



7.0 Ecology

7.1 Introduction

- 7.1.1 This Chapter has been produced by WYG. It presents the baseline ecological information of the study area and its environs and assesses the likely impacts of the proposed development upon any sensitive ecology receptors identified within its zone of influence.

7.2 Methodology and Scope

Policy Background

National Policy

- 7.2.1 The National Planning Policy Framework was adopted in March 2012ⁱ. Section 11 of the NPPF, Conserving and Enhancing the Natural Environment replaces Planning Policy Statement 9 (PPS9): Biodiversity and Geological Conservation. However, government Circular 06/2005, Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System, which relates to PPS9 remains valid and is referenced within Paragraph 113 of the NPPF.
- 7.2.2 Circular 06/2005 states that the presence of protected species is a material consideration in the planning process. The NPPF also states that 'planning policies should promote the protection of priority species populations linked to national and local targets'.
- 7.2.3 Furthermore, central and local government policy now points towards ecological enhancement on development sites. The NPPF considers enhancement in the statement 'The planning system should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes....and minimising impacts on biodiversity and providing net gains in biodiversity'.

Local Policy

- 7.2.4 The North Dorset Local Plan Part 1 was adopted in January 2016ⁱⁱ. Policy 4: The Natural Environment includes a number of requirements in relation to ecology.
- 7.2.5 *Development proposals which seek to conserve or enhance the natural environment should be permitted unless significant adverse social or environmental impacts are likely to arise as a result of the proposal.*
- 7.2.6 *Developers should demonstrate that their proposals will not have significant adverse effects, including cumulative effects, on internationally important wildlife sites. Where this cannot be demonstrated, appropriate mitigation measures will be required otherwise permission will be refused.*
- 7.2.7 *Nationally designated wildlife sites should not be harmed by development unless it can be clearly demonstrated that the benefits of development clearly outweigh the impact on the site and the wider SSSI site network.*
- 7.2.8 *Development proposals should aim to avoid impact on local biodiversity sites however where impact is unavoidable; developers will be required to provide effective mitigation for this loss in biodiversity. As a last resort, compensation measures may be acceptable if effective mitigation cannot be provided. Such compensation measures must offer gains equivalent in magnitude to the loss resulting from the development.*

- 7.2.9 *Where there is likely to be an impact on nationally protected or locally rare or scarce species, an assessment of the impact on these species should be submitted to accompany development proposals. This should be appropriate to the scale of development and be informed initially through consultation with the local environmental records centre.*
- 7.2.10 Policy 21: Gillingham Strategic Site Allocation covers the proposed development and includes a number of requirements in relation to ecology and biodiversity.
- 7.2.11 *The Master Plan Framework for the southern extension (and any subsequent planning application, or applications, for the site) should show how the natural and historic environment will be conserved and enhanced by measures to conserve and enhance wildlife interests, including both habitats and species within and close to the southern extension.*
- 7.2.12 *The Master Plan Framework for the southern extension (and any relevant subsequent planning application, or applications, for the site) should make provision for:*

- *at least 26 hectares of informal public open space primarily along the river corridors providing: a landscape setting for development; enhanced habitats for wildlife; and off-road routes for pedestrians and cyclists within the SSA linking to the town and countryside; and*
- *the retention, where practicable, of important trees, groups of trees and hedgerows on the southern extension site within public open spaces and publicly accessible 'greenways'; and*
- *the establishment of a sustainable drainage system across the southern extension utilising, where practicable, existing watercourses, ponds, ditches and the 'greenways' associated with the retained hedgerows; and*
- *the retention of existing areas of strategic landscape planting and the establishment of new strategic landscape planting, particularly on the edges of the site to screen new development whilst also allowing views out of and into the site.*

Key Legislation

National Legislation

- 7.2.13 The Wildlife and Countryside Act 1981 (as amended) (the W&CA) is the primary legislation covering endangered or threatened species in England and sets out the framework for the designation of SSSIs and SPAs.
- 7.2.14 The Conservation of Habitats and Species Regulations 2010 (as amended) (the Habitat Regulations) action the UK's implementation of the Habitats Directive, including the protection of European Protected Species and the designation of SACs.
- 7.2.15 The Protection of Badgers Act 1992 (the Badger Act) brings together all the legislation that is specific to badgers, with the exception of their inclusion on Schedule 6 of the W&CA.
- 7.2.16 The Hedgerows Regulations 1997 (the Hedgerow Regulations) aims to protect hedgerows of importance from destruction. The Regulations only apply to hedgerows growing on or adjacent to certain land use categories.
- 7.2.17 The Countryside and Rights of Way Act 2000 (the CRoW Act) affords a greater level of protection to SSSIs, provides better management arrangements for Areas of Outstanding Beauty and strengthens



wildlife enforcement legislation. Section 74(2) of the Act requires the Secretary of State to list those habitats and species of principal importance for the conservation of biodiversity, in accordance with the United Nations Convention of Biological Diversity 1992.

- 7.2.18 The Natural Environment and Rural Communities Act 2006 (the NERC Act) is designed to help achieve a rich and diverse natural environment and thriving rural communities through modernised and simplified arrangements for delivering Government Policy. Elements of the act most relevant to the proposed scheme include (i) extension of the CRoW Act biodiversity duty to public bodies and statutory undertakers to ensure due regard to the conservation of biodiversity; and (ii) modification of the CRoW Act so that species listed under Section 74 are now listed under Section 41 of the NERC Act. Priority Habitats and Priority Species for England and Wales (formerly listed in the superseded UK Biodiversity Action Plan) are detailed under Section 41.

Species-specific Legislation

Great Crested Newts

- 7.2.19 Great crested newt (GCN) is a European Protected Species and is protected under the Habitat Regulations and the W&CA. It is an offence to:

- Intentionally or recklessly kill, injure or take a GCN;
- Possess or control any live or dead specimen or anything derived from a GCN;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a GCN;
- Intentionally or recklessly disturb a GCN while it is occupying a structure or place which it uses for that purpose.

- 7.2.20 A European protected species mitigation licence (EPSL) from Natural England is required for any development works that would affect GCN.

Reptiles

- 7.2.21 The adder, grass snake, slow-worm and common lizard receive partial or full protection under the W&CA as amended which makes it an offence to:

- Intentionally or recklessly kill or injure these animals;
- Sell, offer for sale, possess or transport for the purpose of sale or publish advertisement to buy or sell individual reptiles.

Bats

- 7.2.22 All UK species of bat are European Protected Species which means they are protected under the Habitat Regulations and it is an offence to:

- deliberately, recklessly or intentionally kill, injure or take a bat;
- to deliberately, intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat; or,

- deliberately disturb an animal while it is occupying a structure or place which it uses for that purpose.

- 7.2.23 An EPSL from Natural England is required for any development works that would affect bat roosts.

Birds

- 7.2.24 It is an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs under the W&CA. In addition, there are 194 species that are subject to special conservation measures concerning their habitat in order to ensure their survival and reproduction. This includes an offence to disturb any birds listed on Schedule 1 of the W&CA whilst nesting, or their dependant young.

Badgers

- 7.2.25 It is illegal for a person to kill, injure or take a badger under the Badger Act. It is also an offence to destroy, damage or obstruct an entrance to a badger's sett, or to disturb animals whilst within a sett.

- 7.2.26 A Natural England Mitigation licence will be required if development works affect badger setts. This can also include direct/indirect disturbance near to a sett.

Dormice

- 7.2.27 The hazel dormouse is a European Protected Species under the Habitat Regulations and is also protected under the W&CA. It is an offence to:

- Intentionally or deliberately kill, injure or capture a dormouse;
- Damage, destroy or obstruct access to any structure or place used for shelter or protection by a dormouse;
- Deliberately disturb a dormouse while it is occupying a structure or place which it uses for that purpose.

- 7.2.28 An EPSL from Natural England is required for any development works that would affect dormouse or dormouse habitat (e.g. hedgerows, scrub or woodland) where the species is known to be present.

Otter

- 7.2.29 The otter is a European Protected Species under the Habitat Regulations and is also protected under the W&CA. It is an offence to:

- Intentionally or deliberately kill, injure or capture an otter;
- Damage, destroy or obstruct access to any structure or place used for shelter or protection by an otter;
- Deliberately disturb an otter while it is occupying a structure or place which it uses for that purpose.

- 7.2.30 An EPSL from Natural England is required for any development works that would affect otters or their habitat (e.g. holts, couches) where the species is known to be present.



Water Vole

- 7.2.31 The water vole is fully protected under Schedule 5 of the W&CA. It is an offence to:
- Intentionally kill, injure or capture water voles;
 - Damage, destroy or obstruct access to any structure or place used for shelter or protection;
 - Disturb a water vole while it is occupying a structure or place which it uses for that purpose;
 - Possess, sell, control or transport live or dead water voles or parts of them.
- 7.2.32 A licence from Natural England is required for any works which would result in an offence. Natural England will not issue licences for development purposes however they may issue a licence if a conservation benefit can be demonstrated. A low-impact licence is also available which can be used under strict circumstances.

Invertebrates

- 7.2.33 A number of invertebrate species are protected by European and UK legislation, such as those listed on Schedule 5 of the W&CA and in the Habitat Regulations. As a result, some species are protected from some or all of the following (amongst others): (i) killing, injuring or taking; (ii) possession or control; (iii) damage to, destruction of or obstruction of access to any places used for shelter or protection; and (iv) disturbance while using such a structure. There are currently 411 invertebrate Priority Species in the UK.

Invasive Species

- 7.2.34 It is illegal to allow any animal which is not ordinarily resident in Great Britain, or is listed on Schedule 9 to the W&CA, to escape into the wild, or to release it into the wild without a licence. It is also illegal to plant or otherwise cause to grow in the wild any plant listed on Schedule 9 of the W&CA.

Scoping Assessment Stage

- 7.2.35 An EIA Scoping Request was made to North Dorset District Council (see Section 2.2.7) and it was agreed that Ecology would be one of the topics addressed as part of the ES. The response from North Dorset District Council noted the presence of protected species on Site as well as the presence of trees and hedgerows worthy of retention. The potential for adverse effects on otters and water voles was also noted.

Assessment Methodology

- 7.2.36 The impact assessment for ecology has been carried out in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Guidelines for Ecological Impact Assessment in the UK Ireland: Terrestrial, Freshwater and Coastal 2nd edition (2016)ⁱⁱⁱ, hereafter referred to as the CIEEM guidelines.
- 7.2.37 The starting point for any assessment of impacts is to determine which features should be subject to detailed assessment. These will be ecological receptors considered to be important and potentially affected by the project.

- 7.2.38 This approach is consistent with the 2011 EIA Regulations^{iv}, which only require investigation of likely significant effects. A summary of the key points from the relevant guidance, as relevant to this assessment, is provided below.

Geographic Context

- 7.2.39 The CIEEM guidelines recommend that the value of ecological receptors or features is determined based on a geographic frame of reference that includes the following levels:
- **International** - Special Protection Areas (SPA), Special Areas of Conservation (SAC), Ramsar Sites, etc;
 - **National** - Sites designated at UK level, e.g. Sites of Special Scientific Interest (SSSI);
 - **Regional** - Habitats or populations of species of value at a regional (i.e. south-west England) level;
 - **County** - Designated Sites, such as Wildlife Heritage Sites (WHS) and Sites of Importance to Nature Conservation (SINCs), or habitats / species populations of value at a county (i.e. North Dorset) level;
 - **Local** - Habitats or species populations of value in a local context.
 - **Negligible** - Habitats or species populations are were either not detected on Site, or the potential for them to be present is negligible.

- 7.2.40 Habitats or species populations of value below the local context are not considered to be important for the purposes of this assessment (unless there is potential for a breach of legislation – see below).

Habitats

- 7.2.41 In accordance with the CIEEM guidelines, the importance of habitats is measured against published selection criteria where available. Reference is also made to the list of habitats of principal importance in England and Wales, Priority Habitats and Dorset Biodiversity Strategy. In accordance with the guidance, where important habitats are in a sub-optimal condition, their potential value should be considered.

Species

- 7.2.42 In accordance with the CIEEM guidelines, when assigning a level of value to a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records. Rarity is an important consideration because of its relationship with threat and vulnerability although since some species are inherently rare, it is necessary to look at rarity in the context of status. A species that is rare and declining should be assigned a higher level of importance than one that is rare but known to be stable.
- 7.2.43 Reference is also made to the list of species of principal importance in England and Wales and Dorset Biodiversity Strategy. Legally protected species are considered important where there is potential for a breach of relevant legislation.

Predicting and Characterising Ecological Impacts

- 7.2.44 In accordance with the CIEEM guidelines, when describing impacts, reference is made to the following, where applicable:
- **Positive/Negative** – whether an impact improves or reduces the quality of the receptor.



- **Extent** – the area over which an impact occurs.
- **Duration** – the time for which an impact is expected to last.
- **Magnitude** – the size or intensity of the impact.
- **Reversibility** – a permanent impact is one that is irreversible within a reasonable timescale or for which there is no reasonable chance of action being taken to reverse it; a temporary impact is one from which a spontaneous recovery is possible.
- **Timing and frequency** – whether impacts occur during critical life-stages or seasons

Direct and Indirect Ecological Impacts

- 7.2.45 Both direct and indirect impacts are considered within this assessment. A direct impact is directly attributable to a defined action such as the physical loss of a habitat or the immediate mortality of an individual of a particular species. Indirect impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process or receptor. An example of an indirect effect would be the loss of an important prey species for a predator.

Approaches for Determining Significant Impacts

- 7.2.46 In accordance with the CIEEM guidelines, a significant impact, in ecological terms, is defined as an impact which either supports or undermines the conservation objectives for important ecological features or for biodiversity in general.
- 7.2.47 In accordance with the CIEEM guidelines, the approach adopted here aims to determine if an impact is significant or not on the basis of a discussion of the factors which characterise it - i.e. the ecological significance of an impact is not dependent on the value of the feature in question. The value of any feature that will be significantly affected is used to determine the geographical scale at which the impact is significant. For example, an ecologically significant impact on a feature of value at county level is regarded as a significant impact at county level. This in turn is used to determine the implications in terms of legislation, policy and/or development control.
- 7.2.48 As noted above, impacts are only assessed in detail for receptors of sufficient value that impacts upon them may be significant (in terms of legislation or policy).
- 7.2.49 Any significant impacts remaining after mitigation (the residual impacts), together with an assessment of the likelihood of success in the mitigation, are the factors to be considered against legislation, policy and development control in determining the application.

Limitations of the Assessment

- 7.2.50 The extended Phase 1 survey was completed early in the season for flowering plants. However, numerous further site visits were completed during the peak season between 6th May and 28th August with the results of the extended Phase 1 survey updated where relevant. As such this is not considered to be a significant limitation.
- 7.2.51 Baseline data for bats was collected in accordance with the 2012 2nd Edition Bat Survey Guidelines^v. These have since been superseded by new guidance in 2016^{vi}. If the surveys had been completed under the 2016 guidelines it is not anticipated that there would have been a significant change in the scope of surveys undertaken. As such this is not considered to be a significant limitation.

- 7.2.52 All baseline data was collected in the 2015 survey season and as such would typically be considered either out of date or nearly so. An update walkover survey was completed in March 2017 which confirmed that there had been no significant change in site conditions. As such it was agreed with the Dorset Natural Environment Team that the existing baseline data would remain valid for the purposes of this assessment (if submitted in 2017), but that updated surveys may be required to support detailed applications for individual phases.
- 7.2.53 There are no other significant overall limitations that are considered to compromise the validity of this EcIA although details of any qualifications or limitations that are specifically relevant to a particular floral or faunal survey, are provided in the relevant appendices (7.1 – 7.8).

7.3 Baseline Environment

Existing baseline

- 7.3.1 The Site has been subject to a number of desk-based, floral and faunal surveys by WYG between March 2015 and March 2017. Factual reports presenting the full details of these surveys are provided in the appendices. However, a summary of their key findings are presented in this chapter in order to inform the Nature Conservation Value evaluation for each of the sensitive receptors identified.
- 7.3.2 The species discussed in this report are referred to by their common name, wherever possible. This has been done to make the text concise and easily readable; however, their scientific names are provided in the relevant appended reports.

Desk Study

- 7.3.3 Desk-based consultation was undertaken in 2015 with the Dorset Environmental Records Centre (DERC). A range of locally designated sites and legally protected and priority species records were returned for a 2km radius surrounding the centre of the Site, extended to 5km for bats. The MAGIC database was consulted for details of statutory designated sites within 20km of the Site and records of granted EPS licences.
- 7.3.4 Previous ecology reports produced by SLR^{vii} and Ecology Solutions^{viii} were also reviewed in relation to the Site.
- 7.3.5 The full details are provided in Section 2.2 of Appendix 7.1. The relevant records are summarised below.

Statutory Sites

- 7.3.6 Table 7.1 below provides details of the statutory designated sites within 20km of the Site. There are no statutory designated sites located within 2km of the Site. Five sites are located within 20km.

**Table 7.1 - Details of Statutory Designated Sites within 20km of the Site**

Designated site	Distance and direction from Site	Reasons for designation	Value
Fontmell & Melbury Downs SAC	7.2 km south-east of the Site.	This inland site supports consistently large populations of early gentian numbering many thousands of plants. The site includes large areas of species-rich chalk grassland and is one of three sites selected in the centre of the main range of the species.	International
River Avon SAC	14.2 km east of the site.	The Avon in southern England is a large, lowland river system that includes sections running through chalk and clay, with transitions between the two. Five aquatic <i>Ranunculus</i> species occur in the river system, but stream water-crowfoot and river water crowfoot are the main dominants.	International
Prescombe Down SAC	15.4 km east of the Site.	Prescombe down is one of three sites selected in the central part of the range for early gentian. It holds very significant populations of hundreds of thousands of plants in high-quality chalk grassland that has been sympathetically managed for many years. Marsh fritillary is present as a qualifying feature but not a primary reason for the selection.	International
Chilmark Quarries SAC	15.5 km north east of the Site.	This complex of abandoned stone mines provides suitable hibernation conditions for a range of bat species and has a long history of usage by greater horseshoe bats. This complex of abandoned mines in central-southern England is regularly used by small numbers of barbastelle as a hibernation site. The site also contains an important assemblage of other bat species, including Bechstein's bat for which this site has also been selected, indicating that	International

Designated site	Distance and direction from Site	Reasons for designation	Value
		conditions at this site are particularly favourable for the survival of these bat species.	
Rooksmoor SAC	15.7 km south-west of the Site.	Representing marsh fritillary in the southern part of its range in England, Rooksmoor supports an exceptionally large population within a cluster of sites in the Dorset stronghold. A large outlying population at Lydlinch has been included in this site as it is considered to be part of the metapopulation in this area.	International

Non-statutory Sites

7.3.7 The data received from DERC provides details of two non-statutory designated sites known as Sites of Nature Conservation Interest (SNCI) within 2km of the site. In addition, there are two Habitat Restoration Sites (HRS). Refer to Table 7.2 for details for these sites.

Table 7.2 - Details of Non-Statutory Designated Sites within 2km of the Site

Name	Distance and direction from development site	Reason for designation	Value
Gillingham Secondary School HRS	0.5 km north-west of the Site.	Neutral grassland; Fen/sedge with pond.	Local
Palemead Coppice SNCI	1.00 km east of the Site.	Oak woodland on a heavy clay soil.	County
Gillingham Showground HRS	1.4 km south-east of the Site.	Pond.	Local



Name	Distance and direction from development site	Reason for designation	Value
King's Court Wood SSCI	1.53 km north-east of the Site.	A large oak/ash woodland not of ancient origin.	County

Protected and Notable Species Records

Great Crested Newts

- 7.3.8 The data provided by DERC included 36 records of GCN within 2 km of the Site. Five of these records were relating to ponds within 500m of the Site, ponds P4, P11, P14, P15 and P16 (see Figure 1, Appendix 7.1). The Ecology Solutions and SLR surveys carried out at the Site in 2011 identified small populations of GCN in Ponds P6, P7, P10, P11 and P16.

Reptiles

- 7.3.9 The data provided by DERC included one record of a reptile which was for a grass snake located 150m to the north of the Site. The Ecology Solutions and SLR surveys carried out at the Site in 2011 recorded low populations of slow worm, common lizard and grass snake across the Site.

Birds

- 7.3.10 The data provided by DERC included records of 26 bird species within 2 km of the Site. Although most were common species, 13 are protected under Schedule 1 Part 1 of the W&CA or are Schedule 41 priority species under the NERC Act or are red listed Birds of Conservation Concern (BoCC).
- 7.3.11 Schedule 1 or Annex 1 species included barn owl, kingfisher, fieldfare and redwing. Schedule 41 priority species included yellowhammer, starling, bullfinch, cuckoo, and reed bunting.

Bats

- 7.3.12 The data provided by DERC included records of common pipistrelle, soprano pipistrelle, whiskered bat, Natterer's bat, Bechstein's bat, Daubenton's bat, noctule, serotine, brown long-eared bat and lesser horseshoe bat from within 5km of the Site. The closest record of lesser horseshoe was a maternity roost 2.5km south-east of the Site in Port Regis (in 2011). The closest record of Bechstein's bat was 2.7km to the south of the Site in a bat box in Duncliffe Wood (2009 most recent). The site is not located within a consultation zone for bats (an area which is subject to specific planning guidance in relation to important bat populations). The Ecology Solutions surveys in 2011 identified a soprano pipistrelle roost within a mature tree adjacent to the southern boundary of Ham Farm (TN15, Figure 1, Appendix 7.1).

Hazel Dormouse

- 7.3.13 The data provided by DERC included one record of hazel dormouse located at the southern boundary of Ham Farm in 2005. The Ecology Solutions and SLR surveys in 2011 recorded no evidence of dormice on Park Farm or Ham Farm. Newhouse Farm was not surveyed.

Badgers

- 7.3.14 The data provided by DERC included 16 records of badgers within 2km of the Site, the closest approximately 160m north-west of Newhouse Farm. The Ecology Solutions and SLR surveys in 2011 observed badger setts at the eastern extent of Park Farm, and the eastern extent of Ham Farm. The Park Farm setts included a main sett and several active annexes, whilst the Ham Farm sett comprised a main sett.

Otters

- 7.3.15 The data provided by DERC included seven records of otters within 2km of the Site between 2000 and 2006. The closest records were of spraints from the River Lodden adjacent to the northern boundary of Newhouse Farm. Spraints were identified along Fern Brook in 2011 during the SLR surveys.

Water Voles

- 7.3.16 The data provided by DERC included 15 records of water vole within 2km of the Site between 2000 and 2012. The closest records were of burrows from the River Lodden adjacent to the northern boundary of the Site. The Ecology Solutions and SLR surveys in 2011 identified signs of water voles in both the River Lodden and Fern Brook.

Invertebrates

- 7.3.17 The data provided by DERC included records of four notable invertebrates from within 2km of the Site; small eggar butterfly, wall butterfly, white admiral butterfly and small blue butterfly. The closest record is of small eggar 50m north of the development site within the Lodden Lakes.
- 7.3.18 White-clawed crayfish surveys in 2011 recorded the presence of signal crayfish (a non-native invasive species) within the River Lodden.

Field Surveys

- 7.3.19 An extended Phase 1 habitat survey was conducted by WYG in March 2015 in accordance with Joint Nature Conservation Committee (JNCC, 2003^{ix}) and CIEEM (CIEEM, 2013^x) guidelines. This has been subsequently updated by WYG in February 2017, with no change in site conditions noted. All accessible areas of the Site were investigated including a 50m radius where access was possible. Full descriptions of the habitats found are provided in Appendix 7.1. In summary, the following Phase 1 habitat types were recorded on Site:

- plantation broadleaved woodland;
- species-rich hedgerows;
- species-poor hedgerows;
- improved grassland;
- neutral semi-improved grassland;
- running water;
- standing water;



- bare ground; and
- buildings.

Habitats

Plantation Broadleaved Woodland

- 7.3.20 There is a large area of plantation broadleaved woodland located to the north of the Park Farm area of the site. The woodland was found to be young, comprising immature and semi-mature trees with rough grassland beneath. A further strip of immature plantation woodland is located along the northern edge of the Ham Farm site. These areas of woodland are plantation rather than semi-natural and as such are not considered to qualify as a Habitat of Principal Importance (HPI).
- 7.3.21 As such, based on its botanical value the woodland on site is not considered to be an important receptor for the purpose of this assessment.

Hedgerows

- 7.3.22 A large number of hedgerows are present within the boundary of the proposed development site. These form the boundaries of most fields across all three areas of the Site. The majority of hedgerows on site were species-poor and many were heavily managed through regular cutting. Seven species-rich hedgerows are present on site. Two hedgerows, H5 and H7 (Figure 1, Appendix 7.1) were considered likely to be 'Important' under the Hedgerow Regulations due to the presence of an average of seven woody species in a 30m section and species-rich hedgerows are considered to qualify as an HPI.
- 7.3.23 Due to the presence of species-rich and 'Important' hedgerows, the hedgerow network is considered to be of value at a **County** level.

Improved Grassland

- 7.3.24 The improved grassland present on Site is grazed or managed for silage. It is species-poor and hence is not considered to qualify as an HPI.
- 7.3.25 As such, the improved grassland is not considered to be an important receptor for the purpose of this assessment.

Neutral Semi-improved Grassland

- 7.3.26 The neutral semi-improved grassland is less intensively managed than the improved grassland with a higher sward, however it is also species-poor and not considered to qualify as an HPI.
- 7.3.27 As such, the neutral semi-improved grassland is not considered to be an important receptor for the purpose of this assessment.

Running Water

- 7.3.28 The River Lodden forms the northern boundary of the Ham Farm and Newhouse Farm areas. It was approximately 3m wide with a moderate flow and a depth of approximately 0.5m. Hedgerows are present on the banks along much of its length and the riparian vegetation predominately comprises semi-improved grassland.

- 7.3.29 A running ditch is located to the south of the Lodden along the boundary between Ham Farm and Newhouse Farm. The water level was shallow (100-300mm) with a moderate flow.
- 7.3.30 Fern Brook is a tributary of the River Lodden which runs along the northern and eastern boundaries of the Park Farm area. Although the water level was relatively shallow (100-300mm) with a moderate flow at the time of the survey, the brook has deep banks up to 1m in height and 2m wide.

- 7.3.31 The River Lodden and Fern Brook are considered to qualify as River HPis.

- 7.3.32 As such the running water on site is considered to be of value at a **Local** level.

Standing Water

- 7.3.33 Five ponds are located on site with a further 13 within 500m of the Site. Ponds are listed as an HPI.

- 7.3.34 As such the standing water on Site is considered to be of value at a **Local** level.

Bare Ground

- 7.3.35 Bare ground is present within all three areas of the Site in the form of hardstanding access tracks. The bare ground has negligible ecological value.

- 7.3.36 As such, the bare ground is not considered to be an important receptor for the purpose of this assessment.

Buildings

- 7.3.37 A single building complex is located in the southern corner of the Park Farm area. This building, a garden centre, is a large commercial building of predominately metal construction with a pitched metal roof. The building has negligible ecological value.

- 7.3.38 As such, the buildings are not considered to be an important receptor for the purpose of this assessment.

Protected and Notable Species

Great Crested Newts

- 7.3.39 A GCN presence/likely absence and population survey was carried out over six visits in May and June 2015 of eight waterbodies considered suitable to breeding GCN on and within 500m of the Site. These were undertaken in accordance with the methodology outlined in English Nature's Great Crested Newt Mitigation Guidelines (2001) – see Appendix 7.2 for full details.

- 7.3.40 Small populations of GCN were confirmed in P3, P9, P10, P11, P14, P15 and P16. Small populations were also recorded in P6 and P7 in 2011 (see 7.3.8) however these were considered to be disconnected from the Site by Fern Brook and therefore considered to be independent of each other and not part of the same metapopulation.

- 7.3.41 The GCN populations on site are considered to be of value at a **Local** level due to the high number of records and suitable habitat in the wider area.

Reptiles

- 7.3.42 A reptile presence/likely absence survey was carried out over seven visits between July and September 2015 in accordance with the recommended survey guidelines (Gent and Gibson, 2003). See Appendix 7.3 for full details. These comprised seven inspections of 200 artificial refugia which had been positioned in



the areas identified during the extended Phase 1 habitat survey as having suitable habitat (Figure 1, Appendix 7.3).

- 7.3.43 A good population of slow worms (peak count 11) and a low population of grass snakes (peak count 1) were recorded at the Site. Common lizard were not recorded however a low population was recorded in 2011 and as such it is assumed they remain present.
- 7.3.44 The reptile population on the Site is considered to be of value below the local level given that there is a large amount of similar habitat connected to the Site, the number of previous records within 2km and because reptiles are considered to be widespread in the south of England (as per Natural England's Standing Advice Species Sheet, 2011^{xi}). However reptiles are considered an important receptor due to the potential for a breach of legislation (W&CA).

Birds

- 7.3.45 Four breeding bird surveys were completed on the Site between April - June 2015 (see Appendix 7.4). The survey methodology for all surveys was based on a combination of the Common Birds Census (CBC) and Breeding Bird Survey (BBS) as described by Gilbert et al. (1998).
- 7.3.46 A total of 42 species were recorded on Site, 30 of which were considered to be breeding on Site.
- No WCA Schedule 1 species were recorded within the survey area.
 - Although not recorded during the breeding bird surveys, barn owls which are legally protected under the WCA Schedule 1 were recorded flying during a GCN survey and a bat activity survey.
 - Seven red list BoCC were recorded within the survey area, all of which were considered to be breeding: cuckoo, house sparrow, linnet, skylark, spotted flycatcher, song thrush and starling. All of these are Species of Principle Importance (SPI).
 - Eleven BoCC amber list species were recorded within the survey area, of which five were considered to be breeding: dunnoek, bullfinch, whitethroat, stock dove and mallard. Dunnock and bullfinch are both SPIs.
 - Twenty-two BoCC green listed species were recorded on Site of which eighteen were considered to be breeding: blackbird, blackcap, wren, blue tit, great tit, jackdaw, rook, carrion crow, woodpigeon, pied wagtail, chaffinch, long-tailed tit, chiffchaff, collared dove, lesser whitethroat, magpie, goldfinch and greenfinch.
- 7.3.47 Pheasant and red-legged partridge were recorded on Site, but they are not classified under the BoCC as they are introduced species.
- 7.3.48 Potential barn owl nesting Sites were identified during the extended Phase 1 habitat survey and inspected in March 2015. No trees with suitability for barn owl were identified. Several buildings outside the Site had potential for nesting barn owl but no evidence was found. Two owl boxes were identified on Site, however both appeared to be in use by jackdaw.
- 7.3.49 A barn owl was heard during a GCN survey on 5th May 2015 to the north of the site at 20:00. Later a barn owl was seen flying south across Cole Street Lane away from the site at 21:50. A barn owl was also seen flying away from the site during a bat activity transect on 22nd July 2015 in Park Farm at 22:00 hours.
- 7.3.50 Fuller (1980^{xii}) described a method for assessing the ornithological interest of sites, whereby the importance of a site is defined by the number of breeding species present. Since the publication of this

method, further declines of bird species have been recorded causing the CIEEM to issue an adaption to the level of importance (CIEEM, 2006). It is this adapted criteria which is shown in Table 7.3 below.

- 7.3.51 Thirty native bird species were confirmed or probably breeding within the Site boundaries (two more confirmed breeding were non-native), therefore using Table 7.3 below, the Site is considered to be of **Local** value (as it falls below County and District is not a recognised frame of reference in 7.2.39).

Table 7.3 – Site Importance by Number of Breeding Bird Species

Number of breeding species	Site Importance
<25	Local
26-49	District
50-69	County
70-84	Regional
>85	National

Bats

- 7.3.52 Bat activity surveys using manual and static bat detectors were undertaken in 2015 in accordance with the guidance set out in the (now superseded) Bat Conservation Trust's Bat Surveys: Good Practice Guidelines 2nd Edition^{xiii}. The surveys completed were also in accordance with the current 3rd Edition Guidelines. The site was assessed as having moderate suitability for foraging and commuting bats and as such five dusk surveys and one dawn survey were undertaken between April and September. Four transect routes were walked on each survey occasion. Two automated bat detectors were left along each transect route for five consecutive nights per month (see Appendix 7.5).
- 7.3.53 At least eleven species of bat were recorded using the habitats at the Site to forage and commute. The species comprised common pipistrelle, soprano pipistrelle, noctule, serotine, Daubenton's, whiskered/Brandt's, Natterer's, Leisler's, brown long-eared, Nathusius' pipistrelle and lesser horseshoe. Common pipistrelles were the most frequently encountered species and Natterer's, whiskered/Brandt's, Leisler's, brown long-eared and lesser horseshoe were each only recorded on one survey visit.
- 7.3.54 The areas found to support the highest frequency of bat activity / number of bats encountered were the River Lodden and the plantation broadleaved woodland to the north of Park Farm.
- 7.3.55 A bat roost assessment was undertaken of trees on Site in March 2015 in accordance with BCT 2012 guidelines. Twenty were identified with high suitability for roosting bats and of these, one tree (TN15, see Figure 1 Appendix 7.1) was identified as a day roost of common and soprano pipistrelle by Ecology Solutions in 2012. No other trees have been confirmed to support roosts.
- 7.3.56 The assessment of the value of the bat population on Site is based on Wray *et al.* 2010^{xiv}. This is shown in Table 7.4 – 7.8 below.



Table 7.4 - Categorising bat species by distribution and rarity in England, UK

Rarity	Species
Rarest	Greater horseshoe
	Bechstein's
	Alcathoe
	Greater mouse-eared
	Barbastelle
Rarer	Grey long-eared
	Lesser horseshoe
	Whiskered
	Brandt's
	Daubenton's
	Natterer's
	Leisler's
	Noctule
	Nathusius' pipistrelle
	Serotine
Common	Common pipistrelle
	Soprano pipistrelle
	Brown long-eared

Table 7.5 - Valuation of bat roosts

Geographic Frame of Reference	Roost Types
District, Local or Parish	Feeding perches (common species)
	Individual bats (common species)
	Small numbers of non-breeding bats (common species)
	Mating sites (common species)
County	Maternity sites (common species)

Geographic Frame of Reference	Roost Types
	Small number of hibernating bats (common and rarer species) Feeding perches (rarer/rarest species) Individual bats (rarer/rarest species) Small numbers of non-breeding bats (rarer/rarest species)
Regional	Mating sites (rarer/rarest species) including well-used swarming sites Maternity sites (rarer species) Hibernation sites (rarest species) Significant hibernation sites for rarer/rarest species or all species assemblages
National/UK	Maternity sites (rarest species) Sites meeting Sites of Special Scientific Interest (SSSI) guidelines
International	Special Areas of Conservation (SAC) sites

Table 7.6 – Valuation of commuting routes

Species	Number of Bats	Roosts/Potential Roosts Nearby	Type and Complexity of Linear Features
Common (2)	Individual bats (5)	None (1)	Absence of (other) linear features (1)
		Small number (3)	Unvegetated fences and large field sizes (2)
Rarer (5)	Small number of bats (10)	Moderate number/not known (4)	Walls, gappy or flailed hedgerows, isolated well grown hedgerows, and moderate field sizes (3)
		Large number of roosts or close to a SSSI (5)	Well grown and well-connected hedgerows, small field sizes (4)
Rarest (20)	Large number of bats (20)	Close to or within a SAC for the species (20)	Complex network of mature well-established hedgerows, small fields and rivers/streams (5)

**Table 7.7 - Valuation of foraging areas**

Species	Number of Bats	Roosts/Potential Roosts Nearby	Foraging Habitat Characteristics
Common (2)	Individual bats (5)	None (1)	Industrial or other site without established vegetation (1)
		Small number (3)	Suburban areas or intensive arable land (2)
Rarer (5)	Small number of bats (10)	Moderate number/not known (4)	Isolated woodland patches less intensive arable and/or small towns and villages (3)
		Large number of roosts or close to a SSSI (5)	Larger or connected woodland blocks, mixed agriculture and small villages/hamlets (4)
Rarest (20)	Large number of bats (20)	Close to or within a SAC for the species (20)	Mosaic of pasture, woodlands and wetland areas (5)

Table 7.8: Final scoring system for valuing commuting and foraging bats

Geographic Frame of Reference	Score
International	>50
National	41-50
Regional	31-40
County	21-30
District, local or parish	11-20
Not important	1-10

7.3.57 Based on the above, the roost identified on Site (small numbers of non-breeding common species) would be valued at the local level.

7.3.58 The commuting routes (rarer species, individual bats, unknown number of roosts, gappy/flailed hedgerows) would score 17 and be valued at the local level.

7.3.59 The foraging areas (rarer species, individual bats, unknown number of roosts, isolated woodland) would score 17 and be valued at the local level.

7.3.60 Based on the above, and notwithstanding the botanical value of these habitats, the bat assemblage on Site is therefore considered to be of value at a **Local** level.

Badgers

7.3.61 A badger survey was completed in March 2015 and updated in February 2017. This identified an active main sett and two active annex setts to the east of Park Farm. An inactive main sett was identified to the east of Ham Farm (refer to Appendix 7.1). The findings were consistent with the 2011 surveys.

7.3.62 Badgers are widespread in the local area based on the desk study results and as such the badger population on Site is considered to be of value at the **Local** level.

Hazel Dormice

7.3.63 Hazel dormouse surveys were completed for the Site between May – September 2015 (see Appendix 7.6). A total of 345 nest tubes were installed within plantation woodland and all hedgerows across the Site. During these surveys, no hazel dormice were recorded.

7.3.64 Therefore hazel dormice are not currently considered to be present on the Site and they are **not considered further** in this assessment.

Otters

7.3.65 Evidence of otters (such as spraints or feeding remains) was searched for during the extended Phase 1 habitat survey in 2015 including up to 50m upstream and downstream of the Site (Appendix 7.1). Suitable habitats on site (such as woodland) were also searched for potential holts. No evidence was found.

7.3.66 The desk study returned records of spraints along the River Lodden and Fern Brook. An otter was observed during a GCN survey in June 2015 within P12 on Site which is linked to the Lodden by a flowing ditch.

7.3.67 The Site is considered to be of value at a **Local** level for otters.

Water Voles

7.3.68 The presence of water voles within the River Lodden and Fern Brook was confirmed by the desk study between 2000 and 2012. Evidence of water voles was searched for during the extended Phase 1 habitat survey in 2015 (Appendix 7.1). Burrows were observed along the River Lodden, the western extent of Fern Brook and the northern extent of the flowing ditch where it meets the Lodden (Appendix 7.1) which confirmed that they remain present on Site. According to Morris *et al.* (1998^{xv}), water vole populations can be estimated using an equation based on the number of latrines. Based on this calculation the population on Site is estimated to be around 18 individuals, a density of less than 1 per 100m. The Water Vole Conservation Handbook states that population density can range from 2.4 – 14 per 100m, as such the population on Site is considered to be low.

7.3.69 The Site is therefore considered to be of value at a **Local** level for water vole.



Invertebrates

- 7.3.70 There were few records of notable invertebrates in the desk study and the habitats on Site were considered unlikely to support notable species. White-clawed crayfish are considered likely to be absent due to the nearby records of signal crayfish and negative field survey results in 2011.
- 7.3.71 Overall the invertebrate assemblage is not considered to be an important receptor for the purpose of this assessment.

Invasive Species

- 7.3.72 No invasive species were recorded, they are therefore not currently considered to be present on the Site and they are **not considered further** in this assessment.

Future baseline

- 7.3.73 No attempt has been made to estimate the potential future nature conservation value of this Site, as this is typically difficult to estimate as it is dependent on the specific local pressures which are hard to predict with any level of certainty. For example, if left entirely undisturbed, the grassland habitats would continue to mature and naturally succeed over time, steadily both creating and replacing a range of potential ecological receptors in the process. However, should the current use and management of the Site continue, it is considered unlikely that there would be any significant change to the baseline.

7.4 Mitigation within the Submitted Design

- 7.4.1 The impacts will be assessed against the proposals for the Site including the inherent mitigation measures described below. These measures have been 'designed-in' to the development proposals to reduce the ecological impacts of the scheme.

Design

- 7.4.2 Ecologically valuable habitats will be retained including all woodland, running water and standing water. All species-rich hedgerows will be retained, together with the majority of species-poor hedgerows, with a small amount of removal to accommodate the internal road layout. All hedgerow removal, likely to total c. 450m, will be compensated for on a like-for-like basis with native species-rich planting.
- 7.4.3 The masterplan includes c.8.5ha of formal open space (including sports pitches, play areas, allotments and community orchards) and 26ha of informal open space (including pedestrian and cycle links) which will provide links to the local area and minimise off-site trips for recreation. Footpath and cycle routes will be clearly demarcated to discourage the disturbance of created habitats.
- 7.4.4 Open space is distributed towards the watercourses to provide buffers of 20-150m between the watercourses and development (including both named watercourses and the flowing ditch).
- 7.4.5 A sustainable drainage system will be incorporated to treat all surface water prior to discharge into watercourses or ponds.
- 7.4.6 A sensitive operational lighting strategy has been incorporated to avoid disturbance of nocturnal species. This will avoid light spill of above 1 lux upon the following habitats: woodland edge, hedgerows, running water and standing water.

- 7.4.7 All GCN ponds on Site will be retained with surrounding terrestrial habitat. Off-set gully pots will be used where necessary and dropped kerbs incorporated where roads cross potential commuting routes such as hedgerows.
- 7.4.8 Some of the rough grassland habitat suitable for reptiles will be retained, in particular to the north of the Site, and additional grassland habitat will be created as part of the informal open space.
- 7.4.9 The informal open space will include the retention of the majority of habitats used by breeding birds (woodland and hedgerows). It will also include further enhanced habitat suitable for birds in the form of new hedgerow and scrub planting and rough grassland (suitable for foraging barn owl).
- 7.4.10 The areas of highest bat activity (River Lodden and woodland) will be retained along with the majority of hedgerows used for foraging and commuting. Trees with bat roost suitability and the confirmed roost will be retained. Further habitat suitable for bats in the form of new hedgerow and scrub planting and rough grassland will be included within the informal open space. Tall trees will be retained and planted to create hop-overs where roads cross potential commuting routes such as hedgerows.
- 7.4.11 Known badger setts will be retained with a buffer between them and development (20m minimum for annex setts, 30m minimum for main setts).
- 7.4.12 Any vehicle or pedestrian crossings of watercourses will incorporate a mammal shelf allowing a minimum of 500mm clearance above the level of peak flow. They will also avoid obstructing other species using the watercourses for foraging and commuting (such as bats) and be unlit.
- 7.4.13 A long-term habitat management plan will be produced to detail management practices and timings for retained and created habitats of biodiversity value. This will avoid the potential mismanagement of these areas during the operational phase.

Construction

- 7.4.14 A Construction Environmental Management Plan will be produced to include the following:
- Construction-phase surface water drainage strategy including methods of sediment and hydrocarbon filtration prior to discharge;
 - No construction within 8m of watercourses, with the exception of proposed foot/vehicle crossings;
 - Spill kits to be available and used immediately should a pollution incident occur;
 - Adherence to best practice pollution prevention and control guidance;
 - Fencing specification (Heras or similar) to protect retained ecological features during construction;
 - Construction-phase lighting plan to prevent illumination of retained ecological features.
 - Measures to protect wildlife moving across the Site (provision of escape routes from trenches, capping pipes, secure storage of chemicals and spoil, storage of materials on pallets etc.).

7.5 Likely Significant Environmental Effects of the Scheme

- 7.5.1 As stated in paragraph 7.2.53, impacts are only assessed in detail for features both of sufficient value such that impacts upon them may be significant in EIA terms, and also that are potentially vulnerable to significant impacts arising from the development.



7.5.2 This detailed assessment will therefore concentrate on the likely impacts in respect to the following receptors only:

- Statutory designated sites (International value);
- Non-statutory designated sites (County value);
- Species-rich hedgerows (County value);
- Running water (Local value);
- Standing water (Local value);
- Great Crested Newts (Local value);
- Reptiles (Legally protected);
- Birds (Local value);
- Bats (Local value);
- Badgers (Local value);
- Otters (Local value); and
- Water Voles (Local value).

Construction Phase Effects

Statutory Designated Sites

7.5.3 Fontmell & Melbury Downs SAC is the closest statutory designated site, located 7.2km south-east of the Site. There are no hydrological connections between the Site and any of the SACs, and impacts during construction (noise, dust etc.) are considered unlikely to occur due to the distance from the site and the implementation of the CEMP to control these aspects. As such, there is considered to be **no significant adverse effects** to these International level features from the current proposals during the construction phase.

Non-Statutory Designated Sites

7.5.4 Palemead Coppice SSSI is the closest SSSI, located 1km from the Site, with Kings Court Wood SSSI 1.53km from the Site. Gillingham Secondary School HRS is the nearest Habitat Restoration Site 0.5km north of the Site with Gillingham Showground HRS 1.4km from the Site. There are no hydrological connections between the Site and any SSSIs or HRS and impacts during construction (noise, dust etc.) are considered unlikely to occur due to the distance from the site and the implementation of the CEMP to control these aspects. As such, there is considered to be **no significant adverse effects** to these **County** level features from the current proposals during the construction phase.

Species-rich Hedgerows

7.5.5 Approximately 450m of hedgerow removal will be required in order to accommodate the internal road layout of the masterplan. Although this will be compensated by like-for-like planting (see 7.4) there will be an adverse effect in the period between removal and compensation. Provided that the proposed measures for inclusion within the CEMP are adopted and abided by no effects upon retained hedgerows are anticipated, and there will be no long-term loss of habitat once compensation becomes established. As such there is likely to be a **significant short-term adverse effect at a County level** during the construction phase.

Running Water

7.5.6 Provided that the proposed measures for inclusion within the CEMP are adopted and abided by, in particular during the construction of proposed crossings over the running water on site, there is considered to be **no significant adverse effect at a Local level** during the construction phase.

Standing Water

7.5.7 Provided that the proposed measures for inclusion within the CEMP are adopted and abided by, there is considered to be **no significant adverse effect at a Local level** during the construction phase.

Great Crested Newts

7.5.8 Low populations of GCN has been recorded using 7 of the waterbodies on Site. Although a long-term loss of habitat is not anticipated due to the designed-in mitigation, the construction phase will result in the temporary loss of habitat used by predominately by commuting, but also foraging and hibernating GCN. Furthermore, the stripping of vegetation and movement of vehicles associated with the construction could disturb, injure and/or kill any GCN present. This would be a contravention of the Habitat Regulations. Therefore, in the absence of any additional mitigation, these impacts are likely to have a **significant short-term adverse effect** at a **Local** level.

Reptiles

7.5.9 A low population of grass snake and good population of slow worm has been recorded on Site. Common lizard are also assumed to occur in low numbers given previous surveys recording this species in 2011. Although a significant long-term loss of habitat is not anticipated due to the designed-in mitigation, the construction phase will result in the permanent loss of habitat used by foraging, commuting and basking reptiles. Furthermore, the stripping of vegetation and movement of vehicles associated with the construction could injure and/or kill reptiles present. This would be a contravention of the W&CA. Therefore, in the absence of any additional mitigation, these impacts are likely to have a **significant short-term adverse effect** due to a breach of legislation.

Birds

7.5.10 The Site as a whole supports a wide range of bird species, notably within the woodland and hedgerow habitats, of value at the Local level. Although a long-term loss of habitat is not anticipated due to the designed-in mitigation, the construction phase will result in the permanent loss of habitat used by breeding birds during the removal of small areas of hedgerow for the internal road layout. There is also potential for noise from construction activities to disturb breeding birds.

7.5.11 All active bird nests are legally protected from damage or destruction, so vegetation clearance and ground works could result in an offence under the W&CA. Furthermore, construction works within up to 150m of a barn owl nest would also constitute an offence (note that none are confirmed on or adjacent to the Site,



but there are potential nest sites which could be occupied in the future). Therefore, in the absence of any additional mitigation, these impacts are likely to have a **significant short-term adverse effect** at a **Local** level.

Bats

- 7.5.12 At least eleven species of bats were recorded using the habitats at the Site to forage and commute. The species comprised common pipistrelle, soprano pipistrelle, noctule, serotine, Daubenton's, whiskered/Brandt's, Natterer's, Leisler's, brown long-eared, Nathusius' pipistrelle and lesser horseshoe. The commuting and foraging bat habitat identified during the baseline is to be retained including one tree confirmed to support roosting bats. However, other trees may become suitable or further roosts may be occupied on Site prior to construction. Any damage (through removal of trees) or disturbance (from noise, vibration or lighting) to a bat roost would be a breach of the Habitat Regulations. Therefore, there is potential for a **significant permanent adverse effect** at a **Local** level to roosting bats.

Badger

- 7.5.13 Known badger setts are to be retained and protected through the construction phase. However, badgers are highly mobile and additional setts may be created prior to construction commencing. In the absence of mitigation this could result in disturbance or damage/destruction to setts, or disturbance, killing or injury to badgers as a result of construction activities. Therefore, in the absence of any additional mitigation, there is potential for a **significant permanent adverse effect** at a **Local** level.

Otters

- 7.5.14 Otters have been confirmed as present within the River Lodden and Fern Brook and there is potential for disturbance during construction, in particular where works to take place at night. However, with accordance to the measures outlined in 7.4 it is considered that there will be **no significant adverse effect** at the **Local** level during construction.

Water Voles

- 7.5.15 A pedestrian/cycle bridge is proposed across the River Lodden and three others across the ditch to the south. There is the potential for the construction of the bridges to cause disturbance or direct harm to water voles and their burrows. Any harm to water voles would contravene the W&CA. Therefore, in the absence of mitigation measures, there is potential for a **significant permanent adverse effect** at a **Local** level.

Operational Phase Effects

Statutory Designated Sites

- 7.5.16 The proposals will bring the occupants of up to 1,800 residential units to the area and will thus increase the recreational use of the wider countryside, albeit this will be mitigated by the formal and informal open space provided on site. As the Site is allocated under Policy 21 of the North Dorset Local Plan, it was subject to HRA as part of the Local Plan^{xvi}. During this process it was concluded (and confirmed by Natural England) that adverse effects upon European Sites were unlikely and an HRA was not required for the Master Plan Framework or subsequent applications.

- 7.5.17 As such, there is considered to be **no significant adverse effect** to these International level features from the current proposals during the operational phase, provided the development is brought forward with Policy 21.

Non-Statutory Designated Sites

- 7.5.18 Palemead Coppice SSSI is not publicly accessible and is unlikely to be affected by increased recreation. Kings Court Wood does have a public footpath adjacent however it is anticipated that the formal and informal open space provided on site will avoid a significant increase in recreational pressure. None of the non-statutory sites are located within 300m of roads and are therefore unlikely to be impacted by pollution from increased vehicle traffic.
- 7.5.19 As such, there is considered to be **no significant adverse effect** to these County level features from the current proposals during the operational phase.

Habitats – Species-rich hedgerows, running water and standing water

- 7.5.20 The provision of up to 1,800 residential properties is likely to result in increased pressure to important habitats in the absence of mitigation.
- 7.5.21 Although these habitats have been retained within areas of open space to prevent inappropriate management during operation, the open spaces will provide elements of recreation. There is currently no public access to the majority of areas supporting these receptors and as such the increased number of visitors could cause degradation in the form of erosion and damage through trampling, bank erosion, noise, dog fouling, fly tipping and littering. Therefore in the absence of mitigation there is likely to be a **significant permanent adverse effect** at a **County** level.

Great crested newts

- 7.5.22 The in-built mitigation includes indicative proposals to avoid mortality to GCN from vehicle movements during operation. However, there is potential for adverse effects to waterbodies used by GCN (see 7.5.21). There is also potential for predation by cats. Therefore in the absence of mitigation there is likely to be a **significant permanent adverse effect** at a **Local** level.

Birds

- 7.5.23 There is potential for disturbance of breeding birds within retained and created habitats as a result of the recreational use of informal open space. In addition, the presence of cats within the completed development could result in an increase in predation, in particular upon passerines. Therefore in the absence of mitigation there is likely to be a **significant permanent adverse effect** at a **Local** level.

Bats

- 7.5.24 The in-built mitigation includes parameters for lighting during the operational phase, and planting to maintain connectivity in order to avoid adverse effects on foraging and commuting bats. With adherence to these measures it is considered that there will be **no significant adverse effect** at the **Local** level during operation.

Badger

- 7.5.25 There is potential for increased mortality to badgers as a result of vehicle movements on site. There is also potential for disturbance of setts as a result of recreation within the informal open space. Therefore



in the absence of mitigation there is likely to be a **significant permanent adverse effect** at a **Local** level.

Otter

- 7.5.26 The in-built mitigation includes parameters to maintain connectivity for otters through the use of mammal shelves in culverts/under bridges where crossings of watercourses are required. This will also prevent mortality from vehicles as otters will not be forced to cross roads. Lighting parameters are also included to prevent disturbance from illumination of otter habitats during operation. No holts have been identified on site therefore disturbance from recreation during the day is not considered to be significant. With adherence to these measures it is considered that there will be **no significant adverse effect** at the **Local** level during operation.

Water vole

- 7.5.27 There will be access to the informal open space adjacent to the watercourses with confirmed presence of water voles. As such there is potential for disturbance from recreation within these areas. Therefore in the absence of mitigation there is likely to be a **significant permanent adverse effect** at a **Local** level.

7.6 Additional Mitigation, Compensation and Enhancement Measures

- 7.6.1 These measures are proposed to address any significant adverse impacts that have been predicted as being likely to arise in the absence of mitigation (beyond that committed to within the development description). This section describes the mitigation measures which will be implemented to avoid, reduce or offset any adverse ecological impacts from the proposed development. Those receptors affected by significant adverse effects or those receptors that are legally protected even where not significant have all been addressed. Where impacts cannot be mitigated, compensation (creation of new features to offset the impacts on ecological receptors) will be implemented. The mitigation hierarchy involves the following this sequence from most to least favourable approaches:
1. Avoidance – first try to avoid adverse effects as far as possible by designing out or using preventative measures during the construction process thus resulting in an environmental effect of neutral significance.
 2. Reduction – if not possible, minimise the adverse effects as far as possible.
 3. Compensation – where the above are not applicable, habitat creation/management measures of the same value should be employed to offset the impact.
 4. Enhancement – lastly, opportunities should be taken for enhancement to be incorporated into the scheme where effects have been neutralised, to improve the overall ecological assets of the site.
- 7.6.2 The key objective of mitigation is to address the impacts considered to be of negative significance on the identified ecological receptors of this Site.
- 7.6.3 The mitigation measures outlined in this chapter will form the basis for Ecological Mitigation and Management Plans for each reserved matters planning application. These will include requirements for pre-works surveys, avoidance and mitigation proposals, specification for habitat compensation and enhancement, management prescriptions and monitoring schedules. Where necessary these plans will be informed by up-to-date survey information.

Construction Phase

Great Crested Newts

- 7.6.4 To avoid killing or injuring GCN and therefore breaching the Habitat Regulations, GCN will be captured and translocated to prepared receptor areas that have been incorporated into the Site to allow GCN to be moved from working areas to a safe refuge. The implementation of this strategy will be dependent on the phasing of the site and will be detailed within the EMMPs.
- 7.6.5 GCN will be translocated out of the working area to receptor areas which will be located around each of the retained ponds. This will ensure that receptor sites include both suitable terrestrial and aquatic (breeding) habitats. These areas currently comprise suitable GCN habitat in the form of standing water with semi-improved grassland, hedgerow and plantation woodland. A minimum of one hibernacula will be installed in each receptor area.
- 7.6.6 The translocation will require an European Protected Species Licence (EPSL) from Natural England and will follow measures in the Great Crested Newt Conservation Handbook^{xvii}. It will involve the installation of amphibian fencing and pitfall traps around each receptor area, trapping GCN and moving them to the receptor areas. Installation of amphibian fencing and pitfall traps will be completed under the supervision of an Ecological Clerk of Works (ECOW) during the amphibian active season, which runs from March to October inclusive. The translocation exercise will then also be completed during this period. The translocation for each phase is likely to involve 30 days translocation due to the presence of a low population. A judgement on the conclusion of the capture stage of the translocation will be made by the ecologist; this is usually accepted after five consecutive visits to a site in suitable conditions without encountering any target species.
- 7.6.7 Following this, areas to be developed will be subject to a destructive search under the supervision of an ECOW in suitable weather conditions. In the event that any GCN are found, they will be translocated to the receptor areas.
- 7.6.8 As part of the EMMP to be produced in support of each phase of development, a detailed method statement will be prepared outlining the proposed works and habitat enhancement of receptor sites, fencing installation, trapping and translocation once a Phasing Plan is available. This should be produced in consultation with Natural England and will require their approval as part of an EPSL application. The methodology will also require the approval of the Local Planning Authority as part of the reserved matters applications.
- 7.6.9 The translocation will be followed by long-term management of retained habitat (covered by the habitat management plan) and a period of post-development monitoring to measure the success of the mitigation and, if necessary, guide corrective action or changes to management.
- 7.6.10 With the inclusion of the above mitigation measures, it is considered that the effects on GCN will be **not significant**.

Reptiles

- 7.6.11 To avoid killing or injuring reptiles and therefore breaching the W&CA, reptiles will be captured and translocated to prepared receptor areas that have been incorporated into the Site to allow reptiles to be moved from working areas to a safe refuge. The methodology differs slightly from the GCN mitigation due to differing receptor locations, and habitats occupied on site. However, they do overlap and it is likely that mitigation for both reptiles and GCN will be completed concurrently.



7.6.12 The reptiles will be translocated out of the working area to the large expanse of informal open space which totals approximately 12ha of new grassland habitat which will be created to the north of the site. This area has been chosen as the majority of reptiles were recorded in the north of the site and it will provide a greater area of contiguous habitat than the GCN receptor sites. This is necessary to accommodate the higher numbers of reptiles on site. The area currently comprises improved grassland fields which, being heavily grazed are not currently optimal habitat for reptiles. Enhancement of the reptile receptor site will increase the suitability of the habitat. Removal of livestock during the summer will enable longer grassland to establish. This will be cut every other month in order to encourage thatch to develop (favoured by slow worm). Depending on the soil conditions, rotivation may also be carried out to loosen soil compacted by livestock. An ecologist will then deem when the site is considered suitable to commence the translocation, it is likely this would take one growing season. A minimum of ten reptile hibernacula will also be installed within the created habitats.

7.6.13 The translocation will be based on the advice of the JNCC's Herpetofauna Workers' Manual guidelines^{xviii}. It will involve the installation of fencing as described in 7.6.6 around each phase of the works area, trapping reptiles present using artificial refugia and moving them to the receptor area. The installation of fencing will be completed under the supervision of an ECoW during the reptile active season, which runs from March to October inclusive. The translocation exercise will then also be completed during this period. Although a medium population of slow worm was recorded across the whole site, the translocation is likely to take place in phases, with each only affecting a low number of animals. As such the translocation for each phase is likely to involve 30 days translocation in suitable weather conditions. A judgement on the conclusion of the capture stage of the translocation will be made by the ecologist; this is usually accepted after five consecutive visits to a site in suitable conditions without encountering any target species.

7.6.14 Following this, areas to be developed will be subject to a destructive search under the supervision of an ECoW in suitable weather conditions as per the GCN mitigation strategy (7.6.7). In the event that any reptiles are found, they will be translocated to the receptor area.

7.6.15 As part of the EMMP to be produced in support of each phase of development, a detailed method statement will be prepared outlining the proposed works and habitat enhancement of receptor site. fencing installation, trapping and translocation once a Phasing Plan is available. The method statement will likely require the approval of the Local Planning Authority prior to commencement.

7.6.16 The translocation will be followed by long-term management of created habitat (covered within the habitat management plan) and a period of post-development monitoring to measure the success of the mitigation and, if necessary, guide corrective action or changes to management. This will be detailed within the EMMP.

7.6.17 With the inclusion of the above mitigation measures, it is considered that the effects on reptiles will be **not significant**.

Birds

7.6.18 Some vegetation that will be lost to the proposed development (trees, scrub and hedgerows) provides nest sites for woodland birds, whilst the grassland provides nesting opportunities for ground-nesting birds, as well as a foraging resource (although none were confirmed as breeding on site).

7.6.19 Works affecting potential bird nesting habitat will be completed outside the breeding season (generally considered to be March to September, inclusive) where practicable.

7.6.20 Where vegetation clearance works cannot avoid the bird breeding season, an ECoW will check the vegetation, building and/or areas of grassland for nests in advance of any works taking place. Where

birds are found to be nesting, clearance of the supporting structure will be postponed and a buffer around the nest established until the chicks have fledged. This will be determined by a suitably qualified ECoW. These requirements will be detailed within the CEMP.

7.6.21 An update barn owl nesting survey will be completed to inform detailed design and layout for each application and prior to construction works in each phase of development. During construction, suitable buffer zones will be implemented as required around any active barn owl nests should they be found. These buffers will be maintained until nesting is complete and compensation nest boxes erected in the open space on site.

7.6.22 With the inclusion of the above mitigation measures, it is considered that the effects on birds will **not be significant**.

Bats

7.6.23 The masterplan incorporates habitats used by foraging and commuting bats such as woodland and hedgerows. As such with the in-built mitigation the effects on foraging and commuting bats will be **not significant**.

7.6.24 An update bat roost assessment will be completed to inform detailed design and layout for each application and prior to construction works in each phase of development. This will cover any trees with potential to be impacted by the phase and any trees with bat roosting suitability will be subject to climbed tree inspections and dusk emergence/dawn return surveys (where necessary) in accordance with current best practice guidelines at the time of the survey to determine presence/likely absence or to characterise the roost.

7.6.25 If any bat roosts are confirmed that will be impacted, the EMMP for that Phase will set out appropriate mitigation measures, including need for an EPSL to enable the development to proceed lawfully.

7.6.26 With the inclusion of the above mitigation measures, it is considered that the effects on roosting bats will **not be significant**.

Badger

7.6.27 Prior to the commencement of any works on each phase of development, the EMMP for that phase will require that a badger survey be undertaken throughout and within 50m of the proposed development Site to establish the status of known setts, and whether any further setts have been created.

7.6.28 In the event that badger setts are present and the proposed development will impact them, a Natural England development licence may be required; however this is not considered likely at this stage.

7.6.29 With the inclusion of the above mitigation measures, it is considered that the effects on badgers will **not be significant**.

Water Voles

7.6.30 Prior to any bridge construction, an update survey for water vole will be required in the relevant EMMP for that phase of development. This will either inform a design/location which avoids impacts to water voles, or if necessary to inform mitigation measures and any licensing requirements.

7.6.31 Following the construction of any crossing points required over the streams, the banks will be reinstated to the same height and profile and allowed to vegetate naturally from the surrounding area.

7.6.32 With the inclusion of the above mitigation measures, it is considered that the effects on water voles will be **not significant**.



Operational Phase

Habitats – Species-rich hedgerows, running water and standing water

- 7.6.33 The Master Plan Framework includes indicative locations of proposed footpaths, many of which follow existing paths and tracks, however these locations have not been defined. EMMPs submitted at the reserved matters stage will detail the routes and their future management. These will be located along desire lines but away from important receptors. These will provide defined footpath routes to prevent trampling, erosion or degradation of important habitats.
- 7.6.34 Fly-tipping, littering and dog-fouling will be discouraged through natural surveillance with dwellings and roads fronting on to open space and the provision of appropriate bins within open space areas.
- 7.6.35 The EMMPs will include long-term management provisions including specification and timing of works to avoid disturbance of important receptors during maintenance.
- 7.6.36 As part of the long-term management of the retained habitats and open space (detailed within a habitat management plan) the effects of disturbance will be monitored for 5 years' post-development and remedial action undertaken if necessary. With the inclusion of the above mitigation there is likely to be **no significant adverse effect**.

Great crested newts

- 7.6.37 Potential adverse effects to habitats will be mitigated as discussed above and detailed in the EMMPs, with recreation restricted to footpaths designed to avoid standing water and terrestrial GCN habitat. Predation will be mitigated by cats as far as possible with open spaces screened and buffered by roads, and dwellings fronting on to open space, rather than back gardens. Homeowners will be provided with information to encourage further measures to reduce predation such as keeping cats inside at night. With the inclusion of the above mitigation there is likely to be **no significant adverse effect**.

Birds

- 7.6.38 As described above, the footpaths will be positioned to avoid disturbance to habitats, including those used by breeding birds such as woodland and hedgerows. Measures to mitigate for cat predation are discussed in 7.6.37. In addition, durable artificial nest boxes will be installed in suitable habitat to provide safer nesting sites for birds. With the inclusion of the above mitigation there is likely to be **no significant adverse effect**.

Badger

- 7.6.39 Recreational routes will be deigned to avoid badger setts as discussed above. The need for measures to prevent mortality will be guided by updated surveys however if required they will include mammal underpasses below roads, exclusion fencing and lighting to deter badgers from crossing roads. These measures will be detailed within relevant EMMPs. With the inclusion of the above mitigation there is likely to be **no significant adverse effect**.

Water vole

- 7.6.40 As discussed above, footpaths will be directed away from valuable habitats, including running water. Where footbridge crossings are proposed paths will run perpendicular to the watercourse to minimise the period of recreation. With the inclusion of the above mitigation there is likely to be **no significant adverse effect**.

7.7 Assessment Summary and Likely Significant Residual Environmental Effects

- 7.7.1 In the absence of mitigation, the proposed development has the potential to cause significant adverse effects on important ecological receptors (habitats and species) identified on Site. Impacts associated with the development include the loss of habitats and direct and indirect effects on the wildlife supported in these areas, including the temporary loss of foraging and commuting habitats.
- 7.7.2 However, the masterplan framework has retained and enhanced existing habitats where possible with new habitats created to mitigate for unavoidable loss and enhance ecological value in the long-term.
- 7.7.3 The retained plantation woodland, hedgerows and proposed informal open space, incorporating hedgerow, scrub and grassland, will provide a habitat mosaic which will support the range of species currently present on Site including bats, birds, GCN, reptiles, badgers, otters and water voles. Assuming that the mitigation and management measures outlined above are implemented and the EMMPs and CEMP are created and adhered to, it is considered that the proposed development will have **no likely long-term significant residual effects** on the overall ecological value of the Site.

7.8 Cumulative impacts

- 7.8.1 Appendix 7.7 considers all the sensitive receptors from the proposed development with cumulative effects of the developments identified in Chapter 2 (see Table 2.2).
- 7.8.2 From the review of the ecological reports (where possible) of the proposed developments, some of the sensitive ecological receptors are present both on Site and the 6 nearby proposed development sites. Whilst many of the sensitive receptors are common to both the Site and many of the developments considered within the local area, due to spatial, temporal or ecological reasons, cumulative impacts are not considered likely. Where sensitive receptors are present on the Site and one or more of the other 6 proposed developments these are discussed further below.

Construction

Statutory Designated Sites

- 7.8.3 No development related effects have been identified due to the lack of connection between the Site and potential receptors. As such there are no statutory designated sites which could be affected by both the Site and one or more of the other developments considered. As such **no significant cumulative effects** are considered likely during construction.

Non-statutory Designated Sites

- 7.8.4 No development related effects have been identified due to the distance between the Site and potential receptors. None of the other developments considered are likely to have an effect on these receptors as all are located further away than the Site and none have any hydrological connections or other potential pollution pathways. As such **no significant cumulative effects** are considered likely during construction.

Notable Habitats

- 7.8.5 Developments 1, 2, 5 and 6 support notable habitats in the form of running water and species-rich hedgerows. All of the developments (including the Site) are likely to have impacts during construction from loss of hedgerow. All include built-in mitigation in the form of compensation for hedgerow loss, and



measures to protect running water during construction. As such **no significant cumulative effects** are considered likely during construction.

Bats

- 7.8.6 Developments 1, 2, 4, 5 and 6 support low numbers of bats. All include built-in mitigation and all but 2 are considered to be too far from the Site to result in a cumulative effect. Development 2 is adjacent to the Site and bats are likely to forage and commute across both sites. Following mitigation, neither site is considered likely to have an effect during construction and furthermore, construction is unlikely to occur simultaneously as Development 2 is further progressed in the planning system. As such **no significant cumulative effects** are considered likely during construction.

Great crested newts

- 7.8.7 GCN have not been identified on or near any of the other development sites. As such there are considered to be **no significant cumulative effects**.

Reptiles

- 7.8.8 Developments 1, 2, 4 and 5 are understood to support reptile populations. However, none are connected to the Site and as such all are considered to be discrete populations. With the exception of 4 all populations will be retained on their respective sites, whilst the population at 4 has been relocated to a site close to 4. As such **no significant cumulative effects** are considered likely during construction.

Badger

- 7.8.9 Developments 5 and 6 are understood to support badgers. However, both sites are over 4km from the Site and as such do not share territories with the badgers on the Site. As such **no significant cumulative effects** are considered likely during construction.

Birds

- 7.8.10 Developments 2 and 5 support breeding birds, including red listed species, and 1, 4 and 6 are also considered likely to support breeding birds. All other than 2 are considered to be too distant from the Site for cumulative effects during construction (e.g. from noise). Both 2 and the Site include mitigation for construction-phase effects on birds and as per 7.8.6 construction is unlikely to occur on both sites simultaneously. As such **no significant cumulative effects** are considered likely during construction.

Water Vole and Otter

- 7.8.11 Developments 1 and 2 are both located adjacent to habitats which either support, or are likely to support otter and water vole. All developments include built-in measures to avoid construction-phase effects and as such **no significant cumulative effects** are considered likely during construction.

Operation

Statutory Designated Sites

- 7.8.12 No development related effects have been identified due to the lack of connection between the Site and potential receptors. As such there are no statutory designated sites which could be affected by both the Site and one or more of the other developments considered. As such **no significant cumulative effects** are considered likely during operation.

Non-statutory Designated Sites

- 7.8.13 No development related effects have been identified due to the distance between the Site and potential receptors. All of the other developments are considered unlikely to have an effect on these receptors due to their distance. There is potential for residents from 2 to use Kings Court Wood for recreation, however the development includes built-in mitigation in the form of recreational routes and connections. As such **no significant cumulative effects** are considered likely during operation.

Notable Habitats

- 7.8.14 Developments 1, 2, 5 and 6 support notable habitats in the form of running water and species-rich hedgerows. All of the developments (including the site) include mitigation for operational-phase effects such as disturbance. The most likely source of cumulative effects is 2 which is located north of the site, the opposite side of the River Lodden. However this development follows the Master Plan Framework and incorporates a large buffer north of the river, maintaining a large corridor between the two developments. As such **no significant cumulative effects** are considered likely during operation.

Bats

- 7.8.15 Developments 1, 2, 4, 5 and 6 support low numbers of bats. All but 2 are considered to be too far from the Site to result in a cumulative effect. Development 2 is adjacent to the Site and bats are likely to forage and commute across both sites. Both developments include buffering to important bat habitats such as the River Lodden and include measures to restrict operational-phase lighting. As such **no significant cumulative effects** are considered likely during operation.

Reptiles

- 7.8.16 Developments 1, 2, 4 and 5 are understood to support reptile populations. However, none are connected to the Site and as such all are considered to be discrete populations. As such **no significant cumulative effects** are considered likely during operation.

Badger

- 7.8.17 Developments 5 and 6 are understood to support badgers. However, both sites are over 4km from the Site and as such do not considered to share territories with the badgers on the Site. As such **no significant cumulative effects** are considered likely during operation.

Birds

- 7.8.18 Developments 2 and 5 support breeding birds, including red listed species, and 1, 4 and 6 are also considered likely to support breeding birds. All other than 2 are considered to be too distant from the Site for cumulative effects during operation (e.g. disturbance from recreation). Both 2 and the Site include areas of open space with recreational routes, however these will be designed to avoid significant effects on bird populations during operation. No other developments identified potential adverse effects upon barn owl. As such **no significant cumulative effects** are considered likely during construction.

Water Vole and Otter

- 7.8.19 Developments 1 and 2 are both located adjacent to habitats which either support, or are likely to support otter and water vole. All developments include built-in measures to avoid operational-phase effects



including control of lighting and access, in particular to the River Lodden. As such **no significant cumulative effects** are considered likely during construction.



Table 7.9 Assessment Summary and Residual Environmental Effects (Ecology)

Ecological Receptor	Potential Impacts (following designed-in mitigation)	Value of Receptor	Nature	Significance	Proposed Mitigation / Enhancement	Rationale	Residual Effects
Construction Impacts							
Species-rich hedgerows	Removal	County	Direct Adverse Short-term	Significant	Mitigation Like-for-like compensation with native species-rich planting.	Mitigation To maintain the extent of species-rich hedgerow HPI.	Not significant
Great crested newts	Loss of habitat	Local	Direct Adverse Short-term	Significant	Mitigation Enhancing receptor sites within the Site through removal of livestock to increase carrying capacity for GCN.	Mitigation To maintain existing GCN populations.	Not Significant
	Direct harm	Local	Direct Adverse Permanent	Significant	Mitigation - Translocation of GCN population from construction area to receptor areas within the Site. - Receptor habitats will be enhanced prior to translocation (as above).	Mitigation To avoid an offence under the Habitat Regulations.	Not significant
Reptiles	Loss of habitat	Local	Direct Adverse Short-term	Significant	Mitigation Enhancing retained habitats within the Site through removal of livestock to increase carrying capacity for reptiles.	Mitigation To maintain existing reptile populations.	Not significant
	Direct harm	Local	Direct Adverse Permanent	Significant	Mitigation - Translocation of reptile population from construction area to receptor areas within the informal open space. - Receptor habitats will be enhanced prior to reptile relocation (as above).	Mitigation To avoid an offence under the W&CA.	Not significant
Breeding Birds	Nest loss, and disturbance to nesting birds (all species)	Local	Direct Adverse Short-term and Permanent	Significant	Mitigation - Pre-construction barn owl surveys will be completed for each phase. If nesting barn owl are present, buffers will be maintained until the chicks have fledged. - All vegetation clearance completed outside the breeding bird season (March – September incl.). If this is not possible, areas to be cleared shall be checked by a suitably qualified ecologist in advance to confirm the absence of active nests. - If nests are found, a buffer zone will be established and the nest left in situ until the young have left the nest.	Mitigation To avoid an offence under the W&CA.	Not significant



Ecological Receptor	Potential Impacts (following designed-in mitigation)	Value of Receptor	Nature	Significance	Proposed Mitigation / Enhancement	Rationale	Residual Effects
Bats <i>All bat species</i>	Impacts to roosting bats.	Local	Direct Adverse Permanent	Significant	Mitigation - Pre-application and pre-construction assessment of trees to be affected in each phase. - Any trees with bat roosting suitability to be subject to climbed tree assessment and/or dusk emergence/dawn return surveys according to current (at the time) best practice. - If a roost is present all works to be completed under an EPSM licence from Natural England.	Mitigation To avoid an offence under the Habitat Regulations.	Not significant
Badger	Damage to sett.	Local	Direct Adverse Permanent	Significant	Mitigation - Pre-application and pre-construction surveys for new setts for each phase. - Any setts identified to be protected through protection fencing to be installed at a minimum of 30m from the nearest active hole (main setts) or 20m (annex setts). - Alternatively, if protection is not possible, works to proceed under a Natural England development licence.	Mitigation Required to avoid an offence under the Badger Act.	Not significant
Water vole	Impacts to burrows and direct harm	Local	Direct Adverse Permanent	Significant	Mitigation - Pre-RM application and pre-construction surveys for water voles for bridge works. - Bridge locations to avoid areas of confirmed water vole activity. - Alternatively, if avoidance is not possible, works to proceed under a Natural England licence. - Following construction, banks will be reinstated and allowed to re-vegetate naturally from the surrounding area.	Mitigation To avoid an offence under the W&CA.	Not significant
Operation Impacts							
Species-rich hedgerows	Degradation	County	Direct Adverse Permanent	Significant	Mitigation - Designated paths within open space. - Natural surveillance. - Long-term management and monitoring (5 years) to be secured within EMMP.	Mitigation To preserve and enhance hedgerow biodiversity in the long-term.	Not significant
Running water	Degradation	Local	Direct Adverse Permanent	Significant	Mitigation - Designated paths within open space. - Natural surveillance. - Long-term management and monitoring (5 years) to be secured within EMMP.	Mitigation To preserve and enhance aquatic biodiversity in the long-term.	Not significant



Ecological Receptor	Potential Impacts (following designed-in mitigation)	Value of Receptor	Nature	Significance	Proposed Mitigation / Enhancement	Rationale	Residual Effects
Standing water	Degradation	Local	Direct Adverse Permanent	Significant	Mitigation - Designated paths within open space. - Natural surveillance. - Long-term management and monitoring (5 years) to be secured within EMMP.	Mitigation To preserve and enhance aquatic biodiversity in the long-term.	Not significant
Great crested newts	Disturbance	Local	Direct Adverse Permanent	Significant	Mitigation - Designated paths within open space. - Natural surveillance. - Long-term management and monitoring (5 years) to be secured within EPSL.	Mitigation To maintain and enhance the GCN population at the Site for the life of the development. To avoid an offense under the Habitat Regulations.	Not significant
Breeding birds	Disturbance	Local	Direct Adverse Permanent	Significant	Mitigation - Designated paths within open space. - Natural surveillance. - Long-term management and monitoring (5 years) to be secured within EMMP.	Mitigation To maintain and enhance the breeding bird population at the Site for the life of the development.	Not significant
Badger	Disturbance	Local	Direct Adverse Permanent	Significant	Mitigation - Designated paths within open space. - Natural surveillance. - Long-term management and monitoring (5 years) to be secured within EMMP. - Installation of exclusion fencing with badger gates where necessary.	Mitigation To maintain and enhance the badger population at the Site for the life of the development.	Not significant
	Road mortality	Local	Direct Adverse Permanent	Significant	Mitigation - Installation of exclusion fencing where necessary. - Use of lighting to deter road crossing where necessary. - Construction of underpasses where necessary.	Mitigation To maintain and enhance the badger population at the Site for the life of the development.	Not significant
Otter	Disturbance	Local	Direct Adverse Permanent	Significant	Mitigation - Designated paths within open space. - Natural surveillance. - Long-term management and monitoring (5 years) to be secured within EMMP.	Mitigation To maintain and enhance the otter population at the Site for the life of the development. To avoid an offense under the Habitat Regulations.	Not significant
Water vole	Disturbance	Local	Direct Adverse Permanent	Significant	Mitigation - Designated paths within open space. - Natural surveillance. - Long-term management and monitoring (5 years) to be secured within EMMP.	Mitigation To maintain and enhance the water vole population at the Site for the life of the development. To avoid an offense under the W&CA.	Not significant



Table 7.10 Means by which Additional Mitigation Measure may be Secured (Ecology)

Identified Effect where additional mitigation (Not design mitigation) has been identified	Type of mitigation measures (avoidance, reduction, compensation, enhancement)	Means by which mitigation measure may be secured
Construction		
Loss of habitat (GCN and Reptiles)	Receptor site enhancement.	EPSL and EMMP
Direct harm (GCN and Reptiles)	Translocation programme	EPSL and EMMP
Nest loss, and disturbance to nesting birds (all species)	Pre-construction barn owl surveys; 150m buffers until chicks have fledged. All vegetation clearance completed outside breeding bird season; or areas checked by a suitably qualified ecologist in advance; buffer zones established and nests left in situ until young have left.	EMMP
Impacts to roosting bats.	Pre-application and pre-construction assessment of trees to be affected in each phase; climbed tree assessment and/or dusk emergence/dawn return surveys if required. If a roost is present all works to be completed under an EPSM licence from Natural England.	EPSL and EMMP
Damage to badger sett.	Pre-application and pre-construction surveys for new setts for each phase; setts identified to be protected through protection fencing. Alternatively, if protection is not possible, works to proceed under a Natural England development licence.	EMMP and Badger Licence
Impacts to water vole burrows and direct harm	Pre-application and pre-construction surveys for water voles for bridge works; bridge locations to avoid areas of confirmed water vole activity. Alternatively, if avoidance is not possible, works to proceed under a Natural England licence. Following construction, banks to be reinstated.	EMMP and Water Vole Licence
Operation		

Recreational pressure (Habitats)	Detailed design to avoid sensitive features. Post-development management and monitoring.	EMMP
Disturbance (GCN, breeding birds, badger, otter, water vole)	Detailed design to avoid sensitive features. Post-development management and monitoring.	EPSL and EMMP

7.9 Glossary

Term	Definition
Badger Act	Protection of Badgers Act 1994
BCT	Bat Conservation Trust
BoCC	Bird(s) of Conservation Concern – a regularly updated UK list maintained by the British Trust for Ornithology (BTO), Royal Society for the Protection of Birds (RSPB) and JNCC. Species are listed as red (decline in population or breeding range of >50% in the last 25 years) amber (decline of 25-50%, breeding population <300, non-breeding population <900, 50% of population in 10 sites or fewer or >20% of European population in UK) or green (not qualifying as red or amber).
CIEEM	Chartered Institute of Ecology & Environmental Management
CRoW Act	Countryside and Rights of Way Act 2000
EcIA	Ecological Impact Assessment
ECoW	Ecological Clerk of Works
EMP	Ecological Management Plan
EPS	European Protected Species



EPSL	European Protected Species Licence
GCN	Great crested newt
Habitat Regulations	Conservation of Habitats and Species Regulations 2010 (as amended)
Hedgerow Regulations	Hedgerow Regulations 1997
HPI	Habitat(s) of Principal Importance
HRA	Habitats Regulations Assessment
JNCC	Join Nature Conservancy Council
LPA	Local Planning Authority
Natura 2000 site	A European site designated for its nature conservation value
NE	Natural England
NERC Act	Natural Environment and Rural Communities Act 2006

NPPF	National Planning Policy Framework
PEA	Preliminary Ecological Appraisal
SAC	Special Area of Conservation
SPA	Special Protection Area
SPI	Species of Principal Importance
SSSI	Site(s) of Special Scientific Interest
W&CA	Wildlife & Countryside Act 1981

7.10 References

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