Hatch End Industrial Estate, The Hatchery, Middle Aston, Bicester, Oxfordshire OX25 5QL

Preliminary Ecological Appraisal

March 2021

***on behalf of* Middle Aston Ltd**

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Report Contents

1 Summary of Study

- An extended Phase 1 Habitat Survey of Hatch End Industrial Estate, Middle Aston was undertaken by Windrush Ecology Ltd on the 3rd March 2021. A Preliminary Roost Assessment of the buildings and trees within the site was conducted concurrently.

- The Thames Valley Environmental Records Centre was contacted to request ecological information on statutory/non-statutory sites and protected/notable species records held within 1km of the site.

- There is a proposal to re-develop the site.

- The main aim of the survey was to look for evidence of protected species and to evaluate habitats present within the site, and to assess the potential impacts on protected species and valued habitats.

- Habitats present within the site include buildings, improved grassland, amenity grassland, hedgerow, trees, ruderal vegetation and hard-standing.

- Semi-mature/mature trees and adjacent woodland are considered to be the habitats of greatest ecological value.

- The Office and Building 9 are known to support roosting bats (day roost of low numbers).

- There are no foreseeable impacts on statutory or non-statutory sites.

- There are no foreseeable impacts on priority habitats listed under Section 41 of the NERC Act, 2006 or other habitats of high ecological value. All mature trees will be retained and protected.

- The demolition of The Office and Building 9 will require a European Protected Species (Bat) Licence and further surveys are necessary to inform a licence application.

- With the continued management of improved grassland, to prevent the habitat developing into suitable amphibian terrestrial habitat, there are no foreseeable impacts on amphibians including the great crested newt.

- No further ecological surveys are considered necessary at this stage.

- Recommendations are made with regard to sensitive timing of works to avoid impacts on nesting birds and amphibians, mitigation for bats, and the incorporation of enhancement measures within the proposed development.

1 Introduction

1.1 Site Description & Context

Hatch End Industrial Estate, referred to as the 'site' for the purpose of this report, is located to the western side of Fir Lane approximately 450m to the south of the village of Middle Aston in Oxfordshire OX25 5QL. The central Ordnance Survey grid reference for the site is SP 4754 2648. The village of Middle Aston is located to the north of the neighbouring village of Steeple Aston, approximately 10km north-west of Bicester, in the Cherwell District of Oxfordshire.

The site comprises an industrial estate including areas of concrete and tarmacked hard-standing, improved and amenity grassland, and a number of industrial buildings. The majority of the buildings are understood to be former poultry sheds and are relatively simple rectangular structures with wooden panel walls and pitched roofs of corrugated concrete fibre/sheet metal. The western site boundary is marked by a section of hedge and a line of mature trees. The northern and eastern boundaries of the site are also marked by lines of trees, whereas the southern boundary is marked by an adjacent area of woodland.

The site is situated in a semi-rural location, with open countryside extending to the east. To the west is Lakeside Farm industrial estate, and to the north is a detached dwelling with the gardens and grounds of Middle Aston House to the north. Beyond the woodland to the south is the village of Steeple Aston.

The wider landscape is largely agricultural, with arable fields and areas of improved pasture set within a network of interconnecting hedgerows. Woodland is also a characteristic habitat, although nearby woodlands tend to be small and isolated. The River Cherwell flows north to south approximately 850m to the east of the site and is considered to be a notable ecological feature within the wider context.

1.2 Proposals

There is a proposal to redevelop the industrial estate. Please refer to Appendix 6 for plans of the proposals.

1.3 Background

The site was previously surveyed by Windrush Ecology Ltd in 2018 and 2019, including a Preliminary Ecological Appraisal and Bat Survey. The bat surveys indicated that Building F was being used as a day roost site by small numbers of soprano pipistrelle *Pipistrellus pygmaeus* and brown long-eared bats *Plecotus auritus*, and that Building D was being used as a day roost site by small numbers of soprano pipistrelle bats.

Habitats present during the Preliminary Ecological Appraisal in 2018 included:

- Buildings
- Hard-standing
- Improved grassland
- Amenity grassland
- Scrub
- Hedgerow
- Trees and lines of trees
- Ruderal vegetation

The bat surveys, undertaken in 2019, confirmed that the Office and Building 9 supported day roost sites of small numbers of soprano pipistrelle bats (both buildings) and small numbers of brown long-eared bats (the Office).

1.4 Aims of Study

The aims of this study are to describe and evaluate the habitats present within the site and to assess the potential for the site to support protected and notable species. The report discusses the likely impacts of development on the ecology of the site, on valued habitats and on protected/notable species. The study also makes recommendations for appropriate mitigation measures and habitat enhancement with regard to habitats and species. The need for further ecological survey work is discussed in light of the impact assessment.

One specific aim of this study is to survey the buildings for bats and/or evidence of bats, and other protected species including nesting birds such as the barn owl. The study assesses the overall potential of the buildings to support roosting bats, and other protected species, and discusses the likely impact of the proposed works on protected species and their habitats.

The report makes recommendations for appropriate mitigation, compensation and enhancement measure and the potential impacts are assessed in accordance with the legal protection afforded to bats under The Conservation of Habitats & Species Regulations 2017. The need for a European Protected Species (Bat) licence is also discussed in light of the impact assessment.

2 Methodology

2.1 Desk Study

The Thames Valley Environmental Records Centre (TVERC) was contacted in October 2018 to gather records that it holds for protected and notable species, of nature conservation importance from within a 1km radius of the site. Considering that the site is an industrial estate, it was not considered necessary to repeat the desk study.

The Multi-Agency Geographic Information for the Countryside (www.magic.gov.uk) website was searched for information regarding internationally protected sites (e.g. Special Areas of Conservation) within 5km of the site and statutory sites of nature conservation importance (e.g. Sites of Special Scientific Interest) within a 1km radius. Other Internet resources interrogated as part of the desk study include:

- The Ordnance Survey - www.ordnancesurvey.co.uk
- Bing Maps - www.bing.com/maps
- Old Maps - www.old-maps.co.uk
- Google Earth - www.earth.google.co.uk

Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, and the Biodiversity Action Plan for Oxfordshire were also consulted to gather information pertaining to priority habitats and species for conservation action at the national and local level.

Aerial photography interpretation was used to place the study sites into an ecological context and to provide information on the nature of the habitats beyond the site boundary. The information gathered is used provide a baseline to the habitat assessment.

2.2 Extended Phase 1 Habitat Survey

An extended Phase 1 Habitat Survey was undertaken on 3rd March 2021 by Edward Bodsworth *MA (Cantab) PhD MCIEEM*. A walkover of the site was conducted, and a description of the habitats present was prepared using standard Phase 1 Habitat Survey methodology (JNCC 2010).

Target notes were also prepared on features of particular ecological interest within the site and an assessment was made of the site's potential to support protected and notable species (such as species listed under Section 41 of the NERC Act 2006).

2.3 Initial Bat Survey/Preliminary Roost Assessment

An initial bat survey and preliminary roost assessment was also undertaken on 3rd March 2021 by Dr Bodsworth. Dr Bodsworth holds a licence from Natural England to survey for bats within all counties of England (Natural England Level 3 and Level 4 Licence nos. 2020-45379-CLS-CLS & 2020-45382-CLS-CLS).

A detailed survey of the buildings was undertaken using a 1 million candle-power torch and close-focusing binoculars in order to look for bats and/or evidence of bats and to assess the potential of the buildings to support roosting bats. The elevations of the buildings were inspected for evidence of bats including, bat droppings, urine stains, feeding remains (such as moth wings) and characteristic fur staining around access points.

Notes were made on the relative freshness, shape and size of bat droppings and the location and quantity of any feeding remains. 'Clean' gaps and crevices within the structure of the buildings were looked for as this can indicate where bats may have gained access to the interior spaces and the fabric of the walls.

The bat survey was undertaken according to best practice guidelines published by the Bat Conservation Trust (Collins, 2016) and the *Bat Workers Manual* (JNCC, 2012).

The study also takes into account the structures and ecological context of the buildings, including the following factors which may increase the likelihood of roosting bats being present:

- Age of the building (pre-20th Century or early 20th Century construction)
- Nature of construction; traditional brick, stone or timber construction
- Large and complicated roof void with unobstructed flying spaces
- Large (>20 cm) roof timbers with mortice/tenon joints, cracks and holes
- Entrances and gaps for bats to fly and crawl through
- Poorly maintained fabric providing ready access points for bats into roofs, walls; but at the same time not being too draughty and cool.
- Roof warmed by the sun, south-facing roofs in particular
- Weatherboarding and/or hanging tiles with gaps
- Undisturbed roof voids
- Buildings and built structures in proximity to each other providing a variety of roosting opportunities throughout the year
- Buildings or built structures close to good foraging habitat, in particular mature trees, parkland, woodland or wetland, especially in a rural setting.

The following criteria are used for as guidelines for assessing the potential suitability of buildings for bats (Collins, 2016):

Confirmed presence of roosting bats is where evidence is found to show that a building or structure is used by bats, this includes:

- bats seen roosting or observed flying from a roost or freely in the habitat;
- droppings, carcasses, feeding remains etc. found and/or
- bats heard 'chattering' inside a roost on a warm day or at dusk.

In addition to the bat survey, the buildings were checked for evidence of nesting birds including old birds' nests, bird droppings, feathers and eggs.

Table 1. Criteria for the assessment of buildings for roosting bats (Collins, 2016).

Suitability	**Description of Roosting Habitats**
Negligible	Negligible habitat features likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual 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).
Moderate	A structure 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 to support 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 the presence is confirmed).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitats.

3 Results & Evaluation

3.1 Constraints to Current Study

There are not considered to be any significant constraints to the current study. The habitats of the site have not significantly changed since 2018 and 2019, and a robust assessment of the site's ecological value was possible.

3.2 Sites of Nature Conservation Importance

A summary of sites of nature conservation importance is given below; please refer to Appendix 5 for full citations of these sites. Species records are discussed within Section 3.3, alongside the results of the field surveys.

3.2.1 *Statutory Sites*

There are no sites of national conservation importance, such as Sites of Special Scientific Interest (SSSIs) within 1km of the site.

There are no sites of international conservation importance, such as Special Areas of Conservation (SAC) of Special Protected Areas (SPA) within 5km of the site.

3.2.2 *Non-statutory Sites*

There are no Local Wildlife Sites, or other non-statutory wildlife sites, located within a 1km radius of the site.

The Upper Cherwell Conservation Target Area (CTA) is located approximately 700m to the north-east of the site. The CTA includes habitats created within the valley created by the River Cherwell/Oxford Canal. Habitats associated with the CTA include:

- Floodplain grazing marsh
- Lowland meadows
- River

3.3 Habitats

Photographs of the site are presented in Appendix 1, showing habitats and buildings. A Phase 1 Habitat Plan is provided in Appendix 3.

3.3.1 *Buildings*

Descriptions of the buildings are provided below, and the locations of the buildings are shown in Figure 1. Please refer to Appendix 1 for photographs.

3.3.1.1 Office

The Office covers a 'U'-shaped footprint; created from a main rectangular section with two gables at its eastern elevation. The building is constructed upon a plinth of concrete blockwork with walls of tight-fitting wooden shiplap boarding. Wooden boxed eaves are present at the roof-wall junctions, with gaps observed at the northern and southern gables.

The roof is pitched and has a covering of concrete pantiles. The roof tiles are in a good state of repair, with no slipped or missing tiles. A single small gap was observed at the north-eastern corner of the roof where an area of missing mortar creates a potential bat roost feature beneath a roof tile. A central cupola (clock tower) exists at the ridge of the roof and is created from wooden sides with a hipped roof of lead flashing.

A single loft void extends over the entire footprint of the building, with this space only interrupted by an enclosed 0.5m x 0.5m cuboidal box which extends through the ceiling below and houses the mechanical workings for the clock on the roof above. The void is uncluttered. Walls at the four gable ends are un-lined, with the single skin wooden panelling evident from within void. The bitumen felt underlay is visible throughout and is in a variable condition with some tears noted.

The Office is assessed as having 'moderate' potential (Collins, 2016) to offer shelter to roosting bats.

A total of approximately 500 bat droppings were observed within the Office's loft void during the inspection carried out on the 15th August 2019. The bat droppings were noted to be predominantly scattered throughout the space, with a denser accumulation of approximately 100 droppings present below the point where the ridge boards for the main section and southern gable meet. All bat droppings observed were of a size and shape indicative of the brown long-eared bat, with a number of droppings appearing fresh, indicating the presence of bats within the 2019 bat activity period.

Two soprano pipistrelles were seen to emerge from the boxed eaves on eastern gable end of the Office's southern gable during the bat surveys in 2019. Two brown long-eared bats were recorded emerging from tiles on the eastern pitch of the roof, at a location between the two eastern gables.

3.3.1.2 Scout Hut

The Scout Hut is used for the storage of outdoor equipment. The building covers a small rectangular footprint and is created on a concrete plinth with walls of wooden plywood. Wrapped metal edging is present at the eaves of the northern and southern gables. The roof is created from a pitched

arrangement of corrugated asbestos. The interior space is open to the underside of the roof which is supported by a simple timber frame with no underlay.

The Scout Hut is assessed as having 'negligible' potential (Collins, 2016) to offer shelter to roosting bats.

3.3.1.3 Building 2

Building 2 is arranged over a rectangular footprint and is set upon a plinth of concrete blockwork. The walls of the building are created from tight-fitting wooden shiplap boarding with wooden boxed eaves at the northern and southern gable ends. The roof has a pitched arrangement of corrugated concrete fibre sheeting and is lined on its underside by wooden panelling. There are not considered to be any accessible loft spaces within the building.

Building 2 is assessed as having 'negligible' potential (Collins, 2016) to offer shelter to roosting bats.

3.3.1.4 Building 3

Building 3 is a relatively large former barn arranged over a rectangular footprint and set on a plinth of concrete blockwork. The walls of the building are constructed from tight-fitting wooden shiplap boarding with wooden boxed eaves at the gable ends and wooden fascia board along its side elevations.

Gaps were observed at the eaves of the southern gable end; however, these features are considered to lead directly into the internal space and do no not create sheltered crevice features. Three wooden bird boxes have been installed on the eastern elevation of the building. The roof of the building is created from a pitched arrangement of corrugated concrete fibre sheeting.

Building 3 is assessed as having 'negligible' potential (Collins, 2016) to offer shelter to roosting bats.

3.3.1.5 Building 4

Building 4 is identical in its construction to Building 5.

Building 4 is assessed as having 'negligible' potential (Collins, 2016) to offer shelter to roosting bats.

3.3.1.6 Building 5

Building 5 is a relatively large former barn arranged over a rectangular footprint and set on a plinth of concrete blockwork. The northern and southern gable ends are created from tight-fitting wooden shiplap boarding. Wooden bargeboards are present at the gable ends and are set away from the wall face and sealed by sunken soffits underneath.

The eastern and western elevations display tapering walls covered with corrugated metal sheeting set against the vertical internal walls. The nature of the external walls creates a sheltered void between the external (tapering) wall and internal (vertical) wall which is open at the base. The roof of the building is of a shallow pitch and created from sheets of corrugated metal.

Building 5 is assessed as having 'negligible' potential (Collins, 2016) to offer shelter to roosting bats.

3.3.1.7 Building 8

Building 8 is arranged over a rectangular footprint and is set upon a plinth of concrete blockwork. The walls of the building are created from tight-fitting wooden shiplap boarding with wooden boxed eaves at the northern and southern gable ends. The roof has a pitched arrangement of corrugated concrete fibre sheeting and is lined on its underside by wooden panelling. There are not considered to be any accessible loft spaces within the building.

Building 8 is assessed as having 'negligible' potential (Collins, 2016) to offer shelter to roosting bats.

3.3.1.8 Building 9

Building 9 is a converted agricultural barn which is currently in use as an arts and crafts workshop/storage facility. The building is rectangular in shape and set atop a plinth of concrete blockwork. The walls are created from tight-fitting wooden shiplap boarding. Wooden boxed eaves are present at the roof-wall junctions of the northern and southern gable ends.

A small gap is present at the southern elevation due to a damaged bargeboard. A hole is also present within the northern wall (towards the apex), the hole has been partially sealed by boarding from the inside, however a significant gap remains at the top of the feature providing potential bat access into the roof space.

Two accessible loft spaces are present within the roof of Building 9 and are separated from the workspace below by a wooden panel ceiling. The loft space within the northern section of the building has an approximate floor-ridge height of 1.25m, whereas the void within the southern section is shallower (max 1m). Both spaces contain a thick layer of dirt throughout, with dense accumulations of cobwebbing at the ridge. The underside of the roof is unlined within both loft spaces.

Building 9 is assessed as having 'low' potential (Collins, 2016) to offer shelter to roosting bats. This is due to the fact that one soprano pipistrelle was seen to emerge from Building 9 during the bat surveys in 2019.

3.3.1.9 Electricity Sub-station

The Electricity Sub-station is a simple shed with wall of wooden shiplap boarding and a sloping roof of bitumen and hessian roofing felt.

The Electricity Sub-station is assessed as having 'negligible' potential (Collins, 2016) to offer shelter to roosting bats.

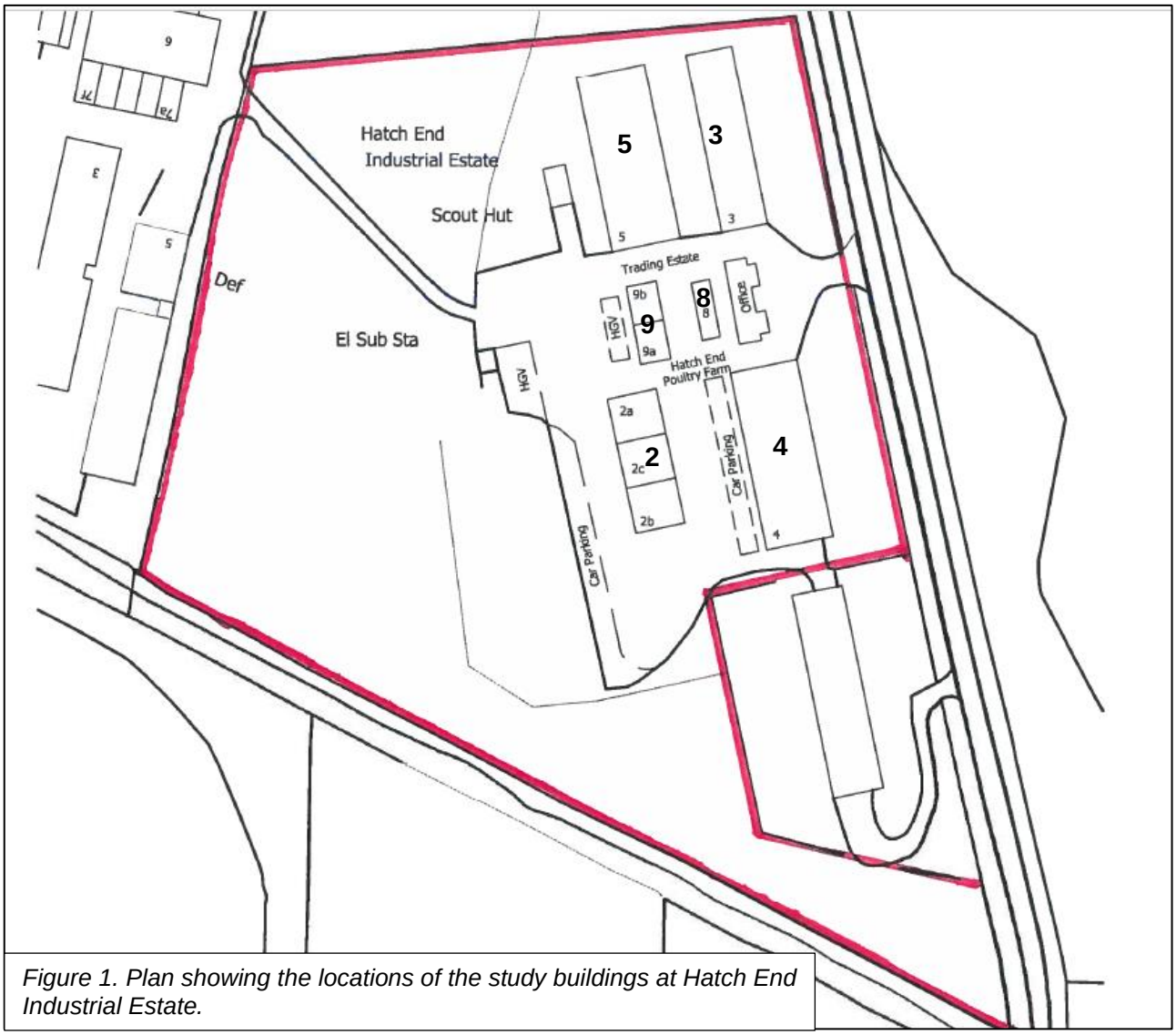

Figure 1. Plan showing the locations of the study buildings at Hatch End Industrial Estate.

3.3.2 *Improved Grassland*

An area of improved grassland habitat extends to the southern and western boundaries of the site. The grassland appears to be managed through infrequent mowing.

The grassland is dominated by common grasses including cock's foot *Dactylis glomerata*, false oat-grass *Arrhenatherum elatius* and Yorkshire fog *Holcus lanatus*. The habitat is relatively species-poor, containing a low diversity of common herbaceous plants which are present in relatively low abundance. Species include stinging nettle *Urtica dioica*, white dead-nettle *Lamium album*, cleavers *Galium aparine*, herb Robert *Geranium robertianum*, ground ivy *Glechoma hederacea*, ivy *Hederacea helix*, hogweed *Heracleum sphondylium*, dove's-foot crane's-bill *Geranium molle*, cow parsley *Anthriscus sylvestris*, sow thistle *Sonchus* sp. and broad-leaved dock *Rumex obtusifolius*.

The improved grassland does not meet the criteria for any grassland habitats of 'principal importance' as listed within Section 41 of the NERC Act 2006, and the habitat is considered to be of low ecological value.

3.3.3 *Amenity Grassland*

Amenity grassland surrounds the buildings at the northern end of the yard and to the immediate west of the yard, as well as to the eastern side of Building 3 and Building 4, either side of the entrance to the industrial estate.

These areas are regularly mowed and had a maximum sward height of approximately 5cm at the time of the survey. The habitat is dominated by common grasses and contains a greater abundance of herbs in comparison the areas previously described. Species present within the shorter areas of amenity grassland include creeping buttercup *Ranunculus repens*, dove's-foot crane's-bill, creeping cinquefoil *Potentilla reptans*, dandelion *Taraxacum officinale*, germander speedwell *Veronica chamaedrys*, spear thistle and broad-leaved dock.

The amenity grassland does not meet the criteria for any grassland habitats of 'principal importance' as listed within Section 41 of the NERC Act 2006, and the habitat is considered to be of low ecological value.

3.3.4 *Trees*

A double avenue of planted trees is present towards the north-western corner of the site and extends northwards beyond the site boundary. The trees are mature specimens of horse chestnut *Aesculus hippocastanum* and beech *Fagus sylvatica*.

The western site boundary is marked by mature trees horse chestnut, lime *Tilia europaea*, and beech trees. The northern site boundary is marked by a row of mature/semi-mature birch *Betula* sp., silver birch *Betula pendula*, cherry *Prunus* sp. with some coppiced hazels *Corylus avellana*.

A line of mature lime trees is also present along the eastern site boundary.

Mature trees are considered to be of high ecological value. This is due to the age of the trees and the fact that they provide green infrastructure and habitat connectivity into the wider landscape.

3.3.5 *Hedgerow*

A hedgerow is present within the south-western area of the site and serves to separate the yard from the grassland. The hedge consists largely of field maple *Acer campestre* and hawthorn *Crataegus monogyna,* with some dogwood *Cornus sanguinea* also present.

The hedgerow is not considered to qualify as a habitat of 'principal importance' as listed within Section 41 of the NERC Act 2006, and does not qualify as an important hedgerow under the ecological criteria Hedgerow Regulations 1997. This is due to the fact that the hedgerow has been planted as a screen to the yard, and does not form a field boundary. The hedgerow exhibits no ancient woodland ground flora.

The hedgerow habitat is considered to be of ecological value at the site level.

A short section of garden hedge, with cherry laurel *Prunus laurocerasus* is present at the western side of the site. The feature is considered to be of negligible ecological value.

3.3.6 *Ruderal Vegetation*

Areas of ruderal vegetation are present within the site in the form of a dense bed of sting nettles at the southern corner as well as along the northern site boundary. Species present within the habitat include stinging nettle, chickweed *Stellaria media*, wood avens *Geum urbanum*, ground ivy G*lechoma hederacea*, and great willowherb *Epilobium hirsutum*.

Areas of ruderal vegetation are considered to be of low ecological value.

3.3.7 *Hard-Standing*

Areas of tarmacked and gravel hard-standing exist within the centre of the site to create the working yard. Areas of hard-standing are of negligible ecological value.

3.3.8 *Woodland*

The southern site boundary is marked by an area of adjacent woodland habitat, located outside of the site boundary. The habitat is dominated by semi-mature and mature trees including specimens of ash *Fraxinus excelsior*, willow *Salix* sp., beech, cherry *Prunus avium*, sycamore *Acer pseudoplatanus*, lime and horse chestnut, with an understorey of hawthorn. The ground flora beneath the trees contains stinging nettle, ivy *Hedera helix*, cleavers *Galium aparine* and bramble *Rubus fruticosus agg.*

The adjacent woodland is considered to meet the criteria for Lowland Mixed Deciduous Woodland, as listed within Section 41 of the NERC Act 2006, and the habitat is considered to be of high ecological value within the wider local context.

3.4 Species

The following sections collate data collected during the site survey of 3rd March 2021 with the species data held by the Thames Valley Environmental Records Centre (TVERC) in order to assess the suitability of the habitats within the study for protected species.

The TVERC holds records of protected/notable plant, bird and mammal species from within a 1km radius of the site. A summary of the most pertinent species, given the nature of the habitats within the site and the surrounding landscape, are provided below. Full details of protected/notable species records can be found in Appendix 5.

3.4.1 *Plants*

The TVERC holds a record of common valerian *Valeriana officinalis* from near Upper Heyford (exact location unknown). The species typical grows within woodland clearings and ditches. No common valerian was noted within the site, and no other rare of uncommon plant species were noted.

The site is dominated by common and widespread plant species that are typical of improved and amenity grassland habitats.

3.4.2 *Invertebrates*

A number of butterfly records exist for a location located approximately 700m to the south of the site, dating from 1993, including small heath *Coenonympha pamphilus*, wall *Lasiommata megera*, pearl-bordered fritillary *Boloria selene* and large tortoiseshell *Nymphalis polychloros*.

The large tortoiseshell was once common and widespread in areas with significant woodland habitat, however the species is now considered to be extinct in the UK. Both small heath and wall butterflies occur in areas of species-rich grassland, such as unimproved grassland, semi-improved grassland and meadows, where their larval stages feed on fine grasses. The pearl-bordered fritillary occurs in woodland clearings where violets are found.

Whilst the small heath and wall are both grassland species, the improved grassland and amenity grassland are not suitable habitats for this species. There are no habitats for the pearl-bordered fritillary within the site, but the woodland habitats outside of the site boundary may provide potential habitat to woodland butterflies. Woodland may also offer suitable habitat to moth species, potentially including priority species listed under Section 41 of the NERC Act 2006.

3.4.3 *Amphibians*

There are no records of amphibians, including the great crested newt *Triturus cristatus*, from within 1km of the site.

There are no ponds within the site or immediately adjacent to the site boundary. The nearest waterbody is located approximately 140m to the north-east of the site, part of the series of ponds associated with Middle Aston House. It is considered that great crested newts can disperse up to 500m from their breeding ponds, and so it is possible that amphibians are moving into the site form the ponds to the north.

However, the areas of improved grassland, amenity grassland and hard-standing are not considered to provide suitable terrestrial habitats to amphibians whilst on land. In addition, the ponds appear to be surrounded by potentially suitable terrestrial habitats, and suitable habitat occurs in the vicinity in the form of woodland and parkland. It is considered unlikely, therefore, that amphibians will be present within the site.

3.4.4 *Reptiles*

There are no records or reptiles from within 1km of the site.

Habitats within the site are not considered suitable for reptiles, comprising species-poor improved grassland of poor structure, close-mown amenity grassland and hard-standing.

3.4.5 *Birds*

Species of bird observed within the site and its immediate surroundings include robin *Erithacus rubecula*, wood pigeon *Columba palumbus*, carrion crow *Corvus corone*, blue tit *Cyanistes caeruleus*, great tit *Parus major*, chaffinch *Fringilla coelebs* and nuthatch *Sitta europaea*.

The majority of records returned by TVERC within the data search pertain to birds observed within Middle Aston and the local surroundings. There are several historic records of the lesser spotted woodpecker from woodland within the local area, although the age of the records is unlikely to provide accurate information on the species' current distribution within the local area.

The adjacent woodland habitat (to the south) is potentially suitable for woodcock *Scolopax rusticola* (a red list species). In addition, mature trees such as those within the site's tree belts and adjacent woodland are suitable for nesting by raptors including red kite *Milvus milvus*.

Opportunities for common and widespread species of garden and farmland bird are present within the site's hedgerow, tree belts and by nest boxes on Building 3. The breeding bird assemblage within the site is likely to consist largely of common and widespread species of garden/farmland bird, several of which are listed as priority under the NERC Act 2006 such as song thrush *Turdus philomelos*, bullfinch *Pyrrhula pyrrhula* and dunnock *Prunella modularis*.

The buildings are not suitable for barn owls *Tyto alba*.

The grassland habitats, and the site in general, are not suitable for ground nesting species.

3.4.6 *Bats*

The Office is assessed as having 'moderate' bat roost potential, and Building 9 is assessed as having 'low' bat roost potential; all other buildings are assessed as having 'negligible' bat roost potential.

Two brown long-eared bats and two soprano pipistrelle bats were found to be roosting (day roosts) within the Office in 2019. Building 9 was a day roost used by one soprano pipistrelle bat.

The TVERC holds a record of brown long-eared bat droppings found within a building to the immediate north of the site. Other species of bat known to occur within Middle Aston and the local surroundings include common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle, serotine *Eptesicus serotinus*, noctule *Nyctalus noctule* and several species of 'mouse-eared' bat within the genus *Myotis*.

The site boundaries, woodland beyond the boundaries and mature trees are considered to provide suitable foraging areas and commuting corridors for bats. Although a specific survey of individual trees was not undertaken within the current study the mature trees within the site have the potential to contain potential roost features which could support roosting bats.

3.4.7 *Other Mammals*

No badger *Meles meles* setts or other evidence of badgers was recorded within the site.

The records centre holds numerous records of otter *Lutra lutra* from the River Cherwell. Given the absence of watercourses within the site, and within its surroundings, otters are considered to be absent.

The site provides potential foraging habitat for hedgehogs *Erinaceus europaeus* within areas of improved and amenity grassland.

The site does not offer suitable habitat to dormice *Muscardinus avellanarius*. This includes the hedgerow, which does not have suitable species-richness or structure for this species.

4 Discussion

4.1 Relevant Legislation & Policy Guidance

4.1.1 *Nesting Birds*

Nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. The nesting season for most species is between March and August, inclusive.

4.1.2 *Bats*

As with many animal species within the UK, declines in the abundance and distribution of many bat species have been documented through recent decades. The reasons for these declines are various and complex but it is considered that the major factors are changes in land use and agriculture, the loss of woodlands and hedgerows and the loss of suitable roosting sites.

Bats are particularly sensitive to human activity due to the fact that they roost within buildings, trees and underground structures such as mines, and the availability of suitable roost sites is considered to be a key factor in the conservation of bats within the UK. As a consequence, all species of bat and their roost sites are protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and under The Conservation of Habitats and Species Regulations 2017. Taken together, these make it an offence to:

(a) Deliberately capture or intentionally take a bat
(b) Deliberately or intentionally kill or injure a bat
(c) To be in possession or control of any live or dead wild bat or any part of, or anything derived from a wild bat

(d) Damage or destroy a breeding site or resting place of such an animal or intentionally or recklessly damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection
(e) Intentionally or recklessly disturb any wild bat while it is occupying a structure or place that it uses for shelter or protection
(f) Deliberately disturb any bat, in particular any disturbance which is likely
- to impair their ability;
(i) to survive, breed, reproduce or to rear or nurture their young; or
(ii) in the case of hibernating or migratory species, to hibernate or migrate; or
- to affect significantly the local distribution or abundance of the species to which they belong

A bat roost may be any structure a bat uses for breeding, resting, shelter or protection. It is important to note that since bats tend to re-use the same roost sites, current legal opinion is that a bat roost is protected whether or not the bats are present at the time.

Although the law provides strict protection to bats, it also allows this protection to be set aside (derogation) under The Conservation of Habitats and Species Regulations 2017 through the issuing of licences. Where a lawful operation is required to be carried out, but which is likely to result in one of the above offences, a licence may be obtained from Natural England (the statutory body in England with responsibility for nature conservation) to allow the operation to proceed. However, in accordance with the requirements of The Conservation of Habitats and Species Regulations 2017, a licence can only be issued where the following requirements are satisfied:

- The proposal is necessary 'to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment';
- 'There is no satisfactory alternative';
- The proposals 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'.

A licence application includes a Method Statement which details the ecological survey work that has been undertaken and assesses the impacts on bats and their roost sites as a result of the development proposals. It also presents a mitigation strategy for maintaining the 'favourable conservation status' of the bats. This strategy will often include careful timing of work to avoid disturbance to bats, sensitive work practices to avoid the killing and injury of bats and the provision of alternative and enhanced roosting sites and roosting opportunities such as bat lofts and bat boxes. These compensation features will be appropriate to the species of bat and the type of roost site, such as maternity, hibernation or transient.

The Method Statement is prepared by a suitably qualified and experienced ecologist on behalf of the applicant. The licence application may also include a Reasoned Statement which is completed by the applicant (not the ecologist) to address the first two requirements of the Regulations which consider the 'need' of the development and any satisfactory alternatives.

4.1.2.1 Bat Mitigation Class Licence

In 2015, Natural England launched a new class licence (WML-CL21), which provides a streamlined process to the European Protected Species Licence (EPSL) described above. The Bat Mitigation Class Licence (formerly the Low Impact Bat Class Licence) permits work that has a low or temporary impact on certain bat species and certain roost types, but which still needed to be licensed in order to meet legal requirements. Specifically, the criteria for using the class licence are set out below.

Bat species
The Bat Mitigation Class Licence can be used for sites where the following species are roosting:

- Common pipistrelle *Pipistrellus pipistrellus*
- Soprano pipistrelle *Pipistrellus pygmaeus*
- Brown long-eared *Plecotus auritus*
- Whiskered *Myotis mystacinus*
- Brandt's *Myotis brandtii*
- Daubenton's *Myotis daubentonii*
- Natterer's *Myotis nattereri*
- Serotine *Eptesicus serotinus*[1]
- Lesser horseshoe *Rhinolophus hipposideros*[2]

Assemblage of bats
Sites that support a maximum of three bat species listed above can be registered for the class licence. Sites with a more diverse assemblage of bat roosts must apply for an individual European Protected Species (EPS) licence.

Number of bats
Sites that support individuals or small numbers (in total) of the bat species listed above can register for the Bat Mitigation Class Licence. If more than one bat species will be affected, it is the total number of bats which must be considered. The conservation status of bats varies across regions and must be considered by the ecologist when determining what constitutes 'small numbers'.

Roost type
The Bat Mitigation Class Licence applies to roosts of low conservation significance, and is regulated to cover the following types of roosts in buildings:

- Feeding roosts
- Night roosts
- Day roosts
- Transitional roosts / occasional roosts

Sites with roosts of higher conservation significance such as maternity roosts, hibernation sites or swarming sites do not qualify.

Number of roosts
The Bat Mitigation Class Licence is applicable to sites that support no more than three roosts in total (across all structures).

Impacts
Natural England's Bat Mitigation Class Licence permits activities resulting in the disturbance and/or capture of certain bat species (listed above) and/or the damage or destruction of roosts of low conservation significance.

[1] *Under Annex C (for use in the following counties Berkshire, Buckinghamshire, Devon, Dorset, East Sussex, Essex, Greater London, Hampshire, Hertfordshire, Kent, Oxfordshire, Somerset, Surrey, West Sussex and Wiltshire) the Bat Mitigation Class Licence also covers damage and destruction of no more than 3 feeding, day, night and transitional serotine bat roosts and the disturbance and capture serotine bats in appropriate small numbers.*

[2] *Under Annex D (for use in the following counties Cornwall, Devon, Dorset, Gloucestershire, Herefordshire, Somerset and Wiltshire) the low impact bat class licence also covers damage and destruction of no more than 3 low conservation significance day and transitional lesser horseshoe bat roosts and disturb and capture lesser horseshoe bats in appropriate small numbers.*

Natural England's Bat Mitigation Class Licence is held by Registered Ecological Consultants and sites must be registered with, and approved by Natural England before any licensable work can commence. The ecological consultant must apply to register the site with at least 3 weeks (15 working days) notice and no more than 12 weeks before commencement of any licensable activities.

4.1.3 *The Natural Environment and Rural Communities Act 2006*

Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 places a duty on the Secretary of State to publish, review and revise lists of living organisms and types of habitat in England that are of principal importance for the purpose of conserving English biodiversity.

It also requires the Secretary of State to take, and promote the taking of, steps to further the conservation of the listed organisms and habitats. This is important in the context of planning decisions as the National Planning Policy Framework affords planning policy protection to the habitats of species listed by virtue of Section 41.

Habitats listed within Section 41 of the NERC Act 2006 that are considered to be relevant to the site include:

- Lowland mixed deciduous woodland (outside, but adjacent to site)

Species listed within Section 41 of the NERC Act 2006 that are considered to be relevant, or potentially relevant, to the site include:

- Common birds, such as song thrush and dunnock (trees, hedgerow and boundary woodland offer potential nesting habitats)
- Hedgehog (potential foraging habitat within site)

4.1.4 *National Planning Policy Framework (NPPF)*

The revised National Planning Policy Framework was updated in February 2019 and sets out the government's planning policies for England and how these are expected to be applied. This revised Framework replaces the previous National Planning Policy Framework published in March 2012, and revised in July 2018.

The NPPF states that planning policies and decisions should contribute to and enhance the natural and local environment by:

- Protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- Recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- Maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

- Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and the Broads. The scale and extent of development within these designated areas should be limited. Planning permission should be refused for major development other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of:

- The need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy;
- The cost of, and scope for, developing outside the designated area, or meeting the need for it in some other way; and
- Any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.

Within areas defined as Heritage Coast (and that do not already fall within one of the designated areas mentioned in paragraph 172), planning policies and decisions should be consistent with the special character of the area and the importance of its conservation. Major development within a Heritage Coast is unlikely to be appropriate, unless it is compatible with its special character.

To protect and enhance biodiversity and geodiversity, plans should:

- Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

When determining planning applications, local planning authorities should apply the following principles:

- If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that

make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

- Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons, and a suitable compensation strategy exists; and
- Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

The following should be given the same protection as habitats sites:

- ❖ Potential Special Protection Areas and possible Special Areas of Conservation;
- ❖ Listed or proposed Ramsar sites; and
- ❖ Sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitat's site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitat site.

4.2 Potential Impacts

4.2.1 *Sites of Nature Conservation Importance*

There are no foreseeable impacts on statutory or non-statutory sites of nature conservation importance. This due to the distance of such sites from the proposed area of development.

The site is located outside of the Upper Cherwell CTA and development within the site will have no foreseeable impacts on the CTA.

4.2.2 *Habitats*

Development will result in the loss of existing buildings, hard-standing and amenity grassland. These habitats are of negligible or low ecological value and habitat loss will result in no foreseeable ecological impacts. There are no foreseeable impacts on habitats of 'principal importance'.

Development will also result in the partial loss of improved grassland and hedgerow, although the majority of the improved grassland will remain. These habitats are of low ecological value and it is considered that habitat loss can be compensated for through new landscaping, native planting and habitat creation within the proposals. For example, a hedgerow is proposed along the northern boundary of the site, and this will compensate for the partial loss of the existing hedgerow.

Planting between the proposed new buildings will include native trees and shrubs, including hazel, wild cherry, dogwood, guelder rose and spindle.

With the retention of mature trees, and protection of trees and adjacent woodland, there are no foreseeable impacts on habitats of higher value and habitats of principal importance (such as the adjacent woodland). Given the low value of existing habitats (that may be affected by the proposals) such as improved grassland, it is considered that biodiversity net gain can be achievable within the site, through appropriate new landscaping, native planting and habitat creation.

Species-specific features, such as bat boxes and bird boxes, would also promote biodiversity net gain.

4.2.3 *Species*

4.2.3.1 Amphibians

There are no foreseeable impacts on amphibian breeding ponds.

Buildings, hard-standing, amenity grassland and improved grassland are considered to be unsuitable habitats for amphibians whilst on land. The grassland is managed either regularly (amenity) or infrequently (improved) through cutting and the sward is generally low, homogeneous and with little structure or shelter.

Whilst the mature tree belt provides a potential movement corridor for great crested newt into the improved grassland habitat at the western side of the site, where some loss of improved grassland will occur, Natural England's Great Crested Newt (GCN) Rapid Risk Assessment (Table 2) indicates that given the size of the habitat and the distance from the nearest waterbodies development is unlikely to result in an offence.

Table 2. GCN Rapid Risk Assessment for potential terrestrial habitat loss at Hatch End Industrial Estate.

Component	**Likely effect** **(select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)**	**Notional offence probability score**
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.1
Land >250m from any breeding pond(s)	0.5 - 1 ha lost or damaged	0.03
Individual great crested newts	No effect	0
	Maximum:	0.1
Rapid risk assessment result:	**GREEN: OFFENCE HIGHLY UNLIKELY**	

Given the above, a European Protected Species (newt) Mitigation Licence is not considered necessary in this instance. However, a precautionary approach is recommended with regard to the clearance of areas of improved grassland, to avoid any inadvertent impacts on amphibians.

4.2.3.2 Birds

Clearance of shrubs, hedgerow or other woody vegetation during the breeding bird period has the potential to result in the damage or destruction of active nests and the killing/injury of eggs/young.

Removal of the existing bird boxes from Building 3 during the breeding bird period also has this potential impact.

There are no foreseeable impacts on ground-nesting bird species.

4.2.3.3 Bats

Removal of The Office and Building 9 will result in the destruction of bat roosts and a bat licence from Natural England will be required for the proposed works to proceed since the impacts will be significant under the Conservation of Habitats and Species Regulations 2017 & Wildlife and

Countryside Act 1981 (as amended). In addition, if bats are present during the works to demolish the buildings, there is the potential for bats to be killed, injured or disturbed.

Given the fact that two common species of bat are using the two structures, in low numbers, and there is no evidence of breeding or suitability for hibernation, the Bat Mitigation Class Licence (BMCL) approach to licencing is applicable in this instance. The licence will allow for the legal 'destruction' of the bat roosts.

External lighting can have an impact on bats by affecting their activity and behaviour. Certain species of bat have been shown to be attracted to mercury vapour lamps which emit light over a very broad-spectrum including UV light to which insects are particularly sensitive. Insects can be attracted in large numbers to mercury lamps and so can bats of the genera *Nyctalus* and *Pipistrellus*, including noctules *N. noctula* and common pipistrelles *P. pipistrellus* (Rydell and Racey 1993).

Lighting has shown to have an opposite effect on certain other species, such as the lesser horseshoe bat *Rhinolophus hipposideros*, which have been shown to avoid areas of artificial light (Stone *et al.* 2009). External lighting within the re-developed site could therefore have an effect on foraging or commuting bats, if designed in an insensitive manor.

It should be noted that activity levels (in 2019) around the site were moderate with activity dominated by common species which were commuting and foraging; there was no sustained foraging activity within the immediate confines of the industrial estate.

4.2.3.4 Other Species

There are no foreseeable impacts on reptiles, badgers, uncommon invertebrates or other species.

5 Recommendations

5.1 Further Surveys

Given that the existing bat survey data is from 2019, further bat surveys of The Office and Building 9 will be required to inform a Bat Mitigation Class Licence. Natural England will accept data from the current or preceding survey seasons, and so 2019 data would be seen as out of date.

It is recommended that three bat activity surveys (at dusk and dawn) are undertaken in the period of May to August, inclusive, to inform a Bat Mitigation Class Licence.

The survey in March 2021 has confirmed that there has been no change in status of The Office and Building 9, and so it is confirmed that there is likely to have been no change in status of bats within these two buildings. This will be confirmed by the recommended further surveys.

No further surveys, for other protected species such as great crested newts, are recommended.

5.2 Habitats

5.2.1 *Protection of Existing Ecological Features*

The adjacent woodland located at the southern site boundary will be protected through the establishment of an appropriate buffer zone between the woodland and new areas of built development. All mature trees should be retained, and integrated into the new landscaping. The adjacent woodland, and retained mature trees, should be protected in accordance with BS 5837:2012 and through the establishment of appropriate root protection zones.

5.2.2 *Enhancement of Existing Habitats*

Opportunities for habitat enhancement include the creation of species-rich grassland within retained areas of improved grassland, under the mature trees and along the woodland edge.

Under mature trees, and along the woodland edge, it is recommended that the areas are sowed with a seed mixture of shade-tolerant species of wildflower and grasses such as Emorsgate EW1 Woodland Mixture (other suppliers are available).

Within existing areas of improved grassland, the ground could be prepared, and the grassland 'over-sown' with a mixture of wildflowers, such as Emorsgate EM2F, a general-purpose mix of wildflowers that are typical of grassland habitats.

5.2.3 *Habitat Creation*

New areas of tree and shrub planting should be of native species, preferably of local origin. Native tree and shrub species which are considered suitable for the site include:

- Beech *Fagus sylvatica*
- Blackthorn *Prunus spinosa*
- Crab apple *Malus sylvestris*
- Dog rose *Rosa canina*
- Dogwood *Cornus sanguinea*
- English oak *Quercus robur*
- Field maple *Acer campestre*
- Guelder rose *Viburnum opulus*
- Hawthorn *Crataegus monogyna*
- Hazel *Corylus avellana*
- Holly *Ilex aquifolium*
- Hornbeam *Carpinus betulus*
- Spindle *Euonymus europaeus*
- Wayfaring tree *Viburnum lantana*
- Wild cherry *Prunus avium*

5.3 Species

5.3.1 *Great Crested Newt Mitigation Strategy*

5.3.1.1 Avoidance of Killing/Injury

The area of improved grassland (that is to be lost) along the western side of the yard should be taken under more regular management (mowing) so as to prevent the grassland succeeding to tall, rough grassland and becoming suitable for amphibians. The grassland should be regularly mown/cut to a short sward (2-3cm) and maintained in this manner, as within areas of existing amenity grassland.

With the adoption of this strategy, it is considered that the risk of killing/injury of great crested newts can be avoided.

5.3.1.2 Habitat Enhancement

It is recommended that a log/brash pile is created along the northern boundary of the site (wood from the removed section of hedgerow could be used). This feature would provide potential shelter for amphibians, as well as potential habitat for hedgehogs, invertebrates and fungi.

5.3.2 *Bat Mitigation Strategy*

5.3.2.1 Licencing

The demolition of The Office and Building 9 will be undertaken under a Bat Mitigation Class Licence from Natural England. This licence will allow for the destruction of day roosts used by small numbers of a non-breeding soprano pipistrelles and brown long-eared bats.

A Registered Consultant should be sought to apply for this licence and to register the site with Natural England under the low impact scheme (Bat Mitigation Class Licence).

5.3.2.2 Timing

There is no strict timing in this instance given that no breeding or hibernating bats are considered to be present, and there is little or no potential for such roosts to exist.

5.3.2.3 Loft Inspection

An inspection of the loft spaces of The Office and Building 9, by the Registered Consultant or Accredited Agent, will be carried out immediately prior to the commencement of demolition works. If bats are found to be present, then these will be rescued by hand and released at an appropriate time and in a safe place. If release is not possible, the bats will be placed in a pre-erected bat box on a nearby tree.

5.3.2.4 Careful Work Practices

A 'toolbox talk' delivered by the Registered Consultant will inform contractors about the presence of roosting bats within the two building. Contractors will be made aware of where bats are known to roost, and which locations offer the best opportunities for roosting.

Works should proceed in a careful and controlled manner, with the disassembly of the known roost locations being undertaken by hand, including the removal of boxed eaves on The Office's southern gable and the stripping of both buildings' roofs. The Registered Consultant or Accredited Agent will be present on site to advise on which features of the building should be removed by hand and where inspections for bats and evidence of bats should be undertaken.

Contractors will be briefed regarding the fact that bats are a mobile species and the potential presence of small numbers of bats and will remain vigilant for bats and any evidence of bats (droppings) when carrying out the soft demolition works.

If bats are encountered, they will be rescued by the Registered Consultant or Accredited Agent by hand and released at an appropriate time and in a safe place. If release is not possible, the bats will be placed in a pre-erected bat box on a nearby tree.

After the Registered Consultant or Accredited Agent has left, in the unlikely event that bats or significant evidence of bats (for example large accumulations of droppings) are encountered, works will stop, and advice sought from the Registered Consultant.

5.3.2.5 Roosting Opportunities

The provision of new roosting opportunities for bats will be required to ensure that the favourable conservation status of bats is maintained post development, thereby complying with wildlife legislation and planning policy.

Immediate Roost Replacement

Two Schwegler 2F bat boxes (see Figure 2) and one Schwegler 1FF bat box (see Figure 3) will be erected on mature trees within the wider landholding, prior to the commencement of works. These boxes will provide immediate roost capacity and can be used to receive rescued bats, if necessary.

The boxes will be retained in perpetuity.

Figure 2. Schwegler 2F bat box.

Figure 3. Schwegler 1FF bat box.

Long-term Roost Replacement

At least five new bat roosting features will be incorporated into the proposed new buildings within the site in order to mitigate for the loss of soprano pipistrelle and brown long-eared bat day roost sites.

Such features could include integrated bat tubes (Schwegler 1FR Bat Tube) (Figures 4 & 5*)* which can be rendered into an external wall, leaving a small access slot for bats. Alternatively, externally mounted bat boxes could be mounted on the walls of the new buildings; Schwegler 1FQ Bat Roost is recommended.

New bat roosting features should be installed under the eaves of the new buildings and if possible, should be incorporated within southern and eastern elevations to ensure they receive maximum warming from the sun. External lighting of new bat roosting features should be wholly avoided.

Figure 4. Schwegler 1FR Bat Tube.

Figure 5. Schwegler 1FR Bat Tubes integrated into a wall.

5.3.2.6 Lighting

External lighting should be avoided on buildings, unless it is necessary for reasons of security and safety. In particular, lighting should be avoided around any new bat roosting features, including bat boxes on trees and integrated bat roosting features. Lighting of mature tree belts and adjacent woodland habitat will be absolutely avoided in order to prevent negative impacts on bat foraging and behaviour within the site.

If lighting is required elsewhere, it should be kept at low level and at low intensity, with hoods and baffles used to direct the light to where it is required (Bat Conservation Trust 2017, Emery 2008). To minimise the impact on bats, the use of low pressured sodium lamps is recommended in preference to mercury or metal halide lamps which have a UV element that can affect the distribution of insects and attract bats to the area, affecting their natural behaviour (Bat Conservation Trust 2017).

The key principals for choosing a suitable type of lamp are:

- Avoid blue-white short wavelength lights: these have a significant negative impact on the insect prey of bats. Use alternatives such as warm-white (long wavelength) lights as this will reduce the impact on insects and therefore bats.
- Avoid lights with high UV content: (e.g. metal halide or mercury light sources), or reduce/completely remove the UV content of the light. Use UV filters or glass housings on lamps which filter out a lot of the UV content.

Selecting an appropriate lamp unit that is designed to be environmentally friendly will minimise light spill, but further controls can be imposed by installing directional accessories such as baffles, hoods and louvres on lamps to direct light away from ecologically sensitive areas, such as the woodland edge and mature trees.

LED (Light Emitting Diode) units are an effective way to direct the light into small target areas and are recommended for lighting the proposed parking and turning area. Composite LEDs can be switched off to reduce/direct the light beam to specific areas.

5.3.3 *Birds*

5.3.3.1 Sensitive Timing of Works

Removal of bird boxes from building along with the clearance of any woody vegetation will be undertaken outside of the bird breeding season (avoiding March-August inclusive).

5.3.3.2 Enhanced Nesting Opportunities

As an enhancement, it is recommended that nest boxes for common or garden bird species are erected on new buildings. Over 60 species are known to adopt nest boxes including blue tits, great tits, starlings, robins and sparrows.

The location and nature of the nest box depends on the species it is designed for; boxes for tits, sparrows or starlings should be fixed two to four metres up a tree or a wall; open-fronted boxes for robins and wrens need to be low down, below 2m, and well-hidden in vegetation. Unless there are trees or buildings which shade the box during the day, boxes should be faced between north and east, thus avoiding strong sunlight and the wettest winds. Consideration should also be given to the incorporation of house sparrow terraces and swift boxes within the new building.

On buildings, the integration of bird boxes is particularly recommended as species such as house sparrow, house martin and swift will readily adopt such features as nest sites. The following bird nesting features are recommended:

- 1MR Schwegler Avianex Nest Box
- Ibstock Swift Box
- Schwegler Swift Box Type 25
- Schwegler House Sparrow Brick Box Type 24
- Schwegler Sparrow Terrace 1SP

6 References

Bat Conservation Trust. 2018. *Bats and artificial lighting in the UK*. Bat Conservation Trust

Collins, J. 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. The Bat Conservation Trust, London.

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JNCC, 2010. *Handbook for Phase 1 Habitat Survey - a technique for environmental audit*. JNCC First published 1990; reprinted in 2010.

7 Appendix 1. Photographs

Photograph 1. The Office.

Photograph 2. The Scout Hut.

Photograph 3. Building 8.

Photograph 4. Building 9.

Photograph 5. Roof space of Building 9.

Photograph 6. Roof space of Building 9.

Photograph 7. Building 5.

Photograph 8. Building 3.

Photograph 9. Building 2.

Photograph 10. Building 4.

Photograph 11. Amenity grassland between Building 5 (left) and Building 3 (right).

Photograph 12. Hard-standing to the west of Building 2.

Photograph 13. Improved grassland to the western area of the site.

Photograph 14. Mature trees within the north-western area of the site.

Photograph 15. The hedgerow marking the boundary with another industrial unit.

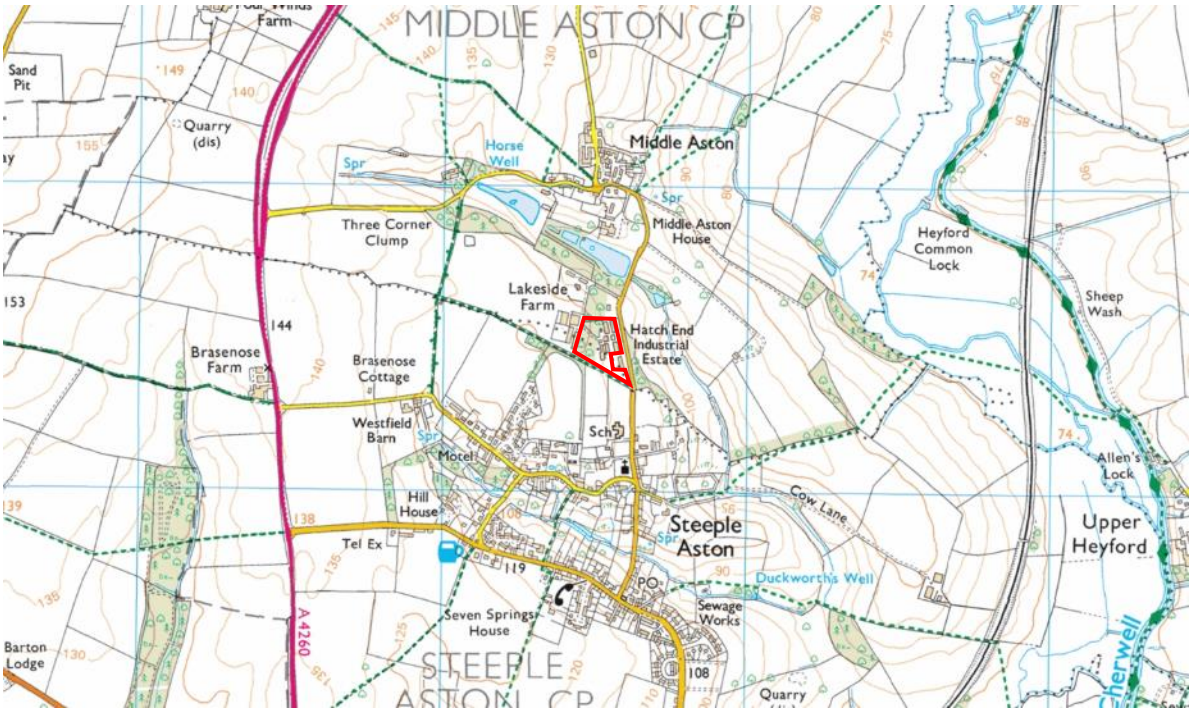
Photograph 16. The woodland edge to the south side of the site.

Photograph 17. Fir Lane, with mature lime trees.

Photograph 18. Amenity grassland along the eastern boundary of the site.

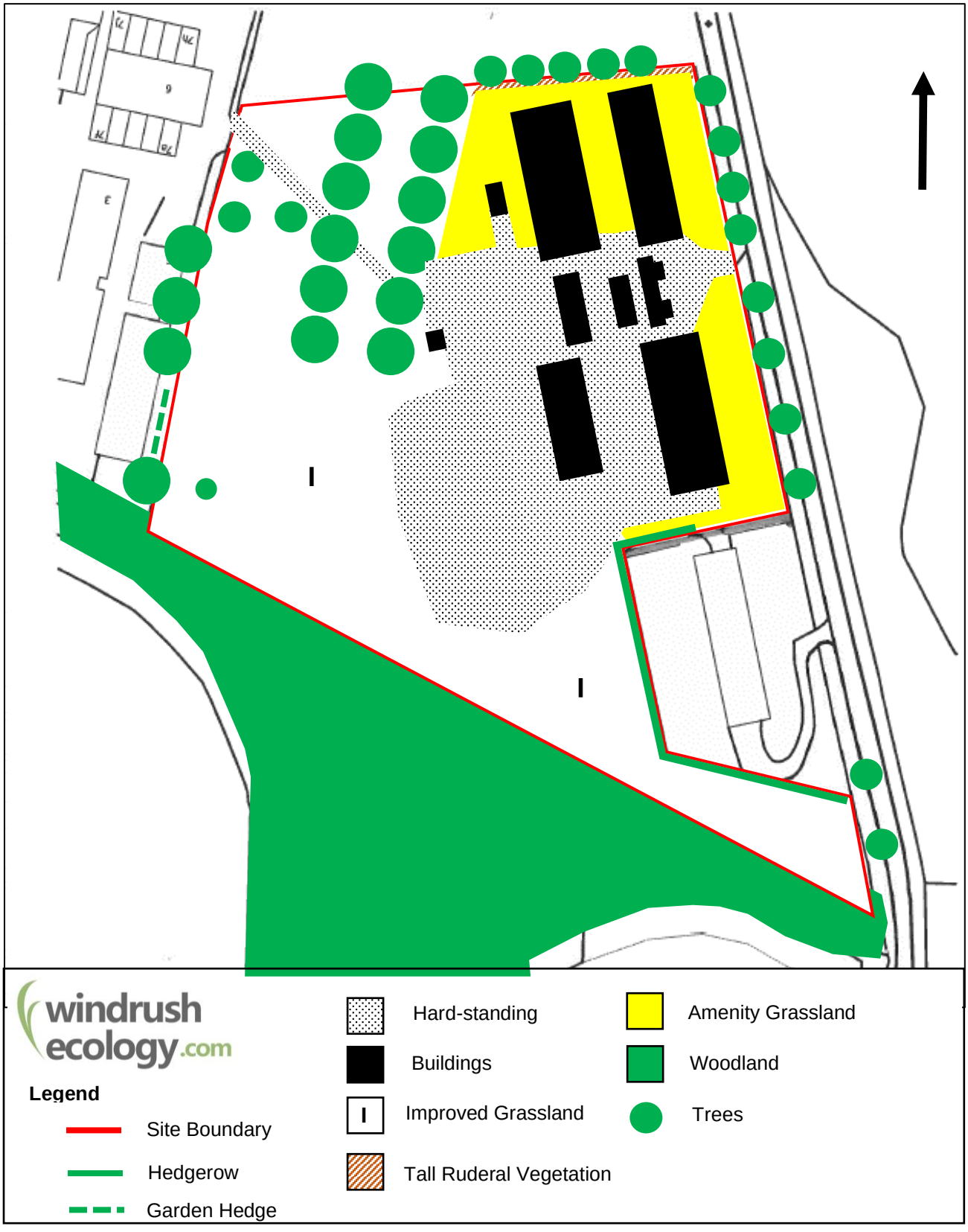
8 Appendix 2. Site Location Plans

Aerial photograph showing the location of Hatch End Industrial Estate (outlined in red) Source: www.bing.com/mapspreview/



Ordnance Survey map showing the approximate location of the site (indicated by the red outline) within the local area. Source: www.bing.com/mapspreview/

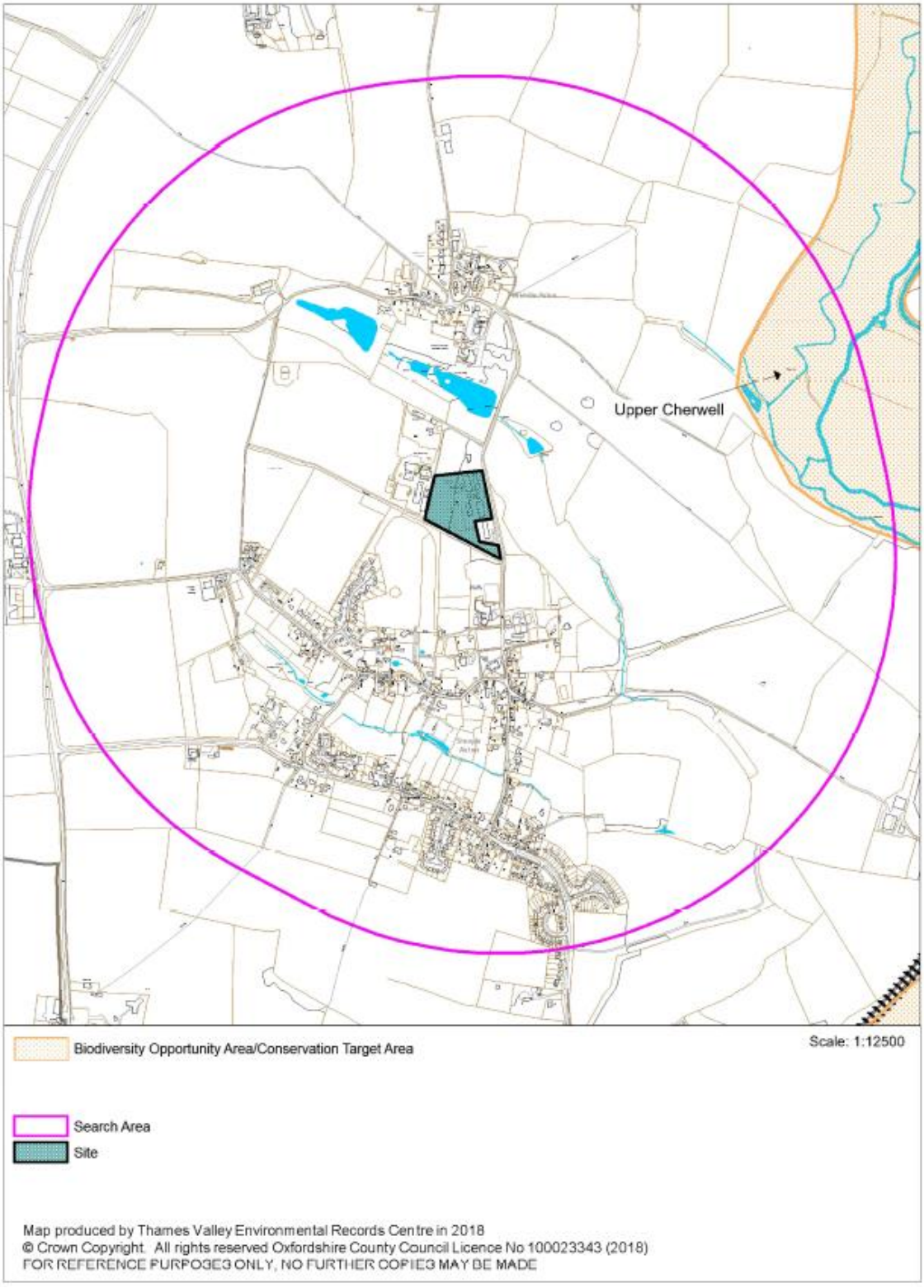
9 Appendix 3. Phase 1 Habitat Plan



10 Appendix 4. Non-Statutory Sites Map & Citations

Hatch End Industrial Estate, Middle Aston
Designated Wildlife Sites

TVERC



Upper Cherwell Valley CTA (Conservation Target Area)

The Cherwell Valley from Lower Heyford to Clifton. This encompasses the flat wet riverside land and the Oxford Canal, which often forms the boundary of the area.

Joint Character Area: Cotswolds

Landscape Types: River Meadowlands

Geology: Largely alluvium, some sand and gravel and Lias mudstone at the edge.

Topography: Flat riverside land.

Area of CTA: 451 hectares

Biodiversity:

- Floodplain grazing marsh: Several areas are being restored by landowners, particularly between Somerton and Clifton.
- Lowland meadows: There are several sites which in some cases were formerly grazing marsh before changes to the river and field drainage systems.
- River: The Cherwell here supports otter and water vole.
- Species: Several BAP bird species are found including curlew and lapwing on the grazing marsh. Additionally tree sparrow, reed bunting, skylark, grey partridge, yellow wagtail, yellowhammer and bullfinch are present. Bestmoor SSSI holds a high proportion of the UK population of narrow-leaved water dropwort.

Access: There is a towpath along the length of the canal and a good network of footpaths.

Archaeology:

Oxfordshire Biodiversity Action Plan Targets associated with this CTA:

1. Floodplain grazing marsh: management[1], restoration and creation (for breeding waders and wintering wildfowl in particular)
2. Lowland meadow – management, restoration and creation.
3. Lowland fen – management and restoration.
4. Reedbed – creation.
5. River – management and restoration.

[1] "Management" implies both maintaining the quantity, and maintaining and improving the quality of existing BAP habitat and incorporates the following target definitions: "Maintaining extent" and "Achieving Condition".

11 Appendix 5. Protected/Notable Species Records

Please refer to separate report from the Thames Valley Environmental Records Centre.

12 Appendix 6. Proposal Plans


PLANNING
UNIT 1
UNIT 2
UNIT 3
UNIT 4
HUB
UNIT 6
UNIT 9
BIN STORE
Planning Application area
Area within site ownership
A
Planning Application Area Updated.
18.03.21
REV MARK
REVISION DESCRIPTION
REVISION DATE
- The Hatchery
- Middle Aston
HAWKINS
DRAWING TITLE
- Proposed Site Plan
CONTRACT
- The Hatchery
MODELLED BY
- HS
ISSUE DATE
-
CONTRACT NO
- JO8139990
SCALE
- 1:250 @A1
DRAWING No
- 139990_P101
REVISION No.
A