

**BIODIVERSITY ACCOUNTING
ASSESSMENT REPORT**

at

**Land at Grange Moor
off Barnsley Road
Wakefield
West Yorkshire
WF4 4DR**

Client:

PCS Property Solutions Ltd

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Date of Report:

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Quality Assurance

Version	Desktop Survey Completed:		Site Surveyed:		Report Completed:		Reviewed:	
	Date	Name	Date	Name	Date	Name	Date	Name
Planning Rev 1	21/11/22	Amy Donaldson	30/11/22	Amy Donaldson	15/02/23	Amy Donaldson	20/02/23	Audrey Bourdais Paull
				Helen Chambers Eve Goodwin			20/02/23	Adam West

This report has been prepared and provided in accordance with the *British Standard 42020: Biodiversity – Code of practice for planning and development 2018* and the *CIEEM's Code of Professional Conduct*.

Risk Assessment Completed	Redacted
Bio-security Procedure Completed	
Lone Worker Procedure Completed	



Executive Summary

JCA Limited was instructed by **PCS Property Solutions Ltd** to carry out a Biodiversity Accounting Assessment (BAA) of **Land at Grange Moor, off Barnsley Road, Wakefield, West Yorkshire, WF4 4DR** (hereafter referred to as the 'Site') to inform a planning application for development of an industrial unit with associated access and landscaping ('the Proposed Development').

The purpose of the assessment is to determine the baseline biodiversity value of the Site and to assess if there are sufficient biodiversity enhancement opportunities available within the Site boundary to compensate for any residual biodiversity losses as a result of the Proposed Development.

To fulfil the brief, the Biodiversity Metric 3.1 (May 2022 update) was used to calculate the baseline biodiversity value of all existing habitats on-Site. The metric was then used to provide a comparative measure of any habitat creation and enhancements associated with the Client's Proposed Development. The resulting balance determines the extent of Biodiversity Units (BU) generated through the proposed habitats post development.

On balance of impacts and habitat retention/enhancement/creation, the report concludes that the Proposed Development will result in a net gain of +23.40 habitat BU, equivalent to a net gain of +78.85%, and a net gain +11.40 hedgerow BU, equivalent to a net gain of +477.82%. The Proposed Development has not satisfied the trading rules due to a net loss across medium distinctiveness habitats.

This executive summary is intended as a summary of the assessment of the Site based on information received by the client at the time of production. This executive summary should be read in conjunction with the full report.



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1. Introduction

1.1 Purpose of the Report

1.1.1 JCA Limited have been instructed by **PCS Property Solutions Ltd** to undertake a Biodiversity Accounting Assessment (BAA) of a site located at **Land at Grange Moor, off Barnsley Road** (hereafter referred to as the 'Site').

1.1.2 The purpose of this report is to:

- Assess the baseline biodiversity value of the Site through the total sum of the habitats within the Site, and their calculated biodiversity value.
- Assess if there are sufficient biodiversity enhancement and/or creation opportunities available within the Site boundary to compensate for any residual biodiversity losses as a result of the Proposed Development.
- To determine the level of overall residual biodiversity gains or losses associated with the Proposed Development.

1.2 Terms of Reference

1.2.1 The principal source documents used to inform this BAA include:

- Proposed Development Plan (ZLA_1386-L-201 (C) - Detailed planting).
- Ecological Impact Assessment Scoping Report (JCA Ref: 19649a/AD).

1.3 Site Description

1.3.1 The site is located at Ordnance Survey (OS) National Grid Reference **SE 22216 15226**, with nearby postcode **WF4 4DR**. The site is bordered to the north by a public house and residential properties, and to the east, south and west by arable grasslands.



1.4 Details of Proposed Development

1.4.1 The scheme is the development of an industrial unit with associated access, parking and soft landscaping.



2. Biodiversity Accounting in Context

2.1 Background

2.1.1 Biodiversity is complex and so it is impossible to measure in its entirety. Therefore metrics, which incorporate measures of different biodiversity attributes, are used to provide surrogate measures of overall biodiversity. This report uses the 'Biodiversity Metric 3.1', which was designed by Natural England (2022) to define the biodiversity impacts and compensation requirements associated with development proposals. The metric works by providing a comparative measure of each habitat on-Site in biodiversity units (BU) by multiplying its area (hectares), distinctiveness (habitat type) and current condition (quality). The relative impacts (habitat loss) of the development, taking into account any additional on-Site habitat creation or enhancement, can then be calculated to determine if a measurable biodiversity net gain will be achieved on-Site. If a measurable net gain is unable to be achieved on-Site, then the process of biodiversity offsetting must be undertaken.

2.1.2 Biodiversity offsets are conservation activities designed to deliver biodiversity benefits in compensation for residual losses, in a measurable way. Biodiversity offsetting is distinguished from other forms of compensation by the requirement for measurable outcomes. This is achieved by quantifying net biodiversity impacts caused by development; using the same metric to assess direct and indirect negative impacts to habitats and the value of any on-Site compensation, to set the framework of off-site compensation (offset) requirements and the biodiversity net gain generated by these offsets. Biodiversity offsetting ensures that off-site compensation proposed is both proportionate to the development concerned and that a measurable net gain for biodiversity can be achieved.

2.1.3 Biodiversity offsetting, like other forms of compensation, is the last step of the mitigation hierarchy (first avoid, then reduce, and finally, compensate) and is applied as a last resort to otherwise policy-compliant development proposals. 'Offsetting' – i.e. creating or restoring new wildlife habitat in a measurable way and in a different place to where it was lost.

2.1.4 In addition to providing a mechanism for quantifiable compensation and net gain, biodiversity offsets provide reliable biodiversity outcomes as



they are long-term (30 years), monitored and enforceable with adaptable management plans for optimised success.

2.2 Biodiversity Net Gain Principles

2.2.1 Biodiversity Net Gain: Good Practice Principles for Development published by CIEEM *et. al* (2016) states that delivering biodiversity net gain goes beyond balancing relative gains and losses. It also involves doing everything to avoid biodiversity losses in the first instance. The application of the DEFRA metric detailed in this report supports developments to adopt this approach by:

- a) Providing a habitat balance sheet which can be used to identify those habitats with the greatest value and subsequently those with the greatest impacts if lost;
- b) Supporting and incentivising the mitigation hierarchy by quantifying the benefits of avoiding and mitigating impacts on high value features;
- c) Promoting the value of biodiversity enhancements and demonstrating the potential for additionality on retained habitats;
- d) Providing a balance of losses, enhancements or on-Site compensation to determine if a measure net gain contribution can be achieved;
- e) Providing transparent, robust and credible evidence to help inform the best possible Site options for biodiversity; and,
- f) Ensuring that any residual off-Site compensation required (e.g. through biodiversity offsetting) is proportionate to the impacts and can secure a measurable net gain contribution for biodiversity overall.

2.3 Biodiversity Offsetting Standards

2.3.1 Good practice standards for biodiversity offsetting are set out by the Business and Biodiversity Offsets Programme (BBOP, 2012). These standards inform the approach for selection and development of suitable Offset Sites and projects. Of these standards, the following provide the most relevant UK framework for the preliminary offset site search:



- The proposed offset site should be identified as suitable for the creation and/or enhancement of a target habitat within the vicinity of where the impact occurs;
- The site must be available and managed for a minimum specified term (typically 30 years).
- The landowner must agree to an enforceable delivery mechanism to secure the long-term management.
- The site must be available for monitoring to ensure appropriate management is being undertaken and to report biodiversity progress back to the local planning authority.

2.3.2 Further standards, with regards to offset site surveys and ensuring that appropriate target habitats and units can be achieved, will form part of the detailed site search that will precede the preliminary site search.

2.3.3 In addition to biodiversity net gains achieved on-Site, off-Site enhancements can also achieve positive outcomes for nature in the local area.



3. Policy and Legislation

3.1 Introduction

3.1.1 Planning guidelines, international commitments, legislation and planning policies relevant to the protection, conservation and enhancement of nature conservation interests are detailed below.

3.2 National Policy and Guidance

3.2.1 Specific habitats and species of relevance to the Site receive legal protection in the United Kingdom under various pieces of policy and legislation, including:

- The Environment Act 2021 mandates that all planning applications will be required to demonstrate how a development will enhance biodiversity and protect habitats from November 2023. This is to be achieved through a measurable 10% Biodiversity Net Gain (BNG), in association with development through the use of the most up to date Defra Metric (currently Defra 3.1 Metric);
- National Planning Policy Framework ('NPPF', as revised 2021) sets out how planning policies and decisions should contribute to and enhance the natural and local environment through amongst other things, ensuring BNG through development and protect ecological important sites and networks;
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 details the regulations for the protection of European Protected Habitat and Species. Such European Protected Species (EPS) include all species of bats, great crested newt *Triturus cristatus*, dormouse *Muscardinus avellanarius*, and European otter *Lutra lutra*, amongst others;
- The Wildlife and Countryside Act ('WCA') 1981 (as amended) covers the legislation for endangered species in England and the framework for the designation of Sites of Special Scientific Interest (SSSIs);
- The Countryside and Rights of Way ('CRoW') Act 2000 reinforces the wildlife legislation listed in the WCA and places a duty of government departments to consider biodiversity, and provides governmental department powers for the protection and maintenance of SSSIs;
- The Natural Environment and Rural Communities Act ('NERC') 2006



places a duty upon local authorities to promote and enhance biodiversity in all their functions. Specifically, habitats and species of principal importance to the conservation of biodiversity in regards to the planning process;

- The Hedgerow Regulations 1997 provides protection by prohibiting the destruction or damage to important countryside hedges; and
- The Protection of Badgers Act 1992 includes the protected of badgers under the act and that it is unlawful to wilfully kill, injure, take, possess or cruelly ill-treat badgers or attempt to do so.

3.2.2 Where relevant, this appraisal takes account of the legislative protection afforded to specific habitats and species.

3.3 Local Policy and Guidance

3.3.1 Kirklees Local Plan – (Kirklees Council, Adopted February 2019)

Policy 13: Natural Environment (specifically, 13.1 Biodiversity & geodiversity) and Policy 18: Environmental Protection, of the Kirklees Local Plan apply to the Proposed Development.

3.3.2 Biodiversity Action Plan (BAP) for Kirklees

The BAP for Kirklees (Kirklees Metropolitan Council, No Date) concentrates on species and habitats that had national action plans produced or are of local conservation concern. These include semi natural grassland, riverine habitats, ancient woodland, water vole and great crested newt.



4. Methodology

4.1 Background

4.1.1 Biodiversity accounting of existing and post-development habitats and linear features on-Site was carried out using the Biodiversity Metric 3.1 Calculator Tool, following guidance set out in the metric user guide (Natural England et al, 2022). The process for data collation and analysis associated with the assessment is detailed in Sections 4.2 – 4.3 below.

4.2 Baseline Data

4.2.1 A baseline analysis of the existing habitats on-Site was carried out from the information gathered during the Site's ecological assessment visit carried out by Amy Donaldson (Graduate Ecologist, JCA Limited), Helen Chambers, (Graduate Ecologist, JCA Limited) and Eve Goodwin, (Graduate Ecologist, JCA Limited) on 30/11/22

4.2.2 To undertake the Biodiversity Metric 3.1 calculations, the following information was recorded for each habitat parcel and/or linear feature:

- Habitat type;
- Area/Length (ha/km) (using the Minimum Mappable Unit of 25m² and 5m);
- Habitat condition;
- Strategic significance; and
- Whether that habitat will be lost, retained, enhanced, succeeded and/or created, and at what scale.

4.2.3 The habitat map for the Site was digitised and interpreted using QGIS Version 3.26.0 to calculate habitat area.

4.3 Impact Assessment

4.3.1 The existing baseline habitat plan for the Site was overlain with the Proposed Landscape Plan (DWG number: ZLA_1386-L-201 (C)) of the Proposed Development using GIS software to provide an area (Ha) of temporary and permanent habitat loss.



4.3.2 The area of any retained/enhanced or created habitats proposed as part of the development was also mapped to provide an area (Ha) (or length (Km) for linear features) of the on-Site compensation proposals being provided. An estimate of future condition, time until establishment and the likelihood of success was then calculated using landscaping data provided by the client and professional judgement.

4.4 Habitat Creation and Enhancement

4.4.1 The area of any retained/enhanced or created habitats proposed on-Site as part of the Proposed Development was mapped using the Proposed Landscape Plan (DWG number: ZLA_1386-L-201 (C)) of the final development, to provide an area (Ha) (or length (Km) for linear features) estimate of on-Site compensation provided. This includes areas of developed land, which are assigned a very low (or null) value, notably, areas of buildings and/or roads.

4.4.2 Condition and strategic significance for each habitat or linear feature were projected using available ecological data or professional opinion about the likely value.

4.5 Residual Effects

4.5.1 The residual effects of the Proposed Development scheme were calculated using the Biodiversity Metric 3.1 Calculator Tool. This subtracts the pre-development baseline values from that of the post-development values to determine the change in overall habitat value for the Site, taking into account any habitat trading.

4.5.2 Habitat trading is where the loss of a habitat must be compensated for through the creation or restoration of areas of equivalent or greater distinctiveness value. Guidance by Defra is that the loss of high distinctiveness areas, such as Habitats of Principal Importance (HPI, NERC Act, S.41), require compensation in a like-for like manner (creation or restoration of habitat of the same habitat classification as that impacted). Within the Biodiversity Metric 'trading up' (where compensation through creation of a higher distinctiveness habitat) can occur, however, 'trading down' (compensation through creation of lower distinctiveness habitats) is not permitted. Therefore, if present, despite gains in lower distinctiveness habitats, these will not reduce the net gain requirement for the development. This also applies to the different habitat features i.e. habitats, hedgerows and rivers and streams. Hedgerow



creation gains will not reduce net gain requirements for either rivers and streams or habitats.

4.5.3 Where the resulting biodiversity balance is negative, a residual net loss of biodiversity is recorded. Where the balance is positive a residual net gain of biodiversity is recorded.



5. Biodiversity Metric 3.1

5.1 Introduction

5.1.1 The assessment was carried out by JCA Limited using the ecological data gathered during the Site's ecological assessment survey carried out on 30/11/22.

5.2 Existing Site Value

5.2.1 The existing biodiversity value for each habitat, together with the cumulative value of all habitats is provided in Table 1. Existing on-Site habitats can be found in Appendix 1.

Table 1: Baseline habitats on site and their ecological value as categorised by the Biodiversity Metric 3.1 calculator.

Biodiversity Metric Reference Number	Biodiversity Metric 3.1 Habitat Type	Total Area on Site (Ha)	Distinctiveness	Condition	Strategic Significance	Ecological Baseline Habitat Unit
1	Other woodland; broadleaved	0.202	Medium	Good	Location ecologically desirable but not in local strategy.	2.67
2	Other woodland; broadleaved	0.102	Medium	Moderate	Location ecologically desirable but not in local strategy.	0.90
3	Temporary ryegrass and clover leys	2.914	Low	N/A	Location ecologically desirable but not in local strategy.	6.41
4	Other neutral grassland	1.141	Medium	Moderate	Location ecologically desirable but not in local strategy.	10.04
5	Modified grassland	0.745	Low	Poor	Location ecologically desirable but not in local	1.64



Biodiversity Metric Reference Number	Biodiversity Metric 3.1 Habitat Type	Total Area on Site (Ha)	Distinctiveness	Condition	Strategic Significance	Ecological Baseline Habitat Unit
					strategy.	
6	Bramble scrub	0.545	Medium	N/A	Formally identified in local strategy.	2.51
7	Mixed scrub	0.050	Medium	Moderate	Formally identified in local strategy.	0.46
8	Mixed scrub	0.178	Medium	Poor	Formally identified in local strategy.	0.82
9	Pond	0.028	High	Poor	Formally identified in local strategy.	0.19
10	Ruderal/ ephemeral	0.032	Low	Moderate	Location ecologically desirable but not in local strategy.	0.14
11	Ruderal/ ephemeral	0.047	Low	Poor	Location ecologically desirable but not in local strategy.	0.10
12	Developed land; sealed surface	0.428	Very Low	N/A	Area/ compensation not in local strategy/ no local strategy.	0.00
13	Artificial unvegetated; unsealed surface	0.805	Very Low	N/A	Area/ compensation not in local strategy/ no local strategy.	0.00
14	Urban tree ¹	0.081	Medium	Good	Location ecologically desirable but not in local strategy.	1.07
15	Urban tree ¹	0.2645	Medium	Moderate	Location ecologically desirable but	2.33



Biodiversity Metric Reference Number	Biodiversity Metric 3.1 Habitat Type	Total Area on Site (Ha)	Distinctiveness	Condition	Strategic Significance	Ecological Baseline Habitat Unit
					not in local strategy.	
16	Urban tree ¹	0.041	Medium	Poor	Location ecologically desirable but not in local strategy.	0.18
17	Sustainable urban drainage feature	0.024	Low	Poor	Location ecologically desirable but not in local strategy.	0.05
18	Vacant/derelict land/bare ground	0.087	Low	Poor	Area/compensation not in local strategy/ no local strategy.	0.17
	Total (area excl. urban trees)	7.328	-	-	-	29.68

¹These are rural trees which have been inputted into the metric using guidance for urban trees. The guidance states that the methodology used for calculating habitat BU for urban trees may also be used for individual trees outside of the urban environment.

5.2.2 Detailed assessments of the condition of each habitat can be found within the accompanying habitat condition spreadsheet. Each rural tree (inputted into the metric as Urban Trees) was assessed using the Urban Tree condition sheet.

5.2.3 The bramble scrub, mixed scrub and pond are designated Kirklees Habitats of Principle Importance, therefore they are listed as 'Formally identified in local strategy' within the strategic significance section. Other habitats are listed as 'ecologically desirable' if they contribute to biodiversity value on site, or 'area/compensation not in local strategy' if they are habitats of little value to biodiversity.

5.2.4 The existing biodiversity value for each hedgerow, together with the cumulative value of all hedgerows is provided in Table 2.

Table 2: Baseline hedgerows on site and their ecological value as categorised by the Biodiversity Metric 3.1 calculator.



Biodiversity Metric Reference Number	Biodiversity Metric 3.1 Habitat Type	Total Length on Site (Km)	Distinctiveness	Condition	Strategic Significance	Ecological Baseline Habitat Unit
1	Line of trees	0.098	Low	Moderate	Location ecologically desirable but not in local strategy.	0.43
2	Native hedgerow – associated with a bank or ditch	0.061	Medium	Good	Formally identified in local strategy.	0.84
3	Native hedgerow – associated with a bank or ditch	0.242	Medium	Poor	Formally identified in local strategy.	1.11
	Total	0.401	–	–	–	2.39

5.2.5 The native hedgerows are listed as ‘Formally identified in a local strategy’ as they are UK and Kirklees Habitats of Principle Importance. The lines of trees and listed as ‘location ecologically desirable’ as they contribute to biodiversity on site, but are not formally designated habitats.

5.2.6 To ensure a 10% net gain in biodiversity is achieved as part of the Proposed Development the following measures can be employed:

- Habitat retention; and/or
- Habitat enhancement; and/or
- Habitat creation.



6. Proposed Development Impact Assessment

6.1 Description of the Proposed Development

6.1.1 The Proposed Development involves the development of an industrial unit with associated access, parking and soft landscaping.

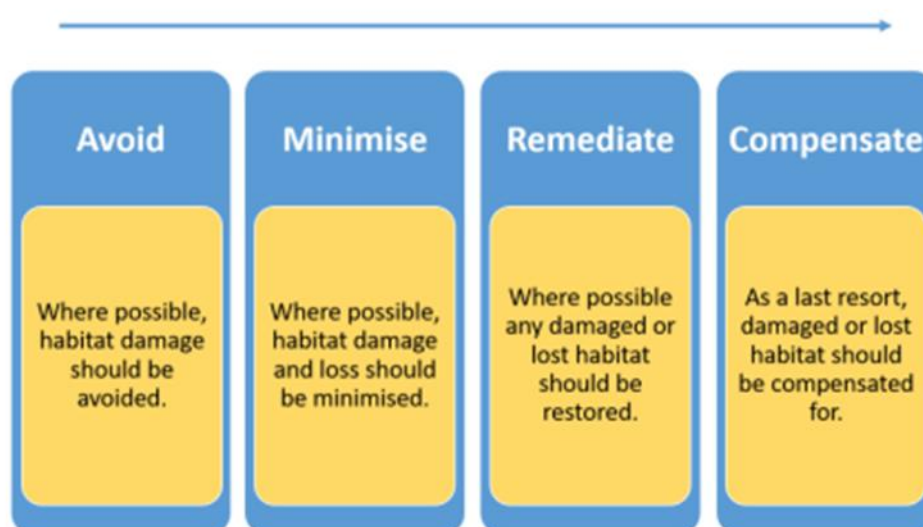
6.1.2 The Proposed Development will see the full removal of some habitats to facilitate the development, including the developed land; sealed surface, buildings, ryegrass and clover ley, bare ground, modified grassland, mixed scrub, ruderal/ephemeral, and artificial unvegetated; unsealed surface. The development will also involve the partial removal of bramble scrub and urban trees. The retained habitats are to be incorporated into the created habitats or enhanced, including the bramble scrub, sustainable urban drainage feature, broadleaved woodland and other neutral grassland.

6.1.3 The Proposed Development will see the enhancement of the native hedgerows on site, with the line of trees to be retained.

6.2 Habitats to be Retained

6.2.1 Any development should apply the Mitigation Hierarchy (British Standards Institution (BSI), 2013; shown below in Figure 1).

Figure 1: The mitigation hierarchy (BSI, 2013)



6.2.2 Development proposals should first seek to **avoid** impacts by retaining habitats. Second, development proposals should look to **minimise** the impact by producing plans that are designed to limit habitat disturbance, damage, and loss, thereby mitigating against any unavoidable impacts. Third, proposals should look to **restore** any damaged or degraded habitats. Then, only as a last resort should proposals **compensate** for unavoidable residual impacts to damaged or lost habitats that remain after avoidance and mitigation measures.

6.2.3 The Proposed Development will see the retention of broadleaved woodland, urban trees and bramble scrub to facilitate the development. The retention of these habitats will avoid any direct impacts of loss of habitat.

6.2.4 The Proposed Development will see the retention of the line of trees to the east of the site to facilitate the development. The retention of this feature will avoid any direct impacts of loss of habitat.

6.3 Habitats to be Enhanced

6.3.1 The Proposed Development will see the enhancement of broadleaved woodland, the pond, bramble scrub, other neutral grassland, and the sustainable urban drainage feature on-Site to facilitate the development. The enhancement of these habitats will restore any indirect impacts as a result of the Proposed Development.

- The retained woodland parcel to the east of the site is to be enhanced to 'good' condition by increasing the number of native tree and shrub species.
- The retained pond is to be enhanced to 'moderate' condition through the removal of invasive species (Montbretia).
- The bramble scrub is to be enhanced to mixed scrub in 'moderate' condition through the addition of native shrub species and removal of invasive species.
- The other neutral grassland is to be enhanced to 'good' condition through the removal of invasive species (Himalayan balsam, giant hogweed) and wildflower seeding, including semi-parasitic plants such as yellow rattle.



- The sustainable urban drainage feature is to be enhanced to 'moderate' condition through the removal of invasive species (Himalayan balsam) and the addition of flowering plant species.

6.3.2 The Proposed Development will see the enhancement of native hedgerows on-Site to facilitate the development. The enhancement of these hedgerows will restore any indirect impacts as a result of the Proposed Development.

- The native hedgerows are to be enhanced to native species rich hedgerows with trees in 'good' and 'moderate' condition through the inclusion of native woody species and native trees and altered management.

6.4 Habitats to be Lost

6.4.1 The Proposed Development will see the partial or complete loss of ryegrass and clover ley, other neutral grassland, urban trees, bramble scrub, mixed scrub, ruderal/ ephemeral, developed land; sealed surface, bare ground and artificial unvegetated; unsealed surface on-Site to facilitate the development.

6.4.2 The loss of these habitats will facilitate the development and associated landscaping; the footprint of habitat that is not deemed valuable to biodiversity lost is similar to that of the footprint gained. Any other loss of habitats deemed to be ecologically valuable will be to facilitate habitats of better ecological value and/or higher habitat distinctiveness.

6.5 Overall Impacts

6.5.1 The retention, enhancement and loss of habitats as a result of the Proposed Development are quantified in Table 3.

6.5.2 The results of the metric calculation indicates that a total of 13.95 BU for habitats are to be lost as a result of the Proposed Development, with 3.95 BU retained and 11.77 BU enhanced (Table 3).

Table 3: Summary value of baseline habitat biodiversity value through retention, creation and enhancement

Biodiversity Metric 3.1 Habitat	Retained	Enhanced	Lost
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	Area (Ha)	Unit	Area (Ha)	Unit	Area (Ha)	Unit
Other woodland; broadleaved (good)	0.202	2.67	0.000	0.00	0.000	0.00
Other woodland; broadleaved (moderate)	0.000	0.00	0.102	0.90	0.000	0.00
Temporary ryegrass and clover leys	0.000	0.00	0.000	0.00	2.914	6.41
Other neutral grassland	0.000	0.00	1.059	9.32	0.082	0.72
Modified grassland	0.000	0.00	0.000	0.00	0.745	1.64
Bramble scrub	0.000	0.00	0.285	1.31	0.260	1.20
Mixed scrub (moderate)	0.000	0.00	0.000	0.00	0.050	0.46
Mixed scrub (poor)	0.000	0.00	0.000	0.00	0.178	0.82
Pond	0.000	0.00	0.028	0.19	0.000	0.00
Ruderal/ ephemeral (moderate)	0.000	0.00	0.000	0.00	0.032	0.14
Ruderal/ ephemeral (poor)	0.000	0.00	0.000	0.00	0.047	0.10
Developed land; sealed surface	0.012	0.00	0.000	0.00	0.416	0.00
Artificial unvegetated; unsealed surface	0.000	0.00	0.000	0.00	0.805	0.00
Urban tree (good)	0.000	0.00	0.000	0.00	0.081	1.07
Urban tree (moderate)	0.147	1.29	0.000	0.00	0.118	1.03
Urban tree (poor)	0.000	0.00	0.000	0.00	0.041	0.18
Sustainable urban drainage feature	0.000	0.00	0.024	0.05	0.000	0.00
Vacant/ derelict land/ bare ground	0.000	0.00	0.000	0.00	0.087	0.17
Total (area excl. urban trees)	0.361	3.96	1.474	11.77	5.616	13.95

6.5.3 The loss, retention and enhancement of hedgerows as a result of the Proposed Development are quantified in Table 4.



6.5.4 The results of the metric calculation indicates that a total of 0.00 BU for hedgerows are to be lost as a result of the Proposed Development, with 0.43 BU retained and 1.96 BU enhanced (Table 4).

Table 4: Summary value of baseline hedgerow biodiversity value through retention, creation and enhancement

Biodiversity Metric 3.1 Habitat	Retained		Enhanced		Lost	
	Length (Km)	Unit	Length (Km)	Unit	Length (Km)	Unit
Line of trees (moderate)	0.098	0.43	0.000	0.00	0.000	0.00
Native hedgerow – associated with a bank or ditch (good)	0.000	0.00	0.061	0.84	0.000	0.00
Native hedgerow – associated with a bank or ditch (poor)	0.000	0.00	0.242	1.11	0.000	0.00
Total	0.098	0.43	0.303	1.96	0.000	0.00

6.6 Proposed Habitat Creation

6.6.1 It is proposed that the following habitats be created as part of the Proposed Development:

- Buildings represented on the plans by ‘Proposed buildings/units’,
- Developed land; sealed surface represented on the plans by blank areas within the red line boundary,
- Other neutral grassland represented on the plans by ‘Existing grassland overseeded with Emosgate EM1’,
- Other woodland; broadleaved represented on the plans by ‘Proposed native woodland’,
- Wet woodland represented on the plans by ‘Proposed wet woodland scrub’,
- Introduced shrub represented on the plans by ‘Proposed ornamental shrubs’,
- Mixed scrub represented on the plans by ‘Proposed native structure/ scrub’,



- Urban trees represented on the plans by 'Proposed trees',
- Sustainable urban drainage feature represented on the plans by 'Proposed attenuation pond',
- Species-rich hedgerow with trees represented on the plans by 'Proposed species-rich native hedge' with 'Proposed trees',
- Species-rich hedgerow represented on the plans by 'Proposed species-rich hedge',
- Ornamental hedgerow represented on the plans by 'Proposed evergreen hedge',

6.6.2 The proposed habitats on-Site can be found within Appendix 2.

6.6.3 Table 5 below summarises the value of all habitats that are to be created as part of the Proposed Development.

6.6.4 In total, +32.71 BU for habitats are to be created within the Proposed Development.

Table 5: Summary value of on-Site habitat proposals.

Biodiversity Metric Reference Number	Biodiversity Metric 3.1 Target Habitat Type	Total Area on Site (Ha)	Distinctiveness	Target Condition	Strategic Significance	Biodiversity Unit Value
1	Other neutral grassland	3.047	Medium	Good	Location ecologically desirable but not in local strategy.	27.18
2	Other woodland; broadleaved	0.482	Medium	Moderate	Location ecologically desirable but not in local strategy.	2.40
3	Wet woodland	0.034	High	Moderate	Location ecologically desirable but not in local strategy.	0.17
4	Mixed scrub	0.015	Medium	Moderate	Formally identified in local	0.11



Biodiversity Metric Reference Number	Biodiversity Metric 3.1 Target Habitat Type	Total Area on Site (Ha)	Distinctiveness	Target Condition	Strategic Significance	Biodiversity Unit Value
					strategy.	
5	Mixed scrub	0.038	Medium	Poor	Formally identified in local strategy.	0.16
6	Introduced shrub	0.029	Low	N/A	Formally identified in local strategy.	0.06
7	Urban trees	0.733	Medium	Moderate	Location ecologically desirable but not in local strategy.	2.38
8	Developed land; sealed surface	1.873	Very Low	N/A	Area/compensation not in local strategy/ no local strategy.	0.00
9	Sustainable urban drainage feature	0.099	Low	Moderate	Location ecologically desirable but not in local strategy.	0.25
	Total (area excl. trees)	5.617	-	-	-	32.71

6.6.5 Table 6 below summarises the value of all hedgerows that are to be created as part of the Proposed Development.

6.6.6 In total, +9.33 BU for hedgerows are to be created within the Proposed Development.

Table 6: Summary value of on-Site hedgerow proposals.



Biodiversity Metric Reference Number	Biodiversity Metric 3.1 Target Habitat Type	Total Length on Site (Km)	Distinctiveness	Target Condition	Strategic Significance	Biodiversity Unit Value
1	Native species rich hedgerow with trees – associated with a bank or ditch	0.403	Very High	Moderate	Formally identified in local strategy.	5.01
2	Native species rich hedgerow – associated with a bank or ditch	0.382	High	Moderate	Formally identified in local strategy.	4.26
3	Hedge ornamental non-native	0.059	Very Low	Poor	Location ecologically desirable but not in local strategy.	0.06
	Total	0.844	-	-	-	9.33

6.7 Proposed Development Summary of Net Impacts

6.7.1 Table 7 below summarises the BU value of the Proposed Development together with the unit value of any biodiversity impacts or on-Site habitat creation/enhancement proposals.

6.7.2 This shows that on balance, the Proposed Development would result in a net gain of +23.40 habitat BU, equivalent to a net gain of +78.85% and a net gain +11.40 hedgerow BU, equivalent to a net gain of +477.82%.

6.7.3 The Proposed Development does not satisfy Trading Rules as a deficit of -1.14 habitat BU has been generated across the broad habitat type 'Heathland and Scrub' and 'Urban', both of which are medium distinctiveness habitats. However, the loss of these habitats is not deemed to be detrimental to the value of the site in terms of biodiversity and the species supported, as the woodland understory proposed contains significant shrubbery which would mitigate any loss in scrub habitat.

Table 7: Summary of Biodiversity Metric results for habitats and hedgerows.



Biodiversity Units (BU)	
Existing Site habitat biodiversity value (habitats)	29.68
Existing Site habitat biodiversity value (hedgerows)	2.39
Value of gross habitat biodiversity loss	13.95
Value of retained and proposed on-Site habitat creation and enhancement (habitats)	53.09
Value of retained and proposed on-Site habitat creation and enhancement (hedgerows)	13.79
Net habitat biodiversity balance (habitats)	+23.40
Net habitat biodiversity balance (hedgerows)	+11.40



7. Conclusion

- 7.1.1 In accordance with the NPPF, where a biodiversity impact cannot be avoided or mitigated then compensation measures must be provided. If this cannot be achieved on-Site through further avoidance, mitigation or compensatory habitat creation or enhancement measures, then off-Site compensation measures will be required.
- 7.1.2 The BAA identified that the Proposed Development would have a net gain of +23.40 habitat BU, equivalent to a net gain of +78.85% and a net gain +11.40 hedgerow BU, equivalent to a net gain of +477.82%. The Proposed Development has not satisfied Trading Rules.
- 7.1.3 The Proposed Development has achieved a biodiversity net gain in habitat and a net gain in hedgerow BU. Therefore, no off-Site compensatory habitat creation and/or enhancement measures are required.
- 7.1.4 Further details of the Biodiversity Metric 3.1 calculations and associated condition assessments can be found within the Biodiversity Metric 3.1 Calculator Tool excel spreadsheet and the Biodiversity Metric 3.1 Habitat Condition Assessment Sheets accompanying this report.
- 7.1.5 Should the Proposed Development be subject to future change, the conclusions and recommendations in this report will need to be revised. This is to be undertaken via the recalculation of the impact assessment element through the most up-to-date biodiversity metric.



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Appendices





















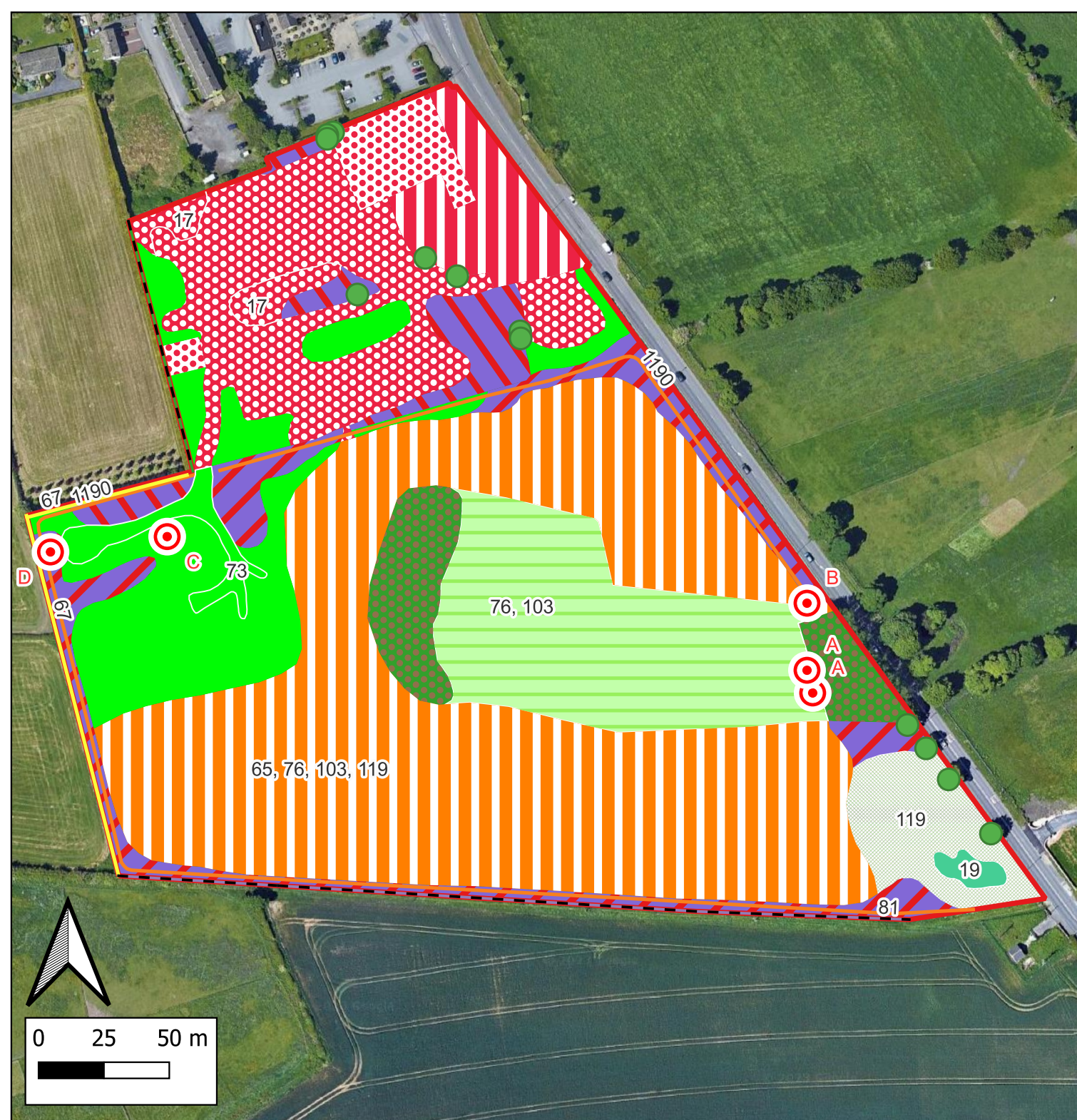
Appendix 1: UKHab Habitat Map



UKHab Habitat Map: Land at Grange Moor

Key:

-  Red line boundary
-  Other woodland; broadleaved - w1g
-  Rye grass and clover ley - c1b5
Hay (65), recent management (76),
permanent agricultural grassland (103),
seasonally wet (119)
-  Other neutral grassland - g3c
Recent management (76),
permanent agricultural grassland (103)
-  Deschampsia neutral grassland - g3c7
Seasonally wet (119)
-  Modified grassland - g4
Bare ground (73)
-  Bramble scrub - h3d
-  Mixed scrub - h3h
-  Standing open waters and canals - r1
Pond (Priority) (19)
-  Developed land; sealed surface - u1b
-  Buildings - u1b5
-  Artificial unvegetated; unsealed surface - u1c
Ruderal/ ephemeral (17)
-  Hedgerow (Priority) - h2a
Flailed (81)
-  Line of trees - w1g6
-  Dry stone wall (67)
-  Sustainable urban drainage feature (1190)
-  Urban trees - u1
-  Target notes



Appendix 2: Proposed Development Plan



Appendix 3: Good Practice Principles for Development

Taken from CIEEM (2016) Biodiversity Net Gain: Good practice principles for development.

Principal 1. Apply the Mitigation Hierarchy.

Principal 2. Avoid losing biodiversity that cannot be offset by gains elsewhere.

Principal 3. Be inclusive and equitable.

Principal 4. Address risks.

Principal 5. Make a measurable Net Gain contribution.

Principal 6. Achieve the best outcomes for biodiversity.

Principal 7. Be additional.

Principal 8. Create a Net Gain legacy.

Principal 9. Optimise sustainability.

Principal 10. Be transparent.



Appendix 3: Author Qualifications

Adam West, Principal Ecologist

BSc (Hons) Animal and Wildlife Management.

Adam joined JCA to lead the expanding ecology department. Having returned to education as a mature student, Adam studied Countryside Management for two years before undertaking a Bachelor's degree, for which he was awarded First Class Honours. Adam has many years' experience in ecological consultancy, working on projects ranging from individual planning applications to national infrastructure projects. Adam holds a Natural England Level 1 great crested newt survey class licence, a Natural England Level 2 bat survey class licence (and the Scottish and Welsh equivalents) and a CSCS card.

Audrey Bourdais Paull, Graduate Ecologist

BSc (Hons) Zoology.

Audrey graduated in 2020 in Zoology at the University of Leeds and joined JCA in 2022. Audrey volunteered for many years with various wildlife conservation and rescue organisations, as well as working on various projects to develop a variety of field survey techniques, report writing and data analysis skills. Audrey is looking forward to developing her ecology consultancy experience with JCA, as well as combining her previous dog training and detection work with ecology to expand into ecology detection dogs.

Helen Chambers, Graduate Ecologist

MSc by Research in Environmental Studies, BSc (Hons) Wildlife Conservation with Zoo Biology.

Helen joined JCA in 2022 after completing her master's by research degree at the University of Salford. In 2019 Helen graduated with First Class Honours BSc Wildlife Conservation with Zoo Biology, where she gained theoretical knowledge of, and practical experience with, wildlife monitoring and wildlife legislation. She is hoping to further develop her ecological surveying and report writing skills at JCA.

Amy Donaldson, Graduate Ecologist

BSc (Hons) Zoology.

Amy joined JCA in 2022 after graduating with a First Class Honours from the University of Leeds. Amy volunteered for numerous years with the Northumberland wildlife trust to develop a variety of field surveying skills. In 2020 Amy began bat surveying, where she gained practical knowledge and experience in the field. Amy is looking forward to developing her report writing and data analysis skills with JCA, and is working towards her Level 1 bat survey class licence.

Eve Goodwin, Graduate Ecologist

BSc (Hons) Plant Biology

Eve gained her Royal Society of Biology accredited undergraduate degree in 2019 from Aberystwyth University in Plant Biology. She has good plant identification skills which were developed through her academic studies and field work. She has since worked as a CAD technician and has joined JCA in 2022 where she hopes to develop her field skills further.



The Information and advice which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and bona fide opinions.

Signed

Redacted

.....
Amy Donaldson

15/02/23

Reviewed by

Redacted

.....
Audrey Bourdais Paull

20/02/23

Approved by

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.....
Adam West *ACIEEM*

20/02/2023



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ECOLOGICAL SERVICES

Ecological Pre-Planning Services

- Phase 1 Habitat Surveys
- Great Crested Newt eDNA Sampling
- Protected species: Bat, Wintering and Nesting Bird, Badger, Amphibian, Otter, Water Vole, White-Clawed Crayfish, Dormice and Reptile Surveys.
- Preparation for Environmental Impact Assessment (EIA)
- Invasive Species Surveys
- Code for Sustainable Homes
- Butterfly & Insect Surveys

Ecological Post-Planning Services

- Biodiversity Enhancement Plans
- Protected Species Mitigation
- Ecological Management (Bat and Bird box installation and inspection)
- Planting Schemes
- Monitoring of bird or bat boxes.

ARBORICULTURAL SERVICES

Guidance for Architects & Developers

- British Standard 5837 Surveys
- Arboricultural Implications Assessments (AIA)
- Arboricultural Method Statements (AMS)

Advice for Engineers, Loss Adjusters and Insurers

- Tree Surveys for Subsidence
- Heave Assessment
- Tree Root Identification

Advice for Local Authorities and Social Housing

- Tree Safety Surveys
- Specialist Decay Detection
- Landscape and Orchard Design

Tree Advice for the Legal Profession

- Subsidence Litigation
- Personal Injury and Accident Investigation
- Expert Witness, Planning Inquiries and Appeals

Veteran Tree Management

- Ancient Woodland Management
- Veteran Tree Management

Tree Health and Pest and Disease Management

- Pest and Disease Surveys
- Tree Health Checks
- Disease Mitigation and Control



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