

BRUNEL RETAIL PARK,
READING,
BERKSHIRE

Ecological Assessment

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1. INTRODUCTION

1.1. Background

- 1.1.1. Ecology Solutions was commissioned by Quod in September 2020 to undertake an ecological assessment of Brunel Retail Park, Reading, Berkshire (see Plan ECO1), hereinafter referred to as the site.
- 1.1.1. The proposals for the site include the redevelopment of the site to provide two new large units for office, industrial and warehouse use, with associated road infrastructure and landscaping.

1.2. Site Characteristics

- 1.2.1. The site consists of a retail park and adjoining land along the River Kennet / Kennet and Avon Canal, hereafter referred to as the River Kennet. The site is approximately 3.5 hectares in size and is located to the south of Reading town centre in the county of Berkshire.
- 1.2.2. The site is bound to the north by Rose Kiln Lane, to the east by Gillette Way, to the south by Tradeteam Ltd depot, and to the west by the River Kennet and associated broadleaved deciduous woodland. The wider landscape comprises existing business, industrial and residential development within the Reading urban area and Local Wildlife Sites (LWSs) associated with the floodplain of the River Kennet to the west of the site.
- 1.2.3. The site comprises principally built form including hardstanding and buildings, as well as small areas of amenity planting, amenity grassland, recolonising ground and scattered scrub at the site margins. The western part of the site comprises an area of broadleaved deciduous woodland alongside the River Kennet, which is designated as priority habitat. The woodland connects to a tree / scrub belt that is located immediately adjacent to the western part of the northern boundary.

1.3. Ecological Assessment

- 1.3.1. This document assesses the ecological interest of the site. The importance of the habitats within the site are evaluated with due consideration given to the guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM)¹.
- 1.3.2. Where necessary, mitigation measures are recommended so as to safeguard any significant existing ecological interest within the site and, where appropriate, potential enhancement measures are put forward and reference made to both national and local biodiversity priorities.

¹ CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Version 1.1 – Updated September 2019. Chartered Institute of Ecology and Environmental Management, Winchester.

2. SURVEY METHODOLOGY

- 2.1. The methodology utilised for the survey work can be split into three areas, namely desk study, habitat survey and faunal survey. These are discussed in more detail below.

2.2. Desk Study

- 2.2.1. In order to compile background information on the site and the surrounding area, Ecology Solutions contacted Thames Valley Environmental Resources Centre (TVERC). This data is referenced in this report where relevant. Species records dating from the past 10 years only are included.
- 2.2.2. Further information on designated sites from a wider search area was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC)² database, which uses information held by Natural England and other organisations. This information is reproduced at Appendix 1, and where appropriate illustrated on Plan ECO1.

2.3. Habitat Survey

- 2.3.1. A habitat survey was carried out by Ecology Solutions in October 2020 in order to ascertain the general ecological value of the site and to identify the main habitats and associated plant species located within the site.
- 2.3.2. The site was surveyed based around extended Phase 1 habitat survey methodology³, as recommended by Natural England, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.
- 2.3.3. Using the above method, the site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified.
- 2.3.1. All the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent in different seasons. While it is acknowledged that the extended Phase 1 survey was undertaken at a sub-optimal time of year, it is considered that an accurate and robust assessment of the botanical interest has been made given the habitats present, particularly within the retail park.

2.4. Faunal Survey

- 2.4.1. Obvious faunal activity, such as birds or mammals observed visually or by call during the course of the surveys, was recorded. Specific attention was paid to any potential use of the site by protected species, priority species, or other notable species.

² <http://www.magic.gov.uk>

³ Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*. England Field Unit, Nature Conservancy Council, reprinted JNCC, Peterborough.

Badgers

- 2.4.2. During the Phase 1 habitat survey, the site was surveyed for Badgers *Meles meles*, with particular attention paid to the suitable habitat along the western boundary.
- 2.4.3. The surveys comprised two main elements: firstly, searching thoroughly for evidence of Badger setts. If any setts were encountered each sett entrance was noted and plotted, even if the entrance appeared disused. The following information was recorded:
- i) The number and location of well used or very active entrances; these are clear of any debris or vegetation and are obviously in regular use and may, or may not, have been excavated recently.
 - ii) The number and location of inactive entrances; these are not in regular use and have debris such as leaves and twigs in the entrance or have plants growing in or around the edge of the entrance.
 - iii) The number of disused entrances; these have not been in use for some time, are partly or completely blocked and cannot be used without considerable clearance. If the entrance has been disused for some time all that may be visible is a depression in the ground where the hole used to be together with the remains of the spoil heap.
- 2.4.4. Secondly, evidence of Badger activity such as well-worn paths, run-throughs, snagged hair, footprints, latrines and foraging signs was recorded so as to build up a picture of the use of the site by Badgers.

Bats

- 2.4.5. During the Phase 1 habitat survey, the site was surveyed to assess its potential to support bats.
- 2.4.6. The buildings present were subject to external assessments of their suitability for roosting bats. The survey work was undertaken using (where necessary) a ladder, torch, endoscope, mirrors and binoculars.
- 2.4.7. The probability of a building being used by bats as a summer roost site increases if it:
- is largely undisturbed;
 - dates from pre-20th Century;
 - has a large roof void with unobstructed flying spaces;
 - has access points for bats (though not too draughty);
 - has wooden cladding or hanging tiles; and / or
 - is in a rural setting and close to woodland or water.
- 2.4.8. Conversely, the probability decreases if a building is of a modern or pre-fabricated design / construction, is in an urban setting, has small or cluttered roof voids, has few gaps at the eaves or is a heavily disturbed premises.

- 2.4.9. The main requirement for a winter / hibernation roost site is that it maintains a stable (cool) temperature and humidity. Sites commonly utilised by bats as winter roosts include cavities / holes in trees, underground sites and parts of buildings. Whilst different species may show a preference for one of these types of roost site, none are solely dependent on a single type.
- 2.4.10. All trees within the site were assessed for their potential to support roosting bats. Features typically favoured by bats were searched for, including:
- Obvious holes, e.g. rot holes and old Woodpecker holes;
 - Dark staining on the tree, below the hole;
 - Tiny scratch marks around a hole from bat claws;
 - Cavities, splits and or loose bark from broken or fallen branches, lightning strikes etc.; and
 - Very dense covering of mature Ivy *Hedera helix* over trunk.
- 2.4.11. The site was also appraised for its likely value to any locally present foraging and dispersing bats.
- 2.4.12. Field surveys were undertaken with regard to best practice guidelines issued by Natural England (2004⁴), the Joint Nature Conservation Committee (2004⁵) and the Bat Conservation Trust (2016⁶).

⁴ Mitchell-Jones, A. J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

⁵ Mitchell-Jones, A.J. & McLeish, A.P. (Eds.) (2004). *Bat Workers' Manual*. 3rd edition. Joint Nature Conservation Committee, Peterborough.

⁶ Collins, J. (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. 3rd Edition. The Bat Conservation Trust, London.

3. ECOLOGICAL FEATURES

3.1. A habitat survey of the site was undertaken by Ecology Solutions in October 2020.

3.2. The following main habitat / vegetation types were identified within the site during the survey undertaken:

- Hardstanding;
- Buildings;
- Recolonising Ground;
- Scattered Scrub;
- Amenity Grassland;
- Amenity Planting;
- Broadleaved Deciduous Woodland;
- Tree / Scrub Belt (located off-site); and
- River Kennet (located off-site)

3.3. The location of these habitats is shown on Plan ECO2 and are described individually below.

3.4. Hardstanding

3.4.1. The site is dominated by hardstanding and includes the retail centre car park to the front of the buildings (see Photograph 1), the service yard to the rear of the buildings (see Photograph 2), and part of the roundabout along Rose Kiln Lane and the access road.

3.4.2. The hardstanding is largely devoid of vegetation. A few low growing plants are present around the edges in cracks in the pavement including Annual Meadow Grass *Poa annua*, Canadian Fleabane *Conyza canadensis*, Creeping Thistle *Cirsium arvense*, Dandelion *Taraxacum officinale*, Butterfly Bush *Buddleja davidii*, Willowherb *Epilobium* sp. and Dovesfoot Cranesbill *Geranium mole*.

3.5. Buildings

3.5.1. The site contains a row of buildings comprising ten shops (use Class A1) and a single restaurant / café building (use Class A3) (see Photograph 1). Occupiers include Halfords, Pets at Home, Next, Go Outdoors, Dreams, Shoezone, B&M, Laura Ashley, Subway and Costa Coffee. Three shops have no occupiers and are now vacant.

3.5.2. The buildings within the site are named B1 to B11 on Plan ECO2. All buildings are single storey buildings with steel cladding exteriors. Buildings B1 to B9 support shallow pitched steel cladding roofs. Buildings B10 to B11 support flat steel cladding roofs.

3.6. Recolonising Ground

3.6.1. The site contains some very limited areas of recolonising ground. A narrow strip of recolonising ground is present on gravel areas along the southern site boundary. In addition, a small former area of amenity grassland /

planting in the south of the site has recently been cleared and is now largely bare ground with some limited early colonising and opportunistic species.

- 3.6.2. Species present within the strip of recolonising ground along the southern boundary include frequent Nettle *Urtica dioica*, Hedge Bindweed *Calystegia sepium*, Mugwort *Artemisia vulgaris*, Bramble *Rubus fruticosus*, Willowherb sp., Cleavers *Galium aparine*, and occasional Canadian Fleabane, Ragwort *Senecio jacobaea*, Teasel *Dipsacus sylvestris*, Hemlock *Conium maculatum*, Smooth Sow-thistle *Sonchus oleraceus* and Bristly Ox-tongue *Helminthotheca echinoides*.

3.7. Scattered Scrub

- 3.7.1. Scattered scrub is growing in the area of unmanaged ground beyond the metal palisade fencing along the southern and southwestern boundary, including abundant Butterfly Bush and frequent Elder *Sambucus nigra* scrub. Saplings of Field Maple *Acer campestre* are also present in rare abundance.
- 3.7.2. The Magic Map website classifies the area of scrub along the southwestern site boundary as part of the priority habitat deciduous woodland area along the River Kennet corridor. However, a habitat survey and review of Google Earth satellite imagery indicates that the classification of this area as priority habitat deciduous woodland is likely to be outdated and it is considered more accurate to class it as open scrub habitat.

3.8. Amenity Grassland

- 3.8.1. The site contains some small areas of amenity grassland, mainly associated with the frontage of the retail park along Rose Kiln Lane (see Photograph 3). These areas of amenity grassland support a very short sward height and are likely to be regularly mown.
- 3.8.2. The grass sward is dominated by Annual Meadow Grass, Perennial Rye Grass *Lolium perenne* and likely Creeping Bent *Agrostis stolonifera*. In addition, Broadleaved Plantain *Plantago major* and Dandelion *Taraxacum officinale* were recorded in abundance, and Yarrow *Achillea millefolium*, Mouse-ear-hawkweed *Pilosella officinarum* and Buck's-horn Plantain *Plantago coronopus* were recorded frequently. Species recorded occasionally included Daisy *Bellis perennis*, Dovesfoot Cranesbill, Cleavers and Ribwort Plantain *Plantago lanceolata*. Rarely recorded species include Ragwort and Canadian Fleabane.
- 3.8.3. A small area of amenity grassland is also present along the southern boundary. This area is less regularly managed and has developed a relatively taller sward structure than the amenity grassland at the front of the site. The species composition is similar to the areas of amenity grassland at the front of the site with the addition of other species that have colonised from off-site habitats, including Bristly Ox-tongue, Field Forget-me-not *Myosotis arvensis*, Agrimony *Agrimonia eupatoria* and Nettle.

3.9. Amenity Planting

- 3.9.1. The site contains some small areas of amenity planting associated with the frontage of the retail park along Rose Kiln Lane (see Photograph 3), the

eastern boundary beside building B11 and within the retail centre car park.

- 3.9.2. The most common amenity species present within the site is Firethorn *Pyracantha* sp., which form dense, low-growing hedges that front the site. Other amenity shrubs include Cherry Laurel *Prunus laurocerasus*, Wild Privet *Ligustrum vulgare*, Spindle *Euonymus* sp., and Sycamore *Acer pseudoplatanus* saplings.
- 3.9.3. In addition, several ornamental trees are present at the front of the site, including six young / semi-mature Plane *Platanus* trees and a young Alder *Alnus glutinosa* tree.
- 3.9.4. The semi-mature Plane tree in the northeast of the site is subject to a Tree Preservation Order (TPO) (see Photograph 4).

3.10. Broadleaved Deciduous Woodland

- 3.10.1. An area of broadleaved deciduous is present along the western site boundary (see Photograph 5). This woodland is classified as priority habitat deciduous woodland on the Magic Map website. The area within the site only includes a small area of the entire woodland that extends to the River Kennet.
- 3.10.2. The woodland is comprised of a variety of native and naturalised deciduous tree species. Tree species include frequent Sycamore, Lime *Tilia platyphyllos* x *cordata* and Willow *Salix* sp., occasional Ash *Fraxinus excelsior*, Cherry *Prunus avium*, Aspen *Populus tremula*, Hazel *Corylus avellana*, Hawthorn *Crataegus monogyna* and Wild Privet. Field Maple and Holly *Ilex aquifolium* are also present in rare abundance. Willow trees found across the woodland include Goat Willow *Salix caprea*, Crack Willow *Salix fragilis* and White Willow *Salix alba*.
- 3.10.3. The northern and eastern areas of the woodland have a dense tree cover and a limited understorey. The sloping ground in the southern area has a relatively limited tree cover and is more typical of a dense scrub habitat. This open scrub area is dominated by Nettle and Bramble and contains frequent Butterfly Bush shrubs and occasional Hawthorn and Blackthorn *Prunus spinosa* and Elder shrubs. Other occasional low-growing species in this area include Hedge Bindweed, Willowherb sp. and Broom *Cytisus scoparius*.
- 3.10.4. Ground flora noted throughout the survey of the entire woodland area that extends up to the River Kennet include Nettle, Ivy *Hedera helix*, Mugwort, Bristly Oxtongue, Dandelion, Cow Parsley *Anthriscus sylvestris*, Creeping Thistle *Cirsium arvense*, Broad-leaved Dock *Rumex obtusifolius*, Lesser Burdock *Arctium minus*, Colts-foot *Tussilago farfara* and Foxglove *Digitalis purpurea*.
- 3.10.5. Significant littering is present along the woodland edge with the retail park.

3.11. Tree / Scrub Belt (located off-site)

- 3.11.1. An area of scrub and trees is located immediately adjacent to the western part of the northern site boundary (see Photograph 6). It connects to the broadleaved deciduous woodland along the western boundary but is not

classed as part of the priority woodland habitat on Magic Map.

- 3.11.2. The tree / scrub belt contains a mixture of species including Ash, Hazel, Hawthorn, Sycamore, Elder and Ivy. There is also a row of amenity planting along the interface between the tree / scrub belt and hardstanding within the site and consists of Wild Privet, Firethorn sp., Field Maple and Sycamore.

3.12. River Kennet (located off-site)

- 3.12.1. The River Kennet is located west of the site (see Photograph 7). This is a large chalk river approximately 10-15 metres in width. Parts of the riverbanks are shaded by Willow *Salix* sp. trees. Emergent vegetation includes dense stands of Reed Canary Grass *Phalaris arundinacea* in the open, unshaded areas. Aquatic vegetation growing in the section of the river adjacent to the site is limited to Water-cress *Rorippa nasturtium-aquaticum*.
- 3.12.2. Pendulous Sedge *Carex pendula* and Soft Rush *Juncus effusus* were recorded growing close to the riverbank in the broadleaved deciduous woodland area.
- 3.12.3. This section of waterway is also used as Kennet and Avon Canal and has barges passing along it.

3.13. Background Records

- 3.13.1. Information received from the TVERC shows a single record of Bluebell *Hyacinthoides non-scripta* within the search area, which relates to a location approximately 1.3km southeast of the site and dates from 2014. Bluebell is protected on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended).

4. WILDLIFE USE OF THE SITE

- 4.1. General observations were made during the surveys of any faunal use of the site, with specific attention paid to the potential presence of protected species.

4.2. Badgers

- 4.2.1. No evidence of the potential presence of Badgers was recorded within or immediately adjacent to the site during the course of the survey.
- 4.2.2. The retail park that covers the majority of the site lacks opportunities for Badgers. The broadleaved deciduous woodland west of the retail park provides suitable habitat for locally present Badger groups.
- 4.2.3. The sloped ground covered by dense Nettles and Bramble within the southern part of deciduous woodland area was noted as being a suitable area for Badger setts. Although this area was too dense to access, no Badger paths or latrines suggesting regular use were recorded.
- 4.2.4. Information received from the TVERC shows seven records of Badgers within the search area. The closest and most recent record for this species dates from 2018 and relates to a location approximately 0.1km north of the site. This record is of a Badger sett appearing to be located in the deciduous woodland along the River Kennet further north of the site. However, the record location is described as from Waterloo Meadows, which is located approximately 0.4km north of the site at its closest point. Therefore, there is some inaccuracy in the exact location of this sett.

4.3. Bats

- 4.3.1. All building presents within the site are modern buildings used for retail purposes. They comprise modern building materials and are subject to a high level of artificial lighting from the car park and surrounding roads. As such no buildings are considered to offer any opportunities for roosting bats.
- 4.3.2. Several Lime and Sycamore trees within the northern area of the deciduous woodland have a covering of Ivy (see Photograph 8). Although the covering of Ivy was noted as being relatively sparse on most trees, it may still obscure potential roosting features (PRFs) on the tree trunks. The number, if any, of PRFs present is likely to be relatively low as the trees have not reached full maturity. They may provide some negligible to low opportunities and are therefore considered to have a likelihood of a maximum of low potential to support roosting bats. The Plane trees within the retail park lack any PRFs and therefore have no potential for roosting bats.
- 4.3.3. The majority of the site is expected to offer limited foraging and dispersal opportunities for any local bat populations owing to its built form and significant artificial lighting. The corridor of natural habitats along the River Kennet, including the broadleaved deciduous woodland along the western boundary, is likely to be of greater interest for local bats.
- 4.3.4. Information received from the TVERC shows a high number of bat records within the search area. A total of six identified bat species were recorded within the search area, including Brown Long-eared Bat *Plecotus auritus*, Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *Pipistrellus*

pygmaeus, Daubenton's Bat *Myotis daubentonii*, Noctule *Nyctalus noctula* and Serotine *Eptesicus serotinus*, as well some unidentified bats including Long-eared Bat *Plecotus* sp., Pipistrelle *Pipistrellus* sp., and *Myotis* *Myotis* sp.. The bat record in closest proximity to the site is a Common Pipistrelle recorded in 2013 at a location approximately 0.1km north of the site. The most recent records are of a roosting Common Pipistrelle recorded in 2018 at a location approximately 1.3km northeast of the site.

- 4.3.5. TVERC returned numerous records of bats from locations along the River Kennet dating from 2012 to 2016, including records of Common Pipistrelle, Soprano Pipistrelle, Noctule, Daubenton's Bat and Long-eared Bat species. Droppings attributed to Pipistrelle sp. and Long-eared Bat sp. were recorded within a riverside building located approximately 0.7km southwest of the site. Therefore, bats are known to roost in the locality and use the River Kennet corridor for foraging and commuting.

4.4. Otters and Water Voles

- 4.4.1. The River Kennet, located to the west of the site, is a suitable watercourse for both Otter *Lutra lutra* and Water Vole *Arvicola amphibius*. The river is of moderate size and has well vegetated banks that could hide Otter holts and Water Vole burrows.
- 4.4.2. No evidence of either species was recorded along the River Kennet during the habitat survey. However, a targeted survey for these species which provides a better indication of their presence was not undertaken.
- 4.4.3. Information received from the TVERC shows no recent records of Water Vole within the search area. Past records of this species were returned, including five records along the River Kennet, the most recent of which dates from 2000. No records of Otters were returned within the search area.

4.5. Other Mammals

- 4.5.1. No evidence of Hedgehog *Erinaceus europaeus* was recorded during the habitat survey. However, the broadleaved deciduous woodland in the west of the site and the off-site tree / scrub belt along part of Rose Kiln Lane provide suitable habitat for this species. A few log piles were recorded within the dense Nettles in the deciduous woodland area, which may offer suitable hibernation and shelter opportunities for Hedgehogs (see Photograph 9). However, these log piles are located close to the public footpath and are immediately beyond the western site boundary (see Plan ECO2).
- 4.5.2. It is also likely that the site supports a number of small mammals of no conservation concern. For example, a Grey Squirrel *Sciurus carolinensis* was recorded within the broadleaved deciduous woodland area.
- 4.5.3. Information received from the TVERC shows three records of Hedgehog within the search area. The closest record relates to a location approximately 0.7km southeast of the site and dates from 2013. The most recent record dates from 2018 and relates to a location approximately 1.1km southeast of the site.

4.6. Birds

- 4.6.1. Several species of birds were noted within the site or immediately adjacent during the habitat survey, including Black-headed Gull *Chroicocephalus ridibundus*, Pied Wagtail *Motacilla alba*, Great Spotted Woodpecker *Dendrocopos major*, Long-tailed Tit *Aegithalos caudatus*, Great Tit *Parus major*, Robin *Erithacus rubecula*, Wren *Troglodytes troglodytes*, Blackcap *Sylvia atricapilla*, Wood Pigeon *Columba palumbus*, Jay *Garrulus glandarius*, Carrion Crow *Corvus corone* and Magpie *Pica pica*. The majority of these species were recorded within the broadleaved deciduous woodland along the River Kennet, except for Black-headed Gull and Pied Wagtail which were recorded within the retail park.
- 4.6.2. In addition, Redwing *Turdus iliacus*, Goldfinch *Carduelis carduelis*, Jackdaw *Corvus monedula* and Red Kite *Milvus milvus* were recorded flying over the area during the survey.
- 4.6.3. The broadleaved woodland and tree / scrub belt within the west of the site offer suitable opportunities for nesting and foraging birds. The Plane trees in the northern part of the retail park also provide some limited opportunities. A couple of old bird nests were recorded within the broadleaved deciduous woodland (see Photograph 10) and in a single Plane tree in the retail park.
- 4.6.4. The River Kennet (located off-site) offers opportunities for waterbirds such as Kingfisher *Alcedo atthis*, Grey Heron *Ardea cinerea*, Little Egret *Egretta garzetta*, Mallard *Anas platyrhynchos* and Common Moorhen *Gallinula chloropus*.
- 4.6.5. Information received from the TVERC shows a large number of bird records within the search area. A total of 23 bird species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and / or on Annex I of the European Birds Directive were recorded within the search area, including Barn Owl *Tyto alba*, Bar-tailed Godwit *Limosa lapponica*, Black Tern *Chlidonias niger*, Cetti's Warbler *Cettia cetti*, Common Tern *Sterna Hirundo*, Dartford Warbler *Sylvia undata*, Fieldfare *Turdus pilaris*, Garganey *Anas querquedula*, Green Sandpiper *Tringa ochropus*, Greenshank *Tringa nebularia*, Hobby *Falco subbuteo*, Kingfisher, Little Egret, Little Ringed Plover *Charadrius dubius*, Marsh Harrier *Circus aeruginosus*, Mediterranean Gull *Larus melanocephalus*, Merlin *Falco columbarius*, Peregrine *Falco peregrinus*, Red Kite, Redwing, Ruff *Philomachus pugnax*, Short-eared Owl *Asio flammeus* and Wood Sandpiper *Tringa glareola*. The majority of these protected bird records were returned from within the 1km grid square approximately 0.3km west of the site at its nearest point and are associated with Fobney and Kennet Valley Meadows, and Fobney Island LWSs. However, their precise locations are not provided. The most recent records date from 2017 and include Little Egret, Cetti's Warbler, Fieldfare, Garganey, Green Sandpiper, Greenshank, Hobby, Peregrine, Redwing and Wood Sandpiper, recorded in 1km grid squares approximately 0.3km and 1.3km west of the site at their closest points.
- 4.6.6. In addition, a total of 17 species listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 were recorded within the search area, including Bullfinch *Pyrrhula pyrrhula*, Cuckoo *Cuculus canorus*, Dunnock *Prunella modularis*, Grasshopper Warbler *Locustrella naevia*, Herring Gull *Larus argentatus*, House Sparrow *Passer*

domesticus, Lapwing *Vanellus vanellus*, Lesser Redpoll *Carduelis cabaret*, Linnet *Carduelis cannabina*, Marsh Tit *Poecile palustris*, Reed Bunting *Emberiza schoeniclus*, Skylark *Alauda arvensis*, Song Thrush *Turdus philomelos*, Spotted Flycatcher *Muscicapa striata*, Starling *Sturnus vulgaris*, Turtle Dove *Streptopelia turtur* and Yellowhammer *Emberiza citrinella*. The majority of these notable bird records were returned from within the 1km grid square approximately 0.3km west of the site at its closest point and are associated with Fobney and Kennet Valley Meadows LWS, and Fobney Island LWS.

4.7. Reptiles

- 4.7.1. No reptiles were recorded within the site during the habitat survey. It is considered that the site offers no suitable habitats for reptiles.
- 4.7.2. The Kennet Island Wildlife Conservation Area, located southwest of the site, supports open grassland and wetland habitats that may offer suitable opportunities for common reptile species. Reptiles may shelter in the trees and scrub bordering this area and the site. However, reptiles are not expected to ever utilise the retail park. As such, no further consideration for this group is considered necessary.
- 4.7.3. Information received from the TVERC shows records of two common reptile species within the search area, including Slow-Worm *Anguis fragilis* and Grass Snake *Natrix helvetica*. The closest records of both species relate to a location approximately 0.4km southwest of the site and date from 2014 to 2015. The most recent records of both species date from 2016 and relate to a location approximately 0.6km southwest of the site. All recent reptile records are from the same development site that no longer supports suitable reptile habitat.

4.8. Amphibians

- 4.8.1. No amphibians were recorded within the site during the habitat survey. The site itself contains no suitable waterbodies for amphibians. Waterbodies located in very close proximity to the site, including River Kennet, Foudry Brook and ponds within Kennet Island Wildlife Conservation Area, are likely to support breeding populations of amphibians. There are no past records of Great Crested Newt *Triturus cristatus* in this area, meaning there is no evidence to suggest this protected species is close to the site. However, common amphibians are likely to breed within these adjacent waterbodies.
- 4.8.2. The retail park only offers negligible terrestrial habitat for amphibians. The broadleaved deciduous woodland along the western boundary is a suitable area of terrestrial habitat for amphibians. Log piles recorded beyond the western boundary within the deciduous woodland provide suitable hibernacula for amphibians (see Photograph 9).
- 4.8.3. Information received from the TVERC shows a small number of records of two common amphibian species within the search area, including Common Frog *Rana temporaria* and Smooth Newt *Lissotriton vulgaris*. For Common Frog, the closest record relates to a location approximately 0.7km southwest of the site along the River Kennet and dates from 2011, whilst the most recent records date from 2016 and relate to a location approximately 1.1km northeast of the site. For Smooth Newt, the closest

record relates to a location approximately 0.8km northeast of the site and dates from 2011, whilst the most recent records date from 2016 and relate to a location approximately 1.1km northeast of the site.

4.9. Invertebrates

- 4.9.1. The majority of the site is considered to be of limited value for invertebrates, being principally areas of built form and well-managed amenity grassland and planting. The natural habitats within the site, including the broadleaved deciduous woodland and the adjoining off-site tree / scrub belt, are expected to support an assemblage of invertebrates.
- 4.9.2. Stag Beetle *Lucanus cervus*, a species protected under Schedule 5 of the Wildlife Countryside Act 1981 (as amended), is known to be present within the local area (see below). The broadleaved deciduous woodland along the western site boundary may provide breeding opportunities for Stag Beetles, as a few log piles containing suitable decaying wood were noted off-site in the wooded area (see Photograph 9).
- 4.9.3. Information received from the TVERC shows 26 records of Stag Beetle within the search area. Many of these records originate from gardens and parks within the Reading urban area. The closest record of this species relates to a location approximately 0.8km northeast of the site and dates from 2015, whilst the most recent record dates from 2018 and relates to a location approximately 1km northeast of the site. Historical records of other protected invertebrate species were also returned within the data search area, including single records of White-letter Hairstreak *Satyrium w-album* and Chalkhill Blue *Polyommatus coridon*.

5. ECOLOGICAL EVALUATION

5.1. The Principles of Site Evaluation

- 5.1.1. The guidelines for ecological evaluation produced by CIEEM propose an approach that involves professional judgement, but makes use of available guidance and information, such as the distribution and status of the species or features within the locality of the project.
- 5.1.2. The methods and standards for site evaluation within the British Isles have remained those defined by Ratcliffe⁷. These are broadly used across the United Kingdom to rank sites so priorities for nature conservation can be attained. For example, current Sites of Special Scientific Interest (SSSI) designation maintains a system of data analysis that is roughly tested against Ratcliffe's criteria.
- 5.1.3. In general terms, these criteria are size, diversity, naturalness, rarity and fragility, while additional secondary criteria of typicalness, potential value, intrinsic appeal, recorded history and the position within the ecological / geographical units are also incorporated into the ranking procedure.
- 5.1.4. Any assessment should not judge sites in isolation from others, since several habitats may combine to make it worthy of importance to nature conservation.
- 5.1.5. Further, relying on the national criteria would undoubtedly distort the local variation in assessment and therefore additional factors need to be taken into account, e.g. a woodland type with a comparatively poor species diversity, common in the south of England, may be of importance at its northern limits, say in the border country.
- 5.1.6. In addition, habitats of local importance are often highlighted within a local Biodiversity Action Plan (BAP). Both the Berkshire BAP and the draft Reading BAP have been considered as part of this assessment and is referenced where relevant.
- 5.1.7. Levels of importance can be determined within a defined geographical context from the immediate site or locality through to the international level.
- 5.1.8. The legislative and planning policy context are also important considerations and have been given due regard throughout this assessment.

5.2. Habitat Evaluation

Designated Sites

- 5.2.1. **Statutory Sites.** There are no statutory designations of nature conservation value within the site or immediately adjacent to it. The closest statutory designated site is Pearman's Copse Local Nature Reserve (LNR), which is located approximately 2.6km southeast of the site at its nearest point (see Plan ECO1). Pearman's Copse is a small area of ancient woodland.

⁷ Ratcliffe, D. A. (1977). *A Nature Conservation Review: The Selection of Sites of Biological National Importance to Nature Conservation in Britain*. Two Volumes. Cambridge University Press, Cambridge.

- 5.2.2. Given the distance and the intervening urban development, it is considered highly unlikely that the development of the site will have any direct adverse effects upon this statutory designated site, be it during the construction or operational phases.
- 5.2.3. **Non-statutory Sites.** The Kennet Valley East Biodiversity Opportunity Area (BOA) lies immediately west of the site. At its closest point, it lies approximately 6-7m west of the area of broadleaved deciduous woodland within the western part of the site.
- 5.2.4. Kennet Valley East BOA covers a large area of floodplain of the River Kennet stretching from Newbury to Reading. Habitats include the River Kennet (a chalk river), reedbeds, fen, wet woodland, lowland meadow, wet grassland and standing water.
- 5.2.5. The western part of the site, including a small area of the retail park where the redevelopment will occur, lies within the 50m buffer zone for the Kennet Valley East BOA.
- 5.2.6. In addition, there are several other non-statutory designated sites that are included within the Kennet Valley East BOA located to the west of the site, including River Kennet / Kennet and Avon Canal, Fobney and Kennet Valley Meadows, Fobney Island, Holy Brook and Burghfield Gravel Pits, which are all designated as Local Wildlife Sites (LWSs) (see Plan ECO1). These LWSs are important for their botanical and ornithological value.
- 5.2.7. The broadleaved deciduous woodland along the western site boundary will be retained to provide a sufficient ecological buffer zone between the redevelopment and the Kennet Valley East BOA boundary. While considered unlikely, owing to the nature of the proposals, precautions will be followed to limit any potential adverse impact through pollution (such as dust and run-off) on the BOA and the River Kennet. These will follow best industry practice methods in regard to pollution and the Environment Agency's Pollution Prevention Guidelines.
- 5.2.8. Further details on full protective and preventative measures to avoid detrimental impacts on the Kennet Valley East BOA will be provided in a Construction Ecological Management Plan (CEMP) document that will be drafted and submitted to the LPA.

Habitats

- 5.2.9. The habitats within the site comprise common and widespread species and are in themselves of low intrinsic ecological interest. The majority of the site consists of buildings and hardstanding of very limited nature conservation value. Their removal to facilitate the proposed redevelopment is of little ecological significance. The habitat of most interest within the context of the site includes the broadleaved deciduous woodland in the west of the site, which is classed as priority habitat. In addition, the Plane trees and the off-site tree / scrub belt along the northern boundary provide some ecological value. On account of its perceived amenity value a single Plane tree located within the northeast of the site is subject to a TPO and will be safeguarded. The existing boundary vegetation (including the broadleaved deciduous

woodland, the Plane trees and the off-site tree / scrub belt) will be fully protected ensuring that biodiversity within the site is retained. All trees to be retained should be subject to the necessary protection in line with BS 5837 2012.

- 5.2.10. The landscape strategy for the proposed development will be based around a diverse selection of native species of local provenance and species of known wildlife value. Specifically, the landscape strategy will seek to bolster and improve the existing areas of vegetation to be retained along the western and northern site boundaries.
- 5.2.11. Newly created habitats within the site will include native shelterbelts (comprised of native trees and shrubs with understorey planting), native hedgerows, ornamental trees, ornamental shrub planting, and amenity grassland with bulb planting adjacent to the new access road.
- 5.2.12. The ornamental shrub planting will be comprised of non-native species that are recognised as being important for pollinating invertebrates to increase biodiversity.
- 5.2.13. The development proposals will lead to an increase in the boundary vegetation cover and potential ecological value within the site post-development.
- 5.2.14. Overall, through the habitat protection, creation and future sensitive management the proposed development shall deliver measurable biodiversity net gains. An assessment against Natural England's Biodiversity Metric 2.0 has been completed (see Appendix 2) that shows a measurable net gain of 12.14% shall be delivered as part of the development proposal. It is noted that whilst not currently a mandatory requirement the current metric that remains in beta format can be used as a useful tool in assessing biodiversity change from pre to post development. However, it is important to stress its use should not be viewed in isolation and be set alongside sound assessment, evaluation and professional judgement.

5.3. Faunal Evaluation

Badgers

- 5.3.1. **Legislation.** The Protection of Badgers Act 1992 consolidates the previous Badgers Acts of 1973 and 1991. The legislation aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain, with particularly high populations in the southwest.
- 5.3.2. As well as protecting the animal itself, the 1992 Act also makes the intentional or reckless destruction, damage or obstruction of a Badger sett an offence. A sett is defined as "*any structure or place which displays signs indicating current use by a Badger*", as defined by current Natural England guidance.
- 5.3.3. In addition, the intentional elimination of sufficient foraging area to support a known social group of Badgers may, in certain circumstances, be construed as an offence by constituting 'cruel ill treatment' of a Badger.

- 5.3.4. Any work that disturbs Badgers is illegal without a licence granted by Natural England. Unlike the general conservation legislation, the Badgers Act 1992 makes specific provision for the granting of licences for development purposes, including for the destruction of setts.
- 5.3.5. It should be noted that a licence cannot be issued until the application site is in receipt of a full and valid planning permission and that generally licences are not granted between December and June inclusive to avoid disruption to the Badger breeding cycle.
- 5.3.6. Local Authorities are therefore obliged to consult Natural England over any application, which is likely to adversely affect Badgers.
- 5.3.7. **Site Usage.** No evidence of the presence of Badgers was observed during survey work undertaken. However, the broadleaved deciduous woodland in the west of the site is suitable habitat for Badgers and the potential presence of a Badger sett in the dense Nettles and Brambles cannot be completely ruled out. There are recent records of Badgers and setts in the surrounding area increasing the likelihood of this species utilising the woodland within the site. The retail park itself is unsuitable for this species.
- 5.3.8. **Mitigation and Enhancements.** No updated Badger survey is required as the broadleaved deciduous woodland will be retained as part of the development ensuring that opportunities for foraging and dispersing Badgers will remain post-development. The establishment of new shelterbelt planting and hedgerow planting comprising some native fruit-bearing trees and shrubs will offer increased foraging opportunities for Badgers.
- 5.3.9. The potential exists for Badgers to roam into areas where construction is underway and become trapped in trenches, excavate new setts in piles of subsoil or disturb chemicals that may be being used for development. Badgers are highly mobile animals and it is possible that new setts will be constructed within the footprint of the proposed development prior to site clearance and the start of the construction phase. The following measures should be followed throughout the construction phase of development:
- All site personnel will be made aware of the potential presence of this species and the appropriate steps required to ensure the safety of Badgers while on site;
 - Inclines and mounds of loose soil present ideal habitats for Badgers seeking to establish setts; therefore, during the construction process, all dug ground and loose soil will be levelled and compacted wherever possible. This will prevent Badgers from attempting to excavate setts prior to completion of the works and causing potential disruption;
 - Any mounds of material will be regularly checked for signs of Badgers, especially before disturbance or movement;
 - Planks will be left in any uncovered trenches to provide any Badger that may stray onto the application site with an escape route;
 - Any open trenches will be checked at the beginning of each day, to ensure that Badgers are not present, and at the end of each day, to ensure that the means of escape remain in place;

- Tools and loose materials will be stored in an appropriate container in order to reduce the risk of Badgers coming onto the application site and injuring themselves;
- No fires or chemicals should be left unsupervised anywhere on the site; and
- Any open pipework greater than 150mm outside diameter will be blanked off at the end of each working day to prevent Badgers from entering the pipework.

Bats

5.3.10. **Legislation.** All bats are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and included on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 ("the Habitats Regulations"). These include provisions making it an offence:

- Deliberately to kill, injure or take (capture) bats;
- Deliberately to disturb bats in such a way as to:-
 - (i) be likely to impair their ability to survive, to breed or rear or nurture their young; or to hibernate or migrate; or
 - (ii) affect significantly the local distribution or abundance of the species to which they belong;
- To damage or destroy any breeding or resting place used by bats;
- Intentionally or recklessly to obstruct access to any place used by bats for shelter or protection (even if bats are not in residence).

5.3.11. The words deliberately and intentionally include actions where a court can infer that the defendant knew that the action taken would almost inevitably result in an offence, even if that was not the primary purpose of the act.

5.3.12. The offence of damaging (making worse for the bat) or destroying a breeding site or resting place is an absolute offence. Such actions do not have to be deliberate for an offence to be committed.

5.3.13. In accordance with the Habitats Regulations the licensing authority (Natural England) must apply the three derogation tests as part of the process of considering a licence application. These tests are that:

1. the activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety;
2. there must be no satisfactory alternative; and
3. the favourable conservation status of the species concerned must be maintained.

5.3.14. Licences can usually only be granted if the development is in receipt of full planning permission.

5.3.15. **Site Usage.** All buildings within the site are modern buildings in a good state of repair and highly unlikely to provide opportunities for roosting bats. A group of several Ivy-covered Lime and Sycamore trees considered to offer some potential opportunities for roosting bats were recorded in the northern area of the broadleaved deciduous woodland (see Photograph 8).

5.3.16. Opportunities for foraging and commuting bats are largely restricted to the

western site boundary. The River Kennet and associated habitats provide a suitable commuting route for bats through the Reading urban area. The remainder of the site (i.e. the retail park) provides very little interest for bats.

- 5.3.17. **Mitigation and Enhancements.** As all buildings possess no bat potential there is no requirement for any further bat surveys. The development can commence without the requirement of a Natural England European Protected Species (EPS) licence for bats as the development is unlikely to have any significant effect upon the favourable conservation status of any local bat populations.
- 5.3.18. The trees identified as having a low bat potential are located within the broadleaved deciduous woodland that is to be retained by the development proposals. Most bat potential trees are located deeper within the woodland and even slightly beyond the site boundary. Therefore, no further bat surveys are required to confirm the presence of any bat roosts.
- 5.3.19. The proposals retain the existing suitable habitat for bats and will provide new native shelterbelt planting, native hedgerow planting and ornamental shrub planting at the site boundaries. It is considered that foraging and commuting opportunities for bats will be enhanced post-development, owing to additional landscape planting promoting opportunities for invertebrates.
- 5.3.20. As a further enhancement, a selection of bat boxes (e.g. Schwegler 2F and 1FF bat boxes), could be installed on suitable trees in the retained broadleaved deciduous woodland within the site. Retaining the existing bat potential trees within the woodland as well as installing several bat boxes would provide gains in roosting opportunities for bats post-development.
- 5.3.21. Lighting should be sensitively designed to avoid any increased levels of illumination where possible across the development. Lighting should adhere with the Bat Conservation Trust's Bats and artificial lighting in the UK Guidance Note 08/18⁸ and ensure that no features of potential interest, both existing and to be created, together with any provided bat boxes, are subject to significant light levels where practicable and adhering to required health and safety standards.

Otters and Water Voles

- 5.3.22. **Legislation.** Otters are subject to the same legislative protection as bats (see bat section above). Water Voles are fully protected under the Wildlife & Countryside Act 1981. It is an offence to:
- Intentionally kill, injure or take (capture) a Water Vole;
 - Possess or control a live or dead Water Vole, or any part of a Water Vole;
 - Sell, offer for sale or advertise for live or dead Water Voles;
 - Intentionally or recklessly damage, destroy, or obstruct access to any structure or place which Water Voles use for shelter or protection or disturb Water Voles while they are using such a place.

⁸ Bat Conservation Trust (2018). Bats and lighting in the UK - Bats and the Built Environment Series. Guidance Note 08/18. The Bat Conservation Trust, London.

- 5.3.23. The words deliberately and intentionally include actions where a court can infer that the defendant knew that the action taken would almost inevitably result in an offence, even if that were not the primary purpose of the act.
- 5.3.24. Operations where Water Voles are to be trapped or displaced require a conservation licence from Natural England. This may be in the form of a class licence or a site-specific licence dependent on whether the proposals meet particular criteria. To obtain either licence the project must deliver a net benefit for Water Voles.
- 5.3.25. **Site Usage.** The River Kennet, located to the west of the site, is a suitable watercourse for both Otter and Water Vole. The river provides foraging, dispersal, and sheltering / breeding opportunities for these species. The vegetated banks could potentially be obscuring Otter holts and Water Vole burrows.
- 5.3.26. **Mitigation and Enhancements.** The proposals are not considered to adversely affect the River Kennet. The retained broadleaved deciduous woodland will act as a sufficient ecological buffer zone between the development works and the River Kennet. The existing metal fencing should prevent possible accidental encroachment into the ecological buffer zone.
- 5.3.27. During the construction phase of the development, rubble and building waste should be prevented from entering the River Kennet and effective engineering solutions should be employed to ensure that contaminated run-off is prevented from entering the River Kennet and harming wildlife.
- 5.3.28. The drainage strategy for the site should be designed to ensure that any discharge of water into the River Kennet will be judged against the Environment Agency minimum standards minimising any adverse impact on Otters and Water Voles as a result of pollution.

Hedgehogs

- 5.3.29. **Legislation.** Hedgehog is a species of principal importance for the conservation of biodiversity under Section 41 (England) of the NERC Act 2006.
- 5.3.30. The NERC Act 2006 requires the Secretary of State to:
- ... take such steps as appear... to be reasonably practicable to further the conservation of the living organisms and types of habitat included in any list published under this section, or... promote the taking by others of such steps.**
- 5.3.31. **Site Usage.** No evidence of Hedgehogs was recorded during the survey work undertaken. However, the broadleaved deciduous woodland and the off-site tree / scrub belt are suitable habitats for Hedgehogs. Log piles are present in the adjacent woodland area which offer hibernation and sheltering opportunities for Hedgehogs. The rest of the site is largely unsuitable for Hedgehogs being comprised of built form and has heavy traffic.
- 5.3.32. **Mitigation and Enhancements.** While likely to be limited, it is recommended that any dense ground cover to be cleared is undertaken

outside of the winter hibernation period (October to April inclusively) with any Hedgehogs found relocated to the broadleaved deciduous woodland along the western boundary. Vegetation clearance should be carried out in a systematic and controlled manner to allow Hedgehogs to disperse away from harm.

- 5.3.33. Any trenches or deep pits associated with construction that are to be left open overnight will be provided with a means of escape in case a Hedgehog enters. This is particularly important if the trench fills with water and will take the form of a roughened plank of wood placed in the trench as a ramp to the surface.
- 5.3.34. Retaining the existing broadleaved deciduous woodland and adjoining tree / scrub belt and buffering with new native landscape planting around the boundaries would represent an increase in opportunities for Hedgehogs post-development.
- 5.3.35. Some gaps were noted in the chain-link mesh fencing between the broadleaved deciduous woodland along the western boundary and the off-site tree / scrub belt along the northern boundary. Where possible, any new fencing should continue to provide small gaps ('Hedgehog gateways') to ensure the boundary vegetation is accessible for Hedgehogs and other small mammals.
- 5.3.36. The provision of 'Hedgehog Houses' or additional log piles in discrete locations within the broadleaved deciduous woodland would provide year-round shelter for Hedgehogs and other small mammals.

Birds

- 5.3.37. **Legislation.** Section 1 of the Wildlife and Countryside Act is concerned with the protection of wild birds. With certain exceptions, all wild birds and their eggs are protected from international killing, injuring and taking; and their nests, whilst being built or in use, cannot be taken, damaged or destroyed.
- 5.3.38. Schedule 1 lists species which are protected by special (i.e. greater) penalties. These species also enjoy additional protection whilst breeding, as it is also an offence to disturb adults or their dependant young when at the nest.
- 5.3.39. **Site Usage.** An assemblage of widespread and common bird species was recorded within the site and adjacent habitats. Most bird species were associated with the broadleaved deciduous woodland. The species recorded using the retail park including Pied Wagtail and Black-headed Gull are expected to be non-breeding winter residents.
- 5.3.40. The site offers suitable opportunities for nesting and foraging birds, mainly within the existing broadleaved deciduous woodland in the west of the site and the tree / scrub belt located immediately north of the site. The individual Plane trees along the northern site boundary also provide some limited nesting and foraging opportunities.
- 5.3.41. **Mitigation and Enhancements.** In order to avoid impacts on nesting birds and to avoid a possible offence under the Wildlife and Countryside Act 1981 (as amended), it is recommended that any required clearance of vegetation

be undertaken outside of the nesting bird season (typically March to July inclusive). Alternatively, if clearance outside this period is not possible, a check survey for nesting birds should be undertaken by an ecologist prior to any clearance works. A minimum 5m buffer will be placed around any active bird nests to prevent encroachment or disturbance until the young have fledged.

- 5.3.42. All features of interest to birds, including the broadleaved deciduous woodland, tree / scrub belt and individual Plane trees will be retained as part of the development proposals.
- 5.3.43. New shelterbelt and hedgerow planting undertaken as part of the proposed development will include native fruit-bearing species and species of known entomological value, which will enhance the bird nesting and foraging opportunities above the existing level.
- 5.3.44. As a further enhancement, a selection of bird boxes (e.g. Schwegler 2B, 1SP and 3S bird boxes) could be installed on suitable trees within the retained broadleaved deciduous woodland and onto new buildings within the site. The proposed bird boxes will ensure the immediate provision of nesting opportunities for a range of bird species and offer bespoke opportunities for some priority species of conservation concern including House Sparrow *Passer domesticus* and Starling *Sturnus vulgaris*.
- 5.3.45. Potential consideration could be made to providing on-site opportunities for Black Redstart *Phoenicurus ochruros*, a highly rare priority species of conservation concern. Local bird recorders have made past records of Black Redstart in Reading town centre. Therefore, suitable nesting and foraging opportunities could be provided through establishing biodiverse green roofs or areas of gravel roofs on the new buildings. Suitable nest boxes for Black Redstarts (e.g. Schwegler 2H open-fronted nest boxes) could also be installed onto the exterior walls or roofs of the new buildings.

Amphibians

- 5.3.46. **Legislation.** Great Crested Newts are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and included on Schedule 2 of the Conservation of Habitats and Species Regulations 2010 ("the Habitats Regulations"). These include provisions making it an offence:
- Deliberately to kill, injure or take (capture) Great Crested Newts;
 - Deliberately to disturb Great Crested Newts in such a way as to:-
 - (i) be likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or to hibernate or migrate; or
 - (ii) affect significantly the local distribution or abundance of the species to which they belong;
 - To damage or destroy any breeding or resting place used by Great Crested Newts;
 - Intentionally or recklessly to obstruct access to any place used by Great Crested Newts for shelter or protection.

- 5.3.47. European Protected Species licences are available from Natural England in certain circumstances, and permit activities that would otherwise be considered an offence.
- 5.3.48. **Site Usage.** No amphibians were recorded during the survey work undertaken. Suitable waterbodies for amphibians are present in the immediate locality, but do not exist within the site boundaries. Suitable amphibian terrestrial habitat within the site is mainly restricted to the broadleaved deciduous woodland along the western boundary but is limited elsewhere within the site.
- 5.3.49. **Mitigation and Enhancements.** No specific mitigation for amphibians is required as the suitable waterbodies are separated from the development.
- 5.3.50. Retaining the broadleaved deciduous woodland will continue to provide suitable terrestrial habitat for any amphibians present in the local area. New native and ornamental landscape planting within the site will provide greater foraging and dispersal opportunities for amphibians during their terrestrial phase.
- 5.3.51. As a further enhancement, hibernacula and log piles could be provided in discrete locations within the broadleaved deciduous woodland, which would offer more hibernating and refuge opportunities for amphibians.

Invertebrates

- 5.3.52. **Legislation.** Stag Beetles are protected internationally, under the Habitats Directive Annex II. The species is also protected nationally under Schedule 5 of the Wildlife & Countryside Act (1981), making it illegal to trade in the species without an appropriate licence.
- 5.3.53. **Site Usage.** The majority of the site is considered to be of limited value for invertebrates, being principally areas of built form and well-managed amenity grassland and planting. The natural or semi-natural habitats within and bordering the site, including the broadleaved deciduous woodland and the adjoining off-site tree / scrub belt, are expected to support an assemblage of invertebrates.
- 5.3.54. The broadleaved deciduous woodland may offer opportunities for Stag Beetle, a protected and priority species known to be present in the Reading area. The off-site part of the woodland contains a few log piles comprised of decaying wood that may offer suitable breeding opportunities for Stag Beetle.
- 5.3.55. **Mitigation and Enhancements.** No specific entomological surveys are required as the site's most valuable invertebrate habitats will be retained and incorporated into the proposals.
- 5.3.56. The log piles existing within the adjacent part of the woodland should be retained to continue to provide opportunities for saproxylic species such as Stag Beetle. Further loggeries could also be constructed within the site to increase breeding opportunities for this declining species.
- 5.3.57. A positive gain for invertebrates is expected to be attained through a variety of newly created habitats. New landscaping will include both native tree,

shrub and hedgerow planting, and ornamental tree and shrub planting to offer greater foraging resources for invertebrates.

- 5.3.58. Although all non-native, the low-level ornamental shrub planting will be comprised of species that are recognised as being important for pollinators such as bees, butterflies and moths.
- 5.3.59. The base of new hedgerows will be sown with an Emorsgate HE1 (Hedgerow Mixture) or similar and left unmanaged to establish a species-rich ground flora that will provide a nectar resource for pollinators such as bees, butterflies and moths.
- 5.3.60. As a further enhancement, insect nesting aids (e.g. Schwegler Clay and Reed Insect Nests) can be provided within the broadleaved deciduous woodland or created landscaped areas to further enhance the site's entomological interest.

6. POLICY BACKGROUND

- 6.1. The planning policy framework that relates to nature conservation in Reading is issued at two main administrative levels: nationally through National Planning Policy Framework (NPPF), and locally through the Reading Borough Local Plan. Any proposed development will be judged in relation to the policies contained within these documents.

6.2. National Policy

National Planning Policy Framework (February 2019)

- 6.2.1. Guidance on national policy for biodiversity and geological conservation is provided by the NPPF, published in March 2012, revised on 24 July 2018 and updated on 19 February 2019. It is noted that the NPPF continues to refer to further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system provided by Circular 06/05 (DEFRA / ODPM, 2005) accompanying the now-defunct Planning Policy Statement 9 (PPS9).
- 6.2.2. The key element of the NPPF is that there should be “*a presumption in favour of sustainable development*” (paragraphs 10 to 11). It is important to note that this presumption “*does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site*” (paragraph 177). ‘Habitats site’ has the same meaning as the term ‘European site’ as used in the Habitats Regulations 2017.
- 6.2.3. Hence the direction of Government policy is clear; that is, the presumption in favour of sustainable development is to apply in circumstances where there is potential for an effect on a European site, if it has been shown that there will be no adverse effect on that designated site as a result of the development in prospect.
- 6.2.4. A number of policies in the NPPF are comparable to those in PPS9, including reference to minimisation of impacts to biodiversity and provision of net gains to biodiversity where possible (paragraph 170).
- 6.2.5. The NPPF also considers the strategic approach that Local Authorities should adopt with regard to the protection, maintenance and enhancement of green infrastructure, priority habitats and ecological networks, and the recovery of priority species.
- 6.2.6. Paragraphs 174 to 176 of the NPPF comprise a number of principles that Local Authorities should apply, including encouraging opportunities to incorporate biodiversity in and around developments; provision for refusal of planning applications if significant harm cannot be avoided, mitigated or compensated for; applying the protection given to European sites to potential SPAs, possible SACs, listed or proposed Ramsar sites and sites identified (or required) as compensatory measures for adverse effects on European sites; and the provision for the refusal for developments resulting in the loss or deterioration of ‘irreplaceable’ habitats – unless there are ‘wholly exceptional reasons’ (for instance, infrastructure projects where the

public benefit would clearly outweigh the loss or deterioration of habitat) and a suitable compensation strategy exists.

- 6.2.7. National policy therefore implicitly recognises the importance of biodiversity and that with sensitive planning and design, development and conservation of the natural heritage can co-exist and benefits can, in certain circumstances, be obtained

6.3. Local Policy

Reading Borough Local Plan (Adopted January 2019)

- 6.3.1. A new Reading Borough Local Plan was adopted on 4th November 2019. This document sets out the planning policies for development in Reading up to 2036. The new Local Plan replaces all previous development plans – the Core Strategy, Reading Central Area Action Plan and Detailed Policies Document – which no longer apply. The three policies regarding nature conservation have been carried across to the new Local Plan, with a few amendments.
- 6.3.2. Policy EN11 relates to protecting and enhancing Reading's watercourses (particularly the River Kennet and River Thames) so that they may continue to have importance for local and regional biodiversity, amongst other benefits. Developments should have no adverse impacts on the function and setting of any watercourse and its associated habitat corridor. Developments will be accepted if they are at least 10m back from the banks of the watercourse and if they help improve the quality of the watercourse corridor through protecting and enhancing associated habitats.
- 6.3.3. Policy EN12 relates to biodiversity and the Green Network. It states that the identified Green Network shall be maintained, protected, extended and enhanced. Development will not be permitted where it affects sites with identified interest or fragments the Green Network. The Green Network comprises statutory and non-statutory designated sites, priority habitats, the River Thames and its tributaries, and other areas with potential for biodiversity value including connecting habitats and Local Green Spaces. It also states that on all sites, development should not result in a loss of biodiversity. They can do this through protecting features of biodiversity interest on or adjacent to the development site and providing new wildlife friendly landscaping, and ecological enhancements, such as wildlife ponds, bat and bird boxes, wherever possible.
- 6.3.4. Policy EN14 relates to trees, hedges and woodlands and states that these habitats will be protected from damage or removal where they are of importance. Waterside vegetation is regarded as being particularly important in the context of the Borough and should be maintained or enhanced. New development should include new tree planting to improve the overall vegetation cover of the Borough.

6.4. Discussion

- 6.4.1. The development proposals for the site would be judged according to the planning policies summarised above. It is considered that the site is of relatively low intrinsic ecological interest. The new development will be on an existing area of built form and will fully protect the area of priority

deciduous woodland habitat adjacent to the proposed development. The development proposals will have regard to the River Kennet and associated non-statutory designated sites, as the new units will be constructed far back from the banks of the river and an ecological buffer zone will be retained in between. The development proposals will result in an increase in the number of trees within the site, in line with the council's aim to increase tree cover across the Borough. Mitigation and enhancement measures have been recommended to offset any potential adverse impacts and bring about enhancements and deliver biodiversity net gains. Taking these recommendations on board it is considered that the relevant policy requirements will be met.

7. SUMMARY AND CONCLUSIONS

- 7.1. Ecology Solutions was commissioned by Quod in September 2020 to undertake an ecological assessment of Brunel Reading Park, Reading, Berkshire.
- 7.2. The site comprises a retail park and adjoining deciduous woodland along the River Kennet.
- 7.3. The proposals for the site include the redevelopment of the site to provide two new units for office, industrial and warehouse use, with associated road infrastructure and landscaping.
- 7.4. An extended Phase 1 habitat survey of the site boundary was undertaken in October 2020. A desk-based study has also been undertaken.
- 7.5. **Statutory Sites.** There are no statutory designations of nature conservation value within the site or immediately adjacent to it. The closest statutory designated site is Pearman's Copse LNR, which is located approximately 2.6km southeast of the site at its nearest point. Pearman's Copse is a small area of ancient woodland.
- 7.6. Given the distance and intervening urban development, it is considered highly unlikely that the development of the site will have any direct adverse effects upon this statutory designated site, be it during the construction or operational phases.
- 7.7. **Non-statutory Sites.** The Kennet Valley East BOA lies immediately west of the site. Several LWSs are included within the BOA, including River Kennet / Kennet and Avon Canal LWS. These non-statutory designated sites are designated for their wetland habitats, plants and birds.
- 7.8. The broadleaved deciduous woodland along the western site boundary will be retained to provide a significant ecological buffer between the construction footprint and the Kennet Valley East BOA boundary. Whilst considered unlikely owing to the ecological buffer, best industry practice methods will be employed to prevent any potential adverse impacts on the River Kennet, particularly with regards to pollution.
- 7.9. **Habitats.** The habitats within the site consist of common and widespread species, and of low intrinsic ecological interest. The redevelopment of the retail park area, which consists mainly of hardstanding and buildings, is of little ecological significance. Features of ecological value within and adjacent to the site are to be fully safeguarded and retained as part of the proposals.
- 7.10. A landscape strategy that seeks to bolster the vegetation cover at the site boundaries has been devised. Wherever possible, the landscape strategy should be based around a diverse selection of native species of local provenance and species of known wildlife value.
- 7.11. A variety of new habitats will be created that will benefit biodiversity including native shelterbelts, native hedgerows, ornamental trees, ornamental shrubs and amenity grassland with flowers.
- 7.12. To ensure that biodiversity net gains are achieved, the Natural England Biodiversity Metric 2.0 has been used to assess the proposals of the site, details of which are included within Appendix 2. The result shows that a measurable net

gain of 12.14% shall be achieved from the sustainable and sensitively designed proposed development.

- 7.13. **Badgers.** No evidence of Badgers was observed within the site. The broadleaved deciduous woodland is suitable habitat for Badgers and provides foraging, dispersal and potential sett-building opportunities for this species. Badgers are not likely to use the rest of the site, except for occasional dispersal.
- 7.14. No updated Badger survey is required. The development proposals fully retain the broadleaved woodland and adjoining tree / scrub belt and bolster it with new landscape planting across the site, including fruit-bearing trees and shrubs that will offer new foraging opportunities for Badgers post-development.
- 7.15. Appropriate mitigation will be undertaken during the construction phase of the development to ensure that a risk of entrapment of Badgers is safeguarded against.
- 7.16. **Bats.** The site contains no suitable buildings that are likely to support bat roosts. The broadleaved deciduous woodland habitat that runs along the western boundary and continues along the River Kennet provides good foraging and commuting opportunities for local bat populations. Several trees are present in the adjacent woodland area that may offer some roosting opportunities for bats.
- 7.17. There is no requirement for any further bat surveys or a Natural England EPS licence as the development is not likely to detrimentally affect the conservation status of any locally present bat species. No bat roosts are expected to be lost.
- 7.18. The development proposals fully retain the broadleaved woodland and provide new landscape planting including species of known entomological value that will offer increased foraging opportunities for bats post-development.
- 7.19. Efforts should be made in the lighting design to minimise artificial lighting onto retained and newly established vegetation ensuring bats are not deterred from foraging within the site. As an enhancement, bat boxes may be installed on suitable trees within the retained woodland.
- 7.20. **Otters and Water Voles.** The River Kennet, located to the west of the site, is a suitable watercourse for both Otter and Water Vole. The river has well vegetated banks that could hide Otter holts and Water Vole burrows.
- 7.21. The development proposals are not considered to adversely affect the River Kennet as the broadleaved deciduous woodland is to be retained to provide a sufficient ecological buffer between the development area and the River Kennet. Appropriate safeguards will be employed at all times during the construction phase to ensure there is no harmful pollution of the River Kennet.
- 7.22. **Hedgehogs.** The broadleaved deciduous woodland and tree / scrub belt at the site margins offer opportunities for small mammals such as Hedgehogs.
- 7.23. Whilst likely to be limited, any log piles or dense ground cover that require clearing should be undertaken outside of the winter hibernation season (October to April inclusively) to avoid the sensitive period for Hedgehogs.

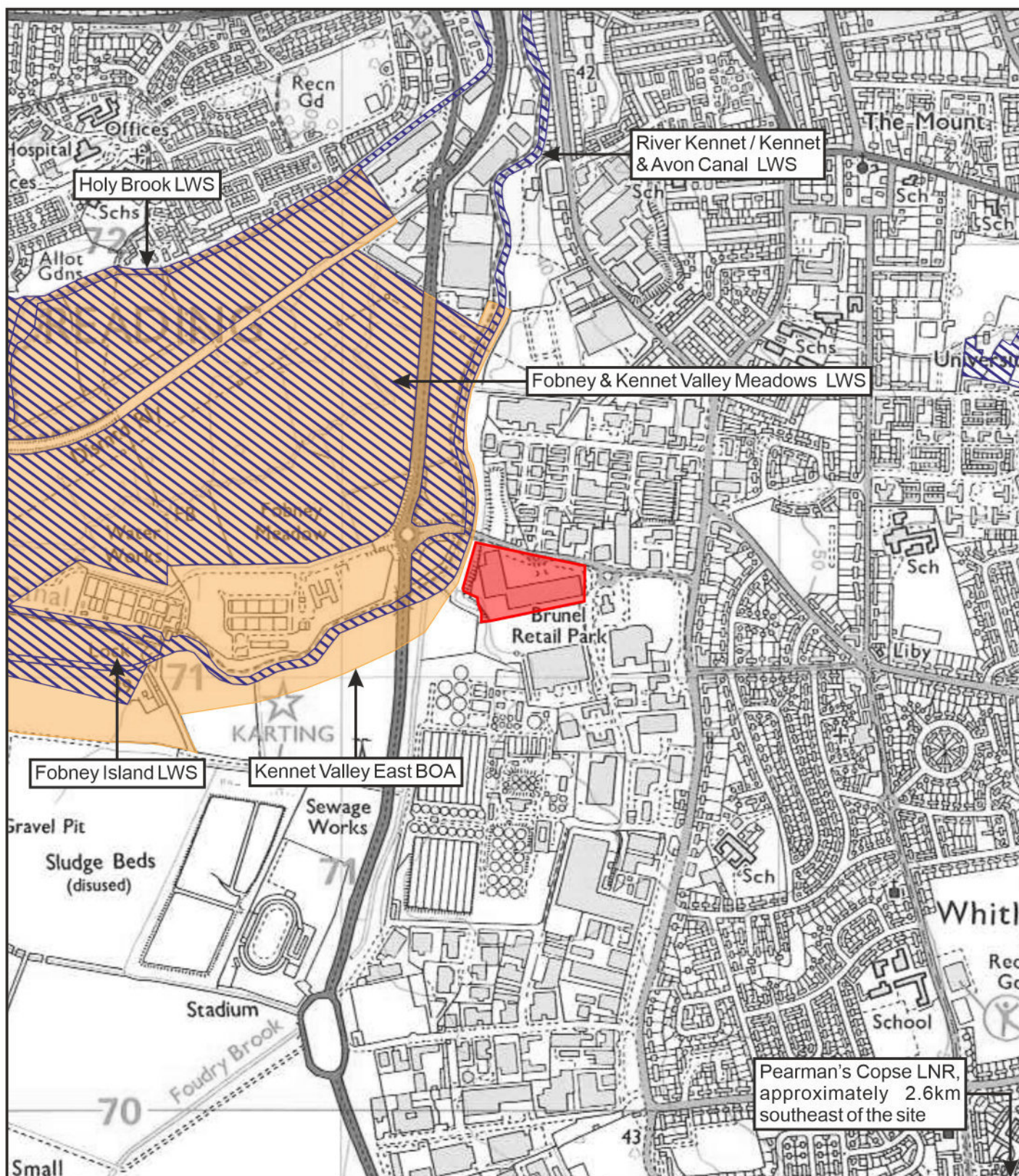
- 7.24. Appropriate mitigation will be undertaken during the construction phase of the development to ensure that a risk of entrapment of Hedgehogs is safeguarded against.
- 7.25. The development proposals fully retain the broadleaved woodland and adjoining tree / scrub belt and provide new landscape planting across the site that will offer increased foraging and dispersal opportunities for Hedgehogs post-development. Retained and created boundary vegetation should remain permeable for Hedgehogs and other small mammals. As an enhancement, Hedgehog houses and additional log piles could be provided within the retained woodland.
- 7.26. **Birds.** The broadleaved deciduous woodland, individual Plane trees and off-site tree / scrub belt provide suitable nesting and foraging habitat for birds, albeit mainly common and widespread species.
- 7.27. As all species of birds receive general protection whilst nesting, the removal of any suitable nesting habitat should only be completed outside the nesting bird season (March to July inclusive), or during this period after a survey by an experienced ecologist has confirmed the absence of any active nests.
- 7.28. The development proposals fully retain all the main habitats of ornithological value and provide new landscape planting including fruit-bearing species and species of known entomological value that will offer increased foraging and nesting opportunities for bird's post-development.
- 7.29. As an enhancement, bird boxes may be installed across the site on retained trees and on new buildings. Consideration for Black Redstarts could potentially be made through providing green roofs and open-fronted nest boxes on the new buildings.
- 7.30. **Reptiles.** No reptiles were recorded during the survey work. The site does not support any suitable habitats for reptiles, although Kennet Island Wildlife Conservation Area and open, sunny areas close to the banks of the River Kennet (located adjacent to the site) may provide opportunities for this species group.
- 7.31. The proposals do not provide any suitable grassland habitats for reptiles. No further consideration to this species group is required.
- 7.32. **Amphibians.** No amphibians were recorded during the survey work. The site supports suitable terrestrial habitat for amphibians within the broadleaved deciduous woodland. Aquatic habitats needed for amphibians to breed are not present within the site but exist within the locality, and include the River Kennet, Foudry Brook, and several ponds within the Kennet Island Wildlife Conservation Area.
- 7.33. No specific mitigation for amphibians is required as the development proposals fully retain the broadleaved deciduous woodland, and therefore retain the site's interest for amphibians. New native landscape planting within the site will provide greater foraging and dispersal opportunities for amphibians during their terrestrial phase.

- 7.34. As an enhancement, several hibernacula and log piles may be provided within the woodland to offer additional hibernating and refuge opportunities for local amphibian populations.
- 7.35. **Invertebrates.** Given the habitats present within the site it is likely an assemblage of invertebrates is present. Entomological interest is mainly restricted to the marginal habitats, including the broadleaved deciduous woodland and the adjoining off-site tree / scrub belt. The broadleaved deciduous woodland may offer opportunities for Stag Beetle, which are known to be present in the local area.
- 7.36. No specific entomological surveys are required. The development proposals fully retain the broadleaved deciduous woodland and therefore continue to provide opportunities for Stag Beetle and a variety of other invertebrates. New landscape planting incorporating trees, shrubs and wildflowers of value to pollinators will deliver gains for this species group post-development.
- 7.37. As an enhancement, insect nesting aids and loggeries can be provided within the broadleaved deciduous woodland to further increase invertebrate nesting opportunities.
- 7.38. **Summary.** Overall, there is no overriding ecological constraint to the proposed development. Following the recommendations in this report, the proposals would accord with planning policy with regard to nature conservation at all administrative levels and shall ensure net biodiversity gains are delivered, whilst also elevating on-site interest for a number of protected or notable fauna groups.

PLANS

PLAN ECO1

Site Location and Ecological Designations



KEY:

- SITE LOCATION
- BIODIVERSITY OPPORTUNITY AREA (BOA)
- LOCAL WILDLIFE SITE (LWS)



ECOLOGY SOLUTIONS
Part of the ES Group

Cokenach Estate
Barkway | Royston
Hertfordshire | SG8 8DL

+44(0)1763 848084
east@ecologysolutions.co.uk
ecologysolutions.co.uk

9352: BRUNEL RETAIL PARK,
READING, BERKSHIRE

PLAN ECO1: SITE LOCATION AND
ECOLOGICAL DESIGNATIONS

Rev: A
Nov 2020

PLAN ECO2

Ecological Features



PHOTOGRAPHS

PHOTOGRAPH 1: Retail park (front view)



PHOTOGRAPH 2: Service yard at the rear of the buildings



PHOTOGRAPH 3: Amenity grassland and planting along Rose Kiln Lane



PHOTOGRAPH 4: One of several Plane trees along Rose Kiln Lane



PHOTOGRAPH 5: Deciduous woodland



PHOTOGRAPH 6: Tree / scrub belt (located immediately off-site)



PHOTOGRAPH 7: River Kennet (located immediately off-site)



PHOTOGRAPH 8: Bat potential trees in the deciduous woodland



PHOTOGRAPH 9: Log pile within the deciduous woodland



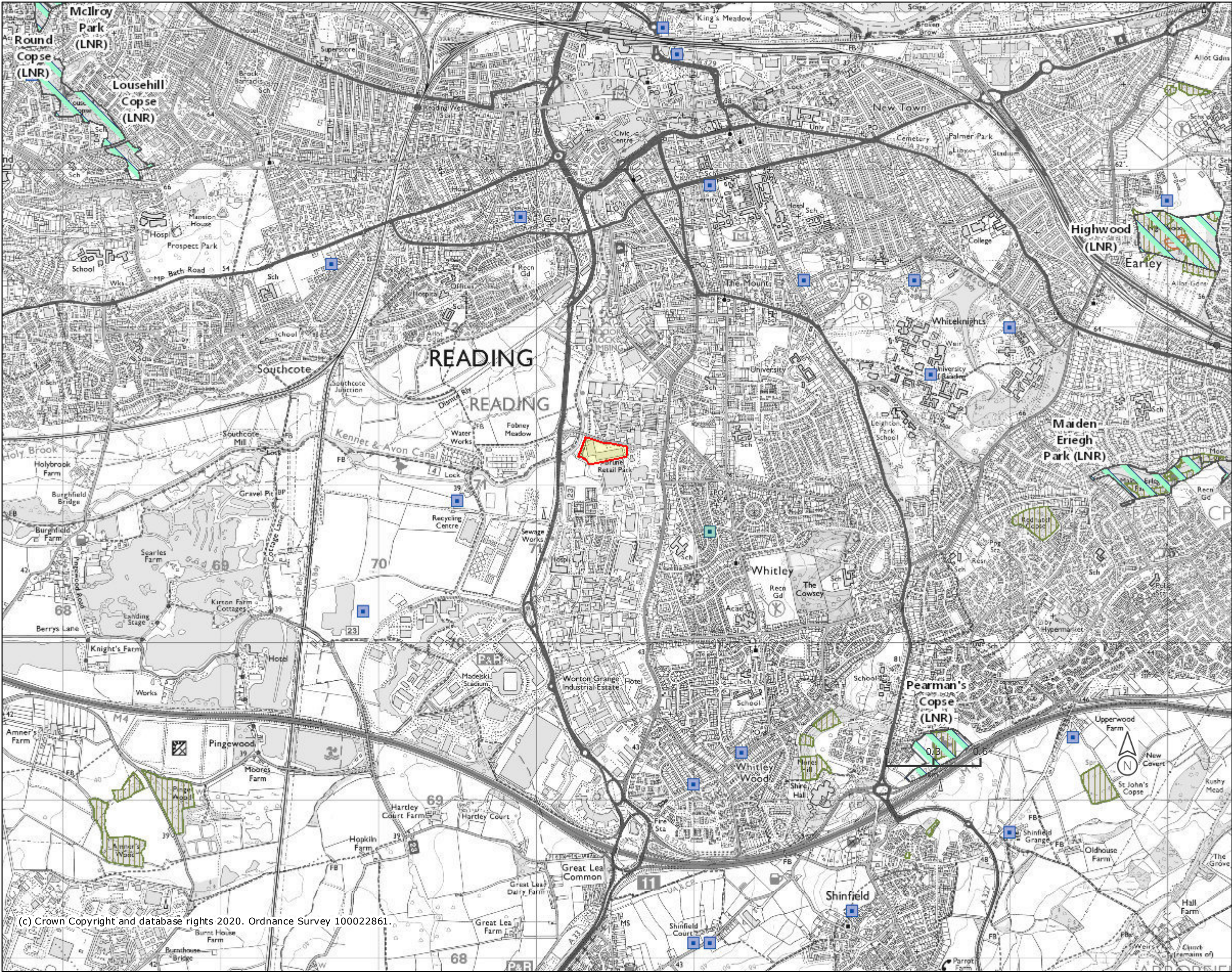
PHOTOGRAPH 10: Old bird nest within the deciduous woodland



APPENDICES

APPENDIX 1

Information downloaded from the Multi-Agency Geographic
Information for the Countryside (MAGIC) website



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Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- Ramsar Sites (England)
- Sites of Special Scientific Interest (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)

Ancient Woodland (England)

- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland

Granted European Protected Species Applications (England)

- Amphibian
- Bat
- Cetacean
- Invertebrate
- Other Mammal
- Plant
- Reptile

Projection = OSGB36
xmin = 465300
ymin = 167800
xmax = 477700
ymax = 174100

Map produced by MAGIC on 29 October, 2020.
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APPENDIX 2

Biodiversity Net Gain Briefing Note

Ecology Solutions Limited
Farncombe House
Farncombe Estate
Broadway
Worcestershire
WR12 7LJ

+44(0)1451 870767
info@ecologysolutions.co.uk
www.ecologysolutions.co.uk



9352: BRUNEL RETAIL PARK, READING, BERKSHIRE

BRIEFING NOTE: BIODIVERSITY NET GAIN USING BIODIVERSITY METRIC 2.0

Introduction

1. This note has been produced in relation to the provision of measurable biodiversity net gain for the proposed development at Brunel Retail Park, Reading, Berkshire.
2. This note should be read in conjunction with the Ecological Assessment produced by Ecology Solutions (9352.EcoAs.vf1). The assessment details the results of habitat survey, which is referenced within this note.
3. The proposed landscaping scheme for the site has been provided by Encon Associates.
4. In order to demonstrate measurable net gains (as requested within the National Planning Policy Framework), an assessment was made using the Biodiversity Metric 2.0¹, which is still in its beta phase.
5. This document assesses the level of Biodiversity Net Gain (BNG) within the site. This report has been prepared with due consideration to the guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM)^{2 3} in relation to BNG.

Biodiversity Metric 2.0

6. The Biodiversity Metric 2.0 uses habitat features as a proxy measure for capturing the value and importance of nature. It uses calculations to assess the importance of each habitat based on its size, ecological condition, location and its connectivity.
7. Measurements for habitats pre-development were calculated using AutoCAD. Information regarding the habitats present as well as their condition were based on survey information obtained by Ecology Solutions during the habitat survey undertaken in October 2020. The Biodiversity Technical Supplement, as well as professional judgement, was used to inform the habitats condition criteria, as well as its connectivity score.

¹ Natural England (2019). *The Biodiversity Metric 2.0 – Calculation Tool – Beta Test December 2019*.

² CIEEM (2019). *Biodiversity Net Gain. Good Practice Principles for Development, A practical Guide*

³ CIEEM, CIRIA, IEMA (2016). *Biodiversity Net Gain: Good Practice Principles for Development*

8. Measurements for the proposed landscaping, including the planting schedules, were provided by Encon Associates. Their measurements were based around Encon Associates' Proposed Landscaping Scheme (Drawing Number: 03). Measurements of the lengths of proposed hedgerows were calculated using AutoCAD.

Site Baseline

9. The site baseline has been established using survey data obtained in 2020. Detailed descriptions of each habitat including the species present can be found within the Ecological Assessment. The habitats recorded during the phase 1 survey have been classified using the UK habitat classification system for the purpose of the metric.
10. A summary of the area-based habitats existing on-site along with the habitat units assigned to each habitat through the metric is highlighted in Table 1 below.

Habitat Type	Area (ha)	Distinctiveness	Condition	Ecological Connectivity	Strategic Significance	Total Habitat Units
Urban – Introduced shrub	0.06	Low	Poor	Low	Area / compensation not in local strategy / no local strategy	0.12
Urban – Amenity grassland	0.05	Low	Poor	Low	Area / compensation not in local strategy / no local strategy	0.10
Urban – Developed land; sealed surface	3.05	V. Low	N/A – Other	Low	Area / compensation not in local strategy / no local strategy	0.00
Sparsely vegetated land – Ruderal/Ephemeral	0.02	Low	Poor	Low	Area / compensation not in local strategy / no local strategy	0.04
Heathland and shrub – Mixed scrub	0.05	Medium	Moderate	Low	Within area formally identified in local strategy	0.46
Woodland and forest – Lowland mixed deciduous woodland	0.27	High	Moderate	Low	Within area formally identified in local strategy	3.73
Urban – Street Tree	0.03	Low	Moderate	Low	Area / compensation not in local strategy / no local strategy	0.12
Urban – Artificial unvegetated, unsealed surface	0.04	V. Low	N/A – Other	Low	Area / compensation not in local strategy / no local strategy	0.00

Table 1. Summary of baseline habitat information for the site.

11. The site contains no existing linear features (i.e. hedgerows and tree lines).

Post-development Proposals

12. The total site area is approximately 3.54 hectares (ha). Of this total area, approximately 2.98 ha will be subject to development. This includes two new large units for office, industrial and warehouse units, along with associated access roads and car parks. Therefore, the development proposals will result in a reduction in the area of the site subject to development. Land used for development is classified as developed land; sealed surface, in the Biodiversity Metric.
13. The landscape scheme for the site retains the deciduous woodland and mixed scrub that classes as priority habitat along the western boundary of the site. These are given greater habitat units in the Biodiversity Metric compared to other existing habitats within the site and are therefore considered more ecologically valuable. The retention of these follows the on-site mitigation hierarchy. In addition, the majority of the street trees along the northern boundary will be retained. The landscape strategy will seek to bolster and improve the retained vegetation along the western and northern site boundaries through the establishment of a variety of new habitats, including native shelterbelts, native hedgerows, ornamental shrub and amenity grassland. When mature, native shelterbelts will be comprised of native trees and shrubs and understorey planting) and have therefore been classified as urban – woodlands within this Biodiversity Metric.
14. In order to achieve a gain for linear features, approximately 180 metres new native hedgerow will be provided within the site. The new hedgerows will comprise a diversity of native hedgerow species and wildflower species at the base to ensure that benefits to biodiversity are achieved.
15. Table 2 below summarises habitats to be retained within the site.
16. Tables 3 and 4 below summarise all habitats to be created within the site.

Habitat Type	Area (ha)	Distinctiveness	Condition	Ecological Connectivity	Strategic Significance	Area Retained (ha)	Baseline Units Retained	Units Lost
Heathland and shrub – Mixed scrub	0.05	Medium	Moderate	Low	Within area formally identified in local strategy	0.05	0.46	0.00
Woodland and forest – Lowland mixed deciduous woodland	0.27	High	Moderate	Low	Within area formally identified in local strategy	0.27	3.73	0.00
Urban – Street Tree	0.03	Low	Poor	Low	Area / compensation not in local strategy / no local strategy	0.02	0.08	0.04

Table 2. Summary of retained habitats.

Habitat Type	Area (ha)	Distinctiveness	Condition	Ecological Connectivity	Strategic Significance	Time to Target Condition (years)	Difficulty of Creation Category	Total Habitat Units
Urban – Street Tree	0.06	Low	Moderate	Low	Area / compensation not in local strategy / no local strategy	27	Low	0.09
Urban – Introduced shrub	0.04	Low	Moderate	Low	Area / compensation not in local strategy / no local strategy	1	Low	0.15
Urban – Amenity grassland	0.03	Low	Poor	Low	Area / Compensation not in local strategy / no local strategy	1	Low	0.06
Urban – Woodland	0.18	Medium	Moderate	Low	Area / Compensation not in local strategy / no local strategy	27	Low	0.55
Urban - Street Trees	2.98	V. Low	N/A – Other	Low	Area / Compensation not in local strategy / no local strategy	0	Low	0.00

Table 3. Summary of created habitats.

Habitat type			Length (km)	Distinctiveness	Condition	Ecological Connectivity	Strategic Significance	Time to Target Condition (years)	Total Hedgerow Units
Native Hedgerow	Species Rich		0.15	Medium	Good	Low	Area/compensation not in local strategy/ no local strategy	20	0.84
Native Hedgerow	Species Rich		0.03	Medium	Good	Low	Area/compensation not in local strategy/ no local strategy	20	0.17

Table 4. Summary of hedgerow creation.

Summary

17. Overall gains have been achieved in habitat and hedgerow units if the proposals as set out in this note are adhered to. Table 5 summarises the overall biodiversity gain of the site.

Onsite Baseline	Habitat Units	4.57
	Hedgerow Units	0.00
Onsite Post intervention	Habitat units	5.12
	Hedgerow Units	1.01
Total net change (%)	Habitat Units	12.14%
	Hedgerow units	N/A

Table 5. Headline results

18. The high level of gain demonstrates that the design of the scheme is ecologically driven and achieves the necessary net gain across the site as a whole.
19. The retention of the most ecologically valuable habitats and the creation of new valuable habitats within the site will ensure that opportunities for a wide range of species, such as Badgers, bats, Hedgehogs, birds and invertebrates, will be achieved whilst also achieving an increase in the botanical interest of the site.
20. The proposals will also include additional enhancements to be provided within the retained deciduous woodland that are not captured by the Biodiversity Metric. These are further detailed in the Ecological Assessment and include the provision of bat and bird boxes to increase the roosting and nesting opportunities within the site, the provision of log piles to increase hibernation and refugia opportunities for Hedgehogs, reptiles, amphibians and invertebrates, and the provision of insect nesting aids to increase nesting opportunities for invertebrates.



ECOLOGYSOLUTIONS

Part of the ES Group

Ecology Solutions Limited | Cokenach Estate | Barkway | Royston | Hertfordshire | SG8 8DL

01763 848084 | east@ecologysolutions.co.uk | www.ecologysolutions.co.uk



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