

Graven Hill, Bicester - Construction Environmental Management Plan (CEMP): Biodiversity

LNT Care Property Developments

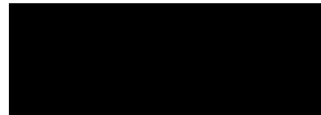
Date: 03/07/2025

Prepared by: Cura Terra Land & Nature (CTLN)

Ref: 25484-CEMP-V1.0

Report to: LNT Care Property Developments
Report Title: Graven Hill, Bicester – Construction Environmental Management Plan: Biodiversity
Version: V1.0
Issue Date: July 2025
Report Ref: 25484

Originated By:



Reviewed By: **Molly-Marie Mills**
 Senior Ecologist Date: 25/06/2025



Approved By: **Claire Evans**
 Principal Ecologist Date: 30/06/2025



Becky Anderson
 Associate Director of Ecology Date: 02/07/2025

Prepared by:

Cura Terrae Land and Nature, Unit 4, Prisma Park, Berrington Way, Wade Road, Basingstoke, RG24 8GT. 01256
 224 588

Version	Author	Description	Date
V0.1	MM	First draft	25/06/2025
V0.2	CE	QA1	30/06/2025
V0.3	MM	Addressing QA1 Comments	30/06/2025
V0.4	BA	QA2	02/07/2025
V1.0	MM	Issue	03/07/2025

The report and the site assessments carried out by Cura Terrae on behalf of the client in accordance with the agreed terms of contract and/or written agreement form the agreed Services. The Services were performed by Cura Terrae with the skill and care ordinarily exercised by a reasonable Environmental Consultant at the time the Services were performed. Further, and in particular, the Services were performed by Cura Terrae taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between Cura Terrae and the client.

Other than that expressly contained in the paragraph above, Cura Terrae provides no other representation or warranty whether express or implied, in relation to the services.

This report is produced exclusively for the purposes of the client. Cura Terrae is not aware of any interest of or reliance by any party other than the client in or on the services. Unless expressly provided in writing, Cura Terrae does not authorise, consent or condone any party other than the client relying upon the services provided. Any reliance on the services or any part of the services by any party other than the client is made wholly at that party's own and sole risk and Cura Terrae disclaims any liability to such parties.

This report is based on site conditions, regulatory or other legal provisions, technology or economic conditions at the time of the Service provision. These conditions can change with time and reliance on the findings of the Services under changing conditions should be reviewed.

Cura Terrae accepts no responsibility for the accuracy of third-party data used in this report.

Contents

1. Introduction	4
1.1 Background	4
2. Existing Site Conditions and Features of Interest	6
2.1 Overview.....	6
2.2 Designated Sites	6
2.3 Ecological Summary.....	7
3. Proposals and Impacts	13
3.1 Proposals.....	13
3.2 Potential Impacts.....	13
4. Construction Management and Implementation.....	14
4.1 Construction Management	14
4.2 Habitat Protection	14
4.3 Species Protection	15
4.4 Contact Details	21
References.....	22
Figure 1: Site Map	23
Appendix 1: Toolbox Talk.....	24
Appendix 2: Protected Species Best Practice Measures	36

1. Introduction

1.1 Background

- 1.1.1 This Construction Environmental Management Plan: Biodiversity (CEMP: Biodiversity) has been produced by Cura Terrae Land & Nature (CTLN) on behalf of LNT Care Property Developments for a circa 1.18-hectare (ha) area of land at Graven Hill, Bicester, OX25 2BF (central National Grid Reference (NGR): SP 58894 21247), hereafter referred to as ‘the Site’.
- 1.1.2 Site proposals have been taken from the finalised landscape plans received on 6th November 2024. These include drawings; ‘24_330_101_B Detailed Soft Landscape Proposals (North). Sheet 1 of 2’ and ‘24_330_102_B Detailed Soft Landscape Proposals (South) 2 of 2’ produced by Mood Landscape.
- 1.1.3 This report is also informed by the ‘Proposed Site Plan’ drawing no: OX25 2BF A-03-A, produced by LNT Construction (2022).
- 1.1.4 Proposals include the construction of care home, inclusive of associated access and facilities, as well as both hard and soft landscaping.
- 1.1.5 The CEMP refers to information detailed within the following CTLN (formerly Ecus Ltd) reports as appropriate:
- Preliminary Ecological Appraisal (PEA) – ‘Graven Hill, Bicester - Preliminary Ecological Appraisal’, Ref: 23635 v1.0, dated June 2024 (Ecus, 2024).
 - Great Crested Newt eDNA Survey Report – ‘Graven Hill, Bicester – Great Crested Newt eDNA Survey Report’, Ref: 23857 V1.0, dated September 2024 (Ecus, 2024)
 - Biodiversity Net Gain Assessment (BNGA) – ‘Graven Hill, Bicester - Biodiversity Net Gain Baseline Assessment’, Ref: 23635 v4.0, dated November 2024 (Ecus, 2024).
 - Biodiversity Enhancement and Management Plan (BEMP) – ‘Graven Hill, Bicester - Biodiversity Enhancement and Management Plan’, Ref: 24349 v1.0, dated November 2024 (Ecus 2024).
- 1.1.6 The CEMP has been produced to inform the discharge of a planning condition for Application 24/02058/F from the Cherwell District Council (CDC) North Oxfordshire Local Planning Authority. The planning condition wording is detailed below:

“No development shall commence (including demolition, ground works, vegetation clearance) unless and until a Construction Environmental Management Plan (CEMP: Biodiversity) has been submitted to and approved in writing by the local planning authority. The CEMP: Biodiversity shall include as a minimum:

- *Risk assessment and mitigation of potentially damaging construction activities*
- *Identification of ‘Biodiversity Protection Zones’*
- *Practical measures (both physical measures and sensitive working practices) to avoid or reduce impacts during construction (may be provided as a set of method statements)*
- *The location and timing of sensitive works to avoid harm to biodiversity features*
- *The times during construction when specialist ecologists need to be present on site to oversee works*
- *Responsible persons and lines of communication*
- *The role and responsibilities on site of an ecological clerk of works (ECoW) or similarly competent person*
- *Use of protective fences, exclusion barriers and warning signs*

The approved CEMP: Biodiversity shall be adhered to and implemented throughout the construction period strictly in accordance with the approved details.”

- 1.1.7 The measures set out in this CEMP: Biodiversity serve to discharge the above planning condition. The approved CEMP: Biodiversity shall be adhered to and implemented throughout the construction period strictly in accordance with the approved details, unless otherwise agreed in writing by the Local Planning Authority (LPA).
- 1.1.8 Potentially damaging impacts of the works are assessed within Section 3.2, and a Method Statement for protection against potentially damaging construction activities is discussed in Section 4. Actions to be taken if any protected species are found during construction are detailed within the Toolbox Talk in **Appendix 1**. The use of protective fencing, exclusion barriers, warning signs and other wildlife safety measures are addressed within Section 4 and **Appendix 2**.

2. Existing Site Conditions and Features of Interest

2.1 Overview

- 2.1.1 The Site is approximately 1.18 ha and habitats at the Site consisted of UK Habitat Classification types: sparsely vegetated urban land (u1f), bramble scrub (h3d), willow scrub (h3j), modified grassland (g4), other developed land, and sealed surface (u1b).
- 2.1.2 A line of trees was also recorded along the western extent of the Site. Two ditches were initially recorded during the PEA bordering the eastern and western extent of the Site. A single ditch (D3), not previously recorded along the northern extent of the Site was identified during an updated topography survey on 12th September 2024.
- 2.1.3 Three semi-mature/ immature trees were recorded within the Site boundary with a single mature oak *Quercus* spp. at SP 58918 21202 along the southern boundary of the Site.
- 2.1.4 The Site is located within the Cherwell District Council local authority, on the outskirts of a widely urban area of Bicester. The surrounding area to the north of the Site comprised mainly of residential and industrial buildings with associated roads. To the south of the Site are arable fields with pockets of woodland and hedgerows. Further surrounding habitats comprised of more arable fields with pockets of woodland and hedgerows.

2.2 Designated Sites

- 2.2.1 A desk study presented within the CTLN PEA report (CTLN, 2024) identified no statutory designated site for nature conservation located within 2 km of the Site.
- 2.2.2 Four non-statutory designated sites were identified within 2 km of the Site including Graven Hill Local Wildlife Site (LWS) located 0.6 km south, Bicester Wetland Reserve LWS located 1 km southwest, Gavray Drive Meadows LWS located 1.2 km northeast and Meadow NW of Blackthorn located 1.6 km east of the Site.
- 2.2.3 The non-statutory designated sites were considered to be of importance to nature conservation at between local and county level. No impacts were anticipated from the proposed development on the designated sites.

2.3 Ecological Summary

- 2.3.1 The below provides a summary of the habitats present on Site (pre-development) their value and sensitivity based on the guidance given in 'Guidelines on Ecological Impact Assessment' (CIEEM, 2018) and their associated potential to support protected species. Full details are provided within the Graven Hill, Bicester PEA report (CTLN, 2024).

Habitats

- 2.3.2 Habitats at the Site recorded during the PEA (CTLN, 2024) include UK Habitat Classification types; Urban - sparsely vegetated urban land (u1f), Urban - developed land, sealed surface (u1b), Heathland and Shrub - bramble scrub (h3d), Heathland and Shrub – willow scrub (h3j) and Grassland – modified grassland (g4). Three semi-mature/ immature trees were recorded within the Site boundary with a single mature oak along the southern boundary of the Site.
- 2.3.3 The Site comprised of a large area of bare ground with sparse vegetation. Vegetated habitat within the Site included areas of bramble scrub *Rubus fruticosus* agg. interspersed with scattered trees. A strip of willow *Salix* sp scrub was found present along the eastern boundary. A line of trees was also recorded along the western extent of the Site. Within the southern aspect of the Site two large patches of modified grassland were separated by a section of bramble scrub containing some ruderal and ephemeral plants. Two ditches were recorded along the eastern and western extent of the Site.
- 2.3.4 A single ditch (D3), not previously recorded along the northern extent of the Site was identified during an updated topography survey on 12th September 2024. It is likely that this ditch was evident at the time of this survey due to recent rain and heavy flooding within the area.
- 2.3.5 The Site is located on the edge of a widely suburban area of Bicester. The surrounding area to the north of the Site comprised mainly of residential and commercial buildings with associated roads. To the south of the Site are arable fields with pockets of woodland and hedgerows. Further surrounding habitats comprised of more arable fields with pockets of woodland and hedgerows.
- 2.3.6 The habitats within the Site were considered to be of up to site level value for nature conservation. Various habitat safeguards were recommended in the PEA which are detailed further within this CEMP.

Species

Amphibians

- 2.3.7 The habitat within the Site offered some suitability for foraging and resting amphibians in the form of bramble scrub and modified grassland. The terrestrial habitats at the Site were assessed during the survey visit, for their suitability to support great crested newt (GCN) *Triturus cristatus* and were considered to offer GCN with minimal shelter, foraging and dispersal opportunities categorised as 'poor'.

- 2.3.8 Further surrounding habitats to the south of the Site comprised of arable fields and small pockets of woodland with hedgerows which are likely to be suitable for foraging and dispersing amphibians. Roads and urban infrastructure surrounding the Site however may act as a barrier to any sort of dispersal.
- 2.3.9 There were five waterbodies identified within 250 m of the Site:
- A ditch (D1) located adjacent to the Site boundary running parallel to the western boundary of the Site;
 - A ditch (D2) located adjacent to the Site boundary running parallel to the eastern boundary of the Site;
 - A ditch (D3) located bordering the northern boundary of the Site;
 - Large sized pond (P1) located directly adjacent to the southern boundary of the Site; and
 - Medium sized pond (P2) located 200 m west of the Site.
- 2.3.10 In addition to the five waterbodies, a small section of stream runs 249 m north of the Site. This stream was not considered to be relevant to the scope of works due to its unsuitability for GCN (fast flowing with limited suitability for breeding). This watercourse is not considered further in this CEMP report.
- 2.3.11 Waterbodies P1, D1, D2 and D3 fall within the ‘Amber’ zone under the NatureSpace Impact Risk Map. Amber zones contain suitable habitat and GCN are likely to be present. P2 falls within the ‘Red’ zone. Red zones contain suitable habitat and most important areas for GCN.
- 2.3.12 Each waterbody was assessed for its potential to support GCN via a Habitat Suitability Index Assessment (HSI) (Oldham *et al.*, 2000) and eDNA surveys by ecologists from CTLN during the Site visit on 21st June 2024. D3 was not surveyed during this visit as this was dry at the time of survey. The result of the survey was negative for P1 & D2 (GCN likely absent) and positive for P2 & D1 (GCN likely present).
- 2.3.13 Given the established likely presence of GCN at P2 and D1 it is considered reasonable to conclude that GCN may potentially be encountered within, and dependant, at least in part, on, terrestrial habitats at the Site. Therefore, the species poses a constraint to the proposed works.
- 2.3.14 The proposed works at the Site will involve the destruction of extensive areas of existing onsite terrestrial habitats encompassing approximately 1.18 ha and the temporary disturbance of P1, D1 and D2.
- 2.3.15 Based on the predicted development effect on the habitat at the Site, and with consideration for the English Nature Great Crested Newt Mitigation Guidelines (2001) and current GCN guidance issued by Natural England, the scale of impact of the proposed works on GCN has been assessed as ‘medium’.

- 2.3.16 It is understood that a formal enquiry to enter the Site into the NSP and West Oxfordshire District Council Great Crested Newt District Licencing (NSP GCN DL) scheme was submitted by LNT Care Property Developers in December 2024. NSP returned a comprehensive District Licence Report detailing their assessment in January 2025. This report is available for review in the supporting documents of planning application 24/02058/F, located in the CDC planning register.
- 2.3.17 Overall, amphibians (including GCN) were considered likely to be associated with the Site due to the suitable waterbodies identified within 500 m of the Site and the connectivity (albeit limited) to surrounding suitable terrestrial habitat. The Site was considered to be of site level value for amphibians (including GCN).

Badger

- 2.3.18 During the PEA (CTLN, 2024) survey, no signs of badger *Meles meles*, including setts or latrines, were recorded during the survey on Site or within 30 m of the Site.
- 2.3.19 Due to its flat topography dominated by sparsely vegetated urban land, the Site is sub-optimal for sett creation, as badgers prefer a 45-degree angle slope to facilitate sett creation.
- 2.3.20 The Site itself provided suitable foraging habitat for badger in the form of bramble scrub. Further surrounding habitats comprised of arable fields and small pockets of woodland with hedgerows which may be suitable for foraging and dispersing badger.
- 2.3.21 A data search returned 15 records for badger *Meles meles* within 2 km of the Site. The closest record related to a badger 270 m southeast of the Site in 2014.
- 2.3.22 Given the small number of records within close proximity to the Site, the lack of evidence during the walkover survey and the limited suitability and small extent of habitats on the Site which are relatively isolated from more suitable habitat in the wider area, it was considered unlikely that badgers would be regularly associated with the Site.
- 2.3.23 If present locally there was considered to be a low risk that badgers may commute across the Site. As such the Site was considered to be of no more than site level value for badgers.

Bats

- 2.3.24 During the initial assessment in May four individual trees were noted across the Site. Tree 1 (T1) was an immature goat willow *Salix caprea* recorded within the northwest corner of the Site. Tree 2 (T2) and tree 3 (T3) were both semi-mature ash *Fraxinus excelsior* recorded along the northern boundary of the Site. Tree 4 (T4) was a mature oak recorded along the southern boundary of the Site.
- 2.3.25 Following the initial response from Cherwell District Council (CDC) on 14th August 2024, Ecus received an amended redline boundary of the Site with coordinates from the client, dated 12th

September 2024. A notable change was made to vegetation located along the northern aspect of the Site including the positioning of Trees. Trees 1,3 & 4 are no longer situated within the client's Site boundary so have been omitted from this assessment.

- 2.3.26 Upon further assessment and consultation with the Arboriculture Team at Watermans; T2, which was originally evaluated as a multi-stemmed ash tree, has now been categorised as two separate ash trees (T2a & T2b).
- 2.3.27 Both trees located within the Site were assessed for their suitability for roosting bats in accordance with good practice guidelines (Collins, 2023). No suitable features for roosting bats were recorded during the preliminary ecological appraisal. It is understood that at the time of writing, Trees 2a & 2b on Site are to be removed as part the proposed works.
- 2.3.28 Five EPS licences pertaining to bats were identified within 2 km of the Site. The closest of these records pertained to the destruction and damage of a brown long-eared bat *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus* resting place and breeding site (20.01.16 – 31.01.21), located 360 m south of the Site.
- 2.3.29 Additionally, the Site contained suitable foraging and commuting habitat in the form of the line of trees and bramble scrub with some albeit limited connectivity via scrub, trees, surrounding waterbodies and vegetated residential gardens to higher quality semi-natural habitat in the wider area.
- 2.3.30 Given the suburban setting of the Site and the availability of higher quality habitat in the wider area with limited connectivity to the suitable habitat on the Site, it was considered that the Site displays 'Low' suitability following good practice guidelines (Collins, 2023) and was considered to be of value to commuting and foraging bats at up to site level only.

Birds

- 2.3.31 Whilst on Site during the PEA (CTLN, 2024), no incidental bird sightings were recorded. During the survey a carrion crow *Corvus corone* was recorded nesting within in T4 (Figure 1). It is understood that this tree is to be retained throughout and following the proposed works.
- 2.3.32 The trees and bramble scrub on the Site were found to have suitability to support a variety of common breeding bird species. The habitats on Site were not found to be of high ecological value and similar, more abundant and higher quality habitat was available in the local area, in the form of residential gardens and blocks of woodland located to the northeast of the Site.
- 2.3.33 The Site was considered highly unlikely to support wintering or passage birds due to the urban context of the Site and common habitats present that do not provide a valuable foraging resource and are unsuitable for use by waterfowl or wading birds. Therefore, the Site was considered to be of importance to birds up to site level only.

Invertebrates

- 2.3.34 The Site offers limited suitability for invertebrates given the dominance of artificial unvegetated urban land and the limited diversity (species present and structure) of vegetated habitats, although the mature trees, scrub and modified grassland offers some limited foraging, commuting, sheltering/burrowing and basking opportunities.
- 2.3.35 Habitats in the wider area such as urban greenspace, and woodland parcels to the northeast of the Site are considered to provide higher value habitats for invertebrates.
- 2.3.36 Due to the limited extent of available habitat on Site, the lack in diversity of habitats and the availability of similar/higher value habitat off-site, Site habitats were not considered to be of importance to invertebrates at beyond the site level.

Reptiles

- 2.3.37 It was considered that the Site provided some suitable habitat for foraging, sheltering, basking and dispersing common reptiles in the form of bramble scrub and sparsely vegetated urban land.
- 2.3.38 Further surrounding habitats to the south of the Site comprised arable fields and small pockets of woodland with hedgerows which may be suitable for foraging and dispersing reptiles. Roads and urban infrastructure surrounding the Site however may act as a barrier to any sort of dispersal of reptiles to and from the wider landscape.
- 2.3.39 Due to the presence of suitable habitat on Site and connectivity (albeit limited) to surrounding suitable terrestrial habitat. The Site was considered to be of site level value for reptiles.
- 2.3.40 Safeguards outlined for common amphibians would help to protect reptiles in the event they are present at the time of works.

Riparian Mammals and White-clawed crayfish

- 2.3.41 A small section of stream runs 249 m north of the Site. However, it was separated from the Site by roads and is not obviously connected to the Site by any drains or flowing water. Three ditches (D1, D2 and D3) were recorded along the western, northern and eastern boundary of the Site.
- 2.3.42 The ditches provided sub-optimal habitat for water vole *Arvicola amphibius* and white-clawed crayfish *Austropotamobius pallipes* due to a lack of aquatic and emergent habitat, seasonal flooding and over shading. Water voles and crayfish favour permanent slow flowing or still freshwater where water levels do not fluctuate greatly. Both species avoid excessively shaded sites with overhanging trees and shrubs, as these usually lack appropriate tall, dense vegetation. Rich bankside and emergent vegetation is necessary for the provision of food and concealment from predators.

- 2.3.43 As such, both riparian mammals (such as water vole) and white-clawed crayfish were considered highly unlikely to occur on Site.
- 2.3.44 Furthermore, the ditches and ponds within and surrounding the survey area were considered unsuitable to support otters *Lutra lutra* due to their shallow nature and lack of available aquatic prey.
- 2.3.45 Given that otters are extremely mobile species, safeguards outlined for badger were considered sufficient to protect otter in the highly unlikely event individuals commute across the Site.

Other Key and Notable Species

Hedgehogs

- 2.3.46 The Site was found to provide some suitable foraging and commuting habitat for hedgehog mainly in associated with the vegetated habitats such as bramble and willow scrub providing some suitable shelter and hibernation habitat. Habitats were nonetheless limited in extent and separated from more suitable habitats in the wider area by major roads and hardstanding which are likely to reduce chances of dispersal onto the Site from more suitable habitats in the wider area. As such, the Site was considered to be of importance to hedgehogs at up to the site level only.

Invasive Species

- 2.3.47 *Buddleia Buddleja davidii* and horse tail *Equisetum arvense* were recorded within the Site, and whilst not listed as an invasive non-native species under Schedule 9 of the WCA 1981 (as amended), are known to display invasive tendencies.

3. Proposals and Impacts

3.1 Proposals

- 3.1.1 The proposed works at the Site include the construction of a care home, inclusive of associated access and facilities, as well as both hard and soft landscaping throughout.
- 3.1.2 Surrounding the care home will be a newly created secure garden area which will comprise of a mosaic of developed land paving with areas of introduced shrub, grassland, meadow and mixed scrub.
- 3.1.3 Native hedgerows and trees will also be planted in various locations across the Site which will provide privacy across the development and deliver connectivity and forage resource for wildlife throughout the year.

3.2 Potential Impacts

- 3.2.1 Pre-construction/construction operations with potential to damage the Site and other potential sources of ecological impact arising from the development are considered to include:
- Ground compaction, disturbance and damage to trees/scrub and roots as a result of bringing machinery and materials on Site and storage of materials;
 - Adverse impacts to individual birds/active nests as a result of clearance of vegetation if this is undertaken during the bird nesting season (typically recognised as March - September inclusive);
 - Adverse impacts to common amphibians (including GCN) and reptiles in the event that that are present at the time of works (particularly ground and vegetation clearance);
 - Minor disturbance of bats, birds, badgers, hedgehogs and other small animals which may commute through the Site during construction activities and the increase of lighting at night post-development;
 - Adverse impacts to badger, hedgehog and common mammal species caused by the creation of excavations and general construction traffic on Site during development which have potential to injure or trap mammals; and
 - Pollution through accidental fuel spills during the construction period.

4. Construction Management and Implementation

4.1 Construction Management

- 4.1.1 During construction and in accordance with Best Practice Measures (BPM) (Appendix 2), the following working methods and considerations specific to habitats and species/species groups will be undertaken by the contractor.
- 4.1.2 The methods proposed are based on best practice and industry guidelines to avoid committing an offence under wildlife legislation, to safeguard protected/notable species and retained habitats.

4.2 Habitat Protection

General measures

- 4.2.1 Construction practices will follow BPMs in terms of dust and noise control by ensuring unsealed surfaces are kept damp during dry weather conditions and ensuring that machines are not idling when not in use. All machine refuelling will be carried out in designated areas on Site where spill mats have been installed to prevent any pollution on Site and within adjacent habitats.
- 4.2.2 Temporary fencing will be installed ahead of construction commencing to ensure operations do not extend beyond the working area or vegetation, namely trees that are due to be retained with appropriate warning signs installed to warn contractors.
- 4.2.3 Lighting of adjoining off-site habitats will be avoided both temporarily during the construction stage and in the long-term, post-development, to prevent light spill/pollution. The same will apply to retained on Site habitats and soft landscaping.
- 4.2.4 Due to the presence of waterbodies within and adjacent to the Site (250 m of the Site), best practice pollution prevention (i.e. run-off control measures) will also be employed during the works and the operational phase. Pollution prevention measures for businesses can be viewed on the government website at <https://www.gov.uk/guidance/pollution-prevention-for-businesses>.
- 4.2.5 Guidance for Pollution Prevention (GPP) documents produced by Natural Resources Wales (NRW), Northern Ireland Environment Agency (NIEA) and Scottish Environment Protection Agency (SEPA) should also be referred to for site works which may impact the local environment. Relevant examples include:

- GPP5 – works and maintenance in or near water (NRW, NIEA and SEPA, 2018);
- GPP21 – pollution incident response planning (NRW, NIEA and SEPA, 2017); and,
- GPP22 – dealing with spills (NRW, NIEA and SEPA, 2018).

4.2.6 Pollution Prevention Guidelines 1 (NRW, NIEA and SEPA, 2013), is now withdrawn but provides a general overview for good practice environmental measures in construction and where followed will assist with protection of the waterbodies on and off-Site:

- Materials shall not be stored within 10 m of any running water or aquatic habitat; and,
- Details of the Environment Agency (EA) should be stored in the site office/compound during drainage works should any pollution incident occur which may impact upon off-site waterbodies/watercourses.

Root Protection Zones (RPZs)

4.2.7 Existing trees will be protected from construction activities by Root Protection Zones (RPZs), implemented in accordance with British Standard 5837 (2012): Trees in Relation to Design, Demolition and Construction. This will ensure adequate protection is given to trees and their roots to prevent direct damage or soil compaction which could lead to root damage and subsequent failure of the tree. RPZs will be securely fenced to prevent access by machinery or site personnel. RPZs should be calculated by a suitability qualified arboriculturist prior to works.

4.2.8 The protected boundary trees will create Biodiversity Protection Zones (BPZs) during construction. This will maintain the boundary habitat to the north of the Site for protected species including bats, nesting birds, invertebrates and other wildlife. Access routes and movement of machinery will be carefully planned so as to avoid the RPAs/ BPZs. BPZs and RPAs will be fenced to ensure no site personnel or machinery access these areas.

4.2.9 In the circumstance that works require the movement or removal of protective fencing from around a tree/trees, advice will first be sought from the appointed arboriculturist and ecologist. Where minor excavation is required within these RPZs, works will be undertaken using hand tools to minimise impacts upon the roots of mature trees and only in consultation with the arboriculturist.

4.3 Species Protection

4.3.1 To protect any species associated with the Site during the pre-construction and construction phases of the works, BPMs will be adhered to during the vegetation clearance works and construction works. The current recommended BPMs are presented within **Appendix 2** and outlined in the Toolbox Talk site guide at **Appendix 1**.

4.3.2 The BPMs will help to safeguard amphibians, badgers, bats, birds, reptiles, and hedgehogs in the event that they are present on the Site at the time of works. BPM regarding INNS are also recommended to prevent the spread of undesirable flora species.

General Measures

Toolbox Talk

- 4.3.3 An Ecological Clerk of Works (ECoW) will be appointed prior to works on Site commencing. The appointed ECoW will provide a Toolbox Talk (TbT) to all Site personnel prior to the start of vegetation clearance and prior to commencement of activities where ECoW attendance is considered to be appropriate. The TbT will be used to outline the key habitats/protected species that are present or potentially present on the Site, how to identify them, legislation associated with them, BPMs and/or mitigation that should be in place at the Site throughout the works. All measures set out in the TbT are to be adhered to during clearance/construction. The TbT will also include biosecurity measures.
- 4.3.4 The TbT will form part of the Site induction process for personnel involved in activities where ECoW presence is required, or where there is a residual risk but where ECoW attendance is not considered to be essential. For new staff that begin work on the Site after the initial TbT has been delivered by the ecologist, they will be briefed by the site manager.
- 4.3.5 A copy of the TbT documents and identification sheets will be kept on the Site at all times in the Site office and will be signed by personnel to demonstrate that they have been briefed on the ecological features associated with the Site prior to commencing works. The TbT documents are provided in Appendix 1.
- 4.3.6 The appointed ECoW will be present to complete pre-works Site checks and supervise as follows:
- To deliver the TbT as required;
 - To check all relevant fencing has been deployed to create the RPZs or BPZs for retained trees and vegetation;
 - To complete nesting bird checks of vegetation, within a 24 hour period prior to removal/demolition (only where removal/demolition is scheduled during the nesting bird season i.e. between March – September inclusive);
 - To directly supervise vegetation/habitat clearance works in the event it is considered to be appropriate following initial inspections, to watch for protected/notable species and relocate individuals (if necessary);
 - To attend the Site in an emergency capacity, in the unlikely event protected species are unexpectedly encountered when the ECoW is not in attendance; and,
 - To ensure all construction materials on the Site are being stored effectively.

Timing of Works

- 4.3.7 Ecological considerations which will constrain the timing of proposed works primarily concern bats and amphibians in relation to their active (March-October, weather dependent in March and October) and hibernation season (October –March, weather and species dependant in March). In

addition, the main breeding bird season (March – August inclusive), and the hibernation season for small mammals such as hedgehogs (October/November – March/April) are also a key consideration. Further details are provided below.

Good Housekeeping

- 4.3.8 Good general housekeeping on the Site will be employed to ensure there is no build-up of debris. If earth spoil arises from the works this should be removed from the Site as quickly as possible or placed in a skip or other sealed container immediately, if to be stored on the Site. This is to avoid creating suitable habitat which may encourage species colonising the Site during the construction phase.
- 4.3.9 All construction materials on the Site should be stored in a suitable location away from (ideally a minimum of 5 m) suitable habitat (i.e. tall grassland, waterbodies, scrub, brash/logs/rubble) and raised off the ground, e.g. on pallets, or stored on hard standing/bare ground to avoid creating artificial refugia/hibernacula for species which may occur on Site.
- 4.3.10 Safeguards must be put in place to prevent pollution or run-off events arising from construction.

Amphibians and Reptiles

- 4.3.11 The following BPM are recommended to safeguard common amphibians and reptiles in the event they are encountered during works (and other species such as hedgehogs):
- The appointed ECoW will have briefed all key site personnel via a TbT prior to the start of vegetation clearance and construction works;
 - Areas of longer vegetation (e.g. scrub, tall grass) present (i.e. above 100 mm) at the time of works will ideally be strimmed/cut in a 2-stage process. The first strimming phase will cut the vegetation to approximately 100-150 mm above ground level to encourage any animals present to move into suitable off-Site habitat away from the construction zone. The second strim will take the vegetation down to ground level (or 50 mm as appropriate). The second strim will ideally take place following a one-day interim period between the first strim (or an absolute minimum of 2 hours). Arisings should ideally be removed off-Site or alternately thinly scattered across the Site. Arisings could also be incorporated into habitat features for amphibians and other wildlife (e.g., grass heaps or newly created brash piles);
 - Clearance of suitable shelter/hibernation habitat (e.g. brash, spoil, rubble piles) will ideally avoid the winter hibernation period (which is weather dependant but typically runs from November to February inclusive) when amphibians are hibernating and inactive and are at greater risk of injury;
 - Site clearance should ideally be undertaken on days with suitable weather (e.g. temperatures between 10-18°C with no rain). Early mornings (unless temperatures are above 10°C) should be avoided in order to allow temperatures to rise above 10°C, below this threshold amphibians may be less mobile;
 - Where common amphibians are encountered (i.e. common frog, common toad, smooth newt, palmate newt) these will be moved to safety by Site personnel into long vegetation

outside the works area. In the unlikely event that GCN are encountered all works should cease and a suitably experienced ecologist will be contacted immediately for guidance on how to proceed;

- If reptiles are encountered during the active season works should cease where safe to do so and the ecologist contacted for advice.. In the event that any torpid/hibernating reptiles/amphibians are found during the hibernation period they should be left in situ wherever possible, and works should cease and the ECoW or an CTLN ecologist contacted immediately for advice;
- Reptiles, in particular any snakes found, should not be handled and should be allowed to move away of their own volition. It should be noted that the UK supports a venomous species, the adder. Adders will only use their venom as a last means of defence, and this typically occurs only when snakes are handled or accidentally trodden on. In the unlikely event adders are encountered on Site stop works and contact an ecologist immediately. If bitten, keep the affected area immobilised as much as possible and proceed to the nearest hospital with an Accident and Emergency (A&E) unit.
- Good general housekeeping of the Site will be employed to ensure there is no build-up of debris. All materials (construction materials) on Site to be stored in a suitable location away from suitable amphibian habitat (ideally a minimum of 5 m) and ideally risen off the ground) (e.g. on pallets) or on hard stand/bare ground. Designated storage areas would be agreed with the ECoW. Rubble, spoil and other materials arising from the works should be removed from the Site as quickly as possible or placed in a skip or other sealed container immediately if stored on Site.

Badgers

4.3.12 Badgers are not currently considered to be resident on the Site however may use the Site for foraging/dispersal. Badgers are a highly mobile species capable of routinely excavating new setts.

4.3.13 Badgers are inquisitive and will investigate anything new within their territories, so general safeguards should also be implemented during construction as a precaution. These safeguards will also act to protect other mammals such as hedgehog and otter and should include:

- All site personnel will be briefed on the potential presence of mammals such as badger and hedgehog within the Site using a toolbox talk to be included in the Site induction process;
- Food/litter will not be left on Site;
- Deep excavations (>1 m) or excavations with potential to flood will be securely fenced off to ground level or should be back filled or covered overnight to prevent animals falling in and becoming trapped to ensure badgers cannot fall into potential pitfalls. Open pipework will not be left open overnight;
- Unfenced/uncovered shallow excavations (<1 m) should have a pair of scaffold boards placed to one corner to act as an escape ramp, allowing any badgers to exit should they fall in;
- Trenches/excavations will also be inspected each morning to ensure that no animals have become trapped overnight;

- Lighting implemented during the construction stage to be directed away from retained vegetation and off-site vegetated habitats;
- Appropriate storage of equipment and materials in designated areas and avoidance of stockpiling on Site. All waste to be securely stored in covered skips or containers to prevent materials littering the site; and
- If in the unlikely event that badgers are suspected to be associated with the Site once construction has commenced, including should a suspected badger sett be recorded on or within 30 m of the Site during the works, works should cease, and an appropriately experienced ecologist should be contacted for advice before continuing.

Bats

- 4.3.14 No suitable features for roosting bats were recorded during the preliminary ecological appraisal. It is understood that at the time of writing, Trees 2a & 2b on Site are to be removed as part the proposed works. In the unlikely event that any evidence of roosting bats is identified or suspected at any time during the works, such as live or dead bats, droppings or feeding remains, works should cease immediately (where safe and practical to do so) and a suitably qualified ecologist should be contacted immediately for further advice.
- 4.3.15 Contractors are prohibited from handling bats except in exceptional circumstances where a bat is in immediate danger and an ecologist is not present, i.e. a grounded bat which is at risk of attack from predators. In such cases contractors must wear gloves and place the bat gently in a pre-prepared rescue box, ideally comprising a small box, such as a cardboard shoe box, with ventilation holes no wider than 7 mm, a piece of fabric such as a tea towel and an upturned drinks bottle cap filled with water. An ecologist will attend as soon as possible if they are not already present on the Site. It is the responsibility of LNT Construction to ensure that contractors are able to access the correct equipment for emergency bat rescue ahead of the ecologist attending the Site.
- 4.3.16 In the event that an injured bat is encountered the bat would be taken by the ecologist to a local bat carer or vet as appropriate. Note that a small number of bats in the UK have been found to carry rabies viruses called European Bat Lyssaviruses (EBLVs). EBLVs are transmitted through a bite or a scratch or from a bat's saliva coming into contact with your mucous membranes (your eyes, mouth or nose) therefore any ecologist called to attend Site in relation to bat handling will ideally hold a CL18 class licence, will have up to date rabies vaccinations, and wear protective gloves and a mask while handling bats.
- 4.3.17 Night working (hours between and including dusk and dawn) should be avoided where possible to reduce disturbance to foraging /commuting bats. Any temporary lighting used during the construction phase should avoid light-spill onto suitable retained habitats (i.e. trees). Tower lighting is not recommended. Hoods should be fitted to all lights to prevent light spill behind or above the light. Lights should be turned off when not in use.

- 4.3.18 Lighting and layout of the proposed development will be designed to avoid light-spill onto suitable retained habitats and created greenspace to safeguard these habitats as foraging, commuting and potential roosting resources.

Birds

- 4.3.19 Where removal of tree and scrub habitats is required, it is recommended that this is undertaken between September and February inclusive i.e. outside of the typical bird breeding season. Where it is not possible to schedule clearance works for these months, a nesting bird check, to be undertaken by a suitably qualified ecologist will be required no more than 24 hours prior to clearance, to check for the presence of active bird nests. If an active bird nest is identified during the checks (or at any time), any works in progress must be stopped and a suitable buffer established by an ecologist (typically between 5-10 m). An active nest would require an exclusion zone to be established and adhered to until chicks had fledged and/or the nest is no longer in use (to be monitored and confirmed by an ecologist). Be aware some species can nest all year round e.g. feral pigeon.

Hedgehogs

- 4.3.20 Clearance works are to be undertaken in a sensitive manner with consideration to the potential for hedgehogs to be present.
- 4.3.21 Avoid disturbing key features where hedgehog may be hibernating such as dense piles of leaves/ brash piles/ tree hollows and spoil/rubble piles during November to March. Any suitable shelter and hibernation features for hedgehogs (e.g. refugia piles, tall grasses, dense scrub, dense piles of leaves/ brash piles/ tree hollows) should be cleared by hand, preferably between April and October in milder weather when hedgehogs are not hibernating.
- 4.3.22 If an individual is found, they should be left to move away of their own volition wherever possible. If the individual is in immediate danger, then they should be moved to a place of safety outside of the works area by a gloved hand. If hedgehog(s) are encountered between November and March or juveniles are encountered, works should temporarily cease, and the ecologist will be contact for advice immediately.

Biosecurity Measures

- 4.3.23 Biosecurity measures will be implemented during the construction stage and post-development to reduce the possibility of spread of invasive species across or outwith the Site and prevent the spread of diseases (e.g. Chytridiomycosis, an infectious disease in amphibians) (ARG UK 2017).
- 4.3.24 Any Invasive Non-Native Plant Species identified on Site should be eradicated to prevent spread into the wild as well as further spread on Site which has the potential to impact the development. These plants should be eradicated and disposed following an INNS Method Statement (MS)/Management Plan in accordance with guidance published by Natural England, Department

for Environment, Food & Rural Affairs, and the Environment Agency (2022). Soft landscaping proposals at the Site should avoid the use of species listed on Schedule 9 of the WCA 1981 (as amended) and ideally no non-native species where possible. Non-native species should be of proven biodiversity value (if required).

- 4.3.25 INNS MS /Management Plan will further need to include post-construction monitoring measures.
- 4.3.26 Standard practices such as cleaning and disinfecting equipment and boots and when leaving the Site should apply to reduce the risk of transferring diseases (ARG UK, 2017).
- 4.3.27 Larger equipment e.g. small plant and vehicles should be washed before they leave Site and before arriving at the Site, if they have been used at other sites where the presence of invasive species or diseases is known.
- 4.3.28 On-going monitoring at the Site during construction and post development should be implemented to ensure that the presence of invasive and/or diseases is identified. Should invasive species or diseases be identified at any point then these would need to be managed through a management plan to be implemented by appointing a suitably experienced contractor/specialist.

4.4 Contact Details

- 4.4.1 The overall responsibility of the Site during the construction phase lies with LNT Construction. The person in charge of day-to-day Site activities will be the appointed Site Manager.
- 4.4.2 CTLN has prepared this document and can be the main point of contact for ecological advice and the provision of ECoW, as required.
- 4.4.3 Project Appointed Ecologists Abel Drewett (Technical Director of Ecology) and Molly-Marie Mills (Senior Ecologist) should be contacted immediately in the event that protected or notable species (e.g. GCN, bats, badgers, birds, reptiles, riparian mammals or hedgehogs) are encountered during the works. Alternatively, request to speak to a Senior or Principal Ecologist from CTLN.
 - Abel Drewett (Technical Director of Ecology): 07943 582038.
 - Molly-Marie Mills (Senior Ecologist): 07964 543826.
 - Curs Terrae Land & Nature Basingstoke: 01256 224588

References

- ARG UK. (2017). 'ARG UK Advice Note 4: Amphibian Disease Precautions: A Guide for UK Fieldworkers.' Amphibian and Reptile Groups of the United Kingdom.
- British Standards Institution (BSI). (2012). BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*. London: BSI.
- Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). 'Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater Coastal and Marine', CIEEM, Winchester.
- Ecus (2024) 'Graven Hill, Bicester - Biodiversity Enhancement and Management Plan', Ref: 24349 v1.0, dated November 2024
- Ecus (2024) 'Graven Hill, Bicester - Biodiversity Net Gain Baseline Assessment', Ref: 23635 v4.0, November 2024
- Ecus (2024). 'Graven Hill, Bicester - Preliminary Ecological Appraisal' Ref: 23635 v1.0, June 2024
- Ecus (2024). 'Graven Hill, Bicester – Great Crested Newt eDNA Survey Report' Ref 23857 v1.0, September 2024
- English Nature (2001). Great crested newt mitigation guidelines. English Nature, Peterborough.
- Natural England, Department for Environment, Food & Rural Affairs, and Environment Agency. (2022). Invasive Non-Native Species (INNS) management: method statement and management plan guidance. [online] Available at: <https://www.gov.uk/guidance/invasive-non-native-plants> [Accessed 25th June 2025].
- Oldham, R.S; Keeble, J; Swan, M.J.S. and Jeffcote, M. (2000). *Evaluating the suitability of habitat for the great crested newt (Triturus cristatus)*. Herpetological Journal, 10, pp. 143-155.

Figure 1: Site Map



Legend

- Site boundary
- Fencing Plan
- Impacted Habitats
- g4 - modified grassland
- h3d - bramble scrub
- u1b6 - other developed land
- u1f - Sparsely vegetated urban land
- r1e - canal or ditch
- Trees

Revision	Date	Drawn by	Checked by
A	30/06/2025	HO	MM



Imagery ©2025 Airbus, Landsat / Copernicus, Maxar Technologies, Map data ©2025 Google

Drg. Ref.: MM/23635/4

Scale (A4): 1:1,200

Appendix 1: Toolbox Talk

Legislation

Amphibians

- GCN are a European protected species;
- It is an offence to **capture, disturb, injure or kill a GCN or to damage or destroy their breeding sites and resting places.**
- Smooth newt, common frog and common toad are included in Section 9(5) of the WCA 1981 (as amended) which prohibits sale, barter, exchange, transporting for sale and advertising to sell or to buy these species.
- It is considered best practice to avoid impacts and harm to common amphibians.

Reptiles

- Common reptile species including grass snake *Natrix helvetica*, adder *Vipera berus*, common lizard *Zootoca vivipara*, and slow worm *Anguis fragilis* are protected under Schedule 5 of the WCA 1981 (as amended) against intentional killing or injuring.
- It is considered best practice to avoid impacts and harm to common reptiles.

Badgers

- Badgers and their setts are protected under the Protection of Badgers Act 1992. It is an offence under the act to kill, injure or take a badger. It is also an offence to destroy, damage or obstruct a currently active badger sett, or to disturb animals within the sett.

Bats

- All species of bat occurring within the UK are included in Schedule 2 of the Conservation of Habitats and Species Regulations 2017 and are protected from deliberate capture, injury or killing, from deliberate disturbance and from deliberate damage or destruction of a breeding site or resting place (roost).
- All UK bats are also included on Schedule 5 of the WCA 1981 (as amended). However, their protection is limited to certain offences. Under the 1981 Act (as amended) it is an offence to

intentionally or recklessly disturb bats while they are occupying a structure or place used for shelter or protection, or to obstruct access to any such place.

- Barbastelle *Barbastella barbastellus*, Bechstein's *Myotis bechsteinii*, brown long-eared bat *Plecotus auritus*, greater horseshoe *Rhinolophus ferrumequinum*, lesser horseshoe *Rhinolophus hipposideros*, noctule *Nyctalus noctula* and soprano pipistrelle *Pipistrellus pygmaeus* bats are included as priority species under Section 41 of the NERC Act 2006 (as amended).

Birds

- All nesting birds are protected under the WCA 1981 (as amended) against destruction of the nest during the bird nesting season, which falls between March and August, inclusive. It is an offence under the Act to kill, injure or take any wild bird, with certain exceptions.
- Other birds are also afforded additional protection under Schedule 1 of the WCA 1981 (as amended) and Part 3 of the Countryside and Rights of Way Act 2000 (CRoW Act). It is an offence to intentionally or recklessly disturb a Schedule 1 species while it is building a nest, is on or near a nest containing eggs or young, or to intentionally or recklessly disturb dependent young of such a species.

Hedgehog

- European hedgehog *Erinaceus europaeus* are listed as a species of principal importance under Section 41 of the NERC Act 2006. Whilst not afforded a high level of protection, these species have experienced significant declines in their UK population numbers, therefore, a best practice approach, avoiding harm to these species should be taken into consideration during works.

Where to find them?

Amphibians

- Amphibians spend much of their time on land and are generally found in close proximity to ponds (and ditches);
- Amphibians are present within and around ponds/ditches March to June for breeding;
- Amphibians may shelter/hibernate for long periods under rocks, dead logs, debris and mud, and may venture out in milder conditions to forage. The key hibernation period is November-

February. Amphibians begin to come out of hibernation and move to breeding ponds with consecutive minimum night time temperatures of 5 degrees Celsius or more.

Reptiles

- Reptiles need to bask in the sunshine each day before they become active, which puts them at risk from human impacts in the early mornings or on cooler days as they are unable to flee threats; and,
- Reptiles tend to hibernate from November-February, concealed in rubble or spoil piles, dense vegetation/brush or in below-ground features such as rabbit burrows.

Badgers

- Badgers live underground in setts often on sloping ground, at the base of hedgerows or woodland edge. Sett entrances are identified by a D-shaped hole usually accompanied by a large spoil heap.
- Badgers are rarely seen but their presence at a site can be determined by looking for the following field signs: setts, spoil heaps, footprints, trails through vegetation, latrines, hairs and scratch marks on trees.
- Badgers are active at dusk and dawn and during the night.
- Badgers are generally active from April- October. They do not hibernate but are commonly less active between November- March, i.e. they become more reliant on/are more likely to stay within the sett for prolonged periods during this time. The key breeding season runs from December to June inclusive.

Bats

- UK bats are very small animals and the bodies of the smallest bats are able to fit inside a match box. Several species of UK bat are able to conceal themselves in gaps and crevices little wider than 10 mm.
- Bat droppings appear similar in size and shape to mouse droppings but if rolled between your thumb and forefinger will crumble to dust, unlike mouse droppings.

What do they look like?

Amphibians

Male Great Crested Newt



Female Great Crested Newt



Smooth (Common) Newt



Palmate Newt



Common Toad



Common Frog



Reptiles

Grass snake



Slow worm



Adder



Common lizard



Badgers

Badger sett entrance



Badger footprint



Bats



This image shows a pipistrelle bat approximately 5 cm in length

What you need to know

A risk of encountering common amphibians, bats, birds, badgers, nesting birds and hedgehogs at the Site has been identified. The main suitable habitat on Site includes scrub, trees, brash and spoil/rubble piles. It should be noted that any wildlife within the Site will likely be well concealed.

To safeguard the above protected species in the event that they are present at the time of works, the following points will be followed:

- The appointed ECoW and will have briefed all key site personnel via a Toolbox Talk prior to the start of vegetation clearance and construction works. The Toolbox Talk will include relevant detail on ecology/identification, legislation and best working practices;
- All Site contractors will have been shown a copy of this guide which will be made available for reference on the Site at all times;
- All Site personnel to keep a high level of vigilance for protected species during works;
- Always check where you are walking and maintain good housekeeping across the Site, including the storage of all materials on hard standing/bare ground well away from vegetation (i.e. ideally a minimum of 5 m away from) or ideally on pallets raised from the ground;
- Food/litter will not be left on Site;
- Deep excavations (> 1 m) should be covered overnight during construction works. Any shallow excavations (<1 m) should have a scaffold board or equivalent placed in them overnight to allow any badgers, hedgehog and other species to exit, should they fall in. Trenches / excavations will also be inspected each morning to ensure that no animals have become trapped overnight;
- Vegetation clearance will avoid the key nesting bird season (i.e. will avoid March to August inclusive). If clearance must occur within the nesting season and ecologist will complete a check for nesting birds before clearance no more than 24 hours prior to clearance, to check for the presence of active bird nests. An active nest would require an exclusion zone to be established and adhered to until chicks had fledged and/or the nest is no longer in use (to be monitored and confirmed by the ECoW);
- Vegetation clearance will occur in a sensitive manner which will involve a 2-stage cut of the vegetation to safeguard wildlife such as common amphibians and hedgehog (see 4.3.11 and Appendix 2);

- Clearance of suitable shelter/hibernation habitat (e.g. brash, spoil, rubble piles) will ideally avoid the winter hibernation period for common amphibians (November to February inclusive) when amphibians are hibernating and inactive and are at greater risk of injury. Clearance should ideally be undertaken on days with suitable weather (e.g. temperatures between 10-18°C with no rain). Early mornings (unless temperatures are above 10°C) should be avoided in order to allow temperatures to rise above 10°C, below this threshold amphibians may be less mobile;
- Avoid disturbing key features where hedgehog may be hibernating such as dense piles of leaves/ brash piles/ tree hollows and spoil/rubble piles during November to March. Any suitable shelter and hibernation features for hedgehogs (e.g. refugia piles, tall grasses, dense scrub, dense piles of leaves/ brash piles/ tree hollows) should be cleared by hand, preferably between April and October in milder weather when hedgehogs are not hibernating;
- Where common amphibians are encountered (i.e. common frog, common toad, smooth newt, palmate newt) these may be moved to safety by Site personnel into long vegetation outside the works area. In the unlikely event that GCN are encountered all works should cease and a suitably experienced ecologist will be contacted immediately for guidance on how to proceed;
- If a hedgehog is encountered on Site during works, they should be left to move away of their own volition wherever possible. If the individual is in immediate danger, then they should be moved to a place of safety outside of the works area by a gloved hand. If hedgehog(s) are encountered between November and March or juveniles are encountered, works should temporarily cease and the ecologist will be contact for advice immediately;
- In the highly unlikely event that reptiles are encountered then works in the area will stop and the ecologist contacted. Reptiles will not be handled by staff and will be allowed to move away of their own volition. Incorrect handling of reptiles can cause injury/death to the reptile;
- If in the unlikely event that badgers are suspected to be associated with the Site once construction has commenced, including should a suspected badger sett be recorded on or within 30 m of the Site during the works, works should cease, and an appropriately experienced ecologist should be contacted for advice before continuing;
- Night working (hours between and including dusk and dawn) should be avoided where possible to reduce disturbance to foraging /commuting bats and other wildlife. Any temporary

lighting used during the construction phase should avoid light-spill onto suitable retained habitats (i.e. trees) and offsite habitats. Tower lighting is not recommended. Hoods should be fitted to all lights to prevent light spill behind or above the light. Lights should be turned off when not in use;

- At the time of writing, it is understood that all trees are to be retained. Trees on Site have been identified with suitability to support roosting bats (PRF-I). Should any trees assessed as PRF-I require removal to facilitate the proposals, these should be inspected by a suitably qualified ecologist prior to being sectional felled under a Precautionary Working Method Statement (PWMS). This would involve felling the tree in sections once bats are confirmed as absent and leaving on the ground for a minimum of 24 hours before chipping/removal from the Site; and,
- Contractors are prohibited from handling bats except in exceptional circumstances where a bat is in immediate danger and an ecologist is not present, i.e. a grounded bat which is at risk of attack from predators. In such cases contractors must wear gloves and place the bat gently in a pre-prepared rescue box, ideally comprising a small box, such as a cardboard shoe box, with ventilation holes no wider than 7 mm, a piece of fabric such as a tea towel and an upturned drinks bottle cap filled with water. An ecologist will attend as soon as possible if they are not already present on the Site. It is the responsibility of LNT Construction to ensure that contractors are able to access the correct equipment for emergency bat rescue ahead of the ecologist attending the Site.

Biosecurity Measures

- Biosecurity measures will be implemented during construction to reduce the possibility of spread of invasive species and diseases (e.g. Chytridiomycosis an infectious disease in amphibians);
- Standard practices such as cleaning and disinfecting equipment and boots and when leaving the Site should apply to reduce the risk of transferring diseases (ARG UK 2017);
- Larger equipment e.g. small plant and vehicles should be washed before they leave Site and before arriving at the Site (if they have been used at other sites where the presence of invasive species or diseases is known);

- Any Invasive Non-Native Plant Species identified on Site should be eradicated to prevent spread into the wild as well as further spread on Site which has the potential to impact the development. These plants should be eradicated and disposed following an INNS Method Statement (MS)/Management Plan; and,
- On-going monitoring at the Site during construction and post development should be implemented to ensure that the presence of invasive and/or diseases is identified. Should invasive species or diseases be identified at any point then these would need to be managed through a management plan to be implemented by appointing a suitably experienced contractor/specialist.

Other General Considerations & Habitat Safeguards

- Construction practices will follow best practise measures in terms of dust and noise control by ensuring unsealed surfaces are kept damp during dry weather conditions and ensuring that machines are not idling when not in use. All machine refuelling will be carried out in designated areas on Site where spill mats have been installed to prevent any pollution on Site and within adjacent habitats;
- Safeguards must be put in place to prevent pollution or run-off events arising from construction;
- Good general housekeeping on the Site will be employed to ensure there is no build-up of debris. Stockpiling of materials on the Site will be avoided and waste materials or spoil from excavation will be removed from the sites and disposed of at the earliest opportunity;
- All materials (construction materials) on Site to be stored in a suitable location away from suitable amphibian habitat (ideally a minimum of 5 m) and ideally risen off the ground) (e.g. on pallets) or on hard stand/bare ground. Rubble, spoil and other materials arising from the works should be removed from the Site as quickly as possible or placed in a skip or other sealed container immediately if stored on Site;
- Temporary fencing will be installed ahead of construction commencing to ensure operations do not extend beyond the working area or vegetation, namely trees that are due to be retained with appropriate warning signs installed to warn contractors;

- Lighting of adjoining off-site habitats will be avoided both temporarily during the construction stage and in the long-term, post-development, to prevent light spill/pollution. The same will apply to retained on Site habitats and soft landscaping;
- Root Protection Area (RPA) and/or Biodiversity Protection Zones (BPZs) will be clearly demarcated ahead of vegetation clearance and construction and will be maintained for the duration of construction works; and,
- The Project Appointed Ecologists should be contacted immediately in the event that protected or notable species (e.g. GCN, bats, badgers, nesting birds, reptiles, riparian mammals or hedgehogs) are encountered during the works. Alternatively, request to speak to a Senior or Principal Ecologist from CTLN.

Project Appointed Ecologist contact details:

- Abel Drewett (Technical Director of Ecology): 07943 582038.
- Molly-Marie Mills (Senior Ecologist): 07964 543826.
- Curs Terrae Land & Nature Basingstoke: 01256 224588

Appendix 2: Protected Species Best Practice Measures

Table 1: Protected Species Best Practice Measures (BPM)

Mitigation	Species Concerned	Reason	Timing
Toolbox Talk (TbT) & Ecological Clerk of Works (ECoW) Provision			
<p>All site personnel will be briefed during their site induction by an ECoW or the Site Manager on the potential presence of wildlife on the Site. A TbT (see Appendix 1) including an identification guide will be provided and shown to all site personnel and will be made available for reference at all times.</p>	<p>Common amphibians, reptiles, badgers, bats, nesting birds, hedgehog.</p>	<p>To ensure all site personnel are aware of the potential presence of wildlife on the Site, identify areas with an increased risk of presence, and explain the relevant legislation and the proposed methods of working as detailed below. To ensure that all site personnel are aware of appropriate precautionary measures to minimise the risk of committing an offence during the works.</p>	<p>Prior to works commencing.</p>
Vegetation & Site Clearance			
<p>Clearance works are to be undertaken in a sensitive manner with vigilance for protected and notable species.</p> <p>Areas of longer vegetation (e.g., scrub, tall grass) present (i.e. above 100 mm) at the time of works will ideally be strimmed/cut in a 2-stage process. The first strimming phase will cut the vegetation to approximately 100-150 mm above ground level to encourage any animals present to move into suitable off-Site habitat away from the construction zone. The second strim will take the vegetation down to ground level (or 50 mm as appropriate). The second strim will ideally take place following a one-day interim period between the first strim (or an absolute minimum of 2 hours). Arisings should ideally be removed off-Site or alternately thinly scattered across the Site. Arisings could also be incorporated into habitat</p>	<p>Common amphibians and reptiles in the unlikely event they are present at the time of works, hedgehog.</p>	<p>To minimise the risk of harming wildlife during clearance of the sites, with individuals likely to be concealed below ground or in sheltering habitat during their hibernation phase (from November to February).</p>	<p>During vegetation and site clearance works.</p>

Table 1: Protected Species Best Practice Measures (BPM)

Mitigation	Species Concerned	Reason	Timing
<p>features for amphibians and other wildlife (e.g., grass heaps or newly created brash piles.</p> <p>Clearance of suitable shelter/hibernation habitat (e.g. brash, spoil , rubble piles) will ideally avoid the winter hibernation period (i.e. avoid November to February inclusive) when amphibians are hibernating and inactive and are at greater risk of injury.</p> <p>Site clearance should ideally be undertaken on days with suitable weather (e.g. temperatures between 10-18°C with no rain). Early mornings (unless temperatures are above 10°C) should be avoided in order to allow temperatures to rise above 10°C, below this threshold amphibians may be less mobile.</p> <p>Avoid disturbing key features where hedgehog may be hibernating such as dense piles of leaves/ brash piles/ tree hollows and spoil/rubble piles during November to March. Any suitable shelter and hibernation features for hedgehogs (e.g. refugia piles, tall grasses, dense scrub, dense piles of leaves/ brash piles/ tree hollows) should be cleared by hand, preferably between April and October in milder weather when hedgehogs are not hibernating.</p>			
<p>If vegetation clearance is required during the main nesting bird season (typically March to August inclusive) there is potential for active bird nests of common species to be destroyed during tree or scrub clearance works on the Site.</p> <p>Where vegetation clearance is required within this period, a nesting bird check, to be undertaken by a suitably qualified ecologist will be required no more than 24 hours prior to clearance, to check for the presence of active bird nests. An active nest would require an exclusion zone to be established and adhered to until chicks</p>	Birds	To prevent disturbance or destruction of active bird nests.	During clearance of vegetation on the Site.

Table 1: Protected Species Best Practice Measures (BPM)

Mitigation	Species Concerned	Reason	Timing
<p>had fledged and/or the nest is no longer in use (to be monitored and confirmed by the ECoW).</p> <p>It should be noted that some species such as pigeons may nest year round and as such vigilance is required at all times. If a nest is suspected to be present, stop works and contact the ecologist for advice.</p>			
<p>Once all clearance of suitable habitat has been completed on the Site (to be confirmed by ECoW) construction works can continue unsupervised. After this time the construction footprint should be maintained as short vegetation (less than 50 mm)/bare ground as appropriate until works are completed.</p>	All Wildlife.	To discourage recolonization by wildlife during the construction stage.	Post Site clearance and to be maintained until construction is complete.
Lighting			
<p>Night working during the construction phase will be avoided where possible and construction practices will follow best practice in terms of dust and noise control.</p> <p>If lighting is implemented during the construction stage it should be directed away from retained and off-site vegetated habitats to allow badgers and bats to continue to use such habitats for foraging and commuting.</p> <p>No artificial lighting will be placed near to any potential bat roost features (retained trees with suitable features, bat boxes, off-site buildings and trees).</p> <p>Night-time security lighting will be avoided wherever possible. However, if short term lighting is needed during construction, when daytimes are short, unnecessary light spill would be controlled through a combination of directional lighting, low</p>	Badger, bats, hedgehog.	To safeguard badger, bats and other wildlife that is nocturnal that use the sites for foraging/commuting purposes.	At all times.

Table 1: Protected Species Best Practice Measures (BPM)

Mitigation	Species Concerned	Reason	Timing
lighting columns (reduced wattage lamps and louvres), hooded/shielded luminaires and/or strategic screening planting. All luminaires will lack Ultra Violet (UV) elements and metal halide, fluorescent sources should not be used. LED luminaires should be used where possible with a warm white spectrum adopted (<2700 Kelvin (oK)).			
Good Site Housekeeping			
<p>Good general housekeeping on the Site will be employed to ensure there is no build-up of debris. If earth spoil arises from the works this should be removed from the Site as quickly as possible or placed in a skip or other sealed container immediately, if to be stored on the Site. This is to avoid creating suitable habitat which may encourage species colonising the Site during the construction phase.</p> <p>All construction materials on the Site should be stored in a suitable location away from (ideally a minimum of 5 m) suitable habitat (i.e. tall grassland, waterbodies, scrub, brash/logs/rubble) and raised off the ground, e.g. on pallets, or stored on hard standing/bare ground to avoid creating artificial refugia/hibernacula for species which may occur on Site. Designated areas for storage would be agreed with the ecologist/ECOW ahead of works.</p> <p>Safeguards must be put in place to prevent pollution or run-off events arising from construction.</p>	All wildlife	To ensure there is no build-up of debris or other waste which may create suitable habitats for protected species or otherwise attract wildlife. To prevent impacts through pollution events.	At all times.

Table 1: Protected Species Best Practice Measures (BPM)

Mitigation	Species Concerned	Reason	Timing
<p>Food & litter will not be left on Site. Any litter must be kept in secure containers before being appropriately disposed of through off-site waste and recycling facilities.</p>			
Biosecurity			
<p>Biosecurity measures will be implemented during construction to reduce the possibility of spread of invasive species and diseases. Standard practices such as cleaning and disinfecting equipment and boots and when leaving the Site should apply to reduce the risk of transferring diseases (ARG UK, 2017).</p> <p>Larger equipment e.g. small plant and vehicles should be washed before they leave Site and before arriving at the Site (if they have been used at other sites where the presence of invasive species or diseases is known).</p> <p>An Invasive Non-Native Species (INNS) Method Statement (MS)/Management Plan should be in place and implemented appropriately ahead of and during works to eradicate any INNPS on Site and prevent further spread on Site or off-Site.</p> <p>On-going monitoring at the Site during construction and post development should be implemented to ensure that the presence of invasive and/or diseases is identified. Should invasive species or diseases be identified at any point then these would need to be managed through a management plan to be implemented by appointing a suitably experienced contractor/specialist.</p>	All wildlife	To prevent the spread of invasives and wildlife diseases	At all times.

Table 1: Protected Species Best Practice Measures (BPM)

Mitigation	Species Concerned	Reason	Timing
Excavations			
<p>Hedgehogs and badgers are highly mobile and inquisitive animals that have potential to move onto the Site or be resident within these Site at any time.</p> <p>Deep excavations (>1 m) or excavations with potential to flood will be securely fenced off to ground level or should be back filled or covered overnight to prevent animals falling in and becoming trapped to ensure badgers cannot fall into potential pitfalls. Open pipework will not be left open overnight.</p> <p>Unfenced/uncovered shallow excavations (<1 m) should have a pair of scaffold boards placed to one corner to act as an escape ramp, allowing any badgers to exit should they fall in.</p> <p>Trenches/excavations will also be inspected each morning to ensure that no animals have become trapped overnight.</p>	Badger, hedgehog.	To protect animals in the event that they are present at the time of excavation works.	Throughout excavation works.

Table 1: Protected Species Best Practice Measures (BPM)

Mitigation	Species Concerned	Reason	Timing
Encountering Wildlife			
<p>Where common amphibians are encountered (i.e., common frog, common toad, smooth newt, palmate newt) these may be moved to safety by Site personnel into long vegetation outside the works area. In the unlikely event that GCN are encountered (unlikely) all works should cease and a suitably experienced ecologist will be contacted immediately for guidance on how to proceed.</p> <p>In the event that reptiles are encountered then works in the area will stop and the ecologist contacted. Reptiles will not be handled by staff and will be allowed to move away of their own volition. Incorrect handling of reptiles can cause injury/death to the reptile.</p>	Amphibians, reptiles	To protect animals in the event that they are present at the time of works.	At all times.
<p>If in the unlikely event that badgers are suspected to be associated with the Site once construction has commenced, including should a suspected badger sett be recorded on or within 30 m of the Site during the works, works should cease, and an appropriately experienced ecologist should be contacted for advice before continuing</p>	Badgers	To protect animals in the event that they are present at the time of works.	At all times.
<p>Should any trees assessed as having potential roosting features for bats require removal to facilitate the proposals, these should be inspected by a suitably qualified ecologist prior to being sectional felled under a Precautionary Working Method Statement (PWMS). This would involve felling the tree in sections once bats are confirmed as absent and leaving on the floor for a minimum of 24 hours before chipping/removal from the Site.</p> <p>Contractors are prohibited from handling bats except in exceptional circumstances whereby a bat is in immediate danger and an ecologist is not present, such as a</p>	Bats	To protect animals in the event that they are present at the time of works.	At all times.

Table 1: Protected Species Best Practice Measures (BPM)

Mitigation	Species Concerned	Reason	Timing
<p>grounded bat which is at risk of attack from predators. In such cases contractors must wear gloves and place the bat gently in a pre-prepared rescue box, ideally comprising a small box, such as a cardboard shoe box, with ventilation holes no wider than 7 mm, a piece of fabric such as a tea towel and an upturned drinks bottle cap filled with water. An ecologist will attend as soon as possible if they are not already present on the Site. In the event that an injured bat is encountered the bat would be taken by the ecologist to a local bat carer or vet as appropriate.</p> <p>Note that a small number of bats in the UK have been found to carry rabies viruses called European Bat Lyssaviruses (EBLVs). EBLVs are transmitted through a bite or a scratch or from a bat's saliva coming into contact with your mucous membranes (your eyes, mouth or nose).</p>			
<p>If a hedgehog is encountered on Site during works, they should be left to move away of their own volition wherever possible. If the individual is in immediate danger, then they should be moved to a place of safety outside of the works area by a gloved hand. If hedgehog(s) are encountered between November and March or juveniles are encountered, works should temporarily cease and the ecologist will be contact for advice immediately.</p>	Hedgehog	To protect animals in the event that they are present at the time of works.	At all times.