

Biodiversity Metric Assessment

Former Ambulance and Fire Station, Huyton, Liverpool

A Report To: McCarthy Stone
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Quality Assurance

Date	Version	Author	Checked by	Approved by
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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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Executive Summary

In December 2022, McCarthy Stone commissioned Middlemarch to undertake a Biodiversity Metric Assessment associated with a proposed development at Former Ambulance and Fire Station, Huyton, Liverpool. The Assessment was required to ascertain the level of biodiversity loss/gain on the site resulting from the proposed development of a residential retirement complex with associated landscaping, parking and access.

The Biodiversity Assessment was carried out using the Natural England Biodiversity Metric 3.1. A baseline was established through a Preliminary Ecological Appraisal carried out by Middlemarch in September 2022 and the biodiversity units of proposed landscaping was calculated from the Landscape Masterplan (Drawing No: R/2671/1) by FDA Landscapes.

The metric calculation indicates that the proposed development will achieve a significant net gain for the site of 0.52 area biodiversity units, a 220.05% increase on baseline units. The proposals will also achieve a gain in linear (hedgerow and tree line) habitats of 0.43 biodiversity units, a 1079% increase on the current baseline.

A Landscape and Ecological Management Plan is recommended for the site to ensure the target habitat types and condition of the proposed habitats are maintained long term.

1. Introduction

1.1 Project Background

In December 2022, McCarthy Stone commissioned Middlemarch to undertake a Biodiversity Metric Assessment associated with a proposed development at Former Ambulance and Fire Station, Huyton, Liverpool.

The assessment is informed by ecological works carried out at the site in September 2022 by Middlemarch. This comprised a Preliminary Ecological Appraisal (Report: RT-MME-158942-01).

1.2 Site Description and Context

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

Attribute	Description
Location	The site was located within the town of Huyton, situated within the Metropolitan Borough of Knowsley, Merseyside.
National Grid Reference	SJ 44401 91122
Site Area (ha)	Approx. 0.4 ha
Topography	The site topography was largely flat, with a slight slope to south-east where poor, semi-improved grassland was present.
Land Cover (on site)	The land cover on site comprised predominantly of hardstanding with buildings associated with an ambulance station to the north-east and scrub/trees to the south-west. Scattered buddleia was noted throughout the site.
Land Cover (site surrounds)	The wider landscape is dominated by commercial units to the south, and residential properties with associated gardens to the remaining sides. Pockets of greenspace are dispersed throughout the wider landscape, including areas of grassland, wetland (Huyton Lane Wetland) and woodland/scattered trees. The River Alt is located approximately 230 m north-east.

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 the development of an assisted living apartment block on site with associated hard and soft landscaping. This assessment is based on the documentation detailed in the following documentation listed in Table 1.2.

Document / Drawing Number	Author
Huyton Lane, Huyton – Proposed Site Plan (Drawing No: 22053-1002)	Brightspace Architects
Huyton, Liverpool - Project Evolve RL Scheme Green File Information (Drawing No: SK100 Rev A).	Brightspace Architects
Proposed Residential Development Huyton Lane, Huyton – Landscape Masterplan (Drawing No: R/2671/1)	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 3.1' 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 (Report: RT-MME-158942-01) carried out by Middlemarch in September 2022. A Phase 1 Habitat Plan showing the extent and location of each habitat recorded on site is included in Section 6 (Drawing: C159079-01-01).

The Biodiversity Metric 3.1 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 3.1 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 Report RT-MME-158942-01).
Strategic significance	A score based on information set out in local plans or policies. In this instance, a strategic location were defined at National, Liverpool City Region and Knowsley levels including locations within the Knowsley Green Space Strategy document ³ and in the North Merseyside Biodiversity Action Plan ⁴ .

¹ Panks, S., White, N., Newsome, A., Nash, M., Potter, J., Heyton, M., Mayhew, E., Alvarez, M., Russell, T., Cashon, C., Goddard, F., Scott, S.J., Heaven, M., Scott, S.H., Treweek, J., Butcher, B. and Stone, D. (2022) *The Biodiversity Metric 3.1 – Auditing and accounting for biodiversity: User Guide*. Natural England.

² Panks, S., White, N., Newsome, A., Nash, M., Potter, J., Heyton, M., Mayhew, E., Alvarez, M., Russell, T., Cashon, C., Goddard, F., Scott, S.J., Heaven, M., Scott, S.H., Treweek, J., Butcher, B. and Stone, D. (2022) *The Biodiversity Metric 3.1 – Auditing and accounting for biodiversity: Technical Supplement*. Natural England.

³ Knowsley Council (2010). Green Spaces: Identifying the National, City Region and Knowsley Strategic Context (Available at: <https://www.knowsley.gov.uk/pdf/GSS-review-research-paper-1-Strategic-Context.pdf>)

⁴ Merseyside Biodiversity Group (2008) North Merseyside Biodiversity Action Plan, Available at: <https://www.merseysidebiodiversity.org.uk/habitats-plans/>

Table 2.1: Habitat Attributes for Existing Baseline Habitats

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 Proposed Site Plan (Drawing No: 1002) compiled by Bright Space Architects. 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 detail in Add development drawing.
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 were defined at National, Liverpool City Region and Knowsley levels within the Knowsley Green Space Strategy document.
Time to Target Condition	Time to target condition is automatically assigned in accordance with the Biodiversity Metric Tool 3.1. 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 3.1.

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 5.

- 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 C159079-01-01 in Section 6. 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				
Amenity Grassland	Modified Grassland	0.02	Habitat is automatically classed as being of 'Low' distinctiveness and was assessed as being in 'Poor' condition based on the Preliminary Ecological Appraisal. This habitat is considered to be of 'Low' strategic significance.	0.04
Buildings and Hardstanding	Developed Land; Sealed Surface	0.31	Habitat is automatically classed as being of 'Very Low' distinctiveness and does not require a condition assessment as part of the metric. This habitat is of 'Low' strategic significance.	0.00
Poor, Semi-improved Grassland	Modified Grassland	0.03	Habitat is automatically classed as being of 'Low' distinctiveness and was assessed as being in 'Poor' condition based on the Preliminary Ecological Appraisal. This habitat is considered to be of 'High' strategic significance as it fits the criteria for 'Urban Grasslands' priority habitat under the local BAP.	0.07
Scattered Trees	Urban Trees	0.012*	Habitat is automatically classed as being of 'Medium' distinctiveness and was assessed as being in 'Moderate' condition based on the Preliminary Ecological Appraisal. This habitat is considered to be of 'High' strategic significance as Urban Trees are a priority on the local BAP.	0.09
Bare Ground	Bare Ground	0.01	Habitat is automatically classed as being of 'Low' distinctiveness and was assessed as being in 'Poor' condition based on the Preliminary Ecological Appraisal. This habitat is of 'Low' strategic significance.	0.02
Total Area (ha)		0.37	Total Habitat Baseline (BU)	0.24

Table 3.1: Summary of Existing Habitats and Linear Features (Continues)

Phase 1 Habitat	UKHab Habitat Equivalent	Area (ha) / Length (km)	Description (distinctiveness, condition, connectivity and strategic significance)	Value (BU)
Linear Habitats (Hedgerows/Lines of trees)				
Scattered Trees	Line of Trees	0.02	Habitat is automatically classed as being of 'Low' distinctiveness and was assessed as being in 'Poor' condition based on the Preliminary Ecological Appraisal. As it comprised a non-native species, this habitat was of 'Low' strategic significance.	0.04
Total Length (km)		0.02	Total Hedgerow Baseline (BU)	0.04
Key: * Tree area not included in total habitat area				

Table 3.1: Summary of Existing Habitats and Linear Features (Continued)

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 produced by FDA Landscape (Drawing No: R/2671/1). An adapted version of this map is included in Section 6 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	0.00	0.00	0.00	0.00	-0.02	-0.04
Buildings and Hardstanding	Developed Land; Sealed Surface	0.00	0.00	0.00	0.00	-0.31	0.00
Poor, Semi- improved Grassland	Modified Grassland	0.00	0.00	0.00	0.00	-0.03	-0.07
Scattered Trees	Urban Trees	0.008	0.07	0.00	0.00	-0.002	-0.02
Bare Ground	Bare Ground	0.00	0.00	0.00	0.00	-0.01	-0.02
Total Impact (Area habitats)		0.008	0.07	0.00	0.00	-0.37	-0.15

Linear Habitats (Hedgerows/Lines of trees)							
Scattered Trees	Line of Trees	0.00	0.00	0.00	0.00	-0.02	-0.04
Total Impact (Hedgerows)		0.00	0.00	0.00	0.00	-0.02	-0.04

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				
Buildings and Hardstanding	Developed Land; Sealed Surface	0.194	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.	0.00
Proposed Ornamental Shrub	N/A	0.033	Introduced non-native shrub will be incorporated into the development. This habitat type is automatically assessed as being of 'Low' distinctiveness and does not require a condition score within the metric. This habitat is considered to be of 'Low' strategic significance.	+0.06
Proposed Grass (Turf)	Modified Grassland	0.096	Comprises the formal grassland area around the building and will comprise an Amenity Lawn (Fescue) Mix. Bulb planting will also be incorporated into this area. This habitat type is automatically assessed as being of 'Low' distinctiveness and is considered to achieve 'Poor' condition due to low species diversity and management. This habitat is of 'Low' strategic significance.	+0.19
Proposed Species-rich Flowering Lawn	Modified Grassland	0.049	Comprises areas of flowering lawn mix, it is understood that an Emorsgate EL1 mix will be used. Bulb planting will also be incorporated into this area. This habitat type is automatically assessed as being of 'Medium' distinctiveness and has a target condition of 'Moderate'. This habitat is of 'Medium' strategic significance as more species rich 'Urban Grassland' is a priority habitat in the Local BAP.	+0.19

Proposed Trees	Trees	0.073*	Comprises planting of 17 trees, comprising a mix of native and ornamental. It is understood that at least 70% of the trees will comprise native species. This habitat type is automatically assessed as being of 'Medium' distinctiveness and it is considered that 'Moderate' condition should be able to be achieved. This habitat is deemed to be of 'High' strategic significance as Urban Trees are a priority in the local BAP.	+0.26
Total Creation (Area Habitats)		0.37	Total Habitat Baseline (BU)	+0.69
Hedgerows				
Hornbeam Hedgerow	Native Hedgerow	0.141	A hornbeam hedgerow to be installed along the south-west and north-west boundaries of the site, as well around the car park area. This habitat type is automatically assessed as being of 'Low' distinctiveness and it is considered that 'Moderate' condition should be able to be achieved. This habitat is of 'Low' strategic significance.	+0.47
Total Creation (Length)		0.141	Total Hedgerow Baseline (BU)	+0.47
Key: * Tree area not included in total habitat area				

Table 3.3: Summary of Habitat Creation and Enhancement Proposals

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	0.24	0.04
On-site post-intervention	0.77	0.47
Total net unit change	0.53	0.43
Total net % change	220.05%	1079.93%

Table 3.4: Biodiversity Metric Assessment – Headline Results

The existing value of the habitats on site is **0.24 BU**.

The proposals (habitat loss, retention and creation combined), as based on the Landscape Masterplan (Drawing No: R/2671/1) produced by FDA Landscape, will deliver a net gain of **0.53 units**, a **220.05%** increase of baseline habitat value.

The existing value of the linear habitats (tree line) on site is **0.04 BU**.

The proposals for new hedgerows as based on the Landscape Masterplan (Drawing No: R/2671/1) produced by FDA Landscape, will deliver a net gain of **0.47 BU**, a **1079.93%** increase of baseline linear habitat 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 **0.53 BU** (Habitats) and **0.43 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 habitat and hedgerow features will be established and maintained to fulfil their intended biodiversity value. Biodiversity Net Gain Principles⁵ 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 habitat 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.

⁵ 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 C159079-01-01 – Phase 1 Habitat Survey

Drawing C159079-01-02 - Drawing Adaptation of Landscape Masterplan for Purposes of the BMA



Legend

- Site boundary
- X Scattered scrub
- X Scattered shrub
- Scattered tree
- +++++ Fence
- Line of trees
- Wall
- A Amenity grassland
- Bare ground
- Building
- Hardstanding
- SI Poor semi-improved grassland
- 2 Target note

Project
Former Ambulance & Fire Station, Huyton

Drawing
Phase 1 Habitat Map

Client
McCarthy Stone

Drawing Number
C159079-01-01

Revision
00

Scale @ A4
1:600

Date
January 2023

Approved By
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Legend

- Application boundary
- Tree to be removed
- Tree to be retained
- Proposed tree
- Line of trees to be removed
- Proposed hornbeam hedge
- Proposed bulb planting
- Proposed ornamental shrub
- Proposed species rich flowering lawn
- Proposed turf
- Proposed building and hardstanding

Project
Former Ambulance & Fire Station, Huyton

Drawing
Landscape Proposal

Client
McCarthy Stone

Drawing Number
C159079-01-02

Revision
00

Scale @ A4
1:600

Date
February 2023

Approved By
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C159079-01-02

Appendix 1

Biodiversity Metric 3.1. Calculation, Former Ambulance and Fire Station, Huyton, Liverpool

Attached Separately