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Sirius Group

Oaklands Solar Farm and Battery Energy Storage System

BIODIVERSITY NET GAIN REPORT

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1.0 INTRODUCTION

- 1.1 This report has been prepared by FPCR Environment and Design Ltd on behalf of Sirius Planning. It details the results of a Biodiversity Net Gain Assessment undertaken at Oaklands Solar Farm and Battery Energy Storage Development (hereafter referred to as the 'site').
- 1.2 The site spans 127ha and consists predominantly of agricultural grassland parcels separated by hedgerows and lines of trees.
- 1.3 The proposals are for the development of a solar farm and Battery Energy Storage System (BESS). Hedgerows will be retained bar small gaps for access, with gapping up of existing hedgerows to be undertaken through planting. The area below the solar panels will be seeded with local green hay and buffer zones will be seeded and managed as wildflower meadows.

2.0 METHOD

- 2.1 Biodiversity net gain was measured using the Biodiversity Net Gain Metric 3.1 (hereafter referred to as 'the metric'). To calculate biodiversity change using the metric the following are required:
- Habitat type and area pre and post-intervention
 - Habitat condition pre-intervention
 - Estimated habitat condition post-intervention
- 2.2 These are then entered into the metric which uses predetermined values for habitat distinctiveness alongside values generated for condition, strategic significance and ecological connectivity to create a numerical output. In the case of habitat creation or enhancement these values are multiplied by a temporal factor and a difficulty of creation value to account for risks related to creating habitats and hedgerows.

Baseline Conditions

- 2.3 A phase 1 habitat field survey was conducted on 12th May 2021 by a suitably experienced ecologist. Habitats on site were classified according to the UK Habitats Classification system. Habitat condition was determined through the use of detailed quadrat surveys and the criteria set out in the guidance documents accompanying the metric.
- 2.4 Habitat locations were recorded during the field survey then combined with aerial imagery and mapping to determine the precise extent of the habitat in QGIS.

Strategic Significance

- 2.5 The strategic significance of the site and the individual habitats therein was determined through the use of the DEFRA magic website and the Vale of Glamorgan Local Development Plan.

Post-Intervention Conditions

- 2.6 Post-Intervention habitat types and extent were determined using FSRE1113.02.16R0 Landscape M. Where habitat types remained unclear likely habitats were estimated.
- 2.7 Conditions of post-intervention habitats were estimated by an experienced ecologist with reference to the criteria set out in the metric guidance documents taking into account likely management, location and the difficulty of maintaining condition within the context.

Limitations

- 2.8 Habitats are complex systems that frequently do not fit into defined categories. This presents a problem as the metric requires defined inputs. Where there is ambiguity in habitat classification, a professional judgement has been made by a suitably qualified botanist.

3.0 RESULTS

Strategic significance

- 3.1 It was found that no part of the site was considered to be strategically significant by the criteria set out in the metric.

Pre-intervention Habitats

- 3.2 The site is largely grassland managed for agriculture. The exact type and condition changes across the site.
- 3.3 In the north and east the grassland is species poor and predominantly managed as *Lolium perenne* dominant sward for silage. This is considered by the metric to be modified grassland, a habitat of low distinctiveness. Across the site this habitat is largely in poor condition with some patches of moderate and good condition modified grassland in the south west. It delivers a total of 264.66 habitat units making it bar far the greatest contributor to habitat units pre-intervention.
- 3.4 Other neutral grassland is a habitat of medium distinctiveness. It is present in one field in the south west of the site and delivers 13.39 habitat units.
- 3.5 The patches of woodland in the site are categorised as Other woodland; broadleaved in moderate condition. This is a habitat of medium distinctiveness and delivers a total of 31.60 habitat units.
- 3.6 Trees which are not associated with any underlying habitat types are frequent in the east of the site. These are scored as urban trees by the metric, a habitat of medium distinctiveness. They were scored as a whole and found to be in good condition, delivering a total of 6.79 habitat units.
- 3.7 The small ponds present are in poor condition. As the total area of ponds is low they deliver 0.10 habitat units.
- 3.8 The tracks do not score within the metric as they are considered to be artificially unsealed surfaces.

Post-Intervention Habitats

Retention and Enhancement

- 3.9 Post-intervention all woodlands will be retained in their entirety. Most ponds will also be retained as they occur within the woodlands however one pond (P5) will be lost.
- 3.10 Urban trees will largely be retained however a small number from in the centre of field compartments will be lost. There will be a loss of 0.01 habitat units from the removal of these urban trees.

Habitat Creation

- 3.11 The area within the deer fencing is to be grassland, seeded from local green hay and manged using conservation sheep grazing. This habitat will be considered by the metric to be other neutral

grassland in moderate condition, provided nutrient input is kept low. The solar panels themselves will not significantly affect this habitat so it has been scored as a contiguous block, however the shade cast will limit maximum condition to moderate. In total these areas will deliver 669.20 habitat units.

- 3.12 Areas outside the deer fencing will not have the issues related to shading and will be managed for wildlife. This includes areas around the edges of the fenced parcels as well as the field near the A4226 and in the north east. A condition score of good is achievable for these areas if required. This can be achieved by use of a hay cut or appropriate grazing regime. These areas have been scored as other neutral grassland in good condition and they will deliver a total of 156.78 habitat units.
- 3.13 Tracks and the BESS compound area are considered sealed surfaces and do not score within the metric.

Hedgerows

- 3.14 The hedgerows on site are varied in species richness and additional habitat features such as trees and ditches, as one might expect from a site of this size. Likewise condition varies from poor to good. Most hedgerows are considered to be in good condition.
- 3.15 Nearly all hedgerows will be retained post-intervention bar small sections for access. A total of 0.33 hedgerow units will be lost from a length of approximately 30m. Additional hedgerows in the west will deliver 11.49 hedgerow units. These have been scored as species rich in good condition.

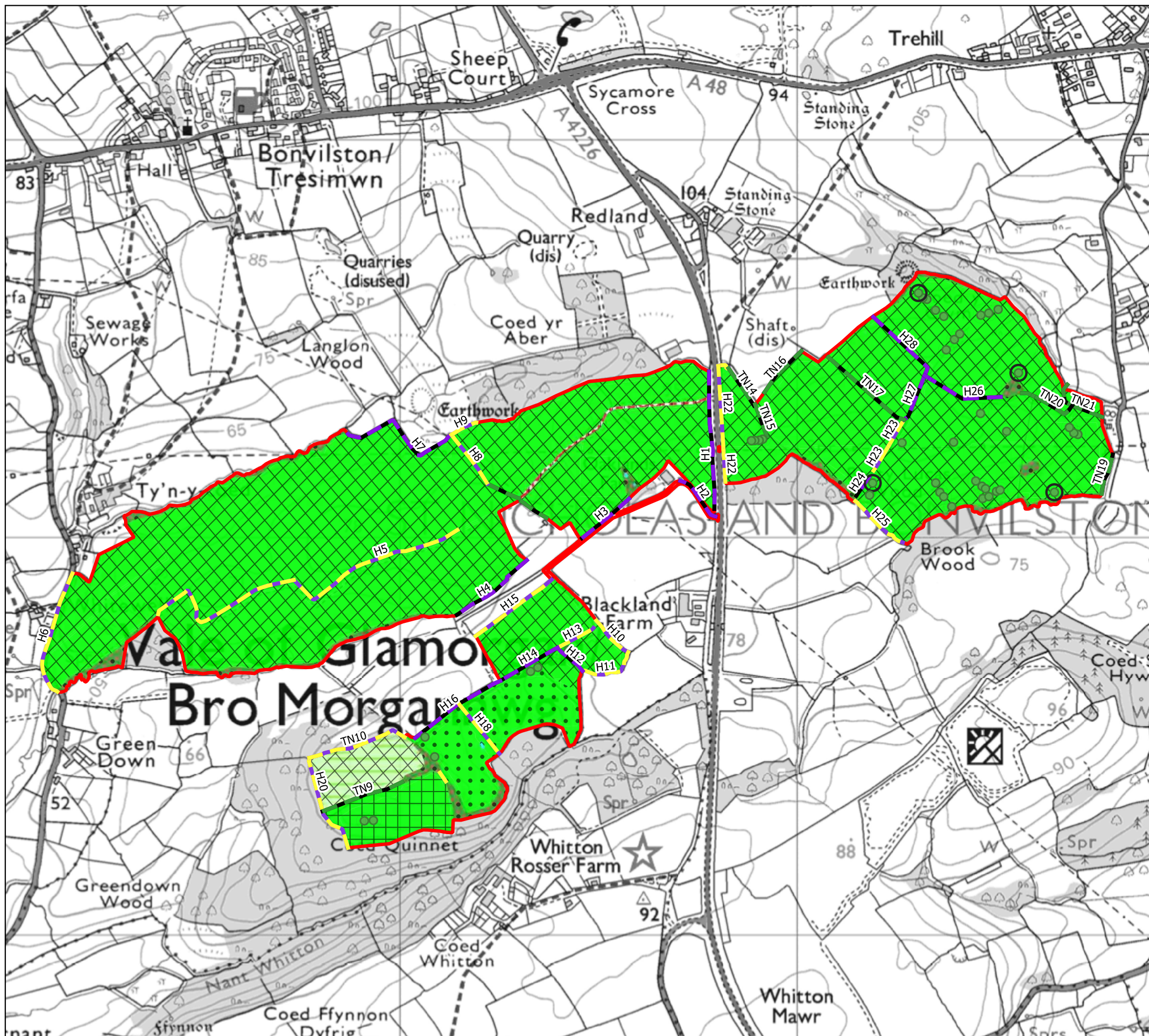
Table 1: Summary Biodiversity Net Gain Results

Habitats	Pre-intervention Units	316.56
	Post-Intervention Units	864.28
	Net change	+547.72 (+173.02%)
Hedgerows	Pre-intervention Units	75.34
	Post-Intervention Units	86.50
	Net change	+11.16 (+14.81%)

4.0 DISCUSSION

- 4.1 There is scope for a very large net gain on the site. This will depend on the success of the seeding and management regime. A high condition score of good has been chosen for the areas outside of the deer fenced parcels. This will be secured through a prescriptive management and monitoring regime specified in a Landscape Environmental Management Plan (LEMP).
- 4.2 Additional hedgerow units at the site will be delivered through “gapping up” planting of existing hedgerows and the planting of new species rich native hedgerows, some with trees.
- 4.3 Within the metric 3.1 there is a habitat trading rule where losses of the higher distinctiveness habitats must be compensated for through increasingly prescriptive habitat types. This scheme will result in small losses of ponds and urban trees. Typically, as these are both medium distinctiveness habitat types they must be compensated for using the same broad habitat type. P5 is a very small

pond, entirely ephemeral in nature and during dry winters does not form at all. Its loss is assumed as a precautionary assessment post development, however it is likely that this wet area will remain even after the panels are installed. The loss of standalone trees classified as urban trees in the metric will be mitigated for by the significant provision of new hedgerow and tree planting as part of the proposals.



Key

Habitat Baseline

- Artificial unvegetated, unsealed surface
- Modified grassland
- Other neutral grassland
- Other woodland; broadleaved
- Ponds (Non- Priority Habitat)

Hedgerow Baseline

- Line of Trees (w1g6NE2)
- Line of Trees - Associated with bank or ditch (w1g6NE4)
- Native Hedgerow (h2NE5)
- Native Hedgerow - Associated with bank or ditch (h2NE9)
- Native Hedgerow with trees - Associated with bank or ditch (h2NE8)
- Native Species Rich Hedgerow (h2NE2)
- Native Species Rich Hedgerow - Associated with bank or ditch (h2NE7)
- Native Species Rich Hedgerow with trees (h2NE1)
- Native Species Rich Hedgerow with trees - Associated with bank or ditch (h2NE6)

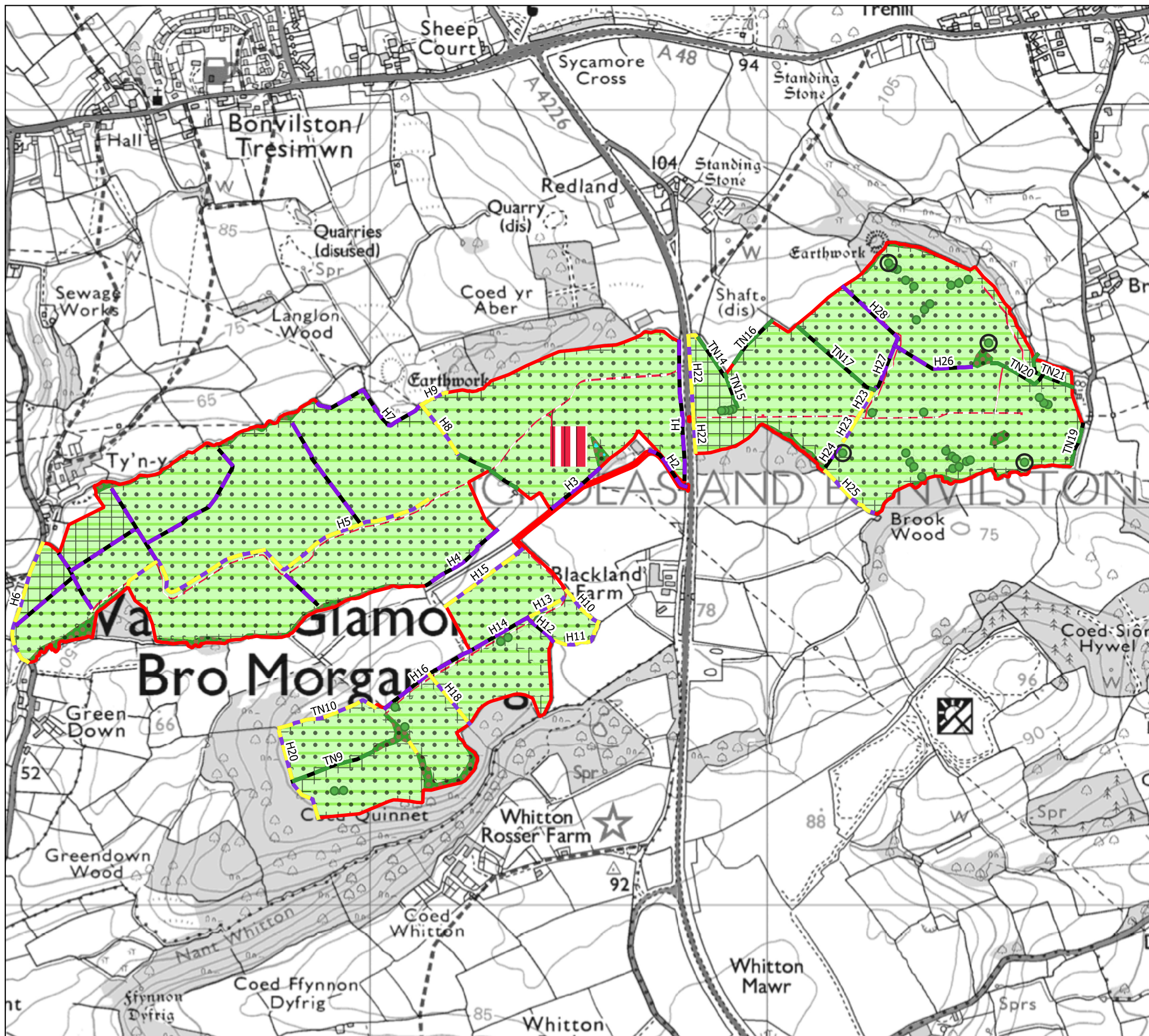
Urban Tree Baseline

- Existing Large
- Existing Medium
- Existing Small

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


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Key




Habitat Proposed

-  Developed land; sealed surface
-  Modified grassland
-  Other neutral grassland
-  Other woodland; broadleaved
-  Ponds (Non- Priority Habitat)

Hedgerow Proposed

-  Line of Trees (w1g6NE2)
-  Line of Trees - Associated with bank or ditch (w1g6NE4)
-  Native Hedgerow (h2NE5)
-  Native Hedgerow - Associated with bank or ditch (h2NE9)
-  Native Hedgerow with trees - Associated with bank or ditch (h2NE8)
-  Native Species Rich Hedgerow (h2NE2)
-  Native Species Rich Hedgerow - Associated with bank or ditch (h2NE7)
-  Native Species Rich Hedgerow with trees (h2NE1)
-  Native Species Rich Hedgerow with trees - Associated with bank or ditch (h2NE6)

Urban Tree Proposed

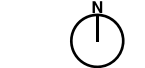
-  Proposed Large
-  Proposed Medium
-  Proposed Small

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Sirius Planning

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Oaklands Solar Farm and Battery Energy Storage Development

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Biodiversity Net Gain Plan - Proposed Habitats

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Figure 2