

**BIODIVERSITY ENHANCEMENT
AND MANAGEMENT PLAN**

at
**University of Huddersfield Car
Park
Old Leeds Road
Huddersfield
West Yorkshire
HD1 1SG**

**Client:
Gardiner & Theobald LLP**

**Client Address:
2 Bond Street
Leeds
LS1 2JZ**

**Client Contact:
0113 284 8922 (Tel)**

**JCA Ref:
23849a/LZD**

**Date of Report:
19/10/2026**



Quality Assurance

Version	Desktop Survey Completed:		Site Surveyed:		Report Completed:		Reviewed:	
	Date	Name	Date	Name	Date	Name	Date	Name
0	N/A	N/A	12/05/26	Adam West	03/09/26	Rebecca Petch-Smith	08/09/26	Kristen Kelly
							16/09/26	Liz Davies
1	N/A	N/A	12/05/26	Adam West	16/10/26	Liz Davies	16/10/26	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*.

This Assessment is only valid for the named client and the project described. JCA Limited. accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purpose for which it was commissioned. If the scope of works or timing of the project are altered the advice given in this report may not be valid. Information and data provided within this report is considered accurate at the time of writing.

Provided no significant changes are made to the proposals or on the site (e.g. significant changes to management practices or habitats present) subsequent to the report's issue; this report can be considered valid for 18 months from the date of issue.

As part of membership to our professional body (CIEEM) and EPS licence reporting we are required to provide our biological results to applicable biological record centres. As such, it is our intention to supply biological data collected as part of this assessment, where recorded, to the relevant BRC. If the project is sensitive in nature, we may be able to delay submitting the records until the project enters the public domain, however, this must be discussed with JCA Limited and agreed in writing.



Executive Summary

JCA Limited was instructed by **Gardiner & Theobald LLP** to carry out a Biodiversity Enhancement and Management Plan (BEMP) of **University of Huddersfield Car Park, Old Leeds Road** (hereafter referred to as the 'Site') to inform a planning application for the construction of a multi-storey car park for the University ('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 Statutory Biodiversity Metric 4.0 (June 2024 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.

The baseline habitat units present on site are **1.51** habitat BU. On balance of impacts and habitat retention/enhancement/creation, the report concludes that the Proposed Development will result in a **net loss** of **1.66** habitat BU, equivalent to a **net loss** of **75.80%**, the Proposed Development has **not satisfied** the trading rules.

Off-site mitigation will be required to meet the required 10% net gain and satisfy the trading rules. This will be secured through the purchase of credits from a habitat bank.

Measures for the creation and management of the habitats on site are included within this report.



Contents

1.	Introduction	5
1.1	Purpose of the Report	5
1.2	Terms of Reference.....	5
1.3	Site Description	5
1.4	Details of Proposed Development	6
1.5	Roles and Responsibilities.....	6
2.	Biodiversity Accounting in Context	7
2.1	Biodiversity Net Gain Principles.....	7
2.2	Relevant Planning Policy and Legislation	7
2.3	Local Policy and Guidance	8
3.	Methodology.....	9
3.1	Background	9
3.2	Assessing strategic significance	9
3.3	Baseline Data	10
3.4	Biodiversity Net Gain	10
3.5	Impact Assessment	11
3.6	Habitat Creation and Enhancement	12
3.7	Residual Effects	12
4.	Statutory Biodiversity Metric 4.0	13
4.1	Introduction	13
4.2	Strategic Significance	13
4.3	Existing Site Value	13
5.	Proposed Development Impact Assessment.....	15
5.1	Description of the Proposed Development.....	15
5.2	Habitats to be Retained	15
5.3	Habitats to be Enhanced	15
5.4	Habitats to be Lost	15
5.5	Habitats to be Created.....	15
5.6	Overall Impacts	17
5.7	Protection of Retained Features.....	18
6.	Habitat Creation and Enhancement	19
6.3	Summary of Habitat Creation	19
6.4	Habitat Enhancement	20
7.	Management Prescriptions.....	21
7.3	Modified grassland	21
7.4	Introduced Shrub.....	24
7.5	Individual Trees.....	24
7.6	Rain Garden	28
8.	Monitoring.....	30
8.1	Monitoring Strategy	30
8.2	Ecological Monitoring	30
9.	References.....	31
	Appendix 1: Baseline Habitat Map	33
	Appendix 2: Proposed Habitat Map.....	35
	Appendix 3: Proposed Development Plan	37
	Appendix 4: Site Photographs.....	39
	Appendix 5: Additional Relevant Maps	41
	Appendix 6: Author Qualifications	42



Introduction

1.1 Purpose of the Report

1.1.1 JCA Limited have been instructed by **Gardiner & Theobald LLP** to undertake a Biodiversity Enhancement and Management Plan (BEMP) of a site located at **University of Huddersfield Car Park, Old Leeds 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.
- Address the requirements of Condition 19 of Outline Planning Consent 2021/60/91544/W.

1.1.3 The Site location and red line / survey area are shown in Appendix 1.

1.2 Terms of Reference

1.2.1 Brooks Ecological prepared an Ecological Diversity Statement for the site in 2021, which should be read in conjunction with this report. The assessment extended beyond the current red line boundary and identified the baseline habitats present within and surrounding the site, together with recommendations for ecological enhancement and mitigation in relation to the proposed development.

1.3 Site Description

1.3.1 The site is located at Ordnance Survey (OS) National Grid Reference SE 14757 16880, with nearby postcode HD1 1SG. The site comprises an area of previously developed land, with the northern area of the site classified as vacant and derelict land. The surrounding area is characterised by a mix of residential and industrial development. The site is located within Huddersfield town centre, with the Huddersfield Broad Canal situated to the east.



1.4 Details of Proposed Development

- 1.4.1** The development proposed at the site is the construction of a multi-storey car park for the university. The soft landscaping proposed at the site includes tree, grassland and ornamental planting.

1.5 Roles and Responsibilities

1.5.1 Ecologist Responsible for HMMP

- 1.5.2 JCA Ltd. are the organisation responsible for the production of this BEMP. All surveys and reports are undertaken and compiled in accordance with CIEEM's Professional Code of Conduct and the relevant survey guidance.

1.5.3 Developer

- 1.5.4 The developer responsible for the implementing the habitat creation detailed within this BEMP, until the end of the defects period, is University of Huddersfield. It is recommended that the first year monitoring is completed in May – August before the management is transferred to WVHT to ensure the habitats have established correctly.

1.5.5 Landowner or Land Manager

- 1.5.6 The landowner and manager responsible for the site is University of Huddersfield.

1.5.7 Management Organisation(s)

- 1.5.8 University of Huddersfield are responsible for ongoing management throughout the 30-year period.

1.5.9 Local Planning Authority (LPA)

- 1.5.10 Kirklees Metropolitan Council are the LPA responsible for reviewing and auditing the BEMP. There are also the body responsible for reviewing monitoring reports throughout the 30-year HMMP.



Biodiversity Accounting in Context

1.1 Biodiversity Net Gain Principles

- 1.1.1 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.

1.2 Relevant Planning Policy and Legislation

- 1.2.1 In England, Biodiversity Net Gain (BNG) is mandatory under Schedule 7A of the Town and Country Planning Act 1990 (as inserted by Schedule 14 of the Environment Act 2021). All planning permissions granted in England will have to deliver at least 10% Biodiversity Net Gain (BNG) to be maintained for a period of at least 30 years. The concept seeks measurable improvements for biodiversity by creating or enhancing habitats in association with development.



1.3 Local Policy and Guidance

1.3.1 West Yorkshire Local Nature Recovery Strategy (LNRS)

1.3.2 The **West Yorkshire Local Nature Recovery Strategy (LNRS)** aims to reverse biodiversity loss and build climate resilience by establishing a larger, healthier, and more interconnected network of natural habitats. Coordinated by the West Yorkshire Combined Authority, its primary objectives involve linking fragmented woodlands, meadows, and grasslands, while heavily focusing on the restoration of rivers and wetlands—known as the "Big Blue Thread"—to enhance water quality and mitigate local flood risks. Alongside protecting vulnerable native species, the strategy explicitly champions social equity by expanding urban greenery and securing safe, local access to nature to elevate public health and community well-being across the region

1.3.3 Kirklees Local Plan

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

1.3.5 Kirklees Biodiversity Action Plan

1.3.6 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 *Arvicola amphibius* and great crested newt.



Methodology

1.1 Background

- 1.1.1 Biodiversity accounting of existing and post-development habitats and linear features on-Site was carried out using the Statutory Biodiversity Metric 4.0 Calculator Tool, following guidance set out in the metric user guide (DEFRA, 2024). The process for data collation and analysis associated with the assessment is detailed in Sections 4.2 – 4.3 below.

1.2 Assessing strategic significance

- 1.2.1 A desk study was conducted to collate baseline data about ecological sites within the zone of influence of the proposed development site, following guidelines set out by the Chartered Institute of Environmental and Ecological Management (CIEEM, 2017). This data-gathering exercise was undertaken to obtain any available information relating to statutory nature conservation sites, ecological networks, local plans and priority habitats to help establish the strategic significance of the site. Sources of information used are shown in Table 1.

Table 1: Summary of information sources used for the desk study.

Organisation/source	Information sought
MAGIC	Locations of and citations for all national statutory wildlife sites, including SSSI, and all international sites including SAC, SPA or Ramsar sites within 5 kilometres of the site. Priority Habitats within 300m.
Kirklees Council	Adopted Local Plan, evidence base, and policies map

- 1.2.2 This evidence was reviewed and used to assess the strategic significance of the site, and/or individual habitats and whether it lies within an ecological network for the area.



1.3 Baseline Data

- 1.3.1 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 Adam West (Principal Ecologist, JCA Limited) on 12/05/2026.
- 1.3.2 Habitat degradation had occurred between the Brooks Ecological site visit in May 2021 and JCA's subsequent site visit. Therefore, the baseline habitat classification was assessed using the species lists and photographic evidence provided within the Brooks Ecological Statement. Brooks Ecological classified the habitat as 'other neutral grassland'; however, the species list was predominantly composed of pioneer species characteristic of previously developed land. Furthermore, the photographs within the Brooks Ecological Statement do not support the classification of the habitat as 'other neutral grassland'. Based on the available evidence, the habitat is considered to have been more appropriately classified as vacant and derelict land at the time of the 2021 survey, prior to the subsequent degradation observed by JCA.

1.4 Biodiversity Net Gain

- 1.4.1 Biodiversity Net Gain complements and works with the biodiversity mitigation hierarchy set out in the National Planning Policy Framework paragraph 180a. To achieve a net gain in a way that is consistent with the mitigation hierarchy and reflects the 'spatial-hierarchy' preference for local enhancements, the following steps should be followed:
- (1) Aim to avoid or reduce biodiversity impacts through site selection and layout;
 - (2) Enhance and restore biodiversity on-site;
 - (3) Create or enhance off-site habitats, either on their own land or by purchasing biodiversity units on the market; and
 - (4) As a last resort, to prevent undue delays, purchase statutory biodiversity credits from the UK Government where they can demonstrate that they are unable to achieve biodiversity net gain through the available on-site and off-site options.
- 1.4.2 On completion of the fieldwork the habitat information was mapped and areas were imported into the DEFRA Biodiversity Statutory Metric Calculation Tool. The metric calculates the baseline biodiversity units for the site based on the following factors:
- Area
 - Habitat distinctiveness
 - Habitat condition
 - Strategic significance



1.4.3 Once inputted the metric provides biodiversity units for the proposed habitats based on the following factors:

- Area
- Habitat distinctiveness (full metric only – automatically calculated for small sites metric)
- Habitat target condition
- Strategic significance
- Time habitat is created (full metric only)
- Time to the target condition (full metric only – automatically calculated for small sites metric)
- Difficulty of creation (full metric only – automatically calculated for small sites metric)

1.4.4 The difference between the baseline units and proposed units is then used as a measure of change and is used to assess the number of biodiversity units achieved. Habitats, hedgerows and rivers are inputted as separate factors, with each requiring net gains.

Mitigation hierarchy

1.4.5 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.

1.5 Impact Assessment

1.5.1 The existing baseline habitat plan for the Site was overlain with the Proposed Landscape Plan (Dwg number: 6413-OOB-ZZ-00-D-L-0040) of the Proposed Development using GIS software to provide an area (Ha) of temporary and permanent habitat loss.

1.5.2 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.



1.6 Habitat Creation and Enhancement

- 1.6.1 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: 6413-OOB-ZZ-00-D-L-0040) 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.
- 1.6.2 Condition and strategic significance for each habitat or linear feature were projected using available ecological data or professional opinion about the likely value.

1.7 Residual Effects

- 1.7.1 The residual effects of the Proposed Development scheme were calculated using the Statutory Biodiversity Metric 4.0 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.
- 1.7.2 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 Statutory 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.
- 1.7.3 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.



Statutory Biodiversity Metric 4.0

1.1 Introduction

1.1.1 Habitat degradation had occurred between the Brooks Ecological site visit in May 2021 and JCA's subsequent site visit. Therefore, the baseline habitat classification was assessed using the species lists and photographic evidence provided within the Brooks Ecological Statement.

1.2 Strategic Significance

1.2.1 There are **no** priority habitats or areas identified as part of a potential ecological network within the vicinity of the site. The site is relatively isolated from the wider landscape, being surrounded by residential and industrial development, comprising predominantly of built forms and sealed surfaces. As a result, the site has limited connectivity with the surrounding habitats and is considered to have limited value as part of the wider ecological network.

1.2.2 The site is located within the West Yorkshire LNRS under measure B3_M01 (Appendix 5). The site is **not** part of any designated site, or listed on any local plan, neighbourhood plan or other policy document for ecology. As per the LNRS guidance, the baseline value of the site is considered to have **low** strategic significance (Area/compensation not in local strategy/ no local strategy).

1.3 Existing Site Value

1.3.1 The existing biodiversity value for each habitat, together with the cumulative value of all habitats is provided in Table 2.

Table 2: Baseline habitats on site and their ecological value as categorised by the Statutory Biodiversity Metric 4.0 calculator.

Biodiversity Metric Reference Number	Biodiversity Metric Habitat Type	Total Area on Site (Ha)	Distinctiveness	Condition	Strategic Significance	Ecological Baseline Habitat Unit
1	Developed land, sealed surface	0.17	V.Low	N/A – Other	Area/compensation not in local strategy/no local strategy	0.00
2	Vacant or derelict land	0.251	Low	Good	Area/compensation not in local strategy/no local strategy	1.51
	Total (area excl. trees)	0.42	–	–	–	1.51



1.3.2 The following habitat types were recorded on site: vacant or derelict land and developed land sealed surface.

1.3.3 Vacant or derelict land

UKHab code: u ~ urban, 82 ~ vacant or derelict land.

0.251 ha of the site was classified as vacant or derelict land worth 1.51 BU. The habitat was assessed as being in 'good' condition based on the species list and photographic evidence provided in the Brooks Ecological report. The assessment also considered the subsequent degradation of the habitat since May 2021, which provides an indication of the habitat's condition at the baseline date.

1.3.4 Developed land, sealed surface

UKHab code: u1b ~ developed land, sealed surface.

Approximately 0.17 ha of the site was classified as developed land; sealed surface. This habitat is considered to have negligible biodiversity value and, in accordance with the BNG habitat condition assessment methodology, does not require a condition assessment.



Proposed Development Impact Assessment

1.1 Description of the Proposed Development

- 1.1.1 The Proposed Development involves the construction of a multi-storey car park with associated soft landscaping.
- 1.1.2 The Proposed Development will see the partial removal of vacant or derelict land habitat to facilitate the development. Modified grassland, rain garden, introduced shrub, developed land and urban trees will be created during the development.

1.2 Habitats to be Retained

- 1.2.1 The Proposed Development will retain approximately 0.1682 ha of developed land; sealed surface and 0.0049 ha of vacant or derelict land habitat within the Site. The retention of these habitats will avoid direct habitat loss associated with the Proposed Development and therefore prevent any corresponding reduction in biodiversity units.

1.3 Habitats to be Enhanced

- 1.3.1 No habitat or hedgerow enhancement is proposed as part of the development.

1.4 Habitats to be Lost

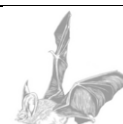
- 1.4.1 The Proposed Development will result in the loss of approximately 0.25 ha of vacant or derelict land habitat within the Site to facilitate the development. This is a low-distinctiveness habitat with a baseline value of 1.48 biodiversity units (BU). The loss of this habitat will therefore result in a measurable reduction in habitat units and will require compensation through the creation of habitat of equivalent or higher ecological distinctiveness, in accordance with the Biodiversity Net Gain (BNG) requirements.

1.5 Habitats to be Created

- 1.5.1 The Proposed Development will see the creation of the following habitats on-Site:
- 1.5.2 Modified grassland

Approximately 0.0112 ha of modified grassland in 'poor' condition will be created as part of the Proposed Development. This is a low-distinctiveness habitat and will provide approximately 0.02 habitat biodiversity units (BU) post-development.

The created habitat will be required to conform to the following UKHab description for modified grassland in poor condition:



*'Species-poor vegetation (<9 species per m²) dominated by a few fast-growing grasses on fertile, neutral soils. It is frequently characterised by an abundance of ryegrasses *Lolium* spp. and white clover *Trifolium repens*. Most broadleaved species present will be associated with high fertility'.*

1.5.3 Introduced shrub

0.0089 ha of introduced shrub will be created during the development. This is a low distinctiveness habitat that does not require a condition assessment. This will provide 0.02 habitat BU post-development.

The created habitat will be required to conform to the following UKHab description for introduced shrub: *'Non-native tall phanerophytes, mid phanerophytes or low phanerophytes planted in a garden or park setting'.*

1.5.4 Rain garden

0.0132 ha of moderate condition rain garden will be created during the development. This is a low distinctiveness habitat that will provide 0.05 BU post-development. This habitat will need to pass 2 out of the 3 following assessment criteria:

- *Condition A: Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.*
- *Condition B: The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.*
- *Condition C: Invasive non-native species (listed on Schedule 9 of WCA) and others which are to the detriment of native wildlife (using professional judgement) cover less than 5% of the total of the vegetated area.*

1.5.5 Urban trees

20 small, moderate condition, urban trees will be planted post-development. This is a medium distinctiveness habitat that will provide 0.25 BU post-development. Each tree will need to pass 3 or 4 out of the following 6 assessment criteria:

- *Condition A: tree is a native species (or at least 70% within the block are native species).*
- *Condition B: The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).*



- *Condition C: The tree is mature (or more than 50% within the block are mature).*
- *Condition D: There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.*
- *Condition E: Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.*
- *Condition F: More than 20% of the tree canopy area is oversailing vegetation beneath.*

1.5.6 Developed land, sealed surface

0.2146 ha of developed land will be created during the development. This habitat is of very low ecological distinctiveness and provides no biodiversity value post-development (0.00 BU).

1.6 Overall Impacts

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

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

Biodiversity Metric Reference Number	Statutory Biodiversity Metric Habitat Type	Retained		Enhanced		Lost	
		Area (ha)	Unit	Area (ha)	Unit	Area (ha)	Unit
1	Developed land, sealed surface	0.1682	0.00	0.00	0.00	0.00	0.00
2	Vacant or derelict land	0.0049	0.03	0.00	0.00	0.25	1.48
	Total (area excl. trees)	0.17	0.03	0.00	0.00	0.25	1.48

1.6.2 The existing baseline across the site was compared to the current hard and soft landscaping plans. The Metric calculated a net change of **-74.96%** for habitat units. The full Metric spreadsheet has been provided alongside this report for the LPAs review. Table 4 summarizes the biodiversity metric results.

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

On-site baseline	Habitat units	1.51 BU
On-site post intervention	Habitat units	0.36 BU
Total net change %	Habitat units	-75.80% (-1.14 BU)
Trading rules satisfied	Yes/No	No



- 1.6.3 Off-site mitigation will be required to meet the required 10% net gain and satisfy the trading rules. This will be secured through the purchase of credits from a habitat bank.
- 1.6.4 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.

1.7 Protection of Retained Features

- 1.7.1 Protective Heras fencing, at least 1.8m in height, is to be installed around the development area. This fence is to be retained for the duration of the works to prevent construction works causing any damage to surrounding habitats and retained habitats close to construction. The fence should be inspected regularly and repaired as necessary for the duration of the works.
- 1.7.2 Lighting should not fall onto surrounding habitats close to construction. All lighting should be directional towards the works required and avoid overspill into surrounding habitats.
- 1.7.3 If plant operations are unavoidably close to surrounding habitats and retained habitats close to construction, they should only be done with light tracked machinery (under 20 tonnes) to avoid pollution, excessive noise and vibration spilling into the surrounding environment. The use of dust suppression equipment is also recommended.
- 1.7.4 To prevent any possible chemicals from entering surrounding habitats and retained habitats close to construction appropriate fuel storage and refuelling techniques must be followed. This may include secure storage areas, use of plant nappies/drip trays, and a set location for re-fuelling. Spill kits must also be available to combat any chemical or fuel spill that may occur.
- 1.7.5 The use of herbicides should also be limited where possible. For vegetation removal, use of hand tools/ light machinery should be adopted. This is to limit possible herbicide runoff into the surrounding habitats and retained habitats close to construction. The selection of tools must be appropriate for the job and ensure the habitat removal is limited to the required habitat removal.



Habitat Creation and Enhancement

1.8 Summary of Habitat Creation

1.8.1 The site contains habitats of low conservation value. The proposed created habitats will compensate for the loss of baseline habitats. The following will be created to facilitate the proposed development:

- Modified grassland – poor condition, 0.0112 ha, delivering **0.02** BU,
- Introduced shrub – 0.0089 ha, delivering **0.02** BU,
- Rain garden – moderate condition, 0.0132 ha, delivering **0.05** BU,
- Urban trees – moderate condition, 0.25 ha, delivering **0.25** BU, and
- Developed land, sealed surface – 0.2146 ha, delivering **0.00** BU.

1.8.2 Tables 5 below summarises the value of all area habitats that are to be created as part of the Proposed Development.

Biodiversity Metric Reference Number	Statutory Biodiversity Metric Target Habitat Type	Total Area onsite (Ha)	Distinctiveness	Target Condition	Strategic Significance	Final time to target condition (years)	Biodiversity Unit Value
1	Modified grassland	0.0112	Low	Poor	Area/compensation not in local strategy/ no local strategy	1	0.02
2	Developed land; sealed surface	0.2146	V.Low	N/A - Other	Area/compensation not in local strategy/ no local strategy	0	0.00
3	Introduced shrub	0.0089	Low	Condition Assessment N/A	Area/compensation not in local strategy/ no local strategy	1	0.02
4	Rain garden	0.0132	Low	Moderate	Area/compensation not in local strategy/ no local strategy	3	0.05
5	Urban tree	0.0814	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	27	0.25
	Total (area excl. trees)	0.25	–	–	–	–	0.34



1.9 Habitat Enhancement

1.9.1 The proposed development will not involve the enhancement of any habitats on site.



Management Prescriptions

1.10 Modified grassland

1.10.1 Description

Several parcels of modified grassland are to be created around the site.

1.10.2 Target Condition and Management Summary

To be classed as the 'modified grassland' habitat type, the created grassland area must meet the UKHab (Version 2.01) habitat definition for primary code g4:

"Species-poor vegetation (<9 species per m²) dominated by a few fast-growing grasses on fertile, neutral soils. It is frequently characterised by an abundance of rye-grasses Lolium sp. and white clover Trifolium repens. Most broadleaved species present will be associated with high fertility".

In addition to the above, the modified grassland has a target condition of **poor**, therefore, no specific management is required as long as the above habitat definition is met.

1.10.3 Species Selection and Specification

It is important that the correct plant species are selected that are adapted to the local site conditions and resemble the semi-natural plant communities of the local area. A wildflower and grass mix of 15:85 is normally recommended but this should not include vigorous grasses as these will compete with wildflowers for resources.

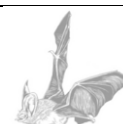
A diverse species mix is required so that 6-8 species per m² establish. The recommended seed mix is EM1 Basic General Purpose Meadow Mixture (or similar). **0.0122 ha** is to become modified grassland. Sown at **40kg per hectare**, this will require approximately **0.43 kg** of seed mix. A list of the species included within EM1 seed mix can be found at the link below:

<https://wildseed.co.uk/product/mixtures/complete-mixtures/general-purpose-meadow-mixtures/basic-general-purpose-meadow-mixture/>

1.10.4 Implementation of Modified Grassland

It is recommended that new grassland planting is implemented after the completion of the development. On completion of construction, if the area of ground to be converted into grassland is bare, then the following instructions should be implemented:

- At most sites, it is likely that the soil will have at one point been fertilised. To reduce fertility, remove the top 15 to 20 cm of topsoil to reveal the nutrient-poor subsoil. The nutrient rich topsoil should then be relocated elsewhere on site, i.e. in the garden spaces and shrub beds.
- Alternatively, a layer of the unearthed subsoil can be excavated and placed over the topsoil. This method will inhibit the growth of any weeds present in the topsoil. Another option is to dilute the topsoil by mixing in poor quality material such as crushed builders'



rubble or spoil. Then, using a fork, break up the soil and rake the proposed seedbed to produce a fine, firm tilth. Remove any large stones and any root fragments.

- Once the ground has been prepared, the seed mix should be sown during Spring (March to April) or early autumn (late August/ September). The seeds should be sown sparsely, at a rate of 40kg per ha. The seed must be surface sown and can be applied by machine or by hand. For an even distribution divide the seed into two or more parts and sow in overlapping sections. Do not incorporate seed and lightly roll or tread the ground to settle the seeds in the soil. Alternatively, lay rolls of turf over the prepared ground to allow to take root.

1.10.5 First Year Management of Modified Grassland

Following sowing, remove any annual and perennial weeds that appear. The grassland should remain nutrient poor, therefore, do not add fertilisers at any point. Mow newly sowing modified grassland regularly (every 7-10 days) during first year of establishment. Cut to a height of 40-60mm and remove the cuttings to prevent nutrients returning to the soil.

1.10.6 Management Once Established

Once established, mow regularly to ensure a consistent sward height. This cutting regime will prevent the grassland from succeeding into scrub and woodland. Cuttings should be collected and removed from the site.

To permit flowering, it is highly recommended to reduce mowing regime from late June and cut every 4-6 weeks. This cutting regime will prevent succession, whilst allowing the flowers to set seed for the following year, thus producing a sustainable and viable habitat.

1.10.7 Monitoring

As the modified grassland has a target condition of poor, no specific monitoring requirement are needed as long as the seed establishes.



Table 6: Prescriptions for the implementation, management, and monitoring of modified grassland.

	Year	Action	Prescriptions	Time of year
Implementation	0	Ground preparation	<u>Bare ground:</u> To reduce fertility, remove the top 15 to 20 cm of topsoil to reveal the nutrient-poor subsoil. The nutrient rich topsoil should then be relocated elsewhere on Site, i.e. in the garden spaces and shrub beds. Alternatively, a layer of the unearthed subsoil can be excavated and placed over the topsoil. This method will inhibit the growth of any weeds present in the topsoil. Another option is to dilute the topsoil by mixing in poor quality material such as crushed builders' rubble or spoil. Then, using a fork, break up the soil and rake the proposed seedbed to produce a fine, firm tilth. Remove any large stones and any root fragments.	Aug - Sep
			<u>Existing grassland:</u> During September or October cut the grass very short and rake the land over vigorously to create patches of bare ground. When the grassland is cut, the cuttings must be removed from the Site to prevent the nutrients being returned.	Autumn
	0	Sow seed	Seed should be sown in spring (March to April) or early Autumn (late August to September) at a rate of 40kg per ha.	Mar - Apr or Aug - Sep
First Year Management	1	Mow grassland	Mow the grassland mid to late summer to a height no shorter than 5cm and remove the arisings. Remove any residual weeds present in the grassland.	Aug
Annual Management	2 - 30	Mow grassland regularly when required	Mow grassland in Spring no shorter than 50mm.	All year
Monitoring	1 - 5, 10, 15, 20 & 30	Monitor grassland	Seasonal visit to assess grassland species.	May - Sep



1.11 Introduced Shrub

1.11.1 Description

Approximately 0.0157 ha of introduced shrub will be created across the site.

1.11.2 Target Condition and Management Summary

There is no condition assessment for introduced shrub, but the habitat will need to meet the UKHab definition for introduced shrub:

“Non-native tall phanerophytes, mid phanerophytes or low phanerophytes planted in a garden or park setting.”

1.11.3 Monitoring

The introduced shrub will be verified as present during the monitoring visits for the mixed scrub.

1.12 Individual Trees

1.12.1 Description

14 small-sized individual trees are due to be planted across the site.

1.12.2 Target Condition and Management Summary

Urban trees of **moderate** condition are to be planted across the site. To achieve moderate condition, **3 or 4 out of 6** of the criteria listed below will need to be met.

- Criteria A – The tree is a native species (or at least 70% within the block are native species).
- Criteria B – The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).
- Criteria C – The tree is mature (or more than 50% within the block are mature).
- Criteria D – There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.
- Criteria E – Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.
- Criteria F – More than 20% of the tree canopy area is oversailing vegetation beneath.

To achieve moderate condition, it is recommended at least to meet Criteria A, B, D, and F. In



the event that one criteria is not met, then meeting the other three will still result in a moderate condition score.

1.12.3 Species Selection and Specification

The chosen species are all native to Britain. The species selected have a range of life expectancies to provide the site with long term tree cover. Poisonous species have been avoided, as have species which commonly drop branches. Where appropriate trees have been planted to provide useful screening.

Trees must be positioned where they will provide the highest amenity possible, and are unlikely to conflict with other trees or structures as they attain their mature height and spread.

Trees should be container-grown and selected according to guidelines BS: 3936: Part 1: 1992 - Nursery Stock. This will ensure that they are of good form and in healthy condition. **Table 12** details the specification for the individual trees. Consideration is given to availability, immediate impact, ease of installation and likelihood of successful establishment.

Table 12: Native deciduous trees.

Botanical Name	Common Name	Size at Purchase	Number
<i>Acer campestre</i>	Field Maple	Standard	4
<i>Sorbus aucuparia</i>	Rowan	Standard	4
<i>Betula pendula</i>	Silver Birch	Standard	3
<i>Prunus avium</i>	Wild cherry	Standard	3

1.12.4 Implementation of Individual Trees

It is recommended that the tree planting scheme is implemented after the completion of the development. This will avoid damage to new trees from construction hazards such as re-grading of soils near roots and mechanical damage to tree crowns.

Tree planting should take place between November and March. Before planting, loosen the soil to eliminate compaction and improve drainage. If the existing topsoil is of poor quality, a fertile, freely draining soil with neutral or slightly acidic pH should be imported.

A planting hole will be excavated by hand and will be twice the diameter of the rootball and of equal depth. The sides and bottom of the hole should be roughened with the spade or fork. The new tree should be offered into the hole and backfilled using the original soil material. Before planting, loosen the soil to eliminate compaction and improve drainage. Soil amendments such as compost should not be added as this has been shown to be detrimental to successful establishment. All newly planted trees and shrub are to be thoroughly watered immediately after planting.

Staking will be required to secure the tree and prevent losses within the first years of establishment. It may be necessary to angle the stakes to avoid damaging the rootball. All trees are to be staked at a height of no more than 1 metre. Spiral type guards are to be incorporated around the base of each stem to reduce pest damage throughout the winter months and to prevent mechanical damage from strimmers and mowers. Adjustable and flexible tree ties will be used. These are to be attached at a point no more than one third of the way up the stem.



Woodchip mulch should be applied around the base of each shrub to a depth of no more than 75mm. This will conserve water close to the soil surface and inhibit weed growth.

1.12.5 Management Once Established

Remove tree stakes, guards, and ties when they are no longer needed.

After completing any future tree works such as pruning or felling, all deadwood should be retained on Site and created into log piles in suitable and sheltered positions. This will then provide habitat for flora and fauna such as fungus, invertebrates, and amphibians.

1.12.6 Monitoring

Monitor annually from years one to five and then every five years after. Monitoring is to take place between May and September. It is recommended to monitor the establishment of newly planted trees and to replace dead trees as necessary.



Table 8: Prescriptions for the implementation, management, and monitoring of individual trees.

	Action	Prescriptions	Time of year	Year
Implementation	Tree planting	All newly planted trees are to be thoroughly watered immediately after planting. Woodchip mulch should be applied around the base of each tree to a depth of no more than 75mm. This will conserve water close to the soil surface and inhibit weed growth.	Nov - Mar	1
Management of Newly Planted Trees	Watering	Newly planted trees to receive 50 litres of water per week for the first three years.	Apr - Aug	1-3
	Weeding	Any weeds found growing around the newly planted trees should be removed annually in subsequent years after planting. This should be done by manually without the use of herbicides.	Aug - Sep	1-30
	Mulching	New bark mulch should be applied around the base of each tree to a depth of no more than 75mm	Mar - Apr	1
	Replacement of dead trees	Replace dead trees, as necessary.	Nov - Mar	-
	Remove stakes & ties	Remove stakes, guards and ties when they are no longer needed. This is usually done in year 2 and 3 but may be later if trees need additional time to establish.	All year	2-3
Monitoring	Inspection of newly planted trees	Inspect newly planted trees. Undertake monitoring surveys of trees following criteria listed in the Statutory Biodiversity Metric Conditions Assessment Sheets.	May - Sep	1, 5, 10, 20, 30



1.13 Rain Garden

1.13.1 Description

0.0132 ha of moderate condition rain garden will be created during the development. This is a low distinctiveness habitat that will provide 0.05 BU post-development. This habitat will need to pass 2 out of the 3 following assessment criteria:

- *Condition A: Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.*
- *Condition B: The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.*
- *Condition C: Invasive non-native species (listed on Schedule 9 of WCA) and others which are to the detriment of native wildlife (using professional judgement) cover less than 5% of the total of the vegetated area.*

1.13.2 Species Selection and Specification

The chosen species should all be native to Britain. The species selected have a range of life expectancies to provide the site with long term tree cover. Poisonous species have been avoided.

1.13.3 Implementation of Rain Garden

It is recommended that rain garden planting is implemented after the completion of the development. This will avoid damage to plants from construction hazards such as re-grading of soils near roots and mechanical damage to tree crowns. Care should be taken during development to ensure that soils surrounding the scrub are not contaminated with cement or any other building materials.

Whip planting should take place between November and March. Before planting, loosen the soil to eliminate compaction and improve drainage. If the existing topsoil is of poor quality, a fertile, freely draining soil with neutral or slightly acidic pH should be imported.

The whips should be planted at 2m x 2m spacing to create the rain garden. A planting hole will be excavated by hand and will be twice the diameter of the root ball and of equal depth. The sides and bottom of the hole should be roughened with the spade or fork. The new tree should be offered into the hole and backfilled using the original soil material. Before planting, loosen the soil to eliminate compaction and improve drainage. Soil amendments such as compost should not be added as this has been shown to be detrimental to successful establishment. All newly whips are to be thoroughly watered immediately after planting.

Staking will be required to secure the tree and prevent losses within the first years of establishment. It may be necessary to angle the stakes to avoid damaging the root ball. All



trees are to be staked at a height of no more than 1 metre. Spiral type guards are to be incorporated around the base of each stem to reduce pest damage throughout the winter months and to prevent mechanical damage from strimmers and mowers. Adjustable and flexible tree ties will be used. These are to be attached at a point no more than one third of the way up the stem.

Woodchip mulch should be applied around the base of each shrub to a depth of no more than 75mm. This will conserve water close to the soil surface and inhibit weed growth.

1.13.4 First Year Management

All newly planted whips are to be thoroughly watered immediately after planting and then watered once a week throughout the summer period and during any prolonged periods of dry weather.

Once planted, whips should be inspected on an annual basis for signs of poor condition or damage. Any whips that die within the first 5 years after planting will be replaced.

Any weeds found growing around the newly planted whips should be removed annually in subsequent years after planting. This will ensure the uptake of valuable resources such as water, nutrients and light. This should be done manually without the use of herbicides.

1.13.5 Management Once Established

Any ties should be inspected annually and adjusted if required. Ties and stakes should be removed within three years of planting unless establishment is deemed to be unusually slow.

The scrub is to be split into coups and coppiced on rotation every 7 to 15 years depending on growth rate of shrubs. The best time to cut scrub is during late winter.

After completing any future works such as pruning or coppicing, all deadwood should be retained on-site and created into log piles in suitable and sheltered positions. This will then provide habitat for flora and fauna such as fungus, invertebrates, and amphibians.

1.13.6 Monitoring

Monitor annually from years one to five and then every five years after. Monitoring is to take place between May and September. It is recommended to monitor the establishment of newly planting shrub and trees and to replace dead shrubs as necessary.

The site should be annually monitored (at an appropriate time of year) for the introduction and spread of invasive and undesirably non-native plant species, including but not limited to Himalayan balsam *Impatiens glandulifera*, Japanese knotweed *Fallopia japonica*, rhododendron *Rhododendron ponticum*, and cherry laurel *Prunus laurocerasus*. If any invasive species are identified, then an appropriately licensed specialist must be contacted who can eradicate and safely dispose of the invasive species.



Monitoring

1.1 Monitoring Strategy

Ongoing ecological monitoring and BEMP review is required for the successful delivery of BNG targets. The monitoring of habitats will be undertaken by a suitably qualified Ecologist with the findings presented in monitoring reports to be submitted to the Kirklees Metropolitan Council. It is anticipated that Year One will be 2027.

Table 9: Details of when monitoring surveys and reports will be undertaken and submitted.

Project Year	Month Report to be Submitted	Month HMMP to be Reviewed	Comments
1 - 5	September	October	Update in the establishment of habitats
10, 15, 20 & 30	September	October	Habitats to be assessed using the Statutory Biodiversity Metric Condition Sheets & any necessary changes to the BEMP for habitats to achieve proposed condition.

1.2 Ecological Monitoring

Table 10 sets out contingency measures in the event that management prescriptions do not deliver as expected.

Table 10: Summary of adaptive management approaches

Habitat	Risk Factor	Adaptive Management
Modified Grassland	Cover of bare ground does not meet to condition assessment criteria	Additional seeding may be required if bare ground exceeds 5%.
	Cover of bracken exceeds 20% and/or cover of scrub exceeds 5%	Targeted removal of the scrub and/or bracken.
	Cover of species indicative of sub-optimal condition greater than 5% and the presence of Schedule 9 invasive non-native species (INNS)	Review cutting regime to suppress undesirable weeds.
Rain Garden	Shrubs fail to establish	Newly planted whips to be monitored closely and dead shrubs to be replaced.
	Presence of Schedule 9 invasive non-native species (INNS)	A survey is to be undertaken to map the extent of the INNS and a method statement to be produced for its safe removal and management.
Individual Trees	Trees fail to establish	Newly planted trees to be monitored closely and dead shrubs to be replaced.
	The tree has been impacted by human activities.	Replace any damaged trees and consider installing protection whilst the trees establish.



References

CIEEM, CIRIA, IEMA (2016) Biodiversity Net Gain. Good practice principles for development.

CIEEM, CIRIA, IEMA (2019) Biodiversity Net Gain. Good practice principles for development. A practical guide. CIRIA C776a. London, 2019.

CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

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

Department for Communities and Local Government (2005), Circular 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System.

DEFRA (2023) Biodiversity Metric Calculation tool (spreadsheet) (Biodiversity Metric 4.0)

DEFRA (2023) Biodiversity Metric 4.0 User guide

DEFRA (2023) Biodiversity Metric 4.0 and SSM: Technical Annex1 (habitat condition assessments)

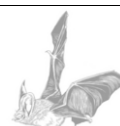
Ministry of Housing, Communities and Local Government (2021), National Planning Policy Framework.

Multi-Agency Geographical Information for the Countryside (MAGIC) Website



Appendices

Appendix 1: Baseline Habitat Map





Site name & address
UoH Transport Hub
Old Leeds Road
Huddersfield
HD1 1SG

Key

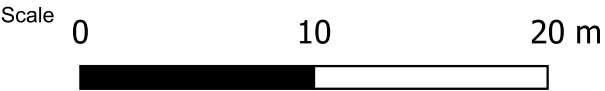
 Red Line Boundary

Habitats Baseline -

 Developed land; sealed surface

 Vacant or derelict land

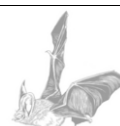
Google Satellite



Site UoH Transport Hub	Client Gardiner and Theobald LLP
Project 23849 Biodiversity Accounting Assessment	Author RPS
Plan ref 6413-OOB-ZZ-00-D-L-0040	Revision 0

Contains Ordnance Survey data © Crown copyright
and database right 2025

Appendix 2: Proposed Habitat Map





Site name & address

UoH Transport Hub
Old Leeds Road
Huddersfield
HD1 1SG

Key

 Red Line Boundary

Individual tree Proposed -

 Proposed Small Urban Tree

Habitats Proposed -

 Developed land; sealed surface

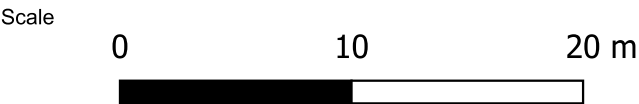
 Introduced shrub

 Modified grassland

 Rain garden

 Vacant or derelict land

Google Satellite



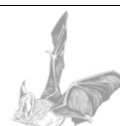
Site UoH Transport Hub	Client Gardiner & Theobald LLP
---------------------------	-----------------------------------

Project 23849 Biodiversity Accounting Assessment	Author RPS
--	---------------

Plan ref 6413-OOB-ZZ-00-D-L-0040	Revision 0
-------------------------------------	---------------

Contains Ordnance Survey data © Crown copyright and database right 2025

Appendix 3: Proposed Development Plan



12. PLANTING STRATEGY

Soft Landscape

The soft landscape design integrates a sustainable drainage (SuDS) strategy with a diverse planting palette to enhance the campus environment.

A mix of large single-stem trees frames the main boulevard to provide shade and structure, while smaller multi-stem trees create an intimate, garden-like feel within the seating areas.

These trees are selected to offer changing colors throughout the seasons, creating a vibrant visual experience. This greenery is combined with rain gardens that manage surface water runoff naturally, filtering the water while significantly increasing the site's biodiversity and providing new habitats for wildlife.

Existing Trees & Arboriculture

There are no existing trees within the site boundary. Consequently, there are no trees to be retained or removed as part of the proposed development. This provides opportunities for new planting to enhance the site's landscape character, biodiversity, and environmental quality.



KEY:

- Planting
- Rain Garden
- Species Rich Grass
- Proposed Trees
- Proposed Shrubs

Appendix 4: Site Photographs



Photo 1: Cleared vacant derelict land on site.



Photo 2: Cleared vacant derelict land on site.



Photo 3: Cleared vacant derelict land on site.



Photo 4: Developed land sealed surface



Photo 5: Developed land sealed surface



Photo 6: Landscaping of staged development adjacent to site.





Photo 7: Vacant derelict land and sealed surface



Photo 8: Vacant derelict land and sealed surface



Photo 9: Vacant derelict land and sealed surface



Photo 10: Vacant derelict land and sealed surface



Photo 11: Developed land sealed surface.



Photo 12: Landscaping of staged development adjacent to site.



Appendix 5: Additional Relevant Maps



Figure 1: The West Yorkshire LNR mapped measures within the red line boundary. The measure is classified as B3_M01: Encourage temporary nature rich uses on undeveloped smaller non-phased brownfield sites (of more than 0.25 hectares) or on land being used for larger phased developments (more than 5 hectares).



Appendix 6: 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.

Rebecca Petch-Smith, Assistant Ecologist

MBiol (Hons) Zoology

Rebecca joined JCA in 2025 after spending 18 months in the teaching industry. Prior to this she graduated from the University of Leeds with a 2:1 Honours Integrated Master's degree in Zoology. As part of her degree programme, Rebecca spent time in Kenya conducting surveys on African ungulates. Rebecca began assisting on bat emergence surveys in 2024, after which, she gained employment as a Graduate Ecologist at JCA Ltd. She is currently working towards her Level 1 Great Crested Newt Licence and Level 1 Bat Licence.

Kristen Kelly, Graduate Ecologist

BSc (Hons) Ecology & Conservation, MSc Biodiversity & Conservation.

Kristen joined JCA in 2025 after completing her master's degree at the University of Leeds with a distinction in biodiversity and conservation. Prior to this she completed her Bachelors at Edge Hill University with a first in ecology and conservation. She has gained a level 3 FISC qualification in plant identification and is currently gaining experience in Preliminary Ecological Appraisals and UKHabs.



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

.....
Rebecca Petch-Smith *MBIOL, BSc (Hons)*

03/09/2026

Reviewed by

.....
Kristen Kelly *MSc, BSc (Hons)*

08/09/2026

Approved by

.....
Elizabeth Davies, *BSc (Hons) MCIEEM*

16/10/2026



For and on behalf of **JCA Ltd**

Registered Office:

Unit 80

Bowers Mill

Branch Road

Barkisland

Halifax

HX4 0AD

Tel. 01422 376335

Email: info@jcaac.com

Web: www.jcaac.com





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



HEAD QUARTERS

Unit 80 Bowers Mill,
Branch Road,
Barkisland
Halifax, HX4 0AD

Company Reg No: 05005041
VAT No: 686 4674 78

