



Riverside Central, Reading

Ecological Assessment Report

On behalf of **Lipman Properties**

L I P M A N
P R O P E R T I E S

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Contents

Executive Summary	1
1 Introduction	2
1.1 Overview.....	2
1.2 Project Context.....	2
1.3 Report Objectives.....	2
2 Methodology	3
2.1 Overview.....	3
2.2 Study Area.....	3
2.3 Desk Study	3
2.4 Extended Phase 1 Habitat Survey	3
2.5 Preliminary Bat Roost Assessment (PRA)	4
2.6 Emergence/Re-entry Surveys for Bats.....	5
2.7 Survey Personnel	5
2.8 Evaluation and Impact Assessment.....	5
2.9 Limitations to Methodology.....	7
2.10 Report Qualification	7
3 Ecological Baseline.....	9
3.1 Overview.....	9
3.2 Statutory Designated Areas	9
3.3 Non-Statutory Designated Areas.....	9
3.4 Habitats	9
3.5 Bats	11
3.6 Great Crested Newts.....	13
3.7 Otter and Water Vole.....	13
3.8 Birds	13
3.9 Reptiles.....	15
3.10 Badger.....	15
3.11 Other Notable Species	15
3.12 Summary of Ecological Baseline.....	16
3.13 Future Baseline	17
4 Ecological Impact Assessment and Mitigation	18
4.1 Overview.....	18
4.2 Impacts likely to be associated with Proposed Development	18
4.3 Inherent Design and Embedded Ecological Mitigation.....	18
4.4 Important Ecological Features - Avoidance and Mitigation.....	19
4.5 Non-Statutory Designated Areas.....	19
4.6 Off-Site Habitats	20
4.7 Black Redstart	20
4.8 Other Ecological Features.....	21
4.9 Summary	21

5	Management and Enhancement	22
5.1	Overview.....	22
5.2	Management Measures.....	22
5.3	Ecological Enhancement.....	22
6	Conclusion.....	24
7	Figures	1

Figures

Figure 1: Site Location Plan	1
Figure 2: Designated Areas Plan	1
Figure 3: Phase 1 Habitat Plan	1
Figure 4 Bat Survey – Surveyor Location.....	1

Tables

Table 1: Categories of Bat Potential of Buildings (adapted from Collins, 2016)	4
Table 2: Bat records from within 1km of the Site within the last 10 years	11
Table 3: Notable bird records from within 1km of the Site within the last 10 years.....	14
Table 4. Summary of Important Ecological Features	16

Appendices

Appendix A	Legislation and Planning Policy
Appendix B	Photographs
Appendix C	Target Notes
Appendix D	Bat Survey Results
Appendix E	Landscape Strategy

Executive Summary

Stantec was instructed on behalf of Lipman Properties to undertake an ecological assessment in support of a planning application for the roof and side extensions to the existing building to provide a residential-led scheme with associated landscaping, public realm improvements, alterations to the existing vehicular access and car parking and provision of cycle parking and waste storage. The assessment has been informed by an ecological desk study; an extended Phase 1 habitat survey, a preliminary roost assessment of buildings and trees and subsequent bat emergence/re-entry survey of the potential roosting features identified within the building.

There are no statutory designated areas of international importance present within 10km of the Site. Two non-statutory designated areas of County value; Local Wildlife Sites (LWSs), are located within 1km of the Site; Holy Brook LWS and River Kennet/Kennet and Avon Canal LWS. The Kennet and Avon Canal is located immediately adjacent to the Site along the southern boundary. This section of the Kennet and Avon Canal is not classed as a LWS but is ecologically connected to the River Kennet/Kennet and Avon Canal LWS to the south-west.

The Site was found to support habitats of negligible ecological value, intensively modified/managed habitat types (buildings and hardstanding with ephemeral vegetation and some introduced shrub beds) supporting common and widespread readily established plant species.

The building on Site (B1+B2) was assessed in accordance with best practice guidance (Collins 2016) and was found, as a whole, to be of low potential for roosting bats. The two low potential roosting features for bats located on B1 and B2 were subjected to a dusk bat emergence/re-entry survey. No bat roosts were confirmed to be present.

Part of the building on Site was also suitable to potentially support nesting black redstart, a Schedule 1 bird under the Wildlife and Countryside Act 1981. Pre-development checks for this species will be required if development works are to take place between March and August inclusive.

A CEMP will be implemented during the construction works in order to ensure that pollution events to nearby non-statutory designated areas of important habitats (i.e. the adjacent Kennet and Avon Canal which is hydrologically linked to the LWS) does not occur.

With the exception of providing replacement nesting habitat for black redstart, (creation of biodiverse roofs) and suitable roosting habitat for bats no other project-specific mitigation is deemed necessary.

Additional enhancement measures include bird boxes for black redstart, house sparrow and swift..

An external lighting scheme will be sensitively designed, with minimal lighting included in areas where bat and bird boxes are to be installed and ensure the Kennet and Avon Canal will be protected in 'dark' conditions to ensure that it continues to function as a wildlife corridor for nocturnal wildlife including bats and otter.

Implementation of an ecologically beneficial planting scheme, combined with the enhancement measures, will improve habitat diversity and contribute to a biodiversity net gain when completed.

The proposals will safeguard protected species, minimise ecological impacts, and achieve ecological enhancements, where possible. As such, the proposals are considered to comply with applicable nature conservation legislation and align with national and local planning policy aspirations.

Disclaimer

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 Overview

- 1.1.1 Stantec UK (formerly Peter Brett Associates (PBA)), was commissioned by Lipman Properties to undertake an ecological assessment for the proposed development of Riverside Central, Duke Street, Reading; hereafter referred to as 'the Site'.
- 1.1.2 The purpose of this Ecological Assessment Report (EAR) is to provide sufficient ecological information to inform the planning application, as described in **Section 1.2.2**. It has been informed by an ecological desk study, extended Phase 1 habitat survey, preliminary building roost assessment for bats and subsequent bat emergence/re-entry survey.

1.2 Project Context

Site Location

- 1.2.1 The Site is located in the centre of Reading Town Centre, Berkshire, centred on grid reference SU 7178, 7335, see **Figure 1**. The Site is located off Highbridge Wharf with retail units and King's Road to the north, Duke Street/London Street to the west, commercial and retail development to the east and the Kennet and Avon Canal to the south.

Proposed Development

- 1.2.2 The planning application relates to:
- "Roof and side extensions to existing building to provide a residential-led scheme with associated landscaping, public realm improvements, alterations to the existing vehicular access and car parking and provision of cycle parking and waste storage."*
- 1.2.3 These proposals are hereafter referred to as the 'Proposed Development'.

1.3 Report Objectives

- 1.3.1 This report sets out an ecological assessment of the proposed development, with the aim of presenting sufficient ecological information to allow the planning authority to validate, and subsequently determine the planning application with respect to ecological considerations. As such, the objectives of this report are to provide:
- The relevant survey methodologies and guidance;
 - A description of the relevant ecological baseline and identification of any features of potential ecological importance;
 - An assessment of impacts associated with the construction and operation of the proposed development, taking into account the baseline and any effects on 'Important Ecological Features'; and
 - A description of the agreed ecological avoidance, mitigation, compensation and / or enhancement measures in line with applicable ecological legislation/ planning policy.

2 Methodology

2.1 Overview

- 2.1.1 This section outlines the methods used to inform the ecological assessment of the Site with regards to the Proposed Development. The methods used to carry out the desk study, extended Phase 1 habitat survey, preliminary building roost assessment for bats and subsequent bat emergence/re-entry survey are described, including survey limitations and survey personnel. The evaluation and impact assessment approach is also described.

2.2 Study Area

- 2.2.1 The study area considered within this EAR comprises the footprint of the Site, extended to a 500m radius for waterbodies, a 1km radius for the desk study (2km for statutory sites) and a 10km radius for European / internationally designated areas for nature conservation.

2.3 Desk Study

- 2.3.1 A desk study was completed for the Site in December 2019. The desk study included a review of existing ecological baseline information available in the public domain and a review of information provided by Thames Valley Environmental Records Centre (TVERC), in relation to:
- Protected and notable species¹;
 - Invasive species; and
 - Non-statutory areas designated for nature conservation.
- 2.3.2 Further information relating to statutory designated areas (including European / internationally designated areas), Habitats of Principal Importance (HPI) and consented European Protected Species licence applications was obtained using the Multi-Agency Geographic Information for the Countryside website (MAGIC) website.
- 2.3.3 A search of ponds / waterbodies from within 500m of the Site was also undertaken using freely available OS mapping (1: 25,000).

2.4 Extended Phase 1 Habitat Survey

- 2.4.1 The extended Phase 1 habitat survey was undertaken on the 4th December 2019. The habitats within the Site were identified and described following the standard Phase 1 habitat survey methodology (JNCC, 2016)². This uses a system of codes to describe different habitat types based on the dominant vegetation present. The survey was extended to give particular consideration to the potential of the habitats present to support protected or otherwise notable species.
- 2.4.2 The survey was extended to give particular consideration to the potential of the habitats present to support protected or otherwise notable species in accordance with published guidance by the Chartered Institute of Ecology and Environmental Management (CIEEM) for Preliminary Ecological Appraisal (CIEEM, 2017)³.

¹ In this instance, 'notable species' are considered to be 'Species of Principal Importance' (SPI). Habitats or Species of Principal Importance (HPI or SPI), sometimes referred to as 'Priority Habitats' or 'Priority Species' are those habitats / species listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Planning authorities have a duty under Section 40 of the NERC Act to have regard to 'Priority Habitats' and 'Priority Species' in exercising their functions including development control and planning.

² JNCC (2016), Handbook for Phase 1 habitat survey - a technique for environmental audit. JNCC, Peterborough

³ CIEEM. (2017) Guidelines for Preliminary Ecological Appraisal. Version: December 2017. Chartered Institute for Ecology and Environmental Management, Winchester. Available online: https://www.cieem.net/data/files/Publications/Guidelines_for_Preliminary_Ecological_Appraisal_Jan2018_1.pdf

- 2.4.3 Where identifiable, the locations of any significant growth of invasive species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were mapped during the extended Phase 1 habitat survey.
- 2.4.4 Higher plant vernacular and scientific names are given on the first usage of the species name, with the scientific name given in italics, based on those given in Stace (2019)⁴.
- 2.4.5 The weather conditions were dry with misty skies (2/8 cloud cover) and calm conditions (Beaufort Scale F1). Air temperatures were cold ranging between 1°C and 3°C.

2.5 Preliminary Bat Roost Assessment (PRA)

- 2.5.1 The external inspection survey of the buildings and trees on Site (where access was possible and deemed safe) was completed in parallel with the extended Phase 1 habitat survey on 4th December 2019. The purpose of this survey was to identify any evidence of bat roosts and/or features with suitability to support roosting bats (hereafter referred to as Potential Roost Features (PRFs)). Buildings/trees were then categorised in accordance with Bat Conservation Trust's guidance 'Bat Surveys for Professional Ecologists' (Collins, 2016)⁵ as defined in **Table 1** below.

Table 1: Categories of Bat Potential of Buildings (adapted from Collins, 2016)

Level of Bat Roosting Potential	Rationale
Negligible	A structure/tree with no or very limited roosting opportunities for bats and no evidence of use by bats and where the feature is isolated from foraging habitat.
Low	A structure/tree with one or more potential roost sites that could be used by bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions (temperature, humidity etc) and/or suitable surrounding habitat to be used on a regular basis by a larger number of bats (i.e. unlikely to be suitable for maternity or hibernation).
Medium	A structure/tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only i.e. maternity or hibernation roosts).
High	A structure/tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Confirmed	Presence of bats or evidence of recent use by bats.

- 2.5.2 During the external building inspection, evidence of use by bats was searched for, in addition to suitable potential access and roosting points. Equipment used included binoculars and a high powered torch for:
- features which could provide bats with access into roosting spaces or provide roosting spaces (such as gaps under roofing tiles, gaps in ridge tiles, gaps in soffit boxes, gaps under lead flashing, and cracks and crevices in the stonework); and

⁴ Stace, C (2019) New Flora of the British Isles 4th Edition. Cambridge University Press

⁵ Collins, J. (Ed.). 2016. Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). The Bat Conservation Trust, London.

- evidence of the presence of bats such as bat droppings on windows, windowsills, walls and the ground, or scratch marks or staining from bat's fur around possible roost access/ egress points.
- 2.5.3 All trees were inspected from the ground, using close focusing binoculars and a high-powered torch as necessary to identify any feature(s) with suitability to support roosting bats such as woodpecker holes, rot holes, splits or cracks, dead limbs, ivy cover and/or flaking bark. Evidence of use by bats was also searched for, such as characteristic staining, scratch marks and droppings.

2.6 Emergence/Re-entry Surveys for Bats

- 2.6.1 Buildings confirmed to have potential to support roosting bats during the PRA were subject to bat emergence/re-entry surveys, to determine whether any roosts were present. A single dusk emergence survey was conducted on the 2nd July 2020 with regards to best practice guidelines (2016)^{Error! Bookmark not defined.}.
- 2.6.2 During the emergence/re-entry survey, surveyors were positioned to observe all elevations of the building being surveyed to identify any bats as they emerged from/re-entered potential roosts. Dusk emergence surveys commenced approximately 15 minutes before sunset and finished 105 minutes after sunset.
- 2.6.3 The 2020 dusk emergence survey was undertaken by two suitably qualified and experienced surveyors. The surveyor locations are shown in Figure 4. The survey began at 21:08 with sunset being at 21:23 and finished at 23:08.
- 2.6.4 Weather conditions during this survey were dry with partially cloudy skies (4/8-6/8 cloud cover), calm conditions (Beaufort Scale F1) and warm temperatures ranging from 20°C - 19°C.
- 2.6.5 The two surveyors used Batlogger M bat detectors to listen to and record echolocation calls of bats observed. The recorded calls were analysed using BatExplorer computer software following the surveys to confirm the identification of the species observed in the field.
- 2.6.6 During the survey, surveyors noted any features used by the bats to exit the buildings. Bat activity within the vicinity of the building was also recorded as incidental observations, with the species of bat and number of passes also noted.
- 2.6.7 A thermal imaging scope was also used to gather additional information of use of the building by bats. The scope was positioned outside of the building to focus on each of the potential roosting features (access/egress points) (see Photograph 3 and 4 in **Appendix D**).

2.7 Survey Personnel

- 2.7.1 The extended Phase 1 habitat survey, external PRA and subsequent bat emergence/re-entry surveys were undertaken by experienced ecologists who are both full member of CIEEM. The surveyors have worked as professional ecologists for more than 15 years and have extensive experience of completing ecological assessments of a variety of sites and habitat types using the extended Phase 1 method. The bat emergence/re-entry survey approach was designed by and led by a holder of a (Level 2 Class Licence) since 2010 for surveying bats. During his time as a professional ecologist he has undertaken an extensive number of external and internal building assessments, dusk emergence and dawn return to roost surveys, activity transect and automated static detector surveys across the UK and Ireland. He has been involved in numerous projects requiring bespoke mitigation to be designed and implemented where proposed development has an impact on roosting bats.

2.8 Evaluation and Impact Assessment

- 2.8.1 The ecological assessment of the Proposed Development has been undertaken in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment (EIA) in the UK and Ireland: Terrestrial, Freshwater, Coastal and

Marine (CIEEM, 2018)⁶, which are in full accordance with the mandatory requirements of the UK EIA Regulations. The ecological assessment seeks to obtain the best possible biodiversity outcomes by integrating the following key principles:

- Avoidance: seek options that avoid harm to ecological features (for example, by locating on an alternative site).
- Mitigation: adverse effects should be avoided or minimised through mitigation measures, either through the design of the project or subsequent measures that can be guaranteed (for example, through a condition or planning obligation).
- Compensation: where there are significant residual adverse ecological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures.
- Enhancements: seek to provide net benefits for biodiversity over and above requirements for avoidance, mitigation or compensation.

2.8.2 The CIEEM EclA guidelines state that one of the key challenges in EclA is to decide which ecological features (habitats, species, ecosystems and their functions/processes) are important and should be subject to detailed assessment. Such ecological features will be those that are considered to be important and potentially affected by the Proposed Development. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable.

2.8.3 However, effort should be made to safeguard biodiversity in its entirety, as emphasised by the Convention on Biological Diversity and developed in the EU Biodiversity Strategy 2020. The EU Strategy and national policy documents emphasise the need to achieve no net loss of biodiversity and enhancement of biodiversity.

2.8.4 The CIEEM Guidelines recommend that valuation of ecological features associated with a site is made with reference to a geographical framework, i.e. a feature may be of importance within the following context:

- International and European
- National (UK)
- County (Berkshire)
- Local (Reading)

2.8.5 The valuation process allows the identification of 'Important Ecological Features' which, in the context of this assessment, were deemed to be any feature considered to be of importance within the 'Local' context or greater. In line with the EclA Guidelines (CIEEM, 2018)⁶, no geographical frame of reference for below the 'Local' level has been defined. For the purposes of this report, any ecological feature which has been assessed as being of less than Local level importance has been assigned a 'negligible' level of importance.

2.8.6 Only 'Important Ecological Features' have been carried forward for detailed impact assessment; where protected species (of less than 'Local' importance) are nonetheless present, measures to enable compliance with relevant wildlife legislation have also been included.

2.8.7 Construction and operation of the proposed development may cause impacts which lead to effects on ecological features. Impacts may be direct or indirect in nature and may occur in the construction and/or operational phase of the redevelopment. The assessment of the significance of predicted ecological effects is based on professional judgement and made with

⁶ CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

reference to whether effects are positive or negative. The extent, magnitude, duration, timing, frequency, and reversibility of the impacts is also considered and forms part of the assessment.

- 2.8.8 These factors provide a means of characterising the impacts of the proposed development and thereby support an assessment of the significance of the effects on the important ecological features determined as relevant in this assessment. CIEEM guidance states that a '*significant effect is an effect that either supports or undermines biodiversity conservation objectives for important ecological features or biodiversity in general*'.
- 2.8.9 Ecological input has been provided into the design for the proposed development; and as such, the proposed development provides 'embedded avoidance and mitigation' for ecology. The impact assessment therefore considers the impacts of the scheme and assess the ecological effects taking account the embedded measures. This approach is in accordance with the CIEEM Guidelines which promotes the assessment of effects of the mitigated scheme only, where there is high confidence that integrated mitigation will be implemented; as in this situation.
- 2.8.10 Use of the terms 'impact' and 'effect' within the impact assessment follows the definitions as defined within CIEEM Guidelines (CIEEM, 2018)⁶. An 'impact' is defined as an action that results in changes to an ecological feature e.g. when a proposed development requires the removal of a tree with bat roost features. An 'effect' is the outcome to an ecological feature from an impact e.g. the effects on a bat population from the loss of a tree with bat roost features.

2.9 Limitations to Methodology

- 2.9.1 Data supplied by records centres provides useful baseline information on the species that have been recorded within a local area and details of sites with nature conservation designations. This data often includes surveys undertaken by third parties on an 'ad hoc' basis so may be incomplete. Absence of species records may not therefore indicate absence of that species from an area. For this reason, an ecological assessment is always informed by both desk study and information gathered during field survey.
- 2.9.2 The extended Phase 1 habitat survey was undertaken outside of the optimal time of year for extended Phase 1 habitat survey. However, given the highly modified intensively managed nature of the Site (and lack of botanical species) it was possible to fully characterise the habitats present and undertake a robust assessment of the potential for protected and notable species to occur. As such there are not considered to be any constraints or limitations associated with this aspect of the assessment.
- 2.9.3 The bat emergence/re-entry survey was undertaken at an appropriate time of year in suitable weather conditions. As such there are no constraints or limitations to the methods undertaken during this survey.

2.10 Report Qualification

- 2.10.1 The surveys described above were undertaken in accordance with the best practice methodologies current at the time of commissioning. Site circumstances, scientific knowledge or methodological requirements can change during the course of a project, and these external factors may impact on the scope of subsequent work requirements.
- 2.10.2 All survey work and reporting has been undertaken by experienced and qualified ecologists in accordance with the Code of Professional Conduct of CIEEM.
- 2.10.3 All ecological surveys have an expected validity period owing to the tendency of the natural environment to change over time. This validity period varies from receptor to receptor, and is also dependent on the degree of change in a site's management and overall landscape ecology. Where the potential for change is considered to be relevant to the site, this is highlighted in the appropriate section.

2.10.4 This report does not purport to provide detailed, specialist legal advice. Where legislation is referenced, (see **Appendix A**), the reader should consult the original legal text, and/or the advice of a qualified environmental lawyer.

3 Ecological Baseline

3.1 Overview

- 3.1.1 The following section contains the results of the desk study, extended Phase 1 habitat survey, and other surveys described in Section 2 above. An evaluation is set out for ecological features in the context of the geographic frame of reference defined in Section 2.7.
- 3.1.2 Where a feature is not evaluated as being an 'important ecological feature', and/or unlikely to be affected by the proposals, it is screened out of further detailed consideration in this report. Where protected species (of less than 'Local' importance) are nonetheless present, measures to enable compliance with relevant wildlife legislation have also been included.

3.2 Statutory Designated Areas

- 3.2.1 No statutory designated areas of international importance are present within a 10km radius of the Site, see **Figure 2**. In addition, no statutory designated sites of national or local importance were present within a 2km radius of the Site. As a result, statutory designated areas will not be considered further in this assessment.

3.3 Non-Statutory Designated Areas

- 3.3.1 Two Local Wildlife Sites (LWSs) were identified within a 1km radius of the Site, see **Figure 2**. The closest of these is Holy Brook LWS located approximately 700m to the south-west. This site is a chalk river lined with alder and willow trees known to support a range of aquatic macroinvertebrates, and water voles. This watercourse is linked to the River Kennet/Kennet and Avon Canal LWS.
- 3.3.2 The second closest LWS (The River Kennet/Kennet and Avon Canal LWS) is located approximately 750m to the south-west. This site is one of the best examples of chalk river nationally and was known to support water voles and a diverse invertebrate assemblage.
- 3.3.3 The Kennet and Avon Canal is located immediately adjacent to the Site along the southern boundary. This section of the Kennet and Avon Canal is not classed as a LWS but is ecologically connected to the River Kennet/Kennet and Avon Canal LWS to the south-west.
- 3.3.4 Both of these LWS are of importance at the **County** level.

3.4 Habitats

- 3.4.1 This section presents the result of the desk study and field survey to confirm the habitats within the Site and its immediate surrounds. Features of ecological interest located within the wider survey area are also described, as appropriate.

Desk Study

- 3.4.2 No Habitats of Principal Importance were identified within the Site during the desk study.
- 3.4.3 Defra's MAGIC maps website shows the presence of several areas Habitats of Principal Importance within 2km of the Site. The closest of these are an area of deciduous woodland approximately 600m to the north, and 'good quality' semi-improved grassland approximately 850m to the north. These habitats are of value at the **Local** level.
- 3.4.4 Due to the distance and limited ecological connectivity, it is considered highly unlikely that the Proposed Development at the Site will have any effect upon the Habitats of Principal Importance located within 2km of the Site and, as such, these Habitats of Principal Importance are not considered further within this report.

- 3.4.5 Further to this, one ornamental pond was located within 500m (approximately 290m north of the Site in Forbury Gardens), from a review of OS 1: 25,000 mapping. However this pond is ecologically disconnected from the Site by busy roads and industrial/commercial areas.

Extended Phase 1 Habitat Survey

- 3.4.6 Habitats recorded on Site during the extended Phase 1 habitat survey included three scattered trees, small areas of ephemeral/short perennial, a building and large areas of hard standing; overall considered to be of **negligible** ecological value (see **Figure 3**). A selection of photographs are provided in **Appendix B** with target notes provided in **Appendix C**.

Scattered broadleaved trees

- 3.4.7 Three bird's eye maple trees *Acer saccharum* were noted on the eastern boundary of the Site. These semi-mature trees were in good condition with the tree to the north having been recently heavily managed.

Ephemeral/short perennial vegetation

- 3.4.8 Ephemeral vegetation was present in small patches throughout the carpark and around the periphery of the building, growing through cracks in paving, etc. Species present included frequent Canadian fleabane *Conyza canadensis* with occasional ribwort plantain *Plantago lanceolata*, toadflax *Linaria vulgaris*, grounsel *Senecio vulgaris*, dandelion *Taraxacum* agg. and butterfly bush saplings *Buddleja davidii*.
- 3.4.9 No invasive plant species were recorded during the survey.

Building

- 3.4.10 A large proportion of the Site comprised two large joined buildings (B1 and B2) .
- 3.4.11 Building 1 (B1) was located in the south of the Site and comprised a four-storey office building with a cavity brick wall construction and pitched, slate tile covered roof. A number of dormer windows were present on the upper floor, clad in lead sheeting. The roof had been covered for the most part in bird-netting in order to prevent nesting birds (pigeons and gulls). A basement level (possibly used for carparking and heating infrastructure) was present. This building measured approximately 50m in length by 15m in width by 14-16m in height.
- 3.4.12 Building 2(B2) was on the western boundary of the Site and currently houses a number of retail outlets. This building had five storeys and a cavity brick wall construction. The roof was complex with multiple hipped and pitched roof sections clad in slate tiles. This building measured approximately 50m in length by 15m in width by 14-16m in height.

Hardstanding

- 3.4.13 The remainder of the Site comprised concrete hardstanding used for carparking, pedestrian and vehicular access.

On-Site Habitat Evaluation

- 3.4.14 The habitats on Site are highly modified and man-made with botanical species present also being either non-native or common and widespread and readily established. The habitats are therefore assessed as being of less than local value (**negligible**).

Offsite Habitat Evaluation

- 3.4.15 The Kennet and Avon Canal lies adjacent to the southern boundary of the Site. The section of this canal adjacent to the Site is not part of the River Kennet/Kennet and Avon Canal LWS,

which is of County value. However it is hydrologically linked to this LWS and this section adjacent to the Site is therefore considered to be of **Local** value.

3.5 Bats

Desk Study

- 3.5.1 A number of bat records were identified from within 1km of the Site within the last 10 years. These are summarised in **Table 2** below.

Table 2: Bat records from within 1km of the Site within the last 10 years

Common Name	Latin Name	Date	Distance and Direction of Most Recent
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	2017	260m NW
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	2017	260m NW
Noctule bat	<i>Nyctalus noctula</i>	2018	450m W
Serotine	<i>Eptesicus serotinus</i>	2018	460m W
Myotis sp.	<i>Myotis</i> sp.	2018	460m W
Long-eared bat	<i>Plecotus</i> sp.	2018	460m W
Nathusius pipistrelle	<i>Pipistrellus nathusii</i>	2014	590m SE
Daubenton's bat	<i>Myotis daubentonii</i>	2014	650m N

- 3.5.2 A review of granted EPS licence on MAGIC identified the presence of 3 known roosts/resting places within a 1km radius of the Site. The closest of these were roosts for a common pipistrelle roost (resting place) approximately 350m to the north (EPSM2013-6155); a common pipistrelle (resting place) 500m to the south-east (Licence ref: 2016-22301-EPS-MIT); and a Daubenton's roost approximately 550m to the north (2017-28045-EPS-MIT).

Preliminary Bat Roost Assessment (PRA)

- 3.5.3 The part of the building identified as B1 was L-shaped, extending along the west and south of the Site. The majority of building B1 along its southern elevation did not support features capable of supporting roosting bats with all cladding being tightly secured, access to the basement level being meshed and roof tiles being tightly affixed. In addition, bird netting had been installed over much of the roof also reducing the potential for bats to gain access to the roof structure. However, one section of missing mortar was noted on the western elevation of the building (on the gable end) that could provide roosting opportunities to crevice dwelling species of bats (see Photograph 8 in **Appendix B** and TN4 on **Figure 3**).
- 3.5.4 The western wing of the building (B2) was also in good condition with tightly affixed roof tiles and external cladding. One potential roosting feature (missing mortar beneath a roof tile) was noted on the south-western corner of the building (see Photograph 9 in **Appendix B** and TN5 on **Figure 3**).
- 3.5.5 As a result, this building (B1+B2) was assessed as having a **low** level of bat roosting suitability.
- 3.5.6 No trees within the Site or on the boundary of the Site supported features capable of providing roosting opportunities to support bats.
- 3.5.7 The intensively managed, man-made nature of the Site has less than local value (**negligible**) to foraging and commuting bats with nearby street-lighting and lighting from adjacent built development also likely to lessen the value of the Site as a foraging and commuting resource. However, the Kennet and Avon Canal on the southern boundary of the Site is likely to provide a high-quality foraging and commuting resource for the local bat population.

Emergence/re-entry Surveys for Bats

- 3.5.8 Following the PRA of the Site the buildings, which were considered to have **low** potential for roosting bats, one emergence/re-entry survey was completed on the 2nd July 2020. The survey results are detailed in **Appendix D** with example sonograms included.
- 3.5.9 No bats were recorded emerging from either of the PRFs surveyed. A factor likely to deter roosting was the bright street-lighting in the vicinity of the building(see Photograph 5 in **Appendix D**), which was evident during the post-dusk survey.
- 3.5.10 During the dusk survey low levels of incidental bat activity were recorded from common pipistrelle *Pipistrellus pipistrellus* bats with a single pass from a noctule bat *Nyctalus noctula*..
- 3.5.11 As shown in the tables in **Appendix D** the majority of calls were attributed to common pipistrelle bats which is not surprising given that this species is common and widespread throughout the UK (Dietz et al, 2009)⁷.
- 3.5.12 The first common pipistrelle bat recorded was at 21:34 (11 minutes after sunset) and was observed commuting past the building towards the canal corridor to the south from the direction of the building on the opposite side of Dukes Street (from the west). Common pipistrelle bats typically emerge between 10 and 30 minutes after sunset (Russ, 2012)⁸. Taking into account the activity and timings of the pipistrelle calls recorded during the survey, it is likely that this bat, roosts very close to the Site possibly even in the building opposite which has a complex roof structure with a sheltered internal valley. The remaining activity recorded was the result of intermittent passes of an individual bat(s) foraging around the adjacent London plane tree and the canal. Both common pipistrelles and the noctule bat (see below) tolerate lighting well and are known to use lighting as a foraging resource (feeding upon invertebrates attracted to the lights) (Rich and Longcore, 2005)⁹.
- 3.5.13 Noctule bats primarily roost within cavities in trees and are known to emerge from their roosts between 0 and 26 minutes after sunset and return to the roost at or very close to sunrise (Russ, 1999)¹⁰. The earliest noctule bat was recorded at 21:37 (14 minutes after sunset) likely commuting over the Site (though not directly observed). This bat was likely commuting between its roost and foraging habitat (possibly foraging on the adjacent canal corridor). The timings of this call would suggest that the roost is close by; however, it is worth noting that the noctule bat is a fast flying species reaching speeds of up to 50 kmph (BCT, 2010)¹¹ suggesting that the roost for this bat could still be a considerable distance from the Site possibly within more mature woodland to the north close to the River Thames.
- 3.5.14 The dusk survey undertaken has confirmed that no bat roost is present at this time, within the identified PRFs. Roosting bats are considered to be absent from the Site although suitable roosting features are present.
- 3.5.15 Due to the low potential of this building to support roosting bats, along with the intensively managed man-made nature of the Site, the Site is therefore considered to be of less than local importance (**negligible**) to the local bat population.
- 3.5.16 Management measures are outlined in **Section 5.2** in relation to the legislative protection afforded to bats.

⁷ Dietz et al. (2009) Bats of Britain Europe and Northern Africa. A&C Black.

⁸ Russ, J (2012) British Bat Calls a Guide to Species Identification. Pelagic Publishing.

⁹ Rich, C & Longcore, T (2005) The Ecological Consequences of Artificial Night Lighting. Island Press

¹⁰ Russ, J (1999) The Bats of Britain and Ireland: Echolocation Calls, Sound Analysis and Species Identification. Alana Ecology Ltd.

¹¹ Bat Conservation Trust (2010) Noctule bat *Nyctalus noctula* – BCT Publication. BCT

3.6 Great Crested Newts

Desk Study

- 3.6.1 One record of a great crested newt *Triturus cristatus* was provided in the results of the desk study from within a 1km radius of the Site from 880m to the north in 2017.

Field Survey

- 3.6.2 The Site supports heavily modified, manmade habitat types and does not provide an aquatic (breeding) resource or a foraging / sheltering resource for great crested newts (the introduced shrub is isolated from other areas of suitable habitat present locally).
- 3.6.3 The record of a great crested newt to the north and the waterbody present 285m to the north of the Site are separated from the Site by significant barriers to great crested newt migration i.e. major roads, urban development or watercourses.
- 3.6.4 Given the location of the record, separation of the waterbody from the Site and the lack of suitable habitat on Site, the Site is considered to have **negligible** potential to support great crested newts. Great crested newts are likely to be absent within the Site and are therefore not considered further within this assessment.

3.7 Otter and Water Vole

Desk Study

- 3.7.1 Two records of otter *Lutra lutra* were provided from within a 1km radius of the Site in the results of the desk study. The closest record was 700m to the north in the River Thames in 2017.
- 3.7.2 No records of water vole *Arvicola amphibius* were returned within a 1km radius of the Site in the results of the desk study. However both Holly Well LWS and the River Kennet/Kennet and Avon Canal LWS are known to support water vole.

Field Survey

- 3.7.3 The Kennet and Avon Canal adjacent to the southern boundary provides a suitable commuting and foraging resource for otters that may be present in the local area. The Kennet and Avon Canal is hydrologically linked to the River Thames approximately 1.4km to the north east.
- 3.7.4 The Site itself is considered to be of negligible value to this species being highly modified and intensively managed offering no sheltering opportunities to this species. Given the lack of suitable habitat present the Site is considered to have **negligible** potential to support otters.
- 3.7.5 The Kennet and Avon Canal adjacent to the southern boundary of the Site is engineered with no aquatic vegetation recorded at the time of the extended Phase 1 habitat survey, see Photograph 7 **Appendix B**. There are no habitats within the Site, nor is the section of canal adjacent to the Site considered suitable to support water vole. Therefore the Site is considered to have **negligible** potential to support water vole.
- 3.7.6 Both otter and water vole are considered to be absent from the Site and are not considered further within this assessment.

3.8 Birds

Desk Study

- 3.8.1 A number of notable bird species were identified from within 1km of the Site within the last 10 years. These are summarised in **Table 3** below.

Table 3: Notable bird records from within 1km of the Site within the last 10 years

Common Name	Latin Name	Date	Distance and Direction of Most Recent	Designation
Swift	<i>Apus apus</i>	2010	20m N	Amber
Peregrine falcon	<i>Falco peregrinus</i>	2014	550m NW	WCA Sch 1
Mute swan	<i>Cygnus olor</i>	2015	800m N	Amber
Black redstart	<i>Phoenicurus ochruros</i>	2015	550m NW	WCA Sch 1 Red
Mallard	<i>Anas platyrhynchos</i>	2015	800m N	Amber
Black-headed gull	<i>Chroicocephalus ridibundus</i>	2015	800m N	Amber
Grey wagtail	<i>Motacilla cinerea</i>	2015	800m N	Red
Dunnock	<i>Prunella modularis</i>	2018	800m N	Sec 41 Amber
Starling	<i>Sturnus vulgaris</i>	2015	800m N	Sec 41 Red
House sparrow	<i>Passer domesticus</i>	2012	850m E	Sec 41 Red

Field Survey

- 3.8.2 A total of six species of bird were noted during the field survey; black-headed gulls *Chroicocephalus ridibundus* loafing on the roofs of adjacent buildings; a blue tit *Cyanistes caeruleus* foraging in trees on Site; a feral pigeon *Columba livia domestica* flying over the Site; a pied wagtail *Motacilla alba* perched on an adjacent building; a magpie *Pica pica* flying over the Site; and a wood pigeon *Columba palumbus* also perched in a tree on Site.
- 3.8.3 The Site supports a small number of semi-mature trees and areas of introduced shrub that have the potential to provide low/moderate quality nesting habitat for birds. Given the small area of potential nesting habitat available on Site, particularly in light of the presence of superior nesting habitat in mature trees to the north; the Site is therefore assessed as being of less than Local value (**negligible**).
- 3.8.4 Records of two specially protected bird species (Schedule 1 under the Wildlife and Countryside Act 1981) were provided in the results of the desk study including the Peregrine falcon and the black redstart.
- 3.8.5 In recent years, peregrines have increasingly begun to use ledges on churches, towers, pylons and other manmade structures as nesting habitat (Brown & Grice, 2005)¹². Peregrines tend to prefer structures between 20-200m above ground level (Dixon and Shawyer, 2004)¹³. The building on Site falls below this height range and is subject to high levels of disturbance. It is far more likely that this species uses other taller structures in the local landscape as nesting habitat but may pass over the Site to forage on feral pigeons (a large component of an urban peregrines diet). For these reasons it is considered very unlikely that peregrines nest on Site and therefore they are considered to be absent and will not be considered further within this assessment.
- 3.8.6 Most breeding territories of black redstarts are within urban areas or are associated with large built structures, such as power stations, gas works, dockyards and other industrial sites (Morgan and Glue, 1981)¹⁴. Nests are usually constructed in holes or on internal ledges of buildings, derelict buildings in particular (Brown and Grice, 2005)¹². Despite the bird netting over much of the building there are ledges and other features that could be used as potential nesting sites in

¹² Brown and Grice (2005) Birds in England. English Nature & T & AD Poyser, London.

¹³ Dixon & Shawyer (2004) Peregrine falcons provision of artificial nest sites on built structures - Advice note for conservation organisations, local authorities and developers. RSPB.

¹⁴ Morgan, R.A & Glue, D.E (1981) Breeding survey of black redstarts in Britain. Bird study, 28: 163-168

the western wing of the building (B2) where netting is absent. Given the relatively close proximity of recent records, the use of the building on Site as a nest site in some years cannot be ruled out.

3.8.7 No black redstart were observed or heard during the bat emergence survey undertaken on the 2nd July 2020.

3.8.8 The Site has potential to support black redstart, which if present, would be considered important at a **Local** level.

3.9 Reptiles

Desk Study

3.9.1 Two records of slow worms *Anguis fragilis* were provided in the results of the desk study from 2016 approximately 900m to the north-east of the Site.

Field Survey

3.9.2 Reptiles prefer a mosaic of habitats with a varied vegetation structure providing conditions suitable for both sheltering and foraging (Edgar et al, 2010)¹⁵. The Site supports heavily modified manmade habitat types and does not provide a foraging / sheltering resource for this species group. For these reasons, the Site is considered to have **negligible** potential to support reptiles and they are likely to be absent at the Site. Reptiles are not considered further within this assessment.

3.10 Badger

Desk Study

3.10.1 No records of badger *Meles meles* were returned in the results of the desk study.

Field Survey

3.10.2 There are no habitats suitable on Site to support badger. Therefore badgers are considered to be absent and are not considered further within this assessment.

3.11 Other Notable Species

Hedgehogs

Desk Study

3.11.1 Records of hedgehogs *Erinaceus europaeus* were provided in the results of the desk study from 630m to the west.

Field Survey

3.11.2 The hedgehog is found in virtually all lowland habitats but has a preference for grassland in close proximity to woodland, scrub or hedgerows (Harris & Yalden, 2008)¹⁶. This species predares upon slugs, snails, insects and amphibians. Given the highly modified man-made nature of the Site and lack of suitable foraging and sheltering habitat for this species, the Site is considered to have **negligible** potential to support hedgehog and it is considered extremely unlikely that this species is present. As such this species will not be considered further in this assessment.

¹⁵ Edgar, P., Foster, J. and Baker, J. (2010). Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth

¹⁶ Harris, S & Yalden, D (2008) Mammals of the British Isles: Handbook, 4th Edition. The Mammal Society

Invertebrates

Desk Study

- 3.11.3 A number of stag beetle *Lucanus cervus* records were provided in the results of the desk study. The closest was from 300m to the south-east in 2018.

Field Survey

- 3.11.4 Stag beetles are a saproxylic (dead wood living) species that tend to be found in association with woodland parcels and mature hedgerows. In the summer months this species is often observed flying at dusk in search of breeding partners. The Site is highly modified and intensively managed and does not offer foraging of sheltering habitat for this species. Therefore the Site is considered to have **negligible** potential to support Stag beetles and it is considered likely that this species is absent. As such this species will not be considered further in this assessment.

3.12 Summary of Ecological Baseline

- 3.12.1 A summary of the above-detailed results and evaluation is provided in **Table 4** below. Those identified as 'Important' in accordance with the methodology outlined previously (i.e. those of importance within the local context or greater) are shown in **bold**.

Table 4. Summary of Important Ecological Features

Ecological Feature	Importance (Geographic Frame of Reference)
Off Site	
Statutory Designated Areas	N/A
Non-Statutory Designated Areas	County
Holy Brook LWS The River Kennet/Kennet and Avon Canal LWS	
Habitats of Principal Importance	Local – no ecological connectivity, therefore no further assessment.
Habitats (Off-Site) Kennet and Avon Canal	Local – adjacent to the Site County – where it joins The River Kennet/Kennet and Avon Canal LWS
On Site	
Habitats	Negligible
Bats – Roosting - Building	Negligible
Bats – Roosting - Trees	N/A
Bats – Foraging and Commuting	Negligible
Great crested newts	Absent
Otters and water vole	Absent
Birds	Negligible
Specially Protected Birds - Peregrine falcon	Absent
Specially Protected Birds - Black redstart	Local
Reptiles	Absent

Ecological Feature	Importance (Geographic Frame of Reference)
Badger	Absent
Hedgehogs	Absent
Invertebrates	Absent

- 3.12.2 Those features of greater than **Local** importance require further consideration in the ecological impact assessment (see **Section 4**).
- 3.12.3 Where protected species of less than local (**negligible**) importance are present, the requirement for measures to enable compliance with relevant wildlife legislation and/or planning policy have also been identified (see **Section 5**).

3.13 Future Baseline

- 3.13.1 In the absence of development and assuming the current management of the Site remains the same, there is no reason to anticipate that baseline conditions would alter greatly in the foreseeable future. Given the heavily modified nature of the Site dominated by hardstanding it is also unlikely that should management alter, (i.e. through lapsed management), the value of habitats for use by protected and notable species would substantially change with the exception of the building possibly becoming more suitable to support roosting bats/nesting birds as the building degrades. The below assessment is made with regard to the baseline conditions as recorded during the 2019 extended Phase 1 habitat survey, preliminary bat roost assessment and subsequent 2020 bat emergence/re-entry survey for the Site.

4 Ecological Impact Assessment and Mitigation

4.1 Overview

- 4.1.1 The following section considers the impacts of the Proposed Development on Important Ecological Features identified in Section 3. The impacts are considered in the light of the agreed avoidance and embedded ecological mitigation measures that are an inherent part of the scheme design. This approach is in accordance with the CIEEM Guidelines which promotes the assessment of effects of the mitigated scheme only, where there is high confidence that integrated mitigation will be implemented, as in this situation.

4.2 Impacts likely to be associated with Proposed Development

- 4.2.1 The majority of impacts are likely to occur during the construction phase of works. Activities identified that may lead to effects on Important Ecological Features (in the absence of mitigation) are likely to include the following:
- Land take (i.e. site clearance, building demolition, refurbishment and construction);
 - Noise and visual disturbance from construction processes;
 - Dust and surface water drainage; and
 - Increased lighting levels.
- 4.2.2 Operational activities that may lead to effects on Important Ecological Features (in the absence of mitigation) are likely to include the following:
- Increased artificial lighting; and
 - Increased disturbance (noise and visual).

4.3 Inherent Design and Embedded Ecological Mitigation

- 4.3.1 Ecological input has been provided as the design of the Proposed Development has evolved; and as such, the Proposed Development includes avoidance measures and provides embedded mitigation for ecology.
- 4.3.2 The Proposed Development has been designed to take in to account the following measures inherent within the scheme design:
- The Proposed Development (creation of a new coffee shop/retail outlet) is to be sited within an area of hard-standing with negligible ecological value. Trees present on Site are non-native with introduced shrub beds also supporting non-native introduced plant species. Their clearance will therefore not be detrimental to the ecological value of the Site.
 - Planting – Any shrub, tree and flower bed planting on Site will use native species of local provenance or wildlife friendly species suitable to support invertebrates and foraging bats.
 - As the PRFs currently present in the building will be lost to the development, to ensure that the future development provides opportunities for roosting bats the following features are to be incorporated into the scheme:
 - i. Bat access tiles incorporated into the roofs of the building (2-3 tiles). The internal roof lining beneath these tiles must be Type 1F bitumen felt. Modern breathable membranes must not be used as they have been found to kill bats, as they can get tangled in the fibres.

- ii. Either two specialist soffit box bat boxes installed or two bat bricks discreetly installed into the walls of the structure. They should be sited on the southern elevation facing the adjacent canal corridor, away from existing streetlighting.
 - Biodiverse roofs – to mitigate for the potential loss of black redstart nesting sites a proportion of the total roof space will be biodiverse roofs. These biodiverse roofs will be ecologically designed to provide a foraging resource for black redstart and other bird and bat species as well as providing habitat for invertebrates (including installation of suitable invertebrate boxes for species such as lacewings, ladybirds and solitary bees). Boxes should be sited in sheltered locations on the roof, surrounded by vegetation where possible.).
 - External lighting scheme will be sensitively designed, with minimal lighting included in areas where bat and bird boxes are to be installed and adjacent to the Kennet and Avon Canal, see **Section 5.2**. Proposed lighting will have regard to the Bat Conservation Trust - Bat and Artificial Lighting in the UK Guidance Note 08/18¹⁷.
- 4.3.3 Furthermore, the following embedded ecological mitigation will be provided, secured by suitably worded planning conditions, during the construction/ operational phase of the Proposed Development, respectively:
- A Construction Environmental Management Plan (CEMP) will be implemented during the construction phase of the Proposed Development in order to ensure that pollution events to nearby non-statutory designated areas of important habitats (i.e. the adjacent Kennet and Avon Canal which is hydrologically linked to the LWS) does not occur. The CEMP will ensure that ecological and other environmental protection is integrated into the construction process. The CEMP will include details on important ecological features and how they are to be protected, procedures for site clearance, and measures to control incidental noise and lighting during construction. Where appropriate, the CEMP will set out when an Ecological Clerk of Works is required during construction.
 - An Ecological Mitigation and Management Plan (EMMP) will be developed for the Site which will provide further details of the mitigation and enhancement measures and their management.

4.4 Important Ecological Features - Avoidance and Mitigation

- 4.4.1 The assessment sections below identify the ecological effects arising from the identified impacts on Important Ecological Features, or protected species likely to be affected by the proposed development, taking account of the inherent design and embedded mitigation measures described above. The avoidance mitigation and compensation measures relevant to that ecological feature are confirmed and an assessment of residual effects is provided.

4.5 Non-Statutory Designated Areas

Impact Assessment - Construction

- 4.5.1 In order to avoid indirect effects upon the nearby non-statutory designated areas, which are hydrologically linked to the Site via the adjacent Kennet and Avon Canal, (Holy Brook LWS and the River Kennet/Kennet and Avon Canal LWS), a CEMP will be implemented as mentioned in **Section 4.3.3**.
- 4.5.2 This will include the general environmental protection measures as listed below which must be implemented during the construction phase of the Proposed Development. Such measures include best environmental practice guidance outlined in the Environment Agency's Pollution Prevention Advice and Guidance (Environment Agency, 2007)¹⁸ (now archived) and those

¹⁷ Bat Conservation Trust and Institute of Lighting Engineers (ILE) (2018) Bats and Artificial Lighting in the UK. Bats and the Built Environment Series. Guidance Note 08/18

¹⁸ <https://webarchive.nationalarchives.gov.uk/20140328090931/http://www.environment-agency.gov.uk/business/topics/pollution/39083.aspx>

outlined by the Construction Industry Research and Information Association guidance (CIRIA, 2015)¹⁹.

4.5.3 The following minimum standards will be adhered to, to prevent ecological impacts beyond the Site boundary:

- Measures must be taken to prevent dust, other emissions and uncontrolled materials/pollution from construction affecting land beyond the Site;
- Avoid indirect impacts on the Kennet and Avon Canal during construction through the generation of dust, see Air Quality Screening Report;
- Chemicals and fuels must be stored in secure containers. Spill kits must be available;
- Noise and vibration must be controlled and kept to the minimum necessary;
- No surface water will be discharged into the adjacent Kennet and Avon Canal and surface water drainage will be discharged into the appropriate existing sewer. No adverse effects on water quality of the adjacent Kennet and Avon Canal are therefore anticipated.

Impact Assessment – Operation

4.5.4 The lighting strategy will ensure that the canal habitats will be protected in 'dark' conditions to ensure that it continues to function as a wildlife corridor for nocturnal wildlife including bats and otter.

4.5.5 The Transport Statement prepared by Peter Brett Associates, now Stantec, states that there will be a reduction in trips associated with the site with the proposed development in place, compared to the existing site use (Stantec 2020)²⁰. The potential impacts on air quality from road traffic associated with the development will therefore not be significant and no further assessment is required.

Summary

4.5.6 The Kennet and Avon Canal will be protected through a sensitive lighting design to avoid light spill on to the canal, and pollution prevention measures set out in the CEMP. In view of the nature and scale of the Site and proposals, redevelopment of the Site is highly unlikely to result in an adverse effect on the nearby non-statutory designated areas; Holy Brook LWS and the River Kennet/Kennet and Avon Canal LWS, that are hydrologically linked by the adjacent Kennet and Avon Canal.

4.5.7 The effective implementation of a CEMP would ensure that any adverse effects on the LWS are avoided. There are considered to be no residual effects.

4.6 Off-Site Habitats

4.6.1 The embedded mitigation measures listed above in **Section 4.3**, would also ensure that adverse effects on the adjacent Kennet and Avon Canal (offsite to the south) would be avoided.

4.7 Black Redstart

4.7.1 The Site currently offers some potential to support nesting black redstarts, within part of the site; specifically the portion of the Building B2 roof which is not covered in netting. In addition, black redstarts have been recorded approx. 550m to the north west, as revealed during the desk study.

¹⁹ CIRIA (2015) Environmental Good Practice on Site (4th Edition) (C741) Charles, P., Edwards, P (eds) CIRIA, London

²⁰ Stantec (2020) Riverside Central, Reading: Air Quality Assessment'

- 4.7.2 All wild birds, their active nests and eggs receive protection under the Wildlife and Countryside Act 1981 (as amended) in respect of intentional killing and injury or damage and destruction. The black redstart receives additional protection under the Wildlife and Countryside Act, 1981 (as amended) via its inclusion on Schedule 1 which prohibits disturbance of individuals or their dependent young at or near an active nest Site (see Appendix A). Impact Assessment – Construction
- 4.7.3 Where development works are to be carried out during the nesting season (i.e. March to August inclusive), an inspection of suitable building features will be undertaken by a suitably qualified ecologist within 48 hours of proposed development works, to confirm the absence of active nests. Where active nests are identified, these will be retained in-situ within an appropriate buffer until the nest has been vacated
- 4.7.4 Given that the majority of the building roof is covered in netting it is probably unlikely that black redstart are present. However if black redstart are present, the Site has been assessed on a precautionary basis, as being of **Local** value and loss of potential nesting opportunities has been mitigated for through provision of replacement habitat in the form of biodiverse roofs and enhancement through appropriate bird boxes. Therefore overall no adverse effects are anticipated.
- 4.7.5 In the unlikely event that black-redstart are confirmed to be present on site during the pre-development inspection, further surveys would be required to determine how and where the birds are using the Site. Established guidance (Gilbert et al, 2012)²¹ would need to be followed and survey scope agreed with the LPA Ecologist.
- 4.7.6 Information from these subsequent surveys (if required) would determine any implications in relation to the Proposed Development and would be reflected in the updated CEMP accordingly.

Impact Assessment – Operation

- 4.7.7 The lighting strategy described below for bats (**Section 5.2**) should also take account of the position of proposed bird boxes integrated into the scheme design, to avoid direct lighting of the bird boxes.

Summary

- 4.7.8 There will be no significant effects on black redstart and the mitigation measures described above will enable legal compliance. Additional enhancement measures for birds, targeting priority species for nature conservation, is considered in **Section 5.3**.

4.8 Other Ecological Features

- 4.8.1 The remainder of the ecological features associated with the Site and surrounding area are not considered to be sufficiently valuable and/or with the potential to experience significant effects (i.e. none identified with greater than a 'Local' value). Therefore, there is also no requirement to undertake a detailed impact assessment for these receptors, as there can be no significant potential effects. However, the impacts of the development have been considered below, to inform the management measures for the ecological receptors which have been scoped out of the detailed assessment, but which require mitigation due to legislative or policy implications.

4.9 Summary

- 4.9.1 Given the above, there will be no significant adverse effects predicted on any Important Ecological Features associated with the Proposed Development. As a consequence, no residual effects are anticipated and no cumulative or in combination effects are likely to arise in relation to ecology as a result of the Proposed Development.

²² Bat Conservation Trust and Institute of Lighting Engineers (ILE) (2018) Bats and Artificial Lighting in the UK. Bats and the Built Environment Series. Guidance Note 08/18

5 Management and Enhancement

5.1 Overview

- 5.1.1 With the exception of providing replacement nesting habitat for black redstart and roosting habitat for bats, no other project-specific mitigation is deemed necessary. The following section outlines appropriate management measures for ecological receptors which have been scoped out of a detailed assessment, but which require mitigation due to legislative or policy implications.
- 5.1.2 The proposed ecological management strategy will be implemented through a detailed Landscape Ecology Management Plan (LEMP).

5.2 Management Measures

Bats

- 5.2.1 Although no confirmed bat roosts were identified on Site during the surveys, bats are very mobile species. Bats are protected under the Wildlife and Countryside Act 1981 (as amended) and under The Conservation of Habitats and Species Regulations 2017 (as amended).
- 5.2.2 In the unlikely event that bats are identified during construction activities, works in the immediate vicinity will stop and Stantec's Ecology Team or other Suitably Qualified Ecologist contacted to provide further advice on the appropriate action to be taken. If a roost is identified at the Site, there may be the requirement for further survey work and an application for a European Protected Species Licence may be required once Planning Consent has been secured.
- 5.2.3 To minimise disturbance to bats using the adjacent Kennet and Avon Canal as a foraging and commuting resource, lighting within the development will be sensitively designed, and will have regards to the Bat Conservation Trust - Bat and Artificial Lighting in the UK Guidance Note 08/18²².

Birds

- 5.2.4 Nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. The core nesting season for most species is between March and August inclusive.
- 5.2.5 Where the removal of trees and shrubs is required, or buildings are to be refurbished/construction works, this work should ideally occur outside the bird breeding season (i.e. not between March and August, inclusive). In the event that vegetation clearance or building works are required during the bird breeding season, a search for nesting birds will be undertaken by a suitably qualified ecologist immediately prior to vegetation removal/ building works to confirm the absence of nesting birds as detailed in **Section 4.7**. In the event that nesting birds are discovered, sufficient buffer will need to be retained to ensure birds are not disturbed until nesting activity has been completed and the nest vacated.

5.3 Ecological Enhancement

- 5.3.1 National Planning Policy Framework (NPPF) (2019) states that the planning system should 'contribute to and enhance the natural and local environment by minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures...

²² Bat Conservation Trust and Institute of Lighting Engineers (ILE) (2018) Bats and Artificial Lighting in the UK. Bats and the Built Environment Series. Guidance Note 08/18

- 5.3.2 The masterplan design for the proposals seek to maintain and provide new opportunities for wildlife within the Site in accordance with national and local planning policy and guidance (NPPF 2019; and the Reading Borough Local Plan 2019 ²³ (see **Appendix A**).
- 5.3.3 The following measures will be incorporated into the Proposed Development, which will increase the nature conservation interest of the Site in the longer-term:
- In order to enhance the ecological value of the Site any soft-landscaping (biodiverse roof, shrubs and trees, etc.) to be planted in association with the development will comprise native species or species with a known benefit to wildlife (in particular pollinating insects and bats).
 - The landscape strategy within Appendix E shows a net gain in the number of trees on Site (additional 4 to be planted) with additional areas of shrub/flower bed and specimen shrubs.
 - Three nest boxes suitable for black redstart (Schwegler 1HE, Schwegler 2HW and WoodStone Build-in Open Nest Box) will be erected as part of the Proposed Development.
 - Schwegler Brick Box 1HE can be integrated into the fabric of the building (replacing a brick) or installed in existing cavities or sheltered ledges. Alternatively, Schwegler 2HW open-fronted nest boxes could be incorporated into crevices or sheltered undisturbed areas on the building, or in suitable crevices incorporated into the fabric of the development. Nesting opportunities for birds will be incorporated into the Site (in addition, to the three boxes to provide nesting opportunities to black redstart). These will include provision for;
 - Swifts - at least two Ibstock Eco-habitat boxes; and
 - House sparrow - at least two WoodStone Build-in House Sparrow Nest Boxes.
 - The installation of the biodiverse roof will provide additional/enhanced foraging habitat for black redstart (and other species) post development.
- 5.3.4 Subject to the successful implementation of the avoidance measures, embedded mitigation and enhancement measures detailed above, and given the current limited value of the Site, it is expected that the Proposed Development will achieve overall net gain in biodiversity.

²³ Reading Borough Council (2019) Reading Borough Local Plan

6 Conclusion

- 6.1.1 Full account has been taken of relevant biodiversity policy and legislation in order to complete this ecological assessment. A desk study, extended Phase 1 Habitat survey, PRA and subsequent bat emergence/re-entry survey have been undertaken to identify the habitats present on Site and their potential to support protected or notable species.
- 6.1.2 The Site comprises predominantly areas of building and hard standing, with small introduced shrub beds, ephemeral/short perennial vegetation and scattered non-native trees. These habitats are all common and widespread, considered to be of negligible ecological value in their own right. However, the adjacent Kennet and Avon Canal is of greater ecological value and is likely to provide a valuable resource to commuting and foraging bats and other species.
- 6.1.3 There will be no direct effects from the Proposed Development on any statutory or non-statutory designated areas. The potential for indirect effects on the nearby non-statutory designated Local Wildlife Sites (Holy Brook LWS and the River Kennet/Kennet and Avon Canal LWS) exists, as a result of potential for dust impacts etc, associated with the construction phase of the development. However, the implementation of an effective CEMP will ensure that effects are controlled and minimised accordingly.
- 6.1.4 The habitats within the Site are considered to be of less than Local (negligible) value for some common species of birds and roosting bats, (two potential roosting features were identified and no confirmatory signs of bat activity found during the bat emergence/re-entry survey), foraging and commuting bats.
- 6.1.5 The potential for nesting black redstart (a specially protected bird species) to be present on Site has also been identified. Specific mitigation will be incorporated into the works programme, including appropriate timing of works. Additional nesting opportunities (biodiverse roofs) have been incorporated in the scheme design and management measures will be implemented through a LEMP to ensure legislative protection associated with this species is adhered to.
- 6.1.6 In accordance with current best practice guidance as set out by CIEEM (2018)⁶, the findings of the assessment (including embedded scheme design and mitigation) have confirmed that none of the Important Ecological Features associated with the Site and surrounding area are considered to be sufficiently valuable (with greater than a 'Local' value) and/or with the potential to experience significant effects.
- 6.1.7 No significant adverse effects are predicted on any Important Ecological Features associated with the planning application, in the administrative area of Reading Borough Council. As a consequence, no residual effects are anticipated and no cumulative or in combination effects are likely to arise in relation to ecology as a result of the Proposed Development.
- 6.1.8 There will be no net loss in biodiversity as a result of the Proposed Development. The incorporation of a series of mitigation and enhancement measures, including the incorporation of landscaping (including a biodiverse roof) comprising native species or species with a known benefit to wildlife, invertebrate boxes, nesting opportunities for birds (in addition, to boxes to provide nesting opportunities to black redstart) and roosting provision for bats in the form of specialist bat soffit boxes/bat bricks and bat access tiles, should increase the nature conservation value of the Site in the longer-term.

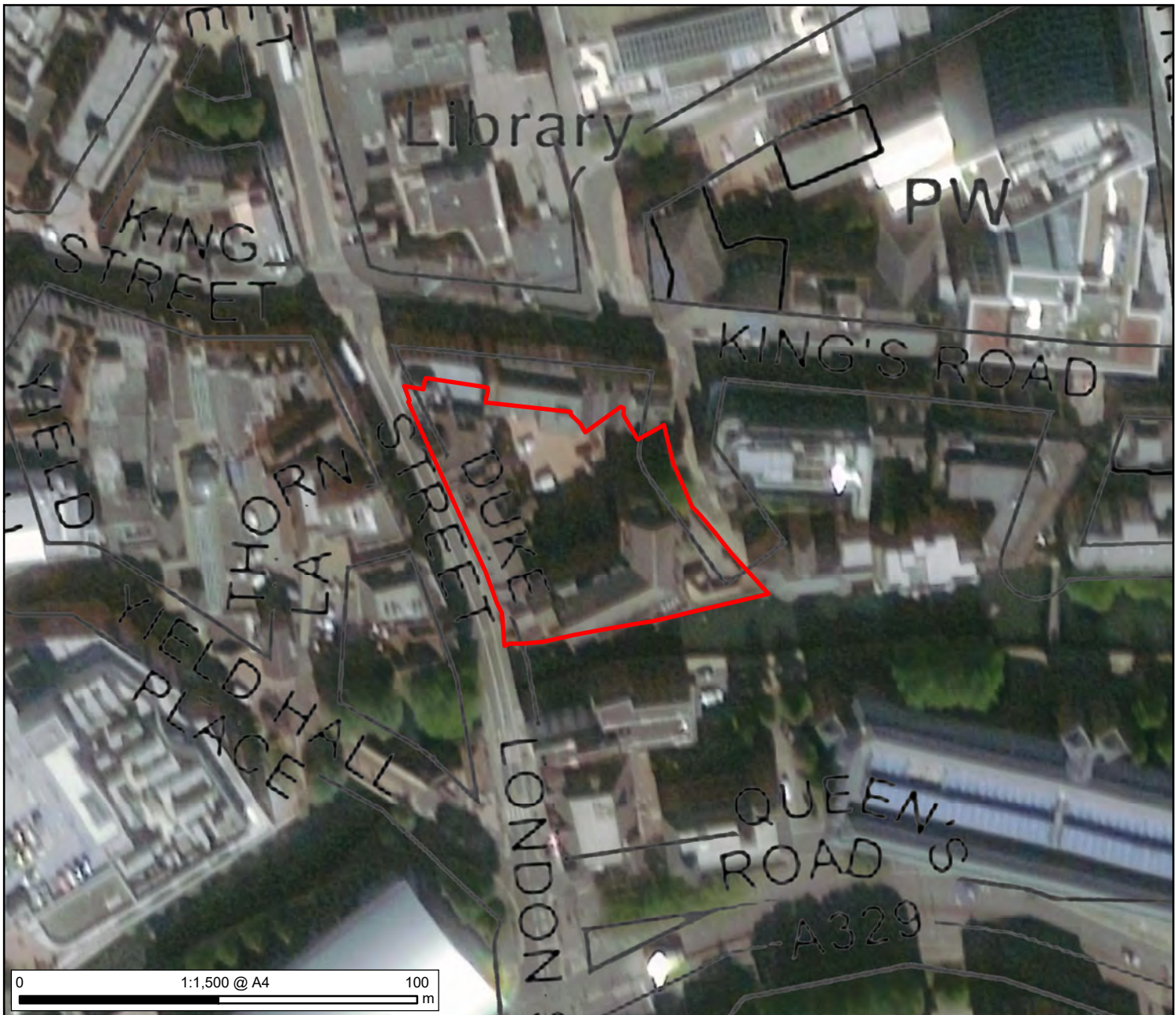
7 Figures

Figure 1: Site Location Plan

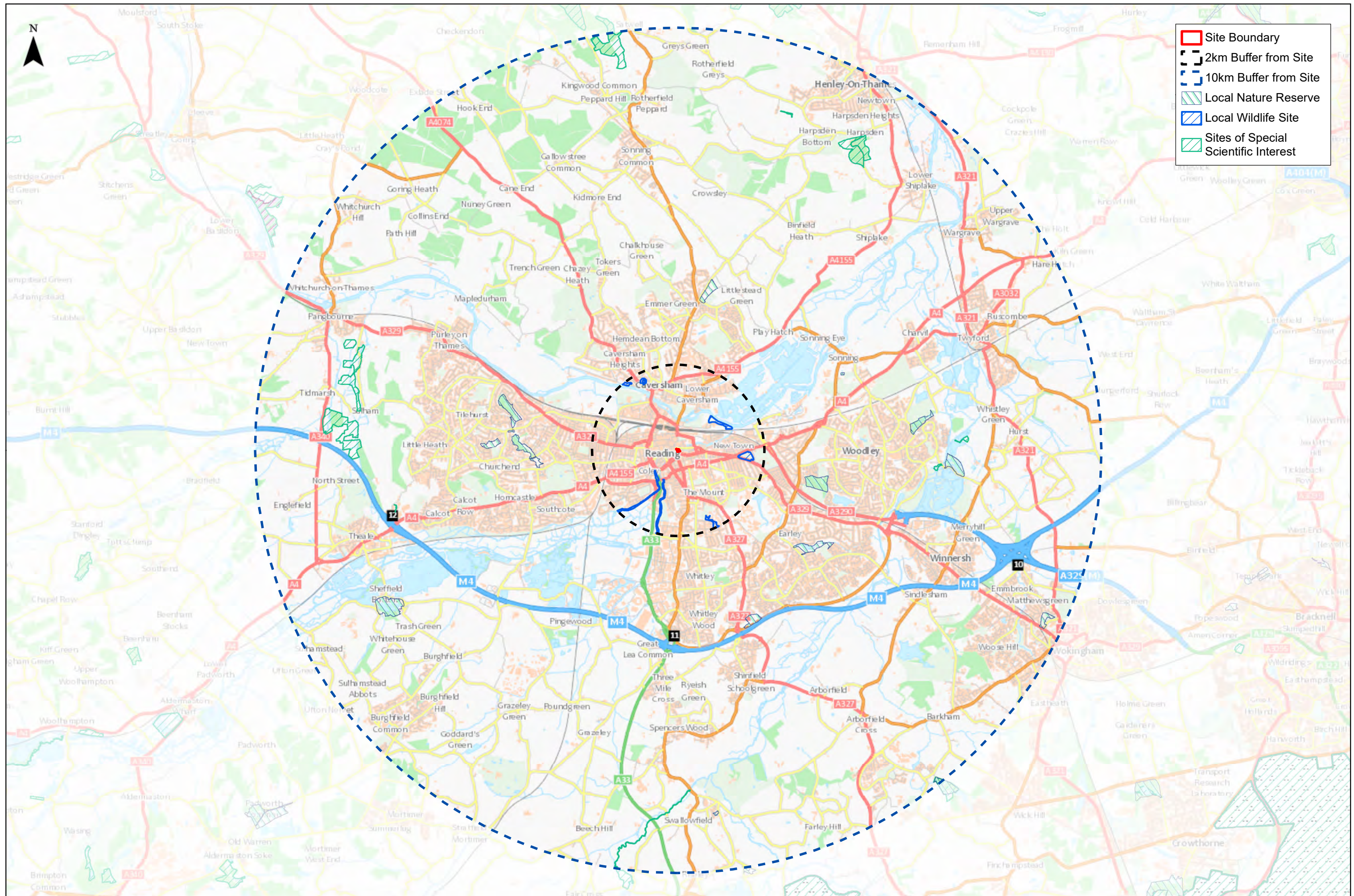
Figure 2: Designated Areas Plan

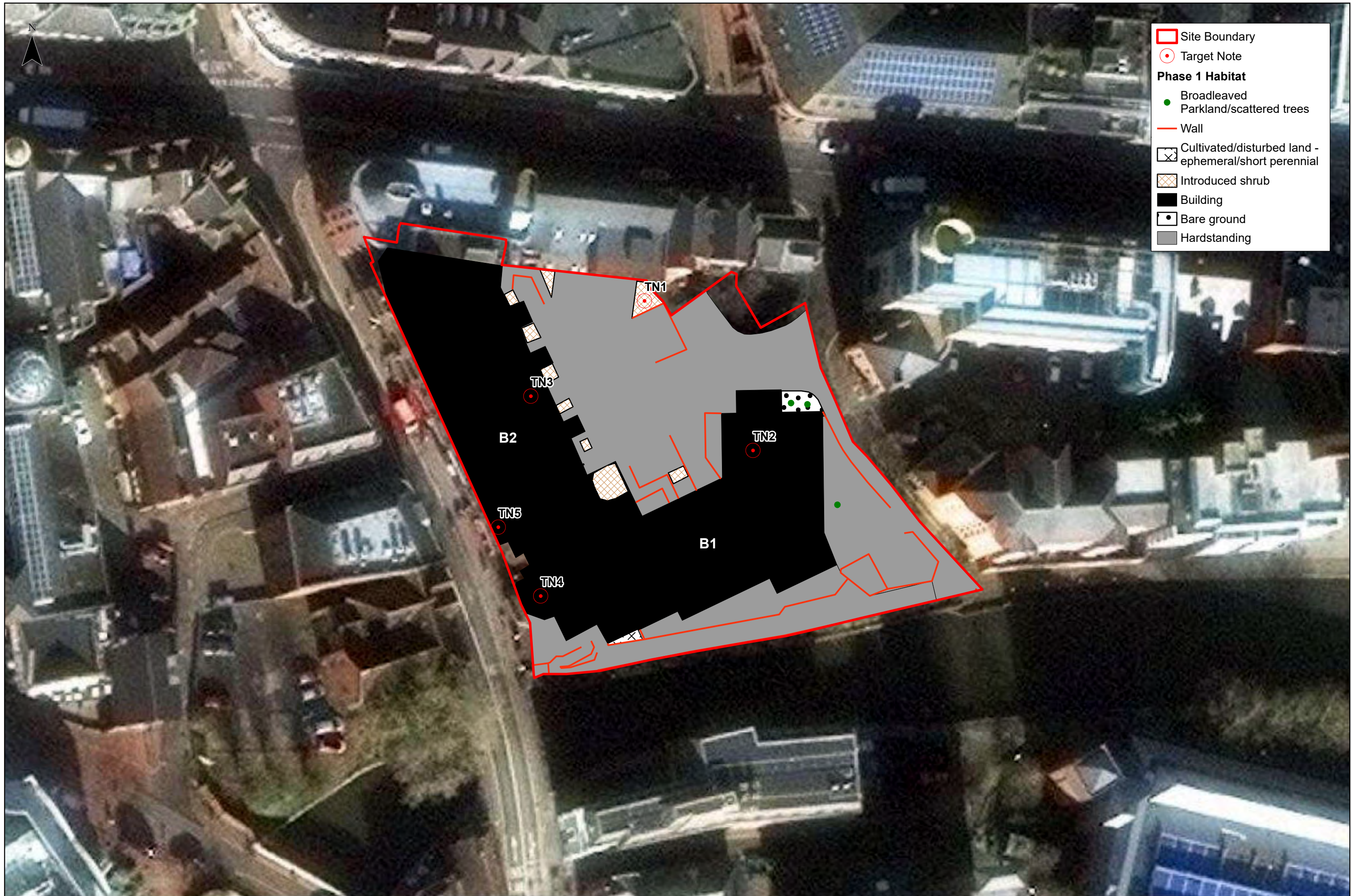
Figure 3: Phase 1 Habitat Plan

Figure 4 Bat Survey – Surveyor Location

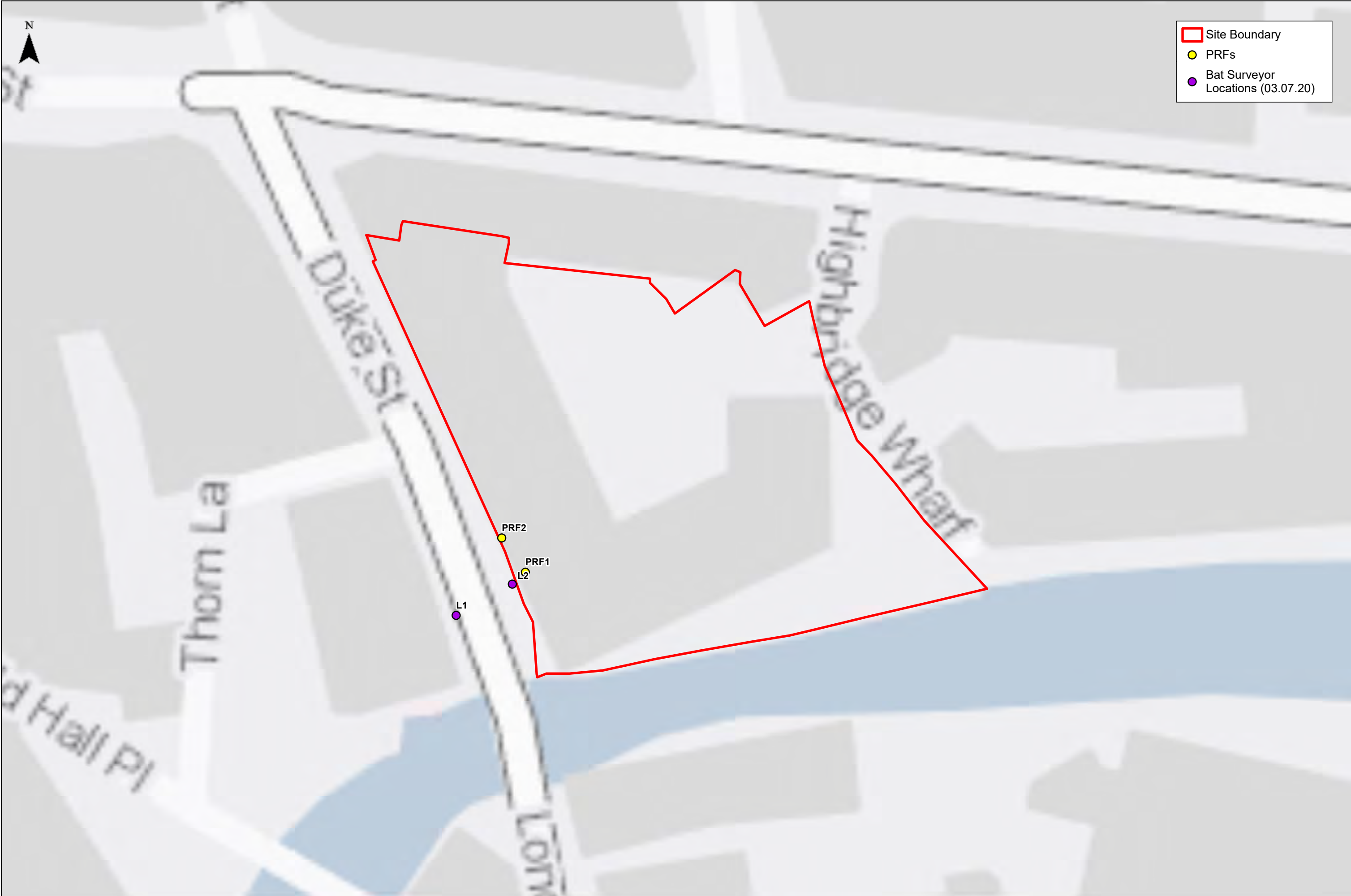


	Client Lipman Properties Ltd	Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Contains OS data © Crown Copyright and database right 2019 Contains Ordnance Survey data (c) Crown		Riverside Central Site Location Plan	 Figure 1 Rev A
			13/07/2020		
			Drawn: TL		
			Checked: JS		





	Client Lipman Properties Ltd	Riverside Central Extended Phase 1 Habitat Survey Results	02550 m		1:500 @ A3	Date: 14/01/2020
			Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		Drawn: TL	Checked: JS
			Figure 03			Rev A



Appendix A Legislation and Planning Policy

A.1 Overview

- A.1.1 This section briefly summarises the relevant legislation and national and local planning policies pertaining to habitats and species mentioned within this report. Please note that the following text does not constitute legal advice.

A.2 Conservation of Habitats and Species Regulations 2017

- A.2.1 The original (1994) “Habitat Regulations” transposed the EC Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Council Directive 92/43/EEC) into national law.
- A.2.2 The 2017 Regulations consolidate the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The regulations provide for:
- Designation and protection of European Sites (Special Protection Areas (SPA) and Special Areas of Conservation (SAC)) including the need for ‘Appropriate Assessment’ of plans and proposals;
 - Protection of European Protected Species (EPS);
 - Adaptation of planning and other controls for the protection of European Sites; and
 - Make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2.
- A.2.3 “European protected species” (EPS) are those which are present on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). These habitats and species are subject to the provisions of Regulation 41 of those Regulations. All EPS are also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together, these pieces of legislation make it an offence to:
- intentionally or deliberately capture, injure or kill any wild animal included amongst these species
 - Possess or control any live or dead specimens or any part of, or anything derived from these species
 - deliberately disturb wild animals of any such species
 - deliberately take or destroy the eggs of such an animal, or
 - intentionally, deliberately or recklessly damage or destroy a breeding Site or resting place of such an animal, or obstruct access to such a place
- A.2.4 For the purposes of paragraph (c), disturbance of animals includes in particular any disturbance which is likely:
- to impair their ability to survive, to breed or reproduce, or to rear or nurture their young,
 - or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
 - to affect significantly the local distribution or abundance of the species to which they belong.
- A.2.5 Although the law provides strict protection to these species, it also allows this protection to be set aside (derogation) through the issuing of licences. The licences in England are currently determined by Natural England (NE) for development works. In accordance with the requirements of the Regulations (2017), a licence can only be issued where the following requirements are satisfied:

- 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'
- 'There is no satisfactory alternative'
- 'The proposals 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'.

A.2.6 No steps that will impact upon a European protected species or its habitat can be undertaken unless authorised by a European Protected Species licence issued by Natural England. Such a licence is granted after planning consent has been granted once Natural England are satisfied that adequate measures are to be put in place to mitigate for the impact of the development.

A.3 Wildlife and Countryside Act 1981 (as amended)

- A.3.1 The Act implements the Convention of European Wildlife and Natural Habitats (The Bern Convention) and the Directive 2009/147/EC 'The Birds Directive'.
- A.3.2 The 1981 Act has been amended by the Countryside and Rights of Way (CROW) Act 2000.
- A.3.3 Schedules 1 (birds) and 5 (animals) of the Act identify species of bird and other animal in relation to which the Act makes killing, injury, taking and disturbance an offence while Schedule 8 to the Act lists species of plant in relation to which the Act makes it an offence to intentionally pick, uproot or destroy.
- A.3.4 Section 14(2) of the Act makes it an offence to cause any species of animal or plant listed in Schedule 9 of the Act to grow in the wild.
- A.3.5 The Act further provides for notification and confirmation of Sites of Special Scientific Interest (SSSI) for their flora, fauna, geological or physiographical features. It also contains measures for the protection and management of SSSIs.

A.4 The Natural Environmental and Rural Communities Act 2006 ('NERC')

- A.4.1 The NERC Act sets a duty on public bodies (including Local Authorities) to have due regard for habitats and Species of Principal Importance for biodiversity in England when carrying out their duties.
- A.4.2 Section 41 (S41) 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 England. The list is used by decision-makers, such as Local Authorities, in implementing their protection duties under this Act when carrying out their functions.
- A.4.3 The S41 list includes 56 habitats and almost 1000 Species of Principal Importance in England. Since the UN Convention on Biological Diversity (CBD) in 2010 the UK identify these habitats and species as conservation priorities under the UK Post-2010 Biodiversity Framework, (they were formerly identified as UK BAP habitats and species).
- A.4.4 The National Planning Policy Framework guides local planning authorities to create policies which promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species.

A.5 Bats

- A.5.1 Bats and their habitats are protected under the Wildlife and Countryside Act 1981 (as amended), and by the Conservation of Habitats and Species Regulations 2017. Taken together, these make it an offence to:
- a) Deliberately capture, injure or kill a bat;
 - b) Deliberately disturb any bat, in particular any disturbance which is likely to (i) impair their ability to survive, breed, reproduce or to rear or nurture their young; or in the case of hibernating

or migratory species, to hibernate or migrate; or (ii) to affect significantly the local distribution or abundance of the species to which they belong;

c) To be in possession or control of any live or dead bat or any part of, or anything derived from a bat;

d) Damage or destroy a breeding site or resting place of a bat;

e) Intentionally or recklessly obstruct access to any place that bat uses for shelter or protection; and

f) Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection.

A.5.2 A bat roost may be any structure a bat uses for breeding, resting, shelter or protection. It is important to note that since bats tend to re-use the same roost sites, current legal opinion is that a bat roost is protected whether or not the bats are present at the time.

A.5.3 Seven bat species are listed in the UK Biodiversity Action Plan and are listed as Species of Principal Importance under the provisions of the NERC Act 2006.

A.6 Birds

A.6.1 The Wildlife and Countryside Act (WCA) 1981 (as amended), states that all wild birds and their nest sites are protected. Under the WCA, it is an offence to kill, injure or take any wild bird, to take damage or destroy the nest of any wild bird, or to take or destroy the egg of any wild bird. Birds listed on Schedule 1 of the WCA receive additional protection against disturbance during breeding.

A.7 Wild Mammals (Protection Act, 1996 (as amended))

A.7.1 Under the Wild Mammals (Protection) Act 1996 it is an offence to cause unnecessary suffering to wild mammals, including crushing and asphyxiating. This Act is primarily concerned with animal welfare and aims to prevent cruelty. As a result, offences include those actions with the intent to inflict unnecessary suffering. A wild mammal includes any mammal which is not domestic or captive. Red foxes, wild deer and other mammals such as rabbits are therefore covered by the Act.

A.8 National Planning Policy

A.8.1 The National Planning Policy Framework (NPPF) was published in February 2019. This document states that:

A.8.2 *'Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives)... an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy'.*

Conserving and Enhancement of the Natural Environment

A.8.3 Section 15 relates to: Conserving and Enhancement the Natural Environment. This states that *'Planning policies and decisions should contribute to and enhance the natural and local environment by:*

- a) *protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan)*
 - b) *recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;*
 - c) *maintaining the character of the undeveloped coast, while improving public access to it where appropriate;*
 - d) *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
 - e) *preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
 - f) *remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.*
- A.8.4 Paragraph 171 states that “Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries”.

Habitats and Biodiversity

- A.8.5 Paragraph 174 states that “To protect and enhance biodiversity and geodiversity, plans should:
- a) *Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and*
 - b) *promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.*
- A.8.6 Paragraph 175 states that “When determining planning applications, local planning authorities should apply the following principles:
- a) *if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
 - b) *development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
 - c) *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁵⁸ and a suitable compensation strategy exists; and*

- d) *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.”*

A.8.7 Paragraph 176 states that *“The following should be given the same protection as habitats sites:*

- a) *potential Special Protection Areas and possible Special Areas of Conservation;*
- b) *listed or proposed Ramsar sites; and*
- c) *sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.”*

A.8.8 Paragraph 177 states that *“The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.”*

The Reading Borough Local Plan

A.8.9 The Local Plan was adopted on 4th November 2019. This document sets out our planning policies for development in Reading up to 2036 and is the main consideration in deciding planning applications. The following policies are of relevance to biodiversity and ecology.

Policy EN11 – Waterspaces

A.8.10 Reading’s waterspaces will be protected and enhanced, so that they can continue to contribute to local and regional biodiversity and ecology, flood mitigation, local character, heritage and visual amenity, the provision of accessible leisure and recreational opportunities and, where appropriate, navigation. There will be no adverse impact on the functions and setting of any watercourse and its associated corridor.

A.8.11 Where development in the vicinity of watercourses is acceptable, it will:

- *Provide appropriate, attractive uses and buildings that enhance the relationship of buildings, spaces and routes to the watercourse, including through creating or enhancing views of the watercourse, and create a high quality public realm;*
- *Make positive contributions to the distinct character, appearance, historic significance, landscape and amenity of the watercourses;*
- *Provide a strengthened role for watercourses as important landscape features, wildlife corridors, historic features and recreation opportunities;*
- *Wherever practical and consistent with its biodiversity role, provide good, level access to and along the waterside for all those who want to use it;*
- *Be set at least ten metres back from the watercourse wherever practicable and appropriate to protect its biodiversity significance;*
- *Improve the quality of watercourse environment through protecting and enhancing habitats and ensuring that habitat creation is balanced with access and urban uses; and*
- *Pursue opportunities for deculverting of watercourses.*

Policy EN12 - Biodiversity and the Green Network

A.8.12 The identified Green Network, the key elements of which are shown on the Proposals Map, shall be maintained, protected, consolidated, extended and enhanced. Permission will not be granted for development that negatively affects the sites with identified interest or fragments the overall network. The Green Network comprises:

- *Sites with identified biodiversity interest - Local Wildlife Sites, Local Nature Reserves, Biodiversity Opportunity Areas, protected and priority species and their habitats, Priority and Biodiversity Action Plan habitats, and the River Thames and all its tributaries (including the River Kennet and the Kennet & Avon Canal); and*
- *Areas with potential for biodiversity value and which stitch the Green Network together – designated Local Green Space and open green spaces, and existing and potential Green Links.*

A.8.13 New development shall demonstrate how the location and type of green space, landscaping and water features provided within a scheme have been arranged such that they maintain or link into the existing Green Network and contribute to its consolidation. Such features should be designed to maximise the opportunities for enhancing this network. All new development should maximise opportunities to create new assets and links into areas where opportunities are as yet unidentified on the Proposals Map.

A.8.14 On all sites, development should not result in a net loss of biodiversity and geodiversity, and should provide a net gain for biodiversity wherever possible. Development should:

- *Protect and wherever possible enhance features of biodiversity interest on and adjacent to the application site, incorporating and integrating them into development proposals wherever practicable; and*
- *Provide new tree planting, wildlife friendly landscaping and ecological enhancements (such as wildlife ponds, bird and bat boxes) wherever practicable.*

A.8.15 In exceptional circumstances where the need for development clearly outweighs the need to protect the value of the site, and it is demonstrated that the impacts cannot be: 1) avoided; 2) mitigated or; 3) compensated for on-site; then new development will provide off-site compensation to ensure that there is “no net loss” of biodiversity. Provision of off-site compensation shall be calculated in accordance with nationally or locally recognised guidance and metrics. It should not replace existing alternative habitats, and should be provided prior to development.

Appendix B Photographs

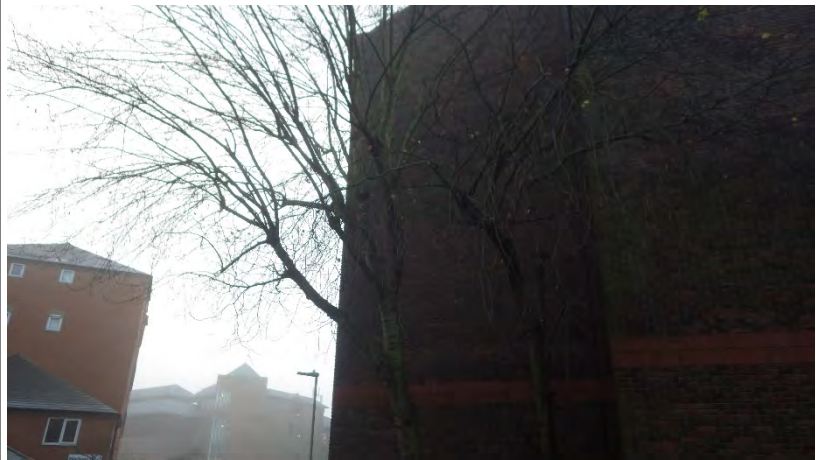
Table B1 below includes photographs from the Site.

Photograph Description	Photograph
Photograph 1: The majority of the Site comprised hardstanding currently used for car-parking.	
Photograph 2: The northern elevation of building B1 bird netting is present on the roof level.	
Photograph 3: The eastern elevation of building B2 showing the complex structure with some potential to be utilised by black redstarts.	

Photograph 4: One of the introduced shrub beds in the inner courtyard providing a potential nesting resource for common and widespread bird species.



Photograph 5: Two semi-mature maple trees in the east of the Site.



Photograph 6: Some ephemeral vegetation growing out of the concrete with the basement level in the rear of the photograph. This grille is covered in a mesh preventing access to bats and birds.



Photograph 7: The Kennet and Avon Canal adjacent to the south of the Site.



Photograph 8: A potential roosting feature (TN4) on the western gable of building B1.



Photograph 9: A potential roosting feature (TN5) on the south-western elevation of building B2.



Appendix C Target Notes

Target Note 1

Areas of introduced shrub with the potential to be used as nesting habitats by birds.

Target Note 2

Bird netting installed on B1 is likely to limit opportunities for nesting birds and roosting bats.

Target Note 3

The complex structure of the building has some potential to provide nesting opportunities to black redstart.

Target Note 4

Missing mortar in the gable of the building having some potential to be used by roosting bats.

Target Note 5

Missing mortar beneath a roof tile on the west of building B2 having some potential to be used by roosting bats.

Appendix D Bat Survey Results

Dusk Emergence Survey Results 02/07/19 Location 1 PRF1

Date	Species	Number of Passes	Timing of Call	Time After Sunset/Before Sunrise
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:34	00:11
02/07/20	<i>Nyctalus noctule</i>	1	21:37	00:14
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:47	00:24
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:48	00:25
02/07/20	<i>Pipistrellus pipistrellus</i>	2	21:51	00:28
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:52	00:29
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:53	00:30
02/07/20	<i>Pipistrellus pipistrellus</i>	2	21:54	00:31
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:55	00:32
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:57	00:34
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:58	00:35
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:59	00:36
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:00	00:37
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:01	00:38
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:02	00:39
02/07/20	<i>Pipistrellus pipistrellus</i>	6	22:03	00:40
02/07/20	<i>Pipistrellus pipistrellus</i>	2	22:05	00:42
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:07	00:44
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:10	00:47
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:11	00:48
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:16	00:53
02/07/20	<i>Pipistrellus pipistrellus</i>	7	22:17	00:54
02/07/20	<i>Pipistrellus pipistrellus</i>	2	22:18	00:55
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:19	00:56
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:24	01:01
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:27	01:04
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:32	01:09
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:35	01:12
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:38	01:15
02/07/20	<i>Pipistrellus pipistrellus</i>	2	22:40	01:17
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:41	01:18
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:42	01:19

02/07/20	<i>Pipistrellus pipistrellus</i>	3	22:46	01:23
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Dusk Emergence Survey Results 02/07/20 Location 2 PRF 2

Date	Species	Number of Passes	Timing of Call	Time After Sunset/Before Sunrise
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:34	00:11
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:36	00:13
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:47	00:24
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:48	00:25
02/07/20	<i>Pipistrellus pipistrellus</i>	3	21:51	00:28
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:52	00:29
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:53	00:30
02/07/20	<i>Pipistrellus pipistrellus</i>	2	21:54	00:31
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:55	00:32
02/07/20	<i>Pipistrellus pipistrellus</i>	2	21:58	00:35
02/07/20	<i>Pipistrellus pipistrellus</i>	1	21:59	00:36
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:00	00:37
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:02	00:39
02/07/20	<i>Pipistrellus pipistrellus</i>	4	22:03	00:40
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:05	00:42
02/07/20	<i>Pipistrellus pipistrellus</i>	2	22:06	00:43
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:08	00:45
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:10	00:47
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:11	00:48
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:16	00:53
02/07/20	<i>Pipistrellus pipistrellus</i>	6	22:17	00:54
02/07/20	<i>Pipistrellus pipistrellus</i>	2	22:18	00:55
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:19	00:56
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:24	01:01
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:27	01:04
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:32	01:09
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:35	01:12
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:37	01:14
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:38	01:15
02/07/20	<i>Pipistrellus pipistrellus</i>	2	22:40	01:17
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:41	01:18
02/07/20	<i>Pipistrellus pipistrellus</i>	1	22:42	01:19

Date	Species	Number of Passes	Timing of Call	Time After Sunset/Before Sunrise
02/07/20	Pipistrellus pipistrellus	3	22:46	01:23

Photographs



Photograph 1: PRF 1 on the western gable



Photograph 2: PRF 2 on the lower level roof



Photograph 3: PRF 1 as seen through thermal imaging scope



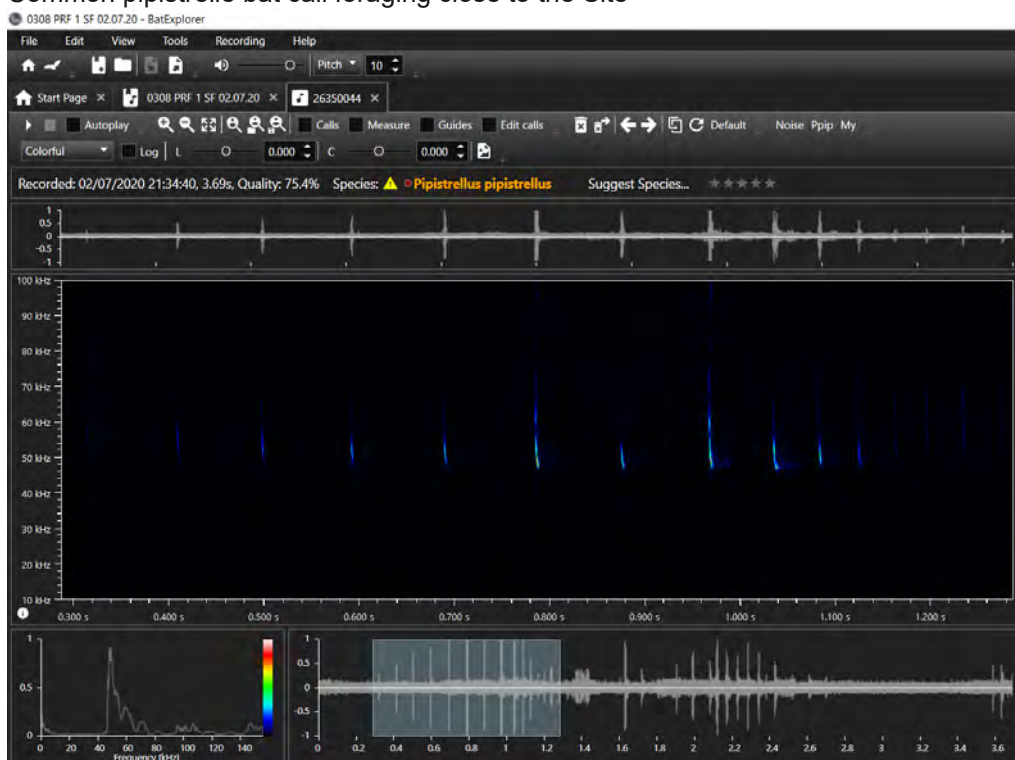
Photograph 4: PRF 2 as seen through the thermal imaging scope



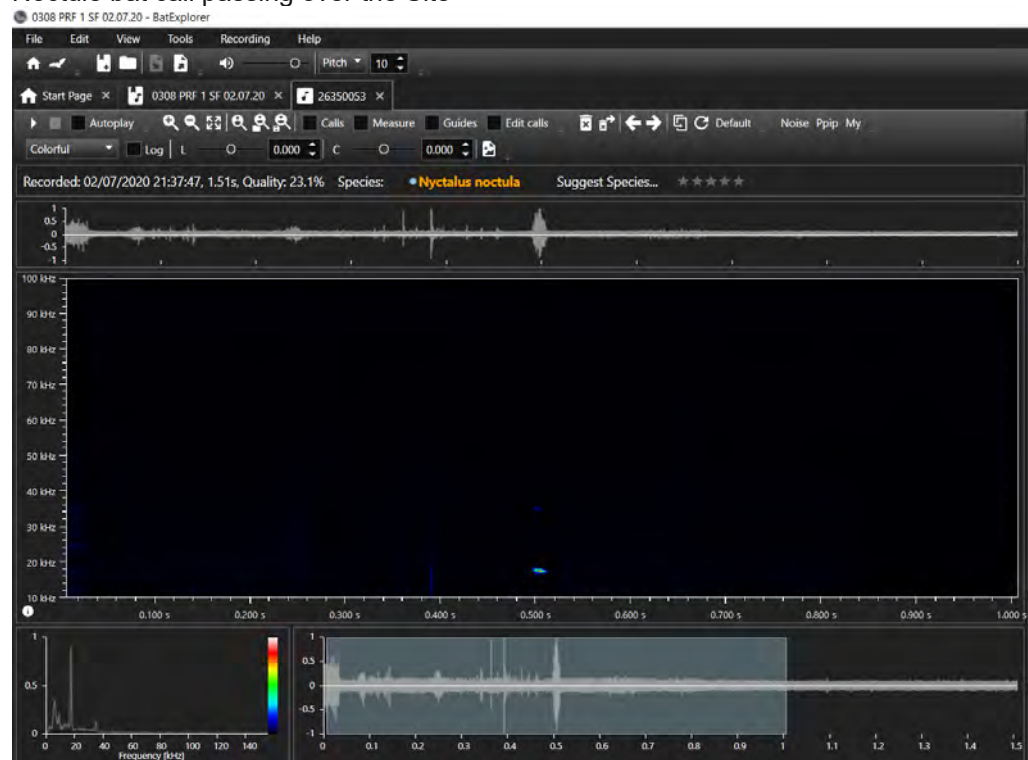
Photograph 5: Bright streetlighting close to PRFs

Example Sonograms

Common pipistrelle bat call foraging close to the Site



Noctule bat call passing over the Site



Appendix E Landscape Strategy



LEGEND

Application boundary

Existing trees to be retained

Proposed tree

Proposed specimen shrub

Proposed shrub planting

Proposed feature paving

Proposed block paving to carriageway and parking bays

Proposed paving to pedestrian areas

Proposed paving to private terrace

Proposed CorTen/CorTen style steel planter

Proposed seating cube to ground floor entrance

Proposed planter with seating edge to ground floor entrance

Proposed handrail/guardrail

E	Amendment following comments	01/07/2020	CS/VR
D	New bin store added in courtyard	30/06/2020	CS/VR
C	Amendment following change to layout	18/06/2020	CS/VR
B	Amendment following change to layout	26/02/2020	CS/VR
A	Amendment following comments	16/01/2020	CS/VR

Rev	Description	Date	By/Chk
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Status **FOR COMMENTS**
ARC LANDSCAPE DESIGN AND PLANNING LTD.

Client
LIPMAN PROPERTIES

Project
DUKESBRIDGE HOUSE, READING

Drawing Title
LANDSCAPE STRATEGY

Scale	By/Chk	Date
1:200@A1	CS/VR	07/01/2020
Drawing Number	Revision	
A255 SK01	E	



	Application boundary		Proposed specimen shrubs eg. 'Rubra' <i>Hamamelis x intermedia</i> 'Arnold Promise' <i>Prunus x subhirtella</i> 'Autumnalis Rosea'		Feature paving to river front eg. granite style paving slab
	Railing/Handrail		Proposed shrubs and herbaceous Including wildlife friendly, evergreen, native and shade tolerant species. eg. <i>Choisya</i> <i>Cornus sanguinea</i> sp. <i>Cytisus</i> sp. <i>Euonymus europaeus</i> <i>Hebe</i> sp. <i>Lavandula</i> sp. <i>Sarcococca</i> sp. <i>Skimmia</i> sp.		Block paving to courtyard area eg. tegula paving
	Existing trees to be retained - refer to arboricultural survey for details		<i>Achillea</i> sp. <i>Asplenium scolopendrium</i> <i>Campanula glomerata</i> <i>Centaurea</i> sp. <i>Fragaria vesca</i> <i>Hyacinthoides non-scripta</i> <i>Polystichum setiferum</i> <i>Pulmonaria longifolia</i> <i>Stipa arundinacea</i> <i>Verbena bonariensis</i>		Raised planter with seating edge and seating cube
	Proposed fastigate trees eg. <i>Acer campestre</i> 'Streetwise' <i>Pyrus calleryana</i> 'Chanticleer' <i>Quercus robur</i> 'Fastigiata Koster'				CorTen/CorTen style raised planter