Land at 45 Upper Redlands Road, Reading

Preliminary Ecological Appraisal

May 2018

***on behalf of* Anthony Sharp**

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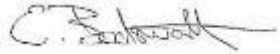
Prepared by		Edward Bodsworth *MA PhD MCIEEM*	Director	11/05/18

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1 Introduction

1.1 Site Description

The land at 45 Upper Redlands Road, referred to as the 'site' for the purposes of this report, is located to the south of Upper Redlands Road, east of Redlands Road and to the north of New Road, within the suburbs of Reading, Berkshire. The approximate Ordnance Survey grid reference for the site is SU 727 722.

The site comprises parts of the garden of 45 Upper Redlands Road, which are mainly laid to lawn with some trees and shrubs; the majority of the trees are located to the boundaries of the site. Boundaries are formed by wooden fences and stone walls. One notable feature is the presence of an underground air raid shelter within the central-eastern area of the site, surrounded by trees.

1.2 Proposals

There is a proposal to develop the site for residential use through the erection of four dwellings. The vast majority of the trees will be retained.

1.3 Aims of Study

The aims of this study are to describe and evaluate the habitats present within the site and to assess the potential for the site to support protected and notable species. The habitats are evaluated and the report discusses the potential impacts of development on the ecology of the site and protected/notable species. Preliminary recommendations are made for appropriate mitigation & compensation measures in light of the impact assessment. Recommendations for further ecological survey work, particularly regarding protected species, are made where appropriate.

2 Methodology

2.1 Extended Phase 1 Habitat Survey

A walkover of the site was conducted and a description of the habitats present was prepared using standard Phase 1 habitat survey methodology (JNCC 2010). Target notes were prepared on features of particular ecological interest and an assessment was made of the sites potential to support protected and notable species (such as species listed under the UK Post-2010 Biodiversity Framework and Section 41 of the NERC Act 2006). In addition, evidence of badger activity, including badger sett entrances, were searched for during the survey.

A Phase 1 habitat plan is presented in Appendix 3.

2.2 Assessment of Trees for Roosting Bats

An initial bat survey of trees was also undertaken on 22nd August 2017. The survey was undertaken according to the best practice guidelines published by the Bat Conservation Trust in 2016 (Collins 2016) and the *Bat Workers Manual* (JNCC 2012). Trees were assessed from ground level (using binoculars) as either having high, medium, low or no potential to shelter roosting bats according to the criteria shown in Table 1 below.

Table 1. Criteria for the assessment of trees for roosting bats (Collins 2016)

Potential	Features of tree
No	Trees with no potential to support roosting bats
Low	A tree of sufficient size and age to contain potential roost features (PRFs) but with none seen from the ground or features with only limited roosting potential.
Moderate	A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation significance.

Potential	Features of tree
High	A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Potential roost features (PRFs) that may be used by bats include (Collins 2016):

- woodpecker holes;
- rot holes;
- hazard beams;
- other vertical or horizontal cracks and splits (such as frost cracks) in stems or branches;
- partially detached bark;
- knot holes arising from naturally shed branches, or branches previously pruned back to the branch collar;
- man-made holes (e.g. cavities that have developed from flush cuts) or cavities created by branches tearing out from parent stems;
- cankers (caused by localised bark death) in which cavities have developed;
- other hollows or cavities, including butt-rots;
- double leaders forming compression forks with included bark and potential cavities;
- gaps between overlapping stems or branches;
- partially detached ivy with stem diameters in excess of 50mm; and
- bat, bird or dormouse boxes.

3 Results & Interpretation

3.1 Ecological Context

The site is located within a suburban area of Reading and is surrounded on all sides by residential development, roads and gardens. However, the Whiteknights campus of the University of Reading is located approximately 170m to the south-east. Although the closer areas of the campus are mainly lawns and amenity parkland, within the wider area the campus also includes woodland and wetland habitats, as well as mature trees within a parkland setting.

3.2 Habitats

Please refer to Appendix 3 for a Phase 1 Habitat Plan.

3.2.1 Amenity Grassland

The site comprises part of the gardens of the property, which are mainly laid to lawn (amenity grassland) and which appear to be maintained through regular cutting. The sward is short and dominated by grasses. Herbs occur only in low abundance and include creeping buttercup *Ranunculus repens*, daisy *Bellis perennis*, dandelion *Taraxacum officinale* and white clover *Trifolium repens*.

The amenity grassland is species-poor and contains only common and widespread herbaceous species. The habitat does not meet the criteria for any of the valued grassland habitats listed on Section 41 of the NERC Act 2006, such as ‘Lowland Meadows’. Given this, the habitat is considered to be of negligible ecological value.

3.2.2 Trees

There are a number of young, semi-mature and mature trees within the site, mostly along the site boundaries, walls and fence lines. Species recorded include yew *Taxus baccata*, lime *Tilia europaea*, apple *Malus sylvestris*, silver birch *Betula pendula*, horse chestnut *Aesculus hippocastanum* and sycamore *Acer pseudoplatanus*.

Shrubs include holly *Ilex aquifolium*, lilac *Syringa vulgaris* and hawthorn *Crataegus monogyna*. The majority of the trees appear to have been planted as part of the overall landscaping of the garden.

However, there is a group of coppiced sycamore trees within the central-east area of the site, surrounding the underground air-raid shelter in this area.

Semi-mature trees are considered to be of ecological value within the context of the site. The larger, more mature trees, are considered to be of highest ecological value, due to their age.

3.2.2.1 Boundaries

Garden boundaries are marked by wooden fences and brick walls. These features are of negligible ecological value.

3.2.2.2 Bunker

Within the central-east area of the site, within an area of coppiced sycamore trees, is an underground air-raid shelter. The bunker has a sealed door and was not accessed during the survey. The area surrounding the bunker is dominated by ivy *Hedera helix*, with bramble *Rubus fruticosus*, cow parsley *Anthriscus sylvestris* and periwinkle *Vinca major* also noted. The area appears to be relatively unmanaged, although there is evidence of coppicing to the sycamore trees.

3.3 Species

3.3.1 Bats

There are no trees within the site that could offer shelter to roosting bats, and all of the trees exhibit no potential roost features.

Underground chambers can offer hibernation roost sites to bats. However, in this instance the air-raid shelter is considered to be unsuitable for hibernation. This is due to the fact that there is no obvious free flight access to the chamber by bats, and the space is likely to be small and relatively simple with regard to its ecological complexity and thermal regime.

There are no other structures within the site that bats could use for shelter. The site is located within a suburban environment and the surrounding habitats are likely to support common species and a typical assemblage of species for suburban habitats.

3.3.2 Birds

The amenity grassland is unsuitable as a habitat for ground-nesting species, such as the skylark *Alauda arvensis.*

Trees and shrubs offer potential nest sites to breeding birds. Four old nests were noted within the trees surrounding the air-raid shelter. The nests appeared to be those of pigeons, or a similar sized bird such as a magpie.

3.3.3 Reptiles

The amenity grassland, and tree and shrub planting of the site, are not considered to be suitable habitats for common reptiles such as the grass snake *Natrix natrix* or slow worm *Anguis fragilis*. This is due to the fact that the grassland is closely mown and managed for amenity; it offers no obvious shelter to reptiles.

3.3.4 Amphibians

There are no ponds within the site or within a 500m radius of the site. Given this, it is considered that amphibians, including great crested newts *Triturus cristatus*, are absent from the site.

3.3.5 Badgers

There are no badger setts within the site, or within accessible adjacent areas. No evidence of badger activity was noted within the site.

3.3.6 Other Species

The site is considered to be unsuitable for other protected species.

4 Discussion

4.1 Relevant Legislation & Policy Guidance

4.1.1 Nesting Birds

Nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. The nesting season for most species is between March and August inclusive.

4.1.2 The Natural Environment and Rural Communities Act 2006

Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 places a duty on the Secretary of State to publish, review and revise lists of living organisms and types of habitat in England that are of principal importance for the purpose of conserving English biodiversity. It also requires the Secretary of State to take, and promote the taking of, steps to further the conservation of the listed organisms and habitats. This is important in the context of planning decisions as the National Planning Policy Framework (paragraph 117) affords planning policy protection to the habitats of species listed by virtue of Section 41.

The current list of species and habitats is the same as those listed with the UK Post-2010 Biodiversity Framework.

There are no habitats listed within Section 41 of the NERC Act 2006 that are considered to be relevant to the site.

Species listed within Section 41 of the NERC Act 2006 that are relevant to the site, or considered to be potentially relevant, include:

- Dunnock *Prunella modularis* and certain other common bird species

4.1.3 The National Planning Policy Framework

The National Planning Policy Framework (NPPF) was published in March 2012 and this new document forms a key part of the Government's reforms to make the planning system less complex and more accessible, to protect the environment and to promote sustainable growth. The NPPF states that the planning system should contribute to and enhance the natural environment by:

- protecting and enhancing valued landscapes, geological conservation interests and soils;
- recognising the wider benefits of ecosystem services;
- 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, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and
- remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

Local planning authorities should set criteria-based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites, so that protection is commensurate with their status and gives appropriate weight to their

importance and the contribution that they make to wider ecological networks. To minimise impacts on biodiversity and geodiversity, planning policies should:

- plan for biodiversity at a landscape-scale across local authority boundaries;
- identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation;
- promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan;
- aim to prevent harm to geological conservation interests; and
- where Nature Improvement Areas are identified in Local Plans, consider specifying the types of development that may be appropriate in these Areas.

When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, 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 a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;
- development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;
- opportunities to incorporate biodiversity in and around developments should be encouraged;
- planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and
- the following wildlife sites should be given the same protection as European sites:
    - potential Special Protection Areas and possible Special Areas of Conservation;
    - listed or proposed Ramsar sites; and
    - sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites

The Government will "now embark on a new exercise to consider what underpinning guidance continues to be needed" with the outcome of this process being "an appropriate and easy to use set of guidance, focussing on issues that require national expression, to support implementation of the National Planning Policy Framework." The Government has "not established the process or set a timetable" for this yet and "until such time as the guidance review is complete, the existing guidance where relevant can still be used." Regarding what guidance is still relevant, "Annex 3 of the NPPF indicates that ODPM Circular 06/2005: *Biodiversity and Geological Conservation - Statutory Obligations and their Impact within the Planning System* (Circular 06/05) is still relevant. This Circular provides administrative guidance on the application of the law relating to planning and nature conservation as it applies in England.

4.2 Potential Impacts

4.2.1 Habitats

There are considered to be no significant ecological impacts as a result of the proposals. Habitats that will be directly affected include amenity grassland, and a very small number of trees or shrubs. These habitats are of low or negligible ecological value.

It is considered that all semi-mature and mature trees can be retained, as well as the area of sycamore trees around the air-raid shelter. The air-raid shelter itself will also be retained.

After development, the site will remain as the gardens to the new dwellings, and will continue to function as gardens. Given this, there are considered to be no significant ecological impacts as a result of the proposals.

4.2.2 Species

4.2.2.1 Bats

There is no evidence to suggest that the air-raid shelter is being used as a place of shelter/protection by roosting bats and the building is considered to have 'negligible' potential to offer shelter to bats. There are no trees within the site that could offer shelter to roosting bats.

The air-raid shelter will be retained. Since no significant impacts on bats are predicted under The Conservation of Habitats and Species Regulations 2010, a European Protected Species (bat) licence will not be required for the proposed works to proceed. Since there are no predicted impacts on bats or their habitats, it is not necessary to consider the 'three tests' of The Conservation of Habitats and Species Regulations 2010 in this instance.

4.2.2.2 Birds

Removal of woody vegetation during the breeding bird period (March to August inclusive) may result in the destruction of active birds' nests and the killing and injury of eggs and young. There are no foreseeable impacts on ground-nesting species.

4.2.2.3 Other Species

There are no predicted impacts on other protected species.

5 Recommendations

5.1 Further Surveys

No further surveys are recommended at present.

5.2 Habitats

It is recommended that the site is enhanced through the planting of a native species within the garden landscaping. The following species are considered to be suitable:

- Silver birch *Betula pendula*
- Yew *Taxus baccata*
- Hawthorn *Crataegus monogyna*
- Hazel *Corylus avellana*
- Holly *Ilex aquifolium*
- Dogwood *Cornus sanguinea*
- Wayfaring tree *Viburnum lantana*
- Guelder rose *Viburnum opulus*
- Field maple *Acer campestre*
- Wild roses *Rosa canina, Rosa arvensis*

5.3 Species

5.3.1 Bats

A lighting design for the scheme should allow provision for dark corridors for movement by bats (and other nocturnal animals) around the periphery of the site. Specifically, the lighting strategy should minimize light spill (i.e. spilling of light beyond the boundary of the proposed area to be lit) on the boundaries from external lamps.

Where lighting is required, such as at the driveway entrances, appropriate light types (i.e. lamps with narrow spectrum and no UV output), low level lighting bollards and hoods on lamps should be used to control light spill. The lighting proposal should be designed to illuminate only those areas where lighting is required for safety and security within the new (built) residential areas, but control illumination on the surrounding vegetation.

As a guide, controlling lighting within the proposed development to 0.5 lux at a position 3m from the site boundary will help prevent light spill on hedgerows.

The key principals for choosing a suitable type of lamp are:

- Avoid blue-white short wavelength lights: these have a significant negative impact on the insect prey of bats. Use alternatives such as warm-white (long wavelength) lights as this will reduce the impact on insects and therefore bats.
- Avoid lights with high UV content: (e.g. metal halide or mercury light sources), or reduce/completely remove the UV content of the light. Use UV filters or glass housings on lamps which filter out a lot of the UV content.

Selecting an appropriate lamp unit that is designed to be environmentally friendly will minimize light spill, but further controls can be imposed by installing directional accessories such as baffles, hoods and louvres on lamps to direct light away from ecologically sensitive areas.

LED (Light Emitting Diode) units are an effective way to direct the light into small target areas and are recommended for lighting the access track/ driveways to the properties. Composite LEDs can be switched off to reduce/direct the light beam to specific areas.

Security lighting will need to be controlled to illuminate the immediate curtilage of the new houses. The lighting must not directly illuminate trees with bat roost potential, or the boundary hedgerows. Close accent lighting that focus lighting on a particular area fitted with low wattage lamps (<70W) to minimize glare are recommended. Lamps fitted with movement sensors, which turn the light on when the sensor is triggered, are preferable because the lights will be illuminated only when needed (reducing the amount lit time at night).

5.3.2 Birds

Removal of woody vegetation (if required) should be undertaken outside of the bird breeding period, avoiding March to August inclusive. This will protect birds from the destruction of active nests and the possible killing/injury of eggs and young.

6 References

Altringham, J., 2003. *British Bats*. Harper Collins.

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Harris S., Cresswell P. and Jefferies D., 1989. *Surveying Badgers*. Mammal Society

JNCC, 2010. *Handbook for Phase 1 Habitat Survey - a technique for environmental audit*. JNCC First published 1990; reprinted in 1993; reprinted in 2003 with limited revisions & additions; reprinted in 2004; reprinted in 2007 with minor additions; reprinted in 2010.

7 Appendix 1. Photographs

Photograph 1. Lawn within the eastern area of the site, photographs taken facing north.

Photograph 2. Lawn within the northern sector of the site, taken looking south-east. The wooden fence divides this part of the garden from the area of garden to the south.

Photograph 3. Photograph from the very western boundary, looking east over lawns.

Photograph 4. Photograph from the centre of the site, looking west over the lawns. A mature yew and lime tree can be seen to the left.

Photograph 5. Photograph from the southern boundary of the site, looking north. An apple tree and young silver birch can also be seen.

Photograph 6. Photograph from the centre of the site facing south.

Photograph 7. Wooden fence dividing the northern garden from the central area of the site.

Photograph 8. A brick wall boundary along Upper Redlands Road.

Photograph 9. Area of sycamores, surrounding the underground bunker.

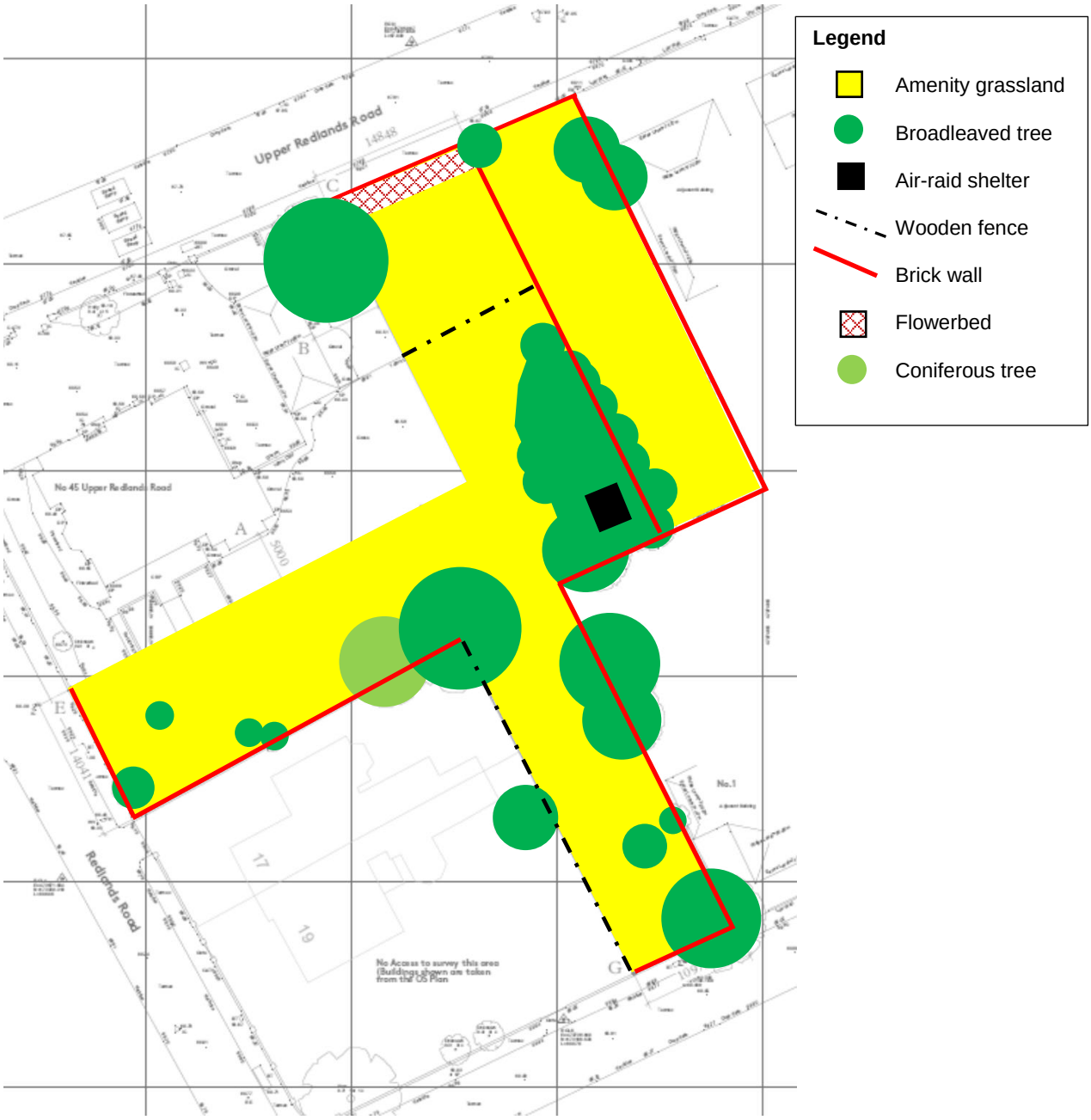
Photograph 10. Boundary brick wall along Redlands Road.

Photograph 11. The doorway to the underground air-raid shelter.

Photograph 12. Pollarded lime tree close to the boundary with New Road.

8 Appendix 2. Site Location Plans

Aerial photograph showing the location of the site (indicated by the red outline). Source: *www.google.co.uk/maps*

Ordnance Survey map showing the approximate location of the site (red outline) within the local area. *Source: www.bing.com/maps*

9 Appendix 3. Phase 1 Habitat Plan