



Reading Borough Council

READING NORTH STREET PRELIMINARY ECOLOGICAL APPRAISAL



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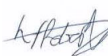
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1 EXECUTIVE SUMMARY

- 1.1.1. WSP was instructed by Reading Borough Council to carry out an ecological appraisal of land at North Street, Reading (central National Ordinance grid reference SU 70913 73664), hereafter referred to as the 'Site'. The Site is being considered for affordable housing provision within the borough, hereafter referred to as the 'Proposed Development'. The Proposed Development is 0.23Ha in area and will include the building of 39 flats and creation of associated soft landscaping.
- 1.1.2. A survey was undertaken on 22nd August 2017 by a consultant ecologist and full member of CIEEM. The aim of the survey was to identify the habitats present, the Site's potential to support protected and/or notable species, and any ecological constraints in relation to the proposed development.
- 1.1.3. A desk study was carried out to establish if there are any records of protected or notable species that pertain to the Site or its near surrounds, or if there are any Statutory or non-Statutory designated sites that would need to be considered in the Site assessment.
- 1.1.4. The survey found that the dominant habitat on Site was hardstanding/bare ground. A large area of semi-improved grassland was also present on Site along with a line of six trees along the southern boundary and a thin line of scattered scrub along the northern boundary.
- 1.1.5. Five of the six trees on the Site were assessed as having low potential to support roosting bats; the sixth was assessed as having negligible potential. In addition, the Site sits within a wider landscape which has suitable habitat for foraging and commuting bats.
- 1.1.6. The trees and scrub were found to have potential to support common species of nesting bird, with a disused nest being observed in one of the trees.
- 1.1.7. No Statutory Designated Sites are present within 2km of the Site. The closest is over 10 km away. Eight Local Wildlife Sites are present within 2km of the Site. The closest is 300 m to the north-west of the Site. Given the intervening distance, the lack of connecting features and the nature of the proposed development no negative impacts are envisaged on any of these sites as a result of the Proposed Development.
- 1.1.8. Bats and bat roosts are fully protected under UK and European Law (detailed fully in Appendix A). Given five trees within the Site were assessed as having low potential to support roosting bats, it is recommended that necessary tree removal is subject to precautionary mitigation measures including a pre-works inspection. If the pre-works inspection confirms the presence of a bat roost, or re-categorises the risk of the tree supporting a bat roost, further survey and/or licensing would be required prior to the felling works proceeding.
- 1.1.9. Under the Wildlife and Countryside Act 1981 (as amended) the nests and eggs of all common species of wild birds are protected from damage and destruction whilst in use. Additional protection is extended to species listed under Schedule 1 of the Act, meaning it is also an offence to disturb these species at or near the nest, or whilst they have dependent young. Therefore, vegetation removal should be carried out outside of the nesting bird season (March – September inclusive). If this is not possible then a nesting bird check would need to be carried out no earlier than 24 hours prior to the commencement of works.

2 INTRODUCTION

2.1 BACKGROUND

PROJECT BACKGROUND

- 2.1.1. WSP was instructed by Reading Borough Council to carry out an ecological appraisal of land at North Street, Reading (central National Ordinance grid reference SU 70913 73664), hereafter referred to as the 'Site'. The Site is the being considered for affordable housing provision within the borough, hereafter referred to as the 'Proposed Development'.

ECOLOGICAL BACKGROUND

- 2.1.2. The Site covers approximately 0.2 ha and consists predominantly of hardstanding, semi-improved grassland and scrub, with a line of six trees. In the wider context, the Site sits within an urban residential area, and is bordered by residential housing, commercial buildings and scattered street trees.

2.2 SCOPE OF REPORT

Reading Borough Council commissioned WSP to complete a Preliminary Ecological Appraisal (PEA) of the Site. The brief was:

- to provide baseline ecological information about the Site and a surrounding study area with particular reference to whether legally protected and/or notable sites, species or habitats are present or likely to be present;
- to provide recommendations to enable compliance with relevant nature conservation legislation and planning policy; and
- if necessary, to identify the need for avoidance, mitigation, compensation or enhancement measures and/or further ecological surveys.

2.3 RELEVANT LEGISLATION AND POLICY

The appraisal has been compiled with reference to the following relevant nature conservation legislation, planning policy and the UK Biodiversity Framework from which the protection of sites, habitats and species is derived in England. The context and applicability of each item is explained as appropriate in the relevant sections of the report and additional details are presented in Appendix A.

- The Conservation of Habitats and Species Regulations 2017 ('Habitats Regulations');
- The Wildlife and Countryside Act 1981 (as amended) (WCA);
- Countryside Rights of Way Act 2000;
- The Natural Environment and Rural Communities (NERC) Act 2006;
- The Wild Mammals (Protection) Act 1996;
- The UK Post-2010 Biodiversity Framework (2011-2020) (JNCC and DEFRA, 2012);
- Biodiversity 2020: A strategy for England's wildlife and ecosystem services (DEFRA, 2011);

- UK Biodiversity Action Plan (UKBAP)¹;
- The National Planning Policy Framework (NPPF) 2012 (DCLG, 2012); and
- Reading Borough Local Development Framework, Core Strategy (Adopted January 2008, altered January 2015)

¹ The UK BAP has now been replaced by the UK Post-2010 Biodiversity Framework, however, it contains useful information on how to characterise important species assemblages and habitats which is still relevant.

3 METHODS

3.1 OVERVIEW

This appraisal has been prepared with reference to current good practice guidance published by the Chartered Institute for Ecology and Environmental Management (CIEEM, 2013 and 2015), and Joint Nature Conservation Committee (JNCC, 2010); and guidance contained in the British Standard - Code of Practice for Biodiversity and Development BS42020:2013 (British Standards Institute (2013).

This PEA is based on the following data sources:

- an ecological desk study;
- a habitat survey; and
- a protected/notable species assessment.

3.2 DESK STUDY

3.2.1. The desk study was undertaken on 29th June 2017 to review existing ecological baseline information available in the public domain and to obtain information held by relevant third parties. For the purpose of the desk study exercise, records were collated within various radii around the site. This approach is consistent with current good practice guidance published by the CIEEM (2013 and 2015). To provide the baseline data for the ecological desk study, the following information was requested from the Thames Valley Environmental Record Centre:

- Records of legally protected and notable species within 2 km of the Site;
- Bat records within a 5 km radius of the Site; and
- Records of non-statutory sites designated for nature conservation value within 2km of the Site.

3.2.2. Freely downloadable datasets (available from Natural England) were consulted for information regarding the presence of statutory designated habitats within 2 km of the site. This search was extended to 10 km for Natura 2000 sites (Special Areas of Conservation (SAC) and Special Protection Areas (SPA)) of European importance and internationally designated Ramsar sites.

3.2.3. Information regarding Habitats of Principal Importance (HPI) within 2 km of the site was provided by the Thames Valley Environmental Record Centre and woodland listed on the Ancient Woodland Inventory.

3.2.4. In addition, open source 1:25,000 Ordnance Survey mapping was used to identify any mapped water bodies and watercourses within 500m of the Site.

3.2.5. The ecological desk study was carried out by an assistant ecologist who has completed numerous ecological desk studies within the last year.

3.3 HABITAT SURVEY

3.3.1. A Phase 1 habitat survey of the Site was carried out on the 22nd August 2017 in warm, overcast conditions, with a brief period of drizzle. The survey covered the entire Site including boundary features. The Phase 1 habitat survey was carried out by an ecological consultant who is a member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and has over eleven years' experience in ecological consultancy, including extensive experience completing PEAs.

- 3.3.2. Habitats were described and mapped following the standard Phase 1 habitat survey methodology (JNCC, 2010). Phase 1 habitat survey is a standard technique for classifying and mapping British habitats. The dominant plant species are recorded and habitats are classified according to their vegetation types. Where appropriate consideration was given to whether habitats qualify, or could qualify, as a Habitat of Principal Importance following habitat descriptions published by the Joint Nature Conservation Committee (JNCC, 2008).
- 3.3.3. A list of plant species was compiled (Appendix C), with relative plant species abundance estimated using the DAFOR scale². The scientific names for plant species follow those in the New Flora of the British Isles (Stace, 2010) and are also listed in Appendix C.
- 3.3.4. Habitats were marked on a paper base map and were subsequently digitised using a Geographical Information System (GIS). The smallest area to be mapped was 0.01 ha, which was selected as a suitable scale to sample the range of different vegetation types present.
- 3.3.5. Target notes were made to provide information on specific features of ecological interest (e.g. a badger *Meles meles* sett) or habitat features too small to be mapped. These are included in Appendix D.
- 3.3.6. Any invasive plant species listed on Schedule 9 of the WCA 1981 (as amended) which were evident during the Phase 1 habitat survey were also target noted. Detailed mapping of such species; or a full survey of the Site for all invasive plant species is beyond the scope of this commission.
- 3.3.7. Data collected as part of this Phase 1 Habitat survey is suitable for use in retrospective biodiversity unit calculations, if required.

3.4 PROTECTED SPECIES ASSESSMENT

- 3.4.1. The potential for the Site to support legally protected and notable species was assessed using the desk study results and combined with field observations made during the habitat survey. The assessment of habitat suitability for protected and notable species was based on professional experience and judgement. This was supplemented by standard sources of guidance on habitat suitability assessment for key faunal groups including: birds (Gilbert et al, 1998 and Bibby et al, 2000), great crested newt *Triturus cristatus* (Gent and Gibson, 2003 and English Nature, 2001); reptiles (Froglife, 1999 and Gent and Gibson, 2003); bats (Collins, 2016 and Mitchell-Jones, 2004); badger (Harris et al, 1991 and Roper, 2010); and invertebrates (Drake et al, 2007 and Kirby, P, 2001).
- 3.4.2. Where trees or buildings on Site were considered to offer roosting bat potential, these were categorised and further surveys were recommended based on the bat potential rating of the feature as described within Table 1 below.

² The DAFOR scale has been used to estimate the frequency and cover of the different plant species as follows: Dominant (D) - >75% cover, Abundant (A) – 51-75% cover, Frequent (F) – 26-50% cover, Occasional (O) – 11-25% cover, Rare (R) – 1-10% cover., The term 'Locally' (L) is also used where the frequency and distribution of a species are patchy and 'Edge' (E) is also used where a species only occurs on the edge of a habitat type.

Table 1 - Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement (Based on Interpretation of Collins, 2016)

Suitability	Description	
	Roosting Habitats	Commuting and Foraging Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure or tree of sufficient size and age to contain potential roost sites but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potential for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous high quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

3.5 PRELIMINARY EVALUATION

- 3.5.1. A preliminary evaluation of all ecological features within the Site was undertaken with reference to guidance issued by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2016). In evaluating the relative importance of ecological features, the following factors were considered; nature conservation designations, species/habitat rarity, naturalness, fragility, connectivity to other habitats and relevant nature conservation aims and objectives for a given area as contained in national and local biodiversity action plans and planning policies.

3.6 NOTES AND LIMITATIONS

- 3.6.1. Every effort has been made to provide a comprehensive description of the Site; however, the following specific limitations apply to this assessment:
- Ecological survey data is typically valid for two years unless otherwise specified, for example if conditions are likely to change more quickly due to ecological processes or anticipated changes in management’.
 - Records held by local biological record centres and local recording groups are generally collected on a voluntary basis; therefore, the absence of records does not demonstrate the absence of species, it may simply indicate a gap in recording coverage.
 - Botanical surveys are seasonally limited, and throughout the spring and summer period certain species will be more or less evident at different times (i.e. depending on the flowering season). However, it is considered that sufficient information was gathered to enable an assessment of the habitat types present, in line with standard Phase 1 habitat categories and the potential for these to support protected or notable species.
 - The Phase 1 habitat survey was carried out over the period of a single day, as such only a selection of all species that occur within the Survey Area will have been recorded. However, through use of desk study information to supplement site survey data, it is considered that an accurate assessment of the potential for the Site to support protected species or those of conservation concern was possible.
 - The extended Phase 1 habitat map (Figure 7) has been reproduced from field notes and plans. Whilst this provides a sufficient level of detail to fulfil the requirements of a PEA, the maps are not intended to provide exact locations of key habitats.
 - A number of ornamental plant species were present within the Site. These have been identified to species level where possible; however, owing to the large number of horticultural varieties some plants could not be identified. Ornamental plants may be of value to wildlife; however, none are characterised as rare or notable from a native biodiversity conservation perspective. Thus this limitation does not affect the overall conclusions of this appraisal.

4 RESULTS

4.1 DESIGNATED SITES

STATUTORY SITES

- 4.1.1. The desk study identified no national statutory nature conservation sites within 2 km of the centre of the site (Figure 1 & 2). One European statutory nature conservation site, the Hartslock Wood Special Area of Conservation (SAC), was recorded within 10 km of the centre of the site. Descriptions of the all statutory designated sites are detailed in Appendix B.

NON-STATUTORY SITES

- 4.1.2. The desk study identified eight non-statutory nature conservation sites within 2 km of the centre of the Site (Figure 4). These include Cow Lane Depot Local Wildlife Site (LWS), the closest site located 0.3km away; Prospect Park LWS, Warren Woodlands complex LWS; River Kennet/Kennet and Avon Canal LWS; Fobney & Kennet Valley Meadows LWS; Holy Brook LWS; Old Cemetery LWS, Victoria Road LWS and The Coal, Kennetmouth and Kings Meadow East LWS. Descriptions of these sites are provided in Appendix B.

OTHER HABITATS OF CONSERVATION IMPORTANCE

- 4.1.3. There are three HPI habitats within 2 km of the Site including deciduous woodland, good quality semi-improved grassland, and traditional orchards (Figure 5).

WATERBODIES

- 4.1.4. No ponds were identified within 250m of Site (Figure 6). Two drainage ditches are present 300m north of the Proposed Development associated with the railway. These drainage ditches will not be impacted due to proximity and lack of connecting features. It is therefore considered unlikely that great crested newts will be impacted by the Proposed Development.

PROTECTED AND NOTABLE SPECIES RECORDS

- 4.1.5. A list of protected and noteworthy species records within 2 km of the Site, extended to 5 km in the case of bat species, and details on their legal/conservation status can be found in Appendix B.

4.2 HABITATS

OVERVIEW

- 4.2.1. The Site is relatively small and is situated towards the centre of Reading. It is bordered by residential housing to the west and south, and by business premises to the north and east. A line of scattered trees is located on Weldale Street, just outside the southern boundary. The Site, which is bounded by a perimeter fence, predominantly consists of hardstanding/bare ground, with patches of scattered scrub along the northern boundary and an area of semi-improved grassland along the southern boundary. Set in the grassland is a line of six deciduous trees. Although aerial photography indicated the presence of a building within the Site, this was found to be absent at the time of survey. It is understood that the building was a school, comprising a complex of portacabin-type components, and that this had been removed in spring of 2017 (Giles Allchurch, Youth Offending Team Officer for North Street, pers. comm.).

- 4.2.2. The following account summarises the findings of the Phase 1 habitat survey. Six Phase 1 habitat types were identified in the Site. They are mapped on Figure 7 and are listed in Table 2 along with areas in hectares (or length for linear features). A description of the dominant and notable species, the composition and management of each habitat is provided below and an indicative species list is provided in Appendix C. Target notes are provided in Appendix D and photographs in Appendix E. Alpha-numeric codes used in this section cross-refer to the JNCC Phase 1 habitat survey classification (JNCC, 2010). The order of the habitat descriptions below reflects their ordering in the Phase 1 habitat survey manual and does not reflect habitat importance.

Table 2 - Phase 1 Habitat Areas

Phase 1 Habitat	Area (m2)	Length (m)
Scattered Scrub (A2)	90 m2	n/a
Scattered trees (A3)	n/a	n/a
Semi-improved grassland (B6)	679 m2	n/a
Fenceline (J2.4)	n/a	186 m
Bare ground (J4)	1180 m2	n/a
Hardstanding	103 m2	n/a
TOTAL	2053 m2	186 m

SCATTERED SCRUB – A2

- 4.2.3. A line of scattered scrub is present along the northern boundary of the Site (TN5). For most of its length this is relatively low, increasing in height towards the eastern extent. Species present include bramble *Rubus fruticosus* agg., cotoneaster *Cotoneaster* sp.; buddleia *Buddleja davidii*, and elder *Sambucus nigra*.

SCATTERED TREES – A3

- 4.2.4. A line of six deciduous trees is present along the southern and western boundaries of the Site (T1-T6). Species present are: sycamore (x3) *Acer pseudoplatanus*; weeping willow (x1) *Salix* sp.; semi-mature rowan (x1) *Sorbus aucuparia*; and a mature cherry (x1) *Prunus avium*. The sycamore on the western boundary and the cherry tree both had a moderate covering of ivy *Hedera helix*.

SEMI-IMPROVED GRASSLAND – B6

- 4.2.5. The southern area of the Site supported grassland that was semi-improved in character (TN1). It is understood that a wildflower meadow seed mixture had previously been planted here by the school (Giles Allchurch, Youth Offending Team Officer for North Street, pers. comm.). Dominant grass species include perennial rye-grass *Lolium perenne*, false oat grass *Arrhenatherum elatius* and Yorkshire fog *Holcus lanatus*, with a range of forbs including red campion *Silene dioica*, cleavers *Galium aparine*, and red clover *Trifolium pratense*.

FENCELINE – J2.4

- 4.2.6. The Site is bounded by a perimeter fence comprising chain-link (northern and eastern boundaries) and wooden panel (southern and western boundaries). Associated with the western boundary fence are climbing plant species, including ivy and hedge bindweed *Calystegia sepium*.

BARE GROUND – J4

- 4.2.7. A small area of bare ground comprising a gravel substrate is present in the west of the Site (TN2). Small numbers of ruderal and ephemeral/perennial plant species are beginning to colonise, including broad-leaved dock *Rumex obtusifolius*, dandelion *Taraxacum officinale* agg, and common bistort *Persicaria bistorta*.

HARDSTANDING

- 4.2.8. Most of the Site area is covered by various types of hardstanding. The western extent of the Site is formed from older, deteriorating tarmac (TN3). The central part of the Site is formed from the concrete foundations of the former building (TN4). To the east is a car parking area formed from relatively newly laid tarmac (TN6). Owing to the presence of cracks in the concrete foundations, as well as in the older tarmac in the west of the Site, small patches of ruderal and ephemeral/perennial plant species are beginning to establish. Species present include seedlings of buddleia and sycamore, as well as herb-robert *Geranium robertianum*. The eastern area of fresh/intact tarmac is not yet subject to such recolonization.

4.3 PROTECTED AND NOTABLE SPECIES ASSESSMENT

- 4.3.1. The potential for the Site to support legally protected species and notable species has been assessed using the results of the desk study and observations made during the site survey of habitats within and immediately surrounding the Site. A summary of desk study information is included within Appendix B. Desk study records have only been considered below if they are recent (from the last 10 years) and/or if they relate to species that may be supported by habitats at the Site. Habitats present within the Site are suitable for the following species; further consideration is given below to the likelihood for these species to be present within the Site:

- Bats
- Birds

- 4.3.2. The Site does not provide suitable habitat for other protected or notable species and other species, beyond those listed above, will not be considered further in this PEA.

BATS

- 4.3.3. A total of 356 records of bats within 2km of the Site were returned in the data search, including 15 confirmed roosts (three soprano pipistrelle *Pipistrellus pygmaeus*; six common pipistrelle *Pipistrellus pipistrellus*; two brown long-eared bat *Plecotus auritus*; three unidentified pipistrelle; and one unidentified bat roost).
- 4.3.4. The mix of scrub, tree lines and grassland, as well as bare ground, both on Site and in the wider landscape, is likely to support flying insects and provide foraging and commuting opportunities for some species of bat.
- 4.3.5. A preliminary ground-based assessment was undertaken of the six trees on Site. At least one minor potential roosting feature was identified on five of the trees, which could provide shelter and roosting

opportunities for bats. No features were identified on the semi-mature rowan (T3). The bat roost potential of the five trees (T1, T2 and T4-T6) was preliminarily categorised as low (see Table 3 below for a summary of the assessment).

Table 3 – Preliminary Ground-based Assessment of Trees for Bat Roosting Potential

Tree Reference (Species)	Potential Roosting Features	Preliminary Categorisation
T1 (Sycamore)	Minor callus roll on southern elevation at ca. 2m	Low
T2 (Weeping Willow)	Minor callus roll and cracked bark/deadwood at on southern and eastern elevations at ca. 3-5m. Potential for at-height roosting features to be obscured by canopy.	Low
T3 (Rowan)	No obvious potential roosting features	Negligible
T4 (Cherry)	Moderate ivy-cladding on northern, eastern and southern elevations from ca. 0-4m; and Minor cracked deadwood and rot-hole on western elevation at ca. 2m	Low
T5 (Sycamore)	Minor callus roll on north-western elevation at ca. 3m	Low
T6 (Sycamore)	Light ivy-cladding and deadwood apparent on lower limbs. Potential for at-height roosting features to be obscured by canopy.	Low

BIRDS

- 4.3.6. A total of 242 records of birds within 2 km of the Site were returned in the data search.
- 4.3.7. The scattered trees and scrub within the Site offers suitable habitat for nesting birds. A disused nest was recorded in the canopy of the rowan tree (T3) and the remains of an egg-shell was found on the ground nearby.

NON-NATIVE INVASIVE PLANT SPECIES

- 4.3.8. Six records of Japanese Knotweed *Fallopia japonica* and 17 records of Indian Balsam *Impatiens glandulifera* were recorded within approximately 2 km of the Site, but no stands of these species were recorded within the Site at the time of the survey. Occasional *Cotoneaster* sp. were located along the northern boundary of the Site (likely a relic of previous ornamental planting). Certain species of cotoneaster are listed on Schedule 9 of the Wildlife and Countryside Act 1981 and it is therefore an offence to allow these species to spread in the wild.

5 DISCUSSION AND RECOMMENDATIONS

This section considers the potential for effects on designated sites, legally protected species, notable species and notable habitats as a consequence of the Proposed Development. Where further surveys or detailed assessment of potential effects are required in order to design suitable mitigation this is identified.

5.1 DESIGNATED SITES

STATUTORY DESIGNATED SITES

- 5.1.1. There are no national statutory designated sites with 2km of the Site. One European statutory designated site (Hartslock Wood SAC) was located on the boundary of the 10km search radius of the Site, with most of the SAC area located beyond 10km. Given the distance of the SAC from the Site; the scale of the Proposed Development; and the expanse of built-up landscape between the two, it is considered that the potential for negative effects is negligible.

NON-STATUTORY DESIGNATED SITES

- 5.1.2. Eight non-statutory designated sites were identified within 2 km of the development site: all Local Wildlife Sites (LWS). Most of these sites are over 1 km from the development site and it is not envisaged that these will be affected by the Proposed Development. LWS are designated by local authorities as being of local conservation interest. These sites are defined in local plans and are a material consideration when planning applications are being considered.
- 5.1.3. No negative effects are envisaged on any other designated sites identified in section 4.1 of this PEA owing to their distance from the Proposed Development site and lack of ecological connectivity between these areas and the Proposed Development Site.

5.2 HABITATS

- 5.2.1. The habitats identified within the Phase 1 habitat survey are considered to be of negligible ecological value, other than at the level of the Site. It is understood that the development proposals will likely result in the loss of most/all of the habitats on Site. However, no significant negative effects are envisaged on all Phase 1 habitat types identified in Section 4.2 of this PEA as these habitats are all of low nature conservation interest.
- 5.2.2. No mitigation or further survey is required of the Phase 1 habitat types identified in section 4.2 of this PEA (other than in respect of potential protected species as set out in Section 5.5 below).

5.3 PROTECTED AND NOTABLE SPECIES

- 5.3.1. The results of the desk study, Phase 1 habitat Survey and protected species assessment highlighted the potential presence of several protected species or species of conservation concern within the Site, or within the immediate surroundings of the Site. These include bats and birds. The legal protection afforded to these species is outlined below and, where appropriate, the requirement for further survey and/or mitigation measures is identified.

BATS

- 5.3.2. All species of bats recorded within the UK are protected from killing, injury and disturbance³ and their roosts protected from damage or destruction under the Habitats Regulations. Protection is also afforded under the Wildlife and Countryside Act 1981 (as amended) with respect to disturbance of individuals occupying places of rest or shelter and obstruction of access to these. Activities that would otherwise constitute an offence under this legislation may be licensed by Natural England for certain purposes.
- 5.3.3. Certain species of bats, including the Bechstein's bat *Myotis bechsteinii*, greater horseshoe *Rhinolophus ferrumequinum* and lesser horseshoe bats *Rhinolophus hipposideros*, noctule bat *Nyctalus noctula*, brown long eared bat and soprano pipistrelle bat are also listed as Species of Principal Importance (SPI) for the conservation of biodiversity in England in accordance with Section 41 of the NERC 2006. Section 40 obliges public bodies (including local planning authorities) to have regard for the conservation of biodiversity (including SPI) when discharging their duties (including determining planning applications).
- 5.3.4. The overall potential suitability of the trees on Site to support bats has been assessed as low (T1, T2 and T4-T6) or negligible (T3). It is recommended that this risk is managed by using precautionary felling techniques on these trees, with no immediate requirement for further survey. It is recommended that contractors with basic bat awareness are employed and guidance within British Standard BS8596:2015 Surveying For Bats in Trees and Woodland is adhered to. This includes undertaking a secondary at height inspection of PRF's to confirm the assessment that they are of low or negligible suitability for supporting roosting bats. In the unlikely instance that evidence of bats or PRF's of moderate/ high suitability for supporting roosting bats are identified at this stage, further professional ecological advice should be sought. Where it is not possible to thoroughly assess PRFs, sectional soft felling methods should be used to remove those features.
- 5.3.5. The Site offers potential to support foraging and commuting bats. Loss of the scrub, trees and grassland habitats could have an impact on bats; however, this can be compensated for by use of insect-attracting native plant species within the soft landscaping scheme and design of a sympathetic lighting scheme to limit light levels within the Site and light spill into surrounding areas during the construction and operation phase. Works associated with the construction phase should only be carried out during daylight hours and all lighting should be directed to where it is needed and spillage avoided via the use of accessories such as baffles, hoods or louvres.
- 5.3.6. Reducing the height of lighting columns as far as possible (unless a taller column will allow light to be directed downwards at a more acute angle) will also help minimise the impact of light disturbance. Light levels should be as low as guidelines allow, with lighting used only where and when necessary, allowing some dark periods (Bat Conservation Trust, 2009; ILE, 2011). Narrow spectrum light sources that emit minimal ultra-violet light and that peak higher than 550 nm are recommended, whilst white and blue wavelengths of the light spectrum should be avoided to reduce

³ Disturbance is defined within the Habitats Regulations as that which is likely to impair a species ability to survive, breed or reproduce, hibernate or migrate or to significantly affect the local distribution or abundance of the species.

insect attraction. Where white light sources are required in order to manage the blue short wavelength content, they should be of a warm/neutral colour temperature <4,200 kelvin (Bat Conservation Trust, 2014).

BIRDS

- 5.3.7. Under the amendments to the Habitat Regulations (16th August 2012) Reg. 9A (2) & (3) state that local authorities '*must take such steps in the exercise of their functions as they consider appropriate to contribute to...the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the UK including by means of the upkeep, management and creation of such habitat...*'. The legislation continues to state that economic and recreation requirements must be taken into consideration in considering which measures are appropriate.
- 5.3.8. Under the Wildlife and Countryside Act 1981 (as amended) all wild birds are protected from killing and injury, and their nests and eggs protected from taking, damage and destruction whilst in use. Additional protection is extended to species listed under Schedule 1 of the Act, meaning it is also an offence to disturb these species at or near the nest, or whilst they have dependent young.
- 5.3.9. Should any vegetation removal be carried out during the nesting bird season (March – September inclusive) then a nesting bird check would need to be carried out no earlier than 24 hours prior to the commencement of works. If this is not possible then an ecologist should check vegetation for nesting birds prior to removal, if active nests are present, a suitable buffer zone will need to remain in place until all chicks have fledged.

PLANTS

Further spread of non-native invasive species (with precautionary inclusion of Cotoneaster) during site-clearance, construction and post-construction should be avoided. The Cotoneaster species recorded should be treated as controlled waste as it is not known if it is one of the Cotoneaster species listed on Schedule 9 of the Wildlife and Countryside Act 1981. All cuttings / wood debris / berries should either be retained on Site or disposed of at an appropriately licenced landfill facility. Non-native invasive species should be excluded from any soft-landscaping proposals and longer term eradication of Cotoneaster species should be sought in future management.

5.4 FURTHER SURVEY REQUIREMENTS

Potential ecological constraints for which further surveys are required to ensure legal and planning policy compliance are listed in Table 4.

Table 4 - Key Ecological Constraints and Further Survey Requirements

Ecological Receptor	Potential Constraints	Further Survey Requirements	Seasonal Constraints
Bats	Felling of trees may result in the destruction of a bat roost	Precautionary felling techniques	N/A
Bats	Lighting could disturb bats	N/A	N/A

Birds	Clearance of Site vegetation may result in destruction of a bird's nest.	Possible pre-works check	Vegetation removal should be carried out outside the nesting bird season (March – September inclusive). If this proves infeasible, then a nesting bird check should be carried out no earlier than 24 hours prior to the commencement of works. If this is not possible then an ecologist should check vegetation for nesting birds prior to removal, if active nests are present, a suitable buffer zone will need to remain in place until all chicks have fledged.
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5.5 PRELIMINARY AVOIDANCE, MITIGATION AND COMPENSATION MEASURES

- 5.5.1. No further avoidance, mitigation and compensation measures (other than those described in Section 5.5 above in respect of bats and birds) are required.

ENVIRONMENTAL BEST PRACTICE

- 5.5.2. In addition, general environmental protection measures must be implemented during the construction phase of the proposed scheme. Such measures include best environmental practice guidance outlined in the Environment Agency's Pollution Prevention Advice and Guidance (Environment Agency, 20074) and those outlined by the Construction Industry Research and Information Association guidance (CIRIA, 2015). The following minimum standards must be adhered to prevent ecological impacts beyond the Site boundary:

- Measures must be taken to prevent dust and other emissions from construction affecting land beyond the Site.
- Chemicals and fuels must be stored in secure containers located away from watercourses or water bodies. Spill kits must be available.
- Excavations must be covered or securely fenced (with no potential access points beneath fencing) when the Site is closed (e.g. overnight) to prevent entrapment of animals.
- Retained trees must be protected in accordance with BS5837;
- Noise and vibration must be controlled and kept to the minimum necessary.
- Lighting used for construction must be switched-off when not in use and positioned so as not to spill on to adjacent land or retained vegetation within the Site.

- 5.5.3. Ecological Enhancement Opportunities

⁴ This document was withdrawn in 2015 but remains a guide for good practice in the industry

- 5.5.4. The National Planning Policy Framework (NPPF) (2012) states that at an overview level the 'planning system should contribute to and enhance the national and local environment by... minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures'.
- 5.5.5. At a local level, the Local Plan states that the aim '*is to maintain and enhance the quality of the Borough's landscapes and biodiversity features*' and to '*have minimal impacts on biodiversity*'.
- 5.5.6. Policy EN12: BIODIVERSITY AND THE GREEN NETWORK of the Draft Reading Local Plan States "*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 where possible enhance features of biodiversity interest on and adjacent to the application site, incorporating and integrating them into development proposals where practicable; and*
 - *Provide new tree planting, wildlife friendly landscaping and ecological enhancements (such as wildlife ponds, bird and bat boxes) where practicable.*
- 5.5.7. Mitigation, compensation and enhancement measures are recommended in Section 4.5 to enable the Proposed Development to be compliant with the above legislation and planning policy.
- 5.5.8. Ecological enhancements will also deliver other green infrastructure benefits such as storm water attenuation and reducing the urban heat island effect.
- 5.5.9. To encourage compliance with planning policy the following measures are recommended for inclusion within the Proposed Development; where possible:
- Installation of two Schwegler 1FF or equivalent bat boxes and bird boxes on new buildings;
 - Sensitive/low UV lighting;
 - Naturalistic/wildlife planting using insect-attracting native species;
 - Seeding of new grassland areas with a native meadow mixture which is suited to the soil conditions such as Emorsgate EM10 Tussock Mixture, EM4 Meadow Mixture for Clay Soils or EM32 Royal Meadows Mixture.
 - Good horticultural practice (e.g. should be utilised, including the use of peat-free composts, mulches and soil conditioners, native plants with local provenance and avoidance of the use of invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

6 CONCLUSIONS

- 6.1.1. No negative effects on designated sites from proposals of this scale are anticipated on account of their separation from the Site by areas of built-up landscape.
- 6.1.2. The areas of scrub and scattered trees within the Site offer suitable habitat for nesting birds, therefore a pre-commencement nesting bird check will be required if vegetation clearance works occur during the bird breeding season (May to September inclusive).
- 6.1.3. Five of the six trees on Site were assessed as having low roosting potential for bats. Precautionary methods of felling are recommended for these trees, including a pre-felling climbed check by a contractor with basic bat awareness.
- 6.1.4. The scrub, scattered trees and grassland offer suitable foraging and commuting habitat for bats. Use of insect-attracting native plant species within soft landscaping and design of a sympathetic lighting scheme is recommended.
- 6.1.5. Other than their potential to support birds and bats, the habitats identified within the Phase 1 habitat survey are considered to be of low nature conservation interest.
- 6.1.6. Enhancements for the site are recommended in line with planning policy including installation of bat and bird boxes, native landscape and grassland planting and good horticultural practice.

7 REFERENCES

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- JNCC and DEFRA (2012) UK Post 2010 Biodiversity Framework. Available online: <http://jncc.defra.gov.uk/page-6189>. [Accessed July 2014].
- Office of the Deputy Prime Minister (ODPM) (2005). Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impacts within the Planning System.

FIGURES

FIGURE 1 - SITE LOCATION PLAN

FIGURE 2 - EUROPEAN DESIGNATED SITES WITHIN 10KM

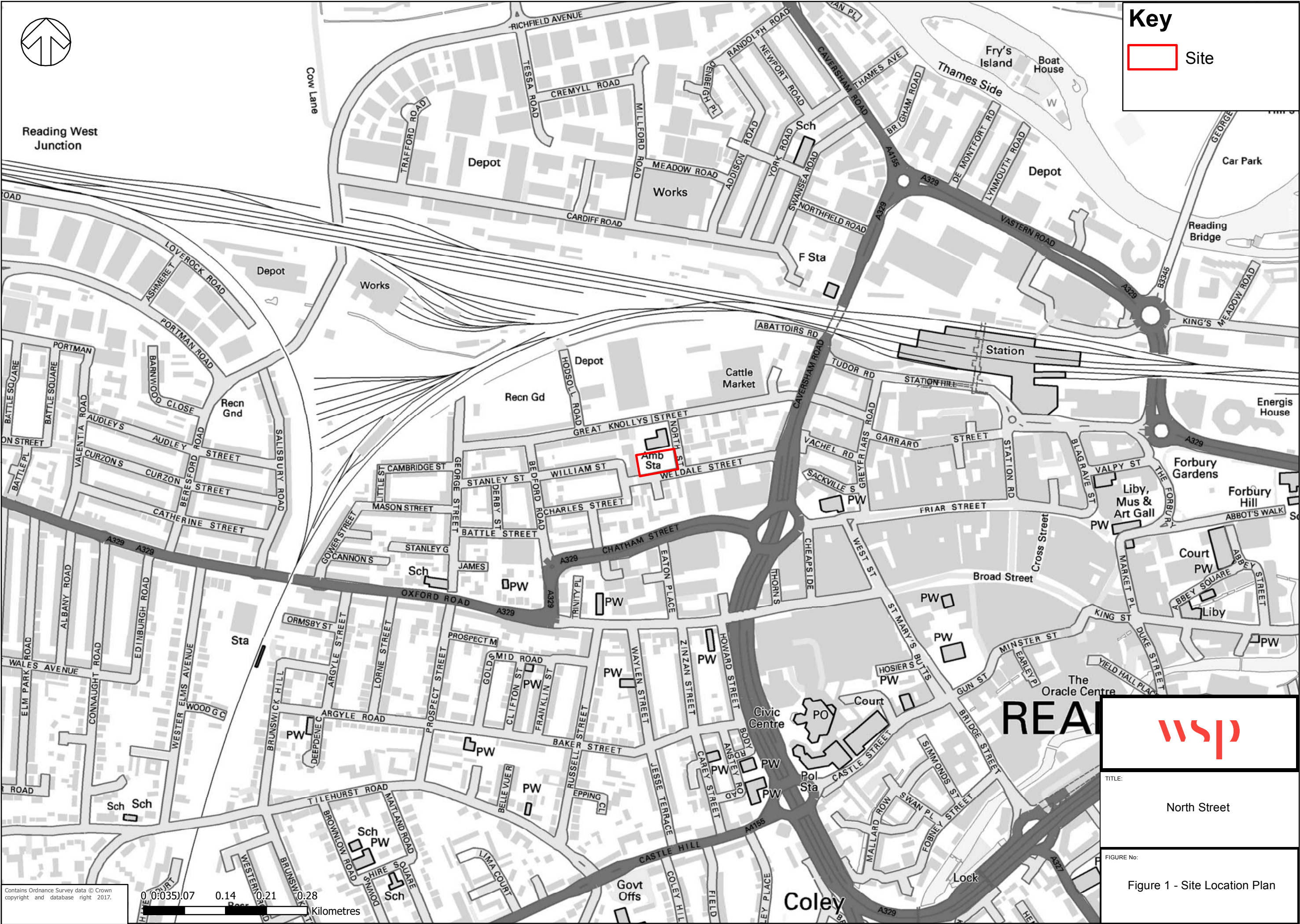
FIGURE 3 - UK STATUTORY SITES WITHIN 2KM

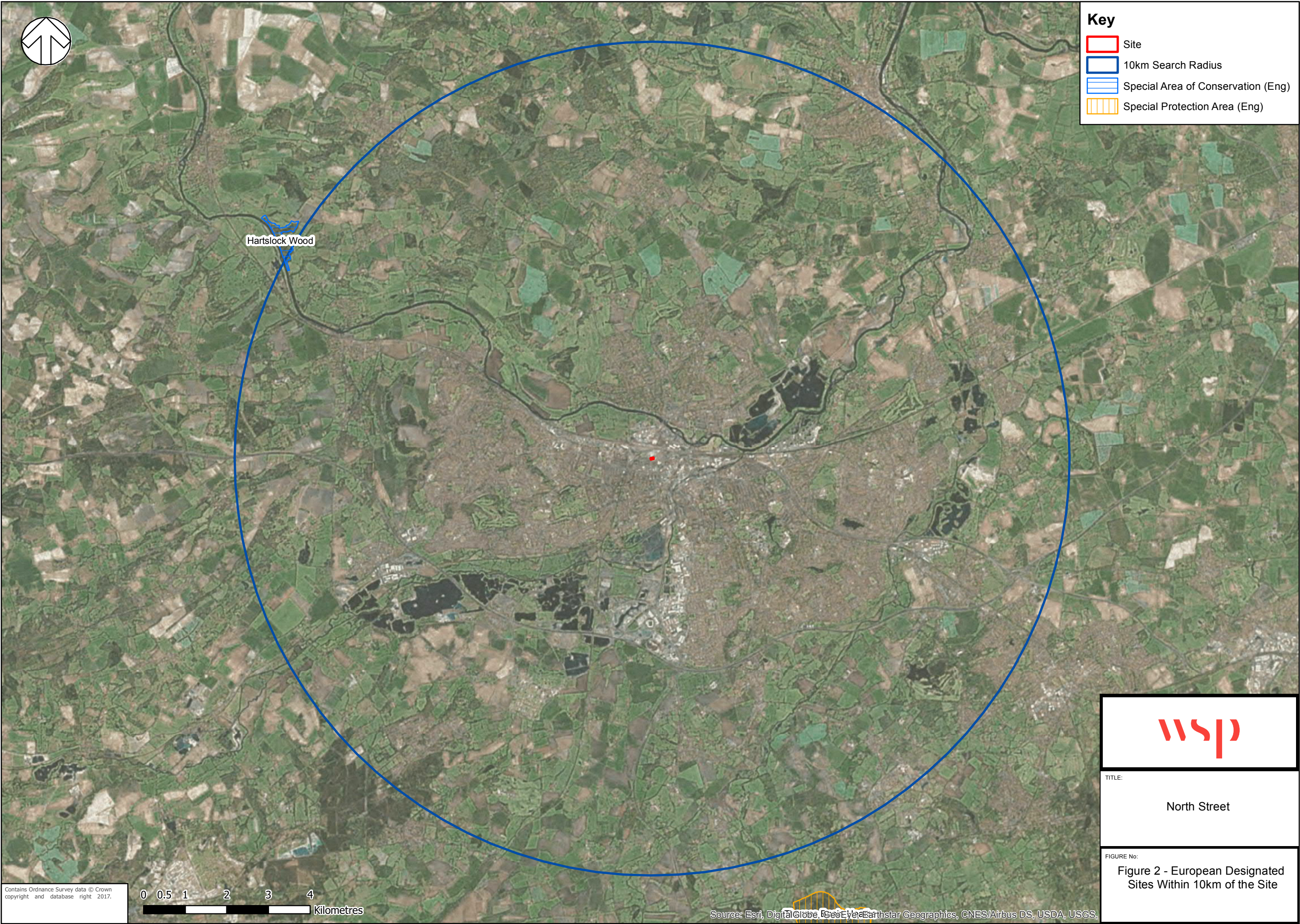
FIGURE 4 – UK NON-STATUTORY SITES WITHIN 2KM

FIGURE 5 – ANCIENT WOODLAND AND HABITATS OF PRINCIPAL IMPORTANCE WITHIN 2KM

FIGURE 6 – WATERBODIES WITHIN 500M

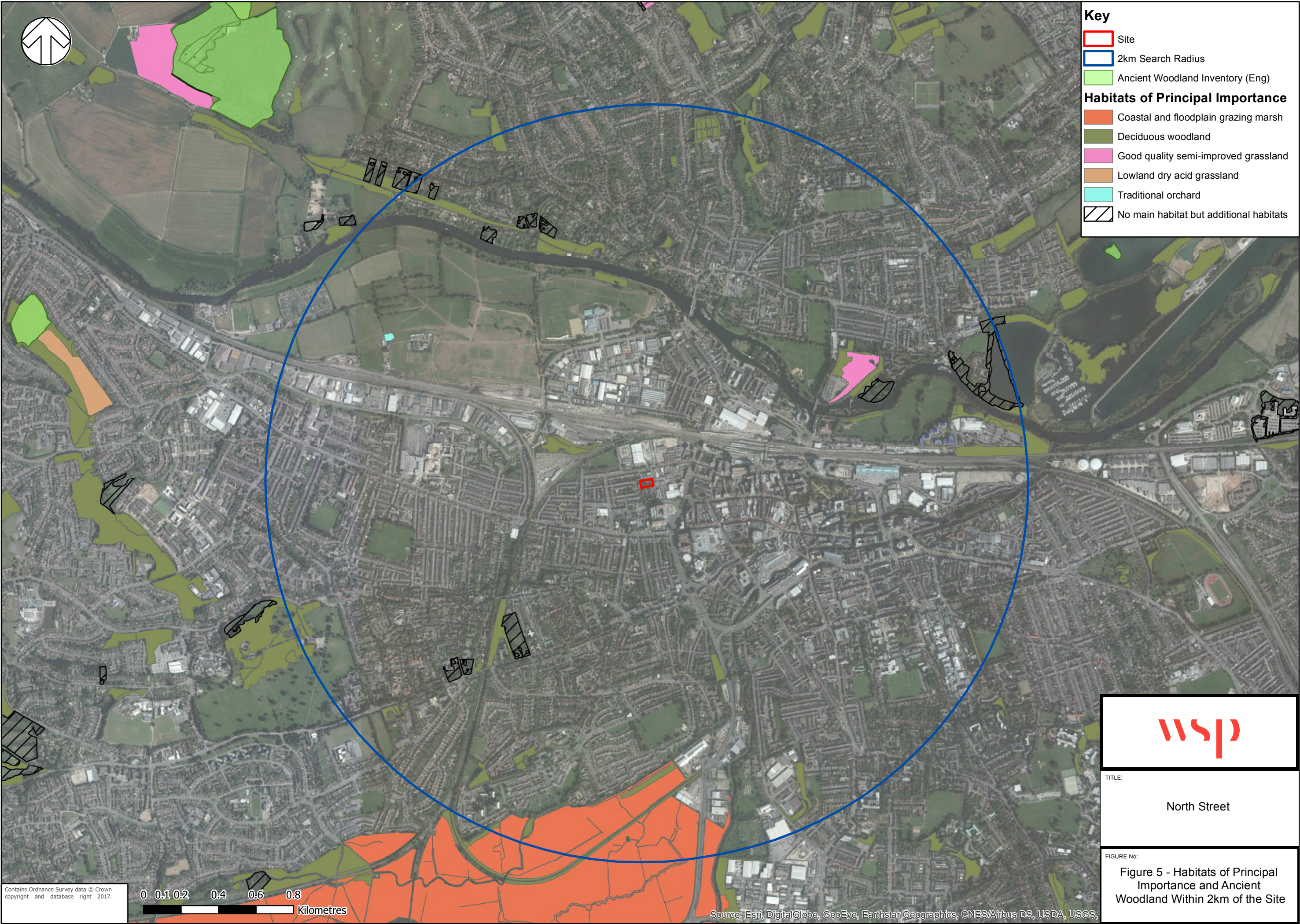
FIGURE 7 – PHASE 1 HABITAT SURVEY















Key

Site

ScatteredTree

TN

Bare Ground

Hardstanding

Poor Semi-Improved Grassland

Scattered Scrub

Fenceline

TITLE:

North Street

FIGURE No:

Figure 7 - Phase 1 Habitat Survey

Appendix A

LEGISLATION AND PLANNING POLICY



ENGLAND & WALES LEGISLATION AND POLICY CONTEXT

This report has been compiled with reference to relevant wildlife legislation, planning policy and the UK Biodiversity Framework. An overview and context of relevant legislation is provided, with the relevant protection each species groups or species receives summarised in Table 1.

Planning policy context

At the national level the National Planning Policy Framework (2012) forms the basis for planning system decisions with respect to conserving and enhancing the natural environment, including reptiles; the ODPM circular 06/2005 also provides supplementary guidance, including confirmation that *'the presence of a protected species is a material consideration when a planning authority is considering a development proposal'*.

The NPPF sets out, amongst other points, how at an overview level the 'planning system should contribute to and enhance the national and local environment by:

- ...recognising the wider benefits of ecosystem services; and
- minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures...

A list of principles which local planning authorities should follow when determining planning applications is included in the NPPF, and includes the following:

- *'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;*
- *...opportunities to incorporate biodiversity in and around developments should be encouraged;*
- *- planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland...unless the need for, and benefits of, the development in that location clearly outweigh the loss...'*

The Wildlife and Countryside Act 1981, (as amended) (WCA)

Protected birds, animals and plants are listed under Schedules 1, 5, 8 and 9 respectively of the WCA, a description of these Schedules and their meaning is provided below.

Under the WCA (England and Wales) all birds, their nests and eggs (with exception of species listed under Schedule 2) are protected by the WCA. It is an offence to:



Intentionally kill, injure, or take any wild bird,
take or destroy an egg of any wild bird.

damage or destroy the nest of any wild bird (whilst being built, or in use). Under the WCA the clearance of vegetation within the survey area boundary, or immediately adjacent to the survey area during the bird nesting season could result in an offence occurring by the disruption or destruction of nest sites. The bird breeding season can be taken to occur between March - August inclusive, although is subject to variations based on species, geographical and seasonal factors.

Schedule 1

Birds listed under Schedule 1 of the WCA⁵ are afforded additional protection with regard to intentional or reckless disturbance whilst nest-building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Schedule 5

Species listed in Schedule 5 can either be fully protected or be partially protected under Section 9, which makes it unlawful to intentionally:

Part 1: kill, injure or take;

Part 2: possess or control (live or dead animal, part or derivative);

Part 4 (a): damage or destruct any structure used for shelter or protection;

Part 4 (b): disturb them in a place of shelter or protection;

Part 4 (c): obstruct access to place of shelter or protection;

Part 5 (a): sell, offer for sale, possess or transport for the purpose of sale (live or dead animal, part or derivative);

⁵ To view the current list of Schedule 1 listed birds visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/1> [Accessed 06.02.18].

Part 5 (b): advertise for buying or selling.

Schedule 8

The Act makes it an offence (subject to exceptions) to pick, uproot, trade in, or possess (for the purposes of trade) any wild plant listed in Schedule 8, and prohibits the unauthorised intentional uprooting of such plants.

Schedule 9

Invasive species listed under Schedule 9 are prohibited from release into the wild and the Act prohibits planting or “causing to grow” in the wild of any plant species listed in Schedule 9. It should be noted that certain bird species listed on Schedule 1 of the WCA are also listed on Schedule 9 to prevent release of non-native and captive individuals, this includes barn owl, red kite, goshawk and corncrake.

Countryside Rights of Way Act 2000 (CRoW Act)

The CRoW Act has amended the WCA in England and Wales strengthening the protection afforded to Sites of Special Scientific Interest (SSSI) and the legal protection for threatened species. It adds the word ‘reckless’ to the wording of the offences listed under Section 9(4) of the WCA. This alteration makes it an offence to recklessly commit an offence, where previously an offence had to be intentional to result in a breach of legislation.

Natural Environment and Rural Communities (NERC) Act 2006

Species and Habitats of Principal Importance in England and Wales are listed under Section 41 and Section 42 respectively of the NERC Act. The Section 41 and 42 lists detail species that are of principal importance for the conservation of biodiversity in England and Wales, and should be used to guide decision-makers such as local and regional authorities when implementing their duty to have regard for the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006.

The Protection of Badgers Act (1992)

It is an offence to wilfully take, kill, injure, possess or ill-treat a badger. Under the Act their setts are protected against intentional or reckless interference. Sett interference includes damaging or destroying a sett, obstructing access to any part of the sett, or disturbance of a badger whilst it is occupying a sett. The Act defines a badger sett as ‘any structure or place, which displays signs indicating the



current use by a badger' and Natural England (NE) takes this definition to include seasonally used setts that are not occupied but that show sign of recent use by badgers (Natural England, 2009⁶).

If impacts to badgers or their setts are unavoidable then authorised sett disturbance requires a licence.

The UK Post-2010 Biodiversity Framework (2011-2020) (JNCC and DEFRA, 2012)

This Framework lists the UK's most threatened species and habitats and sets out targets and objectives for their management and recovery. The UK Biodiversity Action Plan (BAP) process is delivered nationally, regionally and locally and should be used as a guide for decision-makers to have regards for the targets set by the framework and the goals they aim to achieve. The UK BAP has now been replaced by the UK Post-2010 Biodiversity Framework, however, it contains useful information on how to characterise important species assemblages and habitats which is still relevant (UK Post-2010 Biodiversity Framework, 2012⁷).

The Conservation of Habitats and Species Regulations 2017

The EC Habitats Directive and EC Birds Directive is transposed into UK law via the Conservation of Habitats and Species Regulations 2017, referred to as the Habitats Regulations. All species listed under Annex IV of the Habitats Directive require strict protection and are known as European Protected Species (EPS).

Under Regulation 43 of the Habitats Regulations it is unlawful to:

Deliberately kill, capture or disturb;

Deliberately take or destroy the eggs of; and

Damage or destroy the breeding site/resting place of any species protected under this legislation.

⁶ Natural England, June 2009, Protection of Badgers Act 1992 (as amended), Guidance on 'Current Use' in the definition of a Badger Sett WMLG17, Natural England, Peterborough.

⁷ JNCC and Defra (on behalf of the Four Countries' Biodiversity Group), July 2012, UK Post-2010 Biodiversity Framework, Available from: http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf [Accessed 06.02.18].

If the Ecologist determines that impacts to an EPS are unavoidable then the works may need to be carried out under a site specific mitigation licence from Natural England (NE) or Natural Resources Wales (NRW). Low Impact Class licences are also available in both England and Wales for bats and great crested newts. This enables Registered Low Impact Consultants to undertake certain low impact activities reducing the EPS application paperwork and process length.

Certain EPS are also listed under Annex II of the Habitats Directive and are afforded protection by the establishment of core areas of habitat known as Special Areas of Conservation. This means these species are a relevant consideration in a Habitats Regulations Assessment (HRA).

The Birds Directive seeks to maintain populations of all wild bird species across their natural range (Article 2). All bird species listed under Annex I⁸ of the Birds Directive are rare or vulnerable and afforded protection by the classification of Special Protection Areas (SPAs), these are also designated under all regularly occurring migratory species, with regard to the protection of wetlands of international importance (Article 4). This means these bird species and communities are a relevant consideration in HRA.

⁸ To view birds listed under Annex I visit: http://ec.europa.eu/environment/nature/conservation/wildbirds/threatened/index_en.htm [accessed 06.02.18]

Table A:1: Key Species and National Wildlife Legislation, Policy and Biodiversity Framework Applicable in England & Wales

Species	Legislation, Planning Policy and UK Biodiversity Framework							
	Wildlife and Countryside Act 1981 (as amended), (WCA)				The Conservation of /Habitats and Species Regulations 2017 (Habitats Regulations) - Regulation 43	Natural Environment and Rural Communities (NERC) Act 2006 / The Environment(Wales) Act (2016)	The Protection of Badgers Act 1992	The UK Post-2010 Biodiversity Framework 2011-2020 (JNCC and DEFRA, 2012)
	Schedule1	Schedule 5	Schedule 8	Schedule 9	European Protected Species (Annex IV of the EC Habitats Directive),			
Badger							x	

Bats		x ⁹ (part)			x ¹⁰	x ¹¹		x ¹²
Hazel Dormouse		x 5(part)			x	x		x
Otter		x 5(part)			x	x		x
Water vole		x ¹³ (full)				x		x
Birds	x			x ¹⁴		x ¹⁵		x ¹⁶

⁹ These species are partially protected under section 9(4)(b), (4)(c) and (5).

¹⁰ Only Barbastelle (*Barbastella barbastellus*), Bechstein's bat (*Myotis bechsteinii*), greater horseshoe bat (*Rhinolophus ferrumequinum*) and lesser horseshoe bat (*Rhinolophus hipposideros*) are listed on Annex II of the Habitats Directive.

¹¹ Greater horseshoe bat, lesser horseshoe bat, Bechstein's bat, noctule (*Nyctalus noctula*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat (*Plecotus auritus*) and barbastelle are listed as Species of Principal Importance in England with the addition of common pipistrelle (*Pipistrellus pipistrellus*) in Wales listed under Section 7 of the Environment (Wales) Act (2016) <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

¹² Barbastelle bat, Bechstein's bat, noctule, soprano pipistrelle, brown long-eared bat, greater horseshoe bat, lesser horseshoe bat are listed as UK BAP species of bat.

¹³ Class Licences are available to Registered Consultants to intentionally disturb, damage or destroy water vole burrows or to displace water voles from their burrows in relation to a development proposal where the licensed action provides a conservation benefit for water voles. Certain displacement operations may be carried out under a Class licence by a registered person in England, however in Wales all displacement operations must be carried out under a site specific licence.

¹⁴ To view plants and animals listed on Schedule 9 Part 1 visit <http://www.legislation.gov.uk/ukpga/1981/69/schedule/9> [accessed 6 April 2017]

¹⁵ There are 49 species of birds listed as Species of Principal Importance in England in Section 41 of the NERC Act 2006 and 51 species in Wales under Section 7 of the Environment (Wales) Act (2016) <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

¹⁶ To view the current list of UK BAP priority birds visit: <http://jncc.defra.gov.uk/page-5163> [Accessed 06.02.18].

Reptiles		x ¹⁷ (part) □		x ⁹	x ¹⁸	x ¹⁹		x ²⁰
Amphibians		x ²¹ (part)		x ²²	x ^{23 24}	x ²⁵		

¹⁷ The four common reptile species, Adder (*Vipera berus*), Grass snake (*Natrix natrix*), Common lizard (*Zootoca vivipara*) and Slow worm (*Anguis fragilis*) are offered partial protection under section 9(5). The rarer UK reptile species (Smooth snake (*Coronella austriaca*) and Sand lizard (*Lacerta agilis*)) are partially protected under section 9(4)(b) and (c) and (5).

¹⁸ Smooth snake (*Coronella austriaca*) and Sand lizard (*Lacerta agilis*) are the only reptiles to be designated as European Protected Species.

¹⁹ All 6 reptile species are listed as Species of Principal Importance in England listed under Section 41 of the NERC Act 2006 and 5 species, excluding smooth snake, listed under Section 7 of the Environment (Wales) Act (2016) <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

²⁰ To view the current list of UK BAP priority herptile species visit: <http://jncc.defra.gov.uk/page-5166> [Accessed 06.02.18].

²¹ The four common reptile species, Adder (*Vipera berus*), Grass snake (*Natrix natrix*), Common lizard (*Zootoca vivipara*) and Slow worm (*Anguis fragilis*) are offered partial protection under section 9(5). The rarer UK reptile species (Smooth snake (*Coronella austriaca*) and Sand lizard (*Lacerta agilis*)) are partially protected under section 9(4)(b) and (c) and (5).

²² Common frog (*Rana temporaria*), Common toad (*Bufo bufo*), Smooth newt (*Lissotriton vulgaris*) and Palmate newt (*Lissotriton helveticus*) are offered partial protection under section 9(5). Great crested newt (*Triturus cristatus*) and Natterjack toad (*Epidalea calamita*) are offered partial protection under section 9(4)(b) and (c) and (5). Pool frog (*Pelophylax lessonae*) is offered partial protection under section 9(4)(b) and (c)(1) only and with respect to England only.

²³ Great crested newt, Natterjack toad and Pool frog are the only amphibians to be designated European Protected Species.

²⁴ Great crested newt is the only amphibian listed on Annex II of the Habitats Directive.

²⁵ Great crested newt, Natterjack toad and Common toad are listed as Species of Principal Importance in England in Section 41 of the NERC Act 2006 and under Section 7 of the Environment (Wales) Act (2016) <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

White-clawed Crayfish		x ²⁶ (partial)			x ²⁷	x		x
Invertebrates		x ²⁸ (full/part)		x	x ^{29 30}	x ³¹		x ³²

²⁶ Under the Wildlife and Countryside Act it is illegal to take or sell white clawed crayfish under the WCA. A licence is required to survey (hand net or trap) for the species. To undertake work within WCC inhabited rivers a Class Licence maybe issued by the relevant authority to move WCC away from harm prior to works. Although WCC are not protected from killing or injury Natural England state in their Class licence that due to declining numbers all efforts should be made to conserve the species.

27 White clawed crayfish are listed under Annex II and V of the Habitats Directive.

²⁸ To view the current list of invertebrates that are protected under this Act either in part or full visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/5> [Accessed 06.02.18].

²⁹ The Large blue butterfly (*Maculinea arion*), Fisher's estuarine moth (*Gortyna borellii lunata*) and Lesser whirlpool ram's-horn snail (*Anisus vorticulus*) are the only invertebrates to be designated European Protected Species.

³⁰ There are currently twelve invertebrates listed in Annex II of the Habitats Directive; White-clawed crayfish (*Austropotamobius pallipes*), Southern damselfly (**Coenagrion mercuriale**), Marsh fritillary butterfly (**Eurodryas aurinia**), Violet click beetle (**Limoniscus violaceus**), Stag beetle (**Lucanus cervus**), Freshwater pearl mussel (**Margaritifera margaritifera**), Narrow-mouthed whorl snail (**Vertigo angustior**), Round-mouthed whorl snail (**Vertigo genesii**), Geyer's whorl snail (**Vertigo geyeri**), Desmoulin's whorl snail (**Vertigo moulinsiana**), Lesser whirlpool ram's-horn snail (*Anisus vorticulus*) and Fisher's estuarine moth (*Gortyna borellii lunata*).

³¹ There are currently 379 invertebrate species (not including marine species) listed as Species of Principal Importance in England http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0ahUKEwivvu7J9trSAhXiCsAKHX4TBGcQFggvMAM&url=http%3A%2F%2Fpublications.naturalengland.org.uk%2Ffile%2F6518755878240256&usq=AFQjCNEpiUWYuQghVcfSDvi_3iK2TJytfQ and 188 species in Wales http://www.eryri-npa.gov.uk/data/assets/pdf_file/0003/486156/SpeciesList.pdf listed under Section 41 of the NERC Act 2006 and listed under Section 7 of the of the Environment (Wales) Act 2016. [Accessed 06.02.18]

³² To view the current list of UK BAP priority invertebrates visit: <http://jncc.defra.gov.uk/page-5169> [Accessed 06.02.18].

Fish		x ³³ (full/part)		x9	x 34 35 ,	x ³⁶		x ³⁷
Plants			x ³⁸	x9	x 39 40 ,	x 41		x 42

³³ To view the current list of fish either part or fully protected under the Act visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/5> [Accessed 06.02.18].

³⁴ Sturgeon (*Acipenser sturio*) is the only fish to be designated a European Protected Species.

³⁵ There are eight fish species listed on Annex II of the Habitats Directive. To view the current list visit: <http://jncc.defra.gov.uk/page-1523> [Accessed 06.02.18].

³⁶ There are 35 species of fish listed as Species of Principal Importance in England listed under Section 41 of the NERC Act 2006 and 10 species in Wales listed under Section 7 of the Environment (Wales) Act 2016.

³⁷ To view the current list of UK BAP priority fish visit: <http://jncc.defra.gov.uk/page-5164> [Accessed 06.02.18].

³⁸ To view the current list of Schedule 8 listed plants visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/8> [Accessed 06.02.18].

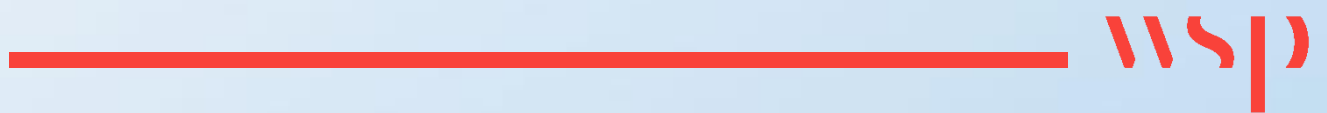
³⁹ There are nine plant species designated as European Protected Species. To view the current list visit: <http://www.legislation.gov.uk/ukxi/2010/490/schedule/5/made> [Accessed 06.02.18].

⁴⁰ To view the current list of plant species on Annex II of the Habitats Directive visit: <http://jncc.defra.gov.uk/page-1523> [Accessed 06.02.18].

⁴¹ There are currently 152 vascular plants listed as Species of Principal Importance in England listed under Section 41 of the NERC Act 2006 and 77 species in Wales listed under Section 7 of the Environment (Wales) Act 2016.³¹ To view the current list of UK BAP priority plants visit: <http://jncc.defra.gov.uk/page-5171> and <http://jncc.defra.gov.uk/page-5168> [Accessed 06.02.18].

⁴² To view the current list of UK BAP priority plants visit: <http://jncc.defra.gov.uk/page-5171> and <http://jncc.defra.gov.uk/page-5168> [Accessed 06.02.18].

Appendix B



SUMMARY OF ECOLOGICAL DESK STUDY DATA

Table 5 - European Statutory Designated Sites within 10 km of the Site

Site Name	Designation	Size (ha)	Distance and orientation from Site	Description
Hartslock Wood	SAC	34.16	9.8km NW	One of the best sites in the United Kingdom for semi-natural dry grasslands and scrubland facies; on calcareous substrates, and <i>Taxus baccata</i> woods.

Table 6 - Non-statutory designated sites within 2 km from the Site

Site Name	Designation	Size (ha)	Distance and orientation from Site	Description
Prospect Park	LWS	24.1	1.73km SE	The site consists of Prospect park and includes the Rookery, which prior to the notification of Prospect Park, was already a LWS. The park is an historic parkland site in the heart of Reading and the Rookery is a small area of woodland above the park.
The Warren Woodlands Complex	LWS	7.64	1.22km N	The Warren Woodland Complex consists of six sites, situated on the chalk scarp of the Warren in Caversham, Reading.
River Kennet/Kennet And Avon Canal	LWS		1.16km SE	A section of the River Kennet and the Kennet and Avon Canal from near Burghfield Bridge, south-east of Reading, to Waterloo Meadows adjacent to Edgar Road near the centre of Reading. The River Kennet is one of the best examples of a chalk river nationally, and is an UK BAP Priority Habitat. The Kennet & Avon Canal section is also fed by water from the River Kennet and is also calcareous in nature.
Fobney & Kennet Valley Meadows	LWS	140.4	1.48km S	A large area of permanent pasture with some wet grassland and patches of swamp vegetation. The site has a good series of ditches with tall wetland and aquatic species and a small area of woodland. Species found along the ditches include common reed, common marsh bedstraw, yellow flag iris, purple loosestrife, water mint, hemlock water-dropwort, fennel pondweed, marsh woundwort and lesser water parsnip. Dragonflies and damselflies seen here

				include the common darter, banded demoiselle and common hawker. The meadows flood regularly in winter providing an attractive area for overwintering wildfowl. There are also areas of unmanaged grassland with areas of swamp, scrub and tall herb vegetation, including the recently added areas along Rose Kiln Lane. There is a backwater of the River Kennet near Southcote Lock which has been recorded as being rich in aquatic species including the rare river water-dropwort, fennel pondweed, flowering rush, and spiked water milfoil.
Holy Brook	LWS		0.86km S	The Holy Brook is a stream that carries water from and emptying back into the River Kennet, a chalk river. Alder and willows line the banks and a variety of wetland species are found along the banks with stands of reed sweet-grass, hemlock water-dropwort and occasional water dock. Water-crowfoots (<i>Ranunculus aquatilis/fluitans</i>) were recorded in the Brook in 1987 and 1994. A number of notable invertebrates have been recorded in Holy Brook
Cow Lane Depot	LWS	1.544	0.3km NW	A small isolated, triangular site bounded by a railway track, situated towards the centre of Reading. The site forms a mosaic of habitats ranging from willow scrub with mature trees, to open standing water with swamp to ruderal and tall herb grassland. Cow Lane Depot provides a wildlife corridor in an urban landscape. Standing water has collected at the centre of the site where stands of greater pond sedge and common reedmace swamp (with affinities to an S6/12 NVC community) form a mosaic with open water and areas of encroaching willow scrub. Areas of willow scrub are dominated by crack willow with some mature trees and a shaded ground flora of predominantly nettle and areas of dense bramble.
Old Cemetery, Victoria Road	LWS	1.5	1.82km N	This small Victorian cemetery is laid out on a formal grid with tarmac paths surrounded by hedges. It is a sheltered man-made habitat in the midst of an urban environment in Caversham, Reading. Many large trees, generally not native and evergreens, form a backdrop to a carpet of native and garden bluebells, native primroses and celandine in a shaded moist environment.

The Coal, Kennetmouth And Kings Meadow East	LWS	3.62	1.60km E	The site comprises a central and riverside woodland area and an open wayleave at the foot of a steep railway embankment. The former is dominated by canopy trees including two large poplars and a small stand of semi-mature hornbeams. Large horse chestnuts also dominate in places. The understorey of elder, buddleia and hawthorn forms a dense thicket in places effectively shading out the ground flora throughout. Kennetmouth is a short length of towpath at the confluence of the River Kennet and the River Thames at Reading. It includes the western bank of the Kennet and the southern bank of the Thames. It has alder, willow and ash trees and patches with wetland species such as reed sweet-grass, lesser reedmace, yellow flag iris, hemlock water-dropwort, meadowsweet and water figwort. This site is important for the presence of the nationally scarce vascular plant, Loddon lily (<i>Leucojum aestivum</i>). Several slender groundhoppers (<i>Tetrix subulata</i>) were present, colonies of which are often isolated along the Thames Valley. Kings Meadow East is at the eastern end of a large Tesco supermarket development. The site is currently utilised as a recreational area and as a short cut through to the supermarket from the boating jetty on the Thames. Much of this site has been created through the landscaping works associated with the supermarket development, including reprofiling the topography and substantial amounts of tree and shrub planting (circa 10 – 15 years ago). This work has supplemented the natural development of habitats on the site. The result is a mosaic of habitats including mixed broadleaved woodland, scrub and tall herb and rough grassland. The elevated central grassland areas tend to be the most interesting, being moderately rich in plant species at some locations. The grassland generally has a good variety of structure also. The surrounding low lying land is occupied by the woodland and scrub elements and tends to be densely shaded and botanically impoverished. There are some large canopy trees, including small-leaved lime, poplar species, sycamore, oak and buckthorn, as well as a mature avenue of horse chestnuts along the river side.
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Table 7 - Protected and notable species (excluding birds and bats) for which records have been identified within 2km

Species common name	Species Latin name	No. of records	Legal / Conservation Status ⁴³
Smooth Newt	<i>Lissotriton vulgaris</i>	2	W&CA
Common Toad	<i>Bufo bufo</i>	1	W&CA NERC UKBAP
Common Frog	<i>Rana temporaria</i>	3	W&CA
Bluebell	<i>Hyacinthiodes nonscripta</i>	9	W&CA
Eurasian Badger	<i>Meles meles</i>	19	Badgers Act 1992
Slow-worm	<i>Anguis fragilis</i>	14	W&CA
Grass Snake	<i>Natrix helvetica helvetica</i>	4	W&CA
Common Lizard	<i>Zootoca vivipara</i>	1	W&CA
Water Vole	<i>Arvicola amphibius</i>	5	W&CA NERC
West European Hedgehog	<i>Erinaceus europaeus</i>	12	W&CA NERC
European Otter	<i>Lutra lutra</i>	4	W&CA HabReg NERC

Table 8 - Protected and notable birds for which records have been identified within 2km

⁴³ HabReg = Conservation of Habitats and Species Regulations (2010), W&CA = Wildlife and Countryside Act (1981), NERC = Schedule 41 Natural Environment and Rural Communities Act (2006), LBAP = Local Biodiversity Action Plan, RD1 (UK) = UK Red Data Book listing based on IUCN guidelines, RD2 (UK) = UK Red Data Book listing not based on IUCN guidelines (Nationally Rare and Scarce).

Species common name	Species Latin name	No. of records	Legal / Conservation Status ⁴⁴
Black Redstart	<i>Phoenicurus ochruros</i>	4	W&CA BoCC Amber
Kingfisher	<i>Alcedo atthis</i>	5	W&CA BoCC Amber
Peregrine	<i>Falco peregrinus</i>	3	W&CA BoCC Amber
Honey-buzzard	<i>Pernis apivorus</i>	1	W&CA BoCC Amber
Red Kite	<i>Milvus milvus</i>	1	W&CA BoCC Amber

Table 9 - Protected and notable invertebrates for which records have been identified within 2km

Species common name	Species Latin name	No. of records	Legal / Conservation Status ⁴⁵
Stag Beetle	<i>Lucanus cervus</i>	169	W&CA

Table 10 - Bat species for which records have been identified within 2km

Species common name	Species Latin name	No. of records	Legal / Conservation Status ⁴⁶
Unidentified Bat	<i>Chiroptera species</i>	1	W&CA; HabReg; NERC

⁴⁴ HabReg = Conservation of Habitats and Species Regulations (2010), W&CA = Wildlife and Countryside Act (1981), NERC = Schedule 41 Natural Environment and Rural Communities Act (2006), LBAP = Local Biodiversity Action Plan, BoCC Red = Birds of Conservation Concern Red List, BoCC Amber = Birds of Conservation Amber List.

⁴⁵ HabReg = Conservation of Habitats and Species Regulations (2010), W&CA = Wildlife and Countryside Act (1981), NERC = Schedule 41 Natural Environment and Rural Communities Act (2006), LBAP = Local Biodiversity Action Plan, RD1 (UK) = UK Red Data Book listing based on IUCN guidelines, RD2 (UK) = UK Red Data Book listing not based on IUCN guidelines (Nationally Rare and Scarce).

⁴⁶ HabReg = Conservation of Habitats and Species Regulations (2010), W&CA = Wildlife and Countryside Act (1981), NERC = Schedule 41 Natural Environment and Rural Communities Act (2006), LBAP = Local Biodiversity Action Plan, RD1 (UK) = UK Red Data Book listing based on IUCN guidelines, RD2 (UK) = UK Red Data Book listing not based on IUCN guidelines (Nationally Rare and Scarce).

			UKBAP; LBAP
Serotine	<i>Eptesicus serotinus</i>	2	W&CA; HabReg; NERC
Unidentified Myotis Bat	<i>Myotis species</i>	14	UKBAP; LBAP
Daubenton's Bat	<i>Myotis daubentonii</i>	22	W&CA; HabReg; NERC
Noctule	<i>Nyctalus noctula</i>	32	UKBAP; LBAP
Pipistrelle Bat	<i>Pipistrellus species</i>	31	W&CA; HabReg; NERC
Nathusius' Pipistrelle	<i>Pipistrellus nathusii</i>	3	UKBAP; LBAP
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	132	W&CA; HabReg; NERC
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	96	UKBAP; LBAP
Long-eared Bat	<i>Plecotus species</i>	1	W&CA; HabReg; NERC
Brown Long-eared Bat	<i>Plecotus auritus</i>	22	UKBAP; LBAP

Appendix C

SPECIES RECORDED **wsp**

Table 11 - Plant species recorded

Common name	Latin name	Frequency (DAFOR)
Scattered scrub		
Bramble	<i>Rubus fruticosus agg.</i>	F
Buddleia	<i>Buddleja davidii</i>	O
Elder	<i>Sambucus nigra</i>	O
Cotoneaster	<i>Cotoneaster sp.</i>	R
Tomato	<i>Solanum lycopersicum</i>	R
Green alkanet	<i>Pentaglottis sempervirens</i>	F
Cleavers	<i>Galium aparine</i>	O
Ragwort	<i>Senecio jacobaea</i>	O
Willowherb	<i>Epilobium sp.</i>	R
Hedge mustard	<i>Sisymbrium officinale</i>	F
Prickly lettuce	<i>Lactuca serriola</i>	O
Herb Robert	<i>Geranium robertianum</i>	F
Canadian fleabane	<i>Erigeron canadensis</i>	O
Scattered trees		
Sycamore	<i>Acer pseudoplatanus</i>	O
Rowan	<i>Sorbus aucuparia</i>	R
Cherry	<i>Prunus avium</i>	R
Ivy	<i>Hedera helix</i>	O
Semi-improved grassland		
Perennial rye-grass	<i>Lolium perenne</i>	F
False oat-grass	<i>Arrhenatherum elatius</i>	F
Yorkshire fog	<i>Holcus lanatus</i>	O
Red campion	<i>Silene dioica</i>	F
Ribwort plantain	<i>Plantago lanceolata</i>	F
Green alkanet	<i>Pentaglottis sempervirens</i>	F

Red clover	<i>Trifolium pratense</i>	F
Round-leaved cranesbill	<i>Geranium rotundifolium</i>	O
Ox-eye daisy	<i>Leucanthemum vulgare</i>	R
Cut-leaved cranesbill	<i>Geranium dissectum</i>	O
White clover	<i>Trifolium repens</i>	F
Forget-me-not	<i>Myosotis sp.</i>	O
Meadow buttercup	<i>Ranunculus acris</i>	F
Cleavers	<i>Galium aparine</i>	O
Ragwort	<i>Senecio jacobaea</i>	O
Scentless mayweed	<i>Tripleurospermum inodorum</i>	R
Wood avens	<i>Geum urbanum</i>	R
Greater plantain	<i>Plantago major</i>	O
Dandelion	<i>Taraxacum officinale agg.</i>	O
Nettle	<i>Urtica dioica</i>	F
Hogweed	<i>Heracleum sphondylium</i>	O
Selfheal	<i>Prunella vulgaris</i>	R
Ivy	<i>Helix hedera</i>	F
Alexanders	<i>Smyrniolum olusatrum</i>	F
Fenceline		
Hedge bindweed	<i>Calystegia sepium</i>	O
Ivy	<i>Hedera helix</i>	O
Bare ground		
Broadleaved dock	<i>Rumex obtusifolius</i>	O
Dandelion	<i>Taraxacum officinale agg.</i>	O
Forget-me-not	<i>Myosotis sp.</i>	R
Ragwort	<i>Senecio jacobaea</i>	R
Spear thistle	<i>Cirsium vulgare</i>	F
Hardstanding		

Buddleia	<i>Buddleja davidii</i>	R
Herb Robert	<i>Geranium robertianum</i>	O
Sycamore (saplings)	<i>Acer pseudoplatanus</i>	R

Appendix D

TARGET NOTES **wsp**

- TN1. Area of semi-improved grassland adjacent to the southern boundary of the Site supporting a good diversity of forb species, as well as a line of six trees.
- TN2. Small area of bare ground comprising gravel substrate and subject to initial colonisation by a small number of ruderal and ephemeral/perennial species.
- TN3. Area of hardstanding comprising old/deteriorating tarmac and subject to early colonisation by sycamore and buddleia saplings, as well as herb Robert.
- TN4. Large area of hardstanding comprising the cracked concrete foundations of a former building and subject to early colonisation by such species as broad-leaved dock, dandelion and common thistle.
- TN5. Area of hardstanding comprising freshly laid tarmac (used for car parking).
- TN6. Linear stretch of scattered scrub associated with the northern boundary fenceline supporting such species as bramble, cotoneaster, buddleia and elder.

Appendix E

PHOTOGRAPHS **wsp**

Table 12 - Photographs



Line of low scattered scrub along northern fence



Line of scattered trees



Semi-improved grassland



Boundary fence



Small patch of bare ground



Hardstanding



Sycamore tree (T1)



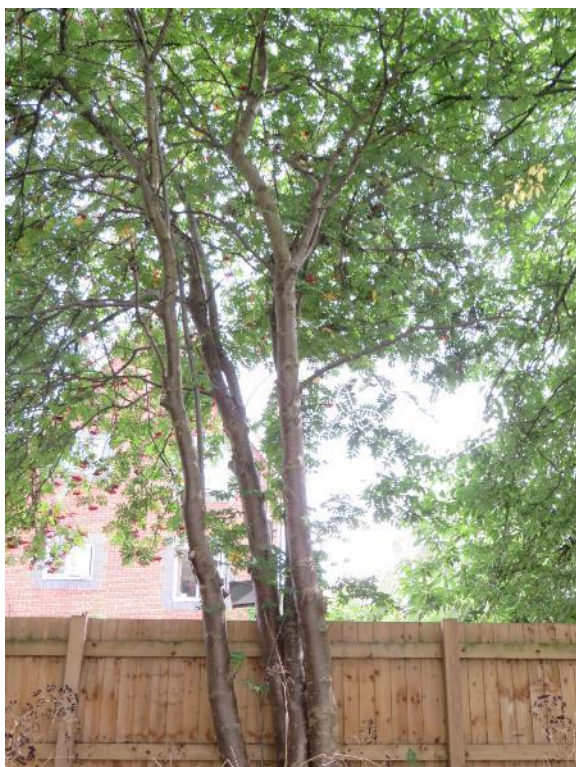
Minor potential roosting feature on T1



Weeping willow tree (T2)



Potential roosting features on T2



Rowan tree (T3)



Potential roosting feature on T4



Ivy-clad cherry tree (T4)



Sycamore tree (T5)



Minor potential roosting feature on T5



Lightly ivy-clad sycamore tree (T6)



Minor potential roosting feature (ivy-cladding) on T6



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