

Biodiversity Metric Assessment

St Chad's Drive, Kirkby, Liverpool

A Report To: McCarthy Stone
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Quality Assurance

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Declaration of Compliance

This study has been undertaken in accordance with British Standard 42020:2013 "Biodiversity, Code of Practice for Planning and Development". The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

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1. Introduction

1.1 Project Background

In October 2023, McCarthy Stone commissioned Middlemarch to undertake a Biodiversity Metric Assessment associated with a proposed development at St Chad's Drive, Kirkby, Liverpool. This assessment is required to inform a planning application associated with the development of new build retirement living complex with associated parking, access roads and soft landscaping.

The assessment is informed by ecological and arboricultural works carried out at the site by Middlemarch. These are:

- Preliminary Ecological Appraisal completed in September 2023 (Report: RT-MME-161307-04).
- Preliminary Arboricultural Assessment completed in August 2023 (Report: RT-MME-161307-01);

1.2 Site Description and Context

Table 1.1 provides a brief summary of the site and its surroundings.

Attribute	Description
Location	St Chad's Drive, Kirkby, Liverpool.
National Grid Reference	SJ 41440 98767
Site Area (ha)	Approx. 0.358 ha
Topography	Flat topography
Land Cover (on site)	The site is dominated by the built environment of a hardstanding car park, and a small area of amenity grassland to the north, with some scattered trees and scrub.
Land Cover (site surrounds)	The wider landscape is dominated by the area of Kirkby with Parks, gardens, residential buildings, churches, schools and associated infrastructure.

Table 1.1: Summary of Site and Surroundings

1.3 Project Scope

The purpose of the Biodiversity Metric Assessment (BMA) is to identify the change in biodiversity value that may result from a change in land use (e.g. development) or management (e.g. biodiversity enhancement) at the site and to establish if a net gain for biodiversity can be achieved. The BMA utilises a biodiversity metric to provide a proxy measure of biodiversity based on habitat attributes, which can then be used to determine the relative change in biodiversity value resulting from any land use or management measures proposed.

It should be noted that the metric is only a proxy for biodiversity using habitat values, and that any proposed enhancements should be designed using appropriate ecological expertise. Existing levels of protection afforded to protected species and to habitats are not changed by use of the metric and statutory obligations will still need to be satisfied. In addition, the metric cannot account for impacts on, or enhancements to, irreplaceable habitats or protected sites, which will need to be assessed separately.

1.4 Summary of Proposals

The proposed development will comprise a new build retirement living complex with associated parking, access roads and soft landscaping. This assessment is based on the documentation detailed in Table 1.2.

Document / Drawing Number	Author
St Chad's Drive, Kirkby – Landscape Masterplan (Drawing: R/2714/1B)	FDA Landscape

Table 1.2: Documentation Provided by Client

2. Methods

2.1 Biodiversity Metric

The biodiversity calculations used within this assessment were undertaken by Charlotte Richardson MSc, ACIEEM (Senior Ecological Consultant) using 'The Biodiversity Metric 4.0' and associated User Guide¹ and Technical Supplement². Sections 2.2 and 2.3 describe the data used for the assessment and the assumptions applied.

2.2. Data Sources

Existing Baseline

The baseline habitat data and condition assessment for the site is taken from the Preliminary Ecological Appraisal carried out by Middlemarch in September 2023 (Report: RT-MME-161307-04). A Phase 1 Habitat Plan showing the extent and location of each habitat recorded on site is included in Section 5 (Drawing: C161307-04-01).

The Biodiversity Metric 4.0 calculator tool utilises the UK Habitat Classification System (UKHab) as the standard data input for habitats. The Phase 1 Habitat Survey data for the site was subsequently converted for the purposes of the metric calculation using the Phase 1 habitats to UKHab translation feature, included in the Biodiversity Metric 4.0 calculator tool, or using professional opinion.

Each habitat or linear feature recorded within the site is assigned a score for 'Distinctiveness', 'Condition' and 'Strategic Significance'. Table 2.1 below describes how each habitat attribute has been determined for the existing baseline habitats in the metric assessment.

Attribute	Description
Distinctiveness	An automated score based on the type of habitat present and its value to wildlife. Highly diverse habitats such as those listed as Habitats of Principal Importance under the NERC Act (2006) or Annex 1 habitats in the Habitats Directive (1992) score highly in this category, whilst highly modified and low diversity habitats such as arable crops will have low distinctiveness scores.
Condition	A score based on the quality of the habitat parcel against published condition criteria (See the Preliminary Ecological Appraisal, Report: RT-MME-161307-04, for further details).
Strategic significance	A score based on information set out in local plans or policies. In this instance, a strategic location was defined as an area identified within the Knowsley Green Infrastructure Strategy ³ .

Table 2.1: Habitat Attributes for Existing Baseline Habitats

¹ Natural England (2023) *The Biodiversity Metric 4.0 – User Guide*. Natural England Joint Publication JP039. Available <http://publications.naturalengland.org.uk/publication/6049804846366720>

² Natural England (2023) *The Biodiversity Metric 4.0 – User Guide: Technical Annex 1 Condition Sheets and Methodology*. Natural England Joint Publication JP039. Available <http://publications.naturalengland.org.uk/publication/6049804846366720>

³ Knowsley Council (2015). Knowsley's Green Space Strategy. Available at: <https://www.knowsley.gov.uk/pdf/green-space-tech-paper-v2.pdf>

The value of each habitat parcel (or linear feature) is presented in terms of habitat (or hedgerow/river) 'biodiversity units' (BU).

Future Baseline

The future baseline conditions of the site are based on the Landscape Masterplan compiled by FDA Landscape (Drawing: R/2714/1B). Table 2.2 below describes how each habitat attribute has been determined for the future baseline habitats in the metric assessment.

Attribute	Description
Distinctiveness	An automated score based on professional opinion about the projected habitat type proposed, taking into account the landscaping proposals detailed in the Landscape Masterplan compiled by FDA Landscape (Drawing: R/2714/1B).
Condition	A target condition score of the proposed habitat parcel based on professional opinion about the outline enhancement and future management proposals.
Strategic significance	A score based on information set out in local plans or policies. In this instance, a strategic location was defined as an area identified within the Knowlsey Green Infrastructure Strategy ³ .
Time to Target Condition	Time to target condition is automatically assigned in accordance with the Biodiversity Metric Tool 4.0. This multiplier can be adapted manually to reflect situations where a habitat is created in advance or where there is a delay in the project timescales for new habitat creation (e.g. project phasing).
Difficulty of Recreation	An automated value based on the difficulty of creating the target habitat. This value is unchanged from the values generated in Metric 4.0.

Table 2.2: Habitat Attributes for Existing Baseline Habitats

Following the calculation of the existing and future biodiversity value of the site, a calculation of the net biodiversity change is carried out to determine the 'Post-intervention habitat (or hedgerow/river) units', along with a figure for the percentage of net biodiversity impact loss (or gain).

2.3 Constraints and Assumptions

The following constraints and assumptions are applied to this report:

- For the purposes of this report, the term 'Habitat Loss' is applied to proposals that result in a change of habitat type or habitat 'distinctiveness'. This is defined in the Biodiversity Metric even where the new habitat type is created without any physical loss of the previous habitat type (e.g. creation of scrub over grassland). 'Habitat Enhancement' is applied where the habitat type and 'distinctiveness' remains the same, but the 'condition' of the habitat is improved.
- The BMA necessitates an estimation of future baseline values, based on professional opinion, to determine the change in biodiversity value that could occur as a result of the proposals at the site. The assumptions about target habitat types or condition in this report are based on professional opinion about the likely achievable outcomes at the site, based on the proposed planting plans and presumed management resources. All target habitats presume the implementation of a long-term Management Plan to achieve these ends and a recommendation to this effect is given in Section 4.

- The area of any new Urban Trees proposed is calculated using the Street Tree Helper (as described above). For the purposes of this assessment, all new trees proposed are assumed to be small (below 1/3 of their life expectancy).

3. Biodiversity Metric Calculation

3.1 Existing Habitats

The habitats identified during the Preliminary Ecological Appraisal are described in Table 3.1 and their value in biodiversity units (BU) is provided. The current extent of the habitats present is shown in Drawing C161307-04-01 in Section 5. The baseline metric calculations are provided in Appendix 1.

Phase 1 Habitat	UKHab Habitat Equivalent	Area (ha) / Length (km)	Description (distinctiveness, condition, connectivity and strategic significance)	Value (BU)
Area Based Habitats (continues)				
Amenity grassland	Modified grassland	0.122	An amenity grassland strip was present along the eastern boundary of the site. This is a 'Low' distinctiveness habitat which was assigned 'Poor' condition. Amenity grassland is not specified as a priority in the Knowsley Local Plan. Due to this alongside the relatively low biodiversity value of this habitat, it has been assigned 'Low' strategic significance.	0.24
Hardstanding	Urban – Developed land; Sealed surface	0.317	Hardstanding was the dominant habitat on site. This is a 'Very Low' distinctiveness habitat which is automatically assigned a condition score of 'N/A'. Due to its negligible inherent ecological value, this habitat is considered to be of 'Low' strategic significance.	0.00
Dense scrub	Mixed scrub	0.009	Areas of dense scrub were located along the north-western boundary and towards the north-western end of the amenity grassland. This is a 'Medium' distinctiveness habitat which was assigned 'Poor' condition. Scrub is not specified as a priority in the Knowsley Local Plan. However, scrub does have some ecological value and as such, this habitat has been assigned 'Medium' strategic significance.	0.04
Scattered trees	Individual trees – Urban tree	0.004*	A single small tree was recorded towards the northern corner of the site. This is a 'Medium' distinctiveness habitat which was assigned 'Moderate' condition. Trees are considered to be of 'High' strategic significance, as the Knowsley Local Plan indicates that retention of existing trees should be a priority within development proposals, where possible.	0.04

Phase 1 Habitat	UKHab Habitat Equivalent	Area (ha) / Length (km)	Description (distinctiveness, condition, connectivity and strategic significance)	Value (BU)
Area Based Habitats (continued)				
Tall ruderal vegetation	Tall forbs	0.003	Tall ruderal vegetation was present in the south-east of the site. This is a 'Low' distinctiveness habitat which was assigned 'Moderate' condition. Tall ruderal is not specified as a priority in the Knowsley Local Plan. Due to this alongside the relatively low biodiversity value of this habitat, it has been assigned 'Low' strategic significance.	0.01
Total Area (ha)*		0.45*	Total Habitat Baseline (BU)	0.34
Hedgerows				
Species-poor hedgerow	Native hedgerow	0.04	A species-poor, intact hedgerow bordered the hardstanding car park to the north-west. This is a 'Low' distinctiveness habitat which was assigned 'Poor' condition. Hedgerows are not specified as a priority in the Knowsley Local Plan. However, hedgerows do have intrinsic ecological value and as such, this habitat has been assigned 'Medium' strategic significance.	0.09
Scattered trees	Lines of trees	0.036	Two lines of scattered trees were present on site to the north and south-east, both of which were assigned 'Poor' condition. Lines of trees are a 'Low' distinctiveness habitat. Trees are considered to be of 'High' strategic significance, as the Knowsley Local Plan indicates that retention of existing trees should be a priority within development proposals, where possible.	0.08
Total Length (km)		0.08	Total Hedgerow Baseline (BU)	0.17
Notes * excluding urban trees which oversail other habitat areas				

Table 3.1: Summary of Existing Habitats and Linear Features

3.2 Future Baseline and Impacts

Description of the Future Baseline

The future baseline for the purposes of this assessment is set out in the Landscape Masterplan compiled by FDA Landscape (Drawing: R/2714/1B). An adapted version of this map is included in Section 5 showing how each landscaping area has been translated to a habitat type for the purpose of the Biodiversity Metric Assessment.

Impacts

Table 3.2 outlines the potential biodiversity impacts of the proposed development (including area proposed for retention, retained for enhancement, or habitats that are lost).

Phase 1 Habitat	UKHab Habitat	Habitats Retained		Habitat Retained for Enhancement		Habitat Loss	
		Area/Length (Ha/km)	Value (BU)	Area/Length (Ha/km)	Value (BU)	Area/Length (Ha/km)	Value (BU)
Area based habitats							
Amenity grassland	Modified grassland	0.004	0.01	0.00	0.00	-0.12	-0.24
Hardstanding	Urban – Developed land; Sealed surface	0.085	0.00	0.00	0.00	-0.23	0.00
Dense scrub	Mixed scrub	0.009	0.04	0.00	0.00	0.00	0.00
Scattered trees	Individual trees – Urban tree	0.004	0.04	0.00	0.00	0.00	0.00
Tall ruderal vegetation	Tall forbs	0.00	0.00	0.00	0.00	-0.00	-0.01
Total Impact (Area habitats)*		0.10	0.08	0.00	0.00	-0.35	-0.25
Hedgerows							
Species-poor hedgerow	Native hedgerow	0.00	0.00	0.00	0.00	-0.04	-0.09
Scattered trees	Lines of trees	0.036	0.08	0.00	0.00	0.00	0.00
Total Impact (Hedgerows)		0.04	0.08	0.00	0.00	-0.04	-0.09
Notes							
* excluding urban trees which oversail other habitat areas							

Table 3.2: Summary of Impacts

3.3 Habitat Creation / Enhancement

Table 3.3 below outlines the value of the proposed habitat creation/ enhancements in the development proposals.

Landscape Typology	UKHab Habitat Equivalent	Area (ha) / Length (km)	Description (target distinctiveness, condition, connectivity strategic significance and risk multipliers)	Value (BU)
Habitats				
Hardstanding	Developed land; Sealed surface	0.214	Comprises the new area of built development (buildings and hardstanding). The habitat type is automatically assessed as being 'Very Low' distinctiveness and due to the limited attributes for biodiversity is not assigned a condition. Due to its negligible inherent ecological value, this habitat is considered to be of 'Low' strategic significance.	0.00
Meadow grass (incl. bulb planting)	Other neutral grassland	0.021	Meadow grass is assumed to be a species rich meadow mix of 'Medium' distinctiveness. It has been assigned a target condition of 'Moderate'. Other neutral grassland/meadow grass is not specified as a priority in the Knowsley Local Plan. However, this habitat does have intrinsic ecological value and as such, it has been assigned 'Medium' strategic significance.	0.15
Shrub and perennial planting	Introduced shrub	0.028	Ornamental planting is a 'Low' distinctiveness habitat. It does not require a condition assessment within the metric. As it comprises non-native species and is not specified in the Knowsley local plan, this habitat has been assigned 'Low' strategic significance.	0.05
Turf	Modified grassland	0.09	Turf is a 'Low' distinctiveness habitat and it has been assigned a target condition of 'Poor', as it will be subject to regular management post-development. Amenity grassland/turf is not specified as a priority in the Knowsley Local Plan. Due to this alongside the relatively low biodiversity value of this habitat, it has been assigned 'Low' strategic significance.	0.17
Proposed Trees	Urban Tree	0.012	Proposed trees to be planted in grassland on the west side of site. These will be small trees and have 'medium' distinctiveness. Given the confined nature of the area, the target condition is 'poor'. They are of 'high' strategic significance as tree planting is a priority in the Knowsley Local Plan.	0.004
Total Creation (Area Habitats)		0.35*	Total Habitat Baseline (BU)	0.42
* Total area excludes area of urban trees as these oversail other habitats.				

Table 3.3: Summary of Habitat Creation and Enhancement Proposals (continues)

Hedgerows				
Species-rich hedgerow	Native hedgerow	0.131	A new species-rich hedgerow comprising more than five native species will be created on site. This has been assigned a target condition of 'Poor' and is a 'Medium' distinctiveness habitat. Hedgerows are not specified as a priority in the Knowsley Local Plan. However, hedgerows do have intrinsic ecological value and as such, this habitat has been assigned 'Medium' strategic significance.	0.56
Total Creation (Length)		0.131	Total Hedgerow Baseline (BU)	0.56

Table 3.3: Summary of Habitat Creation and Enhancement Proposals (continued)

3.4 Headline Results

Table 3.4 details the headline results. Full details of the biodiversity metric calculations can be found in Appendix 1.

	Habitat Units	Hedgerow Units
On-site baseline	0.33	0.17
On-site post-intervention	0.51	0.64
Total net unit change	+0.17	+0.47
Total net % change	+52.06%	+274.14%
Trading rules satisfied?	Yes	Yes

Table 3.4: Biodiversity Metric Assessment – Headline Results

The existing value of the habitats on site is **0.33 BU**.

The proposals (habitat loss, retention and creation combined), as based on the Landscape Masterplan compiled by FDA Landscape (Drawing: R/2714/1B), will deliver a net gain of **0.17 units**, a **52.06%** increase of baseline habitat value.

The existing value of the hedgerows on site is **0.17 BU**.

The proposals (habitat loss, retention and creation), as based on the Landscape Masterplan compiled by FDA Landscape (Drawing: R/2714/1B), will deliver a net gain of **0.47 BU**, a **274.14%** increase of baseline hedgerow value.

4. Discussion and Recommendations

4.1 Conclusions

Biodiversity Change

Net Gains

The BMA identified that the proposed development will result in a net gain of **0.17 BU** (Habitats) and **0.47 BU** (Hedgerows). These gains compensate for all loss of these features and secures a net gain for biodiversity. This net gain exceeds the 10% net gain in hedgerow value advocated by the Environment Act 2021. This ensures that the proposed development is compliant with planning policy for habitat and hedgerow features (subject to long-term management) and so therefore no additional recommendations are given.

Landscape and Ecological Management Plan

The projected onsite habitat values given in this report are based on the assumption that an appropriate management plan will be implemented to ensure that the habitats/hedgerows will be established and maintained to fulfil their intended biodiversity value. Biodiversity Net Gain Principles⁴ necessitates that any biodiversity units claimed must be deliverable over a minimum period of 30 years. As such, the recommended management plan must provide long-term management proposals and provide scope for monitoring and reporting, to demonstrate that the intended values will be achieved over a minimum 30-year period. A recommendation to this effect is included in Section 4.2 below.

4.2 Recommendations

- R1** A Landscape and Ecological Management Plan (LEMP) should be produced for all habitats and hedgerow features proposed within the site. The LEMP should set out the appropriate establishment works and management prescription required to achieve and maintain the intended type and condition of each habitat /hedgerow/river and stream feature proposed. The LEMP should cover a minimum period of 30 years and include provisions for monitoring, review, reporting and contingency throughout. The LEMP could be produced as part of a planning condition for the proposed development.

⁴ CIRIA, CIEEM, IEMA (2016) *Biodiversity Net Gain: Good Practice Principles for Development* [Available <https://cieem.net/wp-content/uploads/2019/02/Biodiversity-Net-Gain-Principles.pdf>]

5. Drawings

Drawing C161307-04-01 – Phase 1 Habitat Survey

Drawing C161307-05-01-30112023 – Drawing Adaptation of Landscape Strategy Proposal for Purposes of the BMA



C161307-04-01

Legend

Survey area

Scattered trees

Scattered scrub

Species-poor intact hedgerow

Fence

Wall

Line of trees

A

Amenity grassland

Dense scrub

Hardstanding

Tall ruderal

Target note - habitat

Target note - feature

F1. Bird nest

Project

Kirkby, St Chad's Drive, Liverpool

Drawing

Phase 1 Habitat Map

Client

McCarthy Stone

Drawing Number

C161307-04-01

Revision

00

Scale @ A3

1:400

Date

November 2023

Approved By

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C161307-05-01

Legend

Site boundary

Proposed tree

Retained tree

Removed hedgerow

Proposed hedgerow

Retained line of trees

Building and hardstanding

Proposed bulb planting

Proposed meadow grass

Proposed shrub and perennial planting

Proposed turf

Retained habitat

Project

Kirkby, St Chad's Drive, Liverpool

Drawing

Biodiversity Metric Assessment Plan

Client

McCarthy Stone

Drawing Number

C161307-05-01

Revision

00

Scale @ A3

1:400

Date

November 2023

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Appendix 1

Biodiversity Metric 4.0. Calculation - Kirkby, St Chad's Drive, Liverpool

Attached Separately