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BIODIVERSITY IMPACT ASSESSMENT FOR NET GAIN

Southcote, Burghfield Road, Reading
Report Reference: BG22.281.5 REV3
December 2023



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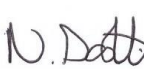


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REV1 Details	Update development proposal plans within Appendix 1, amend Ecological Prescriptions Plan in Appendix 3, and amend all Net Gain calculations references with the report body to reflect change in development layout.
REV2 Details	Update all plans of the site to reflect red-line boundary change.
REV3 Details	Update report and associated plans following comments from LPA regarding metric version and the use of UKHab.

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1 Summary

- 1.1 Where a development has an impact on biodiversity, Biodiversity Net Gain encourages developers to secure an increase in appropriate natural habitat and ecological features over and above that being affected. In order to determine whether there is no net loss or a net gain to biodiversity from a development project, a quantitative approach involving the use of a metric is required. In 2012, DEFRA created such a metric to quantify the impact of a development in terms of 'biodiversity units'. The UK government's 25 Year Environment Plan will require all new developments in England, delivered via the existing planning and development process to meet a mandatory improvement in biodiversity value.
- 1.2 This Biodiversity Impact Assessment (BIA) draws upon the results of the Preliminary Ecological Appraisal (PEA) undertaken and reported upon previously (BG22.281, December 2022), and includes the results of biodiversity value calculations, derived using the Natural England Biodiversity Metric 4.0 Calculator (BG22.281.3, December 2023), based upon the design proposals for the application site.
- 1.3 During the baseline assessment the habitats recorded dense scrub to the north eastern extent of the site, tall ruderal herbs, semi-improved, and improved grassland to the southern area of the site (All considered within "Modified Grassland" in UKHabs terminology). No boundary features were present to the southern and western boundaries, with only a metal palisade fencing to the northern and eastern boundary of the site. The habitats on site were evaluated as holding 'Site' value in relation to local surroundings and a regional context. Habitats present within the application boundary are locally frequent and were not of notable criteria for local or national BAP habitats. The condition of baseline habitats on site were assessed as 'Poor' and 'Moderate' condition when assessed against the criteria outlined within the technical supplement for the Biodiversity Metric 4.0. The habitats were recorded using the Phase 1 habitat survey methodology (See Appendix 2 for accompanying Phase 1 Habitat Plan) and were translated into the UK habitats classifications for the purposes of the biodiversity metric (See Appendix 3 for UKHab Habitat Plan).
- 1.4 Using the Biodiversity metric, the existing habitats within the application boundary were valued at 0.54 'Habitat units', 0 'Hedgerow units' and 0 'River units'. The proposed scheme was calculated to hold 0.84 'Habitat units,' 0 'Hedgerow units' and 0 'River units', resulting in an overall net-gain to biodiversity of +0.30 'Habitat units' (+56.54%) and with no net change of 'Hedgerow units' or 'River units'. Trading rules

have also been satisfied. As such the proposed development meets the target criteria of a no net loss for the development.

- 1.5 The report should be reviewed in conjunction with the Preliminary Ecological Appraisal BG22.281 (December 2022) and the accompanying Metric (BG22.281.3 Southcote, Burghfield Road, Reading – Biodiversity Metric 4.0 – Final).

2 Introduction

- 2.1 Brindle and Green Ltd were commissioned by Southcote BESS SPV Ltd to undertake a Biodiversity Impact Assessment (BIA) at the site known as Southcote, Holybrook Farm, Burghfield Road, Reading. This report provides an appraisal of the biodiversity value associated with the existing habitats established during the baseline survey and assesses the impacts in terms of biodiversity loss against the proposed layout (Appendix 1) using the Natural England Biodiversity Metric 4.0 which is considered the most up to date method for assessing impact to biodiversity. The site is the subject of a planning application for the development of a battery storage facility and associated access. Design proposals for the site are presented in Appendix 1 of this report.
- 2.2 The red line boundary is approximately 0.25ha in extent and comprises an area of semi-improved and improved grassland, tall ruderal herbs (All considered within “Modified Grassland” in UKHabs terminology) and dense scrub (Bramble scrub) with hard standing access from Burghfield Road. The site is located south of the town of Reading, Berkshire and is bordered by a substation and associated access along the northern and eastern boundaries. The surrounding landscape is dominated by agricultural farmland and riverine habitats associated with Holy Brook to the north and the River Kennet to the south.
- 2.3 The design proposals will facilitate the loss of all the existing dense scrub, tall ruderal herbs, and grassland within the boundary, with retention of an existing area of hard standing to the eastern area of the site. No hedgerows were present on the site and only a single tree is present on the site which will be lost as part of the proposals.
- 2.4 The purpose of this report is to assess the current biodiversity habitat and value of the site, so as to reduce net-loss as a result of the development, and preferably, a net-gain in biodiversity value.
- 2.5 Results and recommendations contained within this report have been prepared by an experienced ecologist and are therefore the view of Brindle & Green Limited. The results of the Biodiversity Impact Assessment are based on information provided by our client and the previous ecological report (BG22.281, December 2022). This report pertains to this information only.

3 Methodology

3.1 Biodiversity Metric

- 3.1.1 The biodiversity accounting system is underpinned by a metric that calculates the ecological value of both development impact and habitat restoration/creation.
- 3.1.2 The Biodiversity Metric is designed by Natural England in consultation with a range of experts and tested over a two-year period. The metric is based on an assessment of habitat type and condition. Habitat types are classified into three bands of 'distinctiveness' which are: priority habitats as defined in the NERC Act 2006 (high), semi-natural habitats (medium) and managed habitats, such as arable farmland (low).
- 3.1.3 Compensation arrangements must be like-for-like or better, i.e., the loss of semi-natural habitats can only be compensated for through the creation of priority or other semi-natural habitats, not through creation of lesser quality habitat. 'Trading up' options allow for the loss of poor-quality habitat, such as farmland, to be compensated for with the creation of high-quality habitat.
- 3.1.4 The ecological value of the habitat lost to development is a function of its distinctiveness, its condition and the area lost – scores are assigned to all three variables and multiplied together to arrive at the number of units lost. To compensate for a loss, the same or more units ('conservation credits') must then be delivered through habitat creation or restoration at another site that is going to be managed for wildlife (the 'receptor' site or compensation site).
- 3.1.5 The number of credits delivered by the compensation receptor sites are also a function of the type, condition and area of the habitat being created or restored. But additionally, there are a further range of 'multipliers' applied to the creation of habitat because there are a number of risks to take account of – spatial, temporal and delivery.
- 3.1.6 Linear habitats (such as hedgerows) are measured separately to the rest of the site habitats and included within a separate section – hedge baseline and hedge creation. The aim is to achieve a 10% net-gain for hedgerow units as well as for biodiversity units, or a no net-loss to linear habitats.

3.2 Mapping and assessment

- 3.2.1 A phase 1 habitat survey was carried out by Brindle and Green Ltd (BG22.281, December 2022); for the baseline calculations the habitats were mapped using the

previous phase 1 map and condition assessed using the criteria outlined within the Biodiversity Metric 4.0 habitat condition assessment sheets. The phase 1 habitats were translated into the UKHab classification system to input into the metric. The classification of habitats and conditions follow the outline in the Natural England Technical Support document associated with the latest edition of the metric.

3.2.2 Habitats and hedges were mapped within QGIS software to allow area calculations. The proposed scheme was overlayed and measured using the georeferencing tool. Polygons and lines used to measure existing habitat areas were classified by their proposed habitat type (Appendix 2 and 3), to provide reference. Polygons depicting target areas for net gain are also included within Appendix 4. These target areas include scrub and tree planting along landscape buffer areas.

3.2.3 Proposed hardstanding areas within the battery storage compound and the access track were categorised as urban, developed land; sealed surface.

3.3 **Strategic Significance**

3.3.1 A desk study utilising publications within the local plan (LPA) as well as open-source data available from Multi Agency Geographic Information for the countryside (MAGIC) was searched to determine the strategic significance of the site.

3.4 **Limitations**

3.4.1 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment.

3.4.2 Georeferencing does not provide an exact measurement of the elements of the proposed scheme.

3.4.3 Due to the size of the site, normally small sites' metric calculation would be required, however due to the habitat types present on the site and their condition they were inputted into the Biodiversity Metric 4.0 in order to condition assess the pre-existing habitats.

3.5 **Report Lifespan**

3.5.1 Given the transient nature of the subject we would consider the baseline survey results and biodiversity calculations contained within this report to be accurate for 2 years.

4 Assessment Calculator Results

4.1 Existing Biodiversity Value

- 4.1.1 The application site contains habitats ranging from very low to medium distinctiveness. Habitats of very low and low distinctiveness include developed land - sealed surface and modified grassland which dominates the site (0.13ha). Habitats of medium distinctiveness include mixed scrub and a single tree.

Table 1. Summary of condition assessment for habitat and hedge baseline.

Habitat (UKHab code)	Condition	Reason
Sparsely Vegetated Land – Ruderal/Ephemeral (G4-16)	Poor	Other Tall herb and fern - ruderal vegetation dominated by common nettle (<i>Urtica dioica</i>) which currently achieves 'Poor' condition score satisfying 5 out of 7 criteria (C, D, E, F, & G) but fails to achieve essential criterion A. Expected to be lost as part of the proposals.
Modified Grassland (g4)	Poor	Area of poor semi-improved grassland (g4 – Area A) to the middle of the site. Habitat's botanical diversity limited to less than 6 species per m ² , failing essential criteria A for moderate condition, as most of the habitat consisted of false oat grass (<i>Arrhenatherum elatius</i>), red fescue (<i>Festuca rubra</i>), Yorkshire fog (<i>Holcus lanatus</i>) and timothy (<i>Phleum pratense</i>). Currently achieves 5 out of 7 criteria (C, D, E, F, & G). Expected to be lost as part of the proposals.
		Improved grassland (g4 – Area B) to the border of the pastoral field on the southern edge of the site. Habitat's botanical diversity limited to less than 6 species per m ² , failing essential criteria A for moderate condition as most of the habitat consisted of Yorkshire fog (<i>Holcus lanatus</i>) grass and cock's foot (<i>Dactylis glomerata</i>). Expected to be lost as part of the proposals. The habitat therefore only achieves 5 out of 7 criteria (C, D, E, F, & G).
Bramble Scrub (h3b)	N/A	Dense bramble (<i>Rubus fruticosus</i>) scrub comprised with tall ruderal encroachment by common nettle. This habitat is expected to be lost as part of the proposals and due to the type of the habitat cannot be condition assessed within the metric calculator.
Developed Land – Sealed Surface (u1b)	N/A	Existing hard standing present to the south-eastern edge of the site, where access to the adjacent substation is already present. Expected to be retained as part of the proposals and due to the type of the habitat it cannot be condition assessed as part of the metric calculator.
Individual tree – Rural tree	Moderate	A single elder (<i>Sambucus nigra</i>) tree was located to the northern boundary of the development. It was a small immature tree (<30cm stem diameter) and only achieves 3 out of 5 criteria (A, B, & F) and was generally in poor condition.

- 4.1.2 The total area of the habitats to be impacted is approximately 0.25ha. The baseline biodiversity units of the site are recorded as 0.54 'Habitat units.'

4.2 Scheme Design with Ecological Enhancements

4.2.1 The proposed scheme is for partial site clearance to facilitate the development of a battery storage facility and associated access, with some pre-existing hard standing for access retained. Table 2 shows the scores calculated with maximised potential of planted habitats within available open space. The recommendations outlined in the section would require management under a Landscape and Ecological Management Plan (LEMP) to achieve their target conditions outlined within the metric calculations.

4.2.2 Appendix 4 highlights a series of areas of habitats to be created. To act as a landscape buffer, areas immediately surrounding the battery storage facility will be planted with 'Mixed Scrub' with a range of species to achieve 'Moderate' condition.

4.2.3 Proposed scattered trees within the landscape buffers of the site must be of native species and species relevant to the local surroundings and are not expected to reach a stem diameter of more than 30cm.

Table 2: Biodiversity Impact Assessment Score, Scheme with Ecological Enhancements

Southcote, Burghfield Road, Reading		Return to results menu	
Headline Results			
Scroll down for final results ▲			
On-site baseline	Habitat units	0.54	
	Hedgerow units	0.00	
	Watercourse units	0.00	
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.84	
	Hedgerow units	0.00	
	Watercourse units	0.00	
On-site net change (units & percentage)	Habitat units	0.30	56.54%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Off-site baseline	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	Habitat units	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.30	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Spatial risk multiplier (SRM) deductions	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	0.30
	<i>Hedgerow units</i>	0.00
	<i>Watercourse units</i>	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	56.54%
	<i>Hedgerow units</i>	0.00%
	<i>Watercourse units</i>	0.00%
Trading rules satisfied?	Yes ✓	

5 Evaluation

5.1 Development Proposals

The site is the subject of a full planning application for site clearance to facilitate the development of a battery storage facility and associated access. Current design proposals for the site are presented in Appendix 1 of this report.

5.2 Using the Biodiversity Impact Assessment tool, the existing habitats within the application boundary were valued at 0.54 'Habitat units.' The proposals with ecological enhancements will see a net-gain to biodiversity of +0.30 'Habitat units' (+56.54%) with proposed habitats valued at 0.84 'Habitat units'.

5.3 This report has considered all available area of open space and has been compiled to inform landscape plans to maximise the potential within areas of open space within the design plans. The habitats will require management under a Landscape and Ecological Management Plan (LEMP) to achieve the designated target conditions set out within the accompanying metric.

5.4 The proposals will see a net-gain to biodiversity with the trading rules satisfied, as such achieve the net gain targets as outlined by the Environment Bill 2021.

6 Ecological Management Prescriptions

6.1 To maximise the potential of habitats within areas of open space a Landscape and Ecological Management Plan (LEMP) should be compiled. The plan will facilitate a management regime for the scrub buffer creating rides through the scrub to allow management and increase edge effect through the buffer zone, and enhancement of the area for wildlife. Appendix 4 details each of the target areas for ecological enhancement to guide any landscape proposals.

6.2 Retained Habitats

6.2.1 *Hard Standing – N/A*

An area of hard standing present to the south eastern edge of the site is due to be retained and extended to provide access to the battery storage facility. As this habitat does not hold any ecological value, no condition scoring can be applied to the habitat and as such it cannot be enhanced for biodiversity.

6.3 Habitat Creation

6.3.1 *Mixed Scrub – Moderate Condition*

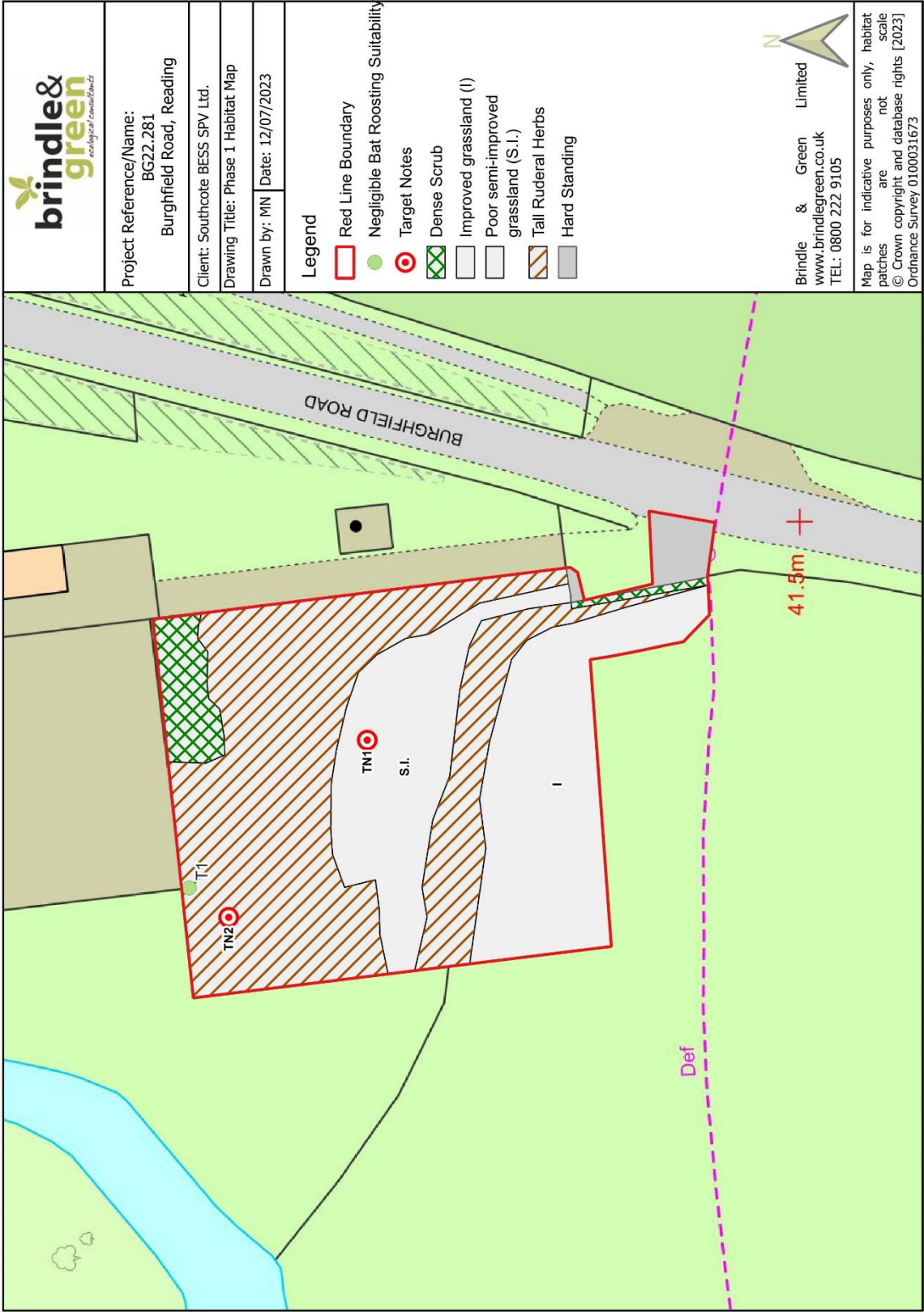
The mixed scrub planted to provide a landscape buffer zone should include a range of species such as hawthorn (*Crataegus monogyna*), dogwood (*Cornus sanguinea*), spindle (*Euonymus europaeus*), hazel (*Corylus avellana*), and guelder rose (*Viburnum lantana*), with at least three species included within the planting. No invasive shrub species should be included and there should be the creation of clearings within the planting to allow the development of a complex scrub habitat to attain a 'Moderate' condition. A range of whips and established shrubs should be used to create the habitat, with the adequate spacing to allow natural regeneration.

6.3.2 *Scattered Trees – Moderate Condition*

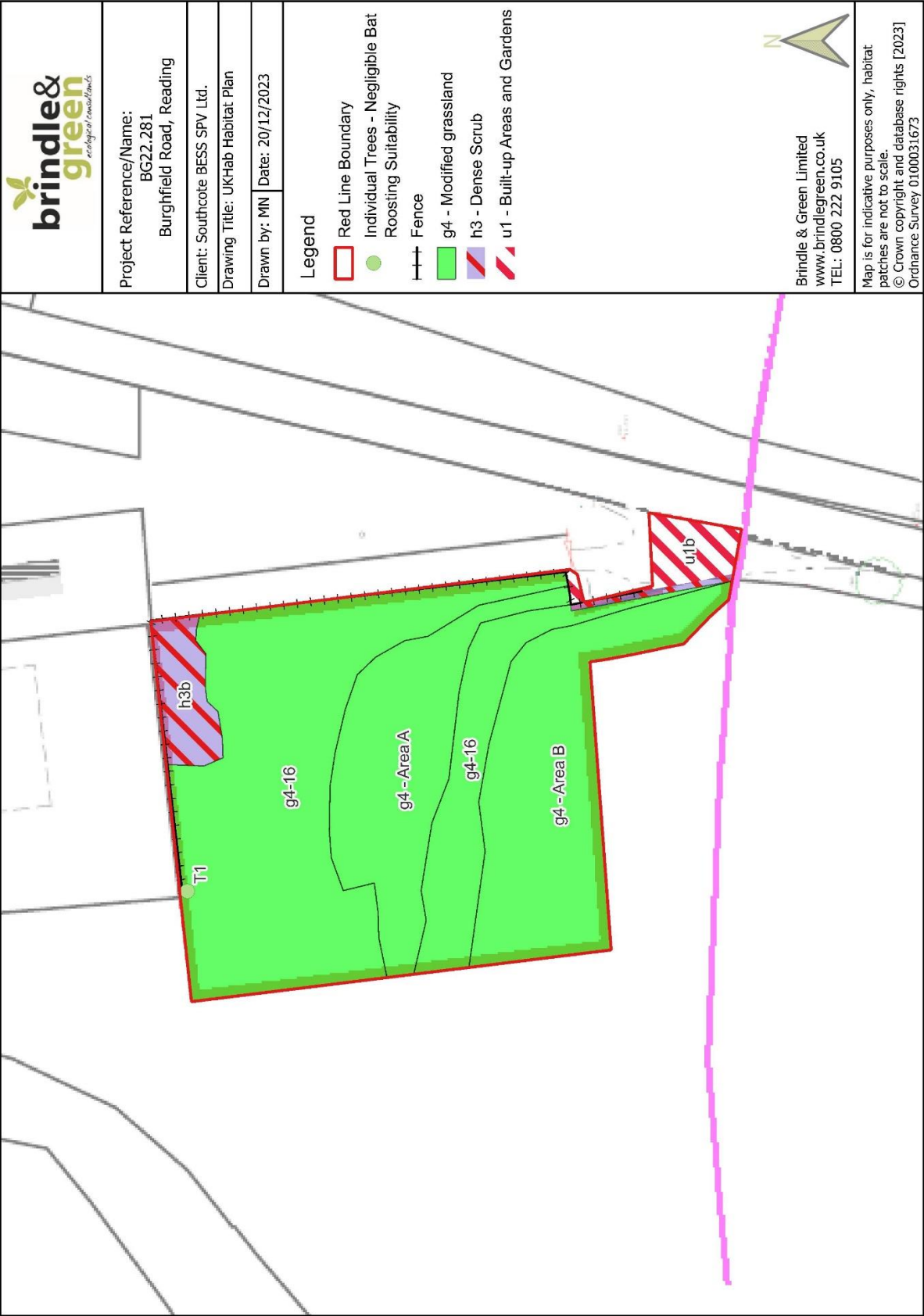
Within the landscape buffers encircling the battery storage area of the development, at least eight small trees shall be planted within the mixed scrub to provide additional screening and height to the landscape buffers. These should comprise a mix of native species such as field maple (*Acer campestre*), rowan (*Sorbus aucuparia*) or birch (*Betula spp.*). Individual trees automatically pass the continuous tree canopy criteria and the trees being planted within the mixed scrub will reach at least a 'Moderate' condition.



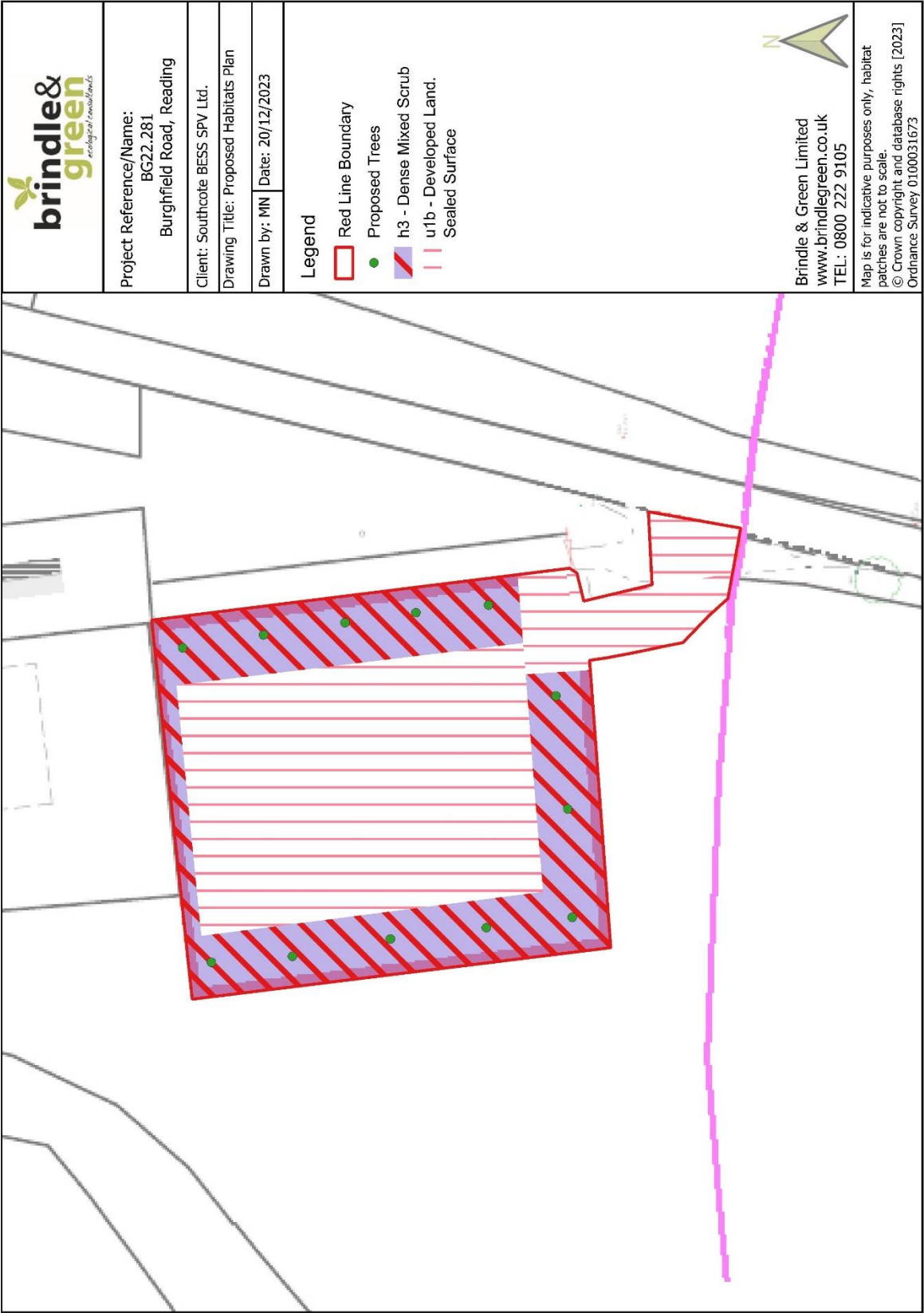
Appendix 2. Existing Habitats – Phase 1 Habitat Plan



Appendix 3. Existing Habitats – UKHab Habitat Plan



Appendix 4 Ecological Prescriptions – Proposed Habitat Plan



Appendix 4. References

CIEEM (2019), Biodiversity Net Gain Good Practice Principles for Development.

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