

Biodiversity Impact Assessment

Boleyn Road, Rubery

Undertaken by



BM3 Architecture Limited

NB: All documents used for compilation of this report have been referenced where necessary. Quotations have been extracted to draw specific reference. Full sections of documents can be found at source.

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1 INTRODUCTION

BM3 Architecture was commissioned by Capita on behalf of the Birmingham Municipal Housing Trust (BMHT) to undertake a Biodiversity Impact Assessment (BIA) to support a planning application for development of the former playing field site at Boleyn Road, hereafter referred to as the 'Site' (Refer to Figure 1 Site Location Plan). This report has been prepared by Andre Gardner MCIEEM, a Full Member of the Chartered Institute of Ecology & Environmental Management at BM3 Architecture.

The assessment seeks to determine a measure of the biodiversity impact of the development using the DEFRA 3.0 Biodiversity Impact Calculation Tool and associated guidance (Natural England, 2021; Natural England, 2021). This report is intended to be read in conjunction with the submitted calculator and provides a summary of results, together with justification for various determinations, such as habitat definition, habitat distinctiveness, etc.

The site was revisited in September 2021 in order to carry out a detail vegetation and habitat survey and assessment, in accordance with the DEFRA 3.0 Biodiversity Impact Calculation Tool guidance documentation. The survey was carried out an appropriate time of year for botanical identification, i.e. between May and September of any given season.

2 BIODIVERSITY IMPACT ASSESSMENT

Information from the Preliminary Ecological Assessment (Bodnar, 2020) together with information obtained during a detail vegetation and botanical survey of Site habitats carried out by BM3 Architecture as well as details of the landscape design created by BM3 Architecture have been entered into the DEFRA 3.0 BIA Calculator Tool following associated guidance. This allows for the establishment of the changes in 'biodiversity units', with respect to 'habitat units' and 'hedgerow units'. No information is imputed in relation to 'river units' as no water courses are present on site.

2.1 Existing Site Habitats (Pre-development)

Refer to Figure 1 for a plan of proposed habitats on site.

2.1.1 Modified grassland

Semi-improved grassland comprises the majority of the site, in the area of a former playing field, totalling approximately 1.93ha. The PEA identifies the grassland as 'species-rich' and 'semi-improved'. The dominant grassland species are identified as Yorkshire fog (*Holcus lanatus*), Sweet vernal grass (*Anthoxanthum odoratum*), Red fescue (*Festuca rubra*), Timothy (*Phleum pratense*), common bent (*Agrostis capillaris*), False oatgrass (*Arrhenatherum elatius*), with cocksfoot (*Dactylis glomerata*) also common within the sward. Forbs identified were Meadow buttercup (*Ranunculus acris*), Creeping buttercup (*Ranunculus repens*), black knapweed (*Centaurea nigra*), Birdsfoot trefoil (*Lotus corniculatus*), common stitchwort (*Stellaria graminea*) and Dandelion (*Taraxacum officinale*).

A botanical assessment of the site was carried out to determine 'distinctiveness' of the grassland. A total of 6no. 1m² quadrat samples were taken showing that the grassland is correctly classified as 'low distinctiveness', with most samples recording 8no. or fewer species, and an average of average of 5.7 species per m². Table 1 below provides detailed results. The results suggest an area of overgrown amenity grassland that has slowly diversified somewhat, however not sufficiently to be of particular ecological significance.

Table 1 Results from the botanical survey to determine grassland distinctiveness

Species	Q1	Q2	Q3	Q4	Q5	Q6
<i>Agrostis capillaris</i>	d	d	d	d	a	a
<i>Holcus lanatus</i>	r	r	a	-	-	-
<i>Trifolium repens</i>	o	-	-	-	-	r
<i>Ranunculus repens</i>	a	f	f	-	f	f
<i>Phleum pratense</i>	r	o	-	-	o	r
<i>Anthoxanthum odoratum</i>	-	r	o	-	o	o
<i>Festuca rubra</i>	-	-	-	d	a	a
<i>Ranunculus acris</i>	-	-	-	r	r	-
<i>Centaurea nigra</i>	-	-	-	-	f	-
<i>Taraxacum officinale</i>	-	-	-	-	r	-
<i>Stellaria graminea</i>	-	-	-	-	r	-
<i>Deschampsia cespitosa</i>	-	-	-	-	-	a
Totals	5	5	4	3	9	7
DAFOR Scale: d=dominant; a=abundant, f=frequent, o=occasional, r=rare						

The conditions assessment results in a 'Fairly Poor' condition grassland. Table 2 provides details of the results.

Table 2 – Grassland 'Condition' and 'Distinctiveness' assessment results.

Quality Elements	Result and rationale
Distinctiveness	Low – Between 6-8 species per m ² . Average 5.7 species per m ² .
Condition	'Fairly Poor' - Passes 4 of 7 - Low distinctiveness; 5-10% less than 7cm; Scrub cover less than 20%; Damage less than 5%; Bracken less than 20%, No invasives.

A total of 0.15ha of this habitat type is planned for retention.

2.1.2 Mixed scrub

Much of the perimeter of the site along the Boleyn Road contains mixed native scrub, containing English oak, hawthorn, with smaller quantities of cherry, field maple, holly and elder. Stands of dominant bramble scrub are also present in places. The habitat scores 'Fairly Poor' in the condition assessment, passing three of the conditions assessment criteria. Table 3 provides details of the results.

Table 3 – Mixed scrub 'Condition' assessment results.

Quality Elements	Result and rationale
Condition	'Fairly Poor' – Passes 3 criteria of 5 – At 3no. woody species; scrub less than 20%, bracken less than 20%, no invasive species.

A total of 0.15ha of this habitat type will be retained.

2.1.3 Bramble scrub

Part of the site perimeter comprises continuous bramble scrub, or approximately 0.114ha. The condition of this habitat is 'Poor' and distinctiveness 'Medium', as automatically assigned by metric calculator. This consist of a single species habitat which could be improved through planting of mixed scrub.

A total of 0.022ha of this habitat is proposed for enhancement through clearance and planting of a species diverse mix of native shrubs.

2.1.4 Urban trees

The site contains several young to mature trees, totalling eight individual trees with stem diameter greater than 75mm diameter at breast height (DBH). Among the species are English oak, field maple and cherry. All trees are native origin and most are within areas of existing vegetation i.e. native scrub and semi-improved grassland. Collectively the trees receive a score of 'Moderate' under the condition assessment criteria. Table 4 provides details of the results.

Refer to the Pre-development Tree Survey BS 5837:2012 for further details of each individual trees.

Table 3 – Urban trees 'Condition' assessment results.

Quality Elements	Result and rationale
Condition	'Moderate' – Passes 3 out of 6 criteria – More than 70% of species are native, little evidence of anthropogenic impact on tree health; trees immediately adjacent to other vegetation.

2.2 Habitat Creation (Post-development)

Refer to Figure 2 for a plan of proposed habitats on site.

2.2.1 Vegetated garden

All front and rear gardens are included in this category and will comprise small areas of amenity grassland with ornamental shrub planting, where possible following recommendations made

within the Preliminary Ecological Assessment (Bodnar, 2020). Vegetated gardens represent approximately 0.577ha of the total site area. Target condition is automatically set to 'Poor'.

2.2.2 Other neutral grassland (Flowering lawns & Wildflower meadow)

All areas of species-rich grassland fall within this category, including flowering lawn and wildflower meadow. The proposals are for the creation of a total 0.0777ha, where area of flowering lawn will be managed as normal lawns and wildflower meadows following an ecologically sensitive maintenance regime. The target condition has been set as 'Moderate', owing to the nature of the mixes used.

2.2.3 Mixed scrub

Small area of native species mixed scrub will be created to establish a low maintenance yet valuable parcels of habitat – approximately 0.0036ha in total. Target conditions has been set to 'Moderate' as a reasonable target.

2.2.4 Introduced shrub

All front and rear gardens are included in the 'vegetated gardens' category. Only areas parcels of ornamental planting outside of private dwellings are included in this category, comprising small parcels within communal area of public realm totalling approximately 0.0012ha. Target condition is automatically set to 'Poor'.

2.2.5 Urban tree

A total of 76 native and non-native trees will be planted as part of the landscape scheme for the development, totalling an estimated 0.561ha of canopy cover. The planting scheme contains a approximately 65% are native or cultivar of native species. Target conditions has been set to 'Moderate' as a reasonable target.

2.2.6 Development land sealed surface

All new buildings and areas of hard surface are included in this category. This habitat category has no value in the metric calculator and scores '0' automatically. There are approximately 1.095ha of this category within the site.

2.3 Habitat Enhancement (Post-development)

2.3.1 Bramble scrub to Mixed scrub

A small area of continuous bramble scrub will be enhanced to mixed scrub by introduction of a mixed scrub planting. This area will total approximately 0.022ha and will deliver 0.16 habitat units. The area will be managed in the long-term following ecological management principles. Target condition is set to 'Moderate' as a reasonable target.

2.4 Off-site Habitat Enhancement

In order to compensate for loss of habitat on site, habitat enhancements are proposed to a site north-east of Frankley Hill Lane/New Street, situated approximately 150m east of the site. Refer to Figure 3 and 4 for a plan showing baseline habitats off-site and proposed habitat enhancement off-site, respectively.

2.4.1 Existing Off-site Habitats (Baseline) Before Development

The site comprises an area of council owned land supporting semi-natural grassland with significant scrub encroachment. The results of the assessment are summarised in Table 4. Results are based on a brief wall-over survey carried in September 2021.

Table 4 Off-site Habitats Baseline

Habitat Type	Area (Ha)	Distinctiveness	Condition	Habitat Units
Bramble scrub	0.829	Medium	Poor	3.65
Mixed scrub	2.487	Medium	Moderate	21.89
Other neutral grassland	0.917	Medium	Moderate	8.07
Modified grassland	0.299	Low	Moderate	1.32

2.4.2 Off-site Habitat Enhancement

An area of 0.829ha of continuous bramble scrub will be enhanced by clearing and resowing the cleared area with green hay from the semi-natural grassland found on site, resulting in no change in habitat distinctiveness but increasing condition from Poor to a target of 'Fairly Good'. This will deliver 7.22 habitat units. The area will be managed in the long-term following ecological management principles.

2.5 Biodiversity Impact Score

The results from the DEFRA Biodiversity Metric 3.0 calculates a gain of 0.75 habitat units, or a - 8.76% increase. Much of the gain has been achieved through the proposed enhancements off-site (Refer to Figure 4).

3 HEDGEROW IMPACT ASSESSMENT

3.1 Existing Hedgerow (Pre-development)

The site does not contain any existing hedgerows of any type.

3.2 New Hedgerows (Post-development)

A total of 0.281km of native species-rich hedgerow will be created, together with 0.716km of non-native ornamental hedge. These will deliver 2.36 and 0.69 hedgerow units, respectively. The native species hedgerow will be managed following ecological principles.

3.3 Hedgerow Biodiversity Impact Score

The results from the DEFRA Biodiversity Metric 3.0 calculates a gain of 3.05 hedgerow units, or a 100% increase. This can be attributed primarily to the loss of semi-improved grassland as a result of development.

4 SUMMARY & CONCLUSIONS

The results of the DEFRA Biodiversity Metric 3.0 calculator show that there will be a net gain of 0.75 habitat units and a gain of 3.05 hedgerow units as a result of the proposed development. This is equivalent to a net gain in habitat credits of 8.76% and a net gain in hedgerow credits of 100%.

5 REFERENCES

Bodnar, D. S. (2020). *Preliminary Ecological Assessment*.

Natural England. (2021). *Biodiversity Metric 3.0 - User Guide*.

Natural England. (2021). *The Biodiversity Metric 3.0 - Technical Supplement*.

6 Appendix 1 – FIGURES



- Site Boundary
- Existing Habitats
 - Bramble scrub
 - Mixed scrub
 - Modified grassland

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Figure 1 - Existing Habitats

Drawn: ARG Checked:

Job No: 71210

Scale: 1:1,000 Sheet Size: A3

Date: 17/09/2021

Drawing No: D950 Rev: -



Site Boundary

Proposed/Retained/Enhanced - Habitats

Introduced shrub

Mixed scrub - Enhanced

Mixed scrub - Proposed

Mixed scrub - Retained

Other neutral grassland - Proposed

Other neutral grassland - Retained

Vegetated garden

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Figure 2 - Proposed/Retained/Enhanced
Habitats

Drawn: ARG Checked:

Job No: 71210

Scale: 1:1,000 Sheet Size: A3

Date: 05/09/2021

Drawing No: D951 Rev: -

0 25 50 75 100 m

- Off-Site Boundary
- Existing Habitats - Off-site
- Bamle scrub
- Mixed scrub
- Modified grassland
- Other neutral grassland



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Figure 3 - Existing Habitats Off-sote

Drawn: ARG Checked:

Job No: 71210

Scale: 1:1,000 Sheet Size: A3

Date: 09/11/2021

Drawing No: D952 Rev: -

 Off-Site Boundary

Proposed Habitats - Off-site

 Mixed scrub - Retained

 Modified grassland

 Other netrual grassland - Enhancement

 Other neutral grassland - Retained



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Figure 4 - Proposed Habitats Off-site

Drawn: ARG Checked:

Job No: 71210

Scale: 1:1,000 Sheet Size: A3

Date: 09/11/2021

Drawing No: D953 Rev: -

