

HOLMSTON FARM ENERGY STORAGE PROJECT

Biodiversity Net Gain Assessment
Prepared for: **RES UK and Ireland Limited**

SLR Ref: 405.064781.00001
Version No: 2
March 2023



Document Control	
Document Properties	
Organisation	SLR Consulting
Project Name	Holmston Farm Energy Storage Project
Report Title	Biodiversity Net Gain Assessment
Author(s)	Callum Taylor & Niamh Ni Nagy
Draft version/final	Final
Document reference	405.064781.00001_HolmstonFarm_Biodiversity Net Gain Assessment_Issue_030323

Date	Revision No	Prepared By	Reviewed By	Approved By	Status	Comments
02/03/2023	V1	Niamh Ni Nagy	Callum Taylor	Sara Toule	Draft	
03/03/20203	V2	Niamh Ni Nagy	Callum Taylor	Sara Toule	Final	

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CONTENTS

SUMMARY	1
1.0 INTRODUCTION	2
1.1 Site Description	2
1.2 Proposed Development	2
1.3 Purpose of this Report - Status of biodiversity gain plan	2
1.4 Other supporting documents	2
1.5 Relevant Policy and Legislation	3
2.0 METHODS	4
2.1 Overview	4
2.2 Stage 1: Baseline Data Collection	4
2.2.1 Site Area	4
2.2.2 UKHab Survey	4
2.2.3 Habitat Condition Assessment	5
2.2.4 Ground Water Dependant Terrestrial Ecosystems	6
2.3 Biodiversity Net Gain (BNG)	6
2.3.1 Overview	6
2.3.2 Approach to BNG	6
2.3.3 Principles of BNG	8
2.3.4 Reporting BNG	8
2.3.5 Methods	8
2.3.6 Key Assumptions	8
2.4 Limitations	8
2.5 Evidence of Technical Competence	8
3.0 RESULTS	10
3.1 Baseline (On-site Habitats)	10
3.1.1 Pre-development Habitats	10
3.1.2 Habitats Summary	10
Annex I Habitats	11
Scottish Biodiversity List Habitats	11
Groundwater Dependant Terrestrial Ecosystems	11
3.2 Baseline Habitat Value	11
3.3 Opportunities for Achieving Biodiversity Net Gain	13
3.3.1 Habitats for Retention	13

3.3.2	Habitats for Enhancement	13
3.3.3	Future Habitat Creation	13
3.3.1	Overall Change.....	13
4.0	CONCLUSION.....	15
	RELEVANT LEGISLATION AND PLANNING POLICY	16
4.1.1	National Planning Framework 4.....	16
4.1.2	Environment Act 2021.....	17
4.1.3	Nature Conservation (Scotland) Act 2004.....	17
4.1.4	Scottish Planning Policy (SPP) (2014)	17
4.1.5	Planning (Scotland) Act 2019.....	18
4.1.6	National Planning Policy Framework.....	18
4.1.7	Core Strategy – Local Development Framework	19

DOCUMENT REFERENCES

TABLES

Table 2-1 UKHab Metadata	5
Table 3-1 Baseline Habitats within the Proposed Development Site.....	10
Table 3-2 Summary of Baseline Habitat Value	12
Table 4-1 Summary of Proposed Biodiversity Gain.....	14

APPENDICES

Appendix 01: Relevant Legislations and Planning Policy	
Appendix 02: BNG Principles	
Appendix 03: Aerial Map	
Appendix 04: UKHab Baseline Map and Target Notes	
Appendix 05: Landscape Plan	
Appendix 06: UKHab Conversion of Landscape Plan	

Summary

SLR Consulting was commissioned by Renewable Energy Systems (RES) UK and Ireland Limited to undertake a Biodiversity Net Gain (BNG) assessment for Holmston Farm, located in Ayrshire, Scotland.

This involved a site visit to map habitats present using UKHab survey protocols and an assessment of the baseline condition of each habitat recorded. The condition data was then used to inform baseline biodiversity unit calculations, before highlighting opportunities for enhancing the condition of habitats present and/or creating new habitats for biodiversity.

The site visit revealed that the Site was predominately comprised of modified and neutral grassland, and mixed woodland (mainly conifer). The majority of the Site is dominated by seasonally wet ground with neutral grasslands dominated by rush species and woodland which has been stunted in its growth, mainly consisting of coniferous trees and wet tolerant broadleaf species such as willow. The development does not affect irreplaceable habitats, as the areas of Ancient Woodland are outside of Site boundaries.

The proposed project would deliver an increase in the habitat biodiversity value of the site of approximately 15.52%, no change in the linear habitat (hedgerow) biodiversity value and 100% increase in river habitats. This would satisfy the current requirement for biodiversity enhancement under the National Planning Policy Framework¹ and the future ambition set out within NPF 4².

The biodiversity gain opportunities identified within this report requires the development of landscape planting plans and site management plans to secure the predicted level of biodiversity delivery.

¹ Ministry of Housing, Communities & Local Government (2021). National Planning Policy Framework.

² National Planning Framework 4: Revised Draft, as adopted by Scottish Ministers as of 13 Feb 2023.

1.0 Introduction

SLR Consulting was commissioned by RES UK and Ireland Limited (the Client) to undertake an evaluation of biodiversity performance and to produce a Biodiversity Net Gain Assessment for the proposed Ayr energy storage facility, location as illustrated on **Appendix 03**. The proposed development of Ayr energy storage facility falls within the administration of South Ayrshire Council (SAC).

The purpose of this biodiversity net gain assessment is to inform the relevant planning authority of the biodiversity gain outcome.

SLR Consulting Limited (SLR) was previously commissioned by RES UK and Ireland Limited in June 2022 to undertake a Preliminary Ecological Appraisal (PEA)³ of proposed Ayr energy storage facility (OS grid reference NS 36215 21305), herein referred to as the 'Site'. SLR Consulting was then commissioned in September 2022 by the Client to undertake an evaluation of the biodiversity performance and to produce a Biodiversity Net Gain Assessment Report for the proposed development Holmston Farm Energy Storage Project illustrated in **Appendix 05**.

1.1 Site Description

The Site is located on land at Holmston Farm approximately 2.5km west of the centre of Ayr, west of Scotland. The Site consists of a small active commercial coniferous plantation with an understory of modified grassland and neutral grasslands, as well as lines of trees, hedgerows and a small area of road leading from the A77.

The Site is 150m South of the River Ayr to the north with woodland immediately adjacent to the north, arable farmland to the east, the A70 to the south, and the A77 to the west.

1.2 Proposed Development

The proposed development involves the installation of an energy storage facility, the siting of battery enclosures, power conversion units and transformers, a substation, hardstanding, fencing, vehicular access, grid connection and ancillary works.

1.3 Purpose of this Report - Status of biodiversity gain plan

This report is intended to provide the South Ayrshire Council with sufficient information on the biodiversity performance of the proposed development to inform consideration of the planning application and specifically alignment of the application with the relevant planning policy.

1.4 Other supporting documents

This report is supported by a number of other documents or figures, including:

- Current Habitat Baseline Mapping;
- Landscape Plan;
- Summary outputs or results from use of Natural England's Biodiversity Metric 3.1⁴; and
- SLR Consulting Holmston Farm Energy Storage Facility – Preliminary Ecological Appraisal³.

³ SLR Consulting: Holmston Farm Energy Storage Facility System – Preliminary Ecological Appraisal

⁴ Natural England (2022). [The Biodiversity Metric 3.1 - JP039 \(naturalengland.org.uk\)](https://www.naturalengland.org.uk/Information-and-data/Biodiversity/Biodiversity-Metric-3-1)

1.5 Relevant Policy and Legislation

While Scotland does not set out that the Biodiversity Net Gain metric must be used to evidence net gain, there are relevant requirements within the relevant policy and legislation (**see Appendix 01**) which set out the requirements for developers to aim to achieve a 10% net gain of biodiversity enhancements. The Biodiversity Net Gain Metric 3.1 provides a quantitative method of presenting the biodiversity assessment of a development site, taking into consideration the baseline and post-construction habitat management.

2.0 Methods

2.1 Overview

There were five sequential work stages:

- 1) Baseline data collection (habitat type and condition assessment);
- 2) Baseline data quality assurance;
- 3) Mapping of future scenario predictions at a single 30-year time interval;
- 4) BNG Metric 3.1 calculations and quality assurance check; and
- 5) Output reporting.

Each work stage was completed and 'signed off' by a suitably qualified ecologist prior to moving to the next stage to ensure data quality and accuracy was maintained. The following sections sets out the methods and approach for each stage.

2.2 Stage 1: Baseline Data Collection

2.2.1 Site Area

The Site included all land within the red-line site boundary (**Appendix 03**), provided by the Client as geospatial data. The initial UKHab survey undertaken for the purposes of the Preliminary Ecological Appraisal was undertaken with a larger area considered. The assessment has been mapped in full within the baseline map (**Appendix 04**) but the assessment here in this report only considers those habitats within the Red Line Boundary.

2.2.2 UKHab Survey

UKHab is a comprehensive habitat classification system that is used for rapidly recording and classifying terrestrial, freshwater, and coastal habitats across the UK. The system enables habitats to be mapped using a hierarchical 'Primary Habitat' system (capturing ecosystems, broad habitats, priority habitats and Annex 1 habitats) and non-hierarchical Secondary Codes. The system has been designed to build on existing habitat mapping techniques and enable integration with European Union and other UK classification systems, including Phase 1 Habitat Survey, NVC, and European Union Nature Information Systems (EUNIS).

The UKHab survey was carried out by Senior Ecologist Callum Taylor (MSc, QualCIEEM) on 11 July 2022. The weather during the survey was mild (20°C) with periods of sunshine and light rain.

The survey was carried out in accordance with the method described in the UK Habitat Classification User Manual⁵. The survey identified habitats of conservation concern, protected or notable plant species and invasive/non-native species. As required by the UKHab mapping system, the metadata table is shown below (Table 2-1).

⁵ Butcher B., Carey P., Edmonds R., Norton L and Treweek J. (2020) The UK Habitat Classification User Manual Version 1.1.

Table 2-1
UKHab Metadata

Item	Data
Scope and purpose of survey	Baseline habitat survey to inform Biodiversity Net Gain assessment.
Area surveyed	Area surveyed shown on Drawing 01.
UKHab edition used	Edition 1 (2020) and UK Habitat Classification - Professional Edition ⁶ .
Level of UKHab hierarchy used	Up to Level 5 where possible.
List of secondary codes used	10 – Scattered scrub 11 – Scattered trees 15 – Rushes dominant 16 – Tall herb 47 – Native 49 – Veteran trees 56- Young trees – Planted 69 – Fence 76- Recent Management 80- Unmanaged 90- Commercial Building 110- Retail 111-Road 119- Seasonally Wet 147 Fallen Dead Wood Abundant 161 – Tall or tussocky sward
Additional attributes recorded	Target Notes (see Appendix 04).
Year of survey	2022
Organisation and individual undertaking survey	SLR Consulting Ltd, Callum Taylor Senior Ecologist.
References for existing data sets that have been used	None

2.2.3 Habitat Condition Assessment

Habitat condition assessment is as a means of measuring variation in the quality of areas of the same habitat type across defined areas of land. This process considers a habitats key physical characteristics and ability to support typical flora and fauna.

The Habitat Condition Assessment was carried out in conjunction with the UKHab survey, through which the quality of habitats were measured using standardised habitat condition assessment criteria⁷. During this process,

⁶ <https://ukhab.org/ukhab-documentation/>

⁷Standardised habitat condition assessment sheets are provided within the Biodiversity Metric 3.1 publication webpage at <http://publications.naturalengland.org.uk/publication/6049804846366720>

habitat parcels were assessed against condition criteria outlined within relevant condition assessment proforma, whereby a 'pass' or 'fail', (or, depending on the habitat being assessed, a value between 1 and 3) was assigned for each criteria. The scores were summed and compared to overall score thresholds for the habitat group being assessed, before reaching a final condition classification result:

- Good (Score = 3, at or close to the perceived optimum for that habitat);
- Moderate (Score = 2); and
- Poor (Score = 1).

The baseline condition results obtained were then used to calculate a biodiversity value for the Site, as described in Section 2.3.

2.2.4 Ground Water Dependant Terrestrial Ecosystems

Groundwater Dependant Terrestrial Ecosystems (GWTDEs) are wetland habitats that derive their water supply primarily from groundwater as opposed to being rain or surface water fed, often supporting diverse, botanically rich ground-flora communities⁸. Habitat communities recorded during the survey were assessed against Scotland and Northern Ireland Forum for Environmental Research (SNIFFER) and Scottish Environmental Protection Agency (SEPA) guidelines^{9,10} for identifying potential GWTDEs.

2.3 Biodiversity Net Gain (BNG)

2.3.1 Overview

Biodiversity Net Gain (BNG) is defined as a *“a specific, measurable outcome of project activities that deliver demonstrable and quantifiable benefits to biodiversity compared to the baseline situation. In order to achieve Biodiversity Net Gain, a project must be able to demonstrate that it has followed all 10 of the Principles of Biodiversity Net Gain”*¹¹.

2.3.2 Approach to BNG

Biodiversity Net Gain is the outcome of activities planned to enhance biodiversity in a specific place, once they have occurred. This report assesses a potential future scenario, but neither biodiversity net gain, nor biodiversity losses are achieved until an update survey, carried out with equivalent scientific rigour and following the same approach as the initial baseline surveys, concludes that the habitat conditions have changed compared to the original baseline.

Because of the complexities associated with measuring biodiversity in a meaningful way, habitats are typically used as a proxy. In England, a single habitat-based metric, Biodiversity Metric 3.1¹² has been developed to ensure a consistency of approach for development-related projects, i.e., those projects where a grant of planning permission is required under the Town and Country Planning Act 1990 and nationally strategic infrastructure projects under The Planning Act 2008.

⁸ Confederation of Forest Industries (2018). *Practice guide for forest managers to assess and protect Groundwater Dependent Terrestrial Ecosystems when preparing woodland creation proposals*. Available at: <https://www.confor.org.uk/media/246950/practice-guide-on-ground-water-dependent-terrestrial-ecosystems.pdf> [accessed October 2022].

⁹ SNIFFER (2009) WFD95: A Functional Wetland Typology for Scotland - Field Survey Manual. Version 1. ISBN: 978-1-906934-22-4

¹⁰ SEPA (2017). *Land-use planning system SEPA guidance note 31: Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems*. LUPG-GU31 Version 3. SEPA, Edinburgh.

¹¹ Based on the definition published in the British Standard BS8683:2021 Process for designing and implementing Biodiversity Net Gain – Specification. The British Standards Institution 2021 and CIEEM (2021). Biodiversity Net Gain Report and Audit Templates Chartered Institute of Ecology and Environmental Management, Winchester, UK.

¹² The Biodiversity Metric 3.1 (April 2022) JP039 [The Biodiversity Metric 3.1 - JP039 \(naturalengland.org.uk\)](https://www.naturalengland.org.uk/Information-and-Resources/Tools-and-Resources/Biodiversity-Metric-3.1)

Metric 3.1 uses habitat types based on a subset of the habitat types defined in the comprehensive, unified UK-wide habitat classification system known as the UK Habitat Classification. However, Metric 3.1 only uses 63 Primary habitat types identified in UKHab, from a total of 213 possible primary habitat types. It also uses only a very small minority of the 309 total UKHab Secondary Codes. The result is that it is often necessary to select the nearest equivalent to the habitat type actually present to make Metric 3.1 work.

Natural England advise that Biodiversity Metric 3.1 *“can be used or specified by any development project, consenting body or landowner that needs to calculate biodiversity losses and gains for terrestrial and/or intertidal habitats. It will be this metric that underpins the Environment Bill’s provisions for mandatory biodiversity net gain in England...”*. It has become the standardised way of describing biodiversity change in England, noting that there are a limited number of local exceptions to its use. The biodiversity evaluation of the predicted future scenarios of this Site has been conducted using Biodiversity Metric 3.1. The basic principle of Metric 3.1 can be described as:

PRE intervention biodiversity units - POST intervention biodiversity units = Predicted BNG Outcome at Design

The BNG Metric uses a comparison of habitats as a proxy for biodiversity and describes these habitats using standard units referred to as biodiversity units (BUs). There are 3 distinct types of BUs and these are not of equivalence or interchangeable, they are:

- Habitat BUs – which describe areas of habitat based on measurement in hectares;
- Linear BUs – which describe hedgerows and lines of trees measured in kilometres; and
- Riparian BUs – which described rivers and streams measured again in kilometres.

Similarly, it has been assumed that linear features such as hedges and treelines will be retained in similar condition to baseline and so no change in the Linear BU value for linear features is expected. Provision of more detailed management plans for these linear features would allow for more accurate assessment.

The overall calculation of the change in biodiversity resulting from a project or development is derived by subtracting pre-project or ‘baseline’ biodiversity unit valuation of an area of land from the number of post-project units.

The results are influenced by:

- Habitat area/length;
- Distinctiveness (an indication of conservation value of a particular habitat type);
- Condition – an indication of quality; and
- Multipliers or risk factors – that take account of the contribution to local priorities, the difficulty of habitat creation/management, the time it takes to deliver and variation in the location of habitat delivery.

The baseline calculation undertaken within Metric 3.1 can be described as:

Size of Habitat Parcel x Distinctiveness x Condition x Strategic Significance = Baseline Biodiversity Units

The Post intervention Calculation undertaken within Metric 3.1 can be described as:

Size of Habitat Parcel x Distinctiveness x Condition x Strategic Significance x Time to Target Condition (+/- habitat creation in advance or delay) x Difficulty x Spatial Risk = Post-intervention Biodiversity Units

Metric 3.1 also relies on a number of Principals and Rules that are set out briefly in **Appendix 02** and more fully in the User Guide and Technical Supplement supporting the use of Metric 3.1.

2.3.3 Principles of BNG

In order to achieve BNG, it is widely accepted that over-arching principles should be attained prior to claims of BNG being made. Principles that set out the parameters of BNG were first published in relation to Biodiversity Offsetting by the Business and Biodiversity Offsets Programme¹³. These principles establish a framework for designing and implementing biodiversity offsets and verifying their success. In 2016, UK-focussed Principles for BNG were published¹⁴, which remain highly relevant to projects seeking to achieve BNG.

2.3.4 Reporting BNG

CIEEM has published a series of three report templates that set out how to report BNG activities for projects¹⁵. The structure of this report has been informed by these templates.

2.3.5 Methods

In supporting the assessment of biodiversity changes SLR have made reference to:

- Biodiversity Metric 3.1 - Calculation Tool;
- Biodiversity Metric 3.1 - User Guide; and
- Biodiversity Metric 3.1 - Technical Supplement.

Baseline data, and habitat creation, retention and enhancement data taken from the site management plans were loaded into the calculation tool.

2.3.6 Key Assumptions

In addition to the assumptions set out above, we have assumed that:

- The Site will be cleared of vegetation prior to replanting in accordance to the landscape plan.
- The MG5 and MG8 grassland used will be influenced by environmental factors and management methods. Therefore, post construction it is assumed that the habitat will most likely resemble g3c other neutral grassland with areas of dominant rush where waterlogging is common.
- The attenuation pond will not retain water permanently and therefore is considered to be more likely inhabited with more wet tolerant species.

2.4 Limitations

Biodiversity Net Gain Assessment using the Metric does not provide any additional assessment for the use of artificial refugia. However, these can provide substantial opportunities and resource for protected and notable species. They have therefore been discussed from a qualitative perspective in this report.

The landscape plan has been used to identify the likely habitats that will be created post construction. Without comprehensive detail of a management plan appropriate assumptions have been made to predict the habitats likely to be achieved. This includes the assessment of condition for these habitats.

2.5 Evidence of Technical Competence

Callum Taylor, MSc, BSc, QCIEEM: Callum is a Senior Ecologist based in Newcastle. He joined SLR in January 2022. Callum has been working in Ecology since 2018 working mainly in England on a varied range of projects. He has

¹³ BBOP (2012) [BBOP Principles - Forest Trends \(forest-trends.org\)](https://www.forest-trends.org/)

¹⁴ CIEEM-CIRIA-IEMA (2016) <https://cieem.net/resource/biodiversity-net-gain-good-practice-principles-for-development-a-practical-guide/>

¹⁵ [Biodiversity Net Gain Report and Audit Templates | CIEEM](#)

gained a broad range of ecological and commercial knowledge. Callum has undertaken a varied range of ecological surveys including most protected species and habitat surveys and has gained project management experience on a range of projects including onshore wind farms, power projects, small and medium housing projects, advanced licensing projects and mixed-use developments.

3.0 Results

3.1 Baseline (On-site Habitats)

3.1.1 Pre-development Habitats

Full description of the baseline habitats within the Site are provided within the Preliminary Ecological Appraisal **Appendix 04**. This habitat survey was undertaken in accordance with UKHab habitat methodology and using the associated classification system. The walkover survey was undertaken in June 2022, and a summary of the habitats present within the red line boundary is given in Table 3-1.

Table 3-1
Baseline Habitats within the Proposed Development Site

Habitat Type	UKHab Code	Distinctiveness	Area (ha)	Condition
Other neutral grassland	g3c	Medium	0.001	Moderate
Holcus-Juncus Neutral Grassland	g3c8	Medium	1.158	Moderate
Modified Grassland	g4	Low	0.503	Poor
Developed land; sealed surface	u1b	Very Low	0.037	N/A – Other
Other woodland; mixed	w2c	Medium	0.432	Poor

3.1.2 Habitats Summary

The habitat communities recorded during the field survey can be compared with several classification systems to assess their nature conservation interest and potential groundwater dependency. These classifications include:

- Annex I habitats listed under Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive);

- Priority habitats detailed within the Scottish Biodiversity List¹⁶ (SBL);
- Priority habitats listed within relevant Local Biodiversity Action Plans¹⁷; and
- Potentially groundwater dependant terrestrial ecosystems (GWDTEs) as defined by the Scottish Environmental Protection Agency¹⁸.

Annex I Habitats

No Annex 1 habitats were recorded on Site.

Scottish Biodiversity List Habitats

The Scottish Biodiversity List (SBL) is a list of animals, plants and habitats which the Scottish Ministers consider to be of principal importance for biodiversity conservation in Scotland. The purpose of the list is to identify species and habitats which are the highest priority for conservation in Scotland, of which are termed 'priority habitats'.

Habitat communities identified that correspond with SBL priority habitats are presented in **Appendix 04** and can be summarised as follows:

- Lowland mixed deciduous woodland; and
- Hedgerows.

Groundwater Dependant Terrestrial Ecosystems

While there were grassland habitats with rush dominated species present, there are no confirmed GWDTEs recorded on site.

3.2 Baseline Habitat Value

The total area of the Site is approximately 2.13 ha with an additional 0.5ha of off-site habitat intended for woodland creation. This includes areas of cropland, grassland habitat woodland and forest habitat, and developed land. The baseline also contains linear habitat, including native hedgerows and lines of trees. A summary of the current baseline biodiversity value to 1 decimal place is given in Table 3-2.

¹⁶ The Scottish Biodiversity List is a list of animals, plants and habitats which the Scottish Ministers consider to be of principal importance for biodiversity conservation in Scotland. The list is available at: <https://www.nature.scot/doc/scottish-biodiversity-list>

¹⁷ East Ayrshire Council, 2001. *Ayrshire Local Biodiversity Action Plan*. <https://archive.south-ayrshire.gov.uk/sustainable-development/lbap.aspx>

¹⁸ SEPA (2017). *Land-use planning system SEPA guidance note 31: Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems*. LUPG-GU31 Version 3. SEPA, Edinburgh.

Table 3-2
Summary of Baseline Habitat Value

BIODIVERSITY UNIT TYPE	AREA/ LENGTH	BASELINE UNITS		TOTAL UNITS
		On-site (dev. site)	Off-site (private or market provided)	
Area habitat	2.13	11.13	1.00	12.13
Linear habitat – Hedgerows/lines of trees	404.17	3718.33	0	3718.33
River Habitat – Ditches	0	0	0	0

3.3 Opportunities for Achieving Biodiversity Net Gain

3.3.1 Habitats for Retention

Habitats which are intended to be retained within the Site boundary include the hedgerow, linear woodlands, grasslands to the west near the A77 road and sealed surface adjacent to the A77 road.

3.3.2 Habitats for Enhancement

The grassland habitats to be enhanced would be within the main area of site, west of the shrub and tree planting area and along the borders of the access road, 1.661 ha will be enhanced from moderate to good neutral grassland. This provides an additional 7.38 biodiversity units.

3.3.3 Future Habitat Creation

The habitats which are intended to be created have been identified by converting the landscape plan into UKHab format. The habitats chosen are the most probable outcomes from the data of the landscape plan, further detail on management has not been provided at this stage which could influence the resulting habitats. However, the habitats chosen are considered to be accurate predictions at this stage and consist of the following habitats:

- 0.854ha of Urban habitat - unsealed surface, buildings and built features associated with the infrastructure required for the energy storage and access track. Urban habitat such as this provides no additional biodiversity units.
- 0.198ha of Grassland - other neutral grassland associated with the MG5 and MG8 seed mix. It is predicted that priority habitats usually associated with MG5 and MG8 would not be met but instead the result would be a good quality grassland with a dominance of rush in the wetter areas. Supporting an enhancement of 1.66 biodiversity units.
- 0.275ha of Scrubby Woodland- the scrub and tree planting would comprise of broadleaf trees as listed in the landscape plan. Supporting an enhancement of 2.12 biodiversity units.
- 585.91m of Ditches- drainage ditches will be created on site and are assumed at this point to be for drainage purposes only, with no permanence of water. Supporting an enhancement of 2261.64 river units.

Offsetting

To the north west of the site boundary, close to the access road and adjacent to the A77 road, 0.5ha of woodland creation is planned on previously Christmas tree plantation north east of Site (see **Appendix 06**). Providing an additional 2.7 biodiversity units.

3.3.1 Overall Change

The proposed parameter plan will increase the biodiversity units of the habitat area by 15.52% while hedgerow length will be unchanged and river length will be of 100%. While the creation of ditches satisfies the current requirement for biodiversity enhancement under the National Planning Policy Framework¹⁹ and the future ambition set out within the Environment Act, the overall net loss of habitat units and hedgerow units would not. There remain opportunities to improve against this level of performance which will be progressed during detailed design. An overall summary of the proposed biodiversity gain is given in Table 3-3.

The development does not affect irreplaceable habitats as the areas of ancient woodland adjacent to the Site boundary are retained.

¹⁹ Ministry of Housing, Communities & Local Government (2021). National Planning Policy Framework.

Table 3-3
Summary of Proposed Biodiversity Gain

BIODIVERSITY TYPE	UNIT	BASELINE UNITS		POST-INTERVENTION UNITS		TOTAL NET UNIT CHANGE	% NET GAIN
		On-site (dev. site)	Off-site (private or market provided)	On-site (dev. site)	Off-site (private or market provided)		
Area habitat		11.13	1.00	6.71	2.7	1.73	15.52
Linear habitat – Hedgerows/lines of trees		3718.33	0	3718.33	0	0	0
Linear habitat – Rivers and streams		0	0	2261.64	0	2261.64	100

4.0 Conclusion

The assessment of the proposed development against the current baseline indicates that an increase in biodiversity performance of the Site of approximately 15.52% in habitat, 0% in hedgerow and 100% in river habitats can be achieved. This is subject to appropriate planting plans and management plans being developed to optimise the delivery of biodiversity performance on the Site and to realise its intended out-turn condition.

This is considered sufficient to satisfy the current requirement for biodiversity enhancement under the National Planning Policy Framework²⁰ and the future ambition set out within NPF 4²¹.

As indicated in the landscape plan, the project will also include artificial refugia. These are not able to be quantified within the metric but have the potential to contribute significantly to the overall net gain of the proposed development. The planned artificial refugia include 11 bat boxes, 4 bird boxes and 3 insect hotels, the placements of which are identified in the landscape plan and selected to utilise the already mature and beneficial habitats bordering Site. It should be noted that the placements within the landscape plan are indicative, prior to the erection of artificial refugia the locations would be selected based on the requirements of the refugia. There will also be the placement of log piles along the bordering woodland habitats to the Site. Any additional log piles will offer shelter to protected species such as herpetofauna species and invertebrates, and therefore, provide feeding resources to protected species such as birds, bats and mammals.

As above, artificial refugia cannot be assessed in the metric however they will provide key resources to protected and notable species. While the bat and bird boxes will provide sources of permanent residence, the insect hotels, alongside the improvement of the quality of grassland, may increase the diversity and quantity of insects which may inhabit the Site, including potentially protected species. This may in turn provide feeding resource to a wide range of protected and notable species. It could therefore be concluded that the net gain will be achieved in excess of the acceptable level from the proposed habitats of Site and with additional refugia opportunities.

²⁰ Ministry of Housing, Communities & Local Government (2021). National Planning Policy Framework.

²¹ National Planning Framework 4: Revised Draft, as adopted by Scottish Ministers as of 13 Feb 2023.

APPENDIX 01

Relevant Legislation and Planning Policy

4.1.1 National Planning Framework 4

The National Planning Framework 4 (NPF4)²² sets out guidance for local planning authorities in Scotland on how to apply planning policies when drawing up plans and making decisions about planning applications. In order to comply with the biodiversity provisions of the recently adopted NPF4, development proposals should demonstrate that they contribute to the enhancement of biodiversity. Of particular relevance to this project, Policy 3 of the NPF4 states that:

“a) Development proposals will contribute to the enhancement of biodiversity, including where relevant, restoring degraded habitats and building and strengthening nature networks and the connections between them. Proposals should also integrate nature-based solutions, where possible;”

“c) Proposals for local development will include appropriate measures to conserve, restore and enhance biodiversity, in accordance with national and local guidance. Measures should be proportionate to the nature and scale of development.; and”

“d) Any potential adverse impacts, including cumulative impacts, of development proposals on biodiversity, nature networks and the natural environment will be minimised through careful planning and design. This will take into account the need to reverse biodiversity loss, safeguard the ecosystem services that the natural environment provides, and build resilience by enhancing nature networks and maximising the potential for restoration.”

²² National Planning Framework 4: Revised Draft, as adopted by Scottish Ministers as of 13 Feb 2023.

4.1.2 Environment Act 2021

The Environment Act (the Act) gained Royal Assent on 9 November 2021 and is now enshrined within UK law. The Act provides a mechanism for implementing Government's ambitions for 'improving the natural environment', which were previously set out in publications including the 25 Year Environment Plan. The Act provides recognition of the 25 Year Environment Plan as the first "environmental improvement plan" which will, once the relevant regulations come into force, be used as the basis for understanding the steps Government intends to take to improve the natural environment.

The Act implements the ambitions for an improved natural environment, by setting out statutory or legal requirements which mandate action, under the oversight of the newly formed Office for Environmental Protection (OEP). The focus of the Act is the "...provision [of] targets, plans and policies for improving the natural environment..." and its requirements are structured around a number of broad themes.

Of relevance to this report Part 6 of the Act sets out provisions for 'Biodiversity gain as condition of planning permission'. Once enacted, amendments to the Town and Country Planning Act 1990 will in future (expected to be by November 2023) require planning applications to be supported with additional information on the change in the biodiversity value attributed to a project, with biodiversity metric calculations, and with biodiversity gain plans. Planning authorities will be required to consider these submissions in the exercise of their planning functions, to ensure that they are secured, approved and where relevant registered.

While the Environment Act is now part of UK law, its required actions do not commence either directly or immediately, for all parties. There remain a range of preparatory actions that need to be undertaken before further implementation of the wider legal framework (secondary legislation or regulations) will take place.

4.1.3 Nature Conservation (Scotland) Act 2004

Part 1 of the Act refers addresses the preservation of Scottish biodiversity by making it the "*duty of every public body and office-holder, in exercising any functions, to further the conservation of biodiversity, so far as is consistent with the proper exercise of those functions*". The Scottish Ministers must also designate one or more strategies for the conservation of biodiversity in the form of the Scottish Biodiversity Strategy. Lastly, public bodies must publish biodiversity reports every three years on the actions taken in pursuance of the conservation of biodiversity.

4.1.4 Scottish Planning Policy (SPP) (2014)

A summary of national planning policy relevant to (onshore) biodiversity Scotland is provided below. Note that the summary provided here is intended for general guidance only and the original policy documents should be consulted for definitive information.

Paragraph 194 states that:

"The planning system should:

- *Facilitate positive change while maintaining and enhancing distinctive landscape character;*
- *Conserve and enhance protected sites and species, taking account of the need to maintain healthy ecosystems and work with the natural processes which provide important services to communities;*
- *Seek to protect soils from damage such as erosion or compaction;*
- *Protect and enhance ancient semi-natural woodland as an important and irreplaceable resource, together with other native or long-established woods, hedgerows and individual trees with high nature conservation or landscape value;*

- *Seek benefits for biodiversity from new development where possible, including the restoration of degraded habitats and the avoidance of further fragmentation or isolation of habitats; and*
- *Support opportunities for enjoying and learning about the natural environment.*

4.1.5 Planning (Scotland) Act 2019

Section 2 of the Planning (Scotland) Act (the National Planning Framework [NPF]) sets out guidance for local planning authorities and decision makers on how to apply planning policies when drawing up plans and making decisions about planning applications. More specifically it states that one of the outcomes of the NPF is to secure positive effects for biodiversity.

4.1.6 National Planning Policy Framework

A summary of national planning policy relevant to (onshore) biodiversity in England and Wales is provided below. Note that the summary provided here is intended for general guidance only and the original policy documents should be consulted for definitive information.

For local planning policy relevant to biodiversity the relevant local plans should be consulted.

National - The National Planning Policy Framework (NPPF), 2021

The National Planning Policy Framework (NPPF)²³ sets out guidance for local planning authorities and decision makers on how to apply planning policies when drawing up plans and making decisions about planning applications. Along with Government Circular 06/05²⁴, the broad policy objectives in relation to the protection of biodiversity and geological conservation in England through the planning system are set out. Specific policies relating to habitats and biodiversity are set out in paragraphs 174 and 179-182 of the NPPF.

Paragraph 174 states that:

“Planning policies and decisions should contribute to and enhance the natural and local environment by:

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); ...

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; ...”

Paragraph 180 of the NPPF states that:

“When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; ...

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design,

²³ Ministry of Housing, Communities & Local Government (2021). National Planning Policy Framework.

²⁴ Office of the Deputy Prime Minister (2005). ODPM Circular 06/2005. Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System.

especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.”

4.1.7 Core Strategy – Local Development Framework

South Ayrshire Local Development Plan (LDP)²⁵

The LDP states that any development must protect or improve biodiversity.

It also states that, in line with the objectives of the Water Framework Directive (2000/60/EC), South Ayrshire Council will only allow developments that will not harm the biodiversity of the water environment.

²⁵ South Ayrshire Council (2014). Local Development Plan.

APPENDIX 02

BNG Principles

BNG Principle	Relevance
Principle 1. Apply the Mitigation Hierarchy	Avoid adverse impacts to habitats of high conservation value, species of conservation concern and other features of biodiversity importance when planning and implementing forest operations. For example, identify and avoid adverse effects on GWDTE's. Map and maintain forest linkages where red squirrel are present in woodlands and follow good practice techniques when felling to avoid harm.
Principle 2. Avoid losing biodiversity that cannot be offset by gains elsewhere	Avoid impacts to irreplaceable habitats by ensuring that all irreplaceable habitats are known and mapped across the portfolio.
Principle 3. Be inclusive and equitable	Consider other stakeholders and local residents when planning operations.
Principle 4. Address risks	Ensure that planting plans take climate change and invasive species into account.
Principle 5. Make a measurable Net Gain contribution	Use a relevant metric to design and predict a BNG outcome and ensure methods are repeatable.
Principle 6. Achieve the best outcomes for biodiversity	Design forest planting to provide meaningful economic outcomes.
Principle 7. Be additional	Ensure that all measures claiming BNG are relevant and additional to actions that would have occurred anyway.
Principle 8. Create a Net Gain legacy	Ensure that the long-term sustainability of actions and interventions is secure. Manage woodland for the long-term.
Principle 9. Optimise sustainability	Deliver BNG, but also optimise wider environmental benefits, e.g. by measuring impacts on natural capital and ecosystem services.
Principle 10. Be transparent	Communicate approaches clearly to all stakeholders in a timely fashion.

APPENDIX 03

Aerial Map

236100

236200

236300

236400

236500

621400

621300

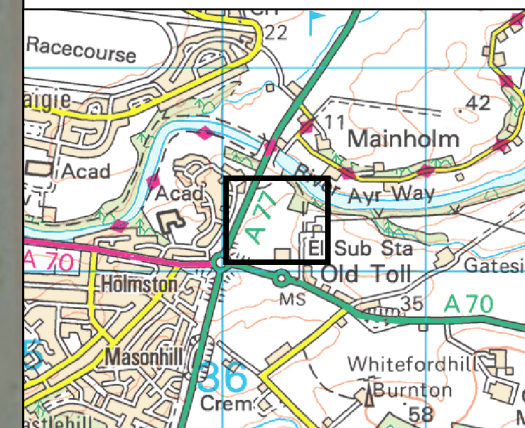
621200

405.064781.00001.0005.0 Aerial Map



LEGEND

 Site Boundary



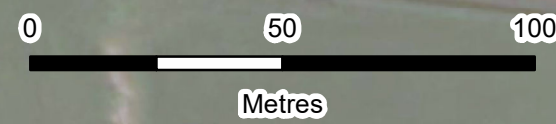
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AYR ENERGY STORAGE PROJECT

PEA REPORT

AERIAL MAP

FIGURE 4



Scale 1:1,500 @ A3 Date FEBRUARY 2023

APPENDIX 04

UKHab Baseline Survey Results

236200

236400

621400

621200

405.064781.00001.0002.1 Baseline BNG

- Secondary Codes**
- 10 - Scattered Scrub
 - 11 - Scattered Trees
 - 16 - Tall Herb
 - 47 - Native
 - 49 - Veteran Trees
 - 56 - Young Trees - Planted
 - 69 - Fence
 - 76 - Recent Management
 - 80 - Unmanaged
 - 111 - Road
 - 119 - Seasonally Wet
 - 161 - Tall or Tussocky Sward

u1b
111
h2
w1g6
47, 49, 69
h2

g4
11, 56,
76,
161

w2c

g3c8
10, 16, 80,
119, 161

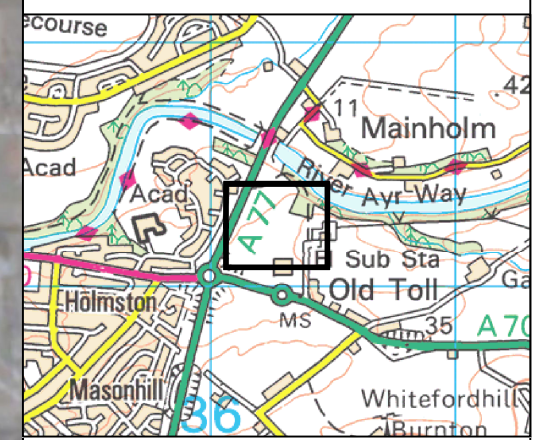
g4

w1g6

u1b
10,
11, 89



- LEGEND**
- Site Boundary
 - UK Habitat Classification**
 - h2 - Hedgerow
 - g3c8 - Holcus-Juncus neutral grassland
 - g4 - Modified Grassland
 - u1b - Developed Land, Sealed Surface
 - w1g6 - Line of Trees
 - w2c - other coniferous woodland



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PEA REPORT

BASELINE UK HABITAT SURVEY

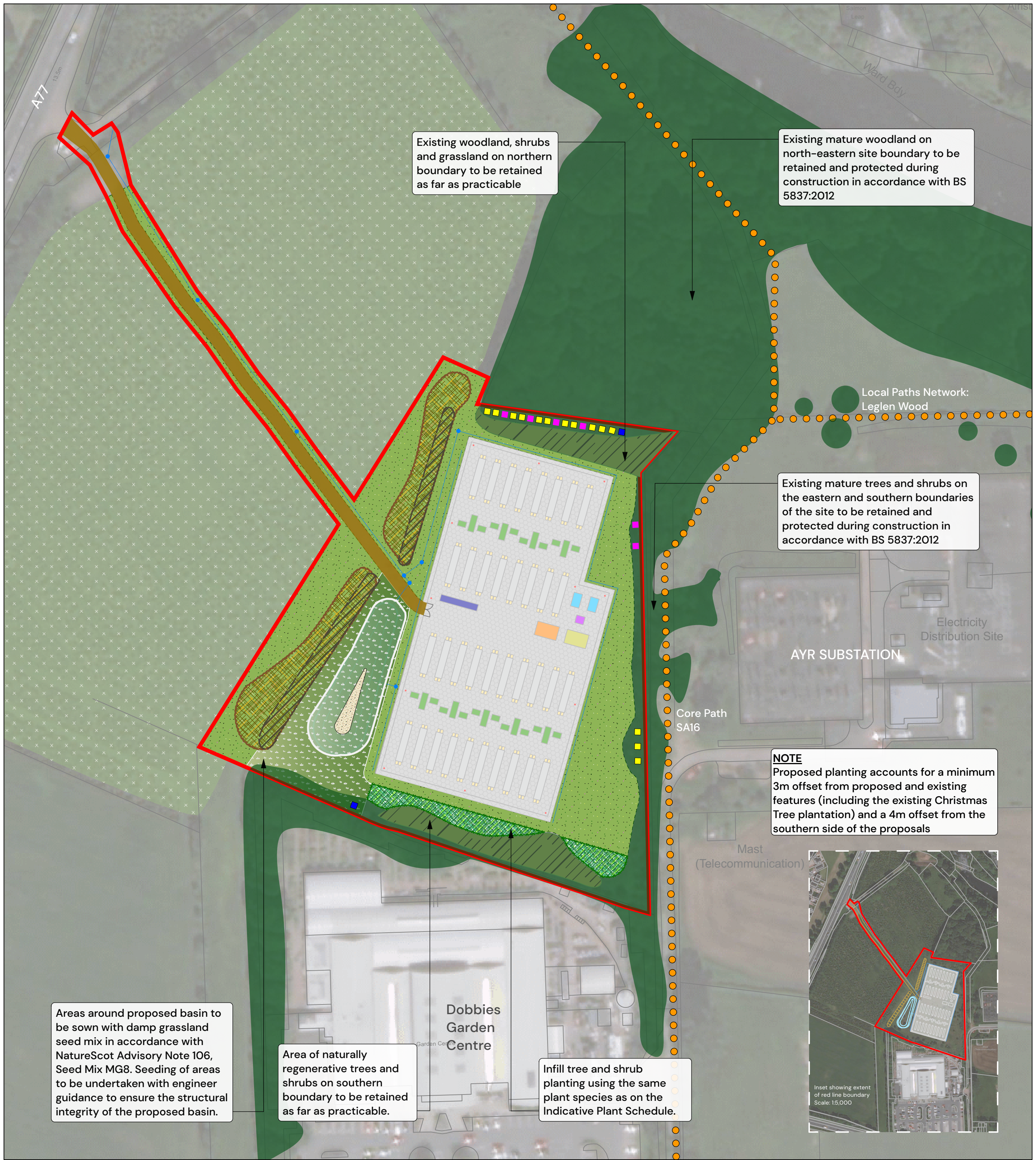
FIGURE 1

Scale 1:1,250 @ A3 Date FEBRUARY 2023



APPENDIX 05

Landscape Plan



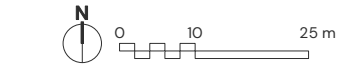
- KEY**
EXISTING
- Site boundary
 - Trees & vegetation
 - Christmas Tree plantation
 - Public rights of way
 - Woodland, shrubs and grassland

- Linear drainage channel
- Bund
- Indicative bird box location
- Indicative bat box location
- Indicative insect box location

- PROPOSED
- Meadow grass: Wild Flower Meadow MG5 or similar & approved
 - Meadow grass: Damp Grasslands Mixture MG8 or similar & approved
 - Native tree & shrub planting blocks
 - Infill native tree & shrub planting
 - Gravel to base of attenuation basin

Indicative Plant Schedule: native tree & shrub planting

SPECIES	SIZE	%
Betula pendula	60-80cm ht, B, 1+1, transplant, seed-raised	25
Quercus robur	60-80cm ht, B, 1+1, transplant, seed-raised	15
Betula pubescens	60-80cm ht, B, 1+1, transplant, seed-raised	10
Sorbus aucuparia	60-80cm ht, B, 1+1, transplant, seed-raised	10
Sorbus aria	60-80cm ht, B, 1+1, transplant, seed-raised	10
Salix cinerea	60-80cm ht, B, 1+1, transplant, seed-raised	10
Prunus avium	60-80cm ht, B, 1+1, transplant, seed-raised	10
Prunus padus	60-80cm ht, B, 1+1, transplant, seed-raised	5
Prunus spinosa	60-80cm ht, B, 1+1, transplant, seed-raised; branches, 2 breaks	5



Rev	Date	By	Note
F	02.03.23	VR	Minor amends
E	23.02.23	VR	Minor amends
D	22.02.23	VR	New layout
C	07.02.23	TR	Minor amends
B	19.01.23	NW	Minor amends
A	07.12.22	TR	Minor amends

**Landscape Masterplan
Holmston Farm**

Client: RES
 DRWG No: P22-1768_EN_001 REV: F
 Drawn by: VR Approved by: GC
 Date: 17/11/2022
 Scale: 1:1,000 @ A2

PEGASUS GROUP

APPENDIX 06

UKHab Conversion of Landscape Plan

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France

GRENOBLE

T: +33 (0)6 23 37 14 14

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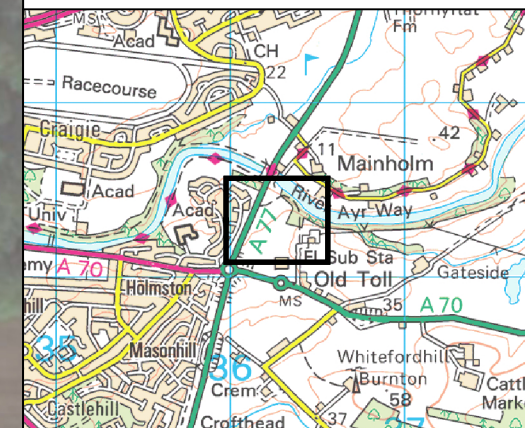
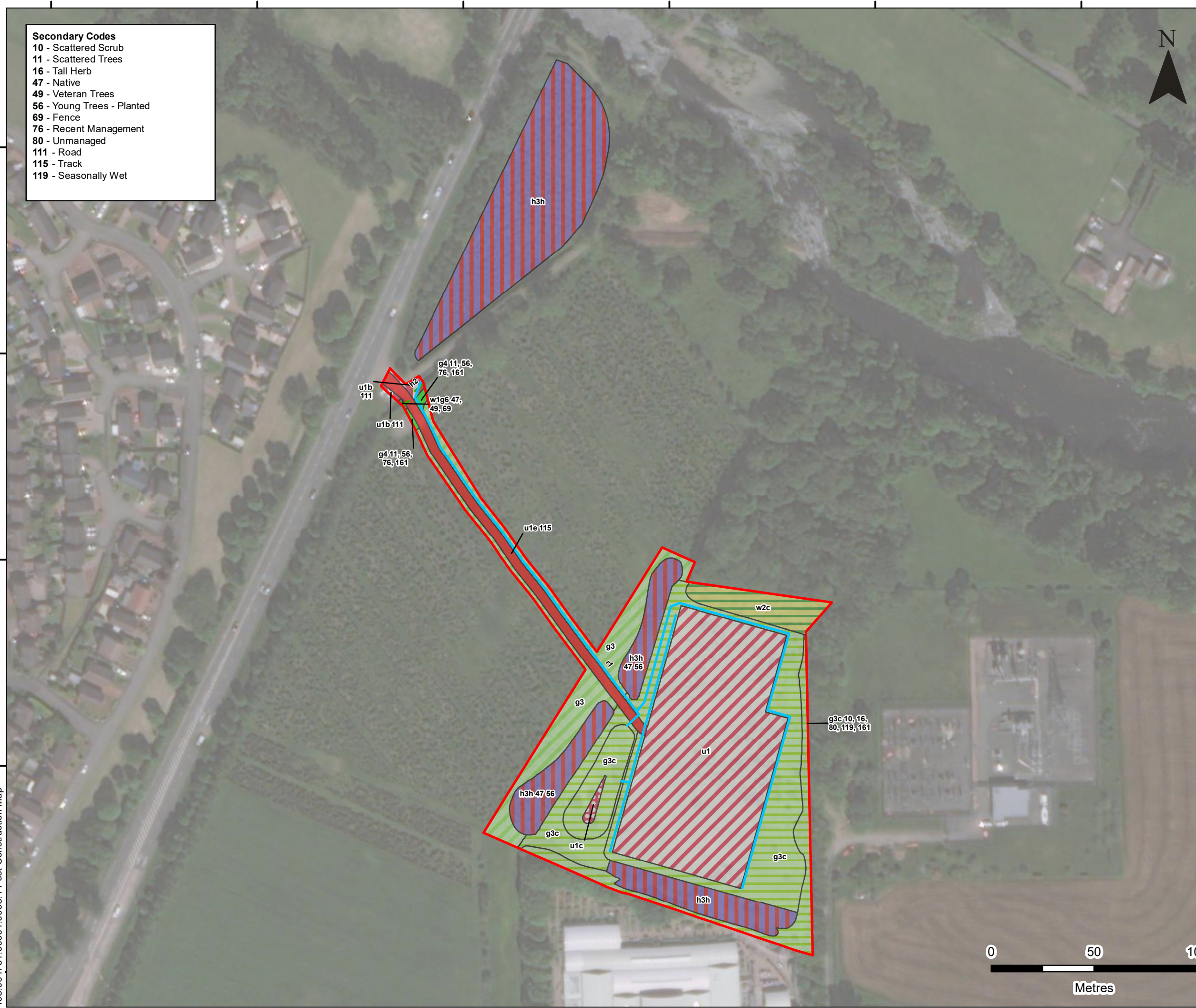
405.064781.00001.0003.1 Post-Construction Map

- Secondary Codes**
- 10 - Scattered Scrub
 - 11 - Scattered Trees
 - 16 - Tall Herb
 - 47 - Native
 - 49 - Veteran Trees
 - 56 - Young Trees - Planted
 - 69 - Fence
 - 76 - Recent Management
 - 80 - Unmanaged
 - 111 - Road
 - 115 - Track
 - 119 - Seasonally Wet



LEGEND

- Site Boundary
- UK Habitat Survey**
- h2 - Hedgerow
- r1 - Standing Open Water and Canals
- g3 - Neutral Grassland
- g3c - Other Neutral Grassland
- g4 - Modified Grassland
- h3h - Mixed Scrub
- u1 - Built-up Areas and Gardens
- u1b - Developed Land, Sealed Surface
- u1c - Artificial Unvegetated Unsealed Surface
- u1e - Built Linear Features
- w1g6 - Line of Trees
- w2c - other coniferous woodland



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PEA REPORT
POST DEVELOPMENT
UK HABITAT SURVEY
FIGURE 3

Scale 1:1,750 @ A3 Date MARCH 2023

