Land to the rear of 1-10
Campbell Close
Twickenham

ECOLOGICAL APPRAISAL

ACD ENVIRONMENTAL

Ecology
Archaeology
Arboriculture
Landscape Architecture

Ruth Rouse

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1.0 EXECUTIVE SUMMARY

1.1 In March 2016, ACD Environmental Ltd carried out an extended Phase 1 Habitat Survey of a parcel of land at the rear of 1-10 Campbell Close in Twickenham, hereinafter referred to as the 'site'. The site will be subject to a planning application for one dwelling.

1.2 The site comprises of a small parcel of land used as a small-holding. The site backs onto the River Crane. No evidence of protected species was found in the site. The site is generally of low ecological value.

1.3 It is considered that the construction of one dwelling will not generate any significant ecological impacts on any habitats or designated sites. No further surveys are recommended.

1.4 The site abuts the River Crane. The Crane Corridor is a designated Site of Metropolitan Importance for Greater London. The stretch of the River Crane adjacent to the site is of limited ecological value, owing to hard engineered banks, siltation, and lack of aquatic vegetation. However, the river corridor has inherent wildlife value and therefore measures should be put in place to protect the river from pollution during and after construction.

1.5 As a condition of planning, it is recommended that a scheme of provisions for locations and specifications of bat roosting boxes and bird nesting boxes is submitted to and approved by the Local Authority.

1.6 Implementing the above recommendations will ensure that the proposals will be in conformity with relevant legislation and policy.

2.0 INTRODUCTION, CONTEXT AND PURPOSE

Introduction

2.1 In March 2016, ACD Environmental Ltd was commissioned by Peter Lineham and Ruth Rouse to carry out an ecological appraisal of a parcel of land to the rear of 1-10 Campbell Close, Twickenham (OS Grid Reference TQ 14542 73039), hereinafter referred to as the 'site'.

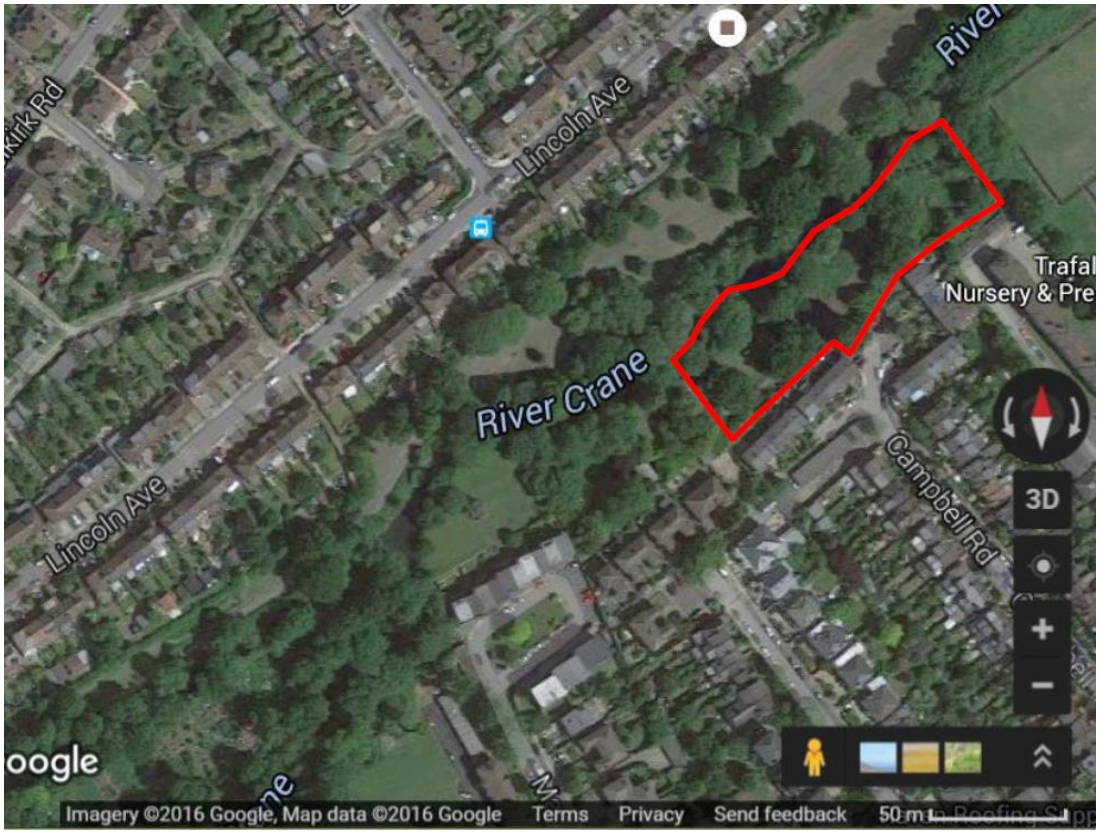

Image 1: Site location and approximate site boundary shown in red.

Context

2.2 A planning application will be submitted to construct one residential dwelling on the site.

Purpose

2.3 The purpose of this assessment is to:

- Ascertain the general ecological value of the application site by:

- Identifying and assessing the main habitats and plant communities;
- Assessing the potential for protected species to use the application site;
- Feeding into refinements of the masterplan; and

- To assess any ecological impacts of the proposed scheme and recommend appropriate mitigation and enhancements.

3.0 METHODOLOGY

Names and qualifications of surveyors

3.1 The survey was carried out by Daniel Wood of ACD Environmental. Daniel is a Principal Ecologist for ACD Environmental and oversees all work carried out by the ACD Environmental team. Daniel has 10 years' experience working for commercial consultancies and specialises in European Protected Species legislation and mitigation. Daniel holds Natural England Class Licences for bats, great crested newts and barn owls. He has held several EPS mitigation licences. Daniel has extensive development project experience, on sites of varying sizes from individual dwellings to strategic land allocations involving a wide range of issues. He has experience of projects from pre-acquisition, planning applications, Preliminary Ecological Appraisal (PEA), and Ecological Impact Assessment (EcIA).

Background Data Search

3.2 Whilst field survey is invaluable and provides a "snap-shot" of the species and habitats present on a site, it is also important to research existing ecological knowledge of the site, such as biological records, and any relevant ecological information from the surrounding area.

3.3 The data search has been undertaken for a 2km radius around the Site for non-statutorily protected sites and protected species records and a 5km radius for statutorily protected sites.

3.4 The following organisations and individuals have been contacted and, where relevant, the information provided has been incorporated with acknowledgement within this report:

- Greenspace Information for Greater London (GIGL).

3.5 The Multi-Agency Geographic Information for the Countryside website[1] was accessed for information on the location of statutory designated nature conservation sites within a 5km radius of the Site.

[1] http://www.natureonthemap.naturalengland.org.uk/MagicMap.aspx

Habitat Survey

3.6 The site was surveyed in March 2016 using a technique based upon Phase I survey methodology[2]. This 'extended' Phase I technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail. The vegetation present was clearly visible and allowed an accurate assessment to be made.

Fauna

3.7 Incidental records of fauna were also made during the survey and the habitats identified were evaluated for their potential to support legally protected species and other species of conservation concern, including UK Biodiversity Action Plan Priority species.

3.8 Trees in the site were assessed for bat roosting potential. The following features and signs of bats were searched for on the trees:

- Cracks and splits;
- Cavities and hollows;
- Dense epicormic growth;
- Loose bark;
- Rot holes;
- Woodpecker holes;
- Scratches around entry points;
- Smoothing of surfaces around entry points;
- Dark staining from droppings and urine;
- Bat droppings in and around entrance;

[2] JNCC, (2010), *Handbook for Phase 1 habitat survey - a technique for environmental audit.* JNCC, Peterborough.

- Audible squeaking during warm weather;
- Flies around entrance; and
- Smell of bats.

Habitats and Species Evaluation and Impact Assessment

3.9 The habitats and species evaluations are made with reference to the Chartered Institute of Ecology and Environmental Management's (CIEEM) guidelines for Ecological Impact Assessment.

3.10 These guidelines aim to give a degree of consistency in approach to evaluating the importance of the ecological features within the site and any effects or impacts a scheme will have upon them.

3.11 Firstly, the species or habitats must be valued and a commonly used framework involves assigning a level of geographical importance to ecological receptors. This framework incorporates a wide range of legislation and governmental guidance in assessing each feature's value.

3.12 Next, the impacts of the proposed scheme have to be predicted, taking into account different stages and activities within the development process. These impacts then have to be assessed for their significance, based upon the value of the species or habitat in question. The assessment of impact significance is done before and after any proposed mitigation to give an overall indication of significance.

3.13 The value of specific ecological receptors (sites, habitats or species) is assigned according to their level of importance using the following terms:

- International value;
- UK value;
- National value (i.e. England/Northern Ireland/Scotland/Wales);
- Regional value;

- County value;
- District value (or Unitary Authority, City, or Borough);
- Local or Parish value; and
- Of value within the zone of influence or a larger defined area.

4.0 RESULTS AND EVALUATION

Data Search Results

Designated Sites

4.1 The nearest non-statutory designated nature conservation site is the River Crane Corridor, which abuts the northern site boundary.

4.2 The Crane Corridor is designated as a Site of Metropolitan Importance for its variety of wetland habitats. The River Crane is bordered by habitats of remarkable diversity, including woodland, pasture, heathland and areas of open water. The river itself is one of the most natural in London, and is a stronghold for uncommon aquatic plants such as arrowhead (*Sagittaria sagittifolia*), unbranched bur-reed (*Sparganium emersum*), river water-crowfoot (*Ranunculus fluitans*) and rigid hornwort (*Ceratophyllum demersum*). At least four species of pondweed include the London rarity small pondweed (*Potamogeton berchtoldii*). Various damp pastures, old water meadows and associated ox-bow ponds also support a rich flora of regionally uncommon plants, including water-purslane (*Lythrum portula*), nodding bur-marigold (*Bidens cernua*), ivy-leaved crowfoot (*Ranunculus hederaceus*), meadow crane's-bill (*Geranium pratense*), marsh-marigold (*Caltha palustris*) and bog stitchwort (*Stellaria uliginosa*). Willow-alder woodland occurs in several places; this is a rare habitat in London. The breeding avifauna includes kingfisher, grey wagtail and reed warbler. The specially-protected water vole is also present.

4.3 The nearest statutory designated nature conservation site within 5km is Crane Park Island Local Nature Reserve. Crane Park Island was formerly the site of Hounslow Gunpowder Works, and is a mosaic of woodland, scrub and reedbed, which provides habitat for wildlife including the increasingly scarce water vole.

Protected Species Records

4.4 The relevant protected species records are incorporated into the Fauna section, below, with due acknowledgement.

Survey Results

Habitats

4.5 The site comprises a 0.5 hectare parcel of land which is used as a small holding. The site contains a horse, chickens, allotments, bee hives, outbuildings, trees and a small pond.

4.6 The site contains native and non-native trees and shrubs, including viburnum, holly, oak, ash, Japanese privet, beech, apple, plum, pear, fruit bushes, elder, willow, Spanish bluebell, primrose, comfrey, daffodils, and salad burnet.

4.7 Overall, the habitats in the site are common and widespread and are considered to be of value within the zone of influence.

4.8 The site backs onto the River Crane. The section of the River Crane that abuts the site is slow-flowing, canalised and has hard engineered timber revetments. The river bed is heavily silted and was largely devoid of any aquatic vegetation at the time of survey.

Photograph 1: Site looking west

Photograph 2: Site looking south towards entrance gate

Photograph 3: Site looking south west

Photograph 4: Allotments in site

Photograph 5: Bee hives in site

Photograph 6: Chicken coup in site

Photograph 7: Grassland (grazed by a horse)

Photograph 8: River Crane (northern site boundary)

Fauna

4.9 For ease of reference, descriptions of the fauna have been described alphabetically, below.

Amphibians

4.10 GIGL did not hold any records for great crested newt within the 2km radius search area.

4.11 The pond in the site was assessed against the Great Crested Newt Habitat Suitability Index (HSI). The pond scored 0.5 (below suitability for GCN). Given the barriers to migration (the site is surrounded by housing and a large river), and the small size of the pond, on balance it is considered that GCN are unlikely to be present in the site.

4.12 One adult smooth newt was found in a log pile in the site during the survey. The site is considered to be of value within the zone of influence for amphibians.

Badgers

4.13 No evidence of badgers was found in the site.

Bats

4.14 No trees in the site were considered to have bat roosting potential. There are several mature poplars on the opposite bank which have bat roosting potential but these trees are outside the zone of influence.

4.15 GIGL returned several bat records for common & soprano pipistrelle, Nathusius pipistrelle, brown long-eared, noctule, Leisler's and Daubenton's. None of these records were from the site. The bat foraging and commuting value is considered to be of value within the zone of influence, although the site also has some inherent connecting value associated with the wider River Crane habitats.

Birds

4.16 Evidence of ducks and geese was present on the banks of the river. The River also supports kingfisher.

4.17 The trees and shrubs in the site have potential for garden and parkland birds such as robin, wren, greenfinch, woodpecker and blackbirds. The value of the site to birds is considered to be within the zone of influence, with some supporting value for birds such as Kingfisher associated with the River Crane.

Dormouse

4.18 The site does not contain sufficient dense hedgerow or woodland habitat which could support dormice. The dormice interest is negligible.

Reptiles

4.19 With the exception of log piles which could afford refuge for grass snakes, there is no sufficient amount of reptile habitat on site that could support a reptile population. The reptile interest is considered to be of negligible value.

Water Voles

4.20 Although water voles are present on the River Crane, the stretch of river abutting the site is sub-optimal for water voles, owing to the hard engineered banks and lack of aquatic vegetation. The water vole interest is considered to be negligible.

Otter

4.21 GIGL did not return any records of otter, although otters are now present in all English counties and may use the river in some capacity to forage and commute. No evidence of otter was found on the river bank abutting the site.

Other Wildlife

4.22 Stag beetle larvae have been found in log piles in the site.

5.0 LEGISLATION AND PLANNING POLICY

5.1 This section summarises the legislation and national, regional and local planning policies, as well as other reference documents, relevant to the baseline ecology results.

Legislation

5.2 Specific habitats and species receive legal protection in the UK under various pieces of legislation, including:

- The Wildlife and Countryside Act 1981 (as amended)
- The Conservation of Habitats and Species Regulations 2010
- The Countryside and Rights of Way Act 2000
- The Hedgerows Regulations 1997
- The Protection of Badgers Act 1992
- The Natural Environment and Rural Communities Act 2006

5.3 Where relevant, the assessment takes account of the legislative protection afforded to specific habitats and species.

Wildlife Legislation

5.4 All wild birds[3] and their nests are protected under the WCA as amended. It is an offence to;

- intentionally kill, injure or take any wild bird
- intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built
- intentionally take or destroy the egg of any wild bird
- have in one's possession or control any wild bird, dead or alive, or any

[3] https://www.gov.uk/wild-birds-protection-surveys-and-licences

part of a wild bird, which has been taken in contravention of the Act or the Protection of Birds Act 1954

- have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act or the Protection of Birds Act 1954
- use traps or similar items to kill, injure or take wild birds
- have in one's possession or control any bird of a species occurring on Schedule 4 of the Act unless registered, and in most cases ringed, in accordance with the Secretary of State's regulations (see *Schedules*)
- intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Planning Policy

National Planning Policy Framework

5.5 The National Planning Policy Framework[4] sets out planning policies on protection of biodiversity and geological conservation through the planning system for local authorities in England. The Framework outlines the role of the decision maker in considering the requirements of wildlife legislation to protect wildlife.

5.6 The Framework states that the planning system should contribute to and enhance the natural and local environment, by measures including the following:

- Minimising impacts on biodiversity and providing net gains in biodiversity where possible
- Contributing to the Government's commitment to halt the overall decline in biodiversity
- Establishing coherent ecological networks that are more resilient to current and future pressures

[4] Department for Communities & Local Government (2012). *National Planning Policy Framework*. [Online]. Available at <http://www.communities.gov.uk/publications/planningandbuilding/nppf> [Accessed 19th June 2012].

- Recognising the wider benefits of ecosystem services

5.7 The Framework states that when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying principles including the following:

- If significant harm from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated for, or, as a last resort, compensated for, then planning permission should be refused.

- Proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on that designated site (either individually or in combination with other developments) should not normally be permitted. Where adverse effects on the site's notified special interest features is likely, an exception should only be made where the benefits of the development clearly outweigh both the impacts that it is likely to have on the features of the site that make of special scientific interest and any broader impacts on the national networks of Sites of Special Scientific Interest.

- Opportunities to incorporate biodiversity in and around developments should be encouraged.

5.8 The Government Circular 06/2005[5] accompanies the National Planning Policy Framework and sets out the application of the law in relation to planning and nature conservation in England.

[5] Office of the Deputy Prime Minister (2005). *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*. [Online]. Available at: < http://www.communities.gov.uk/documents/planningandbuilding/pdf/147570.pdf> Accessed: 19th June 2012.

6.0 DISCUSSION AND RECOMMENDATIONS

Designated Sites

6.1 The site abuts the Crane Corridor Site of Metropolitan Importance.

6.2 It is considered that the proposal for one dwelling is unlikely to generate any significant adverse impacts upon the River Crane, provided that adequate measures are put into place during construction to prevent any pollution entering the watercourse.

6.3 Sustainable drainage systems should be used where considered to be feasible. Detailed drainage proposals have not been reviewed or assessed within this report.

Habitats

6.4 The proposed dwelling will be constructed within an area of bare ground, and will involve the loss of a small area of allotment. All mature trees will be retained and protected. All other habitats including the pond will be retained. The rest of the site will continue to be used as a small holding.

6.5 Ecological impacts on habitats are considered to be negligible.

Species

Bats

6.6 The building footprint will be located 11 metres from the River Crane bank. It is considered that the dwelling will be positioned sufficiently far away from the River bank to not generate any impacts on foraging and commuting bats. Retained trees will screen the dwelling from the River.

Enhancements

6.7 The National Planning Policy Framework encourages development to provide net gains in biodiversity where possible.

6.8 It is recommended that the following enhancements are provided within the site:

- Five Schwegler bat boxes installed on retained mature trees;
- Five Schwegler bird boxes on mature trees; and
- Two bat roosting tubes installed on the wall of the new dwelling.

7.0 CONCLUSIONS

7.1 The site is generally of low ecological value, although the northern site boundary abuts the Crane Corridor, a Site of Metropolitan Importance for London.

7.2 Measures to mitigate for impacts have been set out along with recommendations for enhancement of the site's ecological value.

7.3 Implementing the recommendations will ensure that there are no significant impacts upon protected species and that the proposals will be in conformity with relevant legislation and policy.

APPENDIX 1 HSI ASSESSMENT

Pond Number	1
Geographic location. The three geographic regions are based on the known distribution of the species and are defined as Optimal, Marginal or Unsuitable.	Optimal
S1 Value:	1
Pond Area The optimum size is 400-800m^2 with ponds smaller or larger than this the HSI score is reduced.	0
S2 Value:	0.1
Pond Permanence The optimum is 1 year of drought for every 10 with lower HSI scores above and below this point.	0
S3 Value:	0.90
Water Quality Although adults are relatively tolerant of pollution, the gill-breathing larvae are not. As such the score increases with water quality and four categories of oxygenation and obvious pollution based on invertebrate indicators are assigned.	Mod
S4 Value:	0.67
Pond Shading Perimeter shading of the pond can increase the nutrient level and enhance productivity, however excess shading can cause an increase in organic content and cause eutrophication. The optimum amount of shade is 0-60% with the HSI score decreasing beyond this.	10
S5 Value:	1.00
Presence of Waterfowl High densities of waterfowl can damage aquatic vegetation and are detrimental to water quality owing to nutrient enrichment. Up to two waterfowl per pond is optimal with an increase of this reducing the HSI score.	1
S6 Value:	1
Presence of Fish Some fish predate and/or compete with newt larvae. Four categories are assigned depending on likelihood and species present: Major, Minor, Possible or Absent.	No fish
S7 Value:	1
Local Pond Density GCN populations are not considered to be viable with a pond density of less than 0.7 ponds per km^2. The number of ponds within 500m are recorded with 4 or more ponds per km^2 being optimal.	No connecting ponds
S8 Value:	0.1
Local Amount of Suitable Habitat GCNs are also reliant on good terrestrial habitat. The amount within 500m of the pond is recorded, taking into account any barriers to dispersal, with 4ha or more of good habitat being optimal.	Site has moderate habitats
S9 Value:	0.67
Macrophyte (aquatic plant) Cover Macrophytes provide cover, food for prey and egg laying material, although large density restricts vital GCN behaviour e.g. Courtship. 70-80% macrophyte cover is optimal with the HSI score falling above and below this amount.	Some marginal plants
S10 Value:	0.4
HSI Score	**0.53**
Natural England Classification	Below Average

ACD ENVIRONMENTAL
Ecology
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Landscape Architecture

Head Office
Rodbourne Rail Business Centre
Grange Lane
Malmesbury
SN16 0ES

Tel: 01666 825646

Surrey Office
Courtyard House
Mill Lane
Godalming
GU7 1EY

Tel: 01483 425714

Hampshire Office
Suite 6
Crescent House
Yonge Close
Eastleigh
SO50 9SX

Tel: 02382 026 300

East Anglia Office
PO Box 1272
Cambridge
CB1 0YR

Tel: 07825 868654

Email: mail@acdenv.co.uk
Website: www.acdenvironmental.co.uk

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