

Report

Preliminary Ecological Appraisal Report

Broad Street Mall, Reading

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1 Non-technical Summary

This preliminary ecological appraisal report has been prepared by Sweco for McLaren (Broad Street Mall) Limited and UREF III LP, and relates to proposed residential and commercial development at Broad Street Mall, Broad St, Reading RG1 7QE, including that necessary for temporary construction works, for which detailed planning permission will be sought.

The purpose of this report is to identify potential ecological constraints to development, inform recommendations for design change, highlight opportunities for ecological enhancement and determine the need for further survey work and/or assessment to confirm baseline ecological conditions.

A UK habitat classification survey was carried out on 06 December 2022, to map the habitats present on site and assess their potential to support notable/protected species. An update survey was undertaken on 01 August 2023 to include the courtyard area within the southeast of the site and the grassland with trees to the south.

The site comprises developed land; sealed surface with scattered ruderal/ephemeral plants, modified grassland and roadside scrub. Scattered trees are present off-site to the east and south, and a continuation of the mall complex is present to the north of the site boundary.

The findings of the UK habitat classification survey confirm that the habitats on-site have the potential to support breeding birds. The potential presence of nesting feral pigeons (which can nest year-round), require a pre-works nesting bird check by a suitably qualified ecologist to ensure that the site is not in active use by nesting birds.

Butterfly bush is present across the site, and should be removed from site prior to construction. On going monitoring is recommended to prevent re-colonisation.

The intention is to retain the mature trees adjacent to site, with care taken to avoid impacts on these features in accordance with British Standard BS 5837:2012.

Opportunities exist for the provision of ecological enhancements in the form of:

- Planting of locally sourced native plant species with a benefit to UK wildlife (i.e. fruiting and/or flowering) within soft landscaping.
- Inclusion of green roofs/walls on any new and existing buildings.
- Installation of bat and bird boxes within buildings or installed in retained trees.
- Inclusion of a bug hotel and/or log piles to provide habitat for invertebrates

2 Disclaimer

This report and its findings should be considered in relation to the terms and conditions proposed and scope of works agreed between Sweco and the client.

Interpretations and recommendations contained in the report represent our professional opinions, which were arrived at in accordance with currently accepted industry practices at the time of reporting and based on current legislation in force at that time.

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This report is prepared and written in the context of the proposals stated in the introduction to this report and should not be used in a differing context. Furthermore, alterations to the initial proposals or changes in conditions on site over time may necessitate an alteration to the report in whole or in part after its submission. Therefore, in the event of any change in proposals or lapse of one year or more from the date of the report, the content of the report should not be relied upon unless referred to Sweco for validation and, if necessary, re-appraisal.

Scientific survey data will be shared with local biological records centre in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) professional code of conduct.

This report was prepared only for our client and is not intended to be relied on by any other party. Third parties should not rely on the facts, matters or opinions set out in this report without the express written permission of Sweco.

Please note that Sweco does not purport to provide specialist legal advice.

2.1 General Survey Limitations

Unless stated specifically, drawings and plans are indicative only. As such, the position of features marked on the plans or drawings should not be taken as 100% accurate.

Preliminary ecological appraisal does not assess the presence or absence of species, but is used to assess the potential for habitat to support them. Where a species is seen or there is clear and recent evidence of the presence of a species, this is reported.

With reference to the CIEEM guidelines [1], a preliminary ecological appraisal report is not suitable to support a planning application. This is because where there is the potential for ecological constraints, further survey work is necessary to determine if an actual constraint is present and establish baseline conditions. Once all ecological constraints have been confirmed following any further surveys or assessments that may be required, the effect of the proposals in relation to each of these constraints should be assessed in an ecological impact assessment report, which should be suitable to support a planning application.

3 Introduction

3.1 Purpose

This preliminary ecological appraisal report (PEAR) has been prepared by Sweco for McLaren (Broad Street Mall) Limited and UREF III LP, and relates to proposed residential and commercial development at Broad Street Mall, Broad St, Reading RG1 7QE, for which detailed planning permission will be sought.

The purpose of this report is to:

- Identify potential ecological constraints to development,
- Determine the need for further survey work to confirm baseline ecological conditions in order to inform the ecological impact assessment,
- Highlight opportunities for ecological enhancement, and
- Detail existing baseline Biodiversity Units of the site using the Defra Biodiversity Metric 4.0

3.2 Site Description

The site occupies an area of approximately 0.7 ha and is located around national grid reference SU 71203 73315 within the centre of Reading.

Habitats on-site include buildings and hardstanding with ruderal/ephemeral plants in places. A small area of modified grassland with scattered trees is present along the southern site boundary, as is a small area of roadside verge with ruderal/ephemeral species. A continuation of the mall complex is present to the north of the site boundary and scattered trees and buildings are present off-site to the east.

The site is within an urban area and is surrounded by residential, commercial and retail buildings. Areas of semi-natural green space, including an urban park and vegetable gardens (allotments), are present to the south of the site. The indicative site red line boundary is shown in Figure 1 below:

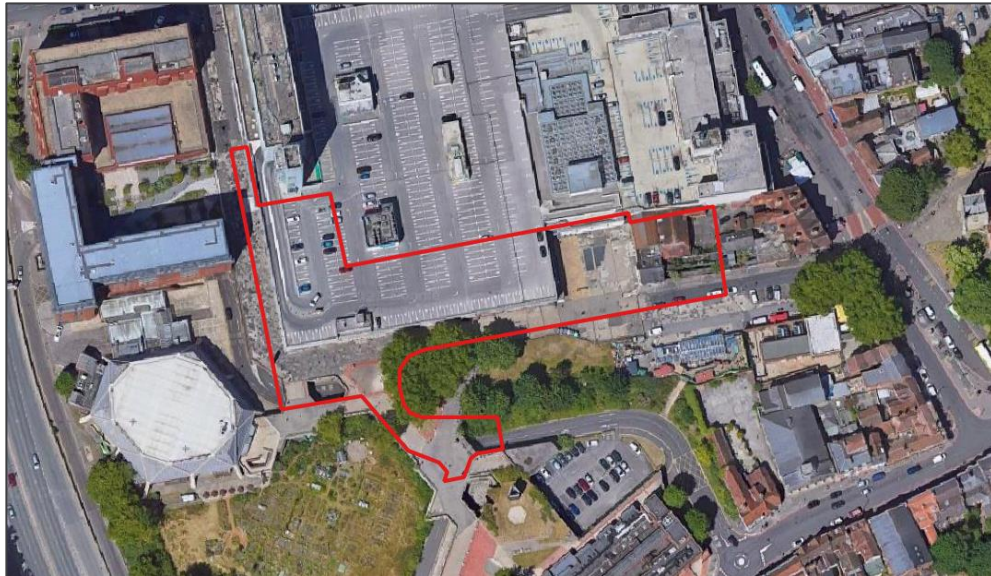


Figure 1. Indicative site boundary (red line).

Map data: Imagery © 2023 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data © 2023.

3.3 Proposed Development

The development consists of three interconnected tower blocks and an adjacent smaller residential block. The buildings are comprised of apartments and residential amenity and servicing space. The ground floor of the development also consists of a mix of non-domestic units which include retail spaces, residential lobbies and a gym.

4 Legislative and Policy Context

4.1 Current UK Legislation

The main pieces of legislation relating to ecology within England and Wales are:

- **The Conservation of Habitats and Species Regulations 2017** (as amended) transposes European Union Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law. These regulations provide for the designation and protection of 'European Sites', the protection of 'European Protected Species' and the adaptation of planning controls for the protection of such sites and species. Under the regulations, public bodies have a duty in exercising their functions to have regard to the EC Habitats Directive.
- **The Wildlife and Countryside Act 1981** (as amended) provides detail on a range of protection and offences relating to wild birds, other animals, and plants. The level of protection depends on which Schedule of the Act the species is listed on. Licences are available for specific purposes to permit actions that would otherwise constitute an offence in relation to species.
- **The Natural Environment and Rural Communities (NERC) Act 2006** imposes an obligation on all public bodies, including local authorities, to consider whether their activities can contribute to the protection of wildlife. The duty is created by section 40(1) of the Act, which states that: "Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity."
- **The Environment Act 2021** introduces a framework to improve and protect the natural environment, overseen by the newly created Office for Environmental Protection. The Act introduces new statutory requirements, including the duty for local authorities to create new local nature recovery strategies. The Act also introduces a new mandatory requirement for developments to achieve measurable biodiversity net gain. A two-year transition period for this requirement is included in the Act, with provision for secondary legislation to set a date for the requirement to come into force. It is likely this will be early 2024. Once in force, all planning permissions in England (subject to exemptions) must be granted subject to a new general pre-commencement condition that requires approval of a biodiversity gain plan. The planning authority would only approve the biodiversity gain plan if the biodiversity value attributable to a development exceeds the pre-development biodiversity value of the onsite habitat by 10%.

The reader is referred to the original legislation for definitive interpretation.

4.2 Birds

The nests and eggs of all wild birds are protected under the Wildlife and Countryside Act 1981, making it an offence to take, damage or destroy a nest of any wild bird while it is being built and to take or destroy the egg of any wild bird. The nesting season for birds is generally considered to be March to August inclusive.

Birds which are listed under Schedule 1 of the Wildlife and Countryside Act are afforded additional protection. As such, it is an offence to intentionally or recklessly

disturb bird species listed on Schedule 1 and their young at, on or near an 'active' nest.

4.3 Bats

All bat species belonging to the Vespertilionidae and Rhinolophidae families are European protected species, and are afforded protection in the UK under the Conservation of Habitats and Species Regulations 2017 (as amended). In addition, these species are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Taken together, these pieces of legislation make it an offence to:

- intentionally, deliberately or recklessly capture, take, kill or injure bats
- possess, control or transport bats
- damage or destroy a resting place or breeding place for bats.
- deliberately disturb bats, in particular any disturbance which is likely to:
 - impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or
 - impair their ability to hibernate (or migrate in the case of migratory species); or
 - affect significantly the local distribution or abundance of any bat species
- intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a bat
- intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for that purpose

4.4 Planning Policy

The recommendations of this report are in line with the key principles of the National Planning Policy Framework [3] and Government Circular 06/05 [4].

Local planning policies relating to ecology are invariably based on the conservation of species protected under the above legislation, including species and habitats of principal importance listed under Section 41 of the NERC Act 2006; and the protection of designated sites. All of these features are considered within the scope of this PEAR and therefore any recommendations made herein are in line with the Reading Borough Council local plan [5].

5 Methods

5.1 Technical Approach

The PEA has been undertaken following CIEEM's guidelines [6] and British Standard 42020:2013 [7]. This approach has been employed to provide an indication of the ecological importance of the site and the potential for the site to be used by protected species. As such, the work required has been carried out in accordance with the key principles of the National Planning Policy Framework [3] and Government Circular 05/06 [4].

Common names and binomial scientific names of plant species identified are as they appear in Stace [8].

The conclusions and recommendations for further works are in accordance with current legislation and guidance.

5.2 Personnel

This report was produced by Graduate Ecologist Claudia Ferreira BSc (Hons). All surveyors used to establish baseline information are suitably qualified and experienced; surveyors' names and qualifications are stated under each survey heading below. This report was reviewed by Ecologist Leonora Hunt MSc and by National Ecology Lead Dr Martin Brammah PhD MA (Cantab) BA (Hons) CEcol MCIEEM MRSB who has over 18 years' experience in ecological consultancy and research.

Amendment C02 was prepared by Ecologist Leonora Hunt, reviewed by Senior Ecologist Elliott Burns BSc MSc, and Principle Ecologist Joshua Stafford BSc (Hons) MRSB.

5.3 Scope of the Assessment and Zone of Influence

The Zone of Influence (ZOI) is the area over which ecological features may be subject to change as a result of the proposed development and associated activities [9]. The ZOI varies depending on the ecological feature concerned and can extend beyond the site boundary. Where possible, ZOIs will be determined using the results of professionally accredited or published scientific studies. Where such studies are not available, the ZOI will be determined using the professional judgement of a suitably experienced and qualified ecologist. This is in line with professional guidelines [9].

Given the size and location of the site the zone of influence was generally taken to be the site boundary and its immediate environs only, although the following below exceptions apply:

- Statutory designated sites: The ZOI was considered as 10km for internationally important statutory designated sites, 3km for nationally and locally important designated sites and 2km for ancient woodland. These distances were chosen based on best professional judgement.
- Non-statutory designated sites: A Thames Valley Environmental Records Centre (TVERC) standard 2km ZOI was considered sufficient [10]. This distance was chosen based on best professional judgement.

- Protected/notable Species: A TVERC standard 2km ZOI was considered sufficient. This distance was chosen based on best professional judgement.
- Great crested newt (*Triturus cristatus*): A 500m ZOI from the site boundary was considered sufficient, based on professional guidelines [11].

5.4 Desk Study

The Multi-Agency Geographic Information for the Countryside (MAGIC) [12] online database was consulted to obtain geographic information on nationally and/or internationally important site designations of relevance to the site and the location of granted protected species licences.

TVERC was contacted for details of any non-statutory designations and records of protected/notable habitats and species within 2km of the site's central national grid reference. Only records of protected species from within the last 10 years are considered within this report.

Online mapping tools were used to check for the presence of any ponds within 500m of the site boundary in order to inform an assessment of habitat availability and connectivity for great crested newt.

A Preliminary Ecological Appraisal report produced by The Ecology Consultancy in 2018 [13], and a Bat Report produced by FPCR Environment and Design Ltd in June 2023 [14] were also reviewed.

5.5 UK Habitat Classification System Survey

A UK habitat classification system survey of the site was undertaken on 6 December 2022 by Claudia Ferreira. Weather conditions at the time of the survey were dry and sunny, with an ambient temperature of approximately 5°C.

An update UK habitat classification system survey of the area south of the site was undertaken by Leonora Hunt on 1 August 2023. Weather conditions were dry and cloudy, with an ambient temperature of 18°C.

A list of plant species was compiled in accordance with methodology required to establish UK habitat classification types [15] up to level 4. Level 5 was recorded wherever possible, with care to accurately record all habitats of priority importance (if present). Secondary codes were added to polygons where deemed appropriate, taking special care to map mandatory codes for habitat mosaic, complex and origin. Survey was undertaken at the fine scale minimum mapping unit (MMU) of 25m² (polygons) and 1m width/5m long (lines). Key ecological features below the MMU in either area or length were mapped as points.

Habitats were classified and assessed in terms of both their conservation importance and potential to support notable and/or protected species (based on habitat suitability and/or field signs).

5.6 Species and Species Groups

The following was searched for and recorded if present during the survey:

- All field signs of protected species or those of conservation interest, including burrows, droppings, footprints and hairs

- Refuges and particular habitat types to be used by certain classes of fauna
- Any mammal paths if found were noted and followed where possible
- Entry points for fauna along fence and/or hedgerow boundaries if present
- Incidental sightings of invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

Accessible buildings and established trees within the site and its immediate environs were inspected and assessed in terms of their suitability (negligible, low, moderate or high) to support roosting bats, in line with the Bat Conservation Trust (BCT) survey guidelines [16].

The survey covered the site boundary and off-site areas in the immediate vicinity of the site boundary.

5.6.1 Bats

5.6.1.1 *Preliminary Roost Assessment and Habitat Suitability Assessment*

The survey covered all areas within the site and immediate surroundings. The survey was undertaken in line with the survey guidance as at the time of survey [16] [17].

On 6 December 2022 a habitat suitability and preliminary roost assessment of all buildings and trees within the site and its immediate environs was undertaken by Claudia Ferreira.

The scoping criteria for commuting and foraging habitat suitability was taken from the best practice guidance, summarised in Table 5.1 as follows:

Table 5.1. Suitability of Commuting and Foraging Habitats for Bats

Suitability	Roosting Habitats
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	Habitat that could be used by small numbers of commuting bats, but isolated. Suitable but isolated habitat that could be used by small numbers of foraging bats.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting. Habitat that is connected to the wider landscape that could be used by bats for foraging.
High	Continuous, high-quality habitat that is well-connected to the wider landscape that is likely to be used regularly by commuting bats. High-quality habitat that is well-connected to the wider landscape that is likely to be used regularly by foraging bats. Site is close and connected to well-known roosts.

The scoping criteria for roost habitat was taken directly from best practice guidance and are summarised in Table 5.2 as follows:

Table 5.2. Suitability of Roosting Habitats for Bats

Suitability	Roosting Habitats
Negligible	Negligible habitat features on site likely to be used roosting bats.
Low	A structure or tree with one or more potential roost sites 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).
Moderate	A structure or tree of sufficient size and age to contain potential roost features (PRFs) but with none seen from the ground or features seen with only very limited roosting potential.
High	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).

6 Results

6.1 Designated Sites

All relevant desk study data relating to designated sites is attached in appendix A.

There are no designated sites found within the site boundary.

Consultation of the MAGIC online interactive mapping tool confirms the presence of no internationally important statutory designations within 10km of the site boundary, no nationally important, and one locally important statutory designation within 3km of the site boundary, as follows:

- Lousehill Copse Local Nature Reserve (LNR) located 2 km west of the site. The LNR comprises semi-ancient woodland surrounded by housing, streams, ponds and open meadow. Species present include oak (*Quercus* sp.), hazel (*Corylus avellana*) and bluebells (*Hyacinthoides non-scripta*).

TVERC has confirmed the presence of eight non-statutory designations within the 2km search radius.

Due to the dense urban area around the site and lack of habitat connectivity within the wider landscape, it is considered unlikely that the development will have an impact on the above designated sites. Therefore, designated sites will not be considered further in this report.

6.2 Habitats

The results of the UK habitat classification survey are presented below and on Sweco drawing 65208344-SWE-XX-XX-I-J-0001-C02.

The following habitat types are present on site:

- Buildings (u1b5)
- Developed land; sealed surface with ruderal/ephemeral scattered planting (u1b6, 17)
- Modified grassland (g4)
- Mixed scrub with ruderal/ephemeral species, roadside verge (h3 17 801)

Scattered trees were also present off-site to the east and south, adjacent to the site boundary.

Consultation of the MAGIC online interactive mapping tool confirms the presence of habitats of principle importance within 2 km radius: semi-improved grassland (2.15 ha) and coastal and floodplain grazing marsh (79.05 ha). These habitats were not recorded within or adjacent to the survey area.

6.2.1 Buildings (u1b5)

The site consists of the southern part of the existing Broad Street Mall building, including part of the car park area, basement and office areas. Two other disused and derelict buildings were present to the southeast, including a barn house, and Eva's Bar.

The main shopping centre, Broad Street Mall (Photo 1), was built of concrete with flat roof areas. The roof is utilised for car parking and some services structures with flat roofs and metal vents are also present (Photo 2). The main car park is located under the mall building (Photo 3).

Eva's Bar was built of concrete with a tile roof and had a terrace to the east side built of wood (Photo 4). The barn house located next to the bar was built of brick with a tile roof.

Scattered plants were recorded growing on the flat roof areas of the mall building and terrace and roof of Eva's bar. Species present comprised ragwort (*Senecio* sp.), grasses, bryophytes and butterfly bush (*Buddleja davidii*).



Photo 1. North-east elevation of Broad Street Mall with Fountain House above.

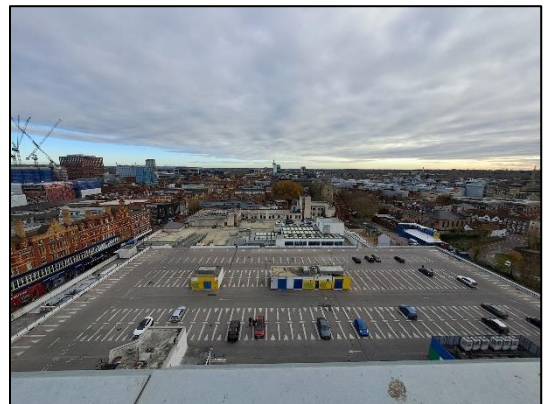


Photo 2. View of car parking areas on top of Broad Street Mall.



Photo 3. View of interior car parking areas.



Photo 4. South elevation of Eva's building and barn house.

- 6.2.2 Developed land; sealed surface with ruderal/ephemeral scattered planting (u1b, 17)
Hardstanding borders the buildings to the south and east and provide pedestrian and vehicular access around the building.

Originally, Eva's bar terrace was comprised of tarmac, but due to lack of activity vegetation has colonised this area and formed a mantle of mosses, grasses (*Poa* spp.) and butterfly bush (Photo 5 and Photo 6).

A courtyard in the southeast of the site comprises tarmac, with colonising ruderal/ephemeral plants including butterfly bush, ragwort and herb Robert (*Geranium robertianum*) (Photo 7).



Photo 5. View of Eva's bar terrace.



Photo 6. View of Eva's bar terrace area.



Photo 7. South-eastern courtyard with colonising plants.

6.2.3 Modified grassland (g4)

An area of modified grassland is present south of the site which has been mown to a short sward (Photo 8). Species recorded include perennial rye grass (*Lolium perenne*), common yarrow (*Achillea millefolium*), daisy (*Bellis* sp.), dandelion (*Taraxacum* sp.), ragwort, common chickweed (*Stellaria media*) and white clover (*Trifolium repens*).

6.2.4 Mixed scrub; ruderal/ephemeral species, road verge (h3h 801)

A small patch of roadside scrub is present within the redline boundary to the south. Species include ivy (*Hedera helix*), butterfly bush and bramble (*Rubus* sp.).

6.3 Habitats Adjacent to Site

6.3.1 Scattered Trees

One immature London plane (*Platanus x hispanica*) tree was present off-site to the east, adjacent to the site.

Eight semi-mature to mature London plane trees were present within the modified grassland area to the south (Photo 8), but were also situated outside of the redline boundary.



Photo 8. View of the small area of modified grassland with scattered trees.

6.4 Species and Species Groups

The ecological desk study and habitat survey have identified that signs of, or habitat suitable to support, the following taxa are present:

6.4.1 Botany

There are 19 records of 11 rare or protected plant species within 2 km. However, none of these have the potential to occur on site and no notable/protected species of native flora were recorded during the survey. Therefore, notable/protected flora are not considered further within this report.

6.4.2 Invertebrates

There are 359 records of 16 invertebrate species within 2km, the majority being records of stag beetle (*Lucanus cervus*).

The grassland, scrub and ruderal/ephemeral plants across site have limited potential to support notable invertebrate species. Given the habitats are of limited suitability and the lack of connectivity of the site to the wider landscape, invertebrates are not considered further within this report.

6.4.3 Reptiles

There are two records of common lizards (*Zootoca vivipara*), with the closest being 900 m from site; 15 records of slow-worm (*Anguis fragilis*) with the closest record being 1.04 km of site; and 3 records of grass snake (*Natrix helvetica*) with the closest record being 650 m of site.

The roadside scrub provides limited suitable habitat for reptiles but lacks connectivity to the wider environment, therefore reptiles are not considered further within this report.

6.4.4 Amphibians

There is one record of great crested newt 1.13 km northeast of the site. In addition, one common toad (*Bufo bufo*) and two common frogs (*Rana temporaria*) were recorded within 2 km of the site. MAGIC returned no records of great crested newts or granted great crested newt protected species licences within 2 km of the site.

There are no ponds or other suitable water bodies for amphibian breeding within 500 m of the site. The roadside scrub provides limited suitable terrestrial habitat for amphibians but lacks connectivity to the wider environment, therefore amphibians are not considered further within this report.

6.4.5 Birds

There are 3,718 records of 85 bird species within 2 km. Records of birds of conservation concern within 1 km, relevant to the site, include starling (*Sturnus vulgaris*) and house sparrow (*Passer domesticus*).

During the December site visit, a grey wagtail (*Motacilla cinerea*) was recorded and a pair of red kites (*Milvus milvus*) were seen flying over the south side of the site. Feral pigeons (*Columba Livia*) were recorded utilising the whole site.

Despite bird spikes in some parts of the site, the buildings offer suitable nesting habitat for feral pigeons.

6.4.6 Bats

There are 819 records of 11 species within 2 km. Species recorded include western barbastelle (*Barbastella barbastellus*), serotine (*Eptesicus serotinus*), Daubenton's bat (*Myotis daubentonii*), noctule bat (*Nyctalus noctula*), Leisler's bat (*Nyctalus leisleri*), common pipistrelle (*Pipistrellus pipistrellus*), Nathusius' pipistrelle (*Pipistrellus nathusii*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat (*Plecotus auritus*) and *Myotis* bat (*Myotis* spp.). MAGIC returned 10 records of granted bat protected species licences, the closest being 620 m from the site, for common pipistrelle, which commenced 19 September 2013 and ended on 31 August 2015 (ref. EPSM2013-6155).

6.4.6.1 Preliminary Roost Assessment and Habitat Suitability Assessment Results

The scattered trees and planting within the site and adjacent to site offer limited potential for foraging or commuting bats and the site has been assessed as having negligible suitability for foraging and commuting bats. The buildings on site were subject to a preliminary roost assessment. Eva's bar (building 1) and the barn house (building 2) are deemed to have moderate potential to support roosting bats. Further details are presented in Table 6.1 below. The locations of building 1 and building 2 are shown in Figure 2 below:



Figure 2. Location of building 1 (B1) and building 2 (B2) within the site boundary (red line).

Map data: Imagery © 2023 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data © 2023.

Table 6.1 Potential Roost Assessments of Buildings and Trees on Site

Ref. No.	Potential Roost Features	Bat Roosting Suitability
B1 – Eva’s bar	Lifted tiles and holes in roof area (Photo 9). No signs of droppings during internal inspection.	Moderate
B2 – Barn house	Lifted tiles in eastern roof area and holes present within the southern wall (Photo 10). No internal inspection conducted due to lack of access.	Moderate



Photo 9. View of potential roost features present on Building 1.



Photo 10. View of potential roost features present on Building 2.

FPCR Environment and Design Ltd undertook a detailed internal and external bat roost assessment, also concluding the buildings have a moderate suitability for roosting bats. The results are detailed within the FPCR Environment and Design Ltd Bat Report [14]. Emergence/re-entry surveys undertaken in 2017 and updated in 2023 found no evidence of roosting bats.

Based on these results, bats are not considered further within this report. However, should works not commence within one year following the completion of bat surveys, further inspection may be required.

6.4.7 Other Mammals

The habitats on site are not considered suitable to support otter (*Lutra lutra*), water vole (*Arvicola amphibius*), hazel dormouse (*Muscardinus avellanarius*), badger (*Meles meles*) or hedgehog (*Erinaceus europaeus*) and therefore these species are not considered further within this report.

6.4.8 Invasive Non-native Species (INNS)

There are 64 records of 16 invasive species within 2km including Himalayan balsam (*Impatiens glandulifera*) and Japanese knotweed (*Fallopia japonica*), both non-native invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act (1981). Whilst butterfly bush is not listed in Schedule 9 of the Wildlife and Countryside Act (1981), it is considered a non-native invasive plant species, and was recorded within the site boundary.

7 Ecological Constraints, Opportunities and Recommendations

The evaluation in this section is based on the site surveys on 6 December 2022 and 1 August 2023. For purposes of the assessment, it is assumed there has been no change in the condition of the site since the site survey (unless otherwise stated).

7.1 Ecological Constraints and Recommendations

Table 7.1 provides a breakdown of the important ecological features, which could pose a constraint, that have been identified for the site and the associated recommendations including further survey work, assessments, mitigation and/or considerations for the scheme design.

Table 7.1 Identified Ecological Constraints and Recommended Actions

Important Ecological Feature (Ecological Constraint)	Legislation / Policy	Recommended action(s)
Mature trees	NERC	Mature trees have intrinsic ecological value and it is the intention that the trees adjacent to site will be retained and protected. In accordance with British Standard BS 5837:2012 care should be taken in the detailed design of developments to avoid impacts on any mature trees [18].
Breeding birds	WCA WCA Sch 1 BoCC Red / Amber BD Annex 1	The buildings on site offer potential nesting opportunities. It is a mandatory requirement that nesting birds (or their nests or eggs), including feral pigeons, would not be killed or injured or their active nests destroyed as a result of activities on site. As pigeons are known to nest all year round, it is recommended that a pre-works check for nesting birds be undertaken by suitably qualified ecologist no more than 48 hours prior to works. If active nests were found, works will need to be delayed in the immediate area until chicks have fledged, which could be a period of up to ten weeks.
Invasive non-native species – butterfly bush	N/A	This invasive non-native species has been recorded on site and should be removed prior to construction. Ongoing monitoring may be required to ensure this species does not recolonise the site.

WCA - Wildlife and Countryside Act 1981 (as amended). **NERC** - Natural Environment and Rural Communities Act 2006 Section 41. Species/habitats of principal importance. **BD Annex 1** - European Birds Directive, Annex 1. **BoCC Red/Amber** - Birds of Conservation Concern - Red or Amber listed.

8 Conclusions

Residential and commercial development at Broad Street Mall, Broad St, Reading RG1 7QE is proposed, for which detailed planning permission will be sought.

The following ecological constraints need to be considered:

- Mature trees
- Nesting birds
- Invasive non-native plant species - butterfly bush

No further surveys are recommended to establish an ecological baseline, but a check for nesting birds will need to be undertaken prior to commencement of works. It is also recommended that the non-native invasive butterfly bush is removed from site prior to construction.

The intention is to retain the mature trees adjacent to site, with care taken to avoid impacts on these features according with British Standard BS 5837:2012.

Opportunities exist for the provision of ecological enhancements in the form of:

- Planting of locally sourced native plant species with a benefit to UK wildlife (i.e. fruiting and/or flowering) within soft landscaping
- Inclusion of green roofs/walls on any new and existing buildings
- Installation of bird boxes within buildings or erected onto retained trees.
- Inclusion of a bug hotel and/or log piles to provide habitat for invertebrates.

Enhancements will be discussed and agreed with the Council as part of the post-submission engagement.

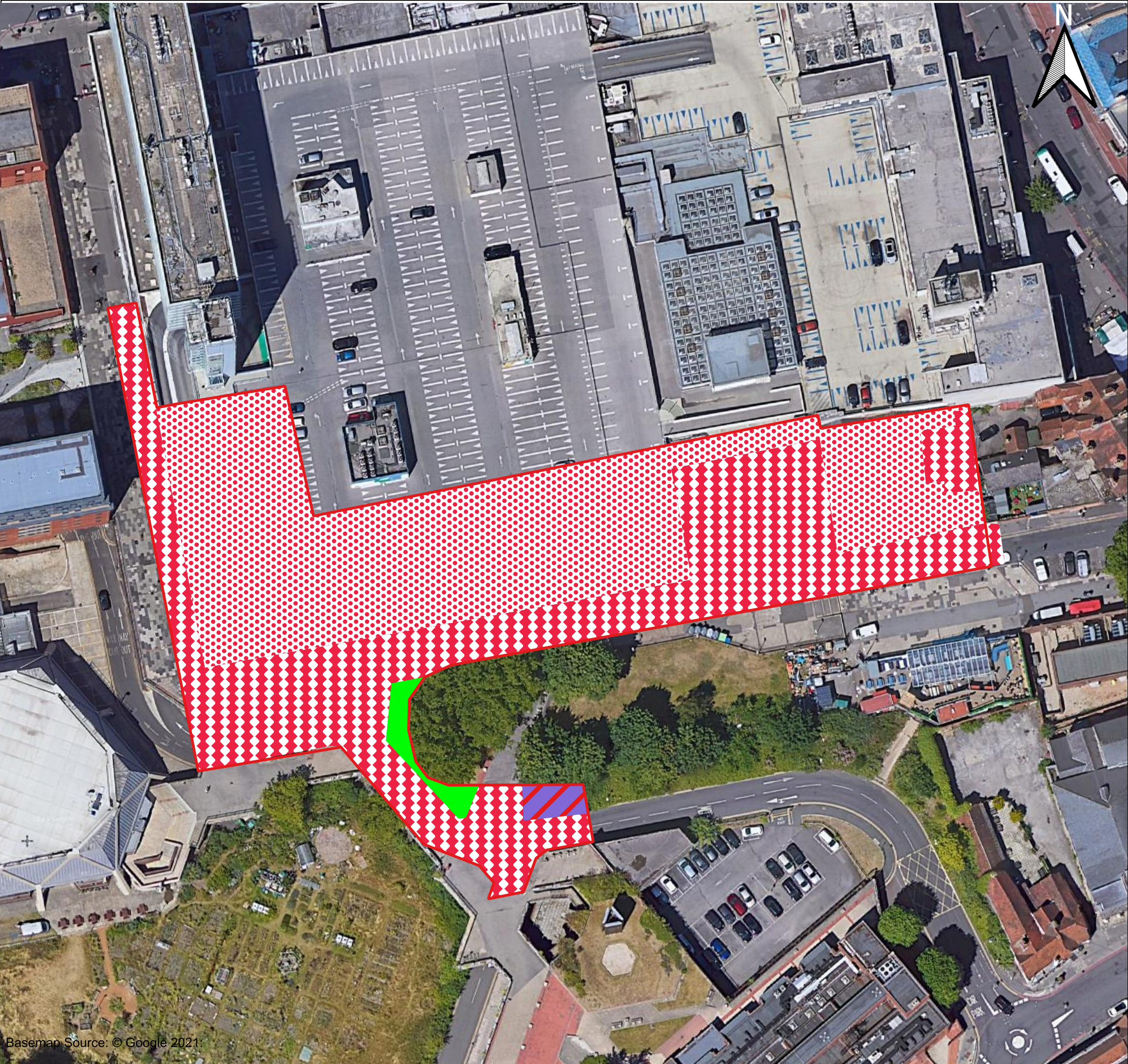
9 References

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Drawings

65208344-SWE-XX-XX-I-J-0001-C02: UK Habitat Classification Survey



Legend

Red Line Boundary

UK Habitats

g4 - modified grassland

h3h- mixed scrub

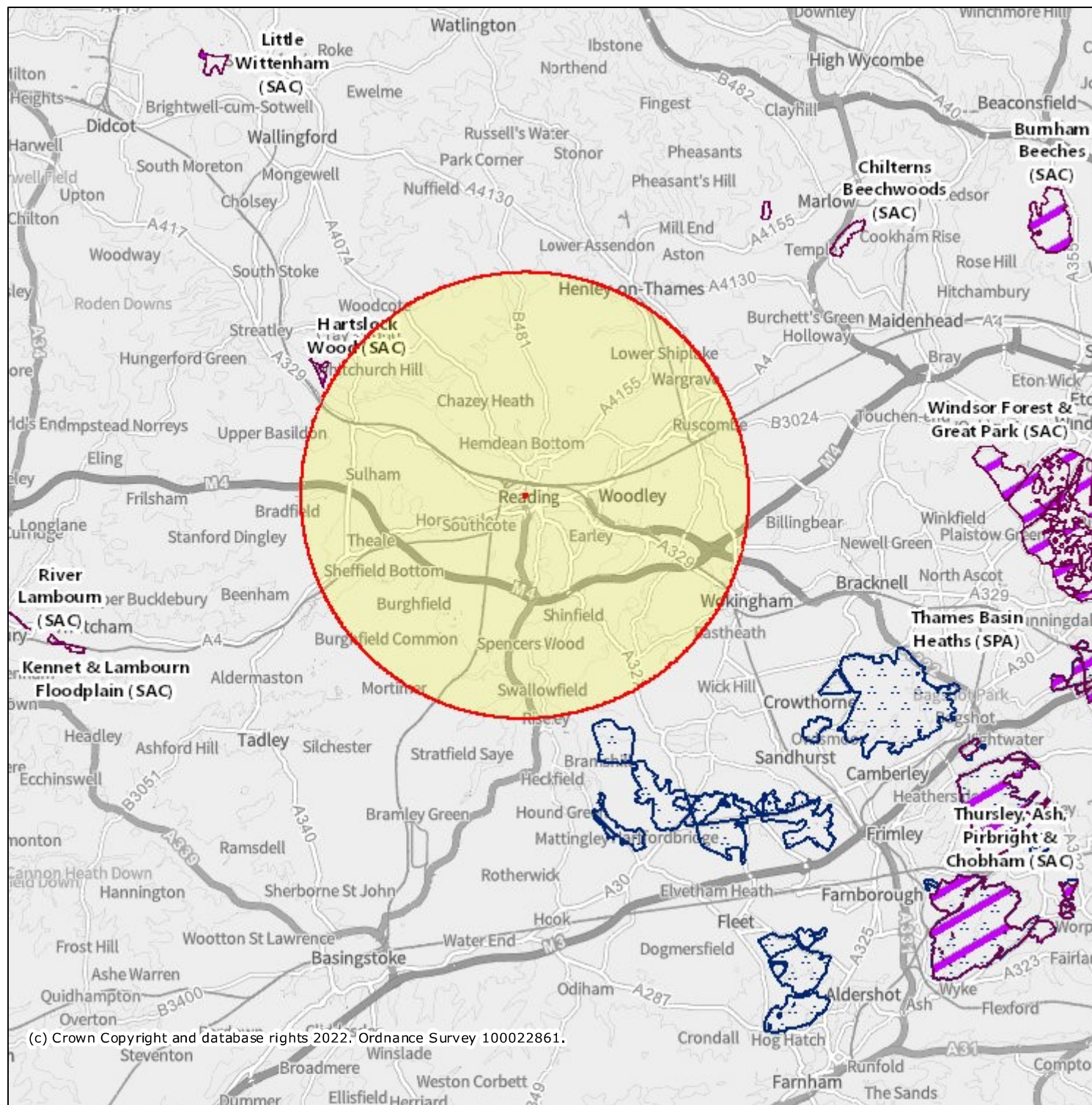
u1b5 - buildings

u1b6 - other developed land

010203040 Metres

C03	09.11.2023	For Information	MB	LH	LH
Rev.	Rev. Date	Drawing Suitability	Drawn	Checked	Appr'd
Sweco UK Limited North Kiln, Felaw Maltings, 46 Felaw Street Ipswich IP2 8PN Tel: +44 1473 231100 Web: www.sweco.co.uk			SWECO		
Client			McLaren (Broad Street Mall) Limited		
Project			Broad Street Mall		
Drawing Title			UK Habitat Classification Survey		
Status Desc.	Final		Status	S2	
Project No.	65208344		Scale	1:700	
Drawing No.	65208344-SWE-XX-XX-I-J-0001-C03		Sheet Size	A3	
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Appendix A – Ecological Desk Study Data



Legend

-  Ramsar Sites (England)
-  Special Areas of Conservation (England)
-  Special Protection Areas (England)



Projection = OSGB36

xmin = 409000

ymin = 135900

xmax = 536000

ymax = 205100

Map produced by MAGiC on 5 December, 2022.

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Site Check Report Report generated on Mon Dec 05 2022

You selected the location: Centroid Grid Ref: SU71227335

The following features have been found in your search area:

Ramsar Sites (England)

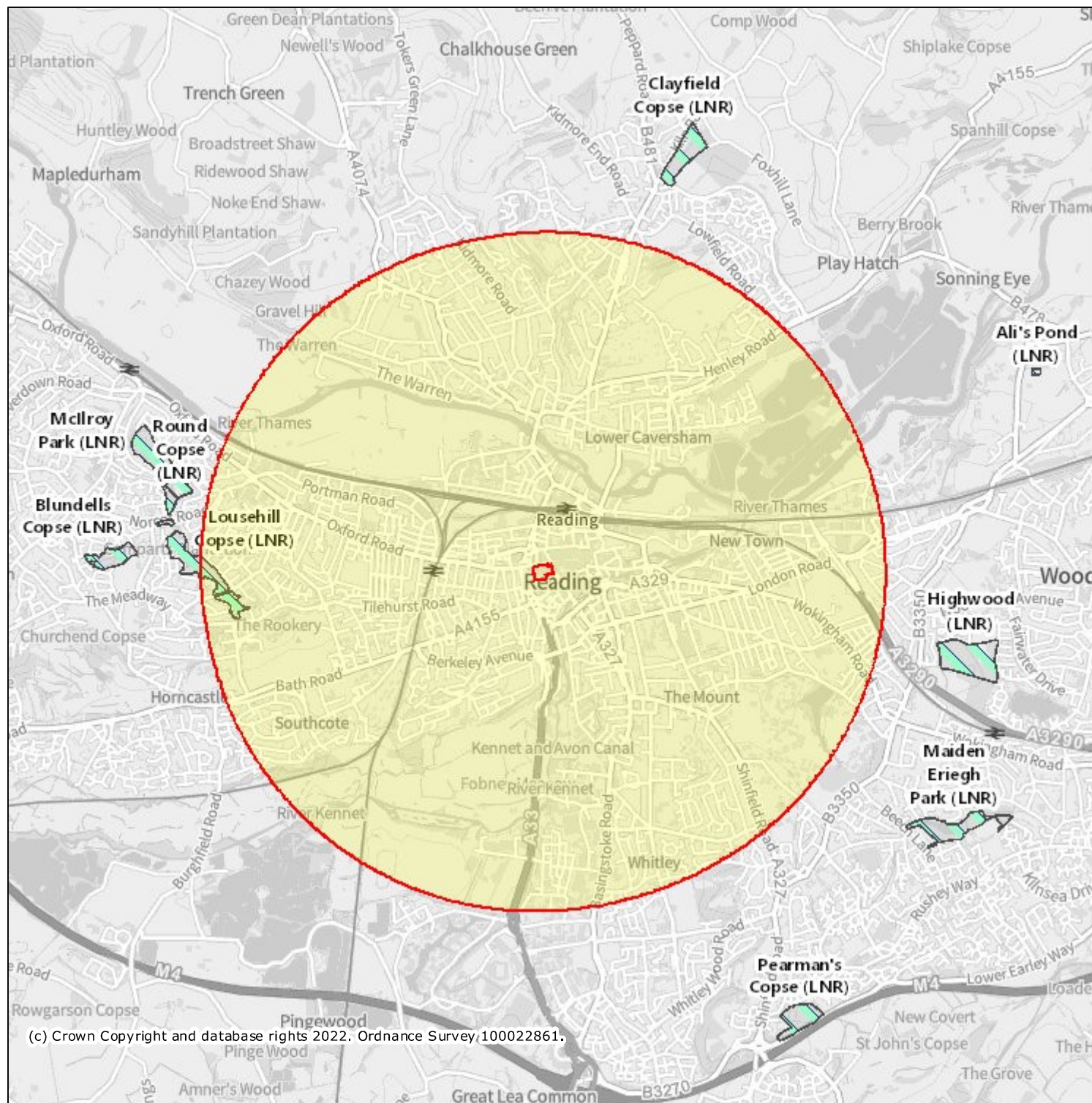
No Features found

Special Areas of Conservation (England)

No Features found

Special Protection Areas (England)

No Features found



Legend

-  Local Nature Reserves (England)
-  National Nature Reserves (England)
-  Sites of Special Scientific Interest (England)



Projection = OSGB36

xmin = 458600

ymin = 166600

xmax = 484000

ymin = 180400

Map produced by MAGiC on 5 December, 2022.

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Site Check Report Report generated on Mon Dec 05 2022
You selected the location: Centroid Grid Ref: SU71227335
The following features have been found in your search area:

Local Nature Reserves (England)

Reference	1009372
Name	LOUSEHILL COPSE
Hectares	13.03
Hyperlink	https://designatedsites.naturalengland.org.uk/SiteLNRDetail.aspx?SiteCode=L1009372

National Nature Reserves (England)
No Features found

Sites of Special Scientific Interest (England)
No Features found