FUTURESECOLOGY

Newett Homes

Land off Northorpe Lane, Mirfield

ECOLOGICAL IMPACT ASSESSMENT

Report Reference Number: FE90/EcIA01

December 2021

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1.0 EXECUTIVE SUMMARY

1.1 An Ecological Impact Assessment (EcIA) was undertaken following published guidelines on the likely effects upon biodiversity as a result of proposals. The assessment draws from the Preliminary Ecological Appraisal (PEA), Brindle & Green Ltd. (September 2019) and additional field surveys of the site conducted in 2021 by Futures Ecology Ltd.

1.2 The assessment identified the following ecological features which could be affected by proposals or warrant consideration due to the legal protection afforded them:

- Lower Spen Wildlife Area LNR;
- Sunny Bank Ponds LNR;
- Whitley Wood LNR;
- Offsite Broadleaved Woodland;
- Dense scrub;
- Generalist bat species;
- Common toad;
- Nesting birds; and
- Hedgehog.

1.3 The proposals will not result in any residual negative effects on designated sites within the specified zone of influences.

1.4 Proposals will result in permanent losses of habitats under the footprint of the development. The habitats lost are generally of low ecological importance. Mitigation through design has been utilised to avoid impacts to valuable, boundary habitats, including hedgerow H1 and the offsite broadleaved woodland.

1.5 Impacts to habitats will be minimised through careful control of construction activities through an industry best practice CEMP. This also reduces the impacts on important faunal species that may utilise these habitats, such as foraging and commuting bats. As a result, all other predicted effects on important ecological features are not anticipated to be significant.

1.6 The inclusion of biodiversity enhancements listed in Section 6 would maximise the biodiversity value of the site, in line with the NPPF and local planning policy.

2.0 INTRODUCTION

2.1 The following report has been prepared by Futures Ecology Ltd. on behalf of Newett Homes. It details a suite of ecological surveys undertaken in 2021 at land located off Northorpe Lane, Mirfield, Kirklees (central grid reference: SE 21490 21076) and provides an assessment of potential impacts from the proposed development. This has been produced to discharge Condition 16 of the outline planning permission (Reference: 2019/92378).

2.2 This document has been prepared with reference to the Chartered Institute of Ecology and Environmental Management's (CIEEM) Ecological Impact Assessment (EcIA) Guidelines[1]. The key findings of the ecological assessments and the application of the mitigation hierarchy have been employed at each stage of the development design process to minimise impacts and maximise the ecological benefit of the scheme.

2.3 The key objectives of EcIA are to:

- Gain an understanding of the baseline ecology of the site and immediate surrounding area;
- Determine whether the site supports or has the potential to support protected species;
- Identify any likely ecological constraints and use this to inform the development design process;
- Assess the likely significant impacts of the proposals on the Important Ecological Features;
- Identify mitigation measures likely to be required; and
- Identify the opportunities offered by the proposed project to deliver ecological enhancement.

2.4 This report should be read in conjunction with the separate Reptile Survey Report (Futures Ecology Ltd., October 2021, Ref: FE90/RR01), Bat Report (Futures Ecology Ltd., October 2021, Ref: FE90/BAT01) and Biodiversity Impact Assessment (BIA) (Futures Ecology Ltd., December 2021, Ref: FE90/BIA01), which detail the methodology and results of surveys undertaken for these species groups.

SITE LOCATION AND CONTEXT

2.5 The Site is approximately 1.4ha in extent and comprises of a residential building with associated hardstanding, amenity grassland, ornamental planting, introduced shrub and tall ruderal vegetation to the northeast, with the rest of the site dominated by poor semi-improved grassland with areas of dense scrub, further tall ruderal vegetation and marshy grassland. The boundaries were largely formed by fences, with a single hedgerow located along the western boundary. The landscape beyond the Site is predominantly residential to the south and west. An arable field was present adjacent to the northern site boundary

[1] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.

and broadleaved woodland, formed on a dismantled railway, was adjacent to the eastern site boundary.

DEVELOPMENT PROPOSALS

2.6 The site is the subject of an outline planning application for the development of 43 residential dwellings, with associated infrastructure and green space.

BACKGROUND

2.7 The Preliminary Ecological Appraisal (PEA), Brindle & Green Ltd. (September 2019) recommended a number of further ecological surveys to be undertaken at the site to fully inform the EcIA report, these included:

- At least one bat emergence survey upon the low potential building located within the site (May- August 2021);
- Monthly bat activity transects and static detector surveys (April to September 2021), in line with the habitats which have been assessed as providing moderate suitability; and
- Reptile presence / absence surveys (seven visits in suitable weather conditions March – September 2021 with April, May and September being the optimum survey period).

3.0 LEGISLATION, PLANNING POLICY AND GUIDANCE

3.1 The policy and guidance framework for nature conservation is provided by various national, regional, and local planning policies as outlined below, with further details, as necessary, within relevant subsequent sections.

Legislative Framework

3.2 The following legislation and European Directives afford protection to wildlife and have been used to inform this assessment.

- The Conservation of Habitats & Species Regulations 2017 (as amended)[2];
- The EC Habitats Directive (Directive 92/43/EEC)[3] as translated into UK law by The Conservation of Habitat and Species Regulations 2017 (as amended);
- The EC Birds Directive (Directive 79/409/EEC)[4]; as translated into UK law by The Conservation of Habitat and Species Regulations 2017 (as amended);
- Wildlife and Countryside Act 1981 (as amended) (WCA)[5];
- Natural Environment and Rural Communities Act 2006 (NERC)[6].

[2] HMSO. The Conservation of Habitats and Species Regulations 2017 (as amended) – No.1012.
[3] EC (1992) Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (The EC Habitats Directive).
[4] EC (1979), Council Directive 79/409/EEC on the Conservation of wild birds (EC Birds Directive).
[5] HMSO. The Wildlife and Countryside Act 1981 (as amended).
[6] HMSO. (2006), Natural Environment and Rural Communities Act.

- The Protection of Badgers Act 1992[7].
- The Hedgerow Regulations Act 1997[8].

National Planning Policy Framework (NPPF)

3.3 The latest NPPF[9] sets out the Government's planning policies for England and how these are expected to be applied within the planning system. It provides a framework for local councils to produce local plans and determine planning applications in order to achieve more sustainable developments.

3.4 The former UK Biodiversity Action Plan (BAP) has been used to compile the statutory lists of priority species and habitats as required under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (also referred to as Habitats and Species of Principal Importance). These lists continue to be regarded as conservation priorities under the NPPF, although the UK Biodiversity Action Plan (BAP) has now been superseded by the UK Post-2010 Biodiversity Framework[10] and Biodiversity 2020[11].

Local Biodiversity Action Plan

3.5 Local BAPs are a key element for securing the requirements of the NPPF at a local level, consequently this assessment has taken due consideration of the priority habitats and species within the Kirklees Biodiversity Action Plan[12].

Local Planning Policy

3.6 Within Kirklees all planning decisions are based on the Kirklees Local Plan, which was adopted in February 2019[13]. The key local policy concerned with ecology is Policy LP30 which states;

Development proposals will be required to:-

- *result in no significant loss or harm to biodiversity in Kirklees through avoidance, adequate mitigation or, as a last resort, compensatory measures secured through the establishment of a legally binding agreement;*
- *minimise impact on biodiversity and provide net biodiversity gains through good design by incorporating biodiversity enhancements and habitat creation where opportunities exist;*
- *safeguard and enhance the function and connectivity of the Kirklees Wildlife Habitat Network at a local and wider landscape-scale unless the loss of the site and its functional role within the network can be fully maintained or compensated for in the long term;*

[7] HMSO. The Protection of Badgers Act 1992 (as amended).
[8] HMSO. The Hedgerow Regulations Act 1997
[9] Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework. London
[10] JNCC and Defra (on behalf of the Four Countries' Biodiversity Group) (2012) UK Post-2010 Biodiversity Framework. July 2012.
[11] DEFRA (2011) Biodiversity 2020: A strategy for England's wildlife and ecosystem services.
[12] https://www.naturalkirklees.org/resources/kirklees-biodiversity-action-plan/ (accessed September 2021)
[13] https://www.kirklees.gov.uk/beta/planning-policy/pdf/local-plan-strategy-and-policies.pdf (accessed September 2021)

- *establish additional ecological links to the Kirklees Wildlife Habitat Network where opportunities exist; and*
- *incorporate biodiversity enhancement measures to reflect the priority habitats and species identified for the relevant Kirklees Biodiversity Opportunity Zone.*

Other guidance

Birds of Conservation Concern

3.7 Leading governmental and non-governmental conservation organisations in the UK have reviewed the population status of 244 bird species regularly found in Britain and, using standardised criteria, have assessed and assigned all bird species onto lists of conservation concern[14].

3.8 Birds are placed into one of three lists - Red, Amber or Green and although these listings offer no further legal protection, they are meant to guide conservation action for the individual species. The listings reflect an individual species' global and European conservation status as well as that within the UK and additionally measure the importance of the UK population in international terms.

4.0 METHODOLOGY

DESK STUDY

4.1 A desk study was undertaken by Brindle & Green Ltd. in the PEA. Data was supplied by West Yorkshire Ecology Service of locally designated sites and protected / notable species within a 2km radius of the site.

FIELD SURVEY – HABITATS

Extended Phase 1 Survey

4.2 A detailed habitat survey, previously undertaken by Brindle & Green Ltd. on 16th August 2019 (PEA, Brindle & Green Ltd., Sep 2019) and an updated walkover by ecologists from Futures Ecology Ltd. on 18th March 2021, were used to inform the baseline conditions of the site.

4.3 Survey methodology followed guidance from Joint Nature Conservation Committee (JNCC) 2016[15] comprising a walkover of the survey area mapping (using JNCC standard habitat codes) and broadly describing and classifying the principal habitat types and identifying the dominant plant species present within each habitat type, noting any features of interest. Whilst the plant species lists obtained should not be regarded as exhaustive, sufficient information was obtained to determine broad habitat types.

[14] Eaton et al (2015), *Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man*. British Birds 108, 708-746. https://britishbirds.co.uk/wp-content/uploads/2014/07/BoCC4.pdf
[15] JNCC (2016) *Handbook for Phase1 Habitat Survey – a technique for environmental audit.* ISBN 0 86139 636 7

4.4 A Phase 1 Habitat plan is provided in Figure 1, which is an updated version of the Phase 1 Habitat Plan in the PEA, using updated GPS and aerial mapping.

FIELD SURVEY – FAUNA

Badger

4.5 The Site and immediate surrounding areas were surveyed for badger *Meles meles* using methodology outlined by Natural England[16] and Harris *et al*[17]. Field signs searched for include; setts, earth mounds, bedding material, mammal paths, latrines, snuffle holes, prints, hairs, scratching posts etc. The identification of some signs on their own does not necessarily provide conclusive evidence of the presence of badgers.

Bats

4.6 On site habitats were appraised for their potential to support bat species on 16th August 2019 (PEA, Brindle & Green Ltd., Sep 2019). Details of the subsequent bat activity surveys and nocturnal assessments are provided in the separate Bat Report (Futures Ecology Ltd., October 2021, Ref: FE90/BAT01).

Great crested newts (GCN)

4.7 On site habitats were appraised for their potential to support GCN *Triturus cristatus* on 16th August 2019 (PEA, Brindle & Green Ltd., Sep 2019).

Environmental DNA (eDNA) Surveys

4.8 The method used to collect the eDNA followed the Technical Advice Note for field and laboratory sampling of GCN eDNA, dated 30th September 2014[18].

4.9 The samples were taken on the 3rd and 21st June 2021 by level 1 GCN licence holders M. Baker (licence reference: CL08 2020-49701-CLS-CLS) and J. Eales (licence reference: CL08 2015-17861-CLS-CLS).

4.10 ADAS undertook the analysis as per the above-mentioned document. Following analysis, results provided by the laboratory could have one of four outcomes which are described in Table 1 below.

Table 1: Description of Possible Results of eDNA Analysis

Result	Description
Positive	A positive result means that great crested newts are present in the water or have been present in the water in the recent past (eDNA degrades over around 7-21 days).

[16] https://www.gov.uk/guidance/badgers-surveys-and-mitigation-for-development-projects#survey-methods (accessed September 2021)
[17] Harris, S., Creswell, P., & Jefferies, D. 1991. *Surveying Badgers.* The Mammal Society.
[18] Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

Result	Description
Negative	A negative result means that DNA from the great crested newt has not been detected in your sample.
Inconclusive	This occurs where the DNA from the great crested newt has not been detected but the controls have indicated that either: the sample has been degraded and/or the eDNA was not fully extracted (poor recovery); or the PCR inhibited in some way. This may be due to the water chemistry or may be due to the presence of high levels of sediment in samples which can interfere with the DNA extraction process.

Reptiles

4.11 On site habitats were appraised for their potential to support reptile species on 16th August 2019 (PEA, Brindle & Green Ltd., Sep 2019). Details of the subsequent reptile surveys are provided in the separate Reptile Survey Report (Futures Ecology Ltd., October 2021, Ref: FE90/RR01).

Other species

4.12 Any sightings, evidence of or suitable habitats for other protected fauna, local BAP or otherwise notable species including breeding birds, reptiles and invertebrates were recorded during the Site visit.

Survey Limitations

4.13 The updated Phase 1 Habitat Survey was undertaken on 18th March 2021, which falls just outside the optimal survey period for botanical identification (April – September). However, as conditions onsite were unchanged from the initial Phase 1 Habitat Survey undertaken within the optimal survey period (16th August 2019) this is considered sufficient to assess the habitats present.

BIODIVERSITY NET GAIN

4.14 Details of the Biodiversity Impact Assessment (BIA) are provided in the BIA Report (Futures Ecology Ltd., December 2021, Ref: FE90/BIA01).

ASSESSMENT

Importance

4.15 Ecological features are those that are considered to be important and potentially affected by the project. Importance may relate, for example, to the quality or extent of designated sites or habitats, to habitat/species rarity, to the extent to which they are threatened throughout their range, or to their rate of decline (CIEEM 2018).

Geographical Context

4.16 The importance of an ecological feature is considered within a defined geographical connect. For the purposes of the assessment this is:

- International (European)
- National (United Kingdom)
- Regional (North England)
- County (West Yorkshire)
- Borough (Kirklees Council)
- Local (Mirfield)

4.17 The assessment of the importance of the ecological features and the potential likelihood of an effect of the development will identify which ecological features could be significantly affected by the proposal. Only these features will be taken forward for further assessment.

4.18 Where further surveys are required to determine no significant effect, a significant effect should be assumed, and the precautionary principle applied.

Further Assessment

Significance

4.19 In order to assess the significance of effects, Important Ecological Features that could potentially be affected by the development have been identified and described and the potential effects quantified using a range of characteristics:

- Positive / negative
- Extent
- Magnitude
- Duration
- Frequency / timing
- Reversibility

4.20 For the purposes of this assessment, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national / local nature conservation policy) or more wide-ranging (enhancement of biodiversity)[19].

Mitigation, Compensation and Enhancement

4.21 Where significant effects have been identified the mitigation, hierarchy has been taken into account (avoiding significant effects where possible, applying mitigation measures to minimise unavoidable significant effects and compensating for any remaining significant effects.)

[19] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

4.22 The assessment will include mitigation, compensation and enhancements which are proposed.

Residual Effects

4.23 Upon completion of the above, residual significant effects will then be identified. It is then only necessary to assess and report significant residual effects (those that remain after mitigation measures have been considered).

Cumulative Effects

4.24 Consideration is given to the effects that may arise cumulatively from the development proposed in combination with other plans and projects proposed/consented but not yet built and operational.

5.0 RESULTS - BASELINE

DESK STUDY

5.1 Full details of the desk study can be found within the PEA (Brindle & Green Ltd., Sep 2019).

5.2 The desk study found that three locally designated (non-statutory) sites were located within 2km of the site. These would be considered of importance at a **Borough** level and are summarised in Table 2 below.

Table 2: Non-Statutory Designated Sites

Site Name	Designation	Proximity to site (approximate)	Description
Lower Spen Wildlife Area	LNR	1.1km SE	Ancient semi-natural woodland
Sunny Bank Ponds	LNR	1.5km NW	Reedbeds with high value for birds
Whitley Wood	LNR	1.9km S	Abundant native bluebells *Hyacinthoides non-scripta*

HABITATS

5.3 The updated walkover survey on 18th March 2021 found the conditions onsite to be much the same as those reported in the PEA (Brindle & Green Ltd., Sep 2019).

5.4 A small number of additional target notes were identified during the site visits in 2021:

- TN1 – Log Pile
- TN2 – Series of former carp ponds, dry at time of survey
- TN3 – Former carp pond, found to be holding water in May 2021 (P7)
- TN4 - Former carp pond, found to be holding water in May 2021 (P8)
- TN5 - Former carp pond, found to be holding water in May 2021 (P10)
- TN6 – Ephemeral field pool, found to be holding water in May 2021 (P11)

- TN7 – Brash Pile

5.5 The log and brash piles represent suitable refugia for a number of species / species groups, including reptiles, amphibians, invertebrates and hedgehog *Erinaceus europaeus.*

5.6 The ephemeral waterbodies were identified in May 2021, after a period of heavy rainfall. These are discussed further within the GCN section below.

5.7 Habitats within the site that were of low-negligible ecological value included the building, hardstanding, ornamental garden planting / introduced shrub, amenity grassland and ruderal vegetation. These were not considered to be Important Ecological Features within the assessment.

5.8 Some habitats had more ecological value, such as the marshy grassland, hedgerow H1 and the scattered trees. However, the marshy grassland was of limited extent / floristic value, H1 was isolated from other hedgerows or semi-natural habitats and the scattered trees were relatively young. These habitats would therefore only be considered of importance at a **Site** level at most, which excludes them from further assessment.

5.9 The habitats of ecological value, that will be further assessed within this report comprise the dense scrub and offsite broadleaved woodland adjacent to the eastern boundary.

Broadleaved Woodland (Offsite)

5.10 The strip of broadleaved woodland, adjacent to the eastern boundary would likely be considered a Habitat of Principal Importance. This habitat is mapped within the Kirklees Wildlife Habitat Network (WHN) and provides connectivity through the local area, structural diversity, and opportunities for sheltering and foraging wildlife. This would be of importance at a **Borough** scale.

Dense Scrub

5.11 The scrub habitat within the site is typical of any area of unmanaged land and is not representative of a priority habitat at a local or national level. However, this habitat does provide structural diversity and opportunities for sheltering and foraging wildlife. This habitat would be of importance at a **Local** level.

FAUNA

Badger

5.12 No badger signs or evidence of badger activity was noted within the site. This species is therefore scoped out of further assessment.

Bats

5.13 Details of the bat assessments undertaken in 2021 are detailed within the Bat Report (Futures Ecology Ltd., October 2021, Ref FE90/BAT01). A brief summary is provided below.

5.14 No bat roosts were confirmed within the onsite building, which was assessed as providing Low bat roosting potential. The bat activity surveys found the site to be utilised by a low

number of common and widespread generalist bat species. Boundary features, namely hedgerow H1 and the offsite semi-natural broadleaved woodland to the east were of most value for commuting and foraging. The importance of the site to generalist bat species is considered to be of relevance at a **Local** scale.

Great crested newts

5.15 The PEA scoped out GCN as an Important Ecological Feature due to the lack of waterbodies within the site and surrounding area.

5.16 During a reptile survey in May 2021, it was noted that several of the former carp ponds in the north of site were holding water, after a period of heavy rain (P7, P8 and P10). An ephemeral pool within the poor-semi-improved grassland field was also noted (P11).

5.17 Table 3 below provides a description of these waterbodies.

Table 3: Onsite Ephemeral Waterbodies

Ref.	Description	Photograph
P7.	Former carp pond measuring 3x3m, situated in the north of site (TN3). Blanket weed covered 95% of the surface and it was surrounded by willow *Salix* sp., hawthorn *Crataegus monogyna*, creeping buttercup *Ranunculus repens* and cow parsley *Anthriscus sylvestris*. Covered with a metal structure.	
P8.	Former carp pond / water tank measuring 2x3m, situated in the north of site (TN4). Completely filled with vegetation, including willow *Salix* sp., and flag iris *Iris pseudacorus*.	
P10.	Former carp pond / water tank measuring 1x2m, situated in the north of site (TN5). Low level of water on top of a floating mat of moss.	
P11.	Ephemeral ditch / pool measuring 5x1m, situated in the east of site (TN6). Resembled wet / marshy grassland with great willowherb *Epilobium hirsutum* covering approximately 50% of the water.	

Terrestrial Habitats

5.18 Terrestrial habitats within the application site that were largely unsuitable for GCN in terms of foraging and commuting, included the building / hardstanding, garden planting

and short mown areas of poor semi-improved grassland. However, there were areas of suitable terrestrial habitat, including the hedgerow, dense scrub and longer areas of poor semi-improved grassland around the boundaries of the site. These would represent a resource for foraging, commuting and shelter. Further opportunities for sheltering GCN were provided by the brash and log piles.

Environmental DNA (eDNA) Survey

5.19 An eDNA survey was undertaken on all ponds holding water (P7, P8, P10 and P11) on 3rd June 2021. The results for all ponds were indeterminate, with evidence of degradation due to sediment within the samples. This was considered to be due to the low water levels.

5.20 A second sample was undertaken on 21st June 2021 of P7 only, as this was the only waterbody still holding sufficient water to take water samples. The water samples were left to settle for double the amount of time recommended, before adding to the ethanol, to ensure the sediment did not interfere with the result. The subsequent result for P7 was negative.

5.21 Given the highly ephemeral nature of the other waterbodies (P8, P10 and P11) it is considered that these do not provide suitable breeding habitat for GCN.

5.22 Given the above, it is considered that GCN are likely absent from site and do not pose a constraint to the proposed development. Great crested newts are therefore not considered to be an IEF within this assessment.

Reptiles

5.23 Details of the reptile surveys undertaken between April and May 2021 are detailed within the Reptile Survey Report (Futures Ecology Ltd., October 2021, Ref FE90/RR01). A brief summary is provided below.

5.24 No reptiles were found during the seven surveys undertaken of the site. This species group is therefore unlikely to be present within the site and does not pose a constraint to the proposals. Reptiles are therefore not considered to be an IEF within this assessment.

Common Toad

5.25 Common toad are listed as a priority species in the NERC Act and within Kirklees BAP. A small number of toads (peak count of 7) were observed under refugia within the site during the reptile surveys and would be considered of importance at a **Local** level.

Nesting Birds

5.26 Habitats with the site (hedgerow H1, dense scrub, scattered trees) and adjacent to site (broadleaved woodland) represent a nesting resource to a variety of bird species. Given the protection afforded to all nesting wild bird species under the Wildlife and Countryside Act 1981 (as amended), nesting birds would be considered of importance at a **Local** scale.

Hedgehogs

5.27 The dense scrub and hedgerow within the survey area have the potential to support hedgehog, a NERC listed SPI and LBAP SPI. The log and brash piles within site would also provide overwintering habitat for this species. Hedgehog would be considered important at a **Local** level.

SUMMARY OF ECOLOGICAL FEATURES & FURTHER ASSESSMENT REQUIREMENTS

5.28 The table below provides a summary of the ecological features, their importance and geographical context.

Table 4: Summary of Relevant Features & Further Impact Assessment Requirements

Ecological Feature	Important	Geographical Context	Further Assessment
Lower Spen Wildlife Area LNR	Yes	Borough	Yes
Sunny Bank Ponds LNR	Yes	Borough	Yes
Whitley Wood LNR	Yes	Borough	Yes
Offsite Broadleaved Woodland	Yes	Borough	Yes
Building / Hardstanding	No	N/A	No
Garden Planting / Introduced Shrub	No	N/A	No
Amenity Grassland	No	N/A	No
Dense Scrub	Yes	N/A	Yes
Poor semi-improved grassland	No	N/A	No
Marshy grassland	No	N/A	No
Hedgerow H1	Yes	Site only	No
Badger	No	N/A	No
Generalist Bat Species	Yes	Local	Yes
GCN	No	N/A	No
Reptiles	No	N/A	No
Common Toad	Yes	Local	Yes
Nesting birds	Yes	Local	Yes
Hedgehog	Yes	Local	Yes

6.0 IMPACT ASSESSMENT

PROPOSALS

6.1 All habitats beneath the footprint of the development will be lost and building B1 will be demolished. Boundary habitats, such as hedgerow H1, have been retained where possible and landscape planting will include new trees and hedgerows, wildflower grassland and native, mixed scrub.

LOCAL NATURE RESERVES

6.2 Three LNRs were located within 2km of the site boundary; Lower Spen Wildlife Area (1.1km SE), Sunny Bank Ponds (1.5km NW) and Whitley Wood (1.9km S). These are of importance at a **Borough** level.

Potential Impacts

6.3 Due to the distance between the LNRs from the Site, no direct or indirect impacts (such as habitat loss, dust / noise pollution), are anticipated during the construction or operational phases of the scheme. There are no direct hydrological connections and any increase in recreational pressure is expected to be nugatory due to the scale of the proposed development and the prevalence of other outdoor recreational options in the area, including Dewsbury Country Park located ~365m east of the site.

Residual Effect

6.4 As no impacts are anticipated, the residual effect upon the LNRs would be **Neutral**.

OFFSITE BROADLEAVED WOODLAND / KIRKLEES WHN

Potential Impacts

6.5 Construction activities may lead to impacts to the offsite woodland through accidental damage, root compaction or dust deposition. In severe cases this could lead to habitat loss or displacement of associated fauna. In the absence of mitigation this could lead to not-significant adverse effect at a **Borough** level and a significant adverse effect at a **Local** level.

6.6 There is also a potential impact to the woodland through artificial lighting during construction and / or operational phases, which could affect the suitability of the woodland to crepuscular and nocturnal species, such as bats. In the absence of mitigation this could lead to not-significant adverse effect at a **Borough** level and a significant adverse effect at a **Local** level.

Mitigation

6.7 The masterplan has sought to buffer the woodland edge with an area of public open space along the western boundary. However, root protection areas should be adhered to in order to protect the retained trees, as per the Arboricultural Assessment. Pollution

prevention measures during construction, through the adherence to best practice working methods, will protect the trees during the construction phase.

6.8 The implementation of a sensitive lighting design in accordance with BCT Guidance[20], with particular avoidance of light spill upon boundary habitats.

Residual Effects

6.9 The significance of residual effects is considered to be **Neutral** following mitigation.

Compensation / Enhancements

6.10 The planting of a native species-rich hedgerow along the northern boundary of the site will link to the offsite broadleaved woodland and help to enhance the function and connectivity of the Kirklees WHN at a local scale. This would ensure a not significant positive effect in the mid-to long-term at a **Local** level.

DENSE SCRUB

Potential Impacts

6.11 All existing scrub within the site will be lost to facilitate the proposals. This totals 0.138ha of bramble scrub in poor condition and its loss would therefore be considered a not-significant adverse effect at a **Local** level.

Mitigation

6.12 Not applicable as the habitat will be permanently lost.

Residual Effect

6.13 Prior to compensation, this loss would result in a not-significant adverse effect at a **Local** level.

Compensation / Enhancements

6.14 The planting of 0.015ha of mixed scrub, with at least three woody species, within public open space in the north of site will help to offset this loss. However, the Biodiversity Impact Assessment indicates that the habitat trading within the site is inadequate for heathland/scrub (Futures Ecology Ltd., December 2021, Ref FE90/BIA01). Therefore, the offsite compensation required to achieve a 10% net gain in biodiversity would include the provision of additional scrub habitats. This would ensure a not significant-to-significant positive effect in the mid-to long-term at a **Local** level.

[20] BCT & Institution of Lighting Professionals (2018). Guidance Note 08/18 Bats and artificial lighting in the UK. Bats and the Built Environment series.

GENERALIST BAT SPECIES

Potential impacts

6.15 Habitats of value to the local bat population are largely to be retained; within the development this includes H1 and offsite the broadleaved woodland. However, a small number of scattered trees and the dense scrub will be lost to development. Impacts during the construction phase could also result in the degradation of retained habitats via physical damage, dust or pollution events. This could result in a temporary reduction in value or even a permanent effect if this leads to habitat loss. This would have a **not significant adverse** effect at **Local** level, prior to mitigation.

6.16 There is also a potential impact to bats due to the lighting of retained habitats during construction and operational phases. This could lead to a temporary or permanent loss of use of these habitats, again resulting in a **not significant adverse** effect at **Local** level, prior to mitigation.

Mitigation

6.17 Root protection areas to protect the retained hedgerow / woodland and pollution prevention measures during construction, through the adherence to best practice working methods, will protect the habitats of value during the construction phase.

6.18 The implementation of a sensitive lighting design in accordance with BCT Guidance[21], with particular avoidance of light spill upon boundary habitats.

Residual Effects

6.19 The significance of residual effects due to lighting or pollution events of retained boundary habitats is considered to be **Neutral** following mitigation.

6.20 The tree and scrub loss would result in a **not-significant adverse** effect at a **Local** level prior to compensation and enhancements outlined below.

Compensation / Enhancements

6.21 Landscape planting will include new trees, a native species-rich hedgerow (H2), wildflower grassland and native, mixed scrub, which will compensate for losses of foraging and commuting habitat for bats. Enhancements could be secured through the provision of bat boxes, which would have a **not-significant positive** effect at a **Local** level in the mid-to-long-term.

COMMON TOAD

Potential Impacts

6.22 Vegetation removal and the removal of brash and log piles has a risk of causing injury or death to this species if present.

[21] BCT & Institution of Lighting Professionals (2018). Guidance Note 08/18 Bats and artificial lighting in the UK. Bats and the Built Environment series.

Mitigation

6.23 In order to minimise risk, it is recommended that vegetation removal is undertaken in a precautionary manner. This should comprise a visual check of long vegetation areas / brash and log piles prior to removal followed by the cutting of woody vegetation to 150mm above ground level in the first instance with all cut vegetation removed by hand from the working area. The remnant vegetation should then be left for 24 hours prior to clearing vegetation to ground level and grubbing out of roots to allow toads or other fauna to disperse from the working area.

Residual Impact

6.24 With the implementation of the above mitigation, it is considered that the residual impact would be **Neutral**.

NESTING BIRDS

Potential Impacts

6.25 All wild bird species are protected while nesting by the Wildlife and Countryside Act 1981 (as amended). This legislation protects wild birds, their nests and eggs from intentional harm, and makes it illegal to intentionally kill, injure or take any wild birds; take, damage or destroy the nest of a wild bird while the nest is in use or being built or take / destroy an egg of a wild bird.

6.26 Prior to mitigation, there is a potential impact to nesting birds within woody vegetation, if removal is undertaken within the breeding bird season. Operations could result in the destruction of nests / eggs or the killing of chicks, which would be a breach of the WCA.

Mitigation

6.27 To comply with relevant legislation, any removal of vegetation should be timed to avoid the nesting season where possible (March to August inclusive, although dates do vary depending on the species and weather conditions). Where it is not feasible, affected areas should be checked for nests in advance by an experienced ecologist, until such time as all birds have fledged.

Residual Impact

6.28 With the implementation of the above mitigation, it is considered that the residual impact would be **Neutral**.

HEDGEHOG

Potential Impacts

6.29 Vegetation removal and the removal of brash and log piles has a risk of causing injury or death to this species.

Mitigation

6.30 In order to minimise risk, it is recommended that vegetation removal is undertaken in a precautionary manner. This should comprise a visual check of long vegetation areas / brash and log piles prior to removal followed by the cutting of woody vegetation to 150mm above ground level in the first instance with all cut vegetation removed by hand from the working area. The cleared vegetation should then be left for 24 hours prior to clearing vegetation to ground level and grubbing out of roots to allow hedgehogs or other fauna to disperse from the working area.

Residual Impact

6.31 With the implementation of the above mitigation, it is considered that the residual impact would be **Neutral**.

BIODIVERSITY ENHANCEMENTS

6.32 In accordance with NPPF (2021) and Policy LP30 in Kirklees Local Plan, a proposed development scheme will be required to:

- Result in no significant loss or harm to biodiversity in Kirklees through avoidance, adequate mitigation or, as a last resort, compensatory measures secured through the establishment of a legally binding agreement;
- Minimise impact on biodiversity and provide net biodiversity gains through good design by incorporating biodiversity enhancements and habitat creation where opportunities exist;
- Safeguard and enhance the function and connectivity of the Kirklees Wildlife Habitat Network at a local and wider landscape-scale unless the loss of the site and its functional role within the network can be fully maintained or compensated for in the long term;
- Establish additional ecological links to the Kirklees Wildlife Habitat Network where opportunities exist; and
- Incorporate biodiversity enhancement measures to reflect the priority habitats and species identified for the relevant Kirklees Biodiversity Opportunity Zone.

6.33 Recommendations with respect to individual species, habitats and the Kirklees WHN are outlined above. Habitats within the Site boundary, affected by the proposals are considered to generally be of low ecological value with no significant adverse impacts arising from the works.

6.34 Overall, the scheme provides opportunities for such enhancements to be included within design proposals which are proportionate to the scale of the scheme. As such, the following will be included for this Site:

- Integral bird and bat boxes to be installed on 50% of dwellings under the advice of an ecological consultant as follows to increase the availability of roosting and nesting habitat for these species groups:

  - 1 Ibstock Enclosed Bat Box B or Habibat Built-In Bat Box, and
  - 1 Ibstock Eco Habitat for swifts or 1 Forticrete Swift Brick, at least 3m above ground.
- Any fencing used will have small gaps under or in the corner to permit access for wildlife such as hedgehog or fox.
- Proposed landscape planting will where possible, use native species of value to wildlife.
- Where possible hedgerow planting will comprise at least 5 native species and be managed to encourage tree standards within the hedgerow.
- A variety of bat and bird boxes will be installed on retained trees to increase the availability of roosting and nesting habitat for these species groups. Boxes suitable for bird species should include a range of open fronted and enclosed nest boxes which can be placed in either trees or new buildings.
- Dead wood piles will be created in areas of retained open-space / landscaping to provide suitable habitats for amphibians and small mammals as well as invertebrates.

APPENDIX A: ENVIRONMENTAL DNA RESULTS

Samples Taken 03/06/2021

P10

Client: [redacted]
Futures Ecology

ADAS
Spring Lodge
172 Chester Road
Helsby
WA6 0AR

Tel: 01159 516747 [redacted]

www.adas.uk

Sample ID: ADAS-2133	Condition on Receipt: High Sediment	Volume: Passed
Client Identifier: P10	Description: pond water samples in preservative	
Date of Receipt: 08/06/2021	Material Tested: eDNA from pond water samples	

Determinant	Result	Method	Date of Analysis
Inhibition Control†	0 of 2	Real Time PCR	10/06/2021
Degradation Control§	Evidence of degradation or residual inhibition	Real Time PCR	10/06/2021
Great Crested Newt*	Indeterminate	Real Time PCR	10/06/2021
Negative PCR Control (Nuclease Free Water)	0 of 4	Real Time PCR	As above for GCN
Positive PCR Control (GCN DNA 10^{-4} ng/µL)#	4 of 4	Real Time PCR	As above for GCN

Report Prepared by:	[redacted]	Report Issued by:	[redacted]
Signed:		Signed:	
Position:	Director: Biotechnology	Position:	MD: Biotechnology
Date of preparation:	11/06/2021	Date of issue:	11/06/2021

eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (WC1067 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.

** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for great crested newt if all of the replicates are negative; positive for great crested newt if one or more of the replicates are positive.*

† Recorded as the number of positive replicate reactions at expected C_t value. If the expected C_t value is not achieved, the sample is considered inhibited and is diluted as per the technical advice note prior to amplification with great crested newt primer and probes.

§ No degradation is expected within time frame of kit preparation, sample collection and analysis.

#Additional positive controls (10^{-1}, 10^{-2}, 10^{-3} ng/µL) are also routinely run, results not shown here.

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P11

Client: [redacted]
Futures Ecology

ADAS
Spring Lodge
172 Chester Road
Helsby
WA6 0AR

Tel: 01159 516747
[redacted]

www.adas.uk

Sample ID: ADAS-2134	Condition on Receipt: High Sediment	Volume: Passed
Client Identifier: P11	Description: pond water samples in preservative	
Date of Receipt: 08/06/2021	Material Tested: eDNA from pond water samples	

Determinant	Result	Method	Date of Analysis
Inhibition Control†	1 of 2	Real Time PCR	10/06/2021
Degradation Control§	Evidence of degradation or residual inhibition	Real Time PCR	10/06/2021
Great Crested Newt*	Indeterminate	Real Time PCR	10/06/2021
Negative PCR Control (Nuclease Free Water)	0 of 4	Real Time PCR	As above for GCN
Positive PCR Control (GCN DNA 10^{-4} ng/µL)#	4 of 4	Real Time PCR	As above for GCN
Report Prepared by:	[redacted]	Report Issued by:	[redacted]
Signed:		Signed:	
Position:	Director: Biotechnology	Position:	MD: Biotechnology
Date of preparation:	11/06/2021	Date of issue:	11/06/2021

eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (WC1067 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.

** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for great crested newt if all of the replicates are negative; positive for great crested newt if one or more of the replicates are positive.*

† Recorded as the number of positive replicate reactions at expected C_t value. If the expected C_t value is not achieved, the sample is considered inhibited and is diluted as per the technical advice note prior to amplification with great crested newt primer and probes.

§ No degradation is expected within time frame of kit preparation, sample collection and analysis.

#Additional positive controls (10^{-1}, 10^{-2}, 10^{-3} ng/µL) are also routinely run, results not shown here.

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P8

Client: [redacted]
Futures Ecology

ADAS
Spring Lodge
172 Chester Road
Helsby
WA6 0AR

Tel: 01159 516747
[redacted]

www.adas.uk

Sample ID: ADAS-2136	Condition on Receipt: Medium Sediment	Volume: Passed
Client Identifier: P8	Description: pond water samples in preservative	
Date of Receipt: 08/06/2021	Material Tested: eDNA from pond water samples	

Determinant	Result	Method	Date of Analysis
Inhibition Control†	1 of 2	Real Time PCR	10/06/2021
Degradation Control§	Evidence of degradation or residual inhibition	Real Time PCR	10/06/2021
Great Crested Newt*	Indeterminate	Real Time PCR	10/06/2021
Negative PCR Control (Nuclease Free Water)	0 of 4	Real Time PCR	As above for GCN
Positive PCR Control (GCN DNA 10^{-4} ng/µL)#	4 of 4	Real Time PCR	As above for GCN

Report Prepared by:		Report Issued by:	
Signed:	[redacted]	Signed:	[redacted]
Position:	Director: Biotechnology	Position:	MD: Biotechnology
Date of preparation:	11/06/2021	Date of issue:	11/06/2021

eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (WC1067 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.

** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for great crested newt if all of the replicates are negative; positive for great crested newt if one or more of the replicates are positive.*

† Recorded as the number of positive replicate reactions at expected C_t value. If the expected C_t value is not achieved, the sample is considered inhibited and is diluted as per the technical advice note prior to amplification with great crested newt primer and probes.

§ No degradation is expected within time frame of kit preparation, sample collection and analysis.

#Additional positive controls (10^{-1}, 10^{-2}, 10^{-3} ng/µL) are also routinely run, results not shown here.

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P7

Client: [redacted]
Futures Ecology

ADAS
Spring Lodge
172 Chester Road
Helsby
WA6 0AR

Tel: 01159 516747
[redacted]

www.adas.uk

Sample ID: ADAS-2137	Condition on Receipt: Medium Sediment	Volume: Passed
Client Identifier: P7	Description: pond water samples in preservative	
Date of Receipt: 08/06/2021	Material Tested: eDNA from pond water samples	

Determinant	Result	Method	Date of Analysis
Inhibition Control†	2 of 2	Real Time PCR	10/06/2021
Degradation Control§	Evidence of degradation	Real Time PCR	10/06/2021
Great Crested Newt*	Indeterminate	Real Time PCR	10/06/2021
Negative PCR Control (Nuclease Free Water)	0 of 4	Real Time PCR	As above for GCN
Positive PCR Control (GCN DNA 10^{-4} ng/µL)#	4 of 4	Real Time PCR	As above for GCN

Report Prepared by:	[redacted]	Report Issued by:	[redacted]
Signed:		Signed:	
Position:	Director: Biotechnology	Position:	MD: Biotechnology
Date of preparation:	11/06/2021	Date of issue:	11/06/2021

eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (WC1067 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.

** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for great crested newt if all of the replicates are negative; positive for great crested newt if one or more of the replicates are positive.*

† Recorded as the number of positive replicate reactions at expected C_t value. If the expected C_t value is not achieved, the sample is considered inhibited and is diluted as per the technical advice note prior to amplification with great crested newt primer and probes.

§ No degradation is expected within time frame of kit preparation, sample collection and analysis.

#Additional positive controls (10^{-1}, 10^{-2}, 10^{-3} ng/µL) are also routinely run, results not shown here.

ADAS eDNA Results Sheet: 1040042-22874 (01) Page | 4 Edition: 04

Sample Taken 21/06/2021

P7

Client: [redacted]
Futures Ecology

ADAS
Spring Lodge
172 Chester Road
Helsby
WA6 0AR

Tel: 01159 516747
[redacted]

www.adas.uk

Sample ID: ADAS-2423	Condition on Receipt: Medium Sediment	Volume: Passed
Client Identifier: P7	Description: pond water samples in preservative	
Date of Receipt: 24/06/2021	Material Tested: eDNA from pond water samples	

Determinant	Result	Method	Date of Analysis
Inhibition Control†	2 of 2	Real Time PCR	28/06/2021
Degradation Control§	Within Limits	Real Time PCR	28/06/2021
Great Crested Newt*	0 of 12 (GCN negative)	Real Time PCR	28/06/2021
Negative PCR Control (Nuclease Free Water)	0 of 4	Real Time PCR	As above for GCN
Positive PCR Control (GCN DNA 10^{-4} ng/µL)#	4 of 4	Real Time PCR	As above for GCN

Report Prepared by:	[redacted]	Report Issued by:	[redacted]
Signed:		Signed:	
Position:	Director: Biotechnology	Position:	MD: Biotechnology
Date of preparation:	28/06/2021	Date of issue:	28/06/2021

eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (WC1067 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.

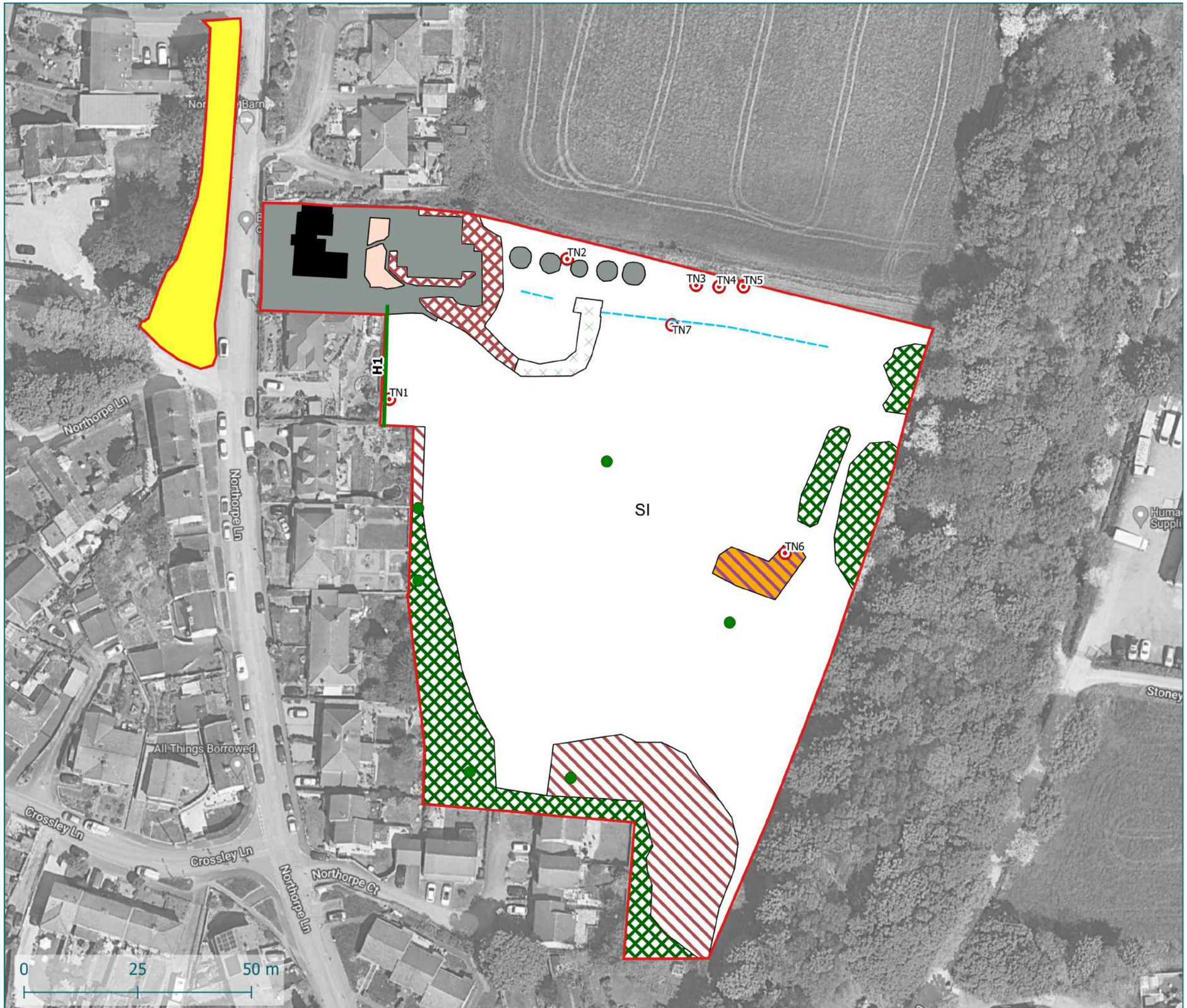
** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for great crested newt if all of the replicates are negative; positive for great crested newt if one or more of the replicates are positive.*

† Recorded as the number of positive replicate reactions at expected C_t value. If the expected C_t value is not achieved, the sample is considered inhibited and is diluted as per the technical advice note prior to amplification with great crested newt primer and probes.

§ No degradation is expected within time frame of kit preparation, sample collection and analysis.

#Additional positive controls (10^{-1}, 10^{-2}, 10^{-3} ng/µL) are also routinely run, results not shown here.

ADAS eDNA Results Sheet: 1040042-KHaymes (01) Page | 1 Edition: 04



FUTURES ECOLOGY

Carrwood Park, Swillington Common Farm, Selby Road, Leeds, LS15 4LG
Telephone: 01133 372185

Unit 9, The Tangent Business Hub, Weighbridge Road, Shirebrook, Mansfield, Derbyshire, NG20 8RX
Telephone: 01623 749709

Key

- Site Boundary
- Buildings
- Built Environment: hardstanding
- Built Environment: Gardens (lawn and planting)
- Cultivated/disturbed land - amenity grassland
- Introduced shrub
- Marsh/marshy grassland
- Other tall herb and fern - ruderal
- SI — Poor semi-improved grassland
- Scrub - dense/continuous
- Scrub - scattered
- Intact hedge - species-poor
- Dry ditch
- Broadleaved tree
- Target note

TN1 – Log Pile
TN2 – Series of former carp ponds, now dry
TN3 – P7, Former carp pond holding water in May 2021
TN4 - P8, Former carp pond holding water in May 2021
TN5 - P10, Former carp pond holding water in May 2021
TN6 – P11, Ephemeral field pool holding water in May 2021
TN7 – Brash Pile

Client:	Newett Homes	Plan Reference:	FE90_01	Author:	KH
Project:	Land off Northorpe Lane, Mirfield, Kirklees	Project Reference:	FE90	Date:	16/12/2021
Title:	Figure 2 - Phase 1 Habitat Plan	Report Reference:	EclA01	Scale:	NTS@A3

C:\Users\kate.haymes\OneDrive - Futures Ecology Ltd\Projects\FE90_Land East of, 28, Northorpe Lane, Mirfield, WF14 0QN\QGIS 3.4\Plans\Phase 1 Habitat