

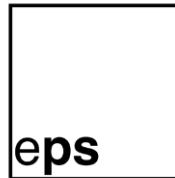
Cube Architecture

# Harrow Avenue, Rochdale

Biodiversity Assessment

5<sup>TH</sup> APRIL 2024





## GENERAL NOTES

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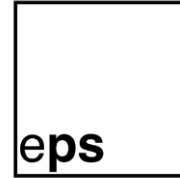
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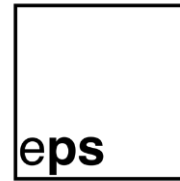
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## EXECUTIVE SUMMARY

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1. This assessment is a desk-based exercise using the results of surveys undertaken by Eps on 3<sup>rd</sup> July 2023 to provide a baseline measure in biodiversity value at Harrow Avenue, Rochdale using the Defra Small Sites Biodiversity Metric 4.0.
2. Proposed habitat changes arising from future ecological enhancements based on a proposed site layout plan (post-construction) provided by the client are evaluated against the baseline (pre-construction) ecology to demonstrate net change in biodiversity units.
3. This report calculates 'biodiversity units' using the Defra biodiversity Small Sites Metric 4.0 and following the methods set out in Defra's biodiversity metric 4.0 user guide. The calculations are based on the area (or length), distinctiveness, condition and strategic significance of habitats found on the site.
4. The full biodiversity assessment calculation can be found in the accompanying Excel document – Harrow Avenue, Rochdale - Biodiversity Metric; however, screenshots of the main results tables are presented here in Appendix A and B.
5. The site was found to be recently cleared and prepared with compacted stone. For the purpose of the calculation, the previous habitat of 'vegetated gardens' has been used as a default baseline.
6. The site was assessed as comprising a total of 2 habitat types with a baseline of 0.32 habitat area units (i.e. 'biodiversity units'), 0 linear hedgerow biodiversity units and 0 watercourse biodiversity units.
7. Post-development plans include new habitats with a total of 0.36 biodiversity area units and 0.38 hedgerow biodiversity units.
8. The biodiversity assessment thus concludes that the current proposed development will result in a 12% net gain for habitat units.



# CONTENTS

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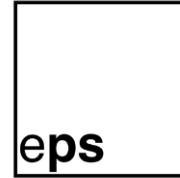
|          |                                                         |          |
|----------|---------------------------------------------------------|----------|
| <b>1</b> | <b>INTRODUCTION .....</b>                               | <b>1</b> |
| 1.1      | Purpose of this Report.....                             | 1        |
| 1.2      | Ecological Context.....                                 | 1        |
| 1.3      | Policy context .....                                    | 1        |
| <b>2</b> | <b>METHODS.....</b>                                     | <b>2</b> |
| 2.1      | Introduction.....                                       | 2        |
| 2.2      | Biodiversity Assessment Methods.....                    | 2        |
| 2.2.1    | Habitat Distinctiveness .....                           | 3        |
| 2.2.2    | Habitat Condition .....                                 | 3        |
| 2.2.3    | Strategic Location.....                                 | 4        |
| 2.2.4    | Difficulty of Creation and Restoration.....             | 4        |
| 2.2.5    | Time to Target Condition .....                          | 4        |
| 2.2.6    | Off-site Risk .....                                     | 4        |
| <b>3</b> | <b>BIODIVERSITY ASSESSMENT .....</b>                    | <b>5</b> |
| 3.1      | Biodiversity Baseline .....                             | 5        |
| 3.2      | Post-development Habitat Creation and Enhancement ..... | 5        |
| 3.3      | Change in Biodiversity Value .....                      | 5        |
| <b>4</b> | <b>REFERENCES .....</b>                                 | <b>7</b> |
| <b>5</b> | <b>FIGURES AND PLATES .....</b>                         | <b>8</b> |

## TABLES

|          |                                                |    |
|----------|------------------------------------------------|----|
| Table 1. | Change in Biodiversity Units Calculation ..... | 6  |
| Table 2. | Headline Results.....                          | 10 |

## FIGURES

|           |                             |    |
|-----------|-----------------------------|----|
| Figure 1. | Site location .....         | 9  |
| Figure 2. | Existing Habitats. ....     | 10 |
| Figure 3. | Proposed Habitats.....      | 10 |
| Chart 1.  | Change by habitat type..... | 11 |



# 1 INTRODUCTION

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## 1.1 Purpose of this Report

In November 2023, Eps were requested by Cube Architecture to carry out a biodiversity assessment of land at Harrow Avenue, Rochdale, associated with the proposed residential development. The aim was for an ecologist with botanical expertise to carry out a site visit to map the habitat types present at Harrow Avenue in order to establish the biodiversity baseline.

Each habitat type was mapped using the standard habitat mapping convention UK Habitat Classification (Butcher et al., 2020) for the purposes of using the Defra metric.

The baseline unit values are then measured against post development habitat changes to determine if the works will result in a loss or gain in biodiversity.

## 1.2 Ecological Context

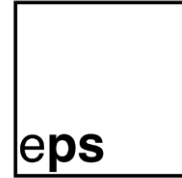
The site is 1800 m<sup>2</sup> and *Figure 1* shows the site location.

The site consists of levelled hardstanding composed of hardcore. The south of the site is bare earth with invasive plant species encroaching onto the site from the dry ditch to the boundary. The Schedule 9 invasive plant species present include; Japanese knotweed *Reynoutria japonica* and himalayan balsam *Impatiens glandulifer*. There is also Rhododendron *Rhododendron* and laurel *Laurus nobilis* to the southern boundary.

## 1.3 Policy context

The primary aim of Biodiversity Net Gain is to secure a measurable improvement in habitat for biodiversity, to minimise biodiversity losses and to help to restore ecological networks whilst streamlining development processes.

The National Planning Policy Framework (NPPF) makes provisions for the delivery of 10% biodiversity net gain.



## 2 METHODS

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### 2.1 Introduction

The biodiversity metric 4.0 is designed to quantify biodiversity to inform and improve planning, design, land management and decision-making (Natural England, 2023).

This study has been carried out as a desk-based exercise, using the results of field surveys carried out at the site by Eps and an Illustrative Landscape Plan provided by the client. The primary documents consulted as part of this study include:

- Preliminary Ecological Appraisal Report (Eps, 2023)
- Proposed Landscape plan provided by client

A map of the pre-construction habitats from the ecological appraisal is presented in *Figure 2*.

### 2.2 Biodiversity Assessment Methods

To calculate biodiversity units for the site and assess any changes arising from the proposed development this study uses methods set out the latest Biodiversity Metric 4.0 user guide (Natural England, 2023).

The biodiversity metric uses habitat area as its core measurement, except for linear features where it uses habitat length<sup>1</sup>. Additionally, linear habitats are split into two types, Hedgerows, which includes lines of trees and watercourses. Therefore, a site can have three biodiversity unit values, one for habitat areas, one for hedgerow features, and one for watercourse features. They are assessed using the same metric but cannot be summed together.

Habitat area is multiplied by several factors that indicate its quality: distinctiveness, condition and strategic location, this gives its biodiversity unit value. This can be used for existing and future created habitats<sup>2</sup>. This is shown in Image 1.

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<sup>1</sup> Linear features are assessed by length rather than area to avoid underestimating their value and therefore failing to ensure adequate compensation for any losses.

<sup>2</sup> Where future habitats are to be enhanced or newly created, the risk of failure is accounted for by applying multipliers for risk factors (difficulty, time to target condition, and off-site risk).

|                        |   |                 |   |           |   |                        |   |                    |
|------------------------|---|-----------------|---|-----------|---|------------------------|---|--------------------|
| Size of habitat parcel | x | Distinctiveness | x | Condition | x | Strategic significance | = | Biodiversity units |
| 10 (ha)                | x | 6 (high)        | x | 1 (poor)  | x | 1.15 (high)            | = | 69 units           |

Diagram illustrating the calculation of biodiversity units:

- Size of habitat parcel (10 ha) × Distinctiveness (6 high) × Condition (3 good) × Strategic significance (1.15 high) = 207
- 207 × Difficulty (0.67 med) × Time to target condition (0.837 5 yrs) × Spatial risk (1 local) = 116 units

The net effect of an intervention (or a series of interventions) on biodiversity is calculated as follows:

|            |   |           |   |            |
|------------|---|-----------|---|------------|
| POST units | - | PRE units | = | Net change |
| 116 units  | - | 69 units  | = | +47 units  |



**Image 1. Biodiversity Metric Calculation (Natural England, 2023)**

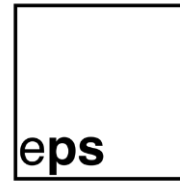
### 2.2.1 Habitat Distinctiveness

Habitats are classified using the phase 1 habitat survey methodology (JNCC 2010) or the UK habitat classification system (Butcher et al., 2020).

The metric pre-assigns each habitat type to a distinctiveness band according to its distinguishing features, i.e. species richness, rarity (at local, regional, national and international scales), and the degree to which it supports species rarely found in other habitats.

### 2.2.2 Habitat Condition

Habitat condition measures the varying quality of similar habitats against what is perceived to be their optimal state. The biodiversity metric 4.0 technical Annex 1 and 2



(Natural England, 2023a) contains condition sheets and guidance for all habitats to which the metric can apply. The condition sheets contain a habitat description, contextual information to aid the assessment, and the assessment criteria. The criteria describe what components need to be present for a habitat to be in good, moderate or poor condition.

### **2.2.3 Strategic Significance**

Strategic significance works at a landscape scale, allowing additional value to be added to habitats in biodiversity restoration and enhancement target areas. Habitats or areas formally listed in local plans and strategies receive a 1.15 multiplier. A 1.1 multiplier can be applied to habitats not listed within formal plans but within informal national initiatives or deemed sufficiently connected by an ecologist.

### **2.2.4 Difficulty of Creation and Restoration**

The risks associated with creating new or enhancing existing habitats, are known as difficulty factors; for example, where habitats fail to establish owing to natural changes in local conditions, incorrect management or for unknown reasons. The biodiversity metric 4.0 contains default values for each habitat based on the average difficulty of creating or enhancing a habitat. Occasionally, under exceptional circumstances, these can be modified, but any deviation from the default value must be fully justified.

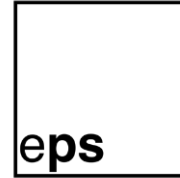
### **2.2.5 Time to Target Condition**

There is often a lag between a habitat being removed and the new compensation habitats achieving their target condition. This gives reduced biodiversity value for a time. The biodiversity metric 4.0 preassigns the time to target condition based on good practice and typical conditions, and assigns a multiplier based on the number of years required to achieve it.

The time to target condition can be advanced or delayed. This function can be used when habitats are created prior to development works starting or if the development will last multiple years so enhancements may not be put in until several years after the initial loss. Advancing or delaying the time to target condition can also be used on sites where local conditions or bespoke enhancements may take more or less time to achieve target condition. In these situations, the adjustments to the time to target condition must be justified.

### **2.2.6 Off-site Risk**

Sometimes it is not possible to compensate adequately for loss of biodiversity within the site boundary, so off-site compensation is required. If the off-site compensation is a significant distance from the development site, then there will be a local loss of biodiversity and a multiplier is applied to any off-site compensation. The off-site risk multiplier can be avoided by using an approved off-site biodiversity units provider.



## 3 BIODIVERSITY ASSESSMENT

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### 3.1 Biodiversity Baseline

The UKHab habitat survey map (Figure 2) has been used to identify the baseline habitats, in this case habitats present are comprised of developed land, but have been defaulted to the original habitat of vegetated gardens for the metric calculation. These habitats have been input into the Defra Small Sites Biodiversity Metric 4.0 calculator and indicate a total of 3.2 area units, 0 hedgerow units and 0 watercourse units. The results of the calculations are presented in Appendix A. It should be noted that these represent screenshots from the calculator; the full biodiversity assessment calculation can be found in the Excel document 'Harrow Avenue, Rochdale - Biodiversity Metric'.

### 3.2 Post-development Habitat Creation and Enhancement

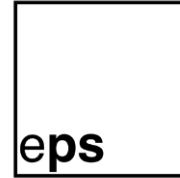
The Illustrative Landscape Plan has been used to identify that there will be 1 retained habitats, 0 enhanced habitats and 3 new habitats.

These comprise a total of 0.36 biodiversity area units and 0.38 hedgerow biodiversity units.

The new habitat areas consist of 400 m<sup>2</sup> vegetated gardens, 150 m<sup>2</sup> of mixed scrub, 50 m<sup>2</sup> of other neutral grassland, 11 native urban trees (*Crataegus monogyna*, *Betula pendula*, *Prunus spinosa*, *Acer campestre*) and 80 m of native hedgerow (*Corylus avellana*, *Ilex aquifolium*, *Rosa canina*, *Crataegus monogyna*, *Betula pendula*, *Prunus spinosa*, *Acer campestre*), 20 of which are associated with a ditch.

### 3.3 Change in Biodiversity Value

Under the current proposals set out in the Illustrative Landscape Plan, there will be a 12% net gain in biodiversity area units and a net gain of 0.38 terrestrial linear biodiversity units. This is shown in Table 1.



**Table 1. Change in Biodiversity Units Calculation**

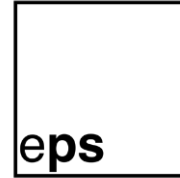
| Post-development Biodiversity Area Units        |   | Baseline Biodiversity Area Units        |   | Change in Biodiversity Area Units        |
|-------------------------------------------------|---|-----------------------------------------|---|------------------------------------------|
| 0.36                                            | - | 0.32                                    | = | + 0.04                                   |
| Post-development Biodiversity Hedgerow Units    |   | Baseline Biodiversity Hedgerow Units    |   | Change in Biodiversity Hedgerow Units    |
| 0                                               | - | 0.38                                    | = | + 0.38                                   |
| Post-development Biodiversity Watercourse Units |   | Baseline Biodiversity Watercourse Units |   | Change in Biodiversity Watercourse Units |
| 0                                               | - | 0                                       | = | 0                                        |

### 3.4 Conclusions

The change in biodiversity value for the Harrow Avenue site as set out in Table 2, above, indicates that the development will result in a 12% net gain for biodiversity.

To enable the development of the site, there will a programme of invasive species eradication which will be a local benefit to biodiversity, but one that is not measured within the metric. This eradication at the top of the catchment has potential benefits in preventing further spread into the local Sites of Biological Interest.

In additions to the proposed post development habitat gains, bird and bat boxes and/or bricks should be incorporated into the development design, including those suitable for a range of bat species, swift, house sparrow and/or starling, which are all species of conservation concern and are likely to be present within 1 km of the site. These features would provide additional roosting/nesting sites for these species groups and offer further onsite biodiversity gains.



## 4 REFERENCES

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Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020), *UK Habitat Classification – Habitat Definitions V1.1* at <http://ukhab.org>

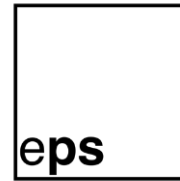
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Natural England (2023a), *The Biodiversity Metric 4.0: User Guide - Technical Annex (March 2023)*. Natural England.

JNCC. (2010), *Handbook for Phase 1 Habitat Survey* (revised). JNCC, Peterborough.

EPS, PEA report (2023)

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## 5 FIGURES AND PLATES

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|                                      |    |
|--------------------------------------|----|
| Figure 1. Site location .....        | 9  |
| Figure 2. Existing Habitats. ....    | 10 |
| Figure 3. Proposed Habitats.....     | 10 |
| Table 1. Headline Results.....       | 10 |
| Chart 1. Change by habitat type..... | 11 |

**Figure 1. Site location**

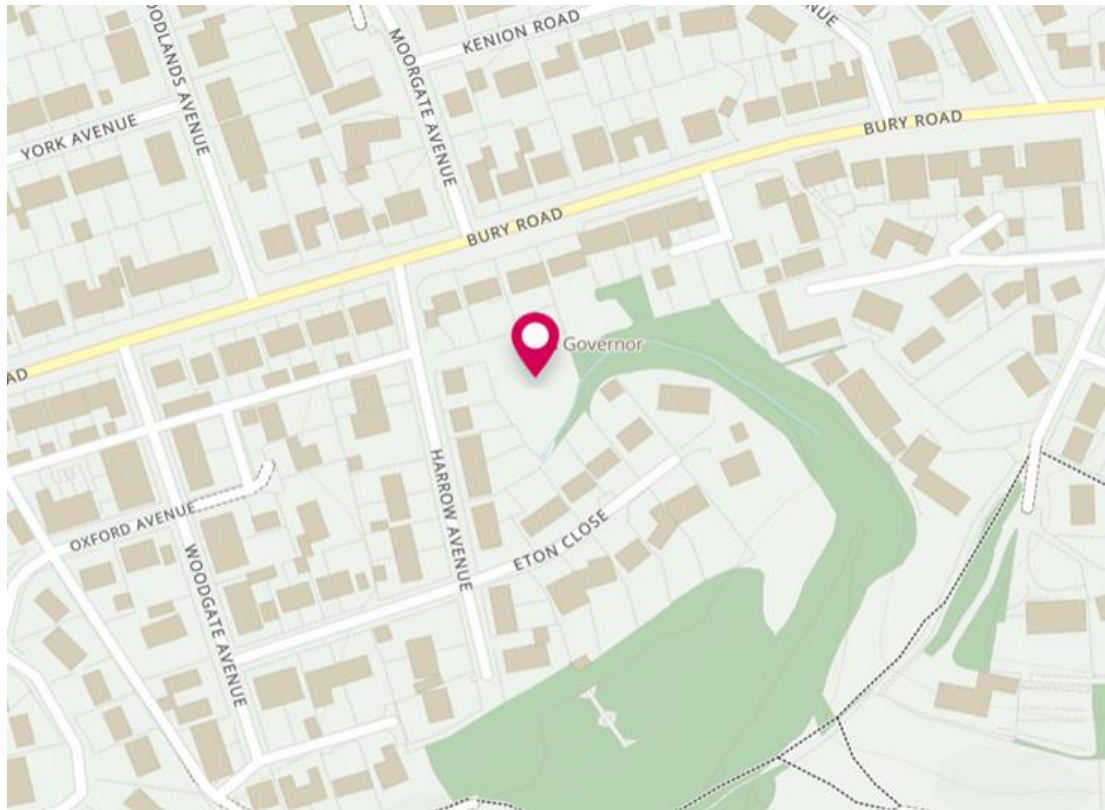
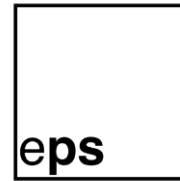




Figure 2. Existing Habitats.



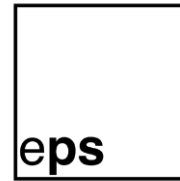


**Figure 3. Proposed Habitats**



**Table 1. Headline Results**

|                        |                |                          |  |
|------------------------|----------------|--------------------------|--|
| Baseline Units         | Habitat units  | 0.3200                   |  |
|                        | Hedgerow units | Zero Units Baseline      |  |
|                        | River units    | Zero Units Baseline      |  |
| Post-development Units | Habitat units  | 0.3584                   |  |
|                        | Hedgerow units | 0.3849                   |  |
|                        | River units    | 0.0000                   |  |
| Total net unit change  | Habitat units  | 0.0384                   |  |
|                        | Hedgerow units | 0.3849                   |  |
|                        | River units    | 0.0000                   |  |
| Total net % change     | Habitat units  | 12.00%                   |  |
|                        | Hedgerow units | % target not appropriate |  |
|                        | River units    | % target not appropriate |  |



**Chart 1. Unit change by habitat type**

