Stairfoot Quarry Restoration

Environmental Statement – Volume 2

Chapter 4.0 - Ecology

Prepared for

GREEN EARTH
DEVELOPMENTS GROUP

Green Earth (Stairfoot) Limited

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4.0 Ecology and Biodiversity

4.1 Proposed Development

4.1.1 The Proposed Development comprises the restoration of Yew Tree Quarry. The Proposed Development would ensure the comprehensive restoration of the quarry, delivering biodiversity benefits and removing health and safety risks associated with the large waterbody that has accumulated in the basin of Yew Tree Quarry.

Description of the Infilling Works

4.1.2 The Applicant wishes to re-engineer the landform of the Application Site through the importation of non-hazardous soil materials and then introduce a new restoration scheme. Material that would be imported would comprise excavated non-hazardous soils from development sites in the local area. It is estimated that circa 400,000m^3 of non-hazardous soil materials would be imported over a period of 111 weeks. This would equate to circa 80 HGV tippers on average per day. The distance from which material would be imported from would be controlled by market forces as the cost of transporting soils by road makes it unviable to do so over long distances therefore the material would be generated by development projects within the area.

4.1.3 It should be noted that import material would be sourced on a ‘campaign basis’ and would therefore be variable and determined by the market and the availability of material. As such, there is likely to be some variability from the average daily HGV traffic forecasts set out above. However, it is anticipated that the number of HGVs to the Site per day would not exceed 200 two-way trips (i.e. 100 arrivals + 100 departures). Volumetrically, this would equate to 22 two-way HGVs per hour, on average. Such a level of trip generation would not be sustained over a long period of time and would be offset by days which are less intensive.

4.1.4 All incoming material would be subject to strict waste acceptance procedures that would be outlined within the Environmental Permit for the Site. The material would not include biodegradable waste and would therefore not require management of landfill gas or leachate.

4.1.5 The Proposed Development would require the construction of a new temporary site compound which would include a wheelwash, parking and welfare facilities.

4.1.6 The Site would receive material five days per week, Monday to Friday 07:30 – 16:30. Saturday operations would be limited from 08:00 – 13:00, there would be no vehicle movements during this time.

4.1.7 Restoration material would be delivered straight into the void and placed immediately in accordance with the phasing plan. Stockpiling of materials would not typically be expected to occur.

4.1.8 It is proposed to use the following items of plant and machinery on site:

i) Dozers
ii) Roller
iii) 8 wheel road tipper HGVs

4.1.9 The plant may be reviewed in accordance with the site management requirements

Access

4.1.10 Access to the Application Site would be taken from the historical access into the former brickworks off Wombwell Lane.

Final Restoration

4.1.11 The Proposed Restoration scheme would include grassland species and shrub boundary planting.

4.1.12 In developing a restoration concept that delivers an appropriate level of Biodiversity Net Gain (BNG) i.e. development of the land so that it leaves biodiversity and ecological habitat in a measurably better state than before the development took place; the Applicant is also looking to ensure that restored site provides the opportunity for improved public access. The owner of the Application Site has historically been forced to maximise appropriate security across the Site in order to dissuade unauthorised access. By removing the risk to health and safety as a result of infilling the historical quarry voids, it allows for a new restoration scheme to be designed that both improves the wider appearance of the site and allows for structured and functional public amenity.

4.2 Methodology and Scope of Assessment

Legislation and Guidance

4.2.1 Relevant legislation is listed below:

- The Wildlife and Countryside Act 1981 (as amended)
- The Conservation of Habitats and Species Regulations 2017 (as amended)
- The Environment Act 2021
- Natural Environment and Rural Communities (NERC) Act 2006

4.2.2 The National Planning Policy Framework (2024) emphasises the need to conserve and enhance biodiversity and aims to minimise impacts on biodiversity and deliver net gains where possible. The key sections include:

- Section 15: Conserving and enhancing the natural environment. It encourages development projects to avoid significant harm to biodiversity and mandates compensation measures if harm is unavoidable.
- Planning Practice Guidance (PPG): Supports the NPPF (2024) and provides further guidance on assessing biodiversity impacts and delivering biodiversity net gain.

4.2.3 Various local planning policies are also in place within Barnsley that relate to ecology and biodiversity. These include:

- Barnsley Local Plan (2019):
    a) BIO1: Biodiversity and Geodiversity
    b) GI1: Green Infrastructure
- Barnsley Biodiversity Action Plan (BAP) (2023)

4.2.4 Various supporting guidance is also available that has been used in relation to ecology surveys conducted at the site. These include:

- Bat Conservation Trust (BCT) Bat Surveys for Professional Ecologists (2023);
- CIEEM Guidelines for Ecological Impact Assessment (EcIA) (2018);
- CIEEM Guidelines for Preliminary Ecological Appraisal (PEA) (2017);

- Froglife Reptile Survey; an introduction to lanning, conducting and interpreting surveys for snake and lizard conservation (1999);
- Herpetofauna Workers' Manual (2003); and
- UK Habitat Classification (UKHab) (2020);

Assessment Methodology

4.2.5 The assessment methodology for this Ecology Chapter follows established standards and best practice guidance for wildlife. Full details of the site boundary, Survey Area, data sources, survey methods, ecological assessments and protected species surveys undertaken are provided in the sections below. In addition, the characterisation of effects and significance criteria are defined in the context of the Proposed Development.

4.2.6 The ecological assessment has been carried out in accordance with the relevant national guidance including that issued by Natural England and the Chartered Institute of Ecology and Environmental Management (CIEEM) 'Guidelines for Ecological Impact Assessment'.

4.2.7 The assessment process evaluates the ecological receptors on the Site using the standard geographical hierarchy set out in CIEEM guidance. It then identifies the potential for adverse effects to arise from the Proposed Development during the enabling works, infill phase and restored phases. Where there is a potential for significant effects on identified receptors, habitats or species, then measures are put forward to avoid, reduce or compensate for these effects (the mitigation hierarchy). Where appropriate, opportunities for ecological enhancement are also identified. The residual effects of the scheme are then determined, taking into account these mitigation measures.

4.2.8 A series of ecological surveys and exercises have been carried out for the site. It is these surveys and exercises which have informed this assessment, and which provide a robust and up to date description of the baseline conditions of the site. The baseline surveys and exercises set out in this report are:

- Ecological Desk Study Exercise
- UK Habitat Classification Survey

- Biodiversity Net Gain Assessment
- Bat Surveys
- Breeding Bird Surveys
- Great Crested Newt Surveys
- Invertebrate Surveys
- Reptile Surveys

4.2.9 The approach to these surveys and exercises are summarised below.

Survey Area

4.2.10 During the various survey work conducted, surveys included the Site boundary and all other land within the applicant's ownership boundary and will be referred to as the Survey Area, comprising 29.1 ha (see Figure 2.1).

Ecological Desk Study Exercise Sources

4.2.11 Various sources have been utilised within the desk study that supplement the assessment, these include:

- Multi-Agency Geographic Information for the Countryside (MAGIC) – online interactive map;
- Natural England (website);
- Sheffield Biological Records Centre; and
- Barnsley Biodiversity Action Plan.

4.2.12 The results of this exercise are presented in the Preliminary Ecological Appraisal report, produced by Urban Green[1]

UK Habitat Classification Survey

4.2.13 The methods were based on the standard methodology as detailed by The UK Habitat Classification User Manual[2]. A UKHab Habitat Plan (see Figure 4.1) has

[1] *Urban Green (2023). Preliminary Ecological Appraisal. UG_1773_ECO_PEA_02.*
[2] *UKHab Ltd (2023). UK Habitat Classification Version 2.0.*

been produced to demonstrate habitats within the site. The mapping techniques are based on The UK Habitat Classification User Manual guidance.

4.2.14 Flora species listed as protected in the Wildlife and Countryside Act 1981 (as amended) and species which are indicators of important and/or uncommon habitats, were searched for during the survey. The full results of this survey are presented in the Preliminary Ecological Appraisal report, produced by Urban Green in 2025.

Protected Species Surveys

4.2.15 In response to the PEA report a suite of targeted protected species surveys were conducted at the site during 2023, these include:

4.2.16 **Bat Activity Surveys** – A combination of transect surveys and automated/static bat detector surveys were undertaken by Urban Green in 2023 at the site, covering the Survey Area. Both surveys were undertaken in accordance with the latest Bat Conservation Trust guidance[3]. As the site was assessed as providing 'high' commuting and foraging potential for bats, two transects surveys were conducted on site, each month between May and September, inclusive. Three static bat detectors were deemed suitable for the size and complexity of the site and were deployed for five nights within the months of May to September, inclusive.

4.2.17 All bat calls recorded during the various surveys were subsequently analysed using two software packages. The Anabat Scout bat detector records bat calls in real time during the surveys. The calls were then run through Anabat Insight to extrapolate the meta data for interpretation. Calls recorded on the Anabat Chorus (static) detectors during the automated static deployment surveys were analysed using Anabat Insight. All calls were ran through an auto identification tool at 95% confidence interval and 100% of the calls were then checked by a suitably experienced ecologist.

4.2.18 **Breeding Bird Surveys** – Four breeding bird surveys were undertaken in 2023 by Whitfield Ecological Services on behalf of Urban Green. These surveys were completed between April and June, inclusive, and followed the Common Bird Census (CBC) survey methodology. A CBC survey includes recording all birds associated

[3] *Collins (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines (Fourth Edition). The Bat Conservation Trust, London.*

with the study area and mapping their activity using British Trust of Ornithology (BTO) codes. The surveys followed a plotted transect route to limit the effects of double counting and the transect is reversed monthly to incorporate all habitats within the study area at differing times of the morning. The surveys were undertaken during the early morning, commencing within half an hour of sunrise.

4.2.19 **Great Crested Newt Surveys** – Three ponds (P1, P2, and P3) were selected for assessment and underwent Habitat Suitability Index (HSI) Assessment and eDNA analysis in 2023. The HSI survey was conducted following the methodology set out in ARG UK Advice Notice 5[4]. Ten habitat suitability indices were assessed and inputted into the HSI equation, which generates a score between 0 and 1. The calculated score corresponds to the estimated pond suitability for great crested newt.

4.2.20 As part of the eDNA process, water samples were collected from each pond during a period of high activity for GCN (15th April to 30th July, inclusive) in line with strict government guidance. Twenty samples were collected from each pond, with samples collected from evenly distributed points around the perimeter of the pond. Samples were then distributed into six conical tubes with preserving fluid. The samples were sealed, and the process was repeated at each pond. The eDNA samples were sent to a certified laboratory to be analysed.

4.2.21 **Invertebrate Surveys** – Six invertebrate surveys were conducted in 2023 between May and September, inclusive, by Conops Entomology Ltd on behalf of Urban Green. Surveys utilised a combination of methods which included:

- Sweep netting,
- Spot sampling,
- Beating, and
- Vacuum sampling

4.2.22 **Reptile Surveys** – Urban Green completed a suite of reptile surveys in 2023. On 14th April 2023, 80 artificial refugia were placed within habitats that were considered potentially suitable for use by reptiles. Following a period of 21 days, allowing for the

[4] 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). Herpetology Journal 10 (4), 143-155.

'bedding in' of the refugia seven presence/likely absence surveys were completed between May and September, inclusive. These surveys followed standard guidance detailed within the herpetofauna workers manual[5] and relevant reptile survey guidance[6,7]. During each survey visit, a visual survey of the area and artificial refugia was carried out prior to any sheltering reptiles observed underneath.

Assessment of Significance / Assessment Criteria

4.2.23 Potential effects associated with the Proposed Development are defined by the following terms:

Positive or negative:

4.2.24 Positive Impact: An effect that benefits ecological receptors, such as habitat creation, restoration, or ecological enhancement that leads to improved biodiversity / clearly results in benefit to protected species, groups or habitats.

4.2.25 Negative impact: An effect that causes harm, degradation, displacement, damage or a decrease in abundance (population) or negatively affects the ability of species to survive or reproduce.

Extent:

4.2.26 Extent describes the spatial area over which an impact occurs. Typically measured in hectares (in the context of habitats); metres and kilometres in the context of buffer zone and designated sites, or other relevant spatial scales.

4.2.27 Extent is useful when quantifying the proportion of an impacted ecological feature or the distance between ecological features and sources of impact.

[5] *Gent A. H. & Gibson S. D. (2003). Herpetofauna Workers' Manual 2nd Edition. Peterborough, Joint Nature Conservation Committee.*
[6] *Froglife (1999). Reptile Survey; an introduction to planning, conducting and interpreting surveys for snake and lizard conversation. Advice Sheet 10.*
[7] *Sewell D, Griffiths R. A., Beebee T. J. C., Foster J. and Wilkinson J. W. (2013). Survey protocols for the British herpetofauna (Version 1.0).*

Magnitude:

4.2.28 Magnitude refers to the size or intensity of an impact on an ecological receptor, considering factors such as the 'degree of change': is the impact minor (i.e. slight impact) or major (i.e. complete habitat destruction).

4.2.29 Magnitude is categorised from low to high, helping assess the overall significance of the impact on the receptor. Please see full descriptions of the different magnitude scales below.

4.2.30 **High Magnitude:** Impacts that result in permanent or irreversible change to the ecological receptor's structure, function, or viability. This includes total loss, fragmentation, or severe degradation of habitats, or the permanent displacement or mortality of a significant proportion of a given population. Example: Complete loss of a habitat used for breeding by a protected species.

4.2.31 **Medium Magnitude**: Impacts that cause measurable but recoverable changes to a receptor's condition, quality, or extent. Effects may last over the medium term and alter key ecological functions, but recovery is likely with mitigation. Example: Temporary construction disturbance to breeding habitat; partial habitat degradation affecting foraging efficiency.

4.2.32 **Low Magnitude:** Impacts that are limited in scale, temporary, or highly reversible. Effects are typically confined to a small proportion of the receptor's area or population and do not significantly affect its ecological function. Example: Short-term disturbance from artificial lighting or noise; removal of a small area of sub-optimal habitat.

4.2.33 **Negligible Magnitude:** Impacts that are trivial or barely detectable, with no meaningful change to the receptor's function, quality, or extent. These impacts have no measurable ecological consequence. Example: shading effects from signage over low value habitat.

Duration:

4.2.34 Duration describes the length of time an impact will last, often classified as:

- Short-term: Lasting a few days to weeks (e.g., temporary noise disturbance).
- Medium-term: Lasting months to a few years.
- Long-term: Lasting several years but potentially reversible.
- Permanent: Irreversible impact, such as permanent habitat loss.

Timing:

4.2.35 Timing relates to the specific period during which an impact occurs, which is important for ecological features with seasonal sensitivity.

4.2.36 For example, breeding seasons, migration periods, and hibernation times for certain species and groups.

4.2.37 Timing is relevant because certain impacts, such as vegetation clearance during the bird nesting season, may have more severe ecological consequences if not appropriately timed.

Frequency:

4.2.38 Frequency refers to how often an impact occurs. This can range from:

- Single event: One stand-alone occurrence; not repeated.
- Intermittent: Occurs sporadically, typically over several weeks or months.
- Continuous: An ongoing and regular impact without pause.

4.2.39 Frequency is crucial in assessing cumulative stress on species and habitats, where repeated disturbances might have a larger ecological effect.

Reversibility:

4.2.40 Reversibility indicates whether an impact can be undone or mitigated over time.

- Reversible impacts: Impacts can be resolved or undone.
- Irreversible impacts: Permanent impacts that cannot be restored/resolved.

4.2.41 Reversibility is critical in determining long-term effects on biodiversity and helps guide mitigation planning.

Likelihood:

4.2.42 Likelihood assesses the probability that an impact will occur, often categorised as:

- Certain: The impact will occur with certainty.
- Likely: High probability of occurring.
- Possible: Moderate probability of occurring.
- Unlikely: A low or negligible probability of occurrence.

4.2.43 Likelihood is essential for understanding risk and uncertainty, helping to focus on impacts that are more probable and to prioritise mitigation in the areas of highest risk.

Significance Criteria

4.2.44 A standardised set of significance criteria (the varying significance of an effect on any given ecological feature or habitat), is provided below, and summarised in Table 2.1 (below):

Sensitivity

4.2.45 **High Sensitivity:** Receptors of significant conservation importance, such as internationally or nationally designated sites (e.g., Special Areas of Conservation, Sites of Special Scientific Interest) and legally protected or endangered species. These receptors are typically rare, have limited distributions, and play critical roles in ecosystem functioning. They have a low tolerance to environmental change with limited capacity for recovery from impacts. Examples include irreplaceable habitats (like ancient woodland) and hibernation bat roost. Impacts on these receptors are likely to result in substantial, long-term ecological consequences.

4.2.46 **Moderate Sensitivity:** Receptors of regional or local conservation importance, including habitats and species that are declining but not legally protected. These receptors have a moderate tolerance to change and can recover over a medium timescale with appropriate mitigation. Examples include priority habitats, and the resting places of common protected species (e.g. reptile hibernacula). While impacts may cause noticeable declines, they are generally reversible with effective management practices.

4.2.47 **Low Sensitivity:** Receptors that are common and widespread, possessing low conservation importance and no specific legal protection. These receptors exhibit high tolerance to environmental change and can recover rapidly from disturbances. Examples include modified grassland habitat (in poor condition), public green spaces, or artificial habitats supporting abundant, generalist species (e.g. rubble/refugia piles). Impacts on these receptors are unlikely to result in significant ecological effects and are typically short-term and reversible.

4.2.48 **Negligible Sensitivity:** Receptors of minimal ecological value, such as heavily modified or degraded habitats and highly abundant groups (e.g. invertebrates). These receptors are highly resilient to change and may even benefit from certain disturbances. Examples include artificial habitats or impacts to invasive plant species. Impacts on these receptors are unlikely to result in any measurable ecological consequences.

Significance of Impact

4.2.49 **Major Beneficial:** Substantial, large-scale positive effects, such as creating or restoring high-value habitats over a significant extent (e.g., several hectares of priority habitat). These positive effects are typically long-term, permanent, and highly likely to occur, with high confidence in their success.

4.2.50 **Moderate Beneficial:** Positive changes of medium extent and magnitude, such as enhancing or connecting bat commuting corridors. These effects may be medium to long-term, with moderate likelihood of success depending on proper implementation and management.

4.2.51 **Minor Beneficial**: Small-scale positive effects, such as localised planting of native species or installation of bat boxes. These effects are often short-term to medium-term and reversible, with moderate to high likelihood of success.

4.2.52 **Negligible**: Impacts that result in no measurable change to ecological features, with no significant extent, magnitude, or duration. These are often associated with actions occurring outside sensitive timings (e.g., avoiding construction during the badger breeding season) and carry a high likelihood of no significant effect.

4.2.53 **Minor Adverse:** Negative effects of limited extent and magnitude, such as temporary disruption to bat commuting routes due to construction lighting or disturbance to

badger setts. These impacts are typically short-term and reversible, with potentially moderate frequency but low magnitude.

4.2.54 **Moderate Adverse:** Medium-scale negative effects, such as partial loss of priority habitat or loss of outlier badger setts. These impacts may be medium-term and of moderate magnitude, occurring with moderate likelihood despite mitigation measures, and can be reversible with targeted restoration efforts.

4.2.55 **Major Adverse**: Large-scale, high-magnitude negative effects, such as permanent loss of main badger setts or destruction of irreplaceable habitats (i.e. ancient woodland). These are often irreversible, long-term impacts, with a high likelihood of occurrence.

Table 4.1. Significance Matrix

		Magnitude of Impact			
		High	**Medium**	**Low**	**Negligible**
Receptor Sensitivity	**High**	Major adverse	Moderate adverse	Moderate adverse to Minor adverse	Minor adverse to Negligible
	Moderate	Moderate adverse	Moderate adverse	Moderate adverse to Minor adverse	Negligible
	Low	Moderate adverse to Minor adverse	Moderate adverse to Minor adverse	Minor adverse to Negligible	Negligible
	Negligible	Minor adverse to Negligible	Negligible	Negligible	Negligible

4.2.56 In the context of this assessment, potential impacts will be defined as significant or non-significant.

Significance

4.2.57 Significant impacts are defined as those that result in moderate or major impacts as detailed in Table 4.1. Minor impacts are deemed non-significant.

Limitations

4.2.58 During the bat surveys conducted in 2023, only nine of the ten transect surveys were conducted due to human error. This is not thought to be a significant constraint as 90% of the surveys were completed and a sufficient volume of data was collected to draw robust scientific conclusions.

4.2.59 During 2023 the UK experienced uncharacteristic weather conditions from a dry and cold spring to hot and dry June followed by a wet July and August, off the back of 2022, which saw a protracted drought and series of heat waves. Little to no rain for many months over the two years coupled with extreme heat events has widely been reported as having significant impact on invertebrate numbers. The rapid decline of invertebrates results in difficulty recording species diversity, as many species are now operating at very low densities and numbers. Results therefore, are on average lower than expected and species lists are broadly dominated by common species. It is still possible to reflect fairly the value of the site, though, through the analysis of data and using the experience of the invertebrate ecologist.

Scope of Assessment

4.2.60 Table 4.2 outlines the scope of the assessment that has been agreed with the Council as part of the EIA Scoping process.

Table 4.2 Consultee Responses

Consultee	Date and Time	Comments	Actions
Barnsley Metropolitan Borough Council (BMBC)	Response to formal EIA scoping request received on 31st January 2025	*The Council agrees that the generic methodology set out in Section 4 of the report is appropriate for presenting the information within the ES, as is the method of determining significance of effects, mitigation, residual effects, cumulative effects, major accidents, climate change, and indirect effects.* *Section 5 of the report proposes that the following topics should be specifically addressed in the Environmental Statement. These are:* *a. Noise* *b. Transport and Access* *c. Ecology and Biodiversity* *It is agreed that the scope of topics listed above in the scoping report should be included within the Environmental Statement (ES) which is scheduled to accompany the planning application.*	The proposed scope of the ES and inclusion of an Ecology Chapter has been deemed acceptable by BMBC. No further action required.
Natural England	Response to formal EIA scoping request received on 16th December 2024	Natural England primarily directed the applicant to 'Appendix A - Natural England Advice on EIA Scoping'. This document provided general advice to produce a comprehensive and accurate EIA and ES. The Items detailed below are those that directly relate to the Ecology/Biodiversity chapter. <u>1.Biodiversity and Geodiversity</u> *The potential impact of the proposal upon sites and features of nature conservation interest and opportunities for nature recovery and biodiversity net gain should be included in the assessment.* <u>2. Designated Nature Conservation Sites</u> a. Nationally designated sites: *The development site is within or may impact on the following Site of Special Scientific Interest: Dearne Valley Wetlands* *The Environmental Statement should include a full assessment of the direct and indirect effects of the development on the features of special interest within the SSSI and identify appropriate mitigation measures to avoid, minimise or reduce any adverse significant effects. The consideration of likely significant effects should include any functionally linked land outside the designated site. These areas may provide important habitat for mobile species populations that are interest features of the SSSI, for example birds and bats. This can also*	This ES Chapter follows the general advice of Natural England and will address those items specially relating to Ecology and Biodiversity as detailed below. <u>1.Biodiversity and Geodiversity</u> This ES Chapter will consider the Biodiversity Net Gain Assessment produced for the site. <u>2. Designated Nature Conservation Sites</u> The ES Chapter will include reference to both nationally designated sites and regionally/locally important sites and assess the projects potential impacts. <u>3. Protected Species</u> This ES Chapter is supplemented by a range of phase II ecology surveys, including bats, breeding birds, great crested newts, invertebrate and reptile surveys, that provide extra information on the status of these species/groups at the site and will be considered throughout.

Consultee	Date and Time	Comments	Actions
		include areas which have a critical function to a habitat feature within a site, for example by being linked hydrologically or geomorphologically. b. Regionally and Locally Important Sites: *The ES should consider any impacts upon local wildlife and geological sites, including local nature reserves. Local Sites are identified by the local wildlife trust, geoconservation group or other local group and protected under the NPPF (paragraph 180 and 181). The ES should set out proposals for mitigation of any impacts and if appropriate, compensation measures and opportunities for enhancement and improving connectivity with wider ecological networks. Contact the relevant local body for further information.* <u>3. Protected Species</u> *The ES should assess the impact of all phases of the proposal on protected species (including, for example, great crested newts, reptiles, birds, water voles, badgers and bats).* *The area likely to be affected by the development should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES.* <u>4. District Level Licensing for Great Crested Newts</u> Natural England highlight the District Level Licencing (DLL) scheme and encourages projects to join the local scheme where impacts on GCN are likely. <u>5.Priority Habitats and Species</u> *Consideration should also be given to the potential environmental value of brownfield sites, often found in urban areas and former industrial land. Sites can be checked against the (draft) national Open Mosaic Habitat (OMH) inventory published by Natural England.* *An appropriate level habitat survey should be carried out on the site, to identify any important habitats present. In addition, ornithological, botanical, and invertebrate surveys should be carried out at appropriate times in the year, to establish whether any scarce or priority species are present.* *The Environmental Statement should include details of:* • *Any historical data for the site affected by the proposal (e.g. from previous surveys)* • *Additional surveys carried out as part of this proposal* • *The habitats and species present*	<u>4. District Level Licensing for Great Crested Newts</u> Phase II ecology surveys targeting Great Crested Newt (GCN) were conducted on site and returned negative results of GCN. Therefore, GCN are assessed as being likely absent from the site and the project does not need to join a DLL Scheme. <u>5.Priority Habitats and Species</u> This ES chapter is supplemented by a Preliminary Ecological Appraisal that included a UKHab habitat survey. The results of which will be detailed and priority habitats and species reasonably considered. <u>6. Ancient Woodland, ancient and veteran trees</u> No ancient woodland habitat is present within the site extent or immediate vicinity, with no direct connectivity with other ancient woodlands in the local landscape. The ES Chapter is also supplemented by an Arboricultural Impact Assessment which will be referred to and considered throughout. <u>7. Biodiversity Net Gain</u> As detailed previously, this ES Chapter will consider the Biodiversity Net Gain Assessment produced for the site.

Consultee	Date and Time	Comments	Actions
		• *The status of these habitats and species (e.g. whether priority species or habitat)* • *The direct and indirect effects of the development upon those habitats and species* • *Full details of any mitigation or compensation measures* • *Opportunities for biodiversity net gain or other environmental enhancement* <u>6.Ancient Woodland, ancient and veteran trees</u> *The ES should assess the impacts of the proposal on any ancient woodland, ancient and veteran trees, and the scope to avoid and mitigate for adverse impacts. It should also consider opportunities for enhancement.* <u>7. Biodiversity Net Gain</u> Natural England highlight the requirement for a Biodiversity Net Gain for the site and highlight that on-site provision should be considered first, and detail that opportunities for wider environmental gains should also be considered.	
Environment Agency	Response to formal EIA scoping request received on 20th January 2025	*The ecological scoping exercise (Environmental Statement Scoping Report section 6) is thorough, and I agree with the assessment and findings.* 1. *Section 6.6.1 recommends that only the impacts on sites with national designations (SSSIs) should be covered in the EcIA. One feature of this area is the string of connected wildlife sites along the rivers Dearne and Dove and their tributaries, including statutory sites of local importance (LNR) and non-statutory designated wildlife sites (LWS) in addition to SSSIs. Although the potential impact on SSSIs is of primary importance, the assessment should consider impacts in the context of landscape-scale habitat connectivity along watercourses.* 2. *Broadleaved woodland has been scoped in as a priority habitat. Consider whether ponds should also be scoped in, as these are considered priority habitat if they support UK BAP species. Grass snake (Natrix matrix), a BAP species, has been confirmed present on site, and*	While the scoping exercise is described as thorough and the assessment and findings are agreed with overall, two main comments are raised. 1. As mentioned earlier, the ES Chapter will be expanded to consider impacts on regionally and locally important designated sites. 2. Ponds will also be additionally included for assessment within the ES Chapter, due to the standing water on site that supports a local population of grass snake.

Consultee	Date and Time	Comments	Actions
		may be dependent on the presence of standing water features and on the populations of common amphibians, on which they feed, that these habitats may also support.	
Barnsley Metropolitan Borough Council Planning Ecologist	Response to formal EIA scoping request received on 20th December 2025	The planning ecologist for BMBC provided the below comments in relation to biodiversity. 1. *The proposals site is located within the Site of Special Scientific Interest (SSSI) Impact Risk Zone of Dearne Valley Wetlands SSSI. Consultation with NE will be required as the proposals are included within the list set by Natural England as a development type which may adversely affect the SSSI (waste – landfill, including: inert landfill, non-hazardous landfill, hazardous landfill).* 2. *Stairfoot Brickworks SSSI is approximately 0.2km to the south of the proposals site; however, the impact risk zone of this SSSI is limited and does not fall within the proposals site which the EIA scoping opinion request relates to.* 3. *The closest Local Wildlife Site (LWS - non-statutory protected site) within proximity of the proposals site is Stairfoot Brickworks LWS, located approximately 0.8km to the north-west of the proposals site. Due to the distance of this site and a degree of severance by roads and built-up areas, adverse impacts upon non-statutorily designated sites as a result of the proposals is not anticipated.* 4. *The governments MAGIC website highlights the presence of deciduous woodland priority habitat (section 41 of the Natural Environment and Rural Communities (NERC) Act 2006) within the site, along the proposed access route. This habitat also occurs adjacent to the east of the site. The Ecology and Biodiversity section of the Environmental Statement Scoping Report submitted with the EIA Scoping Opinion Request highlights the presence of this habitat and likely adverse impact upon it as a result of the proposals. This is not in line with planning policy BIO1 within the Local Plan 2019, which states that development will be expected to conserve and enhance the biodiversity and geological features of the borough by protecting and improving habitats, species, sites of ecological value and sites of geological value with particular regard to designated wildlife and geological sites of international, national and local significance, ancient woodland and species and habitats of principal importance identified via Section 41 of the Natural Environment & Rural Communities Act 2006 (for list of the species*	Comments 2 and 3 are agreeable and no further actions required. However, the below comments require consideration: 1. Consultation with NE will be sought by the client regarding the proposed project. 4. Presence of priority habitat (deciduous woodland) will be considered throughout this ES Chapter and will provide clarification and justification on the proposed schemes layout. 5. Whilst the MAGIC website highlights the presence of Open Mosaic Habitat on Previously Developed Land (OMH), this layer is based off aerial imagery and is a draft resource. The presence of OMH within the site extent will be considered and reasonably justified based on baseline and phase II ecology surveys. 6. Details of the phase 2 ecology surveys will be provided and the results of the surveys considered throughout this ES Chapter. 7. As detailed previously, this ES Chapter will consider the Biodiversity Net Gain Assessment produced for the site.

Consultee	Date and Time	Comments	Actions
		and habitats of principal importance)…. Consideration should be given the amendment of the proposals to avoid impact to this habitat. 5. *The governments MAGIC website also highlights the presence of Open Mosaic Habitat on Previously Developed Land (OMH - section 41 of the Natural Environment and Rural Communities (NERC) Act 2006) within a large proportion of the main body of the proposals site. Again, planning policy BIO1 states that development will be expected to conserve and enhance habitats of principal importance identified under Section 41 of the NERC act. The ES Scoping Report advises that an Ecological Impact Assessment (EcIA) will be submitted to support the application. As part of the assessment, habitats on site should be considered against the OMH criteria (https://data.jncc.gov.uk/data/a81bf2a7-b637-4497-a8be-03bd50d4290d/UKBAP-BAPHabitats-40-OMH-2010.pdf) and if present, the level of impact upon this habitat should be considered.* 6. *The Ecology and Biodiversity section of the ES Scoping Report provides a summary of a range of surveys undertaken at the site in 2023. More detail of these should be provided within the EcIA submitted with the application, with anticipated impacts and recommended mitigation and enhancement measures. Consideration should be given to the EcIA being informed by updated surveys, where necessary, with reference given to the advice note published by CIEEM: On the Lifespan of Ecological Reports & Surveys (April 2019).* 7. *The applicant should consider whether the application is subject to the Biodiversity Gain condition and the requirement to submit a Biodiversity Net Gain assessment and statutory metric. The application may be exempt from BNG under the "Development of a biodiversity gain site" exemption and the applicant will have to fully justify if this is the case, if claiming the exemption.*	

4.3 Baseline

4.3.1 This section describes the baseline conditions (by means of ecological surveys) at the Site as well as the surrounding landscape (statutory and non-statutory designated sites) and provides a summary of the results of the surveys.

Designated Sites

4.3.2 There are no National Site Network sites (Ramsar, Special Protection Areas (SPA), or Special Areas of Conservation (SAC)) within 10km of the project.

4.3.3 Four statutory sites of national importance are present within 10km. The closest being Stairfoot Brickworks Site of Special Scientific Interest (SSSI) located immediately adjacent to the southern border of the site. Dearne Valley Wetlands SSSI, Carlton Main Brickworks SSSI, and Seckar Wood SSSI are all also present within 10km of the Site.

4.3.4 Four statutory sites of local importance are present within 5km of the proposed development site. The closest being Dearne Valley Park Local Nature Reserve (LNR) located approximately 1.7km north-west of the Site. With Worsborough Country Park LNR, Carlton Marsh LNR, and West Haigh Wood LNR all also present within 5km.

4.3.5 Four non-statutory designated wildlife sites are present within 2km of the proposed development site. The closest being Stairfoot Disused Railway Local Wildlife Site (LWS) located approximately 840m north-west of the Site. Additionally, Sunny Bank, Horse Carr and Storrs Wood LWS, Wombwell Wood LWS, and Cliff Wodd LWS are also present within 2km.

4.3.6 The Site also falls within the Impact Risk Zone of the following Statutory Sites, based on consultation with MAGIC:

- Stairfoot Brickworks SSSI
- Dearne Valley Wetlands SSSI

Habitats and Flora

4.3.7 During the UKHab survey, the Site was found to comprise of a mosaic of habitats including: sparsely vegetated urban land (u1f), broadleaved woodland (w1g), modified grassland (g4), developed land (u1b6), mixed scrub (h3h), standing water (r1g), a line of trees (w1g 33), and two hedgerows (h2a6).

4.3.8 The Site is also directly connected to other valuable habitats within the immediate vicinity including well established woodlands, grasslands, and areas of scrub.

Sparsely Vegetated Urban Land

4.3.9 The large majority of the Site comprises of sparsely vegetated urban land (u1f), particularly Yew Tree Quarry, however, the governments MAGIC website maps show this area as Open Mosaic Habitat on Previously Developed Land (OMH), which is a priority habitat as listed under Section 41 of the Natural Environment and Rural Communities Act 2006.

4.3.10 However, following the UKHab survey conducted on site, it was assessed that this area does not qualify as the OMH priority habitat. In order to qualify as OMH an area needs to meet five specific criteria which are listed below.

i) The area of open mosaic habitat is at least 0.25ha in size,
ii) Known history of disturbance at the site or evidence that soil has been removed or severely modified by previous use of the site.
iii) The site contains some vegetation. This will comprise early successional communities consisting mainly of stress-tolerant species.
iv) The site contains unvegetated, loose bare substrate and pools may be present.
v) The site shows spatial variation, forming a mosaic of one or more of the early successional communities, plus bare substrate within 0.25ha.

4.3.11 Whilst the basin of Yew Tree Quarry is approximately 2 ha in size and has a history of disturbance and large volumes of soil removal, there is a lack of vegetation present with only rare occurrences of ruderal/ephemeral vegetation. There is a distinct lack of spatial variation within the quarry basin, with the vast majority comprising completely bare ground. In addition, targeted invertebrate surveys at the Site in 2023

did not result in a significant invertebrate population within the quarry basin as would be anticipated with areas of OMH.

4.3.12 For the above reasons OMH has been discounted from occurring on site and will not be discussed further within this report.

Woodland

4.3.13 Broadleaved woodland (w1g) was the second most abundant habitat within the Site extent, the majority of which comprised semi-natural woodland that had established over the last 30+ years. There were two distinct parcels of woodland, the first forming the proposed access track to Yew Tree Quarry and spanning along the southern border of the quarry, with the second located on the southeastern embankment of Yew Tree Quarry.

Standing water

4.3.14 The southern half of Yew Tree Quarry held a large area of water, that had accumulated naturally in the quarry basin. This waterbody had no aquatic vegetation growing within and is understood to fluctuate naturally throughout the year associated with periods of hot weather and heavy rainfall. However, due to the presence of notable fauna present surrounding the Site, and the standing water acting as a valuable resource this water body has been assessed as a priority pond and will be considered throughout the assessment.

Other habitats

4.3.15 All other habitat types were assessed as having negligible ecological value (e.g. bare ground/hardstanding) and are therefore not considered further within this Chapter.

Fauna

4.3.16 In addition to the PEA, a suite of phase II ecology surveys have been completed within the Survey Area in 2023 by Urban Green.

4.3.17 In the sections below, results from the desk study exercise and phase II protected species surveys will be detailed.

Bats

4.3.18 Ten records of bats were returned within 2km of the Site, including records of common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), and noctule *(Nyctalus noctula*).

4.3.19 Five trees (four trees categorised as 'PRF' and one tree categorised as 'PRF-M' under BCT 2023 guidelines) with the potential to support roosting bats were identified during the Ground Level Tree Assessment (GLTA). All five trees were located outside of the site boundary and were deemed to be a suitable distance from the proposed works. Moreover, due to the mosaic of habitats within the site and surrounding Survey Area the Site was assessed as providing 'high' suitability for commuting and foraging bats.

4.3.20 A suite of bat activity surveys were conducted within the Survey Area in 2023, comprising of transects and deployment of automated static detectors. Analysis of bat calls following transect surveys and static detector deployment confirmed that the species composition was dominated by common pipistrelle bats accounting for 58.3% of all calls. Soprano pipistrelle bats were also abundant, attributing 30.0% of all calls, while recordings of noctule (6.0%), *Myotis* sp. (4.1%), *Nyctalus* sp. (0.7%), leisler's (0.4%), brown long-eared (0.4%), and unidentified bat (0.1%) were rarely recorded.

4.3.21 Bat activity was recorded across a range of habitats within the Survey Area, although activity was more condensed within preferred habitats, with the woodlands, priority hedgerows, quarries and open water in the Survey Area providing high quality foraging conditions for bats. The ponds provided higher quality foraging habitat for species that preferred that habitat, such as Nyctalus and Myotis species identified.

4.3.22 No bat roosts were confirmed within trees on site as part of the Night-time Bat Walkover surveys, however, these surveys are not considered appropriate to determine presence/likely absence of bat roosts within trees.

Breeding Birds

4.3.23 A total of 577 records of protected or notable birds were returned within the data search, comprising 48 species. Of these records 37 related to Schedule 1 birds, including barn owl (*Tyto alba*), fieldfare (*Turdus pilaris*), green sandpiper (T*ringa*

ochropus), kingfisher (*Alcedo atthis*), redwing (*Turdus iliacus*), and whooper swan (*Cygnus cygnus*).

4.3.24 The Survey Area was found to provide optimal nesting opportunities for passerine and ground nesting birds due to the mosaic of habitats present, however, wintering birds were reasonably discounted.

4.3.25 Breeding bird surveys were conducted within the Survey Area in 2023 and confirmed a typical species composition being present. Twenty-seven bird species were recorded over four survey visits, all of which are considered common and very common breeding birds within the local area. No schedule 1 birds were recorded within the Survey Area during the surveys.

Great Crested Newt

4.3.26 No records of amphibians were returned within the data search, however, the waterbodies within the Survey Area were assessed as providing suitability for the species group, particularly in relation to great crested newts (*Triturus cristatus*) and as such further survey work was undertaken.

4.3.27 Three ponds within the Survey Area were subject to Habitat Suitability Index Assessments and eDNA analysis. Pond P1 was returned a score of 'Good' (0.74), P2 returned a score of 'Average' (0.67) and P3 returned a score of 'Excellent' (0.84) suitability for GCN. However, all ponds returned a negative eDNA result in 2023 confirming that GCN are absent from the surveyed ponds.

Invertebrates

4.3.28 Twenty-nine records of notable invertebrate species were returned within 2km of the Site, including cinnabar (*Tyria jacobaeae*), dingy skipper (*Erynnis tages*), shaded broad-bar (*Scotopteryx chenopodiata*), small heath (*Coenonympha pamphilus*), small square-spot (*Diarsia rubi*) and white-letter hairstreak (*Satyrium w-album*).

4.3.29 Following invertebrate surveys conducted in 2023 the Survey Area was found to be of district (low) level importance for invertebrates. A total of 268 species were recorded with nine species having a national status (five of which are more common now than their status suggests and may be later revised). The tall sward and scrub

habitats onsite were deemed an area of high species diversity, with 110 species recorded within this habitat type.

Reptiles

4.3.30 Five records of notable reptiles were returned within 2km of the Site, comprising common lizard (Zootoca vivipara) and grass snake (*Natrix natrix)*.

4.3.31 Presence/likely absence surveys conducted in 2023 identified a population of grass snake within the Survey Area and was assigned as having a 'low-to-good' population. The Survey Area was assessed as likely being a confined and regionally important refuge for the species, with extensive urban land bordering the site to all aspects but the southeast, which itself connects to extensively managed agricultural land.

Badger

4.3.32 Fifteen records of badger were returned within 2km of the Site.

4.3.33 No evidence of badger activity was identified on site, with no badger setts or other signs observed. However, it was deemed feasible that the habitat surrounding the Site may be used by commuting and foraging badger.

Identification of Ecological Features via Ecological Scoping Report

4.3.34 An EIA Scoping Report which included the proposed scope and methodology for assessing ecology was submitted in December 2024 to Barnsley Metropolitan Borough Council (BMBC) (2024/ENQ/00517). It was recommended that 'an Ecological Impact Assessment (EcIA) 'Main Report' [or Ecology Chapter as part of an Environmental Statement] is produced, covering the following ecological items:

- Designated Sites (SSSIs),
- Broadleaved Woodland,
- Ponds,
- Bats,
- Breeding birds,
- Reptiles, and
- Badger

4.3.35 For clarity, 'Designated sites' were scoped in for further assessment due to the Site lying in the Impact Risk Zone for the Dearne Valley Wetlands SSSI.

4.3.36 Broadleaved woodland was included for further assessment due to the potential for direct impact to trees and a parcel of woodland.

4.3.37 Ponds have been included following comments from consultees highlighting the waterbody as a priority habitat due to the population of grass snake in the local area for which it acts as suitable resource.

4.3.38 With respect to fauna, the loss of potential roosting habitat for bats as well as potential impacts to foraging and commuting resources (via the loss of vegetation onsite) scoped in bats for further survey. Equally, loss of vegetation in the form of trees and scrub could impact upon nesting birds, hence their recommended inclusion in the Ecology Chapter. Loss of suitable reptile habitat and the potential for direct impacts on grass snake resulted in the inclusion of grass snake. Finally, badger were included in the context of direct loss of foraging and commuting habitat.

4.4 Sensitivity of Receptors

4.4.1 A summary of the sensitivity of the ecological receptors identified, detailing their value and susceptibility to change is provided below:

Designated Sites

4.4.2 **Value:** Sites of Special Scientific Interest (SSSIs) are of national importance. Their value is high due to their statutory protection and role in conserving key habitat and species at a national scale. Local Wildlife Sites (LWSs) are of local or regional importance and their value is related to supporting key habitats and species at an equivalent scale.

4.4.3 **Susceptibility to change:** Highly sensitive to direct impacts such as habitat loss, fragmentation and damage/destruction of ecological features or species. Low to moderate with respect to indirect effects like pollution, and noise disturbance, which may undermine the features for which they are designated.

Broadleaved Woodland

4.4.4 **Value:** Broadleaved woodlands are priority habitats under the UK Biodiversity Action Plan and have the potential to support diverse flora and fauna, including protected species. The value of woodland parcels on site varies from poor to moderate, with a high strategic significance assessed as part of the BNG assessment undertaken at the Site.

4.4.5 **Susceptibly to change**: Medium to high with respect to direct impacts such as tree removal, edge effects, and habitat fragmentation, which can significantly alter woodland structure and function. Low in the context of indirect impacts like artificial light pollution, noise, dust or other temporary and typical construction activities.

Ponds

4.4.6 **Value:** Certain ponds are priority habitats under the UK Biodiversity Action Plan should they meet certain criteria. These ponds typically support notable or protected species of flora or fauna and have high ecological value.

4.4.7 **Susceptibly to change**: High with respect to direct impacts such as complete loss of pond and moderate in regard to indirect impacts such as increased water pollution as a result of run off.

Bats

4.4.8 **Value:** Bats are legally protected under the Wildlife and Countryside Act 1981 and the Conservation of Habitats and Species Regulations 2017, as amended. They hold high ecological value due to their role in pest control and ecosystem functioning.

4.4.9 **Susceptibility to Change**: High in the context of direct impacts: bats are highly sensitive to the loss of roosting sites; hibernation roots in particular. Low with respect to indirect effects like disturbance during construction (from noise, dust, light, vibration etc.) and changes to commuting or foraging habitats, such as hedgerows or woodland corridors.

Breeding Birds

4.4.10 **Value**: Breeding and migratory birds are protected under the Wildlife and Countryside Act 1981, as amended. Their predicted value ranges from medium to

low, depending on the number of common bird species nesting during any given season. No Schedule 1 bird species have been recorded on site, nor are they anticipated to nest on site.

4.4.11 **Susceptibility to Change**: Medium for direct impacts e.g. habitat loss; low with respect to nest disturbance (in the context of non-Schedule 1 bird species), and/or reductions in food availability caused by vegetation clearance or construction activities

Reptiles

4.4.12 **Value:** Reptiles are protected under the Wildlife and Countryside Act 1981, as amended. Their predicted value is assessed as high due to the declining population densities nationwide.

4.4.13 **Susceptibility to Change:** Reptiles are highly susceptible to change in respect to both direct (loss of suitable habitat/habitat fragmentation) and indirect impacts (increased pollution/increase predation pressure) due to their specific habitat requirements and reliance on stable conditions.

Badger

4.4.14 **Value:** Badgers are protected under the Protection of Badgers Act 1992. While their ecological value may be lower than some other receptors (like bats), their legal protection should infer moderate to high value.

4.4.15 **Susceptibility to Change**: Low sensitivity with respect to indirect impacts such as foraging habitat loss.

4.5 Assessment of Effects

4.5.1 This section details the potential effects of the scheme and their significance; covering the potential effects identified within the EIA Scoping Report and any issues raised through consultations, including the LPAs formal scoping opinion. Potential effects will be assessed in the absence of mitigation at this stage.

Table 4.3. Likely Significant Effects – Infill Phase

Ecological Receptor	Description of Effect	Potential Effect (inc. Significance)
Designated Sites	Sites of Special Scientific Interest (SSSIs) are the finest sites for wildlife and natural features in England, supporting many characteristic, rare and endangered species, habitats and natural features. They are designated for their national status under the Wildlife and Countryside Act (1981). The application site lies in the impacts risk zone for Dearne Valley Wetlands SSSI which is a network of 22 areas that extends through the catchment of the River Dearne. The SSSI is designated as such for supporting a range of nationally important features, including: • Breeding gadwall (*Mareca strepera*), shoveler (*Spatula clypeata*), garganey (*Spatula querquedula*), pochard (*Aythya farina*), bittern (*Botaurus stellaris*), black-headed gull (*Chroicocephalus ridibundus*) and willow tit (*Poecile montanus klienschmidti*). • Non-breeding gadwall and shoveler. • Diverse assemblages of breeding birds of Lowland damp grasslands, Lowland scrub and a mixed assemblage of Lowland open waters and their margins and Lowland fen. The proposed development includes waste activity which is highlighted as a potential impact on the Dearne Valley Wetland SSSI, based on consultation with MAGIC. Highlighting that there are potential impact pathways associated with the proposed scheme, which include: Impact to mobile features: The Dearne Valley Wetlands SSSI is designated as such for supporting a range of mobile species, primarily wildfowl species, though black headed gull and willow tit are also noted. Breeding bird surveys conducted on site in 2023 identified (non-breeding) black-headed gulls, which are mobile features of special interest, using the wider Survey Area, particularly in relation to the pond in the northern quarry basin, confirming the surrounding land as functionally linked land. The infill phase therefore may directly impact bird species that underpin the designation of the Dearne Valley Wetlands SSSI. Loss of functionally linked land: The proposals for the site have the potential to result in the temporary reduction in functionally linked land (suitable for foraging habitat for interest feature bird species of the SSSI) during the infill phase. Black headed gull, a species of interest in regard to Dearne Valley Wetlands SSSI, was identified within the Survey Area during breeding bird surveys in 2023; confirming the wider Survey Area comprises functionally linked land. To that end, an attempt to quantify the impacts to functionally linked land will be made, with the following assumptions made: • The duration of the infill works will be 111 weeks.	Designated sites have a **medium sensitivity** in relation to indirect impacts that could arise from the Proposed Development. The potential effect to mobile features as a result of temporary loss of functionally linked land is assessed as **negligible** and **non-significant.** The potential effect of temporary loss of functionally linked land is also assessed **negligible** and **non-significant,** for the same reasoning.

Ecological Receptor	Description of Effect	Potential Effect (inc. Significance)
	• Average noise levels on site during infill will be circa 85 decibels (dB), based on the typical noise levels associated with the operation of a dumper truck/roller[8]. • A behavioural flight response will likely be initiated in birds using functionally linked land within 50m of the application site[9] as an indirect response to increased noise levels. It is also precautionarily assumed that all land within this buffer is suitable for foraging/functionally linked land. • We assume that a 10km buffer around the SSSI parcels constitute potential functionally linked for interest species of the SSSI. • We assume that 60% of the aforementioned functionally linked land buffer (10km) is suitable for foraging bird species of interest (assuming that ~40% comprises heavily urbanised, developed land that is unsuitable for foraging). Under these assumptions, the temporary reduction in suitable functionally linked land would be: Land within 10km of SSSI = 76845 ha 60% (Suitable functionally linked land) of 76845 ha = 46107 ha Application site + land within 50m of site = 15ha Calculation = (15/46107) x 100 = 0.03 Therefore, under a precautionary approach, it is estimated that <0.1% of functionally linked land will be temporarily reduced for the duration of 111 weeks during the infill phase of the works. It is generally accepted that effects of ≤1% are non-significant.	
Broadleaved Woodland	Broadleaved woodland is a Habitat of Principal Importance (HPI) under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). The Proposed Development would necessitate the removal of a section of one section of woodland assessed as 'Moderate Quality' Retention Category 'B'; and one section of a tree group assessed as 'Low quality' Retention Category 'C'[10].	Broadleaved woodland has **medium sensitivity.** The potential effect of the felling sections of broadleaved woodland (considering its designation as a Habitat of Principal Importance

[8] Health and Safety Executive (2025). Assessing noise risks for larger / more dynamic sites. Accessible at: https://www.hse.gov.uk/construction/healthrisks/physical-ill-health-risks/assessing-noise.htm
[9] Hemmingway. K & Spencer. J (2013). Waterbird Disturbance Mitigation Toolkit, Informing Estuarine Planning & Construction Projects.
[10] Urban Green (2025). Arboricultural Impact Assessment. Ref: UG_1773_ARB_AIA_01_REV_00_FINAL

Ecological Receptor	Description of Effect	Potential Effect (inc. Significance)
	In addition to the direct removal of sections of woodland the Proposed Development has the potential to impact retained areas of woodland surrounding the application site through an increased level of dust, vibration and movement of heavy plant over tree roots. In addition, the movement of vehicles from external sources has the potential to introduce invasive species to the site and surrounding woodland. Broadleaved woodland is an important habitat for many species of fauna providing roosting, nesting and foraging opportunities (namely in the context of birds and bats). For this reason, bat roosts have the potential to be lost, as well as direct impacts (destruction) of bird nests and their eggs and/or young. As bat and birds are discussed separately below, the Potential Effect will focus on habitat loss in isolation.	under the NERC Act, 2006), resulting in direct habitat loss (**high magnitude** of impact) required to facilitate the Proposed Development is assessed as **moderate adverse** in the **long term** at the **local level,** which is **significant**. The potential effect of indirect impacts on retained areas of broadleaved woodland surrounding the site is assessed as **moderate adverse** in the **long term** at the **local level**, which is **significant.**
Priority ponds	Priority ponds are a Habitat of Principal Importance (HPI) under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). The pond within the application site is to be lost in its entirety to facilitate the Proposed Development. Additionally, the Proposed Development has the potential to impact priority ponds within the local vicinity of the application site through increased levels of run off and leachate into ground water. Ponds are an important habitat for many species of fauna, providing important egg laying sites for amphibians, as well as a foraging resource for bats, birds, and reptiles. To that end, the loss of pond habitat on site may impact on faunal species that regularly use it for foraging purposes. As bat, birds, and reptiles are discussed separately below the potential effect will focus on habitat loss in isolation.	Priority ponds have a **high sensitivity.** The potential effect resulting from direct loss of a priority pond as a result of the Proposed Development is assessed as **moderate adverse** in the **long term** at the **local level**, which is **significan**t. The potential effect through the indirect pollution of retained ponds in the local vicinity of the site is assessed as **moderate adverse** in the **long term** at the **local level**, which is **significan**t.

Ecological Receptor	Description of Effect	Potential Effect (inc. Significance)
Bats	The Proposed Development will result in the loss of foraging areas (namely broadleaved woodland and pond habitat) for bats. During the GLTA assessment (conducted in February 2025), no trees within the site boundary were assessed as providing suitable potential roosting features. Therefore, there will be no direct loss of bat roosts associated with the Proposed Development. However, five trees (located off site) were assessed as providing suitable potential roosting features and bat activity surveys (conducted in 2023) confirmed the use of the site as a high value foraging resource, particularly in relation to areas of woodland and ponds. Additionally, the site was found to support at least six bat species. The Proposed Development has the potential to impact retained foraging and commuting habitat that surrounds the application site through increased levels of artificial lighting and noise, which may lead to bats abandoning confirmed foraging grounds. All UK bat species are strictly protected under the Habitats and Species Regulations (2017) as well as the Wildlife and Countryside Act (WCA) (1981), as amended.	In the context of the permanent loss of some foraging areas (sections of woodland and a pond) on site (**low sensitivity** and **low magnitude**), the potential effect would be **minor adverse** in the **long term** at the **local level**, in the absence of mitigation, and is considered **non-significant.** In the context of increased disturbance in regard to retained foraging/commuting areas the potential effect is assessed as **negligible** in the **long term** at the **local level** and is considered **non-significant.**
Breeding Birds	The Proposed Development will lead to the direct loss of suitable nesting habitat and potential nest sites of common bird species. All active bird nests are protected through the WCA (1981) making it an offence to intentionally damage or destroy a bird nest when in active use.	The potential effect of destroying active bird nests, their eggs and young as part of scheduled vegetation clearance (**high sensitivity** and **low magnitude**) to facilitate the Proposed Development is assessed as **moderate adverse** in the **short term** at the **local level,** in the absence of mitigation which is **significant**. This impact would be **permanent**.
Reptiles	During reptiles surveys conducted at the site in 2023, a low-good population of grass snake were confirmed present within the Survey Area. Grass snake are protected under the WCA (1981), making it an offence to kill or injure individuals. The Proposed Development has the potential to impact reptiles in both a direct and indirect nature. The infill phase of the Proposed Development would require the regular movement of Heavy Goods Vehicles (HGVs) along the proposed access route to Yew Tree Quarry, which may lead to direct killing/injuring of individuals by the means of being run over.	Reptiles have a **high sensitivity.** In the context of the direct killing and injuring of individual grass snake via the regular movement of HGVs during the infill phase the impact is assessed as **moderate adverse** in the **long term** at the **regional level**, which equates to a **significant effect.**

Ecological Receptor	Description of Effect	Potential Effect (inc. Significance)
	Additionally, the location of the proposed access route has the potential to alter the level of connectivity between suitable reptile habitat leading to potential fragmentation of the grass snake population.	In regard to the fragmentation of the grass snake population due to the proposed access route the impact is assessed as **moderate adverse** in the **short term** at a **local level**, which equates to a **significant effect**.
Badger	Badger are protected via the Protection of Badgers Act 1992. No badger setts are located on site or in the vicinity of the Proposed Development. However, suitable foraging and commuting habitat is present surrounding the site and therefore individuals may commute through the site. To that end, there is a risk that individual badgers may be impacted through direct killing and injuring through the movement of HGVs and becoming trapped in the quarry basin, while foraging, as a result of the Proposed Development.	The potential effect of killing/injuring badgers during infill activities is assessed as **moderate adverse** in the **medium term** at the **local level**, which equates to a **significant effect.**

Table 4.4. Likely Significant Effects – Restored Phase

Ecological Receptor	Description of Effect	Potential Effect (inc. Significance)
Designated Sites	The final stage of the Proposed Development comprises a restoration scheme of the site, that includes the creation of new grassland habitat and boundary planting. Therefore, the restored phase of the Proposed Development comprises the provision of a functional public amenity space. As the site will be publicly accessible, it is reasonable to assume that the final restoration scheme will result in a minor increase in visitors to the site. The provision of a new functional public space may absorb potential visitors to surrounding designated sites (of both national and local importance) reducing visitor pressure to these designated sites.	A reduction in visitor pressure to designated sites as a result of the Proposed Development is assessed as having a **minor beneficial** effect in the **long term** at the **local level** and a **non-significant** effect.
Broadleaved Woodland	The restored phase will provide a newly accessible public area to areas that were previously inaccessible. The increase in visitors to the site during the restored phase has the potential to impact broadleaved woodland habitat that surrounds the site through an increased level of disturbance e.g. trampling, littering, dog fouling and antisocial behaviour.	The potential effect associated with the impacts are assessed as **minor adverse** in the **long term** at the **local level** and is deemed **non-significant**.
Priority Ponds	As detailed in relation to broadleaved woodland an increase in visitor pressure associated with the restored phase of the development has the potential to increase the level of disturbance to priority ponds that are present surrounding the site. The Survey Area includes a priority pond in the northern quarry basin, which may be affected through the same pathways as outlined above. However, ponds are especially susceptible to environmental change due to their small size, limited water volume, and relatively closed hydrological systems. As a result, factors such as dog fouling and increased nutrient input can cause rapid deterioration in water quality, leading to issues such as eutrophication, algal blooms, and reduced oxygen levels. These changes can have a disproportionately large impact on the ecological balance of the pond, affecting both aquatic and associated terrestrial species.	The potential effect associated with the impacts are assessed as **moderate adverse** in the **long term** at the **local level** and is deemed **significant**.
Reptiles	The restored phase of the development is likely to reduce suitable basking and foraging habitat for reptiles. Exposed sloping embankments, which previously provided optimal basking conditions, will be replaced with grassland of lower suitability. The loss of the quarry basin pond will also remove a key foraging resource for grass snakes recorded on site. Furthermore, increased public access, particularly by dog walkers, is expected to result in higher levels of disturbance within previously undisturbed areas. The grass snake population on site has been assessed as relatively isolated from the wider environment, due to limited management within the Survey Area compared to surrounding arable and urban land. Consequently, the loss of suitable basking and foraging habitat is likely to have a greater impact, potentially reducing the site's carrying capacity for the species.	The potential effect associated with the impacts are assessed as **moderate adverse** in the **long term** at the **local level**, which equates to a **significant impact**.

Incorporated Mitigation

4.5.2 The following section assesses the previously identified likely significant effects in combination with incorporated mitigation measures within the Proposed Development. Those potential impacts that were assessed as non-significant are no longer considered.

Table 4.5. Likely Significant Effects with Incorporated Mitigation – Infill Phase

Ecological Receptor	Description of Effect	Incorporated Mitigation	Potential Effect (inc. Significance)
Broadleaved Woodland	Broadleaved woodland is a Habitat of Principal Importance (HPI) under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). The Proposed Development would necessitate the removal of one section of woodland assessed as 'Moderate Quality' Retention Category 'B'; and one section of a tree group assessed as 'Low quality' Retention Category 'C'. In addition to the direct removal of sections of woodland the Proposed Development has the potential to impact retained areas of woodland surrounding the application site through an increased level of dust, vibration and movement of heavy plant over tree roots. In addition, the movement of vehicles from external sources has the potential to introduce invasive species to the Site and surrounding woodland. Broadleaved woodland is an important habitat for many species of fauna providing roosting, nesting and foraging opportunities (namely in the context of birds and bats). For this reason, bat roosts have the potential to be lost, as well as direct impacts (destruction) of bird nests and their eggs and/or young. As bat and birds are discussed separately below, the Potential Effect will focus on habitat loss in isolation.	The Proposed Development includes the provision of a wheelwash station for incoming and outgoing vehicles, which will reduce the risk of introducing invasive species and dust particles onto site and into the surrounding area.	Broadleaved woodland has **medium sensitivity.** The potential effect of the felling of sections of broadleaved woodland (considering its designation as a Habitat of Principal Importance under the NERC Act, 2006), resulting in direct habitat loss (**high magnitude** of impact) required to facilitate the Proposed Development is assessed as **moderate adverse** in the **long term** at the **local level,** which is **significant**. The potential effect of indirect impacts on retained areas of broadleaved woodland surrounding the site, considering the provision of a wheelwash station is assessed as **minor adverse** in the **long term** at the **local level**, which is **non-significant.**
Priority ponds	Priority ponds are a Habitat of Principal Importance (HPI) under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). The pond within the application site is to be lost in its entirety to facilitate the Proposed Development. Additionally, the Proposed Development has the potential to impact priority ponds within the local vicinity of the application site through increased levels leachate into ground water.	The Proposed Development will not include biodegradable waste and will only include non-hazardous soil materials. Therefore, potential impacts from leachate will not apply as inert waste materials are not likely to	Priority ponds have a **high sensitivity.** The potential effect of the direct loss of a priority pond as a result of the Proposed Development required to facilitate the Proposed Development is assessed as **moderate adverse** in the **long term** at the **local level**, which is **significan**t. Considering the incorporated mitigation the potential effect through the indirect pollution of retained ponds

Ecological Receptor	Description of Effect	Incorporated Mitigation	Potential Effect (inc. Significance)
	Ponds are an important habitat for many species of fauna, providing important egg laying sites for amphibians, as well as a foraging resource for bats, birds, and reptiles. To that end, the loss of pond habitat on site may impact on faunal species that regularly use it for foraging purposes. As bat, birds, and reptiles are discussed separately below the potential effect will focus on habitat loss in isolation.	produce toxic leachate that can cause environmental hazard[11].	in the local vicinity of the site is assessed as **negligible a**nd is considered **non-significan**t.
Breeding Birds	The Proposed Development will lead to the direct loss of suitable nesting habitat and potential nest sites of common bird species. All active bird nests are protected through the WCA (1981) making it an offence to intentionally damage or destroy a bird nest when in active use.	There are currently no incorporated mitigation measures that address potential impacts to breeding birds.	The potential effect of destroying active bird nests, their eggs and young as part of scheduled vegetation clearance (**high sensitivity** and **low magnitude**) to facilitate the Proposed Development is assessed as **moderate adverse** in the **short term** at the **local level,** in the absence of mitigation which is **significant**. This impact would be **permanent**.
Reptiles	During reptiles conducted at the site in 2023, a low-good population of grass snake were confirmed present within the Survey Area. Grass snake are protected under the WCA (1981), making it an offence to kill or injure individuals. The Proposed Development has the potential to impact reptiles in both a direct and indirect nature. The infill phase of the Proposed Development will require the regular movement of Heavy Goods Vehicles (HGVs) along the proposed access route to Yew Tree Quarry, which may lead to direct killing/injuring of individuals by the means of being run over. Additionally, the location of the proposed access route has the potential to alter the level of connectivity between suitable reptile habitat leading to potential fragmentation of the grass snake population.	There are currently no incorporated mitigation measures that address potential impacts to reptiles.	Reptiles have a **high sensitivity.** In the context of the direct killing and injuring of individual grass snake via the regular movement of HGVs during the infill phase the impact is assessed as **major adverse** in the **long term** at the **regional level**, which equates to a **significant effect.** In regard to the fragmentation of the grass snake population due to the proposed access route the impact is assessed as **moderate adverse** in the **short term** at a **local level**, which equates to a **significant effect**.
Badger	Badger are protected via the Protection of Badgers Act 1992. No badger setts are located on site or in the vicinity of the Proposed Development.	The Site will receive material Monday to Friday (07:30–16:30) and on Saturdays	The potential effect of killing/injuring badgers during infill activities is assessed as **negligible** in the

[11] *Sarmah, P. et al. (2024) 'Leaching behaviour of inert waste landfills', Waste Management, 182, pp. 32–41. doi:10.1016/j.wasman.2024.04.012.*

Ecological Receptor	Description of Effect	Incorporated Mitigation	Potential Effect (inc. Significance)
	However, suitable foraging and commuting habitat is present surrounding the site and therefore individuals may commute through the site. To that end, there is a risk that individual badgers may be impacted through direct killing and injuring through the movement of HGVs and becoming trapped in the quarry basin, while foraging, as a result of the Proposed Development.	(08:00–13:00), with no vehicle movements outside these hours. HGV movements are therefore restricted to daylight, avoiding periods when badgers are most active (dusk to dawn) and reducing the likelihood of vehicle–badger interactions. Additionally, the quarry basin will include a sloped access road, providing vehicle access while also offering a safe escape route for any badgers entering the basin.	**medium term** at the **local level**, which equates to a **non-significant effect.**

Table 4.6. Likely Significant Effects with Incorporated Mitigation – Restored Phase

Ecological Receptor	Description of Effect	Incorporated Mitigation	Potential Effect (inc. Significance)
Priority ponds	The restored phase of the development has the potential to increase the number of visitors visiting the site which in turn will increase the level of disturbance to priority ponds that are present surrounding the site. The Survey Area includes a priority pond in the northern quarry basin, which may be affected through the same pathways as outlined above. However, ponds are especially susceptible to environmental change due to their small size, limited water volume, and relatively closed hydrological systems. As a result, factors such as dog fouling and increased nutrient input can cause rapid deterioration in water quality, leading to issues such as eutrophication, algal blooms, and reduced oxygen levels. These changes can have a disproportionately large impact on the ecological balance of the pond, affecting both aquatic and associated terrestrial species.	There are currently no incorporated mitigation measures that address potential impacts to priority ponds.	The potential effect associated with the impacts are assessed as **moderate adverse** in the **long term** at the **local level** and is deemed **significant**.

Reptiles	The restored phase of the development is likely to reduce suitable basking and foraging habitat for reptiles. Exposed sloping embankments, which previously provided optimal basking conditions, will be replaced with grassland of lower suitability. The loss of the quarry basin pond will also remove a key foraging resource for grass snakes recorded on site. Furthermore, increased public access, particularly by dog walkers, is expected to result in higher levels of disturbance within previously undisturbed areas. The grass snake population on site has been assessed as relatively isolated from the wider environment, due to limited management within the Survey Area compared to surrounding arable and urban land. Consequently, the loss of suitable basking and foraging habitat is likely to have a greater impact, potentially reducing the site's carrying capacity for the species.	There are currently no incorporated mitigation measures that address potential impacts to reptiles.	The potential effect associated with the impacts are assessed as **moderate adverse** in the **long term** at the **local level**, which equates to **significant impact**.

4.6 Cumulative Effects

4.6.1 Following a search of the council's planning portal and other sources Axis has advised that there are no developments within the surrounding landscape that may have cumulative effects with the Proposed Development. Therefore, cumulative effects are not discussed further within this report.

4.7 Mitigation

4.7.1 This section will describe additional mitigation, enhancement or compensation measures that are not designed into the proposals (i.e. are not considered embedded mitigation) and which requires a commitment from the applicants to carry out further actions.

4.7.2 As part of the suite of ecological surveys completed on site a range of mitigation measures have been proposed to reduce the likely impacts on those ecological receptors previously described.

4.8 Infill Phase

General

4.8.1 An Environment Management Plan (EMP) will be prepared which will include ecological good practice measures for infill works in relation to habitats and species, including nesting birds, mammals, reptiles and amphibians. These take the form of Reasonable Avoidance Measures (RAMs) prepared and where necessary implemented under the advice of an ecologist.

4.8.2 A project ecologist will be appointed, to co-ordinate and advise on measures to protect wildlife including RAMs as required. The ecologist will be responsible for briefing site teams and undertaking and/or co-ordinating pre-commencement surveys or checks as necessary for protected species before infill activities commence, for example for nesting birds, badgers, or as part of RAMs.

4.8.3 Toolbox Talks will be provided at induction for all site staff on risks and responsibilities and required actions in relation to the potential presence of protected or notable species. The ecologist will also maintain a watching brief at necessary

times during the construction phase to ensure compliance with relevant legislation and the ecological provisions of the EMP.

Broadleaved woodland

4.8.4 The associated Arboricultural Impact Assessment details that loss of woodland habitat on site is to be mitigated against through onsite replacement tree planting and the production of a robust soft landscaping scheme.

4.8.5 In addition, it is detailed that the remaining areas of woodland, trees, and hedgerows, which are to be retained, are protected throughout the Proposed Development through the erection of temporary protective fencing that is detailed within the Tree Protection Plan, see Figure 4.2. It is further recommended that these fence lines are equipped with a prevention barrier that is suitable at preventing dust pollution.

4.8.6 Further to the above it is recommended that woodland removal is covered in a EMP document that outlines the methodology to be followed and details the requirement for an Ecological Clerk of Works (ECoW) to guide the works.

Priority Ponds

4.8.7 As the Proposed Development requires the loss of a priority pond to facilitate the works, it is recommended that these works are covered in EMP document and guided by an ECoW.

4.8.8 Currently the Proposed Development does not mitigate for the loss of a priority pond during the infill phase of the works and due to the nature of the development, it is not realistic to create new pond habitat on the restored site. It is therefore recommended that the landscape proposals for the site incorporate the enhancement of terrestrial habitat on site through the provision of hibernacula features and look to enhance the value of the pond within the wider Survey Area, specifically within the northern quarry basin of the applicant's land ownership.

Bats

4.8.9 To mitigate for the direct loss of suitable commuting and foraging habitat on site as a result of the Proposed Development, the client has committed to create new areas

of woodland and hedgerows within the restored site, providing new commuting and foraging features.

Breeding Birds

4.8.10 The client has committed to the timing of vegetation clearance on site being completed outside the nesting bird season (i.e. between September and February, inclusive). Should the works be completed outside of this timeframe then works should be guided by an (ECoW), following defined precautionary measures outlined in an EMP document.

Reptiles

4.8.11 A chapter on reptiles should be covered within an EMP document that details:

- A toolbox talk for regular operatives on site, detailing presence of grass snake,
- Signage and speed limits to be enforced along the proposed haulage road,
- Presence of an ECoW during any vegetation clearance activities,

4.8.12 In addition to the above, it is recommended that parts of the wider Survey Area are enhanced with the installation of new reptile refugia.

4.8.13 The above recommendations are considered suitable to negate direct impacts to reptiles. Enhancement of surrounding habitat will naturally draw reptiles away from the application site and speed limits/toolbox talks will make operatives aware of the presence of the species reducing the likelihood of direct collision with individuals.

4.9 Restored Phase

Priority Ponds

4.9.1 Creation of new pond habitat within the restored Site is not feasible or realistic due to the nature of the infill works and the requirement for the infill material to be capped and the landform designed to shed water. However, the client has committed to enhance the additional priority pond within their landownership, which will compensate for the loss of pond habitat within the site extent.

4.9.2 It is additionally recommended that educational signage erected the priority pond within the wider Survey Area. Signage should detail the importance of ponds on site

and how they interact with the mosaic of habitats present and should request that dog walkers restrict their dogs from entering the ponds.

Reptiles

4.9.3 The post development layout should include suitable habitat management practices that consider the presence of reptiles and their breeding/hibernation seasons. Additionally new shrub/scrub planting should be strategically placed to provide suitable basking opportunities for grass snake and provide a physical barrier to the public to reduce the potential of being disturbed by dog walkers and the general public.

4.9.4 Signage board should also include information on grass snake, asking the public to refrain from entering sensitive areas and to keep dogs under control.

Residual Effects and Conclusions

4.9.5 The residual effect assessment (detailed in the Residual Effects tables below) assume that the additional mitigation measures detailed in the section above will be implemented in full.

Table 4.7 Residual Effects Considering Additional Mitigation – Infill Phase

Ecological Receptor	Description of Effect	Incorporated Mitigation	Potential Effect (inc. Significance)	Additional Mitigation Measures / Enhancement Measures	How are Additional Mitigation/Enhancement Measures secured?	Residual Effect (inc. Significance)
Broadleaved Woodland	Broadleaved woodland is a Habitat of Principal Importance (HPI) under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). The Proposed Development would necessitate the removal of a section of one section of woodland assessed as 'Moderate Quality' Retention Category 'B'; and one section of a tree group assessed as 'Low quality' Retention Category 'C'. In addition to the direct removal of sections of woodland the Proposed Development has the potential to impact retained areas of woodland surrounding the application site through an increased level of dust, vibration and movement of heavy plant over tree roots. In addition, the movement vehicles from external sources has the potential to introduce invasive species to the site and surrounding woodland. Broadleaved woodland is an important habitat for many species of fauna providing roosting, nesting and foraging opportunities (namely in the context of birds and bats). For this reason, bat roosts have the potential to be lost, as well as direct	The Proposed Development includes the provision of a wheelwash station for incoming and outgoing vehicles, which will reduce the risk of introducing invasive species onto site and into the surrounding area.	Broadleaved woodland has **medium sensitivity.** The potential effect of the felling sections of broadleaved woodland (considering its designation as a Habitat of Principal Importance under the NERC Act, 2006), resulting in direct habitat loss (**high magnitude** of impact) required to facilitate the Proposed Development is assessed as **moderate adverse** in the **long term** at the **local level,** which is **significant**. The potential effect of indirect impacts on retained areas of broadleaved woodland surrounding the site, considering the provision of a wheelwash station is assessed as **minor adverse** in the **long term** at the **local level**, which is **non-significant.**	The loss of woodland habitat on site is to be mitigated against through onsite replacement tree planting and the production of a robust soft landscaping scheme. Additionally, retained areas of woodland, trees, and hedgerows, are to be protected throughout the Proposed Development through the erection of temporary protective fencing, which are fitted with a suitable dust suppression barrier. Any woodland removal is to be covered by the aforementioned EMP document.	Replacement tree planting can be secured through the through the post development layout and should be included within the BNG Assessment for the site. The associated Habitat Management and Maintenance Plan (HMMP) can be secured through the means of a planning condition. The production of a EMP document that includes information on working methods, fencing and ECoW responsibilities can be secured through the means of a planning condition.	The residual effect of the felling sections of broadleaved woodland to facilitate the Proposed Development, with subsequent compensation through the BNG scheme is assessed as **minor beneficial** in the **long term** at the **local level** which is **non-significant** The residual effect of indirect impacts on retained areas of woodland within the site and adjacent is assessed as **negligible** in the **long term** at the **local level** and is **non-significant**.

Ecological Receptor	Description of Effect	Incorporated Mitigation	Potential Effect (inc. Significance)	Additional Mitigation Measures / Enhancement Measures	How are Additional Mitigation/Enhancement Measures secured?	Residual Effect (inc. Significance)
	impacts (destruction) of bird nests and their eggs and/or young. As bat and birds are discussed separately below, the Potential Effect will focus on habitat loss in isolation.					
Priority ponds	Priority ponds are a Habitat of Principal Importance (HPI) under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). The pond within the application site is to be lost in its entirety to facilitate the Proposed Development. Additionally, the Proposed Development has the potential to impact priority ponds within the local vicinity of the application site through increased levels leachate into ground water. Ponds are an important habitat for many species of fauna, providing important egg laying sites for amphibians, as well as a foraging resource for bats, birds, and reptiles. To that end, the loss of pond habitat on site may impact on faunal species that regularly use it for foraging purposes. As bat, birds, and reptiles are discussed separately below the potential effect will focus on habitat loss in isolation.	The Proposed Development will not include biodegradable waste and will only include non-hazardous soil materials. Therefore, potential impacts from leachate will not apply as inert waste materials are not likely to produce toxic leachate that can cause environmental hazard.	Priority ponds have a **high sensitivity.** The potential effect of the direct loss of a priority pond as a result of the Proposed Development required to facilitate the Proposed Development is assessed as **moderate adverse** in the **long term** at the **local level**, which is **significan**t. Considering the incorporated mitigation the potential effect through the indirect pollution of retained ponds in the local vicinity of the site is assessed as **negligible a**nd is considered **non-significan**t.	Pond removal works are to be covered in the aforementioned EMP document and guided by the ECoW.. The loss of a priority pond during the infill phase of the works is to be mitigated for by the enhancement of the pond within the wider Survey Area, specifically within the northern quarry basin of the applicant's land ownership.	The production of a EMP which includes information on working methods, fencing and ECoW responsibilities can be secured through the means of a planning condition. The enhancement of an additional pond within the clients land ownership can be secured through the BNG assessment and subsequent HMMP.	The potential effect of the direct loss of a priority pond as a result of the Proposed Development required to facilitate the Proposed Development is assessed as **negligible** in the **long term** at the **local leve**l, which is **non-significant.**

Ecological Receptor	Description of Effect	Incorporated Mitigation	Potential Effect (inc. Significance)	Additional Mitigation Measures / Enhancement Measures	How are Additional Mitigation/Enhancement Measures secured?	Residual Effect (inc. Significance)
Breeding Birds	The Proposed Development will lead to the direct loss of suitable nesting habitat and potential nest sites of common bird species. All active bird nests are protected through the WCA (1981) making it an offence to intentionally damage or destroy a bird nest when in active use.	There are currently no incorporated mitigation measures that address potential impacts to breeding birds.	The potential effect of the destroying active bird nest, their eggs and young as part of scheduled vegetation clearance (**high sensitivity** and **low magnitude**) to facilitate the Proposed Development is assessed as **moderate adverse** in the **short term** at the **local level,** in the absence of mitigation which is **significant**. This impact would be **permanent**.	The timing of vegetation clearance on site will be completed outside the nesting bird season (i.e. between September and February, inclusive). Should the works be completed outside of this timeframe then works will be guided by an ECoW, following defined precautionary measures outlined in a EMP document. Toolbox talks are to be provided at induction for all site staff in relation to protected and notable species.	The production of a EMP document can be secured through the means of a planning condition.	The potential effect of the destroying active bird nest, their eggs and young as part of scheduled vegetation clearance is assessed as **negligible** in the **short term** at the **local level,** which is **non-significant.**
Reptiles	During reptiles conducted at the site in 2023, a low-good population of grass snake were confirmed present within the Survey Area. Grass snake are protected under the WCA (1981), making it an offence to kill or injure individuals. The Proposed Development has the potential to impact reptiles in both a direct and indirect nature. The infill phase of the Proposed Development will require the regular movement of Heavy Goods Vehicles (HGVs) along the proposed access route to Yew Tree Quarry, which may lead to direct killing/injuring of	There are currently no incorporated mitigation measures that address potential impacts to reptiles.	Reptiles have a **high sensitivity.** In the context of the direct killing and injuring of individual grass snake via the regular movement of HGVs during the infill phase the impact is assessed as **major adverse** in the **long term** at the **regional level**, which equates to a **significant effect.** In regard to the fragmentation of the grass snake population due to the proposed access route the impact is assessed as **moderate adverse** in the	A chapter on reptiles will be covered within the EMP document that details: • A toolbox talk for regular operatives on site, detailing presence of grass snake, • Signage and speed limits to be enforced along the proposed haulage road, • Presence of an ECoW during any vegetation clearance activities, In addition to the above parts of the wider Survey Area are to be enhanced with the installation of new reptile refugia.	The production of EMP document can be secured through the means of a planning condition. The installation of new reptile refugia outside of the application site prior to works commencing can be secured through a specific planning condition.	In the context of the direct killing and injuring of individual grass snake via the regular movement of HGVs during the infill phase the impact is assessed as **negligible** in the **long term** at the **regional level**, which equates to a **non-significant effect.** In regard to the fragmentation of the grass snake population due to the proposed access route the impact is assessed as **negligible** in the **short term** at a **local level**,

Ecological Receptor	Description of Effect	Incorporated Mitigation	Potential Effect (inc. Significance)	Additional Mitigation Measures / Enhancement Measures	How are Additional Mitigation/Enhancement Measures secured?	Residual Effect (inc. Significance)
	individuals by the means of being run over. Additionally, the location of the proposed access route has the potential to alter the level of connectivity between suitable reptile habitat leading to potential fragmentation of the grass snake population.		**short term** at a **local level**, which equates to a **significant effect**.	The enhancement of surrounding habitat will naturally draw reptiles away from the application site and speed limits/toolbox talks will make operatives aware of the presence of the species reducing the likelihood of direct collision with individuals.		which equates to a **non-significant effect**.

Table 4.8 Residual Effects Considering Additional Mitigation – Restored Phase

Ecological Receptor	Description of Effect	Incorporated Mitigation	Potential Effect (inc. Significance)	Additional Mitigation Measures / Enhancement Measures	How are Additional Mitigation/Enhancement Measures secured?	Residual Effect (inc. Significance)
Priority ponds	As detailed in relation to broadleaved woodland an increase in visitor pressure associated with the restored phase of the development has the potential to increase the level of disturbance to priority ponds that are present surrounding the site. The wider Survey Area includes a priority pond within the northern quarry basin which may be	There are currently no incorporated mitigation measures that address potential impacts to priority ponds.	The potential effect associated with the impacts are assessed as **moderate adverse** in the **long term** at the **local level** and is deemed **significant**.	Educational signage is also recommended to be erected around the priority pond within the wider Survey Area. Signage should detail the importance of ponds on site and how they interact with the mosaic of habitats present and should request that dog walkers restrict their dogs from entering the ponds.	Physical mitigation measures suggested (paths and signage) should be incorporated into the final design of the Proposed Development, secured by a planning condition.	The potential effect associated with the impacts are assessed as **negligible** in the long term at the **local level** and is deemed **non-significant**.

Ecological Receptor	Description of Effect	Incorporated Mitigation	Potential Effect (inc. Significance)	Additional Mitigation Measures / Enhancement Measures	How are Additional Mitigation/Enhancement Measures secured?	Residual Effect (inc. Significance)
	impacted through the same pathways as described in the row above.					
Reptiles	The restored phase of the development is likely to reduce suitable basking and foraging habitat for reptiles. Exposed sloping embankments, which previously provided optimal basking conditions, will be replaced with grassland of lower suitability. The loss of the quarry basin pond will also remove a key foraging resource for grass snakes recorded on site. Furthermore, increased public access, particularly by dog walkers, is expected to result in higher levels of disturbance within previously undisturbed areas. The grass snake population on site has been assessed as relatively isolated from the wider environment, due to limited management within the Survey Area compared to surrounding arable and urban land. Consequently, the loss of suitable basking and foraging habitat is likely to have a greater impact, potentially reducing the site's carrying capacity for the species.	There are currently no incorporated mitigation measures that address potential impacts to reptiles.	The potential effect associated with the impacts are assessed as **moderate adverse** in the **long term** at the **local level**, which equates to **significant impact**.	The post development layout should include suitable habitat management practices that consider the presence of reptiles and their breeding/hibernation seasons. Additionally new shrub/scrub planting and hibernacula features should be strategically placed to provide suitable basking opportunities for grass snake and provide a physical barrier to the public to reduce the potential of being disturbed by dog walkers and the general public. Signage boards should also include information on grass snake, asking the public to refrain from entering sensitive areas and to keep dogs under control.	Physical mitigation measures suggested (paths, signage and strategic shrub/scrub planting) should be incorporated into the final design of the Proposed Development, secured by a planning condition.	The potential effect associated with the impacts are assessed as **negligible** in the **long term** at the **local level**, which equates to a **non-significant** impact.

Summary of Residual Effects and Mitigation Measures

4.9.6 When assessing the potential effects of the Proposed Development on ecological features, additional mitigation measures have been assessed as successfully reducing all significant adverse impacts (ranging from major to minor) at a local scale. Notwithstanding this, realistic and achievable 'additional' mitigation measures have been incorporated (as required) such that any residual adverse impacts can be rendered negligible; with some residual effects assessed a minor beneficial in the long term at the local level (Refer to Tables 4.7 & 4.8 above for specifics).

4.9.7 Additional mitigation measures can be summarised as:

i) Construction Environment Management Plan specifically focused on ecological features to avoid impacts to wildlife and habitats, covering working methods, fencing, signage, speed limits, ECoW requirements etc.; secured via planning conditions.
ii) Ecologically sensitive post development layout and landscaping plan.
iii) Installation of new reptile refugia outside of the application site prior to works commencing; secured via planning conditions.

4.10 Conclusion

4.10.1 This section provides a summary of the ES Chapter in its entirety.

Summary of Baseline Conditions

4.10.2 Four statutory sites of national importance are present within 10km of the Proposed Development, with four statutory sites of local importance present within 5km and four non-statutory designated wildlife sites present within 2km. The site also falls within the Impact Risk Zone of two Statutory Sites, based on consultation with MAGIC:

4.10.3 During the UKHab survey, the Site was found to comprise of a mosaic of habitats including: sparsely vegetated urban land (u1f), broadleaved woodland (w1g), modified grassland (g4), developed land (u1b6), mixed scrub (h3h), standing water (r1g), a line of trees (w1g 33), and two hedgerows (h2a6). The site is also directly connected to other valuable habitats within the immediate vicinity including well established woodlands, grasslands, and areas of scrub.

4.10.4 Bat activity was recorded across a range of habitats within the Survey Area, although activity was more condensed within preferred habitats, with the woodlands, priority hedgerows, quarries and open water in the Survey Area providing high quality foraging conditions for bats.

4.10.5 Breeding bird surveys were conducted within the Survey Area in 2023 and confirmed a typical species composition being present. Twenty-seven bird species were recorded over four survey visits, all of which are considered common and very common breeding birds within the local area. No schedule 1 birds were recorded within the Survey Area during the surveys.

4.10.6 All ponds returned a negative eDNA result in 2023 confirming that GCN are absent from the surveyed ponds.

4.10.7 Following invertebrate surveys conducted in 2023 the Survey Area was found to be of district (low) level importance for invertebrates. A total of 268 species were recorded with nine species having a national status (five of which are more common now than their status suggests and may be later revised).

4.10.8 Presence/likely absence surveys conducted in 2023 identified a population of grass snake within the Survey Area and was assigned as having a 'low-to-good' population.

4.10.9 No evidence of badger activity was identified on site, with no badger setts or other signs observed. However, it was deemed feasible that the habitat surrounding the Site may be used by commuting and foraging badger.

Summary of Likely Significant Effects

4.10.10 When assessing the potential effects of the Proposed Development on ecological features, incorporated mitigation measures were insufficient to avoid adverse impacts (ranging from major to minor) at a local scale. Notwithstanding this, realistic and achievable 'additional' mitigation measures have shown that these adverse impacts can be eliminated (most resulting in a negligible residual effect) at both the infill and restored phases with some residual effects assessed as minor beneficial in the long term at the local level.

Summary of Mitigation and Enhancement Measures

4.10.11 The following mitigation and enhancement measures are required at each phase of the Proposed Development to eliminate adverse impacts (as described above). These will primarily be secured via planning conditions.

- Production of a EMP document to avoid impacts to wildlife and habitats, covering working methods, fencing, signage, speed limits, ECoW requirements etc.; secured via planning conditions.
- Ecologically sensitive post development layout and landscaping plan.
- Installation of new reptile refugia outside of the application site prior to works commencing; secured via planning conditions.

Conclusion

4.10.12 Given the relatively small scale of the application site and temporary nature of the infill phase and considering the restoration scheme to be implemented on site, it is unsurprising that only modest levels of additional mitigation is required to nullify the likely significant effects. Notwithstanding this, it should be highlighted that the applicant has taken the disciplines of ecology and arboriculture seriously, evidenced by the early appointment of specialist in these fields, and the subsequent commission of surveys and technical reports to inform baseline conditions. Most notably the client has chosen the application boundary to include as little area of land within their ownership as possible, which equates to avoidance in the mitigation hierarchy and is a key reason as to why only minor levels of mitigation are required.