

University of Gloucestershire  
**City Centre Campus: Debenhams  
re-development**  
Ecological Impact Assessment  
(EcIA)

GCC-ARUP-ZZ-XX-RP-Z-0004

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This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Legislative Context

# 1 Introduction

Ove Arup and Partners Ltd ('Arup') has been commissioned by the University of Gloucestershire to prepare an Ecological Impact Assessment (EcIA) report, in support of a planning application for proposed re-development works for the construction of University of Gloucestershire City Centre Campus building at the site of the former 'Debenhams building' in Gloucester City Centre.

The site is situated at Ordnance Survey Grid Reference SO 83284 18613 (Figure 1). The site is bounded by the current redevelopment of King's Square to the south-east, with Oxbole Street to the south-west, Northgate Street to the north-west and St Aldate Street to the north-east. The site largely comprises a disused department store with associated storage and car parking areas with the immediate surrounds including smaller retail units and food and drink outlets.

**Figure 1: Site location**



Site location with boundaries outlined in red. Source: (Maxar, Microsoft | Esri Community Maps Contributors, Esri UK, Esri, HERE, Garmin, INCREMENT P, METI/NASA, USGS

This project will play a transformational role within the heart of City Centre by contributing to the economic and cultural development of Gloucester. This is an exciting opportunity for both the University and the City; the proposal will revitalise a core part of the City Centre, bringing a new demographic of users into Gloucester by creating a new and vibrant hub.

The changing face of retail has created an opportunity to re-purpose this iconic building that is important to the city's heritage within the heart of the city centre, and to create a new and vibrant hub that will set the University of Gloucestershire above its national and international competition. As well as providing an important catalyst for the ongoing rejuvenation of the town centre, the project will provide a unique offer in Gloucester- the opportunity to transform a building into a positive, and inclusive building, that places accessibility, connectivity, community, sustainability, and well-being at its heart.

The building will act as a public health and outreach space, forming an important link between the university, the wider community and with external healthcare providers. As well as demonstrating how buildings can be creatively adapted for new uses, it will anchor the university in the city centre, becoming an asset for the wider community, and acting a preventative health and well-being centre.

## 1.1 Scope of Works

The works involve the re-development of the former Debenham's retail store into a teaching space for the University of Gloucestershire. The works are to be split into phases, with pre-commencement works requiring asbestos removal, a soft strip of the building and demolition of structure on the rooftops and in the courtyard in order to undertake further surveys to assess the condition of the building.

Phase 1 of works will then comprise re-fitting of the main building as detailed within the planning design and access statement<sup>1</sup> included with the planning submission.

## 1.2 Scope of Report

The purpose of this assessment is to quantify and evaluate the potential effects of the development on habitats, species and ecosystems. This involves an assessment of the habitats present within the footprint of the works, the potential for the site to support protected species, the need for further surveys and reporting and to make recommendations for mitigation and enhancement (if appropriate) to be incorporated into the Proposed Scheme.

The report is written with reference to the Guidelines for Ecological Impact Assessment in the UK and Ireland<sup>2</sup>, and Guidelines for Ecological Report Writing<sup>3</sup> (CIEEM, 2017).

## 1.3 Structure of Report

The report follows the following structure:

- Section 1 provides an introduction to the Proposed Scheme and purpose of this assessment;
- Section 2 provides information on the data and methodology used in the desk study and field survey and the methodology to value the ecological receptors and on the methodology to assess impacts;

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<sup>1</sup> ADP Gloucester City Centre Campus, University of Gloucestershire: Design and Access Statement (December 2021)

<sup>2</sup> Chartered Institute of Ecology and Environmental Management (CIEEM) (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland Terrestrial, Freshwater, Coastal and Marine (September 2018).

<sup>3</sup> Chartered Institute of Ecology and Environmental Management (CIEEM) (2018) Guidelines for Ecological Report Writing, Second Edition (December, 2018).

- Section 3 reports the baseline information and survey results and assesses the value of ecological receptors within the study area;
- Section 4 assesses the potential effects of the construction and operation of the scheme on the ecological receptors before and after mitigation measures are applied;
- Section 5 delivers maintenance and monitoring measures required post construction; and
- Section 6 summarises the findings of the assessment and any further actions required.

## 1.4 Legislative and Policy Overview

A framework of national and local legislation and planning policy guidance exists to protect and conserve wildlife and habitats. The following core legislation exists to protect habitats and species of nature conservation importance:

- i. The Conservation of Habitats and Species Regulations 2017 (as amended);
- ii. Wildlife and Countryside Act 1981 (as amended) (WCA);
- iii. Natural Environment and Rural Communities (NERC) Act 2006;
- iv. The Animal Welfare Act (2006);
- v. The Countryside and Rights of Way Act 2000;
- vi. The Hedgerow Regulations 1997;
- vii. Protection of Badgers Act 1992;
- viii. The Salmon and Freshwater Fisheries Act 1975;
- ix. The Eels (England and Wales) Regulations 2009; and
- x. The Invasive Alien Species (Enforcement and Permitting) Order 2019.

These pieces of legislation include a number of offences relating to protected species and requirements for licences to allow construction works to proceed. In addition, the Habitats Regulations set out the requirement for the consideration of the potential effects of a project on European Sites.

Actions which are prohibited by legislation can be made lawful on the approval and granting of a protected species licence from Natural England (NE), subject to conditions.

Details of the legislation are provided in Appendix A.

The following national planning policies are relevant to assessing the impacts of development upon nature conservation:

- National Planning Policy Framework (NPPF)<sup>4</sup> (MHCLG, 2021);

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<sup>4</sup> Ministry of Housing, Communities and Local Government, (2021), National Planning Policy

- ODPM Circular 06/2005 (Defra Circular 01/2005)<sup>5</sup>; and
- Adopted Local Plan: Joint Core Strategy ‘ Gloucester, Cheltenham and Tewkesbury (2017)<sup>6</sup>.

The NPPF 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 ecosystems 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.
- f) Development should, where 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
- g) Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.’

The NPPF is applied at local level by Gloucester City Council, with notable consideration to biodiversity, including biodiversity net gain. Additional information regarding planning policy is described within Appendix A1. Emerging policy surrounding Biodiversity Net Gain is included within the Environment Bill, which has recently gained assent, and strengthens requirements for biodiversity, in particular requiring delivery of 10% biodiversity net gain for new development projects.

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Framework. Ministry of Housing, Communities and Local Government, London. Available at:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1005759/NPPF\\_July\\_2021.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf)

National\_Planning\_Policy\_Framework\_web\_accessible\_version.pdf Accessed: 19/11/2021)

<sup>5</sup> ODPM (2005) Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact with the Planning System. Available at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/7692/](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/)

<sup>6</sup> The adopted Local Plan is a combination of the Joint Core Strategy (2017) and Gloucester Local Plan (1983). The relevant policies regarding biodiversity can be found in the Joint Core Strategy: <https://www.gloucester.gov.uk/media/5441/jcs.pdf>

The ODPM circular 06/2005 provides guidance on the application of the law relating to planning and nature conservation as it applies in England, complementing the NPPF.

Under these policies further consideration should also be given to species of conservation concern, for example, including red and amber listed birds cited within the Birds of Conservation Concern 5 (BoCC5, 2021).

Biodiversity and Geodiversity is included under policy SD9 within the Adopted Local Plan. This has been produced to ensure that individual assets and the quality of the natural environment in the future is planned, protected and enhanced at a strategic scale. This is to help ensure that the biodiversity is protected and enhanced in order to establish and reinforce ecological networks that are resilient to current and future pressures. The policy states that this will be achieved by:

- Ensuring that protected species are safeguarded in accordance with the law;
- Encouraging new developments to contribute positively to biodiversity and implementation of green infrastructure and wildlife corridors;
- Encouraging the creation, restoration and beneficial management of priority landscapes, priority habitats and populations of priority species. For example, by securing improvements to Strategic Nature Areas; and
- Requiring any development that has the potential to have a likely significant effect on an international site will be subject to a Habitats Regulations Assessment.

Delivery will be achieved within the context of international and national legal frameworks, countywide initiatives and local strategies for biodiversity and geodiversity. Further, the plan requires developers to avoid harm to biodiversity or, where this is not possible, to incorporate mitigation measures into the design of developments. Developers should also ensure that development outside designated sites will not cause reasonably foreseeable harm to those sites, and if such an effect is likely, should mitigate against it. For situations where measures cannot be provided on-site, the local authorities may in certain circumstances consider a system of 'biodiversity offsetting'.



## 2 Project Scoping

The relevant assessment methodologies and significance criteria applied within this EcIA has been determined as per the relevant headings below.

### 2.1 Stakeholder Consultation

Pre-application advice has been sought from Gloucester City Council. Requirements to achieve Biodiversity Net Gain and consideration for opportunities for the installation of bird and bat boxes was noted as part of the review of the proposed application.

### 2.2 Baseline Survey Methodologies

#### 2.2.1 Zone of influence

The current guidance on ecological assessments<sup>2</sup> recommends that all ecological features that occur within a 'Zone of Influence' (ZoI) for a proposed development are investigated.

The ZoI includes:

- Areas directly within the land take for the proposed development and access;
- Areas which will be temporarily affected during construction;
- Areas likely to be impacted by hydrological disruption; and
- Areas where there is a risk of wider disbenefits including, but not limited to, any increase in air, water, or noise pollution; or visual or vibrational disturbance during construction and/or operation.

The ZoI is variable depending on the nature of the construction activities and the ecological receptors affected. For this assessment the following zones have been defined as described in Table 1.

Table 1: Zone of Influence used for this assessment

Ecological features	Zone of Influence
<b>Desk study</b>	
Internationally Designated Sites	10km buffer around the site boundary
Nationally Designated Sites	2km buffer around site boundary
Local Sites	2km buffer around the site boundary
Relevant species records <sup>7</sup> (including protected and invasive species)	2km from site boundary

<sup>7</sup> Relevant species included all those protected by European or UK law, and notable species including those identified as being of principal importance in England, in response to Section 41 of the NERC Act (2006), and invasive species as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and The Invasive Alien Species (Enforcement and Permitting) Order 2019

Ecological features	Zone of Influence
Relevant priority habitat records	2km from site boundary (500m for ponds) <sup>8</sup>
<b>Field survey</b>	
Protected and notable species field survey	30m buffer around the site boundary, where accessible
Habitats (Excluding priority habitats)	30m buffer around the site boundary, where accessible

### 2.2.2 Desk study

A desk study has been undertaken to determine the presence of designated sites and protected or notable species within the ZoI of the site, as determined in Section 2.2.1. Species records obtained from the local data centre have been curtailed to the last ten years to ensure validity. The following sources have been consulted as part of the desk study:

- Multi-Agency Geographical Information for the Countryside (MAGIC) website (<https://magic.defra.gov.uk/MagicMap.aspx>);
- Natural England (<https://designatedsites.naturalengland.org.uk/>);
- Gloucestershire Centre for Environmental Records (GCER);
- Joint Nature Conservation Committee (JNCC) (<https://jncc.gov.uk/>);
- OS Open Maps (<https://www.openstreetmap.org/>);

### 2.2.3 Extended Phase 1 Habitat Survey

An Extended Phase 1 Habitat Survey was undertaken by Arup ecologists Pippa Wood and Chelsea Edwards on 21<sup>st</sup> September 2021.

The site was inspected to establish the presence, or potential presence, of protected or notable species or habitats (or invasive species) which would be affected by the proposed works. Habitats were mapped on the Extended Phase 1 Habitat Survey Plan with reference to JNCC's 'Handbook for Phase 1 Habitat Survey'<sup>9</sup>. Target Notes (TNs) were used to highlight any features of interest, such as those that provide suitable habitat for protected species, or habitats that were too small to appear at the drawing's resolution.

Extended Phase 1 Habitat Survey is a standard technique for rapidly obtaining baseline ecological information over a large area. It involves mapping the site using a standard set of habitat definitions for classifying areas of land on the basis of the vegetation communities present. The extended survey also provides an assessment of the potential for those habitats present to support legally protected or otherwise notable species.

<sup>8</sup> Odiham et al (2000) in ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index.

<sup>9</sup> Joint Nature Conservancy Council, (2016), Handbook for Phase 1 habitat survey – a technique for environmental audit, JNCC, Peterborough, ISBN 0861396367

In conjunction with the Extended Phase 1 Habitat Survey, habitats on site were also mapped in accordance with current guidance for UK Habitat Classification<sup>10</sup> (UKHAB). The recording of UK Habitat Classifications and associated condition data has been undertaken to provide a biodiversity baseline which can be used in the assessment of biodiversity losses or gains as part of the proposed development, using the Defra Metric 3.0 (‘the Metric’)<sup>11</sup>.

As an output, the Metric provides a comparison of the habitat and hedgerow (if present) ‘biodiversity units’ between the baseline and the post development environment, as a net unit and net percentage change (the methodology for this assessment is further detailed in section 2.2.5).

The survey was combined with an internal and external preliminary bat roost assessment of buildings within the site boundary.

## 2.2.4 Preliminary Bat Roost Assessment

A Preliminary Roost Assessment (PRA) of all accessible structures within the site boundary was undertaken to determine any signs of bat use and suitability for roosting. Searches were undertaken with reference to BCT’s Good Practice Guidelines<sup>12</sup> by a licensed bat ecologist<sup>13</sup>.

Any Potential Roost Features (PRFs) were noted during the survey, including:

- Gaps or cracks in stone or masonry (missing mortar or bricks/stones);
- Internal voids (e.g., roof voids);
- Dense ivy or other climbing vegetation;
- Missing/slipped roof tiles;
- Raised fascia boards;
- Gaps along doors or windows;
- Holes in the internal structure;
- Presence of any bat boxes or integrated bat features (e.g., bat access tiles); and/or
- Any other crevices such as beneath lights, signs, guttering or pipework.

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<sup>10</sup> UK Habitat Classification Working Group (2018). UK Habitat Classification – Habitat Definition V1.0 at <https://ecountability.co.uk/ukhabworkinggroup-ukhab/>

<sup>11</sup> Natural England (2019) The Biodiversity Metric 3.0 (JP039) <http://publications.naturalengland.org.uk/publication/6049804846366720> [Accessed 06/12/2021]

<sup>12</sup> Collins, J. (2016). Bat Surveys: Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn.). The Bat Conservation Trust, London.

<sup>13</sup> Natural England (NE) Bats: survey or research level 2 licence (CL18) held by Chelsea Edwards, licence number: 2018-33927-CLS-CLS.

The PRFs were further inspected including using an endoscope, high-powered torch or close-focussing binoculars as appropriate to assess the suitability of each feature and identify any evidence of bat use such as:

- Presence of live or dead bats;
- Urine staining below a potential entry point
- Bat droppings in, around, or below potential entry point;
- Feeding remains (e.g., moth wings);
- Audible squeaking (chittering) in warm weather; and/or
- Distinctive smell of bats.

This was undertaken primarily to assess the suitability of each feature as per the BCT's Good Practice Guidelines<sup>12</sup>, described below:

- High - A structure 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;
- Moderate - A structure 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 – these assessments are made irrespective of species conservation status which is established after presence is confirmed);
- Low - A structure with one or more potential roost site that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e., unlikely to be suitable for maternity or hibernation); or
- Negligible – A structure with no features likely to be used by roosting bats.

## 2.2.5 Biodiversity Net Gain

With the data collected from the site visit, the corresponding UKHAB data were input into the Metric. For each habitat polygon, the following criteria are required to be populated: condition, distinctiveness, and strategic significance. Each of these terms are described below.

**Condition** – this component measures the biological ‘working order’ of a habitat type, judged against the perceived ecological optimum state for that particular habitat. It is a means of measuring variation in quality of habitat patches of the same habitat type, i.e. ‘intra-habitat’ quality.

**Distinctiveness** – this component measures the variation in quality of habitat between habitat types, i.e. ‘inter-habitat’ quality. This component is filled in by default following selection of the habitat type.

**Strategic significance** – this component provides a score on whether the location of the proposed development has been identified locally as significant for nature, e.g. as set out in local plans or policies.

The accompanying Metric has provided results for each of these components for each habitat polygon onsite which are summarised in the relevant sections below and presented within the supplementary material attached to this report.

### 2.2.6 General survey limitations and specific constraints

Whilst not a full protected species or botanical survey, the Extended Phase 1 habitat survey methodology enables an experienced ecologist to obtain a sufficient understanding of the ecology of a site in order to either confirm the conservation importance of the site and assess the potential for impacts on habitats/species likely to represent a material consideration in planning terms, or to ascertain that further surveys will be required before such confirmation can be made.

The findings presented in this study represent those at the time of survey and reporting, and data collected from available sources including a biological record search. Ecological records are provided on an ad-hoc basis and the lack of records should not be taken as absence of protected species, only as an absence of records.

Ecological surveys are limited by factors which affect the presence of flora and fauna, factors such as the time of year and natural behaviour of the animals. Every effort has been made to ensure that the findings of the study present as accurate an interpretation as possible of the status of the habitats and species within the study area. However, to establish presence or absence of protected species further species-specific surveys may be required. The absence of evidence of any particular species should not be taken as conclusive proof that the species is not present or that it will not be present in the future.

The Extended Phase 1 habitat survey was undertaken just outside of the optimal season for identifying botanical species. Additionally, access for the survey was also limited to the site boundary and surrounding publicly accessible areas. Some areas of the buildings were further inaccessible due to safety constraints including the presence of asbestos. These factors are not considered to be a significant constraint to the findings of the report given the urban nature of the site, with findings strengthened through use of aerial imagery.

## 2.3 EcIA Assessment Methodology

The assessments have been undertaken with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment<sup>2</sup>. These guidelines set out a process of identifying the value of ecological receptors and then characterising the impacts that are predicted. They

go on to discuss the impacts on the integrity or conservation status of the receptor, the proposed mitigation and residual impacts.

### 2.3.1 Valuing Ecological Receptors

The CIEEM guidelines recommend that the value of ecological receptors or features is determined based on a geographic frame of reference.

In accordance with the CIEEM guidelines, the value of habitats is measured against published selection criteria where available. Reference is also made to UK and local Habitat Action Plans (HAPs), although as the guidelines note, the presence of a HAP reflects the fact that the habitat concerned is in a sub-optimal state (and hence that action is required) and does not necessarily imply any specific level of importance for the habitat. Under the guidance, the assessor can assign certain features a greater value if there is a reasonable chance that they can be restored to a higher value in the future.

In accordance with the CIEEM guidelines, when assigning a level of value to a species, it is necessary to consider its distribution and status, including consideration of trends based on available historical records. Rarity is an important consideration because of its relationship with threat and vulnerability although since some species are inherently rare, it is necessary to look at rarity in the context of status. A species that is rare and declining should be assigned a higher level of importance than one that is rare but known to be stable. Reference is also made to UK and local Species Action Plans (SAPs) although, as with HAPs, the presence of a BAP-listed species reflects the fact that the population is in a sub-optimal state.

For this assessment, the following geographic frame of reference is used:

- **International** - Including Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites;
- **National** - For example, sites designated at UK level, including Sites of Special Scientific Interest (SSSI);
- **Regional** - Habitats or populations of species of value at a regional level (i.e. South-west England):
- **County** - Designated sites, such as Wildlife Sites or habitats/species populations of value at a county (i.e. Gloucestershire);
- **Local** - Habitats or species populations of value in a local context (i.e. within circa 5km);
- **Less than Local** - Habitats or species populations which are of value only within the potential zone of influence of the proposed development (as defined per section 2.2.1); and
- **Negligible** e.g. areas of hardstanding.

### 2.3.2 Predicting and Characterising Ecological Impacts

The assessment has considered the following, in reference to the CIEEM guidelines, when describing potential impacts of the proposed development:

- Positive or negative influences;

- Magnitude - i.e. the size of an impact in quantitative terms where possible;
- Extent - i.e. the area over which an impact occurs;
- Duration - i.e. the time for which an impact is expected to last;
- Reversibility - i.e. a permanent impact is one that is irreversible within a reasonable timescale or for which there is no reasonable chance of action being taken to reverse it. A temporary impact is one from which a spontaneous recovery is possible; and
- Timing and frequency - i.e. whether impacts occur during critical life stages or seasons and how often impacts occur.
- Direct and Indirect – i.e. direct ecological impacts are changes that are directly attributable to a defined action, e.g. the physical loss of habitat occupied by a species during the construction process. Indirect ecological impacts are attributable to an action, but which affect ecological resources through impacts on an intermediary ecosystem, process or receptor.

### 2.3.3 Significance Criteria

In accordance with the CIEEM guidelines, a significant impact, in ecological terms, is defined as ‘an impact (whether negative or positive) on the integrity<sup>14</sup> of a defined site or ecosystem and/or the conservation status<sup>15</sup> of habitats or species within a given geographical area, including cumulative and in-combination impacts. It is important to note however that in accordance with the CIEEM guidelines, the actual determination of whether an impact is ecologically significant is made irrespective of the value of the receptor in question.

The value of a feature that will be significantly affected is used to determine the geographical scale at which the impact is significant, e.g. an ecologically significant impact on a feature of county importance will be considered to represent a significant impact at a county level. This in turn is used to determine the implications in terms of legislation, policy and /or development management.

The assessment relies on professional judgement and guidance as provided within CIEEM Guidelines<sup>2</sup>.

Any significant impacts remaining after mitigation (the residual impacts), together with an assessment of the likelihood of success of the mitigation, are the factors to be considered against legislation, policy and development management in determining the application.

## 2.4 Limitations of the assessment

At the time of writing further bat surveys have not been completed as the date of commissioning the site survey and EcIA precluded surveys in the 2021 active

<sup>14</sup> Integrity is the coherence of ecological structure and function, across a site’s whole area that enables it to sustain a habitat, complex of habitats and/or the levels of populations of species.

<sup>15</sup> Conservation status for habitats is determined by the sum of the influences acting on the habitat and its typical species that may affect its long-term distribution, structure and functions as well as the long-term survival of its typical species within a given geographical area. Conservation status for species is determined by the sum of influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within a given geographical area.

season. Bats are considered going forwards within this EcIA with the gap in data acknowledged and a precautionary approach to assessment applied.



## 3 Establishing the Baseline and Identification of Important Ecological Features

### 3.1 Previous Assessments

There are no known previous ecological assessments undertaken at the site.

### 3.2 Other Development Projects

King's square redevelopment is in progress immediately south-east of the site. The completion date for this scheme is currently unknown.

### 3.3 Designated Sites

The designated sites identified as part of the desk study are detailed below.

#### 3.3.1 Statutory Designated Sites

One statutory designated site, Alney Island Local Nature Reserve (LNR) was identified within 2.0km of the site. The LNR is located approximately 0.8km north-west of the site and is a grazed marsh designated for its wetland flora and fauna.

No potential effect pathways between the site and the LNR have been identified due the lack of green corridors or hydrological connections as a result of the urban habitats present between the two sites. As such, this site is not further considered within this assessment.

#### 3.3.2 Non-Statutory Designated Sites

A total of seven non-statutory Local Wildlife Sites (LWSs) were identified within 2.0km of the site. Details of the site features and locations are described in Table 2 below.

Table 2: Local Wildlife Sites located within 2.0km of the site boundary

Site name	Site features	Distance and direction to site
Alney Island LWS	Coastal & Floodplain grazing marsh, ponds, ditch, lowland meadows, wet woodland, reedbed, plant & dragonfly interest	0.6km north-west
Sandhurst Lane Meadows LWS	Semi-natural grassland	1.2km north-west
Sud Meadow LWS	Semi-natural grassland	1.3km north-west
Over Ponds Osier Bed 2 LWS	Marsh, bog, swamp, mire and tall herb fen	1.4km north-west

Site name	Site features	Distance and direction to site
Walham Ponds LWS	Lakes and reservoirs: All lakes, gravel pits and reservoirs larger than 0.25 ha	1.4km north-west
Osier Ponds Osier Bed 1 LWS	Marsh, bog, swamp, mire and tall herb fen	1.5km north-west
Walham Ponds (Maisemore) Brickpits LWS	Wet woodland	1.9km north-west

No potential effect pathways between the site and the seven non-statutory designated sites have been identified due the lack of green corridors or hydrological connections as a result of the urban habitats present between the site and these features. As such, these features are not further considered within this assessment.

### 3.3.3 Desk Study

Records of priority habitats including deciduous woodland, good quality semi-improved grassland, lowland meadows, traditional orchard and wood pasture and parkland were returned within 2.0km of the site. The nearest priority habitat identified is a parcel of deciduous woodland 0.5km of the site. No potential effect pathways between the site and priority habitats have been identified due the lack of green corridors or hydrological connections as a result of the urban habitats present between the site and priority habitat parcels.

### 3.3.4 Field Survey

The site is set within the urban surrounds of Gloucester city centre. Habitats identified within the survey area are described below under the Phase 1 Habitat and the UK Habitat Classification habitat type and number referencing in the order as found in JNCC's 'Handbook for Phase 1 Habitat Survey'. The Extended Phase 1 Habitat Map and is provided in Figure 2. and includes target notes, referred to as TN1, TN2 etc within the text below. Where appropriate the condition assessment for the habitat (as included within the Metric) is also included below.

#### 3.3.4.1 Parkland – Scattered broadleaved trees (A1.3.1) / u1171 – Urban mature tree

Ornamental tree planting was noted within the survey area, outwith the site boundary, around King's square, along The Oxbode and Northgate Street. Species present comprised semi-mature common lime (*Tilia × europaea*) and London plane (*Platanus* sp.).

This habitat has not been included within the Metric as it is outside of the site boundary. Due to the poor connectivity of this habitat it is considered to be of **site value (less than local)**.

### 3.3.4.2 Dense scrub (A2.1) / h3d – Bramble scrub

A small parcel (approximately 20m<sup>2</sup>) of dense scrub was present within a courtyard area in the north-west of the site (Photograph 1). Bramble (*Rubus fruticosus* agg.) dominated with further species including occasional butterfly bush (*Buddleia davidii*) and pellitory of the wall (*Parietaria judaica*). Aerial imagery reviewed as part of the desk study identified that this habitat was previously present across a larger area of the site earlier in 2021 (TN1), and this has been estimated as an additional area of 30m<sup>2</sup> for inclusion into the Metric in-line with its associated guidance. For the purpose of this assessment it has been assumed that the composition and condition of the habitat was the same as the remaining parcel of scrub onsite.



Photograph 1 - Scrub habitat present within small courtyard off St Aldate Street

In line with the Metric this habitat has been assessed as being in poor condition due to a lack of diversity in age, structure and species, over 5% cover of undesirable species (butterfly bush) and lack of connective surrounding habitats of biodiversity value. The habitat is generally one which is common and widespread; therefore, the site habitat is considered to be of **site value (less than local)**.

### 3.3.4.3 Fence (J2.4) / u1e – Built linear features

A steel palisade security fence is present at the entrance to the courtyard along St Aldate Street.

This habitat has been assessed as being of **negligible value**.

#### 3.3.4.4 Wall (J2.5) / u1e – Built linear features

A brick wall separates the courtyard in the north of the site from St Aldate Street, little vegetation was noted, however some ivy leaved toadflax (*Cymbalaria muralis*) and pellitory of the wall was identified growing through areas of missing mortar overlooking the courtyard containing dense scrub to the west.

This habitat has been assessed as being of **negligible value**.

#### 3.3.4.5 Buildings (J3.6) / u1b5 – Buildings

The former department store forms the majority of the site. The store was largely in use as retail outlet with associated storage areas until its closure in May 2021 and comprises a series of interconnected buildings referred to as the '1909/14 building', the 'main building' and the 'mezzanine building'. In addition to the main sections of the building, there are several structures within the courtyard and on the flat rooves of the main building housing plant and associated infrastructure. A basement is present along the majority of the store's footprint. The various structures are further described below and should be read in conjunction with the plan provided in Figure 3.

##### 1909/14 building

The 1909/14 building is the oldest section of the former department store, located at the northern extent of the site fronting Northgate street. The building is a three-storey structure of brick construction supporting a double ridge gable to hip roof, with a small wing leading south-east off the northernmost roof. In addition, a small intersecting pitched roof connects the centre of the two main gable to hip rooves. All rooves were covered with slate tiles with double-crested clay ridge tiles. The elevation facing Northgate street supports two painted-brick gable parapets with areas of lead flashing present at the connection of the roof and parapets and within valley gutters between roof sections. Due to safety constraints restricting access to the roof, the full extent of the roof was visible at the time of survey and close inspection was not possible.

The internal inspection of the building identified wooden rafters and posts with wood boardings present affixed to the structures. The windows are largely timber-framed, with metal-framed windows and doors forming the store frontage on the ground-elevation. Internally there appeared to be some water ingress into the building, particularly along the elevation facing Northgate street.

##### Main building

The largest section of the building fronting The Oxbode comprises the main department store constructed in the 1930s, with the adjoining section overlooking King's Square built in the 1960s. The four-storey building is largely of stone construction along the former store's frontage with brickwork present overlooking the courtyard. The building largely supports a flat roof covered in bitumen and ply roofing membranes with several glass rooflights and brick and concrete perimeter parapets and railings present. Netting is present over the majority of the flat roof, although this is broken in several areas.

The flat roof of the main building supports several structures including plant rooms, and a water tower. The water tower located in the centre of the main building's flat roof was considered unsafe to access at the time of survey, was inspected externally from the main building roof-level. The water tower is a three-storey structure of brick construction with a flat concrete roof, wooden and metal-framed doors and windows, some of which contain broken panes. Wooden vents, broken in places, are present across all elevations of the building which appear to lead into large wall cavities. Small patches of early colonising vegetation was noted on the flat roof, for example growing from cracks in walls, areas of missing mortar and areas of lifted and damaged flashing/roofing materials. Species comprised wall rue (*Asplenium ruta-muraria*), white stonecrop (*Sedum album*), sowthistle (*Sonchus* sp.), yellow corydalis (*Pseudofumaria lutea*), bittercress (*Cardamine* sp.), hart's-tongue fern (*Asplenium scolopendrium*), Canadian fleabane (*Erigeron canadensis*), bristly ox-tongue (*Helminthotheca echioides*), soldier sp. (*Galinsoga* sp.), butterfly bush and willow saplings (*Salix* sp.).

Several plant rooms are located on the main building's roof comprising small single storey structures of brick or timber construction. These structures generally had wooden doors and where present, wooden soffit boxes which featured large gaps with missing sections. These structures appear to be largely disused, or accessed infrequently for maintenance.

The main building holds stone-encased windows on upper elevations, with some broken panes noted. Metal-framed windows and doors were observed on the ground-floor forming the frontage to the former store, along with the overhanging canopy. Internally the main building largely appears to have been in recent use comprising retail space and stockrooms.

### Mezzanine building

The mezzanine building is located to the rear of the 1909/14 and main buildings overlooking the courtyard. This extension dates from the 1950s/60s and is a three-storey building of brick construction with a hipped roof at the southern end of the building, and a flat felt roof to the north. The hipped roof holds slate roof tiles with clay ridge tiles, a stairway is present atop the roof however was not able to be accessed at the time of survey due to safety concerns following previous heavy rainfall. As such, the full extent of the roof was not able to be visualised at the time of survey, though some vegetation growth was noted on the roof including red valerian (*Centranthus ruber*). Several rooms on the upper floor of the Mezzanine building, were not accessible at the time of survey due to the confirmed presence of asbestos. As a result, internal inspections of the roof void associated with the hipped roof was not possible. The building additionally features metal and wooden framed windows and doors, with some window broken panes, wooden vents and fascias. Vegetation was noted growing from cracks in the masonry or missing mortar.

### Basement

A basement is present under the majority of the existing building with numerous rooms formed with concrete and brickwork walls. Several areas within basement rooms were noted to be damp however, the level was not fully accessed due to concurrent works taking place at the time of survey.

### Courtyard outbuildings

Structures present in the courtyard comprised a uPVC shed, air-conditioning units, a large metal cabinet and the generator room which is a small single-story lean-to building of rendered brick construction with wooden framed windows and doors and wooden soffit boxes. The roof of the generator building supports a flat roof at the southern end, adjoining a mono-pitched roof sloping north towards St Aldate Street. Vegetation including wall rue and white stonecrop was present on the roof and cracks in render.

As habitats, these features have been assessed as being of **negligible value**. However, this does not preclude their use by protected or notable species (see section 3.4).

### 3.3.4.6 Hardstanding (J5) / u1b – Developed land; sealed surface

Areas of hardstanding surround the buildings onsite comprising the courtyard, pedestrianised paved areas, roads and King's square adjacent the site which is currently subject to re-development works.

These habitats have been assessed as being of **negligible value**.

### 3.3.5 Biodiversity Net Gain

The UKHAB classifications (the compatible classification for use in the Metric) are listed in Table 3 below, with their respective area and biodiversity unit value (as calculated by the Metric). Note, this includes habitats within the site boundary only. All habitats present within the site are considered to be outside of an area of strategic significance in accordance with the guidance provided.

The baseline BNG calculation completed using the Metric indicates that prior to development the site had **0.02 habitat units of medium distinctiveness** over a total site area of 0.582ha.

Table 3: Baseline habitat area and value onsite

UK Habitat Classification	Metric Habitat Type	Area (ha)	Biodiversity Metric Value Units	Notes on Condition and Distinctiveness
h3d – Bramble scrub	Heathland and shrub - Bramble scrub	0.002	0.01	Medium distinctiveness Poor condition (low species diversity and connectivity, with >5% cover of undesirable species)
h3d – Bramble scrub (cleared prior to survey, see section	Bramble scrub	0.003	0.01	Medium distinctiveness

UK Habitat Classification	Metric Habitat Type	Area (ha)	Biodiversity Metric Value Units	Notes on Condition and Distinctiveness
3.3.4.2 for further details)				Poor condition (assumed as per parcel above)
u1b5 - building	Urban - Developed land; sealed surface	0.470	0.00	N/A – condition and distinctiveness assessments are not undertaken on these habitat types
u1b - Developed land; sealed surface	Urban - Developed land; sealed surface	0.107	0.00	N/A – condition and distinctiveness assessments are not undertaken on these habitat types

## 3.4 Protected and Notable Species

The results of the desk study and field surveys have been combined under the relevant headings below.

### 3.4.1 Birds

#### Desk Study

Given the urban nature of the site and its surrounds, the desk study has largely focused on roof-nesting birds (as provided by GCER).

Records of 18 species of birds that could nest on/within roofs were returned including Schedule 1 species including barn owl (*Tyto alba*), black redstart (*Phoenicurus ochruros*) and peregrine (*Falco peregrinus*). Barn owl records were returned around the areas associated with the designated sites as described in section 3.3 to the north-west of the site, whilst records of black redstart and peregrine were returned within Gloucester city centre<sup>16</sup>. Further records of birds which are known to roof-nest listed under section 41 of the NERC Act include herring gull (*Larus argentatus*), house sparrow (*Passer domesticus*), and starling (*Sturnus vulgaris*) have been recorded within 2.0km of the site; these species along with black redstart, house martin (*Delichon urbicum*) and swift (*Apus apus*) are also red-listed species under BoCC5. An additional three BoCC amber-listed species have been recorded within 2.0km comprising lesser black-backed gull (*Larus fuscus*), kestrel (*Falco tinnunculus*) and stock dove (*Columba oenas*).

A number of bird records, including 11 species listed under Schedule 1 of the WCA, were returned associated with the marsh and wetland habitats present

<sup>16</sup> Due to the sensitivities of the records four or six figure grid references have been provided and the exact locations of the records are therefore unknown.

within the designated sites to the north-west of the site, for example including bittern (*Botaurus stellaris*) and green sandpiper (*Tringa ochropus*).

## Field Survey

During the site survey eight species of birds were recorded comprising feral pigeon (*Columba livia domestica*), lesser black-backed gull, herring gull, carrion crow (*Corvus corone*), jackdaw (*Corvus monedula*), blackbird (*Turdus merula*) pied wagtail (*Motacilla alba yarrellii*) and pair of buzzards (*Buteo buteo*) which were observed flying over the city centre. The remains of several feral pigeons, corvids (*Corvus* sp.), gulls (*Larus* sp.) and a blackbird were noted on the roof entangled within the netting present along much of the building onsite. In addition, it was reported onsite that a pheasant (*Phasianus* sp.) has previously been removed from the netting and taken offsite for subsequent care.

Habitats within the survey, including building rooftops and scattered broadleaved trees area are suitable to support nesting birds. No nests were noted during the survey however, the buildings onsite may provide some suitability for species including swift, herring gull, lesser black-backed gull, feral pigeon and notable species such as black redstart and peregrine.

The scrub parcel located onsite is considered to be unlikely to support breeding birds due to its small size, including height, which would increase risk of ground-predation.

Although the buildings onsite have reduced suitability at the time of writing due to netting across the flat roof of the main building, some potential nesting habitat remains on walls and rooves elevated above the netting and within scattered trees within the survey area. As such, the site is considered to have **site (less than local) value** for breeding birds

## 3.4.2 Mammals

### 3.4.2.1 Badger

#### Desk Study

A total of three records of badger (*Meles meles*) were returned within 2.0km of the site. Records were located on the edge of or outside the urban area of the city centre, over 1.0km to the south-west and north-west of the site.

#### Field Survey

No evidence of badger was recorded within the survey area. The urban nature of the site does not provide suitable habitat for foraging badgers. The small parcel of scrub onsite is not sufficient in size to provide cover for badger, with the largely sealed substrate unsuitable for sett creation. As such, it is considered unlikely that badger will be present onsite and this species is not further considered in this assessment.



### 3.4.2.2 Riparian mammals

#### Desk Study

Six records of otter (*Lutra lutra*) were returned within 2.0km of the site. Most records were returned within habitats associated with the marsh and wetland habitats present within the designated sites to the north-west of the site, although one record was returned at Gloucester Docks, approximately 0.7km south-west of the site.

No records of water vole (*Arvicola amphibius*) were identified within 2.0km of the site.

#### Field Survey

No signs of otter or water vole were identified during the site survey. The site is located in an urban area surrounded largely by hardstanding, over 0.6km from the nearest river with negligible ecological connectivity to the site. Given the lack of connectivity between the site and waterbodies otter and water vole are considered to be unlikely to be present onsite and are not further considered within this report.

### 3.4.2.3 Hazel dormouse

#### Desk Study

No records of hazel dormouse (*Muscardinus avellalanrius*) were returned within 2.0km of the site.

#### Field Survey

No evidence of dormouse was identified during the site survey. The parcel of bramble scrub located onsite is too small to support dormice and there is no connectivity to suitable habitat within the wider surrounds given the urban nature of the site. As such, it is considered unlikely that dormice will be present onsite and this species is not further considered in this assessment.

### 3.4.2.4 Bats

#### Desk Study

A total of six species of bats were returned within the record search comprising common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared (*Plecotus auritus*), Daubenton's (*Myotis daubentonii*), noctule (*Nyctalus noctula*) and lesser horseshoe (*Rhinolophus hipposideros*). All records returned were of roosting bats, excluding that of the noctule bat which was identified in flight. The nearest record is that of a Daubenton's bat that was taken into care after being identified within the doorway of a commercial building on Northgate street.

## Field Survey

The site is located within an urban area with vegetation generally limited to ornamental planting, small patches of scrub and early-colonising species in areas of less-regular disturbance. The site's commuting and foraging habitat has therefore been assessed as being of low suitability for bats in line with BCT's Good Practice Guidelines<sup>12</sup>.

Trees present within the survey area, largely comprising London plane, were observed from ground level where possible. No features suitable to support roosting bats were identified during the survey. Some trees were inaccessible due to ongoing works at King's square and were therefore assessed by using close-focussing binoculars from a distance as close-inspection was not possible. As good visibility was gained this is not considered to be a constraint to the assessment.

The former Debenham's buildings were subject to a PRA (as detailed in Section 2.2.4). The buildings were inspected externally and internally, where accessible, to assess their suitability to support roosting bats. Surveys focussed on areas around the edges of the buildings and based on professional judgement moving inwards where appropriate, and those areas that had been disused for a significant period of time (e.g. excluding the large main retail spaces of recent use). No bats, or evidence of bats was observed during inspections of the buildings onsite. Several areas of the buildings could not be viewed externally, with further internal access also restricted due to safety constraints (see Section 3.3.4.5 for further details).

There were several PRFs identified during the inspections which were assessed as having **low suitability** to support roosting bats in line with BCT's Good Practice Guidelines<sup>12</sup> and as such, further surveys are recommended as detailed in the section below. The findings of the PRA summarised in Table 4 overleaf and further detailed under the relevant headings, where identified PRFs are referenced as F01, F02 etc. The below should be read in-conjunction with figures 3 and 4.

Table 4: Summary of Potential Roost Features identified

PRF reference (see Figure 4)	Structure (refer to Figure 3)	Description	Suitability for roosting bats
F01	1909/14 building	Lifted tiles	Low
F02	1909/14 building	Lifted flashing	Low
F03	1909/14 building	Lifted flashing	Low
F04	Main building	Gaps behind large board affixed to wall (behind netting)	Negligible
F05	Main building	Broken windowpane leading into former store area	Negligible
F06	Plantroom 1	Lifted flashing	Low
F07	Plantroom 1	Missing bricks, missing mortar and broken vents	Low
F08	Plantroom 2	Damaged soffit box	Low
F09	Water tower	Broken window vents leading to cavity walls, broken windowpane, cracks in brickwork	Low
F10	Wooden-louvred building	Broken louvres and fascias leading into the building, gaps around doors	Low
F11	Plantroom 4/5	Lifted flashing	Low
F12	Plantroom 4	Lifted capping	Low
F13	Mezzanine building	Lifted roof tiles and lifted flashing	Low
F14	Mezzanine building	Lifted fascia boards	Low
F15	Mezzanine building	Broken windowpane	Low
F16	Generator building	Gap in wall, lifted capping and gaps in door panelling	Low

### 1909/14 building

External visibility of the roof to the 1909/14 was limited by access, however, lifted tiles were noted along the southern-facing elevation of the northern-most gable to hip roof (F01; Photograph 2), along with lifted flashing along the valley gutter (F02) and lifted flashing along the southern-facing elevation of the southern-most roof (F03). An internal inspection of these roof voids revealed wooden boarding throughout, with no access points into the roof voids identified. The PRFs within the 1909/14 building are therefore considered likely to be limited to access under roof tiles and lifted flashing.



Photograph 2 - View looking towards Northgate Street showing the roof of the 1909/14 building as visible at the time of survey

## Main building

PRFs associated with the main building, comprising the largest section of the former department store, were largely identified on structures atop the flat roof. Two features of significance were noted upon the main building itself comprising a large wooden board affixed to the northern-facing elevation overlooking the courtyard (F04; Photograph 3) and broken window forming a gap of approximately 100mm in diameter on the south-western facing elevation, fronting Northgate street (F05; Photograph 4). Upon further inspection the former (F04) was observed to be covered in netting, creating a cluttered entrance to potential roosting features formed in gaps between the wooden boarding and brickwork, and the latter (F05) was found to lead into a brightly-lit area that was previously subject to frequently disturbance. As such, both of these features were assessed as having negligible suitability to support roosting bats.



Photograph 3 - View of the main building from The Oxode



Photograph 4 - Boarding on the main building facing the courtyard

Structures atop the roof of the main building found to contain PRFs included plant room 1, plant room 2, the water tower, the wooden-louvred structure and plantrooms 4 and 5. Plant room 1 contained PRFs including limited areas of lifted metal flashing (F06) and missing bricks, mortar, and broken vents (F07; Photograph 5) which allowed access into the structure. A wooden soffit box with significant damage was noted upon the southern-western and south-eastern facing elevations of plant room 2 (F08; Photograph 6), this was further inspected using an endoscope (under licence<sup>13</sup>) which revealed gaps forming cavities of approximately 200mm in width and height and 400mm in depth.



Photograph 5 – Missing bricks on Plantroom 1



Photograph 6 – Damaged soffit box present on Plantroom 2

The water tower was inspected externally only from the roof-level of the main building. The water tower is a three-storey building upon which several PRFs (F09; Photograph 7) were noted including broken wooden vents leading into large gaps formed in cavity walls on all elevations, broken windows allowing access into the internal structure of the building, and cracks in brickwork and areas of missing mortar .



Photograph 7 – Example of broken vent on the Water Tower

The wooden-louvred building is a single storey building, with wooden panels forming the walls of the structure on the north-west and south-east facing elevations (F10; Photograph 8). Broken wooden fascias, gaps around wooden doors and missing and broken louvres on these elevations provide potential access points into the structure which contains wooden-beam shelving throughout. The suitability of the building is somewhat reduced due to the presence of netting around the majority of the structure, however the netting is broken in places, and it is therefore considered that bats could find egress into the building to roost.



Photograph 8 – Wooden-Louvred Building

Lifted flashing provides suitability for roosting bats where the pitch ply roof of the single storey plantroom 5 adjoins plantroom 4 (F11). Further lifted capping is present at the edge of the flat-roof on the north-west and north-eastern facing elevations plantroom 4 (F12).



### Mezzanine building

The Mezzanine building was inspected from the courtyard adjacent to St Aldate Street and roof-level of the main building, however, due to safety constraints limiting access, the roof was not able to be fully visualised at the time of survey. PRFs were noted on the courtyard elevation of the building comprising raised roof tiles and lifted flashing (F13; Photograph 9), several areas of lifted wooden fascia boards creating gaps of approximately 30mm by 100mm (F14), and a broken window-pane with a gap of approximately 100mm in diameter (F15; Photograph 10). The room containing the broken pane was not able to be accessed at the time of survey due to the presence of asbestos. The access into the roof voids created by the hipped roof is located in the same room and the voids were therefore also inaccessible at the time of survey.



Photograph 9 – Lifted tiles on the Mezzanine building



Photograph 10 – Broken windowpane leading into the Mezzanine building

### Courtyard outbuildings

The structures in the courtyard were also subject to a PRA, with PRFs identified on the generator building forming a lean-to on the Mezzanine building. These comprised lifted ply capping, a hole in wall under the wooden soffit box and gaps in door panelling on the north-eastern facing elevation (F16; Photograph 11) on the north-eastern and south-eastern facing aspects.



Photograph 11 – Gap in wall and lifted capping on the Generator building in the courtyard

### **Further Survey Recommendations**

Further surveys are recommended in the form of emergence and/or re-entry surveys to assist in the identification of any features onsite used by roosting bats and general activity levels across the site. In line with the current assessment of features as having low suitability to support roosting bats, one emergence/re-entry survey should be undertaken between May and August.

All bat surveys should be undertaken with reference to BCTs ‘Good Practice Guidelines’<sup>17</sup>. Surveys should be completed in suitable weather conditions (above 10°C, dry and with low wind conditions) with emergence surveys commencing at

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<sup>17</sup> It is anticipated that a new edition of the bat survey guidance will be published prior to the earliest commencement of surveys in May 2022; surveys should comply with the prevailing guidelines. The recommendations included within this report are compliant with the current third edition of BCT’s ‘Good Practice Guidelines’ (2016) to provide indicative requirements.

least fifteen minutes before sunset and finishing two hours after sunset to allow for identification of later-emerging species. This should be reversed for re-entry surveys commencing two hours before sunrise and ending fifteen minutes after sunrise, or later if bat activity continues. Each surveyor should be equipped with an electronic bat detector with sound recording capabilities and an infrared or thermal camera to assist in identification of any roosting locations. If a bat emergence is identified during the survey, at least two further emergence or re-entry surveys are likely to be required at least two weeks apart in line with the Good Practice Guidelines. A bat mitigation licence must then be sought from Natural England before works to the identified area(s) can proceed.

The full extent of the roof will not be able to be visualised during any emergence/re-entry surveys due to the complexity of the roof structure and associated safety constraints. As such it is likely that a Precautionary Method of Working (PMW) will be required as a minimum during any construction works, however, further advice should be sought from a suitably qualified ecologist following the completion of emergence/re-entry surveys.

Works at roof level are currently planned prior to May 2022. In lieu of being able to carry out the surveys required at this time of year, and to ensure any disturbance or harm to bats is mitigated, it has been agreed with the client that any works that will take place in the proximity of low potential features will be completed under a Precautionary Method of Working (PMW). A toolbox talk will be given onsite prior to the commencement of any works by a suitably qualified ecologist to ensure contractors are aware of the possible presence of bats onsite and requirements regarding their protection. Works must not commence in the areas identified as having suitability to support roosting bats that could cause the disturbance or destruction of these features (including preventing access by bats to a feature) prior to emergence/re-entry surveys being completed in 2022 with further consideration then given to a bat mitigation licence, if required.

In the absence of completed surveys a valuation of this ecological receptor has not been determined (see section 2.3.1), however, precautionary mitigation for the initial works has been included as stated above. Any further mitigation recommended will be determined based on the species, roost status and roost location identified.

### 3.4.2.5 Other mammals

#### Desk Study

A total of 49 records of hedgehog (*Erinaceus europaeus*) were returned within 2.0km of the site the nearest was a road-casualty at a roundabout 0.7km north-west of the site.

A record of common porpoise (*Phocoena phocoena*) was returned from 2017 at Alney Island Nature reserve, approximately 0.8km north-west of the site. There is no hydrological pathway between the site and suitable habitat for aquatic mammals and as such, the species is not further considered within this assessment.

## Field Survey

Although a small parcel of scrub is present onsite it is highly fragmented from any connective habitat due to the urban nature of the site, and it is therefore considered unlikely to support notable small mammal species such as hedgehog. As such, these species and not further considered within this report.

### 3.4.3 Reptiles and amphibians

#### Desk Study

Records of reptiles returned were limited to those of grass snake (*Natrix helvetica*) returned around Alney Island Nature Reserve, approximately 0.8km north-west of the site.

A single record of great crested newt (*Triturus cristatus*) was returned from a pond in a residential garden, based about the householder's description. In addition, there were several records of smooth newt (*Lissotriton vulgaris*) and palmate newt (*Lissotriton helveticus*) returned within 2.0km of the site. One pond is located within 500m of the site, approximately 200m to the north-west, which is separated from the site by extensive areas of hardstanding including roads and buildings.

#### Field Survey

A small parcel of scrub is present onsite, however, due to its limited size and fragmentation from any suitable habitat for reptiles and amphibians (including ponds), it is considered unlikely to support reptile or amphibian species. As such, these species and not further considered within this report.

### 3.4.4 Invertebrates

#### Desk Study

The desk study returned three records of invertebrates listed under Section 41 of NERC Act (2006) comprising cinnabar moth (*Tyria jacobaeae*), blood-vein (*Timandra comae*) and small square-spot (*Diarsia rubi*) associated with sites designated over 0.6km to the north-west of the site.

#### Field Survey

Habitats onsite are considered to be of limited suitability to support notable invertebrate species due to lack of species diversity and vegetation cover present. As such, significant populations are not likely to be present and invertebrates are not further considered within this assessment.

### 3.4.5 Fish

#### Desk Study

No records of fish were returned within 2.0km in the last ten years. There were no waterbodies identified on site, and no hydrological pathways noted between the site and waterbodies in the surrounding landscape and as such, fish are not further considered within this assessment.

### 3.4.6 Protected flora

#### Desk Study

Notable species including tubular water-dropwort (*Oenanthe fistulosa*), divided sedge (*Carex divisia*) and cornflower (*Centaurea cyanus*) were returned within 2.0km associated with sites designated over 0.6km to the north-west of the site.

#### Field Survey

No protected flora was observed in the survey area during the field survey, although it is noted that the survey was completed just outside of the optimal period for vegetation surveys. Nonetheless, given the highly urban nature of the site it is considered unlikely that notable flora will be present onsite and as such, these features are not further considered within this assessment.

### 3.4.7 Invasive species

#### Desk Study

Numerous records of invasive species were returned within 2.0km of the site as part of the desk study including Japanese knotweed (*Reynoutria japonica*) and Himalayan balsam (*Impatiens glandulifera*).

#### Field Survey

No invasive flora or fauna, as listed under legislation detailed in section 1.4, were identified within the survey area. As such these features are not further considered within this assessment.

## 4 Impact Assessment

As detailed in section 2.3, the impacts of the proposed development on any important ecological features are assessed in detail under the relevant headings below. The valuation of ecological receptors within the study area in terms of the importance in an international, national, county, local, and site (less than local) context as per the geographic scale identified, assessed as detailed in Chapter 3, are summarised below. Evaluation of ecological receptors is undertaken with consideration of both construction activities and the operational use of the site.

The effects from both the construction and operation of the scheme are then assessed for all the ecological receptors present, or potentially present, within the study area that are valued as local and above or if they require legal compliance in relation to international and national legislation, or compliance with local policy. Note that habitat types of negligible value, such as hardstanding, are omitted.

### 4.1 Valuation of ecological receptors

Ecological receptors and their associated valuation, assessed as detailed in Section 3, which will be considered as part of the impact assessment are summarised in Table 5 below.

Table 5: Valuation of ecological receptors

Ecological receptor	Valuation
<b>Habitat (Dense scrub)</b>	Site value (compliance with local policy applies)
<b>Breeding birds</b>	Site value (compliance with legislation applies)
<b>Bats</b>	Valuation to be determined following further surveys.

### 4.2 Potential Impacts

Adverse impacts to the biodiversity within the area could arise from the construction and/or operation of the scheme, are described under the relevant headings below.

#### 4.2.1 Construction (permanent and temporary impacts)

Potential impacts, particularly from construction activities, could result upon habitats and species within the site or the wider study area. The potential impacts of the proposed works are:

- Habitat loss;
- Habitat degradation, from potential pollution events including dust;
- Species disturbance from noise; and

- Species mortality/injury.

#### 4.2.1.1 Habitats

Scrub habitat of approximately 20m<sup>2</sup> is to be cleared as part of the proposed works. In the absence of mitigation, there will a significant effect on habitats from permanent loss of vegetation onsite result in net loss of biodiversity (in relation to the BNG assessment). As such a *significant negative impact* at the site level is anticipated.

#### 4.2.1.2 Breeding Birds

All breeding birds, their eggs and their nests are protected by the Wildlife and Countryside Act 1981 (as amended), with further protection against disturbance afforded to those species listed under Schedule 1. Furthermore, any birds caught in netting are considered to be protected under the Animal Welfare Act (2006). In the absence of mitigation/intervention birds could continue to become entangled and die within the netting, potentially constituting an offence under the Animal Welfare Act.

The buildings onsite provide suitability to support breeding bird species including black redstart, swift, house martin, gulls and feral pigeon. Building works, including the demolition of structures and works to rooftops and increase in noise and light disturbance from works, could result in an offence under the Wildlife and Countryside Act if birds are using the building to nest at that time (through direct mortality of birds / destruction of active nests; disturbance offenses only relate to Schedule 1 species such as black redstart).

Taking a precautionary approach and assuming this may occur, a *significant negative impact* at the site level may occur.

#### 4.2.1.3 Bats

In the UK all species of bats and their roosts are fully protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) with additional protection offered under Schedule 2 of the Conservation of Habitats and Species Regulations 2017, listing them as European Protected Species (EPS). This makes it an offence to:

- Intentionally or recklessly kill, injure or capture a bat;
- Intentionally or recklessly disturb a bat such as to affect its ability to survive, breed or rear its young;
- Damage, destroy or obstruct access to a breeding site or resting place (e.g. roost) used by a bat, or disturb bats while they are using such a place; and
- Possess or control a live or dead bat, or any part of a bat.

Preliminary surveys identified features of low suitability for roosting bats on the roof of the 1909/14 building, mezzanine building, structures atop the main roof and generator building within the courtyard. If further surveys confirm bat roosts are present and mitigation is not included, bats could be killed, injured or

prevented from accessing a roost from works to these structures (including demolition and re-roofing works) or disturbed within or from their roosts from an increase in noise and lighting across the site.

Following the precautionary principle, as outlined in section 5.35 of the Guidelines for Ecological Impact Assessment<sup>18</sup> the works are anticipated to have a *significant negative impact* on bats; the level of impact is currently unknown, a value will be assigned to the receptor following the completion of further surveys (this will be determined by the species and roost type identified, if applicable, following surveys in 2022).

## 4.2.2 Operation

There is not predicted to be an operational adverse effect on any habitat, or any protected species, as existing operational activities will remain largely similar as per previous activities onsite. As such, operational effects are not considered further within this assessment.

## 4.3 Avoidance, mitigation, compensation and enhancement

This section presents an overview of avoidance, mitigation and compensation measures proposed in response to the impacts identified. The purpose of these measures is to avoid or reduce the ecological effects associated with the construction of the Proposed Scheme with further enhancements proposed to maximise benefits.

### 4.3.1 Habitat creation

Poor-quality scrub habitat to be lost onsite as a result of the proposed works will be replaced by planting of broadleaved trees, green rooves and green walls in line with local requirements to achieve 10% biodiversity net gain.

Full details regarding the creation of proposed or enhanced habitats onsite are listed under the relevant headings below. Those habitats to be lost, retained, created or enhanced onsite post-construction are summarised in Table 6. Full calculations from the Metric can be found within the supplementary documents attached to this report. A plan detailing habitat creation onsite can be found within the Design and Access statement<sup>1</sup>.

### 4.3.2 u1b5 – Buildings

There will be a small increase in the area of buildings/structures onsite as a result of the proposed works, however, for the purpose of the Metric calculations further

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<sup>18</sup> The evaluation of significant effects should always be based on the best available scientific evidence. If sufficient information is not available further survey or additional research may be required. In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect should be assumed. Where uncertainty exists, it must be acknowledged in the EclA.



areas are included within enhancement and habitat creation calculations under the relevant headings for the green rooves and façade-bound green walls.

As per the Metric guidelines no condition or distinctiveness assessment has been undertaken for this habitat.

### 4.3.3 u1b - Developed land; sealed surface

There will be a small reduction in the area of sealed surfaces (comprising sealed hardstanding for the purpose of this assessment) as a result of the proposed works. This is largely habitat creation delineating St Aldate Street as described under the relevant headings below.

As per the Metric guidelines no condition or distinctiveness assessment has been undertaken for this habitat.

#### 4.3.3.1 u1b1112 – Developed land; sealed surface, intensive green roof

An intensive green roof has been proposed atop the switch room and bin store within the courtyard off St Aldate Street comprising an area of 55m<sup>2</sup>. This will consist of planting of a meadow mixture habitat<sup>19</sup> comprising native grasses and wildflowers such as creeping bent (*Agrostis stolonifera*), red fescue (*Festuca rubra*), oxeye daisy (*Leucanthemum vulgare*) and common knapweed (*Centaurea nigra*). This should be installed as per the manufacturer's instructions, which is likely to require a substrate of at least 300mm, with sowing taking place during the spring or autumn.

In line within the Metric condition assessments this habitat will target 'moderate' condition due to the inclusion of a diverse range of native-species only. The habitat is considered to be of medium distinctiveness.

#### u1b1111 – Developed land; sealed surface, extensive green roof

An extensive stonecrop (*Sedum* spp.) roof has been proposed for the cycle shelter within the courtyard off St Aldate Street comprising an area of 95m<sup>2</sup>. A suitable mixture will be identified and installed as per the manufacturer's instructions. This is likely to require a substrate of at least 100mm with installation directly onto a drainage board.

In line within the Metric condition assessments this habitat will target 'poor' condition due to the lesser species diversity included within this habitat type. The habitat is considered to be of low distinctiveness.

### 4.3.3.2 g4 - Modified grassland

A parcel of grassland is proposed delineating the site's boundary at St Aldate Street comprising an area of 35m<sup>2</sup>. The grassland will be sown as specified in

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<sup>19</sup> Example suggested seed mixture – EM1 – Basic general purpose meadow mixture:  
<https://wildseed.co.uk/mixtures/view/2>

section 4.3.3.1, however, due to the likely inputs at ground-level, and shading from trees planted within the area, it is expected that this habitat will develop into modified grassland.

The proposed habitat condition has been set to 'moderate' due to the target for species diversity to be included, with a value of low distinctiveness as determined by the Metric.

#### 4.3.3.3 u1170 – Urban tree

Four trees will be planted within the modified grassland delineating St Aldate Street. Due to the potential presence of archaeological receptors within the area shallow-rooted species have been advised and as such two specimens of each cherry (*Prunus amanogawa*) and apple (*Malus 'Donald Wyman'*) are proposed. The habitat has been assessed using the 'urban tree helper' within the Metric, with tree sizes set to small in line with the guidance provided.

Due to the non-native / cultivar species proposed, this habitat condition has been set to 'poor' with medium distinctiveness in line with the Metric guidance.

#### 4.3.3.4 u1b1122 – Façade-bound green wall

Four façade-bound green walls have been proposed as part of the scheme comprising one green wall on the south-easter facing elevation of the switch room, and three upon the ground floor of the main building facing the courtyard, covering an area (in terms of elevation) of 88m<sup>2</sup>. For the purpose of the calculations within the metric this has been considered as an enhancement area to the existing u1b buildings habitat onsite. Species proposed comprise ivy (*Hedera helix 'sagittifolia'*) and common honeysuckle (*Lonicera periclymenum*).

Due to the lower diversity associated with this habitat type habitat condition has been set to 'poor', with a value of low distinctiveness as determined by the Metric.

#### 4.3.3.5 Biodiversity Net Gain Post-Intervention Summary

The proposed habitats to be retained or created onsite post-construction (including replanting and enhancement measures) are summarised in Table 6, with their respective area and biodiversity unit value (as calculated by the Metric). All habitats present within the site are not considered to be of strategic significance in accordance with the guidance provided.

Table 6: Post-intervention habitat area and value onsite

UK habitat classification	Habitat metric type	Area (ha)	Biodiversity metric value units	Notes including condition and distinctiveness assessment
<b>Habitat retention</b>				
u1b5 - Buildings	Urban - Developed land; sealed surface	0.04612	0.00	N/A – condition and distinctiveness assessments are not undertaken on these habitat types
u1b - Developed land; sealed surface	Urban - Developed land; sealed surface	0.107	0.00	N/A – condition and distinctiveness assessments are not undertaken on these habitat types
<b>Site Habitat creation</b>				
u1b1112 – Developed land; sealed surface, intensive green roof	Urban – Intensive green roof	0.005	0.01	Medium distinctiveness Moderate condition (due to targeted species diversity which could provide nectar source for invertebrates)
u1b1111 – Developed land; sealed surface, extensive green roof	Urban – Extensive green roof	0.0095	0.02	Low distinctiveness Poor condition (due to lesser species diversity)
g4 - Modified grassland	Grassland – Modified grassland	0.0010	0.01	Low distinctiveness Moderate condition (due to increase in shading as a result of planted trees and lower species diversity expected)
u1170 – Urban tree	Urban – Urban tree	0.0018	0.01	Medium distinctiveness <sup>20</sup>

<sup>20</sup> It should be noted that there is an error within the Metric (version 3.0) where Urban trees are incorrectly assigned as being of low distinctiveness within the trading summary. For the purpose of this assessment urban trees have been included as a medium distinctiveness feature in line with the Metric guidance provided.

UK habitat classification	Habitat metric type	Area (ha)	Biodiversity metric value units	Notes including condition and distinctiveness assessment
				Poor condition (due to the presence of non-native species)
<b>Site habitat enhancement</b>				
u1b1122 – Façade-bound green wall	Urban - Ground based green wall	0.088	0.01	Low distinctiveness Poor condition (due to lesser species diversity)

In total, the Metric indicates that post-intervention habitat creation and enhancement of the site will provide a value of 0.05 habitat units, comprising 0.02 units of medium distinctiveness and 0.03 units of low distinctiveness. This equates to a net gain calculated by the metric of over 250%<sup>21</sup>.

#### 4.3.4 Breeding birds

It is recommended that netting is removed from the building to prevent further injury and mortality to birds. The netting does not cover the entirety of the building and is damaged in places. Trees within the survey area are outside of the site boundary are not expected to be affected by the proposed development so further recommendations for these features are not included. Breeding birds could be present year-round and as such works to remove buildings onsite, and works to rooftops will require an inspection for breeding birds and their occupied nests by a suitably experienced ecologist no more than 24 hours prior to any works commencing. If nesting birds are found during the pre-construction checks, a buffer around the nest will be implemented of at least 5 metres (species dependent) as agreed with the ecologist and further work within the immediate and surrounding area will be delayed until young have fledged and left the nest, and the nest is no longer in use.

Enhancing the site for use by breeding birds is recommended in the form of inclusion of two nest boxes for swifts, which can be mounted onto walls, or unobtrusively built into the fabric of new structure (recommended for rooftop structures at over 5m in height). Further boxes, including 2HW Schwegler Nest Box (or similar) are also recommended which could be used by species including black redstart and robin (*Erithacus rubecula*); these boxes help protect smaller species from predation by larger birds. The treeline to be planted delineating St Aldate street, over time, will further develop into features suitable to support breeding birds.

<sup>21</sup> Within the Metric, the individual values of biodiversity units per parcel are not displayed beyond two decimal points, however they are considered to a further degree of precision within the calculations giving a BNG increase of 255.84%.

### 4.3.5 Bats

Works at roof level are planned prior to the considered active season for bats and it has therefore been agreed that works will be completed under PMW as detailed within section 3.4.2.4. This will comprise a toolbox talk and avoidance of works that could impact low potential features identified. Emergence/re-entry surveys have been recommended to be undertaken in 2022 with further consideration then given to a bat mitigation licence, if required.

Any mitigation or enhancement measures for bats are to be determined following the completion of bat surveys to be undertaken at the site and included within any licence application, if required. This could include the avoidance of disturbance or damage to any roosts onsite, inclusion of bat access tiles into pitch and hipped rooves following re-roofing works, integrating bat bricks into new structures or free-standing bat boxes or bat houses on buildings or trees. Further consideration may need to be given to sensitive lighting onsite depending on the results of further surveys.

### 4.3.6 Further enhancements

Further enhancements onsite are recommended in the form of the provision of four bug hotels. These could be included within courtyard area adjacent to green wall and roof installations to allow invertebrates to complement the increase in foraging resources provided by these habitats.

## 4.4 Residual effects

With consideration and implementation of the mitigation measures discussed above, it is reasonable to conclude that the proposed development will not give rise to likely significant effects on habitats and birds within the study area.

If bat roosts are identified during surveys recommended in 2022, suitable mitigation will be devised and captured in a licence application to Natural England as required. Exact requirements for the amount mitigation including any suitable replacement roost provision (including the locations for these provisions), indicative examples of which are provided in section 4.3.5, will be determined during the detailed design phase based on the 2022 survey results.

## 5 Post-construction Maintenance and Monitoring

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### 5.1 Habitat Maintenance and Monitoring

A management plan will be prepared by the client for the maintenance of the proposed habitats to be created onsite.

The Metric suggests that it will take one year for achievement of the target condition of 'poor' condition for the extensive green roof, four years for the 'moderate' condition improved grassland, five years for the intensive green roof of 'moderate condition' and ten years for the target of 'poor' condition for the newly planted trees. As such, a ten-year management plan will be required. Measures of success will be determined with reference to the condition assessment criteria outlined in the supplementary technical guidance accompanying the Metric.

It is proposed that the habitats are surveyed by a suitably qualified ecologist (SQE) in year one and year five post-construction, with further recommendations for replanting and monitoring made at that time if the vegetation has failed to establish.

### 5.2 Breeding birds

With consideration and implementation of the mitigation measures included, further monitoring of bird populations onsite is not considered to be necessary, however, a plan to clean and maintain boxes will be agreed with the building owner.

### 5.3 Bats

Any further monitoring requirements for bats will be detailed following surveys with the subsequent bat report and any licensing as required.

## 6 Summary

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The relevant findings and recommendations within this assessment are summarised below.

### 6.1 Habitats

The preliminary ecological appraisal survey identified a small parcel of scrub onsite in poor condition, with further coverage of this habitat recognised for baseline calculations based on aerial imagery of the site within the last five years. The habitat was assessed as being of site value and will be permanently lost as a result of the proposed works.

The baseline habitats onsite were calculated using the Metric to assist the delivery of biodiversity net gain onsite. The habitats present onsite prior to development comprised 0.02 units of medium distinctiveness.

New habitats to be created onsite comprise an intensive green roof, extensive green roof, urban trees, modified grassland and façade-bound green walls. This aims to deliver 0.05 habitat units comprising 0.02 units of medium distinctiveness and 0.03 units of low distinctiveness, equating to a net gain of over 250%.

### 6.2 Breeding birds

The preliminary ecological appraisal survey identified common species associated with the urban nature of the site, with remains of several species entangled within the netting present along the flat roof of the main building. Further notable species of birds including peregrine and black redstart were returned within the city centre as part of the desk study which could be present within the study area. The building was assessed as being of site value for breeding birds.

It is recommended that netting is removed from the building. Breeding birds could be present year-round and as such works to rooftops and removal of any buildings should be subject to a pre-construction check by an ecologist. If nesting birds are found suitable mitigation measures will be implemented to ensure these are protected.

Bird boxes, in the form of swift nest boxes and 2HW Schwegler nest boxes (or similar) have been recommended to enhance the site's value for breeding birds. Habitats to be created onsite will also provide suitable nesting habitats for birds in the long-term

### 6.3 Bats

The preliminary ecological appraisal survey identified features on the roof of the 1909/14 building, mezzanine building, structures atop the main roof and generator building within the courtyard which have low suitability to support roosting bats. Further surveys, in the form of emergence/re-entry surveys, have been recommended to be undertaken from May 2022.

In lieu of being able to carry out the surveys required works required at the roof level will be completed under a Precautionary Method of Working comprising a toolbox talk given by an ecologist prior to commencement of any works, and avoidance of works that could cause disturbance or destruction of the low potential features identified. Full works will not commence until the bat surveys are completed in 2022, with further consideration to be given to a bat mitigation licence, if required.

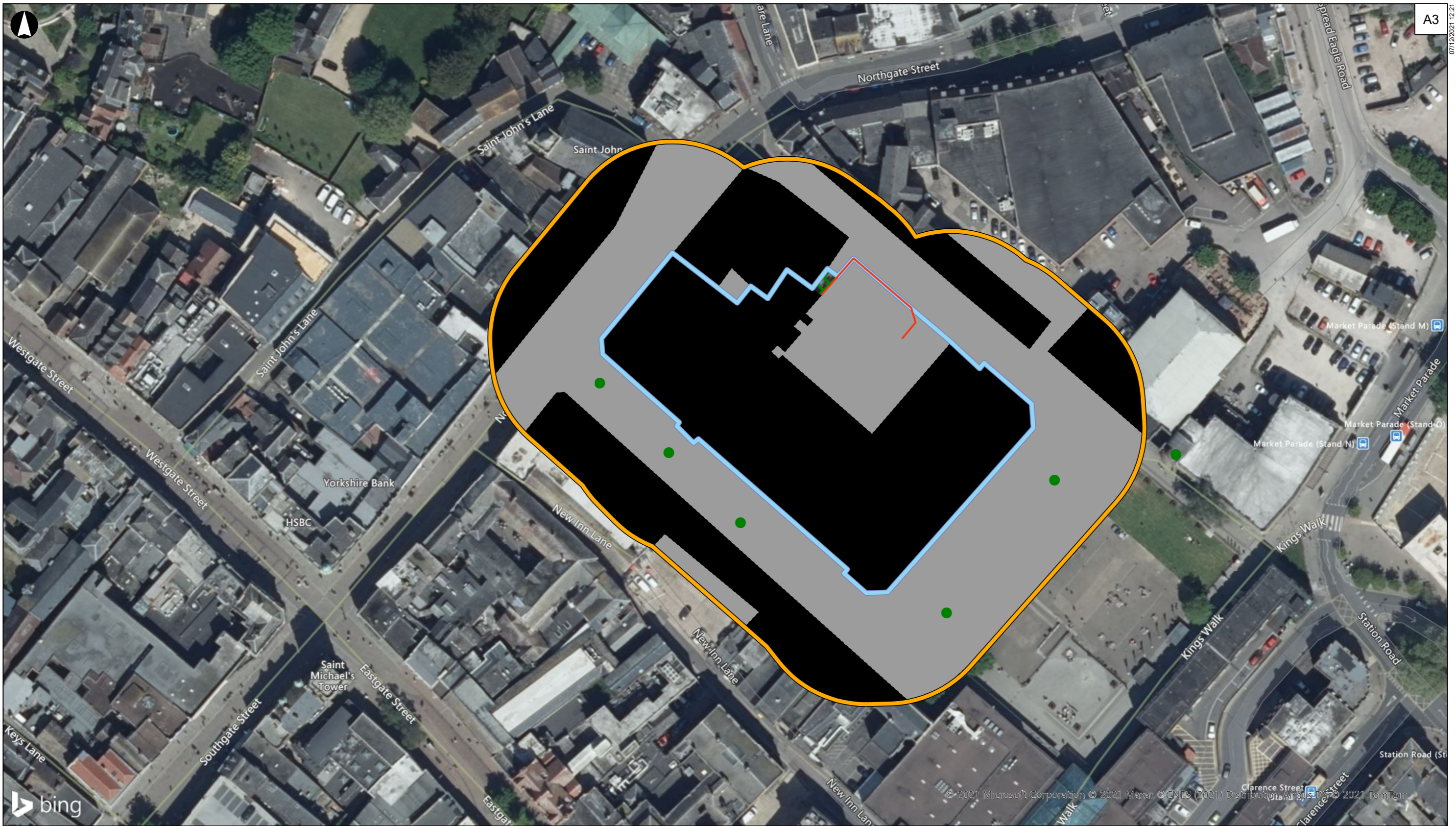
Proposed mitigation or enhancement measures are to be determined following the results of further surveys however, could include the avoidance of disturbance or damage to any roosts onsite, inclusion of bat access tiles into pitch and hipped rooves following re-roofing works, integrating bat bricks into new structures or free-standing bat boxes or bat houses on buildings or trees.



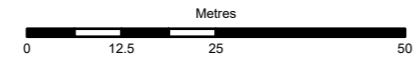
## Figures

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## **Figure 2 Phase 1 Habitat Survey Map**



- Site boundary
- J2.5 - Wall
- Survey boundary
- A3.1 - Broad-leaved parkland/scattered trees
- A2.1 - Scrub - dense/continuous
- J3.6 - Buildings
- J5 - Hardstanding



Coordinate System: British National Grid

—	03/12/21	RSJ	CE	PC	—
Rev	Date	By	Chkd	Appd	Authd

**ARUP**

Client  
**University of Gloucestershire**

Project Name  
**UoG City Campus Project**

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Drawing Title  
**Phase 1 Habitat Survey Map**

Scale at A3  
**1:1,000**

Role  
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Suitability  
**S4**

Project Number <b>282739-00</b>	Rev <b>P01</b>
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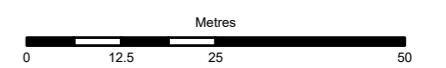
Drawing Name  
**Figure 2**

### **Figure 3 Building Plans**



- Legend**
- Site Boundary
  - Area not able to be visualised externally
  - Water tower
  - Wooden- Louvred building
  - Staircase
  - Clock tower
  - Plant room

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere



P01	03/12/21	RSJ	CE	PC	--
Rev	Date	By	Chkd	Appd	Authd

**ARUP**

Client  
**University of Gloucestershire**

Project Name  
**UoG City Campus Project**

Drawing Title  
**Building plans**

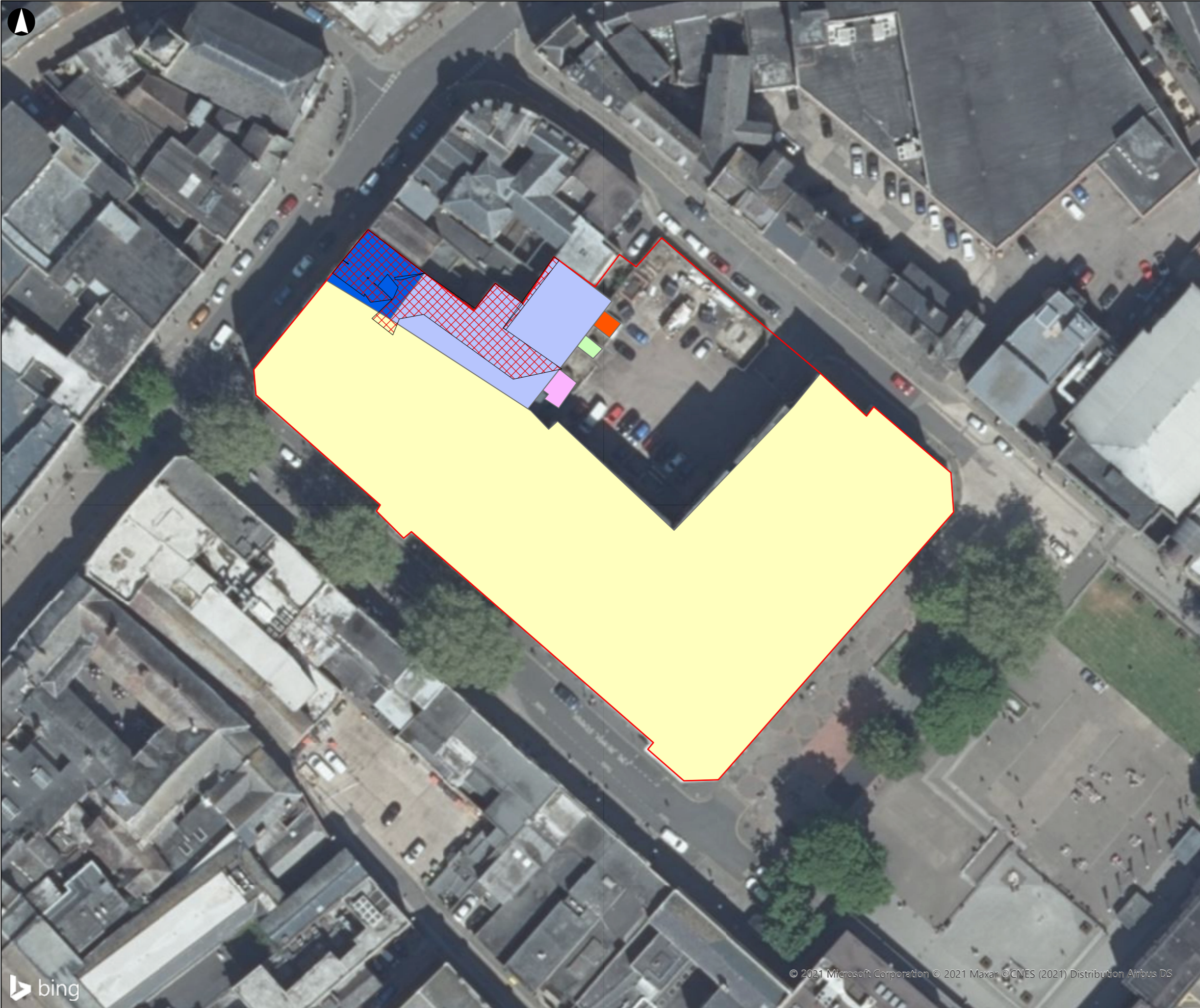
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Role  
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Suitability  
**S4**

Project Number <b>282739-00</b>	Rev <b>P01</b>
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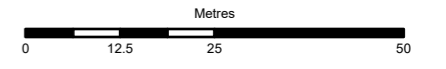
Drawing Number  
**Figure 3 (a)**



**Legend**

- Site Boundary
- Area not able to be visualised externally
- 1909/14 building
- Generator building
- Main building
- Metal cabinet
- Mezzanine building
- Shed

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere



P01	03/12/21	RSJ	CE	PC	--
Rev	Date	By	Chkd	Appd	Authd



Client  
**University of Gloucestershire**

Project Name  
**UoG City Campus Project**

Drawing Title  
**Building plans**

Scale at A3  
**1:1,000**

Role  
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Suitability  
**S4**

Project Number <b>282739-00</b>	Rev <b>P01</b>
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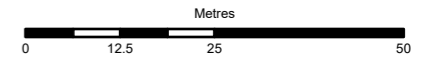
Drawing Number  
**Figure 3 (b)**

## Figure 4 Bat Potential Roost Features



- Legend**
- Site Boundary
  - ▬ Potential Bat Roost Features (PRFs) - Low
  - ▬ Potential Bat Roost Features (PRFs) - Negligible

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere



P01	03/12/21	RSJ	CE	PC	--
Rev	Date	By	Chkd	Appd	Authd

**ARUP**

Client  
**University of Gloucestershire**

Project Name  
**UoG City Campus Project**

Drawing Title  
**Potential Bat Roost Features (PRFs)**

Scale at A3  
**1:1,000**

Role  
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Suitability  
**S4**

Project Number <b>282739-00</b>	Rev <b>P01</b>
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Drawing Number  
**Figure 4**



## **Appendix A**

### **Legislative Context**

## A1 Legislative Context

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A framework of international, European, national and local legislation and planning policy guidance exists to protect and conserve wildlife and habitats. This is described in the following sections. The reader will refer to the original legislation for the definitive interpretation.

### A1.1 Statutory Designated Sites

A network of nationally designated sites has been established through the designation of Sites of Special Scientific Interest (SSSI) under the Wildlife and Countryside Act 1981 (as amended). The protection afforded by the Act means it is an offence to carry out or permit to be carried out any operation listed within the notification without the consent of the Statutory Nature Conservation Organisation<sup>22</sup> (Natural England).

The protection afforded to SSSIs is used to underpin the designation of areas at a European Level. European Sites comprise:

- Special Areas of Conservation (SAC) designated under the Conservation of Habitats and Species Regulations 2019 (Amendment) (EU Exit) (known as the Habitats Regulations);
- Special Protection Areas (SPA) designated under the Wildlife and Countryside Act.

Wetlands of International Importance (Ramsar sites) declared under the Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 are normally also notified as SSSIs but are only considered European Sites as a matter of UK and Local Government Policy.

The Habitats Regulations transpose the requirements of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) into law within England and Wales, while the Wildlife and Countryside Act transposes Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive) in the law within England and Wales. Equivalent legislation exists to transpose these directives in the law within Scotland and Northern Ireland.

The Habitats Regulations require that consideration is given to the implications of plans and projects (developments) on European Sites are considered. Specifically, Regulation 61(1) states:

*“A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which –*

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<sup>22</sup> Section 28 of the Wildlife and Countryside Act 1981 (as substituted by Schedule 9 of the Countryside and Rights of Way Act 2000).

(a) is likely to have a significant effect on a European site or European marine site (either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications for that site in view of that site's conservation objectives.”

The formal consideration of effects on European Sites is therefore undertaken by the determining authority such as the Local Planning Authority.

Local Nature Reserves can be given protection against damaging operations through powers within the National Parks and Access to the Countryside Act 1949 (as amended). However, this protection is usually conveyed through inclusion of protection within local planning policy relating to these sites and other non-statutory sites such as sites of Importance for Nature Conservation.

## A1.2 European Protected Species

The Habitats Regulations convey special protection to a number of species which are listed in schedule 2 of the Regulations and are referred to as European Protected Species (EPS):

- All UK resident bat species;
- All whale and dolphin species;
- Large blue butterfly *Maculinea arion*;
- Common dormouse *Muscardinus avellanarius*;
- Pool frog *Rana lessonae*;
- Sand lizard *Lacerta agilis*;
- Fisher's estuarine moth *Gortyna borelii lunata*;
- Great crested newt *Triturus cristatus* ;
- European otter *Lutra lutra*;
- Wild cat *Felis silvestris*;
- Lesser Whirlpool Ram's-horn Snail *Anisus vorticulus*;
- Smooth snake *Coronella austriaca*;
- Sturgeon *Acipenser sturio*;
- Natterjack toad *Bufo calamita*; and
- All marine turtles.

Regulation 41 makes it an offence to:

- a) Deliberately capture, injure or kill any wild animal of a EPS;

- b) Deliberately disturb wild animals of such a species;
- c) Deliberately takes or destroys the eggs of such a species;
- d) Damages or destroys a breeding site or resting place of such an animal.

Disturbance in the context of the offences above is disturbance which is likely to impair the ability of the animals to survive, to breed or reproduce, to nurture their young, to hibernate, to migrate; or to affect significantly the local distribution of the species.

Licences can be granted by the relevant SNCO for developments (sometime referred to as EPS Licences or Derogation Licences) providing the purposes of the licence is for “*preserving 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*”.

### A1.3 UK Protected Species

The Wildlife and Countryside Act 1981 provide protection to both EPSs and other species including wild birds, water voles and reptiles.

All wild birds, their nests and eggs are protected with some rare species afforded extra protection from disturbance during the breeding season (these species are listed in Schedule 1 of the Act). It is illegal to take any wild bird or damage or destroy the nests and eggs of breeding birds. There are certain exceptions to this in respect of wildfowl, game birds and certain species that may cause damage.

Water vole receive protection under the Wildlife and Countryside Act 1981 which prohibits the killing, injuring or taking by any method.

All native reptile species in the UK are subject to partial protection from intentional or reckless killing or injury only.

Badger and their setts are protected under the Protection of Badgers Act 1992 which makes it an offence to kill, injure or take a badger, or interfere with a sett.

The Salmon and Freshwater Fisheries Act 1975 and The Eels (England and Wales) Regulations 2009 list provisions such as maintaining fish passes where rivers may be obstructed by dams or weirs and the provision of screens on outlets to avoid entrapment of fish.

### A1.4 Other Legislation Relating to Species

Habitats and species of principal importance for the conservation of biodiversity in England are listed under the provisions of Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. These include all the habitats and species in England that were identified as requiring action in the now succeeded UK Biodiversity Action Plan (UK BAP), which continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework.

Section 40 of the NERC Act 2006 places a duty on all local authorities to have regard to the conservation and enhancement of biodiversity within their decision making, particularly with reference to those habitats and species listed within Section 41 of the Act.

## A1.5 Invasive Species

Schedule 9 of the Wildlife & Countryside Act 1981 (as amended) lists certain plants and animals that are not native to Great Britain and could pose a threat to our native species and habitats.

Under this legislation it is an offence to plant or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9. It is also an offence to sell or to release into the wild any plants or animals on the Schedule.

The Invasive Alien Species (Enforcement and Permitting) Order 2019 allows for the enforcement of the EU Invasive Alien Species Regulation 1143/2014 on the prevention and management of invasive alien plant and animal species in England and Wales, including the relevant licenses, permits and rules for keeping invasive alien species. Species on this list are no longer listed on Schedule 9 of the Wildlife & Countryside Act 1981 (as amended).