

University of Reading – School of Art

Ecological Appraisal

Prepared on behalf of

University of Reading

Final Report

25 April 2022

21/70-1D

University of Reading – School of Art

Ecological Appraisal

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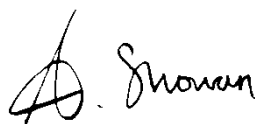
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Ecological Appraisal

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Ecological Appraisal

Executive Summary

Ecological Planning & Research Ltd (EPR) was commissioned to carry out an Ecological Appraisal of an existing kitchen at Whiteknights Campus, University of Reading, to inform an application for a new building extension and separate bin store.

The Site is situated on the south-eastern side of Reading. University and school buildings with associated access roads, car parks and sports grounds are located within the nearby surrounding landscape, alongside discreet habitats including hedgerows and trees, amenity grassland and woodland. Whiteknights Lake lies approximately 0.4 km north of the Site.

Habitats on the site include introduced shrubs, buildings and hardstanding, amenity grassland and mixed semi-natural woodland.

The proposals will result in the loss of predominantly hardstanding which forms part of the existing site car park, as well as a small area of amenity grassland, to make way for the new extension on the eastern elevation of the existing kitchen building. A further proposed bin store for six bins in the south-east corner of the Site will result in the loss of a small area of scrub. The proposals also include new cycle storage and a bin store, resulting in small losses of amenity grassland and hardstanding, respectively.

Scrub clearance is to avoid the nesting bird season (generally March – August inclusive). If building work during the bird nesting season cannot be avoided, precautionary nesting bird checks may be required no more than 24 hours in advance of works. If nesting birds are discovered, work would have to be postponed until all the young have fledged or the nest became inactive.

Suggestions for ecological mitigation and enhancement at the Site, resulting in overall biodiversity net gain in accordance with Section 15 of the National Planning Policy Framework (NPPF), include the planting of a small area of native scrub, creating woodland edge habitat, as well as the addition of bird boxes, bat boxes and a Hedgehog hibernation box.

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Ecological Appraisal

1. INTRODUCTION

Brief

- 1.1 Ecological Planning & Research Limited (EPR) was commissioned by University of Reading to carry out an ecological appraisal of proposals for development at University of Reading, Whiteknights Campus, Reading, RG2 7DN, (hereafter referred to as ‘the Site’), centred on Ordnance Survey (OS) grid reference SU 7346 7144.

Background

- 1.2 Proposals for the Site include the extension of the existing kitchen on the eastern elevation and provision of a new bin store in the south-east corner of the Site. The proposed site plan is shown in **Appendix 1**.

The Study Area

- 1.3 The area within the red line on **Map 1** indicates the study area, referred to as the Site within this document. As can be seen, the Site is situated just to the south-east of the centre of Reading at the southern edge of the Whiteknights Campus of Reading University.

National Character Area 115: Thames Valley

- 1.4 Whiteknights Campus is located within the Thames Valley Character Area (NCA). NCAs are areas that share similar landscape characteristics, and which follow natural lines in the landscape rather than administrative boundaries. The information contained within NCAs supports planning of conservation initiatives at a landscape scale and includes a description of the natural and cultural features that shape the landscape and a broad analysis of each area’s characteristics and ecosystem services.
- 1.5 The Thames Valley NCA is mainly low-lying, with the River Thames as the central feature through a diverse landscape of fragmented agricultural land, historic parks and commons, woodlands, reservoirs, mineral workings and urban and suburban settlements. The Thames Valley is dominated by the Thames and its tributaries, part of the Grand Union Canal and the reservoirs which form the South-West London Waterbodies Special Protection Area (SPA) and Ramsar Site. These provide essential water supply services for London and the surrounding area, as well as being important for wildlife.
- 1.6 Although the landscape of the NCA is densely populated and developed, there are pockets of woodland, open grassland, parkland and wetland with a variety of habitats supporting important populations of many species such as wildfowl and invertebrates such as Stag beetle *Lucanus cervus*.

Brief Description of Site and Surroundings

- 1.7 The wider Whiteknights Campus comprises mainly Wood pasture and Parkland Biodiversity Action Plan (BAP) Priority Habitat, and Deciduous Woodland (listed on the Priority Habitat Inventory). The Site itself at the southern edge of the Campus has no designations.
- 1.8 The majority of the Site is dominated by the existing kitchen building and associated car park. The margins contain discrete areas of amenity grassland, introduced shrubs and scattered trees. A belt of mixed semi-natural woodland is present along the southern boundary of the Site abutting Pepper Lane.

Scope

- 1.9 The purpose of this ecological appraisal is to obtain and present information on potential ecological constraints and opportunities that may be presented to the Proposals. Advice on further actions to address constraints and maximise opportunities in order to enable the proposals to proceed in accordance with nature conservation legislation and policy is also provided. Please note that the results of an ecological appraisal are not equivalent to a full Ecological Impact Assessment (EclA) and so potentially significant ecological effects arising from a Proposal may not be fully understood at the time of reporting on an ecological appraisal.
- 1.10 EPR's approach takes account of the Chartered Institute of Ecology and Environmental Management's (CIEEM) advice in Guidelines for Ecological Impact Assessment in the UK and Ireland (Sept 2018, updated in 2019), as well as CIEEM's Guidelines on Preliminary Ecological Appraisal (PEA)(2018).
- 1.11 An ecological appraisal comprises two main elements: 1) A desktop review of the ecological and policy context; and 2) a field survey of the development site and, where possible, any other areas likely to be affected.
- 1.12 The following articles of nature conservation legislation and planning policy are of relevance to the Proposals, and have been considered as part of this appraisal:
- The Conservation of Habitats and Species Regulations 2017 (as amended);
 - The Wildlife and Countryside Act 1981 (as amended);
 - The Environment Act 2021;
 - The Countryside and Rights of Way (CROW) Act 2000;
 - The Natural Environment and Rural Communities (NERC) Act 2006;
 - The Protection of Badgers Act 1992;
 - The National Planning Policy Framework (NPPF) (2019); and
 - Reading Borough Council Local Plan (adopted November 2019). Relevant policies include Policy CC1: Presumption in Favour of Sustainable Development; Policy EN12: Biodiversity and The Green Network; Policy EN14: Trees, Hedges and Woodland; and Policy ER2: Whiteknights Campus, University of Reading.

- 1.13 The southern woodland area along the southern boundary of the Site is identified as an area of identified biodiversity interest under Policy EN12 of Reading Borough Council Local Plan.
- 1.14 In addition to the above, biodiversity objectives detailed in the following documents have been considered:
- Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services;
 - The 25 Year Environment Plan; and
 - The University of Reading's Biodiversity Strategy.
- 1.15 Further information on the above is provided in **Appendix 2**.

Methods and Constraints

- 1.16 This ecological appraisal has drawn on information collected through both an extensive desktop study, and a field visit carried out by Barney Scott and Krista Middleton of EPR on 24th November 2021. The methodology used has been described in more detail in **Appendix 3**.
- 1.17 Weather conditions during the survey were good and the site was fully accessible at the time of survey. A potential constraint to the results is the time of year of survey; as the survey was undertaken in late November, some species may have been missed. This is unlikely however to alter the overall assessment.

2. NATURE AND EXTENT OF PREDICTED BIOPHYSICAL CHANGES

- 2.1 Certain activities associated with the preparation, construction and operation of the Proposal are likely to generate biophysical changes. These changes, and the Zone of Influence (Zoi) over which they are likely to occur, are summarised in **Table 2.1** below.

Table 2.1: Summary of predicted changes and Zone of Influence

Predicted Change	Zone of Influence
<u>Construction Phase</u>	
Turf, scrub and soil removal for new extension, cycle store and turning head	Site
Storing of construction materials	Site
<u>Operational Phase</u>	
Loss of small areas of amenity grassland	Site
Loss of small area of scrub	Site

- 2.2 The Zones of Influence for each of these predicted changes are considered to be within the Site only.

3. RESULTS OF ECOLOGICAL APPRAISAL

Introduction

3.1 The findings of the ecological appraisal are set out below, including:

- The potential for Important Ecological Features (IEFs) to be present within the Zol that could be affected by the Proposals;
- Potentially significant impacts (both positive and negative) that could occur as a result of the predicted biophysical changes described in **Section 2**, in the absence of impact avoidance and mitigation measures;
- A broad overview, where possible, of the measures that are likely to be required to avoid, mitigate and as a last resort compensate for significant negative effects on IEFs;
- Opportunities to deliver net gains in biodiversity in accordance with the aspirations of National and local planning and biodiversity policy, including Section 15 of the NPPF; and
- Recommendations for further survey necessary to inform assessment and design of the above, compliance with policy, legislation and/or ongoing management of the site.

Ecological Context

3.2 Whiteknights Campus is located in Reading, approximately 2 km south of the River Thames. The Site location marked by the red line boundary on **Map 1**, is on the southern side of Whiteknights Campus. To the east of the Site are University buildings and the Harris Garden, a small former botanic garden. To the west is further University buildings, Leighton Park School and grounds, with residential development beyond. To the north of the Site are University buildings and Whiteknights Lake and parkland.

3.3 Data from the Thames Valley Environmental Records Centre (TVERC) was obtained and the relevant species data is discussed below.

Designated Sites

3.4 **Map 2** shows the nature conservation designations up to 5 km from the site of the Proposals.

Statutory Designated Sites

3.5 The closest statutory designated sites are High Wood and Maiden Erlegh Woods Local Nature Reserves (LNRs), both just over 1.7 and 1.1 km to the north-east and south-east respectively. Parts of both of these LNRs have been included on the Ancient Woodland inventory. Neither of these are likely to be affected by the proposals.

3.6 Other LNRs exist within 5 km of the site including Alder Moors LNR and Pearman's Copse LNR are predominantly designated on account of their woodlands apart. Ali's Pond LNR and Lavells Lake LNR, also located within the 5 km search radius, are urban fringe LNRs with a high level of biodiversity.

- 3.7 Lodge Wood and Sandford Mill SSSI (Site of Special Scientific Interest) is approximately 4.8 km to the north-east of the Site and designated for its populations of Loddon Lily and Summer Snowflake plants. This SSSI is very unlikely to be affected by the proposals.

Non-Statutory Designated Sites

- 3.8 Whiteknights Park Local Wildlife Site (LWS), part of the Whiteknights Campus, is approximately 0.3 km east of the Site at the closest point (see **Map 1**). The LWS encompasses Whiteknights lake, which is large and eutrophic, and a mosaic of landscaped trees within mown grassland and some mixed secondary woodland. It is also noted for its ornithological interest.
- 3.9 High Wood and Maiden Erlegh Woods are Local Wildlife Sites as well as being LNRs.
- 3.10 The proposals are unlikely to adversely affect Whiteknights Park LWS or any of the other Local Wildlife Sites within the vicinity of the Site.

Habitats

- 3.11 The distribution of broad habitat types and features noted during the field visit are presented on **Map 2** and are described further below.

Introduced shrubs

- 3.12 There were a number of beds of introduced ornamental shrubs of various species including Beech *Fagus sylvatica* and Juneberry *Amelanchier lamarckii* around the Site.

Amenity grassland

- 3.13 The Site was surrounded by landscaped areas of amenity grassland comprising Perennial Ryegrass *Lolium perenne* and Red Fescue *Festuca rubra* with Black Medic *Medicago lupulina*, Common Cranesbill *Geranium pratense*, Common Mouse-ear *Cerastium fontanum*, Creeping Buttercup *Ranunculus repens*, Creeping Thistle *Cirsium arvense*, Daisy *Bellis perennis*, Dandelion *Taraxacum officinale*, Ragwort *Jacobaea vulgaris*, Ribwort Plantain *Plantago lanceolata*, White Clover *Trifolium repens* and Yarrow *Achillea millefolium*.
- 3.14 Sward height was generally short mown but was taller within fenced off areas which had not been recently cut adjacent to the Central Kitchen car park.

Mixed semi-natural woodland

- 3.15 Mixed-semi-natural woodland borders the Site to the south of the Site comprise of semi-mature Beech, Sweet Cherry *Prunus avium*, Bird Cherry *Prunus padus*, Field Maple *Acer campestre*, Hornbeam *Carpinus betulus*, Sweet Chestnut *Castanea sativa*, Scott's Pine *Pinus sylvestris*, Crab Apple *Malus sylvestris*, Wild Service Tree *Sorbus torminalis*, Small-leaved Lime *Tilia cordata*, Hazel *Corylus avellana*, Oak *Quercus robur* and Rowan *Sorbus aucuparia*, with a Bramble *Rubus fruticosus* ground layer.
- 3.16 In the southeast corner of the Site, woodland had been felled, leaving immature sapling and semi-mature trees standing on bare ground, and felled mature trees had been placed into log piles. Dead and rapidly declining trees have recently been felled and replaced (December 2021) with a range of broadleaf native species.

Buildings and Hardstanding

- 3.17 Two buildings are present on the Site, both of modern construction, including the main kitchen building and a sperate sub-station. A vast proportion of the main body of the Site is dominated by the kitchen building and associated hardstanding, comprising concrete car parks and footpaths.

Evaluation

- 3.18 The introduced shrubs, grasslands, buildings and hardstanding are considered to be of negligible ecological importance, suffering from low levels of connectivity, species diversity and heterogeneity.
- 3.19 The southern woodland boundary on Site presents greater species diversity and structure, though is limited in extent and lacks good connectivity. This habitat is considered to be of ecological importance at site level only. The woodland is marked as an area of identified biodiversity interest under Policy EN12 of Reading Borough Council Local Plan. Given the limited amount of vegetation removal associated with the woodland and nature of the proposed development, the functionality and integrity of the woodland is not considered to be impacted.

Fauna

Bats

- 3.20 Bat species returned from a data search returned by TVERC within a 2 km radius of the Site are summarised in **Table 3.1**. Relevant bat records are shown visually in **Map 3**.

Table 3.1: Summary of Bat Data from TVERC

Bat species	Scientific Name	Number of records of species within a 2 km radius of Site
Bat (unknown species)		6
Serotine	<i>Eptesicus serotinus</i>	5
<i>Myotis</i> species	<i>Myotis sp.</i>	6
Daubenton's Bat	<i>Myotis daubentonii</i>	3
Natterer's Bat	<i>Myotis nattereri</i>	1
Noctule	<i>Nyctalus noctula</i>	56
Pipistrelle bat species	<i>Pipistrellus sp.</i>	15
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	109
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i> *	65
Nathusius' Pipistrelle	<i>Pipistrellus nathusii</i>	2
Long-eared Bat Species	<i>Plecotus sp.</i>	5
Brown Long-eared Bat	<i>Plecotus auritus</i> *	6

* Listed on NERC – section 41

- 3.21 All of the common bat species found in the UK are found within a 2 km radius of the Site, plus less common species such as Nathusius' pipistrelle.

- 3.22 An external and internal inspection of the central Kitchen building was undertaken to assess suitability for roosting bats in line with best practice guidelines (Bat Conservation Trust, 2016). Constructed in 2014, the Central Kitchen building comprises food storage and preparation facilities with associated parking, footpaths and hardstanding surrounds. The building is brick built with metal external cladding and a flat roof. All cladding was tight to the building with no features observed which might support roosting bats or which may offer access into the building by bats.
- 3.23 An internal inspection was undertaken which identified no evidence of use of the building by bats. All kitchen and storage areas on the ground floor were clean and well maintained. Above the main working areas on the ground floor, there was a large void space which contained various electrical wiring, ducting and ventilation piping. This area was generally clean, and well maintained, with no evidence of use by bats, and no features which may be used by bats to enter the building i.e., cracks and gaps through which external daylight could shine through and be observed internally.
- 3.24 Habitats on the Site are heavily managed and disturbed and are therefore unlikely to support significant populations of foraging and commuting bats. The main habitat on site is the building itself, amenity grassland and hardstanding. These habitats do not provide a good habitat for invertebrates (providing food prey for bats) and therefore there is little to draw bats into the Site. The woodland to the south of the Site is of most interest to bats. However, this lack of good connectivity to wider surrounds, is limited in extent and backed to the south by Pepper Lane. However, it is possible that common species of bat use the woodland edge on occasion, as woodland edge created a linear commuting route for bats navigating the wider area.
- 3.25 Consideration has been given to the impact of newly proposed external lighting on bats (Butler & Young Associates, April 2022), with the following specifications made:
- Avoidance of lighting in the semi-natural buffers, unless essential for health and safety reasons;
 - Low level lighting wall-mounted to the building only (2 m);
 - Lux levels will be kept as low as possible and the use of timers, motion sensors and DALI system will allow strategic control; and
 - Specification of LED luminaires with a maximum correlated colour temperature of 3000K, no ultraviolet and infrared content, and reduced short wavelength light content.

Evaluation

- 3.26 Given the above findings, the kitchen building is assessed to have **negligible suitability** for roosting bats and no further surveys are recommended.
- 3.27 Habitats within the wider landscape generally comprised university buildings and amenity grassland areas, though clusters and rows of planted trees offered some suitability for commuting and foraging bats, and buildings and mature trees may provide suitability for roosting bats. Overall, the site provides **negligible – low value** for foraging and commuting bats.

Birds

- 3.28 There is a large number of bird records from TVERC from within Whiteknights Campus, notably a large number of Swift records spread over the campus. Swifts have declined in recent years and are listed on s41 of the NERC Act. Relevant bird records are shown in **Map 4**.
- 3.29 A low number of bird species were observed during the survey including Blackbird *Turdus merula*, Herring Gull *Larus argentatus*, Jay *Garrulus glandarius* and Wood Pigeon *Columba palumbus*.
- 3.30 Woodland within the Site has the potential to support nesting birds. No further bird surveys are considered necessary; however the potential for nesting birds should be taken into account when scheduling any works affecting these habitats. All species of bird are afforded legal protection under the Wildlife and Countryside Act 1981, and the removal of their nests would be considered an offence.
- 3.31 The timing of any works affecting bird nesting habits should avoid the bird breeding season where possible. The bird breeding season typically runs between March and August; however in urban areas feral pigeons may nest in any month. If building work during the bird nesting season cannot be avoided, precautionary nesting bird checks may be required no more than 24 hours in advance of works. If nesting birds are discovered, work would have to be postponed until all the young have fledged or the nest became inactive. Exclusion zones could be setup around active nests that would allow work to continue, but this would have to ensure that the active nest was not disturbed and would be at the discretion of a suitably experienced ecologist.

Invertebrates

- 3.32 Invertebrate data from TVERC shows a high number of Stag beetle records from Whiteknights Campus. Other records within 2 km of the Site include two records of Adonis' Ladybird *Hippodamia (Adonia) variegata* and one instance of *Phytoecia cylindrica*, neither of which are considered uncommon or rare. Moth species recorded include single instances of Centre-barred Sallow *Atethmia centrigo*, Dusky Thorn *Ennomos fuscantaria*, Oak Hook-tip *Watsonalla binaria* and Sallow *Cirrhia icteritia*, all of which are common species.
- 3.33 Log piles within felled woodland in the south of the Site may have the potential to support xylophagous (wood eating) invertebrates such as Stag beetle. Stag beetles are listed under the requirements of Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 as a 'species of principal importance for the purposes of conserving biodiversity' and so is a material consideration within the planning process.

Non-flying Mammals

- 3.34 There are records of Badger *Meles meles* within Whiteknights campus, but no signs were observed within the Site itself during the survey. The closest Dormouse *Muscardinus avellanarius* record is outside of the Whiteknights Campus to the north-east. Records of other relevant species identified during the desktop search are shown visually in **Map 5**.
- 3.35 There are a number of Hedgehog *Erinaceus europaeus* records, listed on s41 of the NERC Act, from Whiteknights Campus and surrounds.

- 3.36 These species are very unlikely to be affected by the proposals as they currently stand. The small area of woodland on site to be impacted comprises immature saplings which is not considered to provide suitable dense structure to support Dormice, nor is the woodland significant in its extent, or well-connected suitable habitats in the wider landscape. The woodland also suffers reasonable levels of disturbance adjacent to roads and well-used university buildings on the campus.
- 3.37 Enhancement measures such as provision of a hibernation box for Hedgehogs is recommended within chapter 4, as this species is rapidly declining.

4. SUMMARY AND CONCLUSIONS

Introduction

- 4.1 Based on the results of the Ecological Appraisal outlined above, no further survey or assessment work is recommended.

Summary of Recommendations

Recommendations for Impact Avoidance and Mitigation and Opportunities for Net Biodiversity Gain

- 4.2 The following summarises opportunities for incorporating impact avoidance and mitigation measures into the scheme, in addition to opportunities for delivering net biodiversity gains in accordance with National aspirations enshrined in Section 15 of the NPPF and 25 Year Environment Plan:
- Clearance of woody vegetation >1 m in height should be undertaken where possible outside the nesting bird season (March – August inclusive). Where this is not possible, a nesting bird check must precede any clearance. Should an active nest be found, an appropriate buffer is to be established and works here may only take place once the nest has become inactive of its own accord.;
 - Lighting design with consideration to bats (Dextra, 2022);
 - Retention of existing log piles;
 - Installation of 1 Hedgehog hibernation box within the southern woodland boundary within existing undergrowth;
 - Installation of 2 bird nest boxes (such as Schwegler 1B and 2H Robin nest box, or similar approved) on suitable retained trees;
 - Installation of 2 bat boxes (such as Schwegler 2F and 1FF bat boxes, (or similar approved) on existing Horse Chestnut *Aesculus hippocastanum* monoliths within the southern woodland); and
 - Planting of native scrub and species of known benefit to wildlife, such as Hawthorn *Crataegus monogyna*, Small-leaved Lime *Tilia Cordata* and Hazel will be carried out in three distinct locations to the south / south-east of the site (see **Map 6**). Bulb planting will be incorporated below retained trees and the areas will be managed in parallel to existing habitats in and around the site, undertaken by Reading University Grounds Team.
- 4.3 Approximate locations of mitigation and enhancement features are shown visually in **Map 6**. Taking consideration of impacts to habitats on Site, as discussed in Section 3 and with the above measures in place, the Site will achieve biodiversity net gain, in accordance with Section 15 of the NPPF.
- 4.4 Bat and bird boxes should be erected at heights of at least 4 m and 3 m, respectively, using hammer and nail, or as per the manufacturer's instructions.

BREEAM

- 4.5 The Ecological Appraisal and resulting recommendations for mitigation, compensation, and enhancement, as detailed above, provide the required information to achieve LE 02 – Protection of Ecological Features; and LE 04 – Enhancing Site Ecology.
- 4.6 With regards to LE 02, the measures above and in combination with the Arboricultural Impact Assessment and Method Statement (Challice Consulting Ltd, 2022), ensure that features of ecological value are protected. For example, lighting has been considered regarding protection of bats and fencing included to protect the southern boundary woodland. This is in line with BS42020: 2013.
- 4.7 With regards to LE 04, Requirements 1 – 3 are met through delivery of this report and a site visit carried out by a qualified ecologist, inclusion of recommendations for ecological enhancement.

Conclusions

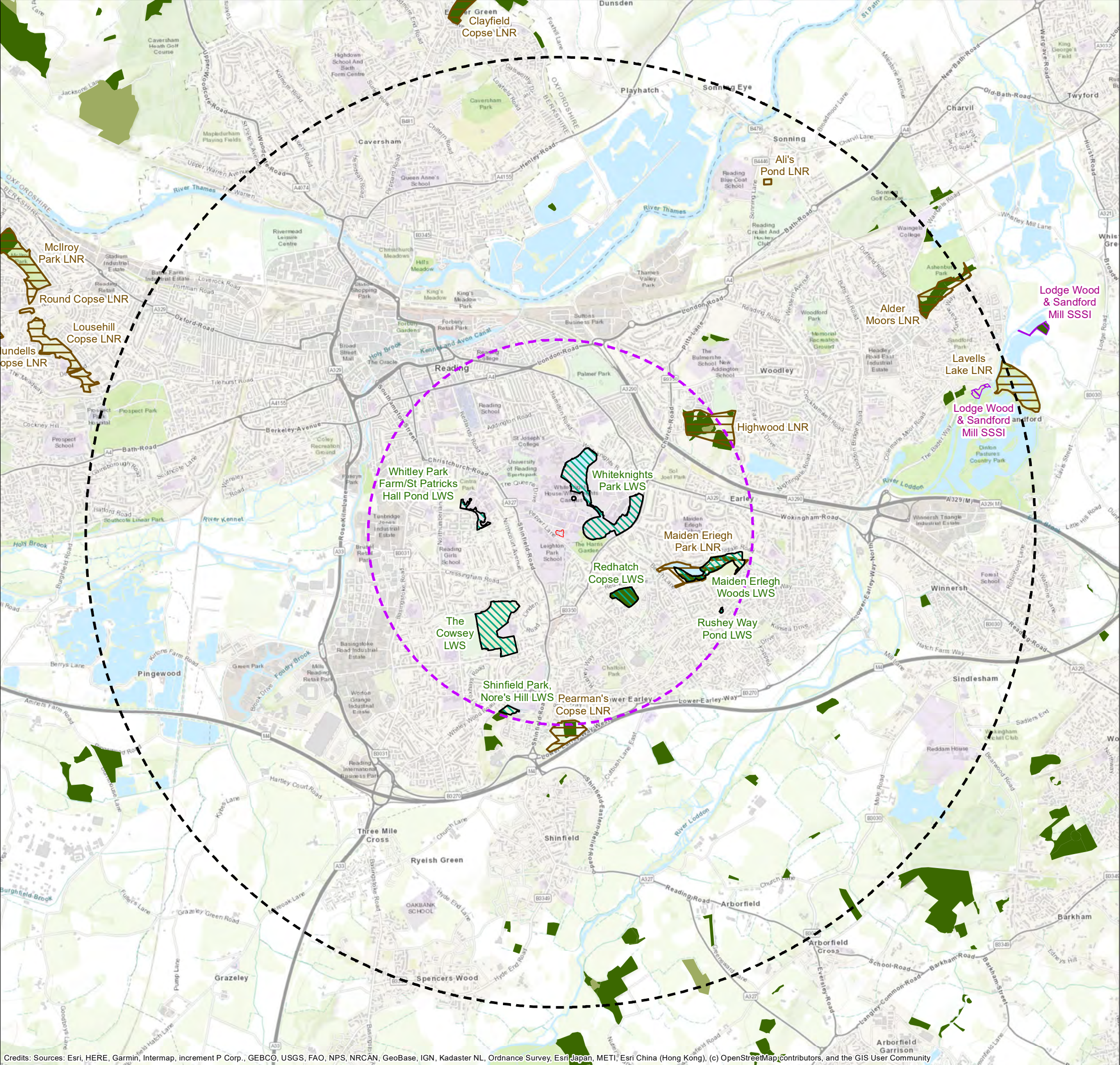
- 4.8 With the proposed mitigation in place the ecological impacts of the proposals outlined in **Appendix 1** are considered to have no significant effect on the important ecological features within the Zol and the proposals will comply with applicable nature conservation related legislation and policy. Impacts to Species of Principal Importance for Nature Conservation (s41 species) are considered to be not significant.
- 4.9 Mitigation as part of the design and suggested enhancements are listed above, and with these in place the effects of the proposals on the ecology of the Site are considered to be positive.
- 4.10 It should be noted that if the proposals in **Appendix 1** change in any way, the conclusions of this report will need to be checked to make sure that they are still applicable.

5. REFERENCES

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Maps

Map 1	Site Location and Designations
Map 2	Habitats and Features
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Map 4	Protected and Notable Bird Records
Map 5	Other Relevant Species Records
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MAP 1 Site Location & Nature Conservation Designations

KEY

- Site boundary
- 2km linear distance from site boundary
- 5km linear distance from site boundary

Non-Statutory Sites

- Local Wildlife Sites (LWS)
- Ancient & Semi-Natural Woodland
- Ancient Replanted Woodland

Statutory Sites

- Sites of Special Scientific Interest (SSSI)
- Local Nature Reserves (LNR)

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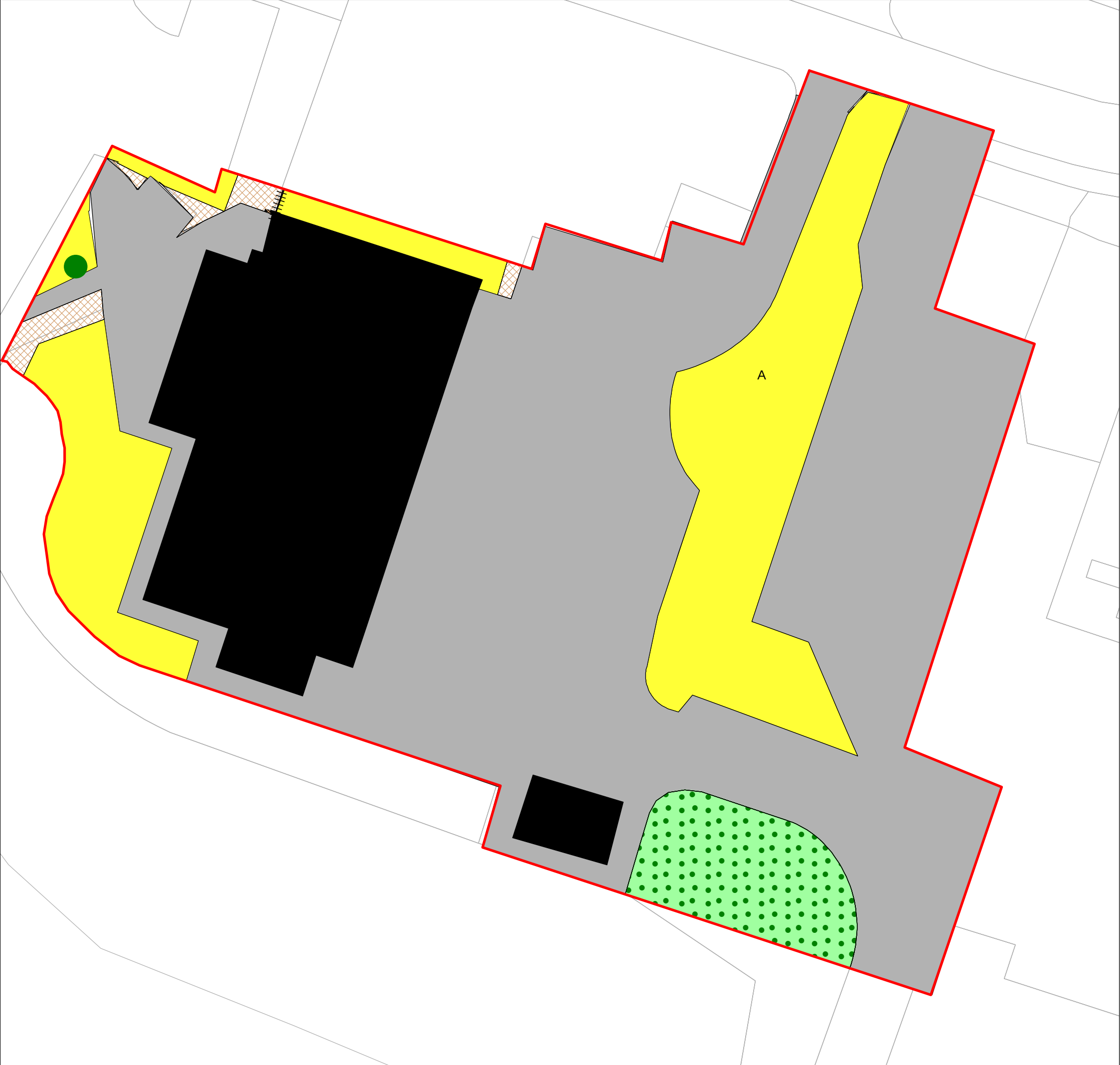
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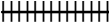
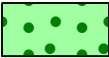
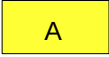
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MAP 2 Habitats and Features

KEY

-  SiteBoundary
-  Scattered Broadleaved Trees
-  Fence
-  Mixed Woodland - Semi-Natural
-  Amenity Grassland
-  Introduced Shrub
-  Buildings
-  Hardstanding

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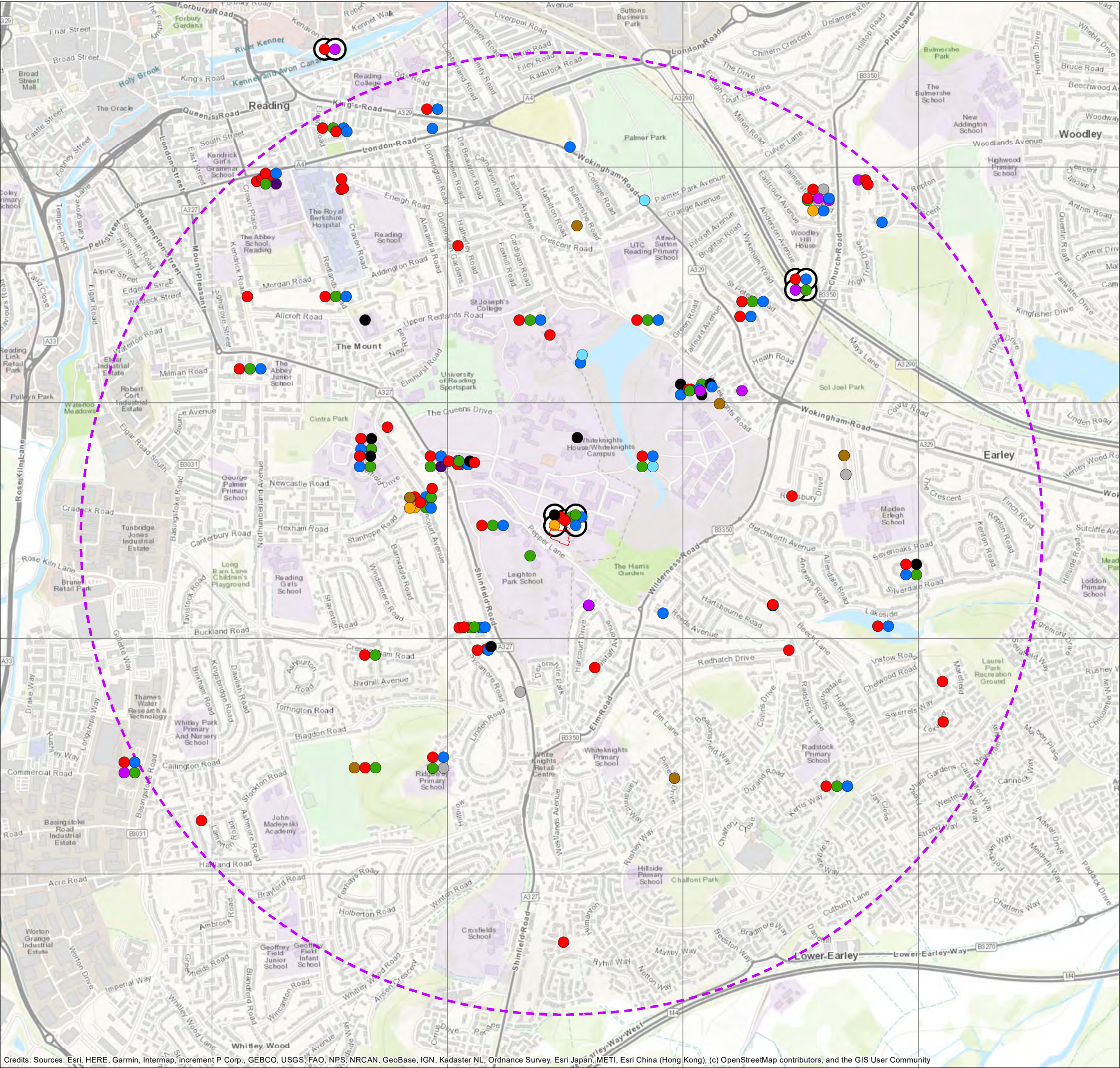
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MAP 3 Bat Records

KEY

Site boundary

2km linear distance from site boundary

Brown Long-eared bat

Common Pipistrelle

Daubenton's bat

Long-eared bat species

Nathusius's Pipistrelle

Natterer's Bat

Noctule Bat

Pipistrelle Bat Species

Serotine

Soprano Pipistrelle

Unidentified Bat

Record accurate to 1km grid square

1km grid

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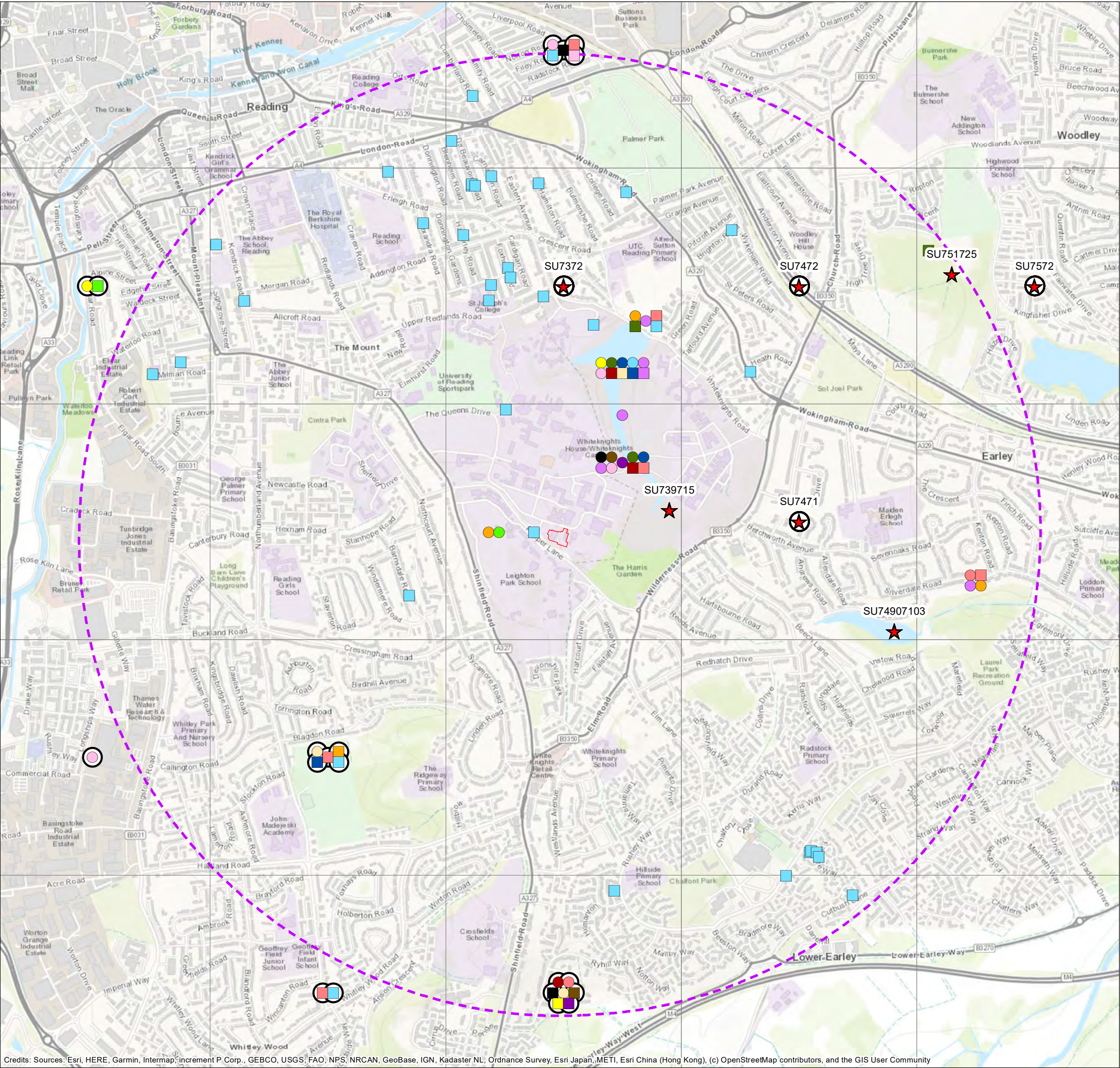
0 250 500 750 1,000 Metres



CLIENT: University of Reading

PROJECT: UoR - Department of Art

DATE: 20 April 2022



MAP 4 Bird Records

KEY

Site boundary

2km linear distance from site boundary

●

Black-headed Gull

●

Peregrine

●

Brambling

●

Pochard

●

Bullfinch

●

Red Kite

●

Cuckoo

●

Redwing

●

Dunnock

●

Reed Bunting

●

Fieldfare

●

Shoveler

●

Grey Wagtail

●

Skylark

●

Herring Gull

●

Song Thrush

●

House Sparrow

●

Starling

●

Kestrel

●

Stock Dove

●

Kingfisher

●

Swift

●

Lesser Black-backed Gull

●

Tawny Owl

●

Mallard

●

Wigeon

●

Mute Swan

●

Willow Warbler

○

Record accurate to 1km grid square

1km grid

SCALE: 1:16,000 at A3

0

250

500

750

1,000 Metres

N

EPR

CLIENT: University of Reading

PROJECT: UoR - Department of Art

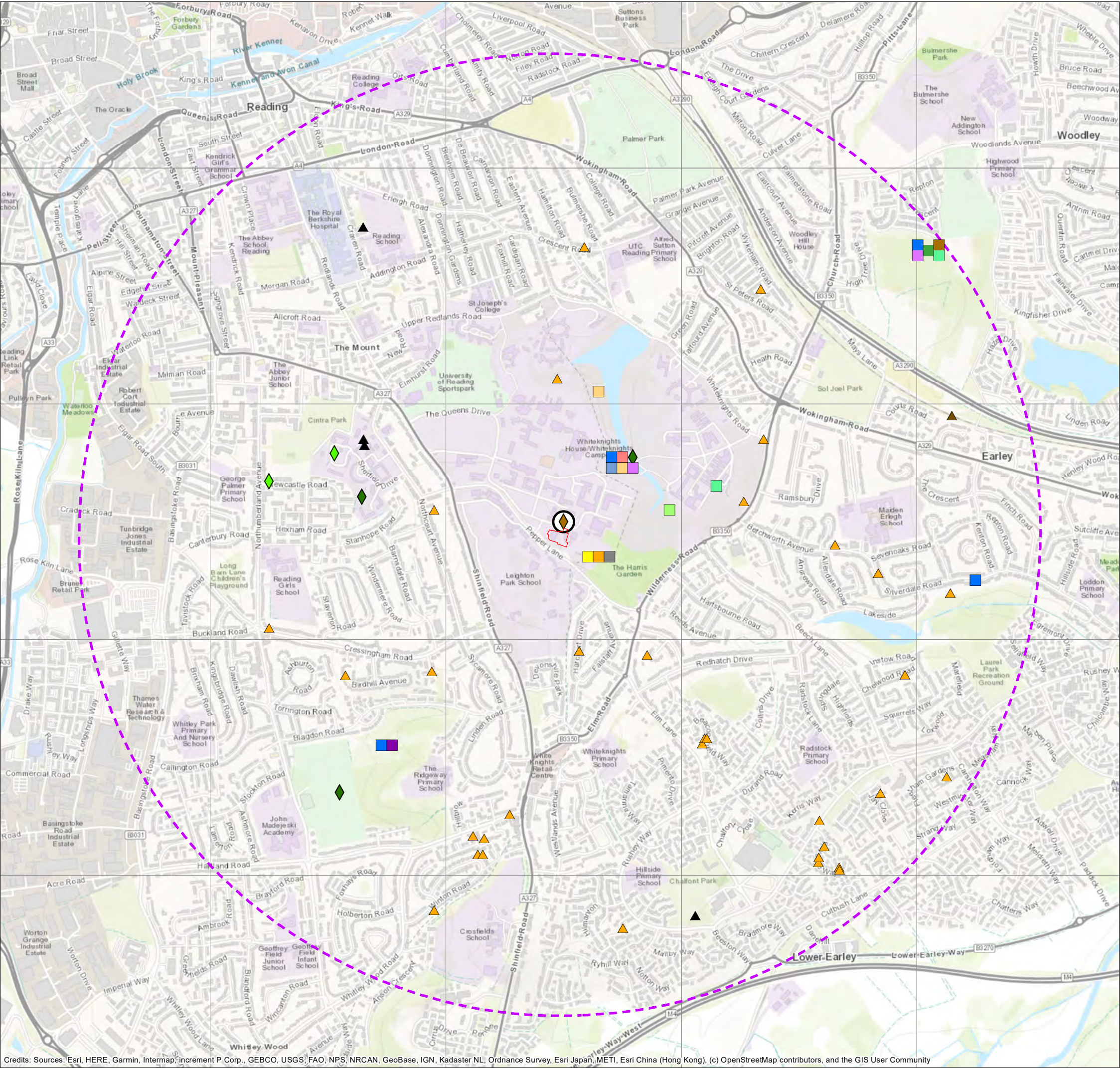
DATE: 20 April 2022

Y:\UoR Department of Art\2170GIS\PEA\Map4_Bird_Records_P2170_1438_081221.mxd

P21/70

LWS: ©Thames Valley Environmental Records Centre (TVERC)

Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



MAP 5 Other Relevant Species Records

KEY

Site boundary
2km linear distance from site

Amphibians & Reptiles

- Common frog
- Common toad
- Smooth newt

Higher plants - Flowering

- Bluebell
- Chicory
- Common Valerian
- Corn Marigold
- Corn Spurrey
- Cornflower
- Cross-leaved Heath
- Grape-hyacinth
- Heath Speedwell
- Heather
- Large-leaved Lime
- Mousetail
- Wood-sorrel

Mammals

- Eurasian Badger
- Hazel Dormouse
- West European Hedgehog
- Record accurate to 1km grid

1km grid

SCALE: 1:16,000 at A3

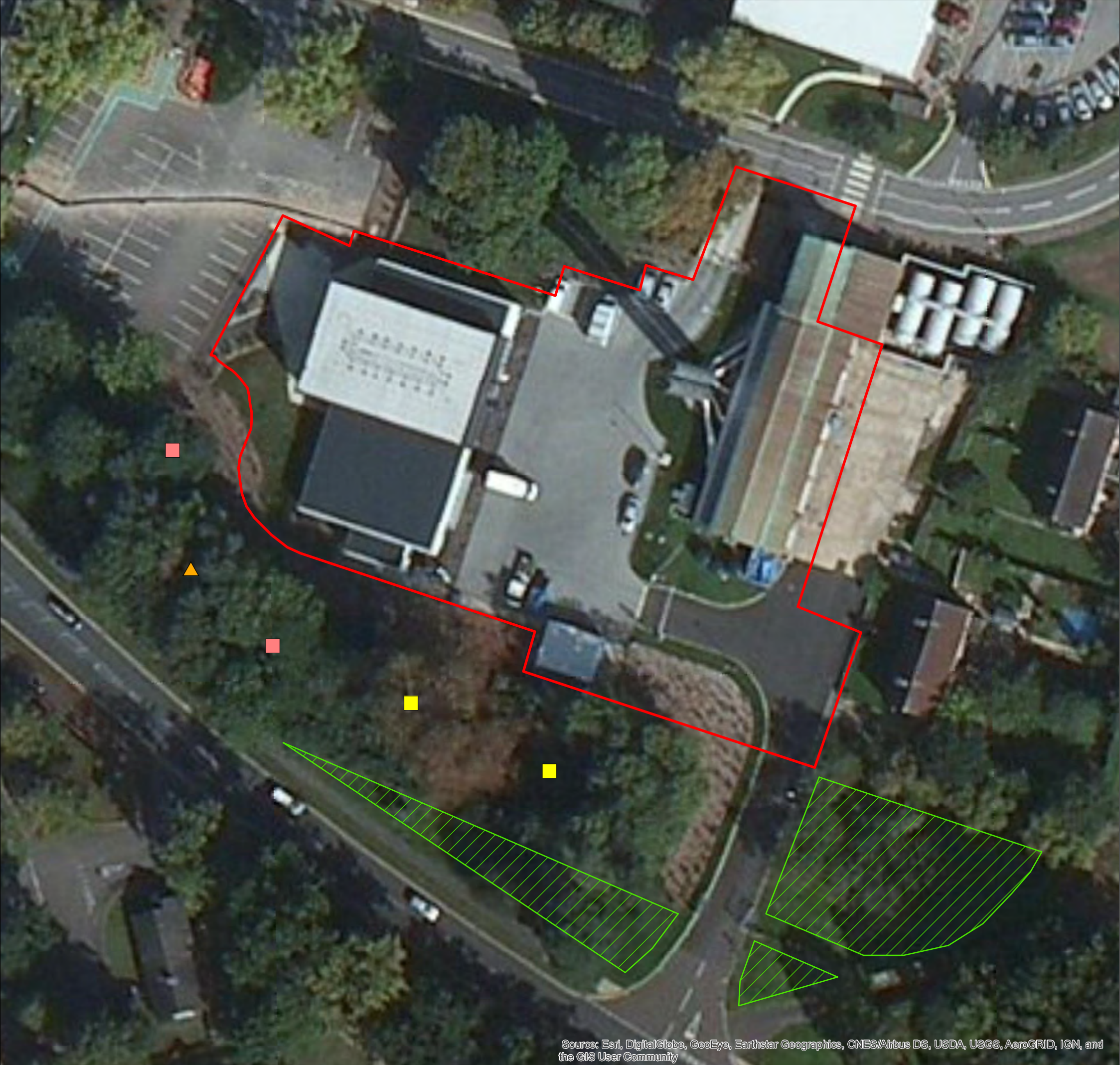
0 250 500 750 1,000 Metres



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DATE: 20 April 2022



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

MAP 6 Mitigation and Enhancement

KEY

- SiteBoundary
- Bat box (installation on Horse Chestnut monoliths)
- Bird box
- Hedgehog house
- New planting areas

SCALE: 1:500 at A3

0 5 10 15 20 Metres



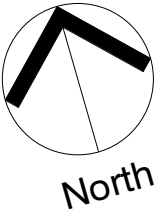
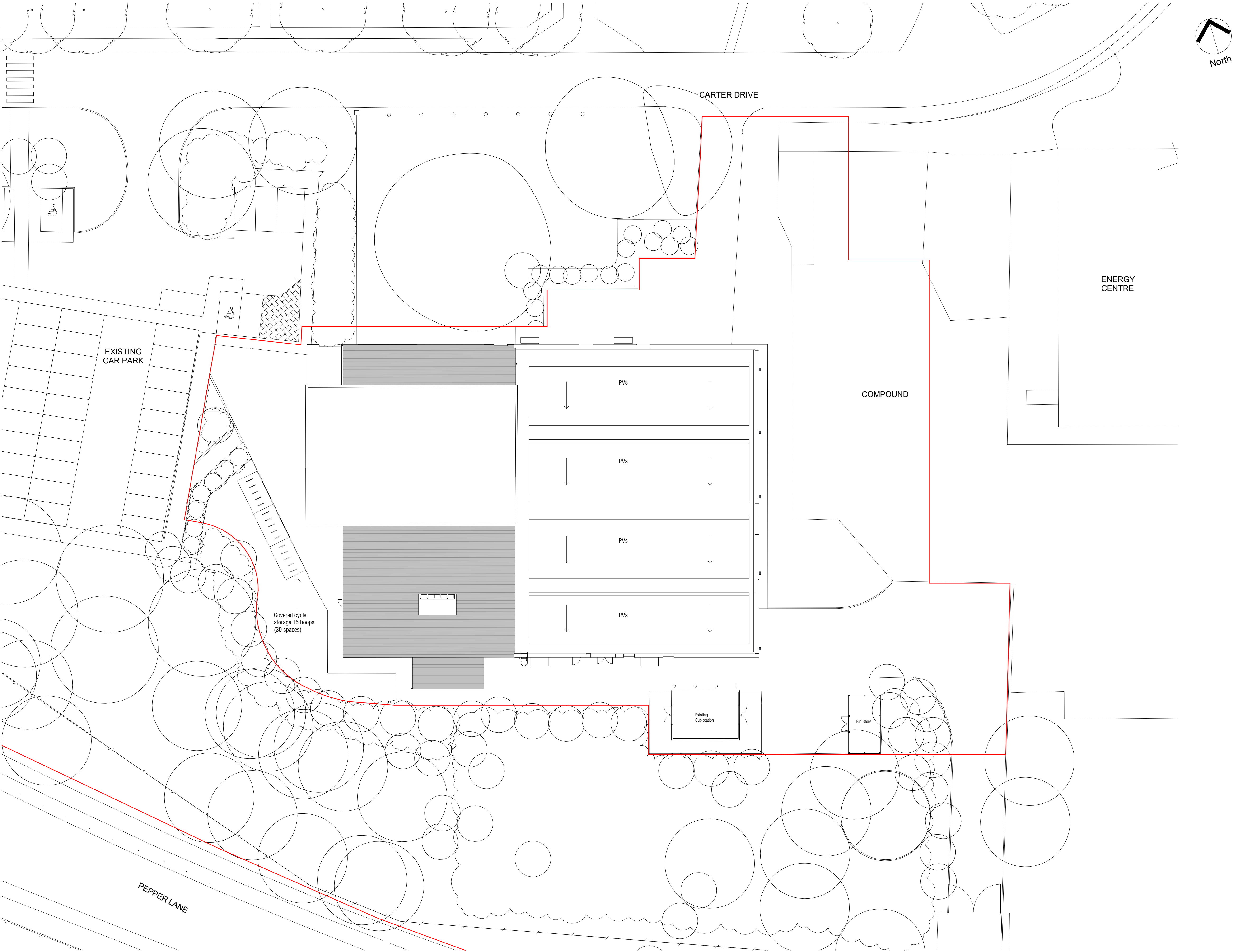
CLIENT: University of Reading

PROJECT: UoR - Department of Art

DATE: 20 April 2022

Appendix 1

Indicative Site Layout



Notes

Estates and Facilities

The information shown on this drawing is given without obligation or warranty. The accuracy therefore cannot be guaranteed and it must never be used for calculation or setting out of works.

General Changes

The accuracy of these drawings relies on feedback from users. If any anomalies are discovered, please immediately inform the CAD Manager. Telephone ext 6807.

7	Issued for Planning	13/04/2022
6	Issued for Stakeholder Approval	23/03/2022
5	Draft Issue for comment	17/03/2022
4	Draft Issue	01/03/2022
3	Pre-App	18/11/2021
2	Pre-App Draft	17/11/2021
1	Stage 2 Issue - Draft Revised LAYOUT	17/09/2021

Rev	Description	Date
Checked		
AB		



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Reading

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W scottbrownrigg.com

Building		
W310		
Project		
School of Art Relocation		
Title		
Site Layout Plan		
Drawn	Date	Scale
ACB/AB	13/04/22	1 : 200 @A1
Project (WREN No - Originator-Volume-Level-Type-Role-Classification-Number)		Suitability-Rev.
W310-1956132-SBR-ZZ-SW-DR-A-ZZZZ-80001 S2- 7		

Paper Size A1.

Appendix 2

Legislation and Planning Policy Relating to Wildlife and Development in England

LEGISLATION

The Environment Act 2021

The Environment Act 2021 places a requirement on the Secretary of State to make regulations setting out long-term targets for air quality, water, biodiversity, resource efficiency and waste reduction. It also requires the Government to produce an Environmental Improvement Plan, to report on progress towards its goals annually, to meet the targets that are set in relation to the improvement of the natural environment and to produce remedial plans should this not be achieved.

In relation to water quality, the Act places new duties on the Government, Environment Agency and sewerage undertakers to reduce the frequency and harm of discharges from storm overflows on the environment, and for monitoring the quality of watercourses affected by those overflows.

It also includes a requirement for an independent Office for Environmental Protection (OEP) to be established, with responsibilities for monitoring and reporting on progress against environmental improvement plans and targets. The OEP will also have investigation and enforcement powers against public authorities failing to comply with environmental law when exercising their functions.

The Act makes provisions for 10% biodiversity gain to become a condition of planning permission in England, through amendments to the Town and Country Planning Act 1990. This will be measured through a biodiversity metric to be published by the Secretary of State. The Act also establishes Biodiversity Net Gain as a requirement for Nationally Significant Infrastructure Projects (NSIPs).

The Act also strengthens the biodiversity duty placed on public authorities through amendments to the Natural Environment and Rural Communities Act 2006 Section 40, requiring such authorities to not only conserve but also enhance biodiversity when exercising their functions. Public authorities will also be required to publish summary reports of actions taken under Section 40 at least every five years.

The Act provides the legal basis for the creation of Local Nature Recovery Strategies (LNRSs) for England (including specifying their content), and the preparation and publication of species conservation strategies and protected sites strategies.

It also creates a new legal vehicle known as a 'Conservation Covenant' which is a voluntary, legally binding private agreement between landowners and responsible bodies (the latter designated by the Secretary of State) which conserve the natural or heritage features of the land, enabling long-term conservation. Conservation Covenants are designed to 'run with the land' when it is sold or passed on and are intended to eventually become a primary mechanism for the delivery of Biodiversity Net Gain (BNG).

The Act provides new powers for the Government to amend in future Regulation 9 and Part 6 of the Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitats Regulations') –

but “only if satisfied that the regulations do not reduce the level of environmental protection provided by the Habitats Regulations”.

Several aspects of protected species licencing have also been adjusted by the Act. These include the removal of several inconsistencies between the Habitats Regulations and the Wildlife & Countryside Act 1981 (as amended), ensuring that licences issued under the former piece of legislation also apply under the latter, and making it now possible for licences to be issued under Section 16(3) of the Wildlife & Countryside Act 1981 (as amended) for purposes of overriding public interest. The maximum term of a licence that can be issued by Natural England has also been extended from 2 to 5 years.

All biodiversity-related commitments and requirements (as set out in Part 6 of the Act) will come into force upon the adoption of secondary legislation and regulations, following a period of consultation. Timescales are to be confirmed, but this is currently expected to be around late 2023.

The Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) (known as the “Habitats Regulations”) were originally drawn up to transpose the European Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the “Habitats Directive”) into UK legislation. Following the UK’s exit from the European Union, the Habitats Regulations – as amended by Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 – remain in force until such a time as they are superseded by new or updated domestic legislation.

The Habitats Regulations provide for the designation of both Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) in the UK, which previously formed part of the Natura 2000 network of protected areas across Europe and are now part of the UK’s “National Sites Network”. New National Sites may be designated under the Regulations.

The Regulations also prohibit certain actions relating to European Protected Species (EPS), which include *inter alia* Hazel Dormouse *Muscardinus avellanarius*, Great Crested Newt *Triturus cristatus*, European Otter *Lutra lutra* and all native species of bat.

Further information on SPAs, SACs and European Protected Species is provided in the relevant sub-sections of this Appendix.

Wildlife & Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 is the principal mechanism for the legislative protection of wildlife in Great Britain. Various amendments have occurred since the original enactment. Certain species of bird, animal and plant (including all of the European Protected Species listed above) are afforded protection under Schedules 1, 5 and 8 of the Act. Reference is made to the various Schedules and Parts of this Act (**Table A1.1**) in the section of this Appendix dealing with Legally Protected Species. The Act also contains measures for the protection of the countryside, National Parks, Sites of Special Scientific Interest (SSSIs) and public rights of way as well as preventing the establishment of invasive non-native species that may be detrimental to native wildlife.

Table A1.1: Relevant Schedules of the Wildlife & Countryside Act 1981 (as amended)

Schedule	Protected Species
Schedule 1 Part 1	Protects listed birds through special penalties at all times

Schedule 1 Part 2	Protects listed birds through special penalties during the close season
Schedule 5 Section 9.1 (killing/injuring)	Protects listed animals from intentional killing or injuring
Schedule 5 Section 9.1 (taking)	Protects listed animals from taking
Schedule 5 Section 9.2	Protects listed animals from being possessed or controlled (live or dead)
Schedule 5 Section 9.4a	Protects listed animals from intentional damage or destruction to any structure or place used for shelter or protection
Schedule 5 Section 9.4b	Protects listed animals from intentional disturbance while occupying a structure or place used for shelter or protection
Schedule 5 Section 9.5a	Protects listed animals from being sold, offered for sale or being held or transported for sale either live or dead, whole or part
Schedule 5 Section 9.5b	Protects listed animals from being published or advertised as being for sale
Schedule 8	Protects listed plants from: intentional picking, uprooting or destruction (Section 13 1a); selling, offering for sale, possessing or transporting for the purpose of sale (live or dead, part or derivative) (Section 13 2a); advertising (any of these) for buying or selling (Section 13 2b).
Schedule 9	Prohibits the release of species listed in the Schedule into the wild.
Schedule 9a	Allows environmental authorities to issue species control orders to landowners, obliging them to control/eradicate invasive and/or non-native species.

Further information on legally protected species, designated wildlife sites and invasive non-native species is provided in the relevant sub-sections of this Appendix.

Countryside & Rights of Way Act 2000

Many of the provisions of the Countryside and Rights of Way (CROW) Act 2000 have been incorporated as amendments into the Wildlife and Countryside Act (1981) and some provisions have now been superseded by later legislation such as The Natural Environment and Rural Communities Act (2006).

The most relevant changes provided by the CROW Act include the added protection given to SSSIs and other important sites for nature conservation. Importantly, under the Act it became a criminal offence to "recklessly disturb" Schedule 1 nesting birds and species protected under Schedule 5 of the Wildlife and Countryside Act. It also enabled heavier penalties on conviction of wildlife offences.

The Natural Environment and Rural Communities Act 2006

The Natural Environment and Rural Communities (NERC) Act 2006 was intended to raise the profile of biodiversity amongst all public authorities (including local authorities, and statutory undertakers) and to make biodiversity an integral part of policy and decision-making processes. The NERC Act also improved wildlife protection by amending the Wildlife and Countryside Act 1981.

Section 40 (S40) of the Act places a 'Biodiversity Duty' on all public bodies to have regard to the conservation of biodiversity when carrying out their normal functions. This includes giving consideration to the restoration and enhancement of species and habitats.

Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of Principal Importance for the conservation of biodiversity in England. This was published in 2007 and is commonly referred to as the "S41 list". Public authorities have a responsibility to give specific consideration to the S41 list when exercising their normal functions. For planning authorities, consideration for Species and Habitats of Principal Importance will be exercised through the planning and development control processes. Further information on Species and Habitats of Principal Importance is provided in the relevant sub-sections of this Appendix.

SITES DESIGNATED FOR THE CONSERVATION OF NATURE

There is a hierarchy of nature conservation sites which is based on the level of statutory (legal) protection and the administrative level of importance. Other features of nature conservation interest outside designated sites may also be a material consideration in the determination of planning applications.

Statutory Sites: International

Ramsar Sites, Special Areas of Conservation (SAC) and Special Protection Areas (SPA)

The Conservation of Habitats and Species Regulations 2017 (as amended) provide the primary legal basis for the protection of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) in the UK.

SACs are sites which support internationally important habitats and/or species listed as being of Community Importance in the Annexes of the European Habitats Directive 92/43/EEC. SPAs are sites which support internationally important numbers of bird species listed as being of Community Importance in the Annexes of the European Birds Directive 2009/147/EC. Following the UK's exit from the EU, these now form part of the "National Sites" network rather than the EU Natura 2000 network.

Ramsar sites are wetlands of international importance and although not covered under the Habitats Regulations they are, as a matter of national planning policy, subject to the same strict protection as SACs and SPAs. The majority of terrestrial Ramsar sites in England are also notified as SPAs and/or Sites of Special Scientific Interest (SSSIs).

To avoid confusion with the nationally designated sites described below, EPR refers to SACs and SPAs as 'International sites', given the reasons for their designation.

Any plan or project considered likely to affect an International site (SAC, SPA or Ramsar) must be subject to a Habitats Regulations Assessment (HRA), as set out under Regulation 63 (and Regulation 105 in respect of Land Use Plans) of the Habitats Regulations 2017 (as amended) and the National Planning Policy Framework (NPPF) 2021.

The local authority (or other 'competent authority') carries out the HRA, but the onus is on the developer to provide the necessary information to inform this process, usually in the form of a report.

Under the Habitats Regulations 2017 (as amended), the competent authority must determine in the first instance whether a proposed development is likely to have a significant effect on the SAC/SPA, either alone or in combination with other plans and projects. This stage of the HRA process is known as 'screening'.

If a likely significant effect cannot be precluded (screened out) on the basis of objective information, the competent authority must undertake an 'Appropriate Assessment' to fully assess these implications against the site's conservation objectives. A precautionary approach must be taken with respect to determining whether or not there would be a significant effect, and the appropriate nature conservation body (in most cases Natural England) should be consulted. Except in certain exceptional circumstances prescribed by the Regulations where there are imperative reasons of overriding public interest for allowing a development to proceed, the competent authority may not undertake or authorise the plan or project until they have established (based on the conclusions of the Appropriate Assessment) that the activity will not adversely affect the integrity of the SAC/SPA. This should be the case where no reasonable scientific doubt remains as to the absence of such effects.

Regulation 16A of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 sets out the management objectives of the National Site Network, which can be summarised as follows:

- to maintain or, where appropriate, restore habitats and species listed in Annexes I and II of the Habitats Directive within the UK's territory to a favourable conservation status (FCS); and
- contribute to ensuring, in their area of distribution, the survival and reproduction of wild birds and securing compliance with the overarching aims of the Wild Birds Directive.

The appropriate authorities must also have regard to:

- the importance of protected sites in meeting the above objectives, including breeding, moulting, staging and wintering areas for in the case of migratory bird species;
- their importance for the coherence of the national sites network; and
- the threats of degradation or destruction (including deterioration and disturbance of protected features) on SPAs and SACs.

Government guidance¹ also states that competent authorities have a duty to help protect, conserve and restore the designated features of SACs and SPAs when carrying out their statutory work, including taking decisions that might affect a site. They also have a duty to consider how they can help to prevent the deterioration of the site's habitats from human activity or natural changes, including habitats that support designated species, and prevent significant disturbance of the site's designated species from human activity or natural changes.

¹ <https://www.gov.uk/guidance/duty-to-protect-protect-restore-european-sites>

Competent authorities include (but are not limited to) local planning authorities, councillors, planning committee members and statutory agencies such as Natural England.

Statutory Sites: National

Nationally important sites include Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs). A development proposal that is likely to affect a nationally important site will be subject to special scrutiny by the local planning authority and Natural England. Certain operations may be permitted. Any potentially damaging operations that could have an adverse effect directly or indirectly on the special interest of the site will not be permitted unless the reasons for the development clearly outweigh the nature conservation and/or geological value of the site itself and the national policy to safeguard such sites, as set out in Section 15 of the National Planning Policy Framework (NPPF).

Sites of Special Scientific Interest

The Wildlife and Countryside Act 1981 (as amended) and the CROW Act 2000 provide the primary legal basis for the protection of Sites of Special Scientific Interest (SSSIs). These sites have been designated to capture the best examples of England's flora, fauna, geological or physiographical diversity.

Public bodies have a duty to take reasonable steps to conserve and enhance the special features of sites of special scientific interest (SSSIs) when carrying out their statutory duties and giving others permission for works, such as reviewing planning applications.

National Nature Reserves

National Nature Reserves (NNRs) are declared under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981, as amended by the Environmental Protection Act 1990. They are managed to conserve their habitats or to provide special opportunities for scientific study of the habitats communities and species represented within them. NNRs represent the very best parts of England's SSSIs. The majority of NNRs also have European nature conservation designations.

Statutory Sites: Regional/Local

Local Nature Reserves

Local Nature Reserves (LNRs) are declared by local authorities under the National Parks and Access to the Countryside Act 1949 as living green spaces in towns, cities, villages and countryside. They provide opportunities for research and education, or for simply enjoying and having contact with nature. LNRs are usually protected from development through local planning documents which may be supplemented by local by-laws.

Non-Statutory Sites

Local Wildlife Sites

Local planning authorities may designate non-statutory sites for their nature conservation value based on important, distinctive and threatened habitats and species within a national, regional and local context. These sites are not legally protected but are given some protection through the planning system. These sites may be declared as 'County Wildlife Sites', 'Sites of Importance for Nature Conservation' (SINCs), or 'Sites of Nature Conservation Importance' (SNCIs) in local and structure

plans. Non-statutory sites are a material consideration when planning applications are being determined. The precise amount of weight to be attached, however, will take into account the position of the site in the hierarchy of sites as set out above. Further information is typically provided in local level planning policy.

Nature Conservation in Areas Outside Designated Sites

Various other features exist outside designated sites that are important for the conservation of nature and which are a material consideration in the planning system.

Habitats of Principal Importance in England

Fifty-six habitat types have been identified as Habitats of Principal Importance for the conservation of biodiversity in England under Section 41 of the NERC Act 2006. Although these habitats are not legally protected, the NPPF, Government Circular 06/05, good practice guidance and the NERC Act place a clear responsibility on planning authorities to further the conservation of these habitats. They can be a material consideration in planning decisions, and so developers are advised to take reasonable measures to avoid or mitigate impacts to prevent their net loss and to enhance them where possible. Additional guidance to developers is typically provided in local level planning policy.

The S41 list also includes species as explained below under 'Species of Principal Importance in England'.

Networks of Natural Habitats

Networks of natural habitats link sites of biodiversity importance and provide routes or stepping stones for the migration, dispersal and genetic exchange of species in the wider environment. Examples include rivers with their banks, traditional field boundary systems (such as hedgerows), ponds and small woods. Local planning authorities are encouraged through the NPPF to maintain networks by avoiding or repairing the fragmentation and isolation of natural habitats through planning, policies and development control.

Hedgerows

Hedgerows can act as wildlife corridors that are essential for migration, dispersal and genetic exchange of wild species. Hedgerows that qualify as a Habitat of Principal Importance under S41 of the NERC Act 2006 are a material consideration in the planning system.

Under the Hedgerow Regulations 1997, it is an offence to remove a hedgerow classed as 'important' under the criteria set out by the Regulations without submitting a notice to the Local Planning Authority and waiting for their decision. The Regulations are aimed at countryside hedges and do not apply to hedges around private dwellings or where planning permission has been granted for a project that includes hedge removal. Hedgerows that satisfy wildlife, archaeological, historical or landscape criteria qualify as 'important' under the Regulations. If a hedgerow is not important, the Local Planning Authority may not prevent its removal; however, Local Planning Authorities are required under the Regulations to protect and retain important hedgerows unless satisfied that the circumstances justify their removal.

SPECIES PROTECTION

Legally Protected Species

The species listed in the following subsections are protected by law in England. When preparing a planning application, it is essential to determine the presence or likely absence of legally protected species and the extent to which they may be affected by a proposed development. This can best be achieved by undertaking surveys early in the planning process. Avoidance and/or mitigation measures may be required to address any predicted impacts upon protected species and may necessitate a licence. The Government website offers standing advice from Natural England and DEFRA which can be applied to planning applications that affect protected species.

Bats

There are 18 species of bat in the UK, seven of which are Species of Principal Importance in England. All bats and bat roosts are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Bats are also a European Protected Species protected under the Habitats Regulations 2017 (as amended). It is an offence to:

- Intentionally or deliberately kill, injure or capture bats;
- Intentionally, deliberately or recklessly disturb bats in such a way as to be likely to significantly affect the ability of any significant group of bats to survive, breed, or rear or nurture their young or the local distribution of or abundance of a species of bat;
- Intentionally, or recklessly damage, destroy or obstruct any place used for shelter or protection (i.e. bat roosts) or intentionally or recklessly disturb a bat whilst it is occupying such a place;
- Damage or destroy a breeding site or resting place of a bat; and
- Possess, sell or transport a bat, or anything derived from it.

Development proposals affecting bats or their roosts require a European Protected Species mitigation licence from Natural England.

Birds

49 species of bird are listed as Species of Principal Importance in England. All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended), making it an offence, with certain exceptions (e.g. game birds), to intentionally kill, injure or take any wild bird and to take, damage or destroy their nests or eggs.

Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) affords extra protection for certain species and applies harsher penalties for offences. Any intentional or reckless disturbance of a Schedule 1 bird, whilst it is nesting or rearing dependent young, constitutes an offence.

Regulation 10 of the Conservation of Habitats and Species Regulations 2017 (as amended) requires appropriate authorities and conservation bodies, in the exercise of their functions, to take such steps that they consider appropriate in order to secure “*the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat (...)*”.

European Badger

The Protection of Badgers Act 1992 offers considerable protection to both Badgers and Badger setts. This legislation was enacted to protect the European Badger *Meles meles* against baiting and not as a means of species recovery as it is common in England. It is an offence to cruelly treat, kill or take Badgers, but it is also illegal to intentionally or recklessly damage or disturb a Badger sett while it indicates signs of current use by a Badger.

The Government website contains information to help developers and their proponents avoid sett disturbance and to identify setts that are in current use. It is important to maintain adequate foraging territory in development proposals affecting Badgers as the destruction or severance of large areas of foraging territory could also be taken to include habitat loss. Licences to disturb Badgers and their setts in respect of development may be issued by Natural England provided provisions are made to minimise disturbance.

Wild Mammals

All wild mammals are protected against cruelty under the Wild Mammals (Protection) Act 1996, which makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

Licences for Development

Licences are required to permit activities prohibited under wildlife legislation, namely the disturbance or capture of protected species or damage to their habitats. Natural England is the licensing authority in England. Licences are only issued for certain purposes, which are set out in the legislation, and only where there is a valid justification. The licences most relevant to development scenarios are discussed below.

European Protected Species Mitigation Licences

A European Protected Species mitigation licence (EPSL) is required from Natural England to undertake any development that is reasonably likely to result in an offence in respect of a European Protected Species protected under Schedule 2 of the Habitats Regulations 2017 (as amended); including *inter alia* all species of bats, Hazel Dormouse, Great Crested Newt and European Otter. Natural England must be satisfied that the following three tests are satisfied before it will issue a licence covering a European Protected Species:

1. 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;
2. There is no satisfactory alternative; and
3. The proposal will have no detrimental effect to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Conservation Licences

In the context of development, conservation licences are normally only relevant to mitigation involving the capture of Water Voles or White-Clawed Crayfish. Conservation licences are granted to permit the

trapping and translocation of these species on the condition that the development activity is properly planned and executed and thereby contributes to the conservation of the population of the species.

Badger Licences

Licences to disturb Badgers and their setts in respect of development may be issued by Natural England, provided provisions are made to minimise disturbance.

Species of Principal Importance in England

943 species have been identified as being of Principal Importance for the conservation of biodiversity in England under Section 41 (S41) of the NERC Act 2006. The S41 list includes species found in England which have been identified as requiring action under the now superseded UK Biodiversity Action Plan 2007 (plus the Hen Harrier). While many of these species may not be legally protected (some are protected under the legislation described above), there is a clear responsibility on local planning authorities to further their conservation. These species can be a material consideration in development control decisions and so developers are advised to take reasonable measures to avoid or mitigate impacts to prevent the net loss of these species, and to enhance their habitats where possible. Additional guidance to developers is typically provided in local level planning policies.

Invasive Non-Native Species

There are a number of species not ordinarily resident in the UK, such as Japanese Knotweed. Those which pose a significant threat, if uncontrolled, to our ecology and economy are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). For an offence to be committed, a species must be released or allowed to escape into the wild. For example, if a plant listed on Schedule 9 is not adequately controlled by a land owner, once they are aware that it is present, and the species is allowed to spread into adjoining areas, then this could constitute an offence.

Japanese Knotweed is also classed as 'controlled waste' under the Environment Protection Act 1990 (as amended) and if taken off site it must be disposed of safely at a licensed landfill site. Soil containing rhizome material should also be regarded as contaminated and treated accordingly.

Species Control Orders

A new schedule 9A was inserted into the Wildlife and Countryside Act 1981 (as amended) by Sections 23 to 25 of the Infrastructure Act 2015. This gives environmental authorities (in England the Secretary of State, Environment Agency, Natural England and the Forestry Commission) the power to offer 'species control agreements' to landowners in respect of invasive and/or non-native species, such as Japanese Knotweed. If the landowner does not comply with a species control agreement, or refuses to enter into one, the environmental authority may issue a 'species control order', requiring the owner to eradicate or control the species, or to allow the environmental authority access to carry out these operations themselves.

If the owner does not comply with the species control order, the maximum penalty if convicted is a fine of up to £40,000 and/or imprisonment for up to 51 weeks. The environmental authority can also recover costs for carrying out the necessary work themselves.

PLANNING POLICY & GUIDANCE

This section set out the main planning policy and government guidance that relates to the conservation of nature at all levels of government.

National Level

National Planning Policy Framework 2021

The National Planning Policy Framework (NPPF) 2021 sets out the Government's planning policies for England and how these should be applied in local-level policy and decision making. The NPPF has a clear "presumption in favour of sustainable development" (paragraph 11), with economic, social and environmental objectives. This presumption does not apply where a plan or project has failed the 'appropriate assessment' test under the Habitats Regulations (paragraph 182).

Section 15 of the NPPF provides guidance on conserving and enhancing the natural environment through the planning system, as summarised below.

Firstly, planning policies and decisions should contribute to and enhance the natural and local environment by applying the following key principles:

- 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);
- minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- 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; and
- 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.

Section 15 also requires planning policies and decisions to limit the impact of artificial light pollution on nature conservation.

Secondly, when determining planning applications, local planning authorities should apply the following key principles:

- if significant harm resulting from a development cannot be avoided, adequately mitigated or (as a last resort) compensated for, then planning permission should be refused;
- proposed development that is likely to have an adverse effect on a SSSI (either individually or in combination with other developments) should normally be refused;
- planning permission should normally be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and ancient or veteran

trees, 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.

In the case of SSSIs and irreplaceable habitats, exceptions may be made if it can be clearly demonstrated that the benefits of the development, in that location, clearly outweigh the costs in terms of loss or adverse impacts.

Section 15 specifies that listed or proposed Ramsar sites, potential European sites, and sites identified or required as compensatory measures for adverse effects on designated/listed or potential/proposed European and Ramsar sites should be given the same protection as designated European sites.

Section 15 includes the following text on air quality:

- Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas;
- Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications; and
- Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.

The NPPF also sets out principles for plan-making, including the allocation of land with the least environmental or amenity value, and taking a strategic approach to maintaining and enhancing networks of habitats and green infrastructure by identifying, mapping and safeguarding components of local wildlife-rich habitats, wider ecological networks, wildlife corridors and stepping stones, and those areas identified by national and local partnerships for habitat management, enhancement, restoration or creation.

Government Circular 06/05: Biodiversity and Geological Conservation

The Government produced Circular 06/05 to provide guidance on the application of the law to the conservation of nature. Although the document is in the process of being updated, Paragraphs 98 and 99 remain relevant as they set out the following principles and obligations:

- The presence of protected species is a material consideration when determining a development proposal;
- Local authorities should consult with Natural England before granting permission, and consider imposing planning conditions or obligations to secure the long-term protection of the species;

- The presence of protected species, and the extent to which they may be affected by the proposed development, must be established before permission is granted;
- Given the delay and cost that may be involved, developers should not be required to undertake surveys for protected species unless there is a reasonable likelihood of the species being present and affected by the development.

MHCLG Planning Practice Guidance

Revised and updated Planning Practice Guidance (PPG) was launched by the Department for Communities and Local Government (now the Ministry of Housing, Communities and Local Government, MHCLG) as a web-based tool in March 2014 to accompany the NPPF. The webpages are set out in a Q&A format. The PPG consolidates and supersedes existing guidance on a range of planning-related topics, clarifies some of the statements made in the NPPF, and provides links to relevant legislation and other sources of advice.

The Guidance outlines a number of important principles in relation to nature conservation and biodiversity, including the need to integrate biodiversity into all stages of the planning process and to consider opportunities to enhance biodiversity and contribute to the Government's commitments and targets set out in *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*.

The guidance also requires that "an ecological survey will be necessary in advance of a planning application if the type and location of development are such that the impact on biodiversity may be significant and existing information is lacking or inadequate", and recommends that "local planning authorities should only require ecological surveys where clearly justified, for example if they consider there is a reasonable likelihood of a protected species being present and affected by development."

Other guidance

In addition to the Planning Practice Guidance, various other forms of guidance and standards are available in relation to biodiversity and the development process. Of particular note is *British Standard BS42020:2013 Biodiversity – Code of practice for planning and development*, published in August 2013, which replaces *Planning to Halt the Loss of Biodiversity (PAS 2010): Biodiversity conservation standards for planning in the United Kingdom*.

This document is designed to complement the NPPF and is aimed at organisations concerned with ecological issues throughout the planning process, including local authorities, developers, planners and ecological consultants. It sets out step-by-step recommendations on how to incorporate biodiversity considerations at all stages of the planning process, with a focus on the provision of consistent, high quality and appropriate ecological information, effective decision making, and high standards of professional conduct and competence.

Regional Level

Regional plans (such as the South East Plan Regional Spatial Strategy) have been revoked, but some specific policies have been saved. The only policy saved from the South East Plan is Policy NRM6, which relates to the Thames Basin Heaths Special Protection Area (TBH SPA).

Local Level

Reading Borough Council have issued a Local Plan (adopted November 2019). Relevant planning policies include:

CC1: PRESUMPTION IN FAVOUR OF SUSTAINABLE DEVELOPMENT

A positive approach to considering development proposals will be taken that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework (NPPF). Where appropriate, the Council will work proactively with applicants jointly to find solutions which mean that proposals can be approved wherever possible.

Planning law requires that applications for planning permission must be determined in accordance with the development plan unless material considerations indicate otherwise. Planning applications that accord with the policies in the development plan (including, where relevant, with policies in neighbourhood plans) will be approved without delay, unless material considerations indicate otherwise. Proposed development that conflicts with the development plan will be refused, unless other material considerations indicate otherwise.

Where there are no policies relevant to the application or the policies which are most important to determining the application are out of date at the time of making the decision then permission will be granted unless material considerations indicate otherwise – taking into account whether:

- The application of policies in the NPPF that protect areas or assets of particular importance provides a clear reason for refusing the development proposed; or
- Any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in the NPPF taken as a whole.

EN12: BIODIVERSITY AND THE GREEN NETWORK

- a) The identified Green Network, the key elements of which are shown on the Proposals Map, shall be maintained, protected, consolidated, extended and enhanced. Permission will not be granted for development that negatively affects the sites with identified interest or fragments the overall network. The Green Network comprises:
 - Sites with identified biodiversity interest - Local Wildlife Sites, Local Nature Reserves, Biodiversity Opportunity Areas, protected and priority species and their habitats, Priority and Biodiversity Action Plan habitats, and the River Thames and all its tributaries (including the River Kennet and the Kennet & Avon Canal); and
 - Areas with potential for biodiversity value and which stitch the Green Network together – designated Local Green Space and open green spaces, and existing and potential Green Links.

New development shall demonstrate how the location and type of green space, landscaping and water features provided within a scheme have been arranged such that they maintain or link into the existing Green Network and contribute to its consolidation. Such features should be designed to maximise the opportunities for enhancing this network. All new development should maximise opportunities to create new assets and links into areas where opportunities are as yet unidentified on the Proposals Map.

- b) On all sites, development should not result in a net loss of biodiversity and geodiversity, and should provide a net gain for biodiversity wherever possible. Development should:
- Protect and wherever possible enhance features of biodiversity interest on and adjacent to the application site, incorporating and integrating them into development proposals wherever practicable; and
 - Provide new tree planting, wildlife friendly landscaping and ecological enhancements (such as wildlife ponds, bird and bat boxes) wherever practicable.

In exceptional circumstances where the need for development clearly outweighs the need to protect the value of the site, and it is demonstrated that the impacts cannot be: 1) avoided; 2) mitigated or; 3) compensated for on-site; then new development will provide off-site compensation to ensure that there is “no net loss” of biodiversity. Provision of off-site compensation shall be calculated in accordance with nationally or locally recognised guidance and metrics. It should not replace existing alternative habitats, and should be provided prior to development.

EN14: TREES, HEDGES AND WOODLANDS

Individual trees, groups of trees, hedges and woodlands will be protected from damage or removal where they are of importance, and Reading's vegetation cover will be extended. The quality of waterside vegetation will be maintained or enhanced.

New development shall make provision for tree retention and planting within the application site, particularly on the street frontage, or off-site in appropriate situations, to improve the level of tree coverage within the Borough, to maintain and enhance the character and appearance of the area in which a site is located, to provide for biodiversity and to contribute to measures to reduce carbon and adapt to climate change. Measures must be in place to ensure that these trees are adequately maintained.

ER2: WHITEKNIGHTS CAMPUS, UNIVERSITY OF READING

The University of Reading is a national and international educational establishment of strategic importance which will continue to adapt and expand over the plan period. The Whiteknights Campus as shown on the Proposals Map will continue to be a focus for development associated with the University of Reading. Such development may include additional staff, teaching, research and enterprise accommodation, infrastructure and services, and sports and leisure facilities among other uses. Access to and within the site will be improved where necessary.

Where development would result in a material need for additional students to be housed, it should be supported by an appropriate increase in existing or planned student accommodation. Provision of new student accommodation on the Whiteknights Campus, or as a reconfiguration or extension of nearby dedicated accommodation, will therefore be acceptable subject to other policies in the Plan.

Development will accord with the following criteria:

- Areas of wildlife significance and current or potential green links will be retained or enhanced, and not detrimentally affected by development, including through light effects;

- The safety of those using the campus will be maintained or enhanced;
- There will be no significant detrimental impact on the amenity of neighbouring residential properties; and
- The loss of undeveloped areas on the site will be weighed against the benefits of development to the wider community.

BIODIVERSITY PLANS AND STRATEGIES

The NERC Act 2006 places a duty on local authorities to have due regard to biodiversity when exercising their normal functions, and the NPPF requires planning policies to “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 measureable net gains for biodiversity” (paragraph 174). These targets are set out in a range of biodiversity plans and strategies from the international through to the district level.

An overview of the key biodiversity plans and strategies in the UK, and their implications for development, are set out below.

National level

The *UK Biodiversity Action Plan 2007* (UK BAP) has been superseded by the *UK Post-2010 Biodiversity Framework* and individual national biodiversity strategies. The UK Framework sets out the overarching vision, strategic goals and priority activities for the UK’s work towards international biodiversity targets (known as the ‘Aichi Targets’), as agreed by 192 parties at the UN Convention on Biological Diversity in 2010.

In England, *Biodiversity 2020: A strategy for England’s wildlife and ecosystem services* is the national biodiversity strategy, which has the stated mission “(...) to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people.” In order to focus activity and assess performance in achieving this mission, Biodiversity 2020 sets out objectives relating to terrestrial and marine habitats and ecosystems, species and people.

Local level

While BAPs at the national level have now been superseded by *the UK Post-2010 Biodiversity Framework* and *Biodiversity 2020: A strategy for England’s wildlife and ecosystem services*, many county and district level BAPs still exist.

‘The Natural Environment in Berkshire – Biodiversity Strategy 2014 – 2020’ is a statement on the current state of nature in Berkshire and a strategy for protecting and enhancing its natural environment. This builds on and replaces the Berkshire Biodiversity Action Plan. Relevant national outcomes are:

Outcome 1 – Habitats and Ecosystems on Land

- A. Better wildlife habitats with 90% of priority habitats in favourable / recovering condition, at least 50% of SSSIs in favourable condition, while maintaining at least 5% in favourable / recovering condition.

- B. More, bigger and less fragmented areas for wildlife, with no net loss of priority habitat and an increase in overall extent of priority habitats.
- C. At least 17% of land and inland water conserved through effective, integrated and joined up approaches to safeguarding biodiversity and ecosystem services
- D. Restoring at least 15% of degraded ecosystems as a contribution to climate change mitigation and adaption.

Outcome 3 – Species

An overall improvement of the status of wildlife, preventing further human-induced local extinctions.

Relevant Berkshire objectives to forward these outcomes include:

Objectives for Habitats

- 1.1 Devise a method to record the condition of Berkshire's priority habitat outside of designated sites
- 1.2 Record & report on the condition of Berkshire's Priority habitat outside of designated sites on an annual basis.
- 1.4 Increase habitat connectivity by encouraging targeted habitat creation within the BOAs
- 1.7 To ensure the Local Wildlife System is maintained and improved upon.
- 1.8 Promote the use of BOAs when guiding nature conservation effort and spending.

Objectives for Species

- 2.1 Maintain species records and encourage local recording
- 2.2 Identify key species for Berkshire where specific objectives would assist with species objective plans
- 2.3 Promote implementation of the Invasive Non-Native Species Framework strategy.

Delivering Net Gain

Biodiversity Net Gain is likely to become mandatory upon adoption of the emerging Environment Bill, which is currently passing through Parliament. This proposes a minimum 10% net gain for new developments. BNG is already enshrined in the key principles of the NPPF, and is increasingly becoming a requirement in local level planning policies, which may set higher net gain targets (20% in some cases). Typically a metric calculation tool such as the DEFRA/Natural England metric is used to calculate net gains and losses.

Enhancement projects may not just benefit biodiversity. There are many functional benefits to be won from strategically planned green infrastructure projects such as semi-natural urban green spaces, sustainable urban drainage schemes (SUDS) and green roofs. Planning conditions and obligations are increasingly being used to mandate biodiversity enhancement on or off a development site, either through design or financial support.

Appendix 3

Assessment Methods

This Ecological Appraisal has been completed following guidance in The Chartered Institute of Ecology and Environmental Management (CIEEM) *Guidelines for Ecological Impact Assessment in the UK and Ireland* (2018).

DESK STUDY METHODOLOGY

A desk study was carried out in order to gather and refer to existing biodiversity and contextual information with respect to the zone of influence and the wider area. This involved interrogation of internet resources, including the Multi-agency Geographic Information for the Countryside (MAGIC) and National Biodiversity Network (NBN), aerial photos, current Ordnance Survey maps and historical maps. Reference was also made to local planning policies, strategies and initiatives relating to biodiversity.

A request was made to Thames Valley Environmental Records Centre (TVERC) for any existing biological records in the databases. The local records search and other desktop research was over a 2km radius for nationally and locally important features and European Protected Species, and a 5 km radius for sites of European significance.

FIELDWORK METHODOLOGY

The field survey was completed by Barney Scott and Krista Middleton of EPR on 24 November 2021. The perimeter of the Site and the sports field and immediately surrounding land was walked, recording habitats and features of potential value to wildlife and any evidence of, or potential for, protected or notable species or habitats, in accordance with the methods described below.

The bat building survey was completed by Barney Scott (CL18 Licence no. 2018-33402-CLS-CLS) and Krista Middleton of EPR on 24 November 2021. Survey methodology followed the Bat Conservation Trust Good Practice Guidelines 2016 and was conducted in appropriate weather conditions and a suitable time of year to detect roosting bats. Survey weather conditions are given in the table below.

Temperature	10°C
Cloud cover	0-25 %
Wind	BF 1 -2
Precipitation	None

Land Use, Habitat Types, Vegetation Communities and Flora

Within the study area the land use, habitat types and landscape features (such as hedgerows and veteran trees) were described and mapped. For each main habitat type the dominant vegetation communities were recorded, along with any notable or indicator plant species, (including invasive species such as Japanese Knotweed where present). A preliminary evaluation of the structure, quality and likely management of each habitat or feature was also carried out.

The survey method used to record this information was based on Phase 1 Habitat Survey methodology (JNCC 1993). Botanical nomenclature in this report follows Stace (2010).

Fauna

The potential for habitats and features to support protected or notable species, or species of principal importance for the purpose of conserving biodiversity, were recorded, as were any signs encountered. The following is a summary of the approach taken for this Ecological Appraisal.

Badgers

Consideration was given to the presence of habitat potentially suitable for supporting Badgers, including woodland and grassland. Potential evidence of the presence of Badgers was looked out for and noted, including earthworks that might be Badger setts, and signs such as dung pits, mammal pathways through ground vegetation and under fences, and hairs on fences.

Bats

Bats use buildings and trees for roosting and breeding and, where present, a preliminary assessment of the potential for these features to support bats was undertaken during the survey. Potential may include gaps beneath roof or hanging tiles, in soffits, or beneath the end of ridge tiles, but also under the edge of felt on flat roofs. In trees potential roosting features include woodpecker holes, splits in branches and peeling bark.

Preliminary evidence was obtained through noting any staining around potential roost entrances, and looking for bat droppings, for example on window sills. A preliminary evaluation was also undertaken of potential bat foraging habitat in the area, including woodland, pasture, hedges and watercourses.

Dormouse

The type and quality of habitat with the potential to be suitable for supporting Dormice, such as woodland and hedgerows, was considered during the survey. In particular the presence of oak, hazel and berry-bearing shrubs was noted, and the connectivity of habitat recorded.

Birds

Any birds seen whilst carrying out the survey were recorded, and the type and quality of habitats available for birds was considered, including vegetation suitable for nesting, and habitat with the potential to support valued species, including breeding and wintering birds.

Amphibians

Consideration was given to the presence of habitat potentially suitable for supporting amphibians, including water bodies (ponds, ditches), woodland, scrub and rough grassland, and features such as log piles that might provide hibernation areas. Where appropriate, effort to gather direct evidence of amphibians was undertaken by making a preliminary search for eggs by examining vegetation within reach of the margins of water bodies, and for resting animals on land by looking under potential refuges, such as stones, wood and rubbish near to water bodies.

Reptiles

The presence and quality of habitat considered potentially suitable for supporting reptiles was recorded. This included areas providing basking and foraging areas, hibernation and breeding sites, such as rough grassland and scrub, banks, burrows, rubble piles, compost heaps, hedgebanks and water bodies.

Invertebrates

Readily identifiable invertebrates seen during the survey were recorded, and habitats and features likely to support noteworthy groups and species were noted, for example herb-rich grasslands, areas of bare ground and deadwood habitats, including woodland and veteran trees.