APPLIED ECOLOGY

Horton Road, West Drayton

Biodiversity Net Gain Assessment

Client: LMO Overseas Investments Limited

Project number: AEL2311

Date: June 2025

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1.0	15 October 2024	Draft Final	NB	DP	DP
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APPLIED ECOLOGY

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1 Introduction

Background

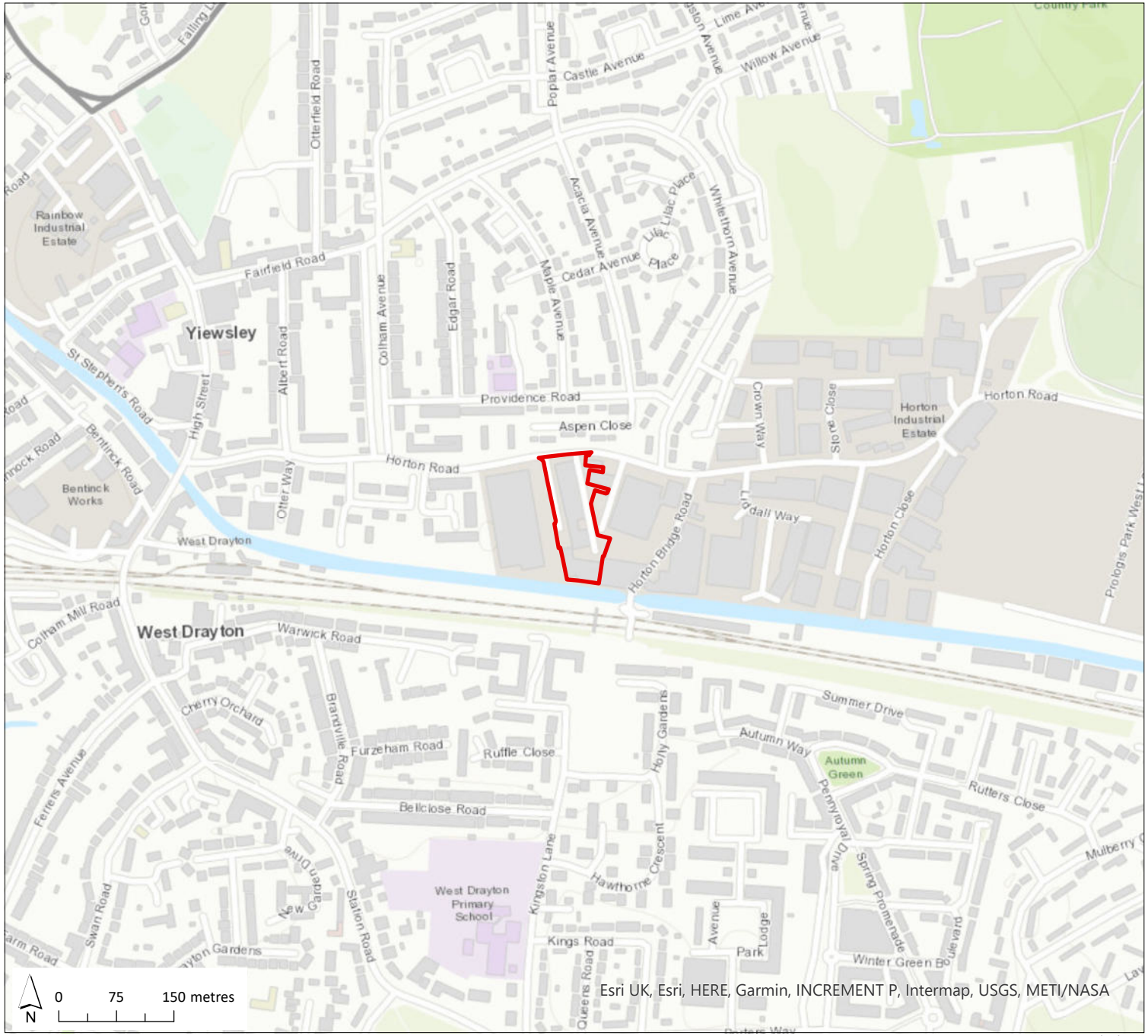
1.1 Applied Ecology (AE) was appointed by LMO Overseas Investments Limited to prepare Statutory Biodiversity Metric calculations in relation to a proposal to re-develop an existing industrial unit facility as two large warehouse units on land south of Horton Road, West Drayton, London Borough of Hillingdon, UB7 8HS ("the Site"). The location of the Site is shown by **Figure 1.1**.

1.2 A baseline ecology survey has been undertaken by AE at the Site during the October 2024, including habitat mapping and condition assessment. The results of this survey are presented in a separate and standalone report[1].

1.3 The calculations presented reflect interpretation of the Planting Layout[2], which is provided in **Appendix A**.

[1] Applied Ecology Ltd (2024) *Horton Road, West Drayton – Preliminary Ecological Appraisal*. Produced for LMO Overseas Investments Ltd.

[2] Terry Anderson Landscape Architects (2025) – *Horton Road, West Drayton – Planting Layout*. Drawing no. 916.19.01.



Horton Road, West Drayton

Site location

Site boundary

Figure 1.1

Map Scale @ A4: 1:7,500

Surveyed by: n/a	
Survey date: n/a	
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2 Biodiversity Metric Calculations

Introduction

2.1 The biodiversity impact of the proposed development has been assessed using the Statutory Biodiversity Metric calculation tool, which compares the relative biodiversity value of the habitats before and after development. The Metric assesses the impact on linear habitat features (such as hedgerows and ditches), and rivers independently. The full Statutory Biodiversity Metric calculator is provided as a separate Excel spreadsheet.

Baseline Conditions

2.2 The habitat baseline for the Site was recorded as part of the habitat survey on 1 October 2024. The methodology adopted followed the UK Habitat Classification (UKHab) system[3], adapted to encompass habitats as used by the Statutory Biodiversity Metric – the Metric habitats largely align with UKHab definitions, but differ in some cases (e.g., hedgerows).

2.3 All habitats present within the Site were classified and mapped according to standard UKHab/Metric categories and assigned a condition according to Statutory Biodiversity Metric guidance[4]. Habitat patches were mapped as polygon features, and linear features (such as hedgerows and ditches) as lines. Point features were recorded where there were notable isolated trees or scrub, and trees were assigned to size categories based on the following Metric guidance:

- Small: >7.5–≤30 cm Diameter at Breast Height (DBH);
- Medium: >30–≤60 cm DBH;
- Large >60–≤90 cm DBH;
- Very large: >90 cm DBH.

2.4 The baseline habitat map is shown by **Figure 2.1**. Baseline habitat condition assessments are provided here in **Appendix B**.

Habitat units

2.5 Overall, the pre-development baseline habitat value of the Site was calculated as **0.09 habitat units** as detailed in **Table 2.1** below.

Table 2.1: Baseline habitats.

Habitat (UKHab)	Distinctiveness	Condition	Area (ha)	Habitat unit value
Individual tree: Urban tree (2 small trees)	Medium (4)	Moderate (2)	0.008	**0.06**
Urban: Bare ground	Low (2)	Poor (1)	0.008	**0.02**
Grassland: Modified grassland	Low (2)	Poor (1)	0.002	**<0.01**
Urban: Introduced shrub	Low (2)	N/A (1)	0.001	**<0.01**
Urban: Developed land; sealed surface	V. Low (0)	N/A (0)	0.906	**0.00**

[3] UKHab Ltd (2023) *UK Habitat Classification Version 2.0* (at https://www.ukhab.org).
[4] Available from Statutory biodiversity metric tools and guides - GOV.UK (www.gov.uk) Accessed on 25/06/2025.

Hedgerow units

2.6 Not applicable to this Site.

Watercourse units

2.7 Not applicable to this Site.

Development Impact and Post-intervention Habitats

2.8 Our interpretation of the Planting Layout is shown by **Figure 2.2**, and shows the habitats that will be retained and created by the development.

2.9 The post-intervention habitat types and areas were informed by the Planting Layout, using relevant guidance and professional judgement to assign suitable habitat creation and management where required to achieve the best possible outcomes in terms of post-intervention value.

2.10 Condition assessment tables for the habitats present on **Figure 2.2** are provided in **Appendix C**.

2.11 The proposed post-intervention habitats and their achievable condition assessments are described below, along with our suggestions and assumptions:

Grassland: modified grassland

2.12 Areas depicted as 'turf grass' on the Planting Layout have been classified as low distinctiveness modified grassland. As the development is set to deliver a substantial net gain, these areas have been conservatively assigned to target poor condition. This means that this habitat will not be subject to BNG specific management once successfully established.

Grassland: other neutral grassland

2.13 Areas depicted as 'wildflower and grass' on the Planting Layout have been classified as medium distinctiveness other neutral grassland. As the development is set to deliver a substantial net gain, these areas have been conservatively assigned to target poor condition. This means that this habitat will not be subject to BNG specific management once successfully established.

Heathland and shrub: mixed scrub

2.14 Planting beds set to be established with UK native species have been classified as mixed scrub. As the development is set to deliver a substantial net gain, these areas have been conservatively assigned to target poor condition. This means that this habitat will not be subject to BNG specific management once successfully established.

Urban habitats

2.15 Areas of developed land, sealed surface, introduced shrub (non-native planting beds), and other green roof have a default n/a condition within the condition assessment.

Individual trees: Urban tree

2.16 The Planting Layout depicts that one of the two trees present in the habitat baseline is set to be retained as a result of the development. The management regime of the retained tree is not expected to change so its condition has been retained as moderate.

2.17 A total of 14 individual trees are proposed for planting. Of these, 10 are non-native species and are therefore anticipated to be maintained in poor condition in accordance with assessment criteria. The remaining four trees will be field maple *Acer campestre*, a UK native species. Native trees are expected to meet at least three of the six condition criteria and achieve moderate condition as a result.

Native hedgerow

2.18 The beech *Fagus sylvatica* hedgerow set to be planted on the eastern Site boundary is classified as a native hedgerow according to the Metric guidance. This hedgerow has been conservatively assigned to target poor condition eliminating the requirement for BNG specific management once successfully established.

Non-native and ornamental hedgerow

2.19 Non-native and ornamental hedgerows have a default poor condition within the condition assessment.

Habitat units

2.20 The post-intervention habitats score a post-intervention value of **0.35 habitat units** as detailed in **Table 2.2** below.

Table 2.2: Post-intervention habitats.

Habitats (UKHab)	Distinctiveness	Condition	Area (ha)	Habitat unit value
Retained habitats				
Individual trees: Urban tree (1 small tree)	Medium (4)	Moderate (2)	0.004	**0.03**
New habitats				
Individual trees: Urban tree (10 small trees)	Medium (4)	Poor (1)	0.041	**0.11**
Heathland and shrub: Mixed scrub	Medium (4)	Poor (1)	0.016	**0.06**
Individual trees: Urban tree (4 small trees)	Medium (4)	Moderate (2)	0.016	**0.05**
Grassland: Other neutral grassland	Medium (4)	Poor (1)	0.011	**0.04**
Urban: Introduced shrub	Low (2)	N/A (1)	0.022	**0.04**
Grassland: Modified grassland	Low (2)	Poor (1)	0.003	**0.01**
Urban: Other green roof	Low (2)	N/A (1)	0.002	**<0.01**
Urban: Developed land; sealed surface	V. Low (0)	N/A (0)	0.864	**0.00**

Hedgerow units

2.21 The post-intervention hedgerows score a post-intervention value of **0.18 hedgerow units** as detailed in **Table 2.3** below.

Table 2.3: Post-intervention hedgerows.

Habitats (UKHab)	Distinctiveness	Condition	Length (km)	Hedgerow unit value
New hedgerows				
Native hedgerow	Low (2)	Poor (1)	0.078	**0.15**
Non-native and ornamental hedgerow	V. Low (1)	Poor (1)	0.029	**0.03**

Watercourse units

2.22 Not applicable to this Site.

Outcome

2.23 The biodiversity net gain assessment for the development at **Horton Road** results in a **net gain of +0.26 habitat units, equivalent to a biodiversity net gain of +307.68 %**.

2.24 As there are no hedgerows present in the baseline, a percentage change cannot be calculated. The net gain of **0.18 hedgerow units** correlates to a biodiversity net gain in excess +10 %.

2.25 The proposed development can, therefore, deliver an overall net gain in line with local and national planning policy. There are no habitat trading issues present.

Horton Road, West Drayton

Baseline habitat map

- Site boundary
- grassland: modified grassland (poor)
- urban: introduced shrub (n/a)
- urban: bare ground (poor)
- urban: developed land; sealed surface (n/a)
- individual tree: urban tree (moderate - 2x small trees)

Figure 2.1

Map Scale @ A4: 1:1,055

Surveyed by: NB	
Survey date: 01 October 2024	
Drawn by: DB	
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Horton Road, West Drayton

Post-intervention habitat map

- Site boundary
- Grassland: other neutral grassland (poor)
- Grassland: modified grassland (poor)
- Heathland and shrub: mixed scrub (poor)
- Urban: introduced shrub (n/a)
- Urban: other green roof (n/a)
- Urban: developed land; sealed surface (n/a)
- Native hedgerow (poor)
- Non-native and ornamental hedgerow (poor)
- New individual tree (moderate - 4x small trees)
- New individual tree (poor - 10x small trees)
- Retained individual tree (moderate - 1x small tree)

Figure 2.2

Map Scale @ A4: 1:1,053

Surveyed by: n/a	
Survey date: n/a	
Drawn by: DB	
Checked by: DP	
Status: Final	

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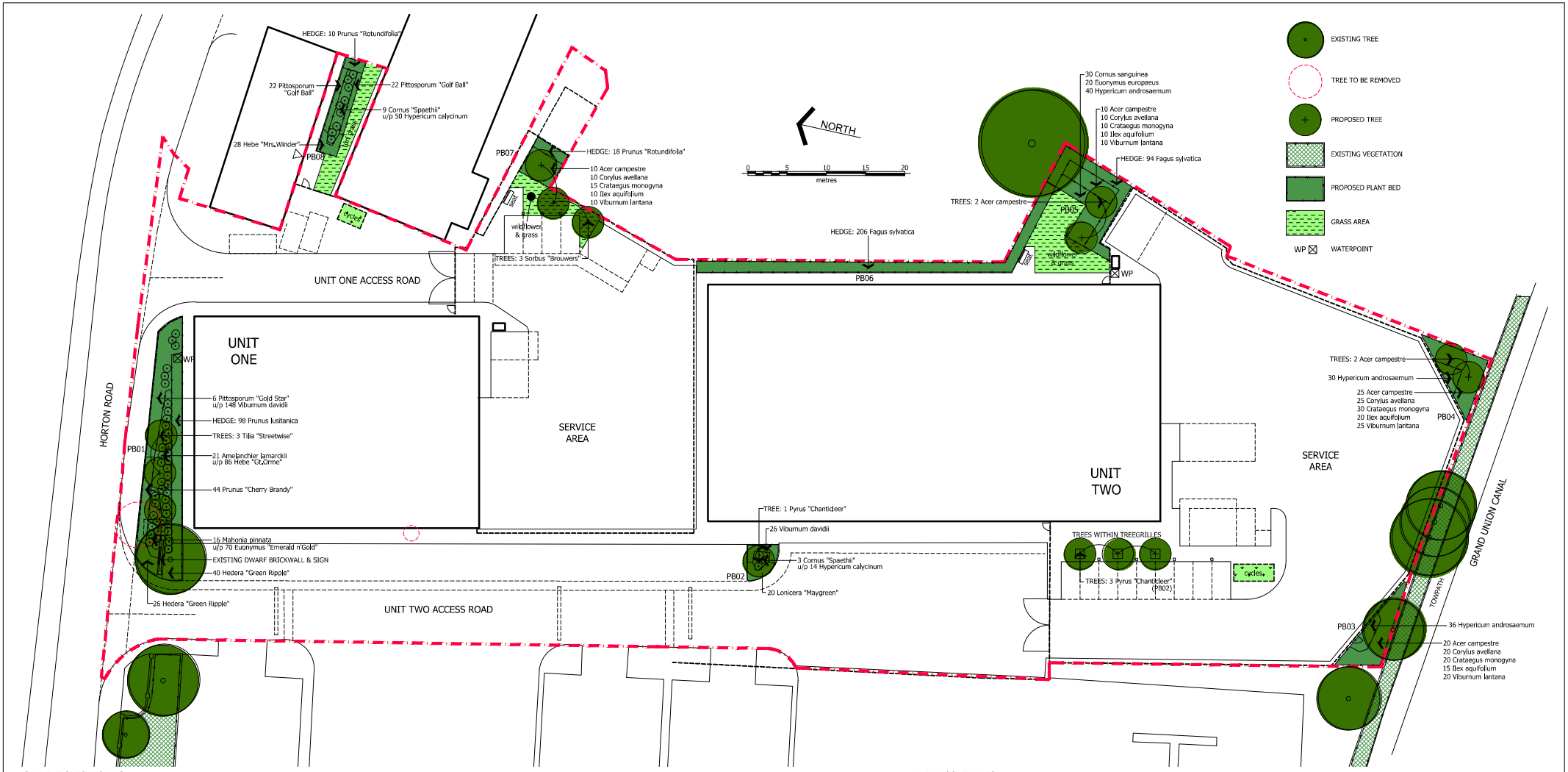
Appendix A

Planting Layout



OUTLINE SPECIFICATION

Refer to schedules for plant sizes, form, support and treepit dimensions

Treepit dimensions: Formation depth as schedules
300mm depth topsoil over 450/ 600mm depth free draining subsoil
Plant Beds: 300mm depth topsoil over 400mm depth of subsoil
Amenity and Turf Grass Areas: Do not disturb existing grass areas/ 150mm depth topsoil over 400mm depth of subsoil
Wildflower & Grass Areas: Cultivate for seeding directly onto subsoil. Do not spread imported or stockpiled topsoil.
The CA to inspect and approve areas where topsoil can be placed directly onto undisturbed clean site subsoil.

Subsoil shall be in accordance with BS8601, sourced from soils below the topsoil layer with minimal organic matter and consist of a mix of clay and stone. No construction fill shall be evident in this layer.

Imported topsoil shall be in accordance with BS3882:2015.
"Multi-Purpose" grade as supplied by Freeland Horticulture or otherwise approved. Tel:01322-619161

Remove objects greater than 75mm in size from the topsoil and cart away.

Provide an analysis of imported/ stockpiled topsoil with recommendations for making good any deficiencies. Provide details of the source and a 1Kg sample of imported topsoil for approval by the Landscape Architect.

TREES
Tree Inspection
Trees to be selected by the Landscape Architect at the grower's nursery.

Triple staking: 3No. 75mm diam. x 1800mm long stakes set equidistant around the tree rootball. Top of stake 800mm above ground level. Tree tied to each stake with 25mm wide neoprene straps and 300mm long rigid plastic sleeves.

Oblique staking: Single 75mm diam. x 1800mm long stake set at 45 degrees in North East direction and fixed to stem with single spacer and 38mm wide neoprene strap

Underground Guying (Unit 2: Trees within paving)
Install 2 sets of timber collars, one above and one below the rootball. Timber collar: 4No. 100 x 25mm x 750mm long untreated softwood boards bolted together
Prior to backfilling with topsoil, strap the collars together and tighten with 3mm mulchstrand wire. Provide gripples to tensien the wire. Anchor the lower collar into firm ground with 4No. 300mm long metal pins, ensuring the tree is set vertical.

Root Preparation
Trees to be rootballed for planting between November and March inclusive.
All trees to be container grown or containerised for planting between April to October inclusive.

Tree Irrigation
Install 70.0 litre capacity slow release hydration bag to each tree, as "Tree Irrigator Bag" supplied by Green-Tech or similar.

Install 75mm diameter land drain to completely surround the rootball of each tree with one end exposed above the mulch.

SHRUB SELECTION
Do not deliver onto site any substitution of species, cultivar, plant size or container volume other than described in the Plant Schedules without prior approval from the Landscape Architect. The Contractor shall submit a list of possible alternatives beforehand for agreement by the Landscape Architect.

SHRUB PLANTING
Refer to schedules for container grown or bareroot shrubs. Bareroots to be planted between November and March inclusive. For all shrubs and transplants, backfill 300 x 300 x 300mm deep plant pit with 1 part Green-Waste compost and 5 parts topsoil thoroughly mixed before backfilling.

BAREROOT / TRANSPLANT PLANTING
Bareroot plants only to be planted between November and March inclusive. Substitute for container grown stock if planted outside the planting season.

Shrubs planted into graded and cultivated subsoil within 30 x 30 x 30cm deep plant pits backfilled with imported/ stockpiled topsoil mixed with an approved Green-Waste compost at a rate of 3Kg per cu.m. Conditioner must be mixed with topsoil prior to backfilling plant pits.

All bareroot trees and shrubs to be dipped in mycorrhizal fungi slurry as Mycorrhiza Rootgrow Professional supplied by Green-Tech (www.green-tech.co.uk), or similar approved. Mix 2 sachets of Root Dipping Gel with 60-80 litres of water and add granules as instructions. Dip whole root system prior to planting. Allow for suitable containers to be located close to the planting areas.

MULCH
50mm thick 35-75mm size bark mulch cover to all exposed topsoil within plant beds. 14% maximum wood content permitted. Provide a sample to the Landscape Architect prior to delivery.

GRASS AREAS
A general pre-seeding fertiliser shall be applied to the soil between 3 and 5 days before laying turf or sowing seed and incorporated into the top 25mm of tilth at a rate of 70gms/sq.m

Turf Grass: Lay ornamental quality turf grass. Turves shall be in accordance with BS3969, "Recommendations for turf for general landscape purposes".

Wildflower & Grass Mix:
No pre-seeding fertiliser to be applied.
"EM2" Meadow Grass Mixture sown at a rate of 5 grams per sq.m, as supplied by Emorsgate Seeds (01553-829028 / www.wildseeds.co.uk)

CYCLE SHELTER GREEN ROOFS
25mm thick Sedum blanket, as supplied by www.sky-garden.co.uk, laid on a 60mm deep lightweight substrate spread onto a filter fleece and separated from a 20mm thick drainage board on protection fleece. Allow for 300mm wide gravel border around the edge of the roof structure laid flush to top of blanket.

WATERPOINTS
2No. Waterpoints to be installed to meet the local Water Authority requirements: to be provided with a stop cock double non-return valve (double check valve), check valve and bib tap, as 25mm coupling set 300mm above ground level with isolation valve within a lockable galvanised metal box on concrete foundation.

MAINTENANCE
Defects Period for 52 weeks following Practical Completion.
Allow for 17 maintenance visits for watering, cutting, weeding, pruning and litter collection.

PROTECTION OF EXISTING TREES
Provide temporary protective fencing to be erected following treeworks and prior to demolition and construction works. To be removed on completion of paving construction. No materials to be stored within the fenced area:
1.8m high weldmesh panels fixed by clamps to 2.4m long scaffold tubes rammed into the ground between each panel

PLANT SCHEDULES

TOTAL	TREES	SIZE (girth)	FORM	SUPPORT	TREEPIT
4	Acer campestre	16-18	Feathered	Oblique	1.0x1.0x0.75m deep
4	Pyrus "Chanticleer"	18-20	Clear Stem	U/gd guy	Refer to detail
3	Sorbus intermedia "Brouwers"	20-25	Clear Stem	Triple	1.2x1.2x0.9m deep
3	Tilia cordata "Streetwise"	25-30	Clear Stem	Triple	1.2x1.2x0.9m deep

TOTAL	SHRUBS	SIZE (cm)	POT (litre)	COMMENTS
21	Amelanchier lamarckii	80-100	10.0	Minimum 5 basal breaks
12	Cornus alba "Spaethii"	60-80	5.0	Minimum 5 basal breaks
70	Euonymus "Emerald n'Gold"	20-30	3.0	
86	Hebe "Great Orme"	30-40	3.0	
28	Hebe "Mrs.Winder"	30-40	3.0	
66	Hedera helix "Green Ripple"	40-60	3.0	Minimum 3 basal breaks
106	Hypericum androsaemum	30-40	3.0	
64	Hypericum calycinum	30-40	3.0	
55	Ilex aquifolium	40-60	2.0	Fully furnished with laterals
20	Lonicera "Maygreen"	30-40	3.0	
16	Mahonia pinnata	60-80	10.0	Bushy plants
6	Pittosporum "Gold Star"	40-60	5.0	
44	Pittosporum "Golf Ball"	30-40	3.0	
44	Prunus "Cherry Brandy"	30-40	3.0	
28	Prunus "Rotundifolia"	60-80	5.0	Hedge plants
98	Prunus lusitanica	40-60	3.0	Hedge plants
174	Viburnum davidii	30-40	3.0	

TOTAL	TRANSPLANTS	SIZE (cm)	TYPE	COMMENTS
65	Acer campestre	60-80	1+1	All transplants to be fully
30	Cornus sanguinea	40-60	1+1	furnished with laterals,
65	Corylus avellana	40-60	1+1	or grown as Bushy plants
75	Crataegus monogyna	60-80	1+1	
20	Euonymus europaeus	40-60	1+1	
300	Fagus sylvatica	60-80	1+1	Hedge plants
65	Viburnum lantana	40-60	1+1	

Refer to Drawing: 916.12.02 "Unit 2 - Trees within paving"

HORTON ROAD, WEST DRAYTON

PLANTING LAYOUT

Scale 1:250 @ A1
Date MAY 2025
Drawing 916.19.01
Revision

TALA TERRY ANDERSON LANDSCAPE ARCHITECTS
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Appendix B

Baseline Habitat Condition Assessments

Individual trees

Condition assessment criterion		Criterion passed?	Criterion passed?
A	Native tree?	y	n
B	Continuous tree canopy? (individual trees automatically pass this criterion).	y	y
C	Tree is mature?	n	n
D	Little or no evidence of an adverse impact on tree health by human activities?	y	y
E	Natural ecological niches present?	n	y
F	More than 20 % canopy is oversailing vegetation?	y	n
	Condition:	**Moderate (2)**	**Moderate (2)**

Condition	Condition assessment result
Good (3)	Passes five or six criteria.
Moderate (2)	Passes three or four criteria.
Poor (1)	Passes two or fewer criteria.

Grassland: modified grassland

Condition assessment criterion		Criterion passed?
A	Six to eight vascular plant species per m^2 including at least two forbs?	n
B	Varied sward height?	n/a
C	Scrub accounts for <20 % of total grassland area?	n/a
D	Physical damage evident in <5 % of total grassland area?	n/a
E	Bare ground cover between 1 % and 10 %?	n/a
F	<20 % bracken *Pteridium aquilinum* cover?	n/a
G	Absence of invasive non-native plant species?	n/a
	Condition:	**Poor (1)**

Condition	Condition assessment result
Good (3)	Passes at least six criteria including essential criterion A.
Moderate (2)	Passes four or five criteria including essential criterion A.
Poor (1)	Passes three or fewer criteria OR passes four to six criteria but fails essential criterion A.

Urban: bare ground

Condition assessment criterion		Criterion passed?
A	Varied vegetation structure?	n
B	Contains plant species that are beneficial to wildlife?	n
C	Invasive non-native plant species and others which are to the detriment of native wildlife cover <5 %?	y
Complete absence (C)?	To achieve good condition, criterion C must be satisfied by a complete absence of invasive non-native species.	y
	Condition:	**Poor (1)**

Condition	Condition assessment result
Good (3)	Passes three criteria and meets the requirements for Good condition within criterion C.
Moderate (2)	Passes two criteria OR passes three criteria but does not meet the requirements for Good condition within criterion C.
Poor (1)	Passes zero or one criteria.

Appendix C

Habitat Condition Assessment Criteria

Condition Sheet: URBAN Habitat Type		
Condition Assessment Criteria		
A	Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.	
B	The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	
C	Invasive non-native plant species (listed on Schedule 9 of WCA[1]) and others which are to the detriment of native wildlife (using professional judgement)[2] cover less than 5% of the total vegetated area[3]. Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).	
Additional criteria – must be assessed for Open mosaic habitat on previously developed land only		
D1	The parcel shows spatial variation and forms a mosaic of bare substrate PLUS: At least four early successional communities (a) to (i); Communities :(a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland, (i) pools.	
D2	The parcel contains pools of water such as permanent and ephemeral waterbodies.	
Additional Criteria – must be assessed for Bioswale and SuDS habitat types only:		
E1	Plant species are mostly native. If non-native species are present, they should not be detrimental to the habitat or native wildlife[4].	
E2	The vegetation is comprised of plant species suited to wetland or riparian situations.	
Additional criterion – must be assessed for Intensive green roofs only		
F	The roof has a minimum of 50% native and non-native wildflowers. 70% of the roof area is soil and vegetation (including water features).	
Additional criterion – must be assessed for Biodiverse green roofs only		
G	The roof has a varied depth of 80–150 mm; at least 50% is at 150 mm and is planted and seeded with wildflowers and sedums or is pre-prepared with sedums and wildflowers. Note – to achieve Good condition some additional habitat, such as sand piles, stones, logs etc are present.	
Condition Assessment Result		**Condition Assessment Score**
Results for Green Roofs and Open mosaic on previously developed land (requiring assessment of four criteria only – core criteria plus additional criterion specified for habitat type)		
Passes all 3 core criteria; AND Meets the requirements for Good condition within criterion C; AND Passes additional criterion relevant to specific habitat type (F or G).		Good (3)
Passes 2 or 3 of 4 criteria; OR Passes 4 of 4 criteria but does not meet the requirements for Good condition within criterion C.		Moderate (2)
Passes 0 or 1 of 4 criteria.		Poor (1)
Results for Bioswale or SuDS (requiring assessment of 5 criteria – core criteria plus additional criteria specified for habitat type)		
Passes all 3 core criteria; AND Meets the requirements for Good condition within criterion C; AND Passes all additional criteria relevant to specific habitat type (E).		Good (3)
Passes 3 or 4 of 5 criteria; OR Passes 5 of 5 criteria but does not meet the requirements for Good condition within criterion C.		Moderate (2)
Passes 2 or fewer of 5 criteria.		Poor (1)
Notes		

Footnote 1 – Wildlife and Countryside Act 1981 (as amended)..

Footnote 2 – Sources of information about detrimental non-native species can be found on the GB Non-native Species Secretariat (GBNNSS) website:

Home » NNSS (nonnativespecies.org) and Natural England Access to Evidence page should also be checked for up-to-date information:

Horizon-scanning for invasive non-native plants in Great Britain - NECR053 (naturalengland.org.uk)

For criterion C – For green roof habitat types only – buddleia *Buddleja davidii* should be assessed alongside Schedule 9 species. This species impairs the health of the local ecosystem and reduces the biodiversity potential of the roof. It is also a sign that a roof has not been planted and seeded correctly in subsequent years.

Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 4 – Use professional judgement. Sources of additional information about non-native wildlife can be found online at the GBNNSS website:

Alternative plants » NNSS (nonnativespecies.org)

Condition Sheet: SCRUB Habitat Type	
Condition Assessment Criteria	
A	The parcel represents a good example of its habitat type – the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range).[1] At least 80% of scrub is native There are at least three native woody species[2], No single species comprises more than 75% of the cover (except hazel *Corylus avellana*, common juniper *Juniperus communis*, sea buckthorn *Hippophae rhamnoides* or box *Buxus sempervirens*, which can be up to 100% cover)
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran[3]) shrubs are all present
C	There is an absence of invasive non-native plant species[4] (as listed on Schedule 9 of WCA[5]) and species indicative of sub-optimal condition[5] make up less than 5% of ground cover.
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.

Condition Assessment Result (out of 7 criteria)	**Condition Assessment Score**
Passes 5 criteria.	Good (3)
Passes 3 or 4 criteria.	Moderate (2)
Passes 2 or fewer criteria.	Poor (1)

Notes

Footnote 1 – Professional judgment should be sued alongside the UKHab description.

Footnote 2 – Native woody species as defined and listed in the Hedgerow Survey Handbook: DEFRA (2007) Hedgerow Survey Handbook: A standard procedure for local surveys in the UK. 2nd ed. [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk).

Footnote 3 – See gov.uk standing advice on ancient and veteran species. Available from:

Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)

and

Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

Footnote 4 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 5 – Wildlife and Countryside Act 1981 (as amended).

Footnote 6 – Species indicative of sub-optimal condition for this habitat type may include: non-native conifers, tree-of-heaven *Ailanthus altissima*, holm oak *Quercus ilex*, European turkey oak *Quercus cerris*, cherry laurel *Prunus laurocerasus*, snowberry *Symphoricarpos* spp., shallon *Gaultheria shallon*, American skunk cabbage *Lysichiton*

americanus, buddleia *Buddleja* spp., cotoneaster *Cotoneaster* spp., Spanish bluebell *Hyacinthoides hispanica* and hybrid bluebells *Hyacinthoides x massartiana*. There may be additional relevant species local to the region and or site.

Condition Sheet: INDIVIDUAL TREES Habitat Type	
Condition Assessment Criteria	
A	The tree is a native species (or at least 70% within the block are native species).
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).
C	The tree is mature (or more than 50% within the block are mature).
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark
F	More than 20% of the tree canopy area is oversailing vegetation beneath.
Condition Assessment Result	**Condition Assessment Score**
Passes 5 or 6 criteria.	Good (3)
Passes 3–5 criteria.	Moderate (2)
Passes 2 or fewer criteria.	Poor (1)
Note that 'Fairly Good' and 'Fairly Poor' condition categories are not available for this habitat type.	
Footnote 1 – See gov.uk standing advice on ancient and veteran trees. Available from: Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) And: Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk) **Footnote 2** – Enhancement of this habitat type is only possible by improving the habitat so that it meets all Criteria B, D and F. It is not possible or appropriate to enhance individual tree/s through meeting just one or two of those Criteria, nor by meeting Criteria A, C or E.	

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)	
Condition Assessment Criteria	
A	The parcel represents a good example of its habitat type with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relevant to Footnote 3 suboptimal species which may be listed in the UKHab description)[1]. Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens[2].
D	Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.
E	Combined cover of species indicative of sub-optimal condition[3] and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species[4] (as listed on Schedule 9 of WCA[5]) are present, this criterion is automatically failed.
Additional criterion – must be assessed or all non-acid grassland types	
F	There are 10 or more vascular plant species per m^2 present, including forbs that are characteristic of the habitat type (species referenced in Footnote 3 and 4 cannot contribute towards this count).

	Note - this criterion is essential for achieving Good condition for non-acid grassland types only
Condition Assessment Result	**Condition Assessment Score**
Acid Grassland Types (Result out of 5 criteria)	
Passes 5 criteria	Good (3)
Passes 3 or 4 criteria	Moderate (2)
Passes 2 or fewer criteria	Poor (1)
Non-acid Grassland Types (Result out of 6 criteria)	
Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	Good (3)
Passes 3–5 criteria, including essential criterion A.	Moderate (2)
Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)
Notes	
Footnote 1 – Professional judgment should be used alongside the UKHab description. **Footnote 2** – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover. **Footnote 3** – Species indicative of sub-optimal condition for this habitat type include: creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius*, common nettle *Urtica dioica*, creeping buttercup *Ranunculus repens*, greater plantain *Plantago major*, white clover *Trifolium repens* and cow parsley *Anthriscus sylvestris*. There may be additional relevant species local to the region and or site. **Footnote 4** – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement. **Footnote 5** – Wildlife and Countryside Act 1981 (as amended).	

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)	
Condition Assessment Criteria	
A	There are 6–8 vascular plant species per m^2 present, including at least 2 forbs (this may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition. Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m^2 (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.
C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble *Rubus fruticosus* agg. may be present. Note – patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens)[2].
F	Cover of bracken *Pteridium aquilinum* is less than 20%.
G	There is an absence of invasive non-native plant species[3] (as listed on Schedule 9 of WCA[4])
Condition Assessment Result (out of 7 criteria)	**Condition Assessment Score**
Passes 6 or 7 criteria including passing essential criterion A.	Good (3)
Passes 4 or 5 criteria, including passing essential criterion A.	Moderate (2)

Passes 3 or fewer criteria; OR Passes 4–6 criteria excluding criterion A.	Poor (1)

Notes

Footnote 1 – Creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius*, common nettle *Urtica dioica*, creeping buttercup *Ranunculus repens*, greater plantain *Plantago major*, white clover *Trifolium repens* and cow parsley *Anthriscus sylvestris*.

Footnote 2 – For example, this could include small, scattered areas of bare ground allowing establishment of new species, or localised patches where not exceeding 10% cover.

Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 4 – Wildlife and Countryside Act 1981 (as amended).

Condition Sheet: HEDGEROW Habitat Types			
Condition Assessment Criteria			
Attributes and functional groupings (A, B, C, D and E)		**Criteria – the minimum requirements for 'favourable condition'**	**Description**
A1	Height	>1.5 m average along length.	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).
A1	Width	>1.5 m average along length.	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn *Prunus spinosa* suckers) are only included in the width estimate when they are >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).
B2	Gap – hedger base	Gap between ground and base of canopy <0.5 m for >90% of length.	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).
B2	Gap – hedge canopy continuity	Gaps make up <10% of total length; and No canopy gaps >5 m.	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).

C1	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for 90% of length: Measured from outer edge of hedgerow; and Is present on one side of the hedgerow (at least).	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.
C2	Nutrient-enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	The indicator species used are nettles *Urtica* spp., cleavers *Galium aparine* and docks *Rumex* spp. Their presence, either singly or together, does not exceed the 20% cover threshold.
D1	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA3) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website[4], as well as the BSBI website[5] where the 'Online Atlas of the British and Irish Flora'[6] contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website[7].
D2	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g., excessive hedgerow cutting)
Additional group – applicable to hedgerows with trees only			
E1	Tree class	There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient[8]), and there is on average at least one mature, ancient or veteran tree present per 20–50 m of hedgerow.	This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.
E2	Tree health	At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.

Condition category requirements for hedgerows without trees	**Condition Assessment Score**
No more than 2 failures in total; AND No more than 1 failure in any functional group.	Good (3)
No more than 4 failures in total; AND	Moderate (2)

Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 and C2 = Moderate condition).	
Fails a total of more than 4 attributes; OR Fails both attributes in more than one functional group (e.g., fails attributes A1, A2, B1 and B2 = Poor condition)	Poor (1)
Condition category requirements for hedgerows with trees	**Condition Assessment Score**
No more than 2 failures in total; AND No more than 1 failure in any functional group	Good (3)
No more than 5 failures in total; AND Does not fail both attributes in more than one functional group (e.g., fails attributes A1, A2, B1, C2 and E1 = Moderate condition).	Moderate (2)
Fails a total of more than 5 attributes; OR Fails both attributes in more than one functional group (e.g., fails attributes A1, A2, B1 and B2 = Poor condition).	Poor (1)
Notes	
Footnote 1 – DEFRA (2007) Hedgerow Survey Handbook. A standard procedure for local surveys in the UK. [online] Available on: layout (hedgelink.org.uk) **Footnote 2** – STALEY, J.T. ET AL. (2020) Definition of Favourable Conservation Status for Hedgerows. [online] Available on: Definition of Favourable Conservation Status for Hedgerows - RP2943 (naturalengland.org.uk) **Footnote 3** – Wildlife and Countryside Act 1981 (as amended). **Footnote 4** – CHEFFINGS, C. M. et al. (2005) The Vascular Plant Red Data List for Great Britain. Species Status 7: 1-116. [online] Available on: The Vascular Plant Red Data List for Great Britain (Species Status No. 7) | JNCC Resource Hub **Footnote 5** – BOTANICAL SOCIETY OF BRITAIN AND IRELAND (BSBI). Definitions: wild, native or alien? [online] Available on: Definitions: wild, native or alien? – Botanical Society of Britain & Ireland (bsbi.org) **Footnote 6** – BSBI and Biological Records Centre (BRC) (2022) Online Atlas of the British and Irish Flora. [online] Available on: Acknowledgements | Online Atlas of the British and Irish Flora (brc.ac.uk) **Footnote 7** – GB NON-NATIVE SPECIES SECRETARIAT (GBNNSS) (2022) Available on: Home » NNSS (nonnativespecies.org) **Footnote 8** – See gov.uk standing advice on ancient and veteran trees. Available from: Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) and Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)	

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