HABITAT WORKS

ENVIRONMENTAL CONTRACTING

Kexbrough Farms

Ecology Report

3rd Issue

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Kexbrough Farms
Ecology Report

Summary

This Preliminary Ecological Appraisal Report has been produced to provide the client with an appraisal of any potential ecological constraints associated with the site and its use and considers data collected from data search and consultation along with a dedicated field survey.

The habitats on site are man-made and of low ecological value. The semi-natural habitats bordering the site have some potential for use by common bird species and hedgehog.

Baseline biodiversity calculations for the site demonstrated an biodiversity unit score of 1.16 Habitat Units (HU) for area-based habitats and 0.39 Hedgerow Units (HeU) for linear habitats. The proposed development of the site will result in a net increase in “soft landscaping” and achieved a biodiversity unit score of 1.25 HU and 0.69 HeU, representing an biodiversity net gain of 7.37% and 76.76% in HU and Heu, respectively.

Introduction

Habitat Works Ltd was commissioned by ADP to undertake an ecological survey of Town Hall Farm and Kexbrough Hall Farm, in Kexbrough, Barnsley. The work is required to inform an application for the proposed redevelopment of the site into residential units.

The purpose of the survey was to obtain an up to date ecological information relating to the site to inform the application.

This report documents the findings of survey and evaluates the likely existing ecological interests of the site in line with CIEEM (2017) Guidelines for Preliminary Ecological Appraisal and with reference to BSI British Standards Publication BS 42020:2013 Biodiversity - Code of practice for planning and development.

Methods

Desk Study

Desk study was undertaken to inform the requirements for survey and obtain additional ecological information outside the scope of field survey. The following sources were consulted to obtain relevant ecological information from within 1.5 km of the study area:

- Barnsley Biological Records Centre (C/O Sheffield BRC);
- Multi Agency Geographic Information Centre website (www.magic.gov.uk);
- Ordnance Survey

The following information was sought and considered:

- records of protected species and scarce species;
- records of national or local Biodiversity Action Plan (BAP) species;
- details of any statutory sites of ecological interest e.g. Sites of Special Scientific Interest (SSSI), Special Protection Area (SPA) etc., and
- details of any non-statutory sites of ecological interest e.g. Sites of Importance for Nature Conservation (SINC), Local Wildlife Sites (LWS) etc.

Only receptors considered to be within the zone of influence of the proposed scheme are presented within this report. Full records can be viewed on request.

Field Survey

Ecological field survey was undertaken by Nick Birkinshaw, ACIEEM on 26th September 2020 and followed the CIEEM GPEA document (CIEEM, 2013) and BS 42020:2013 document (BSI, 2013). Nick is an accomplished ecologist with over 25 years' professional experience in undertaking a wide range of surveys and assessments.

An extended Phase 1 Habitat Survey of the site was undertaken. The habitats and vegetation types present were recorded, together with an indication of their relative abundance. This survey method aims to characterise habitats and communities present and is not intended to provide a complete list of all species occurring across the site.

Plant species recorded were classified according to the subjective method of DAFOR abundance ratings. The standardised terms are as follows:

- D Dominant
- A Abundant
- F Frequent
- O Occasional
- R Rare

Notable, rare or scarce plant species were highlighted if present. Evidence of protected species or species of nature conservation importance was recorded where present at the time of survey. The information is presented using target notes (TN), locations of which are shown on Figure 1.

Invasive plant or animal species listed on Schedule 9 of the Wildlife and Countryside Act (1981) (as amended) were recorded as seen.

Protected and Key Species Survey

All signs of protected species or groups encountered during the survey visit other than bats were recorded. This included observations of tracks or other signs of species such as badger, which may be visible at the time of survey. The structure and quality of the habitats present were assessed for their suitability to support animal groups, paying particular attention to detecting signs of occupation by, or suitability for, protected species. In addition, a note was made of any animals or flora of conservation interest not protected by UK or European legislation.

A separate bat survey of the site was undertaken a licensed bat ecologist and provided separately from this report.

Limitations

This report serves to indicate the value of the site in nature conservation terms based upon the survey data gathered. As with any survey of this kind, the information collected defines the habitat types and quality and is not intended to be a record of every species present. The survey was undertaken at the end of the botanical survey season, however, due to the built nature of the site and low ecological value of semi-natural habitats this did not affect survey accuracy.

Species specific groups, such as the local badger group, were not contacted for detailed records. However, the combination of data obtained is considered sufficient to achieve the survey objectives and accurately map potential habitat for protected species and help recommend and target further detailed studies.

It was not possible to obtain full access to all areas of the farms due to minor building works and aggressive animals. Access could not be gained to the rear of Town Hall Farm, and habitat features were inspected using close focussing binoculars. Due to the man-made nature of the habitats this did not affect ability to identify any habitats or their condition using this methodology.

It was not possible to access the pond outside of the application to the south of Kexborough Hall Farm due to health and safety factors, however a HSI assessment was undertaken using available information. It is considered that the HSI assessment combined with lack of local records or licence applications and the unsuitable nature of the surrounding landscape enabled a sound professional judgement to be made.

As the application site comprises two active farm yards with minimal semi-natural habitats, it is considered that sufficient information was obtained through the survey to fulfil the purpose of this report and to complete the biodiversity unit calculator.

The Defra biodiversity calculator has its own inherent limitations. The outputs of the metric are not absolute values but provide a proxy for the relative biodiversity worth of a site pre- and post-intervention. The metric does not explicitly consider species, rather it uses broad habitat categories as a proxy for the biodiversity ‘value’. Therefore biodiversity enhancements through incorporation of artificial habitats such as bat and bird boxes are not adequately considered.

Assessment methodology

Biodiversity value

The value and sensitivity of ecological features was determined based on the guidance given in 'Guidelines on Ecological Impact Assessment' (IEEM, 2006). Individual ecological receptors (habitats and species that could be affected by the proposed development) were assigned levels of importance for nature conservation in one of the following categories:

- International
- UK
- National
- County
- District
- Local, or
- At site level only

For a given receptor determination of value includes consideration of the size, conservation status and quality of the species or feature.

Valuation of Habitats

Some sites are automatically assigned a nature conservation value through designation and the reason for designation is taken into account in EcIA. Designated sites are considered at the following levels:

- International – Special Areas of Conservation (SAC), Special Protected Areas (SPA) and Ramsar Sites. World Heritage Sites also are considered to be of international value at the site level, but not necessarily in terms of their ecological value.
- National – Sites of Special Scientific Interest (SSSI) in England, Scotland or Wales and Areas of Special Scientific Interest (ASSI) in Northern Ireland
- County or District – sites designated by Local Authorities or County Wildlife Trusts and others

Habitats that are not subject to specific nature conservation designations have been valued against published selection criteria where possible, including the following:

- Habitats Directive, 1992;
- Guidelines for the section of biological SSSI, and
- Species and habitats included in the Section 41 list (list of species and habitats of principal importance in England, as required under Section 41 of the Natural Environment and Rural Communities [NERC] Act, 2006).

In determining values of habitats consideration has also been given to national and local Habitat Action Plans and the appropriate Ancient Woodland Inventory (AWI) in conjunction with critical appraisal of the size, status and quality of the habitat affected.

Species

In ascribing values to populations of species consideration has been given to the legal status of species, as well as their size and status on the site and within the geographic area. Certain species receive

protection under various pieces of legislation and this has been taken into account when determining value. Legislation considered includes:

- The Habitats Directive, 1992;
- The Conservation (Natural Habitats &c.) Regulations, 2010 (as amended);
- The Wildlife and Countryside Act, 1981 (as amended);
- The NERC Act, 2006, and
- The Countryside and Rights of Way Act, 2000.

The rarity of the species in the context of status, i.e. whether populations of a species are declining either nationally or at a more local level has also been considered.

The presence of invasive alien species or injurious weeds is considered to represent an ecological disbenefit.

Biodiversity Calculations

Baseline

Information on habitat type and quality that is required to complete a biodiversity calculation in accordance with DEFRA guidance was collected during the survey. The information was used to populate the DEFRA biodiversity metric 2.0 (BM 2.0) in accordance with the published guidance[1].

Where applicable, the condition of each habitat type was assessed and categorised as either good, fairly good, moderate, fairly poor or poor. The assessment was made using the criteria within 'BM2.0 Technical Supplement'[2], this provided specific assessment criteria for each broad habitat type (1- 12 specific criteria (C1 – 12) are provided for each defined broad habitat and linear features (including function group criteria for hedgerows (A, B, C and D)).

For sparsely vegetated ruderal habitats, condition assessment is based on the most dominant vegetation type present as per the published guidance. If bare ground is considered the most dominant substrate, condition is assessed using the 'urban' criteria.

Measuring Change in Biodiversity

Post-development landscaping plans (Figure 2) and baseline habitats were referred to in order to calculate the area, type and condition of each predicted habitat following development and the implementation of an appropriate 30-year management plan.

BM2.0 was used to calculate the likely net change in biodiversity value of the application site by comparing the existing baseline against the predicted post-restoration units which would be provided by implementation of the restoration plan. Net change in biodiversity value was then calculated by subtracting the forecasted future biodiversity value of the site, post restoration, from its current biodiversity value ('baseline').

Although there is no requirement for formal training or a level of competence defined within the DEFRA methodology, it should be noted that the survey and calculation was undertaken by an

[1] Natural England (2019). The Biodiversity Metric 2.0. Available at: http://publications.naturalengland.org.uk/publication/5850908674228224

[2] Natural England (2019) Ian Crosher. A, et al. *The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: technical supplement* (Beta version, July 2019). Natural England

experienced ecologist with sufficient expertise to collect the relevant information and to complete the calculator.

Policy and Legislation

This appraisal has been undertaken with consideration of relevant national and local policies and legislation

Policy

Barnsley Local Plan

Policy BIO1 Biodiversity and Geodiversity

Development will be expected to conserve and enhance the biodiversity and geological features of the borough by:

- Protecting and improving habitats, species, sites of ecological value and sites of geological value with particular regard to designated wildlife and geological sites of international, national and local significance, ancient woodland and species and habitats of principal importance identified via Section 41 of the Natural Environment & Rural Communities Act 2006 (for list of the species and habitats of principal importance) and in the Barnsley Biodiversity Action Plan.
- Maximising biodiversity and geodiversity opportunities in and around new developments.
- Conserving and enhancing the form, local character and distinctiveness of the boroughs natural assets such as the river corridors of the Don, the Dearne and Dove as natural floodplains and important strategic wildlife corridors.
- Proposals will be expected to have followed the national mitigation hierarchy (avoid, mitigate, compensate) which is used to evaluate the impacts of a development on biodiversity interest.
- Protecting ancient and veteran trees where identified.
- Encouraging provision of biodiversity enhancements.

Development which may harm a biodiversity or geological feature or habitat, including ancient woodland and aged or veteran trees found outside ancient woodland, will not be permitted unless effective mitigation and/or compensatory measures can be ensured.

Development which adversely effects a European Site will not be permitted unless there is no alternative option and there are imperative reasons of overriding public interest (IROPI).

National Planning Policy Framework

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these are expected to be applied. The NPPF creates a presumption in favour of granting planning permission for sustainable developments, unless any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies within the framework as a whole or if specifically restricted within the NPPF.

Section 11 of the NPPF deals with Conserving and enhancing the natural environment.

Paragraph 9 states that "*Pursuing sustainable development involves seeking positive improvements in the quality of the built, natural and historic environment, as well as in people's quality of life, including (but not limited to)….*

- moving *from a net loss of bio-diversity to achieving net gains for nature…*".

Paragraph 109 states that "*The planning system should contribute to and enhance the natural* and *local environment by*:

- protecting *and enhancing valued landscapes, geological conservation interests and soils;*
- recognising *the wider benefits of ecosystem services;*
- *minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;…"*

Paragraph 113 states that "*Local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites, so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks*".

Legislation

EC Directive 79/409 on the Conservation of Wild Birds (The Birds Directive) 1979

The Birds Directive aims to protect all bird species and their habitats within the member states. In particular, it requires special protection for a range of species (listed in Annex I of the Directive) and requires member states to establish SPAs for the protection of internationally important bird habitats. The Birds Directive is implemented in the UK by the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Species and Habitats Regulations 2010 (as amended).

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora (The Habitats Directive) 1992

The EU Habitats Directive aims to provide protection for a range of natural and semi-natural habitats and species. Its Annexes identify a number of priority habitats and species requiring special protection. Member states are required to identify sites within their territory for designation as SACs for the protection of these habitats and species. The Habitats Directive is implemented in the UK by Conservation of Habitats and Species Regulations 2010 (as amended)

Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 allows for the designation of National Nature Reserves (NNRs) and Sites of Special Scientific Interest (SSSIs), to protect areas containing habitats and species of national or international importance. All SPAs and SACs identified under the EC Directives are also SSSIs.

The 1981 Act also provides for the protection of certain species. These include a number of specially protected birds (listed in Schedule 1). Other animals are listed in Schedule 5 and a number of plant species under Schedule 8.

The Conservation of Species and Habitats 2017

The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations) provide domestic implementation of the EU Habitats Directive 1992. Under the Regulations, species listed in Annex II of the Directive are given strict protection in the UK as European protected species and it is an offence intentionally or recklessly to disturb or to harm a European protected species.

Projects which are likely to affect European protected species are subject to particular assessment criteria under the Habitats Directive and the Habitats Regulations. A mechanism for implementing a derogation of the species protection measures of the Directive – by a system of licensing – is

incorporated into the Regulations. Under Part 5 of the Regulations a licence may be granted for a project affecting a European protected species for specific purposes.

Natural England is the licensing authority for derogation licenses. A derogation licence may only be granted, provided:

- that there is no satisfactory alternative, and
- the action authorised will not be detrimental to the maintenance of the population of a European protected species at a favourable conservation status in its natural range.

All public authorities are required to have regard to the provisions of the Habitats Directive in the exercise of their functions under Regulation 9 of the Habitats Regulations. Guidance on the application of the Habitats Regulations is set out in the Joint ODPM and Department for the Environment, Food and Rural Affairs (DEFRA) circular 06/2005 & 01/2005.

Natural Environment and Rural Communities Act 2006

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England.

The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under Section 40 of the NERC Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

Protection of Badgers Act 1992

Under the Protection of Badgers Act 1992 all badgers and their setts are protected from disturbance. The Act also includes provisions to allow NE to grant licences permitting interference with a badger sett in the course of development. Such a licence will normally incorporate conditions to ensure that undue disturbance and suffering to badgers is avoided in the course of the development works.

Hedgerow Regulations 1997

Under the Hedgerow Regulations 1997, provision is made for the notification of "*important*" hedgerows. To qualify for notification, hedgerows must fulfil a range of criteria relating to their historical, landscape or wildlife character. In accordance with the Regulations, the intention to remove any hedgerow should be notified to the LPA via a hedgerow removal notice. The planning authority may issue a Hedgerow Retention Notice to prevent the loss of an "*important*" hedgerow. Where permission is granted to remove an "*important*" hedgerow, the LPA may impose conditions to mitigate the loss.

Baseline Conditions

The existing conditions at the site are set out below. Findings of desk study are incorporated within the report as appropriate.

Site Description

The site comprises two separate dairy farms (Town Farm and Kexbrough Hall Farm) comprising existing farm buildings of various construction, areas of hardstanding and associated residential buildings and gardens.

Town Farm is primarily comprised of portal and modern framed sheds, with a stone-built farmhouse located to the north west of the site. A stone-built cattle holding barn is located to the east of the site on the corner of Cawthorne Lane.

Kexbrough Hall Farm includes a listed long barn and farmhouse. The residential properties around the farms are a mixture of styles and materials, consisting of stone, red brick and render, bungalows, houses, detached, semi-detached, terraces and courtyards.

The two sections of the application site are separated by Cawthorne Lane.

Protected Sites

There are no statutory designated sites present within 1.5 km of the site.

There is one non-statutory designated site (Daking Brook/Cawthorne Dike) within 1.5 km of the site. The brook passes approximately 700m from the site boundary at its nearest point and is designated for the potential presence of white clawed crayfish *Austropotamobius pallipes.*

Habitats

Habitats within the combined site comprise primarily man-made habitats including hard standing and buildings. There are approximately 17 trees or tree groups across the site that will be retained within the proposed scheme.

An area of re-planted ancient woodland is located in Cawthrone Park, approximately 470 m to the west of the site boundary.

Kexbrough Hall Farm

This section of the lies to the east of Cawthorne Road contains six separate buildings connected by concrete hardstanding. Buildings are described in detail within the separate bat survey reports.

There are two small areas of ephemeral short perennial/disturbed habitats that are used for storage within the site (TN1 and TN2). Species noted include occasional common nettle *Urtica dioica,* willow herb *Epilobium sp,* hogweed *Heracleum sphondylium* and dock *Rumex sp*.

The farmhouse is surrounded by closely mown amenity grassland and introduced shrubs and ornamental trees including apple, cherry and yew *Taxus baccata*.

Town Farm

This section of the site contains six separate buildings connected by a large expanses of concrete hardstanding. All buildings are fully described within the separate bat survey report.

The farmhouse is surrounded by amenity grassland gardens with ornamental planting and scattered scrub and trees comprising occasional cherry *Prunus sp,* apple *Malus domestica,* hawthorn *Cratageus*

monogyna, sycamore *Acer pseudoplatanus,* oak *Quercus robur* and pine *Pinus spp.* A strip of scattered scrub and semi-mature trees is present along the boundary of Cawthorne Road comprising occasional ash *Fraxinus excelsior,* field maple *Acer campestre* and sycamore along with locally dominant ivy *Hedera helix* (TN3) and occasional elm *Ulnus sp.*

There are two areas of poor semi improved grassland within the site. The area adjacent to Churchfield Road (TN4) comprises false oat-grass *Arrhenatherum elatius* and perennial rye grass *Lolium perenne,* locally frequent cow parsley *Anthriscus sylvestris*, and occasional nettle and dock. A species poor hawthorn hedge approximately 60 m in length is present at the boundary of Churchfield Lane (H1). A species poor leylandii hedge approximately 30 m in length forms a boundary with farmhouse driveway (H2). There are two mature sycamore trees present either side of the gateway. A further species poor hawthorn hedge approximately 30 m long is present at the southern boundary of the farmhouse garden (H3).

A second area of short/managed poor semi-improved grassland that is used for storage is present to the south of farmhouse.

All habitats within the site are common at all scales and are considered to be of low ecological value.

Species

Amphibians

No amphibian records were provided by the BRC. The nearest evidence of great created newt presence on MAGIC is in Barugh, approximately 1.6 km to the south east, with the M1 creating a barrier to dispersal.

Although it was not possible to access all areas during the day of the survey a small farm pond was noted immediately outside of the site boundary to the south of Kexbrough Hall Farm.

The pond is approximately 60m^2 in area and is partially shaded. A great crested newt habitat suitability index assessment was completed using existing available imagery and found the pond to be of poor habitat suitability.

SI No	SI Description	SI Value	Notes
1	Geographic location	1	
2	Pond area	0.05	Area approximately 60m^2
3	Pond permanence	0.9	Appears permanent present in aerial images from 1999
4	Water quality	0.33	Farm ponds typically have low invertebrate diversity, no observable inflows
5	Shade	1	Low level of shading
6	Water fowl effect	1	No evidence of water fowl
7	Fish presence	0.67	No evidence of fish, however, permanence and location suggest potential for stickleback etc
8	Pond Density	0.1	No other ponds identified on OS explorer
9	Terrestrial habitat	0.33	Poor intermediate habitat quality, adjacent habitats include pasture and farm buildings.
10	Macropyhyte cover	0.3	All imagery indicates no macrophyte cover
HSI Score		**0.40**	**Poor**

The poor HSI score, combined with lack of connectivity, terrestrial habitat suitability, lack of great crested newt records within 1 km and lack of ponds within the wider landscape mean that great crested newts are not considered likely to be a potential receptor to the proposed development.

Bats

A separate bat assessment is provided for each site.

Birds

One hundred and eighty bird records were returned by BRC, comprising mainly common garden and farmland species including dunnock *Prunella modularis* (30 no. records), house sparrow *Passer domesticus* (23 no. records), song thrush *Turdus merula* (18 no. records) linnet *Carduelis cannabina* (11 no. records) and starling *Sturnus vulgaris* (10 no. records) .

Records of interest include the BAP species yellowhammer *Emberiza citronella* (6 no. records) and the following species including in Schedule one of the Wildlife and Countryside Act.

Common name	**Scientific name**	**No of records**
Barn Owl	*Tyto alba*	1
Fieldfare	*Turdus pilaris*	1
Hobby	*Falco subbuteo*	3
Kingfisher	*Alcedo atthis*	2
Osprey	*Pandion haliaetus*	1
Red Kite	*Milvus milvus*	3

Habitats within the site including trees and scrub provide suitable foraging and nesting provision for a range of common bird species. The grid reference for the barn owl record is not of sufficient resolution to accurately determine location, however it appears to be associated with Squirrel Hall Farm approximately 570m to the north west. No evidence of barn owls was observed during internal building inspections.

Crayfish

Three records of white clawed crayfish, all associated with Cawthorne Dyke were provided by BRC. The dyke is approximately 700 m from the site boundary and is unlikely to be affected by the proposed development. Crayfish are therefore not considered a receptor to the proposed development.

Flowering plants

Twenty-eight records of bluebell *Hyacinthoides non-scripta* were provided by BRC at least one of which is associated with the Town Farm area with others associated with the eastern edge of Cawthorne Park and Upperfield Lane. No evidence of bluebells was recorded at the time of the survey.

Terrestrial Mammals

Five records of terrestrial mammals were provided by BRC, one record of badger *Meles meles*, two records of European hare *Lepus europaeus* and two records of hedgehog *Erinaceus europaeus*.

No evidence of badger or hare was recorded on around the site and neither species is considered a receptor to the proposed development. The single badger record relates to a carcass found on the A635 near Barnby Bridge, approximately 1.5 km south of the application boundary.

No hedgehogs were observed on site, however, the semi-natural habitats on site including areas of dense scrub and hedgerows provide potential habitat for hedgehog.

Baseline Biodiversity

The tables below detail the baseline habitats and linear features identified, with their associated BM 2.0 habitat classification, area/length, relative condition, connectivity and calculated biodiversity value. All habitats present are considered to have low strategic significance as the site does not form part of any national or district level designated sites, habitat networks or are included within the Barnsley Biodiversity Action Plan (LBAP). Full condition assessment criteria is provided in Appendix 2.

With the site, the area-based habitats generated: 1.16 Habitat Units (HU); and linear habitats: 0.39 Hedgerow Units (HeU).

Area-Based Habitats

Phase 1 Habitat	**BM 2.0 Habitat**	**Area (ha)**	**Condition**	**Connectivity**	**Habitat Units (HU)**	**Justification**
Ephemeral/ short perennial	Sparsely vegetated land – Ruderal/Ephemeral	0.03	Poor	Low	0.06	Small isolated areas of largely bare substrate. Condition assessed under 'Urban' category. Assessed as poor due to limited abundance and diversity of early successional vegetation present.
Poor semi-improved grassland	Grassland – Other neutral grassland	0.17	Poor	Low	0.68	Poor diversity grassland with ruderal vegetation. Species present indicative of high nutrient levels and poor management. Isolated by surrounding agricultural land.
Amenity grassland	Urban – Vegetated garden	0.19	Poor	Low	0.38	Vegetated gardens at both Kexborough hall and Town Hall farm. Scattered scrub present at Town Hall farm. Condition fixed at poor condition and assessment not applicable.
Bare ground and Buildings	Urban – Developed land; sealed surface	0.92	N/A	N/A	0.00	Man-made habitats supporting a negligible abundance of botanical communities.
Scattered broad-leaved trees	Urban – Street tree	0.0104	Moderate (Default condition score)	Low	0.04	23 semi-mature trees present within the site (Diameter at breast height (DBH) < 0.9m). Condition fixed at moderate condition and assessment not applicable.
Biodiversity Value					**1.16 HU**	

Linear-Based Habitats

Phase 1 Habitat	**BM 2.0 Habitat**	**Length (km)**	**Condition**	**Connectivity**	**Hedgerow Units (HeU)**	**Justification**
Intact species-poor hedgerow (H2 & H3)	Native Hedgerow	0.098	Moderate	Low	0.392	Hawthorn hedgerows with relatively established canopy and no significant gaps – Disconnected to other hedgerows in the site and wider area
Intact species-poor hedgerow (H1)	Hedge Ornamental Non Native	0.03	Poor	Low	0	Hedgerow comprised solely of non-native species with limited value for native biodiversity. Disconnected to other hedgerows within the site and wider area.
Biodiversity Value					**0.39 HeU**	

Impact Assessment

The application relates to demolition of the majority of buildings at Town Farm and a number of larger barns at Kexbrough Hall Farm, conversion of retained buildings to residential use and the construction of new residential units. The proposed development will retain existing trees and include a landscaping scheme that will increase the amount of green space and hedgerow.

Protected Sites

There will be no impact upon any protected sites.

Habitats

The proposed development will primarily require land take of concrete hardstanding and buildings. Land take of the areas poor semi-improved grassland at Town Hall will be required. Existing areas of scrub and scattered trees will be retained where possible as will boundary hedges and understory. All trees proposed for retention are identified within fig 2 and the indicative site layout plan.

The creation of urban gardens will provide increased habitat resource for birds, small mammals, hedgehogs and invertebrates.

Habitat loss associated with the proposed development is not considered significant and gains in soft landscaping are considered a moderate positive impact.

Species

Bats

Please see separate bat report

Birds

The proposed development and future landscape plan has potential to benefit local bird population through planting with native species. However, there is potential for a temporary adverse impact through disturbance of breeding birds if vegetation removal is required during the bird breeding season.

All wild bird species, their eggs and nests are protected by law. As such it is an offence to:

- intentionally kill, injure or take wild birds
- intentionally take, damage or destroy a wild bird's nest while it's being used or built
- intentionally take or destroy a wild bird's egg
- possess, control or transport live or dead wild birds, or parts of them, or their eggs
- sell wild birds or put them on display for sale
- use prohibited methods to kill or take wild birds

Flowering plants

There is no potential for the proposed development to adversely affect bluebells as the works will not affect any roadside verges.

Terrestrial mammals

The proposed development has potential to affect hedgehog through disturbance or loss habitat. Creation of new gardens has potential to increase foraging resources. There is potential for net benefit to hedgehog.

Mitigation

Birds

It is recommended that breeding bird checks are undertaken prior to any vegetation management activities undertaken during the bird breeding season (February – October). Works should not be undertaken if breeding birds or active nests are observed.

Whilst no signs of breeding activity by barn owl was recorded during bat surveys, internal inspection of farm buildings is recommended prior to commencement to confirm absence of barn owls and their nest sites.

Hedgehog

It is recommended that areas of dense vegetation and debris piles are hand searched prior to any vegetation management activities.

Enhancements

Habitats

The habitats on site are man-made and of low ecological value. Although detailed landscaping plans are not available an indicative biodiversity unit calculation has been prepared based on the indicative site layout (Figure 2). The DEFRA calculator showing the change in biodiversity value is associated with this document. The tables below detail the proposed area-based and linear habitats associated with the proposed development plan, suggested habitat management, forecasted condition following the implementation of an 30-year management plan, and the resulting biodiversity unit score.

Area-Based Habitats

Phase 1 Habitat	**BM 2.0 Habitat**	**Area (ha)**	**Condition**	**Connectivity**	**Habitat Units (HU)**	**Habitat Management**
Amenity grassland	Urban – Vegetated garden	0.47	Poor	Low	1.20	Habitat creation - Gardens associated with residential housing to be managed by residents. High condition status not possible.
Bare ground and Buildings	Urban – Developed land; sealed surface	0.69	N/A	N/A	0.00	Habitat creation – development of housing and associated access/parking
Scattered broad-leaved trees	Urban – Street tree	0.0163	Moderate (Default condition score)	Low	0.05	Habitat retention/creation – All existing trees to be retained with an additional tree planting – 36 trees total, all assumed to be unlikely to reach a stature of >0.9m DBH following 30-year cycle. Limited management proposed.
Biodiversity Value					**1.25 HU**	

Linear-Based Habitats

Phase 1 Habitat	BM 2.0 Habitat	Length (km)	Condition	Connectivity	Hedgerow Units (HeU)	Justification
Hedgerow	Native Hedgerow	0.207	Moderate	Low	0.69	Habitat creation – Native hedgerows to be planted as garden boundaries.
Biodiversity Value					**0.69 HeU**	

Post-development, area-based habitats generated: 1.25 HU; and linear habitats: 0.69 HeU, representing a biodiversity net gain of 7.37% and 76.76%, respectively.

The net gain predicted by the proposed development is due to an reduction in areas of developed land to be replaced by soft landscaping (vegetated gardens and open space) and native hedgerows. It should however be noted that due to the limitations of the DEFRA metric this does not adequately reflect the gain in biodiversity that will be achieved in terms of benefits to invertebrates and birds, as the biodiversity value of the site will be increased through planting native flowering species.

An landscaping management plan of the proposed habitats should be produced for the site prior to construction. This should detail appropriate management methods and schedules that aim to develop these areas into the highest condition possible in order to provide maximum benefits to biodiversity and ensure that the predicted net gain can be obtained. It is anticipated that this management plan would be implemented over a minimum period of 30 years.

Species

The biodiversity value of the site should be enhanced for species through inclusion of bird nesting features such as barn owl boxes and sparrow terraces. Hedgehog boxes and habitat piles should be placed in suitable locations at the margins of the site and hedgehog passes should be incorporated in to plot boundaries.

Conclusion

The application site is of low ecological and biodiversity value and the proposed development will result in an increase in soft landscaping and green space that will be of greater value to common garden and farmland species. The development has potential to result in temporary impacts to species that may be present on site during construction and mitigation is proposed to avoid significant effects upon individual animals.

The proposed development will not affect any ancient or veteran trees and seeks to maximise the biodiversity opportunities through inclusion of biodiversity enhancements.

The development is therefore in accordance with Policy BIO1 Biodiversity and Geodiversity.

Figure 1. Phase 1 Habitat Map

Figure 2. Post-Development Habitat Map

Appendix 1: Target Notes

TN 1: Farm equipment stored on an area of historic grassland that is now disturbed.

- D, *Lolium perenne*
- O, *Urtica dioica*
- O, *Rumex sp.*

TN 2: Farm equipment stored on an area of historic grassland that is now disturbed.

- D, *Lolium perenne*
- O, *Urtica dioica*
- O, *Rumex sp*.
- F, *Poa* spp

TN 3: Area of scattered semi-mature trees and scrub at boundary of Cawthorne Lane.

- A, Hedera helix
- O, *Fraxinus excelsior*
- O, *Acer pseudoplatanus*
- O, *Sambucus nigra*

TN 4: Area of poor semi-improved grassland

- *A, Arrhenatherum elatius*
- *F, Lolium perenne*
- *F, Anthriscus sylvestris*

Appendix 2: Biodiversity Metric 2.0 Condition Assessment Criteria

Sparsely Vegetated Land

Sparsely vegetated land - Ruderal/ephemeral

Table A1. Condition assessment of sparsely vegetated land within the site (urban criteria)

Criteria	Description	Pass/Fail
1	Known history of disturbance at the site or evidence that soil has been removed or severely modified by previous use(s) of the site. Extraneous materials/substrates such as industrial spoil may have been added which in turn has led to a low nutrient environment.	Fail
2	The site contains some vegetation. This will comprise of early successional communities consisting mainly of stress-tolerant species (e.g. indicative of low nutrient status or drought). Early successional communities are composed of (a) annuals, or (b) mosses/liverworts, or (c) lichens, or (d) ruderals, or (e) inundation species, or (f) open grassland, or (g) flower-rich grassland, or (h) heathland.	Pass
3	The site contains unvegetated, loose bare substrate and pools may be present and desirable.	Fail
4	The site shows spatial variation, forming a mosaic of one or more of the early successional communities (a)–(h) above plus bare substrate or pools.	Fail
Final Assessment		**Condition**
Bare ground areas are large, with limited vegetation present		Poor

Grassland

Grassland - Other neutral grassland

Table A2. Condition assessment of neutral grassland within the site

Criteria	Description	Pass/Fail
1	Clearly and easily recognizable as a good example of this type of habitat	Fail
2	Appearance and composition very closely matches the characteristics for the specific Priority Habitat	Fail
3	Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency.	Fail
4	Undesirable species and physical damage is below 5% cover.	Fail
5	Cover of bare ground greater than 10%	Fail
6	Cover of bracken less than 20% & cover of scrub and bramble less than 5%.	Pass
Final Assessment		**Condition**
Majority of criteria failed; Poor diversity grassland with ruderal vegetation		Poor

Heathland and Scrub

Heathland and Scrub – Native Hedgerow

Table A3. Condition assessment of native hedgerows within the application site

Criteria		Description	Pass/Fail
A1	Height	>1.5m average along length	Pass
A2	Width	>1.5m average along length	Pass
B1	Gap – hedge base	Gap between ground and base of canopy <0.5m for >90% length	Pass
B2	Gap – hedge canopy continuity	Gaps make up <10% of total length and no canopy gaps >5m	Pass
C1	Undisturbed ground and perennial vegetation	>1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length & present on one side of hedge at least	Fail
C2	Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of area of undisturbed ground	Fail
D1	Invasive and neophyte species	>90% of hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Pass
D2	Current damage	>90% of hedgerow or undisturbed ground is free of damage caused by human activities	Pass
Final Assessment			**Condition**
Fails both attributes in only one category, less than 4 failures total			Poor