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27 January 2017

Stephen Jenkins
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Estates and Facilities
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Reading
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Dear Stephen,

The Acacias, London Road Campus, University of Reading – Bat Building Inspection

Thank you for commissioning EPR, on behalf of the University of Reading to carry out a Bat Building Inspection on Building LO43, “The Acacias and Glasshouse”; a Grade II listed residence at the London Road Campus, University of Reading. I understand that the current proposals include external refurbishment to the property including re-roofing works and repairs to the stonework facades. In addition, the associated timber-framed glasshouse and rockery (the Fernery) will also be subject to refurbishment, hereby referred to as the “Proposed Works”.

The Acacias was built in the 1830's and was a privately-owned villa with basement. It was extended with the addition of the bays on the Eastern elevation, which have subsequently been attached to the “Green Bank” with a 3-storey extension, referred to as the “West Link”. The building is situated to the North-east of the London Road Campus at National Grid Reference: SU722729 (**Map 1**). Located between London Road and Redlands Road and close to a complex of office and teaching blocks. The University campus itself lies to the south-east of Reading City centre within a largely residential urban setting.

This letter provides a summary of the survey methods, results and recommendations following the Bat Building Inspection with consideration for the likely Zone of Influence of the Proposed Works. This letter covers ecological issues related to the Proposed Works of the Acacias in respect of the potential for them to affect roosting bats, as well as any other identified receptors.

Zone of Influence

In order to identify the full extent of any potential ecological issues associated with the Proposed Works, I have considered the likely Zone of Influence (Zoi) of the proposals.

Considering the potential impacts associated with the proposals and the sensitive nature of this redevelopment due to its listed building status; the potential Zone of Influence of the scheme is likely to include the building and immediately adjacent land (referred to as 'the Site' henceforth). The principal potential for a negative effect on bats comes from the removal of the existing roof tiles, voids and features, should they support roosting bats.

Relevant Guidance and Legislation

Legislation relevant to the ecological assessment of the proposed works at the buildings is set out under **Appendix 1** and is summarised below.

In undertaking this assessment, I have had regard to best practice guidance, including that detailed within the Bat Conservation Trust's (BCT) Bat Surveys, Good Practice Guidelines (BCT 2016).

In preparing my recommendations, I have considered biodiversity conservation legislation and nature conservation priorities, both national and international, including:

- Legislation providing protection for sites and species, including the Conservation of Habitats and Species Regulations 2010 (as amended) (the 'Habitats Regulations') and the Wildlife and Countryside Act 1981 (as amended); and
- Biodiversity conservation priorities under the Natural Environment and Rural Communities (NERC) Act 2006, and the Reading Biodiversity Action Plan (BAP).
- Care and attention must be taken to not significantly alter the appearance of the building; adhering to the Planning (Listed Buildings and Conservation Areas) Act 1990.

Methodology

The methods employed for the completion of the Bat Building Inspection are detailed in **Appendix 2** and described in further detail, where necessary below. The Bat Building Inspection comprised of a desktop study, followed by a site visit to complete an inspection of the building and surrounding area. I visited the Site with Philip Brown (a Natural England licensed bat ecologist of EPR, Class Licence: 2015-18270-CLS-CLS) on Wednesday 18th January 2017.

Desktop Study

As part of the desktop study, Thames Valley Environmental Records Centre (TVERC) provided a records search identifying bat species records within 5km of the Site. A variety of bat species have been recorded within 5km of the site and roosts of locally common and widespread species have been recorded within 5km of the site. The closest activity records included species such as Common Pipistrelle, Soprano Pipistrelle and the Daubenton's bat, all of which were located just over 100m to the west of the Site (see **Map 2**). Map 2 also shows the roost records in the area, recorded to 1km resolution. The nearest recorded roost Site returned from TVERC includes an unidentified bat species roost which falls within the same 1km square of the Site. From previous work carried out for the University of Reading, there is also a known Pipistrelle roost within the library/ architecture building (Building L046) on the London Road campus, which is not far from the Acacias. Therefore; the Site falls within the radii of multiple bat Core Sustainance Zones (identified by the Bat Conservation Trust, 2016), meaning these bats are likely to utilise the Site for commuting, foraging and/ or alternative or temporary roost sites in nearby buildings or trees.

Foraging Habitat within the Zone of Influence

As part of the Bat Building Inspection, the potential for habitats within the Zone of Influence to support bats, other than the buildings themselves, was also considered. The area immediately surrounding the Acacias building is of low foraging value to bats and consists of closely mown amenity grassland, hardstanding, some ornamental planting and scattered mature trees. Just South of the Fernery, there is a large mature London Plane Tree, which is likely to fall within the ZOI for the Proposed Works in terms of root protection zones, and does also have the potential to support roosting bats. The tree is expected to be fully retained and protected, so is unlikely to be impacted by the Proposed Works.

The wider University campus forms a mosaic of well-lit open amenity garden areas and buildings which offer limited resources for foraging bats. To the South and eastern boundary there is a patch of amenity grassland and a line of ornamental planted trees, offering some bat foraging potential. Across the campus, south of the building there is a courtyard with more amenity grassland and some ornamental tree planting. More suitable foraging areas within the wider area include the nearby Whiteknights Campus which includes suitable foraging around the woodland and the lake, located to the southeast of the London Road Campus.

Bat Building Inspection

The roof is a complex structure. The western end has two parallel hipped roof areas with central ridges running east to west. The eastern end is a square roof with a square flat section in the middle and pitched roofs coming from each side of the square. All roof areas are slate with lead flashing and occasional chimneys. A specific internal and external inspection of the Acacias was completed with respect to its potential to support roosting bats, following methods set out under **Appendix 2**. Results of the internal and external building inspections are shown as Target Notes on **Map 3** and a description of loft voids is included in **Appendix 3** with locations shown on **Map 4**. Target note descriptions are given for the external inspection within **Appendix 3**.

External Building Inspection of The Acacias

The Acacias, Building Number LO43 is part let out to private tenants and used as a block of residential flats, and other sections of the building are used for meeting and for the students' graduation ceremonies. The Bath stone external wall was well sealed on the external examination and although no bats or evidence of roosting bats were recorded during the external inspection, the building has a number of external features offering potential to support roosting bats (see **Map 3**), including:

- External holes in the stonework associated with former pipework (**Target Note 1; Photograph 1**).
- Timber bargeboard coming away from the stonework (**Target Note 2; Photograph 2**).
- Large gap in the timber soffit (back of building) (**Target Note 3; Photograph 3**).
- Slipped slate tiles to the left of the chimney and directly above the fernery (**Target Note 4; Photograph 4**).
- Misaligned brick (Bath stone) – leading to a potential cavity in the wall (**Target Note 5; Photograph 5**).
- Rotten Bargeboard above fernery- leading to potential cavity and roof void access point (**Target Note 6; Photograph 6**).
- Several cracks and crevices in the rock that was used for fern planting (**Target Note 7; Photograph 7**).
- Coal Store basement, moderate potential to support hibernating bats with external access point (**Target Note 8; Photograph 8**).

Internal Building Inspection of The Acacias

The three available loft hatches were accessed through Flat Number 5 and the landing area, into the roof space of the Acacias, two of these hatches led to additional loft spaces (1a and 2a, See **Map 4**-not to scale). The lofts varied between types of insulation materials used and accessibility. Descriptions of each loft void are included in **Appendix 3** with photographs. Within the loft voids there were some opportunities to support roosting bats, including tares in bitumen felt and gaps into potential cavity walls, and in between plaster boarding. Roof Void 2, the main flat roof area and the two additional voids to the east were identified as not suitable to support bats. This is because there was either no void, e.g. with the flat roof and above the kitchen of Flat 5, or there were skylights present, making the conditions of the voids unsuitable for bats, e.g. light and unstable temperature. Void 2a had notable torn bitumen felt lining and gaps in between plasterboard and the rafters, in a similar condition to Loft 3. Loft 1 had two areas whereby some external light shone through, which could provide potential access/ egress points into the loft space. These voids and loft spaces that have some potential to support bats are described in more detail in **Appendix 3**.

No bats, or evidence of roosting bats were recorded during the internal inspection, however if there is cavity wall present, then this may be a preferred roosting location for bats, and no evidence would be visible during the loft inspection. There were no significant limitations of the survey, and all the loft spaces could be accessed. The former coal store basement was also surveyed for its potential to support roosting or hibernating bats. The store did have suitable temperature conditions and there was an available entrance/ egress point to support hibernating bats over the winter months (**Target Note 8**). However, as the basement is not likely to be impacted by the Proposed Works, no further assessment has been made.

Recommended Actions with regards to roosting bat potential

An assessment of potential for the building to support roosting bats has been made in accordance with evaluation methods outlined within **Appendix 2**.

There are features suitable to support roosting bats within the building surveyed. There are some limited suitable foraging opportunities within the Zone of Influence, however nearby there are suitable foraging areas to the south of the buildings, including the sports field and bordering hedgerows. Multiple existing bat records and roost records within 5km of the site (**Map 2**) have been identified, increasing the likelihood of bats using the area and using nearby roost sites. Considering all the above, The Acacias has been identified as having a **Medium Potential** to support roosting bats during the active bat season.

All native bat species are European Protected Species, protected under the provisions of the Wildlife and Countryside Act (1981) (as amended) and the Conservation of Habitats and Species Regulations (2010) (as amended). In summary, activities which may impact upon any bat or bat roost in a manner described in **Appendix 1** (including in respect of disturbance, killing and injury of bats or disturbance, obstructing access to or destroying a roost) would be an offence without a licence from Natural England.

For this reason, and in accordance with best practice guidelines (BCT updated in 2016), I recommend that further survey work be conducted in order to assess the presence or likely absence of roosting bats within The Acacias.

Further survey works should comprise of two emergence or re-entry surveys in line with the Bat Surveys Good Practice Guidelines 3rd Edition (BCT 2016) for a building of medium potential to

support bats. Surveys can be either dusk emergence surveys or dawn re-entry surveys, or a combination. During the surveys, surveyors will be positioned at previously-identified vantage points, with uninterrupted sight lines of the buildings to observe any bats as they exit or re-enter roosts and record bat activity in the vicinity. The BCT Guidelines state that emergence and re-entry surveys must occur within the peak bat activity season which runs from **May to August inclusive** and should be spread as evenly as possible within this window. It is recommended that a minimum of three surveyors would be required for full coverage of the building. I recommend in order to meet the desired project deadline of commissioning the work in August 2017, that the bat surveys are conducted with one survey in mid-May and the other in early June, 2017, allowing for a recommended two-week time period between the two surveys.

If bats are recorded roosting within the Building during these surveys, a Natural England European Protected Species Licence (EPSL) will be required in order to carry out the Proposed Works on the buildings lawfully. If this is the case, then works may have to be suspended until the license is granted (allowing up to 40 working days) and carry out the work when bats are not active (e.g. outside of the May- August period).

Nesting Birds

It should also be noted; a number of common garden birds were observed nearby the building such as House Sparrow and Blue Tit. The Acacias could potentially support nesting birds during March to August. There were several voids and gaps observed that would be large enough for a small bird, e.g. a House Sparrow to nest in. Alternatively, they could nest on the roof, within the rotten bargeboard cavities or in gaps within the stonework and ivy associated with the old Fernery. Therefore, recommendations have been made in the table below, to avoid disturbance to any nesting birds to time the Proposed Works appropriately. Causing a disturbance to nesting birds is an offence under the Wildlife and the Countryside Act 1981; (see **Appendix 1** for more details.)

Recommendations

Features of potential ecological interest identified during the Bat Building Inspection and associated recommended actions in view of the Proposed Works including their associated timescales, are detailed below.

Table 1: *Summary of Recommended Actions*

Ecological Receptor	Recommended Actions	Timings
Bats	Complete further Phase 2 Bat Surveys comprised of two emergence or re-entry surveys for the building and complete appropriate reporting.	Surveys to be conducted between (May-Aug) – recommended in mid-May and early June of 2017 in order to meet project deadline.
Nesting Birds	If possible, carry out disturbing works outside of the nesting birds season (March -September inclusive) If not possible, a nesting bird check to be completed by a suitably-qualified ecologist within 24 hours of the commencement of work which may affect nesting birds if works are due to be conducted between March to September inclusive.	No check required for works conducted October to February inclusive. Check required for works conducted March to September inclusive.

Recommendations for Biodiversity Enhancement

As guidance and best practice advocates that opportunities to enhance biodiversity should be recommended where possible, to enhance the Site following building refurbishment, I have identified the following opportunities for enhancement, which could be incorporated into the site:

- The incorporation of ecologically-beneficial features into the site, post refurbishment, could be considered. These might include:
 - Bat and bird boxes installed on trees or buildings nearby (not the Acacias itself due to its listed status).
 - Enhancement of the coal store and access points to support hibernating bats.
 - Appropriate planting using native species of local provenance which provide suitable foraging resources for wildlife.

Summary

I consider that, should the above Recommended Actions be implemented, along with any mitigation requirements recommended following further survey work, the potential for bats to be impacted upon as part of the Proposed Works will have been adequately considered and enable the Proposed Works to proceed lawfully.

Suggested recommendations for biodiversity enhancement that could also be included to enhance the site for wildlife post refurbishment have also been made. I consider that ecological interests should not present any significant barrier to the Proposed Works, subject to the further surveys being carried out and any necessary mitigation implemented.

I trust that the above provides you with sufficient information at this stage. Should you have any further enquiries, please do not hesitate to contact me.

With Kind Regards,

Yours Sincerely

Report Approved for Issue by:



Grace Turner BSc (Hons) MSc Grad CIEEM
Assistant Ecologist, EPR Ltd

Alison Hogan BSc (Hons) MSc MCIEEM
Director & Principal Ecological Consultant, EPR Ltd

MAPS AND APPENDICES

Map 1 Site Location & Conservation Designations

Map 2 Bat records within 5km of site

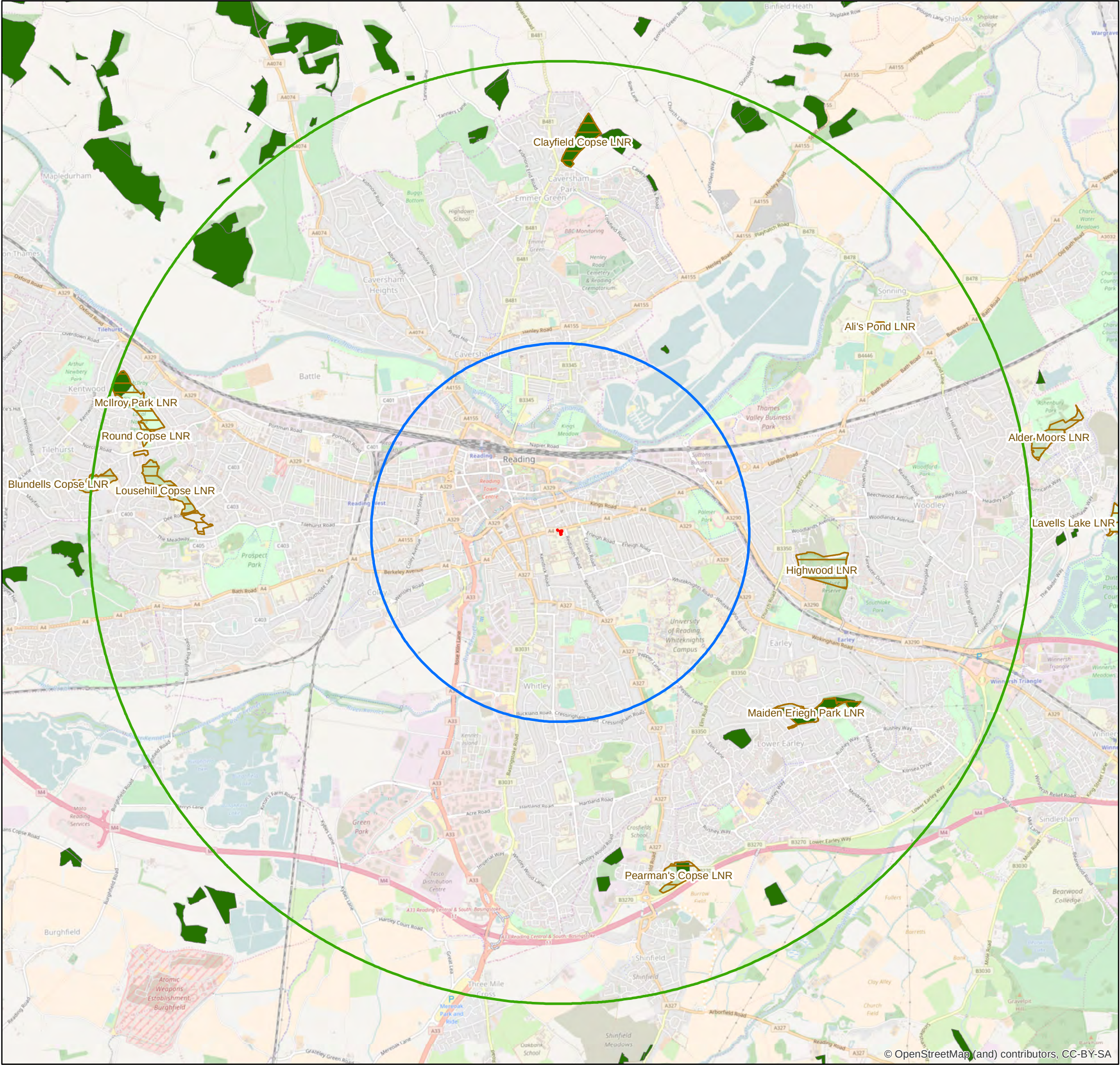
Map 3 External Bat building inspection for LO43

Map 4 Internal Bat building inspection for LO43

Appendix 1 Relevant Nature Conservation Legislation

Appendix 2 Bat Building Inspection Methodology

Appendix 3 Target Notes and Photographs from Bat Building Inspection LO43



MAP 1 Site Location and Conservation Designations

KEY

-  Site boundary
-  2km linear distance from Site boundary
-  5km linear distance to Site boundary
-  Local Nature Reserve (LNR)
-  Ancient Woodland

SCALE: 1:40,000 at A3

0 400 800 1,200 1,600 Metres



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PROJECT: The Acacias, London Road Campus,
University of Reading

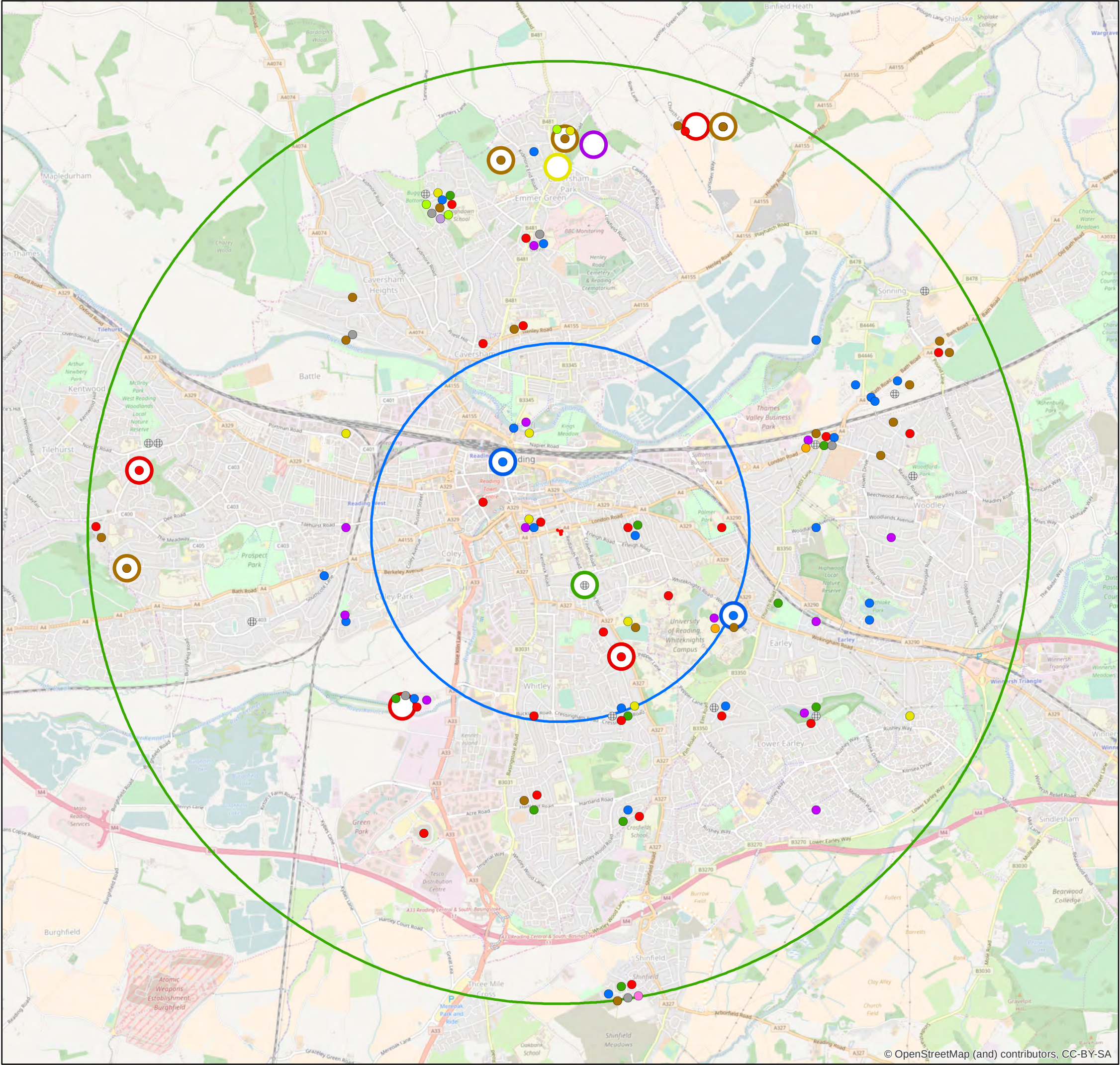
DATE: January 2017

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MAP 2 Bat Records within 5km of the Site

KEY

Site boundary

2km linear distance from Site boundary

5km linear distance to Site boundary

Unidentified Bat

Common Pipistrelle

Soprano Pipistrelle

Pipistrelle Bat species

Nathusius's Pipistrelle

Brown Long-eared Bat

Long-eared Bat species

Noctule Bat species

Daubenton's Bat

Natterer's Bat

Whiskered Bat

Serotine

Bat roost records accurate to 1km

Unidentified Bat

Brown Long-eared Bat

Common Pipistrelle

Daubenton's Bat

Natterer's Bat

Soprano Pipistrelle

SCALE: 1:40,000 at A3

05001,0001,5002,0002,500 Metres

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PROJECT: The Acacias, London Road Campus, University of Reading

DATE: January 2017

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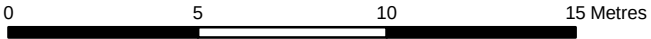
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

MAP 3 External Bat building inspection

KEY

- Site boundary
- Main Building
- Amenity Grassland
- Ornamental planting / Tall Ruderal mosaic
- Fernery
- Photo Point (with ID)
- Target Note (with ID)
- Tree

SCALE: 1:200 at A3

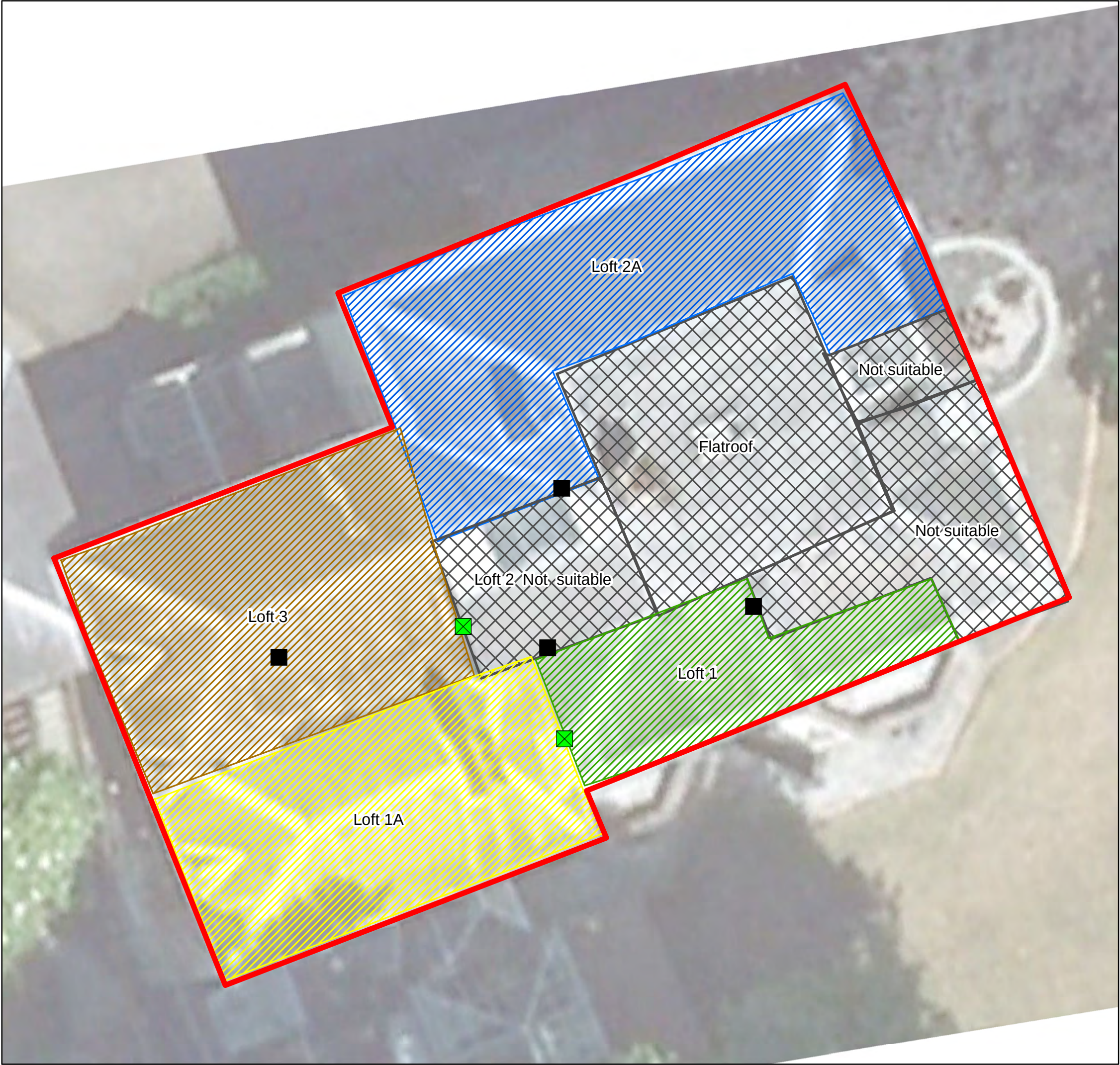


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MAP 4 Bat Internal Inspection Results

KEY



Roof boundary

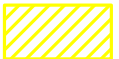
Loft Reference Number



Not suitable



Loft 1



Loft 1A



Loft 2A



Loft 3



Crawl through access point



Loft Hatch (access point)

NOT TO SCALE



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Appendix 1

Relevant Nature Conservation Legislation

This Appendix is intended to provide an overview of the main features of legislation and policy relating to nature conservation in England and the implications for development.

KEY WILDLIFE LEGISLATION

Conservation of Habitats and Species Regulations 2010 (as amended)

The Conservation of Habitats and Species Regulations 2010¹ (known as the “Habitats Regulations”) transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the European “Habitats Directive”) into UK legislation. These regulations consolidate all the various amendments made to the preceding “Conservation Regulations” 1994 for England and Wales.

The Habitats Regulations were amended by the Conservation of Habitats and Species (Amendment) Regulations 2012.²

The Habitats Regulations provide for the designation of both Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) in the UK, which form part of the Natura 2000 network of protected areas across Europe. The Regulations also prohibit the deliberate capture, killing or disturbance of European Protected Species (EPS), which include *inter alia* Dormouse *Muscardinus avellanarius*, Great Crested Newt *Triturus cristatus*, Otter *Lutra lutra* and all native species of bat, and make it an offence to destroy or damage either the nesting or breeding sites of these species. The above actions can be made lawful through the granting of licenses after Natural England (the licensing authority in England) is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on wild populations of the EPS.

Further information on SPAs, SACs and European Protected Species (Licensing and Protected Species) is provided in the relevant sub-sections of this Appendix.

Wildlife & Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981³ is the principal mechanism for the legislative protection of wildlife in Great Britain. Various amendments have occurred since the original enactment. Certain species of bird, animal and plant (including all of the European Protected Species listed above) are afforded protection under Schedules 1, 5 and 8 of the Act. Reference is made to the various Schedules and Parts of this Act (**Table A1.1**) in the section of this Appendix dealing with Legally Protected Species. The Act also contains measures for the protection of the countryside, National Parks, Sites of Special Scientific Interest (SSSIs) and public rights of way as well as preventing the establishment of invasive non-native species that may be detrimental to native wildlife.

¹ The Conservation of Habitats and Species Regulations 2010. Available from: <http://www.legislation.gov.uk/ukxi/2010/490/contents/made>

² The Conservation of Habitats and Species (Amendment) Regulations 2012. Available from: <http://www.legislation.gov.uk/ukxi/2012/1927/contents/made>

³ The Wildlife and Countryside Act 1981. Available from: <http://www.legislation.gov.uk/ukpga/1981/69/contents>

Table A1.1: Key Schedules of the Wildlife & Countryside Act 1981 (as amended)

Schedule	Protected Species
Schedule 1 Part 1	Protects listed birds through special penalties at all times
Schedule 1 Part 2	Protects listed birds through special penalties during the close season
Schedule 5 Section 9.1 (killing/injuring)	Protects listed animals from intentional killing or injuring
Schedule 5 Section 9.1 (taking)	Protects listed animals from taking
Schedule 5 Section 9.2	Protects listed animals from being possessed or controlled (live or dead)
Schedule 5 Section 9.4a	Protects listed animals from intentional damage or destruction to any structure or place used for shelter or protection
Schedule 5 Section 9.4b	Protects listed animals from intentional disturbance while occupying a structure or place used for shelter or protection
Schedule 5 Section 9.5a	Protects listed animals from being sold, offered for sale or being held or transported for sale either live or dead, whole or part
Schedule 5 Section 9.5b	Protects listed animals from being published or advertised as being for sale
Schedule 8	Protects listed plants from: intentional picking, uprooting or destruction (Section 13 1a); selling, offering for sale, possessing or transporting for the purpose of sale (live or dead, part or derivative) (Section 13 2a); advertising (any of these) for buying or selling (Section 13 2b).
Schedule 9	Prohibits the release of species listed in the Schedule into the wild.

Further information on legally protected species, designated wildlife sites and invasive non-native species is provided in the relevant sub-sections of this Appendix.

Countryside & Rights of Way Act 2000

Many of the provisions of the Countryside and Rights of Way (CRoW) Act 2000⁴ have been incorporated as amendments into the Wildlife and Countryside Act (1981) and some provisions have now been superseded by later legislation such as The Natural Environment and Rural Communities Act (2006).

The most relevant changes provided by the CRoW Act include the added protection given to SSSIs and other important sites for nature conservation. Importantly, under the Act it became a criminal offence to "recklessly disturb" Schedule 1 nesting birds and species protected under Schedule 5 of the Wildlife and Countryside Act. It also enabled heavier penalties on conviction of wildlife offences.

The Natural Environment and Rural Communities Act 2006

The Natural Environment and Rural Communities (NERC) Act 2006⁵ was intended to raise the profile of biodiversity amongst all public authorities (including local authorities, and statutory undertakers) and to

⁴ The Countryside and Rights of Way (CRoW) Act 2000. Available from: <http://www.legislation.gov.uk/ukpga/2000/37/contents>

⁵ The Natural Environment and Rural Communities Act 2006. Available from: www.legislation.gov.uk/ukpga/2006/16/contents

make biodiversity an integral part of policy and decision-making processes. The NERC Act also improved wildlife protection by amending the Wildlife and Countryside Act 1981.

Section 40 (S40) of the Act places a 'Biodiversity Duty' on all public bodies to have regard to the conservation of biodiversity when carrying out their normal functions. This includes giving consideration to the restoration and enhancement of species and habitats.

Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of Principal Importance for the conservation of biodiversity in England⁶. Public authorities have a responsibility to give specific consideration to the S41 list when exercising their normal functions. For planning authorities, consideration for Species and Habitats of Principal Importance will be exercised through the planning and development control processes. Further information on species and habitats of Principal Importance is provided in the relevant sub-section of this Appendix.

Biodiversity plans and strategies

The NERC Act 2006 places a duty on local authorities to have due regard to biodiversity when exercising their normal functions, and the NPPF requires planning policies to "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" (paragraph 117). These targets are set out in a range of biodiversity plans and strategies from the international through to the district level. An overview of the key biodiversity plans and strategies in the UK, and their implications for development, are set out below.

National level

The UK Biodiversity Action Plan 2007 (UK BAP) has been superseded by the *UK Post-2010 Biodiversity Framework*⁷ and individual national biodiversity strategies. The UK framework sets out the overarching vision, strategic goals and priority activities for the UK's work towards international biodiversity targets (known as the 'Aichi Targets'), as agreed by 192 parties at the UN Convention on Biological Diversity in 2010. The Framework's overall vision is that "by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people."

In England, *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*⁸ is the national biodiversity strategy, which has the stated mission "...to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people." In order to focus activity and assess performance in achieving this mission, Biodiversity 2020 sets objectives relating to terrestrial and marine habitats and ecosystems, species and people. These include:

⁶ The S40 list replaces the previously prepared list of habitats and species of Principal Importance for the conservation of biological diversity in England that was published under Section 74 (2) of the Countryside and Rights of Way Act 2000.

⁷ JNCC and Defra (on behalf of the Four Countries' Biodiversity Group) (2012). *The UK Post-2010 Biodiversity Framework*. Available from: http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf

⁸ DEFRA (2011). *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*. Available from: <https://www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services>

- Establishing coherent and resilient ecological networks, described as “a network of high quality sites, protected by buffer zones, and connected by wildlife corridors and smaller, but still wildlife-rich, ‘stepping-stone’ sites”;
- Taking targeted action for the recovery of priority species whose conservation is not delivered through wider habitat-based and ecosystem measures;
- Establishing Nature Improvement Areas and Marine Protected Areas;
- Bringing more SSSIs into favourable condition;
- Reducing environmental pressures by working with sectors such as agriculture, forestry, planning and development.

A network of 48 Local Nature Partnerships have been set up across England to help deliver these objectives.

Note that as these changes are still relatively new, some local plans and government guidance documents/circulars still refer to the UK BAP and ‘UK BAP priority habitats and species’. These habitats and species are listed under Section 41 of the NERC Act, and **remain a material consideration in the planning process**. They are now described as ‘Species/Habitats of Principal Importance’, though they are also commonly referred to as ‘Section 41 Species/Habitats’ or simply ‘Priority Species/Habitats’. Further guidance is given in the relevant sections below.

Local level

Despite the changes to national level biodiversity policy described above, county and district level Biodiversity Action Plans (BAP’S) still apply. The Reading BAP identifies a number of priority species and habitats including the following of relevance to the Library site:

Species:

- Bats (all species found in Reading).
- House Sparrow.

Habitats:

- Urban 1.
- Urban 2.

Delivering Biodiversity Opportunities

Where practicable, opportunities should also be sought to achieve a **net gain** (i.e. enhancement) of biodiversity. Support for biodiversity enhancement is provided in the Public Authority ‘Biodiversity Duty’ under the NERC Act 2006 and in the key principles of the NPPF, as described above.

Enhancement projects may not just benefit biodiversity. There are many functional benefits to be won from strategically planned green infrastructure projects such as semi-natural urban green spaces, sustainable urban drainage schemes (SUDS) and green roofs. Planning conditions and obligations are increasingly being used to mandate biodiversity enhancement on or off a development site, either through design or through financial support.

Many ideas for incorporating ecological enhancement into planning and development can be found in the biodiversity action plans and/or strategies relevant to the policy or development area, or through initiatives led by the Local Nature Partnership. At the national level, twelve Nature Improvement Areas were set up in 2012 in order to deliver landscape-scale conservation objectives, and many regions and counties have also identified and mapped 'Biodiversity Opportunity Areas', 'Nature Maps' or 'Strategic Nature Areas' where conservation action such as habitat creation and restoration will deliver the greatest benefits for biodiversity.

Other sources of ideas and opportunities include schemes led by conservation NGOs, such as the Wildlife Trusts' 'Living Landscapes' and the RSPB's 'Futurescapes', which are working in partnership with landowners and local communities across the country to restore ecosystems and ecological networks.

SPECIES PROTECTION

Legally Protected Species

The species listed in the following subsections are protected by law in England. It is essential to determine the presence or likely absence of legally protected species and the extent to which they may be affected by proposed development. This can best be achieved by undertaking surveys early in the planning process. Mitigation measures are required to minimise disturbance to protected species and may necessitate a license. Natural England offers further detailed advice which can be applied to planning applications that affect protected species⁹.

Mammals

All wild mammals are protected against cruelty under the Wild Mammals (Protection) Act 1996, which makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

The following species of mammal are protected further by law in England:

Bats

There are 18 species of bat in the UK, seven of which are Species of Principal Importance in England. All bats and bat roosts are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Bats are also a European Protected Species protected under the Habitat Regulations 2010 (as amended). It is an offence to:

- Intentionally or deliberately kill, injure or capture bats;
- Intentionally, deliberately or recklessly disturb bats in such a way as to be likely to significantly affect the ability of any significant group of bats to survive, breed, or rear or nurture their young or the local distribution of or abundance of a species of bat;
- Intentionally, or recklessly damage, destroy or obstruct any place used for shelter or protection (i.e. bat roosts) or intentionally or recklessly disturb a bat whilst it is occupying such a place;
- Damage or destroy a breeding site or resting place of a bat; and
- Possess, sell or transport a bat, or anything derived from it.

⁹ Natural England. 2011. *Standing Advice for Protected Species*. Available from: <http://www.naturalengland.org.uk/ourwork/planningtransportlocalgov/spatialplanning/standingadvice/default.aspx>

Development proposals affecting bats or their roosts require a European Protected Species licence from Natural England.

Birds

All birds are protected under the Wildlife and Countryside Act 1981 (as amended), making it an offence, with certain exceptions (e.g. game birds), to intentionally kill, injure or take any wild bird and to take, damage or destroy their nests or eggs.

Schedule 1 of the Wildlife and Countryside Act 1981 affords extra protection for a number of species and applies harsher penalties for offences. Any intentional or reckless disturbance of a Schedule 1 bird, whilst it is nesting or rearing dependent young, constitutes an offence.

Licences for Development

Licenses are required to permit activities prohibited under wildlife legislation, namely the disturbance or capture of protected species or damage to their habitats. Natural England is the licensing authority in England. Licenses are only issued for certain purposes, which are set out in the law, and only where there is a valid justification. The licenses most relevant to development scenarios are discussed below.

European Protected Species Licenses

A European Protected Species License is required from Natural England to undertake any development that is reasonably likely to result in an offence in respect of a European Protected Species protected under Schedule 2 of the Habitat Regulations 2010 (as amended); including *inter alia* all species of bats, Dormouse, Great Crested Newt and Otter. Natural England must be satisfied that the following three tests are satisfied before it will issue a license covering a European Protected Species:

1. The proposal is necessary to preserve public health or public safety, or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;
2. There is no satisfactory alternative; and
3. The proposal will have no detrimental effect to the maintenance of the population of the species concerned at a favorable conservation status in their natural range.

Species of Principal Importance in England

943 species have been identified as being of Principal Importance in England for the conservation of biodiversity under Section 41 (S41) of the NERC Act 2006. This list of species includes species found in England which have been identified as requiring action under the now superseded UK Biodiversity Action Plan 2007. While these species may not be legally protected, there is a clear responsibility on planning authorities to further their conservation. These species can be a material consideration in development control decisions and so developers are advised to take reasonable measures to avoid or mitigate impacts to prevent the net loss of these species and habitats and to enhance them where possible. Additional guidance to developers is typically provided in level planning policies.

Appendix 2

Bat Building Inspection Methodology

DESK STUDY METHODOLOGY

A desk study was carried out in order to gather and refer to existing biodiversity and contextual information with respect to the Zone of Influence and the wider area. This involved interrogation of internet resources, including the National Biodiversity Network (NBN), aerial photos, current Ordnance Survey maps and the Old Maps online database, where necessary. Reference was also made to strategies and initiatives relating to biodiversity as detailed in **Appendix 1**.

The Thames Valley Environmental Records Centre were commissioned to provide information from their databases on existing data records with full coverage of the site. Records of protected bat species were identified within a 5km radius from the centre of the Site.

FIELDWORK METHODOLOGY

The field survey (internal and external inspection for bats) was completed by Philip Brown (a licensed bat ecologist, Class License: 2015-18270-CLS-CLS) and Grace Turner of EPR on 18th January 2017. The predicted Zone of Influence of the refurbishment proposals was walked, recording features of potential value to wildlife and any evidence of, or potential for, bats to be using them, in accordance with the methods described below. The potential presence of any other protected or notable species noted on an incidental basis during this work was also recorded.

Bats

Bats use buildings and trees for roosting and breeding and, where present, a preliminary assessment of the potential for these features to support bats was undertaken during the survey in accordance best practice guidance, including that set out within the Bat Conservation Trust's Bat Surveys Good Practice Guidelines (2016). A summary of the methodology used to assess bat roosting potential is given below.

Internal and External Building Inspection for Bats

The building was inspected externally with binoculars and a Clulite torch, where required. Internal areas of the building (voids) were inspected, where accessible and bats and evidence of bats was looked for, including bats themselves, dead bat carcasses, bat droppings, urine staining, feeding remains, scratching and wear around access points.

Potential roosting areas may include gaps beneath roof or hanging tiles, in soffits, or beneath the end of ridge tiles, but also under the edge of felt on flat roofs. Features considered during the external inspection, to assess the potential of a building to support a bat roost, are listed below in **Table 2a**:

Habitat Mapping

The immediate surrounding habitats were also mapped to help assess the surrounding features in terms of suitability for ecological receptors and species assemblages such as bats and birds.

Table 2a External features ¹⁰

Lower Potential	Higher Potential
Modern construction with few gaps Prefabricated with steel/ sheet materials Flat roof Roof shaded from sun	Pre/ early 20 th Century construction Pitched roof Tiled roof with natural gaps Hanging tiles or wooden cladding Cellar (hibernation potential) Bat evidence (droppings/staining etc)

Preliminary evidence was obtained through noting any staining around potential roost entrances, and looking for bat droppings, for example on window sills. A preliminary evaluation was also undertaken of potential bat foraging habitat in the area, including woodland, pasture, hedges and watercourses.

The internal survey noted potential roosting opportunities for bats which can be factored into assessing the potential of the building to support roosting bats and the likely value of any such roost. If bats/ bat droppings are found, the building is a confirmed roost and it will be necessary to give the building a potential value to bats.

In addition to the features described above, the immediate surroundings of a building, which will influence the potential of a building to support roosting bats, were investigated. **Table 2b** below describes location factors that may affect a building's potential to support roosting bats.

Table 2b Location factors¹¹

Lower Potential	Higher Potential
Urban setting with few foraging areas Industrial sites Increased lighting	Rural Setting Close to woodland and/ or water Surrounded by good connective habitat

Assigning potential and value

Information from the external and internal inspection surveys was used to categorise a building as having negligible, low, medium or high potential to support roosting bats, and the likely value of any such roost. This was then used to contribute to an assessment of the overall potential value of the development site or survey site for bats.

¹⁰ See Bat Mitigation Guidelines 2004 (Table 5.1) for further examples.

¹¹ See Bat Mitigation Guidelines 2004 for further examples.

Foraging habitat and commuting corridors

In addition to the various features described above, other features that may be of value to bats include foraging habitat and commuting corridors. These were noted during the Ecological Appraisal. **Table 2e** outlines foraging and commuting features and their potential value to bats.

Table 2e: *Foraging and commuting habitat features and their potential to be of value to bats*

Lower potential to be of value	Higher potential to be of value
Arable field Hardstanding Defunct species poor hedgerows Isolated trees	Grazed pasture Ancient woodland Ponds with diverse marginal vegetation Wet ditches Species rich dense intact hedgerows

Overall Assessment and Assigning Value

In order to conclude whether further survey is required and if so, to design a suitable survey strategy, the overall **Potential Value** to bats is assessed, considering all of the features likely to be of value to bats (see above), and all roost features present are assigned a probability of being used by bats. This information then informs an assessment of the overall **Potential Value** for bats.

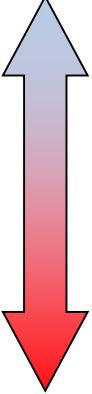
The value of a development site for bats will depend on a variety of factors (as shown in **Figure 2.1** below). Bats are nomadic and require a variety of roosts in addition to foraging areas and commuting routes.

Figure 2.1: *Factors affecting the value of a site for bats*



Table 2f below provides an example of the “value continuum” (adapted from BCT *Good Practice Guidelines*, 2012 **Table 4.2**).

Table 2f: How habitat features influence the potential value to bats

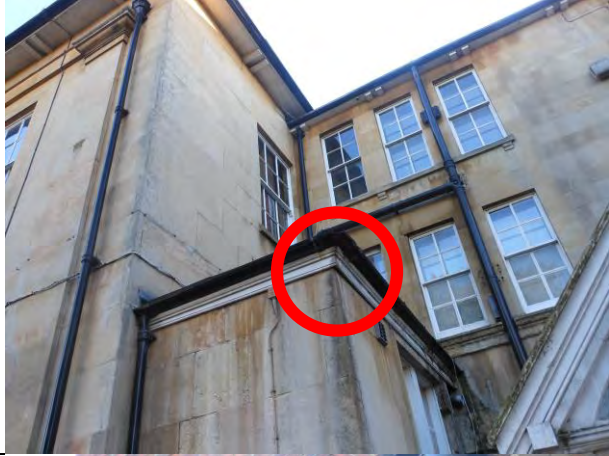
Potential Value	Site features
LOW  HIGH	- No features likely to be used by bats (for roosting foraging or commuting). - Small number of potential roost sites unlikely to support high numbers, or rarer bat species. No maternity or hibernation potential. - Isolated site with habitats that could be used by small numbers of foraging bats. - Several potential roost sites in buildings, trees or other structures. - Habitat likely to be used by foraging bats - Site connected to the wider landscape by linear features and could be used by commuting bats. - High quality foraging habitat (broadleaved woodland, water courses etc). - High potential roost features with the potential to support maternity roosts and/or rarer species of bat.

Birds

Any birds seen whilst carrying out the survey were recorded, and the type and quality of habitats available for birds was considered, including vegetation suitable for nesting, and habitat with the potential to support valued species, including breeding birds.

Appendix 3

Target Notes and Photographs from Bat Building Inspection LO43

Photograph ID	General Photographs	Description
1		TN1: Holes in the external wall (Bath Stone) associated with former pipework. May potentially lead to cavity walls.
2		TN2: Bargeboard coming away from brickwork, providing a potential bat access point.
3		TN3: Large gap in timber soffit, leading to potential cavity.

4		TN4 2-3 Slipped slate tiles to the left of the main chimney stack and a couple of loose and slipped tiles above Fernery.
5		TN5 – Misaligned brick leading to potential cavity.
6		TN6- Large gap in bargeboard where wood has rotted away (above fernery).
7		TN7- Fernery- a number of cracks and crevices in the rock that was used for fern planting.

8		TN8- Old disused coal store basement was accessed from door to the north of the building. There was bat access point through the main door, but no evidence of any roosting or hibernating bats. Does have potential for enhancement for use for hibernating bats.
9		Back of property (Southern elevation; see Photo point 9, Map 3)
10		Front of property (Northern elevation; see Photo point 10, Map 3)

11		Side view of property (Eastern elevation ; see Photo point 11, Map 3).
12		Amenity garden round the back of the property (to the south-east; See Photo point 12, Map 3).
13		Roof Void 1. Red brick wall with potential cavity between brick layer and external Bath stone. Timber rafters. A fine grain sand insulation was laid down on the floor in between rafters. Timber struts up the edge of the internal wall, in good condition. No evidence found. Crawl-through area led to Loft 1A , which is raised by 1m, approximately 7m long by 3m wide.

14		Roof Void 2- Loft Void 2 was accessed through Flat 5 in the hallway and was open, exposed and well-lit from the skylight and window, and was unlikely to be suitable for bats. A second presently open loft hatch led to Loft void 2A.
15		Roof Void 2A – Torn Bitumen roofing felt, but no light coming through. Timber rafters. Part boarded and accessed through a permanently open loft hatch - past the sky light. No signs of bats present.
16		Roof Void 3 – Bitumen felt, as in Roof void 2a. Several water tanks were present in the void, reducing accessibility, but all areas were inspected with a high-powered torch and binoculars.