



Keepmoat

Land West of Cheadle Rd., Upper Tean

Preliminary Ecological Appraisal

July 2021

FPCR Environment and Design Ltd

Registered Office: Lockington Hall, Lockington, Derby DE74 2RH

Company No. 07128076. [T] 01509 672772 [F] 01509 674565 [E] mail@fpcr.co.uk [W] www.fpcr.co.uk

This report is the property of FPCR Environment and Design Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without the written consent of FPCR Environment and Design Ltd.

Rev	Issue Status	Prepared / Date	Approved/Date
-	Initial copy	NJL / 30.07.2021	NJL / 30.07.2021

CONTENTS

1.0	EXECUTIVE SUMMARY	2
2.0	INTRODUCTION	4
3.0	METHODOLOGY.....	4
4.0	RESULTS.....	6
5.0	DISCUSSION & RECOMMENDATIONS.....	13
6.0	APPENDIX A- RELEVANT LEGISLATION AND PLANNING POLICY	19
7.0	APPENDIX B REFERENCES.....	24

FIGURES

10300-E-01: Consultation Results Plan

10300-E-02: Habitat Plan

10300-E-03: Indicative Post Development Habitats

1.0 EXECUTIVE SUMMARY

- 1.1 This preliminary Ecological Appraisal reports an ecological assessment of a c.3.6ha site west of Cheadle Rd. Upper Tean, Staffordshire. Keepmoat are investigating the feasibility of submitting a full planning application for c.67 dwellings on the eastern half of the site, with the western half alongside the River Tean retained and managed sympathetically for biodiversity objectives.
- 1.2 The assessment has involved a desk study to search for existing baseline ecological information associated with the site and its immediate surroundings, and an extended habitat survey undertaken in July 2021. The objective of the survey was to determine the habitats that currently form the site. The survey was 'extended' to make an initial assessment of the presence of protected and/or notable species and assessment of the suitability of the habitats to support such species.
- 1.3 The assessment has concluded that the proposed development would be unlikely to have any adverse effect on any site afforded a statutory international or national nature conservation designation, nor would it have an adverse effect on any site afforded a non-statutory designation.
- 1.4 The desk study did not reveal any existing records from within the past decade directly associated with the site but indicated the presence of a local bat population (which would have been anticipated), a great crested newt population (nearly 500m from the site) and an assemblage of notable bird species in the wider landscape (also anticipated).
- 1.5 The habitat survey determined that the eastern side of the site is formed by relatively species-poor neutral grassland. Hedgerows border Cheadle Road, Breach Lane, and an adjacent residential property. The western side is formed by a mosaic of habitats including wet woodland, tall ruderal herbs, neutral grassland, marsh/marshy grassland, and scrub. Evaluation of the habitats has concluded that the wet woodland and hedgerows represent priority habitats for conservation but are features that would be retained within the proposed development. Himalayan balsam is present in some abundance in the western half of the site; this is an invasive non-native species and legislation makes it an offence to cause this species to grow in the wild.
- 1.6 No evidence of the presence of any protected species was recorded during the survey but the habitats forming the western side of the site were considered to be suitable to be utilised by such species. Additional surveys are therefore recommended for great crested newt, bats, and reptiles.
- 1.7 A preliminary assessment has been made of the potential measurable biodiversity net gain/loss that might be expected from the proposal. This has concluded that the development might deliver a c.2.5% net gain for biodiversity, but this would require the creation of additional areas of wet woodland, reedbed and wildlife ponds, along with management to enhance the areas of retained marsh/marshy grassland, all within the western side of the site. In addition, areas of species-rich wildflower grassland would be required as part of the development greenspace.
- 1.8 The proposed development as outlined above, would appear to be compliant with relevant local planning policy, specifically Policy NE 1 Biodiversity and Geological Resources and Policy NE 2 Trees, Woodland and Hedgerows within the Staffordshire Moorlands Local Plan (adopted). The proposal would also deliver the requirements of the National Planning Policy Framework associated with biodiversity but would be unlikely to be able to achieve the 10% net gain for biodiversity that will be mandated by the emerging Environment Bill when it receives Royal Assent (anticipated for Autumn 2021). Consequently, it is anticipated there could be a requirement to secure off-site compensation to the extent of c.2.0 biodiversity 'habitat units' if there is a legislative requirement to achieve a 10% net gain at the time of planning approval.

Additional surveys recommended to support a planning application

Recommended further ecology surveys			
Ref.	Item	Notes	Timing
GCN	Initial Assessment	Establishing ownership of and requesting access permission to off-site ponds to undertake an initial assessment of the suitability of off-site and on-site waterbodies to support great crested newt (GCN)	Mid-March to Mid-April
	Amphibian Survey – Option 1: eDNA Survey	Undertake eDNA survey Surveys to establish the likely presence/absence of GCN in waterbodies assessed as being suitable to support GCN. If GCN were recorded as being present via the eDNA survey, there would be a requirement to undertake six aquatic surveys detailed in Amphibian Survey Option 2.	Mid-April to the end of June
	Amphibian Survey – Option 2: Aquatic Surveys	Rather than do an eDNA surveys, normal aquatic surveys could be undertaken. Surveys to establish the likely presence/absence of GCN in waterbodies assessed as being suitable to support GCN. A minimum of 4 surveys are required. If GCN are found to be present an additional 2 surveys will be required to confirm population size-class.	April to mid-June
Bats	Roost Survey	Initial ground-based assessment of trees for their potential to support roosting bats. Although this can be done any time, it is best done during the winter before trees come into leaf in the spring.	December - March
	Activity Surveys	This would involve three seasonal ((spring, summer & autumn - (March-May, June-Aug, Sept-Oct)) walked transect surveys (requiring 2 ecologists) and three seasonal surveys collecting bat data from two static detectors over a minimum of 5 consecutive nights during the period March/April-Oct and subsequent analysis of recorded data.	March – October
Reptiles	Reptiles	A presence/absence survey for reptiles. Involving 1 site visit to install artificial refugia and 7 subsequent visits (when weather conditions are appropriate) to check the refugia for reptiles.	March – September
Riparian mammals	Water Vole & Otter Survey	Water Vole Survey – of the old mill race, River Tean and adjacent mill pond (if access permission can be secured). In accordance with best practice guidance this will require two survey visits one between April and June and second between July and September.	April - September

2.0 INTRODUCTION

- 2.1 FPCR Environment and Design Ltd. (FPCR) have been commissioned by Keepmoat Homes Ltd. (Keepmoat) to undertake a preliminary Ecological Appraisal of an area of land extending to c.3.6ha, located west of Cheadle Road, Upper Tean, Staffordshire. This land is hereafter referred to as the Site. The centroid OS Grid Reference is SK 00612 40409.
- 2.2 Outline planning permission (with conditions) for up to 67 dwellings was granted on 15th June 2016 but has subsequently expired as no Reserved Matter application was submitted within the timescales set by Condition 3 of the outline approval. The proposed development involved retention of most of the western half of the Site which would subsequently be managed sympathetically for biodiversity objectives.
- 2.3 Keepmoat are currently investigating the feasibility of submitting a full application for residential development and have commissioned FPCR to re-assess the ecological baseline and review current relevant planning policy to identify any potential ecological constraints to the proposal. The indicative layout mirrors the outline approval in that it involves retention of much of the western half of the site which borders the River Tean. This report provides the results of this assessment.

3.0 METHODOLOGY

- 3.1 Appendix A provides more detail regarding the various legislation mentioned in this section.

Overview

- 3.2 The appraisal process has broadly followed that recommended by the Chartered Institute of Ecology and Environmental Management (CIEEM)¹. In summary, the key parts of that process have been:

- Gathering baseline ecological information;
- Evaluation of the baseline information; and
- Discussion of the results and subsequent conclusions and recommendations.

- 3.3 This has been achieved via:

- A desk study of existing ecological information relating to the Site and the local area;
- A review of the former outline planning permission; and
- An extended Phase 1 habitat survey to assess the habitats present and the potential for protected species to be present.

Desk Study

- 3.4 Ecological information was requested from Staffordshire Ecological Record (SER)².
- 3.5 In addition, the following resources were interrogated for additional information and context:
- Multi Agency Geographic Information for the Countryside (MAGIC) website³;
 - Colour 1:25,000 Ordnance Survey base maps⁴; and
 - Aerial imagery from Bing Maps⁵ and historic aerial imagery via Google Earth⁶.

- 3.6 The geographical extent of the search area for biodiversity information was related to the significance of sites and species, and potential zones of influence which might arise from the proposed development. The following scales of search were considered appropriate:
- 10km around the Site boundary for sites of International Importance (e.g., Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar site);
 - 2km around the Site boundary for sites of National or Regional Importance (e.g., Sites of Special Scientific Interest (SSSI));
 - 1km around the Site boundary for Local Nature Reserves (LNR), and non-statutory designated sites of County Importance; and
 - 1km around the Site for notable species records (e.g., species protected by legislation, 'Species of Principal Importance (SPI)' for the conservation of biodiversity as listed within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006⁷ and other notable species).

Field Survey

Habitats

- 3.7 An Extended Phase 1 Habitat Survey was undertaken which involved classification of the broad habitat types present using the system published by the UK Joint Nature Conservation Committee⁸, but where considered appropriate, with additional information collected beyond that required to determine the Phase 1 Habitat type. The survey was also extended to assess the suitability of the habitats and other features to support protected and notable fauna species. This involved a systematic walk over the Site to classify the broad habitat types present and to identify the presence of any 'Habitats of Principal Importance' (HPI) for the conservation of biodiversity as listed within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006⁷. This was undertaken on 7th and 18th July 2020 by N Law (Associate Ecologist).
- 3.8 Hedgerows associated with the Site were surveyed using the Hedgerow Evaluation and Grading System (HEGS)⁹. This method of assessment includes noting down the canopy species composition, associated ground flora and climbers, structure of the hedgerow including; height, width, and gaps, along with associated features such as the number and species of mature trees, banks, ditches, and grass verges. Each hedgerow is given a grade with suffixes '+' and '-' representing the upper and lower limits of each grade respectively. These grades represent a continuum on a scale from 1+ (the highest score, and denoting hedges of the greatest nature conservation priority) as shown in Table 1. Hedgerows graded 1 or 2 are considered a priority for nature conservation:

HEGS Grade	Ecological Value
Grade 1	High to very high
Grade 2	Moderately high to high
Grade 3	Moderate
Grade 4	Low

- 3.9 Hedgerows were also assessed against the Wildlife and Landscape criteria contained within Statutory Instrument No: 1160 – The Hedgerow Regulations 1997¹⁰ to determine whether individual hedgerows qualified as an 'Important Hedgerow' under the Regulations. This was achieved using a methodology in accordance with both the Regulations and DEFRA guidance¹¹.

Species

General

- 3.10 During the extended Phase 1 Habitat Survey, observations, identification, and signs of any species protected under the following list of Acts and Regulations were noted:
- Part 1 of the Wildlife and Countryside Act 1981 (as amended)¹²;
 - The Protection of Badgers Act 1992¹³;
 - The Conservation of Habitats and Species Regulations 2017 (as amended)¹⁴; and
 - The NERC Act 2006 – S41 Species of Principal Importance (SPI) for the conservation of biodiversity⁷.
- 3.11 This included a specific initial survey for otter and water vole along a 300m stretch of the River Tean from the road bridge on Breach Lane, southwards. This was guided by the methodologies outlined within the Water Vole Conservation Handbook (3rd ed, 2011)¹⁵, and the Water Vole Mitigation Handbook (2016)¹⁶. Signs of otter activity were searched for following the methodologies detailed within the New Rivers and Wildlife Handbook¹⁷.

4.0 RESULTS

Desk Study – Designated Sites

- 4.1 The location of the designated sites discussed below are shown on Figure 10300-E-01: Consultation Results Plan.

Sites with a statutory international nature conservation designation

- 4.2 There are no sites afforded this designation within 10km of the Site.

Sites with a statutory national nature conservation designation

Sites of Special Scientific Interest

- 4.3 There are no Sites of Special Scientific Interest (SSSI) within 2km of the Site, the nearest is Dimmings Dale & The Ranger SSSI, located c.5km to the northeast of the Site.

SSSI, SAC, SPA & Ramsar sites Impact Risk Zones

- 4.4 The Site falls within an Impact Risk Zones (IRZ) for the above SSSI. At this location Natural England would expect the Local Planning Authority to consult them on any development proposal of the following type and scale:
- **Infrastructure:** Airports, helipads, and other aviation proposals; and
 - **Air Pollution:** Livestock & poultry units with floorspace > 500m², slurry lagoons > 750m² & manure stores > 3,500t.

Local Nature Reserve

- 4.5 There are no LNR within 1km of the Site boundary. The nearest is Cecilly Brook LNR, located c.2.25km to the north, northeast of the Site.

Sites with a non-statutory local nature conservation designation

- 4.6 There are two sites afforded this type of designation within 1km of the Site boundary; Huntley Wood Local Wildlife Site (LWS) c.580m to the north, northwest, and Freehay LWS c.970m to the northeast.
- 4.7 Huntley Wood is ancient semi-natural woodland with a canopy dominated by birch and oak with some sycamore, rowan, and beech. The ground flora is indicative of acidic conditions with species such as bracken, ling and bilberry and the most recent monitoring check in 2005 noted that rhododendron remained abundant, and locally dominant in some areas.
- 4.8 Freehay is located on a south-facing slope and supports acidic habitats, with a dry heath acid grassland mosaic formed by bilberry, heather and wavy hair-grass on the higher slopes and birch woodland on the lower ground.

Desk Study – Protected and Notable Species**General**

- 4.9 SER provided approximately 890 records for 132 protected and notable species from a search area extending 2km from the Site boundary. These have varying resolutions; some have 10-figure grid references locating the record to a specific 1m square, others have 8-figure grid references locating the record to a specific 10m square, others have a 6-figure grid reference locating them to a 100m square and others with 4-figure grid references locating them to 1km². Dates ranged from 1922 to 2019.
- 4.10 The appraisal process considered that records older than 10-years are unlikely to be of relevance for the objective of the appraisal. Consequently, the data was analysed to extract records made within the last decade and with a location within the 1km search area and then limited to the most recent record for a species at a specific location. This identified a sub-set of 29 records that met these criteria, and these are mapped on Figure 10300-E-01:
- 16 records for birds at a 1km resolution;
 - 3 records for common pipistrelle (1 at 1m resolution and 2 at 1km resolution);
 - 2 records for noctule bat (1 at 1m resolution and 1 at 100m resolution);
 - 1 record for 'bats' at 100m resolution;
 - 3 records for plants (2 for common cudweed at 10m resolution and 1 for bluebell at 1km resolution);
 - 2 records for mammals other than bats (1 for western European hedgehog at 10m resolution and 1 for polecat at 100m resolution);
 - 1 amphibian record (great crested newt) at 100m resolution; and
 - 1 invertebrate record (tree bumblebee) at 10m resolution.
- 4.11 Whilst two bat records from 2012 are mapped with a location within the Site, this is because they have a resolution of 100m and the mapping point for the 100m² from which the record occurs in is

the southwest corner of the square. These records are associated with the residential development to the east of Cheadle Rd. which fall within the same square.

- 4.12 The records have identified an assemblage of notable birds within the wider landscape, but this would be anticipated. There is a recorded great crested newt population approximately 500m to the northeast and hedgehog (a Species of Principal Importance) has been recorded in a residential area on the edge of Upper Tean to the southeast of the Site. The records for notable plants, tree bumblebee and polecat are not considered to have any relevance to the proposed development.

Waterbodies

- 4.13 From the desk study eight potential waterbodies were identified within 500m of the Site boundary. These are shown on Figure 10300-E-01 and discussed further in this report in association with assessment for great crested newt.

Field Survey

Overview

- 4.14 The site is bounded to the north by Breach Lane, to the west by the River Tean, to the south by mainly existing residential development and commercial/employment land, and to the east by Cheadle Road (A522). The land slopes westwards to the River Tean. Neutral grassland forms a significant proportion of the Site, with two clearly delineated fields alongside Cheadle Rd. and a less clearly defined parcel alongside Breach Lane. Between these parcels and the River Tean there is a mosaic of habitats formed by wet woodland, tall ruderal herbs, neutral grassland, marsh/marshy grassland, and scrub. These habitats and individual parcel references are shown on Figure 10300-E-02.

Neutral Grassland

- 4.15 The most southerly field parcel (Tn7) supports unmanaged, rough tussocky grassland formed by abundant false oat-grass and cock's-foot with tall ruderal herbs and a small number of neutral grassland indicator species which occur rarely within the sward.



Species	Abundance
False Oat-grass	Abundant
Cock's-foot	Abundant
Hogweed	Frequent
Yorkshire-fog	Frequent
Meadow Foxtail	Occasional
Broad-leaved Dock	Occasional
Common Nettle	Occasional
Common Bent	Rare
Common Knapweed	Rare
Creeping Thistle	Rare
Meadow Vetchling	Rare
Ribwort Plantain	Rare
Meadow Buttercup	Rare
Common Sorrel	Rare
Bush Vetch	Rare

- 4.16 The adjacent field (Tn6) had been cut and cleared several weeks before the survey but was supporting sufficient regrowth to enable the species composition to be determined. This was also dominated by false oat-grass with cock's-foot frequent. An abundance of bare ground between cut clumps of these species indicated that prior to cutting this had a similar tussocky structure and had been left un-managed for some time. Similar to Tn7, the sward included forbs indicative of neutral grassland, but here the number was greater, but as with Tn7 most were rare within the stand.



Species	Abundance
False Oat-grass	Abundant
Meadow Foxtail	Frequent
Common Knapweed	Frequent
Cock's-foot	Frequent
Yorkshire-fog	Frequent
Common Nettle	Frequent
Yarrow	Locally frequent
Germander Speedwell	Locally frequent
Hogweed	Occasional
Meadow Vetchling	Occasional
Broad-leaved Dock	Occasional
Dandelion	Occasional
Common Bent	Rare
Common Mouse-ear	Rare
Creeping Thistle	Rare
Lady's Bedstraw	Rare
Common Bird's-foot-trefoil	Rare
Ribwort Plantain	Rare
Meadow Buttercup	Rare
Creeping Buttercup	Rare
Common Sorrel	Rare
Lesser Stitchwort	Rare
Tansy	Rare
Red Clover	Rare

- 4.17 The third field parcel (Tn3) was less clearly defined by boundary features and towards the west graded into other habitats. Like Tn7, this appeared to have been un-managed for many years and was dominated by false oat-grass. Similar to the other parcels, this supported several neutral grassland indicator forbs, but with common knapweed frequent.



Species	Abundance
False Oat-grass	Abundant
Common Knapweed	Frequent
Cock's-foot	Frequent
Cleavers	Frequent
Common Sorrel	Frequent
Rosebay Willowherb	Locally abundant
Yarrow	Locally frequent
Common Bent	Locally frequent
Common Couch	Locally frequent
Meadow Vetchling	Locally frequent
Ribwort Plantain	Locally frequent
Blackthorn	Locally frequent
Creeping Buttercup	Locally frequent
Common Nettle	Locally frequent
Meadow Foxtail	Occasional
Hogweed	Occasional
Lesser Stitchwort	Occasional
Dandelion	Occasional
Common Mouse-ear	Rare
Foxglove	Rare
Bush Vetch	Rare

- 4.18 Other areas of this species-poor false oat-grass grassland occur in the western part of the Site (Tn 20 & Tn 10) but here these pick up small elements of the adjacent marsh/marshy grassland into which they grade.
- 4.19 A slightly more species-rich area of neutral grassland with false oat-grass absent (Tn1) supported abundant sweet vernal-grass, common knapweed and greater bird's-foot-trefoil with frequent red fescue, common bent and ribwort plantain, with occasional common sorrel and some lesser stitchwort.

Marsh/Marshy Grassland

- 4.20 This occurs in three distinct areas. The most northern block (Tn8) is formed by abundant soft-rush, tufted hair-grass and greater bird's-foot-trefoil with locally abundant creeping buttercup frequent common marsh-bedstraw and a few marsh thistle plants.
- 4.21 South of this there is a more extensive area (Tn14) which supports a more diverse species composition with a notable abundance of meadowsweet and common valerian and elements of swamp habitat with locally frequent reed canary-grass.



- 4.22 Within this area, part of the adjacent woodland had been coppiced and pollarded to maintain clearance underneath the two sets of overhead power lines that run through the area.



- 4.23 The third area (Tn11) is formed by abundant soft-rush with frequent marsh thistle, occasional common marsh-bedstraw and small amounts of meadow foxtail, rough meadow-grass, tufted hair-grass and meadow vetchling.

Tn14 Species	Abundance
Meadowsweet	Abundant
Common Valerian	Abundant
Creeping Bent	Frequent
Common Marsh-bedstraw	Frequent
Himalayan Balsam	Frequent
Soft-rush	Frequent
Rough Meadow-grass	Frequent
Bramble	Locally abundant
Common Nettle	Locally abundant
Meadow Foxtail	Locally frequent
Great Willowherb	Locally frequent
Reed Canary-grass	Locally frequent
Creeping Buttercup	Locally frequent
American Willowherb	Occasional
Common Hemp-nettle	Occasional
Yorkshire-fog	Occasional
Meadow Vetchling	Occasional
Spearmint	Occasional
Marsh marigold	Rare
Floating Sweet-grass	Rare
Water Forget-me-not	Rare
Branched Bur-reed	Rare

Tall Ruderal Herbs

- 4.24 Small patches of tall ruderal herbs occur throughout the Site, but two larger areas are Tn16 formed by common nettle, Himalayan balsam, and docks, and Tn4 formed by abundant common nettle and bramble which combine to form a dense, impenetrable stand with small amounts of false oat-grass, cleavers, red campion, and hedge bindweed.

Semi-natural Broadleaved Woodland (Wet Woodland)

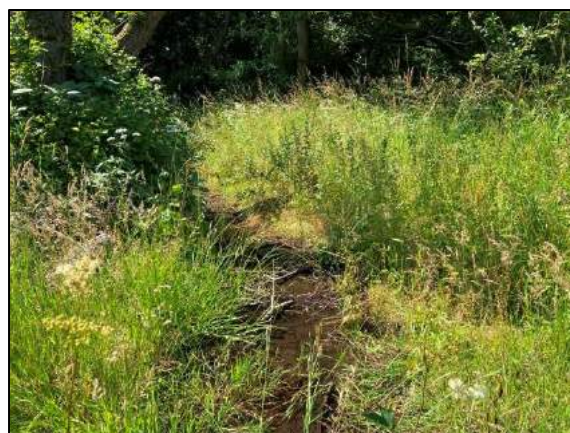
- 4.25 This forms a significant element of the habitats in the western part of the Site. The block located centrally within the Site (Tn 21) is formed by a canopy of mature alder with locally frequent elder forming a shrub layer, The field layer is dominated by Himalayan balsam.
- 4.26 To the southwest a more extensive area (Tn17) also has a canopy dominated by alder, but the shrub layer is very sparse and formed by small amounts of elder and holly. The field layer is slightly more diverse but still with an abundance of the non-native, invasive Himalayan balsam. Other elements include locally abundant reed canary-grass, frequent rough meadow-grass, docks, false oat-grass and occasional soft-rush. Small amounts of bittersweet and red campion were also noted.
- 4.27 In the northwest corner the final stand of woodland (TN19) has a more varied canopy composition with some ash and willow in addition to the frequent alder alongside the river.

Scrub

- 4.28 Scrub occurs variously across the site. The larger, more mappable areas include:
- A relatively large area (Tn19) of alder scrub alongside the river with a smaller area (Tn5) to the north;
 - Hawthorn at Tn2 and Tn13,
 - A linear strip of bramble, holly, hawthorn and elder (Tn15),
 - Holly, hawthorn, and crab apple at Tn9; and
 - Crab apple (Tn12).

Standing Open Water

- 4.29 A single waterbody (Tn22) was identified within the Site, this was the remnants of the old mill race that formed part of the water supply system for the former Croft Mill (a textile mill) located immediately to the south of the Site. This has presumably silted up over the years and is now formed by a narrow channel c.0.5m wide and with a water depth of c.75mm at the time of the survey. Most of the channel was hidden by the dense vegetation in the area, with open channel predominantly in the area where trees had been coppiced and pollarded beneath the power lines (see also the photograph in paragraph 4.22).



Hedgerows

- 4.30 Hedgerow H1 bordering Cheadle Road was formed by abundant hawthorn with frequent blackthorn and small amounts of elder and more rarely holly. Hedgerow H2 alongside Breach Lane was a little more diverse with abundant hazel and hawthorn, frequent elder and blackthorn and occasional holly (which included two holly trees). H2 sits on a relatively species-rich bank with three woodland species (bluebell, dog's mercury, and herb Robert) noted. H3, a garden boundary hedge, was formed by abundant holly (including a variegated horticultural variety) and blackthorn, with small amounts of wild cherry and elder.
- 4.31 None of the hedgerows met the Hedgerow Regulations 1997 criteria of to be considered an 'Important' hedge. All three hedgerows were determined to have a HEGS score of 3, and therefore would be considered to be of just 'Moderate' ecological value. As the species composition and cover of each hedge was formed by at least one woody UK native species, they met the criteria to be considered Hedgerow Habitat of Principal Importance.

Invasive non-native species

- 4.32 Himalayan balsam occurs frequently in parts of the western side of the site. This is listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This legislation makes it an offence to cause species on Schedule 9 to grow in the wild.

SpeciesRiparian Mammals (Otter and Water Vole)

- 4.33 The current within the River Tean was considered possibly to be too fast to be suitable for water vole and no evidence of water vole was recorded during the survey. In contrast, the remnant old mill race had very little flow and was surrounded by dense vegetation which would provide suitable foraging habitat for water vole, but did not provide suitable conditions for water vole to dig burrows. This part of the Site therefore provides partially suitable habitat for water vole, but no evidence of their presence was recorded during the survey.
- 4.34 The river was surveyed from the Breach Lane bridge southwards for 300m. Access was good and along the stretch there were numerous features like exposed boulders and large exposed tree roots where otters if present would be likely to leave spraints. Silty margins where footprints would be left were more restricted. Good tree root systems exposed by erosion and the adjacent marsh/marshy grassland within the Site make this stretch of river very suitable for otter. However, no evidence of their presence was recorded during the survey.

Great Crested Newt (GCN)

- 4.35 The desk study identified eight potential waterbodies within 500m of the Site boundary (including two within the Site). These are shown on Figure 10300-E-01.
- 4.36 Two (P6 and P7) were west of the Cheadle Road which was considered to be a major barrier to dispersal for GCN and they are on the 500m buffer boundary so would be scoped out for requiring further assessment. However, the desk study has identified that GCN were recorded in P6 in 2013 so there is a GCN population associated with that waterbody. Similarly, P8 is located on the west side of the River Tean, and the current within the river forms a barrier to dispersal for newts, so this waterbody is also scoped out.

- 4.37 Within the site P1 is formed by the old mill race. As noted above, only small sections of this were visible due to the dense vegetation, but in the visible areas, the water depth and imperceptible flow would potentially be suitable to support GCN. P2 showing on OS maps is located in woodland but could not be located during the survey and may no longer exist.
- 4.38 The remaining three waterbodies are off-site. P5 to the north is likely to form part of the old mill race but was potentially on private property so was not viewed during the survey. P3 to the south is the old mill pond and OS maps show a waterbody (P4) to the southeast of this abutting the Site boundary, although this feature cannot be seen on aerial imagery so may no longer exist. Both these ponds are on private property, so it was not able to view them during the survey.

Reptiles

- 4.39 No evidence of reptiles was recorded during the survey. However, the dense vegetation within most of the Site lacked the ecotones (areas where one habitat type grades into another) which are important for reptiles but the mill race and adjacent mill pond to the south combined with the marsh/marshy grassland forms suitable conditions for grass snake.

Badger

- 4.40 No evidence of badgers was recorded during the survey. Whilst all of the Site would provide suitable foraging habitat for badgers, there appeared to be a lack of suitable areas for them to dig setts.

Bats

- 4.41 There are no buildings within the Site, but mature trees line the River Tean along the western boundary and are also present within the wet woodland within the Site. These mature trees will have the potential to contain features suitable to support roosting bats.
- 4.42 The marsh/marshy grassland and wet woodland and adjacent riparian woodland along the river form part of the river valley with good connection to the wider landscape. These conditions represent 'high' suitability habitat for commuting and foraging bats as defined by good practice guidelines.

5.0 DISCUSSION & RECOMMENDATIONS

Sites with Ecological Designations

Sites with a statutory international and/or national designation (SAC, SPA, SSSI and Ramsar site)

- 5.1 As there are no sites afforded this type of designation within 10km of the Site and the type and scale of development being proposed does not fall into any of the development categories associated with the Impact Risk Zone that the Site is located, it can be concluded that the proposals would not affect any site afforded these designations.

Local Nature Reserves

- 5.2 The nearest LNR is located c.2.25km from the Site. This is considered to be sufficiently distant for there to be no risk of direct or indirect adverse effects on the LNR as a result of the proposed development.

Sites with a non-statutory local nature conservation designation.

- 5.3 The two Local Wildlife Sites within 1km of the Site boundary are over 500m distant from the Site and at this distance the type of development proposed (residential) is unlikely to have a direct or indirect adverse effect on these sites.

Habitats**Neutral Grassland**

- 5.4 The species composition of the neutral grassland within the Site is not indicative of the National Vegetation Classification (NVC) grassland communities that form the criteria that define Lowland Meadow Habitat of Principal Importance which form the selection criteria within the Staffordshire Local Wildlife Site selection guidelines.
- 5.5 Comparison between the recorded species and the LWS grassland selection guidelines show that there are insufficient indicator species present to meet the guidelines.

Marsh/Marshy Grassland

- 5.6 This is not a grassland type that forms one of the NVC communities that define grassland Habitats of Principal Importance. When assessed against the Staffordshire LWS grassland selection criteria, the grassland indicator species recorded and their abundance levels, result in a score of 10 points. The threshold for qualification as a LWS is 20, and for a Biodiversity Alert Site between 14 and 19. Therefore, although reasonably diverse, this habitat would not be considered to be of significant nature conservation interest.

Tall Ruderal Herbs

- 5.7 This is not a priority habitat type and is not of significant nature conservation interest.

Semi-natural Broadleaved Woodland (Wet Woodland)

- 5.8 The alder woodland within the Site is indicative of the NVC W6 *Alnus glutinosa* – *Urtica dioica* woodland, which is a Habitat of Principal Importance and therefore a priority for conservation. This woodland is located in the western side of the Site where built development is not proposed, and the emerging development layout would only result in a minor loss of the eastern block of woodland, and further development of the layout proposals would most likely result in a removal of this loss.

Scrub

- 5.9 The areas of scrub are typical of blocks of scrub that are ubiquitous in the wider landscape and are therefore not of any significant nature conservation importance.

Standing Open Water

- 5.10 The old mill race is not representative of a Habitat of Principal Importance and its potential importance for nature conservation would be more related to species than its importance as a habitat.

Invasive non-native species

- 5.11 Himalayan balsam was not noted within the proposed development area on the east side of the Site. Therefore, the presence of this Schedule 9 species will be more of an issue in terms of the proposed future management of the western side of the Site. Although control of this species is theoretically relatively easy because it is an annual and can therefore be destroyed by cutting or pulling before it sheds seed. However, in the riparian habitat there is a constant supply of seed brought down by the water and effective control is only achievable if undertaken on a catchment basis, with control starting at the headwater and then working downstream.

Species**Riparian Mammals (Otter and Water Vole)**

- 5.12 Whilst no evidence of otter was recorded during the survey, and the desk study did not reveal the presence of this species in the nearby wider landscape, the River Tean and the adjacent habitats in the western side of the site do provide very suitable conditions for this protected species. As the proposal is to retain and sympathetically manage this western part of the Site there would be no impact on otters if they were present but have been undetected, and there would be no negative change in the extent of suitable habitat for them.
- 5.13 The dense vegetation along the old mill race restricted the extent of the search for evidence of water vole. Whilst it is considered that the mill race provides sub-optimal conditions for water vole the surrounding habitat is good and there is a close association with the old mill pond to the south of the Site. In combination, the mill pond, mill race and surrounding habitat could provide suitable conditions and therefore additional survey work is recommended before the likely presence/absence of water vole can be reliably determined. Because water vole surveys are essentially a survey for riparian mammals, the recommended additional survey work would involve further assessment of the likely presence/absence of otter as well.

Great Crested Newt

- 5.14 The western part of the Site provides very suitable terrestrial habitat for GCN and until further investigation has been undertaken on the nearby off-site waterbodies their likely presence or absence within the Site cannot be determined. Therefore, additional survey work for this protected species is recommended.
- 5.15 This additional survey work would involve seeking access to the offsite ponds and then undertaking a Habitat Suitability Index (HSI) assessment for each waterbody. The results of this would then determine the need or otherwise for either an eDNA survey, or aquatic surveys. This would need to be done in early spring 2022 to coincide with the relatively short GCN survey period.

Reptiles

- 5.16 The western part of the Site and the proximity of the mill pond to the south form suitable conditions for grass snake. Consequently, additional survey work for reptiles is recommended. Although this western part of the Site will remain undeveloped, the proposals include sympathetic management of the area, and it is important that any management recommendations are informed by up-to-date baseline conditions.

Badger

- 5.17 Whilst there is currently no evidence of badger utilising the Site, this is a highly mobile species, and this situation could change at any time. Whilst a specific survey for badger is not considered necessary, during other recommended surveys a watching brief for signs of badger should be undertaken.

Bats

- 5.18 Although all of the mature trees are within the western part of the Site which will remain undeveloped, there is the potential for a roost to be present in a tree close to the edge of the development area. Therefore, it is recommended that a specific initial ground level assessment for potential roost features is undertaken on the mature trees within the Site.
- 5.19 The good practice guidelines¹⁸ indicate that for the habitats present and their location within a river valley, monthly activity surveys involving walked transects and static detectors, should be undertaken across the seven months of April-October. However, this core habitat will be retained and enhanced. Therefore, it is suggested that this could be scoped down to three seasonal surveys concentrating on the area that would be the boundary between the built development and the retained and enhanced areas.

Planning Policy**Biodiversity Nett Gain**

- 5.20 The Environment Bill is likely to achieve Royal Assent in the autumn 2021 (see Appendix A) and this will mandate a requirement for developments to achieve a minimum, measurable 10% net gain for biodiversity. Part 5 of Policy NE 1 within the Staffordshire Moorlands Local Plan¹⁹ expects developments to try and deliver a net gain in biodiversity. Consequently, this assessment has included a preliminary biodiversity net gain calculation.

Methodology

- 5.21 This has been based on the baseline habitats recorded during the 2021 survey and the Geoff Perry Appraisal Layout 23.04.2021 Drg, No. 227 Rev A.
- 5.22 The calculations have been undertaken using the Biodiversity Metric 3.0 Calculation Tool²⁰.
- 5.23 The habitat condition assessments that form a fundamental part of the calculation were undertaken using the relevant Condition Assessment Criteria within the Biodiversity Metric 3.0 Technical Supplement²¹.
- 5.24 Full details of the calculation methodology are provided in the Biodiversity Metric 3.0 – User Guide²².
- 5.25 The indicative habitats post development are shown on Figure 10300-E-03 and have involved the authors interpretation of what the greenspace component of the development area might be formed by. This interpretation has been guided by the need to maximise biodiversity gains within the development greenspace.

Results and Discussion

- 5.26 The preliminary calculation has determined that a small net gain of 2.54% would be achievable based on the indicative post development habitats shown on Figure 10300-E-03. However, the

calculation is showing that one of the Rules of the Biodiversity Metric 3.0 (Rule 3) has not been met and therefore 'trading down' will occur with the suggested approach, this is because the developable area sits on medium distinctiveness habitat and whilst it might be possible to deliver small areas of medium or high distinctiveness habitat within some of the developable area green infrastructure, it will not be possible to provide sufficient to meet Rule 3, this would require having to go an off-site location where the baseline habitats were of low distinctiveness.

- 5.27 Whilst not complying with Rule 3, the proposal is still showing a net gain, and proposes to bring nearly 50% of the site, which is currently formed by unmanaged, abandoned land, where all the habitats are in 'poor' condition, into long-term management using a mix of enhancing retained habitat and the creation of new habitats, all appropriate for a floodplain setting. From an ecological perspective, this is appropriate and makes more ecological sense than doing nothing in the western half of the site and transferring the compensation to an off-site location just to comply with Rule 3.
- 5.28 The Principles and Rules of the Biodiversity Metric 3.0 highlight the fact that the metric is there to inform decision making and should not exclude expert opinion and habitat creation and management proposals should be appropriate. These same Principles and Rules should allow it to be acceptable for Rule 3 to not be met in this circumstance and a local planning authority review of the final calculation would hopefully agree with this pragmatic view.
- 5.29 Achieving no net loss of biodiversity is of course not without a cost. Beyond the normal development green infrastructure delivery costs the proposal involves the management and creation of the following:

Habitat	Action	Area
Marsh/marshy grassland	Retained and enhanced	0.27ha
Neutral grassland	Retained and enhanced	0.20ha
Wet woodland	Retained and enhanced	0.70ha
Wildlife Ponds (Total of 4)	Create and manage	0.10ha
Reedbed (2 areas)	Create and manage	0.22ha
Wet woodland	Create and manage	0.24ha
Total		1.73ha

Alignment with planning policy.

National Planning Policy Framework

- 5.30 As the proposal will not have an adverse effect on any site afforded a statutory or non-statutory nature conservation designation and will deliver a net gain for biodiversity, it would appear to be aligned with the biodiversity requirements of the NPPF.

Staffordshire Moorlands District Council Planning Policy

- 5.31 Similarly, as there will be no adverse effect on any site afforded a statutory or non-statutory nature conservation designation and the proposal will seek to deliver a net gain in biodiversity, there would be alignment with parts 1 to 5 of Policy NE 1. The proposed habitat creation and subsequent

sympathetic management of the west side of the Site aligns with parts 6 to 8 and 10 of NE1. Part 9 is not relevant.

- 5.32 The proposal involves retention of the existing woodland and, with the exception of a small loss for access, the hedgerows. This aligns with the requirements of Policy NE 2 (see Appendix A) which seeks to ensure retention of such features.

6.0 APPENDIX A- RELEVANT LEGISLATION AND PLANNING POLICY

Legislation

6.1 Relevant legislation includes the following:

- The Conservation of Habitats & Species Regulations 2017 (as amended)²³;
- Council²⁴ Directive 92/43/EEC²⁵ (The Habitats Directive) as translated into UK law by The Conservation of Habitat and Species Regulations 2017 (as amended);
- Directive 2009/147/EC on the conservation of wild birds (codified version)²⁶ (The Birds Directive) as translated into UK law by The Conservation of Habitats and Species Regulations 2017 (as amended);
- Wildlife and Countryside Act 1981 (as amended) (WCA)²⁷;
- Countryside and Rights of Way Act 2000²⁸;
- Natural Environment and Rural Communities Act 2006 (NERC)²⁹;
- The Protection of Badgers Act 1992³⁰; and
- The Hedgerow Regulations 1997³¹.

Conservation of Habitats & Species Regulations 2017 (as amended)

6.2 The Conservation of Habitats & Species Regulations 2017 (as amended), including as amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019³². The purpose of this legislation is to provide protection for natural habitats and wild flora and fauna of international importance.

6.3 The '2019 Regulations' have amended the '2017 Regulations' which transpose Council Directive 92/43/EEC of May 1992 on the conservation of natural habitats and of wild fauna and flora (The Habitats Directive) to make them operable since 1 January 2021 when the UK left the European Union. The 2017 Regulations as amended by the 2019 Regulations are referred to hereafter as 'The Regulations'.

6.4 Under Regulation 43 of the Regulations, it is illegal to:

- Deliberately capture, injure, or kill any wild animal of an EPS;
- Deliberately disturb wild animals of an EPS (affecting ability to survive, breed or rear young) – disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young;
- Deliberately disturb wild animals of an EPS (impairing ability to migrate or hibernate) – disturbance of animals includes in particular any disturbance which is likely to impair their ability in the case of hibernating or migratory species to hibernate or migrate;
- Deliberately disturb wild animals of an EPS (affecting local distribution and abundance) – disturbance of animals includes in particular any disturbance which is likely to significantly affect the local distribution or abundance of the species to which they belong;
- Deliberately disturb wild animals of an EPS (whilst occupying a structure or place used for shelter or protection) – intentionally or recklessly disturb any wild animal while it is occupying a structure or place which it uses for shelter or protection; and

- Damage or destroy a breeding site or resting place an EPS.

The Wildlife and Countryside Act 1981 (as amended)

- 6.5 The Wildlife and Countryside Act 1981 (as amended) provides special protection of certain species. Under Part 1 Sections 1(1) and 1(2), all British bird species, their nests, and eggs (excluding some pest and game species) are protected from intentional killing, injury, or damage. Under Sections 1(4) and 1(5), special penalties are applied to bird species included in Schedule 1 of the Act, and protection is extended for these species to disturbance whilst building, in or near a nest and disturbance to dependent young.
- 6.6 Section 9 provides special protection for animal species other than birds that are listed on Schedule 5, and this includes via Section 9(4) protection against damage to “any structure or place which any wild animal (included in the schedule) uses for shelter and protection”²⁷, and against disturbance whilst in such places. The Countryside and Rights of Way Act 2000 (CRoW Act)²⁸ amends Section 1(5) of the Wildlife and Countryside Act 1981 by introducing a new offence of ‘reckless’ disturbance to protected wildlife and making certain offences punishable by imprisonment.
- 6.7 Invasive species are covered under Section 14 of the Act, and Section 14(2) makes it illegal to cause to grow in the wild any plant listed in Part II of Schedule 9.
- 6.8 Part 2 of the Act provides protection for areas of the countryside recognised for their nature conservation or geological value, including Sites of Special Scientific Interest (SSSIs) and National Parks.

Natural Environment and Rural Communities Act 2006

- 6.9 The NERC Act provides protection for habitats or species that are considered to be of principal importance for the purpose of conserving biodiversity (referred to here as; Habitats of Principal Importance (HoPI) and Species of Principal Importance (SoPI)). The legislation requires public authorities, including local planning authorities, to conserve biodiversity when exercising their functions. A list of habitats/species of principal importance, based on the former UK Biodiversity Action Plan (BAP) lists of priority habitats and species, have been produced by the Secretary of State in consultation with Natural England.

The Protection of Badgers Act 1992

- 6.10 The Protection of Badgers Act 1992 provides protection to badgers and their setts. This legislation is primarily concerned with animal welfare issues and the need to protect badgers from activities such as baiting and deliberate harm. The Act makes it an offence to:
- Wilfully kill, injure, take, possess, or cruelly ill-treat a badger, or attempt to do so; and
 - To interfere with a sett intentionally or recklessly (this includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

The Hedgerow Regulations 1997

- 6.11 The Hedgerow Regulations 1997 provide protection for important hedgerows in the countryside by controlling their removal through a system of notification and by providing criteria to determine whether individual hedges are ‘important’. The criteria are formed by two parts: ‘Archaeology and history’ and ‘Wildlife and Landscape’.

Emerging Legislation

Environment Bill

- 6.12 The Government has stated its intention to mandate ‘net gains for biodiversity’³³. This will be achieved via Part 6 of the proposed Environment Bill, which will legislate for the creation of a 10% net gain to be applied through the planning system³⁴. The Government have publicly committed to achieving Royal Assent for the bill ahead of the United Nations Climate Change Conference (COP26) which begins on 1st November 2021 and at the time of writing progression of the bill was close to report stage.
- 6.13 In response to comments received during a ten-week public consultation on ‘biodiversity net gain’, the Government is proposing a two-year transition period from when ‘net gain’ is mandated³⁵. This reflects the fact that local authorities and other stakeholders will need time to establish the systems and protocols required to administer biodiversity offsetting within their areas. This will include things like the development of strategic areas for habitat creation, which will form the basis of Local Nature Recovery Strategies (LNRS) which Clause 91 of the Environment Bill will create³⁴. On that basis, it would seem reasonable to assume that if there is no specific local planning policy requirement for a 10% BNG to be delivered, the requirement from national legislation might not be in place until the end of 2023.

Planning Policy

National Planning Policy

- 6.14 The National Planning Policy Framework (NPPF)³⁶ sets out the Government’s planning policies for England and how these are expected to be applied. Embedded within the NPPF is a ‘*presumption in favour of sustainable development*’. The NPPF considers that to achieve this, the planning system has three overarching objectives: economic, social, and environmental. It considers these to be inter-dependent with a need for them to be mutually supportive of one another. For specific development proposals the NPPF considers applying a presumption in favour of sustainable development means:

“...c) approving development proposals that accord with an up to date development plan without delay...” [para.11].

“They [decision makers] should use the full range of planning tools available, including brownfield registers and permission in principle, and work proactively with applicants to secure developments that will improve the economic, social and environmental conditions of the area”. [para. 38.].

“When determining planning applications, local planning authorities should apply the following principles:..

...d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate...” [para. 180].

- 6.15 In terms of ‘environmental objectives’ (one of the three core planning objectives), the NPPF states that:

“Planning policies and decisions should contribute to and enhance the natural and local environment by:

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate”. [para 174].

Local Planning Policy

- 6.16 The Staffordshire Moorlands Local Plan, adopted on 9th September 2020 “...sets out the development strategy, strategic and development management policies and land designations for the District.”. Policy NE 1 Biodiversity and Geological Resources and Policy NE 2 Trees, Woodland and Hedgerows represent the two key local planning policies concerned with biodiversity matters.

Policy NE 1

Biodiversity and Geological Resources

The biodiversity and geological resources of the District and neighbouring areas will be conserved and enhanced by positive management and strict control of development (and having regard to relevant ecological evidence) by:

1. *By ensuring all development schemes have regard to the surveys and actions recommended by the Council's Extended Phase 1 Habitat Surveys and Local Wildlife Assessment and include measures for protection and enhancement of site biodiversity and protection of any geodiversity as appropriate.*
2. *Resisting any proposed development that could have an adverse effect on the integrity of an International site (or successor designation) alone or in combination with other plans or projects unless it can be demonstrated that the legislative provisions to protect such sites can be fully met. Any development with a potential to adversely affect a European site/s through construction activities should ensure that Ciria construction guidelines are followed including environmental good practice on control of dust and water pollution.*
3. *The Council will not normally permit any development proposal which would directly or indirectly (either individually or in combination with other developments) have an adverse effect on a Site of Special Scientific Interest. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of*

special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest.

4. Conserving, and enhancing regional and locally designated sites. The Council will not permit any development proposal which would directly or indirectly result in significant harm to geological and biodiversity conservation interests, unless it can be demonstrated that:

a) there is no appropriate alternative site available; and

b) all statutory and regulatory requirements relating to any such proposal have been satisfied; and

c) appropriate conservation and mitigation measures are provided; or if it is demonstrated that this is not possible

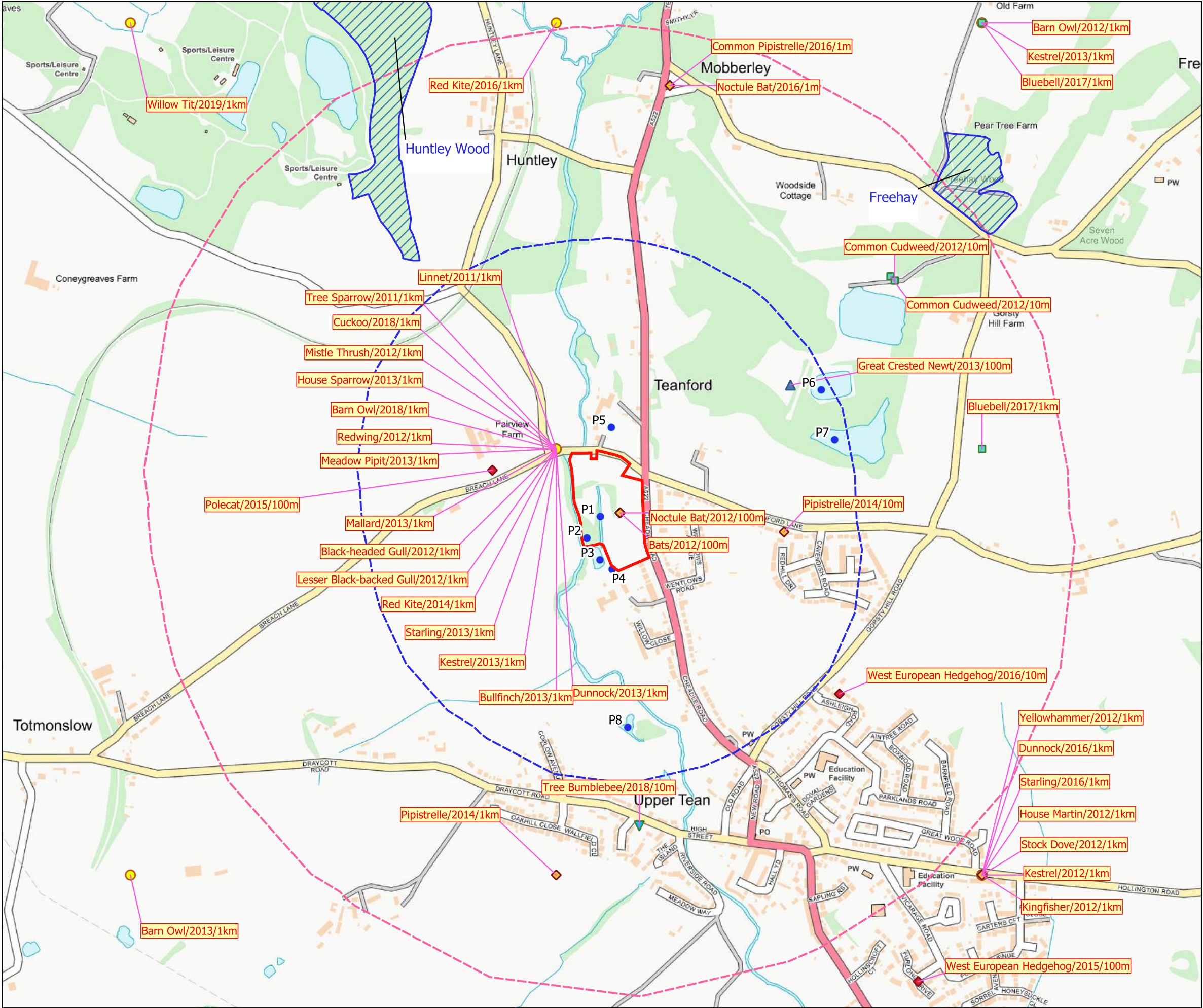
d) the need for, and benefit of, the development is demonstrated to clearly outweigh the need to safeguard the intrinsic nature conservation value of the site and compensatory measures are implemented.

5. Expecting all development where possible seeks to deliver a net gain in biodiversity proportionate to the size and scale of the development. In circumstances where adverse impacts are demonstrated to be unavoidable, developers will be required to ensure that impacts are appropriately mitigated, with suitable compensation

7.0 APPENDIX B REFERENCES

- ¹ CIEEM. (2017). *Guidelines for Preliminary Ecological Appraisal – Second Edition – December 2017*. Winchester: CIEEM. <https://cieem.net/wp-content/uploads/2019/02/Guidelines-for-Preliminary-Ecological-Appraisal-Jan2018-1.pdf>.
- ² SER is the Ecological Records Centre for Staffordshire and incorporates the Staffordshire Biological Records Centre and Geological Records Centre.
- ³ [Online]. <http://magic.defra.gov.uk/>
- ⁴ [Online]. <https://www.ordnancesurvey.co.uk/osmaps/>
- ⁵ [Online]. <https://www.bing.com/mapspreview>.
- ⁶ Application available online at: http://www.google.co.uk/intl/en_uk/earth/
- ⁷ Her Majesty's Stationary Office (HMSO). 2006. The Natural Environment and Rural Communities Act 2006. Available from: <http://www.legislation.gov.uk/ukpga/2006/16/contents>
- ⁸ JNCC. (1990). *Handbook for Phase 1 habitat survey – a technique for environmental audit*. Peterborough: JNCC
- ⁹ Clements, D. & Toft, R. (1992). *Hedgerow Evaluation and Grading System (HEGS) – a methodology for the ecological survey, evaluation and grading of hedgerows*. Countryside Planning and Management
- ¹⁰ *The Hedgerow Regulations 1997 – Statutory Instrument 1997 No. 1160*. [Online]. London: HMSO. Available at: <http://www.legislation.gov.uk/uksi/1997/1160/contents/made>.
- ¹¹ DEFRA. (1997). *The Hedgerow Regulations 1997. A Guide to the Law and Good Practice*. London: HMSO
- ¹² *The Wildlife and Countryside Act 1981 (as amended)*. [Online]. London:HMSO Available at <http://www.legislation.gov.uk/ukpga/1981/69>
- ¹³ *The Protection of Badgers Act 1992 (as amended)*. [Online]. London: HMSO Available at: <http://www.legislation.gov.uk/ukpga/1992/51/contents>
- ¹⁴ *The Conservation of Habitats and Species Regulations 2017– Statutory Instruments 2017 No.1012*. [Online]. London: The Stationary Office Limited. Available at: https://www.legislation.gov.uk/uksi/2017/1012/pdfs/uksi_20171012_en.pdf
- ¹⁵ Strachan, R, Moorhouse, T, & Gelling, M. (2011). *Water Vole Conservation Handbook – Third Edition*. Oxford: WCRU, University of Oxford.
- ¹⁶ Dean, M., Strachan, R., Gow. and Andrews, R. (2016) *The Water vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series)*. London: The Mammal Society
- ¹⁷ Ward D., Holmes N., & Jose P. (eds). (1994). *The New Rivers and Wildlife Handbook* RSPB: Sandy
- ¹⁸ Collins, J. (Ed.). (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines. (3rd Edition)*. London: Bat Conservation Trust.
- ¹⁹ Staffordshire Moorlands District Council. (2014). Staffordshire Moorlands Local Plan – Adopted September 2020. Available at: https://www.staffsmoorlands.gov.uk/media/6155/Adopted-Local-Plan/pdf/Adopted_Local_Plan.pdf?m=1601645140880
- ²⁰ Natural England. (2021). *Biodiversity Metric 3.0 – Calculation Tool* [Excel spreadsheet] <http://nepubprod.appspot.com/file/6242570327031808>
- ²¹ Panks, S., White, N., Newsome, A., Potter, J., Heydon, M., Mayhew, E., Alvarez, M., Russell, T., Scott, S.J., Treweek, J., Butcher, B., and Stone, D. (2021). *Biodiversity Metric 3.0: Auditing and accounting for biodiversity value: technical supplement*. Natural England Joint Publication JP039. Online. Available at: <http://nepubprod.appspot.com/file/4739529476145152>
- ²² Panks, S., White, N., Newsome, A., Potter, J., Heydon, M., Mayhew, E., Alvarez, M., Russell, T., Scott, S.J., Treweek, J., Butcher, B., and Stone, D. (2021). *Biodiversity Metric 3.0: Auditing and accounting for biodiversity value: User Guide*. Natural England Joint Publication JP039. Online. Available at: <http://nepubprod.appspot.com/file/6449751093673984>
- ²³ The Conservation of Habitats and Species Regulations 2017. London: HMSO. <http://www.legislation.gov.uk/uksi/2017/1012/contents/made>
- ²⁴ The Council of the European Communities
- ²⁵ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. *Official Journal L 206*, 22/7/1992 pp. 7–50. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043>

- ²⁶ Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version). *Official Journal L 20*, 26/01/2010 pp. 7–25. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0147>
- ²⁷ The Wildlife and Countryside Act 1981 (as amended). London: HMSO. <http://www.legislation.gov.uk/ukpga/1981/69>
- ²⁸ Countryside and Rights of Way Act 2000. London: HMSO. <http://www.legislation.gov.uk/ukpga/2000/37/contents>
- ²⁹ Natural Environment and Rural Communities Act 2006. London: HMSO. <http://www.legislation.gov.uk/ukpga/2006/16/contents>
- ³⁰ Protection of Badgers Act 1992 (as amended). London: HMSO. <http://www.legislation.gov.uk/ukpga/1992/51/contents>
- ³¹ The Hedgerow Regulations 1997. London: HMSO. <http://www.legislation.gov.uk/uksi/1997/1160/contents/made>
- ³² The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. London: HMSO. Available at: <https://www.legislation.gov.uk/uksi/2019/579/contents/made>
- ³³ GOV.UK. (2019). *Spring Statement 2019: what you need to know*. <https://www.gov.uk/government/news/spring-statement-2019-what-you-need-to-know>
- ³⁴ Smith, L. (2019). *Commons Library Analysis of the Environment Bill 2019-20 – Briefing Paper Number CBP-8712*. <http://researchbriefings.files.parliament.uk/documents/CBP-8712/CBP-8712.pdf>
- ³⁵ DEFRA. (2019). *Net gain. Summary of responses and government response. July 2019*. London: Department for Environment, Food & Rural Affairs. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/819823/net-gain-consult-sum-resp.pdf
- ³⁶ Ministry of Housing, Communities and Local Government. (2021). *National Planning Policy Framework*. London: Ministry of Housing, Communities and Local Government. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf



This drawing is the property of FPCR Environment and Design Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of FPCR Environment and Design Ltd.

Ordnance Survey Open Data ©2021

Key

Site Boundary

1km radius from Site boundary

500 m radius from Site boundary

Local Wildlife Site

Ponds (actual and potential)

**Protected & Priority Species
(Name/Year/Record Precision)**

- amphibian
- bird
- flowering plant
- insect - hymenopteran
- mammal
- mammal - bat

Local Wildlife Site and species data supplied by Staffordshire Ecological Record

-	19.07.21	initial draft	NJL/NJL
rev	date	comment	drm/chk

fpcr

client

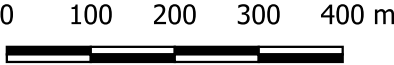
Keepmoat

project

Cheadle Rd,
Upper Tean

drawing title

CONSULTATION RESULTS PLAN



drawing / figure number
10300-E-01

rev
-
print date
21/7/2021



This drawing is the property of FPCR Environment and Design Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of FPCR Environment and Design Ltd.

Ordnance Survey Open Data ©2021

Key

 Site Boundary

Habitats

 Scrub: Scattered

 Other Tall Herb and Fen - Tall Ruderal

 Scrub: Dense/continuous

 Marsh/marshy grassland

 Neutral Grassland

 Woodland: Broad-leaved - Semi-natural

 Standing Open Water

A	30.07.21	Mill race added	NJL/NJL
-	21.07.21	initial draft	NJL/NJL
rev	date	comment	drn/chk



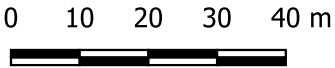
client
Keepmoat
project
Cheadle Rd,
Upper Tean
drawing title
HABITAT PLAN

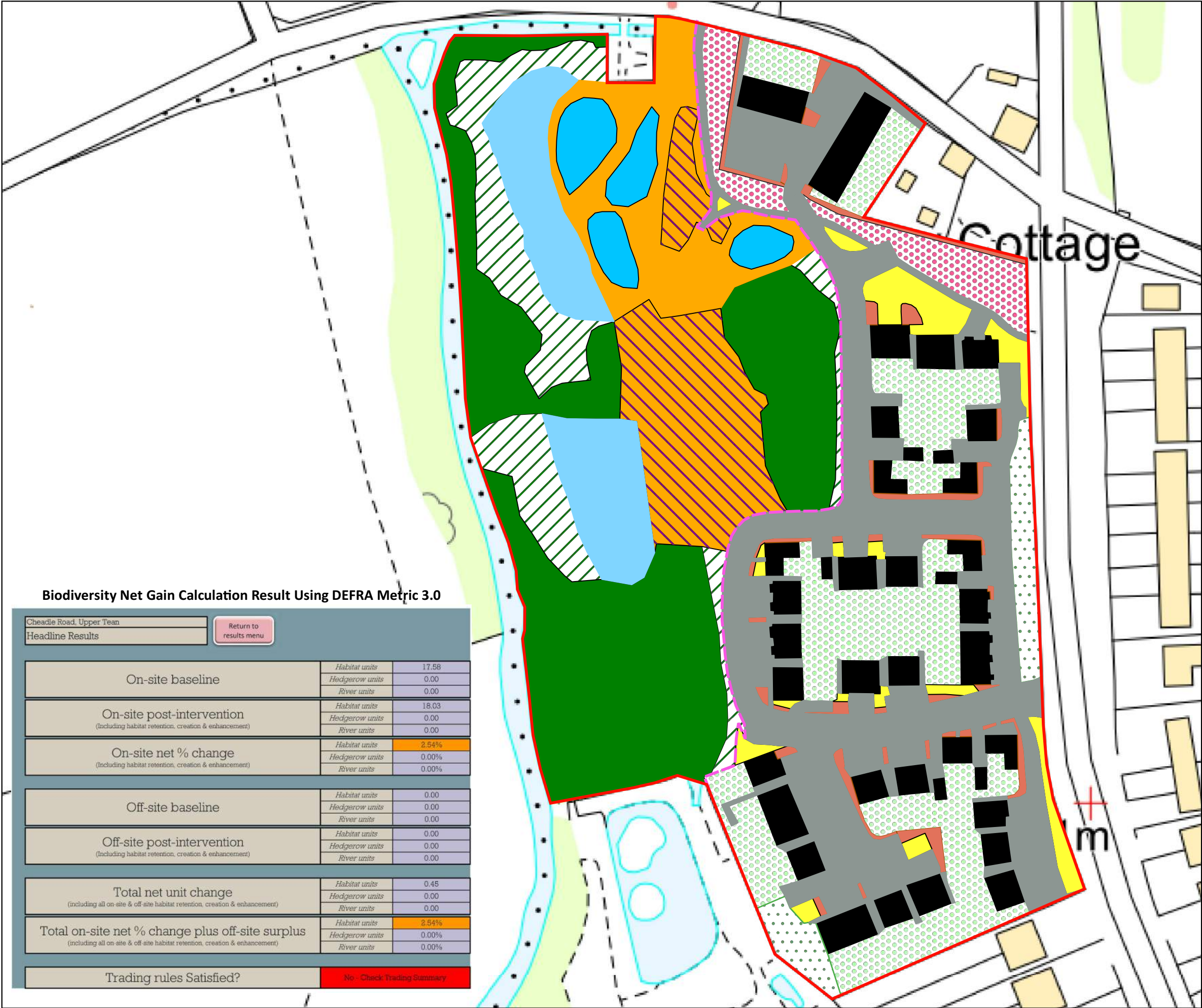


drawing / figure number
10300-E-02

rev
-

print date
30/7/2021





This drawing is the property of FPCR Environment and Design Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of FPCR Environment and Design Ltd.

Ordnance Survey Open Data ©2021

Key

- Site Boundary
- Development edge (Boundary between development and Ecological Mitigation Area)

Ecological Mitigation Area Habitats (1.7292 Ha)

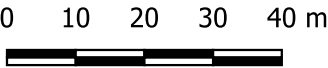
- Enhanced Retained Marsh/marshy grassland (0.2701 Ha)
- Enhanced Retained Neutral Grassland (0.1968 Ha)
- Enhanced Retained Wet Woodland (0.7049 Ha)
- New Pond (Priority Habitat) (0.0951 Ha)
- New Reedbed (0.2180 Ha)
- New Wet Woodland (0.2443 Ha)

Development Area Habitats (1.8679 Ha)

- Homes & garages (0.3404 Ha)
- Roads and drives (0.7228 Ha)
- Vegetated garden (0.4422 Ha)
- Landscaping shrubs (0.0822 Ha)
- Urban plantation (0.0791 Ha)
- Amenity grassland (0.0975 Ha)
- Wildflower Grassland (0.1037 Ha)

-	21.07.21	initial draft	NJL/NJL
rev	date	comment	drn/chk

Biodiversity Net Gain Calculation Result Using DEFRA Metric 3.0		
Cheadle Road, Upper Tean		
Headline Results		
On-site baseline	Habitat units	17.58
	Hedgerow units	0.00
	River units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	18.03
	Hedgerow units	0.00
	River units	0.00
On-site net % change (Including habitat retention, creation & enhancement)	Habitat units	2.54%
	Hedgerow units	0.00%
	River units	0.00%
Off-site baseline	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.45
	Hedgerow units	0.00
	River units	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	2.54%
	Hedgerow units	0.00%
	River units	0.00%
Trading rules Satisfied?	No - Check Trading Summary	



client

Keepmoat

project

Cheadle Rd,
Upper Tean

drawing title

INDICATIVE POST DEVELOPMENT
HABITATS

drawing / figure number

10300-E-03

rev

-

print date

21/7/2021