The Ecology Consultancy

Twickenham Riverside, Twickenham, London / P.E.A. / **Quinlan & Francis Terry LLP**

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Twickenham Riverside, Twickenham, London

Preliminary Ecological Appraisal

Report for Quinlan & Francis Terry LLP

Job Number	3496			
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Summary of key issues

The Ecology Consultancy was commissioned to carry out a Preliminary Ecological Appraisal (PEA), comprising a Phase 1 habitat survey, protected species assessment and ecological evaluation of land at Twickenham Riverside, Twickenham, London. The main findings of the PEA are as follows:

- The site comprised commercial properties and a playground surrounded by amenity green space. The main habitats present included hardstanding/buildings, amenity grassland, broadleaved woodland, species-poor non-native hedgerows, dense scrub, introduced shrub and scattered trees.
- The site is not subject to any statutory or non-statutory nature conservation designations. There is one statutory designated sites within a 1km radius: Ham Lands Local Nature Reserve. There are seven non-statutory designated Sites of Importance for Nature Conservation with in a 1km radius.
- The site is located 30m from the River Thames and Tidal Tributaries Site of Metropolitan Importance. To avoid any potential indirect impacts to this non-statutory designated site it will be necessary to implement mitigation measures during the construction phase.
- Habitats present are considered to be of local value only and include lowland mixed deciduous woodland and a hedgerow which are Habitats of Principal Importance and Richmond Biodiversity Action Plan habitats.
- **Bats** – several buildings and trees have potential to support roosting bats and therefore further surveys are recommended in the form of internal building inspections and a preliminary ground level roost assessment of trees for bats.
- **Breeding birds** – breeding birds were confirmed as being present. Buildings and vegetation have potential to support breeding birds. In order to comply with legislation, where these habitats are to be removed this should take place September to 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.
- Recommendations to enhance the biodiversity value of the site in accordance with national and local planning policies comprise the inclusion of sustainable drainage systems including green roofs, landscape planting of recognised wildlife value; the provision of bird nesting opportunities; and wildlife-friendly fencing.

1 Introduction

BACKGROUND TO COMMISSION

1.1 The Ecology Consultancy was commissioned by Quinlan & Francis Terry LLP on 11 April 2014, to carry out a Preliminary Ecological Appraisal (PEA) of land at Twickenham Riverside, Twickenham, London. The appraisal was carried out in order to provide ecological information to inform an outline planning application for a proposed mixed-use commercial and residential development. This appraisal considers land within the planning application site boundary (hereon referred to as 'the site') as indicated on the plan provided by the client Quinlan & Francis Terry LLP on 14 April 2016.

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 constraints associated with the proposed development and/or to identify the need for additional survey work to further evaluate any impact that may be 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 land within a 1km surrounding radius;
- a Phase 1 habitat survey (JNCC, 2010) of the site to identify and map the habitats present;
- a protected species assessment of the site to identify features with potential to support legally protected species; and
- an evaluation of the site's importance for nature conservation.

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

1.5 The survey was conducted by George Siskos BSc (Hons), ACIEEM, an Ecologist with over six years' experience who is competent in carrying out Phase 1 habitat surveys

and protected species assessments. This report and the assessment therein was authored by Chris Savage BSc (Hons), MSc, GradCIEEM, an Ecologist with over 3 years' experience.

SITE CONTEXT AND STATUS

1.6 The proposed development site is 0.84 hectares (ha) in size and is centred on Ordnance Survey National Grid reference TQ 1627 7351. The site contains the Diamond Jubilee Gardens, a children's playground and a number of buildings and lies 20m north-west from the River Thames and 50m from Eel Pie Island. Between the site and the Thames is The Embankment, a road with car-parking and pedestrian access. The site is bounded by Wharf Lane to the south-west, Water Lane to the north-east and is situated in a largely urban area.

DEVELOPMENT PROPOSALS

1.7 The development proposals for the site, based on current plans provided by the client are to demolish all five buildings/structures present on-site. Vegetation to the north east of the amenity gardens at the centre of the site will be cleared. This vegetation includes broadleaved woodland, introduced shrub, dense scrub, tall ruderal and scattered trees. A section of dense scrub to the south of the site is also to be removed to allow the profiling of the site towards the The Embankment. A new mixed-use building (commercial and residential) will be constructed along with a car park. As of the writing of this report the location of the car park has yet to be finalised.

1.8 It is our understanding the remaining on-site vegetation in and around the amenity grassland and children's playground is to be retained.

RELEVANT LEGISLATION AND PLANNING POLICY

1.9 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; and
- Wild Mammals (Protection) Act 1996.

1.10 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.

1.11 The London Plan: The Spatial Strategy for Greater London (GLA, 2015) deals with matters of strategic importance for spatial development in London, including policies regarding protection, enhancement, creation, promotion and management of biodiversity and green infrastructure in support of the Mayor's Biodiversity Strategy (GLA, 2002), and urban greening to mitigate the effects of climate change.

1.12 Other planning policies at the local level which are of relevance to this development include the London Borough of Richmond upon Thames Core Strategy (2009). Further information is provided in Appendix 5.

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 1km radius of the site:

- Greenspace Information for Greater London (GiGL), the local Biological Records Centre, principally for species records and information on non-statutory sites;
- 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 05 May 2016 in warm, clear, dry 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 ESRI ArcGIS software. Habitats were also assessed against descriptions of Habitat of Principal Importance as set-out by the JNCC (BRIG, 2008)[7].

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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.*, 2015); 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 included in an LBAP; Ancient Woodland Inventory sites; and Important Hedgerows as defined by the Hedgerow Regulations 1997.

7 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 Records for dominant and notable plants are provided, as are incidental records of birds and other fauna noted during the course of the habitat survey.

2.4 Common names are used where widely accepted – for amphibians, birds, fish, mammals, reptiles and vascular plants. Scientific names are provided for other groups but at first mention only if there is also an accepted common name.

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 the location on habitat plan are indicative only.

2.6 Target notes are used to provide information on specific features of ecological interest (e.g. a badger sett) or habitat features that were too small to be mapped.

PROTECTED AND NOTABLE SPECIES ASSESSMENT

2.7 The suitability of the site for legally protected species was assessed on the basis of relevant desk study records[8] combined with field observations from the habitat survey. The likely value of habitat for protected species occurrence was ranked on a scale from 'negligible' to 'present' as described in Table 2.1.

2.8 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 field signs which includes that for the following species: badger (e.g. Roper, 2010); bats (Collins (ed.), 2016); hazel dormouse (English Nature, 2006); great crested newt (Langton *et. al.,* 2001); otter (Chanin, 2003); reptiles (Gent and Gibson, 2003); and water vole (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 are provided by desk study. The site is within 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

[8] Primarily dependent on the age of the records, distance from the site and types of habitats at the site.

	national distribution and with suitable surrounding habitat. Factors limiting the likelihood of occurrence may include small habitat area, 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.

2.9 The findings of this assessment establish the need for protected species surveys that are required to achieve compliance with relevant 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.

2.10 Surveys may be required where a site is judged to be of low suitability for a particular species/species group. However, in some cases there may be opportunities to comply with legislation, without further survey, through precautionary measures prior to and during construction.

SITE EVALUATION

2.11 The site's ecological value has been evaluated broadly following guidance issued by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2016) 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;

DATA VALIDITY AND LIMITATIONS

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

- 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).
- Even where data for a particular species group is provided in the desk study, 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.
- Ecological survey data is typically valid for two years unless otherwise specified.

2.13 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

DESIGNATED SITES

Statutory designated nature conservation sites

3.1 The proposed development site is not subject to any statutory nature conservation designations. There is one national statutory site within a 1km radius, Ham Lands Local Nature Reserve (LNR).

Non-statutory designated nature conservation sites

3.2 The proposed development site is not subject to any non-statutory nature conservation designations. Seven non-statutory sites designated as Sites of Importance for Nature Conservation (SINCs) are present within 1km of the site (see Table 3.1).

Table 3.1: Non-Statutory Designated Sites

Site Name	Distance from site and orientation	Reason for designation
River Thames and Tidal Tributaries	30m to the south.	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.
Ham Lands	180m to the south.	This area of restored gravel pits beside the River Thames contains a mosaic of habitats, including herb-rich grassland, scrub and woodland. In the north-west is a low-lying area of original flood meadow, though this floods only rarely. It supports a diverse flora, including dropwort which is rare in London, and more typical species such as false fox-sedge and cuckooflower
Petersham Lodge Wood and Ham House Meadows	902m to the east.	This site, managed as a nature reserve, contains extensive ground flora, including meadowsweet, meadow crane's-bill, cuckoo flower, hemlock water-dropwort and goldilocks buttercup, the latter rare in London and usually associated with ancient woods. Wet woodland dominated by willows continues to the west and includes marsh ragwort, pendulous sedge and wild angelica.
River Crane at St Margaret's (Richmond side)	1000m to the north.	This site includes the River Crane between Chertsey Road and the tidal limit at Northcote Road. The river is divided into two channels, and is lined with trees and shrubs. Kingfishers are frequently seen.
Marble Hill Park and Orleans House Gardens	850m to the north-east.	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, greater bird's-

Table 3.1: Non-Statutory Designated Sites

Site Name	Distance from site and orientation	Reason for designation
		foot-trefoil, smooth tare, meadow buttercup oxeye daisy, sainfoin, meadow crane's-bill and salad burnet.
Twickenham Junction Rough	700m to the north-west.	Just west of Twickenham station, the railway lines divide and cross over one another, leaving an 'island' of undisturbed wildlife habitat. The site contains a typical mix of rough grassland, tall herbs, scrub and young woodland.
Moor Mead Recreation Ground	600m to the north.	The site mainly comprises informally managed short grass, daisies and other low-growing wild flowers, such as lesser trefoil and dove's-foot crane's-bill are also present. Mature trees include ornamental cherry. Lombardy poplar and avenues of a purple form of Norway maple.

Habitat inventories and landscape-scale conservation initiatives

Habitats of Principal Importance

3.3 There are five lowland mixed deciduous woodland Habitats of Principal Importance within 1km of the site.

PHASE 1 HABITAT SURVEY

Overview

3.4 The site was dominated by hardstanding with smaller areas of amenity grassland at the south-west of the site with introduced shrub and scattered trees surrounding it. An area of broadleaved woodland was present to the north-east of the amenity grassland. There were five buildings/structures on site and a playground to the west.

3.5 Phase 1 habitats types are mapped in Figure 1, areas are given in Table 3.2. A description of dominant and notable species and the composition of each habitat is provided below.

Table 3.2: Phase 1 Habitat Areas

Phase 1 Habitat	Extent (m^2)	% of site
Hardstanding	4687.59	55.6
Buildings	1162.79	13.8
Introduced shrub	1146.53	12
Amenity grassland	548.53	6.5
Broadleaved woodland	348.86	4.1
Bare ground/rubble	297.83	3.5

Table 3.2: Phase 1 Habitat Areas

Phase 1 Habitat	Extent (m^2)	% of site
Dense scrub	148.03	1.8
Species-poor hedge	70	0.8
Scattered trees	68	0.8
Other Habitat	67.44	0.8
Tall ruderal	21.55	0.3
Total site area	**8430.90**	

Habitat description

Buildings and hardstanding

3.6 There were five buildings on site:

- Building 1 (B1) was a rectangular metal shipping container.
- Building 2 (B2) was a mixed single and two storey flat roofed brick building which included a garage. Metal anti-theft sheeting on the north-western elevation covered windows and doorways. Nesting feral pigeons were observed in the north-west of the building. The two-storey section of building was currently in use.
- Building 3 (B3) was a rectangular brick-built single storey flat roofed building with no windows and one door facing onto on The Embankment.
- Buildings 4 (B4) was a two-storey commercial building in the north east of the site on the corner of King Street and Water Lane. The building was in good state of repair and in use.
- Building 5 (B5) was a single-storey wooden building with three part half cylindrical roof. It was in use as a café.

3.7 Hardstanding was widespread across the site, particularly to the north.

Introduced shrub

3.8 Sections of introduced shrub were adjacent to the boundaries along most of the southern, western and north-west sections of the site. Species present included forsythia *Forsythia sp.*, lavender *Lavendula sp.* and fuchsia *Fuchsia magellanica*.

Amenity grassland

3.9 There are two large rectangular areas of amenity grassland in the centre of site. Both are dominated by perennial rye-grass *Lolium perenne* and annual meadow-grass *Poa annua.*

Broadleaved woodland

3.10 At the centre of the site in between B1 and B2 there was an area of broadleaved woodland. Dominant species included sycamore *Acer pseudoplatanus* and well as frequent goat willow *Salix caprea*, occasional silver birch *Betula pendula* and rare horse chestnut *Aesculus hippocastanum*. Ivy *Hedera helix* was present on many of the trees. A mammal push under (TN1 on Figure 1) was identified here.

Bare ground

3.11 Between B1 and the broadleaved woodland was a small area of bare ground.

Species poor hedge

3.12 Two strips of species-poor hedge bound the amenity grassland to the north-west and south-east and consist of hornbeam *Carpinus betulus*.

Scattered broadleaved trees

3.13 There were 34 broadleaved trees scattered around the site. The main concentration of 16 oriental plane *Platanus orientalis* were situated in a planted section to the south-east of the amenity grassland. Other species present include hornbeam, pear *Pyrus communis* and a single black poplar *Populus nigra betulifolia* north of the playground to the west of the site.

Tall ruderal

3.14 There was a small section of tall ruderal vegetation to the north-east of B3 dominated by green alkanet *Pentaglottis sempervirens*.

PROTECTED AND INVASIVE SPECIES ASSESSMENT

3.15 The potential for the site to support protected species has been assessed using criteria provided in Table 3.3, based on the results of the desk study and observations made during the site survey of habitats at the site. Other legally protected species are not referred to as it is it is considered that the site does not contain habitats that would be

suitable to support them. The following species/species groups are potentially present at the site:

- bats; and
- breeding birds.

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

Table 3.3: Protected and Invasive Species Assessment

Habitat/ species	Status [9, 10]	Likelihood of occurrence
Bats	HR WCA S5 LBAP SPI	**Low:** There are desk study records of six species of bats including Daubenton's bat, natterer's bat, noctule, Nathusius' pipistrelle, common pipistrelle and soprano pipistrelle. Noctule and soprano pipistrelle are listed as Species of Principal importance under the NERC Act (2006). The closest bat record to the site, 194m to the north, was an unidentified Myotis species in 2006. A mixture of tree age classes were present, with all trees in good condition. The only features of potential value to roosting bats were dense ivy on several trees, which could be concealing potential roosting features. B2, B3 and B5 all contain suitable features that could support roosting bats. B2 has gaps in brickwork, gaps between corrugated anti-theft defences and windows. B3 has gaps in brickwork. B5 has wooden cladding. The site contains habitat suitable for foraging bats in the form of broadleaved woodland, introduced shrub, scattered trees and dense scrub. In addition it is located immediately adjacent to the River Thames (potential foraging habitat) and has some connectivity with suitable off-site roosting and foraging habitat via hedgerows and scrub. As there is potential that roosting bats will be present on site, they are considered further in this report.
Breeding birds	HR WCA S5	**Present**: The desk study identified 57 bird species within 1km. Buildings, broadleaved woodland, introduced shrub, species-poor hedgerows and scattered trees provided suitable nesting habitat for common breeding bird species. Several bird species were observed during the habitat survey including robin, jackdaw, feral pigeon, wood pigeon, blackbird and blue tit. Two defunct nests were identified on site. It is likely that breeding birds will occur at the site in low numbers and as such they are considered further in Section 4 of this report.
Invasive species	WCA S9	**Negligible:** There are several desk study records for invasive species within 1km of the site, including Japanese knotweed, but this plant (or any other Schedule 9 plants) was not recorded during the habitat survey.

[9] 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.

[10] 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.*, 2015); and/or RD/NN = red data book/nationally notable species (JNCC, undated).

NATURE CONSERVATION EVALUATION

3.17 The proposed development site is not subject to any nature conservation designations. With exception to woodland and hedgerow, it contains commonly occurring and widespread habitats that are considered to be of value within the immediate vicinity of the site only. Lowland mixed deciduous woodland and the hedgerow are Habitats of Principal Importance and Richmond Biodiversity Action Plan habitats. They are small in extent and not considered to be good examples of their type and therefore of local ecological value only.

3.18 The habitats on site were suitable the following notable or protected species:

- bats;
- breeding birds;
- hedgehog; and
- stag beetle.

3.19 Any populations of these species, if present, are likely to be of no more than local value, but this can only be confirmed through further survey. Recommendations for further survey are provided in Section 4. It is considered unlikely that the site would support rare species, or diverse assemblages or large populations of any notable/protected species.

4 Potential Impacts and Recommendations

4.1 This section summarises the potential impacts on habitats and 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:

- habitat suitable for roosting bats is present – further survey will be required to establish their presence/likely absence in trees and buildings that are due to be removed;
- habitat suitable for breeding birds is present – measures must be taken to avoid killing birds or destroying their nests;
- habitat suitable for hedgehog is present – measures should be taken to continue accommodating this species on site post-development;
- deadwood suitable for stag beetle is present and best practice should be followed during the removal of any trees/tree stumps; and
- a range of measures should be undertaken to satisfy the requirement for ecological enhancement included in planning policy.

CONSTRAINTS AND MITIGATION/COMPENSATION

Designated Nature Conservation Sites

4.3 No impacts are envisaged on statutory designated sites due to the small scale of the proposed development and its distance from these sites. Therefore there are no constraints to the proposed development in this regard.

4.4 The site is located 30m from the River Thames and Tidal Tributaries Site of Metropolitan Importance. To avoid any potential indirect impacts to this non-statutory designated site it will be necessary to implement mitigation measures during the construction phase (see Environmental best practice below).

Habitats

4.5 With the exception of woodland, no particular constraints were identified in relation to the intrinsic value of the habitats present. However, compensation for the loss of these habitats should be sought when working under the principle of 'no-net-loss' as supported by planning policy (see Appendix 5). This could be achieved with the

provision of landscape planting such as native trees, hedgerows, scrub and wildflower grassland (see below).

4.6 It is not possible to retain the woodland on site under current development proposals and therefore following the principal of 'no-net-loss', compensatory habitat must be established on site. Landscaping proposals by the client include the provision scattered trees and the installation of hedgerow. Only native species of tree and hedging species (at least 5) should be used for this planting and, where possible, the scattered trees should be supplemented by an understorey of native forb species.

Environmental best practice

4.7 Measures which should be implemented during construction include:

- The protection of any retained woodland and trees during site preparation and construction works in accordance with British Standards Institution (2012) guidelines;
- Appropriate storage of fuels and chemicals to minimise the risk of accidental spillage and water pollution ;
- Following best construction practice and environmental management including CIRIA guidance (Connolly and Charles, 2005) and various Defra/Environment Agency guidelines (2016) that have replaced the Pollution Prevention Guidelines (Environment Agency, 2007);
- Where appropriate, timing construction activities and avoiding any additional light pollution in order to minimise disturbance to wildlife using the Thames and its adjacent habitats.

Bats

4.8 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 Richmond LBAP species.

4.9 Buildings 2, 3 and 5 possess suitable features to support roosting bats. Several trees on site within the broadleaved woodland habitat were covered in dense ivy which may support bats or conceal features which may support bats. As all buildings on site and this area of broadleaved woodland are due to be removed, it will be necessary to carry

out a preliminary roost assessment of the buildings and a ground level assessment of trees with dense ivy to determine their current or potential usage by bats.

Breeding birds

4.10 All breeding birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended).

4.11 Where the proposed works require the removal of buildings and vegetation with potential to support breeding birds, this must be carried out September to February inclusive, to avoid any potential offences relating to breeding birds during their main bird breeding season (Newton *et al.*, 2011).

4.12 Where clearance work cannot reasonably be carried out outside of the main breeding season, a search for any nesting birds up to 48 hours prior to clearance must be undertaken by an ecologist. If any nests are found, they are to be protected until such time as the ecologist confirms that the young have fledged or the nest is no longer active. This would involve setting up an exclusion zone/cordon to an appropriate area for the species concerned. Works may then proceed up to, but not within, this exclusion zone. If any nesting birds are found at any time during clearance works when the ecologist is not present, work must stop immediately and an ecologist consulted for advice on how to proceed.

Hedgehogs and other small mammals

4.13 The proposed development will likely include the use of fencing to divide the residential properties and gardens, and will therefore fragment areas 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 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.

Stag beetle / invertebrates

4.14 Stag beetles rely on tree stumps and dead wood for their larvae to develop. Although not identified as present on site, the larvae of stag beetle could be present in the root systems of any trees being removed. The removal of any semi-mature/mature trees will

also reduce/remove suitable deadwood habitat for this species in the short-term to medium term i.e. until any retained or replacement trees have matured.

4.15 It is recommended that a tool-box talk be carried out to advise construction staff of the potential presence of this species, what habitats it prefers and what the larvae/adults look like. Fact files and ID guides produced by The People's Trust for Endangered Species should be provided.

4.16 In addition, the existing invertebrate tower (TN2 on Figure 1) should be relocated to a suitable area in order to ensure its continuing use by invertebrate species.

Other protected species

4.17 Works must stop immediately and advice sought from a suitably qualified ecologist in the unlikely event that any notable (including stag beetle larvae) or protected species are found during site clearance or construction.

FURTHER SURVEY REQUIREMENTS

4.18 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	To carry out a full internal and external inspection of the buildings and ground level assessment of trees with dense ivy on site to determine their potential to support roosting bats. Methodology for the building and tree inspection will follow accepted best practice guidelines (Collins (ed., 2016). The survey will be carried out by a licenced bat ecologist.	These surveys can be carried out at the same time during one survey visit at any time of the year. Depending on the findings, further activity/emergence surveys may be required (May-August inclusive) and a Natural England licence and mitigation strategy.

OPPORTUNITIES FOR ECOLOGICAL ENHANCEMENT

4.19 Planning policy at the national and local level and strategic biodiversity partnerships encourage inclusion of ecological enhancements in development projects. Ecological enhancements can also contribute to green infrastructure and ecosystem services such as storm water attenuation and reducing the urban heat island effect. The following measures would be suitable for integration into the site's design, but would require a more detailed design to successfully implement.

Sustainable Drainage System (SuDS)

4.20 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 a 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

4.21 It is recommended that biodiverse green roofs be installed in order to enhance the site for wildlife and comply with planning policy. Such roofs will provide further benefits such as protecting and prolonging the life of the roof membrane, reducing building energy use by insulating the building in winter and keeping it cooler in summer, providing a SuDS function by reducing storm water run-off from the roof, reducing the urban heat island effect and local air/noise pollution.

4.22 Biodiverse green roofs should follow UK standards (GRO, 2014) and include additional habitat features such as temporary pools, deadwood and varying substrate depths, where possible. It is recommended that advice is sought from a company with a proven track record in delivering biodiverse green roofs.

Landscape planting

4.23 Wildlife planting should be integral to the soft landscape plans and should include native species and/or species of recognised widllife value[11]. 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. A diverse and naturalistic planting

[11] 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

scheme should be designed consisting of native hedgerows, scrub, trees and wildflower meadows/daisy lawns.

4.24 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.

4.25 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).

4.26 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.

Provision of bird nesting opportunities

4.27 To both compensate for the loss of breeding bird habitat and increase the overall provision of nesting habitat at the site it is recommended that bird boxes are erected on/in buildings or in any suitable retained habitat. Many different designs are available including boxes for house martins/swifts or colonial species such as starling or house sparrow.

4.28 Woodcrete bird boxes (or equivalent sustainable material) 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. Suppliers include:

- Jacobi Jayne http://www.jacobijayne.com
- Schwegler http://www.schwegler-natur.de
- Vivara Pro http://www.vivarapro.com/brochure/mobile/index.html#p=1
- NHBS http://www.nhbs.com/browse/subject/307/equipment
- Wildcare http://www.wildcareshop.com
- Bird Brick Houses http://www.birdbrickhouses.co.uk

4.29 Bird boxes should be erected on trees and fences out of the reach of the general public, ideally positioned so that they face in an easterly or westerly direction. They should be

at least 3 metres above ground level and ideally considerable higher. They should be attached to the tree using Schwegler fixings. Boxes should be cleaned annually in the autumn with old nests removed annually between October and January, and boxes repaired or replaced as necessary.

4.30 Landscape planting (as detailed above) could also provide compensatory breeding habitat for bird species in the form of dense scrub/shrubs/hedgerows/trees etc.

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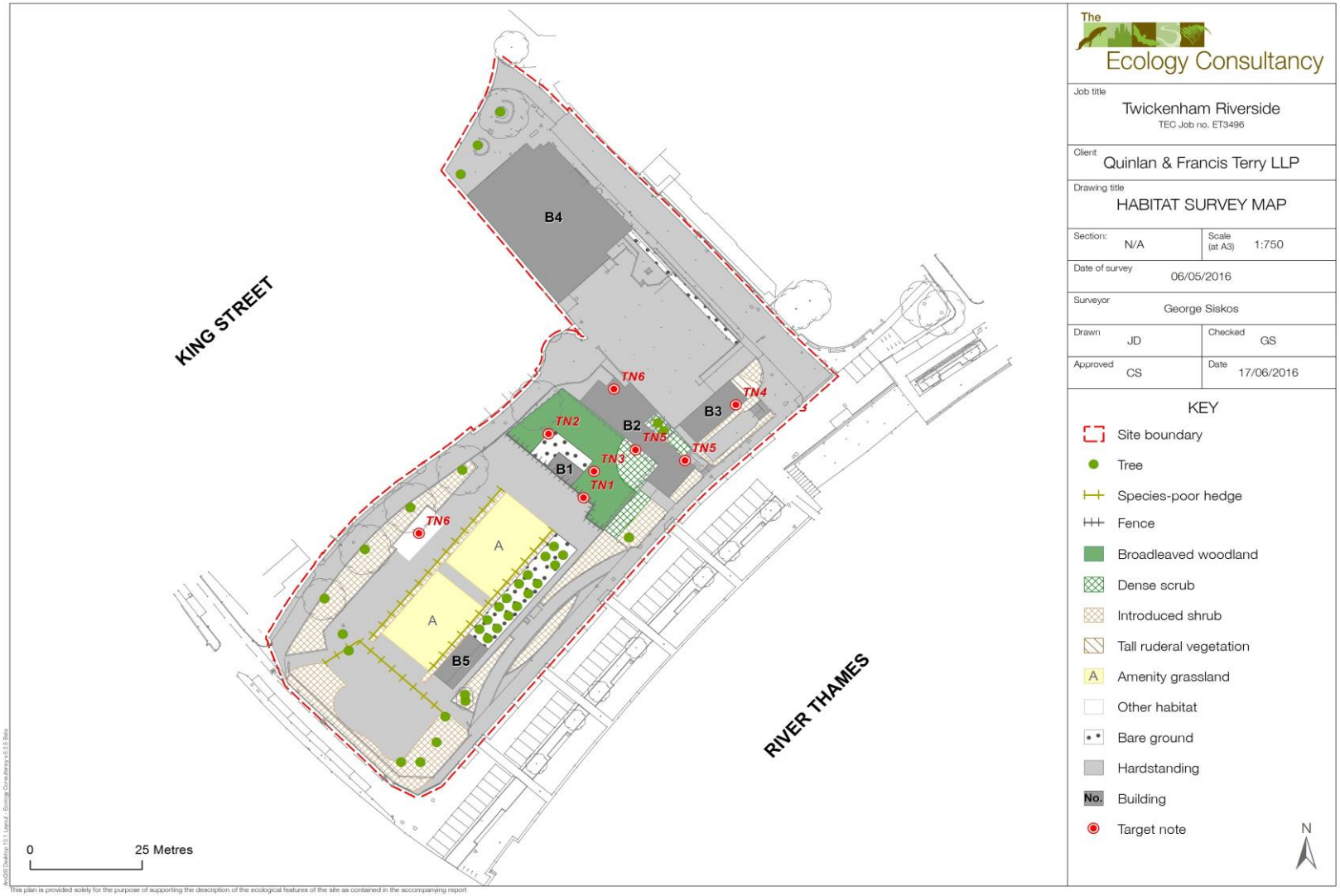
Appendix 1: Habitat Map

Figure 1: Habitat Survey Map



Appendix 2: Photographs

Photograph 1
Introduced shrub at south of site. View looking north.

Photograph 2
Amenity grassland at centre of site. View looking west.

Photograph 3
Scrub and scattered trees at rear of building B2. View looking south-west.

Photograph 4
Potential roost feature for bats in door frame of building B2.

Photograph 5
Potential roost feature in brickwork of building B4.

Photograph 6
Potential roost feature, lifted lead flashing on southern aspect of building B4.

Photograph 7
Target note TN1, mammal push-under at centre of site leading into broadleaved woodland.

Appendix 3: Plant Species List

Plant Species List for Twickenham Riverside, Twickenham, London compiled from Phase 1 habitat survey carried out on the 05 May 2016.

Scientific nomenclature and common names 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	A	t
Aesculus hippocastanum	Horse chestnut	R	t, y
Betula pendula	Silver birch	R	t, p
Betula sp.	Birch	O	t, p
Buddleja davidii	Buddleia	O	s
Buxus sempervirens	Box	O	
Capsella bursa-pastoris	Shepherd's-purse	O	
Carpinus betulus	Hornbeam	O	t
Cymbalaria muralis	Ivy-leaved toadflax	R	
Euphorbia sp.	Spurge	F	
Festuca rubra	Red fescue	LD	
Foeniculum vulgare	Fennel	R	
Forsythia sp.	Forsythia	R	s
Fragaria sp.	Strawberry	R	
Fuchsia magellanica	Fuchsia	O	s
Galium aparine	Cleavers	F	
Geranium robertianum	Herb-Robert	O	
Hedera helix	Ivy	LD	
Lavandula sp.	Lavender	LD	p
Lolium perenne	Perennial rye-grass	LD	
Malva sylvestris	Common mallow	O	
Narcissus sp.	Daffodil	O	p
Pentaglottis sempervirens	Green alkanet	LD	
Plantago lanceolata	Ribwort plantain	F	
Platanus orientalis	Oriental plane	LD	t, p
Poa annua	Annual meadow-grass	A	
Populus nigra betulifolia	Black poplar	R	t, p
Pseudofumaria lutea	Yellow corydalis	R	
Pyrus communis	Pear	R	t, p
Quercus robur	Pedunculate oak	R	t, p
Rosa sp.	Rose	R	s

Rubus fruticosus agg.	Bramble	F	s
Salix caprea	Goat willow	R	t
Stellaria media	Common chickweed	F	
Taraxacum sp.	Dandelion	A	
Trifolium repens	White clover	F	
Veronica sp.	Hedge veronica	O	s
Viburnum sp.	Viburnum	O	s

Appendix 4: Target Notes

Target Notes List for Twickenham Riverside from the Phase 1 habitat survey and protected and notable species assessment carried out on the 05 May 2016.

Target note (TN)	Description
1	A mammal push-under.
2	Defunct bird's nest.
3	Defunct bird's nest.
4	Invertebrate tower.
5	Potential roost features for bats.
6	Sand spoil.

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 Directive[12] 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,

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

dormouse, invasive plant species, otter, plants, red squirrel, water vole and white clawed crayfish.

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[13].

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:

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

- 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;
- 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[14]. 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.

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.

[14] It should be noted that this is the main breeding period. Breeding activity may occur outside 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.

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 Core Strategy (2009) deals with matters of strategic importance for Twickenham. Key chapters include Chapter 8.1.4 CP4 – Biodiversity.

Policy CP4.A: Natural environment

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.

Policy ENV DM4: Protection of trees

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 authorities in the UK have also produced a local Biodiversity Action Plan (LBAP) at the County or District level. The London Borough of Richmond upon Thames has a genera; Biodiversity Action Plan as well as Species Action Plans for Bats and Stag Beetles.

The Ecology Consultancy is part of the Temple Group.

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