Biodiversity Net Gain Assessment

Development of National Significance Pre-Application Consultation

Alaw Môn Solar Farm

Land west of the B5112, 415m south of Llyn Alaw, 500m east of Llantrisant and 1.5km west of Llannerch-y-Medd, Anglesey

October 2023

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Issuing office

3 Brunel House | Hathersage Park | Station Approach | Hathersage | Derbyshire | S32 1DP
T: 01433 651869 | W: www.bsg-ecology.com | E: info@bsg-ecology.com

Client	Wylfa Green Limited
Project	Alaw Mon Solar Farm, Biodiversity Gain Assessment
Version	FINAL
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	Name	**Position**	**Date**
Originated	Sidney Vickress	Ecologist	09 October 2023
Reviewed	Guy Miller	Principal Ecologist	16 October 2023
Approved for issue to client	Guy Miller	Principal Ecologist	19 October 2023
Issued to client	Guy Miller	Principal Ecologist	19 October 2023

Disclaimer

Contents

1 Introduction

1.1 This report relates to the Alaw Môn Solar Farm on Anglesey, Wales ("the Development"). It is located to the west of the B5112, to the south of Llyn Alaw, 500m to the east of the small hamlet of Llantrisant, and 1.5km to the west of the village of Llannerch-y-medd.

1.2 It sets out the results of a Biodiversity Gain Assessment for the Development, completed by BSG Ecology.

1.3 Biodiversity Gain Assessment derives from the Environment Act 2021, which from January 2024 will require new development (in England) to achieve a 10% net gain in biodiversity; it requires the use of a metric to calculate gains and losses.

1.4 The mandatory requirement for using a metric and delivering a specific percentage gain does not apply in Wales. This Biodiversity Gain Assessment is therefore intended to be illustrative only, and should be read in conjunction with the Environmental Statement (ES) for the Development (specifically Chapter 8 Biodiversity and the landscape strategy).

1.5 The Environmental Statement (Chapter 8 Biodiversity) also considers the biodiversity policies that apply in Wales including The Environment (Wales) Act 2016 (Section 6 duty), Planning Policy Wales, and Natural Resources Wales (NRW) framework for evaluating ecosystem resilience based on five attributes and properties specified in the Environment (Wales) Act 2016 (DECCA: Diversity, Extent, Condition, Connectivity and Aspects of ecosystem resilience).

2 Methods

2.1 The assessment is made using the Biodiversity Metric 4.0 Calculation Tool (Defra, April 2023).

2.2 The calculation of the baseline biodiversity value of the Site is based on area (ha) coverage of habitats within the Site (and in kilometres for linear features i.e. hedgerows).

2.3 Habitats have been identified through survey work that was carried out by BSG Ecology. These are described in Alaw Môn Ecological Appraisal Report (BSG Ecology, October 2023).

2.4 Habitat parcel areas have been calculated using the habitat survey results plans in the Alaw Môn Ecological Appraisal Report (BSG Ecology, October 2023), the landscape strategy plan (32518 LN-LP-114 Rev C Landscape Strategy Plan Overall-A0) and GIS data provided by Stantec (the project landscape consultant).

2.5 Where necessary, UK Habitat Classification habitat categories have been converted to Biodiversity Metric habitat categories, taking into account guidance on the translation table provided in the Defra 4.0 User Guide (Natural England, March 2023). Habitat conditions were assigned using a combination of professional judgement and guidance set out in the habitat condition tables provided in the Technical Annex (the latest version of this guidance is Natural England, July 2023).

2.6 The pre-development baseline calculation uses existing habitat areas and condition scores. This is used to derive the biodiversity value of the Site, which is expressed in biodiversity units. The post-development calculation takes into account habitat loss and any habitat retention, enhancement and creation measures.

2.7 The post-development calculation is based on the following plan:

- Landscape Strategy Plan (32518 LN-LP-114 Rev C Landscape Strategy Plan Overall-A0).

Assumptions used in the calculation

2.8 Temporary impacts on certain habitats are not included within the metric calculation; it excludes habitats (modified grassland/improved pasture and species-poor semi-improved pasture) that will only be temporarily impacted by the installation of solar arrays (short-duration), and will continue to be managed as modified grassland during the operation phase.

2.9 Other habitats to be retained within the layout will be protected during the construction phase.

2.10 The only permanent habitat loss will occur in the substation area.

2.11 The minor watercourses on Site will be protected and are not considered within the metric calculation.

2.12 Post-development habitat conditions have been assigned based on realistic aspirations for habitat management within the Site.

2.13 Where new sections of hedgerows are greater than 100m in length, they are considered separately. Shorter sections that are used to fill existing gaps (of less than 100m) are assumed to form part of the existing hedgerow, and the condition assessment used is that of the existing hedgerow.

2.14 Cloddiau (vegetated earth and stone banks) form a traditional field boundary type on Anglesey. Since there is no UK Hab/DEFRA metric linear feature classification for cloddiau, these been classified as hedgerows within the metric.

2.15 The Development's grid connection will be to an existing substation at Wylfa. The grid connection will be provided by underground cabling located within the adopted highway on local roads and will not affect vegetated areas. It has not been included in the metric calculation.

3 Habitat Creation

3.1 The Development's solar farm panels will be situated within the existing fields (based on the existing field layout). Field boundaries, and existing habitat features (such as hedgerows, streams, ponds, woodland, scrub and marshy grassland) have been retained wherever possible and have been incorporated into the design.

3.2 Existing access points will be used to avoid the need to create new openings in hedgerows; there may be some minor widening to increase the width of any narrower gaps.

3.3 Buffer areas will be incorporated into the design of the Development to protect Nantanog SSSI, Cors-y-bol LWS and Tir Pori Traian LWS, to protect these sites and to provide space for habitat enhancement and management. The buffer for Nantanog SSSI will be 10m-wide. The buffer from Cors-y-bol and the perimeter fence will be at least 15m-wide.

3.4 A 50-m wide buffer will be incorporated between the fence and Pond 11 to provide an open area of grassland for birds around the pond, which will be grazed/mown on a regular rotation, to maintain short-sward, open habitat conditions suitable for grazing wildfowl. The nearest panels will be over 50m from the edge of the pond.

3.5 New habitat features will be incorporated into the design including native woodland planting, native scrub planting, meadow creation and improved grassland management for wildlife, the creation of areas of rough grassland, hedgerow enhancement (i.e. gapping up/creating a grass-margin/buffer); 14 new ponds will be also created. These are summarised in Table 1 below. Further detail is provided in Appendix 1, which sets out how the different features summarised below have been treated within the metric (including habitat type, condition and retention categories).

Table 1: Summary of new habitat features

Feature	Area /length	Notes
Native woodland planting	6.21ha	A range of locally appropriate native species will be used in the planting scheme.
Native scrub planting	1.69ha	A range of locally appropriate native species will be used in the planting scheme.
Meadow grassland (fields)	4.31ha	Grassland areas will be reseeded and managed using hay meadow-style management (mowing and removal of arisings in late July/August / aftermath grazing in autumn, using an appropriate seed mix, such as Emorsgate EM2 or equivalent). Specific landscape Area 3
	2.54ha	In addition, this habitat type includes Specific Landscape Area 3 – this is an additional 2.52 ha.
Grassland management (for wildlife) outside perimeter fence.	46.64ha	Existing grassland outside perimeter fence to be allowed to develop a taller sward, with some tussocks allowed to develop in the margins; cut no more than once annually.
	5.95ha	In addition, this habitat type includes Specific Landscape Area 1 (which includes some gorse clearance to maintain open habitat around Nantanog SSSI) – this is an additional 5.95ha.
New hedgerow, and existing hedgerow	4.304km	Locally appropriate native species will be used in the planting scheme.

enhancement (gapping up)		
New ponds	14 no. (0.23 ha)	14 new ponds will be created in clusters of 2-3 ponds (equating to 0.23ha of pond habitat). This will be located adjacent to areas of less frequently managed grassland and scrub. Hibernacula will be created nearby to provide additional habitat for reptiles and amphibians. Marginal / riparian planting around pond margins will include c. 0.16ha of additional habitat.
Other areas of retained habitat		
Grassland within proposed perimeter fence	181.51ha	This will be retained grassland between the panels – this is not new habitat. It will be managed by grazing or mowing, or a combination of both.
Specific Landscape Management Area 2	3.5ha	A 50-m wide buffer between the perimeter fence and Pond 11 to provide an open area of grassland which will be grazed/mown on a regular rotation, to maintain short-sward, open habitat conditions suitable for grazing wildfowl. This is not new habitat.
Specific Landscape Management Area 4	0.48ha	Scheduled Monument Buffer – Existing grassland to be maintained as a short sward, cut six times annually. This is not new habitat.

4 Biodiversity Metric Results

4.1 Baseline and post-development habitat condition and distinctiveness have been assessed using the Biodiversity Metric 4.0 User Guide (Natural England, March 2023). The full data can be viewed in the Metric excel spreadsheet, which is supplied separately.

4.2 The metric results are summarised in Table 2 below.

Table 2. Biodiversity Metric Results

On-site baseline	*Habitat units*	619.28
	Hedgerow units	58.20
	Watercourse units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	817.05
	Hedgerow units	82.37
	Watercourse units	0.00
On-site net change (units & percentage)	*Habitat units*	197.77
	Hedgerow units	24.17
	Watercourse units	0.00
FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	197.77
	Hedgerow units	24.17
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	31.94%
	Hedgerow units	41.53%
	Watercourse units	0.00%
Trading rules satisfied?	Yes ✓	

4.3 Post-development, there is a significant increase in habitat units: 197.77 habitat units are gained as result of the development. Overall, there is a percentage change of 31.94% in habitat units.

4.4 There is a significant increase in hedgerow units: 24.17 units are gained as result of the development. Overall, there is a percentage change of 41.53% in hedgerow units.

5 References

Defra (April 2023) *Biodiversity Metric 4.0 Calculation Tool*.

Natural England (March 2023) *The Biodiversity Metric 4.0 User Guide. Natural* England Joint Publication JP039

Natural England (July 2023) *The Biodiversity Metric 4.0 User Guide – Technical Annex 2*. Natural England Joint Publication JP039

Natural England (July 2023) *Biodiversity Metric 4 Case Study: Cabling for offshore wind development.*

Appendix 1: Habitat Types, Areas and Condition included within the Biodiversity Metric

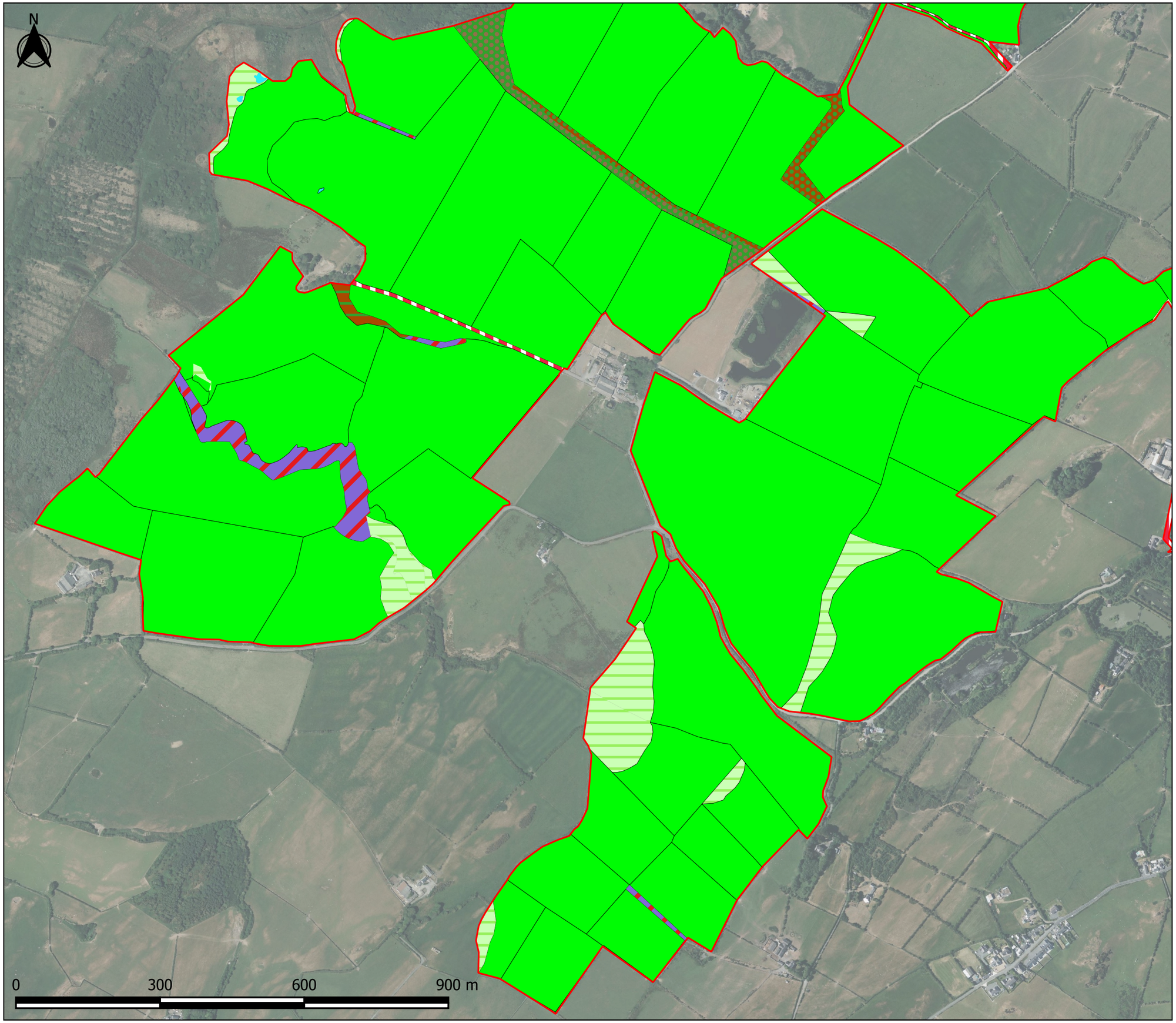
Table A: Summary of baseline habitats

Broad Habitat	Biodiversity Metric Habitat	Area /length	Condition
Grassland	Modified grassland	247.03 ha	Poor
Grassland	Other neutral grassland	8.36 ha	Moderate
Heathland and shrub	Mixed scrub	2.95 ha	Moderate
Woodland	Other woodland; broadleaf	2.03 ha	Moderate
Woodland	Other woodland; mixed	1.25 ha	Moderate
Woodland	Lowland mixed deciduous woodland	0.36 ha	Moderate
Urban	Developed land; sealed surface	0.79 ha	N/A
Lakes	Pond (non-priority)	0.05 ha	Moderate
Hedgerow	Native Hedgerow	14.55 km	Moderate

Table B: Summary of post-development habitats

Broad Habitat	Biodiversity Metric Habitat	Proposed	Area /length	Condition
Grassland	Modified grassland	Retained	185.37 ha	Poor
		Created	2.17 ha	Poor
Grassland	Other neutral grassland	Retained	5.30 ha	Moderate
		Enhanced	48.41 ha	Moderate
		Created	0.91 ha	Moderate
Heathland and shrub	Mixed scrub	Retained	2.49 ha	Moderate
		Created	1.69 ha	Moderate
Woodland	Other woodland; broadleaf	Retained	2.00 ha	Moderate
		Created	4.89 ha	Poor
		Created	1.34 ha	Moderate
Woodland	Other woodland; mixed	Retained	1.02 ha	Moderate
Woodland	Lowland mixed deciduous woodland	Retained	0.36 ha	Moderate
Urban	Developed land; sealed surface	Retained	0.48 ha	N/A
		Created	5.40 ha	N/A
Lakes	Pond (non-priority)	Retained	0.04 ha	Moderate
		Created	0.97 ha	Moderate
Hedgerow	Native Hedgerow	Retained	14.55 km	Moderate
		(filling existing gaps)	0.69 km	Moderate
Hedgerow	Native Species Rich Hedgerow	Created	3.61 km	Moderate

Figures: Pre- and Post-Development Habitat Plans



Legend

- Site boundary
- Developed land; sealed surface
- Lowland mixed deciduous woodland
- Mixed scrub
- Modified grassland
- Other neutral grassland
- Other woodland; broadleaved
- Other woodland; mixed
- Ponds (Non- Priority Habitat)

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PROJECT TITLE

ALAW MON SOLAR FARM

DRAWING TITLE

Figure 1a: Baseline Habitat Plan (west)

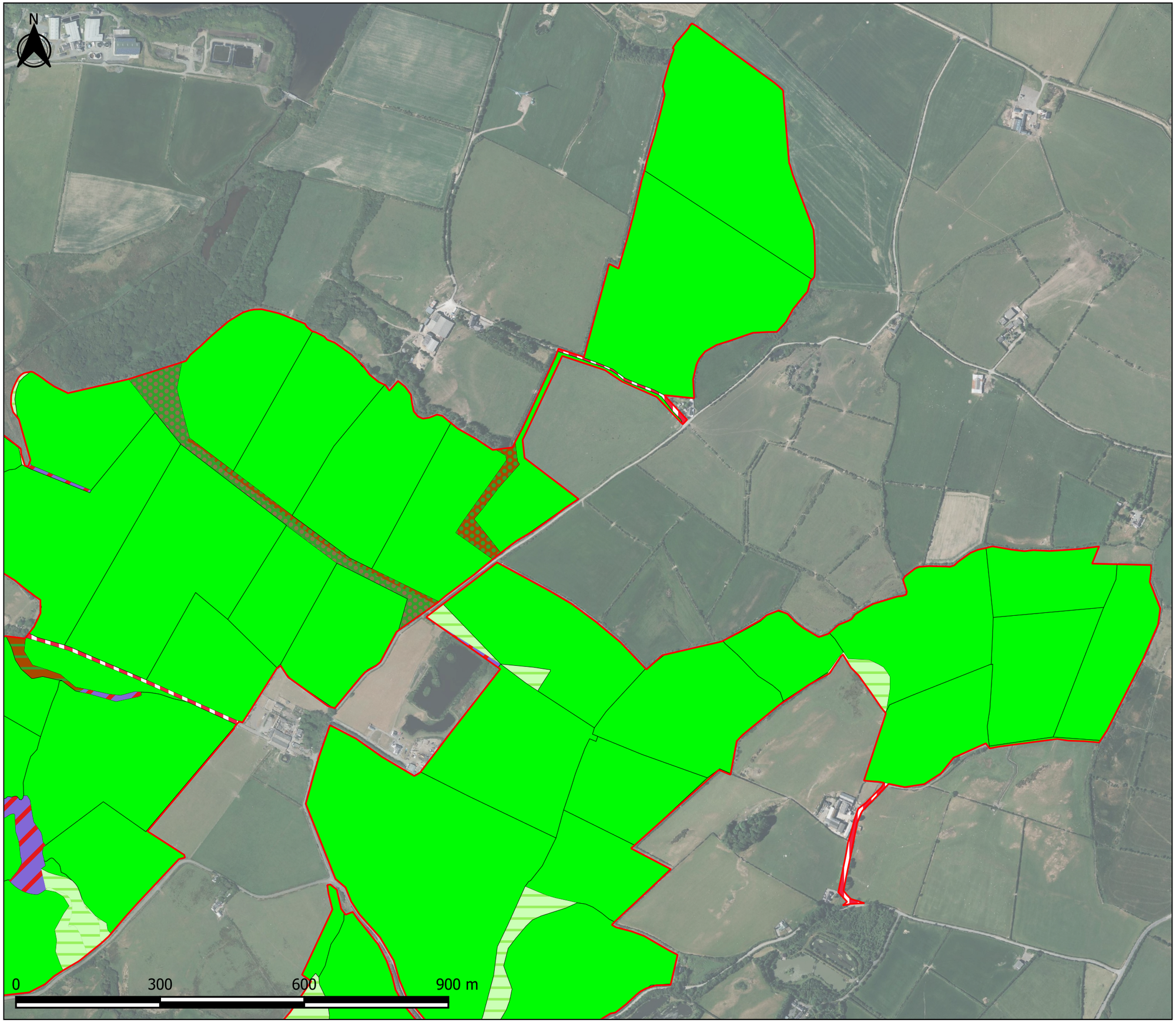
DATE: 16/10/2023 | CHECKED: GM | SCALE: 1:7,500

DRAWN: SV | APPROVED: GM | VERSION:1.0

Projection: OSGB 1936/British National Grid - EPSG 27700

Sources: BSG Ecology survey data

Graphics Ref. No.: 04752



Legend

- Site boundary
- Developed land; sealed surface
- Lowland mixed deciduous woodland
- Mixed scrub
- Modified grassland
- Other neutral grassland
- Other woodland; broadleaved
- Other woodland; mixed

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Figure 1b: Baseline Habitat Plan (east)

DATE: 16/10/2023 CHECKED: GM SCALE: 1:7,500

DRAWN: SV APPROVED: GM VERSION:1.0

Projection: OSGB 1936/British National Grid - EPSG 27700

Sources: BSG Ecology survey data

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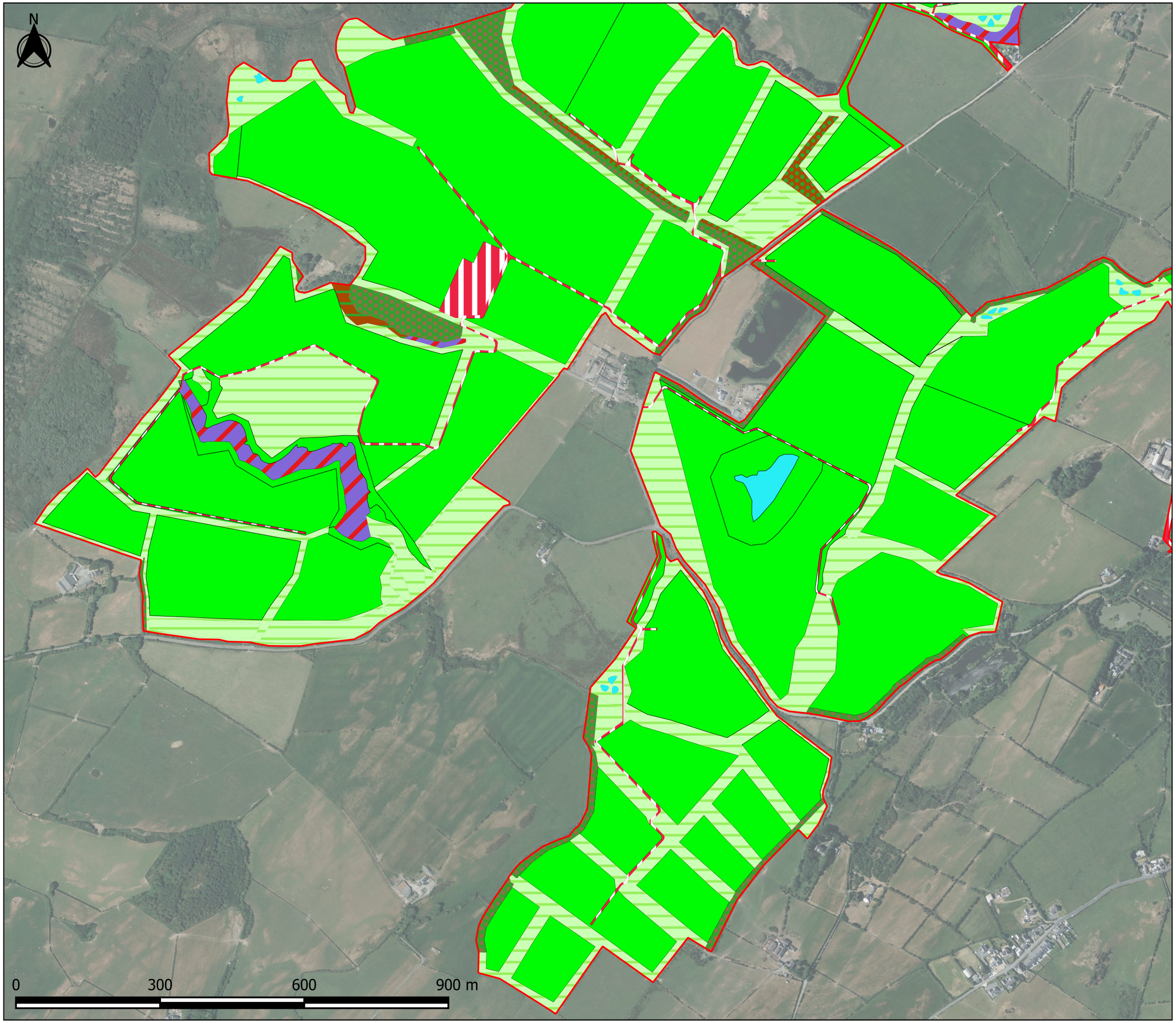

Legend

- Developed land; sealed surface
- Lowland mixed deciduous woodland
- Mixed scrub
- Modified grassland
- Other neutral grassland
- Other woodland; broadleaved
- Other woodland; mixed
- Ponds (Non- Priority Habitat)
- Site boundary

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Figure 2a: Post Development Habitat Plan (west)

DATE: 16/10/2023 | CHECKED: GM | SCALE: 1:7,500

DRAWN: SV | APPROVED: GM | VERSION:1.0

Projection: OSGB 1936/British National Grid - EPSG 27700

Sources: BSG Ecology survey data

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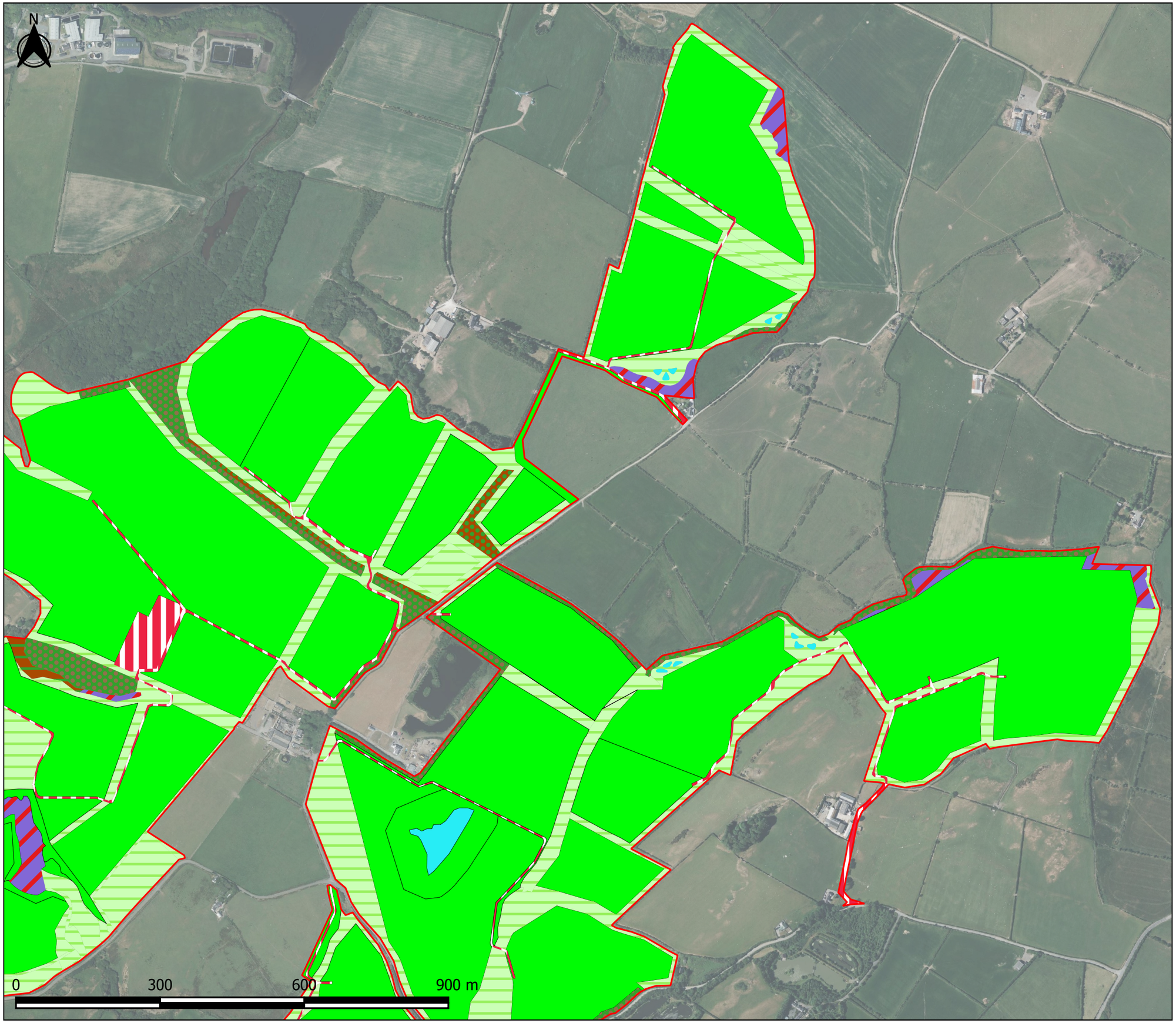

Legend

- Developed land; sealed surface
- Lowland mixed deciduous woodland
- Mixed scrub
- Modified grassland
- Other neutral grassland
- Other woodland; broadleaved
- Other woodland; mixed
- Ponds (Non- Priority Habitat)
- Site boundary

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Figure 2b: Post Development Habitat Plan (east)

DATE: 16/10/2023 CHECKED: GM SCALE: 1:7,500

DRAWN: SV APPROVED: GM VERSION:1.0

Projection: OSGB 1936/British National Grid - EPSG 27700

Sources: BSG Ecology survey data

Graphics Ref. No.: 04754

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Revision	Date	Drn	Ckd
-	-	-	-

LEGEND

N

- Site boundary
- Existing surveyed trees and vegetation
- Existing watercourses and features ^
- Contours/spot heights (metres AOD) ^
- Existing Public Rights of Way * (enhance and maintain through vegetation clearance where required)
- Sustrans Cycle Route NCR5 +
- Scheduled Monument ~
- Existing Overhead Cable

Proposed Hard Elements

- Security fence
- Access routes - crushed aggregate
- Cable route - reinstate to agricultural use
- Solar panels
- Post & wire stock fencing. Stock fencing to be provided around all proposed planting areas where grazing will occur
- Proposed interpretation/information board for Nantanog SSSI
- Cloddiau to be retained/restored
- Proposed FlexMSE Seeded Retaining Wall and Slope Stabilization

Proposed Soft Elements

- Native woodland planting
- Proposed native scrub planting
- Existing grassland stripped/sprayed off and seeded with Emorsgate EM6 or similar. Cut on an annual basis
- Existing grassland stripped/sprayed off and seeded with Emorsgate EM2 or similar. Cut on an annual basis
- Proposed hedgerow (to a minimum height of 2.5 - 3m)
- Proposed habitat ponds for targeted Great Crested Newt mitigation. To be provided with appropriate native aquatic planting and 2m margin of Emorsgate EP1 or similar seed mix
- Proposed Hibernacula formed of site-won material. Stone piles 80% covered with grass turves

Proposed Landscape Managagent Elements

- Existing grassland within proposed perimeter fence to be retained as grazing pasture or mown on a regular basis
- Existing grassland outside perimeter fence to be allowed to grow to a tall sward and cut no more than once annually
- (1) Specific Landscape Management Areas
  1. Nantanog SSSI - Existing grassland to be grazed or cut twice annually. Gorse clearance on a three year rotational basis.
  2. Pond 11 - Minimum 50m buffer from pond margin. Existing grassland managed to benefit of wildfowl, either through cattle grazing or rotational mowing.
  3. Hedgerow Buffer Corridor - Existing grassland retained and encouraged to develop greater diversity through initial scarify and seed cast with Emorsgate EM8. Cut on an annual basis.
  4. Scheduled Monument Buffer - Existing grassland to be maintained as a short sward, cut six times annually.

FIGURE 7.13

Project
Alaw Môn Solar Farm, Anglesey

Drawing Title
Landscape Strategy Plan: Overall

Date	Scale	Drawn by	Check by
07.03.2022	1:5,000 @A0 1:10,000 @A2	GS/ML	JM

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32518	LN-LP-114	C

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