



Preliminary Ecological Appraisal

Land at 1 Arkwright Road, Reading

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LIABILITIES:

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing. Whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date. This report provides a snap shot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated, only dominant species may be recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

1.0 INTRODUCTION

Background

1.1 The Ecology Partnership was commissioned by Studland Properties to undertake a Preliminary Ecological Appraisal (PEA) assessment of Land at 1 Arkwright Road, Reading, RG2 0LU, hereafter referred to as 'the site'.

1.2 The key objectives of a PEA (CIEEM 2017) are to:

- Identify the likely ecological constraints associated with a project;
- Identify any mitigation measures likely to be required, following the 'Mitigation Hierarchy' (CIEEM 2016; BSI 2013, Clause 5.2);
- Identify any additional surveys that may be required to inform an Ecological Impact Assessment (EcIA); and
- Identify the opportunities offered by a project to deliver ecological enhancement.

1.3 This report comprises the:

- Legislative and planning context (Section 1);
- Assessment methodologies (Section 2);
- Results (Section 3);
- Implications for development (Section 4);
- An impact assessment (Section 5); and
- Conclusions (Section 6).

Site Context

1.4 The site (SU 71711 71499) is situated in the south of Reading, east of the A33. The site is approximately 0.2 ha and includes hardstanding, an industrial building and sections of ruderal vegetation. The immediate surroundings consist of an industrial estate to all aspects. The extent of the site and its immediate surroundings are shown in Figure 1.



Figure 1: Approximate location of the red line boundary.

Proposed Development

- 1.5 It is understood that the proposed development involves the demolition of the existing building and construction of a new commercial unit.

Planning Policies

- 1.6 The site was surveyed to assess its ecological value and to ensure the proposals were compliant with relevant planning policy and legislation. Policy guidance is provided by the National Planning Policy Framework (NPPF 2023) as well as policies from Reading Borough Council. The Reading Borough Local Plan was adopted in 2019 and contains policies relating to ecology which are relevant to the site. These policies include:

- *Policy EN1: Enhancement of Conservation Areas*
- *Policy EN12: Biodiversity and the Green Network*
- *Policy EN14: Trees, Hedges and Woodland*

- 1.7 The Environment Bill received Royal Assent on 9th November 2021 and is now enacted as the Environment Act 2021. Part 6 (Nature and Biodiversity) and Schedule 14 of the Environment Act 2021 insert a new section 90A and Schedule 7A into the Town and Country Planning Act 1990 (TCPA), which contain the provisions requiring mandatory biodiversity net gain for development granted planning permission pursuant to the TCPA. These provisions are enacted through implementing

legislation, they require developments to provide a biodiversity value post-development that exceeds the predevelopment biodiversity value of the onsite habitats by at least 10%.

- 1.8 The site has therefore been surveyed to assess its ecological value and to ensure compliance with national and local plan policies and other relevant nature conservation legislation including the Wildlife and Countryside Act 1981, Natural Environment and Rural Communities Act 2006, and the Conservation of Habitats and Species (EU Exit) Regulations 2019.
- 1.9 The report has been produced with reference to current guidelines for PEA (CIEEM 2017) and in accordance with BS 42020:2013 Biodiversity – Code of Practice for Planning and Development.

2.0 METHODOLOGY

Desktop Study

- 2.1 A desktop study was completed using an internet-based mapping service (www.magic.gov.uk) for statutory designated sites and an internet-based aerial mapping service (maps.google.co.uk) was used to understand the habitats present in and around the site, including identifying habitat linkages and features (ponds, woodlands etc.) within the wider landscape. Data for non-statutory sites, and local protected and notable species within 1km of the site was obtained from Thames Valley Environmental Records Centre (TVERC).

Preliminary Ecological Appraisal

- 2.2 The site was surveyed on 8th February 2024 by The Ecology Partnership ecologists Benjamin Prego BSc (Hons) QCIEEM and Natasha Wilson BSc (Hons) QCIEEM. The surveyors identified the habitats present, following the standard UK Habitat classification system (UKHab). The site was surveyed on foot and the existing habitats and land uses were recorded on an appropriately scaled map (JNCC 2010).

Additional Protected Species Assessments

- 2.3 Any evidence of additional protected species was recorded. Standard methods of search and measures of presence, or likely presence based on habitat suitability were used for bats in trees (Collins 2016), breeding birds (BTO 2020), hazel dormice *Muscardinus avellanarius* (Bright *et al.* 2006), great crested newts (ARG 2010), reptiles

(Froglife 2015), badgers *Meles meles* (Creswell *et al.* 1990) and water voles *Arvicola amphibius* (Strachan *et al.* 2011).

Limitations

- 2.4 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no single investigation could ensure the complete characterisation and prediction of the natural environment. The site was visited over the period of one site visit, as such seasonal variations cannot be observed and potentially only a selection of all species that potentially occur within the site have been recorded. Therefore, the survey provides a general assessment of potential nature conservation value of the site and does not include a definitive plant species list.
- 2.5 The protected species assessment provides a preliminary view of the likelihood of protected species occurring on-site, based on the suitability of the habitat and any direct evidence on site. It should not be taken as providing a full and definitive survey of any protected species group. The assessment is only valid for the time when the survey was carried out. Additional surveys may be recommended if, on the basis of this assessment it is considered reasonably likely that protected species may be present.

3.0 RESULTS

Desktop Study

- 3.1 There is one internationally designated site located within 10km of the site (Figure 2). This is Thames Basin Heaths Special Protection Area (SPA) located c. 8.8km south of the site. This site is designated for supporting internationally important populations of woodlark, nightjar and Dartford warbler.
- 3.2 There are no statutory designated sites located within 2km of the site. The nearest statutory site is Pearman's Copse Local Nature Reserve (LNR) located c. 2.7km south-east of the site.



Figure 2: Internationally designated sites within 10km of the site.

3.3 There are five non-statutory designated sites within 1km of the site. These are mostly Local Wildlife Sites (LWS) and detailed within Table 1 below.

Table 1: Non-statutory sites located within 1km of the site.

Site name	Reason for designation	Distance/Orientation from site
River Kennet/ Kennet & Avon Canal LWS	River habitat, historically supporting protected species European eel and water vole	370m west
Kennet Valley East Biodiversity Opportunity Area	Chalk river, extensive reedbed habitat, tall fen, lowland meadow and wet grassland	350m west
Fobney & Kennet Valley Meadows LWS	Wetland, unmanaged grassland and ditch habitat	410m west
Whitley Park Farm/ St Patricks Hall Pond LWS	Lowland mixed deciduous woodland and pond habitats	710m east
Holy Brook LWS	Chalk river	810m north-west

3.4 There are also several units of priority habitat within 2km of the site (Figure 3), the closest of each type include:

- Deciduous woodland located approximately 300m west of the site;
- Coastal and floodplain grazing marsh located approximately 340m west of the site;
- Woodpasture & parkland located approximately 1.4km east of the site.



Figure 3: Priority habitat within 2km of the site. Deciduous woodland (dark green), coastal and floodplain grazing marsh (royal blue), and woodpasture & parkland (shrub symbol).

- 3.5 OS maps and aerial imagery indicate there are no ponds located on site, and no ponds located within 250m of the site.
- 3.6 The desktop study revealed that there were 11 European Protected Species (EPS) licences issued within 2km of the red line boundary (Table 2) (Figure 4).

Table 2: EPSM licences and Class Licence Returns located within 2km of the site.

Species	Distance/Orientation from site	License Type	License Duration/Date	Comments
Great crested newt	850m south	Destruction of a resting place	09/06/2010 – 12/06/2012	N/a
Common pipistrelle, Soprano pipistrelle	1.2km north-east	Destruction of a resting place	26/01/2015 – 30/09/2019	N/a
Common pipistrelle, Soprano pipistrelle	1.2km north-east	Destruction of a resting place	21/10/2014 – 30/11/2019	N/a
Common pipistrelle, Soprano pipistrelle	1.2km north-east	Destruction of a resting place	17/12/2014 – 30/09/2019	N/a
Common pipistrelle,	1.3km south-west	Destruction of a resting place	07/10/2013 – 30/11/2018	N/a

Brown long-eared bat				
Common pipistrelle, Brown long-eared bat	1.3km south-west	Destruction of a resting place	10/12/2015 – 30/11/2018	N/a
Common pipistrelle	1.4km north	Destruction of a resting place	21/04/2016 – 20/04/2021	N/a
Common pipistrelle	1.4km north-west	Destruction of a resting place	04/12/2017 – 29/11/2022	N/a
Common pipistrelle, Brown long-eared bat	1.7km east	Destruction of a resting place Destruction of a breeding site	01/09/2010 – 28/02/2011	N/a
Common pipistrelle	1.8km north-east	Destruction of a resting place	02/09/2010 – 31/08/2012	N/a
Common pipistrelle, Soprano pipistrelle	1.9km north	Destruction of a resting place	01/02/2020 – 31/03/2020	N/a



Figure 4: Location of EPS licences (blue squares) within 2km of the site.

- 3.7 A 2km records search was requested from TVERC. The records closest to site, recorded within the last 10 years and relevant to the habitats on site have been included in Table 3.

Table 3: Species records within 2km of the site boundary in the past 10 years.

Species	Status	Closest Record	Most recent record
Stag Beetle <i>Lucanus cervus</i>	Wildlife and Countryside Act (1981 as amended) Schedule 5 Section 9	80m north-west (08/06/2020)	880m north-east (10/06/2022)
West European Hedgehog <i>Erinaceus europaeus</i>	Wildlife and Countryside Act (1981 as amended) Schedule 1, NERC S41	500m south-east (29/05/2021)	800m north (15/07/2022)
Eurasian Badger <i>Meles meles</i>	Protection of Badgers Act 1992	420m north-west (10/04/2014)	840m north-west (12/11/2022)
Eurasian Otter <i>Lutra lutra</i>	Habitat & Species Directive (1992) Annex 2; Wildlife and Countryside Act (1981 as amended) Schedule 5 Section 9; NERC Act (2006) Section 41	750m north (07/03/2013)	780m west (25/08/2021)
European water vole <i>Arvicola amphibius</i>	Wildlife and Countryside Act (1981 as amended) Schedule 5 Section 9; NERC Act (2006) Section 41	400m west (15/06/2020)	N/A
Grass snake <i>Natrix helvetica</i>	Wildlife and Countryside Act (1981 as amended) Schedule 5 Section 9; NERC Act (2006) Section 41	910m south-west (03/10/2015)	N/A
Slow worm <i>Anguis fragilis</i>	Wildlife and Countryside Act (1981 as amended) Schedule 5 Section 9; NERC Act (2006) Section 41	480m west (22/09/2020)	N/A
Noctule <i>Nyctalus noctula</i>	Wildlife and Countryside Act (1981 as amended) Schedule 5 Section 9; NERC Act (2006) Section 41; Habitat & Species Directive (1992) Annex 4	350m southwest (03/06/2022)	350m southwest (03/06/2022)
Common pipistrelle <i>Pipistrellus pipistrellus</i>	Wildlife and Countryside Act (1981 as amended) Schedule 5 Section 9; NERC Act (2006) Section 41; Habitat & Species Directive (1992) Annex 4	350m south-west (30/06/2022)	350m south-west (30/06/2022)
Myotis bat species <i>Myotis spp.</i>	Wildlife and Countryside Act (1981 as amended) Schedule 5 Section 9; NERC Act (2006) Section 41; Habitat & Species Directive (1992) Annex 4	880m north-east (17/07/2016)	960m north-east (01/07/2017)
Daubenton's bat <i>Myotis daubentonii</i>	Wildlife and Countryside Act (1981 as amended) Schedule 5 Section 9; NERC Act (2006) Section 41; Habitat & Species Directive (1992) Annex 4	2km south-west (26/08/2015)	N/A
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	Wildlife and Countryside Act (1981 as amended) Schedule 5 Section 9; NERC Act (2006) Section 41; Habitat & Species Directive (1992) Annex 4	280m south-west (03/06/2022)	330m south-west (09/05/2022)
Serotine <i>Eptesicus serotinus</i>	Wildlife and Countryside Act (1981 as amended) Schedule 5 Section 9; NERC Act (2006) Section 41; Habitat & Species Directive (1992) Annex 4	550m south-east (09/05/2017)	N/A
Nathusius pipistrelle <i>Pipistrellus nathusii</i>	Wildlife and Countryside Act (1981 as amended) Schedule 5 Section 9; NERC Act (2006) Section 41; Habitat & Species Directive (1992) Annex 4	550m north-east (12/11/2018)	N/A
House sparrow <i>Passer domesticus</i>	NERC Act (2006) Section 41	Within 2km of the site (26/02/2017)	N/A

Habitat Survey

- 3.8 Only species of note have been listed within this section, the full species list can be found within **Appendix 1**. The habitat map is presented in **Appendix 2** and site photos are provided in **Appendix 3**.

Building

- 3.9 The site was dominated by a commercial building consisting of two sections. The western section of the building was a steel constructed office space with a flat roof. The eastern section was a brick-built warehouse with a pitched, corrugated roof.

Hardstanding

- 3.10 Several areas of hardstanding were present within the site boundary in the form of access from the road, parking and a loading area along the southern and eastern edge of the building.

Mixed Scrub

- 3.11 A sloped bank of mixed scrub was present at the eastern edge of the site. Species observed within this habitat included common ivy, bramble, common nettle, creeping buttercup, creeping bent and Yorkshire fog.

Artificial Unsealed Surface with Ruderal Vegetation

- 3.12 An area of artificial unsealed surface was present along the northern edge of the site adjacent to the building. This habitat was dominated by mosses and contained patches of ruderal vegetation including species such as cleavers, willowherb sp., rough hawkbit and chickweed.

Sparsely Vegetated Land

- 3.13 A section of sparsely vegetated land was identified in the north-eastern corner of the site. This habitat consisted of species such as Yorkshire fog, bramble and willowherb sp.

Introduced Shrub

- 3.14 Two ornamental planters were noted at the western entrance to the building. These contained introduced species such as silver-leaf cotoneaster and variegated laurel.

Protected Species

Roosting Bats

- 3.15 No loft void was found in either section of the building on site. Additionally, no features were identified internally or externally on this building with the potential to support roosting bats. The building did not support any traditional features, such as clay tiles, weatherboarding or hanging tiles. As such, the building was considered to have '**negligible**' bat roost potential.

Foraging and Commuting Bats

- 3.16 The bank of mixed scrub in the eastern section of the site was considered to offer some potential to foraging and commuting bats. However, given the urban nature of the site and its surroundings, and due to the limited connectivity of the site to more suitable bat foraging habitat within the wider landscape, the site was considered to have '**negligible**' potential for foraging and commuting bats.

Badgers

- 3.17 No evidence of badger setts, individual holes, or latrines were recorded on site, and the site was dominated by unsuitable foraging habitats such as hardstanding and buildings. Given the urban nature of the site and the lack of local records for the species, badgers are considered unlikely to be present on site, and therefore no further consideration for this species will be provided within this report.

Reptiles

- 3.18 The majority of the site was considered unsuitable for reptiles due to the dominance of developed land. The section of mixed scrub in the eastern corner of the site was considered to offer some potential as foraging and refuge habitat for common reptile species, however, due to the isolated and urban nature of the site and its surroundings, it was considered unlikely that reptiles would be present on site and therefore no further consideration for this species will be provided within this report.

Nesting Birds

- 3.19 The mixed scrub in the eastern section of the site was considered to offer suitable habitat for breeding bird species.

Other Species

- 3.20 Owing to a lack of suitable habitat on site and within the surrounding area, no potential for any other protected species, such as great crested newts, hazel dormice, otters or water voles, was identified within the site.
- 3.21 Owing to the extent of unsuitable habitat on site, including hardstanding and buildings, it is considered unlikely that hedgehogs would be present on site. There are records for hedgehogs within the local area, as such, their presence on site cannot be ruled out with complete certainty.

4.0 DISCUSSION

- 4.1 The following paragraphs consider the effects of the development on designated sites, priority habitats and protected and priority species. Where the desk study and habitat survey provide sufficient evidence for an assessment of effects on any of these groups to be taken through planning, these are detailed below, the need for additional surveys and when and how these should be completed are summarised, if required.

Effects on Designated Sites

- 4.2 There is one internationally designated site located within 10km of the site boundary. This is Thames Basin Heaths SPA located c. 8.8km south of the site. At this distance, the site does not fall within the 5km zone of influence for the Thames Basin Heaths SPA. Due to the distance of the site from the SPA, and due to the urban nature of the site's surroundings, it is considered that the proposed scheme would not have any potentially negative impacts on the Thames Basin Heaths SPA. Furthermore, the development is a commercial scheme and therefore impacts associated with residential developments would not occur.
- 4.3 The site does not lie within or adjacent to any designated sites. The nearest statutory site is Pearman's Copse LNR located c. 2.7km south-east of the site. The site does fall within the impact risk zone (IRZ) of Bramshill Site of Special Scientific Interest (SSSI); however, it is considered that the development on site will not fall under any of the categories that would require consultation with Natural England.
- 4.4 Five non-statutory sites were identified within 1km of the site boundary. The closest of these is River Kennet/Kennet & Avon Canal LWS located c. 370m west of the site. Due to the nature of the development and the lack of any related habitat being lost on

site, it is unlikely there will be any negative impacts on this or any other non-statutory site in the local area.

Effects on Priority Habitats

- 4.5 There are a number of priority habitats within the wider landscape, which are all habitats of principle importance for the conservation of biodiversity under Section 41 of the NERC Act 2006. These habitats are not present on or adjacent to the site, with the closest being a parcel of deciduous woodland located c. 300m west of the site.
- 4.6 The priority habitats are separated from the site by a number of roads, commercial infrastructure and other urban landscape features, and there is limited connectivity through hedges or treelines in the wider landscape. It is therefore considered unlikely that any significant direct impacts on priority habitats will occur as a result of the development on site.

Effects on Onsite Habitats

- 4.7 The majority of habitats on site are common and widespread, and most are of low biodiversity value. These habitats are considered to be of site value only and, as such, it is considered that the loss or removal of these habitats would result in site level impacts only. The habitat with the most ecological value on site is the section of mixed scrub in the eastern section of the site, however, this habitat is due to be retained as part of the development.

Effects on Protected Species

Roosting Bats

- 4.8 The building on site was considered to have '**negligible**' potential to support roosting bats. This was due to the absence of any potential bat roost features. As such, no further surveys for roosting bats are recommended on site. The building is not considered to be constrained by roosting bats.

Foraging and Commuting Bats

- 4.9 The site was considered to be of '**negligible**' suitability for foraging and commuting bats due to the lack of suitable habitat and the isolated and urban nature of the site. As such, no activity transect surveys are required on site.

- 4.10 It is considered that the redevelopment of the site will not impact upon linear features, foraging or commuting networks and will not result in the alteration of the functionality of the landscape.
- 4.11 Specific enhancements for bats are not therefore recommended. However, it is always recommended that where possible habitat enhancements are provided. This could include new tree planting within any scheme or the use of green walls or green roofs where possible.

Nesting Birds

- 4.12 The mixed scrub in the eastern section of the site was considered suitable to support nesting birds. It is understood that this feature will not be impacted by the proposed development, however, if this features is to be impacted by the works, this should be carried out outside of the nesting bird season (March to September inclusive) or immediately following a nesting bird check by a suitably qualified ecologist to prevent an offense.

Other Species

- 4.13 No potential for any other protected species, including great crested newts, hazel dormice, reptiles, badgers, water voles or otters was identified within the site. It is considered that if during any works, a protected species is recorded, then all works must cease and advice from an ecologist sought.
- 4.14 The site has limited potential to support hedgehog, however, their presence on site cannot be ruled out. As such, it is recommended that best practice guidelines be followed throughout any proposed development, to ensure no individuals are harmed.

Ecological Enhancements

- 4.15 Several enhancements can be made to the final development to help reduce potential ecological impacts and increase ecological opportunities for a range of species. Local planning encourages developments to improve biodiversity, therefore some enhancements are detailed below.
- 4.16 It is recommended that any newly created areas of ornamental planting on site are designed to provide ecological opportunities for invertebrate species. Sweet nectar and

protein-rich pollen, especially night-scented flowers, are excellent to encourage insects. These species should be incorporated into the development where possible. It is recommended that any ornamental planting on site post-development should follow the 'RHS Plants for Pollinators' guidelines (rhs.org.uk/plantsforpollinators) regarding the most suitable native and non-native plants to encourage pollinating insects.

- 4.17 Green roofs could be incorporated into the master plan and would be considered a significant enhancement to the site and the surrounding environment. They provide opportunities for a range of invertebrates and bird species as well as floral species. Green roofs are also installed for sustainable drainage purposes, countering climate change, improving building performance as well as amenity value, alongside health and wellbeing.
- 4.18 Areas of green roof can be planted with a wildflower mix. A recommended wildflower mix would include species such as agrimony (*Agrimonia eupatoria*), kidney vetch (*Anthyllis vulneraria*), common knapweed (*Centaurea nigra*), wild basil (*Clinopodium vulgare*), Viper's bugloss (*Echium vulgare*), lady's bedstraw (*Galium verum*), perforate St John's wort (*Hypericum perforatum*), wild candytuft (*Iberis amara*), field scabious (*Knautia arvensis*), rough hawkbit (*Leontodon hispidus*), oxeye daisy (*Leucanthemum vulgare*), common toadflax (*Linaria vulgaris*), birdsfoot trefoil (*Lotus corniculatus*), musk mallow (*Malva moschata*), wild marjoram (*Origanum vulgare*), hoary plantain (*Plantago media*), cowslip (*Primula veris*), wild mignonette (*Reseda lutea*), wild clary (*Salvia verbenaca*), small scabious (*Scabiosa columbaria*), bladder campion (*Silene vulgaris*), dark mullein (*Verbascum nigrum*).
- 4.19 Artificial house sparrow and swift nest sites can also be built into the development. Nest boxes should be installed in order to provide new nesting opportunities for birds. These will be inserted into the building and become integral with the design. Such boxes include the following below. Either of these models can be used within the building (Figure 5):
- Schwegler Sparrow Terrace (1SP) should be inserted into the wall structure or inserted on to the wall.
 - Woodstone Build-in House Sparrow Nest Box.

- Woodstone Build-in Swift Nest Box.



Figure 5: Schwegler sparrow terrace (left) with the Woodstone Build in House boxes (centre/right).

5.0 Impact Assessment

- 5.1 This section of the report forms an EcIA (Ecological Impact Assessment) and is designed to quantify and evaluate the potential impacts of the development on habitats and species present on site or within the local area.

Methodology

- 5.2 The approach to this assessment accords with guidance presented within the CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM 2018). In essence, an EcIA assesses the activities associated with a proposed scheme that are likely to generate changes within identified zone of influences, on identified ecological features and receptors. The proposals are subsequently reviewed, and mitigation and compensation measures are outlined which help to reduce negative impacts.
- 5.3 The zone of influence for the development is defined as:
- The project red line, for effects on habitats and species;
 - Adjacent habitat, considered by species, for mobile species with territories or foraging ranges that may overlap the site.
 - Up to 1km for national statutory and non-statutory designations; and,
 - Up to 15km for international statutory designations.
- 5.4 The types of features considered in the assessment of effects, to meet legislative and policy requirements, are:
- Designated sites (European, national and local);
 - Protected species;
 - Habitats and species of principal importance (Section 41 list);
 - Hedgerows and woodland, where not of principal importance; and

- Habitats, where not of principal importance, that may function as wildlife corridors or stepping-stones.

Impact Assessment and Mitigation

5.5 Table 4 below summarises the impacts and required mitigation for each receptor as previously detailed in the discussion.

Table 4: Assessment of effects from the proposal after mitigation and compensation

Feature	Scale of Importance	Mitigation/Compensation Required	Residual Effect
Internationally Statutory Designated Sites	International	None required – considerable distance from the site, no related habitats will be lost through this scheme.	Not significant
National Statutory Designated Sites	National	None required – considerable distance from the site, no related habitats will be lost through this scheme.	Not significant
Non-statutory Designated Sites	County	None required – no related habitat to be lost through this scheme.	Not significant
Offsite priority habitats	Local	None required – considerable distance from the site, no related habitats will be lost through this scheme.	Not significant
On site habitats	Site	The majority of the existing habitat is of limited ecological value.	Not significant
Bats	Local	No further surveys required due to lack of evidence of bats and lack of potential roost features. A sensitive lighting scheme should be implemented during development to protect foraging/commuting bats within the local area.	Not significant
Reptiles, dormice, GCN, badgers, nesting birds	Local	No further surveys required due to lack of suitable habitat on-site.	Not significant

6.0 Conclusions

6.1 The site does not lie within or adjacent to any designated sites. A number of statutory and non-statutory sites are located within the surrounding area; however, no residual

negative impacts are anticipated due to the nature of the development, the distances between the site and all designated sites, and the lack of any related habitat to be lost.

- 6.2 The site was comprised of a commercial building with large areas of hardstanding, artificial unsealed surface with ruderal vegetation, and a section of mixed scrub. The habitats on site are common and widespread throughout the local area and the UK as a whole.
- 6.3 The building on site was considered to have 'negligible' potential to support roosting bats. As such, no further surveys for roosting bats are required on site.
- 6.4 The majority of the site was considered unsuitable for nesting birds due to the lack of suitable habitat.
- 6.5 No suitable habitats for reptiles, GCNs, badgers, dormice, otters or water voles were identified on site. As such, no further surveys for these species are required.
- 6.6 Recommendations for enhancements have been made within this report, aimed at improving the ecological value of the site post-development.

7.0 REFERENCES

ARG., (2010) *UK Advice Note 5: Great crested newt habitat suitability index*. Amphibian and Reptile Groups of the United Kingdom.

UK Advice Note 5: Great crested newt habitat suitability index. Amphibian and Reptile Groups of the United Kingdom.

Bright, P., Morris, P. & Mitchell-Jones, T., (2006)., *The Dormouse Conservation Handbook*. 2nd edition. English Nature.

Chapman, C., & Tyldesley, D. (2016). *Small-scale effects: How the scale of effects has been considered in respect of plans and projects affecting European sites-a review of authoritative decisions*. Natural England Commissioned Reports, (205).

CIEEM., (2017)., *Guidelines for Preliminary Ecological Appraisal, 2nd Edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

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

Collins, J. (ed.)., (2016)., *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). Bat Conservation Trust, London.

Creswell, P., Harris, S. & Jeffies, D.J. (1990)., *The history, distribution status and habitat requirements of the badger in Britain*. Nature Conservancy Council, Peterborough.

English Nature., (2004)., *Reptiles: guidelines for developers*. English Nature, Peterborough.

Froglife., (2015)., *Surveying for Reptiles*. Froglife, Peterborough.

Franklin, J. F. (1993)., 'Preserving Biodiversity: Species, Ecosystems, or Landscapes?', *Ecological Applications*, 3: 202-205.

Institution of Lighting Professionals., (ILP – 2018)., *Guidance Note 08/18 – Bats and artificial lighting in the UK*. ILP, Rugby.

Joint Nature Conservation Committee., (2010)., *Handbook for Phase 1 habitat survey – a techniques for environmental audit*. JNCC, Peterborough.

Langton, T.E.S., Beckett, C.L. & Foster, J.P. (2001)., *Great Crested Newt Handbook*. Froglife, Halesworth.

Mitchell-Jones, A.J. (2004)., *Bat Mitigation Guidelines*. English Nature, Peterborough.

Natural England., (2011)., *Badgers and Development: A guide to best practice and licensing*. Natural England, Bristol.

Neal, E. & Cheeseman, C. (1996)., *Badgers*. T & A D Poyser Ltd. London.

Stone, E.L., Jones, G., Harris, S. (2009)., Street lighting disturbs commuting bats. *Current Biology*, **19**: 1123-1127.

Stratchan, R., Moorhouse, T., & Gelling, M. (2011)., *Water Vole Conservation Handbook*. 3rd Edn. Wildlife Conservation Research Unit, University of Oxford.

Wilson, G.J., Harris, S. & McLaren, G. (1997)., *Changes in British badger population, 1988-1997*. People's Trust for Endangered Species, London.

Internet resources:

Google Maps: www.google.co.uk/maps

Magic Interactive Map: www.magic.gov.uk

Appendix 1: Species List

Common name	Latin name	DAFOR score
Sparsely vegetated land/Ruderal vegetation		
Moss	<i>Bryophyta</i>	D
Willow-herb sp.	<i>Epilobium</i> sp.	A
Cleavers	<i>Galium aparine</i>	A
Rough hawkbit	<i>Leontodon hispidus</i>	O
Yorkshire fog	<i>Holcus lanatus</i>	O
Chickweed	<i>Stellaria media</i>	O
Dock sp.	<i>Rumex</i> sp.	R
Bramble	<i>Rubus fruticosus</i>	R
Common ivy	<i>Hedera helix</i>	R
Mixed Scrub		
Bramble	<i>Rubus fruticosus</i>	F
Common ivy	<i>Hedera helix</i>	F
Common nettle	<i>Urtica dioica</i>	O
Creeping bent	<i>Agrostis stolonifera</i>	O
Yorkshire fog	<i>Holcus lanatus</i>	O
Creeping buttercup	<i>Ranunculus repens</i>	R
Vetch sp.	<i>Linaria purpurea</i>	R
Cleavers	<i>Galium aparine</i>	R
Cock's-foot	<i>Dactylis glomerata</i>	R
Introduced Shrub		
Silver-leaf cotoneaster	<i>Cotoneaster pannosus</i>	R
Variegated laurel	<i>Aucuba japonica 'Variegata'</i>	R

Appendix 2: Habitat Map



Appendix 3: Site Photographs

Photograph 1: Western section of commercial building on site.	 A photograph of the western section of a commercial building. The building has a modern, industrial design with large glass windows and a metallic, grey facade. A small sign on the wall reads "Arkwright Road". The sky is overcast.
Photograph 2: Eastern section of building.	 A photograph of the eastern section of the building. It is a long, single-story structure with white brick walls and a dark, corrugated metal roof. There are several windows with metal grilles and a large roll-up door. A yellow skip is visible in the background on the left.
Photograph 3: Artificial unsealed surface with ruderal vegetation.	 A photograph showing an artificial unsealed surface, likely a roof or a paved area, with ruderal vegetation growing on it. The vegetation is green and low-lying. A concrete curb is visible in the foreground, and a white brick wall is on the right.

Photograph 4: Sparsely vegetated land.



Photograph 5: Bank of mixed scrub in eastern section.



Appendix 4: Biological Records Confirmation



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