

Biodiversity Net Gain Assessment



Dwyer Road, Reading

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK ADAS Ltd.

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Summary

Planning permission is being sought for development of residential dwellings at the land at Dwyer Road, Reading, Berkshire, by Gleeds Cost Management Ltd, on behalf of Reading Borough Council.

The updated Preliminary Ecological Appraisal and baseline condition assessment undertaken by ADAS in January 2023 identified existing habitats on site that had largely been left unmanaged since the demolition of the pre-existing building at the site 14 years ago. The site comprised primarily open mosaic on previously developed land and lowland mixed deciduous woodland Priority Habitats, as well as scattered urban trees and lines of trees along the southern and eastern boundaries. The preliminary ecological appraisal also identified habitats suitable for and/or signs of activity of protected and Priority species, including nesting birds, roosting bats, Badger, reptiles and Hedgehog.

ADAS were therefore commissioned to undertake biodiversity net gain assessments of the proposed plans for the development at the site. Plans include complete loss of most habitats on site, apart from 15 urban trees, to facilitate the construction of residential dwellings with associated hard and soft landscaping. Landscaping proposals include associated vegetated urban gardens and grass verges, as well as creation of a species-rich 'Biodiverse Open Green Space' comprising other neutral grassland. Thirty-nine urban trees will also be planted throughout the site, and to achieve at least 10% biodiversity net gain and meet targets within the Reading Borough Local Plan, two offsite grass verges to the southwest of the site will be enhanced and lowland deciduous woodland will be created on the offsite verge directly south of the site. In addition, at least 36 urban trees will be planted offsite within the local area.

The proposed development will result in **net biodiversity area gain of 1.45 biodiversity units, which represents an 11.81% net gain in area habitats** and a **net biodiversity linear gain of 0.04 biodiversity units, which represents a 21.87% net gain in linear habitats**. This will meet the minimum target of 10% net gain and adhere to the Local Plan, as well as the additional tree planting planned within the site and local area.

However, some of the trading rules of the metric have not been satisfied, with the loss of open mosaic on previously developed land on site. This habitat is of High distinctiveness and needs to be replaced with the same habitat type. Currently, within the proposals there is no replacement habitat and since this habitat would be difficult to recreate offsite, the most practical way to preserve this habitat would be to avoid destroying habitats at this site. The trading rules should be met before the designs can go to planning, however this is not mandatory with Metric 3.1 and current development plans for the site make provision for local housing targets.

1 Introduction

1.1 Background and Objectives

This report has been commissioned by Gleeds Cost Management Ltd on behalf of Reading Borough Council to inform a planning application of land at Dwyer Road, Reading RG30 3PN (central OS grid reference: SU 68232 71885), hereafter referred to as ‘the site’. The proposed development includes construction of residential dwellings and associated landscaping on site.

Due to the nature of the proposed development, it is understood that a biodiversity net gain assessment of the proposed works is required, as per local and national policy. Biodiversity net gain occurs in development when the project leaves the natural environment in a better state than it was prior to the project. To achieve biodiversity net gain, the developer is required to ensure that wildlife habitats are created or enhanced. It requires the development to result in a demonstrable increase in habitat value to the baseline (how the site was prior to development). Biodiversity net gain should be demonstrated quantitatively.

To demonstrate biodiversity net gain, the value of the habitats are assessed using a recognised metric tool to calculate biodiversity units. The biodiversity losses or gains resulting from the development are then calculated by subtracting the baseline (pre-development) units from the post development units. The Biodiversity Metric 3.1 Calculation tool (Natural England, 2021a) has been used here to demonstrate biodiversity net gain in a quantitative manner.

The *Biodiversity Net Gain Good Practice Principles for Development* (CIEEM, CIRIA and IEMA, 2016) are a set of ten principles which have been produced to provide a framework that helps improve the UK’s biodiversity by contributing towards strategic priorities to conserve and enhance nature while progressing with sustainable development. To demonstrate that biodiversity net gain has been achieved in a qualitative manner for a development it would need to be shown that the development meets these ten principles which have been listed below:

- *Apply the mitigation hierarchy*
- *Avoid losing biodiversity that cannot be offset by gains elsewhere*
- *Be inclusive and equitable*
- *Address risks*
- *Make a measurable net gain contribution*
- *Achieve the best outcomes for biodiversity*
- *Be additional*
- *Create a net gain legacy*
- *Optimise sustainability*

- *Be transparent*

1.2 Objectives of the report

This biodiversity net gain assessment has been produced in accordance with the British Standard (BS) for Biodiversity – Code of practice for planning and development, BS42020:2013.

The objectives of this report are as follows:

1. *To identify the planning policy context relevant to BNG matters on the site.*
2. *To describe the baseline biodiversity value of the site based on the UK Habitat condition assessment.*
3. *To evaluate the proposed biodiversity of the site based on the agreed final landscape proposals.*
4. *To calculate the predicted change in the biodiversity unit value of the site post development and demonstrate the potential biodiversity net gain of the proposed development in a qualitative manner.*
5. *To assess if the proposed development meets the requirements of the trading rules and demonstrate how the proposed development does meet those requirements.*
6. *To demonstrate how the proposed development meets the ten principles set out in the 'Biodiversity Net Gain Good Practice Principles for Development' and has led with the mitigation hierarchy.*

1.3 Structure of the Report

The remainder of this report is structured in the following manner:

- *Section 2: Planning policy context. This describes the national, county and district level planning policy relevant to biodiversity net gain matters in relation to the proposed development.*
- *Section 3: Methods. Describes the methods used to undertake the Biodiversity Net Gain Assessment.*
- *Section 4: Proposed development. This section describes the proposed development.*
- *Section 5 Baseline Biodiversity Unit Assessment. This section describes the biodiversity baseline information, identifies key habitats, analyses the condition of the baseline habitats, and provides the findings of the baseline biodiversity units.*
- *Section 6: Proposed Biodiversity Unit Assessment. This analyses the effects of the proposed development on the baseline biodiversity units identified in section 5 and details the provision of biodiversity within the proposed development. This section will also assess the proposed development against the mitigation hierarchy and ten principles.*
- *Section 7: Conclusion. This final part of the report summarises the overall effects on biodiversity on the site and if the proposed development can achieve a net gain in biodiversity.*

1.4 The Author

This document has been prepared by Amelia McCormack BSc (Hons) MSc, an ADAS Assistant Ecological Consultant. Amelia McCormack is a professional member of Chartered Institute of Ecology and Environmental Management (CIEEM) and holds a Master's degree in a course relating to ecological consultancy. ADAS is a Landscape Institute and CIEEM registered practice, and all work is prepared and reviewed internally by senior highly experienced Landscape Architects and Ecologists.

2 Legislation and Policy Background

2.1 National Planning Policy Framework

The government policy for England on biodiversity is covered under the National Planning Policy Framework (NPPF; 2021), which includes multiple mentions of the requirement for a measurable net gain (highlighted in the following extracts below):

- *Para 174d: ‘Planning policies and decisions should contribute to and enhance the natural and local environment by... minimising impacts on and improving **net gains** for biodiversity, including by establishing ecological networks that are more resilient to current and future pressures...’*
- *Para 179b: ‘To protect and enhance biodiversity and geodiversity, plans should... promote the conservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing **measurable net gains** for biodiversity.’*
- *Para 180d: ‘development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure **measurable net gains** for biodiversity or enhance public access to nature where this is appropriate.’*

2.2 The Environment Act (2021)

The Environment Act (2021) requires all development schemes in England to deliver a mandatory 10% biodiversity net gain to be maintained for a period of at least 30 years after the development has been completed. Schedule 14 makes provision for biodiversity gain to be a condition of planning permission in England. The concept seeks measurable improvements for biodiversity by creating or enhancing habitats in association with development. Part 6 on nature and biodiversity covers all areas of biodiversity net gain across two core sections and the supporting Schedule 14, particularly sections 9(3), 13(2), 14(2) and 15. Although the Environment Act 2021 is a part of UK law, its policies – with mandatory biodiversity net gain included – aren’t expected to be fully integrated until November 2023 as it goes through a two-year transition period. Many local planning authorities, however, are already enforcing the new NPPF in line with detailed guidance from DEFRA and Natural England and are applying a 10% biodiversity net gain requirement on each new development proposal.

2.3 Local Policy

The Reading Borough Council Local Plan (adopted November 2019) makes provision for protecting biodiversity and the green network in Policy EN12, which states the following in relation to biodiversity net gain:

- b) *“On all sites, development should not result in a net loss of biodiversity and geodiversity, and should provide a net gain for biodiversity wherever possible.*

Development should:

- *Protect and wherever possible enhance features of biodiversity interest on and adjacent to the application site, incorporating and integrating the into development proposals wherever practicable; and*
- *Provide new tree planting, wildlife friendly landscaping and ecological enhancements (such as wildlife ponds, bird and bat boxes) wherever practicable.*

In exceptional circumstances where the need for development clearly outweighs the need to protect the value of the site, and it is demonstrated that the impacts cannot be: 1) avoided; 2) mitigated; or 3) compensated for on-site; then the new development will provide off-site compensation to ensure that there is “no net loss” of biodiversity. Provision of off-site compensation shall be calculated in accordance with nationally or locally recognised guidance and metrics. It should not replace existing alternative habitats, and should be provided prior to development.”

3 Methods

3.1 Baseline Habitat Assessment

This assessment was carried out as a desk-based exercise, using the results of the UK Habitat condition assessment survey undertaken by ADAS Assistant Ecological Consultant Amelia BSc (Hons) MSc in January 2023, and based on the proposed landscape design drawing, shown in Appendix 1.

3.2 The Mitigation Hierarchy

The aim of the biodiversity net gain assessment is to identify, predict and evaluate potential key effects arising from the proposed development and assess them against the mitigation hierarchy. The mitigation hierarchy requires that developers first take steps to avoid and then to minimise impacts on biodiversity. Only after these steps are taken should developers look to compensate for losses that cannot be avoided. Finally, if compensation within the development footprint is not possible or does not generate the most benefits for nature conservation, the losses should be offset elsewhere. The proposals have been developed in accordance with the British Standard for 'Process for designing and implementing Biodiversity Net Gain – Specification', BS8683:2021 to reduce risk to harm of biodiversity and maximise the potential gains on the site.

3.3 Biodiversity Metric Calculation

Biodiversity metrics (units) were calculated for the site using the "Biodiversity Metric 3.1 - Calculation Tool" and guidance available on the Natural England Website in February 2022 (Natural England 2021a, 2021b). The biodiversity metric spreadsheet is provided as an Excel file with this report.

The metric uses area and linear habitat features as a proxy measure for capturing the value and importance of biodiversity. It uses a calculation in MS Excel to allow for the importance of these features for nature: their size, ecological condition, distinctiveness and location. The metric enables assessments to be made of the baseline (pre-intervention) biodiversity value of a site in terms of 'biodiversity units' and calculates the projected post-development (post-intervention) biodiversity value. The metric can also be used to measure off-site biodiversity changes for a project or development and can be applied from the level of an individual field to, for example, an entire river catchment.

The calculator uses the following variable elements to determine biodiversity units, based on the information collected in the field:

Habitat type: The original survey was based on the UK Habitat (UKHabs) classification system (UK Habs, 2020).

Area (Hectares): The area has been measured based on the digitised proposed ground floor map using 'QGIS' Geographical Information System (GIS) software. Measurements have been rounded up or down to the nearest two decimal places to achieve a minimal mapping unit (MMU) of 0.01 ha. Mapping habitats at different times of year may lead to variation between where one habitat starts and another begins as there is potential overlap between habitats (the ecotone). The actual field mapping is based on both field survey and aerial imagery in order to achieve the best representation of the areas covered by each habitat identified onsite. The areas for the post development site were taken from a pdf version of the development plan in Appendix 1 (Drawing reference: RBC-DRR_HTA-A_DR_0100 – Proposed Ground Floor-REV D.pdf).

Condition: The condition is a means to measure the quality of a habitat based on a series of physical characteristics and typical species of a particular habitat type. In order to aid the process, the Biodiversity Metric 3.1 Technical Supplement (Natural England, 2021b), provides 'condition sheets.' Condition sheets provide a list of positive indicators for each habitat and dependent on how many positive indicators a particular habitat meets will equate to the relevant condition for that specific habitat. In order that this process can be followed, in relation to this calculation, the number of positive indicators that are met for each habitat type are presented in Appendix 2 for each habitat found onsite.

Strategic significance: This element is to assess the habitats on site in relation to the geographical location in which they are located. Information to determine the significance of a habitat within a specific landscape can be found in a variety of sources that include: local plans, local biodiversity and National Character Areas. The strategic significance is based on three categories which equate to a different score, which are as follows: High – 1.15; Medium – 1.1 and Low - 1.

3.4 Limitations

Measurements are based on a two-dimensional mapping and would assume the site is completely flat and therefore certain habitats may be greater in extent if they occur on a slope.

In the field the surveyor will have judged the approximate area of each of the habitat type and where appropriate use aerial imagery to assist with mapping of the habitats as accurately as possible. The Biodiversity Metric 3.1 is accurate to two decimal places; therefore, habitats are rounded up or down to the nearest whole value, with a MMU of 0.01 hectares.

The baseline condition assessment was conducted in January, which is sub-optimal time for vegetation identification and habitat survey, so where this limited assessment, a precautionary approach was taken, as per instructions on The Biodiversity Metric 3.1 Condition Assessment Sheets (Natural England, 2021c) so calculations provide details of maximum potential impacts to biodiversity to generate a conservative calculation of biodiversity net gain for the site.

4 Proposed Development

The proposed development includes the loss of all existing ground habitats on site (open mosaic on previously developed land and lowland deciduous woodland), 19 urban trees and both lines of trees to facilitate construction of residential dwellings and associated hard and soft landscaping, as per the plans provided by the client in March 2023 (RBC-DRR_HTA-A_DR_0100 – Proposed Ground Floor-REV D.pdf; Appendix 1).

The dwellings will be two to three bedroom residential houses with three semi-detached three-storey buildings along the southern side of the site; a row of terraced housing with two three-storey and nine two-storey buildings running east to west through the centre of the site, and two additional buildings in the north of the site; with associated hard and soft landscaping. This includes parking and access from Appleford Road through the centre of the site, which will have space for HGV turning at the west end and 22 parking spaces along the internal access road (including at least 2 electric parking spaces). A further five residential parking spaces will be provided alongside the houses along the south of the site.

Soft landscaping includes private amenity grass lawns associated with the residential housing, with amenity grass verges and a community green space in the north of the site; and a 'Biodiverse Open Green Space' in the southwest corner of the site. There will be a mix of 39 small and medium urban trees native and/or RHS species for pollinators planted throughout the site – primarily within grass verges and green spaces.

The proposed habitat map, using UKHabs classification, is provided in Appendix 3.

The planning application is set to be submitted to the Local Planning Authority (Reading Borough Council) in May 2023.

5 Baseline Biodiversity Unit Assessment

5.1 On-site Baseline

The existing habitats and linear features assessed in this report are based on the information provided in the Preliminary Ecological Appraisal report (ADAS, 2023) and on the conditions assessment survey completed in January 2023.

Table 1 is a Translation Table to describe the habitats identified on site using Phase 1 habitat classification during the Preliminary Ecological Appraisal to UKHabs, as required for use for biodiversity net gain assessment.

Table 1: Phase 1 to UKHabs translation table

Phase 1 habitat classification	UK Habitat classification
Broadleaved semi-natural woodland	Lowland mixed deciduous woodland (Priority Habitat)
Scattered trees	Overgrown Beech hedgerows on east and south site boundaries = Line of trees Other scattered trees = Urban trees
Scattered scrub	Open mosaic on previously developed land (Priority Habitat)
Poor semi-improved grassland	
Short perennial	
Introduced shrub	
Bare ground	
Hardstanding	Developed land; sealed surface

The baseline habitat map is provided in Appendix 4, and Section 5.1.1 below describes the existing baseline habitats on site.

5.1.1 Habitats

5.1.1.1 Lowland mixed deciduous woodland

An area of semi-natural lowland mixed deciduous woodland ca. 0.03 ha was located in the southeast of the site. These trees were a mix of immature and semi-mature predominantly cherry (*Prunus* sp.) trees with occasional oak (*Quercus* sp.) that showed signs of succession from lack of management.

The ground was mainly bare earth with some rubbish and fly-tipping evident, and occasional Common Ivy (*Hedera helix*) and bramble (*Rubus fruticosus* agg.).

Lowland mixed deciduous woodland is a Priority Habitat under Section 41 of the Natural Environment and Rural Communities Act 2006.

5.1.1.2 *Open mosaic on previously developed land*

The rest of the ground habitat on site (ca. 0.43 ha) consisted of a mixture of bare ground and successional vegetation, comprising areas of grasslands of varying sward height and composition (including patches of damper ground with low average sward height and abundance of moss in the centre/north of the site); patches of short perennial vegetation in the north of the site; as well as bramble scrub and cotoneaster (*Cotoneaster* sp.) shrub abundant at the north, east and western boundaries of the site. Various other non-native ornamental plants were also present throughout the site.

The land here was previously developed as a former care home known as Alice Burrows House, but the buildings were demolished 14 years ago. However, areas of hardstanding and other infrastructure left from the development can be seen within this habitat on site.

Open mosaic on previously developed land is a Priority Habitat under Section 41 of the Natural Environment and Rural Communities Act 2006.

5.1.1.3 *Urban trees*

There were 34 total urban trees recorded; including 13 immature to semi-mature successional scattered broadleaved trees recorded in the north of the site, with half of these being Silver Birch (*Betula pendula*), also with individual Elm (*Ulmus procera*), willow (*Salix* sp.), Turkey Oak (*Quercus cerris*), cherry, and other ornamental trees recorded. One immature Silver Birch was also noted in the west of the site and a semi-mature Rowan (*Sorbus aucuparia*) tree along the east of the site.

In addition, there were also the following trees found in groups with conjoined canopies across the site: a group of mature trees within the northwest corner, which included two large cypress (Cupressaceae) trees and a Silver Birch (protected by Tree Preservation Order (TPO) 12/08). The ground cover under these trees primarily consisted of hardstanding paved surface and short perennial vegetation, with high volumes of fly-tipping. There were also two semi-mature Silver Birch in the north (protected by Tree Preservation Order (TPO) 12/08); four semi-mature Beech and Horse Chestnut (*Aesculus hippocastanum*) trees in the northeast corner of the site, with canopy overlapping with the semi-mature Sycamore (*Acer pseudoplatanus*) directly north of the site boundary; and a group in the southwest corner, which primarily consisted of the canopy of a mature Norway Maple (*Acer platanoides*; protected by Tree Preservation Order (TPO) 12/08), with semi-mature Beech trees along the site boundary and successional deciduous saplings growing beneath over hardstanding paved surface. The majority of these trees had some degree of thick Ivy cover.

5.1.1.4 *Developed land; sealed surface*

There was ca. 0.03 ha hardstanding tarmacked rectangle leading from the tarmacked entrance to the site, which was mostly bordered immediately by mosses and Mouse-ear Hawkweed (*Pilosella officinarum*) before connecting with the poor semi-improved grassland.

5.1.1.5 *Line of trees*

There were two semi-mature successional lines of Beech trees over 5 m high that had overgrown from ornamental hedgerows along the east and south borders of the site, approximately 0.03 km and 0.05 km in length, respectively.

5.1.2 Important ecological features

5.1.2.1 *Designated sites*

There were eight statutory designated sites within 5 km of the site and 14 non-statutory designated sites within 2 km. The closest designated site was Fobney & Kennet Valley Meadows Complex Local Wildlife Site approximately 0.5 km south of the site, which comprised open floodplain meadows and wetland habitats.

Due to the location, scale and nature of habitats and proposed works on site, and distance from other designated sites, it is unlikely there will be any significant impacts on designated sites from the proposed works.

5.1.2.2 *Priority habitats*

The site comprised two Priority Habitats: lowland deciduous woodland and open mosaic on previously developed land, as described under Section 41 of the Natural Environment and Rural Communities Act 2006, identified on site at the time of assessment. It is anticipated that both these habitats will be completely lost on site.

5.1.2.3 *Protected and Priority species*

The existing habitats on site were deemed suitable for various protected animal species during the preliminary ecological appraisal, including nesting birds, roosting bats, Badger (*Meles meles*) and Hedgehog (*Erinaceus europaeus*).

There was evidence of Badger presence within the vegetation in the north of the site recorded during the preliminary ecological appraisal, including a sett. Badgers and their setts are protected under the Protection of Badgers Act 1992.

The hedgerows, scrub and grasslands at the site also provided suitable habitat for Hedgehog, which are a Priority Species under Section 41 of the Natural Environment and Rural Communities Act 2006.

5.2 Habitat Baseline Assessment

5.2.1 Onsite Baseline Habitat Assessment

The condition of each habitat has been assessed against the relevant positive indicators. Summaries of the habitat units and linear units for each baseline habitat on site are provided in Tables 2 and 3 below. A full breakdown of the condition assessments is presented in Appendix 2.

For strategic significance, the following has been considered the most appropriate for each habitat:

- *Lowland mixed deciduous woodland – provide opportunities for biodiversity and increase connectivity throughout the site and are considered to be related to a local strategy plan (Reading Borough Local Plan (118b));*
- *Open mosaic on previously developed land - provide opportunities for biodiversity and increase connectivity throughout the site and are considered to be related to a local strategy plan (Reading Borough Local Plan (118b));*
- *Urban trees – provide opportunities for biodiversity and increase connectivity throughout the site and are considered to be related to a local strategy plan (Reading Borough Local Plan (118b));*
- *Sealed land; developed surface – not associated within any local strategy in terms of ecology; and*
- *Line of trees – provide opportunities for biodiversity and increase connectivity throughout the site and is referred to in the local plan (Reading Borough Local Plan (118b)).*

Table 2: Baseline assessment – on-site area habitats

Habitat type	Area (ha)	Condition	Strategic significance	Total habitat units
Lowland mixed deciduous woodland	0.03	Moderate	Formally identified in local strategy	0.41
Open mosaic on previously developed land	0.43	Moderate	Formally identified in local strategy	5.93
Urban tree (T1: Mature Leyland Cypress in NW corner of site)	0.04	Good	Formally identified in local strategy	0.55
Urban tree (T2: Mature Leyland Cypress in NW corner of site)	0.04	Good	Formally identified in local strategy	0.55
Urban tree (T4: Semi-mature beech in NW corner of site)	<0.01	Moderate	Formally identified in local strategy	0.04
Urban tree: (T5: Mature silver birch in NW corner of site)	0.04	Good	Formally identified in local strategy	0.55

Habitat type	Area (ha)	Condition	Strategic significance	Total habitat units
Urban tree: (T6: Semi-mature small-leaved lime on pavement east of site)	0.04	Moderate	Formally identified in local strategy	0.37
Urban tree: (T7: Semi-mature small-leaved lime on pavement east of site)	0.04	Moderate	Formally identified in local strategy	0.37
Urban tree (T15: Mature Tree of Heaven in NW corner of site)	0.04	Moderate	Formally identified in local strategy	0.37
Urban tree (T11: Semi-mature cherry tree in N of site)	<0.01	Good	Formally identified in local strategy	0.06
Urban tree (T10: Immature Rowan in E edge of site)	<0.01	Moderate	Formally identified in local strategy	0.04
Urban tree (T12: Immature silver birch in W of site)	<0.01	Moderate	Formally identified in local strategy	0.04
Urban tree (T14: Mature Norway Spruce in SW corner of site)	0.04	Good	Formally identified in local strategy	0.55
Urban tree (G1: Group of 4 semi-mature beech trees in SW corner of site)	0.02	Moderate	Formally identified in local strategy	0.18
Urban tree (G5: Group of 5 trees in NE corner of site, including 2 semi-mature horse chestnut and 3 small beech trees)	0.09	Moderate	Formally identified in local strategy	0.83
Urban tree (G6: 2 semi-mature silver birch in N of site)	0.07	Good	Formally identified in local strategy	0.97
Urban tree (G7: 12 immature successional deciduous trees in north of site)	0.05	Moderate	Formally identified in local strategy	0.46
Developed land; sealed surface	0.03	N/A	Compensation not in local strategy	0.00
Total	0.49	-	-	12.26

**The metric calculator does not include the area measurement for urban trees in the total due to the overlap in habitats.*

Table 3: Baseline assessment – on-site linear habitats

Habitat type	Length (km)	Condition	Strategic significance	Total habitat units
Line of Trees	0.03	Poor	Formally identified in local strategy	0.07
Line of Trees	0.05	Poor	Formally identified in local strategy	0.12
Total	0.08	-	-	0.18

5.2.2 Offsite Baseline Habitat Assessment

Three grass verges to the south of the site (central OS grid references: Verge 1 SU 68258 71820; Verge 2 SU 68177 71843; and Verge 3 SU 68100 71863) were identified as being council owned land that could be enhanced and/or modified to accommodate offsite mitigation for loss of habitats at the site at Dyer Road.

A baseline condition assessment against the relevant positive indicators was undertaken by ADAS Assistant Ecological Consultant Rachel Richards BSc (Hons) on 23 March 2023. Summaries of the habitat units for each baseline habitats and linear features offsite are provided in Tables 4 and 5 below. A full breakdown of the condition assessments is presented in Appendix 2.

For strategic significance, the following has been considered the most appropriate for each habitat:

- *Modified grassland – provide opportunities for biodiversity and increase connectivity throughout the site and are considered to be related to a local strategy plan (Reading Borough Local Plan (118b)); and*
- *Urban trees – provide opportunities for biodiversity and increase connectivity throughout the site and are considered to be related to a local strategy plan (Reading Borough Local Plan (118b)).*

Table 4: Baseline assessment – offsite area habitats

Habitat type	Area (hectares)	Condition	Strategic significance	Total habitat units
Modified grassland (Verge 1)	0.26	Poor	Formally identified in local strategy	0.60
Modified grassland (Verge 2)	0.04	Good	Formally identified in local strategy	0.28
Modified grassland (Verge 3)	0.11	Poor	Formally identified in local strategy	0.25
Urban tree	<0.01	Moderate	Formally identified in local strategy	0.04
Urban tree	0.04	Moderate	Formally identified in local strategy	0.37
Urban tree	<0.01	Moderate	Formally identified in local strategy	0.04

Habitat type	Area (hectares)	Condition	Strategic significance	Total habitat units
Urban tree	0.04	Moderate	Formally identified in local strategy	0.37
Urban tree	0.04	Moderate	Formally identified in local strategy	0.37
Urban tree	<0.01	Moderate	Formally identified in local strategy	0.04
Urban tree	<0.01	Moderate	Formally identified in local strategy	0.04
Urban tree	<0.01	Moderate	Formally identified in local strategy	0.04
Urban tree	<0.01	Moderate	Formally identified in local strategy	0.04
Urban tree	<0.01	Moderate	Formally identified in local strategy	0.04
Total	0.41	-	-	2.49

*The metric calculator does not include the area measurement for urban trees in the total due to the overlap in habitats.

Table 5: Baseline assessment – offsite linear habitats

Habitat type (Linear Habitats)	Area (ha)	Condition	Strategic significance	Total habitat units
Ornamental non-native hedge	0.03	Poor	Formally identified in local strategy	0.03
Line of Trees	0.09	Moderate	Formally identified in local strategy	0.41
Total	0.12	-	-	0.45

5.3 Trading Rules

For habitat trading purposes the following is required for each baseline habitat:

- *Lowland mixed deciduous woodland: High distinctiveness. Same habitat required.*
- *Open mosaic on previously developed ground: High distinctiveness. Same habitat required.*
- *Urban trees: Medium distinctiveness: Same broad habitat or higher distinctiveness habitat required.*
- *Developed land; sealed surface: Very low distinctiveness. Compensation not required.*
- *Line of trees: Low distinctiveness. Same distinctiveness or better required.*

6 Proposed Biodiversity Unit Assessment

6.1 Impacts of the Proposed Development

The proposals for new area habitats are based on the proposed development plan in Appendix 3 and summarised in Table 6. The table provides details on habitats that will be created including the buildings, areas of hardstanding associated with the development and community spaces.

The majority of existing habitats on site will be lost with the proposed development and replaced with other habitats created. This includes the complete loss of the two Priority Habitats on site to facilitate construction of the new buildings. The only areas of habitat to be retained are 15 urban trees throughout the site – primarily the existing semi-mature trees and/or those protected by a Tree Preservation Order. Therefore, in total 0.49 ha of the 1.02 ha combined habitat areas (including urban trees) will be lost.

Additionally, both of the existing linear features on site will be lost completely with the proposed development (0.03 km and 0.05 km lines of trees). However, 0.15 km of new native hedgerows will be created throughout the site, primarily hedges outside residential properties and hedge boundary at the site boundaries.

The total area of proposed habitats to be created on site is 0.75 ha, comprising 0.23 ha of developed sealed urban surface comprising building area and hardstanding (i.e. roads and parking). There will be total 0.13 ha of vegetated urban gardens associated with the residential dwellings, which would likely be monoculture turfed lawn and of little ecological significance. Likewise, the grass verges around site and community amenity space in the north of the site will comprise 0.05 ha total of modified grassland.

However, the Biodiverse Green Space will consist of ca. 0.04 ha other neutral grassland habitat, with species-rich wildflower meadow seed mix recommended to be sown in these areas. Due to the usage of these areas, it is assumed that a Moderate condition will be the highest condition that can be realistically maintained within these areas.

There will be 39 new urban trees planted within the site, consisting of 36 small¹ and three medium² to give a total area of 0.26 ha. It is assumed the trees will be in Moderate condition and reach proposed condition/size by 25 years post-development. The planting scheme for these trees includes a mixture of native species and RHS species beneficial for pollinators, such as Field maple (*Acer campestre*), Alder (*Alnus glutinosa*), Downy Birch (*Betula pubescens*), Judas tree (*Cercis siliquastrum*), Hawthorn (*Crataegus monogyna*), Rowan (*Sorbus aucuparia*), and other non-native/ornamental species.

¹ Small trees are those classed in the Biodiversity Metric User Guide as having a diameter at breast height between 7 and 30cm.

² Medium trees are those classed in the Biodiversity Metric User Guide as having a diameter at breast height between 30 and 90cm.

6.2 On-site Habitats

The new on-site area habitats are based on the development plan in Appendix 1 and are summarised in Table 6 with new linear features summarised in Table 7.

6.2.1 Assumptions

The following assumptions have been made when determining the likely condition achieved for each new relevant onsite habitat created that qualifies for a condition assessment by the proposed development:

Other neutral grassland

Assumed to achieve Moderate condition for Grassland of Medium Distinctiveness, by passing criteria 1, 3, 4 and 5:

- Habitat closely matches the UKHab definition for the grassland type (other neutral grassland), with indicator species present;
- Less than 5% cover of bare ground;
- Bracken is less than 20% and scrub less than 5%;
- No non-native invasive species (as listed on Schedule 9 of the Wildlife and Countryside Act 1981) present.

Modified grassland

Assumed to achieve Poor condition for Grassland of Low Distinctiveness, by passing criteria 3, 6 and 7:

- Scrub accounts for less than 20% total grassland area;
- Cover of Bracken is less than 20%; and
- No invasive non-native species present.

Urban trees

Assumed to achieve Moderate condition for Urban Trees by 25 years post-development, by passing criteria 1 and/or 2, 4 and 6 (at least three criteria are required to achieve this condition):

- Tree is native species;
- Continuous canopy (automatically passed for individual trees);
- Tree is kept healthy with over 75% expected canopy retained and no significant adverse effects from pruning;
- More than 20% canopy is oversailing vegetation below.

Native hedgerows

Assumed to achieve Moderate condition for Hedgerows by passing the following:

- No gaps present at the base of hedges;

- No undesirable perennial vegetation (i.e. Cleavers, Common Nettle) present along base of hedgerow;
- No invasive or non-native species present;

Table 6: Summary of on-site habitat creation

Habitat type	Area (hectares)	Condition	Ecological connectivity	Strategic significance	Total habitat units
Other neutral grassland	0.04	Moderate	Moderate	Formally identified in local strategy	0.40
Modified grassland	0.05	Poor	Moderate	Formally identified in local strategy	0.12
Urban tree	0.26	Moderate	Moderate	Formally identified in local strategy	2.23
Vegetated garden	0.13	N/A	Moderate	Area not in local strategy/ no local strategy	0.26
Other green roof	0.04	N/A	Low	Area not in local strategy/ no local strategy	0.08
Developed land; sealed surface	0.23	N/A	N/A	Area not in local strategy/ no local strategy	0.00
Total	0.49	-	-	-	3.08

**The metric calculator does not include the area measurement for urban trees in the total due to the overlap in habitats.*

Table 7: Summary of on-site linear feature creation

Linear type	Length (km)	Condition	Ecological connectivity	Strategic significance	Total habitat units
Creation					
Native hedgerow	0.15	Moderate	Low	Formally identified in local strategy	0.60
Total	0.15	-	-	-	0.60

6.3 Off-site Habitats

To achieve at least 10% biodiversity net gain in habitat units from the proposed development, additional offsite mitigation will be required.

The habitats on the three verges south of the site will be enhanced/modified as follows:

- Verge 1: creation of lowland mixed deciduous woodland of Moderate condition to compensate for loss of same Priority Habitat on site, by additional planting and woodland management (assume existing urban trees retained, but incorporated into woodland habitat area so 'urban tree' habitat areas lost); and
- Verges 2 and 3: enhancement of modified grassland to species-rich other neutral grassland habitat of Good condition, with existing urban trees retained within these verges.
- Verge 3: creation of at least 0.01 km native hedgerow (assumptions same as above to achieve Moderate condition).

Additionally, planting of at least 36 urban trees are recommended within the local area to also aid in achieving at least 10% net gain in biodiversity. These will include 20 small and 16 medium-sized urban trees, with assumptions same as above urban trees to achieve Moderate condition. No specific offsite location has yet been provided for the planting of these additional urban trees, but in line with the Local Plan, offsite urban trees will be planted throughout the local area, at the discretion of Reading Borough Council.

6.3.1 Assumptions

The following assumptions have been made when determining the likely condition achieved for each new relevant offsite habitat created that qualifies for a condition assessment by the proposed development:

Lowland mixed deciduous woodland

Assumed to achieve Moderate condition for woodlands by scoring at least 28 points by attaining the following:

- At least two age classes of trees present;
- No significant grazing or herbivore damage to woodland;
- No non-native invasive plant species present within the woodland;
- At least three or four native tree or shrub species found across each woodland parcel;
- 50-80% canopy and understorey composition are native species;
- Less than 20% temporary open space within woodland;
- Tree mortality is less than 10% with no pests or diseases present;
- Recognizable NVC plant community is present within woodland ground flora;
- At least two storeys present across woodland;
- No veteran trees present;
- Less than 25% woodland area contains deadwood; and
- Less than 20% damaged ground in woodland with little/no evidence of nutrient enrichment.

Other neutral grassland

Assumed to achieve Good condition for Grassland of Medium Distinctiveness, by passing criteria 1, 2, 3, 4 and 6:

- Habitat closely matches the UKHab definition for the grassland type (other neutral grassland), with indicator species present;
- Sward height is varied;
- Less than 5% cover of bare ground;
- Bracken is less than 20% and scrub less than 5%; and
- There are more than 9 species per any m² within the grassland.

The new off-site habitats are summarised in Tables 8 and 9.

Table 8: Summary of off-site habitat creation and enhancement

Habitat type	Area (hectares)	Condition	Ecological connectivity	Strategic significance	Total habitat units
Creation					
Lowland mixed deciduous woodland	0.26	Moderate	Low	Formally identified in local strategy	0.99
Urban trees (20 small)	0.08	Moderate	Moderate	Formally identified in local strategy	0.69
Urban trees (16 medium)	0.59	Moderate	Moderate	Formally identified in local strategy	5.05
Total	0.26	-	-	-	6.73
Enhancement					
Other neutral grassland (Verge 2)	0.04	Good	Moderate	Formally identified in local strategy	0.44
Other neutral grassland (Verge 3)	0.11	Good	Moderate	Formally identified in local strategy	1.02
Total	0.15	-	-	-	1.46

**The metric calculator does not include the area measurement for urban trees in the total due to the overlap in habitats.*

Table 9. Summary of offsite linear feature creation

Linear type	Length (km)	Condition	Ecological connectivity	Strategic significance	Total habitat units
Creation					
Native hedgerow	0.01	Moderate	Low	Formally identified in local strategy	0.04
Total	0.01	-	-	-	0.04

6.4 Summary of Habitat Changes

The total biodiversity value of the onsite habitat areas prior to development was 12.26 units. Of these habitats, 0.53 ha of urban trees are expected to be retained and protected during the construction phase of the development, which equates to 4.81 biodiversity units retained. All other baseline habitat types will be lost during the construction phase of the development. Post-construction, 3.08 units from habitats of Very Low to Medium distinctiveness will be created on-site, but trading rules will *not* be met for loss of the two Priority Habitats (lowland deciduous woodland and open mosaic on previously developed land) on site.

However, offsite mitigation is recommended for the three grass verges south of the site, including creating ca. 0.26 ha of lowland deciduous woodland on Verge 1 to compensate for the same habitat lost on site and deliver 0.99 habitat units as well as meeting trading rules for this Priority Habitat. Additionally, Verges 2 and 3 (ca. 0.04 ha and 0.11 ha, respectively) will be enhanced to other neutral grassland of Good condition to deliver an additional 1.46 habitat units for the development.

Offsite tree planting on council-owned land within the local area will also be undertaken by Reading Borough Council, in line with the Local Plan, and provide a total 0.67 ha of urban trees to deliver 5.74 habitat units.

Therefore, under the current scheme design, post-development habitats and their associated target conditions will achieve **a total net change of 1.45 biodiversity units, which represents an 11.81% net gain.**

The total biodiversity value of the onsite linear features prior to development was 0.18 units, comprising two lines of trees. It is anticipated these linear features will be removed completely and 0.15 km native hedgerows will be created post-construction. There were also 0.45 units of linear features offsite, including a line of trees on Verge 1 and an ornamental hedgerow on Verge 2. As the line of trees linear feature on Verge 1 will be lost to create woodland area habitat, Verge 3 will also have at least 0.01 km

native hedgerow created to deliver 0.04 linear feature units. This equates to a total net change of 0.04 linear units, which represents a 21.87% net gain.

A screenshot of the headline results within the biodiversity metric is shown in Table 10 below.

Table 10: Summary of Biodiversity Metric 3.1 results

On-site baseline	<i>Habitat units</i>	12.26
	<i>Hedgerow units</i>	0.18
	<i>River units</i>	0.00
On-site post-intervention (including habitat retention, creation & enhancement)	<i>Habitat units</i>	7.89
	<i>Hedgerow units</i>	0.60
	<i>River units</i>	0.00
On-site net % change (including habitat retention, creation & enhancement)	<i>Habitat units</i>	-35.63%
	<i>Hedgerow units</i>	225.19%
	<i>River units</i>	0.00%
Off-site baseline	<i>Habitat units</i>	2.49
	<i>Hedgerow units</i>	0.45
	<i>River units</i>	0.00
Off-site post-intervention (including habitat retention, creation & enhancement)	<i>Habitat units</i>	8.31
	<i>Hedgerow units</i>	0.07
	<i>River units</i>	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	1.45
	<i>Hedgerow units</i>	0.04
	<i>River units</i>	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	11.81%
	<i>Hedgerow units</i>	21.87%
	<i>River units</i>	0.00%
Trading rules Satisfied?	No - Check Trading Summary ▲	

7 Biodiversity Net Gain Good Practice Principles for Development

Table 11 below outlines the justification of how each of the Biodiversity Net Gain Principles has been applied as part of the biodiversity net gain assessment.

Table 11: Good practice principles and their consideration within the scheme

Good Practice Principle	Site Considerations
Apply the mitigation hierarchy	Refer to Section 7.1 for more information
Avoid losing biodiversity that cannot be offset elsewhere	There will be no significant impacts to designated sites, and overall, there will be at least 10% net gain in biodiversity from the proposed development. Although the area of lowland mixed deciduous woodland Priority Habitat onsite will be lost with the development, this habitat will be created offsite in proximity to the site. The open mosaic on previously developed land Priority Habitat onsite will be lost completely, without compensation.
Compensate / Offset	Creation of lowland mixed deciduous woodland Priority Habitat; creation and enhancement of species-rich ecologically-valuable grasslands on- and offsite; and additional planting of urban trees on- and offsite is recommended to achieve at least 10% net gain in biodiversity and compensate for habitat loss.
Be inclusive and equitable	Achieve net gain with the inclusion of a range of local and specialist stakeholders during design and implementation, where possible.
Address risk	Biodiversity Metric 3.1 has been used as a nationally recognised method to quantify biodiversity changes from the proposed development. Proposed retained and created habitats have been selected as a practical and achievable way of meeting biodiversity net gain targets and recreational usage of the site and offsite mitigation within the local area. A management plan will be produced to ensure biodiversity and environment targets for the development are actioned.
Make a measurable net gain contribution	Biodiversity Metric 3.1 has been used to quantify the net change in biodiversity achieved by the proposed development, and with the current plans, a 11.81% net gain in habitat units and 21.87% net gain in linear features will be achieved.
Be additional	Recommended mitigation includes creation and enhancement of habitat on offsite grass verges that are additional to what would be expected to happen without the development.
Create a net gain legacy	Engaging in local stakeholders and production of a Conservation Covenant agreement to ensure biodiversity net gain is achieved within 30 years of development at the site and habitats managed long-term to achieve best possible biodiversity and ecological status.
Optimise sustainability	By achieving net gain from proposed recommendations for the site in relation to biodiversity and ecology, the development will optimise environmental sustainability alongside accomplishing housing targets within the local area.

Good Practice Principle	Site Considerations
Be transparent	The biodiversity net gain assessment of the site has been made using Biodiversity Metric 3.1, and this report will be delivered alongside the calculation sheet and supported drawings used in the calculations. The recommended biodiversity plans for the site have been made through constant consultation with the client and all metric choices have been fully explained and justified.

7.1 Consideration of the Mitigation Hierarchy

Table 12 below outlines how the mitigation hierarchy is being considered.

Table 12: Mitigation hierarchy

Hierarchy Step	Site Considerations
Avoid	The site is avoiding any significant impacts to designated sites. A total 0.53 ha of habitat area of urban trees will be retained and protected on site as they are incorporated into the proposed plans.
Minimise	Impacts to existing biodiversity will be minimised by undertaking thorough and accurate ecological assessments of the habitats and species present within the site and undertaking informed further actions to minimised impacts to ecologically-significant habitats and protected species.
Compensate / Offset	Detailed habitat compensation measures have been identified using the Biodiversity Metric 3.1: habitats lost on site will be compensated for by creation and enhancement of alternate ecologically-distinct habitats on- and offsite, including lowland mixed deciduous woodland, species-rich neutral grassland and planting of at least 75 additional urban trees on- and offsite.

8 Conclusion

A residential development is proposed on land at Dwyer Road, Reading, to aid with achieving housing targets and affordable living provision within the local area. This will lead to the loss of lowland mixed deciduous woodland and open mosaic on previously developed land Priority Habitats and hardstanding on site, but a gain of habitats that includes species-rich neutral grassland, native hedgerows and additional urban trees. The proposed development will also create an area of lowland mixed deciduous woodland and enhance grass verges offsite, as well as planting at least a further 36 urban trees within the local area.

The proposed development will result in a **net biodiversity area gain of 1.45 biodiversity units, which represents an 11.81% net gain in area habitats** and a **net biodiversity linear gain of 0.04 biodiversity units, which represents a 21.87% net gain in linear habitats**. This will meet the minimum target of 10% net gain and adhere to Policy EN12, as well as the additional tree planting planned within the site and local area.

However, some of the trading rules of the metric have not been satisfied, with the loss of open mosaic on previously developed land Priority Habitat on site. This habitat is of High distinctiveness and needs to be replaced with the same habitat. Currently, within the site plans there is no replacement habitat, and this Priority Habitat would be difficult to recreate elsewhere offsite. The trading rules should be met before the designs can go to planning, though this is not yet mandatory with Metric 3.1 and the current designs have been prioritised to achieve local housing targets.

9 References

ADAS (2022) *Preliminary Ecological Appraisal: Dwyer Road.*

CIEEM, CIRIA and IEMA (2016) *Biodiversity Net Gain: Good practice principles.*

Natural England (2021a) *The Biodiversity Metric 3.1: auditing and accounting for biodiversity: User guide.*

Natural England (2021b) *The Biodiversity Metric 3.1 User Guide – Technical Annex 2.*

Natural England (2021c) *The Biodiversity Metric 3.1: Auditing and accounting for biodiversity: Condition Assessment sheets.*

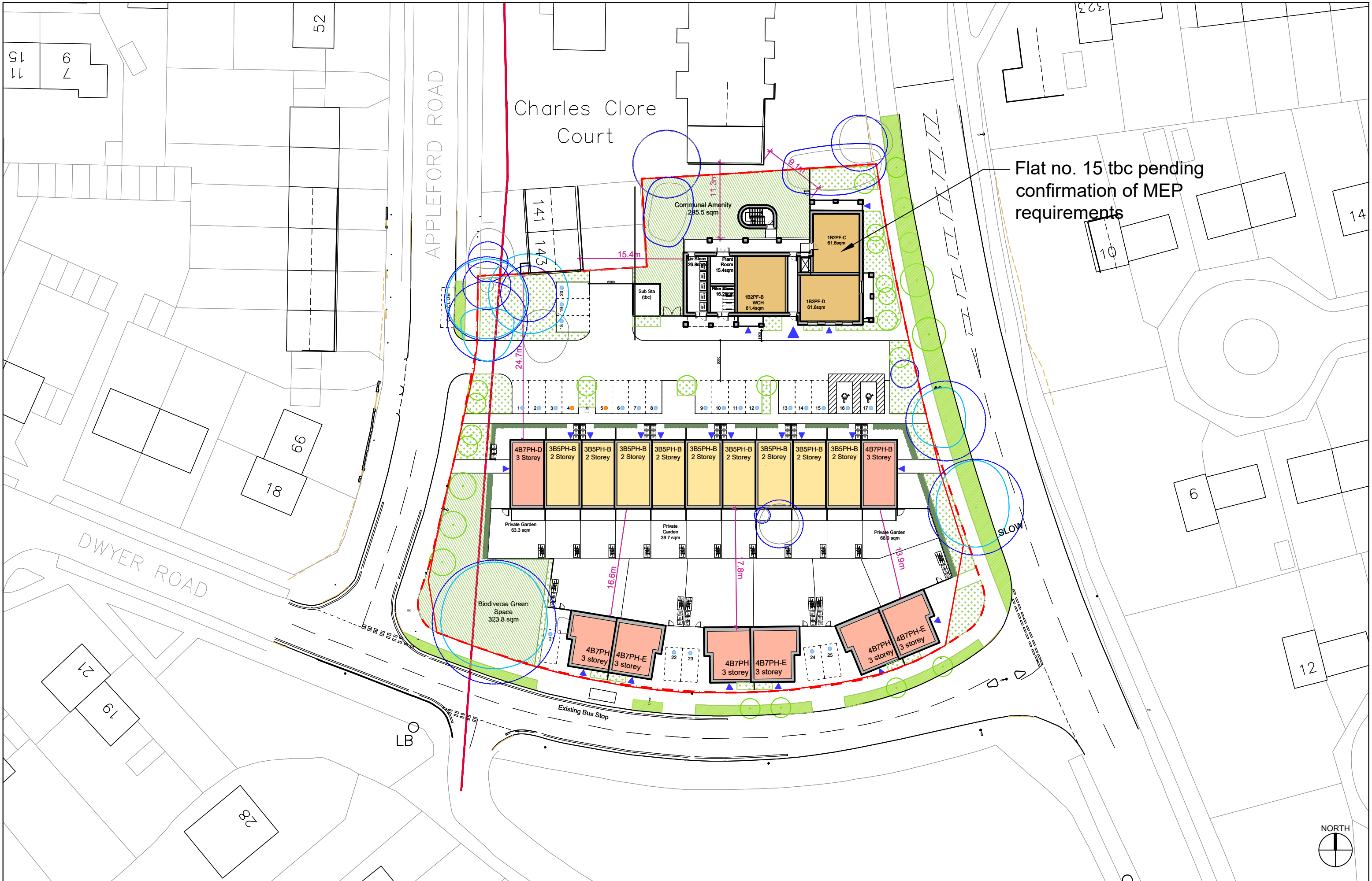
NPPF (2021) *National Planning Policy Framework: Biodiversity and Geological Conservation.* Department for Communities and Local Government, Norwich.

The British Standard Institute (2013) *BSI Standards Publication, Biodiversity — Code of practice for planning and development.*

UK HABS (2020) *The UK Habitat Classification: Habitat Definitions. Version 1.1.*

Appendix 1: Proposed Development Plan

See following page.



Flat no. 15 tbc pending confirmation of MEP requirements

Appendix 2: Baseline Condition Assessment Sheets

Onsite Baseline Habitat Assessments

Other woodland, broadleaved: Lowland mixed deciduous woodland

Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator
1	Age distribution of trees ¹	Three age classes present	Two age classes present	One age class present	2
2	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland ²	Evidence of significant browsing pressure is present in 40% or less of whole woodland	Evidence of significant browsing pressure is present in 40% or more of whole woodland	3
3	Invasive plant species ³	No invasive species present in woodland	Rhododendron or laurel not present, other invasive species < 10% cover	Rhododendron or laurel present, or other invasive species > 10% cover	3
4	Number of native tree species	Five or more native tree or shrub species found across woodland parcel	Three to four native tree or shrub species found across woodland parcel	None to two native tree or shrub species across woodland parcel	2
5	Cover of native tree and shrub species	> 80% of canopy trees and >80% of understory shrubs are native	50-80% of canopy trees and 50-80% of understory shrubs are native	< 50% of canopy trees and <50% of understory shrubs are native	3
6	Open space within woodland ⁴	10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply	21- 40% of woodland has areas of temporary open space	More than 40% of woodland has areas of temporary open space	3
7	Woodland regeneration ⁵	All three classes present in woodland; trees 4-7cm dbh, saplings and seedlings or advanced coppice regrowth	One or two classes only present in woodland	No classes or coppice regrowth present in woodland	2
8	Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback	11% to 25% mortality and/or crown dieback or low risk pest or disease present	Greater than 25% tree mortality and or any high risk pest or disease present	3
9	Vegetation and ground flora	Ancient woodland flora indicators present	Recognisable NVC plant community present	No recognisable NVC community	1

10	Woodland vertical structure ⁶	Three or more storeys across all survey plots or a complex woodland	Two storeys across all survey plots	One or less storey across all survey plots	1
11	Veteran trees ⁷	Two or more veteran trees per hectare	One veteran tree per hectare	No veteran trees present in woodland	1
12	Amount of deadwood	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Between 25% and 50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Less than 25% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	1
13	Woodland disturbance ⁸	No nutrient enrichment or damaged ground evident	Less than 1 hectare in total of nutrient enrichment across woodland area and/or less than 20% of woodland area has damaged ground	More than 1 hectare of nutrient enrichment and/or more than 20% of woodland area has damaged ground	2
Total Score					27
Condition Achieved					Moderate

Urban: Open mosaic on previously developed land

CORE CRITERIA – applicable to all urban habitat types		
1	Vegetation structure is varied, providing opportunities for insects, birds and bats to live and breed. A single ecotone (i.e. scrub, grassland, herbs) should not account for more than 80% of the total habitat area.	N
2	There is a diverse range of flowering plant species, providing nectar sources for insects. These species may either be native, or non-native but beneficial to wildlife. NB – To achieve GOOD condition, criterion 2 must be satisfied by native species only. Note Biodiverse green roofs are exempt from this requirement and can include non-native sedums.	Y
3	Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area. NB – To achieve GOOD condition, criterion 3 must be satisfied by a complete absence of invasive non-native species.	Y
ADDITIONAL CRITERION – only applicable to Open mosaic on previously developed land		
4	The site shows spatial variation, forming a mosaic of at least four early successional communities (a) to (h) PLUS bare substrate AND pools. (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland.	N
Condition:		Moderate

Urban Tree: T1, T2, T14

1	The tree is a native species (or more than 70% within the block are native species).	N
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no gap being >5 m wide (individual trees automatically pass this condition).	Y
3	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	Y
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height).	Y
5	Micro-habitats for birds, mammals, and insects are present e.g. presence of deadwood, cavities, ivy, or loose bark.	Y
6	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y
Condition:		Good

Urban Tree: T4, G1

1	The tree is a native species (or more than 70% within the block are native species).	Y
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no gap being >5 m wide (individual trees automatically pass this condition).	Y
3	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	N
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height).	N
5	Micro-habitats for birds, mammals, and insects are present e.g. presence of deadwood, cavities, ivy, or loose bark.	Y
6	More than 20% of the tree canopy area is oversailing vegetation beneath.	N
Condition:		Moderate

Urban Tree: T5, T10, G6

1	The tree is a native species (or more than 70% within the block are native species).	Y
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no gap being >5 m wide (individual trees automatically pass this condition).	Y
3	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	N
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height).	Y
5	Micro-habitats for birds, mammals, and insects are present e.g. presence of deadwood, cavities, ivy, or loose bark.	Y
6	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y
Condition:		Good

Urban Tree: T6 and T7

1	The tree is a native species (or more than 70% within the block are native species).	Y
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no gap being >5 m wide (individual trees automatically pass this condition).	Y
3	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	N
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height).	N
5	Micro-habitats for birds, mammals, and insects are present e.g. presence of deadwood, cavities, ivy, or loose bark.	N
6	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y
Condition:		Moderate

Urban Tree: T11

1	The tree is a native species (or more than 70% within the block are native species).	Y
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no gap being >5 m wide (individual trees automatically pass this condition).	Y
3	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	Y
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height).	Y
5	Micro-habitats for birds, mammals, and insects are present e.g. presence of deadwood, cavities, ivy, or loose bark.	N
6	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y
Condition:		Good

Urban Tree: T12

1	The tree is a native species (or more than 70% within the block are native species).	Y
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no gap being >5 m wide (individual trees automatically pass this condition).	Y
3	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	N
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height).	Y
5	Micro-habitats for birds, mammals, and insects are present e.g. presence of deadwood, cavities, ivy, or loose bark.	N
6	More than 20% of the tree canopy area is oversailing vegetation beneath.	N
Condition:		Moderate

Urban Tree: T15

1	The tree is a native species (or more than 70% within the block are native species).	N
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no gap being >5 m wide (individual trees automatically pass this condition).	Y
3	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	Y
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height).	N
5	Micro-habitats for birds, mammals, and insects are present e.g. presence of deadwood, cavities, ivy, or loose bark.	Y
6	More than 20% of the tree canopy area is oversailing vegetation beneath.	N
Condition:		Moderate

Urban Tree: G5

1	The tree is a native species (or more than 70% within the block are native species).	Y
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no gap being >5 m wide (individual trees automatically pass this condition).	Y
3	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	N
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height).	N
5	Micro-habitats for birds, mammals, and insects are present e.g. presence of deadwood, cavities, ivy, or loose bark.	Y
6	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y
Condition:		Moderate

Urban Tree: G7

1	The tree is a native species (or more than 70% within the block are native species).	Y/N
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no gap being >5 m wide (individual trees automatically pass this condition).	Y
3	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	N
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height).	Y
5	Micro-habitats for birds, mammals, and insects are present e.g. presence of deadwood, cavities, ivy, or loose bark.	N
6	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y
Condition:		Moderate

Lines of Trees

1	More than 70% of trees are native species.	Y
2	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5m wide.	Y
3	Includes one or more mature or veteran tree.	N
4	There is an undisturbed naturally vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other anthropogenic operations.	N
5	At least 95% of the trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	N
Condition:		Poor

Offsite Baseline Habitat Assessments

Modified Grassland: Verge 1

1	There must be 6-8 species per m ² .	N
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm).	N
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note – patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat.	Y
4	Physical damage is evident in less than 5% of total grassland area, examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Y
5	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Y
6	Cover of bracken less than 20%.	Y
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Y
Condition:		Moderate

Modified Grassland: Verge 2

1	There must be 6-8 species per m ² .	Y
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm).	Y
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note – patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat.	Y
4	Physical damage is evident in less than 5% of total grassland area, examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Y
5	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Y
6	Cover of bracken less than 20%.	Y
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Y

	Condition:	Good
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Modified Grassland: Verge 3

1	There must be 6-8 species per m ² .	N
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm).	N
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note – patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat.	Y
4	Physical damage is evident in less than 5% of total grassland area, examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Y
5	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Y
6	Cover of bracken less than 20%.	Y
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Y
Condition:		Moderate

Urban Tree (x2)

1	The tree is a native species (or more than 70% within the block are native species).	Y
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no gap being >5 m wide (individual trees automatically pass this condition).	Y
3	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	N
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height).	N
5	Micro-habitats for birds, mammals, and insects are present e.g. presence of deadwood, cavities, ivy, or loose bark.	Y
6	More than 20% of the tree canopy area is oversailing vegetation beneath.	N
Condition:		Moderate

Urban Tree (x7)

1	The tree is a native species (or more than 70% within the block are native species).	Y
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no gap being >5 m wide (individual trees automatically pass this condition).	Y
3	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	N
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height).	Y
5	Micro-habitats for birds, mammals, and insects are present e.g. presence of deadwood, cavities, ivy, or loose bark.	N

6	More than 20% of the tree canopy area is oversailing vegetation beneath.	N
Condition:		Moderate

Urban Tree

1	The tree is a native species (or more than 70% within the block are native species).	Y
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no gap being >5 m wide (individual trees automatically pass this condition).	Y
3	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	Y
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height).	Y
5	Micro-habitats for birds, mammals, and insects are present e.g. presence of deadwood, cavities, ivy, or loose bark.	N
6	More than 20% of the tree canopy area is oversailing vegetation beneath.	N
Condition:		Moderate

Urban Tree

1	The tree is a native species (or more than 70% within the block are native species).	N
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no gap being >5 m wide (individual trees automatically pass this condition).	Y
3	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	N
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height).	Y
5	Micro-habitats for birds, mammals, and insects are present e.g. presence of deadwood, cavities, ivy, or loose bark.	N
6	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y
Condition:		Moderate

Urban Tree

1	The tree is a native species (or more than 70% within the block are native species).	Y
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no gap being >5 m wide (individual trees automatically pass this condition).	Y
3	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	N
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height).	Y

5	Micro-habitats for birds, mammals, and insects are present e.g. presence of deadwood, cavities, ivy, or loose bark.	Y
6	More than 20% of the tree canopy area is oversailing vegetation beneath.	N
Condition:		Moderate

Lines of Trees

1	More than 70% of trees are native species.	Y
2	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5m wide.	Y
3	Includes one or more mature or veteran tree.	N
4	There is an undisturbed naturally vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other anthropogenic operations.	N
5	At least 95% of the trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	Y
Condition:		Moderate

Appendix 3: Proposed Habitat Map

See following page.

Gleeds Cost Management Ltd

Vanbrugh House, Hedge End,
Southampton, Hampshire
SO30 2AF

Dwyer Road - Proposed Habitat Map

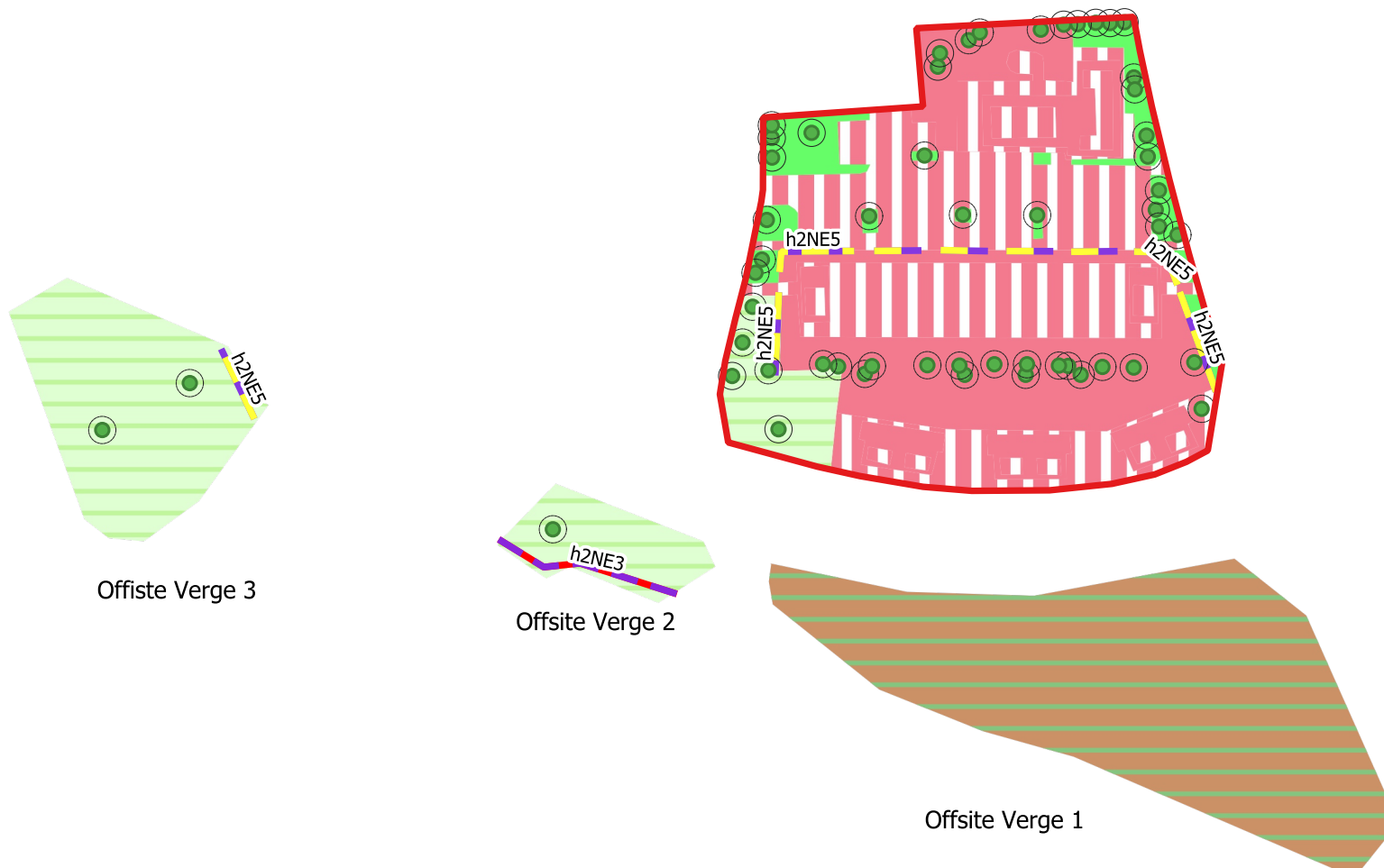
-  Red Line Boundary
-  Other neutral grassland
-  Modified grassland
-  Vegetated garden
-  Other green roof
-  Developed land; sealed surface
-  Lowland mixed deciduous woodland
-  Urban tree
-  Ornamental non-native hedge
-  Native hedgerow

Drawn by Amelia McCormack 17.05.2023



0 10 20 m

ADAS
11D Park House, Milton Park,
Oxfordshire OX14 4RS



Appendix 4: Baseline Habitat Map

See following page.

Gleeds Cost Management Ltd

Vanbrugh House, Hedge End,
Southampton, Hampshire
SO30 2AF

Dwyer Road - Baseline Habitat Map

-  Red Line Boundary
-  Lowland mixed deciduous woodland (Priority Habitat)
-  Open mosaic on previously developed land (Priority Habitat)
-  Developed land; sealed surface
-  Urban tree
-  Line of trees

Drawn by Amelia McCormack 25.01.2023



0 10 20 m

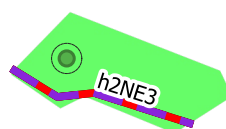
ADAS
11D Park House, Milton Park,
Oxfordshire OX14 4RS



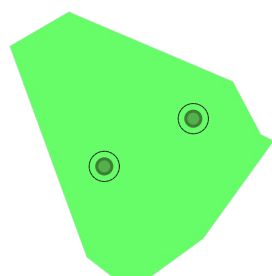
Dwyer Road - proposed
development site



Offsite Verge 1



Offsite Verge 2



Offsite Verge 3

