



Biodiversity Assessment – *Final report*

138 Winsover Road, Spalding

August 2024

Prepared jointly by Ecologist Abbie Smith BSc (Hons) on behalf of:



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Report Overview	
Scheme reference	138 Winsover Road, Spalding
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Reviewed by	 Helen Archer BSc (Hons) MCIEEM – Principal Ecologist

EXECUTIVE SUMMARY

Archer Ecology Ltd was commissioned by JB Architectural Design Services to complete a Biodiversity Assessment in support of proposals to build a new residential dwelling within the existing garden at 138 Winsover Road in Spalding, Lincolnshire. The application site comprises of introduced shrubs, scattered trees, a vegetated garden and gravel/concrete hardstanding. The application site lies within the town centre of Spalding.

This Biodiversity Assessment appraises the extent of habitat loss/modification required to facilitate the proposed works and determines the potential for positive biodiversity credits to be achieved as a result of implementing the development and landscaping proposals.

The Biodiversity Assessment involved a desk study and a habitat walkover of the site which was completed by Ecologist Abbie Smith BSc (Hons) on 30th July 2024. During the walkover, baseline data were recorded on the site's current habitat composition, condition, area and floral species, as well as the presence of any invasive non-native species, where observable.

The Statutory (official) Biodiversity Metric calculation tool was used to generate a pre-works and post-works comparison of biodiversity units. Provided that the proposed landscaping scheme is implemented, the calculator has indicated a LOSS in habitat (area) biodiversity units of -0.04 units (-4.19% change) post-works. This falls below the standard National biodiversity net gain expectations mandated as part of the Environment Act 2021 (i.e., +10%). However, the site is also expected to generate +0.28 biodiversity units, in the form of hedgerows which are proposed in a domestic setting. If it is permissible for the new hedgerows to compensate for the deficit in area habitats then the site would achieve biodiversity net gain (i.e., >+10% biodiversity scoring overall). Given the restricted availability of land on the site which could be dedicated to compensating a loss in area habitats, and the limitations pertaining to the introduction of biodiverse habitats within gardens, the planting of hedgerows for the purpose of achieving net gain is expected to provide a suitable approach in this scenario.

If this approach is not acceptable to the Local Planning Authority, given that the proposals will involve the development of a new dwelling within a domestic curtilage, no further opportunities to increase the biodiversity units on the site are possible with the currently proposed building footprint. The delivery of compensatory units on an off-site compensation site could instead be explored. Alternatively, the option of purchasing compensatory units from an offset provider, and/or the purchase of statutory biodiversity credits, could be secured.

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1.0 INTRODUCTION

1.1 Background

1.1.1 Archer Ecology Ltd was commissioned by JB Architectural Design Services to complete a Biodiversity Assessment in support of proposals to build a new residential dwelling within the existing garden at 138 Winsover Road in Spalding, Lincolnshire (hereafter referred to as 'the application site'). The application site comprises of introduced shrubs, scattered trees, a vegetated garden and gravel/concrete hardstanding.

1.1.2 The application site lies within the town centre of Spalding and is centred at Ordnance Survey Grid Reference (OSGR) TF 23907 22476. The location of the site in context with the local landscape is shown in Figure 1, below.



Figure 1 – Location of the application site in context with local landscape

1.2 Objectives

1.2.1 The purpose of this biodiversity assessment is to determine a pre-works and post-works comparison of biodiversity units through applying the Statutory (official) Biodiversity Metric calculation tool. This is achieved using information pertaining to the onsite habitat condition, area and species composition, which are assessed against the predicted impacts arising from the works.

1.3 Proposed Works

- 1.3.1 In line with the proposed development plans provided at the time of the commission (drawing number 194-01-GELP01, prepared by JB Architectural Design Services in August 2024; See Appendix I), it is proposed that a new dwelling with associated driveway is developed within the existing garden of 138 Winsover Road in Spalding.
- 1.3.2 The proposals are expected to require the removal of a small area of existing introduced shrubs and a small coniferous tree along the eastern site boundary. The proposals will also involve the removal of part of a vegetated garden and hardstanding to allow a new vehicular access point to be created and to facilitate the new dwelling.

2.0 METHODOLOGY

2.1 Field survey

UK Habitat Classification Survey

- 2.1.1 A UK Habitat Classification (UKHabs) Survey was completed on 30th July 2024 by Ecologist Abbie Smith BSc (Hons) who is a Qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and has over three years' experience of undertaking ecological walkover surveys. The habitats at the application site, and where considered appropriate adjacent to the application site, were assessed and classified in accordance with the UKHabs classification system (UKHab Ltd, 2023). The habitats were mapped using Quantum Geographical Information Systems (QGIS). A UKHabs plan of the application site is included under Appendix II.

2.2 Biodiversity assessment

- 2.2.1 The biodiversity assessment was undertaken following guidance contained within CIRIA publication *Biodiversity Net Gain – Good Practice Principles for Development*¹ and involved the following components:

- A desk-based assessment using Multi Agency Geographic Information for the Countryside (MAGIC) website², to identify statutory protected nature conservation sites, such as Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Special Area of Conservation (SACs) occurring on or within significant proximity to the site. A further review of local plans and policies was completed for the purpose of determining the strategic significance of the application site and baseline habitats.
- The assessment also included a review of the findings of the UKHabs survey of the application site, together with data on statutory designated sites for nature conservation and Priority Habitats.
- Measuring habitat parcels on the ground, combined with the use of online measuring tools (including Google Maps Area Calculator Tool³) and QGIS.
- A review of the expected impacts of the proposed development works referred to within the respective plans, including the extent of habitat loss/modification.

¹ Baker, J., Hoskin, R. and Butterworth, T. (2019). *Biodiversity net gain - Good practice principles for development*. CIRIA

² www.magic.gov.uk accessed July 2024

³ Google (2021) *Daft Logic – Google Maps Area Calculator V6.20* [online]. Google. Available at: <https://www.daftlogic.com/projects-google-maps-area-calculator-tool.htm> [Accessed 17th July 2024].

- Identifying habitat distinctiveness and undertaking a condition assessment based upon *The Statutory Biodiversity Metric - Technical Annex 1: Condition Assessment Sheets and Methodology* and other appropriate condition criteria (see Appendix II).
- Application of the biodiversity mitigation hierarchy.
- Identification of any irreplaceable habitats (with reference to Technical Note 4.0 of CIRIA guidelines) and/or invasive, non-native species occurring within the works footprint.
- An assessment of predicted direct and indirect impacts arising from the works, including habitat clearance, disturbance and retention. This would take into account any offset activities, where applicable.
- Inputting existing habitat data into the '*The Statutory (official) Biodiversity Metric calculation tool*', issued July 2024, in addition to data pertaining to predicted post-works habitat types and condition as a result of completing the scheme. This would be used to determine a biodiversity unit scoring.
- A review of changes in biodiversity units as a result of carrying out the works.

2.2.2 This Biodiversity Assessment was undertaken jointly by Ecologist Abbie Smith BSc (Hons) of Archer Ecology Ltd who has over three years' experience of undertaking and assisting with numerous biodiversity assessments.

3.0 RESULTS

3.1 Desk Based Assessment

Statutory designated sites for nature conservation

- 3.1.1 The application site does not fall within the boundary of any nationally or internationally statutory designated sites. No nationally designated sites occur within 10km of the application site. Vernatts Drain LNR occurs within a 2km radius of the application site. However, given that no habitats of value associated with this site was identified on the application site, no adverse impacts upon the interest features forming this LNR are predicted. Subsequently, the application site is considered as being within an '*Area not in local strategy*' with respect to this designated site.

Priority Habitats

- 3.1.2 A search using MAGIC identified no Priority Habitats on or within close proximity to the application site. Priority Habitats are therefore not considered to be a potential receptor with respect to the proposed works. The application site is considered as falling within an '*Area not in local strategy*' with respect to Priority Habitats.

Local Nature Recovery Strategy

- 3.1.3 At the time of preparing this report, no LNRS for Lincolnshire have been published.

Strategic Significance

- 3.1.4 The Central Lincolnshire Local Plan, adopted in 2023, was used to establish the strategic significance of the site and its habitats. The site and the majority of the habitats within it are considered to be of 'low' strategic significance.
- 3.1.5 The plan states that 'Planning permission will be refused for development resulting in the loss, deterioration or fragmentation of irreplaceable habitats, including ancient woodland and aged or veteran trees, unless there are wholly exceptional reasons and a suitable compensation strategy will be delivered'. The existing trees at the site are sub-mature or young saplings and are therefore only considered be of 'moderate' strategic significance and considered as '*Area not in local strategy*'.

3.2 UKHabs Survey

3.2.1 The application site is situated in an urban setting and is located within the existing garden at 138 Winsover Road in Spalding. The application site is surrounded by residential properties beyond the northern, southern and western boundaries. Beyond the eastern boundary is Hereward Road which is also bound by residential properties.

3.2.2 All habitats recorded within the application site boundary are described below and shown with their reference numbers within Appendix II. Target Notes (TNs) are shown in Appendix II and described within the text. Photographs are shown in Appendix III.

Polygon reference	-	P1
Habitat type	-	Modified grassland – vegetated garden
UKHabs code	-	g4 828
Habitat value	-	Of site value

3.2.3 Polygon 1 is the main habitat on the site and is modified grassland which appeared to be frequently cut and maintained at a very low sward height of approximately 3cm. This comprises dominant perennial rye-grass *Lolium perenne* with frequent fescue *Festuca* sp. and rare, greater plantain *Plantago major*, germander speedwell *Veronica chamaedrys* and chickweed *Stellaria media* (see Photograph 1, Appendix III).

Polygon reference	-	P2
Habitat type	-	Other developed land – introduced shrub
UKHabs code	-	ub6 847
Habitat value	-	Of site value

3.2.4 Polygon P2 is located along the northern and eastern boundaries of the application site and comprises introduced shrub. This is composed of abundant variegated privet *Ligustrum sinense variegata*, garden privet *Ligustrum ovalifolium* and frequent nettle *Urtica dioica* and bramble *Rubus fruticosus* agg. It also comprises occasional laurel *Prunus laurocerasus*, Japanese barberry *Berberis thunbergii*, Japanese aralia *Fatsia japonica*, ivy *Hedera helix*, germander speedwell, *Fuchsia* sp. and wild strawberry *Fragaria vesca* and rare greater willowherb *Epilobium hirsutum*, fennel *Foeniculum vulgare*, perennial rye-grass, Norway spruce *Picea abies* and dandelion *Taraxacum officinale* agg. Further rare, young tree specimens are also present, including holly *Ilex aquifolium* and fig *Ficus carica* (see Photograph 2, Appendix III).

Polygon reference	-	P3
Habitat type	-	Bramble scrub
UKHabs code	-	h3d
Habitat value	-	Of site value

- 3.2.5 Polygon P3 is an area of scrub located along the western boundary of the application site. This comprises of dominant bramble with occasional elder *Sambucus nigra* and nettle together with occasional laurel and ivy and rare holly (see Photograph 3, Appendix III).

Polygon reference	-	P4
Habitat type	-	Developed land; sealed surface
UKHabs code	-	u1b
Habitat value	-	Of site value

- 3.2.6 Polygon 4 is an area of hardstanding which comprises of gravel and concrete paving (see Photograph 4, Appendix III).

Polygon reference	-	P5
Habitat type	-	Urban – Other developed land – garden
UKHabs code	-	u1b6 827
Habitat value	-	Of site value

- 3.2.7 Polygon 5 is a pergola with wooden beams and a wooden plank roof (see Photograph 5, Appendix III).

Polygon reference	-	B1
Habitat type	-	Urban – Building
UKHabs code	-	u1b5
Habitat value	-	Of site value

- 3.2.8 Polygon 6 is garden shed construction solely from wood with a felt roof (see Photograph 6, Appendix III).

Polygon reference	-	L1
Habitat type	-	Built linear feature – mortared wall
UKHabs code	-	u1b
Habitat value	-	Of site value

- 3.2.9 Line 1 (L1) is a brick and mortar wall that extends from the western boundary and across the northern boundary to reach the eastern boundary of the application site (see Photograph 7, Appendix III).

Polygon reference	-	T1 – T9
Habitat type	-	Tree
UKHabs code	-	200
Habitat value	-	Of site value

- 3.2.10 T1 – T9 are a mixture of mature and sub-mature tree specimen. The species include rowan *Sorbus aucuparia*, cherry *Prunus avium*, Norway spruce, field maple *Acer campestre* and eastern redbud *Cercis canadensis* (see Photograph 8, Appendix III).

3.3 Baseline Survey

- 3.3.1 An overview of all on-site habitats and predicted impacts is given in Table 1, below, which encompasses a total, combined footprint of 0.0439ha.
- 3.3.2 For simplicity, proposed and existing linear habitats offering negligible biodiversity value, including fences and walls, have been omitted from this appraisal as these do not contribute significantly to the algorithm of the DEFRA calculator.

Table 1: Overview of Habitats and Predicted Impacts

Existing JNCC Habitat (Archer Ecology Ltd, 2024)	Biodiversity Metrics calculator – Habitat equivalent (Crosher <i>et al.</i> , 2024)	Total area/length	Lost	Retained
Modified grassland – vegetated garden	Urban - Vegetated garden	0.0225ha	0.0102ha	0.0123ha
Other developed land – introduced shrub	Urban – Introduced shrub	0.0109ha	0.0025ha	0.0084ha
Bramble scrub	Heathland and scrub – Bramble scrub	0.0023ha	-	0.0023ha
Developed land; sealed surface	Urban - Developed land; sealed surface	0.0065ha	0.0030ha	0.0035ha
Urban - Building	Urban - Developed land; sealed surface	0.0006ha	-	0.0006ha
Other developed land – Garden	Urban - Developed land; sealed surface	0.0011ha	-	0.0011ha
Tree	Urban tree	0.114ha	0.0041ha	0.1099ha

- 3.3.3 No irreplaceable habitats were recorded within the works footprint and no evidence of invasive non-native species was recorded.

3.4 Predicted Impacts and Compensation

- 3.4.1 With reference to the scheme descriptions under Section 1.3 of this report, the site preparatory activities are expected to result in the removal of existing introduced shrubs,

hardstanding, trees and a vegetated garden, as reflected in Table 1. An overview of created habitats is given below.

Table 2: Overview of Habitat Creation

Created Habitat	Biodiversity Metrics calculator – Habitat equivalent (Crosher <i>et al.</i> , 2024)	Total area / length
House footprint	Developed land – sealed surface	0.007ha
Grasscrete driveway	Modified grassland	0.0087ha
Native hedgerow	Native hedgerow	0.085km

3.5 Pre-works and Post-works Comparison of Biodiversity Units

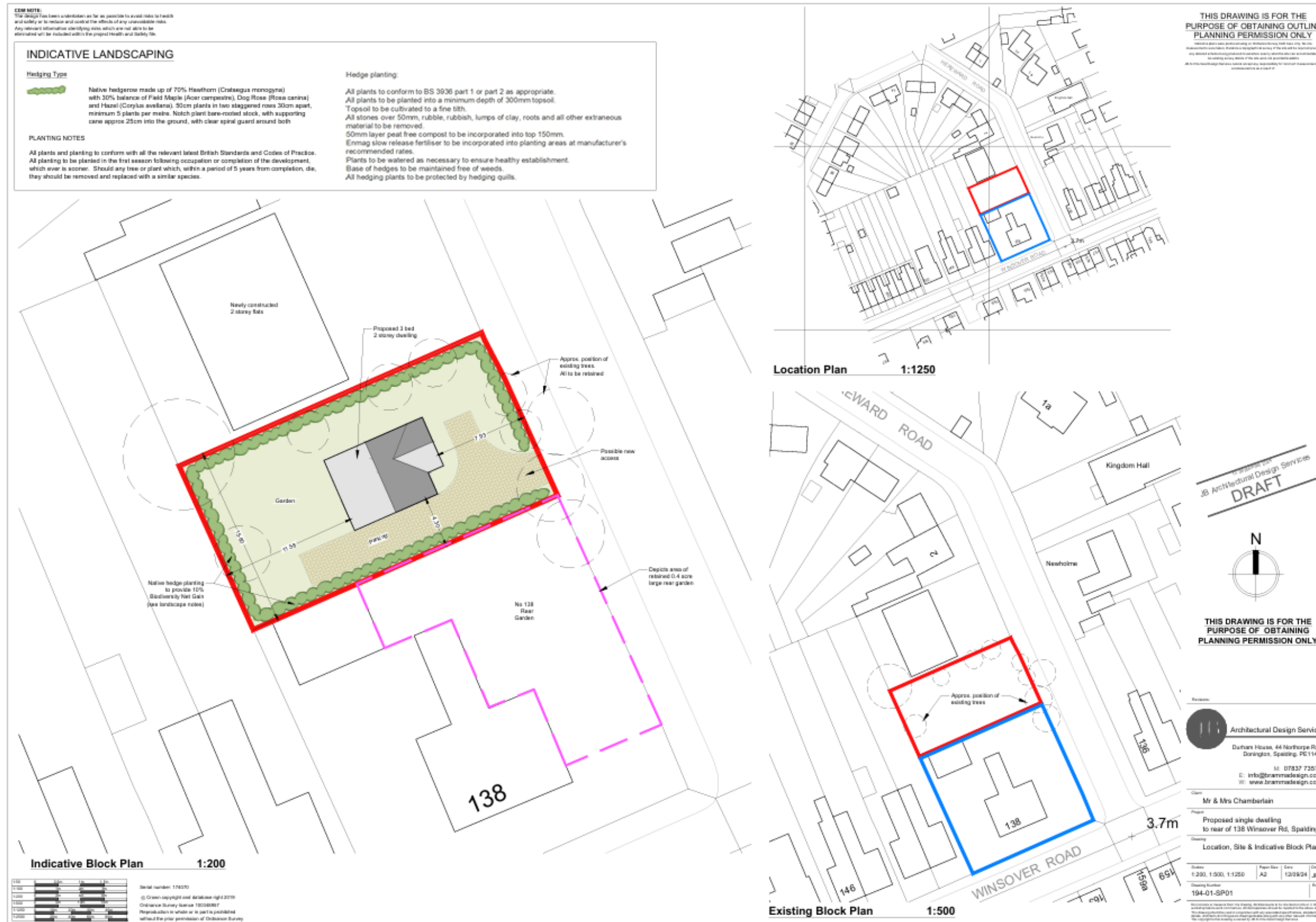
- 3.5.1 The information contained within Tables 1 and 2 was inputted into the Statutory (official) Biodiversity Metric calculation tool, in addition to information pertaining to the condition, distinctiveness and ecological connectivity of each habitat to the wider landscape (see Appendix IV).
- 3.5.2 The Statutory (official) Biodiversity Metric calculation tool was used to generate a pre-works and post-works comparison of biodiversity units. Provided that the proposed landscaping scheme is implemented, the calculator has indicated a LOSS in habitat (area) biodiversity units of -0.04 units (-4.19% change) post-works. This falls below the standard National biodiversity net gain expectations mandated as part of the Environment Act 2021 (i.e., +10%). However, the site is also expected to generate +0.28 biodiversity units, in the form of hedgerows which are proposed in a domestic setting. If it is permissible for the new hedgerows to compensate for the deficit in area habitats then the site would achieve biodiversity net gain (i.e., >+10% biodiversity scoring overall). Given the restricted availability of land on the site which could be dedicated to compensating a loss in area habitats, and the limitations pertaining to the introduction of biodiverse habitats within gardens, the planting of hedgerows for the purpose of achieving net gain is expected to provide a suitable approach in this scenario.
- 3.5.3 If this approach is not acceptable to the Local Planning Authority, given that the proposals will involve the development of a new dwelling within a domestic curtilage, no further opportunities to increase the biodiversity units on the site are possible with the currently proposed building footprint. The delivery of compensatory units on an off-site

compensation site could instead be explored. Alternatively, the option of purchasing compensatory units from an offset provider, and/or the purchase of statutory biodiversity credits, could be secured.

Proposed Hedgerows

- 3.5.4 The proposed hedgerows will be sourced from local provenance. The planted specimens should comprise 60—90cm high ‘whips’ which have a better survival rate than larger specimens and will grow more rapidly. The plants would be planted before April or after November.
- 3.5.5 The ground must firstly be prepared by strimming/mowing. Once ground preparations have been made, the whips would be planted at a density of 3 whips per metre (33cm apart) in a double, staggered row. The rows should be offset to create a zig-zag pattern.
- 3.5.6 In order to maintain the good condition of introduced hedgerow, it is imperative that appropriate management measures are secured for a minimum of 30 years (see Appendix VI).

APPENDIX I – PROPOSED SITE BLOCK PLAN



APPENDIX II – UKHABS MAP



APPENDIX III – PHOTOGRAPHS



Photograph 1: Modified grassland



Photograph 2: Introduced shrub



Photograph 3: Bramble scrub



Photograph 4: Hardstanding pathways



Photograph 5: Pergola



Photograph 6: Wooden shed



Photograph 7: Wall



Photograph 8: Individual trees

APPENDIX IV – CONDITION ASSESSMENTS

Existing habitat

Condition Sheet: INDIVIDUAL TREES Habitat Type			
Habitat Types			
Individual trees – Urban trees Individual trees – Rural trees Complete a condition sheet for each tree or block of trees. <i>Please see the separate Line of trees condition sheet for a line of <u>rural</u> trees. You should only use the Line of trees condition assessment and record that habitat type in <u>rural</u> locations.</i>			
Habitat Description			
Urban trees - Existing			
Individual trees (description applied to the urban or rural environment): Young trees over 7.5 cm in diameter at breast height whose canopies are not touching. Urban Perimeter / Linear Blocks and Groups (description applied to the urban environment only): Groups or stands of trees (size requirement as defined above) within and around the perimeter of urban land. This includes those along urban streets, highways, railways and canals, and also former field boundary trees incorporated into developments. Canopies should predominantly overlap continuously. Groups of urban trees that don't match the descriptions for woodland may be assessed within this category.			
On-site or off-site, site name and location	138 Winsover Rd, Spalding	Survey date and Surveyor name	Abbie Smith BSc (Hons) 20/08/2024
Limitations (if applicable)	N/A	Survey reference (if relating to a wider survey)	N/A
Grid reference	TF 23912 22475	Habitat parcel reference	2
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The tree is a native species (or at least 70% within the block are native species).	No	Non-natives present
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).	Yes	Automatically pass
C	The tree is mature (or more than 50% within the block are mature) ¹ .	No	None are mature, all sub-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.	Yes	No adverse impacts to the trees
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	No	Young trees with no ecological niches present
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Yes	Introduced shrub located beneath trees
Number of criteria passed		3	
Condition Assessment Result (out of 6 criteria)	Condition Assessment Score	Score Achieved x/✓	
Passes 5 or 6 criteria	Good (3)		
Passes 3 or 4 criteria	Moderate (2)	X	
Passes 2 or fewer criteria	Poor (1)		
Note that 'Fairly Good and Fairly Poor' condition categories are not available for this broad habitat type.			

Proposed habitat

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type			
Grassland - Modified grassland			
On-site or off-site, site name and location	138 Winsover Rd, Spalding	Survey date and Surveyor name	Abbie Smith BSc (Hons) 20/08/2024
Limitations (if applicable)	N/A	Survey reference (if relating to a wider survey)	N/A
Grid reference	TF 23912 22475	Habitat parcel reference	2
Habitat Description			
Grasscrete - Modified grassland			
ukhab – UK Habitat Classification			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	There are 6-8 vascular plant species per m ² present, including at least 2 forbs (these 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.	No	Species list not confirmed and therefore assumed as no
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 vertebrates and invertebrates to live and breed.	No	Used as driveway and will therefore not be a varied height
C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble <i>Rubus fruticosus</i> agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Yes	No scrub located within the area
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	No	Damage from vehicles
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	No	Areas of bare ground to be more than 10%
F	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	Yes	No bracken on site
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).	Yes	No non-native invasives on site
Essential criterion achieved (Yes or No)			No
Number of criteria passed			3
Condition Assessment Result (out of 7 criteria)	Condition Assessment Score	Score Achieved x/√	
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)	X	

Condition sheet: HEDGEROW Habitat Types				
Habitat Type				
Native hedgerow Native hedgerow - associated with bank or ditch Native hedgerow with trees Native hedgerow with trees - associated with bank or ditch Species-rich native hedgerow Species-rich native hedgerow - associated with bank or ditch Species-rich native hedgerow with trees Species-rich native hedgerow with trees - associated with bank or ditch				
Habitat Description				
Native hedgerow				
Uphab - UK Habitat Classification				
On-site or off-site, site name and location	138 Winsover Rd, Spalding	Survey date and Surveyor name	Abbie Smith BSc (Hons) 20/08/2024	
Limitations (if applicable)	N/A	Survey reference (if relating to a wider survey)	N/A	
Grid reference	TF 23912 22475	Habitat parcel reference	3	
Condition Assessment Details				
A series of ten attributes, representing key physical characteristics are used for this assessment. Each attribute is assigned to one of five functional groups (A – E) and the condition of a hedgerow is assessed according to the number of attributes from these functional groups which pass or fail the 'favourable condition' criteria.				
This assessment is based on the Hedgerow Survey Handbook ¹ and Favourable Conservation Status document ² . For further clarification please refer to the Hedgerow Survey Handbook.				
Best practice would be to record the species, age, spacing and other key information about all trees present along a hedgerow within the 'Habitat Description' box, as well as other key features of the hedgerow.				
Hedgerow favourable condition attributes				
Attributes and functional groupings (A, B, C, D and E)	Criteria - the minimum requirements for 'favourable condition'	Criteria description	Criterion passed (Yes or No)	Notes (such as justification)
<i>Core criteria - applicable to all hedgerow types</i>				
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).	No	Newly planted
A2. 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 <i>Prunus spinosa</i> 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).	Yes	Newly planted
B1. Gap - hedge 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).	No	Newly planted, gaps are expected to be present
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).	No	Newly planted, gaps are expected to be present
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 riches.	Yes	No disturbed ground is expected to be present
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 <i>Urtica</i> spp., cleavers <i>Galium aparine</i> and docks <i>Rumex</i> spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	Yes	No plant species indicative of nutrient enrichment of soils are expected to be present within the newly planted
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 WCA ³) 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 BSB website ⁵ where the 'Online Atlas of the British and Irish Flora' 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 ⁶ .	Yes	No non-native invasive species located on site
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 (for example, excessive hedgerow cutting).	Yes	No damage by human activities is expected
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 ⁷), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m 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.		
The hedgerow condition assessment generates a weighting (score) ranging from 1 - 3, which is used within the Statutory Biodiversity Metric. The scores for each are set out in the tables below.				
Condition categories for hedgerows without trees				
Category	Category Requirements	Metric Score		
Good	No more than 2 failures in total; AND No more than 1 failure in any functional group.	3		
Moderate	No more than 4 failures in total; AND Does not fail both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and C2 = Moderate condition).	2		
Poor	Fails a total of more than 4 attributes; OR Fails both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor condition).	1		
Score achieved:		2		

APPENDIX V – BIODIVERSITY CALCULATOR INPUT

Existing Habitats

Ref	Existing area habitats				Distinctiveness		Condition		Strategic significance			Required Action to Meet Trading Rules	Ecological baseline						
	Broad Habitat	Habitat Type	Irreplaceable habitat	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic significance multiplier			Area retained	Area enhanced	Baseline units retained	Baseline units enhanced	Area habitat lost	Units lost
1	Urban	Introduced shrub	No	0.0109	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required ≥	0.02	0.0084		0.02	0.00	0.00	0.01
2	Urban	Vegetated garden	No	0.0225	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required ≥	0.05	0.0123		0.02	0.00	0.01	0.02
3	Urban	Developed land; sealed surface	No	0.0065	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00	0.0035		0.00	0.00	0.00	0.00
4	Urban	Developed land; sealed surface	No	0.0006	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00	0.0006		0.00	0.00	0.00	0.00
5	Urban	Developed land; sealed surface	No	0.0011	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00	0.0011		0.00	0.00	0.00	0.00
6	Heathland and shrub	Bramble scrub	No	0.0023	Medium	4	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (≥)	0.01	0.0023		0.01	0.00	0.00	0.00
7	Individual trees	Urban tree	No	0.114	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (≥)	0.91	0.1099		0.88	0.00	0.00	0.03

Proposed Habitats

Ref	Broad Habitat	Proposed habitat	Area (hectares)	Distinctiveness		Condition		Strategic significance			Post intervention habitats							Difficulty multipliers				Habitat units delivered	Comments		
				Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic significance multiplier	Standard time to target condition (years)	Habitat created in advance (years)	Delay in starting habitat creation (years)	Standard or adjusted time to target condition	Final time to target condition (years)	Final time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied	User comments		Planning authority comments	Habitat reference number	
1	Urban	Developed land, sealed surface	0.007	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0	0	0	Standard time to target condition applied	0	1.000	Low	Standard difficulty applied	Low	1	0.00				
2	Grassland	Modified grassland	0.0087	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	0	0	Standard time to target condition applied	1	0.965	Low	Standard difficulty applied	Low	1	0.02				

		Proposed habitats		Distinctiveness		Condition		Strategic significance			Temporal multiplier						Difficulty risk multipliers				Hedge units delivered
Ref	New hedge number	Habitat type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic significance multiplier	Standard Time to target condition (years)	Habitat created in advance (years)	Delay in starting habitat creation (years)	Standard or adjusted time to target condition	Final time to target condition (years)	Final time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied	
1		Native hedgerow	0.085	Low	2	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5	0	0	Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Low	1	0.28

APPENDIX VI – MANAGEMENT PRESCRIPTION TIMETABLE

Description	Activity	Timing - Year 1												Year 2	Year 2	Year 4	Year 5	Continue beyond 5 years?
		J	F	M	A	M	J	J	A	S	O	N	D					
Tree/ hedgerow planting	Plant trees	✓	✓	✓									✓	-	-	-	-	-
	Monitor tree growth					✓	✓	✓	✓					Nov-March	-	-	-	-
	Replacement of failed trees	✓	✓	✓								✓	✓	Nov-March	Nov-March	Nov-March	Nov-March	Yes