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Land Adjoining No. 5 Ian Mikardo Way Caversham

Ecological Appraisal

A combined preliminary ecological appraisal and impact assessment in relation to proposed construction of a single new dwelling on the site.

Version 2 dated 6th January 2018

Report for:

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Project reference:

2017/5182/A





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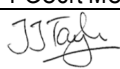
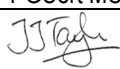
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Quality Management

	Issue	Revision
Remarks	Version 1	Version 2 Minor revision
Date	14 th December 2017	6 th January 2017
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1.0. Summary

- 1.1.1. J Taylor Ecology Consulting were commissioned to undertake an Ecological Appraisal relation to the proposed construction of a single detached dwelling within a former residential garden on land adjacent to No.5 Ian Mikardo Way in Caversham.
- 1.1.2. The ecological work conducted comprised of a Preliminary Ecological Appraisal (PEA), which identified the ecological features present, or potentially present within the site and its surrounding area. Any potential ecological constraints associated with the proposals were then identified and the requirement for any additional surveys identified. The PEA was then used to inform a subsequent impact assessment, evaluating the potential effects of the proposals on the habitats, species and ecosystems identified. Any required mitigation or compensation was then detailed, together with opportunities for ecological enhancement.
- 1.1.3. Initially a desk study was undertaken to gain further information on the site, together with the location of both statutory and on-statutory protected sites. This was followed by a detailed field survey of the site and surrounding area which was undertaken on 27th November 2017. An assessment was then made of the potential of the site to support protected species listed on Schedules 1 and 5 of the Wildlife and Countryside Act 1981 (as amended), those listed under Section 41 of the NERC Act 2006 as Species of Principal Importance. As part of the field survey, a detailed Preliminary Bat Appraisal (Collins J. 2016) was also undertaken. The presence of any Habitats of Principal Importance under Section 41 of the NERC Act 2006 or Priority Habitats listed were also identified.
- 1.1.4. The following conclusions were identified in relation to protected sites and habitats.
- The site is not subject to any statutory or non-statutory wildlife designation. No statutory or non-statutory designated wildlife sites will be affected by the proposals.
 - None of the flora species recorded during the survey are individually protected by the Wildlife and Countryside Act (WCA) 1981 (as amended) or listed under Section 41 of the NERC Act 2006 as Species of Principal Importance.
 - The habitat subject to direct impact as a result of the proposals comprised of the former rear garden of No.5 Ian Mikardo Way, which comprised predominantly of amenity grassland, with a single early mature hawthorn tree in poor condition and a small amount of ruderal vegetation. Hence the site was considered to be of minimum ecological value at the site level only and not considered to contain important ecological features. None of the habitats present within the site were considered to be a Habitat of Principal Biological Importance on Section 41 of the NERC Act 2006 or listed as a Priority Habitat on the Berkshire Biodiversity Strategy.
- 1.1.4. The following conclusions were identified in relation to protected species.
- As it will be necessary to remove a small amount of vegetation on the site that could be used by common bird species for nesting, there is the potential for direct impact or disturbance to occur, should work take place during bird nesting season. Therefore, if possible, the work should either take place outside the bird-nesting season or, the area must be checked for nesting birds by a qualified ecologist prior to work commencing.
- 1.1.5. Overall, no important ecological features were identified as being present on the site, with the extent and magnitude of the impact limited to the site level. There is the potential for a positive impact on both species and habitats, and recommended ecological enhancements are provided to this effect.

2.0. Introduction

2.1. Background

- 2.1.1. J Taylor Ecology Consulting was commissioned by Mr. Andrew Steeden of York Associates, on behalf of their client, Reading Borough Council, to carry out an Ecological Appraisal on land adjacent to No.5 Ian Mikardo Way, Caversham, Reading, RG4 5BZ (approximate OS grid reference SU728747).
- 2.1.2. The survey was required in conjunction with the submission of a planning application to construct a new three-bedroom detached dwelling within a former residential garden. The garden was previously part of No.5 Ian Mikardo Way extending to the west of the building, and had been enclosed with fencing. The remaining section of garden to the north will be retained. The existing car parking spaces for No.5 Ian Mikardo Way will be re-positioned to allow access to the site from the south-eastern corner at the end of the cul-de-sac, with new parking provided (photograph 6 and 7).
- 2.1.3. The proposed new dwelling would be orientated coherently with the adjacent dwelling with the ridge line running in a north to south direction. On the ground floor a kitchen and dining room is proposed, with three bedrooms on the first floor, along with a bathroom. The northern section of the site will be retained as a garden area in which landscaping is proposed. The area to the south of the new building comprised of the new car parking area and connecting footpaths.

2.2. Site Description and Context

- 2.2.1. The proposed site is located in the Caversham area of Reading, to the north of Amersham Road and to the west of Ian Mikardo Way, approximately 1.8km north east of Reading town centre. The site lies within the Reading Borough Council area, a single level unitary authority without civil parishes in the ceremonial county of Berkshire. The site area is approximately 0.03 hectares and rectangular in shape orientated north to south. It is located adjacent to Alston Walk footpath running from Amersham Road into the residential area of Charles Evans Way.



Photograph 1. General view of the site from Alston Walk.

- 2.2.2. The site comprised of an area of amenity grassland, subject to infrequent management and as such some ruderal species were present adjacent to the boundary. An open wire mesh fence was located on the western side adjacent to Alston Walk with a centrally located access gate. The northern, eastern and southern boundaries were fenced with wooden 1.8m high fence panels.
- 2.2.3. The site is surrounded by residential developments, with the dwellings of Ian Mikardo Way to the east, and Charles Evans Way to the west. A short distance to the south of the site along Ashton Walk was Amersham Way, with Caversham Nursey School and Sure Start Centre beyond. Further south lay the River Thames (700m) together with the adjacent flooded gravel extraction pits and Thames and Kennet Marina.
- 2.2.4. Photographs of the site are provided in Appendix 9.1. For the purpose of this report, the “site” is defined as the area outlined red on the Location Plan in Appendix 9.2, and is the area subject to this report. The study area is defined as a 2km radius from the site boundary. As proposed site layout plan is provided in Appendix 9.4.

2.3. Pre-existing information on the site

- 2.3.1. No previously conducted ecological survey work was identified within the boundary of the site, or in close proximity.

2.4. Personnel

- 2.4.1. The field survey of the site and subsequent appraisal was undertaken by Jonathan Taylor BEng (Hons) PGCert MSc MCIEEM on 27th November 2017.
- 2.4.2. Jonathan is fully qualified practising Ecological Consultant with over 15 years' experience and has an expert knowledge of ecological appraisals and impact assessments on an extensive range of habitats and species. He also has a practical understanding of factors affecting ecology in relation to construction and the built environment and regularly provides recommendations for ecological protection, enhancement and mitigation measures.
- 2.4.3. In particular, he has an expert knowledge of bat ecology and legislation, from both formal training and working alongside experienced bat surveyors, and specialises in reptile and amphibian ecology, holding a Natural England Class Licence CL08 (Registration 2015-10258-CLS-CLS).
- 2.4.4. As a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM), Jonathan adheres to the Institute's Code of Professional Conduct and professional ethics, and maintains a standard of knowledge and experience in accordance with the CIEEM Continuing Professional Development Policy.

2.5. Purpose

2.5.1. The purpose of this Ecological Appraisal is as follows:

- To record the ecological baseline and identify the broad habitat types and key ecological features present on the site to enable a provisional assessment of the ecological value of the site to be made.
- To assess the potential of the habitats on and around the site to support legally protected or priority species, and to identify the requirement for any additional surveys that may be required to inform the impact assessment.
- To conduct a provisional impact assessment to identify any possible impacts of the proposals on the ecological receptors present and associated ecological constraints, clearly identifying any 'significant effects' as well as impacts on any designated sites or protected species.
- To make recommendations for design changes to reduce any possible impacts if appropriate.
- To propose mitigation measures to avoid, mitigate or compensate ecological impacts, as appropriate.
- To identify opportunities for wider biodiversity and ecological improvement, in particular to recommend measures to ensure that the biodiversity value of the site would be maintained and enhanced where possible in accordance with Sections 109 and 118 of the National Planning Policy Framework (NPPF 2012).

3.0. Legislative and Planning Context¹

3.1. Legislation Overview

- 3.1.1. The legislation in the Great Britain provides protection of certain species of wild plants, birds and animals. Some species of bird are protected only at certain times of the year when they are particularly sensitive, and provisions in the legislation also prohibit certain methods of taking or killing wild animals and birds. The legislative provisions in Great Britain are primarily contained within in the Wildlife and Countryside Act 1981 (as amended), within Sections 9 to 12, with the wild animals, which are protected, listed in Schedules 5 to 7. In England and Wales, enforcement provisions were extended and some amendments for protection were made by the Countryside Rights of Access Act 2000.
- 3.1.2. In addition, the protection of European Protected Species in Great Britain is covered by the Conservation of Habitats and Species Regulations 2010.
- 3.1.3. In relation to protected sites, Sections 28 to 33 of Part 2 of the Wildlife and Countryside Act 1981 (as amended), detail the law regarding Sites of Special Scientific Interest. Conservation of Habitats and Species Regulations 2010 provide for the designation and protection of European Sites (Special Areas of Conservation and Special Protection Areas), and the adaptation of planning and other controls for the protection of European Sites.

Wildlife and Countryside Act 1981

- 3.1.4. The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends the existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive). Animals listed under Schedule 5, including all species of bats and reptiles, receive full or partial protection under Section 9.
- 3.1.5. Wildlife and Countryside Act 1981 (as amended) also provides for the notification and confirmation of Sites of Special Scientific Interest (SSSIs) – these sites are identified for their flora, fauna, geological or physiographical features by the country conservation bodies in England (Natural England) and Wales (Natural Resources Wales).
- 3.1.6. The Wildlife and Countryside Act 1981 also contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9.

The Conservation of Habitats and Species Regulations 2010

- 3.1.7. The Conservation of Habitats and Species Regulations 2010 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb wild animals listed under Schedule 2 of the Regulations. All bat species together with otters, hazel dormouse and great crested newts are listed under Schedule 2 and hence are protected by Regulation 39.

¹ Please note that this legal information is a summary and intended for general guidance only. In all cases, the original legal documents should be consulted for definitive information. Further information related to the protection afforded to specific species is provided in the Appendix.

- 3.1.8. The Regulations also place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species to the European Commission. These sites are then designated as Special Areas of Conservation (SACs) or Special Protection Areas (SPAs) classified under Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive).

3.2. Policy and Planning

Natural Environment and Rural Communities Act 2006

- 3.2.1. The UK Biodiversity Action Plan (JNCC, 2012) was organised to fulfil the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory. A list of national and local priority species and habitats was produced which lists all listed species/habitats having specific action plans defining the measures required to ensure their conservation. The purpose of the action plans is to both reflect UK and local objectives and targets for habitats of particular conservation concern, and to set appropriate local targets for their conservation.
- 3.2.2. The Biodiversity Action Plan species which the Government expects to be considered in planning applications was subsequently listed in Section 41 (in England) of the Natural Environment and Rural Communities Act 2006.
- 3.2.3. All Local Planning Authorities are obliged under Section 40(1) of the Natural Environment and Rural Communities (NERC) Act 2006 to conserve biodiversity, and hence are required to consider the potential ecological impacts of development proposals on habitats and species prior to submission of a planning application. In addition, all Local Planning Authorities have a duty to restore or enhance biodiversity. This obligation is implemented in relation to planning through Planning Policies, generally at two main administrative levels: nationally through the National Planning Policy Framework (NPPF) and locally through the Reading Borough Council Adopted Core Strategy.

Planning Context

- 3.2.4. The National Planning Policy Framework (NPPF), published on 27 March 2012, sets out current government policy on biodiversity and nature conservation. This places a duty on the Planning Authority to make the effect of a development on protected species (and habitats) a material consideration when considering planning applications. Paragraph 118 comprises a number of principles which Local Authorities should apply, including provision for refusal of planning applications if significant harm cannot be avoided, mitigated or compensated for.
- 3.2.5. The NPPF also promotes sustainable development by ensuring that developments take account of the role and value of biodiversity and that it is conserved and enhanced within a development. The NPPF is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution.
- 3.2.6. Locally, Policy CS36: Biodiversity and Geology of the Reading Borough Council Adopted Core Strategy (Adopted January 2008 with alteration adopted January 2015) sets out requirements and priorities in relation to biodiversity and planning. The policy states that “*Development should retain, protect and incorporate features of biodiversity or geological interest (including protected species and their habitats) found within the application site into their schemes*”.
- 3.2.7. The Natural Environment in Berkshire: Biodiversity Strategy 2014 – 2020 (BLNP 2014) published by the Berkshire Local Nature Partnership (<http://berkshirelnp.org/>) provides further information on the habitats that have been targeted for conservation action in the local area. The potential impact upon such habitats would be considered under Policy CS36 above.

4.0. Methodology

4.1. General

- 4.1.1. The methodology used in this report is based upon that contained within The Guidelines for Preliminary Ecological Appraisal (2nd edition) (CIEEM 2017a), and the Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM 2016a), both produced by the Professional Standards Committee of the Chartered Institute of Ecology and Environmental Management (CIEEM). CIEEM's Guidelines for Ecological Report Writing (CIEEM 2017b), which sets out the appropriate structure and content for Preliminary Ecological Appraisal Reports and Ecological Impact Assessment Reports has been followed where appropriate.
- 4.1.2. The Preliminary Ecological Appraisal (PEA) stage describes the process of identifying the ecological features present, or potentially present within the site and its surrounding area in relation to the specific proposals. This allows the identification of the likely ecological constraints associated with the proposals to be identified, the likely mitigation and the requirement for any additional surveys that may be required. The PEA is then used to inform the following impact assessment stage, which is the process of identifying, quantifying and evaluating the potential effects of the proposals on the habitats, species and ecosystems present.
- 4.1.3. Hence this Ecological Appraisal comprises both a preliminary ecological appraisal and subsequent impact assessment, with the scope, structure and content of the report proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposals, in accordance with the CIEEM guidance referenced above and paragraph 193 of the National Planning Policy Framework.

4.2. Desk Study

- 4.2.1. A desk study was undertaken to identify the presence of any statutory designated wildlife sites and non-statutory designated sites within 2km of the site boundary, with the data obtained analysed using ESRI ArcGIS Software.
- Up to date Natural England Geographic Information System (GIS) Digital Boundary Datasets of UK and European designated wildlife sites were imported as ESRI Shape files under an Open Government Licence (OGL) and viewed on ARC GIS Explorer to identify their location and extent in relation to the site (<http://naturalengland-defra.opendata.arcgis.com/>).
 - Information published by Berks, Bucks & Oxon Wildlife Trust (www.bbowl.org.uk), Thames Valley Environmental Records Centre (www.tverc.org.uk) and Reading Borough Council was examined for information relating to any non-statutory protected sites within the study area.
 - Ordnance Survey maps and aerial photographs were examined to identify all water bodies located within a 500m of the proposed development site. This was undertaken as great crested newts (*Triturus cristatus*) can use suitable terrestrial habitat up to 500m from a breeding pond (English Nature Report ENRR Number 576).
- 4.2.2. Given the urban location, low impact and small-scale development (as defined in CIEEM 2016b / CIEEM 2017a), and to retain proportionality (Section 4.1.3 above), information on previously recorded protected and priority species held by Thames Valley Environmental Records Centre was not sought (Section 4.6.2). However, our local knowledge of protected and priority species distribution in the area from nearby work conducted and our own survey records, has been incorporated into the appraisal in order to provide a context for the study.

4.3. Field Survey

Phase 1 Habitat Survey

- 4.3.1. A detailed walkover survey of the site and surrounding area was undertaken, which identified the habitat types located within the site in line with the guidelines stated in the Handbook for Phase 1 Habitat Survey (JNCC 2010). All broad habitat types present were described, with the dominant plant species recorded and habitats classified. Given the size of the site and the simplicity of the habitats present, the locations of the habitats on the site have been described and referenced to photographs contained within Appendix 9.1, rather than producing a Phase 1 Habitat plan.
- 4.3.2. The survey focused on the areas directly affected by the proposed work as well as habitats immediately adjacent. In addition, areas of the site not affected by the development but still considered to be suitable for protected species were also noted. The presence of any Habitats of Principal Importance under Section 41 of the NERC Act 2006 or Berkshire Priority Habitats (BLNP 2014) was also identified.

Faunal and Floral Species

- 4.3.3. An assessment was then made of the potential for the site to support protected species listed on Schedule 1 and 5 of the Wildlife and Countryside Act 1981 (as amended), those listed under Section 41 of the NERC Act 2006 as Species of Principal Importance. The site and a 50m zone around the site (where land access was permitted) were searched for the presence of badger setts and evidence of badger activity e.g. latrines, hairs, scrapes, footprints and run-throughs.
- 4.3.4. The site was also examined for the presence of vascular plants listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended), those listed under Section 41 of the NERC Act 2006 as Species of Principal Importance. The presence of any alien invasive species of plants listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), such as Japanese knotweed or giant hogweed, was also identified and their location recorded.
- 4.3.5. Plant species were recorded as encountered, together with estimates of cover and abundance where appropriate (on the DAFOR scale i.e. Dominant, Abundant, Frequent, Occasional, and Rare) and follows the nomenclature of Stace (1997) for vascular plant species.
- 4.3.6. Bryophytes, lichen and fungi and the less common invertebrate groups were not surveyed.
- 4.3.7. The age class for a tree is estimated based on its expected life span in its given situation, taking into account any defects, the form of the tree etc. The categories are Young (Y), Early Mature (EM – less than 1/3 of expected life span), Mature (M 1/3 to 2/3 of expected life span), Late Mature (LM – more than 2/3 of expected life span) and Veteran (V).

Preliminary Bat Appraisal Methodology

- 4.3.8. As part of the field survey, a Preliminary Bat Appraisal (Collins J. 2016) was undertaken consisting of a non-invasive visual inspection of the current structure and condition of all the buildings, structures and trees within or directly adjacent to the proposed working area. In addition, the value of the wider area was also assessed for its potential to support roosting, foraging or commuting bats.
- 4.3.9. The assessment for bats was based on the guidance included in the Bat Conservation Trust Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition (Collins J. 2016) and Bat Workers Manual (JNCC 2010).

4.4. Evaluation

- 4.4.1. Following completion of the field survey, the site was evaluated to identify the presence of important ecological features that may be affected, with reference to the geographical context in which they are considered important (CIEEM 2016a). Important ecological features are habitats, species, ecosystems and their functions/processes, which are considered to be important and could potentially be affected by the proposals.
- 4.4.2. The geographical value categories used in this assessment are: International (i.e. Europe), National (i.e. UK/England), County (i.e. Berkshire), District (i.e. Reading), Local (i.e. within Caversham) and Site (i.e. within the immediate zone of influence). The evaluation categories for species are the same as those for habitats and where species are confirmed as present on site, and estimation of the species value is given, having consideration to its distribution, status and historical trends. The legislative and planning policy context are also important considerations and have been given due regard throughout the evaluation.
- 4.4.3. Where species were not confirmed as being present on the site following the field survey, the potential of the site to provide habitats for protected species was assessed. The likelihood of species occurrence is ranked as follows (partially adapted from Collins J (2016) in relation to bats).
- 4.4.4. **Negligible** – while presence cannot be absolutely discounted, the site includes very limited or poor quality habitat for a particular species or species group. The surrounding habitat is considered 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. In relation to bats, there are negligible habitat features on site likely to be used by roosting bats.
- 4.4.5. **Low** – on-site habitat of poor to moderate quality for a given species/species group, but presence cannot be discounted. In relation to bats, the structure has one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger number of bats (i.e. unlikely to be suitable for maternity or hibernation).
- 4.4.6. In relation to trees, the tree is of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.
- 4.4.7. **Moderate** – on-site habitat of moderate quality, providing all of the known key requirements of given species/species group, with suitable surrounding habitat. Factors limiting the likelihood of occurrence may include small habitat area, habitat severance, and disturbance. For bats, the structure or tree has one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but are unlikely to support a roost of high conservation status.
- 4.4.8. **High** – on-site habitat of high quality for given a species/species group. The site is within/peripheral to a national or regional stronghold. Good quality surrounding habitat and good connectivity. In relation to bats, the structure or tree has 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. They are located in sheltered locations with a stable temperature regime a number of suitable bat access points, and could be suitable for a maternity roost.
- 4.4.9. **Present** – presence confirmed from the current survey or by recent confirmed records. For bats, the building, defined section of the building was found to contain conclusive evidence of occupation by bats, such as bat droppings.

4.5. Impact Assessment

- 4.5.1. An assessment of was then made as to whether the identified important ecological features will be subject to any impacts of the proposed work, followed by a characterisation of these impacts and their effects. Where the evaluation has identified the potential presence of a protected species and the impact assessment indicates that should they be present, an impact could occur, further surveys are recommended to gain further information on their potential to be important ecological features, so that an impact assessment can be subsequently conducted.
- 4.5.2. Assessment of residual ecological impacts of the project remaining after mitigation and the significance of their effects, including cumulative effects was also determined where applicable.

4.6. Limitations

- 4.6.1. Ecological appraisals are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. Therefore, the appraisal is unlikely to produce a complete list of all plants and animals and the absence of evidence of any particular species should not be taken as conclusive proof that the species is not present or that it will not be present in the future. However, the results of the survey enable an initial evaluation of the ecological value of the site to be made.
- 4.6.2. The desk study conducted as part of this appraisal was limited to obtaining information on statutory and non-statutory protected sites within the study area, with information on previously recorded protected and priority species not obtained from the Local Environmental Record Centre (LERC). It is acknowledged in both The Guidelines for Preliminary Ecological Appraisal, 2nd edition (CIEEM 2017a) and the CIEEM (2016b) Guidelines for Assessing and Using Biodiversity Data, that obtaining records of previously recorded protected and priority species from the LERC is not always required for low impact or small-scale development (e.g. by size, extent, duration of works, magnitude or locality), including where the site comprises of small areas of cultivated garden/amenity grassland, as in this instance. Hence it is considered that the information gained in relation to protected sites, from the field survey and in context with our local knowledge of species distribution in the study area, is sufficient to result in robust ecological appraisal and impact assessment.
- 4.6.3. It should be acknowledged that bats in particular are highly mobile and may move between different roost sites throughout the year. In addition, new features such as cracks, crevices or openings may appear at any time. Hence the results of this survey are considered to be valid only at the time the survey was conducted.
- 4.6.4. The weather conditions were satisfactory at the time of the survey, and hence not considered to pose a constraint to the appraisal.

5.0. Results and Ecological Baseline

5.1. Desk Study

Statutory Designated Sites

5.1.1. The following statutory designated wildlife sites have been identified within 2km of the site.

Table 1 – Statutory sites identified within 2km of the site.

Site	Designation	Grid Ref	Brief Description	Approximate distance (m) and direction from site
Clayfield Copse	LNR	SU723768	A large, mainly natural open space consisting of fields and native woodlands. Some woodland is being actively managed as hazel coppice, and traditional dead hedging defines some of the ancient woodland areas. A wild flower meadow and other fields are being left to regenerate.	2000m N

Local Nature Reserves (LNR)- Designated by local authorities under Section 21 of the National Parks and Access to the Countryside Act (1949). LNRs are normally greater than 2 hectares in size and of local interest.

Non-Statutory Designated Sites

5.1.2. The following non-statutory sites were identified within 2km of the proposed development site. Non-statutory sites are protected through the planning.

Table 2 – Non- statutory sites identified within 2km of the site.

Site	Designation	Grid Ref	Brief Description	Location
Clayfield Copse	LNR and AW	SU723768	See above.	2100m N
Rotherfield Way Copse	LWS	SU717760	A small broadleaved woodland situated in a sheltered dry valley sloping moderately from NE to SW between roads and houses in Emmer Green, Reading.	1750m NW
Old Cemetery, Victoria Road	LWS	SU712755	The cemetery has a diverse herbaceous flora, including at least six ancient woodland indicators – species that are usually more common in ancient woodland.	1785m WNW
Highdown Wood (Beech Wood)	AW	SU712759	Dominated by beech and known locally as Beech Wood, this woodland is a prominent landscape feature from the east. A woodland belt comprising mature oaks with a dense impenetrable shrubby understorey runs from the north of Beech Wood between Morlais and Highdown School to Tredagar Road in the north	2080m NW

Ancient woodland (AW) - Woodland which has existed at least since 1600 AD and is usually of much older origin. It contains stands of native trees that are not obviously planted. The sites are listed on Natural England's ancient woodland inventory.

Local Wildlife Site (LWS) - Are areas in Oxfordshire and Berkshire which include important and rare habitats and species.

5.2. Water body Search

- 5.2.1. To assess the potential for great crested newts to be present, Ordnance Survey maps and aerial photographs were examined, and no potentially suitable water bodies were identified within 500m of the site.
- 5.2.2. Approximately 200m to the south of the site lay a series of large former adjacent flooded gravel extraction pits, Thames and Kennet Marina with the River Thames to the south. The large flooded gravel pits are considered too large to be considered suitable for use by great crested newts, and hence were excluded from the search (Foster, J. 2001). In addition, water bodies connected to watercourses that are likely to be subject to a noticeable flow at times are considered unsuitable for great crested newts (Kent ARG 2003), due to the lack of standing water and high level of predation.

5.3. Field Survey Results

Habitats

- 5.3.1. The following habitats were recorded in line with the standard Phase 1 Habitat Classification (JNCC 2010), identified as during the field survey visit conducted on 27th November 2017.
- 5.3.2. No species of flora listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) or those listed under Section 41 of the NERC Act 2006 as Species of Principal Importance were observed within the proposed development site.
- 5.3.3. **Scattered broad-leaved trees (A3.1):** A single early mature self-seeded hawthorn (*Crataegus monogyna*) was present in the south west corner of the site. The tree was in poor condition with significant limb damage, and was covered in dense ivy growth (photograph 9). Immediately beyond the boundary to the south were two adjacent young sycamore trees (*Acer pseudoplatanus*), which had grown over and through sections of the hawthorn, impeding its growth further.
- 5.3.4. **Amenity Grassland (J1.2):** Typical former garden lawn / amenity grassland occurred across the interior of the site (photograph 3 and 4). Although the former garden had been separated from the remaining garden of No.5 Ian Mikardo Way and hence was unoccupied, the grassland appeared to be subject to occasional management. The management was less frequent than what would be required to maintain a typical garden lawn, but sufficiently frequent to prevent a diverse sward developing, being approximately 100mm high at the time of the visit.
- 5.3.5. Overall the grassland contained little species diversity, being dominated by perennial rye grass (*Lolium perenne*), cocksfoot (*Dactylis glomerata*) and common bent (*Agrostis capillaris*), with a low covering of nettle (*Urtica dioica*) abundant in places, which had grown since the last time it was cut. There were occasional cleavers (*Galium aparine*), and bramble (*Rubus fruticosus*) growth encroaching from the boundaries, together with rare hedge garlic (*Alliaria petiolata*) and dandelion (*Taraxacum officinalis*).
- 5.3.6. **Tall Ruderal (C3.1):** A small area of tall ruderal vegetation was present along the western boundary at the base of the wire mesh fence (photograph 4), with bramble dominating, together with frequent ivy (*Hedera helix*) and nettle, abundant cleavers, coarse grasses and white dead nettle (*Lamium album*). At the south end of the western boundary (photograph 9) adjacent to the hawthorn tree, ivy and honeysuckle (*Lonicera sp.*) were growing on the boundary fence and within the structure of the hawthorn tree, with occasional bramble, nettle and cleavers present along the fence line.
- 5.3.7. **Boundaries (J2.4):** An area of ivy grown was present on the northern boundary wooden fence, the majority growth over the top of the fence from the neighbouring garden (photograph 8).

Faunal Species

Overview

- 5.3.8. An overview of the legislation and planning policy relating to protected faunal species referred to in this section is provided in Section 5, with more detailed species specific information provided in Appendix 9.4. It should be noted that only species that are present within the same geographical range of the site, and where suitable habitats are present within or adjacent to the site are included below.
- 5.3.9. **Badger (*Meles meles*):** No evidence of badger activity was observed during the site survey and no field signs to indicate either current or previous use of the site was identified. In addition, the site was not considered suitable for sett building given the predominance of short amenity grassland resulting in a lack of cover and a high level of disturbance.
- 5.3.10. The site is located within a high density residential area surrounded by high intensive land use and roads subject to high traffic volumes with very limited connectivity to the wider countryside.
- 5.3.11. Therefore, it is concluded that badger presence within the site is considered negligible.
- 5.3.12. **Reptiles:** No evidence of reptile presence was identified during the survey. Internally the site is largely unsuitable for reptiles, given the working area is composed predominantly of amenity grassland, which offers little cover or foraging opportunities for reptiles. In addition, no suitable refugia are present, and the site was completely isolated from any other potential reptile habitat, given the surrounding high density housing and association road network. Hence since area was developed, it is highly unlikely that any reptile species could have entered the site, and in addition, the surrounding high density housing is likely to have a high number of domestic animals which often prey on reptile species, particularly slow worms.
- 5.3.13. Therefore, the potential for reptiles to be encountered within the site is considered to be negligible.
- 5.3.14. **Great Crested Newt (*Triturus cristatus*):** No potentially suitable water bodies were identified within 500m of the site (Section 5.2). Therefore, given the absence of suitable water bodies, and that the site is isolated from any suitable terrestrial habitat, the likelihood of great crested newts being present is considered to be negligible.
- 5.3.15. **Birds:** The site contained some very limited potential for bird nesting to occur, particularly in the hawthorn tree and adjacent vegetation along the southern boundary of the site (photographs 5), and within the tall ruderal vegetation at the northern end of the western boundary (photograph 4). However, no evidence of redundant nests was recorded during the survey visit.
- 5.3.16. A small number of common bird species were observed during survey visits, including robin (*Erithacus rubecula*), blackbird (*Turdus merula*), wood pigeon (*Columba palumbus*), and feral pigeon (*Columba livia domestica*), none of which have statutory or non-statutory protection. The bird species recorded on site are very common locally and are considered to be of ecological value at the Site level only.
- 5.3.17. However, a variety of common bird species are likely to exist within the vicinity of the site that could use the small amount of vegetation on the site for nesting. The vegetation removal that is currently proposed was assessed as highly unlikely to result in any significant impact upon the conservation status of birds in the local area.
- 5.3.18. However, all nesting birds, their nests, eggs and young receive legal protection under the Wildlife and Countryside Act 1981 (as amended).

- 5.3.19. **Common Dormouse (*Muscardinus avellanarius*):** The site is considered not suitable for use by dormice, given the absence of habitat suitable for use by dormice and particularly the lack of variety of fruiting species such as hazel, hawthorn, blackthorn, cherry and bramble, that dormice require (Bright et al., 1996). In addition, the urban location of the site surrounded by high intensity land use results in the site being isolated from any known dormice populations.
- 5.3.20. Therefore, it is concluded that dormice presence within the site is considered negligible according to the criteria in Section 4.4.
- 5.3.21. **Bats (*Chiroptera*):** No habitat suitable for use by bats was identified within the site. The single early mature hawthorn tree in the south-western corner of the site, together with the adjacent young sycamore trees beyond the boundary were of insufficient age to have formed features that could be used by bats, and were permanently lit from the nearby street lighting and passing traffic from Amersham Road. Hence the tree was assessed as having a negligible likelihood of being used by roosting bats.
- 5.3.22. Given the proximity of the western elevation of No5. Ian Mikardo Way beyond the eastern boundary, it was also inspected for its potential to support roosting bats using high power binoculars from the interior of the site. The building was of recent construction with enclosed UPVC soffits on the western elevation, with all the tiles on the pitched roof intact and in place. The elevation was also permanently lit from the street light adjacent to the site (photograph 2). Bats actively seek dark areas in which to roost, and hence given the elevation was permanently lit it significantly lowers the suitability for use by roosting bats. Hence it was concluded that the western elevation of No5. Ian Mikardo Way facing the site had a negligible likelihood of use by roosting bats.
- 5.3.23. Internally the working area comprised of short amenity grassland and therefore is unlikely to offer any foraging opportunities for bats. Consequently, there is highly unlikely to be any loss of foraging as a result of the construction of the proposed dwelling.
- 5.3.24. **Hedgehog (*Erinaceus europaeus*):** No signs of hedgehog were noted and the habitat within the site is considered not suitable for hedgehogs.
- 5.3.25. **Other Protected Species:** No other protected or priority species were found during the survey. The proposed working area does not support habitat considered suitable for crayfish (*Austropotamobius pallipes*), water vole (*Arvicola amphibius*) otter (*Lutra lutra*) or common toad (*Bufo bufo*).

5.4. Invasive Species

- 5.4.1. Certain species of plants and animals that do not naturally occur have become established in the wild and represent a threat to the natural fauna and flora. The Wildlife and Countryside Act 1981 (as amended) and the more recent Variation of Schedule 9 (England and Wales) Order 2010, makes it an offence to plant or otherwise cause such species listed on Schedule 9 to grow in the wild.
- 5.4.2. No invasive species which are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were identified as being present on the site during the site survey.

6.0. Ecological Evaluation and Impact Assessment

6.1. Designated Areas

- 6.1.1. The site is not subject to any statutory or non-statutory wildlife designation.
- 6.1.2. A single statutory designated site was identified during the desk study. Clayfield Copse Local Nature Reserve located just beyond on the edge of the study area 2100m to the north of the site, adjacent to open countryside and forms the urban boundary of western Reading.
- 6.1.3. Local Nature Reserves area designated under the National Parks and Access to the Countryside Act 1949, normally by the local authority, as wildlife or geological features that are of special interest locally. The site is also designated as a Local Wildlife Site and Ancient Woodland. It is a large, mainly natural open space consisting of fields and native woodlands. Some woodland is being actively managed as hazel coppice, and traditional dead hedging defines some of the ancient woodland areas. A wild flower meadow and other fields are being left to regenerate woodland. It was designated as a Reading Nature Reserve in 1991 and owned and managed by Reading Borough Council.
- 6.1.4. In addition, four non-statutory wildlife sites were identified within the study area, which are protected through the planning system in accordance with the National Planning Policy Framework. The closest was Rotherfield Way Copse Local Wildlife Site, 1750m to the north west of the site.
- 6.1.5. Both Clayfield Copse Local Nature Reserve and the non-statutory sites are considered to be of sufficient distance from the working area not to be directly affected, particularly given the presence of the urban areas of Reading and associated road network, which present a significant barrier to dispersal for many terrestrial mammals and invertebrates.
- 6.1.6. Therefore, no impact on statutory or non-statutory designated areas is foreseen as a result of the proposals and no mitigation or further survey work is required.

6.2. Habitats

- 6.2.1. The habitat subject to direct impact as a result of the proposals comprises predominantly of amenity grassland arising from its former use as the garden of No.5 Ian Mikardo Way, with a single early mature hawthorn tree at the south-western corner and a small amount of tall ruderal vegetation along the base of the western fence. Hence such habitats are common locally and hence considered to be of minimum ecological value at the site level only.
- 6.2.2. In addition, none of the habitats present within the site were considered to be a Habitat of Principal Biological Importance on Section 41 of the NERC Act 2006 or listed as a Priority Habitat on the Berkshire Biodiversity Strategy (BLNP 2014) were present in within the site.
- 6.2.3. Therefore, it is considered that no important habitat features are present on the site, with the extent and magnitude of the impact limited to the site level. Providing the recommended mitigation and enhancement measures are implemented as detailed in Section 7.5 to improve the diversity of the habitat, there is the potential for a positive impact on as a result of the proposals.

6.3. Legally Protected and Priority Species

Floral Species

- 6.3.1. None of the floral species recorded during the survey are specifically protected by the Wildlife and Countryside Act (WCA) 1981 (as amended) or considered rare nationally or locally. Also, none are listed as Priority Species on the Section 41 of the NERC Act 2006. The majority of the species identified are very common locally and typical of managed domestic gardens.
- 6.3.2. The single early mature hawthorn tree at the south-western corner of the site (photograph 9) was in poor condition with significant limb damage, and was covered in dense ivy growth. Hence it is considered not to offer sufficient ecological value to warrant it being retained. However, in compensation at least two appropriate replacement native trees should be incorporated into the design of the development, situated in a suitable location (Section 7.4).

Faunal Species

- 6.3.3. The anticipated ecological impact on faunal species (based on the ecological appraisal detailed above) as a result of the proposed work is detailed below.
- As it will be necessary to remove the hawthorn tree and adjacent vegetation in the south-western corner of the site and within the tall ruderal vegetation at the northern end of the western boundary, there is the potential for direct impact to nesting birds and for disturbance to occur, should work take place during bird nesting season.
- 6.3.4. As the vegetation on site is unlikely to support any significant number of breeding birds, and the loss of vegetation was assessed as highly unlikely to result in any significant impact upon the conservation status of birds in the local area, the vegetation not considered to constitute an important ecological feature. Hence the extent and magnitude of the impact limited to the site level, with the potential for a positive impact on species should the recommended enhancement measures be implemented (Section 7.5).

7.0. Recommendations for Further Surveys, Mitigation, Compensation and Enhancement

7.1. Recommendations for further work

- 7.1.1. Based on the results of the desk study, field survey, and current proposals, no further ecological surveys are considered necessary.

7.2. Proposed Mitigation

Designated Areas

- 7.2.1. No mitigation in relation of designated areas is considered necessary.

Habitats and Flora

- 7.2.2. No other mitigation specifically related to flora or habitats are considered necessary.

Protected Species

- 7.2.3. **Nesting birds:** There is the potential for a variety of common bird species be nest within the small amount of vegetation on site which would require removal. Hence, there is the potential for direct impact to nesting birds which could result in destruction or disturbance occurring to nesting birds, should work take place during bird nesting season
- 7.2.4. All nesting birds, their nests, eggs and young receive legal protection under the Wildlife and Countryside Act 1981 (as amended). Therefore, the work should take place outside the bird-nesting season (mid-March to August inclusive).
- 7.2.5. If it is not possible to undertake the work outside of the bird nesting season, all vegetation in the vicinity of the working area must be checked for wild nesting birds, their eggs, nests or young before work is permitted to commence. Should nesting activity be detected, all work should stop at that location and a qualified ecologist consulted. The work will need to be rearranged until all young birds have fledged or nesting activity ceases.

7.3. Compensation

- 7.3.1. The single early mature hawthorn tree at the south-western corner of the site (photograph 9) was not considered not to offer sufficient ecological value to warrant it being retained. However, at least two replacement small trees should be planted on the site in compensation. A suitable location would be along the western boundary, either to the south adjacent to the proposed new car parking area, or to the north in the rear garden of the new dwelling. The species should be small in form and appropriate for this location, as such rowan (*Sorbus aucuparia*), field maple (*Acer campestre*) or cherry (*Prunus avium* or *P. padus*).
- 7.3.2. To compensate for the small loss in potential bird nesting habitat, at least two bird boxes suitable for a wide variety of common bird species should be erected least 2m above ground level and either attached to the new building or boundary as appropriate. The boxes should be of woodcrete construction, such as the Schwegler 1B, 2M or 1MR Avianex box which are rot-proof and maintenance free (www.schwegler-natur.de).

7.4. Recommended Ecological Enhancements

7.4.1. In accordance sections 109 and 118 of the National Planning Policy Framework (NPPF) 2012, the Natural Environment and Rural Communities Act (2006) and Government Circular 06/2005 (ODPM, 2005), development proposals should seek to incorporate measures to further the conservation of protected species and biodiversity in general.

7.4.2. The following key enhancements should be incorporated into the design of the development:

- The site post development could be greatly enhanced for the benefit of local biodiversity through the planting of trees, shrubs, climbers and other wildlife friendly garden species. Hence planting within the site boundary following the completion of building work should be with native species with known wildlife benefits, which should be incorporated into any new shrub and tree planting or planted beds.

The new planting scheme should seek to create a graduation of vegetation types that include native shrubs and tall grasses and herb species. In particular flowering plants will be of benefit to invertebrate species and shrubs may provide nesting opportunities for birds. An outline planting schedule is included in Appendix 9.7, which should be used as a basis for species selection. All the species recommended are either native or wildlife friendly plant species chosen to attract insects and provide a potential food source for birds throughout the season. If additional species are required, further list of suitable species is given in the Natural England leaflet 'Plants for wildlife-friendly gardens', available at www.naturalengland.org.uk (Catalogue code NE29 /ISBN 978-1-84754-020-1).

- In addition, to further improve the habitat on site, consideration should be given to planting a new narrow hedgerow along adjacent to the existing western boundary fence, using species of value to wildlife. The hedgerow should comprise of a close double staggered row of five whips per metre and be should be based on a mix of species, such as guelder rose (*Viburnum opulus*), hawthorn (*Crataegus monogyna*), hazel (*Corylus avellana*), privet (*Ligustrum vulgare*) or firethorn (*Pyracantha sp.*).

8.0. References

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9.0. Appendix

9.1. Site Photographs



Photograph 2. The western boundary and access gate and street light.



Photograph 3. General view of the northern section of the site.



Photograph 4. Small area of vegetation at the northern end of the western boundary.



Photograph 5. General view of the southern section of the site.



Photograph 6. Location of the proposed access to the site on the eastern boundary.



Photograph 7. Proposed access from the other side of the fence, adjacent to No.5.

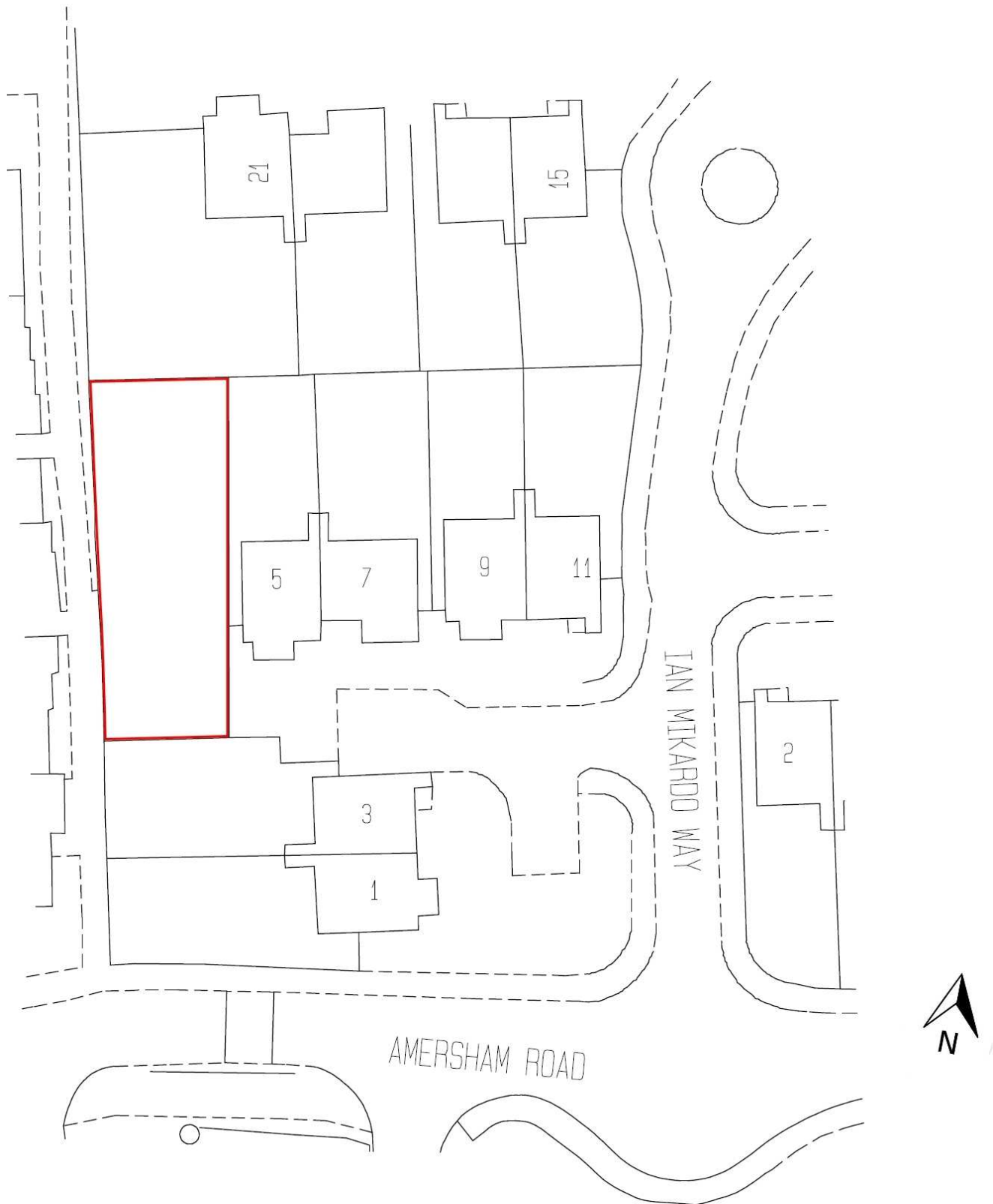


Photograph 8. Small area of ivy growth coming over the northern boundary fence.



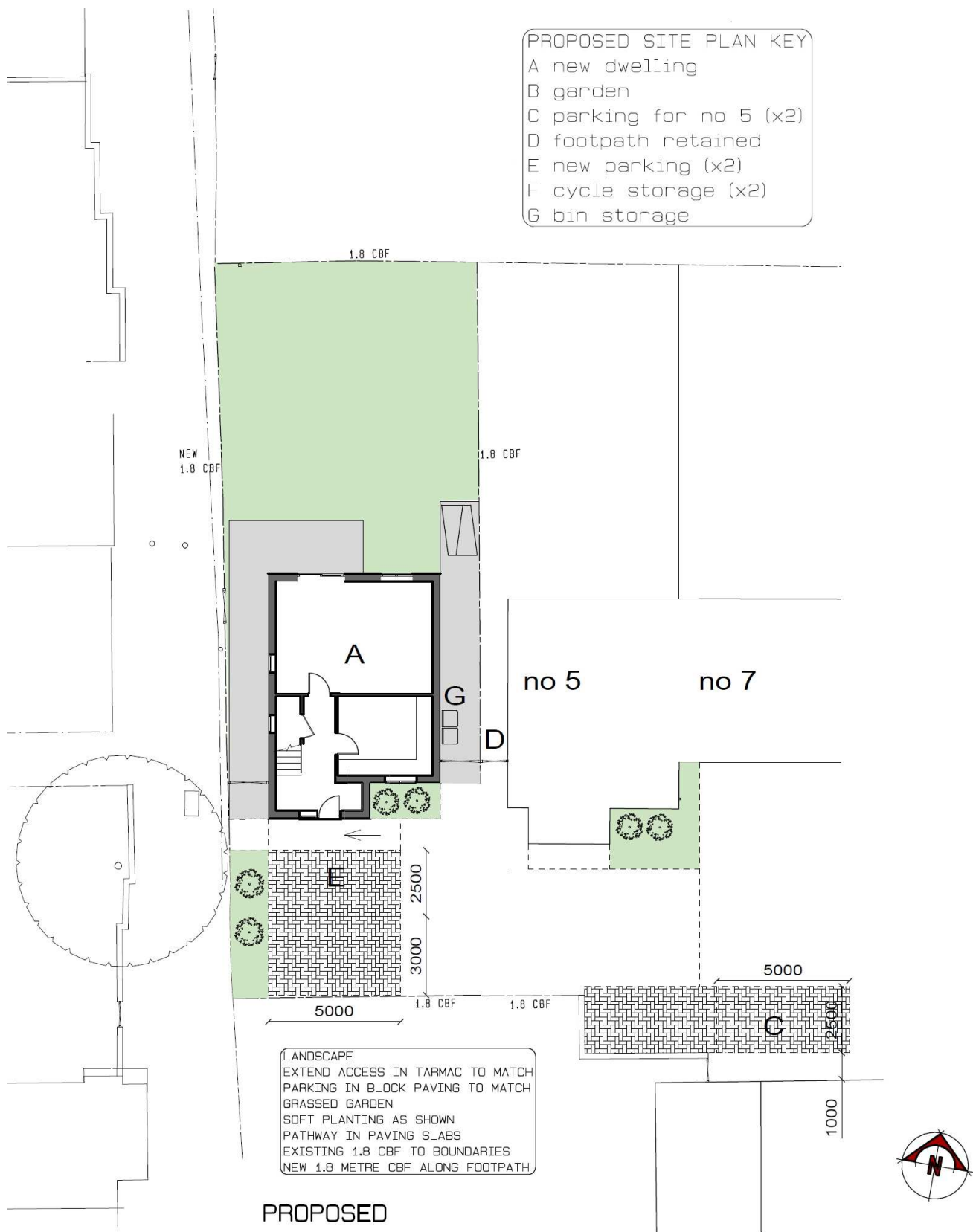
Photograph 9. Hawthorn tree located in the south west corner of the site.

9.2. Location Plan



land adjacent to No.5 Ian Mikardo Way, Caversham, Reading, RG4 5BZ
(approximate OS grid reference SU728747)

9.3. Proposed Site Plan



9.4. Protected Species Legislation Summary

Badgers

- 9.4.1. Badgers and their setts are legally protected under The Protection of Badgers Act (1992), which is based primarily on the need to protect badgers from baiting and deliberate harm or injury. A badger sett is defined in the legislation as "any structure or place, which displays signs indicating current use by a badger". Under this legislation it is illegal to:
- Wilfully kill, injure, take, or cruelly ill-treat a badger, or attempt to do so;
 - possess any dead badger or any part of, or anything derived from, a dead badger; and,
 - intentionally or recklessly interfere with a sett which includes, disturbing badgers whilst they are occupying a sett, damaging or destroying a sett, causing a dog to enter a sett, or obstructing access to it.

Bats

- 9.4.2. All bat species are afforded full protection under UK and European legislation, including the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way Act (2000) and the Conservation (Natural habitats &c.) Regulations 2010 (as amended). A bat roost is defined in the legislation as "any structure or place which a bat uses for shelter or protection". Together, this legislation makes it illegal to:
- Intentionally or deliberately take, kill or injure a bat;
 - damage to, destruction of, and obstruction of access to, a bat roost; and,
 - disturbance of a bat occupying a roost.

Breeding Birds

- 9.4.3. Under the Wildlife & Countryside Act 1981 (as amended), a wild bird is defined as any bird of a species that is resident in or is a visitor to the European Territory of any member state in a wild state. All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended), whilst they are actively nesting or roosting.
- 9.4.4. Section 1 of the Act, makes it an offence to kill, injure or take any wild bird, and to intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built. It is also an offence to take or destroy any wild bird eggs.
- 9.4.5. All birds, their nests and eggs are protected by law and it is an offence, with certain exceptions, to;
- kill, injure or take any wild bird;
 - take, damage or destroy the nest of any wild bird while it is being built or in use;
 - take or destroy the eggs of any wild bird; and,
 - possess or control any wild bird or egg unless obtained legally.
- 9.4.6. In addition, bird species listed under Schedule 1 of the Wildlife & Countryside Act 1981 (as amended) receive extra protection. The Act states that 'it is an offence to intentionally or recklessly disturb any wild bird listed in Schedule 1 while it is nest building, or at (or near) a nest containing eggs or young, or disturb the dependent young of such a bird'.

Hazel Dormouse

- 9.4.7. Hazel dormice are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5, and The Conservation of Habitats and Species Regulations 2010 (Habitats Regulations, 2010) (as amended) Schedule 2; the later designating them as 'European Protected Species' (EPS). Under those regulations, they are protected against:
- Deliberately, intentionally or recklessly, injuring, killing and capturing;
 - deliberately, intentionally or recklessly disturbing;
 - deliberately, intentionally or recklessly destroying a breeding site or resting place or damaging or obstructing a resting place used for shelter or protection; and,
 - keeping, transporting, selling or exchanging; offering for sale or advertising.
- 9.4.8. Disturbance includes any disturbance likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

Reptiles and Amphibians

- 9.4.9. All native reptiles and amphibians receive some legal protection in Great Britain under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010, which applies to all life stages. All native reptiles and amphibians species are all listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and the more threatened species, great crested newt (*Triturus cristatus*), natterjack toad (*Epidalea calamita*), pool frog (*Pelophylax lessonae*), sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*) are also listed on Schedule 2 of the Conservation of Habitats and Species Regulations 2010, which designate them as European protected species.
- 9.4.10. The legislation creates two hierarchical levels of protection. The European protected species receive strict protection, making it an offence to capture, possess, disturb, kill, injure, or trade in individuals of these species. In addition, it is an offence to damage or destroy the places they use for breeding or resting.
- 9.4.11. The remaining reptile species, common lizard (*Lacerta vivipara*), slow worm (*Anguis fragilis*), adder (*Vipera berus*) and grass snake (*Natrix natrix*) are protected against killing, injuring and unlicensed trade only. Whilst the remaining amphibian species, smooth newt (*Lissotriton vulgaris*), palmate newt (*Lissotriton helveticus*), common frog (*Rana temporaria*) and common toad (*Bufo bufo*) are protected only against sale.

Invasive Species

- 9.4.12. A number of non-native, invasive plants are listed on Schedule 9 (Part II, Section 14) of the Wildlife and Countryside Act 1981 (as amended), which states that it is an offence to "plant or otherwise cause to grow in the wild" any plant listed in Schedule 9, Part II of the Act. This includes spreading of the species or transferring polluted ground material from one area to another.
- 9.4.13. Schedule 9 lists over 30 plants including Japanese knotweed, giant hogweed and parrot's feather.

9.5. Suggested Planting Schedule

The species in bold are considered to be of particular value to wildlife.

Type	Species	Type	Species
Large trees	Ash (<i>Fraxinus excelsior</i>) Beech (<i>Fagus sylvatica</i>) Oaks (<i>Quercus robur</i> and <i>Q. petraea</i>) Small-leaved lime (<i>Tilia cordata</i>) White willow (<i>Salix alba</i>)	Wildflowers	Agrimony (<i>Agrimonia eupatoria</i>) Chicory (<i>Chichorium intybus</i>) Chives (<i>Allium schoenoprasum</i>) Common poppy (<i>Papaver rhoeas</i>) Corncockle (<i>Agrostemma githago</i>) Cornflower (<i>Centaurea cyanus</i>) Corn marigold (<i>Chrysanthemum segetum</i>) Cowslip (<i>Primula veris</i>) Dame's-violet (<i>Hesperis matronalis</i>) Devil's-bit scabious (<i>Succisa pratensis</i>) Field scabious (<i>Knautia arvensis</i>) Foxglove (<i>Digitalis purpurea</i>) Germander speedwell (<i>Veronica chamaedrys</i>) Great mullein (<i>Verbascum Thapsus</i>) Greater knapweed (<i>Centaurea scabiosa</i>) Harebell (<i>Campanula rotundifolia</i>) Herb-robert (<i>Geranium robertianum</i>) Lady's bedstraw (<i>Galium verum</i>) Marjoram (<i>Origanum vulgare</i>) Meadow cranesbill (<i>Geranium pratense</i>) Oxeye daisy (<i>Leucanthemum vulgare</i>) Primrose (<i>Primula vulgaris</i>) Purple loosestrife (<i>Lythrum salicaria</i>) Red campion (<i>Silene dioica</i>) Spiked speedwell (<i>Veronica spicata</i>) Tansy (<i>Tanacetum vulgare</i>) Teasel (<i>Dipsacus fullonum</i>) Toadflax (<i>Linaria vulgaris</i>) White campion (<i>Silene alba</i>) Wild thyme (<i>Thymus drucei</i>) Yellow loosestrife (<i>Lysimachia vulgaris</i>)
Medium/small trees	Apples (<i>Malus</i> sp.) Cherries (<i>Prunus avium</i> and <i>P. padus</i>) Field maple (<i>Acer campestre</i>) Holly (<i>Ilex aquifolium</i>) Rowan (<i>Sorbus aucuparia</i>) Silver birch (<i>Betula pendula</i>) Yew (<i>Taxus baccata</i>)		
Hedges	Blackthorn (<i>Prunus spinosa</i>) Guelder rose (<i>Viburnum opulus</i>) Hawthorn (<i>Crataegus monogyna</i>) Hazel (<i>Corylus avellana</i>) Privets (<i>Ligustrum vulgare</i>)		
Climbers	Brambles (<i>Rubus futicosus</i>) Dog rose (<i>Rosa canina</i>) Field rose (<i>R. arvensis</i>) Honeysuckle (<i>Lonicera periclymenum</i>) Wild clematis (<i>clematis vitalba</i>)		
Cultivated plants for borders	Angelica (<i>Angelica archangelica</i>) Aubretia (<i>Aubretia deltoidea</i>) Barberry (<i>Berberis</i> sp.) Candytuft (<i>Iberis sempervirens</i>) Christmas rose (<i>Helleborus niger</i>) Evening primrose (<i>Oenothera biennis</i>) Forget-me-not (<i>Myosotis</i> spp.) French marigold (<i>Tagetes</i> spp.) Globe thistle (<i>Echinops ritro</i>) Grape hyacinth (<i>Muscari botryoides</i>) Hollyhock (<i>Althaea rosea</i>) Phlox (<i>Phlox paniculata</i>) Lavender (<i>Lavendula</i> spp.) Red valerian (<i>Centranthus ruber</i>) Snapdragon (<i>Antirrhinum majus</i>) Snowdrop (<i>Galanthus nivalis</i>) Sweet William (<i>Dianthus barbatus</i>) Wallflower (<i>Cheiranthus cheiri</i>) Ice plant (<i>Sedum spectabile</i>) Michaelmas daisy (<i>Aster</i> spp.) Perennial cornflower (<i>Centaurea Montana</i>) Perennial sunflower (<i>Helianthus decapetalus</i>)		
Other shrubs for nectar, pollen or fruits	Bodant viburnum (<i>Viburnum x bodnantense</i>) Californian lilac (<i>Ceanothus</i> spp.) Firethorn (<i>Pyracantha</i> spp.) Himalayan honeysuckle (<i>Leycesteria Formosa</i>) Laurustinus (<i>Viburnum tinus</i>) Lilac (<i>Syringa vulgaris</i>) Mahonia (<i>Mahonia</i> spp.)		



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