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BIODIVERSITY IMPACT ASSESSMENT FOR NET GAIN

Former MSD Facility, Breakspear Road South, Ickenham

Report Reference: BG22.113.8 REV1

September 2022

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This report has been prepared in accordance with the CIEEM (2017) **Guidance on Ecological Report Writing.** and CIEEM (2019) **Biodiversity Net Gain Good Practice Principles for Development**. Chartered Institute of Ecology and Environmental Management, Winchester

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Document Control

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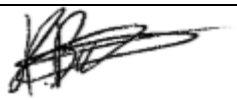
Prepared by	Ellen Marshall Head of Ecology		28/09/2022
Checked by	Kerry Baker Consultant Ecologist		29/09/2022
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Contents

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 (BG22.113 Former MSD Facility Preliminary Ecological Appraisal) and Ecological Impact Assessment (BG22.113.7 Former MSD Facility Ecological Impact Assessment) and presents the results of biodiversity value calculations, derived using the Natural England Biodiversity Metric 3.1 Calculator based upon the design proposals for the application site.

1.3 The habitats on site were assessed to have 'Site' value on a local and regional scale, dominated by low value amenity grassland and hardstanding. The woodland, semi-improved grassland and trees were assessed against Annex 1: Condition Scores (Panks *et al* 2021).

1.4 Using the Biodiversity metric, the existing habitats within the application boundary were scored as 11.48 'habitat units' (Appendix 2). The proposed scheme was calculated to deliver 14.18 'habitat units' if developed as per the proposed plan (Appendix 3) incorporating enhancements and management to created and retained spaces. The proposed scheme will result in a gain of 2.70 habitat units (23.48%) exceeding the target of no net loss and a positive of over 10% in line with the Environment Act 2021. Simultaneously, the site also achieves a positive 100% increase in hedgerow units with inclusion of new hedgerows which were not a habitat present on site previously.

1.5 The report should be reviewed in conjunction with the Biodiversity Metric supplied to support the application (BG22.113.9 Former MSD Facility, BIODIVERISTY METRIC 3.1 CALCULATION TOOL).

2 Introduction

2.1 Brindle and Green Ltd were commissioned by Keltbray Development Ltd to carry out a Biodiversity Impact Assessment (BIA) at the site known as Former MSD Facility, Breakspear Road South, Ickenham. This report provides an appraisal of the biodiversity value associated with the existing habitats and assesses the impacts in terms of biodiversity loss against the proposed layout (Appendix 3) using the Natural England Biodiversity Metric 3.1. This BIA was assessed using the DEFRA metric which is considered the most up to date method for assessing impact to biodiversity.

2.2 This BIA has been compiled to produce an accurate and comparable account of the biodiversity value and impact following the demolition of existing buildings, construction of new buildings within Use Class B8 with associated access and landscaping.

2.3 The design proposals will see the retention of several mature trees, boundary vegetation and a large area of woodland on site, and the loss of low distinctiveness amenity grassland and hardstanding to facilitate the development.

2.4 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, previous ecological reports and the development proposals. 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 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 several 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.

3.2 **Mapping and assessment**

3.2.1 A phase 1 habitat survey was carried out by Brindle and Green Ltd during 2021. For the baseline, the habitats were mapped using the previous phase 1 map and condition assessed using the descriptions outlined within the report (Appendix 2). 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 (Panks *et al* 2021).

3.2.2 Habitats were mapped within QGIS (Version 3.19) 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 labelled numerically (Appendix 2 and 4), to provide reference. Polygons depicting target areas for net gain are also included within Appendix 4. These target areas include retained and enhanced woodland and grassland and planted grassland in areas of open space.

3.3 **Limitations**

3.3.1 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.

3.3.2 Georeferencing does not provide an exact measurement of the elements of the proposed scheme, however, as the metric only allows areas in hectares to be rounded to 2 decimal places. The scale of the development and size of the habitats were very small and may have been rounded to the nearest 0.01 ha.

3.4 **Report Lifespan**

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 from low to medium distinctiveness. Habitat of low distinctiveness relates to the amenity (1.38ha) and semi-improved grassland (0.43ha), and areas of introduced shrub (0.11ha) which will be lost through site clearance to facilitate the development and open space proposals. Habitats of medium distinctiveness relate to areas of bramble scrub (0.13ha), mixed scrub (0.18ha) and areas of semi-natural broadleaved woodland (0.43ha) which will be retained as part of the development. A total area of 5.12ha was recorded with baseline habitat units of the site are recorded as 11.48.

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

Habitat	Condition	Reason
Modified grassland (Amenity)	Poor	Closely mown amenity grassland which fails criteria 1 and 2 due to the lack of diversity and sward height as well as having physical damage and areas of bare ground greater than 5%.
Modified grassland (Semi-improved)	Poor	Fails criteria 1 of condition assessment and is therefore unable to achieve higher than poor condition.
.Bramble scrub	N/A	Encroaching bramble scrub throughout the site.
Mixed scrub	Poor	Passes only 1 criteria, achieving poor condition.
Bare ground	Poor	Passes only 1 criteria, achieving poor condition.
Introduced scrub	N/A	Areas of non native shrub throughout
Other woodland' broadleaved	Poor	Broadleaved plantation woodland to northern boundary. Score of less than 26 scoring poor due to all trees being of the same age and species monoculture, lack of ground flora.
Other woodland' broadleaved	Moderate	Semi-natural broadleaved woodland to northern boundary. Score of more than 26 due scoring moderate due to condition assessment criteria, for example varied age classes, species richness, and presence of deadwood.
Developed land' sealed surface	N/A - Other	Not applicable

4.2 Scheme Design with Ecological Enhancements

4.2.1 The proposed scheme is for the retention and demolition of existing buildings, construction of new buildings, all within Use Class B8 with ancillary uses, hardstanding, widening of vehicular access off Breakspear Road South, associated car and cycle parking, enhanced landscaping and ancillary works. The development will replace the Former MSD Facility. The scheme shows the retention of several central trees, boundary woodland habitats, and woodland. Additional planting of significant areas of screening trees has been proposed along the southern boundary to add screening from a landscape visual perspective. Proposals include two SUDS features and a wildlife pond, with areas of both amenity and meadow grassland.

4.2.2 Enhancements are proposed to the retained broadleaved woodland habitats.

4.2.3 The existing habitats within the application boundary were scored as 11.48 ‘habitat units’ (Appendix 2). The proposed scheme was calculated to hold 14.18 ‘habitat units’ if developed as per the proposed plan (Appendix 3). The proposed scheme will result in a gain of 2.70 habitat units (23.48%) (Table 2) with trading rules satisfied.

Table 2: Biodiversity Impact Assessment Score with secured ecological enhancements

On-site baseline	*Habitat units*	11.48
	Hedgerow units	0.00
	River units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	14.18
	Hedgerow units	970.72
	River units	0.00
On-site net % change (Including habitat retention, creation & enhancement)	*Habitat units*	23.48%
	Hedgerow units	100.00%
	River units	0.00%
Off-site baseline	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	2.70
	Hedgerow units	970.72
	River units	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	23.48%
	Hedgerow units	100.00%
	River units	0.00%
Trading rules Satisfied?		Yes ✓

5 Evaluation

5.1 **Development Proposals**

The site is the subject of clearance to facilitate the demolition of existing buildings, construction of new buildings, and enhanced landscaping and ancillary works. Current design proposals for the site are presented in Appendix 3 of this report.

5.2 Using the Biodiversity Impact Assessment tool, the existing habitats within the application boundary were valued at 11.48 'habitat units'. The scheme involves the loss of areas of woodland, scrub and semi-improved grassland (Appendix 2 and 4), however, the opportunity for the creation of new habitats will see over a 20% increase in habitat units post construction achieving a net gain; integrating higher value botanical habitats showing a benefit to local biodiversity.

5.3 To secure the proposed habitats and their proposed target conditions long term, the Landscape and Environmental Maintenance Plan (211723_OP_Ick-R001) covering should be followed to ensure compliance with the commitment to net gain. A 30-year management period from habitat establishment should be followed. An outline of the information which would be required to achieve target conditions is outlined in Section 6, these features are secured within the detailed soft landscaping scheme for the site and within this document.

6 Ecological Management Prescriptions

6.1 To maximise the potential of habitats within open green space prescriptions within this document and within the Landscape and Environmental Maintenance Management Plan (22173_OP_Ick-R001 Optimised Environments Ltd) should be followed. The plan includes suitable seed and planting mixes and an appropriate management regime to achieve biodiversity gains and prevent scrub encroachment or growth of undesirable species.

6.2 Monitoring should be undertaken at set intervals during a 30-year management period to assess if target conditions have been met. Assessments should be undertaken yearly within years 1 to 5 and on a 5 year interval following year 5. Assessment reports should be forwarded to the Local Authority to audit the success of the scheme and to determine if intervention is required.

6.4 **Creation of habitat**

6.4.1 *Urban trees (Moderate)*

6.4.1.1 The plans secure the integration of approximately 118 small sized native trees across the site. Trees will be native, and support berries/ flowers / fruits which will provide value to local fauna. Species proposed include alder (*Alnus glutinosa*), silver birch (*Betula pendula)*, hornbeam (*Carpinus betula)*, *Prunus avium,* rowan (*Sorbus aucuparia*) and lime (*Tilia cordata)*. The trees will achieve 'Moderate' condition through appropriate management practices.

6.4.2 *Other Neutral Grassland (Moderate)*

6.4.2.1 The creation of 0.41ha of meadow grassland in various areas across the site will see an increase in structural and species diversity within the sward provide benefits to the local area compared to the current dominance over the site of poor quality amenity grassland. The areas will be seeded with a neutral grassland meadow seed mixture such as Scotia Seeds Mavisbank Mix. 0.07ha of wetland grassland will also be created, associated with SUDs and Ponds. These areas will be sown with EM8 emorsgate mix. All areas will be managed as a meadow, with a single late summer cut with arisings removed as specified within the Landscape and Environmental Management and Maintenance Plan to achieve 'Moderate' condition.

6.4.2.2 It is anticipated that the quality of the grassland will reach moderate condition. While the areas of grassland will be accessible, due to the business rather than residential use of the site and significant provision of alternative areas of open space, recreational impacts and degradation are not expected to these habitats.

6.4.3 *Attenuation Features and Marginal Planting (Poor)*

6.4.3.1 At present, attenuation SUDs features are not expected to hold high levels of permanent water. Current proposals intend to plant basins, banks, and swales with marginal species such as marsh marigold (*Caltha palustris)*, flag iris (*Iris pseudacorus)* and tufted hair grass (*Deschampsia cespitosa)*. Management to prevent encroachment of scrub and trees into areas denoted as marginal and SUDs is outlined within the Landscape and Environmental Management and Maintenance plan, as this encroachment could cause degradation to grassland and wetland habitats.

6.4.4 *Native Species Rich Hedgerow (Moderate)*

6.4.4.1 Two sections of native species rich hedgerow are proposed around car parking areas to the south-west of the site. The hedgerow will comprise a minimum of five native species including field maple (*Acer campestre*), hawthorn (*Crataegus monogyna*), hazel (*Corylus avellana)*, blackthorn (*Prunus spinosa),* and dog rose (*Rosa canina)*.

6.4.4.2 The hedgerows should be stocked using feathered whips (circa 1.2, tall) and planted in a double staggered row, with no less than 5 per linear metre. Newly planted specimens will be protected from animal damage by individual tree guards. The tree guards must be made from biodegradable material to minimise pollution and risk to local biodiversity.

6.4.5 *Pond (Moderate)*

6.4.5.1 A wildlife pond of approximately 0.03ha is proposed at the west of the site. The pond is expected to hold water and fluctuate naturally. The banks of the pond should be planted with marginal species such as proposed associated with the SUDs areas (See 6.4.3), with additional stocking of submerged species such as white water lily (*Nymphaea alba)*, common water starwort (*Allitriche stagnalis)* and curled pondweed (*Potamogeton crispus)* to provide submerged habitat and water oxygenation. The pond should **not** be stocked with fish.

6.4.5.2 Management should seek to enable the pond to reach 'Moderate' condition through control of encroaching scrub, control of duckweed or filamentous algae to maintain less than 10% coverage, and reach and maintain 50% coverage of pond plants.

6.4.6 *Woodland Screening (Moderate)*

6.4.6.1 Significant areas of woodland screening (0.3ha) are proposed for the southern boundary of the site. Planting is to comprise 5 native species; field maple (*Acer campestre)*, hazel, beech (*Fagus sylvatica)*, pedunculate oak (*Quercus robur)* and yew (*Taxus baccata).* The woodland will be managed to reach a target 'Moderate' condition. An understorey mix comprising native shrub species and bulbs will improv structure and diversity.

6.4.6.2 Management prescriptions will include watering through establishment, weeding, formative pruning and replacement of failures. Considered thinning will be undertaken post 3 years to maintain structure and to create a varied age class with at least two age classes present.

6.4.7 *Modified Grassland*

6.4.7.1 Areas of modified amenity grassland (0.45ha) are proposed across the site. This should be sown with an appropriate amenity mix such as Germinal Low Maintenance A4. Some areas of this grassland will feature bulb planting. Grassland will be managed to achieve a 'Poor' condition and will be of a 'low' distinctiveness. This condition can be achieved with management to achieve avoidance of scattered scrub, physical damage, bare ground, bracken and invasive species.

6.4.8 *Introduced Scrub*

6.4.8.1 Several areas across the site will be planted with shrub mixes for amenity purposes dominated by non-native species.

6.5 **Enhancement of habitat**

6.5.1 *Retained Woodland*

6.5.1.1 Two areas of existing woodland will be retained within the proposals. The boundary semi-natural broadleaved woodland at the northern boundary is to be retained in its current form. An area of plantation broadleaved woodland at the north-western corner of the site (0.68ha) will be retained and enhanced. It is recommended that this is achieved by selective thinning followed by the

seeding of the ground with an Emorsgate EW1 Woodland Mix. Any fallen deadwood is to be left *in situ*, to further enhance the understory of the woodland and provide habitats for fauna. In order the achieve a 'Moderate' condition woodland, approximately 5% of the woodland should be freed as open space, free of encroaching scrub and canopy cover. These areas should be seeded with EW1 grassland mix (Wildseed.co.uk) which will thrive under the dappled shade of the canopy. Understorey bulb/plug planting should be incorporated into the scheme to increase the ground flora diversity. Species to include a mix of native bugle (*Ajuga reptans*), yellow archangel (*Lamium galeobdolon*), bluebell (*Hyacinthoides non-scripta*), primrose (*Primula vulgaris*) and snowdrop (*Galanthus nivalis*). These will be set in clusters of same species focused around recently regenerated areas where the canopy has been thinned. These measures should be targeted in order to ensure the woodland condition score rises to above 25 equating to moderate condition.

Appendix 1 – References

BAKER J, HOSKIN R, and BUTTERWORTH T, Biodiversity netgain. Good practice principles for development. A practical guide, CIRIA, CIEEM, IEMA

CIEEM (2017) Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.

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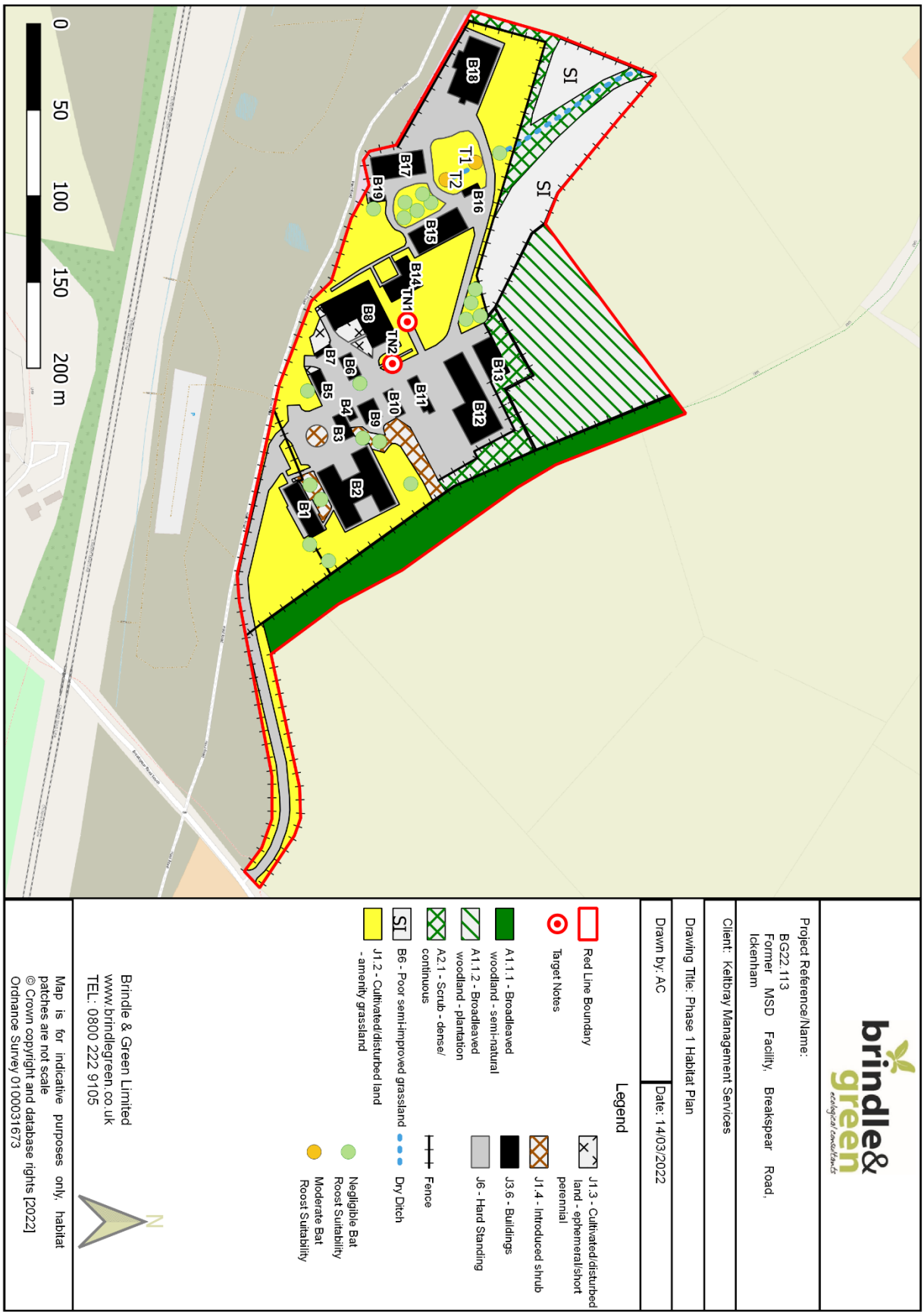
Appendix 2 – Baseline (Existing Habitats)



Appendix 3 – Proposed Plan

Appendix 4 – Proposed Habitats