

Youth Activity Park, Barnsley- Construction Environmental Management Plan (CEMP): Biodiversity

Triton Construction

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1. Introduction

1.1 Background

1.1.1 This Construction Environmental Management Plan: Biodiversity (CEMP: Biodiversity) has been produced by Curra Terrae Land & Nature (CTLN) on behalf of Triton Construction for a circa 1.1-hectare (ha) area of land at Schwabisch Gmund Lane, Barnsley, centred around Ordnance Survey National Grid Reference (OS NGR) SE 34831 06639, hereafter referred to as ‘the Site’.

1.1.2 Site proposals have been taken from the Bond Bryan Landscape Masterplan (‘Youth Zone Activity Park – Landscape Masterplan’, drawing number: BALU BBA YAP XX DR L 1012, Revision: P14, dated: 20/02/2025). This report is also informed by the Bond Bryan Existing Site Topography and Site Constraints plan (‘Youth Zone Activity Park - Existing Site Topography and Site Constraints, Drawing No: BALU-BBA-YAP-XX-DR-L-1006 rev P03, dated: WIP). Proposals include the construction of a youth zone, inclusive of associated access and facilities, as well as both hard and soft landscaping

1.1.3 The CEMP refers to information detailed within the following CTLN (formerly Ecus Ltd) reports as appropriate:

- Preliminary Ecological Appraisal (PEA) – ‘Schwabisch Gmund - Preliminary Ecological Appraisal’, Ref: 11373 v1.0, dated January 2019 (Ecus, 2019).
- Update Ecological Walkover – ‘Schwabisch Gmund Lane – Update Ecological Walkover’ Ref 16656 v1.0, dated March 2021 (Ecus, 2021).
- Update Ecological Walkover – ‘Barnsley Activity Park – Update Ecological Walkover’ Ref 19682 v2.0, dated September 2022 (Ecus, 2022).
- Preliminary Ecological Appraisal (PEA) – ‘Youth Activity Park, Barnsley- Preliminary Ecological Appraisal’ Ref: 24905 v1.0, dated April 2025 (CTLN, 2025).

1.1.4 The CEMP has been produced to inform the discharge of a planning condition for Application 2022/0434 from the Barnsley Metropolitan Borough Council Local Planning Authority. Planning Condition number 31 states:

“Prior to commencement, a Construction Environmental Management Plan (CEMP: Biodiversity) detailing precautionary measures to be adopted on site during construction works to protect retained habitats and to avoid harm/disturbance to protected and priority species such as nesting

birds, amphibians, reptiles, foraging and commuting bats and hedgehogs shall be submitted to, and approved in writing by the Local Planning Authority.

Thereafter the development shall be carried out in accordance with the approved measures.

Reason: In the interests of the visual amenities of the locality and in accordance with Local Plan Policy BIO1.”

- 1.1.5 The measures set out in this CEMP: Biodiversity serve to discharge planning condition 31. 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).
- 1.1.6 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 1.1 ha and habitats at the Site consisted of UK Habitat Classification types: developed land, sealed surface (u1b), artificial unvegetated, unsealed surface (u1c), sparsely vegetated urban land (u1f) and bramble scrub (h3d).
- 2.1.2 The Site is located within the Barnsley Council local authority, in the centre of Barnsley and adjacent to Barnsley train station to the west. The surrounding area is a predominantly urbanised with residential buildings, industrial units, car parks and recreational buildings dominating the north, south and west. Further east lies the River Dearne and an area of woodland and parkland. These habitats and the fishing Lake "The Fleets" to the north are the closest areas of semi-natural/natural habitats although they are all located over 600 m from the Site.

2.2 Designated Sites

- 2.2.1 A desk study presented within the CTLN PEA report (CTLN, 2025) identified one statutory designated site for nature conservation located within 2 km of the Site, Dearne Valley Park Local Nature Reserve (LNR), located approximately 0.89 km east of the Site, designated due to its acidic oak *Quercus sp.* woodland with mosaic of wetland habitats. Additionally, three non-statutory designated sites were identified within 2 km of the Site including Old Mill Lane Local Wildlife Site (LWS) located 0.75 km north, Cliff Wood LWS located 1 km east and Barnsley Canal at Wilthorpe LWS located 1.2 km north.
- 2.2.2 The statutory designated site was considered to be of importance to nature conservation at the national level. 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.
- 2.2.3 The Site was also identified to be located within an Impact Risk Zone (IRZ) for Dearne Valley Wetlands Site of Special Scientific Interest (SSSI) located approximately 2.88 km south of the Site. No risks relating to the IRZ and the proposed development were identified when reviewing the risk register, therefore no direct impacts were anticipated from the proposed development on this designated site.

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 Youth Activity Park, Barnsley PEA report (CTLN, 2025).

Habitats

2.3.2 Habitats at the Site recorded during the PEA (CTLN, 2025) include UK Habitat Classification types; Urban - developed land, sealed surface (u1b); Urban - artificial unvegetated, unsealed surface (u1c); Urban - sparsely vegetated urban land (u1f) and Heathland and Shrub - bramble scrub (h3d). The Site contained some scattered trees along its northern and to the south including ash *Fraxinus excelsior*, wild cherry *Prunus avium* and beech *Fagus sylvatica*.

2.3.3 The Site was dominated by urban habitat types and was surrounded by other developed land with limited areas of scrub. Bordering the north of the Site lies privately owned back gardens, separated from the Site by a strip of fencing.

2.3.4 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

2.3.5 The Site was identified as being located within the Green Zone for Natural England (NE) District Level Licencing (DLL). Green zones contain sparsely distributed Great Crested Newts *Triturus cristatus* (GCN) and are less likely to contain important pathways of connecting habitat for this species.

2.3.6 No waterbodies were present on the Site. Using OS mapping, one waterbody was identified within 500 m of the Site. This pertained to a small pond located approximately 165 m south east of the Site, just off Carey Avenue. This is within the typical dispersal limit for GCN (i.e. 250 m). The waterbody is however isolated from the Site by the two lane A61 dual carriageway which represents a significant barrier to the movement of amphibians (including GCN) onto the Site. Therefore, amphibians (including GCN) were considered highly unlikely to disperse onto the Site from this waterbody.

2.3.7 No garden ponds/ornamental water features were identified as present in any of the nearby residential gardens to the north of the Site using aerial mapping. However, unidentified garden ponds/water features may exist in nearby gardens. In general, such water features are usually relatively small in size and are more likely to be used by common amphibians i.e. smooth newt *Lissotriton vulgaris*, and/or palmate newt *L. helveticus* and/or common frog *Rana temporaria* (albeit GCN and common toad *Bufo bufo* may use them in certain circumstances; for example, if

there is a larger waterbody close by that supports either of these species). Additionally, the Site may offer suitable foraging and sheltering opportunities in the form of sparsely vegetated urban land, bramble scrub and scattered brash (TN2; Figure 1), spoil and rubble piles (TN5; Figure 1) which provide potential for sheltering/hibernating amphibians as well as foraging and dispersal, although these habitats and features are isolated from more suitable habitat off-site (including waterbodies).

- 2.3.8 Overall amphibians (including GCN) were considered unlikely to be associated with the Site due to the lack of suitable waterbodies identified within 500m and the limited connectivity to surrounding suitable terrestrial habitat. Due to a low risk of unidentified garden/ornamental ponds being present within 500m and connectivity to some suitable off-site terrestrial habitat such as residential gardens; the Site was considered to be of no more than the site level value for common amphibians in the terrestrial phase.

Badger

- 2.3.9 During the PEA (CTLN, 2025) 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. The Site was dominated by hardstanding which lacked suitability for sett building. The vegetated habitats on the Site were considered relatively unlikely to be used by foraging and commuting badgers given the Site's urban context in comparison to the availability of more suitable habitat in the wider area including woodland associated with Dearne Valley Park LNR to the east of the Site. The Site was subject to the high levels of human and vehicle activity which further reduced its suitability.
- 2.3.10 Given a lack 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. 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

- 2.3.11 Several trees were identified on Site during the PEA (CTLN, 2025). One of these (T6, Figure 1) was classified as holding no suitable features for roosting bats and five trees (T1 – T5, Figure 1) were classified as having individual features (PRF-Is) with suitability for roosting bats in accordance with good practice guidelines (Collins, 2023). It is understood that at the time of writing, all trees on Site are to be retained throughout and following the proposed works.
- 2.3.12 Two EPS licences pertaining to bats were identified within 2 km of the Site, both of which pertained to the destruction of a common pipistrelle *Pipistrellus pipistrellus* resting place.

2.3.13 Additionally, the Site contained suitable foraging and commuting habitat in the form of trees with some albeit limited connectivity via scrub, trees and vegetated residential gardens to higher quality semi-natural habitat in the wider area. Much of the surrounding area is urban in nature and heavily lit due to the surrounding town centre which reduced suitability, particularly for bat species with low tolerance levels for artificial lighting. Given the urban 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

2.3.14 Whilst on Site during the PEA (CTLN, 2025), no incidental bird sightings were recorded. A bird's nest was located in T4 (TN3; Figure 1) however, the nest was disused.

2.3.15 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 gardens and the country park to the east. 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 at up to site level only.

Invertebrates

2.3.16 The Site offers limited suitability for invertebrates given the dominance of hardstanding and the limited diversity (species present and structure) of vegetated habitats, although the mature trees, bramble scrub and sparsely vegetated land offer some limited foraging, commuting, sheltering/burrowing and basking opportunities together with the brash pile (TN2; Figure 1) and rubble pile (TN5; Figure 1). Habitats in the wider area such as urban greenspace, and woodland to the east of the Site are considered to provide higher value habitats for invertebrates.

2.3.17 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

2.3.18 It was considered that the majority of the Site and surrounding area was of sub-optimal or limited suitability for reptiles due to it being dominated by man-made and frequently managed habitats which lack the habitat interfaces and shelter opportunities required by reptiles, i.e., dominance of developed land; sealed surface and buildings. The spoil (Appendix 2 plates 15 and 16 of the PEA, CTLN 2025), brash piles (TN2; Figure 1) and rubble (TN5; Figure 1) on the Site could offer

shelter and possible hibernacula for reptiles and the vegetated habitats and sparsely vegetated land offer some limited foraging, commuting and basking opportunities. However, the majority of Site habitats provide little foraging or refuge for reptiles and the Site was largely isolated from off-site habitat suitable for reptiles by main roads and hardstanding.

- 2.3.19 Given the urban setting of the Site and the limited extent of suitable habitat on Site that was isolated from more suitable habitat in the wider area off-site, it was considered unlikely that reptiles would be present on the Site and reptiles were therefore considered highly unlikely to occur on Site. Safeguards outlined for common amphibians would help to safeguard reptiles in the unlikely event they are present at the time of works.

Riparian Mammals and White-clawed crayfish

The River Dearne is located approximately 560 m northeast of the Site. However, it was separated from Site by several main roads and a large expanse of urban development and was not connected to the Site by any drains or flowing water, with the Site having no habitat likely to support riparian mammals or crayfish. As such, both riparian mammals (such as water vole *Arvicola amphibius*) and white-clawed crayfish *Austropotamobius pallipes* were considered highly unlikely to occur on Site. Given that otters *Lutra lutra* are nonetheless 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

- 2.3.20 The Site was found to provide some suitable foraging and commuting habitat for hedgehog mainly in associated with the vegetated habitats with the brush piles (TN2) also 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

- 2.3.21 An approximately 15 m long and 2 m wide stand of Japanese knotweed was recorded along the northern boundary of the Site (TN1; Figure 1). This is a WCA Schedule 9 species.
- 2.3.22 Multiple stands of various cotoneaster species *Cotoneaster* spp. were recorded in several locations on Site during the survey (TN4, 6, 7 and 8; Figure 1). Cotoneaster species can be difficult to differentiate and as a precaution the species recorded on Site should be treated as if they are a Schedule 9 species.

2.3.23 Buddleia was also noted across the Site, and whilst not listed as an invasive non-native species under schedule 9 of the WCA 1981 (as amended), is known to display invasive tendencies.

3. Proposals and Impacts

3.1 Proposals

- 3.1.1 Indicative proposed works at the Site include the construction of a youth zone, inclusive of associated access and facilities, as well as both hard and soft landscaping throughout.
- 3.1.2 New areas habitats to include natural grassland with wildflower creation and the planting of native trees, will be incorporated across the Site.

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 roosting bats in the event that they are present within the trees on Site;
 - 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 during their terrestrial phase in the unlikely 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 pass 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 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. Guidance for Pollution Prevention (GPP) documents produced by Natural Resources Wales (NRW), Northern Ireland Environment Agency (NIEA) and Scottish Environment Protection Agency (SEPA) should 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).

4.2.5 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 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)

- 4.2.6 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.
- 4.2.7 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.
- 4.2.8 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 should 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 common amphibians, badgers, bats, birds, 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 5m away from) suitable habitat (i.e. tall grassland, waterbodies, scrub, brush/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

- 4.3.11 The following BPM are recommended to safeguard common amphibians in the event they are encountered during works (and other species such as reptiles and 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 brush piles);
- Clearance of suitable shelter/hibernation habitat (e.g. brush, 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 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; and,
- 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 5m away from) 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 (>1m) 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 (<1m) 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 At the time of writing, it is understood that all trees are to be retained. 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 floor for a minimum of 24 hours before chipping/removal from the Site.
- 4.3.15 In the unlikely event that any evidence of roosting bats is identified or suspected at any time during works, such as live or dead bats, droppings, 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. It is likely that the ecologist would need to attend Site before any works recommence to determine how works may proceed legally, which may include the requirement for a mitigation licence issued by Natural England.
- 4.3.16 Contractors are prohibited from handling bats except in exceptional whereby 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 Triton Construction to ensure that contractors are able to access the correct equipment for emergency bat rescue ahead of the ecologist attending the Site.
- 4.3.17 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, and will definitely have up to date rabies vaccinations, and wear protective gloves and a mask while handling bats.
- 4.3.18 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.

- 4.3.19 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

- 4.3.20 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 5-10m). 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

- 4.3.21 Clearance works are to be undertaken in a sensitive manner with consideration to the potential for hedgehogs to be present.
- 4.3.22 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.
- 4.3.23 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

- 4.3.24 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).

- 4.3.25 Japanese Knotweed should be eradicated to prevent spread into the wild as well as further spread on Site which has the potential to impact the development. The plant 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).
- 4.3.26 The Environment Agency advocates the usage of a combination of different measures to control and eradicate Japanese knotweed including the use of root barriers, herbicide application, burial, and off-site disposal as controlled waste. INNS MS /Management Plan will further need to include post-construction monitoring measures.
- 4.3.27 Control measures for cotoneaster should also be incorporated into the INNS MS /Management Plan. Mechanical methods of control comprise excavating the root mass and pulling any young seedlings. All arising's including cotoneaster or waste containing cotoneaster must be chipped or burnt on Site or removed to licensed landfill as controlled waste. Chemical methods of control include spraying plants with herbicide and treating stumps of larger plants to prevent regrowth are also recommended.
- 4.3.28 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).
- 4.3.29 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.
- 4.3.30 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 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 Triton 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 Sarah Thresher (Associate Ecologist) and Ellie MacQuarrie (Consultant Ecologist) should be contacted immediately in the event that protected or notable species (e.g. GCN, bats, badgers, birds, riparian mammals or hedgehogs) are encountered during the works. Alternatively, request to speak to a Senior or Principal Ecologist from CTLN.

Sarah Thresher (Associate Ecologist): 07943 584506.

Ellie MacQuarrie (Consultant Ecologist): 07792 481234.

5. 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.

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.

Collins, J. (2023) 'Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn)'. The Bat Conservation Trust, London.

Ecus (2019). 'Schwabisch Gmund - Preliminary Ecological Appraisal', Ref: 11373 v1.0, January 2019.

Ecus (2021). 'Schwabisch Gmund Lane – Update Ecological Walkover' Ref 16656 v1.0, March 2021

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Figure 1: Site Map



Legend

- Site boundary
- Target notes
- Scattered Trees - PRF-I
- Artificial unvegetated, unsealed surface (u1c)
- Developed land; sealed surface (u1b)
- Sparsely vegetated urban land (u1f)

Secondary Codes:
32 - Scattered Trees

Revision	Date	Drawn by	Checked by
A	18/03/2025	AO	EM

Drg. Ref.: 24905-PEA/AO/F1 Scale 1:1,182 (A4):

Sources: ESRI, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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*, 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 10mm.
- 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 5cm 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 5m away from) or ideally on pallets raised from the ground;
- Food/litter will not be left on Site;
- Deep excavations (>1m) should be covered overnight during construction works. Any shallow excavations (< 1m) 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 (unlikely) 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 floor for a minimum of 24 hours before chipping/removal from the Site; and,
- Contractors are prohibited from handling bats except in exceptional whereby 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 Triton 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);
- 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 Japanese Knotweed and cotoneaster on Site and prevent further spread on Site or off-Site; 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 practice 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 5m away from) and ideally raised 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:

Sarah Thresher (Associate Ecologist): 07943 584506.

Ellie MacQuarrie (Consultant Ecologist) : 07792 481234.

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 highly 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 5m away from) 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 Japanese Knotweed and cotoneaster 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.
Excavations			

Table 1: Protected Species Best Practice Measures (BPM)

Mitigation	Species Concerned	Reason	Timing
<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 (>1m) 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 (<1m) 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.
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 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.</p>	Amphibians, reptiles	To protect animals in the event that they are present at the time of works.	At all times.

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<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>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 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 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>	Bats	To protect animals in the event that they are present at the time of works.	At all times.

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Mitigation	Species Concerned	Reason	Timing
<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>	<p>Hedgehog</p>	<p>To protect animals in the event that they are present at the time of works.</p>	<p>At all times.</p>