aspect ecology

Former Battle Hospital, Portman Road, Reading

Ecological Appraisal

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Contact Details

Aspect Ecology Ltd
Hardwick Business Park I Noral Way I Banbury I Oxfordshire OX16 2AF
t 01295 276066 f 01295 265072 e info@aspect-ecology.com
w www.aspect-ecology.com

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Executive Summary

i) **Introduction.** Aspect Ecology was commissioned by Bellway Homes Ltd in February 2017 to undertake an Ecological Appraisal in respect of proposed development of land south of Portman Road, Reading, Berkshire. The proposals are for residential development with associated access, infrastructure and open space.

ii) **Survey.** The site was surveyed in February 2017 based on standard extended Phase 1 methodology. In addition, a general appraisal of faunal species was undertaken to record the potential presence of any protected, rare or notable species, with specific surveys conducted in respect of bats and reptiles.

iii) **Ecological Designations.** The site itself is not subject to any statutory or non-statutory ecological designations. The nearest statutory designation is Lousehill Copse Local Nature Reserve, located approximately 1.6km south-west of the site. The nearest non-statutory designation to the site is Cow Lane Depot Local Wildlife Site, located approximately 0.3km east of the site. These, and all other ecological designations in the surrounding area, are well separated from the site by existing development and are therefore unlikely to be adversely affected by the proposals.

iv) **Habitats.** The site comprises largely of buildings and hardstanding surrounded by areas of amenity grassland and planting. Trees, scrub and a small ephemeral waterbody are also present. The habitats present on site are of negligible to low ecological value, and the proposed losses are of negligible to minor ecological significance. New tree and shrub planting will compensate for the proposed losses and new hedgerow and wet grassland creation will provide an ecological enhancement compared to the existing situation.

v) **Protected Species.** The habitats present on site have poor suitability to support protected or notable species, being dominated by buildings and hardstanding. The buildings on-site have negligible potential to support roosting bats and no reptiles were recorded on-site. Bird nesting activity was recorded within one of the derelict buildings and the scrub and trees also have potential to support nesting birds. Appropriate mitigation measures will therefore be implemented to safeguard nesting birds during development. The proposed landscape planting will provide new bird nesting habitat in the long-term, as well as new foraging habitat for birds, bats and small mammals.

vi) **Enhancements.** The proposals present the opportunity to secure a number of biodiversity benefits, including additional native tree, shrub and hedgerow planting, new roosting sites for bats and nesting habitat for birds.

vii) **Summary.** The proposals have sought to minimise impacts on biodiversity and, subject to the implementation of appropriate avoidance, mitigation and compensation measures, it is considered unlikely that the proposals will result in significant harm.

1 Introduction

1.1 Background & Proposals

1.1.1 Aspect Ecology was commissioned by Bellway Homes Ltd in February 2017 to undertake an Ecological Appraisal in respect of proposed development of land south of Portman Road, Reading, centred at grid reference SU 6992 7391 (see Plan 5108/ECO1).

1.1.2 The proposals are for residential development with associated access, infrastructure and landscaping.

1.2 Site Overview

1.2.1 The site is located close to the centre of Reading, within an urban context. The site is largely bound to the south by Portman Way, beyond which lies a relatively new residential development. To the east and south-east the site is bound by residential and small commercial properties. The site is bound to the north and west by Portman Road, beyond which lies large commercial units.

1.2.2 The site itself comprises largely of hardstanding and buildings, with relatively small areas of grassland, trees and scrub. A small ephemeral waterbody is present at the east of the site. The site is formed of three distinct areas; the western area of the site is derelict and has been fenced off, although access remains possible, the north-eastern section of the site is in active use as an ambulance centre, and the south-eastern area of the site contains unoccupied flats.

1.3 Purpose of the Report

1.3.1 This report documents the methods and findings of the baseline ecology surveys and desktop study carried out in order to establish the existing ecological interest of the site, and subsequently provides an appraisal of the likely ecological effects of the proposals. The importance of the habitats and species present is evaluated. Where necessary, avoidance and mitigation measures are recommended so as to safeguard any significant existing ecological interest within the site and where appropriate, opportunities for ecological enhancement are proposed with reference to national conservation priorities and local Biodiversity Action Plans (BAPs).

2 Methodology

2.1 Desktop Study

2.1.1 In order to compile background information on the site and its immediate surroundings the Thames Valley Environmental Records Centre (TVERC) was contacted, with data requested on the basis of a search radius of 2km. Where information has been received this is reproduced on Plan 5108/ECO2, where appropriate.

2.1.2 Information on statutory designations was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC) database, which utilises data provided by Natural England, with an extended search radius (15km). This information is reproduced where appropriate on Plan 5108/ECO2.

2.1.3 In addition, the Woodland Trust database was searched for any records of veteran or notable trees within or adjacent to the site.

2.2 Habitat Survey

2.2.1 The site was surveyed in February 2017 in order to ascertain the general ecological value of the land contained within the boundaries of the site and to identify the main habitats and ecological features present.

2.2.2 The site was surveyed based on standard Phase 1 Habitat Survey methodology[1], 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 through Phase 2 surveys. This method was extended, in line with the Guidelines for Preliminary Ecological Appraisal[2] to record details on the actual or potential presence of any notable or protected species or habitats.

2.2.3 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. The nomenclature used for plant species is based on the Botanical Society for the British Isles (BSBI) Checklist.

2.3 Faunal Surveys

2.3.1 General faunal activity, such as mammals or birds observed visually or by call during the course of the surveys was recorded. Specific attention was also paid to the potential presence of any protected, rare or notable species, and specific consideration was given to bats and reptiles, as described below.

[1] Joint Nature Conservation Committee (2010) *'Handbook for Phase 1 habitat survey: A technique for environmental audit.'*

[2] Chartered Institute for Ecology and Environmental Management (CIEEM) (2013) *'Guidelines for Preliminary Ecological Appraisal.'*

Bats[3]

Visual Inspection Surveys

2.3.2 **Buildings.** Buildings within the site were subject to specific external inspection surveys using ladders, torches and binoculars where necessary, in February 2017.

2.3.3 During the external inspections, particular attention was given to any potential roost features or access points, such as broken or lifted roof tiles, lifted lead flashing, soffit boxes, weatherboarding, hanging tiles, etc. and for any external signs of use by bats such as accumulations of bat droppings or staining. Binoculars were used to inspect any inaccessible areas more closely where appropriate.

2.3.4 **Trees**. Trees were assessed for their suitability to support roosting bats based on the presence of features such as holes, cracks, splits or loose bark. Suitability for roosting bats was rated based on relevant guidance[4] as:

- Negligible;
- Low;
- Moderate; or
- High.

2.3.5 Any potential roost features identified were also inspected for any signs indicating possible use by bats, e.g. staining, scratch marks, bat droppings, etc.

Reptiles[5]

2.3.6 Given the presence of potentially suitable reptile habitat within the site, specific surveys were undertaken to establish the presence/absence of common reptile species between September and October 2017.

2.3.7 A total of forty 50x50cm sheets of thick roofing felt were placed within suitable areas across the site to act as artificial refugia, which represents a density of approximately 15 refugia per hectare (see Plan 5108/ECO4). The refugia, or 'tins', provide shelter and heat up more quickly than their surroundings in the morning and can remain warmer than their surroundings in the late afternoon. Being ectothermic (cold blooded), reptiles use them to bask under and raise their body temperature, which allows them to forage earlier and later in the day. Therefore, checking the refugia at appropriate times of the day (morning and evening) enables the presence/absence of common reptiles to be determined.

2.3.8 The refugia remained undisturbed for approximately 1-2 weeks to allow reptiles to find and start using them. Following this initial bedding-in period, refugia were checked at appropriate times of the day on seven occasions during suitable weather conditions, e.g. bright, intermittent or hazy sunshine, not too wet or windy, sunny spells following wet or cloudy weather, and air temperatures c.10-20°C (see Table 2.1 below). In addition, reptiles basking in the open or partial cover were actively searched for in suitable locations across the site through direct observation. Existing natural objects (e.g. logs and rocks) and artificial refugia (e.g. debris, tyres, etc.) were also

[3] Surveys based on: English Nature (2004) '*Bat Mitigation Guidelines'* and Collins, J. (ed.) (2016) '*Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn).' Bat Conservation Trust

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

[5] Surveys based on: Froglife Advice Sheet 10 (1999) '*Reptile Survey - an introduction to planning, conducting and interpreting surveys for snake and lizard conservation.*'

searched, where present, for reptiles or evidence of reptiles (e.g. sloughed skin). Seven survey visits were planned, however, due to access constraints to two of the transects an additional three visits were required to ensure all refugia were checked on seven occasions.

Table 2.1: Reptile survey dates and weather conditions

Visit	Date	Weather
1	07/09/2017	100% cloud, BF2, 16°C
2	09/09/2017	100% cloud, BF4, 14°C
3	12/09/2017	10% cloud, BF4, 14°C
4	19/09/2017	95% cloud, BF2, 16°C
5	22/09/2017	40% cloud, BF1, 17°C
6	25/09/2017	100% cloud, BF2, 17°C
7	28/09/2017	70% cloud, BF2, 17°C
8	03/10/2017	0% cloud, BF5, 13°C
9	05/10/2017	30% cloud, BF5, 16°C
10	09/10/2017	100% cloud, BF2, 14°C

2.4 Survey Constraints/Limitations

2.4.1 All of 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 during different seasons. The Phase 1 habitat survey was undertaken outside the optimal seasonal period for botanical work, albeit the nature of the habitats within the site allowed for the broad habitat types to be identified and for an adequate assessment of the intrinsic ecological interest of the site to be made.

2.4.2 Internal inspection surveys of the buildings could not be undertaken due to access and health and safety constraints (primarily due to the presence of squatters and hypodermic needles). However, a thorough external survey of the buildings was undertaken and, due to the building types and construction materials, this was considered sufficient to establish bat roosting potential.

2.4.3 Attention was paid to the presence of any invasive species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). However, the detectability of such species varies due to a number of factors, e.g. time of year, site management, etc., and hence the absence of invasive species should not be assumed even if no such species were detected during the Phase 1 survey.

2.5 Principles of Ecological Evaluation

2.5.1 The evaluation of ecological features and resources is based on professional judgement whilst also drawing on the latest available industry guidance and research. The approach taken in this report is based on that described by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2016)[6]. In evaluating ecological features and resources the following key factors are taken into account:

[6] Chartered Institute of Ecology and Environmental Management (CIEEM) (2016) '*Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal.*'

2.5.2 *Geographic Frame of Reference*. The value of an ecological feature or resource is determined within a defined geographical context using the following frame of reference:

- International;
- National;
- Regional;
- County (or Metropolitan);
- District (or Unitary Authority, City or Borough);
- Local (or Parish);
- At the Site level only.

2.5.3 Within this frame of reference, certain sites may carry a statutory ecological designation, e.g. Special Area of Conservation (SAC) for internationally important sites or Site of Special Scientific Interest (SSSI) for sites of national importance.

2.5.4 Sites of more localised nature conservation importance do not receive statutory protection but may be designated by Local Planning Authorities or other bodies, e.g. Wildlife Trusts. Such non-statutory designations or 'Local Sites'[7] include Local Wildlife Sites (LWSs) and Sites of Nature Conservation Interest (SNCIs), for example.

2.5.5 *Biodiversity Value: Habitats*. In certain cases, the value of a habitat can be measured against known selection criteria, e.g. SAC selection criteria, 'Guidelines for the selection of biological SSSIs' and the Hedgerows Regulations 1997. However, for the majority of commonly encountered sites, the most relevant habitat evaluation will be at a more localised level and based on relevant factors such as antiquity, size, species-diversity, potential, naturalness, rarity, fragility and typicalness (Ratcliffe, 1977). The ability to restore or re-create the habitat is also an important consideration, for example in the case of ancient woodland.

2.5.6 Regard should also be given to habitats listed as priorities for conservation in accordance with Sections 41 and 42 of the Natural Environment and Rural Communities Act (NERC) 2006, so called 'Habitats of Principal Importance' or 'Priority Habitats', as the likely effect of a development on such habitats is a potential material consideration within the planning process. Certain habitats may also be listed within regional or local Biodiversity Action Plans (BAPs), albeit the listing of a particular habitat under a BAP does not in itself imply any specific level of importance.

2.5.7 *Biodiversity Value: Species*. The assessment of the value of a species is based on factors including distribution, status, historical trends, population size and rarity. With respect to rarity, this can apply across the geographic frame of reference and particular regard is given to populations where the UK holds a large or significant proportion of the international population of a species.

2.5.8 Regard should also be given to species listed as priorities for conservation in accordance with Sections 41 and 42 of the NERC Act 2006, so called 'Species of Principal Importance' or 'Priority Species'. Certain species may also be listed within regional or local BAPs, albeit as with habitats the listing of a particular species under a BAP does not in itself imply any specific level of importance.

[7] DEFRA (2006) '*Local Sites – Guidance on their Identification, Selection and Management*'

2.5.9 *Secondary or Supporting Value*. Some habitats or features that are of no intrinsic biodiversity value may nonetheless perform an ecological function, e.g. as a buffer. In addition, certain features of the landscape which by virtue of their linear or continuous nature (e.g. rivers) or their function as 'stepping stones' (e.g. small woods) may be of value for the migration, dispersal and genetic exchange of wild species.

2.6 National Policy Approach to Biodiversity in the Planning System

2.6.1 The National Planning Policy Framework (NPPF)[8] describes the Government's national policies on 'conserving and enhancing the natural environment' (Chapter 11). NPPF is accompanied by Planning Practice Guidance on 'Biodiversity, ecosystems and green infrastructure' (2014) and ODPM Circular 06/2005[9].

2.6.2 NPPF takes forward the Government's strategic objective to halt overall biodiversity loss[10], as shown at Paragraph 109, which states the planning system should contribute to and enhance the natural and local environment by:

'*minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*'

2.6.3 The approach to dealing with biodiversity in the context of planning applications is set out at Paragraph 118:

'When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- *if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;'*

2.6.4 The above approach encapsulates the 'mitigation hierarchy' described in British Standard BS 42020:2013[11], which involves the following step-wise process:

- **Avoidance** – avoiding adverse effects through good design;
- **Mitigation** – where it is unavoidable, mitigation measures should be employed to minimise adverse effects;
- **Compensation** – where residual effects remain after mitigation it may be necessary to provide compensation to offset any harm;
- **Enhancement** – planning decisions often present the opportunity to deliver benefits for biodiversity, which can also be explored alongside the above measures to resolve potential adverse effects.

2.6.5 The measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development (BS 42020:2013, section 5.5).

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8 Department for Communities and Local Government (2012) '*National Planning Policy Framework*'
9 ODPM (2006) '*Circular 06/2005: Planning for Biodiversity and Geological Conservation – A Guide to Good Practice*'
10 DEFRA (2011) '*Biodiversity 2020: A strategy for England's wildlife and ecosystem services*'
11 British Standards Institution (2013) '*Biodiversity – Code of practice for planning and development*', BS 42020:2013

2.7 Local Policy

2.7.1 The Reading Borough Local Development Framework, Core Strategy (2008) contains several policies on the natural environment, of which Policy CS38 (Trees, Hedges and Woodlands) is of relevance to the site, stating:

'*Individual trees, groups of trees, hedges and woodlands will be protected from damage or removal, and the Borough's vegetation cover will be extended.*'

2.7.2 The Reading Borough Local Development Framework, Sites and Policies Document (2012), refers to the 'Green Network' and existing and potential green links within Reading Borough. This comprises interconnected green spaces linking urban areas with the urban fringe and wider countryside. According to the Local Development Framework proposals map, an existing or potential green link runs alongside Portman Road to the north of the site. Policy DM17 states:

'*These Green Links shall be maintained, protected, consolidated, extended and enhanced.*

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

2.7.3 Policy DM18 aims to increase tree coverage in the Borough and states:

'*New development shall make provision for tree planting within the application site, or off-site in appropriate situations, to improve the level of tree coverage within the Borough, to maintain and enhance the character and appearance of the area in which a site is located, to provide for biodiversity and to contribute to measures to reduce carbon and adapt to climate change*.'

3 Ecological Designations

3.1 Statutory Designations

Description

3.1.1 The statutory designations of ecological importance that occur within the local area are shown on Plan 5108/ECO2. The nearest statutory designation to the site is Lousehill Copse Local Nature Reserve (LNR), located approximately 1.6km south-west of the site. This LNR comprises semi-ancient Oak and Hazel woodland and also includes streams, ponds and an open meadow.

3.1.2 The next nearest statutory designation is McIlroy Park LNR, located approximately 1.7km west of the site, within Reading. This LNR comprises a large area of grassland with Heather and Broom, and at the north of the site is an area of semi-natural ancient woodland. Round Copse LNR has also been added as an extension to this designation, which comprises an area of deciduous woodland with Hazel coppice.

Evaluation

3.1.3 Lousehill Copse LNR and McIlroy Park LNR are well removed and separated from the site by residential and commercial development in the town of Reading. Both LNRs are accessible to the public, with footpaths present. Considering the distance between the site and the Lousehill Copse and McIlroy Park LNRs and the urban nature of the surrounding landscape, it is unlikely that the proposals would have a significant impact on these or any other statutory designations in the local area.

3.2 Non-statutory Designations

Description

3.2.1 The non-statutory designations of nature conservation interest that occur within the local area are shown on Plan 5108/ECO2. The nearest non-statutory designation to the site is Cow Lane Depot Local Wildlife Site (LWS), located approximately 0.3km east of the site. This LWS is surrounded by railway lines on all sides and forms a mosaic of habitats including willow scrub, mature trees, standing water with swamp, and tall herb and ruderal grassland.

3.2.2 The next closest non-statutory designation is the Prospect Park LWS, located approximately 1km south-west of the site. This LWS includes a small area of deciduous woodland ('The Rookery') which is surrounded by Prospect Park. The majority of the LWS comprises historic parkland with closely mown amenity grassland and public amenities. A significant number of mature and veteran trees are present within the park and deadwood habitat is present. Hedgerows, scrub, a pond and an area of grassland containing species typical of lowland meadow are also present.

Evaluation

3.2.3 The Cow Lane Depot LWS is separated from the site by residential development and the railway line. There is no public access to the LWS as it is surrounded by railway tracks. Due to the distance between the site and the LWS and the isolated nature of the LWS, the proposals are unlikely to have a significant impact on the designation.

3.2.4 Prospect Park LWS is well removed from the site and separated by considerable residential development. The LWS is well used by the public, with a high anthropogenic impact on habitats within the LWS already recognised as part of the designation. Considering the separation distance and the nature of the designation, it is considered unlikely that the proposals would have any significant impact on the Prospect Park LWS, or any other non-statutory designations in the local area.

3.3 Ancient Woodland and Notable Trees

3.3.1 There are no areas of ancient woodland or notable trees recorded within or adjacent to the site. There are a few small areas of ancient woodland within Reading, all located more than 1km from the site.

3.4 Summary

3.4.1 The site itself is not subject to any statutory or non-statutory ecological designations and all designations in the local area are well separated from the site. Therefore, overall it is considered unlikely that any ecological designations in the surrounding area will be significantly affected by the proposals.

4 Habitats and Ecological Features

4.1 Background Records

4.1.1 Information returned from TVERC does not include any specific records of protected, rare or notable plant species from within or immediately adjacent to the site. Several notable plant species records were returned from the wider search area, mostly associated with designated sites in the local area. The only species recorded within 1km of the site is Frogbit *Hydrocharis morsus-ranae* which is an aquatic species, therefore unlikely to be present on-site.

4.2 Overview

4.2.1 The habitats and ecological features present within the site are described below and evaluated in terms of intrinsic ecological value, such as in relation to the presence of rare plant communities or individual plant species of elevated interest. The likely effects of the proposals on the habitats and ecological features are then assessed. The value of habitats for the fauna they may support is considered separately in section 5 below.

4.2.2 The following habitats/ecological features were identified within/adjacent to the site:

- Buildings and Hardstanding;
- Amenity Grassland;
- Rough Grassland;
- Trees;
- Dense and Scattered Scrub;
- Amenity Planting;
- Ephemeral Waterbody.

4.2.3 The locations of these habitat types and features are illustrated on Plan 5108/ECO3 and described in detail below.

4.3 Priority Habitats

4.3.1 Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 places duties on public bodies to have regard to the conservation of biodiversity in the exercise of their normal functions. In particular, Section 41 of the NERC Act requires the Secretary of State to publish a list of habitats which are of principal importance for conservation in England. This list is largely derived from the 'Priority Habitats' listed under the former UK Biodiversity Action Plan (BAP), which continue to be regarded as priority habitats under the subsequent country-level biodiversity strategies.

4.3.2 Of the habitats within the site, none are considered to qualify as UK Priority Habitats.

4.4 Buildings and Hardstanding

Description

4.4.1 The site is dominated by numerous buildings (B1-17 on Plan 5108/ECO3) and associated hardstanding (see Photos within Appendix 5108/2).

4.4.2 Within the eastern section of the site are buildings B1-B6 and B14-B15. Most of these are large buildings in active use for storage, ambulance parking, workshops and

offices. Buildings B11-B13 are separated from the eastern part of the site by hoarding and are derelict. This area of the site contains fly-tipping and piles of old building materials.

4.4.3 Buildings B16 and B17 are separated from the northern section of the site by buildings and a wooden panel fence. Building B16 is a three-storey block of flats and building B17 is a smaller single storey residential unit, both of which are unoccupied.

4.4.4 Adjacent to the site are buildings B7 (offices), B8 (services building) and B9 (shipping containers.

4.4.5 The site contains large areas of hardstanding, including tarmac, concrete and smaller areas of loose hard-core. To the east of the site the hardstanding is generally in good condition, with few colonising species present within cracks. To the west of the site there are more gaps in the hard-surfacing and more developed vegetation present within gaps, dominated by Buddleia (Photograph 1).

4.4.6 Other species colonising gaps in the hardstanding throughout the site include Perennial Rye-grass *Lolium perenne*, Cow Parsley *Anthriscus sylvestris*, Dandelion *Taraxacum officinale* agg., Groundsel *Senecio vulgaris*, Ribwort Plantain *Plantago lanceolata*, Bittercress *Cardamine* sp., Yarrow *Achillea millefolium*, Crane's-bill *Geranium* sp., Willowherb *Epilobium* sp., Herb-Robert *Geranium robertianum*, Chickweed *Stellaria* sp., Creeping Cinquefoil *Potentilla reptans* and Nettle *Urtica dioica*.

Evaluation

4.5 The buildings and hardstanding support a limited range of common and widespread floral species and are inherently of negligible ecological value. Their loss due to the proposals is therefore of negligible ecological significance. Potential for the buildings to support faunal species such as roosting bats is discussed below in Section 5.

4.6 Amenity Grassland

Description

4.6.1 Several areas of amenity grassland are present within the site, between the buildings and adjacent to Portman Road. The sward height varies from 5cm-20cm between areas that are regularly mown and those that have not been intensively managed recently.

4.6.2 Grass species present include Perennial Rye-grass, Yorkshire-fog *Holcus lanatus*, Cock's-foot *Dactylis glomerata*, Barren Brome *Anisantha sterilis*, *Festuca* sp., False Oat-grass *Arrhenatherum elatius*, Creeping Bent *Agrostis stolonifera* and Common Couch *Elytrigia repens*. A low abundance and diversity of herb species are present within the sward, including Dandelion, Ribwort Plantain, Daisy *bellis perennis*, Yarrow, White Clover *Trifolium repens*, Ground-ivy *Glechoma hederacea*, Creeping Buttercup *Ranunculus repens*, Speedwell *Veronica* sp., Chickweed, Red Dead-nettle *Lamium purpureum*, Lesser Celandine *Ranunculus ficaria*, Crane's-bill and Common Mouse-ear *Cerastium fontanum*. In less intensively managed areas, Cow Parsley, Nettle, Dock *Rumex* sp., Mugwort *Artemisia vulgaris*, Green Alkanet *Pentaglottis sempervirens*, Cleavers *Galium aparine*, Hedge Woundwort *Stachys sylvatica*, Burdock *Arctium* sp., Mallow *Malva* sp., Ivy *Hedera helix* and Creeping Thistle *Cirsium arvense* are also present.

Evaluation

4.6.3 The amenity grassland comprises a limited diversity of common and widespread species and is managed regularly to keep the sward short. The patches of this habitat type present on site are small and this habitat is common in the surrounding urban landscape. Accordingly, this habitat is considered to be of low ecological value at the site level and its loss to the proposals is of negligible ecological significance. Nonetheless, similar replacement habitat will be provided within the gardens of the proposed development.

4.7 Rough Grassland

Description

4.7.1 Several areas of rough grassland are present within less intensively managed areas of the site (e.g. Photograph 2). The sward is approximately 20-50cm in height and contains similar species to the amenity grassland (see Section 4.6) but with a higher proportion of tall ruderal species present. Additional species present include Spear Thistle *Cirsium vulgare*, Vetch *Vicia* sp. and Creeping Cinquefoil.

Evaluation

4.7.2 The small areas of rough grassland on-site have likely developed from former amenity grassland which have not been subject to regular management recently. The species present are common and widespread and there are higher quality areas of grassland existing in the local area, particularly within nearby designated sites such as McIlroy Park LNR. The rough grassland is therefore of low ecological value at the local level and its loss to the proposals is of negligible ecological significance. Wet grassland is proposed within the SuDS features at the north of the site, which would compensate for the loss of existing rough grassland.

4.8 Trees

Description

4.8.1 Numerous young to semi-mature trees and a low number of mature trees are present on site, in particular planted at the site boundaries. Species present include Cherry *Prunus* sp., Silver Birch *Betula pendula*, *Cupressus* sp., Willow *Salix* sp., Sycamore *Acer pseudoplatanus*, Maple *Acer* sp., Apple *Malus* sp. and Alder *Alnus* sp.

Evaluation

4.8.2 A mix of native and non-native tree species are present within the site. The majority of trees within the site are young to semi-mature in nature such that they are currently of limited ecological interest. The more mature trees recorded within the site are of some ecological interest in their own right.

4.8.3 Overall, the trees within the site are considered to be of low ecological value at the local level and the loss of a proportion of the trees to the proposals is of minor ecological significance. New tree planting is proposed as part of the scheme design, particularly at the northern and western boundaries and surrounding the amenity space, which will compensate for the proposed losses.

4.9 Dense and Scattered Scrub

Description

4.9.1 Areas of dense and scattered scrub are present within the site, largely at the boundaries and surrounding buildings to the west of the site (e.g. Photograph 3). The dense scrub is dominated by Bramble, with frequent Buddleia scrub particularly towards the west of the site. Other species present include Elder *Sambucus nigra*, Alder, Whitebeam *Sorbus aria*, Hazel *Corylus avellana*, Hawthorn *Crataegus monogyna*, Blackthorn *Prunus spinosa*, Ash *Fraxinus excelsior*, Willow, Holly *Ilex aquifolium*, Yew *Taxus baccata* and Dogwood *Cornus sanguinea*.

Evaluation

4.9.2 The scrub habitat on-site comprises common and widespread native and non-native species. Although scrub is not likely to be very common within the immediate surrounding urban area, this habitat type is likely to be common in the wider area, particularly within the nearby designated sites such as Lousehill Copse LNR and McIlroy Park LNR. Overall, the scrub on-site is considered to be of low ecological value at the local level and its loss due to the proposals is of minor ecological significance. New shrub planting as part of the landscape scheme will provide similar replacement habitat.

4.10 Amenity Planting

Description

4.10.1 Small areas of amenity planting are present within the site. Native and non-native species are present including *Mahonia* sp., Dogwood and Buddleia.

Evaluation

4.10.2 The amenity planting present on-site comprises small areas of common native species and non-native ornamental species. This is likely to be a common habitat type in the local area, particularly within residential gardens, and is of low ecological value at the site level. The loss of this habitat due to the proposals is of negligible ecological significance and a greater area of more diverse planting is likely to be created within new residential gardens as well as landscaped areas of the site.

4.11 Ephemeral Waterbody

Description

4.11.1 A single waterbody is present towards the east of the site, adjacent to building B1 (Photograph 4). The waterbody is located at the base of a slope of hardstanding, and appears to essentially be a seasonally water-logged loading bay, and at the time of survey was approximately 10cm deep. Flag Iris *Iris pseudacorus* is present as well as terrestrial species including grass species and Dock. Considerable leaf litter is present from the surrounding scrub. This waterbody is highly likely to be an ephemeral feature.

Evaluation

4.11.2 This waterbody is a very shallow feature which does not support submerged aquatic vegetation and is likely to dry out for several months of the year. It is unlikely to fall within the Priority Habitat type ‘ponds’. There are numerous waterbodies present at

the outskirts of Reading, including ponds, lakes, ditches and rivers. This waterbody is therefore considered to be of low ecological value at the site level and its loss to the proposals is of negligible ecological significance. New ephemeral water features will be provided by the proposed SuDS features at the north of the site.

4.12 Habitat Evaluation Summary

4.12.1 A summary of the evaluation of the habitats present at the site is set out at Table 4.2 below.

Table 4.2. Summary of habitat evaluation.

Habitat	Value	Level
Buildings and Hardstanding	Negligible	Site
Amenity Grassland	Low	Site
Rough Grassland	Low	Local
Trees	Low	Local
Dense and Scattered Scrub	Low	Local
Amenity Planting	Low	Site
Ephemeral Waterbody	Low	Site

5 Faunal Use Of The Site

5.1 Overview

5.1.1 During the survey work general observations were made of any faunal use of the site with specific attention paid to the potential presence of protected or notable species. Specific survey work was undertaken in respect of bats and reptiles, with the results described below.

5.2 Priority Species

5.2.1 Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 places duties on public bodies to have regard to the conservation of biodiversity in the exercise of their normal functions. In particular, Section 41 of the NERC Act requires the Secretary of State to publish a list of species which are of principal importance for conservation in England. This list is largely derived from the 'Priority Species' listed under the former UK Biodiversity Action Plan (BAP), which continue to be regarded as Priority Species under the subsequent country-level biodiversity strategies.

5.2.2 No Priority Species were recorded within the site during the survey. There is the potential for Priority Species to utilise the habitats on-site, as discussed in the relevant faunal sections below.

5.3 Bats

5.3.1 **Legislation.** All British bats are classed as European Protected Species under the Conservation of Habitats and Species Regulations 2010 (as amended) and are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). As such, both bats and their roosts (breeding sites and resting places) receive full protection under the legislation (see Appendix 5108/1 for detailed provisions). If proposed development work is likely to result in an offence a licence may need to be obtained from Natural England which would be subject to appropriate measures to safeguard bats. A number of bat species are also considered S41 Priority Species.

5.3.2 **Background Records.** A single record for an injured *Pipistrelle* bat species was returned from within the same 1km grid square as the eastern edge of the site in 2011. Species recorded within 2km of the site include Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Daubenton's Bat *Myotis daubentonii*, Noctule *Nyctalus noctula*, Brown Long-eared Bat *Plecotus auritus* and Serotine *Eptesicus serotinus*. This includes roost records for Common Pipistrelle, Soprano Pipistrelle and Brown Long-eared Bat.

5.3.3 **Survey Results**

Visual Inspection Surveys

Buildings

5.3.4 A detailed visual inspection was undertaken of all the buildings within the site, the results of which are detailed at Appendix 5108/2. In summary, the majority of the buildings within the site are large industrial buildings of steel frame and corrugated sheeting construction with poor thermal properties for roosting bats. The brick-built structures have flat roofs, do not contain loft voids, and are generally well sealed.

Trees

5.3.5 No trees within or adjacent to the site exhibit features with potential to support roosting bats.

Foraging and Commuting Habitat

5.3.6 The site is dominated by buildings and hardstanding of negligible value to foraging bats. The areas of rough grassland, trees and shrubs offer some limited potential foraging habitat for bats, however these are small fragmented patches. In addition, the site is well lit and located within a highly built up environment, reducing its value to these species. There are no significant linear habitat features present within the site which are likely to be of value to commuting bats.

5.3.7 **Evaluation and Assessment of Likely Effects**

Roosting

Buildings

5.3.8 No evidence of roosting bats was recorded during the building surveys. Where internal access to the buildings is possible, the building materials, and in some cases the broken windows, will create climatically fluctuating conditions unfavourable for roosting bats. The buildings do not contain enclosed loft voids and the roofs are either flat or of corrugated metal construction of poor suitability for roosting bats. No external features with elevated potential to support roosting bats are present.

5.3.9 The buildings are located within a highly urbanised location, with limited foraging resources present in the immediate vicinity and external lighting present throughout the site. As such, all of the buildings within the site offer negligible roosting opportunities for bats. Accordingly, the loss of the buildings under the proposals is highly unlikely to impact roosting bats or adversely affect the conservation status of local bat populations. On the contrary, there is the potential for a net gain in bat roosting habitat on-site under the proposals (see Section 6).

Trees

5.3.10 The trees within the site have negligible suitability to support roosting bats. Overall, the site is considered to be of negligible value to roosting bats and the loss of trees to the proposals is highly unlikely to impact roosting bats.

Foraging / Commuting

5.3.11 The majority of the site comprises buildings and hardstanding which are of poor suitability for commuting or foraging bats. There are only small pockets of grassland, trees and scrub which are likely to support a higher invertebrate biomass and therefore offer some limited potential foraging habitat for bats. The site is surrounded by urban development therefore it is not likely to form part of an important commuting route for bats.

5.3.12 Superior foraging and commuting habitat is available in the local area, particularly along the River Thames and River Kennet and within local designated sites with grassland and woodland habitat. Overall, the urban nature of the site and its isolation from other high-quality foraging habitat is likely to severely limit the value of the site to foraging and commuting bats.

5.3.13 New tree and shrub planting will compensate for the proposed loss of existing tree and scrub habitat. In addition, the proposed green space at the north, north-west and north-east of the site, and the new native hedgerow planting at the eastern site boundary, will provide better connected bat foraging and commuting habitat on site - compared to the existing situation. Accordingly, it is considered that the conservation status of local bat populations will be fully safeguarded, if not enhanced, under the scheme.

5.4 Badger

5.4.1 **Legislation:** Badger receive legislative protection under the Protection of Badgers Act 1992 (see Appendix 5108/1 for detailed provisions). 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. It is the duty of planning authorities to consider the conservation and welfare impacts of development upon Badger and issue permissions accordingly.

5.4.2 Licences can be obtained from Natural England for development activities that would otherwise be unlawful under the legislation. Guidance on the types of activity that should be licensed is laid out in the relevant best practice guidance.[12, 13]

5.4.3 **Background Records:** Several records for individual Badgers and setts were returned from the data search. Two records were returned within the same 1km grid square as the site, a sett dated to 1998 and a dead individual dated to 2013.

5.4.4 **Survey Results and Evaluation.** The vast majority of the site comprises buildings and hardstanding of negligible value to Badger. No Badger setts were found within or immediately adjacent to the site, nor were any latrines or dung pits recorded. There were no signs of Badgers foraging in, or commuting through, the site. Accordingly, this species is unlikely to be affected by the proposals.

5.5 Other Mammals

5.5.1 **Legislation.** A number of other UK mammal species do not receive direct legislative protection relevant to development activities but may receive protection against acts of cruelty (e.g. under the Wild Mammals (Protection) Act 1996). In addition, a number of these mammal species are S41 Priority Species.

5.5.2 **Background Records.** A number of records of Hedgehog *Erinaceus europaeus* (Priority Species) were returned from the data search, the closest of which were three records located within a residential area approximately 0.9km south-west of the site, between 2010 and 2014. Two records for Otter *Lutra lutra* and one record for Water Vole *Arvicola amphibius* were returned from the local area, associated with the River Thames, all located more than 500m north of the site.

5.5.3 **Survey Results and Evaluation.** No evidence of any other protected, rare or notable mammal species was recorded within the site. Records of Water Vole and Otter were returned from the data search within the local area, however, no aquatic habitat suitable for these species is present within or adjacent to the site.

5.5.4 Hedgehog have been recorded within the local area, however, there are only small areas of grassland and scrub available on-site that may possibly afford potential

[12] English Nature (2002) '*Badgers and Development*'
[13] Natural England (2011) '*Badgers and Development: A Guide to Best Practice and Licensing*', Interim Guidance Document

habitat for this species. The proposals are likely to provide enhanced habitat for Hedgehog and other mammal species compared to the existing situation through the creation of open green-space and residential gardens.

5.6 Amphibians

5.6.1 **Legislation.** All British amphibian species receive a degree of protection under the Wildlife and Countryside Act 1981 (as amended). Great Crested Newt is protected under the Act and is also classed as a European Protected Species under the Conservation of Habitats and Species Regulations 2010 (as amended). As such, both Great Crested Newt and habitats utilised by this species are afforded protection (see Appendix 5108/1 for detailed provisions). Great Crested Newt is also a S41 Priority Species, as are Common Toad *Bufo bufo*, Natterjack Toad *Epidalea calamita*, and Pool Frog *Pelophylax lessonae*.

5.6.2 **Background Records.** No records for Great Crested Newt were returned from the data search within 2km of the site. Two records for Common Toad were returned, located approximately 1.6km north of the site in 2004. In addition, a number of records for Common Frog *Rana temporaria* and Smooth Newt *Lissotriton vulgaris* were returned, located more than 1km from the site.

5.6.3 **Survey Results and Evaluation.** A shallow depression, very unlikely to hold water throughout the year, is present on-site (see Section 4.11 above). This waterbody is considered unlikely to be utilised as Great Crested Newt breeding habitat due to the very shallow water depth and high likelihood of drying out during the spring/summer. Only one waterbody is recorded on OS mapping within 250m of the site and this is separated from the site by roads, buildings and a railway track.

5.6.4 The terrestrial habitat on-site is dominated by buildings, hardstanding, amenity grassland and amenity planting which is of negligible suitability for Great Crested Newt. The small areas of scrub and rough grassland offer very limited areas of suitable terrestrial habitat for amphibians which are fragmented from other suitable habitat.

5.6.5 As no suitable breeding ponds are present on-site, the site contains poor quality terrestrial habitat for Great Crested Newt, and no records for this species were returned from the desktop study within 2km of the site, it is considered highly unlikely that Great Crested Newt utilise the site. The proposals are unlikely to significantly impact amphibians or the conservation status of Great Crested Newt.

5.7 Reptiles

5.7.1 **Legislation**. All six species of British reptile are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), which protects individuals against intentional killing or injury. Sand Lizard *Lacerta agilis* and Smooth Snake *Coronella austriaca* receive additional protection under the Conservation of Habitats and Species Regulations 2010 (as amended); refer to Appendix 5108/1 for detailed provisions. All six reptile species are also S41 Priority Species.

5.7.2 **Background Records.** Several records for Slow-worm *Anguis fragilis* and one record each for Grass Snake *Natrix natrix* and Common Lizard *Zootoca vivipara* were returned from the data search. The closest record is for a Common Lizard located approximately 0.3km north of the site, within allotments north of the railway line, dated to 2010.

5.7.3 **Survey Results and Evaluation.** The site provides low quality habitat for reptiles, being dominated by buildings and hardstanding, with only small isolated areas of rough grassland and scrub present. No reptiles were recorded during the specific survey visits completed in September and October 2017. In addition, the site is separated from any high-quality reptile habitat by roads and built development and the records of reptiles returned from the desktop study are separated from the site. It is therefore unlikely that reptiles are present on-site and the proposals are highly unlikely to impact this species group.

5.8 Birds

5.8.1 **Legislation.** All wild birds and their nests receive protection under Section 1 of the Wildlife and Countryside Act 1981 (as amended) in respect of killing and injury, and their nests, whilst being built or in use, cannot be taken, damaged or destroyed. Species included on Schedule 1 of the Act receive greater protection and are subject to special penalties (see Appendix 5108/1 for detailed provisions).

5.8.2 **Conservation Status.** The conservation importance of British bird species is categorised based on a number of criteria including the level of threat to a species' population status[14]. Species are listed as Green, Amber or Red. Red Listed species are considered to be of the highest conservation concern being either globally threatened and or experiencing a high/rapid level of population decline (>50% over the past 25 years). A number of birds are also S41 Priority Species.

5.8.3 **Background Records.** The desktop study returned records for numerous bird species within the vicinity of the site. Species recorded within 0.5km of the site were Reed Bunting *Emberiza schoeniclus* and Song Thrush *Turdus philomelos* (both Priority Species), Whitethroat *Sylvia communis* and numerous Swift *Apus apus* records (both Amber Listed). Black Redstart *Phoenicurus ochruros*, a species that favours brownfield sites with built structures, were recorded breeding within Reading in 2012, although this record is located approximately 1.4km east of the site.

5.8.4 **Survey Results.** Several species of bird were observed within the site during the Phase 1 survey, including Magpie *Pica pica*, Blackbird *Turdus merula*, Woodpigeon *Columba palumbus*, Carrion Crow *Corvus corone*, Robin *Erithacus rubecula* and Wren *Troglodytes troglodytes*. Pigeon were observed nesting within an open section of building B11. Red Kite *Milvus milvus* were observed flying over the site.

5.8.5 The trees, scrub and buildings with internal access provide potential bird nesting habitat. In addition, the trees and scrub provide potential foraging habitat for a range of species.

5.8.6 **Evaluation.** The birds recorded within the site are not listed as having any special conservation status. Red Kite are listed on Schedule 1 of the Wildlife and Countryside Act and were observed flying over the site, however, no nesting habitat for this species (i.e. large trees away from human disturbance) is present on-site.

5.8.7 The proposals will result in the loss of potential bird nesting habitat in the form of buildings, trees and scrub, which could potentially affect any nesting birds that may

[14] Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) *'Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man'* British Birds *108*, pp.708-746

be present at the time of works. Accordingly, a number of safeguards in respect of nesting birds are proposed, as detailed in Section 6 below.

5.8.8 The habitat types present within the site are widely replicated within the surrounding area. In addition, higher quality habitat is present within the local area, within designated sites, wooded areas and river corridors. New landscape planting will provide new foraging opportunities for a range of birds and new nesting sites in the long-term. Subject to the creation of habitat as outlined above and the implementation of the reasonable avoidance measures described in Section 6 below, it is considered likely that there will be no significant negative effect on the local population status of birds as a result of the development.

5.9 Invertebrates

5.9.1 **Legislation.** A number of invertebrate species are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). In addition, Large Blue Butterfly *Maculinea arion*, Fisher's Estuarine Moth *Gortyna borelii lunata* and Lesser Whirlpool Ram's-horn Snail *Anisus vorticulus* receive protection under the Conservation of Habitats and Species Regulations 2010 (as amended); refer to Appendix 5108/1 for detailed provisions. A number of invertebrates are also S41 Priority Species.

5.9.2 **Background Records.** Large numbers of records for Stag Beetle *Lucanus cervus* were returned from the desktop study, the closest of which are located approximately 150m south of the site, dated to 2006 and 2007. Other records returned include numerous moth species, all located more than 1km from the site. Other than Stag Beetle, the only potential invertebrate record within 1km of the site is for Small Heath *Coenonympha pamphilus* (Priority Species) within an adjacent 1km grid square.

5.9.3 **Survey Results and Evaluation.** No evidence for the presence of any protected, rare or notable invertebrate species was recorded within the site. The majority of the site comprises hardstanding and buildings likely to support a poor diversity of invertebrates. The grassland, scrub, amenity planting and trees are likely to support a greater abundance and diversity of invertebrates, however these are small patches of habitat. Overall, the site contains few micro-habitats that would typically indicate elevated potential for invertebrates[15], such as a variable topography with areas of vertical exposed soil, areas of species-rich semi-natural vegetation; variable vegetation structure with frequent patches of tussocks combined with short turf; free-draining light soils; walls with friable mortar; or fibrous dung.

5.9.4 Numerous records of Stag Beetle were returned from the desktop study. This species requires decaying wood underground as food for the larval life-stage. The majority of the site is covered by hardstanding which is unsuitable for this species. Where areas of open ground are present, the site is largely well maintained and there are unlikely to be large areas of decaying wood present. Therefore, it is considered relatively unlikely that the site is of high value for Stag Beetle.

[15] Natural England (2010) 'Higher Level Stewardship – Farm Environment Plan (FEP) Manual', 3rd Edition

5.10 Summary

Table 5.2: Summary of faunal evaluation.

Species / Group	Value	Level
Badger	Negligible	Site
Bats – Roosting	Negligible	Site
Bats – Foraging / Commuting	Low	Site
Other Mammals	Low	Site
Birds	Low	Local
Amphibians	Negligible	Site
Reptiles	Negligible	Site
Invertebrates	Low	Local

6 Mitigation Measures and Ecological Enhancements

6.1 Mitigation

6.1.1 Based on the habitats, ecological features and associated fauna identified within / adjacent to the site, it is recommended that the following mitigation measures (**MM1 – MM2**) are implemented under the proposals. Further, detailed mitigation strategies or method statements can be secured via suitably-worded planning conditions, as recommended by relevant best practice guidance (BS 42020:2013).

Trees

6.1.2 **MM1 –Tree Protection.** All trees to be retained within the proposed development shall be protected during construction in line with standard arboriculturalist best practice (BS5837:2012) or as otherwise directed by a suitably competent arboriculturalist. This will involve the use of protective fencing or other methods appropriate to safeguard the root protection areas of retained trees.

Nesting Birds

6.1.3 **MM2 – Timing of Works.** To avoid a potential offence under the Wildlife & Countryside Act, no clearance of suitable nesting habitat (including trees, scrub and buildings) should be undertaken during the bird-nesting season (1st March to 31st August inclusive). If this is not practicable, with respect to the buildings, bird deterrent measures could be employed, such as bird-proofing the buildings in advance of the nesting season. Where potential nesting habitat needs to be cleared during the bird-nesting season, this should first be checked by a competent ecologist in order to determine the location of any active nests. Any active nests identified would then need to be cordoned off (minimum 5m buffer) and protected until the end of the nesting season or until the birds have fledged. These checking surveys would need to be carried out no more than three days in advance of vegetation clearance.

6.2 Ecological Enhancements

6.2.1 The National Planning Policy Framework (NPPF) encourages new developments to maximise the opportunities for biodiversity through incorporation of enhancement measures. The proposals present the opportunity to deliver ecological enhancements at the site for the benefit of local biodiversity, thereby making a positive contribution towards the broad objectives of national conservation priorities and the local Biodiversity Action Plan (BAP). The recommendations and enhancements summarised below are considered appropriate given the context of the site and the scale and nature of the proposals. Through implementation of the following ecological enhancements (**EE1** – **EE5**), the opportunity exists for the proposals to deliver a number of net gains for biodiversity at the site.

Habitat Creation

6.2.2 **EE1 – Landscape Planting and Green Link.** New landscape planting will include the planting of trees and shrubs at the northern and western site boundaries. This new planting will enhance the green link identified along Portman Road (see Section 2). In addition, it will provide new habitat for a range of species, including birds, bats and invertebrates. A new native hedgerow is proposed at the eastern site boundary which will contribute to the Berkshire Biodiversity Strategy's habitat creation targets and

provide a new linear habitat feature of value to a range of fauna. Suitable species for inclusion within the planting would include native trees such as Oak, Birch and Field Maple, whilst native shrub species of particular benefit would include fruit and nut bearing species, such as Blackthorn, Hawthorn, Crab Apple *Malus sylvestris*, Hazel, and Elder.

6.2.3 **EE2 – Wet Grassland.** The proposed SuDS features at the north of the site include wet grass seeding. These new wetland areas will provide enhanced habitat for fauna including invertebrates and birds whilst attenuating flood water.

Bats

6.2.4 **EE3 – Bat Boxes.** To enhance the suitability of the site for roosting bats, bat boxes will be incorporated into a proportion of the new houses. This could include 1FR or 2FR Schwelger Bat Tubes which would provide roosting opportunities for Common and Soprano Pipistrelle which have been frequently recorded in the local area (see Appendix 5108/3 for specifications). To maximise potential use, bat boxes should be erected 3m-5m high, facing south-east or south-west, with clear flight lines. Bat boxes should be erected on houses adjacent to areas of green space and where light spill from street lights will be minimal. The precise number and locations of boxes / roost features should be determined by a competent ecologist, post-planning once the relevant final development design details have been approved.

Birds

6.2.5 **EE4 - Bird Boxes**. New nesting opportunities for birds will be provided through the erection of bird boxes on a number of new houses. These could include integrated brick bird boxes for the Schedule 1 species Black Redstart and the Priority Species House Sparrow *Passer domesticus* which are urban species previously recorded in the local area (see Appendix 5108/4 for example bird box specifications). To maximise potential use bird boxes should be erected 2m-4m high, facing between north and east and with clear flight lines. The precise number and locations of boxes should be determined by a competent ecologist, post-planning once the relevant final development design details have been approved.

Invertebrates

6.2.6 **EE5 – Invertebrate Habitat.** A proportion of any deadwood or logs arising from vegetation clearance works should be retained within the site in a number of buried wood piles located within the green space to provide potential habitat opportunities for invertebrate species, including the Priority Species Stag Beetle (see Appendix 5108/5 for specification). In addition, the provision and management of new native landscape planting will likely provide additional opportunities for invertebrates at the site in the long term.

7 Conclusions

7.1 Aspect Ecology has carried out an Ecological Appraisal of the proposed development, based on the results of a desktop study, Phase 1 habitat survey and detailed protected species surveys.

7.2 The available information confirms that no statutory or non-statutory nature conservation designations are present within or adjacent to the site, and none of the designations within the surrounding area are likely to be adversely affected by the proposals.

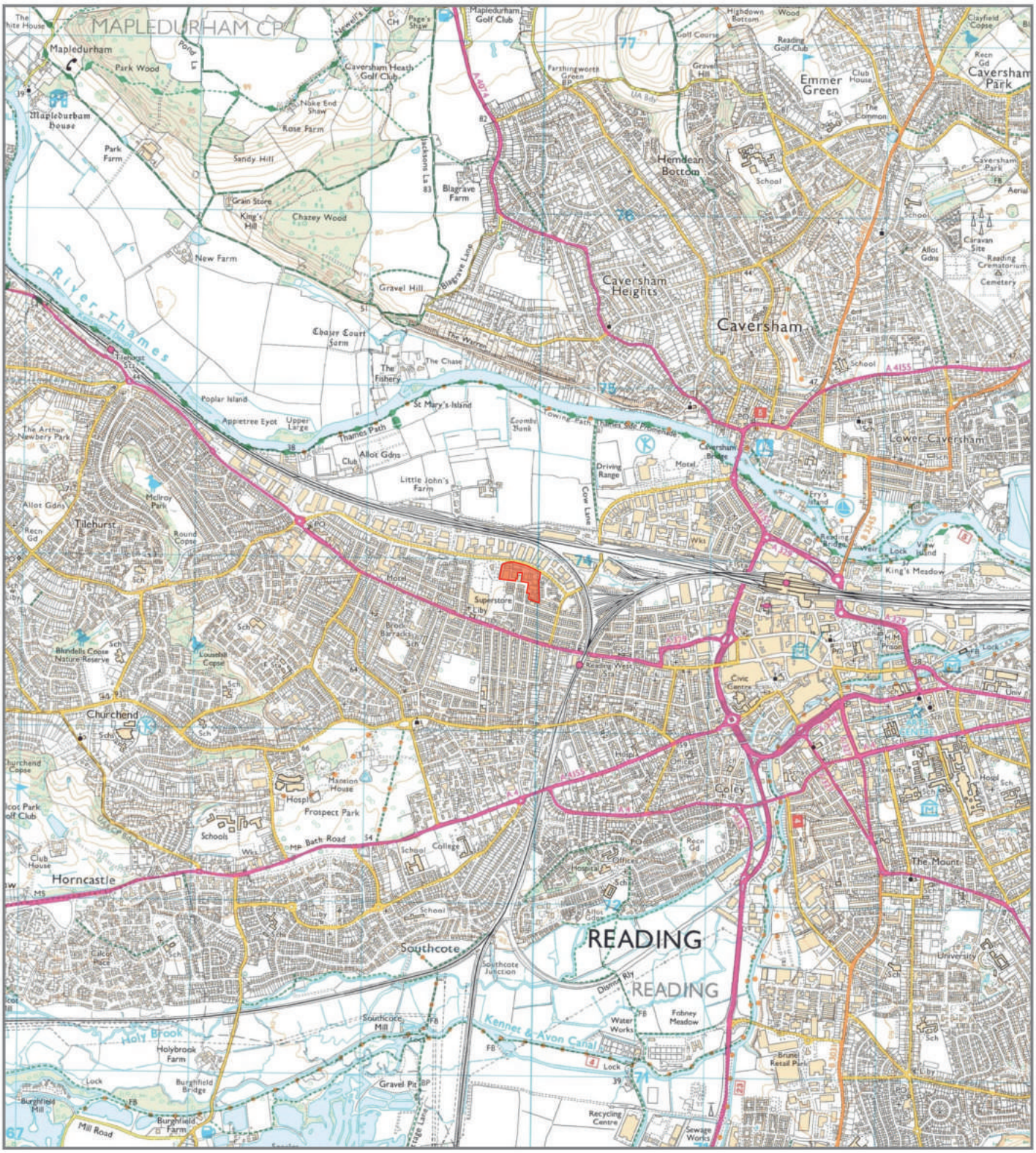
7.3 The Phase 1 habitat survey has established that the site is dominated by habitats of negligible to low ecological value and losses due to the proposals are of negligible to minor ecological significance. New habitat creation has been proposed to offset losses, in conjunction with the landscape proposals.

7.4 The habitats within the site have limited suitability to support protected species. There is the potential for the habitats on site to support nesting birds, accordingly mitigation measures have been proposed to avoid harm to nesting birds. New landscape planting and habitat creation has been proposed to maintain the conservation status of local faunal populations and provide ecological enhancements.

7.5 In conclusion, the proposals have sought to minimise impacts and subject to the implementation of appropriate avoidance, mitigation and compensation measures, it is considered unlikely that the proposals will result in significant harm to biodiversity. On the contrary, the opportunity exists to provide a number of biodiversity benefits as part of the proposals.

Plan 5108/ECO1:

Site Location



Key:

Site Location

aspect ecology

Aspect Ecology Limited - West Court - Hardwick Business Park
Noral Way - Banbury - Oxfordshire - OX16 2AF
01295 276066 - info@aspect-ecology.com - www.aspect-ecology.com

Former Battle Hospital, Portman Road, Reading	PROJECT
Site Location	TITLE
5108/ECO1	DRAWING NO.
-	REV.
January 2018	DATE

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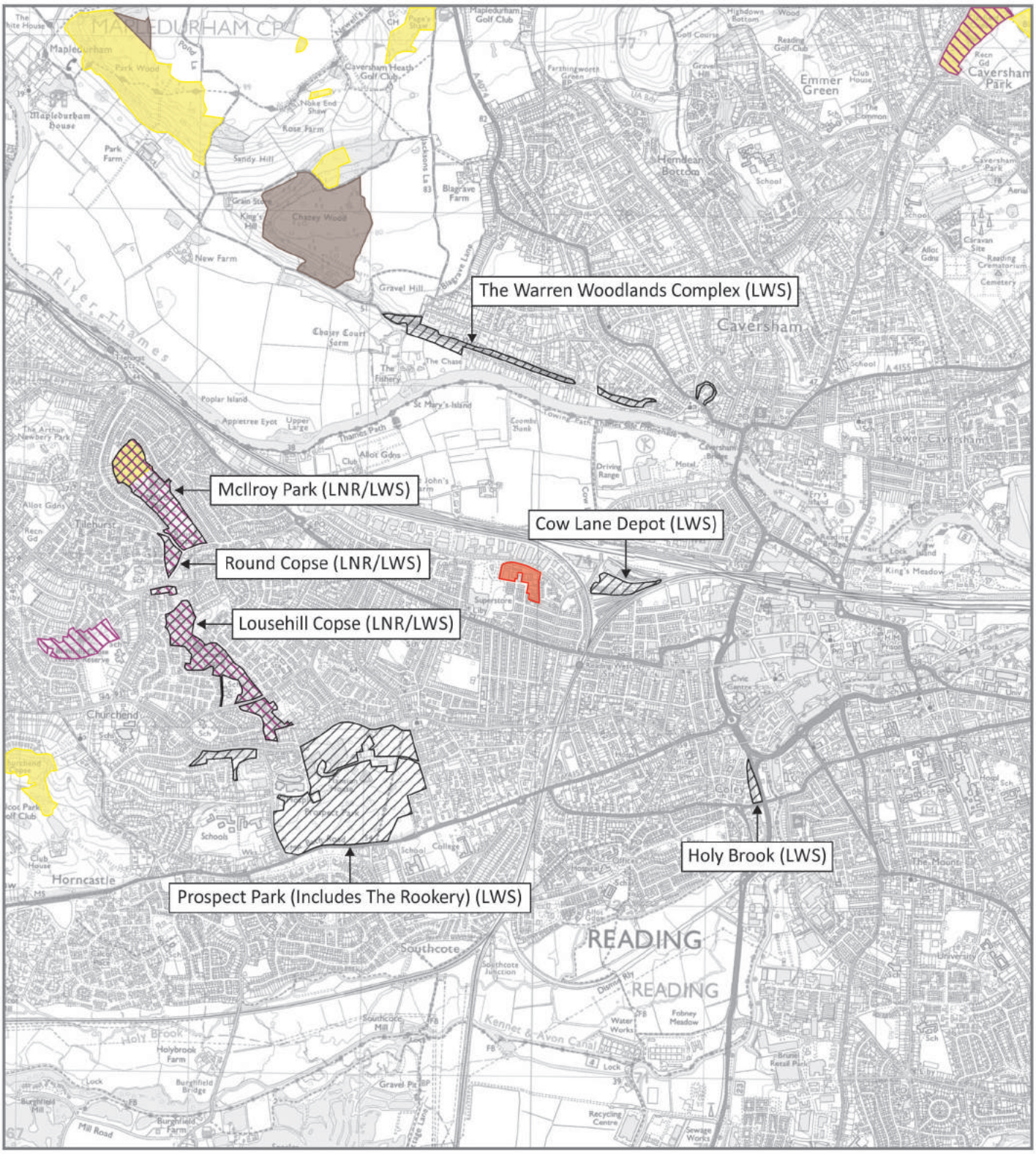
Plan 5108/ECO2:

Ecological Designations



Key:

- Site Location
- Local Nature Reserve (LNR)
- Ancient & Semi - Natural Woodland (ASW)
- Ancient Replanted Woodland (ARW)
- Local Wildlife Site (LWS)

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Aspect Ecology Limited - West Court - Hardwick Business Park
Noral Way - Banbury - Oxfordshire - OX16 2AF
01295 276066 - info@aspect-ecology.com - www.aspect-ecology.com

Former Battle Hospital, Portman Road, Reading	PROJECT
Ecological Designations	TITLE
5108/ECO2	DRAWING NO.
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Plan 5108/ECO3:

Habitats and Ecological Features

KEY:

- Site Boundary
- Amenity Grassland
- Rough Grassland
- Scattered Scrub
- Dense Scrub
- Tall Ruderal
- Tree
- Building
- Hardstanding
- Waterbody
- Amenity Planting

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Aspect Ecology Limited - West Court - Hardwick Business Park
Noral Way - Banbury - Oxfordshire - OX16 2AF
01295 276066 - info@aspect-ecology.com - www.aspect-ecology.com

Former Battle Hospital, Portman Road, Reading	PROJECT
Habitats and Ecological Features	TITLE
5108/ECO3	DRAWING NO.
-	REV.
January 2018	DATE

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Photographs

Photograph 1 : Hardstanding with Buddleia colonising gaps

Photograph 2 : Rough grassland

Photograph 3 : Dense Bramble scrub

Photograph 4 : Ephemeral waterbody

Appendix 5108/1:

Legislation Summary

LEGISLATION SUMMARY

1. In England and Wales primary legislation is made by the UK Parliament, and in Scotland by the Scottish Parliament, in the form of Acts. The main piece of legislation relating to nature conservation in the UK is the Wildlife and Countryside Act 1981 (as amended).

2. Acts of Parliament confer powers on Ministers to make more detailed orders, rules or regulations by means of secondary legislation in the form of statutory instruments. Statutory instruments are used to provide the necessary detail that would be too complex to include in an Act itself[1]. The provisions of an Act of Parliament can also be enforced, amended or updated by secondary legislation.

3. In summary, the key pieces of legislation relating to nature conservation in the UK are:

- Wildlife and Countryside Act 1981 (as amended)
- Protection of Badgers Act 1992
- Hedgerows Regulations 1997
- Countryside and Rights of Way (CRoW) Act for England and Wales 2000
- Natural Environment and Rural Communities Act 2006
- Conservation of Habitats and Species Regulations 2010 (as amended)

4. A brief summary of the relevant legislation is provided below. The original Acts and instruments should be referred to for the full and most up to date text of the legislation.

5. **Wildlife and Countryside Act 1981 (as amended)**. The WCA Act provides for the notification and confirmation of Sites of Special Scientific Interest (SSSIs) identified for their flora, fauna, geological or physiographical features. The Act contains strict measures for the protection and management of SSSIs.

6. The Act also refers to the treatment of UK wildlife including protected species listed under Schedules 1 (birds), 5 (mammals, herpetofauna, fish, invertebrates) and 8 (plants).

7. Under Section 1(1) of the Act, all wild birds are protected such that is an offence to intentionally:

- Kill, injure or take any wild bird;
- Take, damage or destroy the nest of any wild bird whilst in use* or being built;
- Take or destroy an egg of any wild bird.

* The nests of birds that re-use their nests as listed under Schedule ZA1, e.g. Golden Eagle, are protected against taking, damage or destruction irrespective of whether they are in use or not.

8. Offences in respect of Schedule 1 birds are subject to special, i.e. higher, penalties. Schedule 1 birds also receive greater protection such that it is an offence to intentionally or recklessly:

- Disturb any wild bird included in Schedule 1 while it is building a nest or while it is in, on or near a nest containing eggs or young;
- Disturb dependent young of such a bird

[1] http://www.parliament.uk/business/bills-and-legislation/secondary-legislation/statutory-instruments/

9. Under Section 9(1) of the Act, it is an offence to:

- Intentionally kill, injure or take any wild animal included in Schedule 5.

10. In addition, under Section 9(4) it is an offence to intentionally or recklessly:

- Obstruct access to, any structure or place which any wild animal included in Schedule 5 uses for shelter or protection; or
- Disturb any wild animal included in Schedule 5 while occupying a structure or place which it uses for that purpose.

11. Under Section 13(1) it is an offence:

- To intentionally pick, uproot or destroy any wild plant listed in Schedule 8; or
- Unless the authorised person, to intentionally uproot any wild plant not included in Schedule 8.

12. The Act also contains measures (S.14) for preventing the establishment of non-native species that may be detrimental to native wildlife, prohibiting the introduction into the wild of animals (releases or allows to escape) and plants (plants or causes to grow) listed under Schedule 9.

13. **Protection of Badgers Act 1992.** The Act 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. It should be noted that the legislation is not intended to prevent properly authorised development. Under the Act it is an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat* a Badger, or attempt to do so;
- To intentionally or recklessly interfere with a sett# (this includes disturbing Badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

* the intentional elimination of sufficient foraging area to support a known social group of Badgers may, in certain circumstances, be construed as an offence

\# A sett is defined as "*any structure or place which displays signs indicating current use by a Badger*". Natural England advice (June 2009) is that a sett is protected so long as such signs remain present, which in practice could potentially be for some time after the last actual occupation by Badger. Interference with a sett includes blocking tunnels or damaging the sett in any way

14. Licences can be obtained from the Statutory Nature Conservation Organisation (SNCO) for development activities that would otherwise be unlawful under the legislation, provided there is suitable justification. The SNCO for England is Natural England.

15. **Hedgerows Regulations 1997**. 'Important' hedgerows (as defined by the Regulations) are protected from removal (up-rooting or otherwise destroying). Various criteria specified in the Regulations are employed to identify 'important' hedgerows for wildlife, landscape or historical reasons.

16. **Countryside and Rights of Way (CRoW) Act for England and Wales 2000.** The CRoW Act provides increased measures for the management and protection of SSSIs and strengthens wildlife enforcement legislation. Schedule 12 of the Act amends the species provisions of the WCA 1981, strengthening the legal protection for threatened species. The Act also introduced a duty on Government to have regard to the conservation of biodiversity and maintain lists of species and habitats for which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity.

17. **Natural Environment and Rural Communities Act 2006.** Section 41 of the NERC Act requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as local planning authorities, in implementing their duty under Section 40 of the Act, to have regard to the conservation of biodiversity in England, when exercising their normal functions. 56 habitats and 943 species of principal importance are included on the S41 list. These are all the habitats and species in England that were identified as requiring action in the UK Biodiversity Action Plan (BAP).

18. **Conservation of Habitats and Species Regulations 2010 (as amended).** The Regulations enact the European Union's Habitats Directive (92/43/EEC) in the UK. The Habitats Directive was designed to contribute to the maintenance of biodiversity within member states through the conservation of sites, known in the UK as Special Areas of Conservation (SACs), containing habitats and species selected as being of EC importance (as listed in Annexes I and II of the Habitats Directive respectively). Member states are required to take measures to maintain or restore these natural and semi-natural habitats and wild species at a favourable conservation status.

19. The Regulations also require the compilation and maintenance of a register of European sites, to include SACs and Special Protection Areas (SPAs)[2] classified under Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive). These sites constitute the Natura 2000 network. The Regulations impose restrictions on planning decisions likely to significantly affect SPAs or SACs.

20. The Regulations also provide protection to European Protected Species that largely overlaps with the WCA 1981, albeit the provisions are generally stricter. Under Regulation 41 it is an offence, *inter alia*, to:

- Deliberately capture, injure or kill any wild animal of a European Protected Species;
- Deliberately disturb any wild animals of any such species, including in particular any disturbance likely to impair their ability to survive, to reproduce or to hibernate, or migrate, or which is likely to affect significantly their local distribution or abundance;
- Deliberately take or destroy the eggs of such an animal;
- Damage or destroy a breeding site or resting place of such an animal

21. The Regulations do provide a licensing system that permit otherwise illegal activities in relation to European Protected Species, subject to certain tests being fulfilled.

[2] Special Protection Areas (SPAs) are protected sites classified in accordance with Article 4 of the EC Directive on the Conservation of Wild Birds (79/409/EEC) (aka the Birds Directive), which came into force in April 1979. SPAs are classified for rare and vulnerable birds (as listed on Annex I of the Directive), and for regularly occurring migratory species.

Appendix 5108/2:

Building Inspection Survey Results

Building	Photographs	Description	Features providing bat roosting potential	Evidence of bats
B1		Single storey flat roof building in active use as a storage depot. The building has a steel frame with corrugated metal cladding, large sliding doors and large numbers of windows. A light Ivy covering is present in some areas.	The northern aspect has an overhang with water damage to the plyboard under-surface allowing access to the cavity. Internal access to the building is possible through gaps in the structure, however internally the building will be light and the building materials will create fluctuating climatic conditions unfavourable to roosting bats. Overall, buildings B1 is of <u>negligible potential for roosting bats.</u>	No evidence of bats recorded.
B2		Building B2 is linked by a small section to building B1. Building B2 is in active use for storage and ambulance/car parking. Parts of the building have red brick walls, while the majority is a steel girder framework clad with corrugated metal. The roof is pitched with numerous skylights present. External floodlights are present. Internally the building has a large open space, with the steel framework exposed.	The building appears well sealed. Should internal access be possible, the interior is light and the construction materials will create fluctuating climatic conditions unfavourable to roosting bats. Overall, building B2 is of <u>negligible potential for roosting bats.</u>	No evidence of bats recorded.
B3		Building 3a is a single storey building in active use as a workshop. The building has a steel girder framework and a pitched roof. The southern elevation is clad with corrugated asbestos cement and the northern elevation is clad with transparent corrugated plastic and corrugated asbestos cement. Internally there is a dividing wall of transparent corrugated plastic and the roof is open to the framework with numerous skylights present. Buildings 3b and B3c are single storey flat roof sections to the east and west of B3a. These two sections have a steel girder framework and corrugated metal cladding. Building B3b has some small windows, while B3c has none. Small open storage sheds and utilities are also present. External floodlights are present.	Most sections of the building are well sealed. Where internal access is possible, section B3a is very light and all sections are constructed with materials that would create highly fluctuating climatic conditions. Overall, building B3 is of <u>negligible potential for roosting bats.</u>	No evidence of bats recorded.

Building	Photographs	Description	Features providing bat roosting potential	Evidence of bats
B4		A single storey, flat roof building, with a steel girder framework clad with corrugated metal. Long sections of windows are present at the upper level. External floodlights are present.	The building is well sealed with no potential external bat roosting features observed. Overall, building B4 is of negligible potential for roosting bats.	No evidence of bats recorded.
B5		Small single storey storage building. The walls are of concrete sections with pebble-dash, and the pitched roof is clad with corrugated asbestos cement. External floodlights are present.	The building is well sealed and no potential external bat roosting features were observed. Overall, building B5 is of negligible potential for roosting bats.	No evidence of bats recorded.
B6		A two storey office building. The lower storey comprises exposed brickwork while the upper storey and pitched roof is clad with metal. Small windows are present throughout. External floodlights are present.	The building appears new and well-sealed. No external potential bat roosting features were observed. Overall, building B6 is of negligible potential for roosting bats.	No evidence of bats recorded.
B7 (off-site)		A single storey red brick building in active use as offices and a reception. A single storey side extension is present to the west. The building has a flat bitumen felt clad roof. Small windows are present throughout. External floodlights are present.	The building appears new and well-sealed. No external potential bat roosting features were observed. Overall, building B7 is of negligible potential for roosting bats.	No evidence of bats recorded.

Building	Photographs	Description	Features providing bat roosting potential	Evidence of bats
B8 (off-site)		A small metal constructed building containing services.	No potential bat roosting features were observed. Overall, building B8 is of <u>negligible potential for roosting bats.</u>	No evidence of bats recorded.
B9 (off-site)		Two metal shipping containers.	No potential bat roosting features were observed. Overall, building B9 is of <u>negligible potential for roosting bats.</u>	No evidence of bats recorded.
B10		Large incinerator building with a two storey main section and a single storey extension to the west. The entire building is constructed of a steel girder framework and metal corrugated cladding with a flat roof. Windows are present within the second storey of the main section but not the single storey extension. Large flues are present.	Gaps for internal access are present, however the construction materials will create fluctuating climatic conditions unfavourable to roosting bats. No external potential bat roosting features were observed. Overall, building B10 is of <u>negligible potential for roosting bats.</u>	No evidence of bats recorded.
B11	 	One to two storey height disused building. The building has a steel girder framework and is clad in corrugated metal. Where the building is taller in height a continuous line of windows is present at the upper level. A three storey water tower is present in the centre. Numerous broken windows are present and a door is open. Internally, parts of the ceiling are boarded whilst large areas have the boards missing and the framework exposed.	Internal access to the building is readily possible, however the building is very light, draughty and the construction materials would create fluctuating climatic conditions unfavourable for roosting bats. Overall, building B11 is of <u>negligible potential for roosting bats.</u>	No evidence of bats recorded.

Building	Photographs	Description	Features providing bat roosting potential	Evidence of bats
B12		Small single storey brick built building with a flat roof. Likely to be a substation building.	The building is in good condition and no external potential bat roosting features were observed. Overall, building B12 is of <u>negligible potential for roosting bats.</u>	No evidence of bats recorded.
B13		Two storey flat roofed building. The first storey comprises exposed brick and the upper storey is clad with corrugated metal. Numerous windows are broken.	Internal access is possible, however the conditions will be light, draughty and with fluctuating climatic conditions. Overall, building B13 is of <u>negligible potential for roosting bats.</u>	No evidence of bats recorded.
B14	 	Single storey building constructed of breezeblocks. The northern section (B14a) is open fronted with a sloped corrugated metal roof forming a shelter over ambulance vehicle parking. On the south-east corner is a small extension (B14b) rendered with concrete, with a sloped corrugated asbestos cement roof. Metal sliding doors are present on the eastern aspect of B14b and no widows are present. The southern section (B14c) is a segmented concrete structure with a flat roof, no windows, and an open doorway at the western end.	Small gaps are present in the concrete of B14c at joins and where pipework is present. Overall, building B14 is of <u>negligible potential for roosting bats.</u>	No evidence of bats recorded.
B15		A prefabricated, single storey building with metal cladding and an up-and-over shutter door. There is a pitched steel framed roof with a plastic covering.	Internal access is likely possible at the door and roof structure. However the construction materials will not provide good insulating properties and will create highly fluctuating climatic conditions. Overall, building B15 is of <u>negligible potential for roosting bats.</u>	No evidence of bats recorded.

Building	Photographs	Description	Features providing bat roosting potential	Evidence of bats
B16		Three storey red brick building containing numerous flat that are unoccuppied. The roof is flat and clad with bitumen felt. There are numerous windows present with old wooden frames. Street lights are present in the car park adjacent to the building.	The building appears to be in good condition and no external potential bat roosting features were observed. Overall, building B16 is of <u>negligible potential for roosting bats.</u>	No evidence of bats recorded.
B17		Single storey red brick residential building which is currently unoccupied. The building has a flat bitumen felt clad roof and several windows.	The north east corner has damage to the wall brickwork, creating access to a cavity between the brickwork and a concrete layer. However, this appears to be new damage to the structure and no signs of bats utilising this feature are present. Overall, building B17 is of <u>negligible potential for roosting bats.</u>	No evidence of bats recorded.

Appendix 5108/3:

Example Bat Box Specifications

Bat Tubes

This bat brick is designed for buildings, or underneath bridges, arches or tunnels, where conditions are relatively humid. It is particularly useful for siting in new buildings or bridges to attract bats, or to provide new roost sites where existing buildings with bats are being renovated.

Schwegler 1FR Bat Tube

This long box can be installed within brick masonry, beneath plasterwork or wood panelling, or incorporated into concrete structures such as factory buildings or bridges. Inside it contains a woodcrete surface, a roughened wood board, and a metal mesh, providing a choice of roosting areas depending on the weather conditions and the bats' habits. This box is maintenance-free as the entrance slit is at the bottom.

Woodcrete construction, width 20cm, height 47cm, depth 12.5cm, weight 13kg.

Schwegler 2FR Bat Tube

The same design as the 1FR but with holes in the sides. This allows multiple tubes to be placed next to each other to form a much larger bat roost.

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Appendix 5108/4:

Example Bird Box Specifications

Bird Boxes

Bird Brick House

The Bird Brick House is a cleverly designed bird box with a removable brick front, that provides a permanent nesting site for hole-nesting birds, as an interegral part of the fabric of a building.

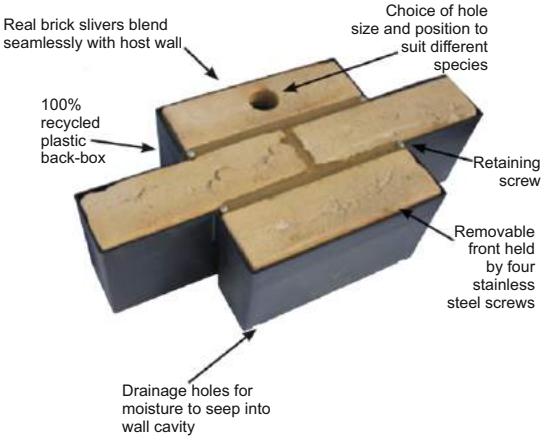
The brick bond of the host wall depends on the type of box, i.e. Stretcher Bond (SB) or Quarter Bond (QB).

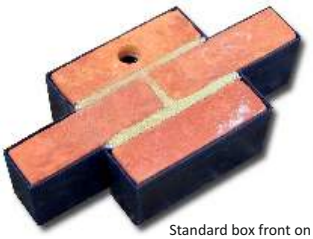
The main housing of the box is made out of 100% recycled plastic. The front plate is bonded with slivers of bricks matching the host wall, one of which will have a bird access hole cut into it (size depending on target bird species).

Four stainless steel screws hold the removable brick-faced front plate to the box, meaning that the box blends in seamlessly with the host wall whilst enabling easy cleaning and monitoring of the box.

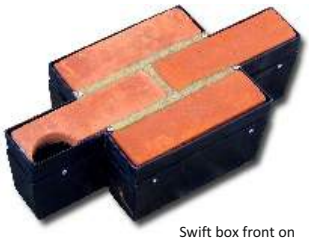
Available in SB to fit half bond brick work, and QB to fit english bond, old english and flemish bond. Both box types are designed for 3 inch or 75mm courses only.

Available in numerous entrance whole sizes:
28mm for great tits, tree sparrows and pied flycatchers
32mm for house sparrows and nuthatches
40mm for black redstart
50mm for starlings
50mm oval hole for swifts




Standard box front on

Standard box front off


Swift box front on

Swift box front off

Sparrow box front on

Sparrow box front off

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Appendix 5108/5:

Buried Log Pile Specifications

Stag Beetle Loggery

Stag beetles larvae live underground feeding on decaying wood, and this simple feature will create new breeding habitat for them.

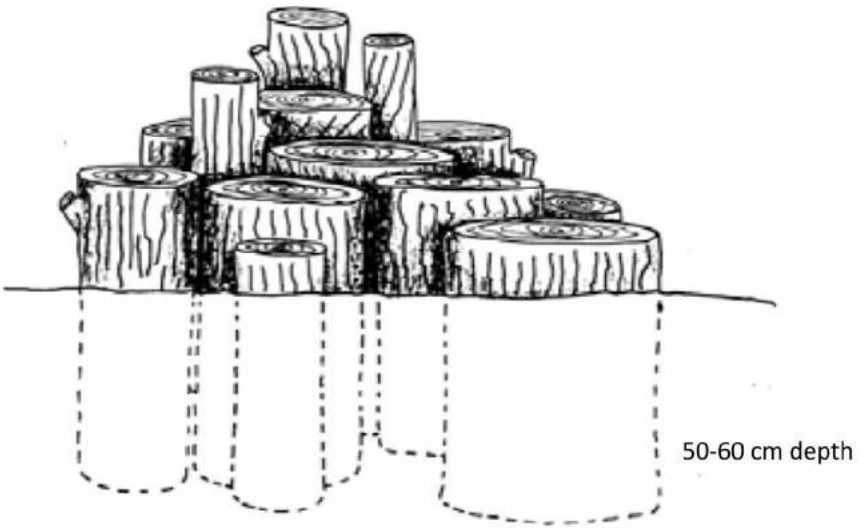

Image taken from the London Wildlife Trust publication: Stag Beetle: an advice note for its conservation in London, 2000.

Create a "loggery", by simply partially burying hardwood logs (with bark still attached) c.60cm into the ground, packing logs as closely together as possible. Position in partially shaded areas to prevent dessication. Avoid making log piles too high, or the timber will dry out. The logs should be at least the thickness of an adult's arm (10-50cm diameter).

Wood from any broadleaved tree can be used, but oak, beech or fruit trees (such as apple/pear) are best, as these support the richest insect communities.

A buffer zone should be created around the logs so that the soils and vegetation are protected as much as possible from disturbance, and ideally the surrounding vegetation should not be cut between May-September. Allowing plants to grow over the log pyramid both retains moisture and provides shade for the stag beetles.

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Aspect Ecology Ltd
West Court
Hardwick Business Park
Noral Way
Banbury
Oxfordshire OX16 2AF

T: 01295 276066
F: 01295 265072
E: info@aspect-ecology.com
W: www.aspect-ecology.com