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59 Ham Street, Ham, Richmond, London / Preliminary Ecological Appraisal / Gilbert Homes

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Preliminary Ecological Appraisal

Report for Gilbert Homes

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Summary of Key Issues

The Ecology Consultancy was commissioned to undertake a Preliminary Ecological Appraisal (PEA), comprising a Phase 1 habitat survey and protected and notable species assessment, for 59 Ham Street, Ham, Richmond, London. The main findings of the PEA are as follows:

- The development proposals for the site are to build two residential properties replacing the current dwelling and covering approximately one third of the site. The site comprises areas of hardstanding, bare ground, amenity grassland, native scrub, introduced shrub and perennials, native species-poor hedgerows and scattered trees.
- The site is not subject to any statutory or non-statutory designations. The nearest statutory designation site is Ham Lands Local Nature Reserve located 0.57km to the west. The nearest non-statutory designated site is Ham Lands Site of Importance for Nature Conservation located 0.25km to the south-east.
- The proposed development site falls within the Impact Risk Zone for Richmond Park Site of Special Scientific Interest which is located 1.11km to the east. Consultation between the local planning authority and Natural England is only required for residential developments of 100 units or more and is therefore not applicable to this scheme.
- Habitats present are considered to be of value within the immediate vicinity of the site only, but they may assume higher value where protected and/or notable species are present.
- **Bats** – Habitat suitable for roosting bats was present in the form of an ivy covered dead tree in the south-east corner of the site. It is understood this tree is to be removed and therefore a further survey will be required in order to avoid any disturbance to a potential bat roost.
- **Reptiles** – Habitat suitable for widespread reptiles is present, but is limited in extent and quality and restricted to the south-east corner of the site where the mosaic of bare ground, scrub and piles of recently generated garden waste are present. It is recommended that a precautionary approach is taken and that this area is cleared by hand during their active period i.e. March to September to avoid any potential impacts on reptiles. In addition, amenity grassland should continue to be maintained short through regular mowing right up until works commence.
- **Breeding birds** – Habitat for nesting birds is present including scrub and trees and measures must be taken to avoid killing birds or destroying their nests. In order to comply with legislation, these habitats should be removed between September and February inclusive which is outside of the main bird breeding season. Where this is not possible, a

check for nesting birds prior to vegetation clearance must be undertaken by an experienced ecologist and, if any nests are found, the nests must be protected until such time as the young have left the nest. If any nesting birds are found at any time during clearance works, work should stop immediately and an ecologist consulted.

- **Other protected species** – No other protected species were considered likely to occur on the site and/or to be affected by the proposed development. However, should the presence of a protected species be confirmed or suspected during works, these must cease immediately and the advice of a suitably qualified and experienced ecologist must be sought.
- **Hedgehog** – Habitat for hedgehog is present and measures should be taken to accommodate this species on-site post development.
- **Invasive species** – Species of cotoneaster and rhododendron, both invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded on the site. Where they are to be impacted by works, appropriate site management and waste disposal will be necessary to preclude the possibility of their spread in the wild.
- Recommendations to enhance the biodiversity value of the site in line with national and local planning policies comprise the inclusion of Sustainable Drainage Systems (SuDS), green roofs, wildlife planting, the provision of bird nesting opportunities and wildlife-friendly fencing within the scheme.

1 Introduction

BACKGROUND TO COMMISSION

1.1 The Ecology Consultancy was commissioned by Gilbert Homes in October 2015, to carry out a Preliminary Ecological Appraisal (PEA) of land at 59 Ham Street, Ham, London Borough of Richmond upon Thames. The appraisal was carried out in order to provide ecological information to inform an outline planning application for a proposed residential development. This appraisal considers land within the planning application site boundary (hereon refered to as 'the site') as indicated on the plan provided by the client (Ascot Design Architecture, 2015).

SCOPE OF THE REPORT

1.2 This aim of this appraisal is to provide baseline ecological information about the site. This will be used to identify any potential ecological impacts associated with the proposed development and/or to identify the need for additional survey work to further evaluate any impact that may risk contravention of legislation or policy relating to protected species and nature conservation. Where necessary, avoidance, mitigation/compensation and/or enhancement measures have been recommended to ensure compliance.

1.3 This appraisal is based on the following information sources:

- a desk study of the site and a 2km surrounding radius;
- a Phase 1 habitat survey (JNCC, 2010) of the site and immediate surrounds to identify and map the habitats present; and
- a protected species assessment to identify features with potential to support legally protected and/or notable species.

1.4 This appraisal has been prepared with reference to best practice guidance published by the Chartered Institute for Ecology and Environmental Mangement (CIEEM, 2013) and as detailed in British Standard 42020:2013 *Biodiversity - Code of Practice for Biodiversity and Development* (BSI, 2013).

1.5 The survey, assessment and report were conducted and written by Markus Jaskari BSc, MRes, GradCIEEM, an Ecologist with over two years' experience who is competent in carrying out Phase 1 habitat surveys and protected species assessments.

SITE CONTEXT AND STATUS

1.6 The proposed development site is 0.1 hectares (ha) in size and is centred on National Grid reference TQ 17352 72298. The site is not subject to any nature conservation designations. It is bordered by residential housing with relatively large gardens, scattered trees and shrubs. Within the wider landscape to the east there are large parks including Richmond Park. To the north in particular, but also the west and south-west the River Thames and surrounding parkland dominate. Both Richmond Park and the River Thames are designated nature conservation sites (see Section 3).

DEVELOPMENT PROPOSALS

1.7 Development proposals for the site, based on current plans provided by the client (Gilbert Homes, 2015), are to build two residential properties replacing the current dwelling that is due to be demolished. The properties will be laid out side by in the centre of the site and cover approximately one third of the plot's size. The habitats impacted by development include amenity grassland, introduced shrub and perennial, native scrub and scattered trees.

RELEVANT LEGISLATION AND PLANNING POLICY

1.8 The following key pieces of nature conservation legislation are relevant to this appraisal. A more detailed description of legislation is provided in Appendix 5:

- The Conservation of Habitats and Species Regulations 2010 (as amended) (commonly referred to as the Habitats Regulations);
- Wildlife and Countryside Act 1981 (as amended);
- Natural Environment and Rural Communities Act 2006;
- Protection of Badgers Act 1992; and
- Wild Mammals (Protection) Act 1996.

1.9 The National Planning Policy Framework (Department of Communities and Local Government, 2012) requires local authorities to avoid and minimise impacts on biodiversity and, where possible, to provide net gains in biodiversity when taking planning decisions. Other planning policies at the local level which are of relevance to this development include The London Borough of Richmond upon Thames Local Plan (2009).

2 Methodology

DESK STUDY

2.1 The following data sources were reviewed to provide information on the location of statutory designated sites[1], non-statutory designated sites[2], legally protected species[3] Species and Habitats of Principal Importance[4] and other notable species[5] and notable habitats[6] that have been recorded within a 2km radius of the site:

- Biological data held by Greenspace Information for Greater London (GiGL) environmental record centre;
- MAGIC (http://www.magic.gov.uk/) - the Government's on-line mapping service; and
- Ordnance Survey mapping and publically available aerial photography.

HABITAT SURVEY

2.2 A habitat survey of the site was carried out on the 30 Octoberber 2015 in mild but cloudy conditions. It covered the entire site including boundary features. Habitats were described and mapped following standard Phase 1 habitat survey methodology (JNCC, 2010). Habitats were marked on a paper base map and subsequently digitised using a GIS. Habitats were also assessed against Habitat of Principal Importance[7] descriptions as set-out by the JNCC (2008)[8].

[1] Statutory designations include Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) and Local Nature Reserves (LNR).

[2] Non-statutory sites are designated by local authorities (e.g. Sites of Importance for Nature Conservation or Local Wildlife Sites).

[3] **Legally protected species** include those listed in Schedules 1, 5 or 8 of the Wildlife and Countryside Act 1981; Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended); or in the Protection of Badgers Act 1992 (as amended).

[4] **Species of Principal Importance** are those listed on Section 41 of the Natural Environment and Rural Communities Act 2006.

[5] **Notable species** include Species of Principal Importance under the Natural Environment and Rural Communities Act 2006; Local Biodiversity Action Plan (LBAP) species; Birds of Conservation Concern (Eaton *et al.*, 2009); and/or Red Data Book/nationally notable species (JNCC, undated).

[6] **Notable habitats** include Habitats of Principal Importance under the Natural Environment and Rural Communities Act 2006; those listed on a LBAP; Ancient Woodland Inventory sites; and Important Hedgerows as defined by the Hedgerow Regulations 1997.

7 Habitats of Principal Importance for the Conservation of Biodiversity = those listed on Section 41 of the Natural Environment and Rural Communities Act, 2006.

8 Data required to confirm that certain habitats (including rivers and ponds) meet criteria for Habitats of Principle Importance is beyond that obtained during a Phase 1 habitat survey, In these cases the potential for such habitats to meet relevant criteria is noted but further surveys to confirm this assessment may be recommended

2.3 A list of plant species was compiled (Appendix 3), together with an estimate of their abundance made using the DAFOR[9] scale. Scientific names are given after a vascular plant species in Appendix 3, common names only are used in the results section. Nomenclature follows Stace (2010). Incidental records of birds and other fauna noted during the course of the habitat survey were also compiled.

2.4 Target notes were used to provide information on specific features of ecological interest or habitat features that were too small to be mapped.

2.5 The site was also surveyed for the presence of invasive plant species as defined by Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). However, detailed mapping of such species is beyond the scope of this commission and their location on the habitat plan are indicative only.

PROTECTED AND NOTABLE SPECIES ASSESSMENT

2.6 The suitability of the site for legally protected species was assessed using the results of the desk study combined with field observations, from the habitat survey. The potential for protected species occurrence was ranked on a scale from negligible to present as described in Table 2.1.

2.7 The assessment of habitat suitability for protected or notable species was based on professional judgement drawing on experience of carrying out surveys of a large number of urban and rural sites and best practice survey guidance on identifying species' field signs which includes: badger *Meles meles* (e.g. Roper, 2010); bats (Hundt, 2012); hazel dormouse *Muscardinus avellanarius* (English Nature, 2006); great crested newt *Triturus cristatus* (Langton *et. al.*, 2001); otter *Lutra lutra* (Chanin, 2003); reptiles (Gent and Gibson, 2003); and water vole *Arvicola amphibius* (Strachan *et al.*, 2011).

Table 2.1: Protected species assessment categories.

Category	Description
Present	Presence confirmed from the current survey or by recent, confirmed records.
High	Habitat present provides all of the known key requirements for a given species/species group. Local records provided by desk study. The site is within

9 The DAFOR scale has been used to try and measure 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. Locally Frequent (LF) is also used where the frequency and distribution is patchy.

	or close to a national or regional stronghold for a particular species. Good quality surrounding habitat and good connectivity.
Moderate	Habitat present provides all of the known key requirements for a given species/species group. Several desk study records and/or site within national distribution and with suitable surrounding habitat. Factors limiting the likelihood of occurrence may include small habitat a rea, barriers to movement, and disturbance.
Low	Habitat present is of relatively poor quality for a given species/species group. Few or no desk study records. However, presence cannot be discounted on the basis of national distribution, nature of surrounding habitats or habitat fragmentation.
Negligible	Habitat is either absent or of very poor quality for a particular species or species group. There were no desk study records. Surrounding habitat unlikely to support wider populations of a species/species group. The site may also be outside or peripheral to known national range for a species.

2.8 The findings of this assessment establish the need for protected species surveys that are required to achieve compliance with relevent legislation. Surveys are commonly required for widespread species such as bats, great crested newt, reptiles and badger; but may be necessary for other species if suitable habitat is present. Surveys may be required where a site is judged to be of low suitability for a particular species/species group. In some cases survey effort may be less than for sites with better habtitat, and there may be opportunities to comply with legislation through precautionary measures prior to and during construction.

2.9 PEA provides an initial assessment of the potential for roosting bats, additional internal and external inpections of structures and tree cavities may be required to establish the likely value of roost features and determine the need need for further surveys.

SITE EVALUATION

2.10 The site's ecological value has beenevaluated broadly following guidance issued by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2006) which ranks the nature conservation value of a site according to a geographic scale of reference: international, national, regional, county/metropolitan, district/borough, local/parish or of value at the site scale. In evaluating the nature conservation value of the site the following factors were considered: nature conservation designations; species/habitat rarity; naturalness; fragility and connectivity to other habitats.

2.11 Specific guidance on designation of local nature conservation sites (Defra, 2006) was used to inform the site evaluation. Also relevant locally developed criteria for the designation of non-statutory wildlife sites and nature conservation aims and objectives contained in local Biodiversity Action Plans and planning policies are considered in the

evaluation. An initial assessment of the site's contribtion to green infrastrcucture and ecosystem services is also considered, as recommended by *BS 42020:2013 Biodiversity - Code of practice for planning and development,* is also included.

DATA VALIDITY AND LIMITATIONS

2.12 Ecological survey data is typically valid for two years unless otherwise specified.

2.13 Every effort has been made to provide a comprehensive description of the site. However, the following specific limitations apply to this assessment.

- Even where data is held, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest, the area may simply be under-recorded.
- Where only four figure grid references are provided for protected species by third parties, the precise location of species records can be difficult to determine and they could potentially be present anywhere within the given 1km x 1km square. Equally six figure grid references may be accurate to the nearest 100m only.
- The Phase 1 habitat survey does not constitute a full botanical survey or provide accurate mapping of invasive plant species.
- The PEA survey was carried out in October which is sub-optimal for botanical surveys.
- The protected species assessment provides a preliminary view of the likelihood of protected species occurring on the site. It should not be taken as providing a full and definitive survey of any protected species group. Additional surveys may be recommended if on the basis of the preliminary assessment or during subsequent surveys it is considered reasonably likely that protected species may be present.
- The ecological evaluation is preliminary and may change subject to the findings of further ecological surveys (should these be required).

2.14 Despite these limitations, it is considered that this report accurately reflects the habitats present, their biodiversity values and the potential of the site to support protected and notable species.

3 Results

DESK STUDY

Statutory Designated Nature Conservation Sites

3.1 The proposed development site is not subject to any statutory nature conservation designations. There are three statutory designation sites within a 2km radius of the site: Ham Lands Local Nature Reserve (LNR), Ham Common LNR and Richmond Park SAC/NNR/SSSI (see Table 3.1).

3.1: Statutory Designated Sites

Site Name	Distance from site and orientation	Reason for designation
Ham Lands LNR	0.57km to the west	Ham Lands comprises infilled gravel pits, old water meadows, woodland and a mosaic of different ecological zones.
Ham Common LNR	0.58km to the south-east	Ham Common supports a large variety of habitats and species, many of which are habitats/species of principal importance. The site supports mostly birch and oak woodland and dead wood habitat valuable for associated invertebrates, fungi and cavity-nesting birds including woodpeckers.
Richmond Park SAC/NNR/ SSSI	1.11km to the east	Richmond Park contains habitats and species rare or threatened in Europe. It is managed as a royal deer park and comprises a variety of wildlife habitats including a mosaic of dry acid grassland, marshy and unimproved neutral grassland, ancient oak trees, deadwood and associated diverse and nationally significant deadwood beetle fauna.

Sites of Special Scientific Interest: Impact Risk Zones

3.2 The site lies within Richmond Park SSSI Impact Risk Zone (IRZ). IRZs are intended as a tool for local planning authorities to identify when specific types of development may require consultation with Natural England regarding their potential impact on SSSIs. Consultation with Natural England is not required for this scheme as only residential development of 100 units or more match the type of development representing a potential risk to the SSSI (MAGIC, 2015).

Non-Statutory Designated Nature Conservation Sites

3.3 The proposed development site is not subject to any non-statutory nature conservation designations. There are 18 non-statutory sites designated as SINCs (Sites of Importance for Nature Conservation) located within 2km of the site. Those within a 1km radius of the site of the site are listed in Table 3.2.

Table 3.2: Non-statutory Designated Sites

Site Name	Distance from site and orientation	Reason for designation
Ham Common West SINC	0.20km south-east	Habitats include acid grassland, scattered trees and a pond/lake. The site supports round-fruited rush which is rare in London.
The Copse, Holly Hedge Field and Ham Avenues SINC	0.30km north-east	Habitats supported include scattered trees, secondary woodland, semi-improved neutral grassland and ancient trees.
Ham Lands SINC	0.48km west	A mosaic of scrub and grassland along the River Thames known for its diverse flora.
Cassel Hospital SINC	0.50km south-east	Hospital grounds supporting acid grassland, scrub, scattered/veteran trees and secondary woodland.
River Thames and tidal tributaries SINC	0.45km west	This SINC is of metropolitan importance and comprises a number of valuable habitats not found elsewhere in London, including intertidal, marsh/swamp, pond/lake, reed bed, running water, saltmarsh, woodland, vegetated wall/tombstones, wet ditches, wet grassland, wet woodland/carr etc.
Richmond Park and associated areas	0.60km east	This SINC is of metropolitan importance and one of only two NNRs in London. It supports a wide range of habitats and is of great importance for insects, especially beetles (see Table 3.1 above).
Petersham Lodge Wood and Ham House Meadows SINC	0.75km north	Habitats include a small wet woodland and flood meadows supporting lush ground flora.

Landscape and Habitat Classifications

Ancient woodland

3.4 There are no ancient woodland sites within a 2km radius of the site on the ancient woodland inventory (MAGIC, 2015).

PHASE 1 HABITAT SURVEY

Overview

3.5 The following account summarises the findings of the Phase 1 habitat survey. Also included are details of habitat information provided in the desk study (e.g. Natural England's Habitat of Principal Importance inventories).

3.6 The site consists of one building with surrounding areas of hardstanding, bare ground, amenity grassland, native scrub and hedgerows, non-native shrub and perennials and scattered trees.

3.7 Phase 1 habitats types are mapped in Figure 1 (Appendix 1), areas are given in Table 3.3. A description of dominant and notable species and the composition of each habitat is provided below.

Table 3.3: Phase 1 Habitat Areas

Phase 1 Habitat	Area (ha)	%
Amenity grassland	0.03	30
Introduced shrubs and perennials	0.03	30
A mosaic of bare ground, scrub and piles of garden waste	0.02	20
Buildings, walls and hardstanding	0.02	20
Site area	**0.10**	**100**

Buildings and hardstanding

3.8 The building was a brick built bungalow, approximately 4-5m high with a felted roof and no roof void. No gaps were noted under roofing felt, wooden eaves and weather boarding. Wooden-framed glass windows appeared well-sealed and in a good state of repair (see Photographs 1 and 2 in Appendix 2).

3.9 Hardstanding covered part of the front yard and areas adjacent to the building's south and east façade where concrete paving and amenity grassland formed a mosaic (see Target Note 1 and Photographs 1, 2, 3 and 4).

Bare ground

3.10 The site entrance comprised an area of bare ground formed of sandy and gritty substrates (see Photograph 1). Small areas of bare ground were also present amongst introduced shrubs and perennials.

Amenity grassland

3.11 Amenity grassland covered areas to the south and east of the (see Photographs 1, 3 and 4) and comprised (amongst other species) abundant moss, frequent annual meadow-grass and perennial rye-grass, and occasional red fescue, white clover, germander speedwell, and oxeye daisy. The amenity grassland appeared regularly managed by mowing.

Mosaic of bare ground, scrub and piles of garden waste

3.12 A mosaic of bare ground, scrub and piles of recently cut garden waste was present in the south-east corner of the site (see Target Note 3). The dominant species was bramble that had been recently strimmed at a height of approximately 20cm. Cleared bramble and other vegetation including small trees was piled within the habitat (see Target Note 3 and Photograph 5).

Introduced shrub, native scrub and perennials

3.13 A wide range of mainly non-native and also some native shrubs were present. Native species included rare holly, hawthorn, blackthorn and hazel. Non-native specimens included rare cotoneaster species, dogwoods, firethorns, oregon-grape, heather, rhododendrons, roses, snowberry and stag's-horn-sumach amongst other species.

Hedgerows

3.14 A native species-poor hedge approximately 10m in length bordered the front yard in the south. The hedge was entirely composed of semi-mature yew that had been cut on one side and at approximately 100cm height (see Photograph 4).

3.15 Another native species-poor defunct hedge approximately 15m in length bordered part of the south-east corner of the site. The hedge comprised occasional bramble and rare elder, holly, black currant, apple, honeysuckle and ivy. Scrub adjacent to the hedge had been strimmed short however the hedge appeared unmanaged.

3.16 None of these hedgerows qualify as a habitat of principal importance as they are less than 20m in length (JNCC, 2008).

Scattered trees

3.17 A number of planted non-native young to mature trees with rare distribution were present These specimens included magnolia, Lawson cypress, western red cedar, plum, apple, maple and sycamore. Native trees included wild cherry with rare distribution. A number of trees were dead including some apple and wild cherry trees. An apple tree approximately 7m tall on the site boundary to the south was covered in ivy (see Target Note 4).

PROTECTED AND NOTABLE SPECIES ASSESSMENT

3.18 The potential for the site to support protected species[10], Species of Principal Importance[11] and notable species[12] has been assessed. The following species/species groups are considered likely to be supported in the habitats present within the site:

- bats;
- dormouse;
- great crested newt;
- reptiles;
- badger;
- breeding birds;
- hedgehog *Erinaceus europaeus*;
- invasive species.

3.19 These assessments, based on the results of the desk study and observations made during the site survey of habitats within and immediately surrounding the site, are detailed further in Table 3.4, below. Desk study records have only be considered if they are recent (from the last 20 years) and/or they refer to species that may be supported by habitats at the site. A number of abbreviations are used in this section to denote the status of different species these are footnoted below Table 3.4.

3.20 The table also summarises relevant legislation and policies relating to protected species and notable species. Key pieces of statute are summarised in Section 1 and set-out in greater detail in Appendix 5.

3.21 It is considered that the site does not contain habitats that would be suitable to support other legally protected species or notable species.

[10] **Legally protected species** include those listed on Schedules 1, 5 or 8 of the Wildlife and Countryside Act 1981 (as amended); species listed on Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended); and the Protection of Badgers Act, 1992.

[11] **Species of Principal Importance** are those listed on Section 41 of the Natural Environment and Rural Communities Act, 2006.

[12] **Notable species** include Species of Principal Importance under the NERC Act, 2006, LBAP species; birds of conservation concern (Eaton *et al.*, 2009); and/or red data book/nationally notable species (JNCC, undated).

Table 3.4: Protected and Invasive Species Assessment

Habitat/ species	Status [13, 14]	Likelihood of occurrence / assessment
Bats	HR WCA S5 SPI London BAP	**LOW:** Ten species of bats were returned from the data serach, the closest being 2012 records for Daubenton's bat *Myotis daubentonii*, noctule *Nyctalus noctula*, Nathusius's pipistrelle *Pipistrellus nathusii*, common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus* a distance of 0.41km north of the site. The building on-site lacked features suitable for roosting bats and was considered to have negligible potential. Overall, the site had limited connectivity to the wider landscape and off-site areas that may be used for foraging. One apple tree had low potential for bat roosts but was not considered sufficiently dense for a hibernation (winter) roost. The extent of any potential features in the tree itself (which was dead) could not be fully determined due to the dense covering of ivy (see Photograph 6 and Target Note 4). **As one tree is considered to have low bat roosting potential, bats are considered further in this appraisal.**
Dormouse	HR WCA S5 SPI	**NEGLIGABLE**: There were two desk study records for hazel dormouse (dated 2004) and located at a distance of 0.89km south-west of the site. Woody habitat that could potenially support foraging and/or nesting dormouse comprised scrub, shrubs, hedgerows and trees present predomiantly around the edges of the site. Potential foodplants were limited to occasional bramble and rare blackthorn and hawthorn. The site had limited connectivity to a wider landscape due to the dense urban location with a lack of hedgerows, tree lines or woodland within close proximity. **As there is a negligable chance dormice are present, they are not considered further in this appraisal.**
Great crested newt	HR WCA S5 SPI	**NEGLIGABLE:** There were no desk study records for great crested newt. Habitats suitable for great crested newts in their terrestrial phase comprise borders of scrub, shrubs, hedher bases and recently created piles of garden waste. There were no ponds within the site boundary or a 500m radius of the site (identified using OS 1:25,000 maps) and the site is poorly connected to suitable off-site (semi-natural) habitats. **As there is a negligable chance great crested newts are present, they are not considered further in this appraisal.**

[13] The following abbreviations have been used to signify the legislation regarding different species: HR = Conservation of Habitats and Species Regulations 2010 (as amended); WCA S1 = Schedule 1 of the Wildlife and Countryside Act 1981 (as amended); WCA S5 = Schedule 5 of the Wildlife and Countryside Act 1981 (as amended); WCA S9 = Schedule 9 of the Wildlife and Countryside Act 1981 (as amended); PBA = Protection of Badgers Act, 1992.

[14] The following abbreviations have been used to signify the policy of conservation assessments applying to notable species: SPI = Species of Principal Importance under the NERC Act 2006; LBAP = Local Biodiversity Action Plan species; BoCC = Birds of Conservation Concern - amber list / red list (Eaton *et al.*, 2009); and/or RD/NN = red data book/nationally notable species (JNCC, undated).

Habitat/ species	Status [13, 14]	Likelihood of occurrence / assessment
Reptiles	WCA S5 SPI London BAP	**LOW:** There are seven records from locations relatively distant to the site including one 1998 record for slow worm *Anguis Fragilis* 0.89km south-west and six records for grass snake 1.77km east of the site. Habitats suitable for reptiles comprised planted borders of scrub, introduced shrubs/perennials and the mosaic of habitats in the south-west part of the site including piles of garden waste. The site had only limited connectivity to the wider landscape via the defunct hedgerow bordering a construction site in the south-east corner of the site. Brick walls and lapboard fences bordered the site in other directions. **As there is a low chance reptiles are present, they are considered further in this appraisal.**
Badger	PBA Richmond LBAP	**NEGLIGABLE**: GiGL does not provide desk study records of badger. Habitats providing suitable cover for sett-building were limited to borders of planted shrubs, scruba nd scattered trees. Amenity grassland provided a small area of foaging habitat. No signs of badger activity were observed during the PEA survey. The site had limited connectivity to a wider landscape due to brick walls and lapboard fences that bordered the site in every direction except the hedgerow in the south-east corner that bordered a construction site. Given the lack of field evidence for this species and the small size of the relatively isolated site it is unlikely that the site forms an important part of a badger territory. **As there is a negligable chance they are present, badgers are not considered further in this appraisal.**
Birds	WCA . Sections 1-8 with some species on Sch 1 SPI London BAP Richmond LBAP	**HIGH**: Desk study records for birds include a wide range of species, however the majority are associated with the River Thames and mostly exceed a distance of 500m from the site. The most relevant sightings to the site are 380 records for house sparrow *Passer domesticus* which is a London BAP species (the nearest 0.10km north) and 370 records for song thrush *Turdus philomelos* which is a Richmond LBAP species (also 0.10km north). The shrubs, hedgerows and trees provided suitable nesting habitat for common breeding bird species. No nesting bird activity was observed at the time of the PEA survey. Blackbird *Turdus merula*, robin *Erithacus rubecula*, blue tit *Cyanistes caeruleus*, magpie *Pica pica* and woodpigeon *Columba palumbus* were present on-site. Ring-necked parakeets *Psittacula krameri*, great spotted woodpecker *Dendrocopos major* and jackdaw *Corvus monedula* were noted close to the site boundary. **As there is a high chance breeding birds are present they are considered further in this appraisal.**
Hedgehog	SPI Richmond LBAP	**LOW**: There were 281 desk study records for hedgehog, the nearest 0.01km north of the site. Habitats suitable for hedgehog included shrubs, perennials and habitat mosaics in the south-west of the site including piles of garden waste. The site was isolated from the wider landscape by brick walls and lapboard fences that border the site in every direction except the hedge in the south-east corner of the site that borderered a construction site. **As there is a low chance hedgehogs are present, they are considered further in this appraisal.**

Habitat/ species	Status [13, 14]	Likelihood of occurrence / assessment
Invasive species	WCA S9	**PRESENT:** Evergreen oak, rhododentron, cotoneaster species and cherry laurel were all present in the north-west corner of the site. Of these, cotoneaster species and rhododendron are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) with the remaining species listed additionally on the London Invasive Species Initiative (LISI, 2013). **As invasive species were present, they will be considered further in this appraisal.**

NATURE CONSERVATION EVALUATION

3.22 The proposed development site is not subject to any nature conservation designations nor does it support any habitats of principal importance. Domestic gardens are both a London BAP and Richmond LBAP and the site contributes to this network of private green spaces at both the local and metropolitan level. Overall, the site is considered of value within the immediate vicinity of the site only, due to it providing only common and widespread habitats of limited extent.

3.23 The habitats on-site have potential to support roosting bats, breeding birds and hedgehogs. There is limited potential for the site to also support reptile species which, if present, would likely be located in the south-east corner of the site and comprise a low population (i.e. a few individuals) of common and widespread species such as slow-worm. Populations of protected species would likely be important within the immediate vicinity of the site only. Further surveys for reptiles and bats are recommended to ensure compliance with the relevant legislation (see Section 4). If present, the nature conservation evaluation of bats at the site is, however, unlikely to change.

4 Potential Impacts and Recommendations

4.1 This section summarises the potential impacts on habitats and notable species that may be present at this site. The impact assessment is preliminary and further detailed assessment and surveys will be required to assess impacts and design suitable mitigation, where appropriate.

4.2 The following key ecological issues have been identified:

- the site is within the IRZ of Richmond Park NNR/SSSI, but the threshold for potential impact (based on the number of residential units proposed) is not met and consultation with Natural England is not required;
- habitats present are considered to be of value within the immediate vicinity of the site only, but they may assume higher value where protected and/or notable species are present;
- a single, ivy-clad tree with potential to support roosting bats is present in the south-east corner of the site. Further suvey will be required to avoid disturbing potential bat roosts;
- habitat suitable for widespread reptiles is present, but it is limited in extent and quality. Precautionary measures must be taken to avoid killing or injuring reptiles;
- habitat for breeding birds is present – measures must be taken to avoid killing birds or destroying their nests;
- habitat for hedgehog is present – measures should be taken to continue accomodating these species on site post-development;
- invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) are present. Where cotoneaster and/or rhododendron are to be impacted by development proposals appropriate site management and waste disposal will be necessary to preclude the possibility of these species spreading in the wild;
- a range of measures could be undertaken to satisfy the requirement for ecological enhancement included in planning policy.

CONSTRAINTS AND MITIGATION/COMPENSATION

Habitats

4.3 The habitats impacted by development include amenity grassland, introduced shrubs and perennials, native scrub and scattered trees. Mitigation/compensation for the loss of habitats should include the following:

- Adherence to best construction practice including CIRIA guidance (Connolly and Charles, 2005) and Environment Agency Pollution Prevention Guidelines (2007);
- Any retained trees should be protected in accordance with British Standards Institution (2012) guidelines;
- Where possible the retention of native scrub, introduced shrubs, hedgerows and trees (particulalrly in the south-west corner) providing habitat suitable for breeding birds and hedgehogs;
- Replacement planting to compensate for the loss of any native scrub, introduced shrub, hedgerows or trees.

Bats

4.4 All British species of bat are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended). Under this legislation it is an offence to deliberately capture, kill, disturb and damage or destroy a bat roost. Some species of bat are also Species of Principal Importance and London BAP species.

4.5 The dead apple tree in the south-east corner of the site was covered in dense ivy which was considered to provide low potential for bat roosting. However, the presence of any features within the main trunk and limbs of the tree could not be fully determined due to the ivy growth.

4.6 On this basis a precautionary approach to clearance of the tree (understood to be scheduled for this winter 2015-2016) is recommended. The ivy should be removed under ecological supervision to check that there are no features of potential behind it and then the tree soft felled. If features of potential value to bats are found to be present then the tree will need to be climbed and fully inspected by an experienced and licensed bat ecologist prior to its clearance.

Reptiles

4.7 All species of reptile are protected from killing or injuring under the Wildlife and Countryside Act 1981 (as amended) and are listed as Species of Principal Importance and London BAP species.

4.8 The site was relatively isolated from suitable off-site reptile habitat with on-site habitat limited to habitat mosaics in the south-east corner which included recently created piles of garden waste. If reptiles are present it is considered that any population is likely to be small (i.e. a few individuals) and comprised of widespread species such as slow-worm.

4.9 In order to comply with legislation, it is recommended that a precautionary approach is taken and that any habitats of value to reptiles are managed/removed in such a way to avoid any potential impacts and disuade them from using the propsoed works area of the site. This would involve the removal of habitats and waste piles in the south-east corner of the site by hand and during their active period i.e. March to September and maintaining amenity grassland as a regularly-mown short sward right up until works commence.

Breeding birds

4.10 All breeding birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended). The site supports at least some widespread species of foraging birds and is likely to support nesting birds.

4.11 Where the proposed works require the removal of introduced shrub, native scrub, hedgerows or trees with potential to support breeding birds, this should be carried out September to February inclusive, to avoid any potential offences relating to breeding birds during their main breeding season (Newton *et al.*, 2011). Where possible, the hedgerows in the south-west corner of the site should be retained in order to provide a habitat for nesting birds.

Other protected species

4.12 No other protected species were considered likely to occur on-site and/or be affected by the proposed development. However, should the presence of a protected species be confirmed or suspected during works, these must cease immediately and the advice of a suitably qualified and experienced ecologist must be sought.

Foxes

4.13 According to anecdotal records from the site owners (Piers Gilbert, 2015) foxes visit the garden. No fox activity or fox holes were noted on-site at the time of the PEA survey. An experienced ecologist must be consulted if fox holes are encountered during construction, including site clearance works.

Invasive Plant Species

4.14 Cotoneaster species and rhododendron species were confirmed present in the south-east corner of the site. Under Schedule 9 of the Wildlife and Countryside Act, 1981, it is an offence to plant or otherwise cause these species to spread in the wild. Where these species are to be affected by works, appropriate site management and waste disposal will be necessary to preclude the possibility of their spread in the wild. Best practice guidelines should be consulted (Natural England, Defra & Enviornment Agency, 2015).

FURTHER SURVEY REQUIREMENTS

4.15 Table 4.1 lists further survey requirements as recommended in the constraints section.

Table 4.1: Further survey requirements.

Species/Habitat	Survey Requirement	Number of surveys and seasonal considerations
Bats/Ivy clad dead apple tree	Ecological Watching Brief	One survey during removal of ivy to check tree for potential features of value to roosting bats. Must be carried out prior to tree felling proposed for winter 2015/16.

OPPORTUNITIES FOR ECOLOGICAL ENHANCEMENT

4.16 Planning policy and strategic biodiversity partnerships strongly encourage inclusion of ecological enhancements. Ecological enhancements will also deliver other green infrastructure benefits such as storm water attenuation and reducing the urban heat island effect. The following generic measures would be suitable for integration into the site's design, but would require a more detailed design to succesfully implement.

Sustainable Drainage System (SuDS)

4.17 SuDS comprise a linked system of soft landscaping, green roofs, rain-water harvesting technologies including ponds, below ground drainage and porous surfacing which can be designed into a development to intercept and attenuate surface water and prevent flooding. Design of SuDS would be appropriate to this development and should be considered as part of the site master plan. SuDS would also increase biodiversity, for example by providing a series of habitats for wildlife to use, if appropriately planted – see below.

Biodiverse green roof

4.18 The aspiration should be to install biodiverse green roofs on houses (subject to loading capacity) as they deliver multiple green infrastructure benefits, including being of high wildlife value. It is advised that any green roof should comply with green roof policies in the London Plan and minimum standards published by the Green Roof Organisation (GRO, 2011) and that professional advice is sought (e.g. The Green Infrastructure

Consultancy - greeninfrastructureconsultancy.com) in order to align the technical specification with the environmental goals of the development.

Wildlife planting

4.19 Wildlife planting should be integral to the soft landscape plans and should include native species and/or species of recognised widllife value[15]. The use of nectar-rich and berry producing plants will attract a wider range of insects, birds and mammals and continue to accommodate those already recorded at the site. Trees should also be provided and can be under-planted to improve structure and cover for wildlife. Consideration should also be give to creation of species-rich native hedgerows.

4.20 Good horticultural practice 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).

4.21 Landscaping should include the use of climbing plants growing on a support structure to provide vertical nesting habitat and foraging resources for birds and invertebrates. The support structure should ideally be placed 50-100mm off the façade. Plants should comprise native species or non-native species of recognised wildlife value and either deciduous or evergreen species depending on the specification.

Provision of bird nesting opportunities

4.22 The provision of bird boxes would be appropriate at this site. Many different designs are available including boxes to support colonial species such as house sparrow *Passer domesticus*. Woodcrete bird boxes (Schwegler, 2011) are recommended as they are long lasting compared to wooden boxes, insulate occupants from extremes of temperature and condensation and are available in a broad range of designs,.

Wildlife-friendly fencing

4.23 The proposed development will include the use of fencing to divide the residential properties and gardens, and will fragment an area of foraging and nesting habitat of value to generalist wildlife such as hedgehogs and other small mammals. It is therefore recommended that connectivity is maintained between the gardens by installing wildlife-friendly fencing, with gaps or tunnels in the bottom panels/gravel boards to

[15] For example The Royal Horticultural Society:
http://www.rhs.org.uk/science/pdf/conservation-and-biodiversity/wildlife/rhs_pollinators_plantlist
http://www.rhs.org.uk/science/pdf/conservation-and-biodiversity/wildlife/perfectforpollinators-wildflowerlist

allow easy passage for small mammals to continue foraging in this area. This can be achieved for example by cutting a hole (approximately 10cm^2) in certain gravel boards, which is large enough for small mammals to pass through, but small enough to contain pets.

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Appendix 1: Habitat Map

Figure 1: Habitat Survey Map

Appendix 2: Photographs

Photograph 1
Bare ground and hardstanding in the front yard. View looking west.

Photograph 2
Areas along the wall comprised a mix of hardstanding and amenity grassland (see Target Note 1). View looking north-east.

Photograph 3
View south-west showing a mix of hardstanding, amenity grassland, introduced shrub/perennials and scattered trees.

Photograph 4
Bare ground and hardstanding in the front yard. Poor semi-improved grassland bordering areas of hardstanding. A species-poor native hedge in the background. View looking south.

Photograph 5
An area in the south-west corner of the site comprised of bare ground, scrub and piles of garden waste (see target Note 3). View looking south.

Photograph 6
A species-poor native defunct hedge (most of the hedge was to the left outside the picture) bordering the south-west corner of the site. A dead apple tree was ivy clad and had low potential for roosting bats (see Target Note 4). View looking south.

Appendix 3: Plant Species List

Plant Species List for 59 ham Street, Ham, Richmond compiled from the Phase 1 habitat survey carried out on the 30 Octoberber 2015.

Scientific nomenclature and commonnames for vascular plants follow Stace (2010). Please note that this plant species list was generated as part of a Phase 1 habitat survey, does not constitute a full botanical survey and should be read in conjunction with the associated results section of this PEA.

Abundance was estimated using the DAFOR scale as follows:
D = dominant, A = abundant, F = frequent, O = occasional, R = rare, L = locally c=clumped, e=edge only, g=garden origin, p=planted, y = young, s=seedling or sucker, t=tree, h=hedgerow, w=water

SCIENTIFIC NAME	COMMON NAME	ABUNDANCE	QUALIFIER
Acer pseudoplatanus	Sycamore	R	y
Achillea millefolium	Yarrow	O	
Aegopodium podagraria	Ground-elder	R	
Alchemilla sp.	Lady's-mantle	R	p
Aquilegia vulgaris	Columbine	R	
Arrhenatherum elatius	False oat-grass	R	
Aucuba japonica	Spotted-laurel	R	p
Berberis sp.	Barberry	R	p
Calluna spp.	Heathers	R	p
Campanula portenschlagiana	Adria bellflower	R	
Cerastium fontanum	Common mouse-ear	R	
Cirsium arvense	Creeping thistle	R	
Cornus spp.	Dogwoods	R	p
Corylus avellana	Hazel	R	y
Cotoneaster spp.	Cotoneasters	R	p
Crataegus monogyna	Hawthorn	R	
Cupressus spp.	Cypresses	R	t, y, p
Cyclamen sp.	Sowbread	R	
Digitalis purpurea	Foxglove	R	
Dryopteris sp.	Fern	R	
Epilobium sp.	Willowherbs	R	
Euphorbia peplus	Petty spurge	R	
Festuca rubra	Red fescue	O	
Forsythia sp.	Forsythia	R	p
Galium aparine	Cleavers	R	
Galium verum	Lady's bedstraw	R	p
Garrya elliptica	Silk tassel	R	p
Geranium sp.	Crane's-bill	O	
Geum urbanum	Wood avens	R	
Glechoma hederacea	Ground-ivy	O	
Hedera helix	Ivy	R	
Hibiscus rosa sinensis	China rose	R	p
Holcus lanatus	Yorkshire-fog	R	

Hypericum calycinium	Rose-of-Sharon	R	p
Hypochaeris radicata	Cat's-ear	O	
Ilex aquifolium	Holly	R	
Iris foetidissima	Stinking iris	R	
Lactuca serriola	Prickly lettuce	R	
Leucanthemum vulgare	Oxeye daisy	O	
Leucanthemum x superbum	Shasta daisy	R	p
Lolium perenne	Perennial rye-grass	F	
Lonicera periclymenum	Honeysuckle	R	
Luzula sp.	Wood-rush	R	
Mahonia aquifolium	Oregon-grape	R	p
Malus spp.	Apples	R	t
Malva moschata	Musk-mallow	R	
Olearia macrodonta	New Zealand holly	R	p
Origanum vulgare	Wild marjoram	R	
Pieris japonica	Mountain fire	R	p
Pilosella aurantiaca	Fox-and-cubs	R	
Poa annua	Annual meadow-grass	F	
Poa pratensis	Smooth meadow-grass	O	
Polygonatum x hybridum	Garden Solomon's-seal	R	p
Potentilla sterilis	Barren strawberry	O	
Primula veris	Cowslip	R	
Prunella vulgaris	Selfheal	R	
Prunus laurocerasus	Cherry laurel	R	p, y
Prunus avium	Wild cherry	R	y
Prunus spinosa	Blackthorn	R	
Pyracantha spp.	Firethorns	R	p
Quercus ilex	Evergreen oak	R	p
Ranunculus repens	Creeping buttercup	R	
Rhododendron spp.	Rhododendron species	R	p
Rhus typhina	Stag's-horn sumach	R	p
Rhytidiadelphus squarossus	Moss	A	
Ribes nigrum	Black currant	R	
Rosa sp.	Rose	R	p
Rubus fruticosus agg.	Bramble	O	
Rumex sp.	Dock	R	
Sambucus nigra	Elder	R	
Senecio jacobaea	Common ragwort	R	
Stachys byzantina	Lamb's-ear	R	p
Stachys sylvatica	Hedge woundwort	R	
Symphoricarpos albus	Snowberry	R	
Syringa vulgaris	Lilac	R	p
Taraxacum sp.	Dandelion	R	
Taxus baccata	Yew	R	p
Tilia sp.	Lime	R	y
Trifolium repens	White clover	O	

Urtica sp.	Nettle	O	
Veronica chamaedrys	Germander speedwell	O	
Veronica persica	Common field-speedwell	R	
Viburnum tinus	Laurustinus	R	p
Vinca sp.	Periwinkles	R	p
Viola sp.	Violet	R	

Appendix 4: Target Notes

Target Notes List for 59 Ham Street, Ham, Richmond, from the Phase 1 habitat survey and protected and notable species assessment carried out on the 30 October 2015.

Target Note (TN)	Description
1	A mosaic of hardstanding and amenity grassland along the south and east facing walls of the building.
2	A mosaic of bare ground and perennials surrounding the stomp of a felled holly.
3	A mosaic of bare ground, scrub and piles of garden waste in the south-eastern corner of the site.
4	A dead ivy clad apple tree providing potential habitat for roosting bats (see photograph 6).

Appendix 5: Legislation and Planning Policy

Important notice: This section contains details of legislation and planning policy applicable in Britain only (i.e. not including the Isle of Man, Northern Ireland, the Republic of Ireland or the Channel Islands) and is provided for general guidance only. While every effort has been made to ensure accuracy, this section should not be relied upon as a definitive statement of the law.

A NATIONAL LEGISLATION AFFORDED TO SPECIES

The objective of the EC Habitats Directive16 is to conserve the various species of plant and animal which are considered rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 (as amended) (formerly The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

The Wildlife and Countryside Act 1981 (as amended) is a key piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Since the passing of the Wildlife & Countryside Act 1981, various amendments have been made, details of which can be found on www.opsi.gov.uk. Key amendments have been made through the Countryside and Rights of Way (CRoW) Act (2000).

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991;
- Countryside and Rights of Way (CRoW) Act 2000;
- Natural Environment & Rural Communities (NERC) Act 2006;
- Protection of Badgers Act 1992:
- Wild Mammals (Protection) Act 1996.

Species and species groups that are protected or otherwise regulated under the aforementioned domestic and European legislation, and that are most likely to be affected by development activities, include herpetofauna (amphibians and reptiles), badger, bats, birds, dormouse, invasive plant species, otter, plants, red squirrel, water vole and white clawed crayfish.

[16] Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora

Explanatory notes relating to species protected under The Conservation of Habitats and Species Regulations 2010 (as amended) (which includes smooth snake, sand lizard, great crested newt and natterjack toad), all bat species, otter, dormouse and some plant species) are given below. **These should be read in conjunction with the relevant species sections that follow.**

- In the Directive, the term 'deliberate' is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.
- The Conservation of Habitats and Species Regulations 2010 (as amended) does not define the act of 'migration' and therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.
- In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three 'tests': i) the action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment; ii) that there is no satisfactory alternative and iii) that the action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

Bats

All species of bat are fully protected under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. all bats)
- Deliberate disturbance of bat species as:

  a) to impair their ability:
  (i) to survive, breed, or reproduce, or to rear or nurture young;
  (ii) to hibernate or migrate[3]
  b) to affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

Bats are also currently protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

How is the legislation pertaining to bats liable to affect development works?

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Though there is no case law to date, the legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded de facto protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost[17].

Birds

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the Wildlife and Countryside Act 1981 (as amended). Among other things, this makes it an offence to:

- Intentionally kill, injure or take any wild bird;
- Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built;
- Intentionally take or destroy an egg of any wild bird:
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.

Certain species of bird, for example the barn owl, black redstart, hobby, bittern and kingfisher receive additional special protection under Schedule 1 of the Act and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC). This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young;

[17] Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected? Mammal News, No. **150**. The Mammal Society, Southampton.

- Intentional or reckless disturbance of dependent young of such a bird.

How is the legislation pertaining to birds liable to affect development works?

To avoid contravention of the Wildlife and Countryside Act 1981 (as amended), works should be planned to avoid the possibility of killing or injuring any wild bird, or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird breeding season which typically runs from March to August[18]. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Those species of bird listed on Schedule 1 are additionally protected against disturbance during the breeding season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Herpetofauna (Amphibians and Reptiles)

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita* and great crested newt *Triturus cristatus* receive full protection under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2. The pool frog *Pelophylax lessonae* is also afforded full protection under the same legislation. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of species listed on Schedule 2
- Deliberate disturbance of any Schedule 2 species as:

  a) to impair their ability:
  (i) to survive, breed, or reproduce, or to rear or nurture young;
  (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate
  b) to affect significantly the local distribution or abundance of the species
- Deliberate taking or destroying of the eggs of a Schedule 2 species
- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

[18] It should be noted that this is the main breeding period. Breeding activity may occur outwith this period (depending on the particular species and geographical location of the site) and thus due care and attention should be given when undertaking potentially disturbing works at any time of year.

With the exception of the pool frog, these species are also currently listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of herpetofauna are protected solely under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). Species such as the adder *Vipera berus*, grass snake *Natrix natrix,* common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis* are listed in respect to Section 9(1) & (5). For these species, it is prohibited to:

- Intentionally (or recklessly in Scotland) kill or injure these species
- Sell, offer or expose for sale, possess or transport for purpose of sale these species, or any part thereof.

Common frog *Rana temporaria*, common toad *Bufo bufo*, smooth newt *Lissotriton vulgaris* and palmate newt *L. helveticus* are listed in respect to Section 9(5) only which affords them protection against sale, offering or exposing for sale, possession or transport for the purpose of sale.

How is the legislation pertaining to herpetofauna liable to affect development works?

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect the breeding sites or resting places of those amphibian and reptile species protected under The Conservation Habitats and Species Regulations 2010 (as amended). A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the Wildlife and Countryside Act 1981 (as amended).

Invasive Plant Species

Certain species of plant, including Japanese knotweed *Fallopia japonica*, giant hogweed *Heracleum mantegazzianum* and Himalayan balsam *Impatiens glandulifera* are listed on Part

II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) in respect to Section 14(2). Such species are generally non-natives whose establishment or spread in the wild may be detrimental to native wildlife. Inclusion on Part II of Schedule 9 therefore makes it an offence to plant or otherwise cause these species to grow in the wild.

How is the legislation pertaining to invasive plants liable to affect development works?

Although it is not an offence to have these plants on your land per se, it is an offence to cause these species to grow in the wild. Therefore, if they are present on site and development activities (for example movement of spoil, disposal of cut waste or vehicular movements) have the potential to cause the further spread of these species to new areas, it will be necessary to ensure appropriate measures are in place to prevent this happening prior to the commencement of works.

Wild Mammals (Protection) Act 1996

All wild mammals are protected against intentional acts of cruelty under the above legislation. This 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.

To avoid possible contravention, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

B NATIONAL AND EUROPEAN LEGISLATION AFFORDED TO HABITATS

Statutory Designations: National

Nationally important areas of special scientific interest, by reason of their flora, fauna, or geological or physiographical features, are notified by the countryside agencies as statutory **Sites of Special Scientific Interest** (SSSIs) under the National Sites and Access to the Countryside Act 1949 and latterly the Wildlife & Countryside Act 1981 (as amended). As well as underpinning other national designations (such as **National Nature Reserves** which are declared by the countryside agencies under the same legislation), the system also provides statutory protection for terrestrial and coastal sites which are important within a European context (Natura 2000 network) and globally (such as Wetlands of International Importance). See subsequent sections for details of these designations. Improved provisions for the

protection and management of SSSIs have been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales).

The Wildlife & Countryside Act 1981 (as amended) also provides for the making of **Limestone Pavement Orders**, which prohibit the disturbance and removal of limestone from such designated areas, and the designation of **Marine Nature Reserves**, for which byelaws must be made to protect them.

Statutory Designations: International

Special Protection Areas (SPAs), together with **Special Areas of Conservation** (SACs) form the **Natura 2000** network. The Government is obliged to identify and classify SPAs under the EC Birds Directive (Council Directive 2009/147/EC (formerly 79/409/EEC)) on the Conservation of Wild Birds). SPAs are areas of the most important habitat for rare (listed on Annex I of the Directive) and migratory birds within the European Union. Protection afforded SPAs in terrestrial areas and territorial marine waters out to 12 nautical miles (nm) is given by The Conservation of Habitats & Species Regulations 2010 (as amended). The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SPAs in UK offshore waters (from 12-200 nm).

The Government is obliged to identify and designate SACs under the EC Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora). These are areas which have been identified as best representing the range and variety of habitats and (non-bird) species listed on Annexes I and II to the Directive within the European Union. SACs in terrestrial areas and territorial marine waters out to 12 nm are protected under The Conservation of Habitats & Species Regulations 2010 (as amended). The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SACs in UK offshore waters (from 12-200 nm).

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and wise use, in particular recognizing wetlands as ecosystems that are globally important for biodiversity conservation. Wetlands can include areas of marsh, fen, peatland or water and may be natural or artificial, permanent or temporary. Wetlands may also incorporate riparian and coastal zones adjacent to the wetlands. Ramsar sites are underpinned through prior notification as Sites of Special Scientific Interest (SSSIs) and as such receive statutory protection under the Wildlife & Countryside Act 1981 (as amended) with further protection

provided by the Countryside and Rights of Way (CRoW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. This effectively extends the level of protection to that afforded to sites which have been designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs).

Statutory Designations: Local

Under the National Sites and Access to the Countryside Act 1949 Local Nature Reserves (LNRs) may be declared by local authorities after consultation with the relevant countryside agency. LNRs are declared for sites holding special wildlife or geological interest at a local level and are managed for nature conservation, and provide opportunities for research and education and enjoyment of nature.

Non-Statutory Designations

Areas considered to be of local conservation interest may be designated by local authorities as a Wildlife Site, under a variety of names such as County Wildlife Sites (CWS), Listed Wildlife Sites (LWS), Local Nature Conservation Sites (LNCS), Sites of Biological Importance (SBIs), Sites of Importance for Nature Conservation (SINCs), or Sites of Nature Conservation Importance (SNCIs). The criteria for designation may vary between counties.

Together with the statutory designations, these are defined in local and structure plans under the Town and Country Planning system and are a material consideration when planning applications are being determined. The level of protection afforded to these sites through local planning policies and development frameworks may vary between counties.

Regionally Important Geological and Geomorphological Sites (RIGS) are the most important places for geology and geomorphology outside land holding statutory designations such as SSSIs. Locally-developed criteria are used to select these sites, according to their value for education, scientific study, historical significance or aesthetic qualities. As with local Wildlife Sites, RIGS are a material consideration when planning applications are being determined.

C NATIONAL PLANNING POLICY

The National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) replaced Planning Policy Statement (PPS9) in April 2012 as the key national planning policy concerning nature conservation. The NPPF

emphasises the need for suitable development. The Framework specifies the need for protection of designated sites and priority habitats and priority species. An emphasis is also made for the need for ecological networks via preservation, restoration and re-creation. The protection and recovery of priority species – that is those listed as UK Biodiversity Action Plan priority species – is also listed as a requirement of planning policy. In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from adverse harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and The Biodiversity Duty

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 40 of the Act requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act (Section 42 in Wales) requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity.' They are referred to in this report as Species of Principal Importance and Habitats or Principal Importance. This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

D LOCAL PLANNING POLICY

The London Borough of Richmond upon Thames Local Plan sets out the priorities for the development of the borough that will be used for making decisions on planning applications (London Borough of Richmond upon Thames, 2009). Policy CP4 Biodiversity states the following principles for development within the borough:

"The Borough's biodiversity including the SSSIs and Other Sites of Nature Importance will be safeguarded and enhanced. Biodiversity enhancements will be encouraged particularly in areas of deficiency (parts of Whitton, Hampton, Teddington, Twickenham and South

Kew), in areas of new development and along wildlife corridors and green chains such as the River Thames and River Crane corridors.

Weighted priority in terms of their importance will be afforded to protected species and priority species and habitats in the UK, Regional and Richmond upon Thames Biodiversity Action Plans"

F REGIONAL AND LOCAL BAPS

Many local authrotities in the UK have also produced a local Biodiversity Action Plan (LBAP) at the County or District level. Habitats identified as being of conservation importance (i.e. priority habitats) in Richmond Biodiversity Action Plan (London Borough of Richmond upon Thames, 2014) include ancient parkland/veteran trees, meadows and acid grassland, urban gardens and hedgerows. Priority species relevant to the site include song thrush, common frog and toad, hedgehog, woodpeckers, bumble bee, badgers and mistletoe.

The Ecology Consultancy is part of the Temple Group.

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