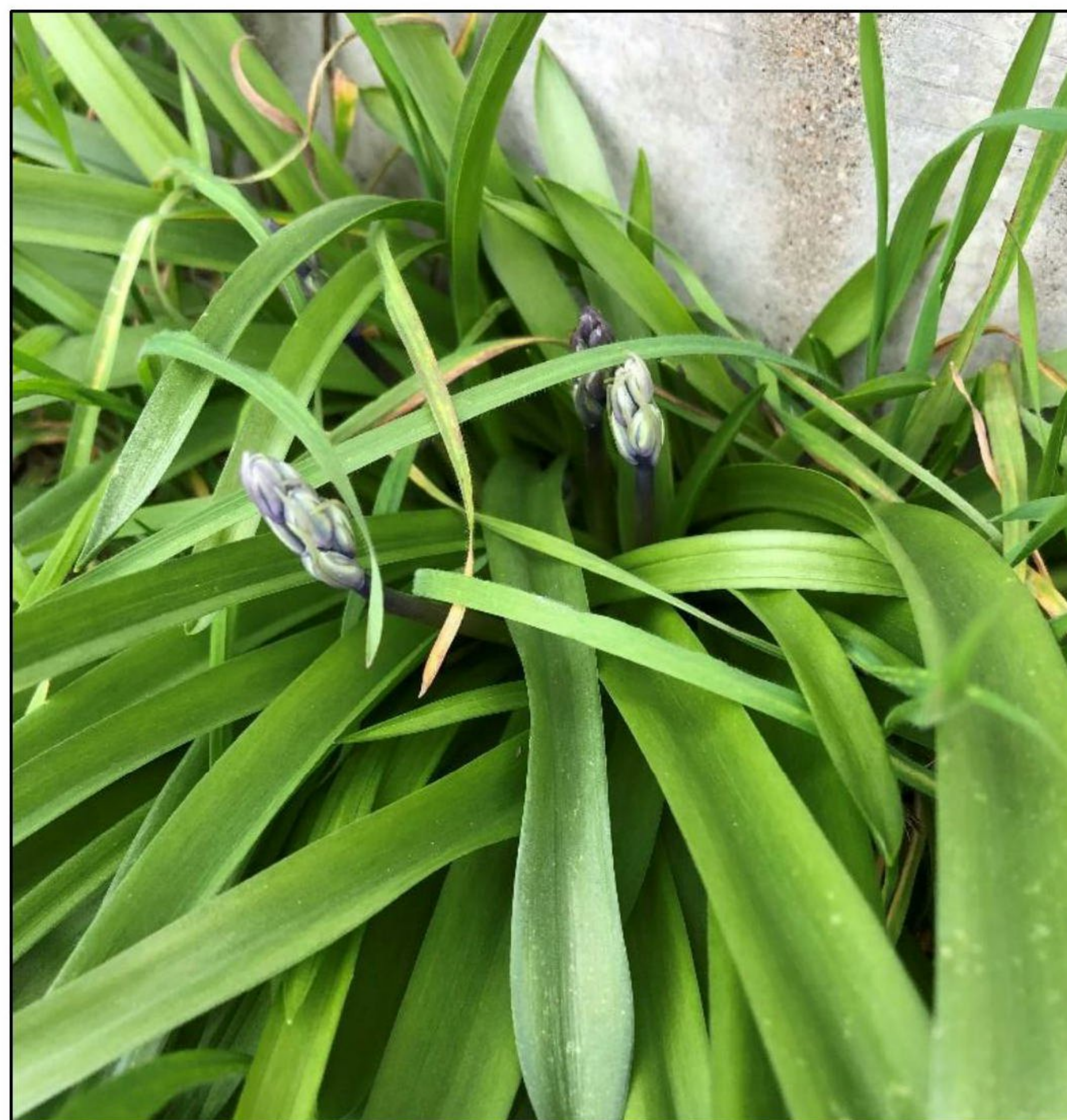


Figure 7: Spanish bluebell found within the improved grassland habitat

Scattered Trees

- 6.14 Several scattered trees were located across the Site.
- 6.15 Species found include holly *Ilex aquifolium*, beech *Fagus sylvatica*, hazel *Corylus avellana*, cypress *Cupressus sp.*, elder *Sambucus nigra*, blackthorn *Prunus spinose*, cherry *Prunus sp.* and common box *Buxus sempervirens* which was clad in ivy *Hedera helix*.
- 6.16 All trees were found to have negligible suitability for roosting bats but were of value to nesting birds.



Figure 8: Ivy clad common box in the centre of the Site

Tall Ruderal

- 6.17 This habitat bordered the south-east and south-west boundaries of the Site.
- 6.18 Species present include common nettle *Urtica dioica* which was the dominant species recorded, red dead nettle *Lamium purpureum*, groundsel, *Pulmonaria sp.*, lords and ladies, creeping buttercup, cleavers, dandelion *Taraxacum sp.*, willowherb *Epilobium*, cranesbill *sp.*, bramble *Rubus fruscticosus*, *Angelica sylvestris*, creeping thistle *Cirsium arvense* and Yorkshire fog grass *Holcus lanatus*.
- 6.19 Overall, this habitat is considered to be of low ecological value.



Figure 9: Tall ruderal

Other Habitats

- 6.20 Hardstanding covers approximately 1/2 of the Site from the centre to the north-west boundary.
- 6.21 Several walls of different materials enclosed the Site. A stone wall borders the entrance to the Site in the north-west corner, a breezeblock wall with encroaching dog rose *Rosa canina* borders the Site between the stone wall and the fence, a red-brick wall borders the south-east boundary of the Site, and an ivy-clad stone wall borders the south-west boundary of the Site.

Evidence of Protected Species and Other Faunal Interest.

- 6.22 Evidence of hedgehog was found in the form of droppings near to B1 (see target notes at Appendix 1). Other species observed during the survey include honeybee *Apis mellifera*, coal tit *Periparus ater*, robin *Erithacus rubecula*, wood pigeon *Columba palumbus*, house sparrow and blackbird *Turdus merula*.

7. EVALUATION OF ECOLOGICAL CONTEXT

The Site

- 7.1 The Site is enclosed by the George Inn and Sandford Road to the west and residential properties with associated landscaping and parking to the north, east and south.
- 7.2 The Site was surrounded by residential properties and amenity buildings as part of the wider residential settlement of Littlemore and wider Oxford suburbs. Connectivity to the wider landscape was limited with most boundaries comprising walls or scattered trees with little ground cover.

Statutory Sites

- 7.3 The Site itself is not subject to any statutory designations.
- 7.4 The nearest designated nature conservation site is Littlemore Railway Cutting SSSI which is located approximately 400m from the Site. This site is designated due to its sedimentary features and as such is unlikely to be impacted by the proposed development.
- 7.5 Impact Risk Zones (IRZs) are a tool developed by Natural England to provide an initial assessment of the potential risks to SSSIs. The Site falls within one IRZ for the Littlemore Railway Cutting, however the IRZ does not apply to residential developments and as such further advice need not be sought.

Non-statutory Sites

- 7.6 The Site is not subject to any non-statutory designations.
- 7.7 The closest non-statutory site is Littlemore Railway Cutting OCWS adjoined to the SSSI of the same name. This site is located approximately 400m west of the Site. Due to its distance from the Site and the scope of proposed works, it is unlikely that the development will negatively impact the LWS.

8. HABITAT EVALUATION

8.1 The Site comprises improved grassland, ephemeral/short perennial, buildings and hardstanding, scattered trees and tall ruderal.

8.2 All of the habitats identified were considered to be of negligible or low ecological value.

Improved Grassland

8.3 This habitat is considered to be of low ecological value, however, it provides suitable foraging for hedgehogs (evidence found) and likely foraging birds, invertebrates and smaller terrestrial mammals, if present locally.

8.4 The current proposed works involve the permanent loss of this habitat.

Scattered Trees

8.5 The Site has several scattered trees present including holly, beech, hazel, cypress, elder, blackthorn, common box and cherry.

8.6 None of the trees were determined to be suitable for roosting bats, however, they could still be used by foraging and nesting birds as well as commuting bats.

8.7 The current proposed works involve the loss of the majority of trees on Site, potentially disturbing nesting and foraging birds.

Tall Ruderal

8.8 This habitat is considered to be of low ecological value, however, it still provides suitable foraging for small terrestrial mammals and birds.

8.9 The current proposed works involve the permanent loss of this habitat. General enhancements to encourage small foraging mammals and birds should be implemented into the proposed design to offset any potential loss in ecological value.

9. FAUNAL EVALUATION

- 9.1 The desk study located a variety of protected species records for the local area.
- 9.2 The Site has been assessed on the suitability of the habitats to support such protected species and the likelihood of those species being present. **Table 5** provides a summary account of protected species within the Site and local area.
- 9.3 In the absence of mitigation and further assessment the impacts on each species have been assessed using the following scale:

Table 4: Impact Levels and Criteria

Classification	Criteria
Negative (Significant)	Likely to create a significant effect, including loss, or long-term irreversible damage on the integrity / status of a valued ecological feature
Negative (non-significant)	Likely to create a negative effect without causing long-term or irreversible damage on the integrity / status of a valued ecological feature
Neutral	Effects are either absent or such that no overall net change to the ecological feature occurs.
Positive (non-significant)	Likely to create a beneficial effect on an ecological feature, or providing a new (lower value) ecological feature, without improving its conservation status markedly
Positive (significant)	Activity is likely to create a significant beneficial effect, including long-term enhancement and favourable condition of an existing valued ecological feature, or creation of a new valued ecological feature.

Table 5: Summary of Protected Species Associated with the Site

Species	Recorded in Desk Study	Evidence on Site	Potential on Site to Support Presence	Description of likely Impact on Species	Likely Impact
Amphibians	Yes – one record of great crested newts, dated 1979, recorded 1km from Site. Smooth newts, common frog and common toad were also recorded.	None	No – the majority of the Site is hardstanding, short perennial and improved grassland.	N/A	Neutral as there is no potential on Site.
Bats	Yes – several common species including soprano and common pipistrelle, Brown-long eared bat and Daubenton's bat. Four less common species included Natterer's bat, Serotine, Noctule and Barbastelle have also been recorded in the local area. The closest record, dated 2013, pertains to a confidential record approximately 150m from the Site.	None	No – the majority of the Site is hardstanding, short perennial and improved grassland. One building is present on Site, but is considered to be unsuitable for roosting bats. No trees on Site are considered to be suitable.	N/A	Neutral as there is no potential on Site.
Birds	Yes – a large number of farmland, wetland and garden birds.	Yes – an assemblage of common bird species	Yes – there is potential for birds to be utilising the scattered trees and tall ruderal for foraging and nesting.	The proposed plans include the removal of several trees and the tall ruderal habitat.	Negative (non-significant)
Crustaceans	No – no records of white-clawed crayfish were received for within 2km of the Site. However, several records of signal crayfish (an invasive species)	None	No – there is no suitable waterbodies within the Site	N/A	Neutral as there is no potential on Site

Species	Recorded in Desk Study	Evidence on Site	Potential on Site to Support Presence	Description of likely Impact on Species	Likely Impact
	were received, the closest, dated 2007, being 1.2km from the Site.				
Dormouse	No – no records received within 2km of Site.	None	No – the majority of the Site is hardstanding, short perennial and improved grassland. There are no suitable hedgerows on Site.	N/A	Neutral as there is no potential on Site.
Reptiles	Yes – several records of grass snake and slow-worm were received. The closest record, dated 2005, pertains to several records of slow-worm located approximately 700m from the Site.	None	No – the majority of the Site is hardstanding, short perennial and improved grassland.	N/A	Neutral as there is no potential on Site.
Otter	Yes – several records, the closest, dated 2014, being approximately 800m from the Site near the Fiddler's Elbow Marsh LWS.	None	No – there is no running water on Site.	N/A	Neutral as there is no potential on Site.
Water vole	Yes – several records, the closest, dated 1999, being 400m from the Site in Littlemore Brook OCWS.	None	No – there is no running water on Site.	N/A	Neutral as there is no potential on Site.
Other faunal interest (e.g. fox, hare)	Yes – several records pertaining to brown hare, hedgehog, polecat, barbell, brown trout, bullhead, European eel and American mink were received within 2km of the Site. The closest record, dated 2019, was of a hedgehog located approximately 20m from the Site.	Yes – several hedgehog droppings were located close to the east boundary and B1.	Yes – there is potential foraging for hedgehogs in the improved grassland and ruderal habitats.	The improved grassland habitat is to be lost, potentially resulting in a loss of foraging and sheltering habitat for hedgehogs.	Negative (non-significant)

10. RECOMMENDATIONS, FURTHER SURVEYS AND ENHANCEMENTS

Overview

- 10.1 Recommendations have been provided within this report that will safeguard the existing ecological interest features within the Site. Wherever possible, measures to enhance ecological and biodiversity value have also been set out.
- 10.2 Based on the survey undertaken to date and the recommendations for further surveys, the presence and potential presence of protected species has been given due regard.
- 10.3 In conclusion, implementation of the measures provided within this report enable the proposals to accord with national and local planning policy for nature conservation.

Designated Sites

- 10.4 Due to the distance between the Site and designated nature conservation sites in the local area it is considered highly unlikely that there will be any significant adverse effects on these sites as a result of the works. Therefore, no recommendations in relation to the designated sites are made.

Habitats

- 10.5 As part of the proposed works, it is anticipated that all habitats on Site are to be lost with the exception of some boundary features such as scattered trees, fences and walls.
- 10.6 All habitats on Site are considered to be of negligible to low ecological value and as such no specific recommendations are necessary.
- 10.7 It is recommended that as far as possible, the boundary features including the scattered trees, should be retained as they offer potential foraging, breeding and sheltering opportunities for a range of species.
- 10.8 In order to increase the biodiversity value of the site as part of the development any landscape planting should incorporate native species, including those species known to provide foraging opportunities for breeding birds and nectar sources for invertebrates.

Species

Nesting Birds

- 10.1 As the scattered trees may potentially offer breeding opportunities for birds' works affecting these habitats should take place outside the bird breeding season (March to August inclusive). If in the event works need to proceed within this period then specialist advice from a suitably qualified ecologist should be sought.

Mammal Safeguards

10.3 General construction safeguards should also be implemented as a precaution, which will also act to safeguard other mammals, such as hedgehog which have been found to frequent the Site:

- All contractors and Site personnel will be briefed on the potential presence of mammals such as badgers and hedgehog within the Site.
- Any trenches or deep pits within the Site are to be left open overnight will be provided with a means of escape should an animal enter. This could simply be in the form of a roughened plank of wood placed in the trench as a ramp to the surface. This is particularly important if the trench fills with water.
- Any trenches will be inspected each morning to ensure no animals have become trapped overnight.
- Food and litter should not be left within the working area overnight.

Bats

10.4 The existing scattered trees should be retained where possible so the foraging and commuting opportunities which this habitat currently offers for bats will be maintained.

10.5 Night working should be avoided where possible, lighting used during the construction phase must be directed away from the trees around the boundaries of the Site.

10.6 Construction practices should follow best practice in terms of dust and noise and control.

10.7 Any exterior lighting installed on the new buildings should be directed away from the retained trees and boundary features.

Enhancements

10.8 Development proposals should seek to provide enhancement opportunities for species using the Site. This could include the following measures:

- Removal of non-native invasive species (Spanish bluebell) and replacement with suitable native species;
- Planting of nectar, fruit and nut producing species;
- Provision of a minimum of three bird boxes on any suitable retained trees. Recommended box types include Schwegler 1B or Schwegler 2M, both of which are suitable for common garden birds;
- Where possible, swift boxes should be incorporated into the design of the building in order to aid this Oxford City LBAP species. Suitable box types include Schwegler 16S, Ibstock or a similar type mounted to manufacturer's specifications.
- Incorporating a minimum of three bat boxes in to the new building design. Recommended types include Ibstock Type B, C, or a similar design. For trees, Schwegler 2F is recommended;
- Provision of suitable gaps in fence lines to allow the movement of species such as hedgehog;
- Inclusion of refugia piles or hedgehog domes where practicable.

General

- 10.9 If in the unlikely event any protected species (e.g. amphibians, badgers, bats, reptiles, or nesting birds) are encountered as part of the works, then all works must stop, with advice sought immediately from Lockhart Garratt (01608 656167).

11. REFERENCES AND BIBLIOGRAPHY

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12. APPENDICES

Appendix 1: PEA Phase 1 Habitat Map

Ref: 19-2552



Legend:

Site Boundary

Scattered Tree

Tall Ruderal

Ephemeral/Short Perennial

I

Improved Grassland

Hardstanding

Building

+++++

Fence

Wall

Target Note:
1 - Hedgehog droppings
2 - Spanish Bluebells

REVISIONS:

DATE:	VERSION:	INITIALS:
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TITLE:
Ecological Phase 1 Habitat Survey

PROJECT/SITE:

Sandford Road, Littlemore

CLIENT:

KJD Investments Oxford Ltd

MAP REF:

4590/01/19-2552

VERSION:

v1

DATE:

20/03/20

SCALE:

1:500 @A3

APPROVED BY:

RJ

PRODUCED BY:

SM

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7 - 8 Melbourne House
Corbygate Business Park
Weldon, Corby
Northamptonshire NN17 5JG
01536 408840

Greystones House
Burford Road
Chipping Norton
Oxfordshire OX7 5UY
01608 656167

www.lockhart-garratt.co.uk

Environmental Planning & Forestry Consultants

Northamptonshire

7-8 Melbourne House
Corbygate Business Park
Weldon,
Corby
Northamptonshire
NN17 5JG
Tel: 01536 408 840
info@lgluk.com
Email: info@lgluk.com
Website: www.lgluk.com

Oxfordshire

Greystones House
Burford Road
Chipping Norton
Oxfordshire
OX7 5UY
Tel: 01608 656 167
info@lgluk.com
Email: info@lgluk.com
Website: www.lgluk.com

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RESTORATION & AFTERCARE MANAGEMENT PLAN (RAMP) | SOIL SURVEY & ADVICE