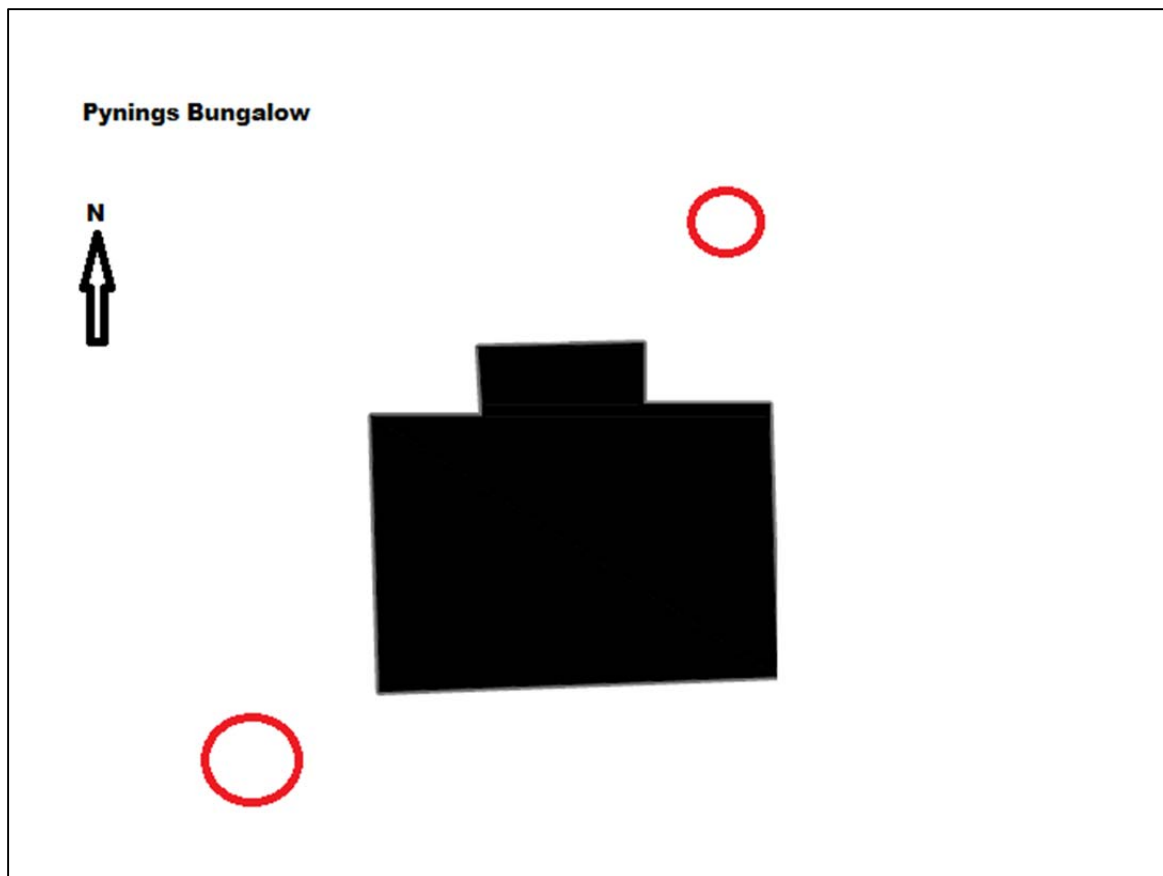


Figures

Figure 1: Location of Buildings and Trees subject to survey

Figure 2: Location of Surveyors Emergence and Dusk Surveys (Circles)



Appendix A Legislation and relevant planning policy

- A.1.1 Both bats and their roosts are afforded protection under the Conservation of Species and Habitats Regulations 2010 (as amended) and the Wildlife and Countryside Act 1981 (as amended). In broad terms these pieces of legislation jointly mean that the animals themselves are protected against killing, injury, taking (capture) and disturbance. In addition their places of shelter are protected against damage, destruction and obstruction. Works affecting any bat roosts in England can only proceed under licence from Natural England once planning permission is in place. The licence application must demonstrate the need for the development, that there is no suitable alternative and that appropriate mitigation and compensation will be put in place to ameliorate impacts and maintain the favourable conservation status of the bat population.
- A.1.2 The National Planning Policy Framework (NPPF) came into effect on the 27th March 2012. It states that the planning system should seek to contribute to and enhance the natural and local environment by minimising impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity. The Government Circular 06/2005 (ODPM, 2005) supports the NPPF by providing guidance on the application of the law in relation to planning and nature conservation as it applies in England. Paragraph 117 of the NPPF states that local authorities should seek to promote the preservation, restoration and re-creation of priority habitats and recovery of priority species populations, linked to national and local targets, through planning policies. Priority habitats and species referred to in the NPPF relate to species and habitats of principle importance listed in accordance with section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. This includes certain species of bat, such as the crevice dwelling species of bat: soprano pipistrelle *Pipistrellus pygmaeus*.

Appendix B Emergence and Re-entry Survey Results

B.1 Dusk Emergence 2nd June 2014

Time	Species	Activity
Sunset: 21:12		
Start time - 21.00. 15.5 °C 80% cloud cover Wind BF scale 2		
End time - 23.15 12c 80% cloud cover Wind BF scale 2, no rain.		
21:53	Soprano pipistrelle	Possible emergence from under tiles at rear of property.
21:54	Soprano pipistrelle	Two bats commuting passed together.
21:59	Noctule	Commuting pass, bat not seen.
22:06	Soprano pipistrelle	Commuting pass.
22:07	Soprano pipistrelle	Commuting pass.
22:13	Common pipistrelle	Commuting pass.
22:14	Pipistrelle sp (49 kHz)	Commuting pass.
22:17	Soprano pipistrelle	Commuting pass, bat not seen.
22:18	Common pipistrelle	2 bats passing together.
22:27	Common pipistrelle	Commuting pass, bat not seen.
22:29	Common pipistrelle	Commuting pass
22:39	Common pipistrelle	Commuting pass, bat not seen.
22:40	Soprano pipistrelle	Commuting pass, bat not seen.
22:42	Common pipistrelle	Commuting pass, bat not seen.
22:44	Soprano pipistrelle	Commuting pass, bat not seen.
22:49	Soprano pipistrelle	Commuting pass, bat not seen.
22:56	Soprano pipistrelle	Commuting pass, bat not seen.
22:57	Soprano pipistrelle	Commuting pass
23:00	Pipistrelle sp. (50kHz)	Commuting pass, bat not seen.
23:06	Common pipistrelle	Commuting pass, bat not seen.
23:10	Soprano pipistrelle	Commuting pass, bat not seen.
23:15	Survey End	

B.2 Dawn re-entry 3rd June 2014

Time	Species	Activity
Sunrise: 04:51		
Start time - 03.15 15c 100% cloud cover and wind speed BF scale 2		
End time - 05.00 17c 100% cloud cover and wind speed BF scale 2 no rain		
04:00	Common pipistrelle	Flew past, did not enter.
04:06	Soprano pipistrelle	Flew over and away from property.
04:51	Survey end.	

B.3 Dusk Emergence 21st July 2014

Time	Species	Activity
Sunset time - 21.08 Start time - 20.50 21c 20% cloud cover, wind BF scale 2. End time - 22.50 16c 20% high cloud cover, wind BF scale 2, no rain.		
22:15	Noctule	Bat commuted from south towards bungalow headed east.
22:20	Soprano pipistrelle	Foraging around garden.
22:25	Soprano pipistrelle	Commuting west across garden in front of bungalow.
22:27	Common pipistrelle	Foraging around garden.
22:34	Common pipistrelle	Commuting pass, bat not seen.
22:39	Noctule	Commuting pass, bat not seen.
22:43	Common pipistrelle	Commuting pass, bat not seen.
22:50	Survey end	

B.4 Dusk Emergence 18th August 2014

Time	Species	Activity
Sunset time: 20.20 Start time - 20.10 17°C, BF scale 3, 80% cloud cover with very light rain to start, clear by 20:30 End time - 22.10 14°C, BF scale 3, 80% cloud cover no rain.		
20:38	Soprano pipistrelle	Commuting pass
20:55 to 20:56	Soprano pipistrelle	Foraging in garden
20:56	Noctule	Commuting pass
20:58	Soprano pipistrelle	Feeding buzzes from pipistrelle and commuting noctule
21:00	Soprano pipistrelle	Foraging around garden
21:02	Noctule	Pass
21:04	Soprano pipistrelle	Pass
21:10	Noctule	Pass
21:14	Noctule	Pass
21:15 to 21:17	Soprano pipistrelle	Foraging around garden
21:20	Common pipistrelle	Pass
21:21	Pipistrelle sp (50kHz)	Pass
21:23 to 21:25	Common pipistrelle	Foraging around bungalow
21:26 to 21:30	Soprano pipistrelle and common pipistrelle	Both species foraging
21:31	Noctule	Commuting pass
21:36 to 21:41	Soprano pipistrelle	Foraging
21:41	Noctule	Commuting pass
21:42 to 22:02	Soprano pipistrelle	Foraging
21:47	Noctule	Commuting pass
22:04 to 22:06	Common pipistrelle	Foraging in garden
22:08	Soprano pipistrelle	Commuting pass.
22:50	Survey end.	

Appendix C Photographs of Trees and Bungalow

Trees climbed

C.1.1 Tree T4 (Ash)



C.1.2 Tree T5 (Oak)



C.1.3 Tree T6 (Cherry Tree)



Building Assessment

C.1.4 Pynings south-facing elevation



C.1.5 Pynings north-facing elevation



C.1.6 Lake to north of Pynings rear garden



A.3 Green Park Station - Bat and Otter Survey

Green Park Station

Bat and Otter Survey Report

On behalf of **Reading Borough Council**



Project Ref: 28791/002 | Rev: BB | Date: October 2014



Document Control Sheet

Project Name: Green Park Station

Project Ref: 28791

Report Title: Bat and Otter Survey

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Date: October 2014

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Revision	Date	Description	Prepared	Reviewed	Approved
A	16-10-14	Edits to reflect minor changes to proposed scheme phasing	HE	KE	-
B	31-10-14	Edits to reflect minor changes to proposed scheme phasing	KE	JP	DA

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Figures

Figure 1: Showing location of buildings and trees affected by the proposed development

Appendices

- Appendix A Tree Survey Results
- Appendix B Building Survey Results

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Executive Summary

This report presents the results of survey work undertaken to support the planning permission renewal for the proposed Green Park railway station scheme and its associated access road. The necessity for this survey work was identified in a preceding report (PBA, 2014).

Three trees with the potential to support small numbers of non-breeding transitory bats were identified (please refer to T4, T5 and T6 in Figure 1). In addition, evidence of use by bats of one of the buildings affected by the proposed access road was identified (Building A, Figure 1). The evidence (a single bat dropping) suggests use of the building by small numbers of non-breeding transitory bats.

To avoid impacts on bats, it is recommended in relation to the trees that a licenced bat worker and tree climber should climb the tree to carry out a detailed off-ground visual assessment of the trees prior to them being felled. The tree felling works should also be timed to either the early spring or late autumn to avoid the period when bats are more vulnerable to disturbance (i.e. during breeding or hibernation). In the unlikely event that a bat or bats are found during the inspection by the tree climber, the tree felling work would necessarily need to cease in order for a European protected species license to be secured prior to recommencement of felling works.

In relation to the building where bat evidence was identified, further survey work is recommended to confirm the extent of use of the building by bats. A single dusk/dawn emergence and re-entry survey, along with automated monitoring using a bat detector within the roof space of the building would be an appropriate level of survey. The results will be required to support a European protected species licence application for demolition of the building. This can only be submitted once planning permission for the development is in place and will include details of appropriate mitigation and compensation.

The approach to addressing impacts on bats will be detailed in full in the licence application, based on the results of the survey work to confirm roost use. However, on the basis of current evidence the mitigation and compensation required is likely to include: appropriate timing of the demolition of the building (in spring or late autumn) to avoid the periods when bats are most vulnerable to disturbance; provision of replacement roosting resources in advance of demolition (bat boxes) and provision of no or low light-spillage lighting in order to minimise the impact of light pollution on roosting bats.

The survey work identified no evidence of otter use of the route of the access road, or of the nearby lake. Given the known presence of otter in the wider area, the presence of this species cannot be entirely ruled out as a result of this survey. However, there is no evidence of frequent use of the site by this species and no evidence of a holt which could be used for breeding purposes.

Given the absence of signs of otter activity within the site and the low level of use of the nearby Foudry Brook by otter (BSG Ecology, 2013), the nature of the road and the speed and number of the vehicles using it, impacts on otters as a result of road traffic collisions are considered unlikely. The provision of measures to minimise light pollution on the immediate areas around the proposed access road will also ensure, were otter to use the lake, that this species would not be disturbed by lighting along the road.

Providing the recommended further survey work in relation to bats confirms the limited extent of use by the building that is indicated from the results of the building inspection, and that the recommended measures set out in this report are put in place, no significant residual impacts on bats or otters are envisaged as a result of the proposed Green Park Station scheme and its associated access road. The development will therefore be in compliance with planning policy and legislation.

This Executive Summary contains an overview of the key findings and conclusions. However, no reliance should be placed on any part of the executive summary until the whole of the report has been read.

1 Introduction

1.1 Background

1.1.1 Full planning permission for the construction of a new railway station, bus interchange and associated car parking facilities (to include multi storey car park, short stay car park, taxi drop-off and disabled parking facilities) on land adjacent to the Basingstoke/Reading Railway Line and to the west of the Green Park business park was granted by Reading Borough Council (RBC) on 14th December 2010 (application no. 10/01905/FUL) and West Berkshire District Council (WBDC) on 20th January 2011 (planning permission ref. 10/02603/XCOMIN).

1.1.2 These permissions have now lapsed and therefore it is necessary to submit new applications for the proposed station development. This report accompanies a full planning application submission to both RBC and WBDC for the:

“Construction of a new Railway Station, bus interchange, multi-storey car park (park and ride facility), short stay car park, taxi drop-off, disabled parking facilities, station access road from Longwater Avenue, landscaping, and associated works”

1.1.3 Overall, the proposed scheme is largely identical to the lapsed permissions (Ref No: 10/01905/FUL and 10/02603/XCOMIN), with the following amendments:

- The station has been designed to accommodate the future electrification of the rail line;
- The design of the footbridge has been updated to reflect Network Rail's requirements;
- The size of the interchange area has been reduced;
- The size of the car park area has now increased to accommodate 42 surface parking spaces; and
- The construction and design of the canopies for the station platform have been simplified.

1.1.4 It is also proposed that the development be built out in four phases:

- Phase 1 – Service Road and Bus Stop
- Phase 2 – Interchange and drop-off parking
- Phase 3 – Surface Car Park
- Phase 4 – Full scheme including multi-storey car park

1.1.5 Further detail and justification for the proposed phasing of the development is provided within the Transport Assessment and the Planning Statement.

1.1.6 Given the time that has lapsed since the granting of the original planning permission and in light of the fact that ecological resources are dynamic and change over time, Reading Borough Council commissioned PBA in August 2013 to undertake an ecological walkover survey of the Green Park Station site to update the findings of the previous Phase 1 habitat survey undertaken in 2007 (AMEC, 2007). This updated survey determined that further survey work of mature trees and buildings likely to be affected by the proposed development should be undertaken to determine whether there was any potential for, or evidence of, bat use. In addition, due to the proximity of the footprint of the proposed development to the edge of one of the large waterbodies within the site, a survey to assess whether there was any potential

for, or evidence of use of this waterbody by otter *Lutra lutra* should be undertaken (PBA, 2014).

1.2 Site Description

- 1.2.1 The Green Park Station site (hereinafter referred to as the 'site') is located on the western edge of the Green Park business park complex in Reading, Berkshire. The site is dominated by an area of land that previously represented the formerly active part of the now closed landfill operation, which now largely supports ephemeral/short perennial vegetation interspersed with pockets of scattered scrub and tall ruderal vegetation, the existing Smallmead Road also passes through the site.
- 1.2.2 The Basingstoke/Reading railway line forms the western boundary of the site along which are a number of mature trees and dense areas of bramble scrub. To the south of the site lies Kirton's Farm Road, beyond which is an area of arable farmland. North of the site the landscape is also dominated by large arable fields and to the east of the site are a number of large, man-made lakes/ponds, associated with former gravel extraction works. To the east of the southernmost lake lies an existing builder's yard.

1.3 Aims of Report

- 1.3.1 This report sets out the approach to the survey work for bats and otters and presents the results of the surveys. This information is used to determine the approach necessary to ensure that effects on these species are avoided or ameliorated such that the proposed development will be acceptable with reference to the planning and legal framework relating to ecological resources. This includes recommendations for further survey work where this is necessary to ascertain the full extent of use of the site by these species and recommendations in relation to working methods or design details.

2 Methods

2.1 Survey Approach

- 2.1.1 All survey work detailed below was carried out by Helen Evriviades MCIEEM and Eva Hansen on 28th January 2013. Helen holds a personal survey licence for bats from Natural England (Class Survey Licence WML CL18 (Bat Survey Level 2)) registration number CLS02571; she is also experienced in surveying for evidence of otter. The weather conditions during the survey were dry with sunny intervals and a light breeze (Beaufort Scale 1). Cloud cover was 2/8 increasing to 7/8 through the survey with an air temperature of 7°C.
- 2.1.2 The findings of the survey, as presented in this report, are written in an ecological context. Reference to, for example, building condition should therefore be read in this context. Observations made are representative of the site at the time of the survey and under the prevailing weather and climatic conditions.

2.2 Bat Survey of Trees

- 2.2.1 All trees or groups of trees that had previously been identified as likely to be directly affected by the proposed development were inspected from the ground using binoculars and a high power torch as necessary. The following information was recorded for each tree: species; width at chest height; description of feature(s) with potential to support roosting bats and the height and aspect of these features. Photographs of each of the trees were taken.
- 2.2.2 Each tree was assigned a category with regards to its potential to support roosting bats with reference to the Bat Conservation Trust Survey Guidelines (Hundt, 2012). These categories are set out below:

Tree Category	Description
Category 1*	Trees with multiple features suitable for bats capable of supporting larger roosts.
Category 1	Trees with definite bat potential, supporting fewer suitable features than category 1* trees or with potential for use by single bats
Category 2	Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats
Category 3	Trees with no potential to support bats

2.3 Bat Survey of Buildings

- 2.3.1 In addition, the two existing buildings identified within the footprint of the proposed development and to be impacted by the scheme were surveyed both internally and externally to determine whether they had any features with the potential to support bats and whether there was any evidence of use by bats. An assessment was made of the building construction and any features of the walls, windows or roof that had the potential to provide a roosting space for a bat. The inspection searched further for evidence of use by bats including: droppings, feeding remains, characteristic staining, scratch marks and any live or dead bats. Powerful torches were used to aid the survey where necessary, and photographs of the buildings were taken.

2.4 Otter Survey

- 2.4.1 The entire perimeter of the water body immediately adjacent to the footprint of the proposed works (Pond 1 as described in the ecological walkover survey report; PBA, 2014) was walked and evidence of otter activity was searched for. Such evidence could include: scat (otter faeces), footprints, feeding remains, holts or daybeds. Particular care was taken during the survey of the southern perimeter of the water body given that this area will be in closest proximity to the footprint of the proposed development.

3 Results and Interpretation

3.1 Overview

- 3.1.1 The results of the survey work, with reference to previous survey reports where this helps to provide context to the results, are set out below. The locations of the trees and buildings described below that have been identified as being affected by the proposed development are shown in Figure 1.

3.2 Bat Survey of Trees

- 3.2.1 The full results of the tree survey are presented in Appendix A. Three of the trees were identified as Category 1 trees see Figure 1, trees T4, T5 and T6). These are two oak *Quercus robur* trees and an ash *Fraxinus excelsior* tree along Smallmead Road. All three of these trees have ivy growth covering the trunk up to at least 3m height. However, the ivy does not appear to be very old, neither do the trees themselves appear to be overly mature such that significant features capable of supporting large bat roosts are unlikely to be hidden by the ivy. Therefore it is considered that the ivy is most likely to provide potential for use by single, transient crevice-dwelling bats.

3.3 Bat Survey of Buildings

- 3.3.1 The full results of the building surveys are presented in Appendix B. Two buildings have been identified as being directly affected by the proposed development. One of these (Building B) has been identified as having no potential to support roosting bats. This building is a single storey building which is metal frame with metal cladding on the walls and roof. The internal rooms of the building are lined with chipboard on the walls and ceiling. The poor thermal properties of the metal cladding mean that the building will be subject to extremes of temperature, not suitable for bats.
- 3.3.2 The other building (Building A) is a single-storey brick-built bungalow with a pitched, tiled roof. This building has a number of features which could provide access into the roof space for roosting bats including lifting tiles and gaps at the eaves. Internally the modern-truss roof space has insulation material on the floor and roofing felt lining the tiles. Careful search by torchlight of the roof-space revealed numerous rat and mouse droppings. In addition a single pipistrelle dropping was found close to the internal gable end of the building. This evidence is consistent with the building being used on an infrequent basis by individual transient bats. No evidence of consistent use by bats (e.g. piles of droppings, urine staining, dead bats) was present which would be indicative of use by a maternity roost. The occasional use of the building by individual non-breeding bats is consistent with the previous activity survey findings (AMEC, 2007).

Bat Legislation and Planning Policy

- 3.3.3 Both bats and their roosts are afforded protection under the Conservation of Species and Habitats Regulations 2010 (as amended) and the Wildlife and Countryside Act 1981 (as amended). In broad terms these pieces of legislation jointly mean that the animals themselves are protected against killing, injury, taking (capture) and disturbance. In addition their places of shelter are protected against damage, destruction and obstruction. Works affecting any bat roosts can only proceed under licence from Natural England once planning permission is in place. The licence application must demonstrate the need for the development, that there is no suitable alternative and that appropriate mitigation and compensation will be put in place to ameliorate impacts and maintain the favourable conservation status of the bat population.

- 3.3.4 The National Planning Policy Framework (NPPF) came into effect on the 27th March 2012. It states that the planning system should seek to contribute to and enhance the natural and local environment by minimising impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity. The Government Circular 06/2005 (ODPM, 2005) supports the NPPF by providing guidance on the application of the law in relation to planning and nature conservation as it applies in England. Paragraph 117 of the NPPF states that local authorities should seek to promote the preservation, restoration and re-creation of priority habitats and recovery of priority species populations, linked to national and local targets, through planning policies. Priority habitats and species referred to in the NPPF relate to species and habitats of principle importance listed in accordance with section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. This includes certain species of bat, such as the crevice dwelling species of bat: soprano pipistrelle *Pipistrellus pygmaeus*.
- 3.3.5 Given findings of the surveys and the legislative and policy framework that protects bats, the likely impacts of development and the mitigation and compensation that will be implemented to ameliorate such impacts are considered in the subsequent sections of this report.

3.4 Otter Survey

- 3.4.1 No evidence of otter was found during the survey work undertaken around the perimeter of the waterbody. Whilst no evidence of otter was found during the survey, previous reports (PBA, 2013) identified that otter have previously been recorded along Foundry Brook which lies 700m to the south-east of the site. Given this, and the presence of suitable habitat (dense scrub) around the perimeter of the lake, the presence of otter cannot be entirely ruled out although it is considered that the banks of the lake are unlikely to support a breeding holt due to the proximity of the lake to the builders and construction yard which provides noise and visual disturbance to the lake.

Otter Legislation and Planning Policy

- 3.4.2 Both otters and their places of rest/shelter are afforded protection under the Conservation of Species and Habitats Regulations 2010 (as amended) and the Wildlife and Countryside Act 1981 (as amended). In broad terms these pieces of legislation jointly mean that the animals themselves are protected against killing, injury, taking (capture) and disturbance. In addition, their places of shelter are protected against damage, destruction and obstruction.
- 3.4.3 The otter is also a priority species for biodiversity conservation, as referred to in the NPPF (refer to paragraph 4.3.4).

4 Potential Impacts and Recommendations

4.1 Overview

- 4.1.1 The presence of bats and the potential for otters to use the lake on at least a transitory basis, and the legislation and planning policies relating to these species make them a material consideration in the planning application renewal for the proposed development. Therefore, the likely impacts of the proposed development on those species identified as being present, or likely to be present, within the site are discussed below along with the appropriate mitigation and compensation that will be required to ensure that the proposed development is in compliance planning policy and legislation.

4.2 Bat Survey of Trees

- 4.2.1 Three of the trees within the site that are to be affected by the proposed development were identified as having potential to support bats due to the presence of ivy growth up the trunks of these trees (see Figure 1, T4, T5 and T6). However, neither the trees nor the ivy are so old that they are likely to provide any more than opportunities for use by single, transient crevice dwelling bats. It is considered highly unlikely that these trees would support significant roosts.
- 4.2.2 Given this assessment, no further survey work is considered necessary to support the planning application to provide any more certainty to the likely impacts. However, the loss of the trees represents the loss of features which could be used by transitory non-breeding bats.
- 4.2.3 Because of this, it is recommended that a licenced bat worker and tree climber should climb the tree to carry out a detailed off-ground visual assessment of the trees prior to them being felled. The tree felling works should also be timed to either the early spring or late autumn to avoid the period when bats are more vulnerable to disturbance (i.e. during breeding or hibernation).
- 4.2.4 In the unlikely event that a bat or bats are found during the inspection by the tree climber, the tree felling work would necessarily need to cease in order for a European protected species license to be secured prior to recommencement.
- 4.2.5 To provide replacement potential roosting opportunities for bats, it is recommended that a minimum of three bat boxes suitable for crevice-dwelling bat species are provided on suitable retained trees within or adjacent to the Green Park station site.

4.3 Bat Survey of Buildings

- 4.3.1 The demolition of Building B that has been identified as having no potential to support roosting bats will result in no impact on bats and therefore no mitigation is required in relation to demolition of this building.
- 4.3.2 A single pipistrelle dropping found in the roof space of Building A indicates that the building is used on an infrequent basis by individual transient bats of this species. To confirm that this is the case and given that previous survey work (AMEC, 2007) has identified foraging/commuting bats in the vicinity of this building, further survey work of this building is recommended to confirm the extent of use of this building by bats.
- 4.3.3 Given the evidence found during the building assessment, a single evening emergence and dawn re-entry survey, carried out in the same 24 hour period, is recommended to confirm the extent of use of the building by bats. In addition, an automated detector will be left in the roof void of the building for a week to record any bat echolocation calls. This survey work should be carried out in the period May-August inclusive when bats are most likely to be active and will provide the necessary additional information to confirm the extent of the building use by

bats such that the LPA will be able to validate and determine the planning application with full ecological information available to them. In the event that this survey work finds significantly different results from those indicated by the building survey, the need for further survey work to confirm the extent of use of the building by bats should be reviewed.

- 4.3.4 The survey work suggested above will confirm the extent of use of the building by bats including the species and numbers of individuals present. The results of the survey work will verify the extent of mitigation required to support a European Protected Species (EPS) licence application to allow the legal demolition of any current bat roost using the existing building. The licence application can only be completed once planning permission for the development is in place and will necessarily include details of appropriate mitigation and compensation. This is likely to include:

- Demolition of the building in early spring or late autumn to avoid the period when bats are most vulnerable to disturbance (i.e. during breeding or hibernation).
- Provision of replacement roosting resources for bats in advance of demolition. A small number of bat boxes on trees or retained/new buildings in appropriate positions within or adjacent to the Green Park Station site would be sufficient to provide replacement for the type of roost thought to be present in this building.
- In accordance with the recommendations given within our previous report (PBA, 2013), it is recommended that lighting along the access road should be kept to a minimum and should not spill onto the lakes, woodland strip or the ditch and treeline along Smallmead Road. The preference would be to use no lighting or low- level lighting only. However, if brighter lighting is proposed, low and high pressure sodium lights should be used instead of mercury and metal halides as these will reduce the impact of light pollution on commuting bats (BCT and ILE, 2008). Light spillage onto the tree shelterbelt can be further reduced through the use of luminaires or directional light accessories (BCT and ILE, 2008). The sensitive use of external lighting will also ensure that the development is compliant with Paragraph 125 of the NPPF.

4.4 Otter Survey

- 4.4.1 Given the lack of evidence of otter in or near to the footprint of the proposed access road and taking into account the fact that access to the new station will remain via a single carriageway low-speed road, highly unlikely to form a barrier to otters which may be moving through the area, impacts on this species associated with changes to the access road are considered unlikely.
- 4.4.2 The provision of low level lighting along the access road, as recommended in the preceding section with regard to bats, will ensure that were otter to use the lake the lighting along the access road will not disturb them in any significant way.

5 Conclusion

- 5.1.1 Providing the recommended further survey work in relation to bats confirms the limited extent of use of Building A, and the recommended measures set out in this report are put in place, no significant residual impacts on bats or otters are envisaged as a result of the proposed Green Park Station scheme and its associated access road. The mitigation and compensation proposed will ensure that the proposed development is in compliance with planning policy and legislation.

References

AMEC (2007) Proposed Green Park Village – Ecological Survey and Assessment, Technical Appendix 8.1. AMEC Earth & Environmental UK Ltd, June 2007.

Bat Conservation Trust (BCT) and Institute of Lighting Engineers (ILE) (2008) Bats and Lighting in the UK. Bats and the Built Environment Series. Version 2, May 2009.

BSG Ecology (2013) Green Park, Reading – Otter and Water Vole Survey. BSG Ecology, August 2013.

Hundt, L (2012) Bat Surveys: Good Practice Guidelines, 2nd Edition. Bat Conservation Trust

NPPF (2012) National Planning Policy Framework - Department for Communities and Local Government. March 2012.

PBA (2014) Green Park Station. Ecological Walkover Survey. Report on behalf of Reading Borough Council.

Department for Communities and Local Government (2012) National Planning Policy Framework. DCLG.

Figures

Figure 1: Showing location of buildings and trees affected by the proposed development

Appendix A Tree Survey Results

For the locations of trees, refer to Figure 1.

ID number (see Figure 1)	Tree description (species, cm dbh, condition)	Bat roost feature and aspect	Tree Category	Photograph
T1	Willow <i>Salix</i> sp. 20cm dbh, few small areas of lifting bark and broken branches but features too small to be used by bats.	none	Category 3	
T2	Group of young alder < 10cm dbh, contiguous with G25	none	Category 3	
T3	group of young alder < 10cm dbh	none	Category 3	

T4	Ash <i>Fraxinus excelsior</i> tree adjacent to gated entrance c. 50cm dbh (but pollarded at some point such that trunk above that around 20cm diameter) ivy <i>Hedera helix</i> covering to approximately 3 m	Ivy all around trunk; potential to support single transitory crevice-dwelling bats.	Category 1	
T5	Oak <i>Quercus robur</i> ~30cm dbh, ivy covered to approx.. 3m	Ivy all around trunk; potential to support single transitory crevice-dwelling bats.	Category 1	
T6	Oak with ivy to c. 3m, est. 20 cm dbh. Some branches snapped off but no obvious potential bat features other than the ivy	Ivy all around trunk; potential to support single transitory crevice-dwelling bats.	Category 1	

T7	Silver birch <i>Betula pendula</i>, approx. 20cm dbh. Good condition, no cracks or splits or obvious holes. Small amount of ivy at base only. NB: pine and cherry immediately adjacent to silver birch assumed being retained. Pine category 3, cherry category 2	-	Category 3	
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Appendix B Building Survey Results

Job Name and Number: RBC BLTB 28791	Date: 28/01/14
Surveyor(s): Helen Evriviades, Eva Hansen	Other Personnel: N/A
Survey Location: Green Park, Reading	Grid Reference: SU698700

Building Reference: A (Pynings House, Residential)	No. of Storeys 1
Building Age: c. 1970s	Building Size (length/width): approx. 11x8m
Wall Construction: Brick No Cladding or hanging tiles	Roof construction: Pitched Modern truss Internal height to ridge 2.5m Tiled Underfelt (bituminised) Loft insulation present
External features: Boxed eaves/soffits No barge boarding/weather boarding No hanging tiles Small amount of lead flashing around chimney Cracked mortar @ gable ends providing potential access points.	Potential/actual roost/access points: Gable apex Gaps between tiles underneath roofing tiles at eaves of gable end Gaps in mortar at eaves of verandah to rear of building Lifting tiles (see photographs below)
Bat evidence: 1 old dropping found close to loft hatch No other evidence	Overall assessment: Bats present (single individuals, transient use most likely) Other evidence: mouse droppings and lots of rat droppings

Photographs

Building A – Front elevation	
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Building A – Rear elevation		
Gaps in mortar at eaves above verandah at rear of building.		
Building A – showing gaps at eaves at gable end and gap at gable apex		
Modern truss internal construction		

Piles of rat and mouse
droppings inside roof void



Building Reference: B (Storage Building)	No. of Storeys 1
Building Age: Temporary structure only c. 10 years max.	Building Size (length/width): 14m long x 5m wide w/ 2mx2m extension
Wall Construction: Metal cladding Entirely metal framed with metal cladding and woodchip board lining	Roof construction: Pitched Metal truss frame Internal height to ridge – 2.5m Corrugated metal sheeting lined with woodchip boarding
External features: Gaps between metal sheeting on roof and metal sheeting of wall filled with insulation material	Potential/actual roost/access points: Some small gaps at top of walls
Bat evidence: None	Overall assessment: No potential for bats Mouse droppings and rat skeleton found inside

Photographs

Front and side elevation of building B	
Metal frame and wooden boarding inside building B	

Appendix B Photographs



Photograph 1: Bare-ground used for storage in the east of the site.



Photograph 2: Mosaic of scrub, introduced shrub and scattered trees providing suitable reptile foraging and sheltering habitat and bird nesting habitat.



Photograph 3: Good quality reptile habitat in the north-east of the site.



Photograph 4: Potential reptile habitat along the edges of the trail track.



Photograph 5: Group of four alder trees in the south-eastern corner of the site with a low level of bat roosting potential.