



**Symmetry Park, Oxford
North**

**Habitat Management
Plan**

Prepared by:
**The Environmental Dimension
Partnership Ltd**

On behalf of:
**Tritax Symmetry Ltd and
Siemens Healthineers**

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Contents

Section 1 Introduction 4
Section 2 Scope, Aims and Responsibilities 7
Section 3 Existing and Proposed Ecological Features 9
Section 4 Habitat Prescriptions 12
Section 5 Monitoring 29

APPENDICES

- Appendix EDP 1 Biodiversity Impact Assessment (edp2425_r021)
- Appendix EDP 2 Woodland Management Plan (edp2425_r018)

Section 1 Introduction

- 1.1 This Habitat Management Plan (HMP) has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Tritax Symmetry Ltd and Siemens Healthineers (hereafter referred to as 'the Developer'). This HMP has been produced in relation to the proposed development of the land at Junction 9 of the M40 (hereafter referred to as 'the Site').
- 1.2 EDP is an independent environmental planning consultancy with offices in Cirencester, Cheltenham, and Cardiff. The practice provides advice to private and public sector clients throughout the UK in the fields of landscape, ecology, archaeology, cultural heritage, arboriculture, rights of way and masterplanning. Details of the practice can be obtained at our website (www.edp-uk.co.uk).
- 1.3 The proposed development includes the provision of a Class B2 structure with associated buildings, structures, parking and landscaping, within the on-site area within the Red Line Boundary. The development will also require habitat enhancement works within the off-site area in the wider land ownership in order to achieve Biodiversity Net Gain.
- 1.4 This document has been produced to set out the habitat management measures required to ensure that the Biodiversity Net Gain (BNG) targets set out within the Biodiversity Impact Assessment (BIA) (report reference: edp2425_r021 provided in **Appendix EDP 1**) are met post-development, thereby discharging Planning Condition 31 of Planning Application 22/01144/F.
- 1.5 This document will detail the habitat management prescriptions as well as ongoing management and maintenance required in order to ensure that the target habitat quality and condition are met by the proposed development.
- 1.6 This report should be read in conjunction with the BIA report provided as **Appendix EDP 1**, the Detailed Landscape Proposals included in **Appendix EDP 1** and the Woodland Management Plan provided in **Appendix EDP 2**.

SITE CONTEXT

- 1.7 The Site is located to the south-west of Bicester, which is located within the Local Planning Authority (LPA) of Cherwell District council (CDC). It currently comprises agricultural farming land, with farm buildings and associated hedgerows and ditches around the fields.
- 1.8 The Site is bounded to the west by the M40 Motorway and to the south-east by the A41. To the east and north, the Site is bordered by adjoining agricultural land and industrial buildings.

PLANNING STATUS

- 1.9 Full planning permission was granted in July 2022 under planning reference 22/01144/F. Condition 31 of the granted permission requires the following:

“A Biodiversity Net Gain will be achieved, as set out in the Biodiversity Impact Assessment edp2424_r021b (July 2022). No development above ground level shall take place until a detailed Habitat Management Plan (HMP) setting out the specific management prescriptions for each habitat type on Site, including measures for habitat creation/enhancement and ongoing management and maintenance to ensure that the target habitat quality and condition is met post-development, has been submitted to and approved by the Local Planning Authority. The approved scheme shall be implemented prior to first occupation of the building.

Reason: To achieve a Net Gain in biodiversity, this information is required prior to commencement as it is fundamental to the acceptability of the proposals.”

BIODIVERSITY NET GAIN

- 1.10 The Biodiversity Impact Assessment (edp2425_r021) provided at **Appendix EDP 1** sets out an evaluation of the proposed development’s potential to achieve Biodiversity Net Gain, based upon use of a biodiversity metric and the proposed Detailed Landscape Proposals, included in **Appendix EDP 1**.
- 1.11 The BIA was undertaken using the Department for Environment, Food and Rural Affairs (DEFRA) Biodiversity Metric 2.0 (version date: 19/12/2019), by an ecologist with experience of using such calculators, in accordance with the Biodiversity Metric 2.0 best practice guidance. Full details of the methodology employed to undertake the BIA, as well as the full results is detailed within report reference: edp2425_r021.
- 1.12 Several iterations of the metric were run as part of the assessment and the decision was made to include an adjacent area of habitat that lay outside the red line boundary but formed part of the wider land ownership within the metric calculations in order to achieve a Net Gain in Biodiversity. This was required since inclusion of the on-site habitats alone would not be sufficient to achieve the desired gain in biodiversity post development. This adjacent off-site habitat comprises an area of woodland (including a listed Ancient Semi-Natural Woodland), grassland and a pond on the western boundary of the Site. A separate Woodland Management Plan has been produced to set out the woodland enhancement measures to be undertaken within the woodland and associated pond (report reference: edp2425_r018, see **Appendix EDP 2**).
- 1.13 In summary based on the Detailed Landscape Proposals as well as the Woodland Management Plan, it was considered that it would be feasible to achieve a Net Gain in Biodiversity post development, as summarised in **Table EDP 1.1**.

Table EDP 1.1: Biodiversity Impact Assessment Summary

Biodiversity Value	Area Habitat Unit	Hedgerow Units
On-site baseline	57.52	7.14
On-site post-development	56.10	9.27
Off-site baseline	14.19	0.00
Off-site post intervention	18.01	0.00
Net Balance (units)	2.40	2.13
Net Change (%)	4.17%	29.80%

1.14 As noted in the BIA report, the proposed habitat types and target conditions will require some level of management and monitoring to ensure that the habitats achieve the desired outcomes over time. It is considered that the proposed habitats are realistically achievable with use of this targeted HMP, which will detail the specific management prescriptions for each habitat, as well as on-going monitoring and maintenance activities required to ensure the above net gain values are achieved.

Section 2

Scope, Aims and Responsibilities

SCOPE

- 2.1 This HMP will extend for a period of 30 years, as established by *The Environment Act 2021*, which requires that habitat creation and enhancement measures are maintained for a minimum period of 30 years after the development is complete. This document will be subject to an appropriate regime of monitoring and review of all operations set out within the HMP at suitable intervals, to ensure that prescriptions remain appropriate and remedial measures, if required, can be implemented.
- 2.2 The HMP addresses the areas of open space within the development, as set out within the Detailed Landscape Proposals and includes management recommendations for the soft landscape and ecological features of interest located within the scheme.
- 2.3 This HMP designs a management and maintenance plan for all enhanced habitats with a view of these habitats entering active management in Year 0 i.e. at the same time new habitats are establishing.
- 2.4 The general scope of this HMP includes the following:
 - The HMP seeks to ensure the successful delivery and appropriate management of all new created or enhanced habitats and features of ecological value or interest; and
 - The long-term management and maintenance of the scheme post-construction seeks to ensure that the ecological and landscape framework is sustained and enhanced, such that the various target habitat types and conditions as set out within the BNG assessment are delivered successfully throughout the lifetime of the scheme.

AIMS

- 2.5 The overall aims of this Management Plan are to ensure appropriate maintenance and management of habitats to be created or enhanced as part of the proposed development, in order to ensure that they continue to contribute to delivery of the Biodiversity Net Gain aims outlined within the Biodiversity Impact Assessment.

RESPONSIBILITIES

- 2.6 The responsibility for delivering the habitat creation and enhancement activities at the Site described in this HMP, during and immediately after the construction period, will be with the Developer. The Developer will be assisted by a combination of one or all of the following: a Principal Contractor; a suitably experienced Landscape Contractor; and a suitably experienced ecologist.
- 2.7 The responsibility for delivering the ongoing maintenance and management activities at the Site described in this HMP during the operational phase (i.e. post-construction), will be with

the Developer/Principal Contractor, via instruction of a management/stewardship body or a suitably experienced Landscape Contractor as instructed by the management/stewardship body.

- 2.8 In accordance with the planning condition, the Developer must submit this HMP to the Local Planning Authority and receive approval prior to any development above ground level. Planning Condition 31 also states that all elements of the HMP must be implemented prior to first occupation of the building.

Section 3

Existing and Proposed Ecological Features

ECOLOGICAL BASELINE

- 3.1 The Site has previously been subject to detailed ecological investigations which are described in full within the Biodiversity Chapter within an Environmental Statement previously submitted to the LPA in support of the planning application.
- 3.2 The baseline ecological conditions within the Site have been informed by an ecological desk study undertaken in June 2021 and Extended Phase 1 Surveys of the Site completed in April 2018 and updated in June 2021. To inform the BIA and DEFRA Metric 2.0, site visits were undertaken in October 2021 to undertake condition assessments of the on-site habitats by a suitably experienced ecologist, in accordance with the methodology and condition assessment criteria set out by DEFRA Metric 2.0 guidance. A follow up condition assessment was undertaken on the off-site habitats comprising the woodland and pond habitats in January 2022 following the same methodology.
- 3.3 Details of the methodology employed to derive the baseline data is detailed in full within the Biodiversity ES Chapter 8 of the Environmental Statement and within the Biodiversity Impact Assessment report.
- 3.4 The on-site ecological features noted within the ecological assessment of relevance to the BIA comprise the following habitats:
- Semi-improved grassland – a field of species-poor semi-improved grassland considered to be in ‘moderate’ condition. This was assessed as being of Local Importance to nature conservation within the Biodiversity ES chapter;
 - Improved grassland – six grazed improved grassland fields considered to be of ‘poor’ condition based on DEFRA Metric 2.0 condition criteria;
 - Ditches – two on-site ditches. Ditch 1 and a section of ditch 2 were dry and considered to be in ‘poor’ condition, whilst the wet section of ditch 2 towards its northern extent was in ‘moderate’ condition. The wet ditch was considered to be of Local Importance;
 - Hedgerows – several intact species-poor hedgerows with trees present across the Site, all considered to be in ‘good’ condition. Hedgerows were assessed as being of Local Importance within the Biodiversity ES chapter;
 - Bare ground – in ‘poor’ condition;
 - Tall ruderal vegetation – a large area to the south of the farm buildings in ‘poor’ condition and smaller area to the west of the farm buildings in ‘moderate’ condition;
 - Dense scrub – small pockets of dense scrub, considered to be in ‘poor’ condition; and
 - Line of trees - present on the Site boundary and considered to be in ‘poor’ condition.

3.5 The off-site habitats noted comprised the following:

- Broadleaved woodland – an area of broadleaved woodland located on the western boundary, directly adjacent to the red line boundary, considered to be in ‘moderate’ condition. Approximately half of this area is listed as Ancient Semi-Natural Woodland. This was assessed as being of Local to County level Importance within the Biodiversity ES chapter;
- Pond – a pond located within the woodland in ‘moderate’ condition; and
- Improved grassland – a section of sheep grazed improved grassland forming the 15m buffer around the woodland in ‘poor’ condition.

ECOLOGICAL FEATURES TO BE RETAINED AND ENHANCED

3.6 The Detailed Landscape Proposals, produced by EDP (and included in **Appendix EDP 1**) shows the extent of the development footprint and proposed habitats therein. As part of the proposals some of the habitats of value have been lost in order to facilitate the development. However, where possible habitats are to be retained, or will be enhanced in order to maximise their biodiversity value.

3.7 The development layout and landscape design for the Site allows for retention or enhancement of the following habitats within the Site:

- 0.79ha of the improved (modified) grassland will be enhanced from a poor condition modified grassland to a good condition ‘other neutral grassland’ with use of appropriate management and a wildflower meadow seed mix;
- 0.01ha of improved (modified) grassland in poor condition will be ‘retained’ on site;
- 1.26ha of the species-poor semi-improved (modified) grassland will be enhanced to good condition ‘other neutral grassland’ with use of appropriate management and a wildflower meadow seed mix. This area will be managed for reptiles and so will also be subject to measures to enhance the grassland for the benefit of the grass snake population recorded on site;
- 0.01ha of the existing ditch will be retained. However, much of the ditch will be lost to facilitate the development and realigned to the south of the Site;
- 25m of hedgerow and 253m of treeline on the boundary will be retained although not enhanced;
- 0.8ha of off-site woodland, including Ancient Woodland, will be enhanced from moderate to good condition;
- The 0.19ha woodland pond will be enhanced from moderate to good condition; and
- 0.24ha of grazed improved grassland will be enhanced to good condition ‘other neutral grassland’ to create a 15m buffer of the woodland.

HABITAT CREATION

3.8 The following habitats are proposed to be created within the Detailed Landscape Proposals:

- Amenity grassland – Hard wearing amenity grassland will be created around the new building and footpath areas to deter facility users from walking on more ecologically valuable habitats;
- Species-rich meadow grassland – A species-rich meadow mixture will be sown within the open space areas primarily to the west of the Site which will be managed as a species-rich meadow, to create new foraging and dispersal opportunities for a range of species, including birds, bats, reptiles and invertebrates;
- Tussock grassland – Tussocky grassland will be created at the margins of the mixed scrub and shrub habitats with use of a tussock grassland mix to provide a variety of foraging habitat for animal especially reptiles and amphibians;
- Wet meadow grassland – Attenuation basins will be created with wetland meadow grassland to provide drainage to the Site, whilst maximising value for biodiversity. In addition, within the attenuation basin a small (c.0.01ha) wetted/ponded section of basin has been incorporated into the landscaping plans;
- Flowering Lawn – A flowering lawn will be created in the landscaped verge in front of the main building;
- Mixed scrub Habitats – These comprise native swathe planting and native feathered tree and shrub mix, such as that north of the offsite woodland, designed to strengthen the boundaries of the Site, provide connectivity around the boundaries and to increase sheltering, commuting and foraging opportunities for animals. In addition, two small areas of structural planting comprising scrub species are present at the attenuation basin in the north of the Site;
- Ditches – To compensate for the loss of much of ditch 2, a new longer realigned section of the ditch will be created that will start from the existing west side of the Site, near to the woodland and extend in a south-easterly direction before diverting north eastwards off-set from the southern boundary of the Site. The ditch will continue past the built development and then will re-connect with the existing alignment in the north-eastern part of the Site;
- Hedgerows – A series of new native species-rich hedgerows will be created along the boundary of the built development to increase diversity of habitats on site, create continuous linear features for commuting wildlife. Native hedgerow and native hedgerow with trees will be created to providing screening within the car park and cycle stores within the main built development; and
- Tree planting – A variety of native and non-native trees will be planted across the Site both in the built development and in the open space to the west.

Section 4

Habitat Prescriptions

4.1 This section details the specific habitat prescriptions that will be employed to create and manage the new proposed habitats, as well as the enhancement measures on retained habitats. The section will also detail on-going management measures that will be required in order to ensure that habitats achieve their target condition.

GENERAL MEASURES FOR SUCCESSFUL ESTABLISHMENT

4.2 All work to be carried out in accordance with the following:

- All materials and workmanship are to be to the highest possible standards in accordance with relevant good practice and British Standards;
- All work to be carried out by appropriately skilled, qualified and experienced operatives for the type and quality of the work, and in accordance with good horticultural practice and contemporary Legislation, Regulations and Codes of Practice;
- Work will be undertaken while soil and weather conditions are suitable. Do not undertake planting, turfing, seeding etc., during periods of frost, strong winds, when topsoil is frozen, snow-covered or waterlogged, or in drought conditions;
- Planting should be undertaken using topsoil recovered from the Site, where possible;
- Only tools suited to Site conditions and work carried out are to be used. Hand tools to be used around existing and newly planted trees and shrubs;
- Boards to be used where required while working, to protect grass/plant beds;
- Materials are not to be stock-piled adjacent to newly planted habitat or in retained woodland areas;
- All waste materials, including plant wrappings and temporary labels, to be removed off-site at the contractors own expense. No waste materials to be buried or burnt on-site;
- All hard and soft landscape materials to conform to the relevant British Standards and Codes of Practice. All plants to be true to name, type and character, and to comply with the National Plant Specification;
- Plants to be vigorous, weed, pest and disease free, and not suffering from drought, waterlogging, windburn, damage or nutrient deficiency. Fresh grass seed and turf produced for the current growing season are to be used. Any substitutes must be approved by the landscape architect;
- Transport and handling of plants shall comply with 'Handling and Establishing Landscape Plants' (Horticultural Trades Association), including protection from desiccation or any other damage prior to planting out; and

- Prior to undertaking planting or seeding, all rubbish, debris and surface stones exceeding 75mm in any direction are to be removed from Site. Any substance or materials injurious to plant growth including any rubble, fuel or lubricants are to be removed.

GENERAL MEASURES FOR SUCCESSFUL MAINTENANCE

- 4.3 Soil debris and arisings will be swept from adjacent hard surfaces after each maintenance operation. All extraneous rubbish not arising from the contract works will be collected and recycled (where feasible) or else removed from Site at each maintenance visit.
- 4.4 Watering will be undertaken as necessary by the developer to ensure the establishment and continued thriving of all planted areas. Watering will be to the full depth of the topsoil. If supply is restricted by emergency legislation, watering will not be carried out unless instructed to do so.
- 4.5 All areas where plants or trees have failed to thrive (through death, damage or disease) will be identified and plants will be removed and replaced with equivalent species to match the size of adjacent nearby plants in the next appropriate planting season as frequently as necessary. All replacement plant stock to be in accordance with BS 3936 Part 1(1992) and Part 10 (1990), and BS 3969 1998. All plant handling to be in accordance with 'Handling and Establishing Landscape Plants', HTA. 1985, revised edition March 2002
- 4.6 Any areas sown with seed, which fail to establish, should be re-seeded with a replacement similar variety more suited to the Site's geology in order to achieve successful establishment.
- 4.7 Spot weed control of all broad-leaved and injurious weed species listed in the Weeds Act 1959 will be undertaken using a suitable non-residual herbicide as and when required annually. The specification and use of herbicides or pesticides, including their use in proximity to water bodies, will comply with all contemporary regulations, British Standards and codes of practice.
- 4.8 Bark mulch on all planted areas is to be topped-up to appropriate levels at least once in spring, with a second application in autumn as required.
- 4.9 Any damage to hard or soft landscape areas arising from the contractors' work is to be repaired at the contractor's own expense.
- 4.10 In regard to litter collection and removal, all rubbish detrimental to the appearance of the Site, including paper, packaging materials, bottles, cans, and similar debris and arising, will be disposed of. Ensure that any litterbins are emptied on a regular basis and that at no time will litter be allowed to spill from the bin. The required frequency of emptying litter bins will depend on usage.
- 4.11 Unless otherwise specified, dispose of arisings from all operations as follows:
- Biodegradable arisings: remove to designated on or off-site recycling facility; and

- Litter and non-biodegradable arisings: remove to designated on or off-site recycling or disposal facility as agreed with client.

HABITAT SPECIFIC CREATION AND MAINTENANCE PRESCRIPTIONS

Grassland Habitats

Habitat Creation

Ground Preparation

4.12 Much of the Site currently comprises grazed improved grassland, which will have higher fertility levels. As such good ground preparation is essential to success, will allow control of weeds, produce a good quality seed bed before sowing and allow the species-rich meadow habitats to establish. Ground preparation is to be carried out in accordance with the following:

- Wherever possible utilise translocated sub-soil from the construction footprint to ensure soil nutrient levels remain low;
- Where required, topsoil will also be reduced by around 150mm, so as to reduce the long-term fertility of the soil and facilitate competition within the established grassland sward aimed at achieving and sustaining medium- to long-term species diversity. Prior to sowing, all large debris, litter, stones and earth clods will be removed; and
- To prepare a seed bed first remove weeds using repeated cultivation or a herbicide. Then plough or dig to bury the surface vegetation, harrow or rake to produce a medium tilth, and roll, or tread, to produce a firm surface.

Grassland Sowing

4.13 The suggested seed mixes for use to create the grassland habitats are provided in **Table EDP 4.1**.

Table EDP 4.1: Proposed Grassland Seed Specifications

Habitat	Seed Mix	Sowing Rate
Species-rich Meadow	Emorsgate EM3: Special General-Purpose Meadow Mixture	4g/m ²
Tussock Grass	Emorsgate EG10: Tussock Grass Mixture	5g/m ²
Flowering Lawn	Emorsgate EL1 Flowering Lawn Mixture	4g/m ²
Wet meadow grassland	EG8: Meadow Grass Mixture for Wet Soils	5g/m ²
Hedgerow grassland mixture	EH1 Hedgerow Mixture	5g/m ²
Turf (amenity grassland)	Rolawn Medallion turf	NA

4.14 Sowing is to be carried out in accordance with the following:

- Sowing should take place in the late summer/autumn (late August-October) or spring (April-May);
- Seeds must be surface sown at the rates detailed in **Table EDP 4.1**, using a seed broadcaster or by hand; and
- Seed must not be covered but should be 'firmed in' to give good soil/seed contact using either a roller or by treading.

4.15 In order to ensure high quality habitats are established and maintained within the green infrastructure areas, signage should be installed to inform site users where access is not permitted, so as to avoid walking on or trampling over more valuable habitats (species-rich meadow, tussock grassland, wetland meadow habitats) and permit access to only designated recreational areas, pathways or the trim trail route.

Habitat Enhancement

4.16 Several existing areas of grassland will be enhanced to a better condition species rich wildflower meadow (other neutral grassland of good condition) through over-sowing of Emorsgate EM3: Special General-Purpose Meadow Mixture at a sowing rate of 4g/m². These areas are located in field **F10** where the existing semi-improved grassland near to the proposed Trim Trail will be enhanced to species-rich meadow grassland (other neutral grassland) of moderate condition, and in the 'off-site' areas in field **F4** where the 15m buffer around the woodland will be enhanced from improved grassland to species rich meadow grassland (other neutral grassland) of good condition.

4.17 The proposed seed mix contains yellow rattle (*Rhinanthus minor*), a semi-parasite plant which feeds on the nutrients and water provided by grasses, which will help to reduce the vigour of existing grass species and allows for species to establish over time. After sowing, the habitat management and maintenance measures detailed in the next section will ensure that the enhanced habitats reach their target condition through reduction in nutrient levels and increase in species diversity and structure over time.

Habitat Management and Maintenance

4.18 In order to achieve the target habitat type and condition specific management prescriptions will be necessary to ensure that the required number of condition criteria are passed. The condition criteria used are those set out within the DEFRA Metric 2.0 Technical Supplement for each habitat¹. These condition criteria will form the basis of the management objectives and will be used to monitor the effectiveness of management measures.

¹ Ian Crosher, Susannah Gold, Max Heaver, Matt Heydon, Lauren Moore, Stephen Panks, Sarah Scott, Dave Stone & Nick White. 2019. The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: technical supplement (Beta version, July 2019). Natural England

Objectives for Species-rich Meadow Grassland and Tussock Grassland (Other Neutral Grassland – Good Condition)

- 4.19 The main objectives for management of the species-rich meadow and tussock grassland (both the newly created and existing enhanced grassland habitats) are as follows:
- Establish a good quality and easily recognise ‘other neutral grassland’ habitat with little difference between that described within UKHab guidance;
 - Promote wildflowers and sedges cover of over 30% (excluding white clover (*Trifolium repens*), creeping buttercup (*Ranunculus repens*) and injurious weeds);
 - Maintain undesirable species and physical damage cover below 5% of the area;
 - Ensure of bare ground cover is less than 10%; and
 - Ensure bracken cover is less than 20% and scrub /bramble cover is less than 5%.
- 4.20 Areas of species-rich grassland will adhere to the following management regime to promote a structurally and botanically diverse grassland sward and ensure the above condition criteria are met.
- 4.21 During the first year of establishment, perennial weeds within areas of species-rich wildflower and tussock grassland will be removed through repeated cutting, hand-pulling or spot-spraying.
- 4.22 Mow newly sown meadows regularly throughout the first year of establishment to a height of 40–60mm, removing cuttings if dense. This will control annual weeds and help maintain balance between faster growing grasses and slower developing wildflowers. Mowing may be undertaken using an appropriate mechanical mower or using a brushcutter/strimmer where access for larger machinery is not possible.
- 4.23 Cut material will be removed and disposed of away from the grassland areas, e.g. baled as hay or sent for composting. Ideally, material will be cut and left on the ground for two to three days to allow seeds and invertebrates to drop out, but it may be necessary to use a mower or collector for practical reasons.
- 4.24 Weed and scrub control by manual or chemical means will be undertaken as required, so as to prevent pernicious perennial weed species from becoming established. During the early developmental stages of the grassland sward, some ‘undesirable’ broadleaved species are to be expected and should become less dominant as the communities become established and stabilized. ‘Undesirable’ species comprise the following: creeping thistle (*Cirsium arvense*), spear thistle (*Cirsium vulgare*), curled dock (*Rumex crispus*), broad-leaved dock (*Rumex obtusifolius*), common ragwort (*Senecio jacobea*), common nettle (*Urtica dioica*), creeping buttercup, white clover, cow parsley (*Anthriscus sylvestris*), marsh thistle (*Cirsium palustre*) and marsh ragwort (*Senecio aquaticus*).
- 4.25 Control methods for weeds and undesirable species will comprise hand-pulling or spot treatment with a suitable approved selective herbicide, as appropriate; timing will be

dependent on the affected species. Control of any invasive species will be carried out in accordance with the advice of a specialist contractor.

- 4.26 Once established, areas of species-rich grassland will be subject to a first summer hay cut undertaken in late July to mid-August, using a scythe, petrol strimmer or tractor mower to 75-100mm. Hay is to be left to dry and shed seeds for 1–7 days then removed from site. This will be followed by a second cut at the end of the growing season (October/November) to between 40–75mm in height. Cutting will avoid the months of May to early July, to enable the majority of species to have flowered and set seed.
- 4.27 All vegetation cuttings (arising) should be removed from the grassland area and either composted on Site or removed. It is important to remove all cuttings to progressively reduce the soil fertility and thereby prevent weed dominance. This will help to promote wildflower establishment over competitive grass establishment, through gradual soil nutrient reduction over time, which will ensure the wildflower comprise a minimum of 30% cover.
- 4.28 Any scrub encroachment from adjacent habitat should be closely controlled to ensure it occupies less than 5% of the grassland area. Likewise, bracken will be controlled to ensure it remains below 20% of the area.
- 4.29 Areas of bare ground caused by poor establishment or wear through unauthorised public access should be re-seeded on an annual basis to limit bare ground cover to less than 10%.

Objectives for Flowering Lawn and enhanced area of Hedgerow Grassland and Species-rich Meadow Grassland adjacent to Trim Trail (Other Neutral Grassland – Moderate Condition)

- 4.30 The main objectives for management of the flowering lawn areas and enhanced hedgerow grassland and species-rich meadow near to the Trim Trail are as follows:
- Promote a diverse mixture of wildflowers and sedges cover up to 30% (excluding white clover, creeping buttercup and injurious weeds);
 - Perennial rye grass to be maintained at less than 25%;
 - Maintain undesirable species and physical damage cover below 5% of the area;
 - Ensure of bare ground cover is less than 10%; and
 - Ensure bracken cover is less than 20% and scrub /bramble cover is less than 5%.
- 4.31 The management regime for the flowering lawn and grassland near to the Trim Trail area consistent with that outlined in paragraphs 4.21 to 4.27 detailed above.
- 4.32 Areas of grassland with bulbs in the flowering lawn will be left un-mown in early spring. The cut will be made when the bulbs have died down (approximately six weeks after flowering). After this, the management will revert to that of the surrounding grassland.
- 4.33 The 'Trim trail' is proposed along the gravelled pathway along the re-aligned watercourse to the south of the Site, and therefore this area may be subject to greater levels of amenity use. The areas of enhanced hedgerow and species-rich meadow adjacent to this path

therefore may be subject greater disturbance and levels of access. As such, it is recognised that the cover of bare ground and physical disturbance may be greater than the above-mentioned limits, and floral diversity less due to disturbance from amenity use.

- 4.34 Efforts to address physical damage such as re-seeding of bare ground should be undertaken on an annual basis.

Objectives for wetland meadow grassland in attenuation features (Modified grassland - Poor Condition)

- 4.35 The main objectives for the management of the wetland meadow grassland habitats present in the attenuation basins/swales are:

- Perennial rye grass to be maintained at less than 25%;
- Maintain undesirable species and physical damage cover below 5% of the area;
- Ensure of bare ground cover is less than 10%; and
- Ensure bracken cover is less than 20% and scrub /bramble cover is less than 5%.

- 4.36 The following management measures will be undertaken on the created wetland meadow habitat. In response to comments from CDC that within the latest landscaping plans the Sustainable Drainage Systems (SuDS) may be constrained by proximity to the road and hardstanding, which may limit the feasibility in achieving a 'moderate' condition, as a precaution the attenuation grassland feature has been downgraded to 'poor' condition. However, management will be undertaken to maximise its ecological value, as well as visual amenity, despite the lower target condition.

- 4.37 Management of newly created and enhanced grassland in and around the attenuation basins and swales throughout the establishment phase will involve annual inspections for the presence of invasive alien plant species, and aggressive native/naturalised plant species. The inspection will be undertaken by a suitably qualified specialist, with remedial works required to control the spread of these species (if present) implemented immediately. Control measures will involve cutting and removal, mechanical control through excavation if plants become well-established, hand removal for shallow-rooted plants, or treatment by herbicides suitable for use near water following guidance from NE.

- 4.38 The extent of colonisation of swales in particular will be reviewed every two years following creation by a Chartered Landscape Architect/Contractor. In the event that colonisation by target habitats of such features has been slow to the extent that margins remain as bare mud and/or devoid of desirable plants, then low-density plug planting of native flora will be undertaken where this will not interfere with drainage and attenuation.

- 4.39 Grassland to be mown regularly to 40–60mm during the first growing season to prevent weeds from outcompeting the newly sown grassland. Cuttings to be removed and disposed of sustainably.

- 4.40 After the first year of growth the grassland should be left uncut to allow flowering and seeding from May through to July/August, after which a late summer cut can be undertaken to 40–75mm, with cuttings removed as described above.
- 4.41 Control methods for weeds and undesirable species will comprise hand-pulling or spot treatment with a suitable approved selective herbicide, as appropriate; timing will be dependent on the affected species. Undesirable species are as listed above in regard to the species-rich meadow grassland habitats. Control of any invasive species will be carried out in accordance with the advice of a specialist contractor.
- 4.42 Encroaching scrub will be removed from swales and attenuation basins on an annual basis to prevent terrestrial succession, whilst maintaining their drainage function. Scrub should be controlled to maintain cover of less than 5% within the grassland areas. Areas of SuDS structural planting, comprising native scrub species is proposed at the edge of the attenuation basin. These areas should be subject to specific management as detailed in the paragraphs below regarding scrub habitats to ensure that they do not encroach the grassland habitats.
- 4.43 Any bracken encroachment from adjacent habitat should be closely controlled and removed.
- 4.44 Areas of bare ground caused by poor establishment or wear through unauthorised public access should be re-seeded on an annual basis to limit bare ground cover to less than 10%.
- 4.45 Within the landscaping plans a wetted/ponded area has been proposed within the centre of the attenuation basin. This area will be managed to maintain an open water habitat within the wetland meadow grassland when water is present, reflecting the potential for seasonal inundation. This area will be managed to prevent colonisation of aquatic non-native and invasive species, which will be subject to the following measures as needed; cutting and removal, mechanical control through excavation if plants become well-established, hand removal for shallow-rooted plants, or treatment by herbicides suitable for use near water following guidance from NE.

Objectives for Amenity Grassland (Amenity Grassland – Poor Condition)

- 4.46 The main objectives for the management of these areas are:
- To establish and maintain grass areas in a healthy, vigorous, attractive condition; and
 - Provide suitable conditions, including appropriate grass length, appropriate to the intended use: rest and informal recreation and visual amenity.
- 4.47 Amenity grassland will be cut as necessary between March and the end of October to required heights of c.25–75mm. Cutting will be suspended in periods of drought. All litter and debris to be removed before each cut.
- 4.48 At the time of each cut, all grass edges round the base of trees will be trimmed, taking precautions not to damage the tree trunks. All arisings will be removed, and all adjoining hard areas will be swept clear of cuttings and swept material removed.

- 4.49 The sward will be kept substantially free of broadleaved weeds where required, by applying a suitable approved selective herbicide. Fallen leaves will be removed in autumn.
- 4.50 Grassland will be watered as necessary to ensure a healthy sward until it has become established. Any areas of extreme wear, bare patches or wheel ruts will be reinstated by means of re-cultivation and re-seeding.

Tree, Scrub and Shrub Habitats

- 4.51 The native feathered tree and shrub habitats (north of the offsite woodland) and the native swathe planting have been entered into the metric as mixed scrub of good condition.

Habitat Creation

- 4.52 Trees and shrubs are to be planted in accordance with the specifications set out within the Detailed Landscape Proposals included in **Appendix EDP 1**. A diversity of native shrub and tree species should be planted to ensure that in any one area of scrub there are a minimum of three woody native species present, and that no one species is dominant.
- 4.53 In addition to the measures set out within the section regarding general measures for successful establishment, the following will be undertaken during creation of these habitats:
- The layout of planted whips should include creation of glades or rides extending through the scrub where grassland is allowed to encroach to create a range of microclimates of value to wildlife;
 - Trees to be planted in the autumn/winter months when the ground is frost-free and at a suitable time to avoid competitive exclusion by rapid growing species;
 - Any tree growth supports should be supplied and fitted in accordance with the manufacturer's guidelines and whips protected using transparent spiral tree guards and shrub shelters;
 - Trenches and pits dug for new tree and shrub planting across the Site and within gaps of retained trees should be dug by hand only, following current best practice;
 - All plants are to be planted in accordance with BS 3936:1992 Nursery Stock. A mycorrhizal inoculant to replace naturally occurring fungi in soil is to be applied to roots of bare plants before planting and backfilling to stimulate plant growth and accelerate root development. Prior to planting, ground is to be well-broken and free draining using an auger. Soil ameliorants/conditioners are to be to BSI PAS 100 – Compost Specification. A slow release fertilizer (e.g. Scotts UK Professional 'Enmag', or similar) is to be used at a rate of 70g/m² for shrub planting, and up to 140g/m² for tree planting; and
 - Well-composted bark mulch is to be applied to trees in grassed areas to 800mm radius around the base of trees, 100mm depth; to 75mm depth around ornamental shrubs/hedges and whip planted areas; and finished level of 50mm below adjacent grassed or paved areas.

Habitat Management and Maintenance

Objectives for Native Feathered Tree and Shrub planting and Native Swathe planting (Mixed Scrub- Good Condition)

4.54 The main objectives for management of the mixed scrub habitats are as follows:

- There are at least three woody species, with no one species comprising more than 75% of the cover;
- Ensure is a good age range – a mixture of seedlings, saplings, young shrubs and mature shrubs;
- Pernicious weeds (creeping thistle, and common nettle (*Urtica dioica*)) and invasive species make up less than 5% of the ground cover;
- The scrub has a well-developed edge with un-grazed tall herbs; and
- There are many clearings and glades within the scrub.

4.55 The following management measures will be undertaken following creation to ensure the target condition criteria are met:

- All planting will be maintained in such a way as to exclude aggressively competitive plants from around the base of each plant for a period of three years from the end of the season in which the stock was planted;
- Weeding will be undertaken during the main growth period (April to June, inclusive) for three years, achieving and maintaining a weed-free area around each of a minimum of 1m radius. Weed control will be by strimming (using appropriate guards to avoid damage to the plant) and/or herbicide application. Care will be taken to avoid damage to trees themselves. Any herbicides should avoid areas of newly established grassland;
- Any dead or dying plants to be replaced during the winter season (November/March). Replacement of trees to ensure a diversity of shrubs/trees in any one area (minimum three woody species);
- Re-firm plants loosened by frost heave, wind rock or vandalism by treading around the base. 'Collars' at the base of tree stems created by tree movement to be broken up by fork, avoiding damage to roots, backfilled with topsoil as necessary, and re-firmed;
- Watering to field capacity to be undertaken regularly during the summer months and as required in the first five years following planting, to achieve successful plant establishment; additional monitoring will also be necessary during prolonged dry periods when new planting has a greater chance of failure;
- Spiral guards can be removed after two years to facilitate further growth and management, providing the trees are suitably established;

- After five year after planting, or once plants are fully established, all tree/shrub/climber stakes, ties, supports and shelters can be removed and disposed of off-site;
- Undertake formative pruning to avoid future structural problems, to remedy disease and vandalism problems, and to achieve good form:
 - Do not prune whips or feathered trees;
 - Do not prune during the late winter/early spring sap flow period; and
 - Crown prune young trees up to 4m high by removing dead branches and reducing selected side branches by one third to preserve a well-balanced head, ensuring the development of a single strong leader and the removal of duplicated branches and potentially weak or tight forks. In each case cut back to live wood.
- The edges of scrub habitats comprising tussocky grassland and scrub saplings should be left to grow long to create a buffer between the scrub and adjacent habitat, with cutting limited to once per year in late summer/autumn, with grass edge cut to 40–75mm;
- When managing scrub over the long-term rotate the cutting regime so that a mixture of young through to mature scrub is created to increase structural diversity and encourage regeneration. Scrub can take 15 years to mature, therefore between 1/15th and 3/15th of the scrub could be cut/coppiced per year;
- Created glades and rides should be maintained by more regular mowing /cutting on a yearly basis to a minimum height of 40-75mm in late summer/autumn to allow grasses to set seed but avoid nesting bird season; and
- Control methods for undesirable and invasive species will comprise hand-pulling or spot treatment with a suitable approved selective herbicide, as appropriate; timing will be dependent on the affected species.

Objectives for Structural Planting in Attenuation Basin (Mixed Scrub - Poor Condition)

4.56 The main objectives for management of the SuDS structural habitat within the attenuation basin are as follows:

- There are at least three woody species, with no one species comprising more than 75% of the cover;
- Pernicious weeds (creeping thistle, and common nettle) and invasive species make up less than 5% of the ground cover; and
- The scrub is managed to prevent its spread across the wider attenuation basin feature.

4.57 The following management measures will be undertaken to ensure the above objectives are met:

- The extent of colonisation of the scrub at the attenuation basin will be reviewed every two years following creation by a Chartered Landscape Architect/Contractor. In the event that colonisation by target habitats of such features has been slow to the extent that margins remain as bare mud and/or devoid of desirable plants, then low-density plug planting of native scrub species will be undertaken where this will not interfere with drainage and attenuation;
- Control measures for non-target species and pernicious weeds will involve cutting and removal, mechanical control through excavation if plants become well-established, hand removal for shallow-rooted plants, or treatment by herbicides suitable for use near water following guidance from NE;
- Bankside cutting of the scrub is best carried out in late summer (mid-July to mid-September), with the flail cutters set to retain vegetation at c.15cm heights. Variable cutting will encourage diversity, thereby increasing the ecological value of these attenuation features;
- In addition, sections of the scrub at the basin will be left uncut in any one year, so as to create variable heights and structure; and
- Scrub will be maintained to ensure it does not spread into the grassland habitats of the attenuation basin. Encroaching scrub will be cut back from the main area of the attenuation basin on an annual basis to prevent terrestrial succession, whilst maintaining their drainage function.

Trees (Street/Urban Trees – Moderate Condition)

4.58 Within DEFRA metric 2.0 urban street trees are automatically allocated a Moderate condition score. In addition to the measures listed above in relation to trees the following measures detailed below will ensure that the planted urban/street trees are managed and maintained in a healthy condition and of maximum benefit for wildlife.

4.59 To ensure the long-term viability trees an annual inspection of all retained mature trees should be undertaken by an Arboricultural Association approved arboriculturist contractor or professional arboriculturist, with all recommendations implemented in full within three months of initial inspection. Where damage is identified, consideration should be given to the inclusion of protective fencing.

4.60 Dead/dying/damaged limbs should be removed only if they pose a hazard to public health and safety.

4.61 Any removal or remedial works to trees should prior to works commencement be inspected by a suitably qualified and licenced ecologist will be undertaken to determine its current potential to support roosting bats. Thereafter, works will only progress in accordance with the advice of the suitably qualified and NE bat licensed ecologist.

- 4.62 Once removed, the limb, as well as any dead wood, should be left at the base of the tree to provide a refugia and food resource for invertebrates.
- 4.63 All tree works are to be undertaken in accordance with BS 3998:2010 Tree Work. Retained trees will be allowed to develop naturally where feasible, subject to Health and Safety considerations.
- 4.64 Monitoring and maintenance of newly planted tree species should be undertaken in accordance with the above prescriptions for shrubs.

Ditch Habitats

- 4.65 The new realigned on-site ditch has been entered into the metric as a ditch in poor condition as a worse-case scenario at this stage due to the extent of water present being unknown. The existing ditch to be re-aligned was dry along much of its length at the time of survey and a detailed drainage assessment has not been made for the proposed watercourse. Since the water level can have an influence on other habitat condition indicators (such as the diversity of aquatic species present, presence of marginal vegetation water quality, etc.), a worse-case scenario has been assumed, based on the ditch being dry for part of the year, and thus may fail several condition criteria as a result of the lack of water present.

Habitat Creation

- 4.66 The new re-aligned ditch will be dug out and planted up or sown at the margins with a range of native aquatic and emergent species for maximum biodiversity benefit.
- 4.67 The ditch should be dug to a depth of 0.7 – 1m with a variable depth and slope profile on the banks for maximum benefit to wildlife.
- 4.68 Marginal and emergent planting should include native species of value to wildlife, such as bogbean (*Menyanthes trifoliata*), flowering rush (*Butomus umbellatus*), yellow flag iris (*Iris pseudocorus*), brooklime (*Veronica beccabunga*), marsh marigold (*Caltha palustris*), purple loosestrife (*Lythrum salicaria*), water mint (*Metha aquatica*), water forget-me-not (*Myositis scorpiodes*), meadowsweet (*Filipendula ulmaria*), rushes/sedges and common reed (*Phragmites australis*).

Habitat Management and Maintenance

- 4.69 Management of the re-aligned ditch as well as the retained existing ditch features will be aimed at maintaining their drainage functions as well as creating new wetland habitats within the Site. As a worst-case scenario the target condition is poor however, it is anticipated that management should aim to address a number of condition criteria and therefore it may be possible to achieve a moderate condition.

Objectives For the Re-aligned Ditch (Ditch – Poor Condition)

- 4.70 The main objectives for management of the ditch habitats are as follows:
- There should be good water quality with no sign of pollution in the water body or the water supply;

- Clear water should be dominated by plants. A range of submerged and floating leaved plants should be present e.g. more than 10 species of emergent, floating or submerged species in a 20m ditch length;
- A marginal fringe of emergent vegetation should be present;
- The water body should not be impacted by use of the riparian land;
- Less than 10% of the ditch or linear waterbody should be heavily shaded;
- There should be an absence of non-native species; and
- There should be less than 10% cover of filamentous algae and/or duckweed.

4.71 The following management measures will be undertaken following creation to ensure the target condition criteria are met:

- Ditches to be mown between September to end-March inclusive to avoid disturbing nesting wildlife. For bank vegetation, a late autumn cut every one or two years would simulate a rich grassland sward, without affecting the drainage function;
- Bankside vegetation to be cut no shorter than 15cm;
- Avoid cutting all sections of the bank at the same time, the ditch should be sub-divided into short lengths, with difference lengths cut on different years. At least one third of the ditch should remain unmanaged per year;
- Clear encroaching scrub from banks to ensure that less than 10% of the ditch is heavily shaded;
- If discovered non-native species, filamentous algae or duckweed should be targeted for removal annually, using appropriate control methods for working on watercourses and best practice biosecurity measures when working with Schedule 9 invasive non-native species;
- Supplementary planting up of marginal and emergent species should monitoring indicate poor establishment or decline in diversity or emergent, marginal or floating plants (below 10 species on average per 20m section); and
- De-silting without interfering with banks using appropriately sized machinery where required.

Hedgerow Habitats

4.72 Several hedgerows are to be created as part of the proposed development. These include native species-rich hedgerow planted around the periphery of the built development, bordered by various grassland habitats, as well as native hedgerow and native hedgerow with trees which will be planted within the landscaped areas of the car park providing screening.

4.73 The species-rich hedgerows have been entered into the metric as 'native species-rich hedgerows' of good condition, whilst the hedgerows around the car park and buildings have been entered as 'native hedgerows' or 'native hedgerows with trees' of 'good' condition.

Habitat Creation

4.74 Hedgerow species selection is detailed within the Detailed Landscape Proposals included in **Appendix EDP 1**, which comprise a number of native hedgerow and shrub species.

4.75 Planting instructions for new hedgerow trees and shrubs should follow those provided above in relation to proposed tree and shrub planting.

4.76 In addition, new tree whips within hedgerows are to be planted in two rows at 0.3 to 0.5m centres allowing for at least 0.5m between rows. Whips within single-species amenity hedgerows are to be planted in single rows at 0.3m centres.

4.77 The margins of the hedgerows in selected locations as detailed within the Detailed Landscape Proposal will be seeded with Emorsgate EH1 Hedgerow Mixture, which comprises wildflowers and grasses tolerant of partial shade, making it suitable for sowing near to hedgerows.

4.78 Ground preparation for hedgerow seeding of hedgerow grassland mixes must rid the soil of perennial weeds, through repeated cultivation or herbicide application, prior to sowing. Cultivation of the ground prior to sowing must take into consideration the existing tree stock within the hedgerow and be careful not to damage the root system. Cultivation should only go to the minimum depth required to expose fresh soil, into which new seeds are to be sown.

4.79 The ground preparation measures detailed in the grassland section above should be applied to sowing of hedgerow grassland seed mix. Sowing should be undertaken in autumn or spring in appropriate conditions following the methodology detailed in the species-rich meadow grassland section above.

4.80 A slow-release fertiliser will also be applied where appropriate. Topsoil trenches shall be mulched with amenity bark mulch up to a depth of 75mm.

Habitat Management and Maintenance

Objectives For the Hedgerow Ditches (Hedgerows – Good Condition)

4.81 The main objectives for management of the hedgerow habitats are as follows:

- Maintain an average height of more than 1.5m and average width of more than 1.5m along length;
- Ensure the gap between ground and base of canopy is less than 0.5m for at least 90% of length;
- Minimise gaps within the hedgerow canopy with gaps less than 10% of total length and no canopy gaps greater than 5m in size;

- Maintain a buffer zone of a minimum of 1m width of undisturbed ground with perennial herbaceous vegetation for at least 90% of length from the outside of the hedgerow on at least one side;
 - Control undesirable perennial vegetation indicative of nutrient enrichment of soils to cover less than 20% cover of the area of undisturbed ground, and ensure less than 10% of the hedgerow and undisturbed ground has invasive non-native and neophyte species present; and
 - Protect the hedgerow from damage with more than 90% of the hedgerow or undisturbed ground free of damage caused by human activities.
- 4.82 The maintenance of retained and newly planted hedgerows should be undertaken in accordance with the above prescriptions for shrubs and trees in order to achieve the objectives for good condition hedgerows.
- 4.83 In addition, new growth of tree whips planted in new native hedgerows should be topped by approximately 30% on all sides, on an annual cycle up to the first three years after planting to encourage low lateral growth of branches, thereby establishing a thick hedgerow at the base. In subsequent years, lateral branches and shoots should be trimmed to an 'A' shaped cross-section, with greater width at the base of the hedgerow.
- 4.84 Thereafter, hedgerows should be cut back on a three-year rotation in section of 50–100m, each winter (November to February). The rotation should ensure that only 1/3 of the hedgerow is cut at any one time and as such it should take three years for all parts of the hedge to be cut in full.
- 4.85 Native boundary hedgerows should not be flailed on all sides, but instead have one natural side retained in rotation to maintain foraging and nesting opportunities.
- 4.86 Hedgerows to be trimmed to maintain an 'A' shaped profile and final trimmed size of about 3m high and 3m wide at base, unless specified otherwise, using suitable mechanical cutters.
- 4.87 Hedgerow trees are not to be lopped or cut off. These should be clearly tagged and identified for full maturity. However, lower branches should be removed to prevent excessive shading to hedgerow species.
- 4.88 Supplementary planting up of gaps using native hedgerow species should be undertaken where gaps within the hedgerow canopy, or hedgerow base are found.
- 4.89 A minimum of a 1m strip of perennial herbaceous vegetation should be maintained on at least one side of the hedgerow and be protected from human impacts (e.g. trampling or littering) or over-management.
- 4.90 The hedgerow grassland should be cut once per year in late summer to a height of 75mm, with cuttings left to dry and shed seed for 1–7 days where possible, prior to removal and composting.

- 4.91 Control methods for undesirable and invasive species to comprise hand-pulling or spot treatment with a suitable approved selective herbicide, as appropriate; timing will be dependent on the affected species.
- 4.92 Removal of litter or debris should be undertaken regularly from the hedgerow and adjacent herbaceous vegetation. Care should be taken to prevent stockpiling of material against hedgerow bases.
- 4.93 Measures to enhance habitat for black hairstreak (*Satyrium pruni*) and brown hairstreak (*Thecla betulae*) will be undertaken through management of blackthorn (where they lay their eggs) in a manner sensitive to these species. Rotational cutting of blackthorn scrub and hedgerow habitat should benefit the local brown hairstreak butterfly population by ensuring that no more than one third of available blackthorn habitat be trimmed in any one year, ensuring eggs are not destroyed during the cutting process.

Off-site Woodland and Pond Habitats

- 4.94 The off-site habitat comprises a broadleaved woodland, including ancient woodland and pond present within, as well as an area of improved grassland with Field F4, that will be enhanced to create a 15m buffer around the woodland. The woodland and pond habitats will be enhanced as part of the proposals from their existing moderate condition to good condition habitats.
- 4.95 A detailed Woodland Management Plan has already been created for the off-site woodland and pond habitats (report reference: edp2425_r018), which detail the specific management prescriptions and monitoring actions required to enhance the existing woodland to its target condition. This can be found in **Appendix EDP 2** of this report.
- 4.96 The enhancement and management measures for the off-site grassland enhancement within the 15m woodland buffer is consistent with those for the on-site species-rich grassland meadow and is detailed within paragraphs 4.16 to 4.28, and therefore will not be repeated here.

Section 5 Monitoring

- 5.1 The Developer will have responsibility for implementation of this HMP and the provisions set out within the Detailed Landscape Proposals and in accordance with the planning consent. When the landscaping is completed as part of the construction of the Proposed Development, the Management Company will take over responsibility for the maintenance and monitoring of the landscaping described in this HMP, with assistance as required from a suitable experienced Landscape Architect or Ecologist.

MONITORING AND EVALUATING SUCCESS OF BIODIVERSITY NET GAIN OUTCOMES

- 5.2 Effective monitoring of the success of habitat creation and enhancement measures will be needed, to determine whether Biodiversity Net Gain outcomes have been successfully achieved within the 30-year period post-construction for which the Net Gain must be maintained.
- 5.3 This will be undertaken through assessment of the each of the created and enhanced on-site and off-site habitats against the DEFRA Metric 2.0 Condition Criteria set out within the Habitat Condition Sheets (pages 13 to 45) in the Metric Technical Supplement². The Habitat Condition Sheets have comprised the measures against which the baseline habitats have been assessed, and that the proposed BNG assessment detailed within the Metric submitted as part of the planning application has been made. Therefore, this is considered to be the most appropriate measure by which the success of habitat creation/enhancement should be assessed.
- 5.4 The post-development habitat types and conditions as detailed within the metric are summarised in **Table EDP 5.1** for created habitats and **Table EDP 5.2** for enhanced habitats.
- 5.5 The various habitats proposed for creation or enhancement will take a variable number of years to reach their target condition, based on a number of site-specific factors such as soil nutrient levels, soil PH, climate, and efficacy of site preparation. The Defra Metric 2.0 Technical Supplement details the estimated 'Time to Target Condition' within the data tables in Part 3 of the document, which are taken as the average time estimates for each habitat type to achieve each condition level based on expert judgement and case studies.
- 5.6 To allow for the variation in how long different habitats take to fully establish and reach a state whereby their target condition criteria can be met, the 'time to condition target' for each habitat will be used as an indicative estimate of how well the habitats are establishing along their proposed trajectory to achieving their target condition.

² Ian Crosher, Susannah Gold, Max Heaver, Matt Heydon, Lauren Moore, Stephen Panks, Sarah Scott, Dave Stone & Nick White. 2019. The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: technical supplement (Beta version, July 2019). Natural England

- 5.7 As such, to monitor the success of Biodiversity Net Gain outcomes it is proposed that the Site will be subject to regular Habitat Condition Assessment surveys over the 30-year period, by a suitably experienced Ecologist. The surveys will require the following to be undertaken:
- Record the current status of each habitat at the time of survey;
 - Complete a Habitat Condition Sheet to determine current condition of each habitat; and
 - Evaluate this condition against the predicted condition status that would be expected after that number of years had elapsed since habitat creation or enhancement activities commenced (as detailed in the 'Time to Target Condition' columns in **Tables EDP 5.1** and **5.2**).
- 5.8 Should it be considered that the target condition after the elapsed time has not been met then further recommendations for remedial works, additional maintenance or monitoring will be provided to the Developer/appointed Management Company.
- 5.9 The frequency of these monitoring visits is habitat dependent based on the likely time to target condition, however in the first few years following habitat creation or enhancement monitoring comprising Habitat Condition Assessment surveys will be undertaken on a more regular basis. This will ensure that habitats have established successfully and are meeting the condition requirement criteria on the proposed trajectory to their target condition.
- 5.10 For example, it is considered that the proposed species-rich meadow grassland would only meet criteria for 'poor' condition after 1-year post-creation, but after 5 years could potentially meet sufficient criteria to meet 'fairly poor' condition, then 'moderate' condition after 10 years, before finally reaching the target of 'good' condition after 15 years.
- 5.11 Once the target condition is met monitoring frequency reduces to every five years with the aim of ensuring that target condition is maintained at the required level. The monitoring years for each habitat are set out within **Tables EDP 5.1** and **5.2**. Following the 30-year management period, it is envisioned that either the habitat management and monitoring regime will continue, following the same format as set out above (e.g. checks every 5 years), or a new habitat management plan will be drawn up.
- 5.12 It is acknowledged that there will be variation from these estimates for the proposed post-development habitats. However, this method is considered to be an effective way to monitor success of BNG outcomes.

Table EDP 5.1: Proposed Habitat and Target Condition, with Time to Target Condition for Post-development Habitat Creation

Proposed Habitat	Habitat Condition	Time to Target Condition	Landscape Proposal	Time (years) to Target Condition NA Indicates Condition Achieved					Frequency of Monitoring Using Habitat Condition Assessment (years following completion)
				Poor	Fairly Poor	Moderate	Fairly Good	Good	
Grassland - Amenity	Poor	1	Turf	1	NA	NA	-	-	Years 1, 5, 10, 15, 20, 25, and 30
Grassland - Other neutral	Moderate	10	Flowering Lawn mixture	1	5	10	NA	NA	Years 1, 5, 10, 15, 20, 25, and 30
Grassland - Other neutral	Good	15	Species rich meadow grassland; Tussock grass mixture	1	5	10	12	15	Years 1, 5, 10, 15, 20, 25, and 30
Grassland-Modified	Poor	1	Wetland meadow grassland	1	NA	NA	NA	NA	Years 1, 5, 10, 15, 20, 25, and 30
Heathland and shrub- Mixed scrub	Good	7	Native shrub and tree planting; Native swathe planting	1	2	3	5	7	Years 1, 3, 5, 7, 10, 15, 20, 25, and 30
Heathland and shrub - Mixed scrub	Poor	1	SuDS structural planting in attenuation basin	1	NA	NA	NA	NA	Years 1, 3, 5, 7, 10, 15, 20, 25, and 30
Pond (non-priority)	Poor	1	Wetted/ponded area in attenuation basin	1	NA	NA	NA	NA	Years 1, 3, 5, 7, 10, 15, 20, 25, and 30
Ditches	Poor	1	Re-aligned ditch	1	3	5	7	10	Years 1, 3, 5, 10, 15, 20, 25, and 30
Native species-rich hedgerow	Good	10	Proposed Hedgerow Planting (species-rich hedgerow mix)	1	-	5	-	10	Years 1, 5, 10, 15, 20, 25, and 30

Proposed Habitat	Habitat Condition	Time to Target Condition	Landscape Proposal	Time (years) to Target Condition NA Indicates Condition Achieved					Frequency of Monitoring Using Habitat Condition Assessment (years following completion)
				Poor	Fairly Poor	Moderate	Fairly Good	Good	
Native Hedgerow	Good	10	Proposed Hedgerow Planting	1	-	5	-	10	Years 1, 5, 10, 15, 20, 25, and 30
Native Hedgerow with trees	Good	20	Proposed Hedgerow Planting (including hedgerow trees)	1	-	10	-	20	Years 1, 5, 10, 15, 20, 25, and 30
Urban – Street Tree	Moderate	27	Planted Tree Planting	-	-	27	-	-	Years 1, 5, 10, 15, 20, 27, and 30

Table EDP 5.2: Proposed Habitat and Target Condition, with Time to Target Condition for post-development Habitat Enhancement

Proposed Habitat (Baseline habitat if different)	Habitat Condition Baseline	Habitat Condition Proposed	Time to Target Condition	Landscape Proposal	Time (years) to target condition					Frequency of Monitoring using Habitat Condition Assessment
					Poor	Fairly Poor	Moderate	Fairly Good	Good	
Grassland – Other neutral (Modified grassland)	Moderate (Modified grassland)	Good (Other neutral grassland)	15	Species rich meadow grassland	-	-	-	12	15	Years 1, 5, 12, 15, 20, 25 and 30

Proposed Habitat (Baseline habitat if different)	Habitat Condition Baseline	Habitat Condition Proposed	Time to Target Condition	Landscape Proposal	Time (years) to target condition					Frequency of Monitoring using Habitat Condition Assessment
					Poor	Fairly Poor	Moderate	Fairly Good	Good	
Grassland – Other neutral	Moderate	Good	15	Species rich meadow grassland/ Hedgerow grassland	-	-	-	10	15	Years 1, 5, 10, 15, 20, 25 and 30
Woodland – Lowland Mixed Deciduous Woodland	Moderate	Good	20	Enhanced woodland	-	-	-	20	20	Years 1, 5, 10, 15, 20, and 30
Pond	Moderate	Good	2	Enhanced woodland pond	-	-	-	2	5	Years 1, 2, 5, 10, 15, 20, and 30

MONITORING PRESCRIPTIONS

General Monitoring

- 5.13 All habitats will be subject to annual monitoring in the establishment phase (Years 1-5) by a suitably qualified Landscape Architect to ensure that habitats are establishing as expected and where issues are recorded, recommendations for remedial measures and further maintenance will be provided. After this time the monitoring regime can be modified to increase or decrease the frequency, as required, based on the recommendations of the Landscape Architect.
- 5.14 In addition, the developer or appointed management company will also be responsible for ensuring the habitats are regularly monitored (multiple times per year) for negative condition indicators including:
- Areas of bare ground, caused by failure in establishment of grassland. These will be remediated through additional seed sowing in the next available sowing season of late August to October or April to May for grassland;
 - Trees and shrubs failing to establish due to death, damage or disease. These will be replaced with similar or more appropriate species (to be advised to Landscape Architect) during the next planting season; and
 - Presence of aggressive or dominating weeds and undesirable species will be monitored throughout the year with spot treatment of weed undertaken using mechanical or chemical treatment, as required.

Habitat Specific Monitoring

- 5.15 The following sections details the habitat specific monitoring that should be undertaken for various habitats, where required.

Grassland Habitats

- 5.16 A Landscape Architect will undertake an assessment of all areas of grassland, meadow and bulb planting on site at Years 1, 3 and 5 from the first spring following planting, to ensure the adequate establishment of all plants, identify the presence of any undesirable species and disease, and determine whether remedial action is required.
- 5.17 This could include replacement seeding/bulb planting for any lost/damaged specimens and additional management prescriptions necessary to ensure successful development. Additional monitoring will also be necessary during prolonged dry periods when new planting has a greater chance of failure. Thereafter, management measures will require subsequent assessment following monitoring at five yearly intervals.
- 5.18 When visiting Site to undertake the Habitat Condition Assessment surveys the ecologist should record the diversity and abundance of grassland species through recording of the average number of species recorded within a 1m² area. This information will be used to

determine whether the habitat matches the description of the target habitat type within UKHab Classification, whether Condition Criteria 1 2 and 3 have been met.

- 5.19 Site user access will be monitored in order to check that Site personnel are using only designated recreational areas and are not accessing, disturbing or damaging any of the more valuable Site habitats. Should unauthorised access be confirmed provision of additional signage or alternative measures such as temporary fencing (formal fencing or low dead hedging) could be employed to deter users from accessing unauthorised areas.

Tree, Scrub and Shrub Habitats

- 5.20 Regular inspection of tree stakes and ties should be undertaken on monthly basis and checks should ensure plants are maintained upright. The following should be carried out:
- Check stakes and replace or re-fix as necessary;
 - Ties: Adjust, re-fix or replace loose or defective ties as necessary, allowing for growth since planting and to prevent chafing. Where chafing has occurred, reposition or replace ties to prevent further chafing;
 - Tree Guards: Inspect and adjust, re-fix or replace loose or defective guards to original specification and to prevent chafing. Remove guards and ties after two years; and
 - Tree Shelters: Adjust, re-fix or replace loose or defective shelters to original specification and to prevent chafing. Remove shelters when tree stems touch the shelters.
- 5.21 Stakes and ties can be removed during spring once monitoring has confirmed trees can maintain an upright, unsupported growth, generally 18 months to 3 years after planting.

Appendix EDP 1
Biodiversity Impact Assessment
(edp2425_r021)



**Symmetry Park,
Oxford North**

**Biodiversity
Impact
Assessment**

Prepared by:
**The Environmental
Dimension
Partnership Ltd**

On behalf of:
**Tritax Symmetry
Ltd and Siemens
Healthineers**

March 2024
Report Reference
edp2425_r021f

Contents

Section 1	Introduction and Methodology	1
Section 2	Calculations.....	3
Section 3	Results Summary	15

Appendix

Appendix EDP 1 Biodiversity Impact Assessment Metric 2.0

Plans

- Plan EDP 1** Baseline On-site and Off-site Habitats
 (edp2425_d048a 01 July 2022 GY/CP)
- Plan EDP 2** Detailed Landscape Proposals
 (edp2425_d017m 08 March 2024 LHa/BC)
- Plan EDP 3** Post-development Habitats
 (edp2425_d049d 21 March 2024 GYo/CHa)

This version is intended for electronic viewing only

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Section 1

Introduction and Methodology

Introduction

- 1.1 This Biodiversity Impact Assessment (BIA) has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Tritax Symmetry Ltd and Siemens Healthineers (hereafter referred to as 'the Applicant'), to determine whether development proposals for the land at Symmetry Park, Oxford North (hereafter referred to as 'the Site') will deliver net biodiversity gain.
- 1.2 To calculate net gain, a BIA metric is used. This is a transparent way to calculate the biodiversity value of the habitats and hedgerows on an application site before and after development. It is a proxy measure to determine if the development will result in a likely on-site habitat biodiversity net loss or gain.

Methodology

- 1.3 To inform the Site proposals and demonstrate compliance with national and local planning policies relevant to biodiversity conservation, and national planning policy guidance relating to biodiversity (as updated by the Ministry of Housing, Communities and Local Government on 21 July 2019), a BIA was completed in October 2021 and subsequently updated to incorporate off-site habitats in May 2022. This iteration of the metric builds upon the metric undertaken in July 2022, which addressed comments from Cherwell District Council (CDC), for the inclusion of the off-site Ancient Woodland. This version addresses comments provided by CDC regarding changes to landscaping plans and implications for the on-site attenuation features.
- 1.4 This report sets out the BNG score based on the on-site baseline habitats and post-development landscaping plans, as well as inclusion of the ancient woodland, the remaining adjacent area of broadleaved woodland and the woodland pond within the off-site area suggested for inclusion by Cherwell District Council (CDC) following a site meeting attended on 27 January 2022, during which the CDC Ecology Officer requested that these habitats be included. This report also includes a 15m buffer of the Ancient Woodland within the off-site areas.
- 1.5 Two areas within the red line boundary will not be subject to development/change. These areas were included as potential working corridors relating to the existing ditch running through the Site, but no works are proposed within these areas. The location of these areas is provided in **Plan EDP 1**.
- 1.6 The BIA was undertaken using the Department for Environment, Food and Rural Affairs (DEFRA) Biodiversity Metric 2.0 (version date: 19/12/2019), by an ecologist with experience of using such calculators, in accordance with the Biodiversity Metric 2.0 best

practice guidance¹. The DEFRA Metric 2.0 was used over the more recent version of the Metric, due to the requirement to also undertake Building Research Establishment Environmental Assessment Method (BREEAM) calculations for the scheme. The BRE Group has previously published guidance which states that the updated version of the DEFRA Metric (version 3.0 at the time of the original assessment in October 2021) is significantly different to version Metric 2.0 and therefore cannot be used to demonstrate compliance with the UK NC 2018 standard. This project is subject to BREEAM assessment and therefore was required to use version 2.0 of the DEFRA Metric.

- 1.7 The assessment was undertaken in March 2024, based on the existing habitat information derived from the Extended Phase 1 Habitat Plan (which has informed the baseline habitats shown in **Plan EDP 1**) and proposed habitats detailed on the Detailed Landscape Proposals (**Plan EDP 2**). Input from the EDP landscape team has also been provided.
- 1.8 Site visits were undertaken on 07 October 2021 to undertake condition assessments of the on-site habitats by a suitably experienced ecologist in accordance with the methodology and condition assessment criteria set out by DEFRA². A follow up condition assessment was undertaken on the off-site habitats comprising the woodland and pond habitats on 27 January 2022 following the same methodology.
- 1.9 An iterative approach has been used with the current landscaping scheme being refined from the outputs of previous initial BIA Metric results produced in October 2021 and May 2022. The detailed calculations are shown in **Appendix EDP 1**. GIS software has been used to accurately calculate areas of habitat to be retained, enhanced and created. The proposed habitats and schemes are illustrated in **Plan EDP 3**.

Limitations

- 1.10 The initial Site visit to undertake condition assessments was undertaken in October 2021 which is outside of the optimal season for surveys requiring botanical species identification. However, it was considered that given the nature of the habitats present and their respective condition criteria, with reference to an Extended Phase 1 Habitat survey undertaken in the optimal survey season (in April and June 2021), species identification was sufficient to adequately assess the condition of the habitats present.
- 1.11 Note that the calculations deal with linear features (hedgerows) and other habitats separately, resulting in two separate scores.

¹ Ian Crosher, Susannah Gold, Max Heaver, Matt Heydon, Lauren Moore, Stephen Panks, Sarah Scott, Dave Stone & Nick White, 2019. The Biodiversity Metric 2.0: auditing and accounting for biodiversity value. User guide (Beta Version, July 2019). Natural England.

² Ian Crosher, Susannah Gold, Max Heaver, Matt Heydon, Lauren Moore, Stephen Panks, Sarah Scott, Dave Stone & Nick White, 2019. The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: technical supplement (Beta version, July 2019). Natural England.

Section 2 Calculations

Baseline Habitat Value

On-site Baseline Habitats

- 2.1 The Site visit undertaken on 07 October 2021 confirmed that the Site predominantly comprises improved grassland fields along with one semi-improved grassland field, with smaller areas of bare ground, tall ruderal vegetation, wet and dry ditches and hedgerows. Areas of hardstanding and buildings are present in the north of the Site. **Table EDP 2.1** outlines the conditions of the habitats present based on the assessment undertaken following the DEFRA Metric 2.0 Technical Supplement condition criteria.

Table EDP 2.1: On-site Baseline Habitat Condition

Habitat	Reference	Condition Criteria Passed	Condition Criteria Failed	Condition
Improved Grassland	Field F1	4, 5, 6, 7	1, 2, 3	Poor - Agricultural grassland with abundance of rye-grass (<i>Lolium perenne</i>) and white clover (<i>Trofolium repens</i>), and poor species diversity.
Improved Grassland	Field F2	4, 5, 6, 7	1, 2, 3	
Improved Grassland	Field F3	4, 5, 6, 7	1, 2, 3	
Improved Grassland	Field F4	4, 5, 6, 7	1, 2, 3	
Improved Grassland	Field F5	5, 6, 7	1, 2, 3, 4	
Improved Grassland	Field F6	4, 5, 6, 7	1, 2, 3	
Poor Semi-improved Grassland	Field F10	1, 2, 3, 4, 5	-	Moderate - does not meet description of Priority Habitat.
Bare Ground	-	3	1, 2	Poor.
Tall Ruderal - large area to south of farm buildings	-	2, 3	1, 4	Poor.
Tall Ruderal - small area to west of farm building	-	2, 3, 4	1	Moderate.
Scrub		3	1, 2, 4, 5	Poor.
Ditch	S1	1, 2, 3, 6, 8	4,5,7	Poor.
Ditch	S2 (dry section)	9, 10	1, 2, 3, 4, 5, 6, 7, 8	Poor.
Ditch	S2 (wet section)	1, 2, 4, 8, 9, 10	3, 5, 6, 7	Moderate.
Hedgerow	H1	A1, A2, B1, B2, C1, C2, D1, D2	-	Good.

Habitat	Reference	Condition Criteria Passed	Condition Criteria Failed	Condition
Hedgerow	H3	A1, A2, B1, B2, C1, D1, D2	C2	Good.
Hedgerow	H4	A1, A2, B1, B2, C1, D1, D2	C2	Good.
Hedgerow	H5	A1, A2, B1, B2, C1, D1	C2, D2	Good.
Hedgerow	H6	A1, A2, B1, B2, C1, C2, D1, D2, E1, E2	-	Good.
Hedgerow	H7	A1, A2, B1, B2, C1, C2, D1, D2, E1, E2	-	Good.
Hedgerow	H8	A1, A2, B1, B2, C1, D1, D2	C2	Good.
Hedgerow	H13	A1, A2, B1, B2, C1, C2, D1, D2	-	Good.
Line of Trees	-	-	-	Poor - comprising broadleaved trees at boundary line and line of coniferous trees on-site with broken canopy.

2.2 None of the on-site habitats are considered to be of ‘Strategic significance’, and all have ‘Low’ ecological connectivity based upon the DEFRA Metric 2.0 connectivity assessment guidance, given that all the habitats are of medium distinctness or lower.

2.3 Based on this assessment, the Site to be assessed measures c.18.16 hectares (ha) and its current biodiversity value is 57.52 Baseline Habitat Units and 7.14 Baseline Hedgerow Units.

Off-site Baseline Habitats

2.4 The Site visit on 27 January 2022 undertook condition assessment of the broadleaved woodland habitat and the woodland pond located within the adjacent ‘off-site’ habitats located outside of the red line boundary.

2.5 Note the ancient woodland habitat is included within the assessment, however, the Metric does not specifically account for this habitat since ancient woodland is deemed one of the irreplaceable habitats for which BNG does not apply within best practice guidance, and impacts should be avoided. However, since the proposed works are to result in enhancement to this habitat rather than negative impacts/losses, it was deemed appropriate to include this habitat under ‘lowland mixed deciduous woodland’ that is of high strategic significance since ancient woodland habitats are included within local plans.

Table EDP 2.2 outlines the result of the condition assessment undertaken.

2.6 The area of improved grassland that will be incorporated within the ‘off-site’ calculations to create a 15m buffer of the Ancient Woodland currently comprises the grassland in Field 4 where is it situated outside of the red line boundary. The condition of this area was assessed during the site visit in October 2021 to assess the on-site habitats.

Table EDP 2.2: Off-site Baseline Habitat Condition

Habitat	Reference	Condition Criteria Passed	Condition Criteria Failed	Condition
Broadleaved Woodland (lowland mixed deciduous woodland, including ancient woodland)	Off-Site Broadleaved Woodland	1, 2, 3, 6, 7, 8, 10, 12	4, 5, 9, 11	Moderate.
Pond	Off-site Woodland Pond	2, 5, 7, 8, 9	1, 6	Moderate. Condition 3 and 4 N/A since it is woodland pond. Fails two criteria, with moderate water quality present and some artificial connectivity, but are not significantly impacting the pond.
Improved grassland	F4 (located outside the red line boundary)	4, 5, 6, 7	1, 2, 3	Poor - Agricultural grassland with abundance of rye-grass and white clover, and poor species diversity.
Arable – cereal crops	Off-Site Arable habitat	NA	NA	Arable/cereal crops automatically assigned as Poor condition

Proposed On-site Habitat Value

2.7 The proposed application is for the erection of a combined research, development and production facility comprising of Class B2 floorspace and ancillary office floorspace with associated infrastructure including: formation of signal-controlled vehicular access to the A41 and repositioning of existing bus stops; ancillary workshops; staff facilities; security gate house; a building for use as an energy centre; loading bays; service yard; waste management area; external plant; vehicle parking; and landscaping.

2.8 This application will require the demolition of existing agricultural buildings within the red line boundary, the realignment of an existing on-site ditch, and creation and enhancement of habitats to provide a buffer between the development and adjacent land uses. The created and enhanced habitats will comprise the following:

- A series of grassland habitats within the following species mixes – species-rich meadow grassland, flowering lawn mixture, and hedgerow grass mixture;

- Amenity grassland;
- Mitigation planting of native shrub and trees along the A41 boundary to the south and the M40 boundary to the west to provide a screening buffer and enhance linear connectivity around the development periphery. This will comprise both native swathe planting and native feathered tree and shrub mix planting;
- Tree planting;
- Diverting the existing on-site ditch (**S2**) along the southern and western boundary to accommodate the development footprint;
- Retention and enhancement of several existing hedgerows at the boundaries of the Site;
- New hedgerow planting comprising both native and non-native (introduced shrub) hedgerows within the car park; and
- A series of drainage features comprising attenuation basins that will be created and managed primarily as wet meadow grassland, with marginal shrub planting and a central wetted area.

Proposed Habitat Type and Condition

- 2.9 Several new habitats will be created as part of the proposed landscaping strategy, whilst other retained habitat will be enhanced to improve their condition in order to achieve a net gain in habitat value post-development. The following section outlines the habitat to be created or enhanced and provides a justification for the proposed target condition scores input into the Metric.
- 2.10 In order to meet the target habitat type and condition a detailed Habitat Management Plan (HMP) will be created in order to set out the specific management prescriptions for each habitat type on-site. The HMP will include measures for habitat creation/-enhancement and ongoing management and maintenance to ensure that the target habitat quality and condition is met post-development.

Habitat Creation

Amenity Grassland (Poor Condition)

- 2.11 The created amenity grassland has been categorised as ‘amenity grassland’ of poor condition due to its amenity use and potentially greater levels of disturbance around the buildings and car park areas.

Species-rich Meadow Grassland (Other Neutral Grassland – Good Condition)

- 2.12 Areas of ‘species-rich meadow grassland’ will be created through sowing of Emorsgate Seed mix EM3: Special General Purpose Meadow Mixture, or similar, at a rate of 4g/m² to create areas of species-rich neutral grassland matching the description of ‘other neutral grassland’ under UK Habitat Classification. This species mix comprises a variety of wildflower and grass species including those commonly found in lowland meadow habitats. Species in the mixture include (but are not limited to) bird’s-foot trefoil (*Lotus corniculatus*), greater knapweed (*Centaurea scabiosa*), meadowsweet (*Filipenula ulmaria*), lady’s bedstraw (*Galium verum*), field scabious (*Knautia arvensis*), oxeye daisy (*Leucanthemum vulgare*), yellow rattle (*Rhinanthus minor*), crested dog’s-tail (*Cynosurus cristatus*), red fescue (*Festuca rubra*) and common bent (*Agrostis capillaris*). This seed mix is recommended for where precise soil characteristics have not been established before sowing.
- 2.13 A ‘good’ condition score has been selected because it is considered that by sowing the above-mentioned seed mix and adherence to the HMP it will be possible to meet the condition criteria for ‘good’ condition grassland required by the DEFRA Metric 2.0 Technical Supplement, including wildflower and sedges of over 30% cover, with none of the indicators of poor condition present and meeting all the condition criteria with only minor variation.
- 2.14 The HMP will detail the specific management measures required to ensure that the grassland matches the description of a species-rich ‘other neutral grassland’ with a variety of wildflower, sedge and other neutral grassland meadow indicator species allowed to proliferate. This will include the specific methodology and timings for a cyclical cutting regime targeted at creating species rich meadow grassland habitat.
- 2.15 Monitoring and maintenance activities will also be detailed to ensure that indicators of poor condition are absent. This will comprise ensuring undesirable species, physical damage, and scrub/bramble (*Rubus fruticosus*) make up less than 5% ground cover, less than 10% of the ground consists of bare ground and less than 20% ground cover consists of bracken. A maintenance schedule will be included in the HMP to detail any localised treatment or clearance of undesirable species, and any remedial works, for example additional seed sowing for areas of damage/bare ground.
- 2.16 These habitat areas are located away from areas where high footfall or use by staff is anticipated (around buildings and car parks, etc.) and so should be protected from damage and disturbance from public use. However, where damage does occur the HMP will detail maintenance measures to ensure that the damage is remediated to bring the areas in line with their target condition criteria.
- 2.17 Furthermore, this habitat will need to be managed for reptiles, therefore the HMP will detail management prescriptions to create a variety of sward heights, a diversity of forb and grass species and management to prevent undesirable species, requiring an ecologically sensitive management regime.

Wet Meadow Grassland (Modified Grassland- Poor Condition)

- 2.18 Within the proposed attenuation basins new wetland meadow grassland of poor condition will be created through sowing of Emorsgate grassland seed mix 'EG8: Meadow Grass Mixture for Wet Soils', or similar, and will be sown at a rate of 4g/m².
- 2.19 The HMP will detail the specific management measures required to ensure that the grassland matches the description of a semi-improved grassland habitat found in wetland habitat with a variety of wildflower, sedges and other wet meadow indicator species allowed to proliferate (in order to meet condition criteria 1). Concerns have been raised by CDC that due to the latest layout and landscaping plans the SUDS would be heavily constrained by the proximal areas of road and hardstanding, which may limit the feasibility in achieving a 'moderate' condition. As such, as a precaution the attenuation grassland feature has been downgraded to 'poor' condition, however management will still be undertaken to attempt to target a higher condition score. Adherence to the HMP will target condition criteria 3 to 6 are met, by avoiding the negative poor condition criteria, as outlined above. A poor condition has been selected as given the locations of these attenuation features within the Site and species mix proposed, it is unlikely that the habitat would meet the description of a Priority Habitat grassland.

Pond (non-priority) - Poor Condition

- 2.20 A ponded area of standing water is present within the main attenuation basin feature, which has been input as a non-priority pond in poor condition, reflecting the fact that given its location and size it is likely to fail a number of the pond condition criteria.

Flowering Lawn (Other Neutral Grassland - Moderate Condition)

- 2.21 Several small areas of flowering lawn will be created with sowing of Emorsgate grassland seed mix EL1: Flowering Lawn Mixture, or similar, at a rate of 4g/m². This mixture comprises a selection of wildflower species that are tolerant to regular short mowing and therefore will be suitable for these locations proposed, which have a more visual amenity use around the buildings, entrances and car parks, and so will be subject to more regular maintenance. A moderate condition has been selected as it is considered, given the location on-site and species mix proposed, it is unlikely that the habitat would meet the description of a Priority Habitat grassland but would be more appropriately classified as a semi-improved grassland. However, it would be likely to meet the remaining moderate condition assessment criteria through implementation of the HMP to prevent the indicators of poor condition (condition criteria 4, 5 and 6).

Mixed Scrub Habitats (Mixed Scrub - Good Condition)

- 2.22 Landscape buffer planting has been incorporated into the scheme, comprising native swathe planting and native feathered tree and shrub mix planting in several locations across the Site boundaries. These habitats have been categorised as mixed scrub habitat since post-development they will consist of a dense scrub habitat without a single dominant species. It is considered that a feasible condition for this habitat could be 'good' since it is

considered that with a considered species selection for planting and an appropriate management regime this is an achievable target condition for this habitat based on the five condition criteria, as follows:

- The planting regime will ensure that at least three woody species will be present with no one species covering more than 75% of the area, and that no non-native and invasive species are included in the planting schedule, thus ensuring condition 1 of the condition assessment criteria is met;
- The HMP will ensure discreet clearings and glades are designed for within the scrub to achieve condition 5;
- The HMP will provide specific management prescriptions and ongoing maintenance to ensure that criteria 2 to 5 are also met over the longer term;
- Adherence to the HMP will ensure that pernicious weed and invasive species make up less than 5% cover through regular monitoring and maintenance (including target spot treatment/eradication of non-target species as required); and
- Furthermore, regular management and cutting will ensure that the scrub has a well-developed edge with some taller herbs and grasses present on the margins between scrub and other habitat creating ecotones of habitats, and that clearings and glades are maintained and do not become overgrown or lost over time.

2.23 Furthermore, the HMP planting schedule will include provision for black hairstreak (*Satyrrium pruni*) and brown hairstreak (*Thecla betulae*) butterflies within areas of mixed scrub, with the planting schedule to include blackthorn and with species-specific mitigation measures to ensure that management maintains patches of blackthorn for the benefit of these species, including a cyclical cutting regime that will allow an age range of blackthorn branches (including some of two-three years old) to provide suitable habitat for egg-laying.

Ditches

2.24 The proposed hardstanding car park requires that much of the existing ditch **S2**, which extends in a west to east orientation across the Site, be lost to facilitate the development. As such it is proposed that the ditch is subject to realignment with the new course, increasing the length of the ditch habitat on-site to extend along the west and southern boundary of the Site.

2.25 The created ditch has been assigned a 'poor' condition as a worse-case scenario at this stage due to the extent of water present being unknown. The existing ditch **S2** was dry at the time of survey along much of its length and a detailed drainage assessment has not been made for the proposed watercourse. Since the water level can have an influence on other habitat condition indicators (such as the diversity of aquatic species present, presence of marginal vegetation water quality, etc.), a worse-case scenario has been assumed, based on the ditch being dry for part of the year, and thus may fail several condition criteria as a result of the lack of water present.

Hedgerow Creation

- 2.26 Several hedgerows are to be created as part of the proposed development. These include native species-rich hedgerow planted around the periphery of the built development, bordered by species-rich grassland, amenity grassland or hedgerow grassland, as well as native hedgerow and native hedgerow with trees which will be planted within the landscaped areas of the car park providing screening.
- 2.27 It is considered that a 'good' condition can be achieved through adherence to an HMP that will include prescriptions for a cyclical hedgerow management regime aimed at promoting a good structural diversity of a minimum of 1.5m high and wide, with minimal gaps in the canopy or at the base, thus passing criteria A1, A2, B1 and B2.
- 2.28 Furthermore, the HMP can ensure a buffer of a minimum of 1m is maintained and managed for a diverse hedgerow ground flora, with less than 20% of undesirable species (criteria C1 and C2) and to protect the hedgerow from adjacent land uses and damage (D2).
- 2.29 A considered planting regime of native hedgerow species will ensure criteria D1 of the condition criteria is passed.
- 2.30 As with the areas of mixed scrub above, hedgerow creation and management within the HMP will include provision for black and brown hairstreak with the inclusion of blackthorn within the hedgerow and with species-specific mitigation measures detailed in the hedgerow HMP to ensure that the hedgerows are managed considerably for these species.

Tree Planting (Street Trees - Moderate Condition)

- 2.31 Tree planting will be undertaken within the built development footprint around the buildings and car parks to provide additional habitat and visual amenity benefits. These have been inputted into the Metric as small sized 'street trees' of moderate condition, which is the pre-assigned condition for urban street trees. A variety of native and non-native trees will be included in the planting scheme.

Habitat Enhancement

- 2.32 Approximately 1.26ha of moderate quality species-poor semi-improved grassland in field **F10** and 0.79ha of 'poor' condition modified grassland will be enhanced to good condition 'other neutral grassland' through over-sowing of Emorsgate Seed mix EM3: Special General Purpose Meadow Mixture, or similar, at a rate of 4g/m² to enhance the quality of the habitat from a species-poor grassland to a species-rich meadow grassland.
- 2.33 Areas of 'hedgerow grassland' will be created adjacent to the retained hedgerows in several locations. This will require sowing Emorsgate EH1: Hedgerow mixture at a rate of 5g/m². This grassland mix comprises wildflower and grass species tolerant of partial shade that would be experienced beside and beneath hedgerows.

- 2.34 As with the created species-rich grassland, the HMP will detail the specific measures needed to achieve good condition through maintenance measures to prevent indicators of poor condition, ensure species diversity of wildflowers is maintained, and will detail the ground preparation measures required to prevent the existing dominant grasses of lower value overtaking the over-sown grassland seed mix.

Species-rich Meadow Grassland (Other Neutral Grassland - Moderate Condition)

- 2.35 Following comments from CDC, regarding the feasibility of creating good condition grassland habitat in areas of amenity use, the post-development habitats in areas close to areas for amenity use have been amended as a precaution. A 'Trim trail' is proposed along the gravelled pathway along the re-aligned watercourse to the south of the Site, and therefore this area may be subject to greater levels of amenity use. In previous iterations of the Metric it was proposed that the pathway would have areas of amenity grassland (modified grassland; poor condition) and enhancement of existing grassland, with use of species-rich grassland mix (other neutral grassland; good condition). However, given there may be high disturbance and levels of access, as a precaution this area has been downgraded in target condition to 'moderate' condition. It is considered that with the management as detailed within the HMP it will still be possible to meet a moderate condition through establishment of a diverse semi-improved grassland habitat, but also reflects that the condition criteria relating to matching characteristics of a priority habitat and cover of bare ground may be failed due to disturbance from amenity use.
- 2.36 Other areas of proposed 'other neutral grassland' of good condition are either located away from the main built development or have a buffer of amenity grassland between areas where people are likely to access (for example verges around the building and car parks), and as such these areas are not anticipated to result in significant footfall. However, as a precaution it is recommended that areas of good condition grassland and other areas to be used for nature conservation be clearly delineated and highlighted with use of signs directing people to avoid accessing these areas to ensure their conservation value can be maintained.

Proposed Off-site Habitat Value

- 2.37 Following the meeting with CDC on 27 January 2022, it was decided that adjacent off-site woodland habitat and associated pond within the wider survey area would be included within the BNG assessment as part of the off-site provision in order to increase to biodiversity value and units available from the proposed development.

Habitat Enhancement

Woodland (Including Ancient Woodland)

- 2.38 The off-site woodland habitat currently comprises moderate condition lowland mixed deciduous woodland, of which part is designated as ancient woodland.

- 2.39 It is proposed that this woodland will be enhanced to good condition woodland through the implementation of a targeted Woodland Management Plan produced for the Site (report ref: edp2425_r018). This management plan sets out the current characteristics of the two woodland compartments, and details the specific measures required to meet the aims of the plan which comprise the following:
- To establish a long-term programme of restoration and enhancement of the woodland, in accordance with best arboriculture practice;
 - To ensure the enhancement of the woodland's existing habitats for the benefit of a range of wildlife species;
 - To manage existing access and introduce protection measures to mitigate against the impact of informal pedestrian traffic (trampling); and
 - To set out a maintenance regime for management of the tree stock.
- 2.40 Management measures include removing rubbish and fly-tipping within the woodland, thinning and coppicing in previous coppice compartments to improve structural diversity and encourage regeneration. Supplementary planning of native species is also proposed with a list of suitable tree and shrub species outlined within the report.
- 2.41 Through implementation of the Woodland Management Plan, the previously failed condition criteria relating to damage, inappropriate management and poor regeneration will be addressed. Therefore, the woodland compartments would be capable of achieving the condition assessment criteria for 'good' quality woodland, and thus would result in an enhancement in condition status.

Pond

- 2.42 The woodland pond will be enhanced from moderate to good condition habitat through the following measures detailed within the Woodland Management Plan aimed to address the previously failed condition criteria.
- 2.43 The artificial connections, comprising pipes and ditches will be removed from the existing pond to enable condition 6 to be passed.
- 2.44 Supplementary planting will be undertaken using appropriate native marginal and aquatic plant species to improve species diversity and help to improve water quality within the pond to attempt to address condition criteria 1.
- 2.45 The pond will also be fenced off in order to prevent negative impacts from pond disturbance and damage which will also help to address condition criteria 1, through preventing increased turbidity from animal encroachment and poaching.

- 2.46 By implementing the measures set out within the Woodland Management Plan, the majority of condition criteria relevant to woodland ponds can be met allowing a 'good' condition to be achieved.

Ancient Woodland Buffer Grassland

- 2.47 A 15m buffer will be created around the Ancient Woodland within Field **F4**. This will require enhancement of the existing poor condition improved grassland to good condition other neutral grassland. This will require management comparable to that set out in paragraphs 2.12 to 2.17, with the HMP detailing the specific management measures required in order to ensure that the condition criteria for 'good' condition habitat is able to be achieved, through ensuring a diverse, species-rich meadow grassland habitat with no indicators of poor condition above the required percentage thresholds.

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Section 3 Results Summary

- 3.1 The BIA calculations pertaining to habitat areas and linear habitat features are based on the Detailed Landscape Proposals provided in **Plan EDP 2** and have been updated following feedback from the client and CDC. The proposed post-development habitats are shown in **Plan EDP 3**. It has been demonstrated that, based on current proposals, the Site alone is capable of delivering biodiversity net gain, as summarised in **Table EDP 3.1**.

Table EDP 3.1: Biodiversity Impact Assessment Summary

Biodiversity Value	Area Habitat Units	Hedgerow Units
On-site baseline	57.52	7.14
On-site post-development	56.10	9.27
Off-site baseline	14.19	0.00
Off-site post intervention	18.01	0.00
Net Balance (units)	2.40	2.13
Net Change (%)	4.17%	29.80%

- 3.2 The Metric includes an assessment of whether certain Trading Rules have been met by the proposed scheme. Trading Rules applied by the Metric require that any loss of habitat is replaced on a 'like for like' or 'like for better' distinctiveness basis, to prevent 'trading down' whereby more ecologically valuable habitats are lost and replaced with larger areas of lower value habitats.
- 3.3 Under the above assessment, the Trading Rules for the Metric are satisfied, as high value habitats are enhanced, and loss of 'Medium' and 'Low' distinctness habitat is compensated for by a greater area of 'Medium' distinctness habitat overall.

Discussion and Conclusions

- 3.4 Overall, there is a net gain resulting from the proposed development. The landscaping scheme does include provision of green space, through creation of a variety of more valuable grassland habitats (including species-rich meadow and wetland meadow grassland), as well as native scrub and tree planting, a landscape buffer, and re-alignment of the existing ditch habitat in the southern part of the Site, which has allowed a gain of 4.17% to be achieved overall.
- 3.5 A number of hedgerows have been lost in order to facilitate the development. However, additional hedgerow planting of species-rich native hedgerow between the edges of the built development and the green spaces, as well as native species hedgerow planting within the car parks and around the buildings has been incorporated into the scheme design, which has allowed a net gain of 29.80% to be achieved.
- 3.6 The development will install photovoltaic (PV) panels to achieve a total power output of at least 380kW peak on each phase of the useable roof area (i.e., the omission of space taken

by roof lights; man-safe working and the roof signage), with planning permission sought for an array extending to 100% of the useable roof area. The final level of PVs installed will be based on Siemens Healthineers final energy requirements, with the remaining space 'future proofed' to accommodate any future energy generation requirements. Therefore, there will not be available space for green roofs in this instance in order to increase the potential units that can be obtained on-site.

- 3.7 The above assessment is considered to represent an achievable estimate of the changes in biodiversity value obtained from the Detailed Landscape Proposals. As noted in **Section 2**, the proposed habitat types and target conditions will require some level of management and monitoring to ensure that the habitats achieve the desired outcomes over time. It is considered that the proposed habitats are realistically achievable on-site with use of a targeted HMP, which will be produced to provide more additional detail regarding how these habitats will be created and subsequently maintained at their target habitat type and condition. Periodic monitoring will be necessary to determine whether habitats are achieving their target condition and will be able to highlight where further management and maintenance activities may be required to address any failures in habitat establishment.
- 3.8 In addition to Biodiversity Net Gain benefits, it is considered the creation of the above habitats will provide supplementary benefits for other species; creation of on-site c.3.1ha of scrub and tree habitats and 0.67ha of grassland habitats (excluding low value amenity grassland).
- 3.9 Previous survey and assessment concluded that there is not a significant population of breeding and wintering bird species using the Site, that would otherwise require specific mitigation. Of the species noted as being of concern to CDC and the BBOWT, including skylark (*Aluda arvensis*), linnet (*Linaria cannabina*), song thrush (*Turdus philomelos*) and dunnock (*Prunella modularis*), surveys undertaken for the Site recorded very low numbers of these species utilising the Site and as such impacts to these species resulting from the development are considered to be limited.
- 3.10 In addition to Biodiversity Net Gain benefits, it is considered the creation of new and enhanced 'other neutral grassland' habitats, and the planting of new native hedgerows, trees and mixed scrub within the Site and in the area associated with the off-site Ancient Woodland, will create new and enhanced habitats. These proposed grassland, tree and scrub habitats therefore are considered to provide additional sheltering and foraging habitats for a variety of priority species of breeding and wintering birds that may be present on-site.
- 3.11 As such, provision of the above-mentioned grassland habitats should be sufficient to accommodate the very low on-site populations of skylark. Likewise, the abundant provision of scrub habitat, other neutral grassland and hedgerows on-site should provide sufficient habitat for nesting linnet, dunnock and song thrush.

Appendix EDP 1
Biodiversity Impact Assessment Metric 2.0

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edp2425 Junction 9, M40, Bicester, Oxon

Headline Results

[Return to results menu](#)

On-site baseline	<i>Habitat units</i>	57.52
	<i>Hedgerow units</i>	7.14
	<i>River units</i>	0.00
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	<i>Habitat units</i>	56.10
	<i>Hedgerow units</i>	9.27
	<i>River units</i>	0.00
Off-site baseline	<i>Habitat units</i>	14.19
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement & succession)	<i>Habitat units</i>	18.01
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	<i>Habitat units</i>	2.40
	<i>Hedgerow units</i>	2.13
	<i>River units</i>	0.00
Total net % change (including all on-site & off-site habitat creation + retained habitats)	<i>Habitat units</i>	4.17%
	<i>Hedgerow units</i>	29.80%
	<i>River units</i>	0.00%

edp2425 Junction 9, M40, Bicester, Oxon
A-1 Site Habitat Baseline

Condense / Show Columns Condense / Show Rows

Main Menu Instructions

Ref	Habitats and areas			Habitat distinctiveness		Habitat condition		Ecological connectivity			Strategic significance			Suggested action to address habitat losses	Ecological baseline Total habitat units			
	Broad Habitat	Habitat type	Area (hectares)	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier					
1	Urban	Urban - Vacant/derelict land/ bareground	0.29	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.58			
2	Urban	Urban - Developed land; sealed surface	0.19	V.Low	0	N/A - Other	0	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00			
3	Urban	Urban - Street Tree	0.01	Low	2	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.04			
4	Heathland and shrub	Heathland and shrub - Mixed scrub	0.1	Medium	4	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	0.40			
5	Urban	Urban - Developed land; sealed surface	0.59	V.Low	0	N/A - Other	0	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00			
6	Grassland	Grassland - Modified grassland	12.73	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	25.46			
7	Grassland	Grassland - Other neutral grassland	3.5	Medium	4	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	28.00			
8	Lakes	Lakes - Ditches	0.01	Medium	4	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	0.08			
9	Lakes	Lakes - Ditches	0.08	Medium	4	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	0.32			
10	Sparsely vegetated land	Sparsely vegetated land - Ruderal/Ephemeral	0.65	Low	2	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	2.60			
11	Sparsely vegetated land	Sparsely vegetated land - Ruderal/Ephemeral	0.02	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.04			
12																		
13																		
14																		
15																		
16																		
17																		
Total site area ha			18.16														Total Site baseline	57.52

Retention category biodiversity value							Bespoke compensation agreed for unacceptable losses	Comments		
Area retained	Area enhanced	Area succession	Baseline units retained	Baseline units enhanced	Baseline units succession	Area lost		Units lost	Assessor comments	Reviewer comments
			0.00	0.00	0.00	0.29	0.58		Bare ground	
			0.00	0.00	0.00	0.19	0.00		Building	
0.01			0.04	0.00	0.00	0.00	0.00		Single tree falling under Street tree, as bordered by hard standing on one side. Given location (area to be meadow), likely to be retained post dev.	
			0.00	0.00	0.00	0.10	0.40		Dense scrub.	
			0.00	0.00	0.00	0.59	0.00		Hardstanding	
0.01	0.79		0.02	1.58	0.00	11.93	23.86		Improved grassland.	
	1.26		0.00	10.08	0.00	2.24	17.92		Poor semi-improved grassland. Grassland assessed as poor semi-improved as it does not meet criteria to achieve Priority Habitat status	
			0.00	0.00	0.00	0.01	0.08		Ditch - S2 (wetter part of the ditch). On site watercourse assessed as a ditch due to nature of feature draining the surrounding arable land, the lack of water throughout much of the year, association with a hedgerow and given that sections have been artificially modified. Furthermore, within the Metric 2.0 User Guide rivers and streams are defined as those classed as 'Main River' or 'Ordinary Watercourse', which is not the case for the ditch.	
0.01			0.04	0.00	0.00	0.07	0.28		Ditch S1 and S2 (poor sections- dry). Watercourse S2 assessed as a ditch due to nature of feature draining the surrounding arable land, the lack of water throughout much of the year, association with a hedgerow and given that sections have been artificially modified. Furthermore, within the Metric 2.0 User Guide rivers and streams are defined as those classed as 'Main River' or 'Ordinary Watercourse', which is not the case for the ditch.	
			0.00	0.00	0.00	0.65	2.60		Tall ruderal vegetation	
			0.00	0.00	0.00	0.02	0.04		Tall ruderal vegetation	
0.03	2.05	0.00	0.10	11.66	0.00	16.09	45.76			

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A-2 Site Habitat Creation

Condense / Show Columns Condense / Show Rows

Main Menu **Instructions**

Proposed habitat	Area (hectares)	Distinctiveness	Score	Condition	Score	Post development/ post intervention habitats						Habitat units delivered	Comments					
						Ecological connectivity			Strategic significance				Temporal multiplier		Difficulty multipliers		Assessor comments	Reviewer comments
						Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier		Time to target condition/years	Time to target multiplier	Difficulty of creation category	Difficulty of creation multiplier		
Urban - Introduced shrub	0.12	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	0.965	Low	1	0.23	Ornamental planting	
Urban - Artificial unvegetated, unsealed surface	0.05	V.Low	0	N/A - Other	0	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0	1.000	Low	1	0.00	Gravel path	
Urban - Amenity grassland	1.33	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	0.965	Low	1	2.57	Amenity grassland.	
Grassland - Other neutral grassland	0.02	Medium	4	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10	0.700	Low	1	0.11	Flowering lawn mixture	
Heathland and shrub - Mixed scrub	3.09	Medium	4	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	7	0.779	Low	1	28.90	Native Feathered tree and shrub mix; Native swathe planting, Native shrub mix. Condition score based on the fact that the habitat will need to be managed for black and brown hairsreak therefore robust management will be needed including provision of young scrub for the butterfly species, requiring an ecologically sensitive management regime.	
Urban - Developed land; sealed surface	10.48	V.Low	0	N/A - Other	0	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0	1.000	Low	1	0.00	Buildings and hardstanding	
Urban - Street Tree	0.15	Low	2	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	27	0.382	Low	1	0.23	Planted trees	
Grassland - Other neutral grassland	0.41	Medium	4	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15	0.586	Low	1	2.88	Species rich meadow grass; Tussock grass mixture. Condition score based on the fact that the habitat will need to be managed for reptiles therefore robust management will be needed to ensure management to create a variety of sward heights, a diversity of forb and grass species and management to previous undesirable species, requiring an ecologically sensitive management regime.	
Lakes - Ditches	0.33	Medium	4	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	0.965	Low	1	1.27	Created ditch. Condition score given as worst case scenario based on low water levels throughout year as with current ditch, which may have impacts on other criteria	
Grassland - Modified grassland	0.24	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	0.965	Low	1	0.46	Wetland meadow grass in attenuation basin. Condition as poor as a precaution, given more constrained nature in current landscaping plan.	
Lakes - Ponds (Non- Priority Habitat)	0.01	High	6	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	0.965	Low	1	0.06	Ponded area of Attenuation basin	
Heathland and shrub - Mixed scrub	0.01	Medium	4	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	0.965	Low	1	0.04	SUDS structural native scrub planting	
Totals	16.09																Total Units	36.75

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 B-1 Site Hedge Baseline

Condense / Show Columns Condense / Show Rows
 Main Menu Instructions

Baseline ref	UK Habitats - existing habitats			Habitat distinctiveness		Habitat condition		Ecological connectivity			Strategic significance			Suggested action to address habitat losses	Ecological baseline Total hedgerow units	Retention category biodiversity value						Comments	
	Hedge number	Hedgerow type	length KM	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier			Length retained	Length enhanced	Units retained	Units enhanced	Length lost	Units lost	Assessor comments	Reviewer comments
1	H1	Native Hedgerow	0.027	Low	2	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	0.162			0	0	0.027	0.162		
2	H3	Native Hedgerow	0.116	Low	2	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	0.696			0	0	0.116	0.696		
3	H4	Native Hedgerow	0.212	Low	2	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	1.272			0	0	0.212	1.272		
4	H5	Native Hedgerow	0.39	Low	2	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	2.34			0	0	0.39	2.34		
5	H8	Native Hedgerow	0.038	Low	2	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	0.228			0	0	0.038	0.228		
6	H13	Native Hedgerow - Associated with bank or ditch	0.019	Medium	4	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Like for like or better	0.228	0.025	0.3	0	Error in Areas	Error in Areas			
7	H6	Native Hedgerow with trees	0.238	Low	2	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	1.428			0	0	0.238	1.428		
8	H7	Native Hedgerow with trees	0.013	Low	2	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	0.078			0	0	0.013	0.078		
9		Line of Trees	0.353	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	0.706	0.253	0.506	0	0.1	0.2	Comprising broadleaved scattered trees at boundary line and line of coniferous trees on site		
10																							
11																							
12																							
13																							
14																							
		Total Site length/KM	1.41											Total Site baseline	7.14	0.28	0.00	0.81	0.00	1.13	6.40		

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B-2 Site Hedge Creation

Condense / Show Columns

Condense / Show Rows

Main Menu

Instructions

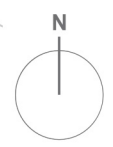
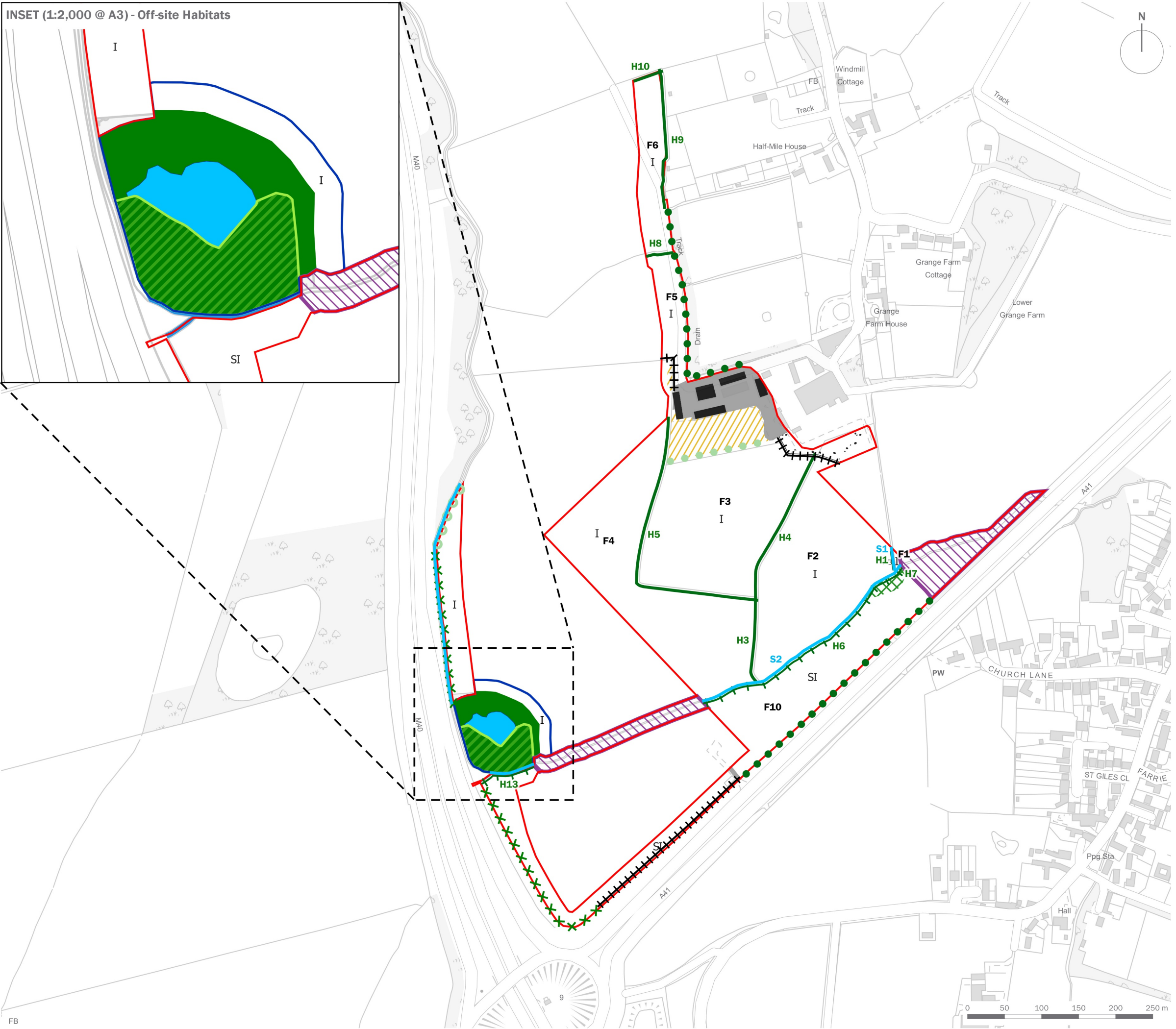
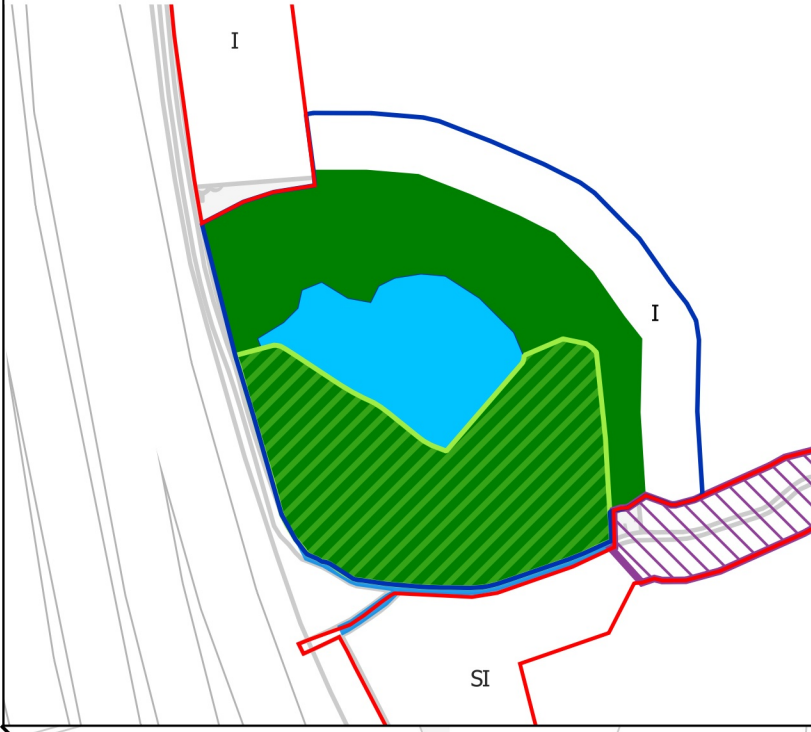
Baseline ref	New hedge number	Multipliers																Hedge units delivered	Comments	
		Proposed habitats		Habitat distinctiveness	Habitat condition		Ecological connectivity			Spatial quality			Temporal multiplier		Difficulty of creation multiplier	Assessor comments	Reviewer comments			
		Habitat type	Length km	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance		Strategic significance	Strategic position multiplier					Time to target condition/years	Time to target multiplier
1		Native Species Rich Hedgerow	0.832	Medium	4	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy		Low Strategic Significance	1	10	0.700	0.67	4.68	Native species rich hedgerow to be planted as part of landscaping. Good condition to be achieved through adherence to a habitat management plan incorporating a cyclical hedgerow management regime aimed at promoting a diverse structure and species diversity, and protecting the hedgerow from adjacent land uses and damage. Buffer of a minimum of 1m to be maintained and managed for a diverse hedgerow ground flora with hedgerow ground flora seed mix sown in several locations.	
2		Native Hedgerow	0.479	Low	2	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy		Low Strategic Significance	1	10	0.700	1	2.01	Management as detailed above	
3		Native Hedgerow with trees	0.599	Low	2	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy		Low Strategic Significance	1	20	0.490	1	1.76	Management as detailed above	
4																				
5																				
6																				
7																				
8																				
9																				
Creation Length/KM			1.91														8.46			

Plans

- Plan EDP 1** Baseline On-site and Off-site Habitats
(edp2425_d048a 01 July 2022 GY/CP)
- Plan EDP 2** Detailed Landscape Proposals
(edp2425_d017m 08 March 2024 LHa/BC)
- Plan EDP 3** Post-development Habitats
(edp2425_d049d 21 March 2024 GYo/CHa)

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INSET (1:2,000 @ A3) - Off-site Habitats



- Site Boundary
- Off-site Habitats
- Area Excluded from BNG Assessment
- Ancient Semi-natural Woodland
- Dense Continuous Scrub
- Tall Ruderal
- I Improved Grassland
- SI Poor Semi-improved Grassland
- Running Water/Stream
- Building
- Hardstanding
- Bare Ground
- + + + + Intact Species-poor Hedgerow and Trees
- — — — Intact Species-poor Hedgerow
- • • • Scattered Trees/Parkland (Broadleaved)
- • • • Scattered Trees/Parkland (Coniferous)
- x x x x Scattered Scrub
- — — — Wet Ditch
- + + + + + Fence
- ○ ○ ○ Woodland Edge

client
Tritax Symmetry Ltd and Siemens Healthineers

project title
Symmetry Park, Oxford North

drawing title
Baseline On-site and Off-site Habitats

date	01 JULY 2022	drawn by	GY
drawing number	edp2425_d048a	checked	CP
scale	1:5,000 @ A3	QA	RB



Registered office: 01285 740427 - www.edp-uk.co.uk - info@edp-uk.co.uk

