



URBAN EDGE
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NATURAL PROGRESSION

**Abbey Gardens, Blunsdon,
Swindon, Wiltshire**

Ecological Impact Assessment

March 2024

Abbey Gardens, Blunsdon, Swindon, Wiltshire

Ecological Impact Assessment

Client:	Bower Mapson Homes	
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Abbreviations

BoCC	Birds of Conservation Concern
CRoW	Countryside and Rights of Way Act 2000
EcIA	Ecological Impact Assessment
EPS	European Protected Species
GCN	Great crested newt
HPI	Habitats of Principal Importance
HRA	Habitats Regulations Assessment
IEF	Important Ecological Features
LGS	Local Geological Site
LWS	Local Wildlife Site
MAGIC	Multi-agency Geographic Information for the Countryside
NERC	Natural Environment and Rural Communities Act 2006
NPPF	National Planning Policy Framework
ODPM	Office of the Deputy Prime Minister
PBA	Protection of Badgers Act 1992
PEA	Preliminary Ecological Appraisal
PPG	Planning Practice Guidance
SAC	Special Area of Conservation
SPA	Special Protection Area
SPI	Species of Principal Importance
SSSI	Site Special Scientific Interest
WCA	Wildlife and Countryside Act 1981
WSBRC	Wiltshire and Swindon Biological Records Centre
Zol	Ecological Zone of Influence

0 Executive Summary

- 0.1.1 An Ecological Impact Assessment was prepared for the site of a proposed residential development at Abbey Gardens, Blunsdon, Swindon, Wiltshire.
- 0.1.2 The Ecological Impact Assessment process was undertaken with reference to relevant parts of the *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*, and in the context of national planning policy and guidance, local planning policy, UK wildlife and animal welfare legislation.
- 0.1.3 Baseline information was obtained from an ecological survey of the Application Site by professional ecologists during 2024, including an ecology desk study and Preliminary Ecological Appraisal (based on an extended UK Habitat Classification survey). Evaluation of the baseline survey work identified the following Important Ecological Features relevant to the development: Haydon Meadows SSSI, great crested newt, badger, roosting bats (buildings and stone wall), and reptiles.
- 0.1.4 Due to the anticipated timeframe for the planning application to be determined, and notwithstanding the requirements of paragraph 99 of ODPM Circular 06/2005 (see section 2.2.11), this Ecological Impact Assessment has been carried out in advance of protected species surveys for great crested newt, badger, roosting bats and reptiles. In the absence of survey data, the report assumes a reasonable worst-case scenario in relation to the presence of these species. The survey season starts in May; once results are available the Ecological Impact Assessment will be amended.
- 0.1.5 The following embedded mitigation is relied upon during the impact assessment: the Application Site will join the District Level Licensing scheme for great crested newt; removal of nesting bird habitats will be undertaken between September and February or under ecological supervision; and a method statement will be prepared to ensure adequate control measures are adopted during construction to prevent the spread of wall cotoneaster.
- 0.1.6 Following assessment of the Proposed Development's impacts during its construction and operation phases, additional mitigation is proposed, including:
- ▶ A badger sett closure licence will need to be obtained from Natural England after planning permission is issued and before commencing ground works in the vicinity of sett S1.
 - ▶ A Natural England European Protected Species Mitigation Licence will need to be obtained for roosting bats in building B2 after planning permission is granted and before development commences.
 - ▶ The use of external lighting will be avoided or reduced to the minimum required for its intended purpose. Where external lighting is to be provided, it should be low-level, directional lighting with minimal spill and glare. Lighting will not be directed towards the

replacement roosts or the boundary stone wall. The measures relating to sensitive lighting can be secured via an appropriately worded planning condition.

- ▶ A translocation of reptiles from the developable areas to a receptor site of similar character, preferably within the Application Site, or nearby, preceded by habitat enhancements to increase the carrying capacity of the receptor site.

0.1.7 Table 0.1 outlines the residual effects following the implementation of additional mitigation measures not already embedded in the design of the Proposed Development and identifies whether these are significant in relation to national and local planning policy. No residual effects that are significant in terms of national and local planning policy are anticipated to occur as a result of the Proposed Development.

0.1.8 Recommendations R1 to R20 as listed in the 2024 Preliminary Ecological Appraisal continue to apply and should be implemented as part of the scheme.

Table 0.1: Residual effects

Feature	Significant residual effects	
	Construction phase	Operation
-		
Haydon Meadow Site of Special Scientific Interest	No effect	No effect
Great crested newt	No effect	No effect
Badger	Negligible negative effect (uncertain)	No effect
Roosting bats	Minor negative effect at the Local level (uncertain)	Negligible negative effect at the Local level (uncertain)
Reptiles	Negligible negative effect at Local level (uncertain)	No effect

1 Introduction

1.1 Purpose of this Report

- 1.1.1 Urban Edge Environmental Consulting was commissioned by the applicant, Bower Mapson Homes, to produce an Ecological Impact Assessment (EIA) Report for the site of a proposed residential development at Abbey Gardens, Blunsdon, Swindon, Wiltshire (Grid Reference: SU 13664 89791). Dan Maude BSc (Hons) MRes is the principal author of this report.
- 1.1.2 This standalone report was commissioned in order to provide a single document containing the ecological baseline and assessment information for the Proposed Development. It identifies features of ecological importance (including legally protected sites and species), specifies mitigation requirements for the Proposed Development, and supports the implementation of national biodiversity strategies and national planning policies for the preservation of biodiversity whilst enabling sustainable development.

1.2 Objectives of this Report

- 1.2.1 The objectives of the Ecological Impact Assessment are:
- ▶ To identify and describe all likely significant ecological effects associated with the Proposed Development;
 - ▶ To set out the mitigation measures required to ensure compliance with nature conservation legislation and to address any significant effects;
 - ▶ To identify how mitigation measures will be secured;
 - ▶ To provide an assessment of the significance of any residual effects;
 - ▶ To set out the requirements for post-construction monitoring of likely effects identified;
 - ▶ To identify appropriate enhancement measures.

1.3 Site Description

- 1.3.1 The Application Site lies within the village and civil parish of Blunsdon in the Swindon Borough of Wiltshire. The survey area comprised c.0.50ha of undeveloped land, currently dominated by recently felled woodland that had been replaced with large patches of bare ground, low growing bramble scrub and sporadic sections of grassland. Existing modified grassland and derelict buildings were present in the north of the survey area.
- 1.3.2 The survey area was bound by a high, stone wall that surrounded the perimeter. Beyond the boundary wall the survey area was bordered to the north by Tadpole Lane, to the east by Blunsdon Abbey, to the south by a public park and to the west by new residential development. The extent of the survey area is outlined in red on Figure 1.1.

- 1.3.3 The wider landscape is characterised by extensive residential development, particularly to the east and south with a patchwork of arable land and pasture to the north and west. Two ponds lie within 250m of the survey area.

1.4 Proposed Development

- 1.4.1 Planning consent is being sought for a residential development. The proposals would include the construction of five new dwellings, together with parking, access, landscaping and associated facilities. The proposed site layout is provided at Figure 1.2.

1.5 Assessment Status

- 1.5.1 Due to the anticipated timeframe for the planning application to be determined, and notwithstanding the requirements of paragraph 99 of Office of the Deputy Prime Minister (ODPM) Circular 06/2005 (see section 2.2.11), this EclA has been carried out in advance of presence / absence surveys for great crested newts (GCN) *Triturus cristatus*, badger *Meles meles*, roosting bats and reptiles. In the absence of survey data, the report assumes a reasonable worst-case scenario in relation to the presence of these species. The survey season starts in May; once results are available the EclA will be amended.

Abbey Gardens, Blunsden, Wiltshire

 Survey area



Figure 1.1: Site location plan



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Ordnance Survey 0100031673

Scale (at A4): 1:4,000 Created by: MT

Date: Jan 2024 Reviewed by: NP

Drawing number:

UE0644ECO-AbbeyGardens_240129:Site location

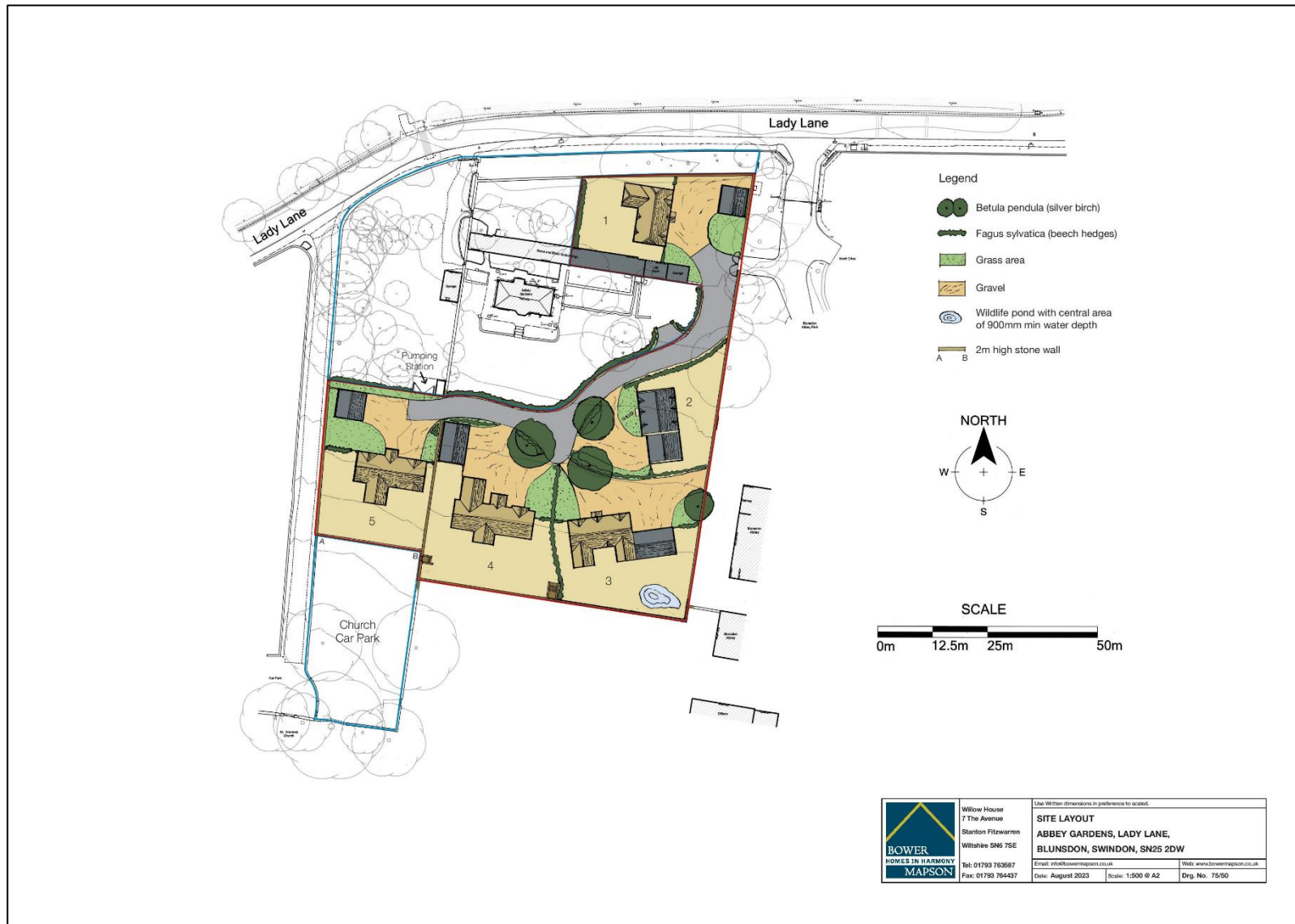


Figure 1.2: Proposed site plan

2 Planning Policy and Legislation

2.1 Introduction

2.1.1 This section briefly summaries planning policy, legislation and related issues which are relevant to the Proposed Development. The following text does not constitute legal or planning advice.

2.2 National Planning Policy

National Planning Policy Framework

2.2.1 The National Planning Policy Framework (NPPF; MHCLG, 2023) outlines the Government's commitment to the conservation of wildlife and natural features. Section 15 aims to conserve and enhance the natural environment by avoiding, adequately mitigating or compensating for significant harm to biodiversity, and delivering net gains for biodiversity. The planning system is required to (Paragraph 180):

- ▶ *“Protect and enhance valued landscapes, sites of biodiversity or geological conservation value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);*
- ▶ *“Recognise the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;*
- ▶ *Maintain the character of the undeveloped coast, while improving public access to it where appropriate;*
- ▶ *“Minimise impacts on and provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current & future pressures;*
- ▶ *“Prevent new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
- ▶ *“Remediate and mitigate despoiled, degraded, derelict, contaminated and unstable land, where appropriate.”*

2.2.2 The NPPF requires that local plans should: “distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value...; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries” (Paragraph 181). To protect and enhance biodiversity and geodiversity, the NPPF states that planning policies should (Paragraph 185):

- ▶ *“Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and*
- ▶ *“Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.”*

2.2.3 When determining planning applications, local planning authorities should aim to protect and enhance biodiversity by applying the following principles (Paragraph 186):

- ▶ *“If significant harm to biodiversity 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;*
- ▶ *“Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
- ▶ *“Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*
- ▶ *“Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.”*

2.2.4 At Paragraph 187 it is stated that: “the following wildlife sites should be given the same protection as habitats sites:

- ▶ *“Potential Special Protection Areas and possible Special Areas of Conservation;*
- ▶ *“Listed or proposed Ramsar sites; and*
- ▶ *“Sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.”*

2.2.5 At Paragraph 188 it is stated that: “the presumption in favour of sustainable development 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” [commonly referred to as Habitats Regulations Assessment].

2.2.6 In Paragraph 191 the NPPF states that “planning policies and decisions should ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In so doing they should... limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation”. This applies to protected species that are a material consideration in the planning process including bats and may also apply to other light sensitive species.

2.2.7 The policies within the NPPF (and accompanying guidance) are a material planning consideration.

Planning Policy Guidance

2.2.8 The online Planning Practice Guidance¹ (PPG) accompanies the NPPF and provides detailed guidance on plan making and the determination of planning applications. Its section on the natural environment² addresses: agricultural land, soils and brownfield land of environmental value; green infrastructure; biodiversity, geodiversity and ecosystems; and landscape. In relation to biodiversity, it presents details on minimising impacts, delivering net gains, plan making, decision taking, protected sites/species, and irreplaceable habitats including ancient woodland.

2.2.9 The ODPM Circular 06/2005 provides further detailed guidance on the application of the law relating to planning and nature conservation in England. It complements the expression of national planning policy in the NPPF and PPG. The Circular includes guidance on internationally and nationally designated sites, habitats and species outside of designated sites, and protected species. The PPG and Circular 06/2005 are a material planning consideration.

2.2.10 Paragraph 98 of Circular 06/2005 advises that the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat. Local authorities should hence “consult Natural England before granting planning permission. They should consider attaching appropriate planning conditions or entering into planning obligations under which the developer would take steps to secure the long-term protection of the species. They should also advise developers that they must comply with any statutory species’ protection provisions affecting the site concerned...”

2.2.11 Paragraph 99 of Circular 06/2005² advises that “it is essential that the presence or otherwise of protected species, and the extent that they may be affected by the Proposed Development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision. The need to ensure ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances, with the result that the surveys are carried out after planning permission has been granted.”

¹ Ministry of Housing, Communities and Local Government (2016): *Planning Practice Guidance*. Accessed online [01/03/2023] at: <https://www.gov.uk/government/collections/planning-practice-guidance>

² Ministry of Housing, Communities and Local Government (2016): *Planning Practice Guidance: Natural environment*. Accessed online [01/03/2023] at: <https://www.gov.uk/guidance/natural-environment>

2.2.12 In addition, Natural England offers ‘Standing Advice’³ on protected sites and species which contains information on potentially significant impacts, and provides advice to planners on deciding if there is a reasonable likelihood of protected species being present. It also addresses recommended survey effort, timing and methods with regard to protected species, together with appropriate mitigation measures, in relation to planning applications. The Standing Advice is a material consideration planning decisions. The Chartered Institute of Ecology and Environmental Management (CIEEM) also provide guidance on survey standards and impact assessment techniques (e.g. CIEEM, 2018).

2.3 Local Planning Policy

Adopted Local Plan

2.3.1 The Swindon Borough Council Local Plan 2026 (Swindon Borough Council, 2015) guides development and use of land within the district. Policies of relevance to ecology are described below:

EN4: Biodiversity and Geodiversity

a) *Development will avoid direct and indirect negative impacts upon biodiversity and geodiversity sites as identified on the Policies Map. This will be achieved through sensitive site location and layout, and by maintaining sufficient buffers and ecological connectivity with the wider environment. Damage or disturbance to local sites will generally be unacceptable, other than in exceptional circumstances where it has been demonstrated that such impacts are:*

- *unavoidable and reduced as far as possible or are outweighed by other planning considerations in the public interest, and*
- *where appropriate compensation measures can be secured*

b) *All development, where appropriate shall protect and enhance biodiversity and provide net local biodiversity gain. Where this is demonstrably not achievable, mitigation and compensation measures will be agreed.*

Wiltshire Biodiversity Action Plan

2.3.2 The Wiltshire Biodiversity Action Plan⁴ sets out guidance to protect and enhance the county’s designated sites, Ancient Woodland, Biodiversity Opportunity Areas, and other green infrastructure. It identifies the following priority habitats and species of relevance:

- ▶ Woodland (including Ancient Woodland)
- ▶ Wood-pasture, parkland and ancient trees

³ Natural England (2016): *Planning and Development: Protected Sites and Species*. Accessed online [01/03/2023] at: <https://www.gov.uk/topic/planning-development/protected-sites-species>

⁴ Wiltshire Wildlife Trust (2008): *Wiltshire Biodiversity Action Plan*. Accessed online [22/03/2024] at: <https://www.wiltshirewildlife.org/sites/default/files/2022-08/wiltshirebap2008%281%29.pdf>

- ▶ Ancient and species rich hedgerows
- ▶ Traditional Orchards
- ▶ Standing open water
- ▶ Lowland heathland
- ▶ Built environment
- ▶ Calcareous grassland
- ▶ Unimproved neutral grassland
- ▶ Rivers, streams and associated habitats
- ▶ Bats (including barbastelle *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, greater horseshoe *Rhinolophus ferrumequinum*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, lesser horseshoe *Rhinolophus hipposideros*, Natterer's bat *Myotis nattereri*, brown long-eared bat *Plecotus auritus*, serotine *Eptesicus serotinus*, Brandt's bat *Myotis brandtii*, Daubenton's bat *Myotis daubentonii*, whiskered *Myotis mystacinus*, noctule *Nyctalus noctula*, Nathusius' pipistrelle *Pipistrellus nathusii*, and Leisler's bat *Nyctalus leisleri*).
- ▶ A further 191 of the species on the UK BAP Priority List are known to be found within Wiltshire.

Local Wildlife Sites

2.3.3 Local Wildlife Sites (LWS) are areas of land with wildlife value of significance at the district or county scale. LWS support both locally and nationally threatened wildlife, and many sites contain Habitats or Species of Principal Importance (HPI/SPI) listed under section 41 of the Natural Environment and Rural Communities Act 2006 in England. LWS are protected within the local planning system and are a material consideration in the determination of planning applications. A similar system of Local Geological Sites (LGS) operates in relation to features of district/county geological significance.

2.4 Legislation

General

- 2.4.1 The main legislative instruments for ecological protection in England and Wales are the Wildlife and Countryside Act 1981 (WCA; as amended), Countryside and Rights of Way Act 2000 (CRoW; as amended), Natural Environment and Rural Communities Act 2006 (NERC), the Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations; as amended) and the Environment Act 2021.
- 2.4.2 WCA 1981 consolidated and amended pre-existing national wildlife legislation in order to implement the Bern Convention and the European Union Wild Birds Directive (Council Directive 2009/147/EC). It complements the Habitats Regulations, offering protection to a wider range of species than the latter. The Act also provided for the designation and protection of nationally important conservation sites of value for their floral, faunal or geological features, termed Sites

- of Special Scientific Interest (SSSI). Schedules of the act list protected species of flora and fauna, as well as invasive species, and detail the possible offences that apply to these species.
- 2.4.3 The CRoW Act 2000 amended and strengthened existing wildlife legislation detailed in the WCA. It placed a duty on government departments & the National Assembly for Wales to have regard for biodiversity, provided increased powers for the protection and maintenance of SSSI, and created a right of access to parts of the countryside. The Act contained lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.
- 2.4.4 The NERC Act 2006 consolidated and replaced aspects of earlier legislation. Section 40 of the Act places a duty upon all local authorities and public bodies in England and Wales to have regard to the purpose of conserving biodiversity in exercising all of their functions, including by restoring or enhancing habitats and species populations. Sections 41 (England) and 42 (Wales) list Habitats and Species of Principal Importance to the conservation of biodiversity (otherwise known as priority habitats/species as listed in the now superseded UK Biodiversity Action Plan). These lists supersede Section 74 of the CRoW Act 2000. These species and habitats are a material consideration in the planning process.
- 2.4.5 The Habitats Regulations 2017 are the principal means by the European Union Habitats Directive (Council Directive 92/43/EEC) was transposed into English and Welsh law, and place a duty upon the relevant authority of government to identify sites which are of importance to the habitats and species listed in Annexes I and II of the Habitats Directive. Those sites which meet the criteria in Europe are designated as Sites of Community Importance by the European Commission, and subsequently identified as Special Areas of Conservation (SAC) by the European Union member states. Since the UK's departure from the European Union the European Commission no longer has a role in designating SAC in the UK. The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 establish a single stage designation process, where the appropriate authority is the decision maker. The selection and designation of SAC is based on the criteria set out in Annex III of the Habitats Directive insofar as it applies to the UK, and having regard to the advice of the appropriate nature conservation body.
- 2.4.6 The 2019 Amendment Regulations have created a new national site network on land and at sea, including both the inshore and offshore marine areas in the UK. The national site network includes existing SAC, existing Special Protection Areas (SPA) originally designated as a result of Council Directive 2009/147/EC on the Conservation of Wild Birds, and any new SAC and SPA designated under the 2019 Regulations. SAC and SPA in the UK therefore no longer form part of the EU's Natura 2000 ecological network.
- 2.4.7 The Habitats Regulations also provide for the protection of individual species of fauna and flora of European conservation concern listed in Schedules 2 and 5 respectively (European Protected Species (EPS)). Schedule 2 includes species such as otter and GCN for which the UK population represents a significant proportion of the total European population. It is an offence to deliberately kill, injure, disturb or trade in these species. Schedule 5 plant species are protected from unlawful destruction, uprooting or trade under the regulations. Under the Habitats Regulations disturbance includes any activity which is likely to: impair the ability of a EPS to

survive, breed, reproduce, or rear/nurture its young; impair the ability of a EPS to migrate or hibernate; or significantly affect the local distribution or abundance of the species.

- 2.4.8 The Environment Act 2021 establishes an Office for Environmental Protection; mandates all new development requiring planning permission to achieve at least 10% net gain for biodiversity; amends the NERC Act duty to conserve biodiversity by explicitly adding a duty to enhance; and requires local authorities to produce local nature recovery strategies.

Amphibians

Great crested newt

- 2.4.9 GCN is fully protected by the WCA and the Habitats Regulations and is a SPI. The legislation makes it an offence, *inter alia*, to:

- ▶ Intentionally kill, injure or take a GCN (including its eggs).
- ▶ Possess or control a live or dead GCN, any part of, or anything derived from a GCN.
- ▶ Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a GCN uses for shelter or protection.
- ▶ Intentionally or recklessly disturb a GCN while it is occupying a structure or place that it uses for shelter or protection.

- 2.4.10 Other native amphibians also receive varying degrees of legal protection. Natterjack toad *Epidalea calamita* and pool frog *Pelophylax lessonae* are Habitats Regulations schedule 2 species, partially protected under the WCA and are SPI. Common toad *Bufo bufo* is partially protected under the WCA and a SPI. Smooth and palmate newt *Lissotriton vulgaris* and *L. helveticus* are partially protected under the WCA.

Wild birds

- 2.4.11 All wild birds are protected by the WCA and 49 are SPI. The legislation makes it an offence to intentionally kill, injure or take away any wild bird. It is also an offence to take, damage or destroy the nest of any wild bird while it is in use or being built or to take or destroy the egg of any wild bird. In addition, certain species are listed on Schedule 1 of the WCA (such as kingfisher *Alcedo atthis*). This makes it an additional offence to intentionally or recklessly disturb the adults while they are in and around their nest or intentionally or recklessly disturb their dependent young. Such species are considered to be in greater need of legal protection or of high nature conservation priority.

- 2.4.12 Birds of Conservation Concern ("BoCC4) are included on Red and Amber lists (Eaton et al., 2015). Birds on the Red list are those of highest conservation priority due significant and sustained population decreases and/or range contractions (e.g. house sparrow *Passer domesticus* and starling *Sturnus vulgaris*). Birds on the Amber list are the next most critical group and include species whose population/range have shown moderate declines, or which have recovered to some extent from historical decline, such as dunnock *Prunella modularis*.

Invertebrates

- 2.4.13 Three invertebrate species in the UK are European Protected Species (large blue butterfly *Maculinea arion*, Fisher's estuarine moth *Gortyna borelii* and little ramshorn whirlpool snail *Anisus vorticulus*) and are afforded the same level of protection as bats, GCN, dormouse and otter. In addition around 400 further species are variously protected under the WCA and SPI.

Mammals

Badger

- 2.4.14 Badgers are listed under Schedule 6 of the WCA which grants them partial protection. This protection is extended by the Protection of Badgers Act 1992 (PBA) which makes it an offence to take, injure or kill a badger, interfere with a sett, sell or possess a live badger, or mark or ring a badger without a licence. Under the Act disturbance is illegal without a licence. Natural England has published guidelines to be adopted when determining whether an activity is 'disturbing' i.e. a licence is required when, for example, using heavy machinery (generally tracked vehicles) within 30m of any entrance to an active sett. Licences are not normally issued during the badger breeding season (December – June inclusive).

Bats

- 2.4.15 Bats and their roosts are fully protected by protected by the WCA and the Habitats Regulations, and seven species of bats are SPI. The legislation makes it an offence, *inter alia*, to:
- ▶ Intentionally kill, injure or take a bat.
 - ▶ Possess or control a live or dead bat, any part of a bat, or anything derived from a bat.
 - ▶ Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a bat uses for shelter or protection. This is taken to mean all bat roosts whether bats are present or not.
 - ▶ Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection.
 - ▶ Make a false statement in order to obtain a licence for bat work.

Hazel dormouse *Muscardinus avellanarius*

- 2.4.16 Hazel dormouse is fully protected by the WCA and the Habitats Regulations and is a SPI. The legislation makes it an offence, *inter alia*:
- ▶ Intentionally kill, injure or take a hazel dormouse.
 - ▶ Possess or control a live or dead hazel dormouse, any part of, or anything derived from a hazel dormouse.
 - ▶ Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a hazel dormouse uses for shelter or protection.
 - ▶ Intentionally or recklessly disturb a hazel dormouse while it is occupying a structure or place that it uses for shelter or protection.

Otter

2.4.17 Otter is fully protected by the WCA and the Habitats Regulations and is a SPI. The legislation makes it an offence, *inter alia*:

- ▶ Intentionally kill, injure or take an otter.
- ▶ Possess or control a live or dead otter, any part of, or anything derived from an otter.
- ▶ Intentionally or recklessly damage, destroy or obstruct access to any structure or place that an otter uses for shelter or protection.
- ▶ Intentionally or recklessly disturb an otter while it is occupying a structure or place that it uses for shelter or protection.

Water vole

2.4.18 Water vole is fully protected by the WCA and is a SPI. The legislation makes it an offence, *inter alia*, to:

- ▶ Intentionally kill, injure or take a water vole.
- ▶ Possess or control a live or dead water vole, any part of, or anything derived from a water vole.
- ▶ Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a water vole uses for shelter or protection.
- ▶ Intentionally or recklessly disturb a water vole while it is occupying a structure or place that it uses for shelter or protection.

2.4.19 Various other mammals are also SPI, including hedgehog *Erinaceus europaeus*, brown hare *Lepus europaeus* and harvest mouse *Micromys minutus*.

Reptiles

2.4.20 The four common species (slow worm *Anguis fragilis*, common lizard *Zootoca vivipara*, adder *Vipera berus* and grass snake *Natrix helvetica*) are partially protected under the WCA and are SPI. They are protected, *inter alia*, against intentional killing and injuring. The handling and translocation of these reptiles does not require a licence.

2.4.21 Smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis* are fully protected by the WCA and the Habitats Regulations and are SPI. The legislation affords them the same level of protection as bats, GCN, hazel dormouse and otter.

Wild mammals

2.4.22 The Wild Mammals (Protection) Act 1996 (as amended) makes provision for the protection of wild mammals from certain cruel acts, making it an offence for any person to intentionally cause suffering to any wild mammal. In the context of development sites, for example, this may apply to rabbit *Oryctolagus cuniculus* burrows and fox *Vulpes vulpes* dens.

Native flora

- 2.4.23 There are nine Habitats Regulations schedule 5 (EPS) plant species native to the UK, while many others are protected under schedule 8 of the WCA. Many more are SPI.

Invasive non-native species

- 2.4.24 Under the WCA it is an offence to release, or to allow to escape into the wild, any animal which is not ordinarily resident in and is not a regular visitor to Great Britain in a wild state or is listed under Schedule 9 of the Act. Strictly speaking, this makes it an offence to return to the wild any animal listed on Schedule 9, even if inadvertently captured. It is also an offence to plant or otherwise cause to grow in the wild invasive non-native plants listed on Schedule 9. This effectively means that it is an offence to cause the spread of such plants as a result of development operations.

Hedgerows

- 2.4.25 The Hedgerow Regulations 1997 protect important hedgerows in the countryside by controlling their removal through a system of notification, and by defining criteria under which a hedgerow is classified as "important". The criteria relate to the value of hedgerows from an archaeological, historical, wildlife and landscape perspective.

3 Methodology

3.1 Consultation

- 3.1.1 No pre-application advice was provided, however an EcIA was considered appropriate based on the potential for onsite habitats to support protected species, including GCN, badger, nesting birds, bats and reptiles.

3.2 Assessment Methodology

- 3.2.1 The EcIA has been prepared with reference to the Chartered Institute of Ecology and Environmental Management's (CIEEM; 2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*.

3.3 Scope of the Assessment

Ecological Zone of Influence

- 3.3.1 The ecological zone of influence (Zoi) was initially defined as the Application Site, as described at section 1.3. The Zoi has subsequently been refined through a review of the ecological baseline information in the context of the Proposed Development. The Zoi is defined as follows:
- ▶ For the majority of ecological features the Zoi coincides with the Application Site, including adjacent land up to 30m from the Application Site; features within this zone are likely to be directly affected by biophysical changes resulting from construction and operation activities.
 - ▶ Due to the presence of waterbodies within the local area, the Zoi for GCN includes a 250m buffer from the Application Site. Populations of GCN within this zone may potentially be directly affected by biophysical changes resulting from construction and operation activities.
 - ▶ Due to the potential for indirect effects (such as dust and noise during operation), the Zoi for locally designated sites and species was the Application Site plus 1km. The Zoi for nationally designated sites and bat records was the Application Site plus 2km. The Zoi for European sites (SAC, SPA and Ramsar) was extended to the Application Site plus 5km, due to their higher level of legal protection and greater importance for nature conservation.

Temporal scope

- 3.3.2 It is expected that site preparation works will commence in 2025 and construction will be completed in 2026. The new accommodation will be occupied in 2026. Impacts on ecological features are assessed in the context of how the baseline conditions within the ecological zone of influence may be liable to change between the survey dates and the timings of construction.

3.4 Desk Study

- 3.4.1 A desk-based study was undertaken in 2024⁵ to examine published information from within the search area. The following desk study search radii were established:
- ▶ Statutory nature conservation sites of international importance within a 5km radius of the Application Site;
 - ▶ Statutory sites of national importance within a 2km radius;
 - ▶ Species records for bats within a 2km radius; and
 - ▶ Non-statutory sites and other protected/notable species records within a 1km radius.
- 3.4.2 The scope of the desk study reflects the sensitivity and value of potential ecological receptors and enables the requirements of mobile species to be considered (e.g. for breeding, foraging, roosting, shelter, migration and dispersal), while providing contextual information to assist with determining and evaluating the baseline. Ecological features to be considered include designated sites of nature conservation interest, habitats and SPI, protected species and legally controlled species.
- 3.4.3 The information was collected from the following sources:
- ▶ The 'MAGIC' (Multi-agency Geographic Information for the Countryside) website: www.magic.gov.uk; and
 - ▶ Wiltshire and Swindon Biological Records Centre (WSBRC).

3.5 Field Surveys

- 3.5.1 A baseline ecological survey was undertaken to inform and influence the design and layout of development and form the basis of the EclA. In summary, the following was undertaken:
- ▶ Preliminary Ecological Appraisal⁶ of the Application Site (reported separately).
- 3.5.2 Refer to the survey report for the detailed methods, weather conditions, personnel, limitations and results of each baseline survey.
- 3.5.3 Baseline ecological surveys undertaken to inform the assessment covered the ZoI defined above i.e. Application Site (as described at section 1.3), including adjacent land up to 30m from the Site. The survey area took into account the likely extent of development activities and such adjacent land as might foreseeably be affected, directly or indirectly, to provide contextual information and further inform the assessment.

⁵ Urban Edge Environmental Consulting (2024): *Abbey Gardens, Blunsdon, Swindon, Wiltshire: Preliminary Ecological Appraisal Report*.

⁶ *Ibid.*

3.6 Limitations

- 3.6.1 The following limitations have been factored into the assessment process. All surveys were undertaken in the appropriate season by suitably qualified and licensed surveyors with reference to industry guidance and during suitable weather conditions.
- 3.6.2 During the 2024 PEA, there were no difficulties in gaining access to survey the site's habitats and assess protected species suitability. Adjacent habitats were surveyed where appropriate in order to identify constraints falling outside of the Application Site and to place the survey area in its ecological context.
- 3.6.3 The majority of the Application Site is historically mapped on MAGIC as Lowland Mixed Deciduous Woodland Habitat HPI, which had been cleared prior to site survey. As such, the area was mapped as felled woodland based on the extent of coverage shown on the most recent aerial map available using Google Earth
- 3.6.4 The PEA made a series of recommendations for protected species surveys. Due to the anticipated timeframe for the planning application to be determined, and notwithstanding the requirements of paragraph 99 of ODPM Circular 06/2005 (see section 2.2.11), this EcIA has been carried out in advance of protected species surveys for GCN, badger, roosting bats and reptiles. In the absence of survey data, the report assumes a reasonable worst-case scenario in relation to the presence of these species. The survey season starts in May; once results are available the EcIA will be amended.

3.7 Ecological Impact Assessment

Important Ecological Features

- 3.7.1 A first step in EcIA is to determine which ecological features (habitats, species, ecosystems and their functions/processes) are important. Important Ecological Features (IEF) should then be subject to detailed assessment if they are likely to be impacted by the Proposed Development. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts such that there is no risk to their viability.
- 3.7.2 Ecological features can be important for a variety of reasons and the rationale used to identify importance is explained below. Importance may relate, for example, to the quality or extent of designated sites or habitats, to habitat/species rarity, to the extent to which they are threatened throughout their range, or to their rate of decline.
- 3.7.3 The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference is used in this case:
- ▶ International and European e.g. SAC, SPA and Ramsar sites;
 - ▶ National (England) e.g. SSSI and National Nature Reserves;
 - ▶ County (Wiltshire) e.g. Local Wildlife Sites, Local Nature Reserves, ancient woodlands;

- ▶ District (Swindon) e.g. species rich and/or extensive habitats, or moderate population sizes, or species assemblages of moderate to high diversity; and
- ▶ Local (Blunsdon civil parish) e.g. common and widespread species with relatively moderate populations or assemblages of relatively limited diversity; and
- ▶ Negligible - Habitats or species populations were either:
 - not detected on Site;
 - the potential for them to be present is negligible; or
 - the habitat / species is present, but its presence is considered insignificant in relation to the local context of Blunsdon civil parish.

Impact assessment

3.7.4 The process of impact assessment involves:

- ▶ Identifying and characterising impacts;
- ▶ Incorporating measures to avoid and mitigate (reduce) the impacts;
- ▶ Assessing the significance of any residual effects after mitigation;
- ▶ Identifying appropriate compensation measures to offset significant residual effects; and
- ▶ Identifying opportunities for ecological enhancement.

3.7.5 It is only necessary to assess and report significant residual effects (those that remain after mitigation measures have been taken into account). However, it is good practice for the EclA to make clear both the potential significant effects without mitigation and the residual significant effects following mitigation. This process of assessment without mitigation helps to identify necessary and relevant mitigation measures that are proportionate to the extent, magnitude and duration of anticipated impacts.

3.7.6 The assessment only needs to describe those characteristics of impacts that are relevant to understanding the ecological effect and determining its significance. It should consider, as appropriate: direct, indirect, secondary and cumulative impacts and whether the impacts and their effects are short, medium, long-term, permanent, temporary, reversible, irreversible, positive or negative. The assessment of impacts then takes into account the baseline conditions to describe:

- ▶ How baseline conditions within the Zol will change as a result of the Proposed Development and associated activities; and
- ▶ Cumulative impacts of the Proposed Development and those arising from other developments within the Zol.

Characterising and quantifying impacts

3.7.7 The term 'impact' relates to changes resulting from Proposed Development activities, for example the removal of habitat.

- 3.7.8 The CIEEM (2018) guidelines state that ecological impacts and effects should be characterised in terms of ecosystem structure and function and reference should be made, as required, to: positive, negative or neutral effects; extent; magnitude; duration; frequency and timing; reversibility; and cumulative effects. The guidelines provide a list of 'aspects of ecological structure and function to consider when predicting impacts and effects' (CIEEM, 2018, Box 17).
- 3.7.9 For the purposes of this EcIA, the duration of impacts is defined as:
- ▶ Short-term – Up to two years i.e. during site preparation and construction (2024-2026);
 - ▶ Medium-term – Three to five years (2027-2029);
 - ▶ Long-term – Greater than five years.
- 3.7.10 However, it should be noted that these terms are considered in the assessment relative to each habitat or species affected and their respective successional processes or life-cycles. For example, six weeks for one species may represent a single generation time period, but for another it may be a few weeks in a life lasting several years.

Determining significant effects

- 3.7.11 The term 'effect' relates to the outcome of an impact, for example population displacement or decline due to habitat loss.
- 3.7.12 Following the characterisation of impacts, an assessment of the ecological significance of an effect is made. Applying the principles promoted in the guidelines, significant effects encompass impacts on the structure and function of a defined site, habitat or ecosystem, and/or the conservation status of habitats and species populations at an appropriate geographic scale. However, the scale of significance of an effect may not be the same as the as the geographic context in which the feature is considered important. For example, an effect on a SPI in England may not have a significant effect on its national population and therefore not be of national significance for that species. Hence the value of the feature that will be significantly affected is used to determine the implications, in terms of legislation and or policy (CIEEM, 2018), and proportionate means of mitigation.
- 3.7.13 Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of this assessment, 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for IEFs. A significant effect is simply an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project. The EcIA guidelines (CIEEM, 2018, p41) state that "*a significant effect does not necessarily equate to an effect so severe that consent for the project should be refused planning permission. For example, many projects with significant negative ecological effects can be lawfully permitted following EIA procedures*" – particularly where the mitigation hierarchy has been applied effectively as part of the decision-making process. The assessment of significance is based on professional judgement, guided by independently established significance criteria where available and appropriate (e.g. in relation to atmospheric pollution impacts).

Cumulative effects

- 3.7.14 Cumulative effects are assessed with respect to the potential for collectively significant impacts to arise upon IEFs relevant to the Proposed Development. A 1km search area was considered sufficient, taking account of the relatively small size of the Application Site and small scale of Proposed Development. The following projects have been identified, in discussion with the client, for consideration of cumulative effects:
- ▶ S/24/0106: Land South of Tadpole Lane Blunsdon St Andrew Swindon. Located c.190m west of the Application Site and comprises the construction of 38 dwellings and associated works.
 - ▶ S/OUT/23/1508: Land North of Burcot Farm Tadpole Lane Swindon. Located c.200m north and north-west of the Application Site and includes an outline application for a residential development of up to 410 dwellings, including affordable housing, and associated open space with all matters reserved except for access, pedestrian and cycle connections.
 - ▶ S/23/1415: 1 The Beeches Lady Lane Swindon SN25 2DN. Located c.290m north-east of the Application Site and is proposing demolition of garage and erection of 2 dwellings (Class C3) and associated works.

Mitigation

- 3.7.15 Where significant impacts or effects are predicted, the mitigation hierarchy is taken into account as recommended in the guidelines, which set out a sequential approach of avoiding impacts where possible, applying mitigation measures to minimise unavoidable impacts, and then compensating for any remaining impacts. Once avoidance and mitigation measures, and any necessary compensation measures, have been applied, and opportunities for enhancement are incorporated, residual impacts and effects are then identified. This approach is reflected across UK planning policy at a country level.
- 3.7.16 Where mitigation and/or compensation is proposed, this is proportionate to the geographical scale at which an effect is significant, *"for example, mitigation and compensation for effects on a species population significant at a county scale should ensure no net loss of the population at a county scale. The relative geographical scale at which the effect is significant will have a bearing on the required outcome which must be achieved"* (CIEEM, 2018, p41).
- 3.7.17 In addition to identifying mitigation measures, this section also addresses relevant legal requirements, for example in relation to protected or invasive non-native species.

4 Baseline Ecological Conditions

4.1 Introduction

4.1.1 This chapter summarises the baseline ecological conditions determined through the course of desk-based and field-based investigations described in Chapter 3. In particular, this section identifies and evaluates those ecological features that lie within the Site’s potential Zol and are relevant in the context of the Proposed Development.

4.2 Statutory and Non-statutory Site Designations

4.2.1 There are two nationally important wildlife sites within the desk study search area, one SSSI and one LNR. Additionally, there are two non-statutory LWS. There are no internationally important wildlife sites within the desk study search area. The information provided by WSBRC regarding these sites is presented in Table 4.1, while Figure 4.1 and Figure 4.2 show their locations in relation to the survey area.

4.2.2 The survey area lies within the Impact Risk Zone (IRZ) of the North Meadow SAC. Any new residential accommodation in this area requires a Habitat Regulations Assessment (HRA) and financial contributions towards Strategic Access Management and Monitoring (SAMM) and Suitable Alternative Natural Greenspaces (SANG) to mitigate increased effects from the recreational use of North Meadow SAC

Table 4.1: Nature conservation sites within the desk study search area

Site name	Location*	Description
Nationally designated sites		
Haydon Meadow SSSI	c.1.6km west	Haydon Meadow is a floristically rich, unimproved lowland neutral grassland, managed as hay meadow. This habitat has largely been lost throughout England, as a result of widespread adoption of intensive agricultural management. The meadow contains populations of two locally uncommon plant species, including green winged orchids <i>Anacamptis morio</i> , a near threatened species in Great Britain believed to be declining. The meadow is also a breeding site and habitat for GCN.
Seven Fields LNR	c.1.7km south	Comprised of seven individual fields, with ancient hedgerows, a stream and Penhill Copse, which is an area of Ancient Woodland. Over 200 species of recorded flowers and grasses including yellow rattle <i>Rhinanthus minor</i> , vetches <i>Vicia spp.</i> and orchids.
Locally designated sites		
Blunsdon Abbey Copse LWS	c.615m south-east	A small area of broadleaved woodland within a much larger area of amenity grassland.

Site name	Location*	Description
Upper Widhill Copse LWS	c.700m north	A small stand of ancient semi-natural broadleaved woodland.

* Approximate distance and bearing from the Application Site.

4.3 Priority Habitats

4.3.1 Priority Habitats include those listed on local Biodiversity Action Plans and Habitats of Principal Importance (HPI) listed under section 41 of the Natural Environment and Rural Communities Act 2006. WSBRC and a search of the MAGIC database returned the following data on priority and other habitats within the desk study search area: Wood Pasture and Parkland, Traditional Orchards, Deciduous Woodland, and Ancient Woodland. Deciduous Woodland is shown recorded as present within the survey area as shown on Figure 4.3.

4.4 Protected, Rare and Notable Species

4.4.1 Biological records were obtained for the search area and are summarised in the 2024 PEA.

4.5 Granted EPS Mitigation Licences

4.5.1 A search of the MAGIC database for granted EPS mitigation licenses within a 2km radius found five licenced sites both of which a licence had been granted on two occasions. Details of these site are presented in Table 4.2.

Table 4.2: Summary of granted EPS mitigation licences within 2km of the site

Case ref.	Distance from site	Dates valid	Licenced actions
2016-25405-EPS-MIT-1	c.1km north-east	18/03/2019 - 31/12/2020	Damage and destruction of a resting place used by GCN.
EPSM2010-2001	1.7km south-west	09/07/2010 - 08/07/2012	Destruction of a resting place used by GCN.
EPSM2010-2293	c.1.8km south-west	04/10/2012 - 31/01/2013	Destruction of a resting place used by GCN.
2014-1309-EPS-MIT	c.1.9km south-west	11/07/2014 - 30/06/2018	Damage and destruction of a resting place used by GCN.
EPSM2010-1650	c.2km south-west	25/10/2010 - 30/09/2012	Destruction of a resting place used by GCN.

Abbey Gardens, Blunsden, Wiltshire

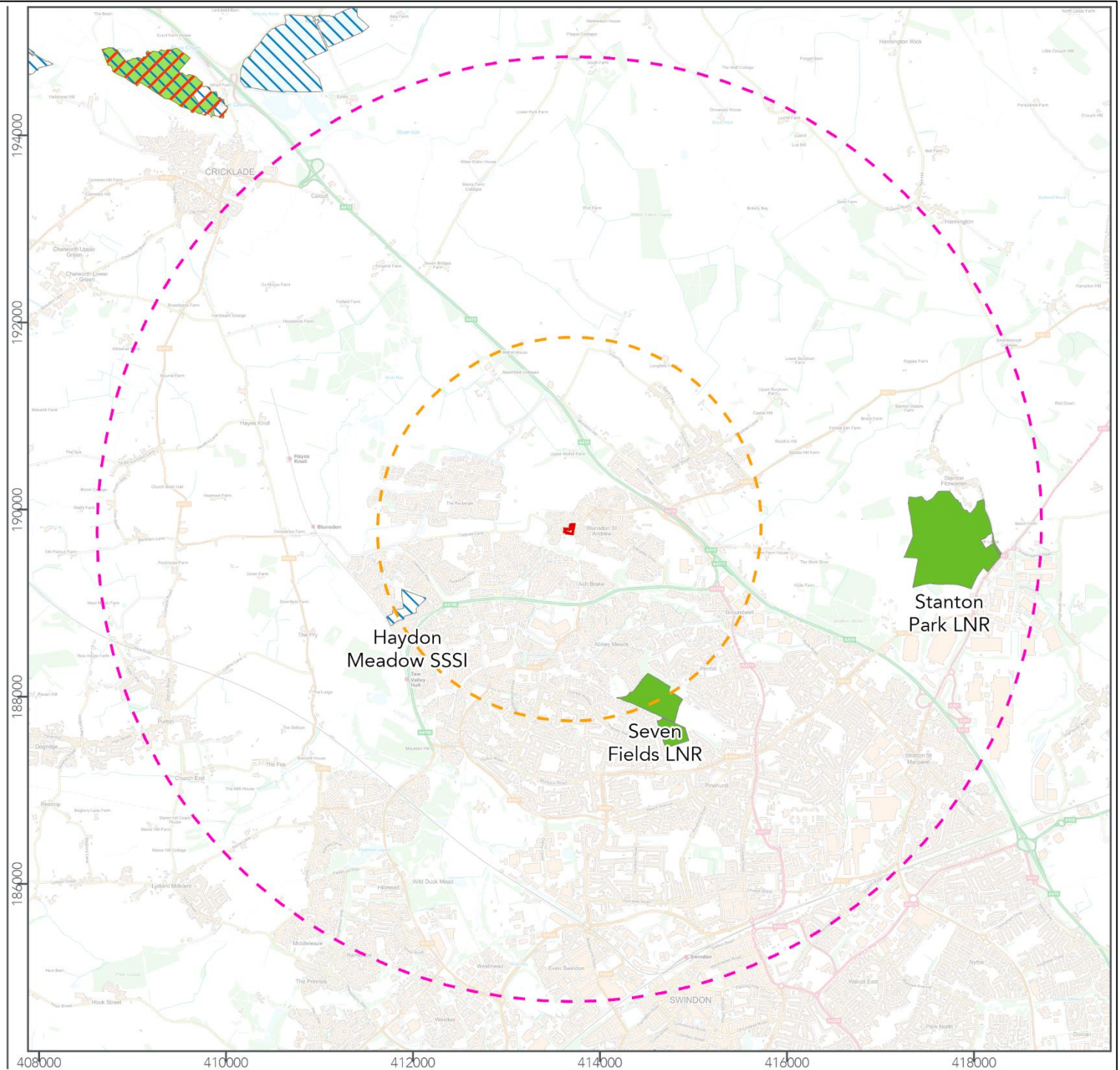
-  Application site
-  2km buffer
-  5km buffer
-  Special Areas of Conservation
-  Sites of Special Scientific Interest
-  Local Nature Reserves
-  National Nature Reserves

Figure 4.1: Statutory nature conservation sites within the desk study search area



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Ordnance Survey 0100031673
Contains data from Natural England

Scale (at A4): 1:60,000 Created by: MT
Date: Mar 2024 Reviewed by: NP
Drawing number:
UE0644ECO-AbbeyGardens_240325:StatutorySites



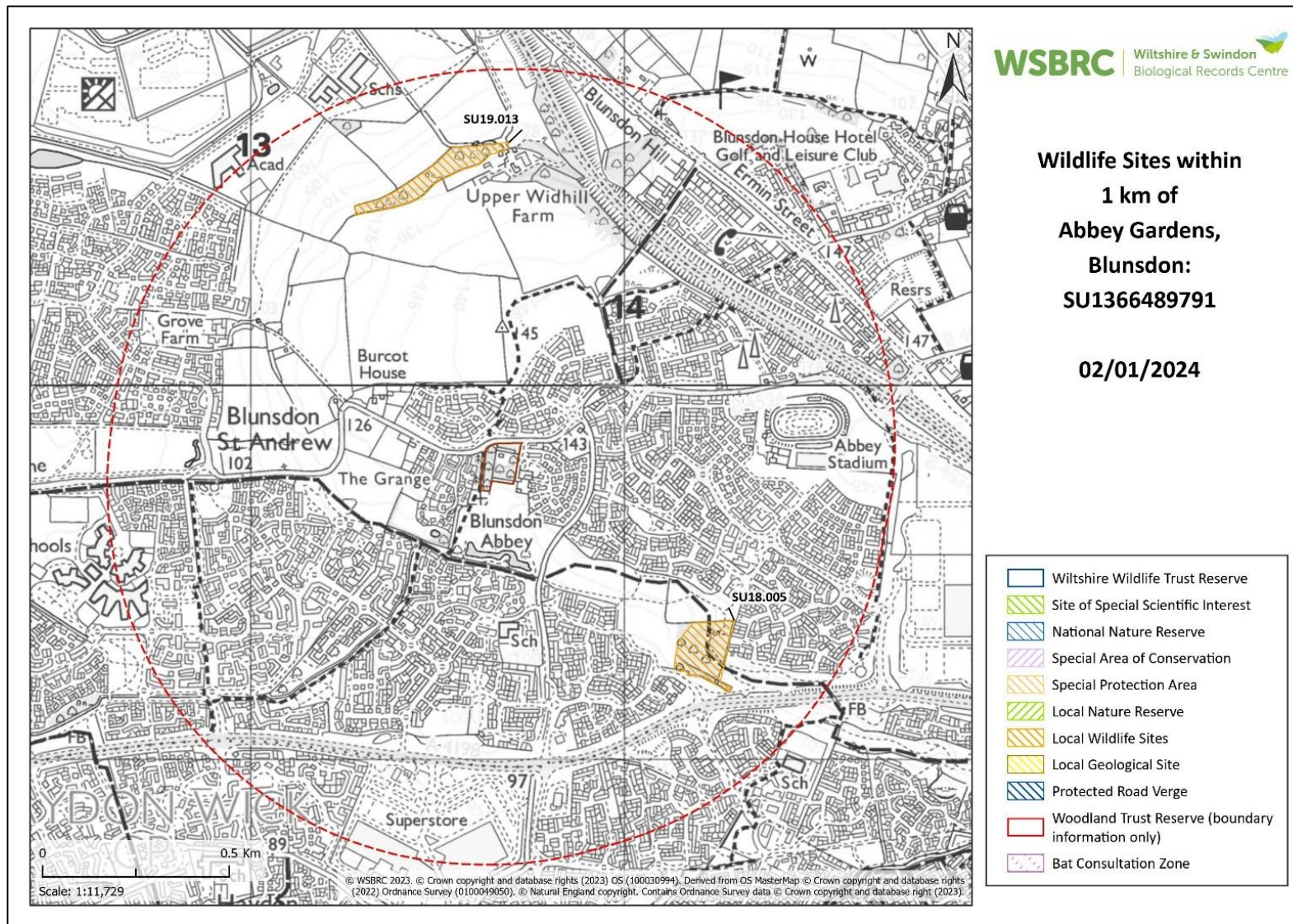
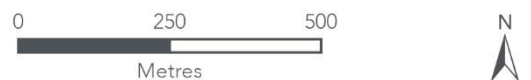


Figure 4.2: Statutory and non-statutory nature conservation sites, and priority habitats, within 1km of the desk study search area

Abbey Gardens, Blunsden, Wiltshire

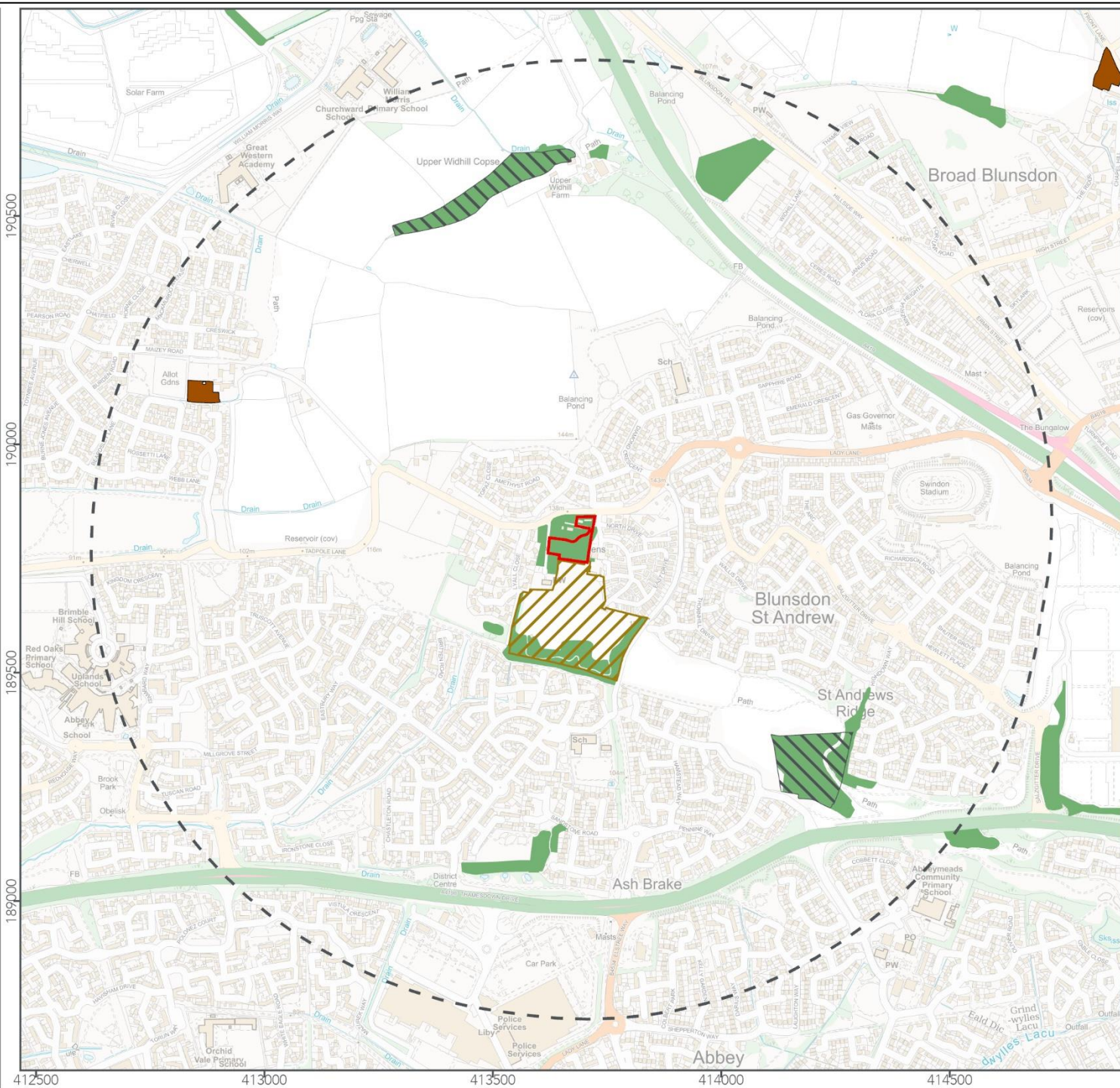
- Application site
- 1km buffer
- Deciduous woodland
- Traditional orchard
- Ancient & Semi-Natural Woodland
- Wood Pasture and Parkland

Figure 4.3: Priority Habitats within the desk study search area



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Ordnance Survey 0100031673
Contains data from Natural England

Scale (at A4): 1:12,500 Created by: MT
Date: Mar 2024 Reviewed by: NP
Drawing number:
UE0644ECO-AbbeyGardens_240325:PriorityHabitats



4.6 Habitat and Vegetation Communities Evaluation Summary

4.6.1 A summary evaluation of the habitats and vegetation communities present within the Application Site is set out at Table 4.3.

Table 4.3: Summary of habitat evaluation

Habitat	Importance	Rationale
Lowland Mixed Deciduous Woodland - felled	<u>Local</u>	As the woodland had been felled prior to survey it is difficult to attribute a value. However, given that small patches of deciduous woodland are relatively common within the local landscape, the felled woodland is likely to be of no more than Local value.
All other habitat	<u>Negligible</u>	These habitats are common and widespread or poor-quality examples, none of which are HPI.

4.7 Faunal Evaluation Summary

4.7.1 A summary evaluation of the animal populations present or potentially present within the Application Site is set out at Table 4.4.

Table 4.4: Summary of faunal evaluation

Species	Importance	Rationale
Great crested newt	<u>Local (provisional)</u>	The Application Site contains good quality terrestrial habitat for GCN dominated by felled woodland that had been replaced with wood chippings, patchy scrub and tussocky grassland, although the grassland lacked the varied structure to be of high suitability. The Proposed Development would result in the loss of c.0.5ha of potentially suitable GCN habitat. There are no ponds within the survey area, but a remnant pond and depressions in the ground from vehicles and machinery may create ephemeral pools. Two ponds (P1 and P2) are present 220m south of the Application Site that were relatively well connected to the Site through adjacent parkland. P1 was classified as being of <u>excellent suitability</u> for GCN and P2 was classified as being of <u>good suitability</u> . GCN may occupy the terrestrial habitats within the survey area and use the nearby ponds for breeding. eDNA surveys for GCN are expected to be carried out in P1 and P2 during the 2024 breeding season. In the absence of the survey data the following reasonable worst-case scenario is assumed: GCN are present within P1 and P2 and may use terrestrial habitats within the survey area.
Badger	<u>Negligible (provisional)</u>	The Application Site contains suitable foraging habitat in the form of felled woodland that had been replaced with patches of scrub, bare ground and grassland. One potential badger sett entrance hole (S1) was recorded in the eastern section of the felled woodland with suspected snuffle holes observed across the Application Site. The entrance hole is due to be monitored for badger activity but in the

Species	Importance	Rationale
		absence of survey results, the following reasonable worst-case scenario is assumed: S1 is an <u>outlier sett</u> that is in active use by badger.
Nesting birds	<u>Negligible</u>	The denser patches of bramble <i>Rubus fruticosus</i> scrub within the Application Site are suitable for nesting birds while the derelict building (B2) and stone wall provide some limited suitability for species such as house sparrow (BoCC5 Red-listed). Impacts are avoided via embedded mitigation (section 5).
Roosting bats (buildings)	<u>Local</u> (provisional)	The PEA concluded that building B2 was of <u>low suitability</u> for roosting bats and the surrounding stone wall was of <u>moderate suitability</u> . The stone wall is expected to be retained but may be indirectly impacted through disturbance such as artificial light. Surveys to establish the presence / likely absence of roosting bats in B2 are expected to take place during the 2024 season. In the absence of survey results, the following reasonable worst-case scenario is assumed: four day roosts used by low numbers of common pipistrelle and soprano pipistrelle bats are present within the stone wall and one day roost used by low numbers of common pipistrelle bats is present with B2.
Reptiles	<u>Local</u> (provisional)	The survey area contains good quality habitats for reptiles, dominated by recently felled woodland that had been replaced with patches of bare ground, grassland and scrub. These habitats offer suitable foraging and basking habitat while the surrounding wall, tree stumps and log piles offer opportunities for shelter and hibernation. The Proposed Development results in losses of c.0.5ha of suitable reptile habitat. Surveys to establish the presence / likely absence reptiles are expected to take place during the 2024 season. In the absence of survey results, the following reasonable worst-case scenario is assumed in relation to the Application Site's potential to support reptiles: there is a <u>good population</u> of slow worm and common lizard.

4.8 Baseline Evolution in the absence of Proposed Development

4.8.1 Site preparation works will commence in 2025. It is considered likely that the majority of habitats present at the Application Site will be in a similar condition in 2025, albeit that minor changes may have occurred such as a further expansion of scrub and grassland over the existing bare ground. Similarly, it is considered likely that, for the majority of species present at the Application Site, their abundance and distribution in relation to the Application Site will be in a similar condition when construction starts, albeit that minor changes may have occurred in highly mobile species such as bats and birds.

4.9 Important Ecological Features

4.9.1 Of the designated sites, habitats and species listed in sections 4.2 to 4.7 above, those listed below are evaluated as being IEFs and have the potential to be affected by the Proposed Development:

- ▶ Haydon Meadow SSSI (National & Legal protection);
- ▶ GCN (Local and Legal protection);
- ▶ Badger (Legal protection);
- ▶ Roosting bats (buildings and stone wall; Local and Legal protection); and
- ▶ Reptiles (Local and Legal protection).

5 Embedded Mitigation

5.1 Introduction

5.1.1 This section summarises the key features that have been incorporated into the Proposed Development in order to avoid or reduce impacts on features of nature conservation interest.

5.2 Great Crested Newt

5.2.1 The Application Site will join the District Level Licensing scheme for Swindon, led by Natural England⁷. The licensing route removes the requirement for further survey and involves financial contributions based upon Proposed Development impacts. This method can be undertaken year-round and provides detailed costs and any mitigation requirements, which can be submitted in support of a planning application.

5.3 Removal of Nesting Bird Habitat

5.3.1 Removal of nesting bird habitats (including vegetation, buildings and stone wall), where necessary, will be undertaken outside of the bird nesting season, which runs from 1 March to 31 August. It will therefore be carried out between September and February but will be planned and implemented in accordance with the mitigation requirements for other species, as other protected species may still be present outside of the bird breeding season. Any construction works undertaken within the bird breeding season where suitable bird breeding habitat exists will require a site check for nesting birds by a suitably qualified ecologist. This will take place no more than two days prior to works commencing. This is to ensure that no disturbance to active bird nests occurs. If a nest is found it must be cordoned off and works adjacent to the nest must be delayed until such time that the chicks have fledged from the nest. This will be supervised by a suitably qualified ecologist.

5.4 Invasive Species

5.4.1 Wall cotoneaster *Cotoneaster horizontalis* is present within the Application Site (see location TN5 in PEA). This species is invasive and spreads to form dense stands that exclude other vegetation. A method statement will be prepared to ensure adequate control measures are adopted during construction to prevent it spreading from the site. Control measures can comprise mulching and/or burning on site so that the plants cannot spread.

⁷ https://www.swindon.gov.uk/info/20027/licences_and_permits/1092/great_crested_newt_mitigation_licence

6 Impact Assessment

6.1 Introduction

6.1.1 This section identifies the potential impacts of the Proposed Development before making an assessment of significant effects on each IEF. It goes on to consider cumulative effects before determining residual impact.

6.2 Potential Effects

6.2.1 Whilst exact details of the construction methods to be used cannot be determined with certainty at this time, a number of assumptions and parameters have been fixed for the purposes of this assessment and are described in section 1.4.1. Potentially significant effects on important ecology and nature conservation features resulting from the construction and operation phases of the Proposed Development are listed in Table 6.1.

6.2.2 GCN is considered adequately dealt with by embedded mitigation; impacts during the construction and operation phases do not therefore require assessment.

Table 6.1: Potential significant effects resulting from construction and operation phases of Proposed Development

Effect	Impact causes/mechanisms
Construction	
IEFs affected	Badger; roosting bats; and reptiles
Habitat loss/damage	E.g. full/partial demolition of structures, soil stripping or digging necessitating the felling of trees, removal or disturbance of vegetation by heavy plant, materials storage / stockpiling, clearance of log piles, deadwood and other habitat.
Killing/injury of animals	E.g. full/partial demolition of structures, digging, vegetation removal, movement of vehicles/heavy plant, and entrapment of animals in trenches, pits or pipes.
Displacement of animals	Visual, noise or vibration-related disturbance from vehicles/heavy plant, digging or piling.
Operation	
IEFs affected	Haydon Meadows SSSI, Roosting bats
Displacement of animals	Visual (especially lighting), noise or vibration-related disturbance, habitat degradation.
Habitat degradation	Increased public access for recreation.

6.3 Effects During the Construction Phase

6.3.1 In Table 6.2 likely significant effects resulting from construction are detailed for each of the IEF identified previously in section 4.9 and the impacts are characterised, where appropriate, in terms of their extent, magnitude, duration, frequency, timing and reversibility. This evaluation takes into account embedded mitigation (as described at section 5), which is also referred to in Table 6.2. Any necessary additional mitigation is also described Table 6.2: Likely significant effects resulting from construction, considered for each Important Ecological Feature.

Table 6.2: Likely significant effects resulting from construction, considered for each Important Ecological Feature

IEF: Badger
Potential effect:
Habitat loss/damage Killing / injury of animals Displacement of animals
Proposed development activity:
For the purposes of this assessment, and noting the limitations stated at section 3.6, it is assumed that S1 is an outlier sett that is in active use by badger. The construction phase will focus on site preparation works, including removal of 0.32ha of felled woodland that has been replaced with bare ground, patches of scrub and grassland, c.800m ² of other neutral grassland, and c.860m ² of modified grassland. These works will require the preparation of ground conditions in the location of badger sett S1.
Characterisation of impact, taking account of embedded mitigation:
The removal of bare ground, patches of scrub, other neutral grassland, and modified grassland will reduce the availability of foraging habitat for badger at the Application Site. This represents a low magnitude negative impact, given the abundance of alternative habitat within the Blunsdon civil parish. The impact will take place over the short term (1 to 2 years). The effect on badger of the loss of bare ground, patches of scrub, other neutral grassland, and modified grassland is irreversible but is of Negligible significance. The site preparation works will destroy the suspected outlier sett S1 resulting in a risk of killing, injury or disturbance to badgers occupying the setts. Killing, injury, disturbance to badgers and sett damage/destruction are unlawful under the WCA and Protection of Badgers Act 1992.

IEF: Badger
Scale of effect:
Negligible negative effect. The effect on badger of loss of bare ground, patches of scrub, other neutral grassland, and modified grassland would be permanent. The risk of killing / injury / disturbance would be temporary during the construction period.
Cumulative effects:
There was no available information relating to the impacts on badger at development sites within 1km of Application Site. Badger records are often kept confidential for reasons of animal welfare in response to persecution of this species. As a result, it is difficult to quantify the cumulative effects of the Proposed Development on badger. However, given that there is extensive habitat suitable for badgers in the local landscape, particularly to the north and west, no cumulative effects of this species are expected to occur.
Additional mitigation required, including means of securing implementation:
<p>It will be necessary to obtain a sett closure licence from Natural England before commencing ground works in the vicinity of setts S1. The licence will need to be obtained after planning permission is issued and, once obtained, will allow for installation of one-way gates and ground mesh to exclude badgers from the sett. The gates will need to be monitored for at least 21 days to show that no badgers are present inside the sett prior to commencement of works. Licences to exclude badgers and to close down or destroy a sett are only issued for works to be carried out between 1 July and 30 November (other than in exceptional circumstances) to avoid the breeding / rearing season.</p> <p>Badger's use of the landscape is dynamic and can change rapidly. A repeat badger survey should be undertaken prior to commencement of development works in order to determine if any new badger setts have established at the site. The survey area should include the construction zone plus a 30m buffer to ensure that disturbance to badgers occupying a sett does not occur during the works.</p> <p>All excavations left overnight should either be covered over, or provided with a ramp to enable easy escape of badgers, and inspected each morning prior to recommencement. Open pipework greater than 150mm outside diameter should be blanked off at the end of each working day. This measure will form part of the Biodiversity Mitigation and Enhancement Plan and can be secured via an appropriately worded planning condition.</p>
Significance of residual effect:
Negligible negative effect.

IEF: Roosting bats (building and stone wall)

Potential effect:

Habitat loss/damage
Killing/injury of animals
Displacement of animals

Proposed development activity:

For the purposes of this assessment, and noting the limitations stated at section 3.6, it is assumed that four day roosts are present within the stone wall and are used by low numbers of common and soprano pipistrelle at roost locations A, B, C and D. It is also assumed that one day roost is present in building B2 and is used by low numbers of common pipistrelle bats at location E.

The stone wall is expected to be retained and roosts A-D will not be directly impacted by the Proposed Development. The derelict building B2 will be restored resulting in the destruction of one day roost (E) used by low numbers of common pipistrelle bats.

Characterisation of impact, taking account of embedded mitigation:

Works to restore B2 and in close proximity to the stone wall are likely to result in the following short-term impacts unless mitigated, which would constitute an offence under the WCA and the Habitats Regulations:

- ▶ Risk of killing, injury or disturbance to low numbers of two common species of bat if present in roosts A-D and E during the works.

Unless mitigated, restoration of B2 and works in proximity to the stone wall will result in the following long-term impacts, which would constitute an offence under the WCA and the Habitats Regulations. The significance of roost loss impacts is predicted for each species with reference to Natural England (2016⁸) taking into account their recorded abundance and frequency within the application site, and rarity in a local context.

- ▶ Low significance impact from the disturbance of four summer day roost present in the stone wall (A, B, C and D) used by low numbers of common and soprano pipistrelle bats.
- ▶ Low significance impact from the destruction of one summer day roost (E) used by low numbers of common pipistrelle bats.

Scale of effect:

Uncertain but potentially up to a Moderate negative effect at the Local level. The impact from disturbance of roosting habitat in the stone wall is temporary of the short term and can be mitigated. The impact of losing of roost features within B2 is irreversible over the medium to long term, however, the effect of losing roost habitat is capable of mitigation.

⁸ Natural England (2016): *Standing Advice: Bats: surveys and mitigation for development projects*. Accessed online [25/03/2024] at: <https://www.gov.uk/guidance/bats-surveys-and-mitigation-for-development-projects>

IEF: Roosting bats (building and stone wall)**Cumulative effects:**

Other developments within 1km of the Application Site included:

- ▶ S/24/0106: recorded one brown long-eared bat day roost during presence / absence surveys – this feature will be lost.
- ▶ S/OUT/23/1508: recorded two soprano pipistrelle and one common pipistrelle day roosts in trees during the presence / absence surveys – these features will be lost.
- ▶ S/23/1415: no details of bat surveys.

Given that no higher conservation status roosts (e.g. maternity or hibernation roosts) were identified either on site or at other development sites within 1km, the loss of one common pipistrelle day roost is not predicted to act negatively in combination with the other roost losses on the conservation status of local bat populations.

Additional mitigation required, including means of securing implementation:

A mitigation strategy is required to (a) remove or reduce the likelihood of damage to bats or their habitats, and (b) offset the damage caused by development through compensation. Mitigation will be implemented in accordance with an agreed Method Statement which will form part of a Natural England European Protected Species Mitigation Licence. The following bullets provide an indicative outline of what is likely to be necessary:

- ▶ Appointment of a licenced Ecological Clerk of Works (ECoW) to oversee mitigation and construction;
- ▶ Timing the works to building B2 to take place during March/April and/or October/November, i.e. during the period in which bats are least likely to be present;
- ▶ Creation of temporary replacement habitats to provide a safe refuge for any bats which are found and moved during the works;
- ▶ A pre-commencement emergence survey;
- ▶ Provision of information and toolbox talks to guide site operatives;
- ▶ Soft demolition measures during works to ensure any bats found can be captured and safely relocated into the pre-installed bat boxes;
- ▶ Specified procedures should bats be encountered during the works;
- ▶ Adjustments to be made to account for nesting birds, if necessary;
- ▶ Commencement of subsequent stages of the Proposed Development once the soft demolition is complete and B2 is declared bat free;
- ▶ Compensation of habitats lost as a result of development.

IEF: Roosting bats (building and stone wall)

The use of external lighting will be avoided or reduced to the minimum required for its intended purpose, during the construction phase. Where external lighting is to be provided, it should be low-level, directional lighting with minimal spill and glare. Lighting will not be directed towards the boundary stone wall or temporary replacement roosts. The measures relating to sensitive lighting can be secured via an appropriately worded planning condition.

Further details of the mitigation strategy, including specification of compensatory habitats, are listed in Appendix I.

Significance of residual effect:

Uncertain but likely capable of being reduced to a Minor negative effect at the Local level.

IEF: Reptiles**Potential effect:**

Habitat loss / damage
Killing / injury of animals
Displacement of animals

Proposed development activity:

For the purposes of this assessment, and noting the limitations stated at section 3.6, it is assumed that the Application Site supports good populations of slow worm and common lizard.

The construction phase will focus on site preparation works, including removal of 0.32ha of felled woodland that has been replaced with bare ground, patches of scrub and grassland, c.800m² of other neutral grassland, c.860m² of modified grassland and numerous log piles and tree stumps, all of which provide suitable habitat for reptiles.

Characterisation of impact, taking account of embedded mitigation:

The Proposed Development will require removal of habitat considered suitable for reptiles (bare ground, scrub, other neutral grassland, modified grassland, log piles and tree stumps). Good populations of slow worm and common lizard were assumed to be present across the survey area during the 2024 survey season.

The loss of suitable reptile habitats represents a minor magnitude negative impact, given the small area affected and that suitable reptile habitat will continue to be available to the south of the Application Site. However there will be a reduction in the available extent of habitat resource during the short term. The loss of habitat is at least partially reversible via replacement with gardens associated with the new dwellings, and is of significance at the Local level.

IEF: Reptiles

Reptiles present within the Application Site will be at risk of killing and injury during site clearance and construction works, which would constitute an offence under the WCA.

Scale of effect:

Uncertain but potentially up to a Minor negative effect at the Local level.
The risk of killing / injury would be temporary and limited to the construction period.

Cumulative effects:

None – no other approved or potential developments are expected to significantly impact populations of slow worm or common lizard.

- ▶ S/24/0106: reptile surveys recorded no reptiles.
- ▶ S/OUT/23/1508: reptile surveys recorded a low population of grass snake.
- ▶ S/23/1415: no details of reptile surveys

Effective mitigation measures are proposed where necessary to prevent impacts upon reptiles and their habitat.

Additional mitigation required, including means of securing implementation:

The Application Site's reptile population will be translocated to a receptor site. The receptor site will be located within the Application Site, or close by, and will contain existing suitable reptile habitat and will be enhanced, including the provision of hibernacula and places of shelter for reptiles on release following translocation. The receptor site will, in the first instance, be surveyed to understand to what extent it is currently used by reptiles and if it provides a sufficient carrying capacity for the translocated reptile population. The translocation will be implemented in accordance with a Method Statement which will need to be agreed with the Local Planning Authority and is likely to include the following:

- ▶ Appointment of Ecological Clerk of Works (ECOW to oversee operations which could negatively affect reptiles and other ecological features of value.
- ▶ Enhancement of the receptor site, in the form of habitat management will be required prior to the commencement of the translocation.
- ▶ Erection of reptile exclusion fencing at the perimeter of the translocation area, left *in-situ* until the conclusion of construction at the Application Site.
- ▶ Capture and translocation of reptiles for a period of at least 30 and up to 60 days during autumn 2024 is likely to be required.
- ▶ Habitat manipulation to reduce the amount of suitable vegetation cover, and render any remaining reptiles easier to catch.
- ▶ Destructive search of potential refuge / hibernation habitat and progressive reduction of vegetation, followed by soil stripping.
- ▶ All site operatives will receive a briefing from the ECoW to explain the legal protection for reptiles, methods, identification and procedures to be followed.
- ▶ The translocation and subsequent works will be programmed to take place during the active season for reptiles, broadly late March to October.

IEF: Reptiles
▶ If reptiles are found within the construction zone during the works, site operatives will be advised to cease activity in its vicinity while advice from the ECoW is sought.
Significance of residual effect:
Uncertain but likely capable of being reduced to a <u>Negligible</u> negative effect at the Local level.

6.4 Effects during the Operation Phase

6.4.1 In Table 6.3 likely significant effects resulting from operation are detailed for each of the IEFs identified previously in section 4.9 and the impacts are characterised, where appropriate, in terms of their extent, magnitude, duration, frequency, timing and reversibility. This evaluation takes into account embedded mitigation (as described at section 5). Any necessary additional mitigation is also described.

Table 6.3: Likely significant effects resulting from operation, considered for each Important Ecological Feature

IEF: Haydon Meadow SSSI
Potential effect:
Habitat degradation
Proposed development activity:
The operational development is anticipated to house a population of approximately 15-20 residents.
Characterisation of impact, taking account of embedded mitigation:
Haydon Meadow SSSI is located c.1.6km west of the Application Site. The most significant risk of impacts during operation of the Proposed Development is increased public use for recreation. Although a public right of way runs parallel to the northern boundary it does not appear that Haydon Meadow is publicly accessible. Residents of the Proposed Development accessing Haydon Meadow SSSI for recreation is therefore unlikely to occur, and no negative impact resulting in habitat damage and / or degradation is predicted.
Scale of effect:
No significant effect

IEF: Haydon Meadow SSSI
Cumulative effects:
None – no other approved or potential developments are expected to affect Haydon Meadows SSSI given that it is not publicly accessible.
Additional mitigation required, including means of securing implementation:
None – no additional mitigation is required.
Significance of residual effect:
No significant effect
IEF: Roosting bats (buildings and stone wall)
Potential effect:
Displacement of animals
Proposed development activity:
Additional artificial lighting proposals for the Application Site for access and health and safety provision, as well as additional lighting associated with individual new dwellings.
Characterisation of impact, taking account of embedded mitigation:
There is potential for bats roosting within retained roosts A- D within the stone wall to be displaced by increased lighting during the operational phase. There is potential for bats roosting within compensatory roosts provided to replace that lost (E) during construction to be displaced by increases in artificial lighting during the operational phase. The impact of artificial light is considered to represent a <u>Low</u> significance impact for both common and soprano pipistrelle which are less vulnerable to artificial light than other bat species.
Scale of effect:
Uncertain but potentially up to a <u>Minor</u> negative effect at the Local level.
Cumulative effects:
None – no other approved or potential developments are expected to affect roosting bats at the Application Site during their operation.

IEF: Roosting bats (buildings and stone wall)***Additional mitigation required, including means of securing implementation:***

The use of external lighting will be avoided or reduced to the minimum required for its intended purpose during operation. Where external lighting is to be provided, it should be low-level, directional lighting with minimal spill and glare. Lighting will not be directed towards the replacement roosts or retained roosts within the boundary stone wall. The measures relating to sensitive lighting can be secured via an appropriately worded planning condition.

Further details of the mitigation strategy are listed in Appendix I.

Significance of residual effect:

Uncertain but likely capable of being reduced to a Negligible negative effect at the Local level.

6.5 Summary of Residual Effects

6.5.1 Table 6.4 outlines the residual effects following the implementation of additional mitigation measures not already embedded in the design of the Proposed Development and identifies whether these are significant in relation to national and local planning policy. Within this EclA, significant residual negative effects are those at the level of moderate, major or substantial; minor and negligible negative effects are not considered to be significant. No residual effects that are significant in terms of national and local planning policy are anticipated to occur as a result of the Proposed Development.

Table 6.4: Residual effects

Feature	Significant residual effects	
	Construction phase	Operation
-		
Haydon Meadow Site of Special Scientific Interest	No effect	No effect
Great crested newt	No effect	No effect
Badger	Negligible negative effect (uncertain)	No effect
Roosting bats	Minor negative effect at the Local level (uncertain)	Negligible negative effect at the Local level (uncertain)
Reptiles	Negligible negative effect at Local level (uncertain)	No effect

6.6 Monitoring

6.6.1 The protected species surveys recommended at R1 to R4 in the 2024 PEA (including badger surveys) still require completion, following which this EclA will be updated. None of the residual effects assessed by this EclA were significant, and no specific monitoring is required following construction, a position which will be confirmed or updated in the final EclA.

6.7 Protection Measures for Other Ecological Features

6.7.1 Recommendations R5 to R13 as listed in the 2024 PEA continue to apply and should be implemented as part of the scheme.

6.8 Recommendations for Ecological Enhancement

6.8.1 Recommendations R14 to R20 as listed in the 2023 PEA continue to apply and should be considered for implementation as part of the scheme.

7 Summary and Conclusion

- 7.1.1 An EclA was prepared for the site of a proposed residential development at Abbey Gardens, Blunsdon, Swindon, Wiltshire.
- 7.1.2 The EclA process was undertaken with reference to relevant parts of the *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018), and in the context of national planning policy and guidance, local planning policy, UK wildlife and animal welfare legislation.
- 7.1.3 Baseline information was obtained from an ecological survey of the Application Site by professional ecologists during 2024, including an ecology desk study and Preliminary Ecological Appraisal (based on an extended UK Habitat Classification survey). Evaluation of the baseline survey work identified the following IEFs relevant to the development: GCN, badger, roosting bats (buildings and stone wall), and reptiles.
- 7.1.4 Due to the anticipated timeframe for the planning application to be determined, and notwithstanding the requirements of paragraph 99 of ODPM Circular 06/2005 (see section 2.2.11), this EclA has been carried out in advance of protected species surveys for GCN, badger, roosting bats and reptiles. In the absence of survey data, the report assumes a reasonable worst-case scenario in relation to the presence of these species. The survey season starts in May; once results are available the EclA will be amended.
- 7.1.5 The following embedded mitigation is relied upon during the impact assessment: the Application Site will join the District Level Licensing scheme for GCN; removal of nesting bird habitats will be undertaken between September and February or under ecological supervision; and a method statement will be prepared to ensure adequate control measures are adopted during construction to prevent the spread of wall cotoneaster.
- 7.1.6 Following assessment of the Proposed Development's impacts during its construction and operation phases, additional mitigation is proposed, including:
- ▶ A badger sett closure licence will need to be obtained from Natural England after planning permission is issued and before commencing ground works in the vicinity of sett S1.
 - ▶ A Natural England EPS Mitigation Licence will need to be obtained for roosting bats in building B2 after planning permission is granted and before development commences.
 - ▶ The use of external lighting will be avoided or reduced to the minimum required for its intended purpose. Where external lighting is to be provided, it should be low-level, directional lighting with minimal spill and glare. Lighting will not be directed towards the replacement roosts or the boundary stone wall. The measures relating to sensitive lighting can be secured via an appropriately worded planning condition.

- ▶ A translocation of reptiles from the developable areas to a receptor site of similar character, preferably within the Application Site, preceded by habitat enhancements to increase the carrying capacity of the receptor site.

7.1.7 Table 6.4 outlines the residual effects following the implementation of additional mitigation measures not already embedded in the design of the Proposed Development and identifies whether these are significant in relation to national and local planning policy. No residual effects that are significant in terms of national and local planning policy are anticipated to occur as a result of the Proposed Development.

7.1.8 Recommendations R1 to R20 as listed in the 2023 PEA continue to apply and should be implemented as part of the scheme.

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Appendix I: Mitigation and Compensation for Roosting Bats

For the purposes of this assessment, and noting the limitations stated at section 3.6, it is assumed that four day roosts are present within the stone wall (A, B, C and D) and used by low numbers of common and soprano pipistrelle bats. In addition, it is assumed that one day roost (E) is present within B2 and is used by low numbers of common pipistrelle bats. Roosts A to D will not be directly affected by the Proposed Development but roost E will be lost through restoration of B2.

The restoration of B2 could result in destruction of a bat roost or present a risk of killing, injury or disturbance if bats are present during the works, which would constitute an offence under the Habitats Regulations and WCA. A mitigation strategy is required to (a) remove or reduce the likelihood of damage to bats or their habitats, and (b) offset the damage caused by development through compensation. The aim is to achieve both the avoidance of harm to individual bats and compensation for loss of suitable habitat or connectivity, thereby ensuring the local conservation status of the species is maintained.

European Protected Species Mitigation Licence

An EPS Mitigation Licence will be obtained from Natural England prior to commencing the works. A mitigation Method Statement will form part of the licence application and will specify precautionary working methods, mitigation and compensation of lost habitats, based on the recommendations outlined below.

Risk of killing, injury or disturbance

Restoration of building B2 will be carried out during March/April and/or October/November. This scheduling of construction activities will reduce the risk that bats are present, while also avoiding the maternity and hibernation periods when they are most vulnerable. The timing restriction should be coupled with ecological supervision (as described below) in order to mitigate the residual risk of bats being present during the work.

An outline of the precautionary working methods to be followed under the licence is given below:

- ▶ **Appointment of Ecological Clerk of Works:** A named Ecological Clerk of Works (ECoW) who is licenced by Natural England will be appointed to oversee operations which could negatively affect bats and other ecological features of value.
- ▶ **Timing of the works:** Restoration of B2 will be carried out during March/April and/or October/November, i.e. during the period in which bats are least likely to be present.
- ▶ **Creation of temporary replacement habitats:** Prior to any works to the building, four bat boxes will be installed on a nearby mature trees which is to be retained. This will provide a safe refuge for any bats which are found and moved during the works; 1no. 2F bat box or 1no. 1FF bat boxes (or another manufacturer's equivalent) will be suitable.

- ▶ **Pre-commencement return-to-roost survey:** Prior to any works to the building, an emergence survey will be carried out the night before works are scheduled to commence unless weather conditions are such that bats are very unlikely to be active. This will allow particular attention to be paid by the ECoW to any part of the structure known to contain a bat.
- ▶ **Toolbox talks:** All site operatives will receive a briefing from the ECoW to explain the legal protection for bats, the precautionary methods to be followed, tips on identifying bats, and the procedure to be followed should a bat be found at any stage during the works.
- ▶ **Supervised soft demolition:** Restoration of B2 will be undertaken using soft demolition techniques, using hand tools only and under the supervision of an ecologist licenced to handle bats. Particular attention will be paid to the recorded roost location and any other part of the structure known to contain a bat as a result of the pre-commencement survey. If any bats are found during the soft demolition, they will be captured and safely relocated into the pre-installed bat boxes by the supervising ecologist.
- ▶ **Procedure if bats are encountered:** If bats are found within the construction zone during subsequent works, site operatives will be advised to cease activity in its vicinity while advice from the ECoW is sought. The ECoW will then assess the most appropriate course of action which may include capturing the individual(s) and moving it to a pre-installed bat box or holding it for release on site at dusk.
- ▶ **Nesting birds:** As a result of the precautionary timing outlined above, it is possible that the work will be carried out during the nesting bird season which runs from early March to late August. If vegetation clearance or building alteration/demolition is required during the nesting season, a survey for active bird nests will be carried out by the ECoW immediately prior to the works. If an active nest is found, the nest must be cordoned off and works adjacent to this nest must be delayed until such time that the chicks have fledged.
- ▶ **Commencement of construction works:** Once the soft demolition is complete it is likely that no bats will be present within the areas to be affected and renovation works can commence.

It should be noted that the above bullets are indicative and that the mitigation strategy will be finalised following consultation with Natural England prior to an EPS mitigation licence being issued. The licence application will need to be based on survey data from the current or most recent bat survey season.

Roost loss – buildings/structures

The destruction of one summer day roost (E) used by low numbers of common pipistrelle is unavoidable if the scheme is to proceed as planned. Compensatory measures are required to ensure there is no net loss of roosting habitats and to enable the recorded bat population to persist in the long-term.

The following measures are recommended in order to re-provide equivalent roosting features following construction. General considerations for the installation of bat roosts are listed in Box 1 below, while bat box specifications are listed at the end of this document.

It is recommended that the following replacement roosting habitat feature is installed at eave height in a similar positions to the existing roost. Further details on the specification of these and alternative systems can be found in Gunnell *et al.*, 2013. The precise number, type and location of features to be installed will be agreed as part of the licence:

- ▶ 1no. Ibstock Enclosed Bat Box (or Schwegler Bat Tube 1FR) wall mounted or integrated into the façade at a comparable height and aspect to the roost affected during the works.

Box 1: Considerations & key requirements for crevice-dwelling bats (after Gunnell <i>et al.</i>, 2013)	
Species	Barbastelle, serotine, Bechstein's, Brandt's, Daubenton's, whiskered, noctule, Leisler's, pipistrelles (common, soprano & Nathusius')
Consideration	Solution
Where in a development	Anywhere that the access is not illuminated by artificial lighting If possible they should be installed facing vegetation features such as mature hedgerows or trees, but with a clear line of flight for bats entering or leaving the roost
Where in a building	Summer maternity roosts in most southerly or westerly aspect for solar heating, or in a location that provides thermal stability Male roosts and winter hibernation roosts on northerly aspect
Height	2m–7m, preferably >4m above ground level
Dimensions	Any size as long as some components of the area are crevices of c.20-30mm wide Total area of >c.1m ² would be useful for summer maternity roosting Male roosts contain a smaller number or individual bats
Access dimensions	20mm–50mm (w) x 15mm–20mm (h)
Other considerations	Rough interior surface (for grip) Non-toxic and non-corrosive materials Absence of breathable roofing membranes to avoid the risk of entanglement Suitable thermal properties (reducing 24hr fluctuations), providing stability but allowing maximum thermal gain for summer roosts The use of thermal insulation materials for maternity roosts should be carefully considered in relation to other desired properties e.g. energy efficiency

Artificial lighting

To minimise the general risk of disturbance to roosting bats within the stone wall at locations A, B, C and D, as well as foraging and commuting bats on and around the Application Site during and after construction, it is recommended that the following lighting precautions are considered during the detailed design stage (ILP/BCT, 2018):

- ▶ Lighting should not be directed towards the replacement roost features, or to boundary stone wall.
- ▶ All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
- ▶ LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.

-
- ▶ A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
 - ▶ Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
 - ▶ Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.
 - ▶ The use of specialist bollard or low-level downward directional luminaires to retain darkness above should be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by the lighting professional.
 - ▶ Column heights should be carefully considered to minimise light spill.
 - ▶ Only luminaires with an upward light ratio of 0% and with good optical control should be used (refer to ILP guidance for the reduction of obtrusive light).
 - ▶ Luminaires should always be mounted on the horizontal, i.e. no upward tilt.
 - ▶ Any external security lighting should be set on motion-sensors and short (1min) timers.
 - ▶ As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

Bat box specifications



Schwegler 2F DFP General Purpose Bat Box:
Apex roof to mimic tree cavity, suitable for noctule, brown long-eared, Bechstein's and Daubenton's. Internal double front panel creates a crevice suitable for pipistrelles

Siting and Positioning:

On a tree-trunk or on buildings

Cleaning and Inspection:

Easy cleaning and inspection due to removable front panel. If occupied by bats, inspection and cleaning must be carried out by a licensed professional

Entrance hole:

Slotted hole

Occupants:

Bats

Material:

Air-permeable and long lasting SCHWEGLER wood-concrete

Kit includes:

Roost box with removable front panel
Galvanized steel hanger - forestry approved
Aluminium Nail - forestry approved

Schwegler 1FF Flat Bat Box:

Open at bottom so cleaning not required. Varied internal roost surfaces. Suitable for crevice roosters such as pipistrelles, and large enough for use as maternity roost

Siting & positioning:

On the tree-trunk or on buildings

Cleaning and inspection:

Open at bottom, cleaning not required. Easy to inspect due to removable front panel. If occupied by bats, inspection and cleaning must be carried out by a licensed professional

Entrance hole:

Width 12-24 mm x Length 21cm

Occupants:

Bats

Material:

Air-permeable and long lasting SCHWEGLER wood-concrete

Kit includes:

Roost box with swing-away front panel
Galvanized steel hanger - forestry approved
Aluminium Nail - forestry approved

<p>Colour: Black</p> <p>Dimensions: Height: 350mm Dia.: 165mm</p> <p>Weight: 4kg approx.</p>	<p>Colour: Black</p> <p>Dimensions: Depth: 140mm Width: 270mm Height: 430mm</p> <p>Weight: 10kg approx.</p>
	
<p>Habibat Bat Access Tile (available in clay, slate or lead):</p> <p>The Habibat Access Tile is a roof tile which has been modified to allow bats either into the batten space (between tiles and liner for pipistrelles) or into the roof void (for brown long-eared bats).</p> <p>The Habibat Access Tile consists of a vacuum-moulded plastic cowl embedded into the tile. The access cowl is designed to prevent rainwater ingress to the roof but is of correct size and roughened to be suitable for bats.</p> <p>The 5 piece clay tile set fits on any roof with plain clay tiles to provide access for bats either behind the tiles or into the roof space.</p> <p>The slate tile consists of a standard sized slate, with a capped vent which allows access into the</p>	<p>Schwegler 1FR/2FR Bat Tube:</p> <p>Suitable for building into or mounting onto external walls. Open at bottom so cleaning not required. Can be used individually (1FR) or by connecting two or more 2FR. Suitable for bats that use buildings e.g. pipistrelles or serotine</p> <p>Siting & positioning:</p> <p>Can be installed on external walls – either flush or beneath a rendered surface in concrete and, during renovation work, under wooden panelling or in building cavities (e.g., slab-type building structures, bridges, etc). If required, it can be painted using standard air-permeable exterior paint. Birds will not occupy this box.</p> <p>Cleaning: Maintenance-free</p>

batten space (between tiles and liner for pipistrelles) or into the roof void (for brown long-eared bats).

Dimensions: (H) 418 x (W) 375 x (D) 80mm

Entrance hole dimensions: (H) 20 x (W) 100mm

Weight: 1.3kg

Entrance hole:

Height: 20mm

Width: 150mm

Occupants:

Bats

Material:

SCHWEGLER
wood-concrete

Kit includes:

1 x Bat Tube

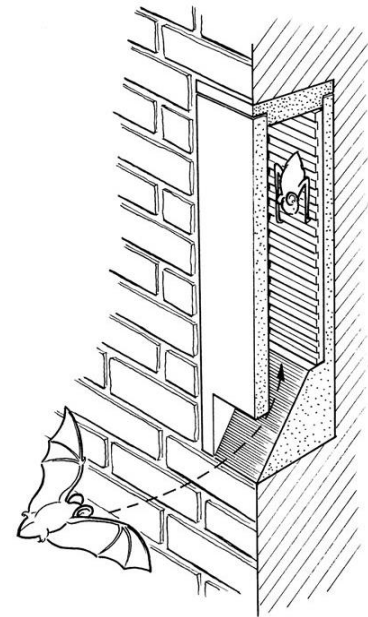
Colour:

Grey material,
paintable with
standard air-
permeable wall-
paint

Dimensions:

Height: 475mm; Width: 200mm; Depth: 125mm

Weight: 10kg approx.



Ibstock Enclosed Bat Box (Type B or C):

- Designed specifically for pipistrelle bats
- Available in all brick types
- Discrete home for bats
- Various sizes
- Several roosting zones are created inside the box
- Bats are contained within the bat box itself
- Maintenance free with entrance at the base
- Suitable for new build & conservation work
- Bat Box Type B: 215 x 215 or 215 x 290 / Bat Box Type C: 215 x 215 or 215 x 290

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