

Biodiversity Net Gain Assessment



Amethyst Lane, 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 Limited.

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Summary

A planning application is being sought for residential development at a 0.56 ha site at Amethyst Lane, Reading, Berkshire, by Gleeds Cost Management Ltd, on behalf of Reading Borough Council. The development will include a respite centre.

The preliminary ecological appraisal (PEA) and baseline condition assessment undertaken by ADAS in October 2022 and January 2023, respectively, identified existing habitats on-site including three disused buildings and associated hard landscaping; and unmanaged areas of modified grassland, mixed and Bramble scrub, introduced shrubs, scattered urban trees throughout the site, native hedgerows with trees, and lines of trees. The PEA also identified habitats suitable for and/or signs of activity of protected and priority species, including nesting birds, roosting, foraging and commuting bats, Badger and Hedgehog.

ADAS was commissioned to undertake biodiversity net gain assessments of the proposed plans for the development at the site. In October 2023 the proposed plans were adjusted following comments from Reading Borough Council planning committee and the biodiversity net gain assessment was re-run through Biodiversity Metric 4.0. Plans include complete demolition of the three existing buildings on-site and construction of residential dwellings, including affordable housing, and a respite centre, with associated hard and soft landscaping.

Landscaping proposals include retention of half the linear features along the boundaries of the site, as well as two of the 24 existing urban trees on-site. All other habitats will be cleared to accommodate the creation of buildings and hardstanding, with associated vegetated urban gardens and rain gardens, as well as creation of a species-rich sensory garden comprising other neutral grassland and planting of native hedgerows. Forty-three urban trees will also be planted throughout the site, with a further 140 small¹ urban (or 16 medium² or 95 small and 5 medium urban trees – to be determined by Reading Borough Council Planting Team) trees planted off-site within the local area. Areas of modified grassland verge to be used in the planting of off-site urban trees need to be confirmed and subject to a habitat survey and baseline condition assessment. The biodiversity net gain assessment will need to be updated once locations are confirmed.

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

The proposed development will result in an increase in habitat **area of 0.33 biodiversity units, which represents a 10.74% increase in area habitats** and an increase **in linear habitats of 0.47 biodiversity units, which represents a 78.08% increase in linear habitats.**

True net gain in either area or linear units cannot be achieved as the trading rules of the metric have not been satisfied (Biodiversity Metric 4.0 – User Guide, 2023), with the loss of scrub habitat on-site and loss of hedgerow with trees. These habitats are of medium distinctiveness and in order to satisfy trading rules needs to be replaced with the same or better habitat on-site or as per Reading Borough Councils Policy EN12 in exceptional circumstances compensated off-site. The creation of habitats within the site do not compensate for the habitats lost as a result of the development, it is proposed that 140 off-site small (or 16 medium or 95 small and 5 medium) urban trees are planted to offset the loss and achieve 10% gain in habitat areas. The current designs have been prioritised to achieve local housing targets, and whilst the trading rules are not met for scrub with an uncompensated loss of 0.21 units, and 0.05 linear units for hedgerow with trees, the site in general is exceeding the 10% minimum for areas by 0.74% and achieving a substantial increase in linear units (78.08%).

1 Introduction

1.1 Background

This report has been commissioned by Gleeds Cost Management Ltd on behalf of Reading Borough Council to inform a planning application of ca. 0.56 ha land located off Amethyst Lane, Reading RG30 2EZ (central OS grid reference: SU 69488 72676), hereafter referred to as 'the site'. The proposed development includes construction of 17 residential dwellings and a respite facility on-site.

Due to the nature of the proposed development, it is understood that a biodiversity net gain (BNG) assessment of the proposed works is required, as per local and national policy. BNG occurs in development when the project leaves the natural environment in a better state than it was prior to the project. To achieve BNG, 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). BNG should be demonstrated quantitatively.

To demonstrate BNG, 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 4.0 Calculation tool (Natural England, 2023) has been used to demonstrate BNG in a quantitative manner.

The *Biodiversity Net Gain Good Practice Principles for Development* (CIEEM, CIRIA, 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

The BNG 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 quantitative 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 Legislation and Policy Background. 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 BNG Good Practice Principles. This section outlines how each of the BNG Principles have been applied as part of the assessment.*
- *Section 8 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 Rachel Richards BSc (Hons), an Ecological Consultant. Rachel Richards is a 'qualifying' member of Chartered Institute of Ecology and Environmental Management (CIEEM) and holds a bachelor's degree in a course relating to ecological consultancy. Updates to the report were made by Sarah Thornton-Mills, a Principal Ecological Consultant. Sarah is a full member of CIEEM and holds a bachelor's and master's degree in courses relating to ecological consultancy and has attended CIEEM's Biodiversity Metric V4 training. 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) (2023), 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 January 2024 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.*

7. *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.”

Policy EN14 relates to trees, hedges and woodlands and states:

Individual trees, groups of trees, hedges and woodlands will be protected from damage or removal where they are of importance, and Reading’s vegetation cover will be extended. The quality of waterside vegetation will be maintained or enhanced.

New development shall make provision for tree retention and planting within the application site, particularly on the street frontage, or off-site in appropriate situations, to improve the level of tree coverage within the Borough, to maintain and enhance the character and appearance of the area in which a site is located, to provide for biodiversity and to contribute to measures to reduce carbon and adapt to climate change. Measures must be in place to ensure that these trees are adequately maintained.

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 Rachel Richards BSc (Hons) in January 2023, and based on the proposed landscape design drawing, shown in Appendix 1.

3.2 The Mitigation Hierarchy

The aim of the BNG 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 4.0 - Calculation Tool” and guidance available on the Natural England Website (Natural England 2023a, 2023b). 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 existing site plan using 'QGIS' Geographical Information System (GIS) software. Measurements have been rounded up or down to achieve a minimum mapping unit (MMU) of 0.0025 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 (Figure 1) in order to achieve the best representation of the areas covered by each habitat identified on-site. The areas for the post development site were taken from a pdf version of the development plan - Appendix 1 (Drawing number RBC-ALR_HTA-L_DR_0902_Landscape Planting Plan.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 4.0 Technical Supplement (Natural England 2023c), 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 on-site.

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 habitat type and where appropriate used aerial imagery to assist with mapping of the habitats as accurately as possible. The Biodiversity Metric 4.0 is accurate to two decimal places; therefore, habitats are rounded up or down to the nearest whole value, with a MMU of 0.01 ha.

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 4.0 Condition Assessment Sheets (Natural England, 2023c) 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 updated proposed development includes the demolition of all three buildings currently on-site to facilitate construction and associated hard and soft landscaping and infrastructure of 17 new residential dwellings within the northern, eastern and western sides of the site, as per the plans provided by the client in November 2023 (RBC-ALR-HTA-L_DR_0902_Landscape Planting Plan.pdf; Appendix 1). Of the new houses, 30% will be affordable housing, and a respite centre will also be constructed on-site.

Hard landscaping will include the creation of an access road into the site from the east end of Amethyst Lane and through the centre of site to connect to Jenkins Close adjacent to the northwest of the site. Eighteen hardstanding parking spaces will be also provided on-site along the internal access road and at the south of the site, including two electric charging spaces and a minibus drop-off point at the south end of the site.

Soft landscaping will include private amenity grass lawns associated with the residential housing, with community green spaces in the centre and southwest of the site – part of which will be managed as a ‘sensory garden’. There will be 43 small native trees planted throughout the site – 22 of those within green spaces and 21 within the private gardens – and the existing trees within the hedgerow along the north of the side of the site will be retained. In the previous design, swale planting was planned along both sides of the street, which has now been replaced with raingarden planting and relocated to western side of street. The proposed habitat map, using UKHabs classification, is provided in Appendix 3.

In addition, planting of off-site urban trees within the wider areas of Reading Borough is proposed, the exact location and specification will be decided by reading Borough Council’s Planting Team but will include native trees species and include either 140 small; 16 medium or; 95 small and 5 medium)

The planning application was submitted to the Local Planning Authority (Reading Borough Council) in May 2023 (planning application number: 230613).

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 PEA report (ADAS, 2022) and on the conditions assessment survey completed in January 2023.

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 Mixed scrub

There was a small patch of mixed scrub located along the northeast border of the site ca. 0.03 ha in area comprising dominant Field Elm (*Ulmus minor*) and Common Hawthorn (*Crataegus monogyna*). The ground flora consisted of Yarrow (*Achillea millefolium*), Creeping Cinquefoil (*Potentilla reptans*), Ribwort Plantain (*Plantago lanceolata*) and Sweet Violet (*Viola odorata*).

5.1.1.2 Bramble scrub

There was a ca. 0.003 ha area of Bramble (*Rubus fruticosus* agg.) scrub at the northwest boundary of the site, which was encroaching onto an area of modified grassland.

Additionally, there was another patch of Bramble scrub (ca. 0.002 ha) to the south of Building 3.

5.1.1.3 Urban trees

There were at least 24 urban trees scattered throughout the site. Within the northeast corner there was a small section of broadleaved plantation woodland (ca. 0.001 ha). The mature trees were part of ornamental planting however, with the lack of management on the site, younger trees had self-sown and the canopy area had become very dense cutting off light to the ground flora. The dominant tree species was Norway Maple (*Acer platanoides*) with occasional Field Elm. The ground flora was dominated by Common Ivy (*Hedera helix*) with Sweet Violet appearing frequently.

There were also predominantly mature trees with occasional semi-mature trees and saplings throughout the rest of the site. The dominant species within the site was Norway Maple with frequent Sycamore (*Acer pseudoplatanus*), Common Hawthorn and Ash (*Fraxinus excelsior*). Found occasionally throughout the site were Wild Cherry (*Prunus avium*), Pedunculate Oak (*Quercus robur*), Sweet Chestnut (*Castanea sativa*), Crab Apple (*Malus sylvestris*) and Silver Birch (*Betula pendula*).

5.1.1.4 Line of trees

There were two lines of trees along the eastern boundary of the site (LT1), both approximately 0.02 km in length (total of 0.04 km) and of the same broadleaved species composition of the other urban trees found across the site (photographs in Appendix 5).

A line of trees was also present along the western boundary (LT2), approximately 0.02 km in length including semi-mature and mature trees with species present including willow (*Salix sp.*), cypress (*Cupressus*) and False Acacia (*Robinia pseudoacacia*) (photographs in Appendix 5).

5.1.1.5 Modified grassland

Within the northwest corner of the site was an area of modified grassland (ca. 0.01 ha) comprising dominant Perennial Rye-grass (*Lolium perenne*), Yorkshire Fog (*Holcus lanatus*) and False Oat-grass (*Arrhenatherum elatius*). Species such as Common Mallow (*Malva sylvestris*), Sun Spurge (*Euphorbia helioscopia*), Yarrow, Creeping Cinquefoil and Creeping Thistle (*Cirsium arvense*) were found frequently through this habitat. There were also patches of Common Ivy and Pedunculate Oak saplings along the north boundary of the site. This was assessed as being in moderate condition.

There were a further six areas of modified amenity grassland across the site all associated with the buildings on-site with a total area of 0.13 ha. All the areas had been unmanaged for some time but had not transitioned into other more naturalised habitats. All these areas had the same composition with Perennial Rye-grass as the dominant species. Cow Parsley (*Anthriscus sylvestris*), Creeping Buttercup (*Ranunculus repens*), Yarrow, Ribwort Plantain and dandelion (*Taraxacum sp.*) were also present within these grassland areas. Areas associated with former gardens behind the buildings were assessed as moderate condition having higher species density and variation in sward height. The area in the northeast corner and between the two buildings was assessed as being in good condition.

To the south of the site in front of the main gate was a small spoil heap, which was covered in ephemeral vegetation (> 0.001 ha). The dominant species found within this area included Colt's-foot (*Tussilago farfara*), Greater Plantain (*Plantago major*), Mugwort (*Artemisia vulgaris*) and dandelion. Creeping Buttercup, Green Alkanet (*Pentaglottis sempervirens*), Common Nettle (*Urtica dioica*) and Cleavers (*Galium aparine*) were also found frequently here.

5.1.1.6 Suburban/mosaic of developed/natural space with introduced shrub

The areas of introduced shrub on-site were associated with the ornamental gardening around the buildings on-site (totalling ca. 0.01 ha). The three areas of shrub to the south of the site associated with Building 1 and 2 were dominated by Butterfly Bush (*Buddleja davidii*), which had become overgrown due to lack of management on-site. Within the shrub running along the southeast wall of Building 2, species

such as Cherry Laurel (*Prunus laurocerasus*), Mexican Orange Blossom (*Choisya ternate*) and Japanese Honeysuckle (*Lonicera japonica*) were also present.

The two small sections of shrub were located to the west of Building 3 (ca. 0.002 and 0.0006 ha). The smaller of the two areas contained bamboo (*Poaceae* sp.) and Hollyberry Cotoneaster (*Cotoneaster bullatus*) which were encroaching from neighbouring residential properties. The larger section was dominated by Butterfly Bush and firethorn (*Pyracantha* sp.). The largest area of shrub (ca. 0.01 ha) was part of the ornamental gardening along eastern wall of Building 3. This was dominated by Cherry Laurel and Mexican Orange Blossom.

5.1.1.7 Native hedgerow with trees

There were two sections of species-poor native hedge with trees, with one section along the north boundary (H1 30 m) and the other running along part of the east boundary of the site (H2 10 m) (photographs in Appendix 5). Both sections were overgrown due to lack of management. The smaller of the two sections (H2) contained Ivy and Common Hawthorn as the dominant species, with frequent Garden Privet (*Ligustrum ovalifolium*). The trees within this section were Sycamore.

Along the north boundary (H1), the trees were Sycamore and Pedunculate Oak. The dominant species within the hedge was Ivy with frequent Common Holly (*Ilex aquifolium*) and Dog Rose (*Rosa canina*). There were also rare appearances of Hollyberry Cotoneaster.

5.1.1.8 Sealed developed surface

There were three main buildings within the site boundary and four structures / outbuildings. Building 1 (0.010 ha) was a two-storey red brick building with a tile roof and wooden soffit, the building was in poor condition. All windows were boarded up with wooded boards. Common Ivy covered a large section of the west and southern aspect of this building.

Building 2 was a single-storey building in good condition (0.045 ha). The roof on the main section of the building was slightly pitched with the abutments each having flat roofs. Both roof sections were covered with bitumen. There was a roof void between the roof and the panel ceiling tiles within the building which could be viewed due to damaged tiles inside, however it was not possible to access the roof void.

Building 3 was a single-storey brick and mortar building in good condition with a tall, pitched roof within the central section of the building (0.122 ha). The outer sections had a slight pitch to the roof and was covered in bitumen. Internal access was granted to this building however no access to the roof void was possible.

Outbuilding 1 was a small, corrugated shed with a wooden door which was 0.0004 ha. This was located in the northwest of the site behind Building 3.

Outbuilding 2 was a large wooden shed (0.003 ha) that was in poor condition and had been predominantly covered with Common Ivy.

Outbuilding 3 was a large metal shipping container (0.003 ha) placed within the trees in the northeast section of the site.

Outbuilding 4 was a small wooden shed (0.002 ha) to the west of Building 2.

There was also ca. 0.194 ha of hardstanding tarmacked ground surface throughout the site.

5.1.2 Important ecological features

5.1.2.1 Designated sites

There were six statutory designated sites within 5 km of the site and nine non-statutory designated sites within 2 km. The closest designated site was Prospect Park Local Wildlife Site approximately 0.68 km west of the site, which comprised public open parkland consisting of modified grassland and urban trees.

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

There were no priority habitats, as described under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, identified on-site at the time of assessment.

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, foraging and commuting bats, Badger (*Meles meles*) and Hedgehogs (*Erinaceus europaeus*).

Evidence of roosting bats in Building 3 was recorded during the preliminary roost assessment, with Building 1 deemed to be of 'high' suitability and Building 2 of 'moderate' suitability for roosting bats. All buildings on-site had evidence of or suitable features to support nesting birds, in addition to the hedgerows, scrub and trees. Bats and nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended) with bats receiving additional protection from the Conservation of Habitats and Species Regulations 2017 (as amended).

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

The hedgerows, scrub and grassland at the site also provided suitable habitat for Hedgehogs, which are a Priority Species under Section 41 of the NERC Act 2006.

5.2 Habitat Baseline Assessment

5.2.1 On-site 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 are provided in Tables 1 and 2 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:

- *Mixed and Bramble scrub – not associated within any local strategy in terms of ecology;*
- *Urban trees – provide opportunities for biodiversity and increase connectivity throughout the site;*
- *Modified grassland – not associated within any local strategy in terms of ecology;*
- *Suburban/mosaic of developed/natural space with introduced shrub – not associated within any local strategy in terms of ecology;*
- *Native hedgerow with trees – provide opportunities for biodiversity and increase connectivity throughout the site and is referred to in the local plan (Reading Borough Local Plan (EN12 and EN14)); and*
- *Line of 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 (EN12 and EN14));*
- *Sealed developed surface – not associated within any local strategy in terms of ecology.*

Table 1: Baseline assessment – on-site area habitats

Habitat type	Area (hectares)	Condition	Strategic significance	Total habitat units
Mixed scrub	0.03	Moderate	Location ecologically desirable but not in Local Strategy	0.24
Bramble scrub	0.01	Condition Assessment N/A	Location ecologically desirable but not in Local Strategy	0.04
Urban tree	0.25	Moderate	Formally identified in local strategy	2.20
Modified grassland	0.02	Poor	Area/compensation not in local strategy/ no local strategy	0.04
Modified grassland	0.04	Good	Area/compensation not in local strategy/ no local strategy	0.24

Habitat type	Area (hectares)	Condition	Strategic significance	Total habitat units
Modified grassland	0.07	Moderate	Area/compensation not in local strategy/ no local strategy	0.28
Suburban/mosaic of developed/natural space with introduced shrub	0.01	Condition Assessment N/A	Area/compensation not in local strategy/ no local strategy	0.02
Developed land; sealed surface (buildings)	0.185	N/A – Other	Area/compensation not in local strategy/ no local strategy	0.00
Developed land; sealed surface (hardstanding)	0.194	N/A – Other	Area/compensation not in local strategy/ no local strategy	0.00
Total (excluding urban trees)	0.56	-	-	3.06

Table 2: Baseline assessment – on-site linear habitats

Habitat type	Length (km)	Condition	Strategic significance	Total habitat units
Line of Trees (LT1)	0.02	Moderate	Formally identified in local strategy	0.09
Line of Trees (LT2)	0.04	Moderate	Formally identified in local strategy	0.18
Native Hedgerow with trees (H1)	0.03	Moderate	Formally identified in local strategy	0.28
Native Hedgerow with trees (H2)	0.01	Poor	Formally identified in local strategy	0.05
Total	0.10	-	-	0.60

5.2.2 Off-site Baseline Habitats

Proposals include the planting of urban trees (140 small; or 16 medium or 95 small and 5 medium) off-site and are assumed to be planted within modified grassland verges. The locations of these verges are yet to be decided by the client. However, as this habitat is to be retained and with urban trees not contributing to the off-site habitat area, there is no impact on the metric calculations. Instead, an estimate of the area of modified grassland required for the planting of urban trees is included in Table 3 below. This area is the area of canopy and root protection area for urban trees as calculated in the metric and does not take into account spacing between trees.

As a precautionary approach and to allow for an estimate of the habitat units, the condition for this habitat is assumed to be moderate.

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

- *Modified grassland – not associated within any local strategy in terms of ecology.*

Table 3: Baseline assessment – off-site area habitats

Habitat type (Area Habitats)	Area (ha)	Condition	Strategic significance	Total habitat units
Modified grassland	0.57	Moderate	Location ecologically desirable but not in Local Strategy	2.28
Total	0.57			2.28

5.3 Trading Rules

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

- *Mixed scrub: Medium distinctiveness. Same broad habitat or higher distinctiveness habitat required.*
- *Bramble scrub: Medium distinctiveness. Same broad habitat or higher distinctiveness habitat required.*
- *Urban trees: Medium distinctiveness: Same broad habitat or higher distinctiveness habitat required.*
- *Modified grassland: Low distinctiveness. Same distinctiveness or better habitat required.*
- *Suburban/mosaic of developed/natural space with introduced shrub: Low distinctiveness. Same distinctiveness or better habitat required.*
- *Developed land; sealed surface: Very low distinctiveness. Compensation not required.*
- *Line of trees: Low distinctiveness. Same distinctiveness or better required.*
- *Native hedgerow with trees: Medium distinctiveness. Same habitat 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 development plan in Appendix 1 and summarised in Table 4. 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 demolition of existing buildings on-site to facilitate construction of the new buildings. The area habitats to be retained are two medium urban trees in the west and east corners of the site, which are of moderate condition. Therefore, in total ca. 0.74 ha of the 0.81 ha combined habitat areas (including urban trees) will be lost.

Additionally, two of the four existing linear features on-site will be lost completely as part of the proposed development (0.02 km line of trees and 0.01 km native hedgerow with trees), with the remaining line of trees being halved in length to 0.01 km; and the remaining native hedgerow with trees all retained. Therefore, only half of the existing total length of linear features on-site (0.04 km) are being retained. However, 0.20 km of new native hedgerows will be created throughout the site, primarily hedgerows outside residential properties and hedgerow boundary around the respite centre.

The total area of proposed habitats to be created on-site is ca. 0.83 ha (including urban trees), comprising ca. 0.38 ha total of hardstanding/developed surfaces, including buildings, solar panels, roads and other hard landscaping. Approximately 0.01 ha of total roof area across the buildings on-site will be green roofs planted with sedums. There will also be total ca. 0.10 ha of vegetated urban gardens associated with the residential dwellings and respite centre, which would likely be monoculture turfed lawn and of little ecological significance. The sensory garden around the respite centre will consist of structural perennials, shrubs, and climbers with herbaceous perennials under street trees within the north western part of the site; and has been classed as ground level planters (total 0.03 ha)

The other green spaces will comprise ca. 0.01 ha mixed scrub of moderate condition under the trees in the eastern corner of the site; as well as ca. 0.01 ha of rain garden, planted with shrubs, grasses and herbaceous perennials, along with some shrubs will achieve moderate condition along the western edge of the street through the centre of the site; and ca. 0.0176 ha other neutral grassland, which includes the open community spaces along the east of the site. This habitat will be planted with species-rich wildflower meadow seed mix, and 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 the other neutral grassland areas. Proposed maintenance is outlined in the Landscape Maintenance Strategy (RBC-ALR_HTA_RP-0001),

further recommendations are to be included in the BNG Habitat Management and Maintenance Plan to ensure moderate condition is achieved.

There will be 43 new urban trees planted within the site, 21 of these are within residential gardens so are included under the vegetated gardens, however 22 small trees will be planted around the rest of site to give a total area of 0.1059 ha. It is assumed the trees will be in moderate condition and reach proposed condition/size by 27 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*), Common Hawthorn, Rowan (*Sorbus aucuparia*), and other non-native/ornamental species.

6.2 On-site Habitats

The new on-site area habitats are based on the development plan in Appendix 1, shown on the proposed habitat map in Appendix 3 and are summarised in Table 4 with new linear features summarised in Table 5. It is assumed that there will be a one-year delay in starting habitat creation of all on-site habitats.

Table 4: Summary of on-site habitat creation

Habitat type	Area (hectares)	Condition	Strategic significance	Total habitat units
Other neutral grassland	0.0176	Moderate	Location ecologically desirable but not in local strategy	0.13
Rain garden (verges)	0.01	Moderate	Location ecologically desirable but not in Local Strategy	0.04
Mixed scrub	0.01	Moderate	Location ecologically desirable but not in Local Strategy	0.07
Urban tree	0.1059	Moderate	Location ecologically desirable but not in Local Strategy	0.34
Other green roof	0.01	Condition Assessment N/A	Area/compensation not in local strategy/ no local strategy	0.02
Vegetated garden	0.10	Condition Assessment N/A	Area/compensation not in local strategy/ no local strategy	0.19
Ground level planters	0.03	Condition Assessment N/A	Area/compensation not in local strategy/ no local strategy	0.06

Habitat type	Area (hectares)	Condition	Strategic significance	Total habitat units
Developed land; sealed surface	0.38	N/A – Other	Area/compensation not in local strategy/ no local strategy	0.00
Total (excluding urban trees)	0.56	-	-	0.84

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

Table 5: Summary of on-site linear feature creation

Linear type	Length (km)	Condition	Ecological connectivity	Strategic significance	Total habitat units
Native hedgerow	0.2	Moderate	Formally identified in local strategy	0.74	
Total	0.2	-	-	0.74	

6.2.1 Assumptions

6.2.1.1 Other neutral grassland

The grassland is assumed to achieve moderate condition for grassland of medium distinctiveness, by passing criteria A, C, D and E:

- *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%; and*
- *No non-native invasive species (as listed on Schedule 9 of the Wildlife and Countryside Act 1981) present.*

6.2.1.2 Mixed scrub

Assumed to achieve moderate condition for scrub habitats, by passing criteria A, C and D:

- *Habitat is representative of UKHab description with at least three woody species present;*
- *There is an absence of invasive non-native species; and*
- *The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present.*

6.2.1.3 Urban trees

Assumed to achieve moderate condition for urban trees by 27 years post-development, by passing criteria A and/or B, D and F (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; and*
- *More than 20% canopy is oversailing vegetation below.*

6.2.1.4 Native hedgerow

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; and*
- *No invasive or non-native species present.*

6.3 Off-site Habitats

It is assumed that there will be a one-year delay in starting habitat creation of all off-site habitats. The area of urban trees shown in Table 6 is based on a composition of 140 small trees or 16 medium or 95 small and 5 medium trees.

Table 6: Summary of off-site habitat creation

Habitat type	Area (hectares)	Condition	Ecological connectivity	Strategic significance	Total habitat units
Urban tree	0.57	Moderate	Moderate	Formally identified in local strategy	1.93
Total	0.57	-	-	-	1.93

6.3.1 Assumptions

It is assumed that the urban trees can achieve moderate condition by 27 years post-development, by passing criteria B, D and F (at least three criteria are required to achieve this condition):

- *The tree canopy is predominantly continuous, with gaps in canopy cover making up <10 % of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion);*
- *There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75 % of expected canopy for their age range and height;*
- *More than 20 % of the tree canopy is oversailing vegetation beneath.*

6.4 Summary of Habitat Changes

The total biodiversity value of the on-site habitat areas prior to development was 3.06 units. Of these habitats, 0.07 ha of urban trees are expected to be retained and protected during the construction phase of the development, which equates to 0.62 biodiversity units retained. All other baseline habitat types will be lost during the construction phase of the development. Post-construction, 0.84 units from habitats of very low to medium distinctiveness will be created on-site, however, trading rules will not be met for loss of area of scrub habitat on-site, resulting in a deficit of 0.21 habitat area units that will require replacement off-site in order to meet trading rules.

Off-site tree planting on council-owned land within the local area will be undertaken by Reading Borough Council, in line with the Local Plan. To meet the 10 % biodiversity net gain, 140 small or 16 medium or 95 small and 5 medium trees are required, providing 0.57 ha of urban trees to deliver 1.93 habitat units. Without the off-site tree planting the proposals would result in a net loss in biodiversity.

Therefore, under the current scheme design, post-development habitats and their associated target conditions will achieve **a total net change of 0.33 biodiversity units, which represents a 10.74% increase in habitat area.**

The total biodiversity value of the on-site linear features prior to development was 0.60 units. Of these, half of the total length of hedgerows and lines of trees are expected to be retained and protected during the construction phase of the development, which equates to 0.32 biodiversity units retained. However, trading rules will not be met for loss of length of hedgerow with trees on-site, resulting in a deficit of 0.05 linear units that will require replacement off-site in order to meet trading rules.

Post-construction, it is anticipated that 0.20 km of native hedgerow will be created, **equal to 0.74 linear units.** This represents a **78.08% increase in linear units.**

A screenshot of the headline results within the biodiversity metric is shown in Table 7 below.

Table 7: Summary of Biodiversity Metric 4.0 results

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	0.33
	<i>Hedgerow units</i>	0.47
	<i>Watercourse units</i>	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	10.74%
	<i>Hedgerow units</i>	78.08%
	<i>Watercourse units</i>	0.00%
Trading rules satisfied?	No - Check Trading Summaries ▲	

7 BNG Good Practice Principles for Development

Table 8 below outlines the justification of how each of the BNG Principles has been applied as part of the biodiversity net gain assessment.

Table 8: 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 or priority habitats, and habitats of ecological significance that will be lost on-site (scrub, urban trees, modified grassland) are common and widespread within the local area. However, this principle has not been met due to trading rules not being satisfied the loss of the scrub on-site.
Compensate / Offset	Soft landscaping and tree planting on-site is recommended to achieve 10% increase in habitat areas and compensate for habitat loss, with additional off-site scrub planting recommended to meet trading rules. Additional planting of urban trees off site is being used to increase the habitat units above 10 % as recommended by the local planning authority.
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 4.0 has been used as a nationally recognised method to quantify biodiversity changes from the proposed development. Proposed retained and created habitats will not meet biodiversity net gain targets due to not satisfying trading rules, however a 10.74% increase in habitat areas will be achieved with a 78.08% increase in linear habitat is achieved. 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 4.0 has been used to quantify the net change in biodiversity achieved by the proposed development, and with the current plans, a 10.74% increase in habitat units and 78.08% increase in linear features will be achieved. However, true net gain in area and linear units cannot be achieved as the trading rules of the metric have not been satisfied.
Be additional	Recommended mitigation includes creation of urban trees off site 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.

Be transparent	The biodiversity net gain assessment of the site has been made using Biodiversity Metric 4.0, 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.
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7.1 Consideration of the Mitigation Hierarchy

Table 9 below outlines how the mitigation hierarchy is being considered.

Table 9: Mitigation hierarchy

Hierarchy Step	Site Considerations
Avoid	The site is avoiding any significant impacts to designated sites, priority habitats or irreplaceable habitats. A total 0.07 ha of habitat area and 0.04 km of linear habitats will be retained and protected on-site as they are incorporated into the proposed plans. These include medium distinctiveness habitats such as urban trees and native hedgerow with trees.
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 4.0: habitats lost on-site will be compensated for by creation of alternate ecologically distinct habitats, including species-rich neutral grassland and planting of 22 urban trees in total on-site and 140 small or 16 medium or 95 small and 5 medium urban trees off-site. However scrub and hedgerow habitats lost on-site will not be compensated for due to the trading rules not being satisfied.

8 Conclusion

A residential development and respite centre site is proposed on land just off Amethyst Lane, Reading, to aid with achieving housing targets and affordable living provision within the local area.

This will lead to the loss of hardstanding, scrub and modified grassland on-site, but a gain of habitats that includes species-rich neutral grassland, as well as the retention of some of the linear features, including native hedgerows with trees and lines of trees. The proposed development will also create additional native hedges and planting of new trees on-site and plant 140 small or 16 medium or 95 small and 5 medium urban trees within the local area.

Areas of modified grassland verge to be used in the planting of urban trees need to be confirmed and subject to a habitat survey and baseline condition assessment. Following this the metric will be updated.

The proposed development will result in a **net biodiversity area gain of 0.33 biodiversity units, which represents an 10.74% increase in habitat area** and an increase in **linear habitats of 0.74 biodiversity units, which represents a 78.08% increase in linear habitats**.

True net gain in area and linear units cannot be achieved as the trading rules of the metric have not been satisfied (Biodiversity Metric 4.0 – User Guide, 2023), as the area of scrub habitat lost on-site will not be sufficiently compensated for by the area of scrub habitat created on-site post-development. In addition the loss of a native hedgerow with trees is not compensated by the hedgerows created. These habitats are of medium distinctiveness and need to be replaced with the same or better habitat on-site. Currently, within the site plans there is no replacement habitat with urban trees proposed to be planted off-site. The current designs have been prioritised to achieve local housing targets and whilst the trading rules are not met for scrub or hedgerows, an uncompensated loss of 0.21 area units and 0.05 linear units and the site in general is exceeding the 10% minimum for areas by 0.74% and achieving a substantial increase linear units (78.08%).

9 Reference

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Appendix 1: Proposed Development

See following page.

Do not scale from drawings unless by agreement with HTA. Use figured dimensions only. Check all dimensions on site prior to commencing the works. Drawing to be read in conjunction with other relevant consultant information.

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- KEY
- Application boundary
- Soft Landscape
- H1 - Hedge Planting - Instant mixed native hedge 1-1.2m high
 - PT1 - Mown amenity grass/lawn (turf) to private gardens
 - PT2 - Species rich lawn turf
 - PT3 - Shade tolerant wildflower / species rich turf
 - PT4 - Raingarden planting
 - PT5 - Privacy planting
 - PT6 - Scrub planting
 - PT7 - Respite Facility planting
 - PT8 - Sensory garden planting
 - PT9 - Shade tolerant groundcover planting
 - PT10 - Climbing plants
- T1 - Proposed Trees (note tree canopies drawn at +50 years)
- S1 - Proposed Feature Shrubs

Refer to Soft Landscape Schedule for further details of planting proposals

- Existing Trees
- RPA (root protection area)
 - Tree Canopy

Refer to Arboricultural Impact Assessment for further details on existing trees, and Arboricultural Method Statement for details of proposed works within tree RPAs.



D	25.10.23	RBL	Revisions following change to building footprints
B	03.05.23	RBL	Issued for Planning
A	18.04.23	RBL	Planning GA for comment - DRAFT
+	05.04.23	RBL	Planning GA for comment - DRAFT
Rev	Date	Drawn	Description

FOR PLANNING

client / project

Reading Borough Council

Amethyst Lane

drawing title

Landscape Planting Plan

drawing number

RBC-ALR HTA-L DR 0902

scale @ A1

1:200

originated by

RBL

revision

D

project code

RBC-ALR

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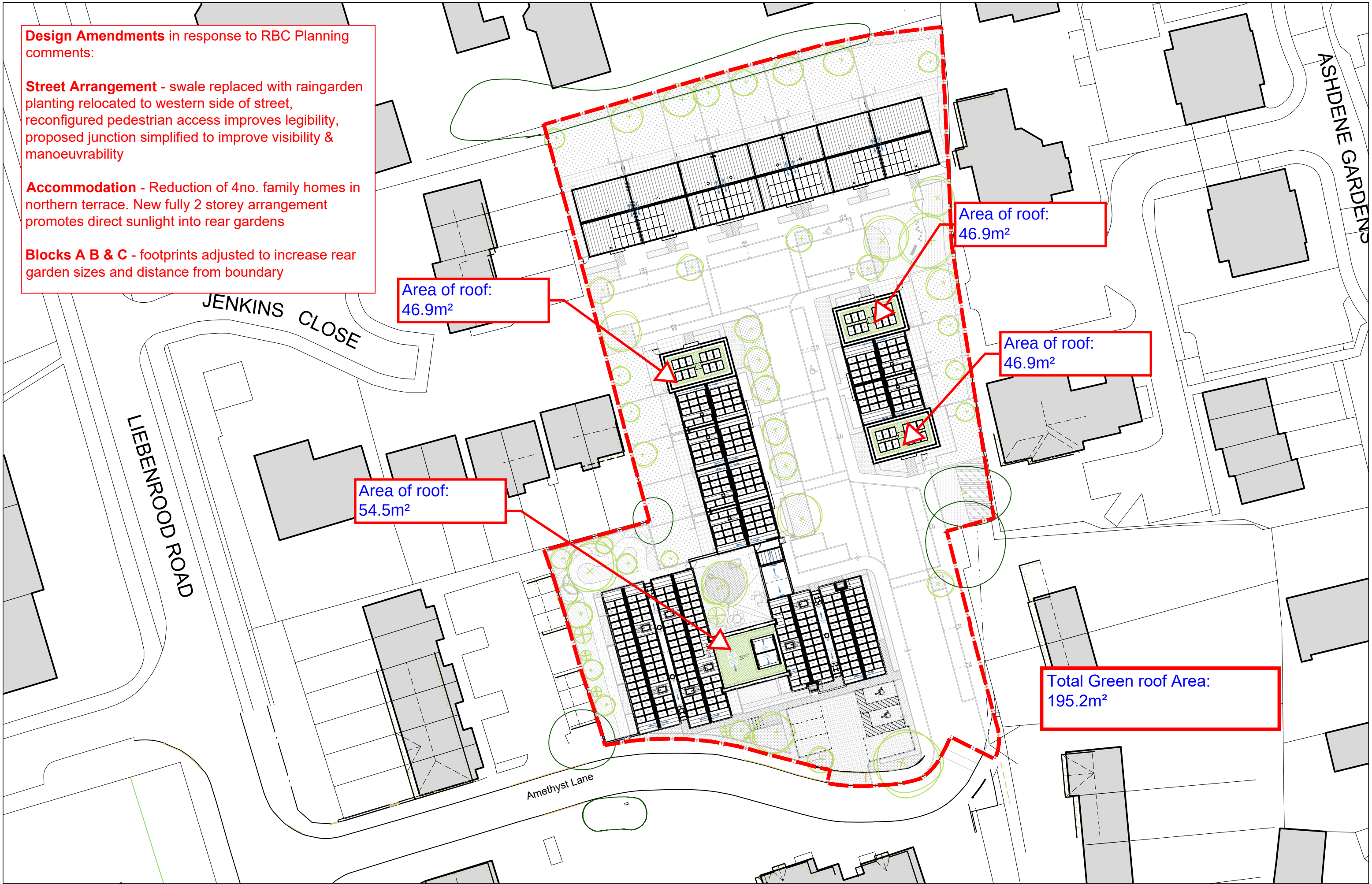
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Design Amendments in response to RBC Planning comments:

Street Arrangement - swale replaced with raingarden planting relocated to western side of street, reconfigured pedestrian access improves legibility, proposed junction simplified to improve visibility & manoeuvrability

Accommodation - Reduction of 4no. family homes in northern terrace. New fully 2 storey arrangement promotes direct sunlight into rear gardens

Blocks A B & C - footprints adjusted to increase rear garden sizes and distance from boundary



Appendix 2: Baseline Condition Assessment Sheets

See following page.

Area Habitats

Grassland Condition Assessment (Low distinctiveness) – east of entrance			
Criteria		Y/N	Notes
A	There are 6-8 species per m ² , including 2 forbs.	N	Ivy, Perennial Rye-grass, Stinking Iris, Bitter Dock, Cow Parsley, Bramble and lots of leaf litter.
B	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	Sward is 90% same height
C	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	Bramble accounts for less than 10%
D	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	Materials have been dumped but overall less than 5%
E	Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	Y	No bare ground visible
F	Cover of Bracken less than 20%.	Y	No Bracken present
G	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Y	No INNS present
Condition:		Poor	

Grassland Condition Assessment (Low distinctiveness) – north west area of grassland

Criteria		Y/N	Notes
A	There are 6-8 species per m ² , including 2 forbs.	Y	Mallow, Creeping Trefoil, Perennial Rye-grass, Yarrow, Dandelion, Creeping Buttercup, Common Dog Violet, Iris, Spurge, Ribwort Plantain.
B	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	Uniform sward height
C	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.	N	30% Bramble scrub
D	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	No damage, site unmanaged for several years
E	Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	Y	10% bare ground around base of trees
F	Cover of Bracken less than 20%.	Y	No Bracken
G	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Y	No INNS
	Condition:	Mode rate	

Grassland Condition Assessment (Low distinctiveness) – western boundary behind building 3

Criteria		Y/N	Notes
A	There are 6-8 species per m ² , including 2 forbs.	N	Stinking Iris, Perennial Rye-grass, Mallow, Ribwort Plantain, Creeping Buttercup
B	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	At least two distinct sward height visible
C	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.	N	Bramble scrub accounts for at least 30% of area
D	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	No management on site since 2017
E	Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	Y	No bare ground visible
F	Cover of Bracken less than 20%.	Y	No Bracken on site
G	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Y	No INNS species
Condition:		Poor	

Grassland Condition Assessment (Low distinctiveness) – between the two buildings on site

Criteria		Y/N	Notes
A	There are 6-8 species per m ² , including 2 forbs.	Y	Sp found include- Perennial Rye-grass, Cock's foot, Barren Strawberry, Ribwort Plantain, Dandelion, Common Sorrel, Cow Parsley
B	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	Three distinct sward heights visible
C	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	Two small areas of Bramble scrub present = less than 20%
D	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	Some area damage by storage of items left and broken fence
E	Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	Y	No bare ground visible
F	Cover of Bracken less than 20%.	Y	No Bracken
G	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Y	No INNS
Condition:		Good	

Grassland Condition Assessment (Low distinctiveness) – Garden behind building 2 and garden area behind building 3

Criteria		Y/N	Notes
A	There are 6-8 species per m ² , including 2 forbs.	Y	Sp found include- Perennial Rye-grass, Cock's foot, Ribwort Plantain, Dandelion sp, Common Sorrel, Cow Parsley, Common Dog Violet
B	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	70 % over 7cm
C	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.	N	30% Bramble scrub in far corner by fence
D	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.	N	Lots of rubbish stored here (items dumped from house behind)
E	Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	Y	Minimal area of bare ground
F	Cover of Bracken less than 20%.	Y	No Bracken
G	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Y	No INNS
	Condition:	Mode rate	

Grassland Condition Assessment (Low distinctiveness) – Garden area behind building

Criteria		Y/N	Notes
A	There are 6-8 species per m ² , including 2 forbs.	N	Sp found include-Ribwort Plantain, Dandelion, Cow Parsley, Bitter Dock, Common Nettle
B	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	All sward of same height under 7cm
C	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	No scrub
D	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.	N	An area of bare earth has been dug up to block gate
E	Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	N	Large earth pile, lots of bare ground
F	Cover of Bracken less than 20%.	Y	No Bracken
G	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Y	No INNS
Condition:		Poor	

Grassland Condition Assessment (Low distinctiveness) – east boundary			
Criteria		Y/N	Notes
A	There are 6-8 species per m ² , including 2 forbs.	Y	ivy, Cow Parsley ,Dandelion, Perennial Rye-grass, common dog violet, stinking iris, dock, sorrel, Green Alkanet
B	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	Sward is uniform
C	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	Small area of Bramble scrub less than 5%
D	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	No damage visible
E	Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	Y	No bare ground
F	Cover of Bracken less than 20%.	Y	No Bracken
G	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Y	No INNS
	Condition:	Good	

Scrub Condition Assessment – eastern boundary		
Criteria	Y/N	Notes
A The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type. At least 80% of scrub is native, and there are at least three native woody species, with no single species comprising more than 75% of the cover (except Hazel <i>Corylus avellana</i>, Common Juniper <i>Juniperus communis</i>, Sea Buckthorn <i>Hippophae rhamnoides</i> or Box <i>Buxus sempervirens</i>, which can be up to 100% cover).	Y	Field Elm (dominant 70%), Hawthorn (20%) and Blackthorn (10%)
B Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	Y	Mix of age in scrub
C There is an absence of invasive non-native plant species³ (as listed on Schedule 9 of WCA4) and species indicative of sub-optimal condition⁵ make up less than 5% of ground cover.	Y	No INNS, ground flora violets, ivy, Cow Parsley, Stinking Iris Dandelion, Yarrow
D The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	N	No clear edge
E There are clearings, glades or rides present within the scrub, providing sheltered edges.	N	
Condition:	Moderate	

Scrub Condition Assessment – adjacent to building 2 and 3

Criteria		Y/N	Notes
A	The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type. At least 80% of scrub is native, and there are at least three native woody species, with no single species comprising more than 75% of the cover (except Hazel <i>Corylus avellana</i>, Common Juniper <i>Juniperus communis</i>, Sea Buckthorn <i>Hippophae rhamnoides</i> or Box <i>Buxus sempervirens</i>, which can be up to 100% cover).	Y	sp- Butterfly bush, Mexican Orange Blossom, Blackthorn, Cherry Laurel, Dog Rose
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	N	No seedling present
C	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA4) and species indicative of sub-optimal condition ⁵ make up less than 5% of ground cover.	N	Both INNS species and sub-optimal species present
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	N	Hardstanding/ building on all sides
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	N	
Condition:		Poor	

Scrub Condition Assessment – north west of site			
Criteria		Y/N	Notes
A	The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type. At least 80% of scrub is native, and there are at least three native woody species, with no single species comprising more than 75% of the cover (except Hazel <i>Corylus avellana</i>, Common Juniper <i>Juniperus communis</i>, Sea Buckthorn <i>Hippophae rhamnoides</i> or Box <i>Buxus sempervirens</i>, which can be up to 100% cover).	N	Rosemary, Sage, Firethorn
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	N	
C	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA4) and species indicative of sub-optimal condition ⁵ make up less than 5% of ground cover.	N	
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	N	
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	N	
	Condition:	Poor	

Urban trees Condition Assessment							
Criteria		Y/N					Notes
		Sycamore	2 no. Silver Birch	2no. Sycamore	Norway Maple	Norway Maple	
A	The tree is a native species (or more than 70% within the block are native species).	N	N	N	N	N	
B	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	Y	Y	Y	Y	
C	The tree is mature (or more than 50% within the block are mature).	Y	Y	Y	Y	Y	
D	There is little or no evidence of an adverse impact on tree health by human 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	Y	Y	Y	Y	
E	Natural ecological niches for vertebrates and invertebrates are present e.g. presence of deadwood, cavities, ivy, or loose bark.	N	N	Y	N	N	
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	N	Y	Y	Y	Y	
	Condition:	Moderate	Moderate	Moderate	Moderate	Moderate	

Linear Habitats

Line of Trees Condition Assessment				
Criteria		Y/N		Notes
		Eastern boundary	Western boundary	
A	At least 70% of trees are native species.	Y	N	East: Sycamore (D), Hawthorn, Field Elm West: Willow, Cypress, Robinia.
B	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5m wide.	Y	Y	
C	Includes one or more trees with veteran features and/or ecological niches for vertebrates and invertebrates.	N	N	
D	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 human activities.	N	Y	
E	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	Y	
	Condition:	Moderate	Moderate	

Hedgerow Habitat Types Condition Assessment (Native Hedgerow) – northern boundary			
Criteria		Y/N	Notes
A1	Height: >1.5 m average along length	Y	Most of hedge >2 m
A2	Width: >1.5 m average along length	Y	2 m wide
B1	Gap – hedge base: Gap between ground and base of canopy <0.5 m for >90% of total length.	N	No gap present
B2	Gap – hedge canopy continuity: Gaps make up <10% of total length and no canopy gaps >5 m.	Y	Dense canopy, no gaps
C1	Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of its length: - Measured from outer edge of hedgerow, and - is present on one side of the hedge (at least)	N	
C2	Undesirable perennial vegetation: plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground (indicator sp. Include nettles, cleavers, and docks).	N	Only Common Ivy present
D1	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species (neophytes are plants that have naturalised in the UK since AD 1500)	Y	
D2	Current damage: >90% of the hedgerow or undisturbed ground is free of damage caused by human activities (could include evidence of pollution, piles of manure, rubble, excessive hedge cutting)	Y	Unmanaged since 2017
E1	Tree class: There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient), and there is on average at least one mature, ancient or veteran tree present per 20 – 50m of hedgerow.	Y	
E2	Tree health: at least 95% of hedgerow trees are in healthy condition. There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or disease, or human activity.	Y	
	Condition:	Moderate	

Hedgerow Habitat Types Condition Assessment (Native Hedgerow) – eastern boundary			
Criteria		Y/N	Notes
A1	Height: >1.5 m average along length	Y	90% of hedge is between 1.5 to 2 m tall
A2	Width: >1.5 m average along length	N	1 m wide
B1	Gap – hedge base: Gap between ground and base of canopy <0.5 m for >90% of total length.	N	No gap present
B2	Gap – hedge canopy continuity: Gaps make up <10% of total length and no canopy gaps >5 m.	Y	Gaps make up 5%
C1	Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of its length: - Measured from outer edge of hedgerow, and - is present on one side of the hedge (at least)	N	No disturbance at base
C2	Undesirable perennial vegetation: plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground (indicator sp. Include nettles, cleavers, and docks).	N	These species only present where hedge is next to grass area the rest of the hedge is next to hardstanding.
D1	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species (neophytes are plants that have naturalised in the UK since AD 1500)	N	
D2	Current damage: >90% of the hedgerow or undisturbed ground is free of damage caused by human activities (could include evidence of pollution, piles of manure, rubble, excessive hedge cutting)	Y	Unmanaged since 2017
E1	Tree class: There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient), and there is on average at least one mature, ancient or veteran tree present per 20 – 50m of hedgerow.	N	All trees same age, semi mature
E2	Tree health: at least 95% of hedgerow trees are in healthy condition. There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or disease, or human activity.	Y	All trees in good health
	Condition:	Poor	

Condition Assessment Results: Hedgerows without trees		
Category	Maximum number of attributes that can fail to meet 'favourable condition' in criteria	Achieves
Good	No more than 2 failures in total; AND No more than 1 in any functional group.	
Moderate	No more than 4 failures in total; AND Does not fail both attributes in more than one functional group.	
Poor	Fails a total of more than 4 attributes; OR Fails both attributes in more than one functional group.	

Appendix 3: Proposed Habitat Map

See following page.



Reading Borough Council

Civic Offices, Bridge Street,
Reading, RG1 2LU

Proposed Habitat Map - Amethyst Lane

-  Red Line Boundary
-  Developed land, sealed surface
-  Urban; ground level planters
-  Green roof
-  Vegetated garden
-  Other neutral grassland
-  Hedgerow
-  Mixed scrub
-  Proposed tree
-  Existing tree

Drawn by Lydia Waite 04/12/2023



0 10 20 m

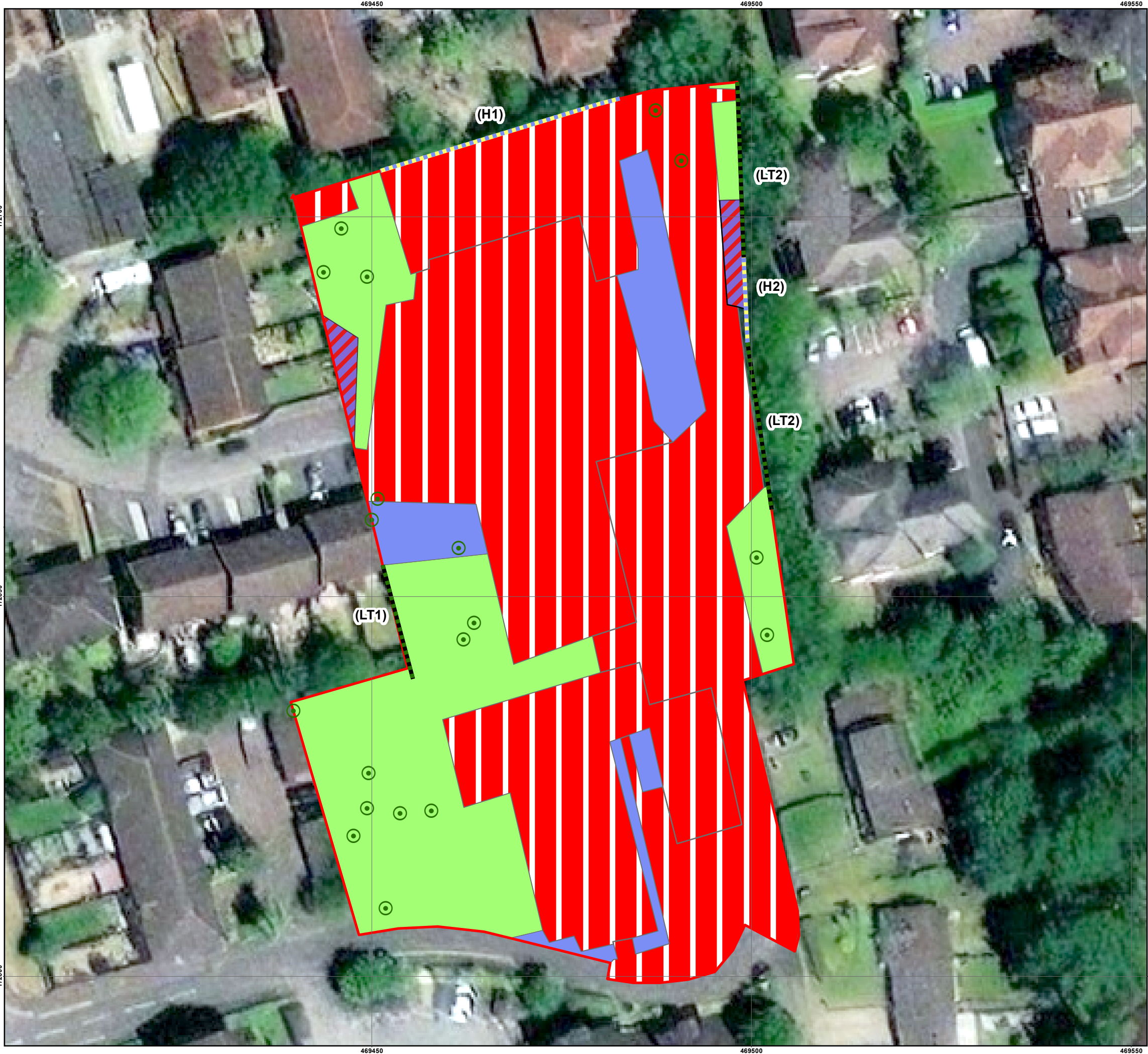
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Appendix 4: Baseline Habitat Map

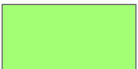
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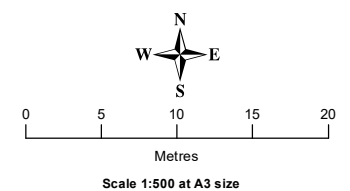
Gleeds Cost Management Ltd

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

Amethyst Lane - Baseline Habitats Map

-  Site boundary
-  Scrub (bramble and mixed)
-  Modified grassland
-  Introduced shrub
-  Developed land; sealed surface
-  Urban Tree
-  Line of trees
-  Native hedgerow with trees

Drawn By: Charlotte Larkins Date: 15.11.2023
Checked By: Sarah Thornton-Mills Date: 15.11.2023



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Appendix 5: Photographs



Photograph 1: LT1 from the north east



Photograph 2: LT2 from south west



Photograph 3: H1 from the south



Photograph 4: H2 from the south