



Our Ref: P16/54A

30th June 2017

University of Reading
c/o Mr Stephen Jenkins

Building & Investment Projects Surveyor
Property Services
Estates and Facilities
University of Reading
PO Box 235
Reading RG6 6BW

Dear Stephen,

The Acacias, University of Reading London Road Campus – Phase 2 Bat Survey Report

Thank you for commissioning EPR to carry out Phase 2 Bat Surveys at the Acacias, London Road Campus, University of Reading prior to building refurbishment. In this letter, 'Site' refers to the Acacias main building and former Glasshouse, location shown on **Map 1**.

I understand that the current plans include roof refurbishment works and repairs to the stonework facades of the Acacias building and Glasshouse.

Following the Bat Building Inspection completed on 18th January 2017, no direct evidence of bats was found following the internal survey, but the Acacias was identified as having moderate potential to support roosting bats due to several external features present (see EPR Bat Inspection Report, dated 27th January 2017).

This letter sets out our findings of the Phase 2 Bat surveys recommended following the Bat Building Inspection. A detailed explanation of the legislation referred to in this letter is set out in **Appendix 1**. Survey methodologies are described in **Appendix 2**.

Relevant Guidance, Legislation and Policy

Legislation relevant to the ecological assessment of the proposed works at the Site is set out under **Appendix 1** and 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, due consideration has been given to 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 (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 Reading Biodiversity Action Plan (BAP).

Site Context and Description

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. London Road campus comprises a landscape of large buildings, amenity grassy areas, with planted trees, hedges, shrubs and flowerbeds and bordered by roads and car parking areas.

Zone of Influence

In order to assess potential ecological constraints and opportunities related to the proposals for the Site, it is necessary to first consider the likely Zone of Influence (Zoi) of the proposals. The Zoi of a proposed development is defined in CIEEM's Ecological Impact Assessment (EclA) guidelines as '...the area over which ecological features may be subject to significant effects as a result of the proposed project and associated activities' (CIEEM, 2016).

Given the nature and scale of activities that are likely to be associated with this project, I consider that the ecological ZOI is likely to be limited to the Building itself and the immediate surroundings.

Background Biological Record Search

A data request was submitted to the Thames Valley Environmental Records Centre (TVERC) and MAGIC was searched in order to obtain records of protected and notable species records within a 2km radius of the Site. Several bat species records were recorded just over 100m west of the Site, including the following species; Common Pipistrelle, Soprano Pipistrelle and the Daubenton's bat.

Based on previous survey work conducted for the University; common species are known to roost within the buildings and trees on campus, including the most regularly occurring bats in the county; the Common and Soprano Pipistrelle.

Trees

It was noted, whilst carrying out the building inspection, that there were four large ornamental trees around the Acacias building (three to the east and one to the south) that could have

potential to support roosting bats. If these trees are to be removed as part of the proposed works, further surveys would be recommended. However, based on personal communication with Stephen Jenkins, it is not anticipated that the trees will be affected by the refurbishment works, therefore no further recommendations have been made.

Phase 2 Bat Surveys of The Acacias and Glass House

Methods employed during the Phase 2 Bat Surveys are set out under **Appendix 2** to this document and summarised below. Phase 2 bat survey work entailed the completion of two dusk emergence surveys on 16/05/2017 and 12/06/2017 as recommended following the Bat Building Inspection. The results of these surveys are summarised in **Table 1**.

Phase 2 Bat Surveys were completed in line with best practice guidelines, including those detailed under the Bat Survey, Good Practice Guidelines 3rd Ed. (BCT 2016). During the surveys, three surveyors were positioned at previously-identified vantage points, with uninterrupted sight lines of the buildings, to observe any bats as they exited or re-entered roosts and record any bat activity in the area. Each surveyor was equipped with a Batbox Duet or a Patterson D240x bat detector and a Site map to record results. For each bat recorded, the time, species, behaviour and direction of travel was noted, where known. Bat activity survey results are shown on **Map 1** and summarised below in **Table 1**.

Table 1: *Summary of Phase 2 Bat Surveys*

Date	Emergence or Re-entry recorded	Summary of bat activity
16/05/2017	None	- Moderate-level bat activity by Soprano Pipistrelle & Common Pipistrelle – particularly around the south and east side of the building, using the garden and surrounding hedgerow to forage. - A Soprano Pipistrelle flew over the top of the building (eastern elevation) at 21:03, a proceeded to forage in the garden to the South. - A Common Pipistrelle was observed commuting over the top of the roof flying Northwards at 21:15, it passed over the building but did not emerge.. - Two separate Common Pipistrelle bats were recorded foraging to the North and South of the Building between 21:34 and 21:35.
12/06/2017	None	- Low-level bat activity by Soprano Pipistrelle and Common Pipistrelle. - Soprano Pipistrelle recorded intermittently foraging in the south-east corner of the Site and middle of the Site, in the garden and along the hedgerow. Recorded at 21:58 and at 22:35. - Common Pipistrelle was recorded intermittently foraging in the garden/ courtyard of the building at 21:37 and 21:50. - Common Pipistrelle recorded foraging North of the Building at 22:06

Recommendations

Following the bat surveys completed on the Acacias and Glasshouse, I consider that there is a likely absence of bat roosts within the Acacias building. During these surveys, no bats were

recorded roosting in either building and low levels of bat activity from common species was recorded across the Site, with higher numbers of passes to the south of the building.

Based on the results of the Phase 2 Bat Surveys, I do not recommend any additional works for bats and consider that the roof and refurbishment works can proceed without the need for a European Protected Species licence. The Site could be enhanced for bats through the implementation of Biodiversity Enhancements as described below.

In the unlikely event that bats are discovered at any point during works, all works must be stopped immediately and a suitably-qualified ecologist or Natural England contacted for advice. In this event, it is likely that works would need to be halted until such a time as a European Protected Species Mitigation Licence is obtained from Natural England, to allow the works to proceed lawfully.

Birds

A number of bird species were also opportunistically noted during the bat surveys. In particular, some common species appeared to be nesting around the cracks in the stonework and dense Ivy cover of the former glasshouse. This activity was noted during the May survey, so it is likely that any chicks present will have already fledged. Birds noted whilst on Site include Blue Tit, Great Tit, Song Thrush and House Sparrow. The actual building itself had some features (identified for bats) that could be used by nesting birds, for example, a large gap in the soffit on the southern elevation. No birds were actually seen to use this feature at the time of survey, but it is still a possible feature that could be utilised.

House Sparrows are often found in urban gardens, but have declined in recent years to become Red-listed on the Birds of Conservation Concern (BoCC), produced by the RSPB and BTO (RSPB, 2015). Records from TVERC show the recent presence of Swift, Green Woodpecker, Dunnock, Song and Mistle Thrush within a 2km radius of the Site. These are all Red or Amber-listed on the BoCC list and use the types of habitat present within the Site.

Recommendations regarding nesting birds

All species of bird are and their nests are protected while the nest is active (including nests in nest boxes). Any vegetation on Site that requires removal should be cut outside of the nesting season if possible. The nesting bird season runs from March to August inclusive. Structures including those covered in Ivy (such as the former glasshouse) should also be checked for nesting birds prior to removal. If it is not possible to remove vegetation outside of the bird nesting season, shrubs and structures should be inspected by a suitably experienced ecologist immediately prior to felling or removal. If any active nests are discovered, these will need to be left *in situ* until any young birds have fledged. A buffer zone of approximately 4m (dependant on species) can be created around the nest, and works can proceed around this buffer, in order to minimise disturbance to the nest.

Biodiversity Enhancements

As guidance and best practice advocates that opportunities to enhance biodiversity should be sought where possible, to enhance the Site following the refurbishment of the Acacias building,

I have identified the following opportunities for enhancement, with the incorporation of ecologically- beneficial features which could be incorporated into the proposals:

These include:

- Bat boxes, bird boxes and nest boxes for small mammals and insects located on trees or in shrub borders. Bird boxes could include house sparrow terraces and swift boxes.
- Appropriate planting using native species of local provenance which provide suitable foraging resources for wildlife including flowering plants and plants with fruiting bodies and/or non-native species with value to wildlife such as species which produce fruits, seeds and berries

Conclusions

Following the bat survey work completed on the Acacias and Glasshouse, I conclude that the refurbishment works to the roof and stonework can proceed lawfully regarding bats (**Appendix 1**). It should be noted that a nesting bird check may be required prior to removal of any ivy or vegetation surrounding the Glasshouse building, however careful timings can completely avoid disturbance to nesting birds if the work is carried out in late August. Most bird species will have completed nesting activity by this time, so the risk of impact is further reduced.

In addition to this, if the above recommendations for biodiversity enhancement are implemented (e.g. the installation of bird or bat boxes onto buildings or trees) the refurbishment of the Acacias Building and Glasshouse has the potential to improve the Site for local wildlife.

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

With kind regards,

Yours Sincerely,

Approved for issue by:



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

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

Maps and Appendices

Map 1 Summary of Dusk Emergence Surveys

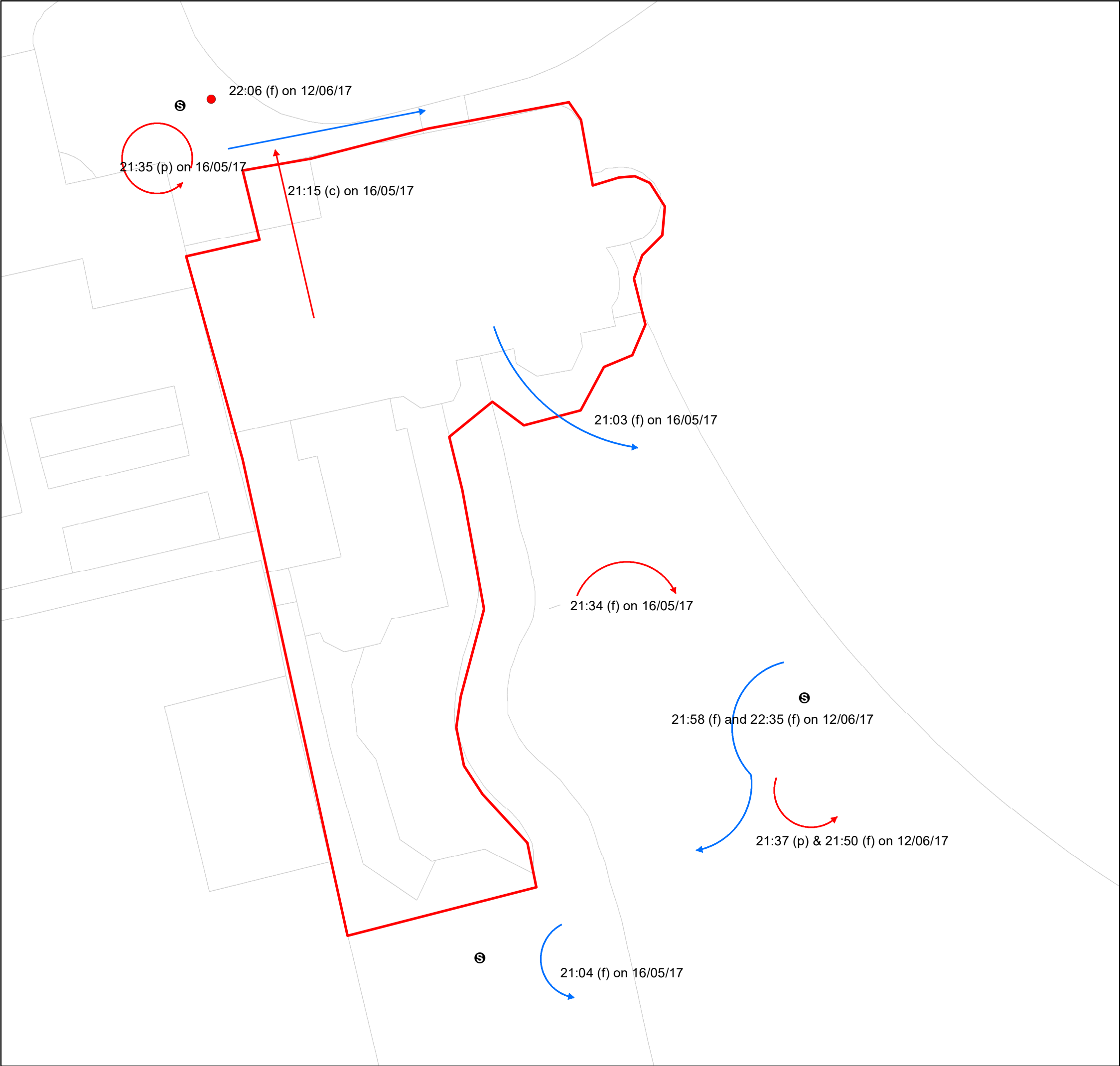
Appendix 1 Relevant Nature Conservation Legislation

Appendix 2 Survey Methodologies

MAP 1 Results from Bat Emergence Surveys

KEY

- Site boundary
- Common Pipistrelle
- Soprano Pipistrelle
- Common Pipistrelle (heard not seen)
- Surveyor Location



SCALE: 1:200 at A3
0 5 10 Metres



Ecological Planning & Research

CLIENT: University of Reading

PROJECT: The Acacias, UOR

DATE: June 2017

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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.

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

¹ The Conservation of Habitats and Species Regulations 2010. Available from:

<http://www.legislation.gov.uk/uksi/2010/490/contents/made>

² The Conservation of Habitats and Species (Amendment) Regulations 2012. Available from:

<http://www.legislation.gov.uk/uksi/2012/1927/contents/made>

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

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 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.

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

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:

- 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";

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>

- 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.

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

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

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

Phase 2 Bat Survey Methodology

A Bat Building Inspection was completed by Grace Turner and Philip Brown, a licenced bat ecologist (Class Licence Registration Number: 2015-18270-CLS-CLS) of EPR Ltd on 14th January 2017.

A total of two dusk emergence surveys were completed during the 2017 active bat season in line with BCT guidelines (BCT 2016). The survey effort employed was in line with best practice guidelines for multiple buildings with **Moderate Potential** to support roosting bats.

Details of the timings of the emergence/re-entry surveys are given in **Table 2a**.

Table 2a: *Bat Activity Survey Timings*

Survey Type	Date	Start	End	Sunset/Sunrise	Duration
Dusk Emergence	16/05/17	20:35	22:20	20:50	1 hr 45 min
Dusk Emergence	12/06/2017	21:05	22:50	21:21	1 hr 45 min

During surveys, three surveyors were positioned at suitable vantage points to observe bats as they emerged from roosts within the onsite buildings. Sight lines encompassed the majority of building elevations, and particular focus was placed on previously-identified features with bat roosting potential. The surveys were lead by Philip Brown, a licenced bat ecologist (Class Licence Registration Number: 2015-18270-CLS-CLS) of EPR Ltd. All other surveyors were suitably-qualified bat surveyors from EPR Ltd.

Each of the surveyors was equipped with a Petterson 240x or Batbox Duet bat detector and a map of the Site on which to record bat passes. Radios were used to allow surveyors to communicate with one another, so that flight paths and activity could be accurately recorded.

For each of the surveys, appropriate metadata describing variables with the potential to affect survey results was noted. This covered weather conditions (temperature, wind speed/direction, cloud cover, recent rainfall) and any significant survey limitations were noted as shown in **Table 2b**.

Table 2b: *Summary of Weather Conditions During Bat Activity Surveys.*

	16/05/2017	12/06/2017
Start Temp (°C)	17.5	15.7
End Temp (°C)	16.5	13.8
Cloud cover (%)	100	20
Wind (Beaufort Scale)	1	2-1
Rainfall	Very light rain for 10 minutes at start of survey	None
Survey limitations	Reduced visibility in survey position by mature Plane Tree (Southern elevation)	Reduced visibility in survey position by mature Plane Tree (Southern elevation)

During surveys detailed information was recorded for all bat passes:

- Species of bat (where known);
- Time of activity;
- Behavior of bat (identified using flight patterns and call characteristics as heard on the bat detector);
- Direction of flight (if seen); and
- Any occurrence of emergence from or re-entry to the buildings.

Impact Assessment and Mitigation Methodology

The assessments of likely ecological impacts of proposals have been reached based on guidance within the CIEEM EclA Guidelines (2016) and best practice guidance. Proposals have been considered in order to identify any potential significant impacts (positive or negative) on bats and other species and how these relate to applicable legislation and policy, referred to in **Appendix 1**.

Where these have been identified, wherever possible, a variety of avoidance, mitigation and compensation measures have been proposed in order to reduce/eliminate potential significant negative impacts upon and provide appropriate enhancement measures for ecological features at the Site.