



Biodiversity Metric Report

Hunshelf BESS, Hunshelf

Reference: 80-863-R2-4

Date: January 2023



BIODIVERSITY METRIC REPORT

Hunshelf BESS
Hunshelf

Prepared for:
Harmony Energy

Report Ref: 80-863-R2-4
Date Issued: 25/01/2023

E3P

Taylor Road
Trafford Park
Urmston
Manchester
M41 7JQ

+ 44 (0) 161 707 9612
<https://e3p.co.uk/>

Registered in England
CRN: 08725262

QUALITY ASSURANCE

PROJECT NUMBER	80-863		
VERSION	Version 2	Version 3	Version 4
REMARKS	Updated landscape plans	Updated layout	Minor Amendment
DATE	December 2022	January 2023	January 2023
PREPARED BY	C. Barlow	C. Barlow	C. Barlow
QUALIFICATIONS	BSc (Hons) MSc MEnvSc CEnv MCIEEM, Associate Director	BSc (Hons) MSc MEnvSc CEnv MCIEEM, Associate Director	BSc (Hons) MSc MEnvSc CEnv MCIEEM, Associate Director
CHECKED BY	L. Thomas	L. Thomas	L. Thomas
QUALIFICATIONS	BSc (Hons), ACIEEM, Project Manager	BSc (Hons), ACIEEM, Project Manager	BSc (Hons), ACIEEM, Project Manager
AUTHORISED BY	C. Barlow	C. Barlow	C. Barlow
QUALIFICATIONS	BSc (Hons) MSc MEnvSc CEnv MCIEEM, Associate Director	BSc (Hons) MSc MEnvSc CEnv MCIEEM, Associate Director	BSc (Hons) MSc MEnvSc CEnv MCIEEM, Associate Director

EXECUTIVE SUMMARY

Site Address	Land off Tofts Lane, Hunshelf, Sheffield, S36 8WR
Co-ordinates	E 426248, N 400017
Site Area	Approximately 0.38 ha
Current Site Use and Adjacent Site Use	The site comprised a grazed grassland field bound by drystone walls to the north, west and south. The grazed grassland field continued off-site to the north-east, with an electrical substation to the south-east. Tofts Lane formed the northern site boundary, with agricultural fields surrounding the site to the north, west and south.
Proposed Development	Development proposals include the construction of a battery storage facility on-site. An area of off-site habitat compensation is proposed.
Results	<p>The biodiversity metric results show a loss of 0.16 habitat units as a result of proposals and off-site habitat enhancement.</p> <p>A 18.08% loss in habitat units will be incurred on-site as a result of development.</p>
Conclusions and Recommendations	<p>The proposals show a small loss of habitat units as a result of development.</p> <p>Additional species enhancements could be provided on-site, which could include hedgehog houses and hibernacula.</p>



Table of Contents

EXECUTIVE SUMMARY	2
1.INTRODUCTION	4
1.1. Background	4
1.2. Previous Surveys	4
1.3. Site Location	4
1.4. Objectives	5
2.METHODOLOGY	6
2.1. Biodiversity Metric	6
2.2. On-Site Habitat Baseline Data	6
2.3. Off-site Habitat Baseline Data	6
2.4. Post Development Habitat Enhancement	6
3.RESULTS	7
3.1. On-Site Baseline Condition Assessment Results	7
3.2. On-Site Habitat Creation	8
3.3. On-Site Habitat Retention	8
3.4. Off-Site Baseline	8
3.5. Strategic Significance	11
3.6. Biodiversity Unit Result	11
4.CONCLUSIONS AND RECOMMENDATIONS	13
5.REFERENCES.....	14
APPENDIX I PHASE 1 HABITAT – ON SITE BASELINE	15
APPENDIX II PHASE 1 HABITAT – OFF SITE BASELINE.....	16
APPENDIX III GENERAL ARRANGEMENT PLAN.....	17



1. INTRODUCTION

1.1. BACKGROUND

E3P has been instructed by Harmony Energy to undertake a Biodiversity Metric Calculation at Hunshelf BESS, Hunshelf hereafter referred to as “the site”.

This report has been prepared by Associate Director Celia Barlow, BSc (Hons) MSc MEnvSc CEnv, MCIEEM. Celia holds both Class 1 bat and great crested newt Natural England Licences, Field Identification Skills Certificate (FISC) Level 3 and has key experience with amphibians and reptiles. Celia has undertaken a number of online training courses with CIEEM including ‘Calculating and Using Biodiversity Units with Metric 2.0’ and ‘Biodiversity Net Gain Through Development’.

This report should be read in conjunction with ‘Biodiversity Metric 3.1 Auditing and Accounting for Biodiversity Calculation Tool – Hunshelf BESS, Hunshelf R2-2.xl’.

1.2. PREVIOUS SURVEYS

E3P completed a Preliminary Ecological Appraisal on-site in June 2021 (report reference: 80-863-R1). The survey included a Condition Assessment of the on-site habitats. During the survey, the site was found to comprise an improved grassland field bound by three drystone walls and a poor semi-improved grassland road verge to the north.

1.3. SITE LOCATION

The site is located in the agricultural area of Hunshelf, north-west of Sheffield. Tofts Lane defines the northern site boundary, with Dean Brook located approximately 100 m north-east of the site. A substation is located to the east of the site, with agricultural land surrounding the site on all other aspects. Please refer to Figure 1.1 for the approximate site location.



FIGURE 1.1 APPROXIMATE SITE LOCATION



1.4. OBJECTIVES

The objectives of the Biodiversity Metric are to:

- ✦ Identify percentage change in on-site habitats.
- ✦ Identify the number of habitat units lost/gained on-site; and
- ✦ Determine the need for a conservation offset payment or off-site habitat creation.

The findings of the calculation are detailed within this report, along with recommendations.



2. METHODOLOGY

2.1. BIODIVERSITY METRIC

Department for Environment, Food and Rural Affairs' (DEFRA) Biodiversity Metric 3.1 2022 version was used to undertake the metric calculation. The metric was undertaken following guidance as detailed within The Biodiversity Metric 3.1 User Guide (Natural England, 2022), the Biodiversity Metric 3.1 Technical Supplement (Natural England, 2022) and the Biodiversity Metric 3.1 – Summary of Changes (2022).

The metric was calculated by Associate Director, Celia Barlow, BSc (Hons) MSc MEnvSc CEnv MCIEEM. Celia has undertaken a number of online training courses with CIEEM including 'Calculating and Using Biodiversity Units with Metric 2.0' and 'Biodiversity Net Gain Through Development'. Celia has also completed Condition Assessments on a number of sites across the UK and holds a Level 3 Field Identification Skills Certificate (FISC).

2.2. ON-SITE HABITAT BASELINE DATA

The baseline data used to inform the condition assessment was collected on 07th June 2022 during the Preliminary Ecological Appraisal. The Biodiversity Metric 3.1 Habitat Condition Assessment Sheets with Instructions (Natural England 2022) was used to undertake the condition assessment.

On-site baseline habitats were measured off the Phase 1 Habitat Plan using QGIS. Please see Appendix I for the Phase 1 Habitat Plan.

Phase 1 habitat types were translated into UKHab habitat types using the metrics Technical Data Translation Tool.

2.3. OFF-SITE HABITAT BASELINE DATA

The off-site habitat baseline data used to inform the condition assessment was collected on 14th November 2022 during a Site Walkover.

Off-site baseline habitats were measured off the Phase 1 Habitat Plan using QGIS. Please see Appendix II for the Phase 1 Habitat Plan for the off-site area.

Phase 1 habitat types were translated into UKHab habitat types using the metrics Technical Data Translation Tool.

2.4. POST DEVELOPMENT HABITAT ENHANCEMENT

The General Arrangement Plan (Urban Green, 2022) details areas of habitat enhancement within the site. Please see Appendix III for the General Arrangement Plan. Areas of habitat enhancement have been detailed within the plan.








3. RESULTS

3.1. ON-SITE BASELINE CONDITION ASSESSMENT RESULTS

Table 3.1 shows the details of the habitat condition assessment used for input into the metric calculation tool.

TABLE 3.1 HABITAT BASELINE CONDITION ASSESSMENT RESULTS



HABITAT TYPE (PH1)	HABITAT TYPE (UKHAB)	AREA (HA)	CONDITION ASSESSMENT	DESCRIPTION
IMPROVED GRASSLAND	Grassland – Modified Grassland	0.3541	Poor	Does not pass essential criterion 1 as there are less than 6-8 species per m2.
POOR SEMI-IMPROVED GRASSLAND	Grassland – Modified Grassland	0.0282	Moderate	Passes 5 of 7 criteria: <ul style="list-style-type: none">  At least 6-8 species per m2.  Scrub accounts for less than 20% of the grassland.  Physical damage is less than 5%.  Cover of bare ground is between 1% and 10%.  Cover of bracken is less than 20%.



3.2. ON-SITE HABITAT CREATION

The site will largely comprise hardstanding, with the provision of a SUDs pond with associated marginal planting.

TABLE 3.2 ON-SITE HABITAT CREATION

HABITAT TYPE	HABITAT TYPE – ENHANCED TOO	AREA (HA)	TARGET CONDITION	DESCRIPTION/ TARGET TIME TO CONDITION
BUILDINGS AND HARDSTANDING	Urban – Developed Land, Sealed Surface	0.2997	N/A	N/A
SUDS POND	Urban – Sustainable Urban Drainage	0.0203	Moderate	<p>Target time to condition will be three years. The following criterion will be targeted:</p> <ul style="list-style-type: none">  There is a diverse range of flowering plant species.  Invasive non-native species are absent.

3.3. ON-SITE HABITAT RETENTION

The remaining areas of grassland within the site will be retained as detailed within Table 3.3

TABLE 3.3 ON-SITE HABITAT RETENTION

HABITAT TYPE	HABITAT TYPE – ENHANCED TOO	AREA (HA)
GRASSLAND – MODIFIED GRASSLAND	Grassland – Other Neutral Grassland	0.0445
GRASSLAND- MODIFIED GRASSLAND	Grassland – Other Neutral Grassland	0.0212

3.4. OFF-SITE BASELINE

An off-site area of habitat located approximately 100 m south-east of the site will be used to offset the loss incurred on-site and enhance the habitats present. The off-site compensation area falls within the same Local Planning Authority as the site.

Please refer to Figure 3.1 for the approximate site location. Plate 1 for a photo showing the habitat present within the off-site area and Appendix II for the Phase 1 Habitat plan of the off-site area.



FIGURE 3.1 APPROXIMATE LOCATION

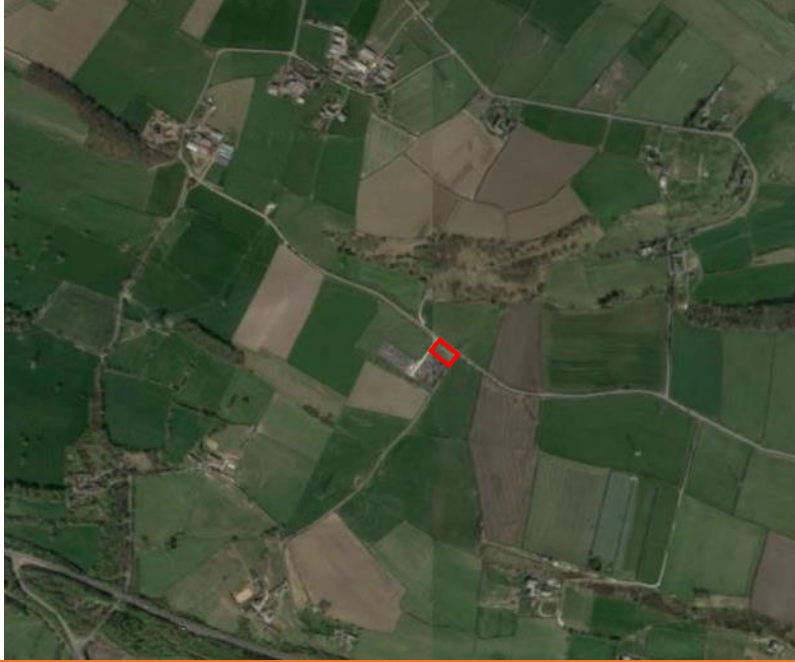


PLATE 1 SHOWS OFF-SITE HABITAT



TABLE 3.4 OFF-SITE BASELINE CONDITION ASSESSMENT RESULTS

HABITAT TYPE (PH1)	HABITAT TYPE (UKHAB)	AREA (HA)	CONDITION ASSESSMENT	DESCRIPTION
POOR SEMI-IMPROVED GRASSLAND	Grassland – Modified Grassland	0.1066	Poor	Passes 5 of 7 criteria: <ul style="list-style-type: none"> ✦ Sward height is varied. ✦ Scrub accounts for less than 20% of the grassland. ✦ Physical damage is less than 5%. ✦ Cover of bare ground is between 1% and 10%. ✦ Cover of bracken is less than 20%. ✦ Absence of invasive non-native species.
SCATTERED TREES	Urban – Urban Trees (x 2 small)	0.0081	Poor	Passes 2 of 6 criteria: <ul style="list-style-type: none"> ✦ Native species. ✦ Tree canopy is continuous – individual trees automatically pass.

It is proposed that the area of off-site land is enhanced to a wildflower grassland, with a seed mix suitable for the soil type present. The two trees present within the site will be retained.



TABLE 3.5 OFF-SITE HABITAT ENHANCEMENT

HABITAT TYPE	HABITAT TYPE – ENHANCED TOO	AREA (HA)	TARGET CONDITION	DESCRIPTION/ TARGET TIME TO CONDITION
GRASSLAND-MODIFIED GRASSLAND	Grassland – Other Neutral Grassland	0.1066	Poor to Moderate	<p>Target time to condition will be 10 years. The following criterion will be targeted:</p> <ul style="list-style-type: none"> ✳ The appearance and characteristic closely matches the grassland habitat type. ✳ Sward height is varied. ✳ Cover of bracken is less than 20% and cove of scrub is less than 5% ✳ There is an absence of invasive non-native species. ✳ There are greater than 9 species per m².

3.5. STRATEGIC SIGNIFICANCE

The strategic significance of the site and off-site compensation area was defined as ‘Location ecologically desirable but not in the local strategy’. The area is bordered by an electrical substation to the south, with Tofts Lane and Mucky Lane located to the north and east. Grazed grassland fields are located beyond this. The surrounding fields are anticipated to hold some value for local wildlife within the hedgerows and trees. Deans Brook is located approximately 100 m north at its closest point, this is anticipated to hold value for local wildlife as a commuting and foraging feature.

3.6. BIODIVERSITY UNIT RESULT

The headline results of the metric show a loss of 0.16 habitat units as a result of development and off-site compensation. Table 3.5 shows the final headline results detailed within the Biodiversity Metric.

TABLE 3.6 ON-SITE NET CHANGE RESULTS

HEADLINE	CATEGORY	RESULT
TOTAL NET % CHANGE	Habitat Units	-72.63%
	Hedgerow Units	N/A
	River Units	N/A



TABLE 3.7 OFF-SITE RESULTS

HEADLINE	CATEGORY	RESULT
OFF-SITE BASELINE	Habitat Units	0.27
	Hedgerow Units	N/A
	River Units	N/A
OFF-SITE POST INTERVENTION	Habitat Units	0.76
	Hedgerow Units	N/A
	River Units	N/A

TABLE 3.8 TOTAL NET CHANGE RESULTS

HEADLINE	CATEGORY	RESULT
TOTAL NET UNIT CHANGE	Habitat Units	-0.16
	Hedgerow Units	N/A
	River Units	N/A
TOTAL NET % CHANGE	Habitat Units	-18.08%
	Hedgerow Units	N/A
	River Units	N/A

The trading rules of the metric have not been satisfied within the metric as habitats lost have not been 'traded up'.



4. CONCLUSIONS AND RECOMMENDATIONS

The proposed scheme and associated landscape plans show a loss of 0.16 habitat units. A net loss of habitats will be incurred on-site as a result of development.

The Biodiversity Metric does not take account for additional species enhancements within the site, and to further increase the site's value for wildlife the following could be provided:

- ✦ Creation of hibernacula (following guidance set out within Froglife, 2001) for common amphibians.
- ✦ Hedgehog houses may be installed to enhance the site for hedgehogs.



5. REFERENCES

- ✳ E3P (2022). Preliminary Ecological Appraisal-Hunshelf BESS, Hunshelf (80-863-R1).
- ✳ National Planning Policy Framework (2021). Ministry of Housing, Communities and Local Government.
- ✳ Natural England Joint Publication JP039. (2022). Biodiversity Metric 3.1 -Summary of Changes.
- ✳ Natural England Joint Publication JP039. (2022). The Biodiversity Metric 3.1. Auditing and Accounting for Biodiversity, Technical Supplement.
- ✳ Natural England Joint Publication JP039. (2022). The Biodiversity Metric 3.1. Auditing and Accounting for Biodiversity, User Guide.
- ✳ Natural England. (2022). The Biodiversity Metric 3.1. Auditing and Accounting for Biodiversity, Condition Assessment Sheets.
- ✳ Urban Green (2020) Hunshelf. General Arrangement Plan (Drawing No. UG_1636_LAN_GA_DRW_01).

END OF REPORT



APPENDIX I
PHASE 1 HABITAT – ON
SITE BASELINE

Key:

— Site boundary

--- Walls

 Poor semi-improved grassland

 Improved grassland

 Field horsetail



Notes

Issue: 1	Revision: 2	Date: 28/11/2022	Drawn: CB2	Authorised: CB
Client: PWA Planning		Job No. 80-863	Date: 28/11/2022	
		Drawing No. 80-863-003	Scale:	
Job title: Hunshelf BESS			Drawing title: Phase 1 Habitat Plan	



Environmental Engineering Partnership Ltd
 Manchester Office
 Taylor Road, Urmston M41 7JQ
 Tel: 0161 707 9612
 Email: info@e3p.co.uk
 Website: www.e3p.co.uk

The client must not amend any drawings, designs or other intellectual property produced by E3P Ltd without permission in writing from E3P Ltd in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, E3P Ltd shall not be liable for any damage and/or losses occurring as a result of the amended drawings, designs or intellectual property.

APPENDIX II
PHASE 1 HABITAT – OFF
SITE BASELINE



Key:

- Site boundary
- SI SI Poor semi-improved grassland
- Scattered trees

Notes

Issue: 1	Revision: 1	Date: 14/11/2022	Drawn: CJ	Authorised: OM
Client: PWA Planning		Job No. 80-863	Date: 14/11/2022	
		Drawing No. 80-863-002	Scale: 1:600 @ A4	
Job title: Hunshelf BESS		Drawing title: Off-site Compensation Phase 1 Habitat Plan		



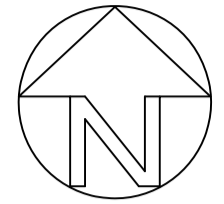
Environmental Engineering Partnership Ltd
 Manchester Office
 Taylor Road, Urmston M41 7JQ
 Tel: 0161 707 9612
 Email: info@e3p.co.uk
 Website: www.e3p.co.uk

The client must not amend any drawings, design or other intellectual property produced by E3P Ltd without permission in writing from E3P Ltd in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, E3P Ltd shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or intellectual property.

APPENDIX III
GENERAL ARRANGEMENT
PLAN

Do not scale this drawing (printed or electronic version).
 Contractors must check all dimensions from site.
 This drawing is copyright and is for use on this site only. This drawing should be read in conjunction with all relevant consultants drawings and specialist subcontractors / supply chain drawings and specifications.
 All works to be carried out in accordance with the latest British Standards / Codes of Practice unless specifically directed otherwise in the specification.
 Responsibility for the reproduction of this drawing in paper form, or issued in electronic format, lies with the recipient to check that all information has been replicated in full and to correct when compared to the original paper or electronic image.
 Graphical representations of equipment on this drawing have been co-ordinated, but are approximations only. Please refer to the specifications and / or details for actual sizes and / or specific contractor construction information.

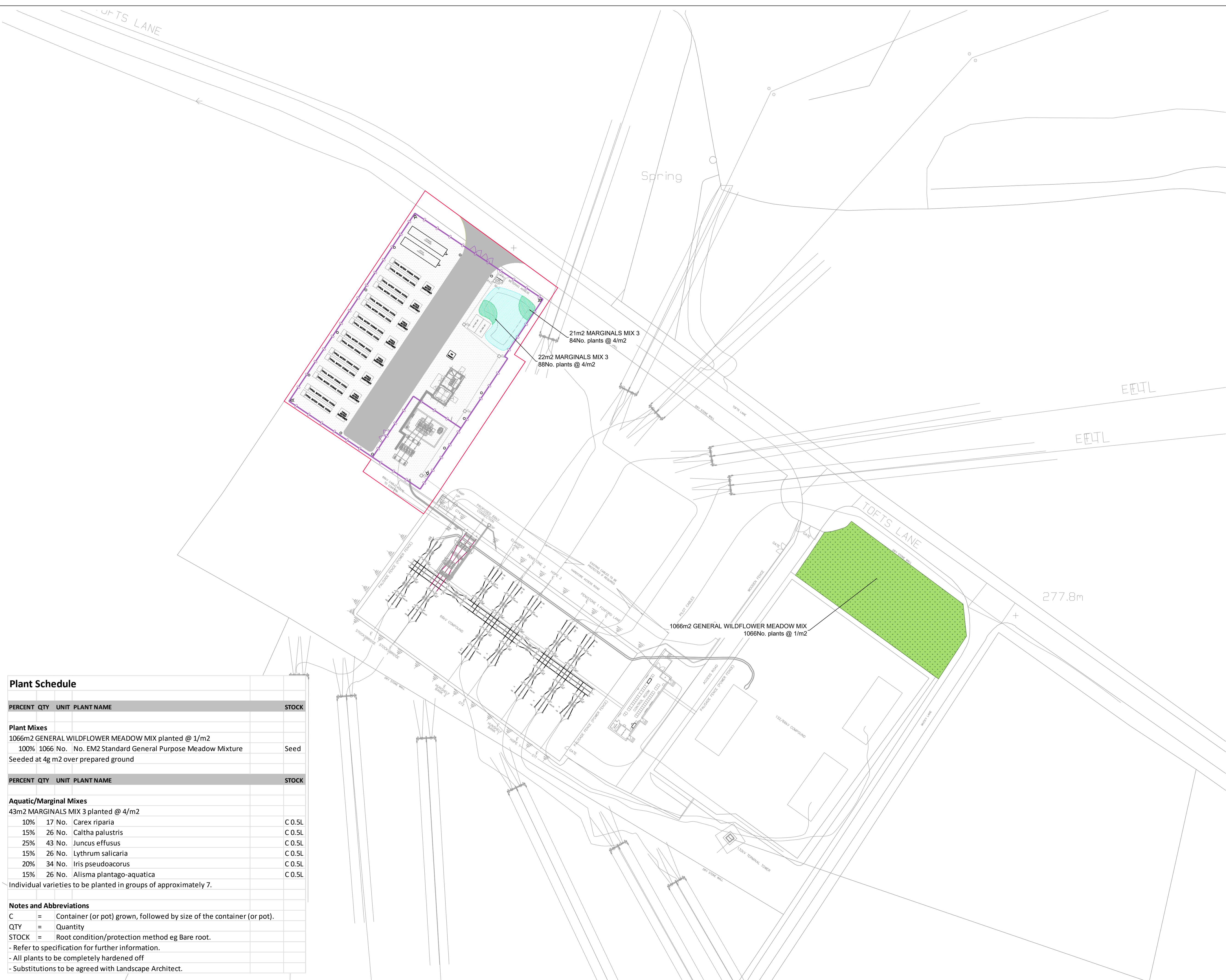
Notes:-



KEY

- Application Site Red Line Boundary
- Hard Landscape**
- Vehicular Asphalt Surface
To engineer specification & recommendation
- Permeable Gravel
To engineer specification & recommendation
- 2.4m High Security Fence
Green colour
- Soft Landscape**
- Enhanced to Wildflower Meadow
Seeded mix applied
- Marginals Mix
- SuDs Basin

Wildflower Meadow Seeding Notes:
 Landscape operations to comply with BS 4428:1999. Seed shall be UK grown, obtained from a reputable seed nursery and comply with Flora Local's Code of practice for collectors, growers and suppliers of native flora. Cultivate the area for seeding to create a fine, friable seedbed within the subsoil down to 100mm in depth (reworking stones greater than 20mm). Carry out two equal sowings at right angles to each other and diagonally to main axis. Broadcast manually or use seed drill. Sow at a rate of 4 g/m², rake level and roll. Ensure good seed to soil contact.
 First Year Maintenance: For Autumn seeding cut to 40-70mm in both March and May.
 Cut back to 40mm after flowering in August/September. Retain arrangements and form on site compost piles.
 Maintenance thereafter: Cut to 40-70mm in April and again in August/September after flowering. Retain arrangements and form on site compost piles. Delay cutting in cases of extreme drought.



Plant Schedule				
PERCENT	QTY	UNIT	PLANT NAME	STOCK
Plant Mixes				
1066m2 GENERAL WILDFLOWER MEADOW MIX planted @ 1/m2				
100%	1066 No.	No.	EM2 Standard General Purpose Meadow Mixture	Seed
Seeded at 4g m2 over prepared ground				
PERCENT	QTY	UNIT	PLANT NAME	STOCK
Aquatic/Marginal Mixes				
43m2 MARGINALS MIX 3 planted @ 4/m2				
10%	17 No.	No.	Carex riparia	C 0.5L
15%	26 No.	No.	Caltha palustris	C 0.5L
25%	43 No.	No.	Juncus effusus	C 0.5L
15%	26 No.	No.	Lythrum salicaria	C 0.5L
20%	34 No.	No.	Iris pseudoacorus	C 0.5L
15%	26 No.	No.	Alisma plantago-aquatica	C 0.5L
Individual varieties to be planted in groups of approximately 7.				
Notes and Abbreviations				
C	=	Container (or pot) grown, followed by size of the container (or pot).		
QTY	=	Quantity		
STOCK	=	Root condition/protection method eg Bare root.		
- Refer to specification for further information.				
- All plants to be completely hardened off				
- Substitutions to be agreed with Landscape Architect.				

REV.	DATE	DESCRIPTION	DRAWN	CHKD
P07	27/03/23	AMENDS UPDATED LAYOUT	ME	SA
P06	22/03/23	AMENDS UPDATED LAYOUT	ME	SA
P05	25/01/23	SEEDING NOTE ADDED	ME	SA
P04	09/01/23	AMENDS UPDATED LAYOUT	ME	SA
P03	08/12/22	AMENDS TO COMMENTS	ME	SA
P02	08/12/22	AMENDS TO COMMENTS	ME	SA
P01	24/11/22	FIRST ISSUE	TH	SA



A: Ground Floor, The Tower,
 Deva City Office Park, Trinity Way,
 Manchester M3 7BF
T: +44 (0) 161 312 3131
 weareurbangreen.co.uk

Client:	HARMONY ENERGY		
Project:	HUNSHELF, TOFTS LANE		
Title:	GENERAL ARRANGEMENT PLAN		
Issue:	PLANNING		
Drawn:	TH	Checked:	SA
Approved:	ME		
Project:	UG1636	Scale @ A1:	1:500
Date:	24/11/22		
Dwg No:	UG_1636_LAN_GA_DRW_01	Revision:	P07