



Greene King Commercial Investments Limited

The Former George and Dragon

Preliminary Ecological Appraisal and Bat Roost Assessment
Report

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EXECUTIVE SUMMARY

1. This report presents the results of a preliminary ecological appraisal, comprising:

- a background data search
- a Phase 1 habitat survey
- an assessment for protected species.

It also presents the results of a Preliminary Roost Assessment of the buildings on site and a Ground Level Tree Assessment (for bats). The survey was carried out on 26th July 2022. This report will support a planning application for proposed development at the Former George and Dragon amenity restaurant / public house on Bath Road, Reading, RG30 2HA. The appraisal was based on the red line boundary plan of the development site (see *Figure 1*).

2. The site comprises a large amenity restaurant / public house building with hard-standing (car park), dense scrub and broadleaved trees around the margins, and a mix of tall ruderal vegetation and amenity grassland to the immediate north and east of the amenity restaurant / public house. The site is situated in an urban area approximately 3 km west of Reading city centre. There are large areas of agricultural land and broadleaved woodland copses to the south (1 km) and west (2.5 km).
3. The building has high bat roosting potential. The tall ruderal and dense scrub vegetation give some cover and therefore could be used by a range of animals. These include nesting birds (multiple priority species are locally present), small mammals, invertebrates and herpetofauna (there are suitable refugia, though the biological data search returned very few records of amphibians or reptiles).
4. One tree (a mature sycamore) could not be assessed for roosting bat potential because of its age, size and dense ivy coverage, potentially obscuring significant features.
5. The linear dense hazel scrub on site contributes to connecting habitats in the wider landscape to the east and west.
6. There is one statutory protected site within 1 km, namely Lousehill Copse (approximately 900 m north). In addition, there are four non-statutory designated sites within 1 km, namely Prospect Park, Medway Fringe, Lousehill Copse, and Holy Brook, all of which contain NERC S41 priority habitats (Lowland Mixed Woodland, Wet Woodland, and Chalk River, respectively) that are recognised as being of local ecological value and national conservation importance. However, the proposals are small-scale and located at a sufficient distance that no significant impacts on these sites are predicted.
7. No invasive species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded during the survey.
8. Priority invertebrate species are locally present, including the small blue butterfly and the stag beetle, although no suitable habitat was found on site.
9. Further surveys are needed to determine the extent of potential constraints and to inform the planning decision, as follows:

- The building has High bat roost potential owing to the presence of suitable features and inability to access a potentially suitable roof space. Hence, presence/absence surveys are required to confirm (or otherwise) the presence of roosting bats. To demonstrate the absence of bats requires two survey visits between May and August in optimal survey conditions. If no bat activity is recorded during these visits, the roosting potential can be downgraded to Moderate. If survey conditions are sub-optimal, or if bats are recorded during either visit, then a third survey would be required to indicate how bats are using the building (numbers, species etc.).
- A mature sycamore on site may be suitable for roosting bats because of its size and age, but it was not possible to determine its potential from the ground because of dense ivy. Therefore, a tree climbing (aerial inspection) survey is required to identify any features used by (or likely to be used by) bats.

10. Mitigation measures required to reduce impacts on ecology include:

- Any vegetation clearance should be conducted outside the breeding bird season (March to August inclusive) to protect potentially nesting birds.
- The results of the bat surveys will determine the level of mitigation required for bats. However, protection measures during construction and a bat-friendly lighting scheme will also be required to reduce potential impacts on bats.
- It is recommended that the linear dense hazel scrub habitat is retained to maintain habitat connectivity.

11. Enhancement opportunities are suggested to meet any requirement for biodiversity net gain, including:

- Bird and bat boxes integrated into the new building and features across the site.
- Using wildlife-friendly plants within the proposed landscaping scheme.
- Provision of deadwood habitat on site.

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1.0 INTRODUCTION

1.1 Purpose of this report

- 1.1.1 This report presents the results of a preliminary ecological appraisal (PEA) at the Former George and Dragon amenity restaurant / public house on Bath Road, Reading, RG30 2HA (Grid Ref: SU 68196 72166), comprising the following:

- a background data search;
- a Phase 1 habitat survey; and
- an assessment for protected or otherwise notable species.

In addition, surveys included a Preliminary Roost Assessment of the building on the site (the amenity restaurant / public house) and a Ground Level Tree Assessment of all trees within 50 m of the site.

- 1.1.2 The survey area included the land within the red-line boundary (the site), plus adjacent land up to 50 m (see *Figure 1*).
- 1.1.3 This report identifies ecological constraints relevant to the project, specifies any further survey or mitigation requirements (e.g. for any Ecological Impact Assessment), gives recommendations for avoidance and protection, and suggests opportunities for ecological enhancement. The appraisal was carried out on behalf of Greene King Commercial Investments Limited.

1.2 Landscape context

- 1.2.1 The 0.25 ha site comprises a large amenity restaurant / public house building with hard-standing (carpark), dense scrub, broadleaved trees around the margins, and a mix of tall ruderal vegetation and amenity grassland to the immediate north and east of the restaurant. The site is situated in an urban area approximately 3 km west of Reading city centre. There are large areas of agricultural land and broadleaved woodland copses to the south (1 km) and west (2.5 km).

1.3 Development proposals

- 1.3.1 Demolition of existing pub/ restaurant and erection of one Drive Thru retail / bakery unit (Class E) including erection of supporting structures, together with alterations to means of access, car parking, landscaping and associated works.
- 1.3.2 Thirty-three car parking spaces will be created, including two disabled, two waiting bays and ten EVC charging bays.

2.0 METHODS

2.1 Overview

- 2.1.1 The PEA was undertaken in line with guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017); it therefore included:
- A desk study (here called a background data search (BDS)), which included a search for statutory designated sites of national and international importance within 2 km of the survey area, plus details of any non-statutory designated sites and protected and priority species records within 1 km of the survey area (centroid).
 - Thames Valley Environmental Records Centre (TVERC) provided the biological data on the 25th of July 2022. The desk study also included a review of aerial photographs; obtaining information from the DEFRA and JNCC websites and the local authority website; and,
 - A field survey informed habitat mapping, an assessment of the possible presence of protected or priority species and the likely importance of habitat features.
- 2.1.2 The PEA report includes an ecological description of the site and information about species that may occur there. Notes and mapping of any incidental sightings of invasive non-native plant species and protected or priority fauna species are also provided.
- 2.1.3 The survey was carried out on 26th July 2022 by Jake M. Robinson PhD, MCIEEM, MRSB. Kate Robinson MSc, assisted in the survey. Jake is a suitably qualified and experienced ecological consultant, a full member of CIEEM, and experienced in conducting preliminary ecological appraisals and protected species surveys (Bat Class 1 licence number: 2018-33783-CLS-CLS).
- 2.1.4 The weather conditions were: 20°C, 90% cloud cover, no wind, dry, and good visibility.

2.2 Background data search

- 2.2.1 A search was conducted on 24th July 2022 for relevant reference data (see *Table 1* for sources).

Table 1 Data sources

Information obtained	Available from
Protected and noteworthy species-records	Thames Valley Environmental Records Centre (TVERC) : www.tverc.org/cms
MAGIC (the Multi-Agency Geographic Information website) to view statutory designated nature conservation sites	www.magic.gov.uk [NB: this site is included for convenience as a viewer, but data to create maps for any figures used is extracted from Open Source data provided by the SNCBs]
Nationally designated site locations and citations	Thames Valley Environmental Records Centre (TVERC) : www.tverc.org/cms

Information obtained	Available from
European and internationally designated site locations and citations	Joint Nature Conservation Committee (JNCC) website
Local Designated site locations and citations	Thames Valley Environmental Records Centre (TVERC) : www.tverc.org/cms
Designations and legal protection of noteworthy species	Joint Nature Conservation Committee (JNCC) website
Details of species and habitats listed on the LBAP	Local biodiversity action plan website
Local planning guidance and policies	Reading Borough Council
Aerial photography	As a viewer only, sources include: www.google.com ; www.bing.com ; Google earth. Where reproduced as figures, sources vary and be licensed through ArcGIS, as stated.

- 2.2.2 A search was undertaken for the following international and national statutory designated sites of ecological importance within 2 km of the site boundary: Ramsar sites, Special Areas of Conservation (SAC), Special Protection Areas (SPA)¹, and for Sites of Special Scientific Interest (SSSI) and their associated risk zones.
- 2.2.3 A search was also conducted for non-statutory designated (often important in a local context) within 2 km of the site boundary.
- 2.2.4 Records were also collated for any notable species within 1 km of the site boundary, and which might constrain the proposed development. Species included in the search were:
- European protected species (listed on Schedules 2 and 5 of The Conservation of Habitats and Species Regulations 2017 (as amended));
 - nationally protected species under Schedules 1, 5 and 8 of The Wildlife & Countryside Act 1981 (as amended) and The Protection of Badgers Act 1992;
 - species listed as critically endangered, endangered or vulnerable based on the IUCN Red List Categories and Criteria 2001;
 - all species listed on the RSPB's Birds of Conservation Concern 5 (Stanbury *et al.*, 2021) as red' or 'amber';
 - nationally rare or nationally scarce species;
 - notable² invertebrates; and
 - species of principal importance listed under The Natural Environment and Rural Communities (NERC) Act 2006 or priority species under the relevant local biodiversity action plan.

¹ SACs and SPAs were formerly called 'European Sites' and part of the Natura 2000 network; post-'Brexit', they are now considered part of the UK's 'national site network'. Ramsar sites are sites of international importance. See Appendix A for details. Note that SPAs, SACs and Ramsar sites are also underpinned by SSSI designations whose citations/boundaries may be slightly different.

² Appendix C includes a description of 'notable' as used in this context.

2.3 Plants and habitats

Phase 1 habitat survey

- 2.3.1 The field survey was based on the UK habitats (UK Hab) survey methodology (Version 1.1; Butcher *et al.* 2020), as extended for use in environmental impact assessment (Institute of Environmental Assessment 1995). The UK Hab classification system is the habitat classification that underpins the DEFRA Biodiversity Metric and is, therefore, the favoured approach where surveys may need to inform a Biodiversity Net Gain (BNG) calculation.
- 2.3.2 This field survey was undertaken in line with CIEEM (2017) guidance and involved the following elements:
- Habitat mapping using a set of standard colour codes to indicate habitat types on a habitat map (*Figure 2*); and
 - A description of features of possible ecological or nature conservation interest in notes relating to numbered locations on the habitat map, called 'target notes'.
- 2.3.3 Vascular plant species were recorded during the survey. However, no attempt was made to produce an exhaustive species list (additional species would almost certainly be found during more detailed surveys or repeat surveys at various times of the year).
- 2.3.4 Plant nomenclature in this report follows Stace (2019) for native and naturalised species of vascular plants, and mosses and liverworts follow Hill *et al.* (2008). Introduced species and garden varieties were identified using relevant Floras.

Invasive non-native species (INNS)

- 2.3.5 Phase 1 habitat survey does not involve exhaustive surveying for individual plant species, and some invasive species may be little in evidence at various times of year. A survey seeking to identify habitat types cannot, therefore, be relied upon to provide definitive information on the presence or extent of any INNS. However, any INNS or invasive non-native species of animals would have been noted had they been seen.

2.4 Protected and notable animals

General

- 2.4.1 The site was assessed for its suitability to support protected or otherwise notable species likely to occur in the area. Taking into account the results of the BDS, the geographic location, connectivity to natural habitats in the broader landscape, the nature and extent of habitats at the site, and the proposed development, a specific assessment was also carried out for the species/species groups below.

Invertebrates

- 2.4.2 The site was assessed for its suitability to support notable species and/or assemblages of invertebrates, but no specific surveys were undertaken. Consideration was given to the presence of features and habitats that might be suitable for the notable species identified in the BDS.

Great crested newts

- 2.4.3 Although standing water is essential for their breeding, great crested newts (*Triturus cristatus*) are terrestrial for most of the year and have been recorded up to 500 m from their breeding ponds. Ordnance Survey maps and aerial imagery was reviewed to identify any ponds within 500 m of the site boundary, and the site was assessed for its suitability for terrestrial and breeding great crested newts.

Reptiles

- 2.4.4 The site was assessed for its suitability for the four most widespread reptile species, with particular attention given to features that provide suitable basking areas (e.g. south-facing slopes), hibernation sites (e.g. banks, walls, piles of rotting vegetation) and opportunities for foraging (e.g. rough grassland and scrub).

Birds

- 2.4.5 The site was assessed for its suitability to support breeding and non-breeding birds, with an emphasis on those species that are listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended), the red and amber lists of the RSPB's Birds of Conservation Concern 4 (Stanbury *et al.*, 2021) and other notable species recorded in the BDS, including any species that are qualifying features of nearby designated sites.
- 2.4.6 Nests or signs of nest building were recorded if present, and buildings were surveyed for their suitability for barn owls and other species and to search for signs.

Bats

- 2.4.7 Habitats were assessed for their suitability for foraging and commuting bats, in line with Collins (2016). Areas of particular interest vary between species, but generally include sheltered areas and habitats with good numbers of insects, such as woodland, scrub, rivers and species-rich or rough grassland.

Preliminary roost assessment (PRA) of built structures

- 2.4.8 Buildings were inspected externally and internally to assess their suitability for roosting bats, taking account of the following factors:
- Surrounding habitat: whether there are potential flight-lines and bat foraging areas nearby.

- Construction detail: the type and construction of architectural features such as attics, soffit boxes, lead flashing and hanging tiles that could be used by roosting bats.
- Building condition: the level of disrepair will influence availability of potential bat-access points.
- Internal conditions: bats favour sheltered locations with a stable temperature regime, protection from the elements and little wind/light/rain penetration.
- Potential bat-access points: whether there is flight and crawl access.
- Potential roosting locations: descriptions of all bat-accessible voids, cracks and crevices.

2.4.9 The building's potential to support roosting bats was then classified according to criteria in *Table 2*.

Table 2: Categorisation of the suitability of buildings or trees for roosting bats (Collins 2016)

Category (Potential to support roosting bats)	Description
Negligible suitability	Negligible habitat features on site likely to be used by roosting bats.
Low suitability	A structure with one or more potential roost sites that could be used by <i>individual</i> bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Moderate suitability	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely for a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High suitability	A structure or tree with one or more potential roost sites that are obviously suitable for use by <i>larger numbers</i> of bats on a more <i>regular</i> basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Confirmed roost	Bats or evidence of bats <i>actually recorded</i> during the initial inspection surveys or during dusk/dawn surveys. A confirmed record (supplied by records centre/local bat group) would also apply.

2.4.10 The buildings were systematically examined for bats and evidence of their presence. The following internal and external features were inspected:

- roof slopes and the ridge;
- wall, window and door surfaces;
- window and door frames;
- wall bases;

- wall ledges and wall tops;
- cracks, crevices and sheltered voids; and
- external features such as soffits and lead flashing.

2.4.11 Evidence of roosting bats includes droppings, urine stains, staining from fur-oils, wear marks, feeding remains, dead bats, odour, squeaking and chattering, and in some cases the absence of cobwebs. Bat droppings can prove beyond doubt that bats use a building and can help to identify roosting locations because piles often accumulate beneath roosting sites or entrance points.

Ground-Level Tree Surveys

2.4.12 Trees were surveyed from ground level. Features that might be used by roosting bats were described and classified according to accepted guidelines (Collins, 2016). Each tree was allocated to a category (see *Table 2*) based on its potential for roosting bats.

2.4.13 Trees were classified as having *unknown potential* if the surveyor's view of the tree was obscured (e.g. by dense ivy or other vegetation).

Badgers

2.4.14 An initial assessment was carried out to identify areas that might be used by badgers (*Meles meles*) for commuting, foraging or setts within 30 m of all areas potentially affected by works (where access was possible). The area was systematically searched for signs of badgers including setts, foraging signs, paths (runs) and latrines.

Other species of Principal Importance

2.4.15 The UK countries are obliged by their individual laws to maintain lists of species and habitats of principal importance for biodiversity conservation. In England, this obligation derives from the Natural Environment and Rural Communities (NERC) Act 2006. An assessment of the suitability and likelihood of the site supporting such species was made (e.g. hedgehog (*Erinaceus europaeus*)).

2.5 Constraints and limitations

2.5.1 The majority of plants present were confidently identified, and the survey was sufficient to make a broad assessment of the habitats present on the site.

2.5.2 This preliminary appraisal as to whether protected or otherwise notable species might occur on the site is based on the suitability of habitat, the known distribution of relevant species in the local area (from online sources and desk study), and any signs of the relevant species. It does not constitute a full and definitive survey of any protected species group.

2.5.3 Field signs for protected or otherwise notable species are often difficult to find or absent, even when the species is present. The survey conducted was not intended to be a comprehensive presence/absence survey for all species, but

rather to provide an indication of the likely presence of such species based on the field signs found, and the nature of the habitats present.

- 2.5.4 Access was not made to adjacent residential land, and therefore it remains possible that a badger sett (or other evidence of protected or notable species) beyond the site boundary could have been missed. Much of the site was also covered by dense bramble scrub, which prevented a full survey for signs of badgers and nesting birds. The peripheries of all such areas were, however, extensively searched, providing a high level of confidence in the results and assessment provided.
- 2.5.5 There were no onsite access or weather-related constraints.

3.0 RESULTS

3.1 Background Data Search

Statutory designated sites

- 3.1.1 There are four statutory designated sites within 2 km of the site boundary, all of which are Local Nature Reserves (LNR) distributed between 0.9 km – 1.9 km to the north of the site (see *Table 3*).

Table 3: Statutory sites within 2 km of the development site boundary

Site name	Reasons for designation	Approximate distance (m) and direction from site
Lousehill Copse LNR: 13.03 ha	Semi-ancient woodland. Mature oak and hazel woodland with coppice. There are many bluebells (<i>Hyacinthoides non-scripta</i>) and other spring flowers, streams, relics of old ponds and boggy areas. The site is on sand and gravel. There is an open meadow with gorse (<i>Ulex</i> species) and broom (<i>Cytisus scoparius</i>) in the northern section with sandy soil: as set out in citations	900
Blundells Copse (Part of West Reading Woodlands) LNR: 5.5 ha	Ancient woodland with a stream. There are large alder (<i>Alnus glutinosa</i>), cherry (<i>Prunus</i> sp.), willow (<i>Salix</i> sp.) and coppiced willow, hazel (<i>Corylus avellana</i>) with oak (<i>Quercus</i> species) and ash (<i>Fraxinus excelsior</i>). There is opposite-leaved golden saxifrage (<i>Chrysosplenium oppositifolium</i>), marsh marigold (<i>Caltha palustris</i>), and fools watercress (<i>Atriplex cordulata</i>). Animals incl. bats and hedgehogs: as set out in citations	1,700
Round Copse LNR: 1.66 ha	Adjacent to and joining McIlroy Park, Round Copse is a dense woodland with a variety of birdlife, incl. all three species of woodpecker (<i>Dryobates minor</i> , <i>Dendrocopos major</i> , <i>Picus viridis</i>), as well as nuthatch (<i>Sitta europaea</i>), treecreeper (<i>Certhia familiaris</i>), and thrushes (<i>Turdus</i> species.): as set out in citations.	1,800
McIlroy Park LNR: 11.98 ha	An extensive natural park with good views over the River Thames. It is mostly grassland with heather (<i>Calluna</i> sp.) and broom. The semi-ancient woodland, mostly around the edges of	1,900

Site name	Reasons for designation	Approximate distance (m) and direction from site
	the site, has bluebell, wood anemone (<i>Anemone nemorosa</i>) and butchers' broom (<i>Ruscus aculeatus</i>). The site has a sunken ancient track "Gypsy Lane" lined with beech (<i>Fagus sylvatica</i>). Romany Lane bounds the eastern side. There are old chalk pits in the west woodland area from the old clay extraction industry. A possible Saxon mound is at the entrance from Weald Way.	

Non-Statutory Sites

3.1.2 There are fourteen non-statutory designated sites within 2 km of the site boundary, all of which are local wildlife sites (LWS) (see *Table 4*).

Table 4: Non-statutory designated sites within 2 km of the development site boundary

Site name	Reasons for designation	Approximate distance (m) and direction from site
Prospect Park (incl. Rookery) (LWS): 24.1 ha	This site consists of Prospect Park and includes The Rookery. Prior to the notification of Prospect Park the Rookery was already a Local Wildlife Site. The Rookery is a small area of lowland mixed deciduous woodland sitting on a small plateau raised above the surrounding Prospect Park to the south. The canopy is largely oak dominated and even aged in some areas the canopy is joined by occasional other trees including ash, horse chestnut (<i>Aesculus hippocastanum</i>), beech, sycamore (<i>Acer pseudoplatanus</i>) and common lime (<i>Tilia x europaea</i>). The understorey has occasional hazel, blackthorn (<i>Prunus spinosa</i>) and hawthorn (<i>Crataegus monogyna</i>), but is largely sparse and open. The ground flora is dominated by creeping soft grass (<i>Holcus mollis</i>), areas of bramble (<i>Rubus fruticosus</i> agg.) and common nettle (<i>Urtica dioica</i>) and areas of cow parsley (<i>Anthriscus sylvestris</i>) and cleavers (<i>Galium aparine</i>) with only the occasional species of interest including locally abundant patches of bluebell, locally frequent wood anemone and	400

Site name	Reasons for designation	Approximate distance (m) and direction from site
	rare wood millet (<i>Milium effusum</i>) and wood melick (<i>Melica uniflora</i>). 14 Ancient Woodland Indicators species are recorded. The site includes Section 41 Habitat of Principal Importance: Lowland Mixed Deciduous Woodland and Lowland wood pasture and parkland.	
Meadway Fringe (LWS): 2.13 ha	Woodland A strip of broad-leaved woodland interspersed with some Scot's pine and larch, squeezed between housing and a road. In spite of heavy use and misuse, it retains a good vertical structure and a good range of woodland plants including ancient woodland indicators. Unimproved grassland The section of unimproved, species-rich neutral grassland lies between garden fences and the car park for Meadway Precinct shopping centre and had both southerly and easterly aspects. It is at the top of a steep slope leading down to the car park, with the soil left undisturbed and nutrient-poor, evidence of which was provided by numerous ant-hills and a great diversity of herbs including cowslip and bird's-foot trefoil. Incl. Section 41 Habitat of Principal Importance: Lowland Mixed Deciduous Woodland	700
Lousehill Copse (LWS): 14.91 ha	Lousehill Copse consists of three parcels of lowland mixed deciduous woodland within the urban area of Reading. The woodland lies on an escarpment south of the Thames with London Clay overlying Reading Beds and there are some steep slopes dipping north-east. The clays have been worked for bricks and tiles in this area and the woodlands contain excavations indicating this past use. Section 41 Habitat of Principal Importance: Lowland Mixed Deciduous Woodland and Wet Woodland	800
Holy Brook (LWS): 4.5 km	This site was originally designated as a number of separate sites which have now been combined. These were the stretch south of Berkley Avenue and the stretch between	900

Site name	Reasons for designation	Approximate distance (m) and direction from site
	Berkley Avenue and the Reading Inner Distribution Road. The Holy Brook is a stream that carries water from and emptying back into the River Kennet, a chalk river. Alder and willows line the banks and a variety of wetland species are found along the banks with stands of reed sweet-grass (<i>Glyceria maxima</i>), hemlock waterdropwort (<i>Oenanthe crocata</i>) and occasional water dock (<i>Rumex hydrolapathum</i>). Water-crowfoots (<i>Ranunculus aquatilis/fluitans</i>) were recorded in the Brook in 1987 and 1994. A number of notable invertebrates have been recorded in Holy Brook and water vole has been recorded in the central and western sections. Section 41 Habitat of Principal Importance: Chalk River.	
Fobney and Kennet Valley Meadows Complex (LWS): 154 ha	This site is located south of Reading and north of the Kennet and Avon Canal and comprises a series of meadows within the Fobney & Kennet valley floodplain. Habitats range from mesic grassland through wetter grasslands to swamps and are dissected by drainage ditches variously associated with hedgerows and trees. It is largely bounded in the north by the railway and Holy Brook, the Kennet and Avon Canal in the south, the A33 in the east and a minor road in the west. To the north are residential properties while to the east are retail parks. To the south and west are agricultural fields and gravel lakes. There is limited public access except by footpaths that cross the site. Section 41 Habitat of Principal Importance: Floodplain grazing marsh. Wet woodland. Lowland fens	1,100
River Kennet / Kennet and Avon Canal (LWS): 9.48 ha	This stretch of the River Kennet and the Kennet and Avon Canal runs from Southcote Lock, south-east of Reading, to Waterloo Meadows (adjacent to Edgar Road), near the centre of Reading. The river is an important wildlife corridor running into Reading and provides valuable riverine habitat. It is known to support a population of water vole (2020) and a rich invertebrate assemblage. Section 41 Habitat of	1,200

Site name	Reasons for designation	Approximate distance (m) and direction from site
	Principal Importance: River (marginal vegetation with elements of Lowland Fen).	
Small Copse at Burghfield Mill (LWS): 1.1 ha	A small, damp, semi-natural broad-leaved woodland with a stream. It was dominated by ash, hawthorn and elder (<i>Sambucus nigra</i>), with nettle and ivy dominating the drier parts and water forget-me-not (<i>Myosotis scorpioides</i>) and water mint (<i>Mentha aquatica</i>) in the wetter areas. The wet ditch supported fool's watercress (<i>Atriplex cordulata</i>) and yellow water lily (<i>Nuphar lutea</i>). Many fungi were present. Section 41 Habitat of Principal Importance: Lowland Mixed Deciduous Woodland	1,700
Blundell's Copse and The Moor (LWS): 5.48 ha	This site includes lowland mixed deciduous woodland and wet woodland habitats within a highly urban environment. It is located in a shallow valley which has a wide range of plant species characteristic of long-established woodland. The valley crosses the boundary between the London Clay to the underlying Reading Beds and the stream drains to the north-east. In the valley the soils are sticky and waterlogged in the upper reaches but gravels are exposed in the low banks at the eastern end. Section 41 Habitat of Principal Importance: Lowland Mixed Deciduous Woodland and Wet Woodland.	1,700
Burghfield Mill Island (LWS): 2.11 ha	Burghfield Mill Island is a small nature reserve found just south of Reading and located in the middle of the Kennet and Avon Canal. The site is left as non-intervention wet woodland.	1,700
Curtis Wood (LWS): 7.73 ha	This site lies within Calcot Golf Course. The majority of the site is ash woodland with oak, hazel coppice, hawthorn and some hornbeam and birch. The ground flora varies, but in the areas where the canopy is dense, bare ground and ivy are common. Where the light does come in, generally along the boundaries, the ground flora is more diverse. Most of the site is recorded on the ancient woodland inventory. Species associated with long established woodland were recorded here during the last	1,700

Site name	Reasons for designation	Approximate distance (m) and direction from site
	survey include wood melick, wood millet, bluebell, wood spurge (<i>Euphorbia amygdaloides</i>), yellow archangel (<i>Lamium galeobdolon</i>), three-nerved sandwort (<i>Argyroxiphium grayanum</i>), primrose (<i>Primula vulgaris</i>) and sanicle (<i>Sanicula europaea</i>). Violet helleborine (<i>Epipactis purpurata</i>) and wood anemone have also been recorded.	
Burghfield Gravel Pits (LWS): 177.7 ha	An extensive area of gravel pits with well-developed wooded areas, islands and marginal vegetation. This area attracts a good variety of wildfowl and other birds including Wildlife and Countryside Act Schedule 1 species as well as uncommon passage migrants.	1,800
Theale Gravel Pits (LWS): 220.4 ha	An extensive area of disused gravel pits with large areas of open water, islands, marginal wetland vegetation and wooded areas. The site consists of Theale Main Pit west of the motorway and Moatlands Pit to the east. The area attracts a wide range of bird species including good numbers of overwintering wildfowl and uncommon passage migrants. It also supports a good population of nightingales (<i>Luscinia megarhynchos</i>).	1,800
McIlroy (LWS): 14.9 ha	McIlroy Park is a hilltop park in Tilehurst, East Reading with views of the surrounding town. The site comprises a large grassland field surrounded by lowland mixed deciduous woodland, including a parcel of ancient woodland in the northern section (Kentwood Grove). The site slopes down on all sides and is entirely surrounded by residential development. It also encompasses two Local Nature Reserves; McIlroy Park and Round Copse. Incl. Section 41 Habitat of Principal Importance: Lowland Mixed Deciduous Woodland	1,800
Fobney Island (LWS): 11.17 ha	The main part of the site is the area of land (island) between the Kennet and Avon Canal and the Kennet overflow. The habitats on the island comprise created standing water bodies bounded by grassland and tall ruderal based habitats and a wetland mosaic dedicated to	1,900

Site name	Reasons for designation	Approximate distance (m) and direction from site
	wildlife. The neutral grassland has affinities to MG1 communities.	

Habitats

- 3.1.3 An area of ancient woodland (Churchend Copse (6.31 ha)) is situated ~900 m north-west of the site (record obtained via the Defra MAGIC tool).
- 3.1.4 Several other Section 41 Habitats of Principal Importance lie within 1 km of the site, including the Holy Brook Chalk River (~900 south), the Lousehill Copse Lowland Mixed Deciduous Woodland and Wet Woodland (~800 m north), the Meadway Fringe Lowland Mixed Deciduous Woodland ~700 m north), the Prospect Park Lowland Mixed Deciduous Woodland and Lowland wood pasture and parkland (~400 m northeast) (records obtained via the TVERC BDS). There is also a large Biodiversity opportunity Area (a golf course), approximately 500 m to the west of the site.

Protected and Notable Species

- 3.1.5 At least 1,289 protected and notable species are recorded within 1 km of the site boundary. Noteworthy species include species of principal importance that are listed under Section 41 of The Natural Environment and Rural Communities (NERC) Act 2006.
- 3.1.6 Of these records, three are amphibians, one is a reptile, 1,008 are birds, 11 are fish, 141 are invertebrates, 111 are mammals (46 of which are bats) and 14 are plants. Species that are protected by law under Schedules 2 and 5 of The Conservation of Habitats and Species Regulations 2017 (as amended), Schedules 1, 2, 5 and 8 of The Wildlife and Countryside Act 1981 (as amended) or The Protection of Badgers Act 1992 recorded in the search area are highlighted in the full species list in *Appendix B*. Those of relevance to the site and the current proposals are discussed in Section 3.3.

3.2 Plants and habitats

Phase 1 habitat survey

- 3.2.1 The Phase 1 habitat map is shown as *Figure 2* and full description for each of the target notes is given in *Appendix D*. The site comprises the following:

Other neutral grassland (g3c)

- 3.2.2 Degraded but herb-rich neutral amenity grassland is present (0.1 ha) in the block of land to the immediate east of the amenity restaurant / public house building (Photo 1). Species include abundant perennial ryegrass (*Lolium perenne*), with yarrow (*Achillea millefolium*) (dominant herb), common hawkbit (*Leontodon hispidus*), ribwort plantain (*Plantago lanceolata*), broadleaved dock (*Rumex*

obtusifolius), red deadnettle (*Lamium purpureum*), ragwort (*Jacobaea vulgaris*), mare's tail (*Equisetum arvense*), herb Robert (*Geranium robertianum*), creeping thistle (*Cirsium arvense*), oxeye daisy (*Leucanthemum vulgare*), field bindweed (*Convolvulus arvensis*), white deadnettle (*Lamium album*), barley grass (*Hordeum vulgare*), dandelion (*Taraxacum officinale*), creeping buttercup (*Ranunculus repens*), and common nettle (*Urtica dioica*).

- 3.2.3 The intermittent herbs and bare ground (providing warm areas) make this habitat suitable for butterflies (a meadow brown (*Maniola jurtina*) was observed here) and other invertebrates. The BDS revealed eight records of the NERC S41 priority species small blue butterfly (*Cupido minimus*) (700 m south). However, no kidney vetch (*Anthyllis vulneraria*) was found and as this is the small blue's sole food plant, the grassland habitat is unlikely to support this species.
- 3.2.4 Similar patches of 0.013 ha and 0.004 ha grassland occur to the immediate north of the amenity restaurant / public house building (Photo 2), with the addition of tall ruderal plants including common mallow (*Malva sylvestris*), spear thistle (*Cirsium vulgare*), hogweed (*Heracleum sphondylium*), ivy (*Hedera helix*), and the garden escape green alkanet (*Pentaglottis sempervirens*).

Dense scrub (h3)

- 3.2.5 A 0.021 ha area of dense scrub exists to the immediate north-east of the amenity restaurant / public house building (Target Note 2; Photo 3). This habitat was too dense to inspect comprehensively, comprising dense thickets of bramble with a scattering of common nettle, mare's tail, and sycamore saplings. The BDS returned several records of red listed and/or NERC S41 priority bird species within 1 km of the site (e.g., marsh tit (*Poecile palustris*) x 4, dunnock (*Prunella modularis*) x 54, house sparrow (*Passer domesticus*) x 26, and mistle thrush (*Turdus viscivorus*) x 40). These include passerines that would potentially feed and nest in dense scrub habitat.

Other hazel scrub (h3b6)

- 3.2.6 Along the northern boundary of the site (top of the carpark), there is a line of dense scrub dominated by hazel (Photo 4). This habitat is approximately 5 m wide and stretches for 45 m and then down the western boundary of the site by 15 m (60 m in total). Other species in this habitat included garden shrubs such as *Pyracantha* sp., and possibly Mexican orange blossom (*Choisya ternate*), together with ash, sycamore and bramble. The hazel trees have produced a large number of nuts this year, which would provide food for many species.

Trees

- 3.2.7 There are four larger trees on the site (with the addition of several young/scrub-stage trees). These include a mature sycamore to the immediate north of the amenity restaurant / public house building (Target Note 1; Photo 5), two semi-mature sycamores to the immediate south-east of the mature sycamore, and a semi-mature crab apple tree (*Malus sylvestris*), to the immediate west of the mature sycamore. The BDS returned 46 records of bats within 1 km of the site, including two confirmed brown long-eared (*Plecotus auratus*) roosts (one 600 m north-east

of the site) and a common pipistrelle (*Pipistrellus pipistrellus*) roost. Bats could potentially roost in the mature sycamore tree if suitable features are present.

Invasive Non-native Species

- 3.2.8 No invasive species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded. However, buddleia (*Buddleja davidii*) was scattered around the hardstanding (carpark), which is an undesirable non-native that can quickly spread. The BDS returned two records of Himalayan balsam (*Impatiens glandulifera*) and one record of Japanese knotweed (*Fallopia japonica*) but all are >1 km from the site (and both from 2012). It is unlikely that these species are present on the site.

3.3 Protected and notable animals

- 3.3.1 *Figure 2* includes target notes showing the location of particular features with suitability for protected and notable animals, and referred to in the text below (see *Appendix D* for details).

Invertebrates

- 3.3.2 The BDS returned a range of protected or otherwise notable invertebrates within 1 km of the site, predominantly associated with the priority habitats listed in *Section 3.1* above. These include the small blue butterfly ($n = 8$) and the stag beetle (*Lucanus cervus*) ($n = 114$).
- 3.3.3 The habitats present were considered likely to support a common assemblage of invertebrate species, typical of bramble scrub and amenity grassland, although the intermittent herbs and bare ground in the g3c habitat do improve the quality for invertebrates compared to standard amenity grassland. The accessible habitat is generally unsuitable for the NERC S41 species listed above (e.g., due to a lack of kidney vetch and rotting wood). However, during any vegetation clearance of the dense scrub, a suitably qualified ecologist should carefully check for stag beetle habitat (e.g., log piles) and advise accordingly.

Great crested newts

- 3.3.4 The BDS did not reveal any records of great crested newts within 1 km of the site boundary. Habitats within the site, the tall ruderal vegetation and scrub (and refugia) to the north of the amenity restaurant / public house buildings provide suitable terrestrial habitat for this species but no ponds were present on site. Based on a review of maps and aerial images, there are also no ponds within a 500 m radius of the site and hence no potential breeding habitat for great crested newts. This species is therefore very unlikely to be present on site.

Reptiles

- 3.3.5 There was only a single reptile record (a grass snake in 2009) returned from the 1 km BDS area. As the site consists of only small amounts of suitable habitat (e.g., scrub with refugia) but is surrounded by physical urban barriers, reptiles are

unlikely to be present, and no further survey or mitigation is proposed for this group.

Birds

- 3.3.6 There is one previous record of peregrines (*Falco peregrinus*) within 1 km of the site, although no suitable nesting habitat is present on site. Peregrines require extensive open terrain for hunting, which is also not present and so it is unlikely that the site is used by this species.
- 3.3.7 The buildings and scrub on site could be used by nesting birds, and there are some opportunities for ground-nesting in the tall ruderal vegetation and other bare ground.
- 3.3.8 The BDS returned 1,008 records of 51 protected and notable bird species from the 1 km radius around the site, with many being associated with the woodlands and riverine/marsh habitats in the wider landscape.
- 3.3.9 Priority species identified by the BDS that could use habitats within or immediately adjacent to the site include song thrush (*Turdus philomelos*), dunnock, house sparrow, and grasshopper warbler (*Locustella naevia*).
- 3.3.10 House sparrows may nest in the building, though no active or old nests were observed during the survey.
- 3.3.11 The scrub habitats, tall ruderal vegetation and trees are all suitable nesting habitat for birds.
- 3.3.12 Five red kites (listed on Annex 1 of the EC Directive 79/409/EEC on the Conservation of Wild Birds) were recorded hovering over and around the site during the survey visit. However, there are unlikely to be significant nesting or feeding opportunities for red kites on site.

Bats

- 3.3.13 The BDS returned records of the following bat species within 1 km of the site:
 - Noctule bat (*Nyctalus noctule*) (2 records located 800 m north of the site);
 - Daubenton's bat (*Myotis daubentonii*) (2 records; closest being at 800 m from the site); and
 - Serotine bat (*Eptesicus serotinus*) (4 records; closest being 1 km southwest of the site).
 - Common pipistrelle (14 records; closest being 800 m north of the site, including a roost)
 - Soprano pipistrelle (*Pipistrellus pygmaeus*) (10 records and 9 unidentified *Pipistrelle* sp. Within 1 km of the site)
 - Brown long-eared (2 records; 600 m northwest of the site, including a roost)

Ground Level Tree Assessment

- 3.3.14 One tree (a mature sycamore approx. 12 m high and 50 cm diameter at breast height (DBH); Target Note 1; Photo 5) was classified as having **Unknown** bat roosting potential due to its suitable age/size and dense ivy coverage. This ivy prevented a comprehensive ground-based assessment and may obscure suitable roosting features (e.g., crevices and hollows).
- 3.3.15 The other two sycamores (8-9 m high and 25 cm DBH) were semi-mature (Photo 6) and not of the size and age to provide significant roosting features for bats. These were classified as having **Negligible** roosting potential.
- 3.3.16 The other tree on site (6 m high and 25 cm DBH crab apple) is also semi-mature and has no significant features to support roosting bats. This tree was also considered to have **Negligible** roosting potential.
- 3.3.17 Trees outside but close to the site include a row of London planes (*Platanus x hispanica*) on the south side (opposite side of Bath Road; Photo 7), and two London plane and three sycamore trees to the immediate west of the site (Photo 8). All these trees were classified as having **Negligible** roosting bat potential owing to the absence of appropriate features. All these trees were between 9-13 m high (all between 20 – 40 cm DBH) and in good condition.
- 3.3.18 The surrounding woodlands and open habitats to the west and south of the site are likely to provide good quality foraging areas, commuting routes and roost sites for bats.

Building (u1b5) Bat Roost Assessment

- 3.3.19 The Former George and Dragon amenity restaurant / public house is a two-story (predominantly red brick) building with roof spaces (Photo 9).

Roof spaces

- 3.3.20 The roof space above the upstairs kitchen (eastern end of the building, near the road) was approximately 10 m x 3.5 m x 2 m (high) and was well-sealed. The brickwork was in good condition as was the roof lining, and there was no daylight or evidence of bats (Photo 10).
- 3.3.21 The roof space at the furthest eastern part of the property (to the back) was very small (4 m x 2 m x 1.5 m high). It was well-sealed with good brickwork and lining with no daylight, and no evidence of bats.
- 3.3.22 The main roof space towards the western side of the building (access at the top of the stairs) was approximately 8 m x 5 m x 2.5 m high. It was also well-sealed and the brickwork and lining were in good condition with no daylight, and no evidence of bats.
- 3.3.23 A further roof space on the lower central part of the building (the roof above the main pub floor) was inaccessible at the time of the survey as it was boarded up and damaged (dangerous) flooring/ceiling). Therefore, this roof space was not inspected, and an assessment of its suitability for bats was not possible.

Upstairs: main rooms

- 3.3.24 The upstairs kitchen was 5 m x 4 m, well-sealed with no crevices for bats (Photo 11). The windows were also well-sealed.
- 3.3.25 The upstairs living area was 7 m x 6 m x 2 m high and was also well-sealed. The windows were not inspected due to metal coverings. One window was smashed but boarded up from the outside. No evidence of bats and no potential for roosts were noted.
- 3.3.26 The room that appears to be an old bedroom at the back (north) of the property was 5 m x 4 m x 2.5 m high and was well-sealed with no evidence of bats. This was also the case for the bathroom.
- 3.3.27 In the hallway (towards the west of the building), the windows are well-sealed and boarded up and no roosting features were recorded.
- 3.3.28 At the western end of the property, the double room with a broken ceiling (8 m x 6 m x 2.5 m high) had no suitable roosting features or evidence of bats. This was also the case for the old security room (5 m x 5 m), which had a boarded-up window and was well-sealed.
- 3.3.29 Downstairs, the security/mains area had a skylight but was well-sealed with no evidence of bats. At the northern part of the property, the hallway had two small rooms to the left (6 m x 6 m) which were generally well-sealed (a small amount of daylight visible through a damaged wall) and no evidence of bats or significant bat-entry points. The small room to the right (3 m x 2 m) was also well-sealed with no evidence of bats.
- 3.3.30 The large kitchen (7 m x 12 m x 2.5 m high) was well-sealed with no daylight visible. The windows were boarded up and no evidence of bats or significant entry points were recorded.
- 3.3.31 The main pub area was approximately 14 m x 30 m x 2.5 m high. The rooms were generally well-sealed with no evidence of bats (Photo 12). The 14 large windows (ranging from 1 m x 2 m to 2 m x 3 m) were all boarded up. The door facing the street was wooden with glass panels and was well-sealed, as was the door to the carpark near the front of the property. However, the door (at the carpark and garden area) to the bar was poorly-sealed, leaving gaps of 3-5 cm into the building – potentially allowing bats to enter (Photo 13). This doorway also leads to the main bar area with the uninspected roof space and the damaged ceiling (potentially providing bats with access to the roof space).
- 3.3.32 The toilets were all well-sealed with no evidence of bats. The basement (7 m x 9 m x 2 m high) was well-sealed with no daylight visible. The room was in poor condition and was waterlogged, but no evidence of bats was found.

Building exterior

- 3.3.33 With regards to the building exterior, there were several potential entry points and roosting opportunities for bats (Target Notes 3-11).
- 3.3.34 The single-storey pitched roof facing the carpark (west) had large grey slates and was 12 m (perpendicular to the road) x 2 m x 2 m (to the ridge). This roof had five

lifted tiles and two missing tiles, which could lead to the roof space that could not be accessed for inspection (Target Note 3; Photo 14). This roof also had missing ridge tile pointing creating gaps that could be used by bats.

- 3.3.35 A roadside-facing single-storey roof (6 m wide) had missing ridge tile pointing and gaps of 30 cm x 4 cm (Target Note 4; Photo 15). The opposite roof (to the north) had six lifted tiles and one broken/missing tile (Target Note 5; Photo 16). These features could be potential entry points or suitable for crevice-dwelling bat species such as *Pipistrelle spp.*
- 3.3.36 The bricks on the carpark-facing building were well-sealed and in good condition. There is a gap in the soffit box where a light is missing (Target Note 6; Photo 17) which may lead to roosting space (to the left of the main porch/door). This feature is 5 cm x 5 cm. There is another small hole (2 cm x 2 cm) in the soffit around the corner to the right of the porch.
- 3.3.37 The rear-facing single (north) single-storey building is 2-4 m high and 11 m long and is well-sealed. There is no obvious damage to the building, but there is a small crevice at the top right of the adjoining outbuilding (15 cm x 2 cm). This is currently covered in cobwebs with no evidence of bats.
- 3.3.38 The second-storey roof facing the carpark (west) was 7 m x 2.5 m. There was no obvious damage although the lower left tiles are slightly lifted. The walls are well-sealed with no obvious crevices. This is also the case for the 2nd storey from the rear (north) – the walls are in good condition. However, there is some missing ridge pointing near the chimney (which is in good condition).
- 3.3.39 The second-storey central building with the flat roof and vertical slated walls (6 m) has damage in the bottom right (Target Note 7; Photo 18): at least two large slates are broken with potential for bats to enter or crevice-dwellers to roost. The other roof (red slated; 6 m x 2.5 m) to the east of the flat roof has a missing tile at the connection to the flat roof, and one lifted tile. The brickwork and chimney are in good condition.
- 3.3.40 To the front of the building (road-facing; south), the lower single-storey brickwork is in good condition. The main two-storey building has gaps (20 cm wide x 3 cm deep x 5 gaps) above the top left window where the brickwork meets the soffit (Target Note 8; Photo 19). This could provide suitable roosting features for crevice-dwelling species. Otherwise, the brickwork is in a slightly worn but good condition.
- 3.3.41 The roof (7 m x 2.5 m) is missing some tiles and ridge pointing. This is also the case for the lower middle roof (7 m x 3.5 m), which has missing tiles and slipped tiles on the left/west (Target Note 9; Photo 20). There also appears to be a whole section of ridge tiles missing on the right side (east). The chimney is in good condition.
- 3.3.42 The eastern pitched roof with grey slates (5 m x 2 m) has missing ridge pointing but the tiles are in relatively good condition. However, the front-facing flat apex has a missing red slate tile on the right.

- 3.3.43 The eastern lower building (5 m x 2 m) has slipped ridge tiles and missing pointing. There is a crevice under the ridge (15 cm x 3 cm) and potentially lifted slates on the rear-facing pitch (2.5 cm x 2.5 cm gaps) (Target Note 10; Photo 21).
- 3.3.44 The two-storey main building facing east has slipped tiles in the bottom left (red-slate roof), otherwise it is in good condition.
- 3.3.45 The front-facing south) red slate roof (2 m x 4 m) is generally in good condition with a small gap on lower tiles. The chimney is also in good condition.
- 3.3.46 Near the apex of this building, there is a missing ventilation cover (Target Note 11; Photo 22). This could potentially be a suitable feature for roosting bats.
- 3.3.47 In summary, there are **moderate-high** roosting opportunities and potential entry points on all aspects (N, S, E, W) of the amenity restaurant / public house buildings.

Badgers

- 3.3.48 Thirty-eight records of badger were returned during the BDS, including recent records (<3 years) and setts within 800 m of the site. Badgers and their setts are protected under the Protection of Badgers Act 1992.
- 3.3.49 No badger setts, tracks, latrines, snuffle holes, hairs on boundary fences or other signs of badger activity were noted during a thorough investigation of the site (although the dense scrub area in the north-east was not all checked). The site has limited potential for sett-building and negligible foraging opportunities and so badgers are considered unlikely to use the site.

Other species

- 3.3.50 The field survey did not record the presence of any other animals of nature conservation importance or associated habitats. However, habitats within the site, including the linear scrub and grassland were suitable for European hedgehogs.
- 3.3.51 Multiple records of hedgehogs within 1 km of the site were identified during the BDS (recent records within 500 m). Hedgehogs occupy a range of lowland habitats with enough cover to allow nesting; they are common in parks in urban and suburban environments, farmland and gardens. Scrub and amenity grassland on the site provide suitable foraging habitat for hedgehogs. There may be opportunities for hedgehogs to hibernate in the dense scrub within the northern part of the site and they are likely to be present

4.0 EVALUATION

Internationally Designated Sites

- 4.1.1 No SAC or Ramsar sites are within 2 km of the site boundary and none are hydrologically connected to the development site. Therefore, water pollution is not anticipated. There are no other potential impact pathways of relevance, and therefore any SAC and Ramsar sites lie outside of the zone of influence of the proposed development.
- 4.1.2 No significant adverse effects are therefore anticipated on any internationally designated sites, all of which fall outside of the zone of influence of the proposed development, and they are therefore not considered further.

Sites of Special Scientific Interest (SSSI) – Impact Risk Zones

- 4.1.3 The site intersects with impact risk zones for two SSSIs in the wider area (Sulham and Tidmarsh Woods (4.2 km northwest) and Meadows and Pincents Kiln (3.2 km southwest)). However, the proposed works do not in this case meet any of the criteria (specific to and published for each SSSI individually) that trigger a requirement for the planning authority to consult with Natural England before determining a planning application.

Non-statutory designated sites

- 4.1.4 There are four non-statutory designated sites within 1 km of the development site boundary (Prospect Park, Meadow Fringe, Lousehill Copse, and Holy Brook), all of which contain NERC S41 priority habitats (Lowland Mixed Woodland, Wet Woodland, and Chalk River, respectively) that are recognised as being of local ecological value and of national conservation importance.
- 4.1.5 Routing construction traffic along the A4 where possible, and avoiding the use of Holyend Lane, Tilehurst Road, Langley Hill, New Lane Hill, and Liebenrood Road would avoid any impacts on non-statutory designated sites that might arise from construction traffic (e.g. dust or pollution). Avoiding working at night would reduce the risks of disturbing the rookery and other wildlife in the Prospect Park LWS and the West Reading Woodlands (Biodiversity Opportunity Area). Any lighting-scheme (during construction and post-construction) should be wildlife-sensitive.

Habitats and plants

- 4.1.6 The habitats at the site are not species-rich and have little intrinsic botanical value given the coverage. They are common and widespread in the surrounding landscape.
- 4.1.7 There are no habitats of principal importance (being listed under Section 41 of the NERC Act 2006) on the site. However, the site likely provides an important linkage between the Biodiversity Opportunity Area (500 m to the west) and the Prospect Park LWS (400 m to the east). In particular, the dense hazel scrub linear habitat (h3b6) contributes to the connectivity of the wider habitat (to the east and west of

the site) (Target Note 12; Photo 4). This linear feature provides good-quality habitat (albeit in a small amount) that is likely to be of ecological importance in a local context. This habitat should be a focus for protection and enhancement for ecological purposes and for achieving biodiversity net gain for the proposed development.

Protected and other notable species

Invertebrates

- 4.1.8 The site provides includes areas of suitable habitat for invertebrates, which should be enhanced where possible.

Birds

- 4.1.9 Small areas of suitable habitat for nesting and feeding birds are present on site, and there are over 1,000 records of protected and notable bird species within a 1 km distance. Retaining as much scrub habitat as possible and replacing any vegetation that is removed with biodiverse assemblages that favour locally and nationally important breeding birds would retain and possibly enhance the value of the site for birds.

Bats

- 4.1.10 The main amenity restaurant / public house buildings have high potential for supporting roosting bats, particularly crevice-dwelling species (Target Notes 3-11). It is understood that the building will be demolished, and that significant development work is planned for the site. Therefore, without measures to protect them, any bats roosting in the building are likely to be harmed. Further surveys are necessary to confirm the presence or likely absence of roosting bats, as outlined in Section 5 below.
- 4.1.11 The mature sycamore tree could support roosting bats and so a tree climbing survey is required to rule out or confirm whether it is suitable and whether bats are present or absent.
- 4.1.12 Bats are afforded protection through the Conservation of Habitats and Species Regulations 2017 (as amended) as well as the Wildlife and Countryside Act 1981 (as amended) (refer to Appendix A for further details). Mitigation may therefore be necessary to ensure compliance with this legislation. This is outlined further in Section 5 below.

Other species

- 4.1.13 The site provides suitable habitat for hedgehogs, and it is connected to other suitable habitats, such as residential gardens. Precautionary measures are therefore required during the works to prevent any negative impacts on hedgehogs, as described in Section 5 below.
- 4.1.14 The site could be enhanced for stag beetle, small blue butterfly, birds, bats and hedgehogs, as outlined in Section 5.

4.2 Validity of Data

- 4.2.1 Unless the site changes significantly, the surveys carried out for this report should remain valid for at least 18-months, and potentially up to 3 years (CIEEM 2019).

5.0 RECOMMENDATIONS

5.1 Key constraints to design and construction

Sites

- 5.1.1 The potential for likely significant effects (LSE) from the proposed development on SAC, SPA and Ramsar sites is very low, given none of these designated sites are present within 2 km of the site.
- 5.1.2 The potential for significant disturbance of the non-statutory designated LWS and Biodiversity Opportunity Area can be avoided by timing the works to occur in the daytime, avoiding certain roads surrounding these sites (see 4.1.6) and installing a wildlife-sensitive lighting scheme.
- 5.1.3 The linear dense scrub habitat on site (Target Note 12; Photo 4) provides connectivity between habitats to the east and west, including the BOA and LWS. This feature should be protected and enhanced for ecological purposes and for achieving biodiversity net gain for the proposed development.

Invertebrates

- 5.1.4 The potential for likely significant effects on invertebrates is low. The site has small amounts of invertebrate habitat, which should ideally be enhanced to support locally present priority species such as the small blue butterfly and stag beetle. The dense scrub to the immediate north-east of the site should only be removed in the presence of an ecologist to ensure any potential stag beetle habitat (i.e. not previously identified due to inability to access all the scrub) is protected.
- 5.1.5 Considerations for invertebrates do not represent a significant constraint to the proposed development.

Birds

- 5.1.6 Any scrub and other nesting bird habitat should only be removed outside of the bird nesting season (i.e. outside of the period March to August inclusive). If this is not possible, then these areas will have to be checked for nests by an ecologist immediately prior to clearance. If nests are found, they must be retained (with a suitable, species-specific buffer from works established) and protected from damage or abandonment until the young have fledged.
- 5.1.7 Considerations for breeding birds do not represent a significant constraint to the proposed development.

Bats

- 5.1.8 It is possible that the buildings and the mature sycamore tree support roosting bats. Bats are protected under the Habitats Regulations and the Wildlife and Countryside Act 1981 (as amended) (see Appendix A). Further surveys are required to identify if any bats are roosting in these locations, and if so, what

mitigation measures may be required as part of the design proposals. If roosting bats are present, demolition of buildings and/or removal of the tree would need to be undertaken under licence, and there may be restrictions on timing dependent on the status of any roost.

- 5.1.9 While it is unlikely that the site represents a critical foraging or commuting resource for bats, a wildlife-sensitive lighting scheme should be maintained during construction and after development to maintain dark commuting corridors, particularly to maintain linkages between the Biodiversity Opportunity Area in the west and the LWS in the east.

Habitat alteration

- 5.1.10 Site clearance to facilitate construction will result in the loss of small areas of dense scrub, grassland/tall ruderal vegetation (see Figure 2), and trees. This small-scale habitat loss and the loss of a small number of trees is not significant in the context of the surrounding habitat. The clearance works themselves could, however, result in adverse effects on animal species which *may* be present, including nesting birds, bats and hedgehogs.

5.2 Further surveys required

Bats

- 5.2.1 Although no direct evidence was found, the amenity restaurant / public house buildings have high potential to support roosting bats. The building will therefore require further surveys to inform an assessment of likely impacts and mitigation requirements for the proposed development.
- 5.2.2 Presence/absence surveys are required to give confidence in a negative result at the high roost suitability level (comprising three separate visits between May and September, two of which should be carried out between May and August). However, if no bat activity is recorded during the first two survey visits, then the third survey will not be required – on the proviso that the surveys are conducted during optimal conditions.
- 5.2.3 These surveys will require five observers to watch and listen for bats emerging from the building at dusk or re-entering at dawn during warm and dry conditions. The methods should follow current Bat Conservation Trust guidelines (Collins, 2016). This information will be required to support a licence application if bats are found to be roosting on site. Surveyors will be positioned to cover all aspects of the building (due to the number and distribution of roosting opportunities and potential entry points; Target Notes 3-11), including two covering the front (south) aspect (Figure 2).
- 5.2.4 The majority of trees on site do not have features suitable for roosting bats. However, the mature sycamore is classified as of 'unknown potential' and will need to be climbed to clarify its suitability for roosting bats. This will involve the aerial inspection of any suitable features using tree climbing techniques and an endoscope to look for bats or evidence of bats. If, on inspection, a feature is

identified as having moderate or high potential for roosting bats, then further surveys will be necessary. If features are found to have low potential, the tree can be felled under precautionary measures (Collins, 2016). If tree climbing is not possible, emergence surveys will be required, the scope of which will be dependent on the value of each feature.

5.3 Mitigation requirements

General

- 5.3.1 The proposed works will be constrained by the legislative protection afforded to nesting birds and bats.
- 5.3.2 However, further surveys to confirm the absence of bird species are considered disproportionate to the risk of encountering them during the proposed works, which will occupy a small area and be short in duration. For this reason, the following precautionary mitigation measures are proposed.

Invertebrates

- 5.3.3 If the dense scrub in the north-east of the site needs to be removed, this should be done in the presence of a suitably qualified ecologist. The ecologist should check for potential features that may support stag beetles (e.g., rotten log piles). Any suitable features for stag beetles should be carefully moved and retained in a safe place elsewhere on site.

Birds

- 5.3.4 All active bird nests, regardless of species, are protected by UK law. A nest is deemed to be active even if it is in the process of being built and does not yet contain eggs or young. To avoid impacts on nesting birds, suitable vegetation should be removed outside the nesting season (which runs from March to August inclusive). If this is not possible then, it will need to be checked for nests by an ecologist immediately prior to clearance. If nests are found, they must be retained (with a suitable, species-specific buffer from the works) and protected from damage or abandonment until the young have fledged.
- 5.3.5 If at any point a bird's nest is discovered, the works should cease immediately, and the advice of an ecologist should be obtained.

Bats

- 5.3.6 Further surveys (as detailed in Section 5.2) will be required to determine the extent of any impacts on bats, and the data gathered used to determine appropriate impact avoidance, mitigation or compensation measures and inform a licence application.
- 5.3.7 This licence will require a detailed method statement that will set out how to avoid injuring or killing bats. The mitigation strategy must be demonstrably proportionate to the number of bats and diversity of species affected, as well as

being appropriate for the level of disturbance or damage that will be caused to the bat roost as a result of development.

- 5.3.8 The use of site lighting/working in the hours of darkness should be avoided.

Hedgehogs

- 5.3.9 To minimise the risk of trapping animals such as hedgehogs, the following measures should be adopted:
- employ an ecological clerk of works to oversee site clearance works, conduct searches during site clearance
 - time the works to avoid the hedgehog hibernation period of October/November to March/April
 - avoid working at night
 - avoid leaving excavations open overnight, or place 'escape ramps' in excavations left open overnight to prevent the inadvertent trapping of animals.
- 5.3.10 Enhancements within the proposed development to support urban hedgehogs and other species can include unlit hedgerows and holes in fences to improve habitat connectivity ('hedgehog highways') (PTES, 2019). The use of pesticides, herbicides and rodenticides should be avoided on the site.
- 5.3.11 No further surveys for other animals such as hedgehog are considered necessary.

5.4 Opportunities for enhancement

Nest/Roost boxes

- 5.4.1 Bird and bat boxes and/or bricks should be incorporated into the development design, including those suitable for a range of bat species, swift, house sparrow and/or starling, which are all species of conservation concern and are likely to be present within 1 km of the site. These features would provide additional roosting/nesting sites for these species and help offset impacts associated with habitat loss.

Log piles and 'hedgehog highways'

- 5.4.2 Log piles could be incorporated into site landscaping to offer deadwood refuge for hedgehogs and invertebrates (including the locally present stag beetle). Ideally, they should be located in quieter parts of the site and created using any logs generated from vegetation clearance.
- 5.4.3 Provision of 'hedgehog highways' (holes approx. 13 cm²) in any fencing on site would improve habitat connectivity for hedgehogs.
- 5.4.4 The following biodiversity enhancement measures could be incorporated

- Creation of new native species boundary hedgerows along the western and eastern boundaries to strengthen habitat connectivity and/or provide habitats or food sources for birds, bats and mammals.
- Install bat and/or bird boxes on retained buildings and trees within the site to provide additional roosting/nesting locations for these species.
- Any retained grassland can be enhanced by seeding with locally present native species. The addition of kidney vetch would provide opportunities for the protected NERC S41-listed small blue butterfly.

6.0 CONCLUSIONS

- 6.1.1 The site contains habitat that could support protected species including bats and birds. There are several designated and non-statutory designated sites within 2 km of the site and locally present priority species. The linear scrub habitat contributes to connecting the habitats in the wider landscape (to the east and west), including a BOA and LWS.
- 6.1.2 Further surveys for bats are required to inform a detailed assessment and a planning application. These will include three presence/absence surveys (between May-September) of the buildings and a mature sycamore tree (via aerial inspection). To ensure adequate coverage a total of five surveyors will be needed for each survey visit.
- 6.1.3 Measures will need to be taken when clearing vegetation to protect nesting birds and potential stag beetle habitat. This will involve clearing vegetation outside of the breeding bird season (which runs from March to August, inclusive) and in the presence of a suitably qualified ecologist. The dense hazel scrub should be retained.
- 6.1.4 Various habitat enhancement measures are also recommended (see 5.4).
- 6.1.5 Unless the site changes significantly, the surveys carried out for this report should remain valid for at least 18-months and potentially up to 3 years (CIEEM 2019).

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FIGURES

Figure 1 Site Location Plan

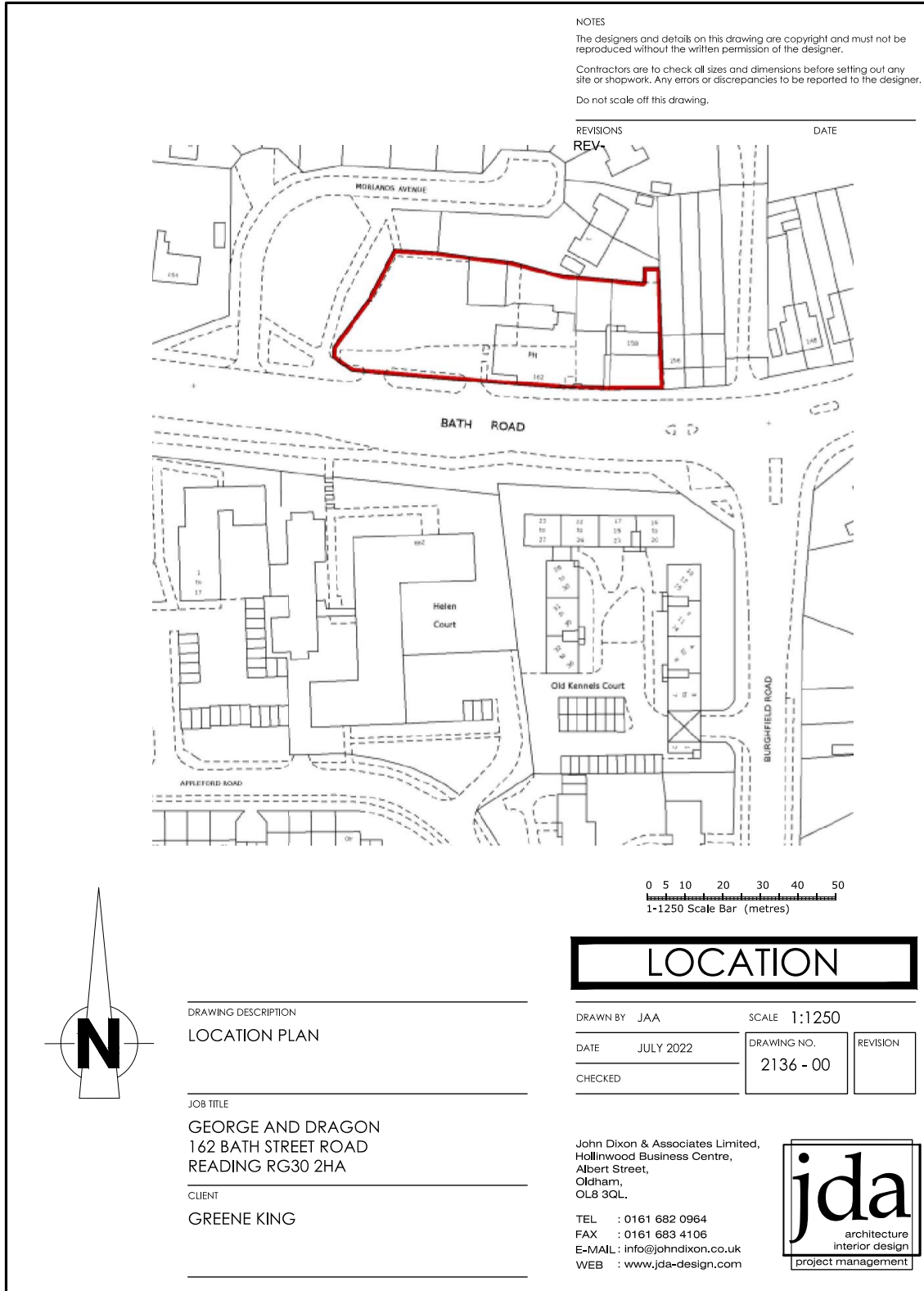
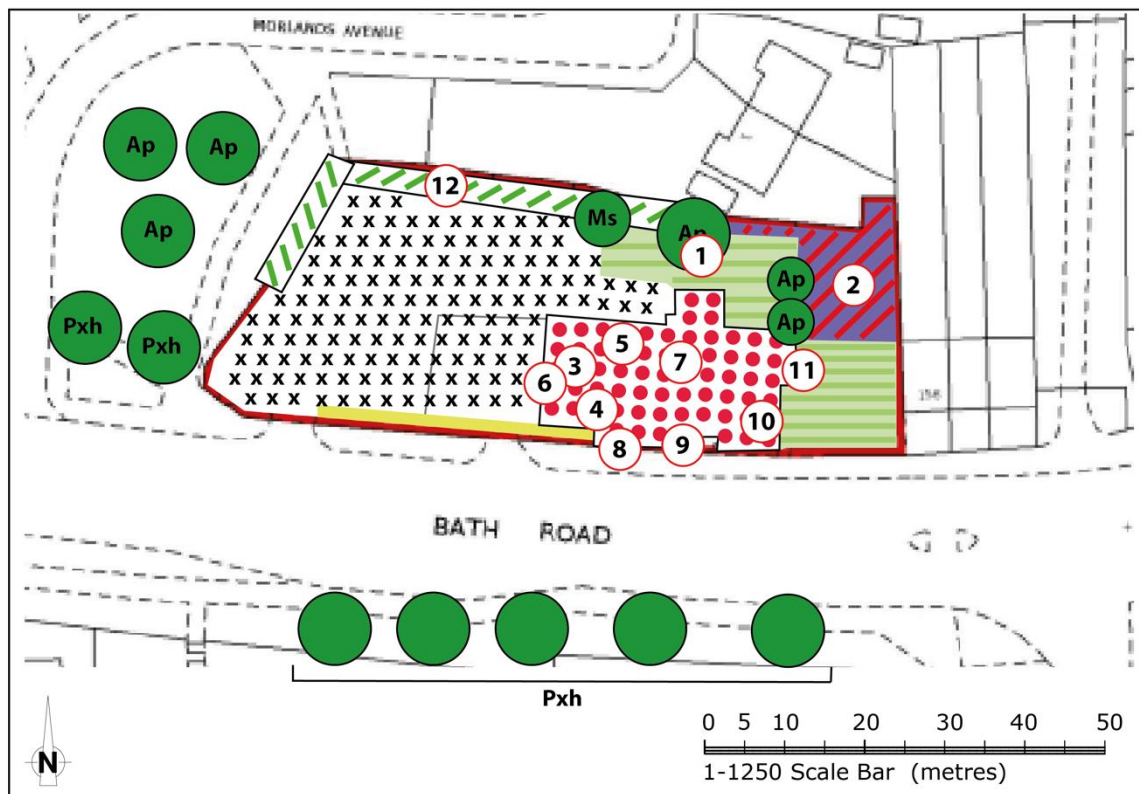
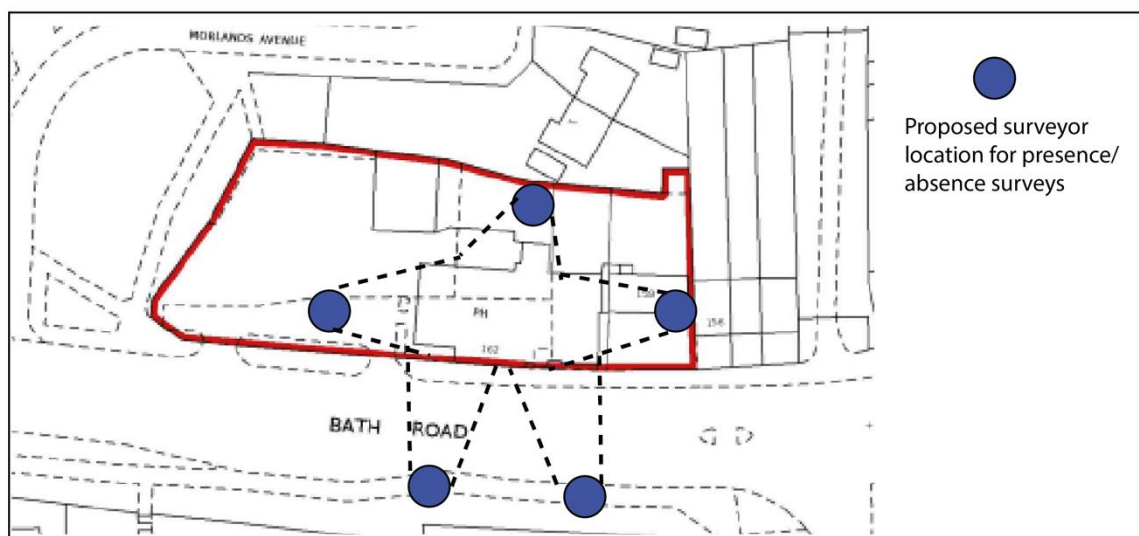


Figure 2 Habitat Map (with target notes (see Appendix D) and proposed bat surveyor locations).



Key:

- | | | |
|--------------------------------|-------------------------|---|
| Site boundary | Building (u1b5) | Target notes |
| Dense scrub (h3) | Broadleaved tree | Proposed surveyor location for presence/absence surveys |
| Other hazel dense scrub (h3b6) | Ap Sycamore | |
| Other neutral grassland (g3c) | Phx London plane | |
| Hardstanding (carpark) (ub1) | Ms Crab apple | |



APPENDIX A – NATURE CONSERVATION LEGISLATION AND POLICY

International Legislation

The following international conventions and directives apply to biodiversity protection in the UK. Post-‘Brexit’, even though European Union (EU) directives no longer directly apply to the UK, the provisions therein are enshrined in both domestic legislation and international agreements. Legislation has been enacted to ensure the regulations derived from these remain in force³.

The Convention on Biological Diversity 1992 *et seq.*

This multilateral treaty (<https://www.cbd.int/doc/legal/cbd-en.pdf>), signed by 150 government leaders at the 1992 Rio Earth Summit, has three main goals, of which one is the conservation of biological diversity. Article 6 requires countries to develop national biodiversity strategies, plans or programmes. In response, the UK developed the UK Biodiversity Action Plan (BAP) 1994 (<https://jncc.gov.uk/our-work/uk-bap/>) as well as county-specific BAPs. Subsequent to this, parties of the convention agreed the supplementary Nagoya Protocol 2010 (available at <https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf>), adopting the Strategic Plan for Biodiversity 2011-2020. The purpose of this Strategic Plan was to provide a framework for establishing national and regional biodiversity targets (<https://www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-EN.pdf>).

Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds (Birds Directive) 2009

<https://www.legislation.gov.uk/eudr/2009/147>

The Birds Directive 2009 relates to the conservation of all species of naturally occurring birds in their wild state in the territory of the EU Member States (MSs) to which the treaty applies. Under the Birds Directive, the most suitable areas of conservation of the Annex I species are to be designated as Special Protection Areas (SPAs), as part of the European Natura 2000 network. Post Brexit, SPAs are no longer considered part of Natura 2000 and are instead components of the UK’s ‘national site network’, but their highly protected status is unchanged. Maintaining a coherent network of protected sites with overarching conservation objectives is still required in order to fulfil the commitment made by government to maintain environmental protections and continue to meet the UK’s international legal obligations.

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) 1992

<https://www.legislation.gov.uk/eudr/1992/43>

The Habitats Directive 1992 requires EU MSs to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of community interest, which are listed

³ Further information relating to England and Wales can be found here: <https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-2017>. A similar exercise has been undertaken in Scotland and Northern Ireland.

under Annex I, II, IV and/or V. Species listed under Annex IV are known as 'European Protected Species' (EPS), and have retained their protected status in UK domestic legislation post-Brexit.

Under the Habitats Directive, EU Member States are required to contribute to the Natura 2000 network through the designation of Special Areas of Conservation (SACs) for natural habitat types listed in Annex I and habitats of species listed in Annex II. Post Brexit, SACs are no longer considered part of the European Natura 2000 network and are instead components of the UK's 'national site network', but their highly protected status is unchanged.

The Convention on Wetlands of International Importance Especially as Waterfowl Habitat 1971: the Ramsar Convention

Accessible via <https://jncc.gov.uk/our-work/ramsar-convention/>

The Ramsar Convention is an intergovernmental treaty focused on the conservation and sustainable use of wetland, primarily as habitats for water birds. Under the convention, each ratified country is required to identify and designate sites (Ramsar sites) that meet the criteria for identifying a wetland of international importance, i.e. containing representative, rare or unique wetland types. In addition, the convention promotes international co-operation to promote the wise use of all wetlands and their resources.

Habitats Regulations Assessment (HRA): a note

There is a requirement under the EU nature directives, and enshrined in country-specific domestic legislation⁴ (see below), to undertake a screening exercise to determine whether any sites that form part of the 'national site network' (formerly Natura 2000) are likely to be significantly affected by any proposal (project or plan). The assessment must consider the proposals alone and also in combination with other plans and projects, if they result from activities that are not directly connected with, or necessary to, the management of the designated sites. If significant effects are likely, an Appropriate Assessment (AA) will need to be carried out. The screening, any AA, and any subsequent assessment, are collectively known as a Habitats Regulations Assessment (HRA). The HRA needs to take into account each of the 'Qualifying Features' (habitats or species) that justified the site being designated. Ramsar sites are treated in the same way as SACs and SPAs in HRAs, as are sites which have not been fully adopted i.e. candidate SACs (cSACs) and potential SPAs (pSPAs).

The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) 1979

Accessible via: <https://jncc.gov.uk/our-work/the-convention-on-the-conservation-of-migratory-species-of-wild-animals/#convention-summary>

The Bonn Convention was adopted in 1979 and came into force in 1985. Contracting Parties work together to conserve migratory species and their habitats by providing strict protection for endangered migratory species (listed in Appendix I of the Convention), concluding multilateral agreements for the conservation and management of migratory species which require or would benefit from international cooperation (listed in Appendix II), and by undertaking cooperative

⁴ In England and Wales: the Conservation of Habitats and Species Regulations 2017 (as amended).
In Scotland: the Conservation (Natural Habitats &c.) Regulations 1994 (as amended).
In Northern Ireland: the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended).
In the UK offshore area: the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended).

research activities. The UK Government ratified the Bonn Convention in 1985. The current legally-binding Agreements under the Convention include EUROBATS⁵.

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) 1979

<https://www.coe.int/en/web/bern-convention>

The principal aims of the Bern Convention 1979 are to ensure the conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species) listed in Appendix III. To this end, the Bern Convention imposes legal obligations on contracting parties, protecting over 500 wild plant species and more than 1,000 wild animal species. The UK Government ratified the Bern Convention in 1982.

National Legislation

The following pieces of domestic legislation apply to biodiversity protection in the UK.

The Wildlife and Countryside Act (WCA) 1981

<https://www.legislation.gov.uk/ukpga/1981/69>

The Wildlife and Countryside Act 1981 (as amended) is the primary piece of legislation relating to nature conservation in the UK, though it has been adapted in different ways in the devolved administrations. It was initially enacted to implement the Bern Convention, Bonn Convention and the Birds Directive (described above).

The act is supplemented by provisions in the Countryside and Rights of Way (CROW) Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006 and extended in Scotland by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2011). Its equivalent in Northern Ireland is the Wildlife (Northern Ireland) Order 1985 (as amended and similarly extended). In addition to the Habitat Regulations (described below), the WCA provides protection for species listed in Schedules 1 (birds), 5 (other animals) and 8 (plants) of the Act. It provides for the notification and confirmation of Sites of Special Scientific Interest (SSSIs) in England and Wales⁶. It also sets out, in other schedules, important and invasive species which are legally protected or require management.

All species of bird are protected under the WCA. The legislation makes it an offence to intentionally:

- a) kill, injure or take any wild bird;
- b) take, damage, or destroy the nest of any wild bird while that nest is in use or being built; or
- c) take or destroy an egg of any wild bird.

Those species of birds listed on Schedule 1 of the WCA are afforded additional protection, which deems it an offence to intentionally or recklessly:

⁵ More information available at <https://jncc.gov.uk/our-work/agreement-on-the-conservation-of-populations-of-european-bats-eurobats>

⁶ Duty replaced by the Nature Conservation (Scotland) Act 2004 (as amended) and the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 (as amended) in those countries.

- a) disturb any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
- b) disturb dependent young of such a bird.

Under Section 9 of the WCA, for animals listed on Schedule 5, it is an offence in England and Wales to intentionally or recklessly:

- kill, injure or take any wild animal listed on Schedule 5*;
- possess or control any live or dead those wild animals or anything derived from it*;
- damage or destroy any structure or place which wild animals listed on Schedule 5 uses for shelter or protection*;
- disturb any such animal while it is occupying a structure or place of shelter or protection;
- obstruct access to any structure or place used by any such animal for shelter or protection; and
- sell, offer or expose for sale, or have in their possession or transports for the purpose of sale, any live or dead wild animal listed on Schedule 5 or any part of, or anything derived from such an animal.

As noted above, there are minor differences between the offences in England and Wales outlined above, and those in Scotland / Northern Ireland. The three clauses marked with asterisks do not apply to EPS in England and Wales, as these offences are included in the 'Habitats Regulations' (see below). In addition, the Wildlife and Countryside Act 1981 is no longer relevant to EPS in Scotland or Northern Ireland, which instead are afforded full protection by the 'Habitats Regulations' (see below).

In addition to EPS, species commonly found on development sites include water voles (*Arvicola amphibius*) and widespread species of reptiles: common lizard (*Zootoca vivipara*); slow-worm (*Anguis fragilis*); grass snake (*Natrix helvetica*); and adder (*Vipera berus*). These four reptile species receive partial protection, which prevents the intentional or deliberate killing and injuring of reptiles or offering them for sale.

Section 14(2)⁷ states that it is an offence to plant or otherwise cause to grow any plant in the wild at a place outside its native range.

There is no provision within the Act for derogation licences to be issued for the purposes of development, although Section 10 provides a defence in cases that may be considered to be: *“the incidental result of a lawful operation and could not reasonably have been avoided”* if certain conditions are met.

Section 16(i) of the Act does make provision for derogation licences to be issued *“for the purposes of preserving public health or public ... safety”*. For confirmation of this, it would be appropriate to consult the relevant statutory nature conservation body (SNCB)⁸.

⁷ In Scotland, as amended by Section 14 of the Wildlife and Natural Environment (Scotland) Act 2011.

⁸ SNCBs are - in England: Natural England; in Wales: Natural Resources Wales; in Scotland: NatureScot; in Northern Ireland: Department of Agriculture, Environment and Rural Affairs (DAERA).

The Conservation of Habitats and Species Regulations (Habitat Regulations) 2017

<https://www.legislation.gov.uk/ukxi/2017/1012> England and Wales

Countryside and Rights of Way Act 2000

<https://www.legislation.gov.uk/ukpga/2000/37>

The Countryside and Rights of Way (CROW) Act 2000 provides for public access on foot to certain land types, amends the law for public rights of way, increases protection for SSSIs, and strengthens wildlife enforcement legislation. It applies only in England and Wales.

The Hedgerows Regulations 1997

<https://www.legislation.gov.uk/ukxi/1997/1160/made>

The Hedgerows Regulations 1997 provide protection for 'important' hedgerows for which replanting is not a substitute. The 'importance' of a hedgerow depends upon several archaeological, wildlife and landscape criteria (which are outlined in the Regulations). The regulations deem it an offence to remove an 'important hedgerow' without prior notification to the relevant local planning authority.

Protection of Badgers Act 1992

<https://www.legislation.gov.uk/ukpga/1992/51>

Badgers and their setts are protected under the Protection of Badgers Act 1992 (England, Wales and Scotland). The key part of this legislation in relation to the proposed development are in Section 3, which deems it an offence to:

- a) damage a badger sett or any part of it;
- b) destroy a badger sett;
- c) obstruct access to, or any entrance of, a badger sett;
- d) disturb a badger when it is occupying a badger sett,
- e) intend to do any of those things or be reckless as to whether those actions would have any of the consequences listed above.

Derogation licences may be obtained from the relevant SNCB⁸ under Section 10 of the Act for the purpose of development, to permit activities which would otherwise be unlawful.

Note: there are additional provisions relating to badgers under the WCA Section 11 (Prohibition of certain methods of killing or taking wild animals).

The Wild Mammals (Protection) Act 1996

<https://www.legislation.gov.uk/ukpga/1996/3>

All wild mammals are protected by The Wild Mammals (Protection) Act 1996 (as amended). This makes it an offence to mutilate, kick, beat, nail, or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal.

Invasive Alien Species (Enforcement and Permitting) Order 2019

<https://www.legislation.gov.uk/ukxi/2019/527/contents/made>

The Invasive Alien Species (Enforcement and Permitting) Order applies principally in England and Wales and the UK's offshore marine area, but also controls imports and exports from the UK (including Scotland and Northern Ireland). It lists species of concern which cannot be imported, kept, bred/grown, transported, sold, used, allowed to reproduce, or released into the environment.

This Order replaces some elements relating to invasive species in the Wildlife and Countryside Act 1981 (as amended).

National, regional and local policy and guidance of relevance

Planning policy relating to ecology and nature conservation is set out below.

National Planning Policy Framework 2021

Access via: <https://www.gov.uk/government/publications/national-planning-policy-framework-2>

The National Planning Policy Framework (NPPF) sets out the Government's planning policy in England at the national level. It does not contain specific policies for nationally significant infrastructure projects, which are determined in accordance with the decision-making framework in the Act and relevant National Policy Statements for major infrastructure, as well as any other matters that are relevant (which may include the NPPF). Section 15 (paragraphs 174-188) of the NPPF specifies the requirements for conserving and enhancing the natural environment through the planning and development process to minimise impacts on habitats and biodiversity.

Planning Practice Guidance

Accessed via: <https://www.gov.uk/government/collections/planning-practice-guidance>

The Planning Practice Guidance is a web-resource to support the NPPF, including guidance for Environmental Impact Assessments (<https://www.gov.uk/guidance/environmental-impact-assessment>) and the Natural Environment (<https://www.gov.uk/guidance/natural-environment>). The guidance for the Natural Environment explains key issues in implementing the NPPF to protect and enhance the natural environment, including local requirements. The guidance outlines what evidence needs to be taken into account in preparing planning applications to identify and map local ecological networks. It also outlines how biodiversity can be taken into account in preparing a planning application.

Government's 25-Year Environment Plan 2018

Accessed via: <https://www.gov.uk/government/publications/25-year-environment-plan>

The Government's 25-Year Environment Plan 2018 sets out how the UK Government intends to improve the natural health of the UK through improving land, air and water quality, as well as setting out how the effects of climate change will be tackled. The plan promotes the creation or restoration of wildlife-rich habitat outside the protected site network and seeks to recover threatened, iconic or economically important species of animals, plants and fungi, and where possible to prevent human induced extinction or loss of known threatened species in England. The plan sets out a number of goals and corresponding policies that look at managing land sustainably, improving and enhancing landscapes and biodiversity for both marine and terrestrial environments, improving resource efficiency and reducing waste and pollution, whilst also examining the UK's contribution to improving the global environment.

Technical Advice Note 5, Nature Conservation and Planning (2009)

<https://gov.wales/technical-advice-note-tan-5-nature-conservation-and-planning>

Provides guidance on how the land use planning system in Wales should contribute to protecting and enhancing biodiversity and geological conservation. It gives advice on developments affecting

designated sites and habitats, in addition to protected or priority habitats and species. It identifies protected species as a material planning consideration, discusses protection of EPS, as well as birds, badgers, other animals and plants, and provides guidance on habitats and species of principal importance for biodiversity in Wales.

APPENDIX B – NOTEWORTHY SPECIES RECORDS

Table 5 displays noteworthy species records that are located within 1 km of the site boundary. These species records were obtained from Thames Valley Environmental Records Centre (TVERC). The scientific and common names for species are given as well as their level of designation. A glossary defining abbreviations used in the table is given in Table 6, Appendix C. If a species is not included in the table below it does not necessarily mean the species is absent from the search area, but that data-holding organizations do not have records of it in these locations.

Table 5: Noteworthy species records within 1 km of the site boundary

Scientific name	Common name	Designation	Number of records	Most Recent
Plants				
<i>Hyacinthoides non-scripta</i>	Bluebell	WCA-8	9	2015
<i>Oxalis acetosella</i>	Wood-sorrel	RL-Eng-post2001-NT	1	2015
<i>Valeriana officinalis</i>	Common Valerian	RL-Eng-post2001-NT	1	2012
<i>Solidago virgaurea</i>	Goldenrod	RL-Eng-post2001-NT	1	1997
<i>Briza media</i>	Quaking-grass	RL-Eng-post2001-NT	1	2010
<i>Fragaria vesca</i>	Wild Strawberry	RL-Eng-post2001-NT	1	2006
Invertebrates				
<i>Bombus rupestris</i>	Hill Cuckoo bumblebee	Notable-B	1	2013
<i>Hippodamia variegata</i>	Adonis ladybird	Notable-B	1	2013
<i>Scolytus mali</i>	Large Fruit Bark Beetle	Notable-B	1	2003
<i>Lucanus cervus</i>	Stag beetle	NERC-S41; Notable-B	114	2020
<i>Cupido minimus</i>	Small blue	WCA5; NERC-S41; RL-GB-post2001-NT	8	2004
<i>Satyrrium w-album</i>	White-letter Hairstreak	WC5; NERC-S41; RL-GB-post2001-NT	1	2019
<i>Rhyacophila septentrionis</i>	Caddis fly	Notable	1	1995
<i>Gomphus vulgatissimus</i>	Common club-tail	RL-GB-post2001-NT	1	2017
<i>Sympetrum striolatum</i>	Common darter	RL-GB-post2001-NT	1	1997
<i>Baetis fuscatus</i>	Mayfly	RL-GB-post2001-NT	3	1994
<i>Baetis niger</i>	Southern iron blue	NERC-S41	1	1994
<i>Pseudanodonta complanata</i>	Depressed River mussel	NERC-S41; RL-Global-post2001-VU	2	2013

Scientific name	Common name	Designation	Number of records	Most Recent
<i>Gyrulus acronicus</i>	Thames ramshorn	NERC-S41; RL-GB-post2001-VU	1	1992
<i>Tyria jacobaeae</i>	Cinnabar	NERC-S41	1	1997
<i>Lygus pratensis</i>	True bug	RL-GB-pre94-R	1	1997
Herpetofauna				
<i>Rana temporaria</i>	Common frog	Hab-Dir-A4; WCA5	2	2010
<i>Lissotriton vulgaris</i>	Smooth newt	WCA5	1	2018
<i>Natrix helvetica</i>	Grass snake	WCA5; NERC-S41	1	2009
Birds				
<i>Tytus alba</i>	Barn owl	WCA1	4	2016
<i>Branta leucopsis</i>	Barnacle goose	BirdsDir-A1	1	2015
<i>Chroicocephalus ridibundus</i>	Black-headed gull	Bird-Amber	93	2017
<i>Pyrrhula pyrrhula</i>	Bullfinch	NERC-S41; Bird-Amber	8	2016
<i>Cettia cetti</i>	Cetti's warbler	WCA1	2	2020
<i>Larus canus</i>	Common gull	Bird-Amber	12	2017
<i>Acanthis flammea</i>	Common redpoll	Bird-Amber	1	1997
<i>Sterna hirundo</i>	Common tern	Bird-Amber	5	2013
<i>Cuculus canorus</i>	Cuckoo	NEWRC-S41; Bird-Red	25	2017
<i>Prunella modularis</i>	Dunnock	NERC-S41; Bird-Amber	54	2017
<i>Turdus pilaris</i>	Fieldfare	WCA1; Bird-Red	10	2017
<i>Regulus ignicapilla</i>	Firecrest	WCA1	5	2015
<i>Locustella naevia</i>	Grasshopper warbler	NERC-S41; Bird-Red	4	2016
<i>Larus marinus</i>	Great Black-backed gull	Bird-Amber	4	2015
<i>Motacilla cinerea</i>	Grey wagtail	Bird-Red	12	2016
<i>Anser anser</i>	Greylag goose	Bird-Amber	3	2015
<i>Larus argentatus</i>	Herring gull	NERC-S41; Bird-Red	34	2017
<i>Falco subbuteo</i>	Hobby	WCA1	3	2014
<i>Delichon urbicum</i>	House martin	Bird-Amber	16	2017
<i>Passer domesticus</i>	House sparrow	NERC-S41; Bird-Red	26	2016
<i>Falco tinnunculus</i>	Kestrel	Bird-Amber	18	2017
<i>Alcedo atthis</i>	Kingfisher	BirdsDir-A1; WCA1; Bird-Amber	11	2017
<i>Vanellus vanellus</i>	Lapwing	NERC-S41; Bird-Red	2	2014
<i>Larus fuscus</i>	Lesser black backed gull	Bird-Amber	88	2017
<i>Acanthis cabaret</i>	Lesser redpoll	NERC-S41; Bird-Red	11	2016
<i>Dryobates minor</i>	Lesser spotted woodpecker	NERC-S41; Bird-Red	3	2017

Scientific name	Common name	Designation	Number of records	Most Recent
<i>Egretta garzetta</i>	Little egret	BirdsDir-A1	9	2018
<i>Charadrius dubius</i>	Little ringed plover	WCA1	1	2018
<i>Anas platyrhynchos</i>	Mallard	Bird-Amber	28	2016
<i>Poecile palustris</i>	Marsh tit	NERC-S41; Bird-Red	4	2016
<i>Anthus pratensis</i>	Meadow pipit	Bird-Amber	1	2014
<i>Turdus viscivorus</i>	Mistle thrush	Bird-Red	40	2020
<i>Cygnus olor</i>	Mute swan	Bird-Amber	1	2014
<i>Luscinia megarhynchos</i>	Nightingale	Bird-Red	2	2016
<i>Falco peregrinus</i>	Peregrine	Birds-Dir-A1; WCA1	1	2016
<i>Ficedula hypoleuca</i>	Pied flycatcher	Bird-Red	3	2004
<i>Milvus milvus</i>	Red kite	BirdsDir-A1; WCA1; RL-Glbal-post2001-NT	111	2020
<i>Tringa totanus</i>	Redshank	Bird-Amber	1	2016
<i>Turdus iliacus</i>	Redwing	WCA1; Bird-Red	41	2017
<i>Emberiza schoeniclus</i>	Reed bunting	NERC-S41; Bird-Amber	33	2017
<i>Alauda arvensis</i>	Skylark	NERC-S41; Bird-Red	2	2012
<i>Gallinago gallinago</i>	Snipe	Bird-Amber	9	2017
<i>Turdus philomelos</i>	Song thrush	NERC-S41; Bird-Red	31	2020
<i>Muscicapa striata</i>	Spotted flycatcher	NERC-S41; Bird-Red	5	2017
<i>Sturnus vulgaris</i>	Starling	NERC-S41; Bird-Red	68	2017
<i>Columba oenas</i>	Stock dove	Bird-Amber	93	2017
<i>Apus apus</i>	Swift	Bird-Amber	33	2017
<i>Strix aluco</i>	Tawny owl	Bird-Amber	20	2018
<i>Anas crecca</i>	Teal	Bird-Amber	1	2003
<i>Streptopelia turtur</i>	Turtle dove	NERC-S41; Bird-Red	2	2011
<i>Saxicola rubetra</i>	Whinchat	Bird-Red	1	2014
<i>Phylloscopus trochilus</i>	Willow warbler	Bird-Amber	10	2017
<i>Larus michanhellis</i>	Yellow-legged gull	Bird-Amber	1	2020
Mammals				
<i>Erinaceus europaeus</i>	Western European hedgehog	NERC-S41; RL-GB-post2001-VU	22	2020
<i>Arvicola amphibius</i>	Water vole	WCA5; NERC-S41; RL-GB-post2001-VU	1	2009
<i>Lutra lutra</i>	Otter	HabReg-Sch2; NERC-S41	1	2012
<i>Meles meles</i>	Badger	Badgers-1992	38	2021
<i>Lepus europaeus</i>	Brown hare	NERC-S41	2	1999

Scientific name	Common name	Designation	Number of records	Most Recent
<i>Pipistrellus pymaeus</i>	Soprano pipistrelle	HabDir-A4; HabReg-Sch2; WCA5; NERC-S41	10	2020
<i>Epseticus serotinus</i>	Serotine	HabDir-A4; HabReg-Sch2; WCA5	4	2018
<i>Nyctalus noctula</i>	Noctule	HabDir-A4; HabReg-Sch2; WCA5; NERC-S41	2	2018
<i>Myotis daubentonii</i>	Daubenton's bat	HabDir-A4; HabReg-Sch2; WCA5	2	2018
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	HabDir-A4; HabReg-Sch2; WCA5	14	2020
<i>Plecotus auritus</i>	Brown long-eared bat	HabDir-A4; HabReg-Sch2; WCA5; NERC-S41	2	2017

APPENDIX C – ABBREVIATIONS

Table 6 displays abbreviations of protected species legislation.

Table 6: Glossary of abbreviations used in this report

Code	Full Title	Explanation
Amber	Amber list	Amber listed species have a population status in the UK of medium conservation concern.
BAP	Biodiversity action plan	A plan that identifies threats to significantly important species and habitats, and sets out targets and actions to enhance or maintain biodiversity.
BOA	Biodiversity opportunity area	Extensive areas where improved habitat management, as well as efforts to restore and re-create Priority habitats will be most effective in enhancing connectivity to benefit recovery of Priority species in a fragmented landscape.
DA	The Deer Act 1991	All wild deer with the exception of Muntjac (<i>Muntiacus reevesi</i>) and Chinese Water deer (<i>Hydropotes inermis</i>) are protected by a closed season.
ENG BSBI RDB	A Vascular Plant Red List for England	A list published in 2014 by the Botanical Society of Britain and Ireland of the red list status of plants in England. Measured against standardised IUCN criteria.
ENG BSBI RDB(CR)	Critically endangered	A BSBI Red List designation for species at an extremely high risk of extinction.
ENG BSBI RDB(EN)	Endangered	A BSBI Red List designation for species at a very high risk of extinction.
ENG BSBI RDB(VU)	Vulnerable	A BSBI Red List designation for species at high risk of extinction.
EPS (Sch 2)	European protected species (Schedule 2)	European protected species of animals, listed on Schedule 2 of The Conservation of Habitats and Species Regulations 2017.
EPS (Sch 5)	European protected species (Schedule 5)	European protected species of plants, listed on Schedule 5 of The Conservation of Habitats and Species Regulations 2017.
GB RDB	Red data book species	Species identified in one of the UK Red Data 2001.
GB RDB(CR)	Critically endangered	An IUCN Red List designation for species at an extremely high risk of extinction.
GB RDB(EN)	Endangered	An IUCN Red List designation for species at a very high risk of extinction.
GB RDB(VU)	Vulnerable	An IUCN Red List designation for species at high risk of extinction.
HAP	Habitat action plan	A plan that identifies threats to a priority habitat and sets out targets and actions to enhance or maintain that habitat.
IUCN	International Union for Conservation of Nature and Natural Resources	A worldwide partnership and conservation network to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.
LBAP	Local biodiversity action plan	A plan that identifies threats to locally important species and habitats, and sets out targets and actions in Species Action Plans and Habitat Action Plans to enhance or maintain biodiversity at the county or regional level.
LHAP	Local habitat action plan	A plan that identifies threats to a locally important priority habitat and sets out targets and actions to enhance or maintain that habitat.
LSAP	Local species action plan	A plan that identifies threats to locally important species, and sets out targets and actions to prevent losing that species from the local area.
Notable	Scarce and threatened invertebrates	Invertebrate species which are estimated to occur within the range of 16 to 100 10km squares but subdivision into Notable A and Notable B categories is not possible as there is insufficient information available).
Notable: A	Scarce and threatened invertebrates	Taxa which do not fall within Red Data Book categories but which are none-the-less uncommon in Great Britain and thought to occur in 30 or fewer 10km squares of the National Grid or, for less well-recorded groups, within seven or fewer vice-counties.

Code	Full Title	Explanation
Notable: B	Scarce and threatened invertebrates	Taxa which do not fall within Red Data Book categories but which are none-the-less uncommon in Great Britain and thought to occur in between 31 and 100 10km squares of the National Grid or, for less-well recorded groups between eight and twenty vice-counties.
NN	Nationally notable	Designation for invertebrate taxa that are thought to be notably important in the UK.
NR	Nationally rare	Species in 15 or fewer hectads in Great Britain.
NS	National scarce	Species in 16-100 hectads in Great Britain.
OSPAR	OSPAR	Species listed on The Convention for the Protection of the Marine Environment of the North-East Atlantic
Red	Red list	Red listed species have a population status in the UK with high conservation concern.
SAP	Species action plan	A plan that identifies threats to significantly important species, and sets out targets and actions to prevent losing that species to extinction.
S41	Species of principal importance	Species of Principal Importance in England under The Natural Environment and Rural Communities (NERC) Act (2006)
UKBAP	UK biodiversity action plan	A plan that identifies threats to locally important species and habitats, and sets out targets and actions in species action plans and habitat action plans to enhance or maintain biodiversity in the UK.
WCA	The Wildlife and Countryside Act 1981 (as amended)	Containing 4 Parts and 17 Schedules, the Act covers protection of wildlife (birds, and some animals and plants), the countryside, National Parks, and the designation of protected areas, and public rights of way.

APPENDIX D – TARGET NOTES

- Target Note 1:** Sycamore tree (with ‘unknown potential’ to support roosting bats). This is located to the immediate north of the building and requires an aerial inspection.
- Target Note 2:** Dense scrub. This habitat was not comprehensively surveyed due to inaccessibility. Any clearance will require the presence of a suitably qualified ecologist. The scrub is dominated by bramble.
- Target Note 3:** Missing tiles/pointing on roof – potential roosting/entry points for bats.
- Target Note 4:** Missing tiles/pointing on roof – potential roosting/entry points for bats.
- Target Note 5:** Missing tiles/pointing on roof – potential roosting/entry points for bats.
- Target Note 6:** Holes in the soffit board – potential roosting/entry points for bats – these include a hole where a light is supposed to be (to the right of the main garden doorway) and a smaller hole around the corner (towards the road).
- Target Note 7:** Damaged/missing tiles on wall – potential roosting/entry points for bats. These tiles are vertically positioned on the wall of the building with a grey flat roof. The damaged tiles are in the bottom right corner.
- Target Note 8:** Gaps between the wall and the soffit board (top of wall) – potential roosting/entry points for bats. This feature is on the upper floor of the main amenity restaurant / public house building, facing the road (south).
- Target Note 9:** Missing tiles/pointing on roof – potential roosting/entry points for bats.
- Target Note 10:** Missing tiles/pointing on roof – potential roosting/entry points for bats.
- Target Note 11:** Missing ventilated cover, exposing a hole on the wall – potential roosting/entry points for bats.
- Target Note 12:** Dense hazel scrub – linear feature. This contributes to connecting the habitats in the wider landscape (incl. the BOA and LWS).

APPENDIX E – SITE PHOTOGRAPHS



Photo 1: Other neutral grassland (g3c)



Photo 2: Other neutral grassland (g3c) with tall ruderal vegetation



Photo 3: Dense scrub to the northeast (h3)



Photo 4: Dense hazel scrub (h3b6)



Photo 5: The mature sycamore to the immediate north of the building.



Photo 6: Semi-mature sycamore trees with negligible bat roosting potential.



Photo 7: Row of London plane trees on the opposite side of Bath Road



Photo 8: Two London planes and three sycamore trees to the immediate west of the site



Photo 9: The front view of the Former George and Dragon amenity restaurant / public house.



Photo 10: One of the roof spaces – well-sealed with no daylight.



Photo 11: Upstairs kitchen – well-sealed.



Photo 12: The main pub (ground floor)



Photo 13: The door leading to the carpark/garden – with 3-5 cm gaps. This room leads to the uninspected roof space and the damaged ceiling.



Photo 14: Slipped tiles and missing pointing on the roof.



Photo 15: Missing ridge tile pointing and lifted slates.



Photo 16: Some of the missing tiles on the north-facing roof.



Photo 17: Hole in the soffit box where a light should be. Another hole around the corner to right of this feature is also present.



Photo 18: Missing / damaged slates (wall) on the upper floor with the flat roof (north facing).



Photo 19: Gaps between the brickwork and soffit on the front left (upper) wall/window – road-facing.



Photo 20: Location of several missing slates on the front (south-facing) of the building.



Photo 21: Potential features on the eastern side of the building – slipped ridge tiles and a hole in the wall.



Photo 22: The missing ventilation cover.



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