Preliminary Ecological Appraisal and Preliminary Bat Roost Assessment Survey

Sharpe Refinery Service, Arlington Works, Arlington Road, Twickenham, Middlesex, TW1 2BB

Dawn Roads

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Guidelines

This assessment has been designed to meet:

- Chartered Institute of Ecology and Environmental Management 'Guidelines for Preliminary Ecological Appraisal' (2013); and
- British Standard 42020 (2013) 'Biodiversity – Code of Practice for Planning and Development'.

Proportionality

> The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.
>
> This approach is enshrined in Government planning guidance, for example, paragraph 193 of the National Planning Policy Framework for England.
>
> The desk studies and field surveys undertaken to provide a preliminary ecological appraisal (PEA) might in some cases be all that is necessary.
>
> (BS 42020, 2013)

In consequence of the scale and intensity of the proposed development, the low impact on ecological receptors identified through both the site survey and search of local biological records, and the passive interface with the mitigation hierarchy, this plan-led report is considered adequate and proportionate. It communicates all relevant information necessary to determine a planning application or support the recommendations for further surveys.

Executive summary

Arbtech Consulting Ltd. undertook a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) at Sharpe Refinery Service, Arlington Works, Arlington Road, Twickenham, Middlesex, TW1 2BB on 25/05/18. The aim of the survey was to complete an extended Phase 1 Habitat Survey of the survey area (all land that will be impacted by the proposals) and analyse it against a desk study and complete a bat roost assessment of all structures on site.

The development proposal is: Mixed use redevelopment containing 24 residential units and a commercial/residential area of 610sqm within 7 units.

Recommendations –

Ecological Factor	**Survey assessment conclusions (with justification)**	**Foreseen impacts**	**Recommendations**	**Enhancements** The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99
Designated sites	There are six statutory designated sites within the study area and seven non-statutory sites. The site itself does not form part of any designated area.	The proposed development is unlikely to have any direct impact on local designated sites. The increase in housing may lead to increased recreational pressure on the sites.	No further surveys.	None applicable.
Notable habitats and plants	None present.	No impact	No further work required.	The habitats on site can be enhanced with a native planting scheme which should include a mixture of hedgerows, fruiting and flowering species and trees.

Invasive / Non-native species	None visible above ground surface.	No impacts	No further work required	None applicable
Bats	B1 and B2 have moderate habitat value for bats. Both buildings provide suitable external features for crevice dwelling bats.	As the buildings will undergo extensive renovations including re-roofing and repointing brickwork, any bat roosts present could be disturbed, damaged or destroyed and bats could be injured or killed.	B1 and B2- bat roost presence/likely absence surveys are required. Two bat emergence/re-entry surveys are required during the active bat season (May – September). To comply with national guidelines at least one of the surveys should be completed during the optimal survey period (mid-May to August), and one of the surveys must be a dawn re-entry survey. Four surveyors are required to provide full coverage of both buildings. If bats are confirming using the building, then a third survey will be required to inform a European protected species license.	Awaiting further surveys.
Birds	The buildings provide nesting habitat for birds. No nests were observed at the time of the survey.	Building demolition and refurbishment could impact nesting birds if present at the time.	The nesting bird season should be avoided which runs from 1st March-31st August. If this is not possible a nesting bird check will need to be carried out by an ecologist immediately prior to the start of any vegetation clearance. Any active nests must be left in situ with a protective buffer until the young have fledged.	Install the following bird boxes on new/retained buildings: Schwegler No 17 swift nest boxes Schwegler 1SP Sparrow Terraces Nest boxes should be positioned at least 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight.

Reptiles	No suitable habitat present	No impact	No further surveys	Reptile habitat can be created on site with areas of long grassland with log pile refugia.
Great crested newts	No suitable habitat present	No impact	No further survey	The addition of a small pond on site would improve habitat for amphibians and also for invertebrates and mammals.
Other Terrestrial Mammals	No suitable habitat present.	No impact	No further surveys	Mammal habitat on site can be created with longer areas of vegetation and log or stone piles to create refugia. Hedgehog boxes can be added in green areas next to longer vegetation.
Invertebrates	No suitable habitat present.	No impact	No further surveys	Invertebrate habitat on site will be improved by the addition of green space. The soft landscaping should include a variety of day and night blooming flowers. Insect boxes can be added to buildings or trees. Half buried deadwood piles can be added to provide breeding habitat for stag beetles.

For full details of these recommendations, please go straight to section 4.0 Conclusions, Impacts and Recommendations. Otherwise, the full report starts below.

Contents

1.0 Introduction and Context

1.1 Background

Arbtech Consulting Ltd. was commissioned by Dawn Roads to undertake a Preliminary Ecological Appraisal (PEA) at Sharpe Refinery Service, Twickenham, Middlesex, TW1 2BB. An extended Phase 1 Habitat Survey of the survey area (all land that will be impacted by the proposals) has been carried out alongside a Preliminary Roost Assessment on the buildings.

No previous surveys have been carried out by Arbtech.

1.2 Site Context

The site is located at National Grid Reference TQ 1694 7438 and measures approx. 0.3ha. The site lies in a residential area adjacent to a railway line, 430m south east of the River Thames.

1.3 Scope of the report

This report describes the baseline ecological conditions at the site; evaluates habitats within the survey area in the context of the wider environment; and describes the suitability of those habitats for notable or protected species. It identifies significant ecological impacts as a result of the development proposals; summarises the requirements for further surveys and mitigation measures, to inform subsequent mitigation proposals, achieve Planning or other statutory consent, and to comply with wildlife legislation.

The aim of the PEA was to obtain data on existing ecological conditions, and to conduct a preliminary assessment of the likely significance of ecological impacts on the proposed development; establishing the baseline conditions for future monitoring. To achieve this, the following steps were taken:

- The desk study area and field survey area (generally 50m from the site boundary/proposed footprint and including the 'zone of influence' of the scheme) have been identified
- A desk study has been carried out including a data search from Greenspace Information for Greater London (GiGL).
- Baseline information on the site and surrounding area has been recorded through an 'Extended Phase 1 Habitat Survey', including a Phase 1 Habitat Survey (JNCC 2010) and recording further details in relation to notable or protected habitats and species
- The ecological features present within the survey area have been evaluated where possible (CIEEM, 2006)
- Invasive plant and animal species (such as those listed on Schedule 9 of the Wildlife & Countryside Act [WCA]) have been identified
- Likely impacts on features of value, as a result of the development proposals, have been identified
- Recommendations for further survey and assessment have been made
- Recommendations for mitigation and opportunities for enhancement have been provided based on current information

A survey plan is presented in Appendix 1, the proposed Project Plan is included in Appendix 2, desk study results are provided in Appendix 3, and a summary of relevant legislation can be found in Appendix 4.

1.4 Project Description

The development proposal is: Mixed use redevelopment containing 24 residential units and a commercial/residential area of 610sqm within 7 units.

The proposed site plan is included in Appendix 2 (where available).

2.0 Methodology

2.1 Desk Study methodology

Existing biological records data relating to the site and a surrounding 2km radius (the study area) are required to conform to national guidelines. The data search is confidential information that is not suitable for public release.

A review of the following information sources has also been undertaken to inform the assessment:

- Landscape structure using aerial images from Google Earth and OS maps
- Designated sites, habitat and granted EPSL records held on Magic.gov.uk.

2.2 Site Survey methodology

The survey was undertaken by Natalie Evans (Natural England Bat Licence Number: 2015-11257-CLS-CLS) on 15/06/18.

The methodology for the Phase 1 Habitat Survey is based on the best practice publication Phase 1 Habitat Survey Methodology (JNCC, 2010). All land parcels are described and mapped according to JNCC Phase 1 habitat classification (see site map in Appendix 1). Where appropriate, target notes provide supplementary information on habitat conditions, features too small to map to scale, species composition, structure and management.

During the survey, habitats were assessed for their suitability to support protected species, and field signs indicating their presence recorded. The assessment takes into consideration the findings of the desk study, the habitat conditions on site and in the context of the surrounding landscape, and the ecology of the protected species. The likelihood of the presence of protected species is ranked; the habitats on site are evaluated against their likelihood to provide suitable habitat for protected species.

The ecological value of the survey area has been assessed based on the Guidelines for Ecological Impact Assessment (CIEEM, 2006), and the Handbook of Biodiversity Methods: Survey, Evaluation and Monitoring (David Hill, 2005), using geographic frames of reference. The biodiversity value of any identified designated sites, habitat types and associated species assemblages has been considered. The distribution and extent of invasive species listed on Schedule 9 of the Wildlife and Countryside Act (1981) were also noted throughout the survey area.

All features that will be impacted by the project proposals were assessed for their bat roosting and/or commuting habitat. The surveyor systematically surveyed all features suitable for bats and signs of bat activity.

For any surveyed buildings:

A non-intrusive visual appraisal from the ground using binoculars, inspecting the external features of the building(s) for potential access/egress points, and for signs of bat use. An internal inspection of the building was also made, including the living areas of derelict or abandoned buildings and the accessible roof spaces of all buildings, using an endoscope, torch and ladders. The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows, and carried out a detailed search of numerous features within the roof space.

For any surveyed trees

A visual inspection from ground level using binoculars and where accessible an internal inspection of suitable roosting features using an endoscope, torch and ladders.

2.3 Suitability Assessment

The likelihood of occurrence of protected species is ranked according to the criteria listed in Table 1. The habitats on site were evaluated as to their likelihood to provide sheltering, roosting, foraging, basking or nesting habitat.

Table 1: showing criteria considered when assessing the likelihood of occurrence of protected species

Present	**Species are confirmed as present from the current survey or historical confirmed records.**
High	Habitat and features of high quality for species/species assemblage. Species known to be present in wider landscape (desk study records). Good quality surrounding habitat and good connectivity.
Medium	Habitat and features of moderate quality. The site in combination with surrounding land provides all habitat/ecological conditions required by the species/assemblage. Within known national distribution of species and local records in desk study area.

	Limiting factors to suitability, including small area of suitable habitat, some severance/poor connectivity with wider landscape, poor to moderate habitat suitability in local area.
Low	Habitats within the survey area poor quality. Few or no records from data search. Despite above, presence cannot be discounted as within national range, all required features/conditions present on site and in surrounding landscape. Limiting factors could include isolation, poor quality landscape, or disturbance.
Negligible	Very limited poor-quality habitats and features. No local records from desk study; site on edge of, or outside, national range. Surrounding habitats considered unlikely to support species/species assemblage.
Likelihood of bats being present	**Feature of building and its context**
Higher	Buildings/structures with features of particular significance for roosting bats e.g. mines, caves, tunnels, icehouses and cellars. Habitat on site and surrounding landscape of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland. Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river and or stream valleys and hedgerows. Site is proximate to known or likely roosts (based on historical data).
Lower	A small number of possible roost sites/features, used sporadically by more widespread species. Habitat suitable for foraging in close proximity but isolated in the landscape. Or an isolated site not connected by prominent linear features. Few features suitable for roosting, minor foraging or commuting.
Likelihood of bats being present	**Feature of tree and its context**
Higher	A 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 potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Lower	A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.

2.4 Limitations – evaluation of the methodology

It should be noted that whilst every effort has been made to describe the baseline conditions within the survey area, and evaluate these features, this report does not provide a complete characterisation of the site. This assessment provides a preliminary view of the likelihood of protected species being present. This is based on suitability of the habitats on the site and in the wider landscape, the ecology and biology of species as currently understood, and the known distribution of species as recovered during the searches of historical biological records.

The loft voids of B1 could not be fully inspected as they were un-boarded and walking on the aged ceiling joists alone presented a health and safety risk. The floor of the lofts were observed from the loft hatch. one of the lofts in B2 could not be inspected as access could not be provided by the tenant. These limitations could lead to an under-recording of bat evidence.

3.0 Results and Evaluation

3.1 Desk Study Results

A summary of desk study results is provided below; full details are included in Appendix 3.

3.2 Designated sites

There are six statutory designated sites within the study area and seven non-statutory sites. Their location and extent are illustrated in Appendix 3. Table 3 (below) provides details of the designated site including its reasons for notification.

Table 2: Designated sites within 2km radius of the site

Designated Site Name	**Distance from Site (Approx.)**	**Reasons for Notification from Natural England (unless otherwise stated)**
Statutory Sites		
Richmond Park National Nature Reserve (NNR), Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC).	1.6km south east	Richmond Park has been managed as a royal deer park since the seventeenth century, producing a range of habitats of value to wildlife. In particular, Richmond Park is of importance for its diverse deadwood beetle fauna associated with the ancient trees found throughout the parkland. In addition, the Park supports the most extensive area of dry acid grassland in Greater London.
Ham Lands Local Nature Reserve (LNR)	1.2km south west	Ham Lands local nature reserve is an extensive area of grassland and scrub with abundant wildlife. The site was once extensively excavated for gravel, then back-filled over time with a variety of soil types from all over London. This has created a unique mosaic of different vegetation types attracting many butterfly and bird species. In spring, the site is full of hawthorn blossom and in the summer, the meadows support hundreds of wild flowers.

Designated Site Name	Distance from Site (Approx.)	Reasons for Notification from Natural England (unless otherwise stated)
Isleworth Ait LNR	1km north west	This three and a half hectare island in the Thames is one of the London Wildlife Trust's more unusual reserves and is rarely visited by humans. It is remarkable for its tall canopy of mixed woodland of mainly poplar and willow, rooted on an area of ground that is regularly flooded. The island provides an undisturbed sanctuary for a variety of birds including treecreeper, kingfisher and heron. Among its other important residents are several rare beetles and two rare species of mollusc, the two-lipped door snail and the German hairy snail. Two-lipped door snail and the German hairy snail; treecreeper, kingfisher, heron, goldeneye, song thrush, spotted flycatcher, grey wagtail, house martin, dunlin, swallow and swift. To preserve the unique wildlife, access on to Isleworth Ait is not encouraged.
Syon Park SSSI	1.7km north	Syon Park is the only known area of tall grass washland along the Thames in Greater London; it contains several invertebrate species with a restricted distribution, both locally and nationally.
Non statutory sites - Sites of Importance for Nature Conservation (SINC's)		

Designated Site Name	Distance from Site (Approx.)	Reasons for Notification from Natural England (unless otherwise stated)
River Thames and tidal tributaries	430m north east	Intertidal, Marsh/swamp, Pond/Lake, Reed bed, Running water, Saltmarsh, Secondary woodland, Vegetated wall/tombstones, Wet ditches, Wet grassland, Wet woodland/carr. The River Thames and the tidal sections of creeks and rivers which flow into it comprise a number of valuable habitats not found elsewhere in London. The mud-flats, shingle beach, inter-tidal vegetation, islands and river channel itself support many species from freshwater, estuarine and marine communities which are rare in London. The site is of particular importance for wildfowl and wading birds. The river walls, particularly in south and east London, also provide important feeding areas for the nationally rare and specially-protected black redstart. The Thames is extremely important for fish, with over 100 species now present. Many of the tidal creeks are important fish nurseries, including for several nationally uncommon species such as smelt. Barking Creek supports extensive reed beds. Further downstream are small areas of saltmarsh, a very rare habitat in London, where there is a small population of the nationally scarce marsh sow-thistle (Sonchus palustris). Wetlands beside the river in Kew support the only London population of the nationally rare and specially-protected cut-grass (Leersia oryzoides). The numerous small islands in the upper reaches support important invertebrate communities, including several nationally rare snails, as well as a number of heronries. Chiswick Eyot, one of the islands, is a Local Nature Reserve. The towpath in the upper reaches is included in the site, and in places supports a diverse flora with numerous London rarities, both native and exotic. Ninety per cent of the banks of the tidal Thames and its creeks are owned by the Port of London Authority, whereas the riparian owners are responsible for the non-tidal (upriver) banks. The water is not owned by anybody. The River Thames upriver of the Thames Barrier is followed by the Thames Path National Trail.

Designated Site Name	Distance from Site (Approx.)	Reasons for Notification from Natural England (unless otherwise stated)
Royal Mid-Surrey Golf Course	900m north	Acid grassland, Amenity grassland, Scattered trees, Scrub, Secondary woodland This large golf course, adjacent to Kew Gardens, supports fine acid grassland, especially in the northern half where there is a thriving population of heath groundsel (Senecio sylvatica), which is scarce in London. Other plants in the acid grassland include heath and lady's bedstraws (Galium saxatile and G. verum), mouse-ear hawkweed (Pilosella officinarum) and sheep's sorrel (Rumex acetosella). A single plant of heather (Calluna vulgaris) has recently been found. Common butterflies abound in the roughs, including small heath, meadow brown and small, large and Essex skippers. There are some fine mature trees, and small areas of scrub and woodland, providing further habitat for birds and mammals. Along the western edge of the golf course is some excellent wetland habitat. This is included in the River Thames Site of Metropolitan Importance.
River Crane at St Margarets	>500m	Running water, Scrub, Secondary woodland, Semi-improved neutral grassland This site includes the Crane between Chertsey Road and the tidal limit at Northcote Road, below which it is included in the River Thames and tidal tributaries Metropolitan Site. The river is divided into two channels and is lined with trees and shrubs. Kingfishers are frequently seen. The river runs through an area of largely disused allotments, which add to the wildlife habitats of the site.
River Crane at St Margaret's (Richmond side)	>500m	This site includes the Crane between Chertsey Road and the tidal limit at Northcote Road (below which the river is included in the River Thames and tidal tributaries Metropolitan site, and an adjacent area of largely disused allotments. The river is divided into two channels and is lined with trees and shrubs. Kingfishers are frequently seen. Most of the site is in Hounslow, but one side of the river is in Richmond.

Designated Site Name	Distance from Site (Approx.)	Reasons for Notification from Natural England (unless otherwise stated)
Marble Hill Park and Orleans House Gardens	500m south east	Amenity grassland, Planted shrubbery, Scattered trees, Secondary woodland, Semi-improved neutral grassland, Veteran trees Marble Hill Park is an attractive landscaped park adjacent to the River Thames. The most impressive natural feature of the park is a huge black walnut tree (Juglans nigra), near the entrance from the Thames footpath. Wildlife habitats in the park include grassland and woodland. Strips of grassland in the south and east of the park are mown infrequently, increasing the ecological value. Wild flowers occurring in patches where seed has been sown include common knapweed (*Centaurea nigra*), greater bird's-foot-trefoil (*Lotus pedunculatus*), smooth tare (*Vicia tetrasperma*), meadow buttercup (*Ranunculus acris*), oxeye daisy (*Leucanthemum vulgare*) sainfoin (*Onobrychis villosa),* meadow crane's-bill (*Geranium pratense*) and salad burnet (*Sanguisorba minor*). A strip of woodland in the north-west of Marble Hill Park is composed mainly of non-native species, with a dense understorey of rhododendron (*Rhododendron ponticum*) and holly (*Ilex aquilifolium*). This provides food and cover for birds and complements the open grassland of most of the site. Much of the garden is now wooded. Specimen trees from earlier landscaping, such as cedar of Lebanon (*Cedrus libani*) and Oriental plane (*Platanus orientalis)* are now surrounded by sycamore (*Acer pseudoplatanus*), silver birch (*Betula pendula*) and other young trees. This woodland is developing a good structure with more saplings and young trees present now among the mature trees.
Twickenham Road Meadow	<2km	Scattered trees, Semi-improved neutral grassland, Vegetated wall/tombstones, Wet grassland This narrow strip of rough grassland lies between Twickenham Road and the railway, just east of Twickenham Bridge. It was formerly part of the Old Deer Park but is now cut off from the Old Deer Park Recreation Ground by the main road. The southern part of the meadow, beside the River Thames, floods regularly. The sward is rather rank and not particularly diverse but is likely to support some interesting invertebrates. A few willows (*Salix sp*.) add variety to the habitat. The drier, northern part of the meadow has a slightly better range of wild flowers, including spotted medick (*Medicago arabica*). A number of trees, including oak (*Quercus robur*), beech (*Fagus sylvatica*) and poplar (*Populus sp*.) have been planted. The old brick walls of the railway viaduct support some interesting plants including, pellitory-of-the-wall (*Paretaria judaica*), ivy-leaved toadflax (*Cymbalaria muralis*) and four species of ferns: wall-rue (*Asplenium ruta-muraria*), maidenhair spleenwort (*A. trichomanes*), male-fern (*Dryopteris felix-mas*) and hart's-tongue (*Phyllitis scolopendrium*). The first two of these are scarce in London, usually growing only on old walls such as this.

Designated Site Name	Distance from Site (Approx.)	Reasons for Notification from Natural England (unless otherwise stated)
Moor Mead Recreation Ground	500m south west	Amenity grassland, Running water, Scattered trees, Semi-improved neutral grassland, Tall herbs The river corridor is shaded by overhanging trees and fenced off from the park itself. Most of the park comprises informally managed short grass, but there are plenty of daisies (*Bellis perennis*) and other low-growing wild flowers, such as lesser trefoil (*Trifolium dubium*) and dove's-foot crane's-bill (*Geranium molle*). Where the grass is allowed to grow longer towards the edges of the site, swathes of cow parsley (*Anthriscus sylvestris*), with creeping buttercup (*Ranunculus repens*) and common mallow (*Malva sylvestris*) enhance the rural character of the site. Mature trees include ornemental cherry (*Prunus sp*.), Lombardy poplar (*Populus nigra 'Italica'*) and avenues of a purple form of Norway maple (*Acer platanoides*). A fair range of common birds can be found here, such as blackbird, collared dove, blue tit, chaffinch, and the - now ubiquitous in west London - ring-necked parakeet.

3.3 Landscape

A review of the designated sites, aerial photographs (Figure 1), the Magic database and OS maps has been undertaken. Collated together, the site's local habitat is described below:

The local landscape offers valuable resources for a range of specie with an impressive diversity of habitats including woodland, grassland and heathland. There is excellent connectivity from the survey area to these high value habitats. Priority habitats within 2km of the site are listed in Table 3.

Table 3: Priority Habitat Inventory within 2km (Magic.gov.uk):

Habitat	Closest distance from site (approx.)
Deciduous Woodland	200m north west
Good quality semi improved grassland	900m north
Woodpasture and parkland	530m north east
Lowland fens	1.72km north
Lowland dry acid grassland	1.6km south east

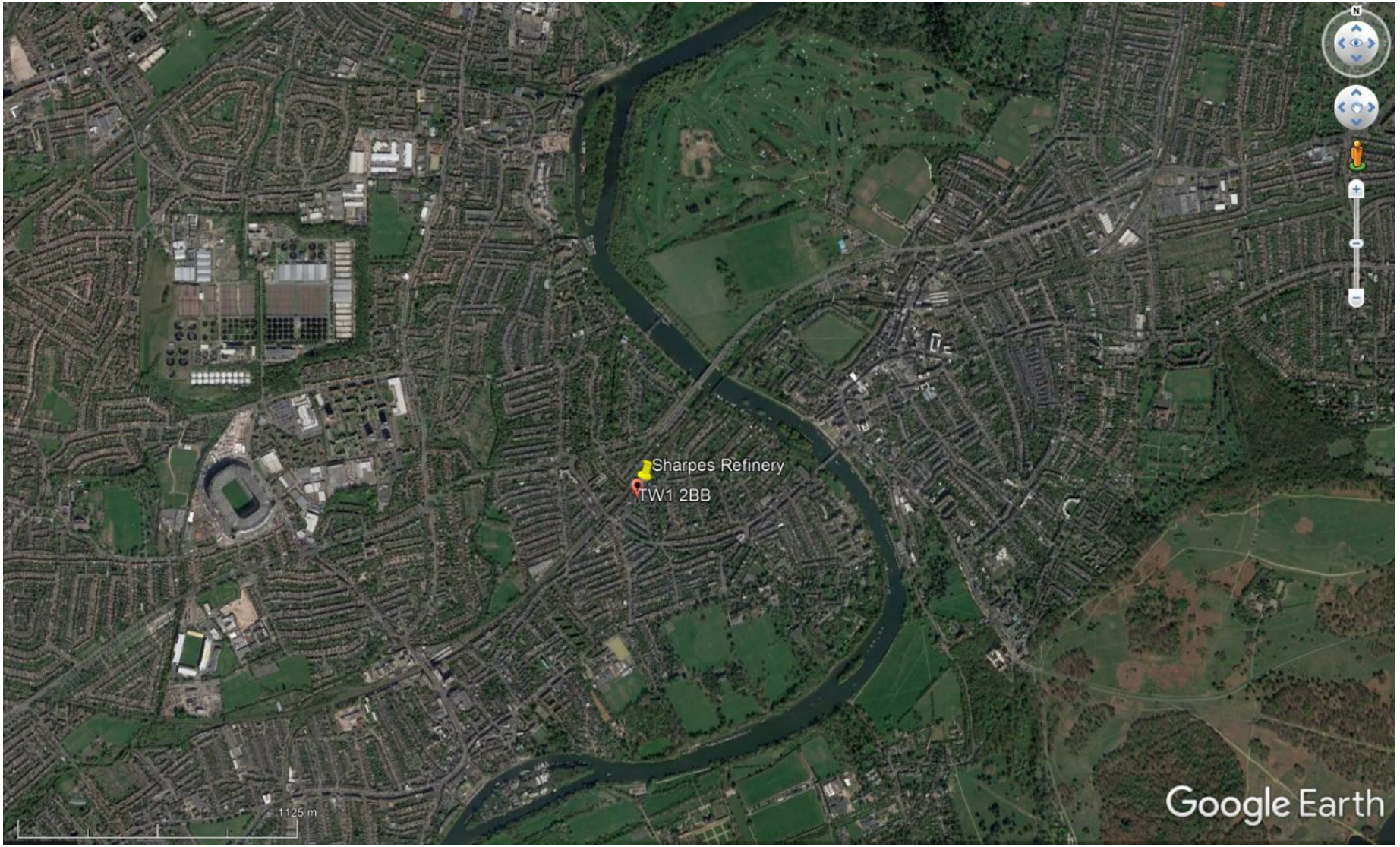

Figure 1: Aerial photo of site, showing landscape structure

3.4 Historical records

Historical records have been obtained from GiGL and are summarised below:

Table 4: Historical records within 2km of the site

Taxon Group	**Common name**	**Scientific binomial**	**Record details**
Bats	Common pipistrelle	*Pipistrelle pipistrellus*	21 records
	Serotine	*Eptesicus serotinus*	Three records
	Soprano pipistrelle	*Pipistrellus pygmaeus*	36 records
	Unidentified myotis	*Myotis sp.*	11 records
	Brown long-eared bat	*Plecotus auritus*	One record
	Unidentified long-eared	*Plecotus sp.*	Three records
	Daubenton's	*Myotis daubentonii*	11 records
	Natterer's	*Myotis nattereri*	Two records
	Noctule	*Nyctalus noctula*	12 records
	Leisler's	*Nyctalus leisleri*	Six records
	Unidentified pipistrelle	*Pipistrellus sp.*	22 records
Birds – 36 species including:	Nightingale	*Luscinia megarhynchos*	One record

Other mammals	Common seal	*Phoca vitulina*	One record
	Hedgehog	*Erinaceus europaeus*	86 records
Amphibians	Common toad	*Bufo bufo*	Ten records
	Common frog	*Rana temporaria*	91 records
Invertebrates	Stag beetle	*Lacunus cervus*	131 records

A search of the Magic database for granted European Protected Species Mitigation Licences (EPSMLs) within a 2km radius found three licenced sites and details are provided in Table 5 below.

Table 5: Granted EPSMLs (bats) within 2km of the site

Case reference of granted application	**Approx. distance from site**	**Species Effected**	**Licence Start Date:**	**Licence End Date:**	**Impacts allowed by licence**
EPSM2009-1356	790m north west	C-PIP	08/04/2011	30/06/2015	Destruction of a resting place
EPSM2011-2993	1.9km west	C-PIP; S-PIP	26/04/2011	31/08/2014	Destruction of a resting place
2016-25082-EPS-MIT	1km south	BLE, C-PIP, S-PIP	06/09/2016	01/09/2021	Destruction of a resting place

The EPSM licences in the surrounding area show that three bat roosts have been destroyed within 2km which have impacted common pipistrelles, soprano pipistrelles and and brown long-eared bats. Displaced bats from these roosts could find roosting habitat on site.

3.5 Field Survey Results

The site of the proposed development area is illustrated in the map in Appendix 1. The environmental variables recorded at the time of the survey are shown in Table 6.

Table 6: Environmental variables during the survey

Date: 15/06/18	
Temperature	24°C
Humidity	61%
Cloud Cover	10%
Wind	5mph
Rain	None

3.6 Site Feature descriptions and photos

J3.6 Buildings and Hard Standing

The site is comprised of buildings and hard standing associated with workshops, studios, offices and storage spaces. There are two main buildings, B1 and B2 with attached metal sheds (shown right). There is parking and tarmac areas surrounding the buildings.

B1 and B2

B1 and B2 have the same structure, size and materials and are situated directly opposite each other on the site. The buildings are two storey of brick construction, with gabled slate tiled roofs. They buildings have timber sash windows and timber doors on the ground floor. They have tightly fitting brick chimneys. The north west elevation of B2 backs straight onto the railway line and cannot be surveyed.

On B1 along the south east elevation there are gaps on to the wall tops which could be used by crevice dwelling bat species.

On the north west elevation of B1 there are gaps in the brickwork.

On a ground floor window of B1 on the north west elevation a pipistrelle type bat dropping was stuck to the glass. This could have been deposited by a passing bat.

On the south west gable end of B2 there is missing mortar along the roof edge that could provide suitable roosting habitat for crevice dwelling bats.

On the north east elevation of B2 there are also gaps in the brickwork which could be utilised by crevice dwelling bats.

The metal workshops attached to B1 (identified as B3 on the survey map) are unlikely to provide suitable roosting habitat for bats as they are single skin corrugated metal with no suitable roosting features.

There are two loft spaces in each building, three of which were inspected. The roof voids are all unlined with modern timber rafters and ridge beams. Gaps around the roof could allow bat access into the voids, however no evidence of bat roosting was noted. The voids all have a ridge height of approx. 2m. the south west roof void of B2 could not be accessed.

B4 is a brick toilet block with a flat roof. The building has no suitable roosting habitat for bats.

The access driveway has a tree line of box *Buxus sempervirens*, ash *Fraxinus excelsior*, tree of heaven *Ailanthus altissima*, sycamore *Acer psuedoplatiunus* and conifer.

4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

Likelihood of the presence of protected species

The habitats on site were evaluated as to their likelihood to provide sheltering, roosting, foraging, basking or nesting habitat. The likelihood of occupancy of protected species is ranked according to the criteria listed in Table 1.

Where this report supports a planning application, the ecological interest of the study area (including the survey area) and the proposed development has also been evaluated in terms of the planning policies relating to biodiversity. It will be clearly stated where a preliminary value can be given and where further information is required.

Appropriate justification for this assessment is provided in Section 2.3 and Table 1 of this report.

4.2 Evaluation

Taking the desk study and site survey results into account, the following conclusions for ecological factors has been reached.

Table 7: Evaluation of site

Ecological Factor	**Survey assessment conclusions (with justification)**	**Foreseen impacts**	**Recommendations**	**Enhancements** The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99
Designated sites	There are six statutory designated sites within the study area and seven non-statutory sites. The site itself does not form part of any designated area.	The proposed development is unlikely to have any direct impact on local designated sites. The increase in housing may lead to increased recreational pressure on the sites.	No further surveys.	None applicable.
Notable habitats and plants	None present.	No impact	No further work required.	The habitats on site can be enhanced with a native planting scheme which should include a mixture of hedgerows, fruiting and flowering species and trees.
Invasive / Non-native species	None visible above ground surface.	No impacts	No further work required	None applicable

Bats	B1 and B2 have moderate habitat value for bats. Both buildings provide suitable external features for crevice dwelling bats.	As the buildings will undergo extensive renovations including re-roofing and repointing brickwork, any bat roosts present could be disturbed, damaged or destroyed and bats could be injured or killed.	B1 and B2- bat roost presence/likely absence surveys are required. Two bat emergence/re-entry surveys are required during the active bat season (May – September). To comply with national guidelines at least one of the surveys should be completed during the optimal survey period (mid-May to August), and one of the surveys must be a dawn re-entry survey. Four surveyors are required to provide full coverage of both buildings. If bats are confirming using the building, then a third survey will be required to inform a European protected species license.	Awaiting further surveys.
Birds	The buildings provide nesting habitat for birds. No nests were observed at the time of the survey.	Building demolition and refurbishment could impact nesting birds if present at the time.	The nesting bird season should be avoided which runs from 1st March-31st August. If this is not possible a nesting bird check will need to be carried out by an ecologist immediately prior to the start of any vegetation clearance. Any active nests must be left in situ with a protective buffer until the young have fledged.	Install the following bird boxes on new/retained buildings: Schwegler No 17 swift nest boxes Schwegler 1SP Sparrow Terraces Nest boxes should be positioned at least 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight.

Reptiles	No suitable habitat present	No impact	No further surveys	Reptile habitat can be created on site with areas of long grassland with log pile refugia.
Great crested newts	No suitable habitat present	No impact	No further survey	None applicable
Other Terrestrial Mammals	No suitable habitat present.	No impact	No further surveys	Mammal habitat on site can be created with longer areas of vegetation and log or stone piles to create refugia. Hedgehog boxes can be added in green areas next to longer vegetation.
Invertebrates	No suitable habitat present.	No impact	No further surveys	Invertebrate habitat on site will be improved by the addition of green space. The soft landscaping should include a variety of day and night blooming flowers. Insect boxes can be added to buildings or trees. Half buried deadwood piles can be added to provide breeding habitat for stag beetles.

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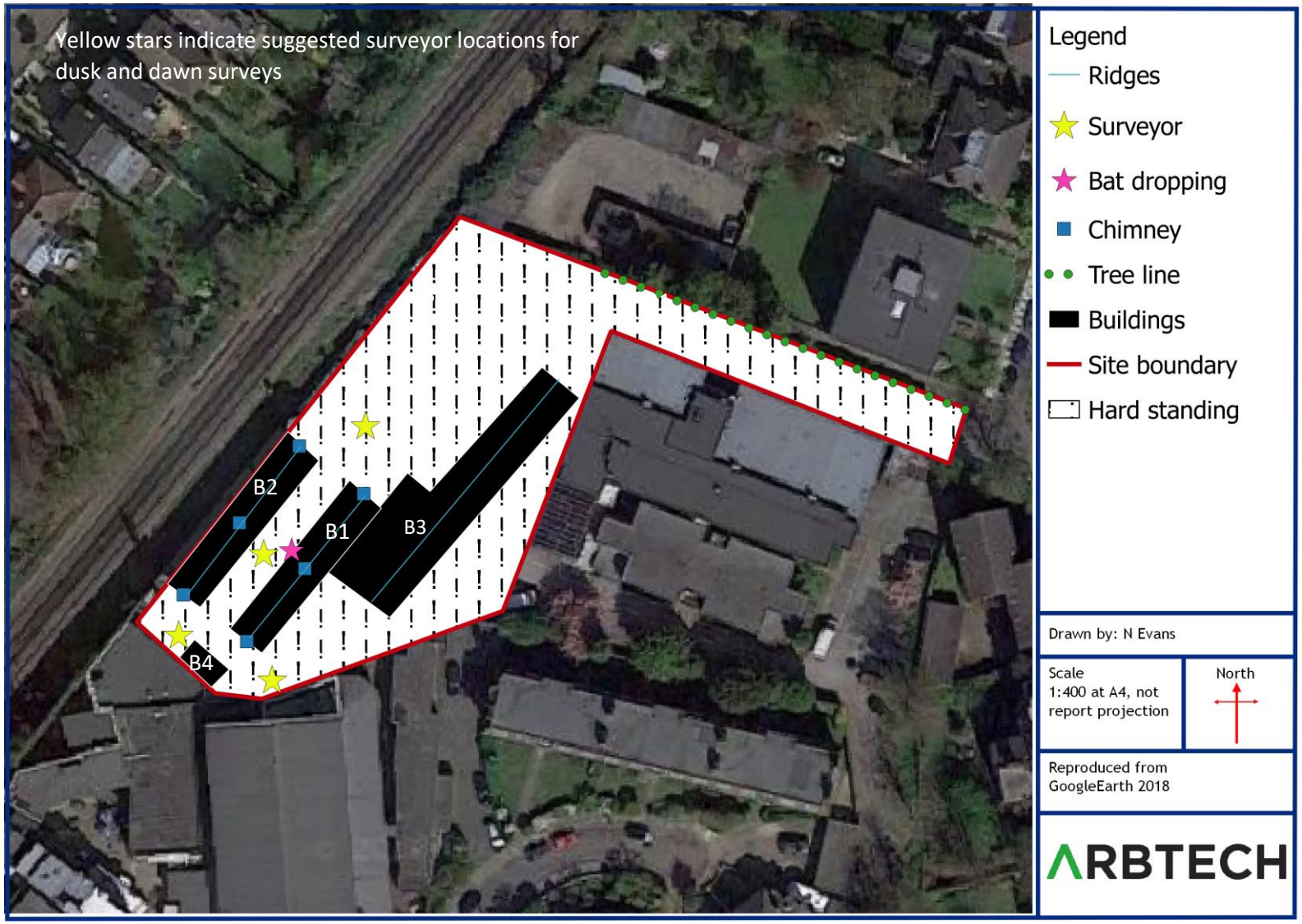
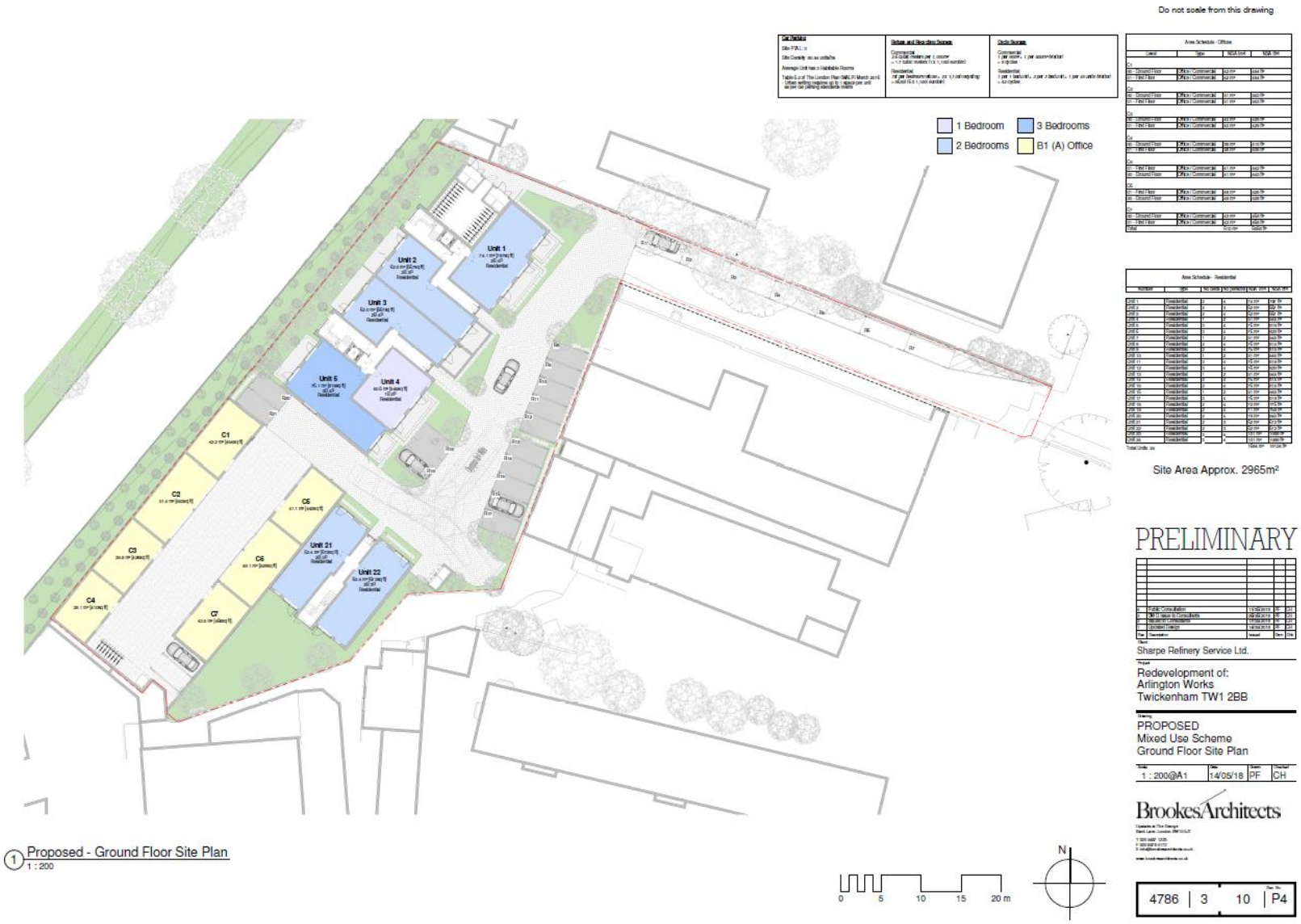
Appendix 1: Phase 1 Habitat Survey Map



Appendix 2: Proposed Site Plan



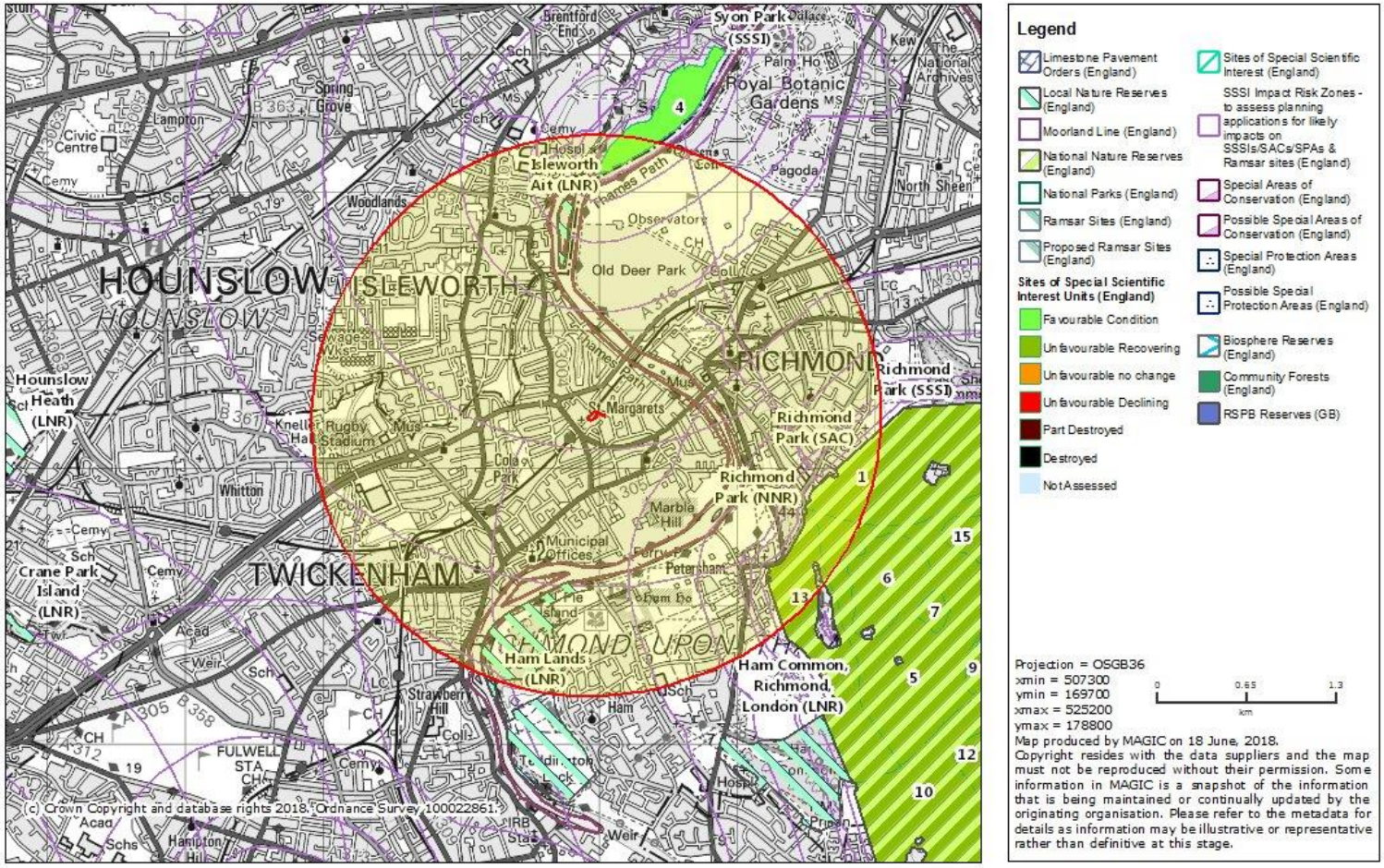
1 Proposed - Ground Floor Site Plan
1 : 200

Appendix 3: Desk Study Information

Full historical records can be provided on request.

MAGiC

Designated Sites



Legend

- Limestone Pavement Orders (England)
- Local Nature Reserves (England)
- Moorland Line (England)
- National Nature Reserves (England)
- National Parks (England)
- Ramsar Sites (England)
- Proposed Ramsar Sites (England)

Sites of Special Scientific Interest Units (England)

- Favourable Condition
- Unfavourable Recovering
- Unfavourable no change
- Unfavourable Declining
- Part Destroyed
- Destroyed
- Not Assessed

- Sites of Special Scientific Interest (England)
- SSSI Impact Risk Zones - to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England)
- Special Areas of Conservation (England)
- Possible Special Areas of Conservation (England)
- Special Protection Areas (England)
- Possible Special Protection Areas (England)
- Biosphere Reserves (England)
- Community Forests (England)
- RSPB Reserves (GB)

Projection = OSGB36
xmin = 507300
ymin = 169700
xmax = 525200
ymax = 178800

0 0.65 1.3 km

Map produced by MAGIC on 18 June, 2018.
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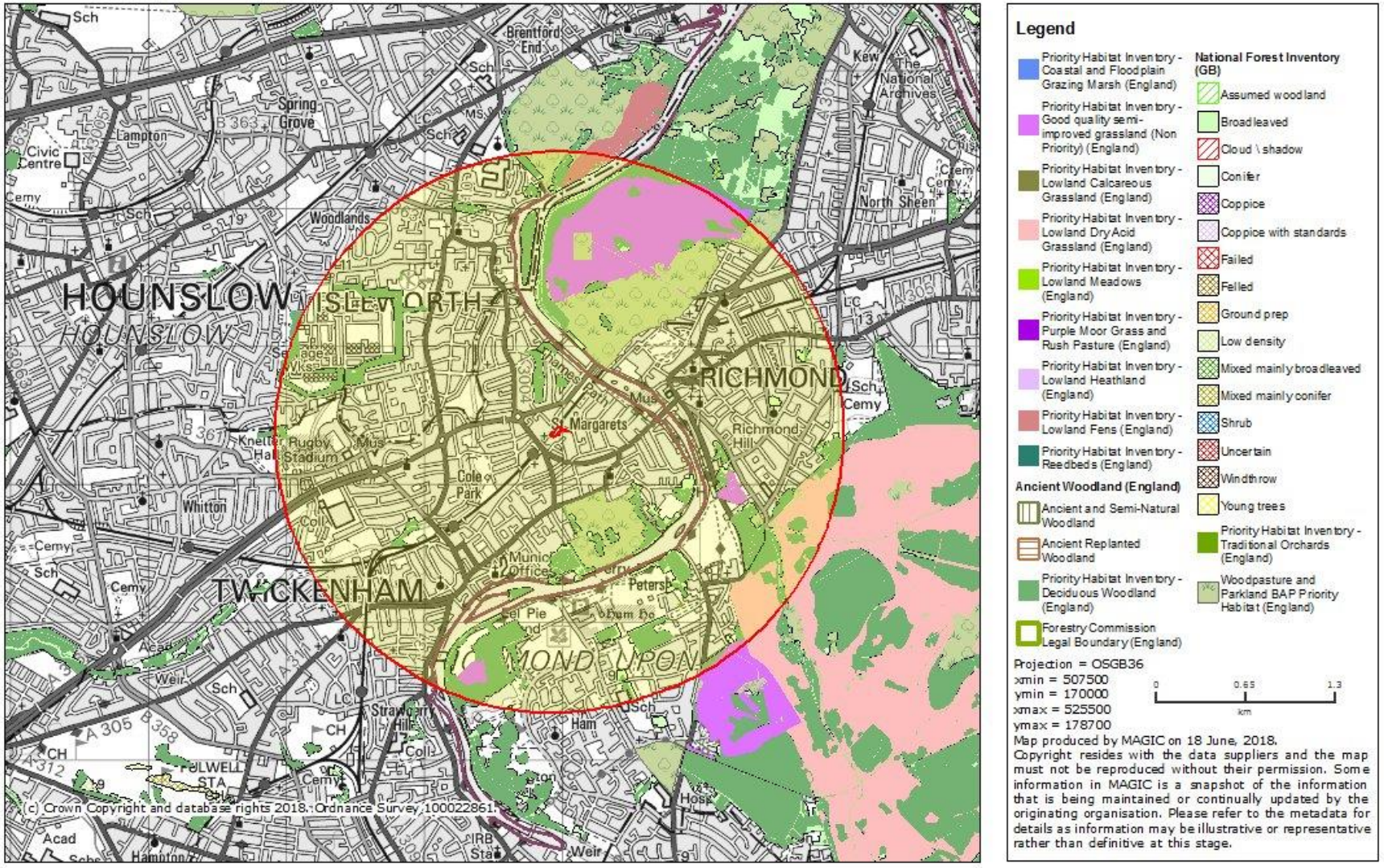
MAGiC

Habitats



Legend

- Priority Habitat Inventory - Coastal and Floodplain Grazing Marsh (England)
- Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) (England)
- Priority Habitat Inventory - Lowland Calcareous Grassland (England)
- Priority Habitat Inventory - Lowland Dry Acid Grassland (England)
- Priority Habitat Inventory - Lowland Meadows (England)
- Priority Habitat Inventory - Purple Moor Grass and Rush Pasture (England)
- Priority Habitat Inventory - Lowland Heathland (England)
- Priority Habitat Inventory - Lowland Fens (England)
- Priority Habitat Inventory - Reedbeds (England)

Ancient Woodland (England)

- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland
- Priority Habitat Inventory - Deciduous Woodland (England)
- Forestry Commission Legal Boundary (England)

National Forest Inventory (GB)

- Assumed woodland
- Broadleaved
- Cloud \ shadow
- Conifer
- Coppice
- Coppice with standards
- Failed
- Felled
- Ground prep
- Low density
- Mixed mainly broadleaved
- Mixed mainly conifer
- Shrub
- Uncertain
- Windthrow
- Young trees
- Priority Habitat Inventory - Traditional Orchards (England)
- Woodpasture and Parkland BAP Priority Habitat (England)

Projection = OSGB36
xmin = 507500
ymin = 170000
xmax = 525500
ymax = 178700

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km

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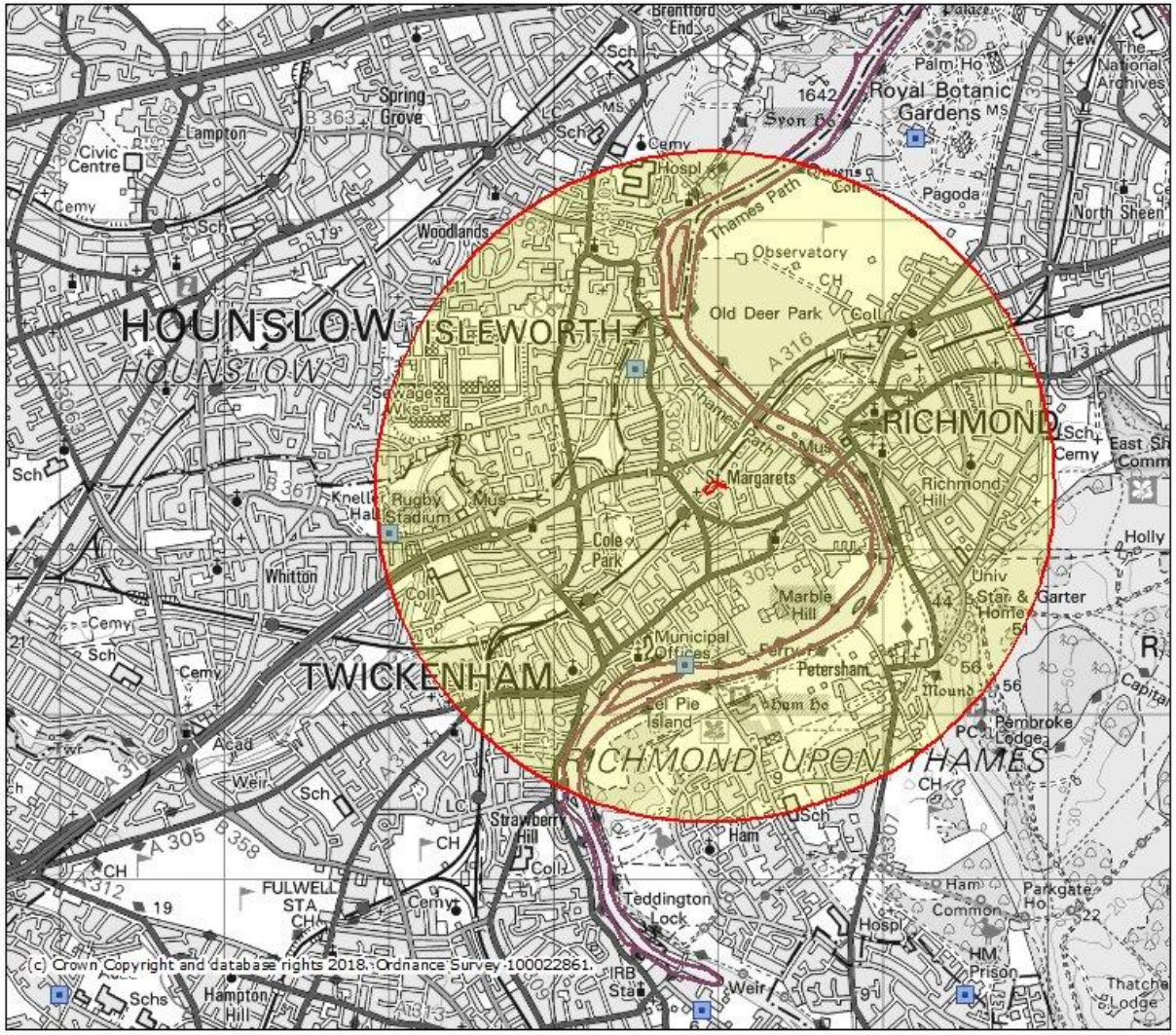
MAGiC

EPSLs



Legend

Granted European Protected Species Applications (England)

- Amphibian
- Bat
- Cetacean
- Invertebrate
- Other Mammal
- Plant
- Reptile

Projection = OSGB36
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xmax = 525200
ymax = 178600

0 0.65 1.3
km

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Appendix 4: Legislation and Planning Policy

LEGAL PROTECTION

National and European Legislation Afforded to Habitats

International Statutory Designations

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are sites of European importance and are designated under the EC Habitats Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and the EC Birds Directive 2009/147/EC on the conservation of wild birds respectively. Both form part of the wider Natura 2000 network across Europe.

Under the Habitats Directive the, Article 3 requires the establishment of a network of important conservation sites (SACs) across Europe in order to conserve the 189 habitats and 788 species (non- bird) identified in Annexes I and II of the Directive (as amended).

SPAs are classified under Article 2 of the EC Birds Directive both for rare bird species (as listed on Annex I) and for important migratory species.

SACs and SPAs up to 12 nautical miles (nm) from the coast are afforded protection in the UK under the Conservation of Habitats and Species Regulations 2010 which consolidate all amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994. In Scotland, the requirements of Habitats Directive are implemented through a combination of the 1994 and the 2010 (reserved matters) Regulations. The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a means for designating and protecting 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 recognises the importance of wetland ecosystems in relation to global biodiversity conservation. The Convention refers to wetlands as "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres" however they may also include riparian and coastal zones. Ramsar sites are statutorily protected 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. The Government in England and Wales has issued policy statements which ensure that Ramsar sites are afforded the same protection as areas designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs).

National Statutory Designations

Sites of Special Scientific Interest (SSSI) are designated by nature conservation agencies in order to conserve key flora, fauna, geological or physio-geographical features within the UK. The original designations were under the National Parks and Access to the Countryside Act 1949 but SSSIs were then re-designated under the Wildlife & Countryside Act 1981 (as amended). As

well as reinforcing other national designations (including National Nature Reserves), the system also provides statutory protection for terrestrial and coastal sites which are important within the European Natura 2000 network and globally. Further provisions for the protection and management of SSSIs have been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and the Nature Conservation (Scotland) Act 2004.

Local Statutory Designations

Local authorities in consultation with the relevant nature conservation agency can declare Local Nature Reserves (LNRs) under the National Parks and Access to the Countryside Act 1949. LNRs are designated for flora, fauna or geological interest and are managed locally to retain these features and provide research, education and recreational opportunities.

Non- Statutory Designations

All non-statutorily designated sites are referred to as Local Wildlife Sites (LWS) and can be designated by the local authority for supporting local conservation interest. Combined with statutory designation, these sites are considered within Local Development Frameworks under the Town and Country Planning system and are a material consideration during the determination of planning applications. The protection afforded to these sites varies depending on the local authority involved.

Regionally Important Geological Sites (RIGs) are the most important geological and geomorphological areas outside of statutory designations. These sites are also a material consideration during the determination of planning applications.

The Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are designed to protect 'important' countryside hedgerows. Importance is defined by whether the hedgerow (a) has existed for 30 years or more; or (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Under the Regulations, it is against the law to remove or destroy hedgerows on or adjacent to common land, village greens, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys without the permission of the local authority. Hedgerows 'within or marking the boundary of the curtilage of a dwelling-house' are excluded.

National and European Legislation Afforded to Species

The Habitats Directive

The EC Habitats Directive aims to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those species of European importance. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 (the Conservation Regulations) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended). The following notes are relevant for all species protected under the EC Habitats Directive:

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 Habitats Regulations do 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':

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;

- There is no satisfactory alternative; and
- The action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

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

The Wildlife and Countryside Act (WCA) 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection requirements of EC Birds Directive 2009/147/EC on the conservation of wild birds in Great Britain (the birds Directive). The WCA 1981 has been subject to a number of amendments, the most important of which are through the Countryside and Rights of Way (CRoW) Act (2000) and Nature Conservation (Scotland) Act 2004.

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

- Deer Act 1991
- Natural Environment & Rural Communities (NERC) Act 2006
- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996

Badgers

Badgers Meles meles are protected under The Protection of Badgers Act which makes it an offence to:

- Wilfully kill, injure, take, or attempt to kill, injure or take a badger
- Cruelly ill-treat a badger, including use of tongs and digging
- Possess or control a dead badger or any part thereof
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part thereof
- Intentionally or recklessly disturb a badger when it is occupying a badger sett
- Intentionally or recklessly cause a dog to enter a badger sett
- Sell or offers for sale, possesses or has under his control, a live badger

Effects on development works:

A development licence will be required from the relevant countryside agency for any development works liable to affect an active badge sett, or to disturb badgers whilst they occupy a sett. Guidance has been issued by the countryside agency's to define what would constitute a licensable activity. It is no possible to obtain a licence to translocate badgers.

Birds

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the WCA. Among other things, this makes it an offence to:

- Intentionally (or recklessly in Scotland) kill, injure or take any wild bird
- Intentionally (or recklessly in Scotland) take, damage or destroy (or, in Scotland, otherwise interfere with) 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.
- Intentionally or recklessly obstruct or prevent any wild bird from using its nest (Scotland only)

Certain species of bird, for example the barn owl, bittern and kingfisher receive additional protection under Schedule 1 of the WCA and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC) and are commonly referred to as "Schedule 1" birds.

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
- Intentional or reckless disturbance of dependent young of such a bird
- In Scotland only, intentional or reckless disturbance whilst lekking
- In Scotland only, intentional or reckless harassment

<u>Effects on development works:</u>

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 nesting season which typically runs from March to August. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Schedule 1 birds are additionally protected against disturbance during the nesting 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, pool frog Pelophylax lessonae and great crested newt Triturus cristatus receive full protection under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate

- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

With the exception of the pool frog, these species are also listed on Schedule 5 of the WCA and 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, Section 9(1) & (5) of the WCA, i.e. the adder Vipera berus, grass snake Natrix natrix, common lizard Zootoca vivipara and slow-worm Anguis fragilis. It is prohibited to:

- Intentionally or recklessly kill or injure these species.

Effects on 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 amphibian and reptile species protected under Habitats Regulations. 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 WCA.

Water voles

The water vole Arvicola terrestris is fully protected under Schedule 5 of the WCA. This makes it an offence to:

- Intentionally kill, injure or take (capture) water voles
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection
- Intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection

Effects on development works:

If development works are liable to affect habitats known to support water voles, the relevant countryside agency must be consulted. It must be shown that means by which the proposal can be re-designed to avoid contravening the legislation have been fully explored e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable, and measures to ensure minimal habitat loss. Conservation licences for the capture and translocation of water voles may be issued by the relevant countryside agency (e.g. Natural England) for the purpose of development activities if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the

population. The licence will then only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of works.

Otters

Otters Lutra lutra are fully protected under the Conservation Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Otters are also currently protected under the WCA 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

<u>Effects on development works:</u>

An EPSM Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect otter breeding or resting places (often referred to as holts, couches or dens) 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, and rear young). 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

Bats

All species are fully protected by Habitats Regulations 2010 as they are listed on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. All bats)
- Deliberate disturbance of bat species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Bats are afforded the following additional protection through the WCA as they are included on Schedule 5:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

Works which are liable to affect a bat roost or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Dormice

Dormice Muscardinus avellanarius are fully protected under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Dormice are also protected under the WCA 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

Effects on development works:

Works which are liable to affect a dormice habitat or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

White clawed crayfish

The white clawed crayfish Austropotamobius pallipes receives partial protection under Schedule 5 of the WCA in respect of Sections 9(1) and 9(5). This makes it an offence to:

- Intentionally take (capture) white-clawed crayfish.

Effects on development works:

The relevant countryside agency will need to be consulted about development which could impact on a watercourse or wetland known to support white clawed crayfish. Conservation licences for the capture and translocation of crayfish can be issued if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of the 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.

Legislation afforded to Plants

With certain exceptions, all wild plants are protected under the WCA. This makes it an offence for an 'unauthorised' person to intentionally (or recklessly in Scotland) uproot wild plants. An authorised person can be the owner of the land on which the action is taken, or anybody authorised by them.

Certain rare species of plant, for example some species of orchid, are also fully protected under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). This prohibits any person from:

- Intentionally (or recklessly in Scotland) picking, uprooting or destruction of any wild Schedule 8 species (or seed or spore attached to any such wild plant in Scotland only)
- Selling, offering or exposing for sale, or possessing or transporting for the purpose of sale, any wild live or dead Schedule 8 plant species or part thereof
- In addition to the UK legislation outlined above, several plant species are fully protected under Schedule 5 of The Conservation of Habitats and Species Regulations 2010. These are species of European importance. Regulation 45 makes it an offence to:
- Deliberately pick, collect, cut, uproot or destroy a wild Schedule 5 species
- Be in possession of, or control, transport, sell or exchange, or offer for sale or exchange any wild live or dead Schedule 5 species or anything derived from such a plant.

Effects on development works:

An EPSM licence will be required from the relevant countryside agency for works which are liable to affect species of planted listed on Schedule 5 of the Conservation or Habitats and Species Regulations 2010. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Invasive Species

Part II of Schedule 9 of the WCA lists non-native invasive plant species for which it is a criminal offence in England and Wales to plant or cause to grow in the wild due to their impact on native wildlife. Species included (but not limited to):

- Japanese knotweed *Fallopia japonica*
- Giant hogweed *Heracleum mantegazzianum*
- Himalayan balsam *Impatiens glandulifera*

Effects on development works:

It is not an offence for plants listed in Part II of Schedule 9 of the WCA 1981 to be present on the development site however it is an offence to cause them to spread. Therefore, if any of the species are present on site and construction activities may result in further spread (e.g. earthworks, vehicle movements) then it will be necessary to design and implement appropriate mitigation prior to construction commencing.

Injurious weeds

Under the Weeds Act 1959 any land owner or occupier may be required prevent the spread of certain 'injurious weeds' including (but not limited to):

- Spear thistle Cirsium vulgare
- Creeping thistle Cirsium arvense
- Curled dock Rumex crispus
- Broad-leaved dock Rumex obtusifolius
- Common ragwort Senecio jacobaea

It is a criminal offence to fail to comply with a notice requiring such action to be taken. The Ragwort Control Act 2003 establishes a ragwort control code of practice as common ragwort is poisonous to horses and other livestock. This code provides best practice guidelines and is not legally binding.

NATIONAL PLANNING POLICY (ENGLAND)

National Planning Policy Framework

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be 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 harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and 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

Section 40 of the Natural Environment and Rural Communities (NERC) Act, 2006, 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.' 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.