Landscape Science Consultancy Ltd

PROPOSED BATTERY SITES

INDIAN QUEENS SUB-STATION, CORNWALL

BIODIVERSITY NET GAIN ASSESESMENT REPORT

For

DALTON WARNER DAVIS LLP

OCTOBER 2021

Landscape Institute
Registered practice

Registered Office:
The South Wing, The Old Barracks, Sandon Road, Grantham, Lincolnshire , NG31 9AS
Tel: (01476) 569600
Email: admin@landscapescienceconsultancy.co.uk www.landscapescienceconsultancy.co.uk

Registered in England and Wales, Registration No 5991034
VAT Reg No 738 3576 01

Certificate Number 3269
ISO 9001

CONTENTS

1.0 Introduction

2.0 Current Policy and Legislative Context

3.0 Methodology

4.0 Baseline Conditions

5.0 Proposed Design

6.0 BNG Metric Results and Discussion

7.0 Recommendations

8.0 Specific Recommendations for Habitat Management

References

Appendix 1: BNG Headline Results
Appendix 2: Landscaping Proposals

Figure 01: Baseline Habitats
Figure 02: Post-Intervention Habitats

Project Ref No:	D78.21A
Author:	Joseph Valentine BSc (Hons)
Scientific check:	Steven Weber BSc (Hons)
Presentation check:	Zoe Lewis BA (Hons)
Date:	October 2021

1.0 Introduction

1.1 Landscape Science Consultancy Ltd was commissioned by DWD LLP to produce a Biodiversity Net Gain (BNG) assessment for a Proposed Development at the National Grid Sub-Station Site at Indian Queens, Cornwall.

1.2 The Proposed Development comprises the construction and operation of a battery energy storage system (BESS) with a total import capacity of 100 megawatts (MW), within part of the Site (see submitted plans). The design of the battery is split into two separate 50MW battery sites each comprising approximately half of the total site area. The battery site contains a range of equipment including the battery units themselves (these are generally containerised but a specific model will not be known until post-consent), typically set out in uniform rows throughout the site, as well as electrical transformer units, acoustic fencing and CCTV cameras. The development will also include a planting buffer of approximately 15m on all boundaries apart from the south. All site access (construction and operational) will be via an existing, purpose-built access track that connects to the National Grid substation track and eventually Domellick Hill (B3279).

1.3 The Proposed Development is to be located within part of the National Grid Sub-Station Site which lies approximately 1.7km to the east of the village of Indian Queens, Cornwall.

1.4 The 'Site' and therefore the Application Boundary for the Proposed Development, comprises agriculturally improved pasture fields and a sealed surface access road. Immediately adjacent to the Site lies the Operational Area of a National Grid Sub-Station Site comprising occupied and actively used buildings, infrastructure and hardstanding. The Site and associated National Grid Sub-Station are surrounded by established habitats such as plantation woodland, scrub and willow carr.

1.5 This BNG assessment has been calculated using DEFRA Metric 3.0 and follows guidance set out within the Biodiversity Net Gain: Good Practice Principles for Development (Baker et al., 2019). This BNG assessment aims to:

- Measure and classify the baseline habitats within the Site in accordance with the requirements of Metric 3.0, based on the ecology data for the Site gathered to date;
- Measure and classify the post-development habitats within the Site in accordance with the requirements of Metric 3.0, based on the Landscaping Proposals provided to date;
- Aim to achieve BNG within the Site, wherever possible;
- Where it is not possible to achieve BNG within the Site, provide recommendations on how BNG maybe achieved off-site, based on the available processes in place at the time of writing.

2.0 Current Policy and Legislation Context

2.1 National Planning Policy and Legislation

2.1.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF3) (Ministry of Housing, Communities and Local Government, 2021) Section 174 states planning, and policy decisions should '*minimise impacts on and providing net gains for biodiversity*' and section 179 states plans should '*pursue opportunities for securing measurable net gains for biodiversity*'. Section 180 also states '*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, especially where this can secure measurable net gains for biodiversity*'.

2.1.2 Planning Policy Guidance

The Natural Environment Planning Policy Guidance (updated July, 2019) supports the NPPF in providing broad commentary on the process of BNG, particularly how BNG should be assessed and implemented in respect of development projects.

2.1.3 The Environment Bill

The Environment Bill will enact 10% BNG for all development projects once the Bill receives Royal Assent. It is understood that a two-year implementation period will then be required to allow Local Planning Authorities (LPAs) to implement the necessary processes to support BNG, after which it is expected to become a legal requirement and, therefore, mandatory.

2.2 Local Planning Policy

The Survey Site lies within the jurisdiction of Cornwall Council.

The Cornwall Local Plan, adopted in November 2016, does not specifically identify planning policies in respect of biodiversity net gain. The Cornwall Climate Emergency Development Plan Document is currently under development and is expected to be submitted to the Secretary of State for Examination in the Autumn of 2021. The Development Plan Document identifies the following planning policies in respect of biodiversity net gain:

Policy G2 – Biodiversity Net Gain

1) All major development types must achieve a minimum of 10% Biodiversity Net Gain (or any higher percentage mandated by national policy/legislation) over the pre-development site score as measured by the latest version of the DEFRA Biodiversity Metric or any subsequent Biodiversity Metric on the application site within a 30 year period from the commencement of the development.

2) Where a major proposal adequately demonstrates in the Biodiversity Gain plan that the mitigation hierarchy has been followed and the required net gain cannot be achieved onsite within the site boundary, it must provide for the Biodiversity Offsetting of any habitat types to be lost alongside the percentage gain required either through:

a) the purchase of biodiversity offsetting units to enable provision to be made by an approved biodiversity offset provider; or

b) direct provision of the habitat types in a suitable location by the applicant provided the in-perpetuity management and monitoring of the offset site can be assured; or

c) A Biodiversity Offset Contribution to the Cornwall Council Habitat Bank. The receptor site for any biodiversity offsetting must be in a suitable location where local climactic conditions suit the type of offset habitat and should avoid the best and versatile land most of the time.

3) Minor development (with the exception of householder development and Change of Use (not creating new dwellings)) shall demonstrate biodiversity net gains in accordance with a Cornwall Council approved Small Site Biodiversity Metric.

3.0 Methodology

3.1 Use of BNG Metric

The latest version of Metric 3.0 was downloaded and utilised. The completed and full Metric 3.0 Excel spreadsheet has been submitted alongside this report.

The following reference documents were used:

- Biodiversity Metric 3.0 Technical Supplement document (Natural England, 2021);
- Biodiversity Metric 3.0 User Guide document (Natural England, 2021).

3.2 Desk Top Study and Extended Phase 1 Habitat Survey

An Ecological Assessment report has been undertaken by LSC for the Proposed Development and has been submitted to the Local Authority in tandem with this BNG assessment.

This BNG assessment utilises desk-top studies and local nature conservation policy evidence gathered for the Ecological Assessment, as well as Extended Phase 1 Habitat Surveys and Protected Species Surveys undertaken in Spring 2021.

Phase 1 Habitat classifications have been transcribed to the UK Habitats Classification methodology (UKHAB Working Group, 2020), as required for Metric 3.0. The G-9 'Translation Phase 1' tab contained within Metric 3.0 was used for this purpose.

3.3 Measurement of Habitat Areas

All baseline and post-development habitat areas were measured utilising QGIS. Habitats were measured as distinct polygons or linear features as defined by their classification and condition determined through the Metric 3.0 criteria.

Post-development habitats were calculated using the submitted Site Layout and Landscape Proposals, which identified the areas of removed, retained, created and enhanced habitats.

3.4 Condition Assessment

Habitat condition was determined following the guidance presented within the 'Biodiversity Metric 3.0 Technical Supplement' document (Natural England, 2021). The habitat condition criteria were followed for each habitat type within the Site, to determine the relevant condition categories to be entered into Metric 3.0.

It was determined that sufficient data had been gathered during the spring 2021 Phase 1 Habitat surveys to complete the habitat condition criteria and that a follow-up site assessment was not required.

3.5 Strategic Significance

The strategic significance criteria within Biodiversity Metric 3.0 were considered separately for each habitat type to determine inclusion or reference within any relevant local plans, strategic locations for biodiversity and designated sites.

3.6 Assessor Competence

The overview and finalisation of this BNG assessment was undertaken by Steven Weber BSc (Hons) MCIEEM. Steven is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and has 13 years' experience undertaking a range of ecological surveys and assessing the factors that affect ecology in relation to construction and the built environment.

3.7 Assumptions and Limitations

There are no hedgerows or linear watercourses within the Site therefore these sections of Metric 3.0 have not been completed.

Habitats located outside of the Site have not been included within this BNG assessment.

Areas of existing hard standing access roads within the Site have not been included within the submitted Metric 3.0 as they will not be permanently removed, altered or enhanced under the Proposed Development; therefore, there would be no change in their Habitat Units.

4.0 Baseline Conditions

See **Figure 01** – Baseline Habitats.

4.1 Presence of Designated Sites and Priority Habitats

The Site is partly surrounded by habitats associated with three statutory designated sites, which also encapsulate internal boundary habitats within the wider National Grid Sub-Station Site to varying degrees. These statutory sites are:

- Brenley Common & Goss and Tregoss Moors Special Area of Conservation
- Mid Cornwell Moors Special Site of Scientific Interest
- Gos Moor National Nature Reserve

No part of the Proposed Development falls within the boundaries of these statutory sites.

Further information on these statutory sites, including the designation type, site name and qualifying habits/species can be found in Chapter 5.0 of the submitted Ecological Assessment.

4.2 On-Site Habitats

Full details of the habitat types within the Site and the wider National Grid Sub-Station Site can be found within the submitted Ecological Assessment. The below commentary is intended as a summary to concentrate on only those habitats directly affected by the Proposed Development for the purposes of this BNG assessment.

4.2.1 Modified Grassland

The Site for the Proposed Development encompasses part of four linked agriculturally improved, species-poor grasslands surrounding the Operational Area of the National Grid Sub-Station Site (R1 - **Figure 01**). At the time of the survey, the fields were of a similar habitat structure with an even sward grazed by livestock to approximately 5-10cm in height. This habitat translates into Metric 3.0 as 'Modified Grassland'.

The modified grassland has been classified as being in 'moderate condition' as it was identified at the time of survey as containing less than 6-8 species per m^2 and supported an even homogenous sward (Condition Assessment Sheet: Grasslands – Low Distinctiveness).

4.2.2 Developed Land, Sealed Surface

The remainder of the Site for the Proposed Development comprises an existing asphalt access road. Access roads have not been included within the submitted Metric 3.0 as they will not be permanently removed, altered or enhanced under

the Proposed Development, therefore, there would be no change in their Habitat Units.

4.3 Strategic Significance

Site habitats comprise modified grassland and developed land which are not typical resource components of the adjacent statutory designated sites, which in comparison support species-rich neutral grasslands and heathland habitats of significantly higher ecological value Therefore, the strategic significance of habitats within the Site was set as 'low'.

5.0 Proposed Design

See **Figure 02** – Post-Intervention Habitats. The submitted Landscape Proposals are provided in **Appendix 2** for reference.

5.1 Built Habitats

Approximately 1.75ha of the existing 2.92ha of 'Modified Grassland' would be removed and replaced with built habitats as part of the Proposed Development. This would comprise a range of equipment including battery units, electrical transformer units, acoustic fencing and CCTV cameras installed upon a sealed surface. This habitat translates into Metric 3.0 as 'Developed land; sealed surface'. Within Metric 3.0 this habitat type is classified as being of 'very low distinctiveness' and cannot be assigned a condition assessment. This habitat type delivers no post-development Habitat Units.

5.2 Neutral Grassland, Other

As detailed within the Landscaping Proposals, approximately 0.75ha of the existing 2.92ha of 'Modified Grassland' would be enhanced through the over-sowing of a species-rich wildflower mix, to increase the abundance and diversity of botanical assemblages throughout the sward, which is currently species-poor. The grassland is anticipated to be managed in the long-term through hay cutting.

The existing 'Modified grassland' sward is classified as being in 'moderate condition' and a 'low distinctiveness' habitat within Metric 3.0. Therefore, the habitat type 'Neutral Grassland, Other' is considered to appropriately reflect the enhancement proposals, which in the UK Habitats classifications is typically affiliated to semi-improved neutral grassland swards of 'medium distinctiveness'.

The target condition assessment for the enhanced grassland is set at 'good'. It is considered that this habitat condition can be achieved through following the specific recommendations for grassland management set out in Section 8.0 of this report which should be developed in the Landscape Implementation and Management Plan as recommended in Section 7.0.

5.3 Mixed Scrub

As detailed within the Landscaping Proposals, approximately 0.42ha of the existing 2.92ha of 'Modified Grassland' would be removed and replaced through the planting of new shrubs including grey willow, goat willow, eared willow, hawthorn, blackthorn, hazel and guelder rose for the purpose of strengthening the existing Green Infrastructure resource and associated scrub habitats present within the wider landscape. The habitat type 'Mixed Scrub' is considered to reflect the proposals and the most appropriate UK Habitat classification.

The target condition assessment for the newly created 'Mixed Scrub' is set at 'good'. It is considered that this habitat condition can be achieved through

following the specific recommendations for scrub management set out in Section 8.0 of this report which should be developed in the Landscape Implementation and Management Plan as recommended in Section 7.0.

6.0 BNG Metric 3.0 Results and Discussion

Headline results of the completed Metric 3.0 for the Proposed Development are provided in **Appendix 1**. Metric 3.0 has been submitted as the full Excel spreadsheet alongside this report.

6.1 Habitats Units

Based on the completed Metric 3.0 calculations, the Proposed Development (inclusive of on-site intervention) would result in an **13.99% net loss** in habitat units.

6.2 Discussion

Based on the Biodiversity Metric 3.0 calculations, the Proposed Development returns a net loss in habitat units. This is a result of the loss of 1.75ha of existing 'Modified Grassland' and replacement with 'Developed land; sealed surface', which delivers no Habitat Units.

It is not possible to deliver any further net gain beyond the submitted Landscape Proposals within the wider National Grid Sub-Station Site, as this land is required to be free from constraint should the National Grid be required to deliver further critical energy infrastructure within this area of Cornwall.

7.0 Recommendations

7.1 Compensating for Net Loss

As the Proposed Development has been calculated as returning a biodiversity net loss, the following measures should be considered and discussed with Cornwall Council in accordance with Policy G2 of the Cornwall Climate Emergency Development Plan Document:

- The purchase of biodiversity offsetting units to enable provision to be made by an approved biodiversity offset provider; or
- A Biodiversity Offset Contribution to the Cornwall Council Habitat Bank.

7.2 Landscape Implementation Plan

A Landscape Implementation Plan should be produced and secured through planning condition, to ensure the landscape proposals are correctly delivered during the construction phase of the Proposed Development. This should comprise:

- Detailed landscape drawings and planting schedules;
- Detailed specifications and prescriptions for the over-sowing of wildflower seed mixes in existing swards, to ensure good establishment;
- A handover checklist;
- A timetable for implementation;
- Identify persons responsible for the delivery of the landscaping scheme.

7.3 Landscape and Biodiversity Management Plan

A Landscape and Biodiversity Management Plan should be produced and secured through planning condition, to ensure the long-term delivery and management of enhanced or created habitats. The Management Plan must include as a minimum:

- Management aims and targets;
- Management operations and prescriptions for at least the first twenty years;
- Periodic review of management operations and prescriptions to ensure management aims and targets are met;
- Lines of responsibility for the Management Plan and associated works.

Management operations and prescriptions must include, as a minimum, measures to:

- Ensure the successful establishment of planting;
- Maintain and increase the species-richness of wildflower meadows through traditional hay meadow management techniques;

- Maintain and increase the species-richness and structural diversity of scrub.

8.0 Specific Recommendations for Habitat Management

8.1 Wildflower Grassland

Specific considerations for how grassland habitats should be managed are provided below, which should be incorporated into the recommended Landscape and Biodiversity Management Plan.

8.1.1 Location

Across areas of previously species-poor pasture classified as 'Modified Grassland' – see **Figure 02**.

8.1.2 Aims of Management

The provision of a mosaic of wildflower meadows supporting an assemblage of botanical communities. Ongoing management through annual hay cut(s) would appropriately maintain these swards in the long-term to the prevailing soil type.

The sward should be healthy and vigorous, free from the visible effects of pests, weeds and disease. The sward should in addition be closely knit, with continuous ground cover of even density, height and colour.

8.1.3 Management Operations: Establishment (Year 1)

Initial Cutting

In good growing conditions (warm soils and adequate rainfall) and during the correct season, the sward is anticipated to establish and require its first management around 6-10 weeks from sowing, by which time the sward would have reached around 50mm to 100mm in height.

Cutting operations should comprise:

- Approximately 6x cuts should be undertaken when the soil is relatively dry between April to August;
- Cutting bar should be set to approximately 200mm above ground level;
- Litter, debris and stones and earth clods larger than 50mm in any dimension should be removed prior to each cut;
- Arisings should be removed from Site or located within an appropriate area as designated by the Contracts Manager.

Weed Control

Where undesirable weed species such as docks and thistles become persistent, the number and frequency of annual cutting operations should be maintained beyond the establishment phase to control weed flushes, particularly in the spring.

The frequency and duration of the cutting should be determined by the Contracts Manager dependant on the density and distribution of undesirable weed species within the swards.

Reinstatement

During the establishment period, the 12 months following completion of landscape works, any swards that have failed should be re-cultivated and re-seeded with the seed mix as detailed in approved Landscape Plans.

8.1.4 Management Operations: Long-Term Hay Cuts

Hay Cuts

Hay cutting operations should comprise:

- Two annual cuts should be undertaken, one in March/April and one in September/October;
- Cutting bar should be set to a height of approximately 200mm above ground level;
- Litter and debris should be removed prior to each cut;
- Arisings should be removed from Site or located within an appropriate area designated by the Contracts Manager.

The removal of arisings following each cut should be treated as a primary management objective, where access for equipment allows (this measure prevents nutrient enrichment of the sward and the dominance of weeds and aggressive grasses).

8.1.5 Broad Triggers for Changes in Management or Remedial Measures

Monitoring

Monitoring visits by the Project Ecologist should assess:

- Sward condition, quality and density of thatch;
- The proportion of bare ground cover;
- The frequency and distribution of herbaceous and grass species indicative of the seed mix; and
- The encroachment and development of ruderal and injurious weeds.

Triggers and Remedial Measures

Trigger: Increasing cover of undesirable weed species (docks, thistles, ragwort, nettles and scrub).
Potential Remedial Measures: Additional cutting in spring period.

Trigger: Physical damage (machinery) and bare ground (excluding local areas,

such as rabbit warrens).

Potential Remedial Measures: Review use of cutting machinery and timings. Re-cultivation and re-seeding with the appropriate seed mix.

Trigger: Wildflowers becoming less evident in the sward in respect of frequency and density.

Potential Remedial Measures: Review effectiveness of arisings removal. Changes to cutting frequencies and timings. Further targeted re-sowing of seed mixes.

8.2 Mixed Scrub

Specific considerations for how scrub habitats should be managed are provided below, which should be incorporated into the Landscape and Biodiversity Management Plan.

8.2.1 Location

Across areas of previously species-poor pasture classified as 'Modified Grassland' – see **Figure 02**.

8.2.2 Aims of Management

The maintenance of planted scrub to maintain condition, allowing specimens to attain natural growth and form. Management should comprise ensuring the successful establishment of all plantings, with minimal intervention to allow trees to attain natural growth and form wherever possible.

Over the long-term, the aim of the scrub management would be to create structural diversity and a range of ages, and also ensuring that presence of non-native invasive and undesirable species are restricted or eliminated.

8.2.3 Management Operations: Years 1 to 4 – Establishment

Weed Suppression

Weed free areas should be maintained around each shrub using a layer of mulch at least 5cm thick. The diameter (minimum) should be the larger of 1m or the surface of original planting pit.

Pruning

Dead/damaged/diseased branches and suckers should be pruned with the arisings removed from Site or located within an appropriate area designated by the Contracts Manager. Undertake in spring or autumn.

Watering

Shrubs should be watered in the growing season as necessary to ensure effective

establishment and growth, particularly in prolonged periods of drought.

Tree Protection

Shrubs should be inspected once per year to ensure that both roots and crowns are stable and firm – ties and canes to be checked, adjusted, re-firmed and replaced as necessary. Growth tubes should be removed in Year 4, subject to inspection.

Ensure that shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools. Damage to bark should be cut back neatly with sharp knife.

Replacement of Failed Shrubs

Failed shrubs should be replaced to match size of adjacent or nearby plants of same species or match original specification detailed within the approved Landscape Proposals, whichever is the greater. Timings of making good should be within the planting season where current, or alternatively the next planting season.

8.2.4 Scrub Management Operations: Long-Term Pruning and Thinning Regimes

Pruning Principles

Allow the natural growth and spread of new scrub where this does not conflict with access, safety or the operational functionality of the Site.

Pruning Timings and Methods

Only when necessary (i.e. for reasons of access, safety or removal of dead/diseased/damaged branches), shrubs should be pruned during January or February, wherever possible, to reduce the removal of berry crops – trees must be pruned during September to February inclusive to avoid the bird nesting season.

Pruning of shrubs should be undertaken to current best practice arboricultural methods (BS 3998:2010) ensuring clean and neat cut faces with no jagged ends, tears or scars.

Replacement of Failed Shrubs

Failed shrubs should be replaced to match size of adjacent or nearby plants of same species or match original specification detailed within the approved Landscape Proposals, whichever is the greater. Timings of making good should be within the planting season where current or alternatively the next planting season.

Thinning Operations

Following approximately the first 10 years of growth an appropriate monitoring visits by the Project Ecologist, thinning operations of each scrub compartment should be undertaken on a cyclical basis to enhance the structural diversity of the scrub habitats.

This should be undertaken approximately every 3 years, rotationally coppicing approximately 5% of each scrub compartment in any one year. The rotational coppicing should be undertaken over the long-term to create:

- A good age range of seedlings, young shrubs and mature shrubs;
- Well-developed edges with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s);
- Clearings, glades or rides, providing sheltered edges.

Coppicing works should comprise neat, clean and angled cuts to allow for water shedding. Coppicing works should be undertaken during January or February, wherever possible, to reduce the removal of berry crops – shrubs must be coppiced during September to February inclusive to avoid the bird nesting season.

Cut brash should be located within neat habitat piles within a designated area of the Site by the Contracts Manager or removed off-site and deposited at an appropriately licenced landfill site.

8.2.5 Triggers for Changes in Management or Remedial Measures

Monitoring

Monitoring visits by the Project Ecologist shall assess:

- Establishment rate of shrubs;
- Damage from pests and diseases;
- Quality of structural diversity and development of age ranges.

Triggers and Remedial Measures

Trigger: Poor establishment of planted specimens. Bark damage from pests such as grey squirrel and deer.

Potential Remedial Measures: Replace failed shrubs. Pruning of damaged areas if appropriate.

Trigger: Mechanical damage from vehicles and poor shrub canopy shape due to over management.

Potential Remedial Measures: Changes to cutting frequencies and timings, review and change use of machinery and equipment.

Trigger: Poor structural diversity.

Potential Remedial Measures: Increase volume and/or frequency of coppicing works and/or further diversify coppicing across each scrub compartment.

Trigger: Increasing cover of undesirable weed species (creeping thistle, common nettle, cherry laurel, snowberry, buddleia, cotoneaster, Spanish bluebell).

Potential Remedial Measures: Targeted removal of undesirable species through cyclical and repeated cutting and removal.

References

Baker et al (2019). Biodiversity Net Gain: Good practice principles for development. A Practical Guide. CIRA. London.

MoHCLG (2021). National Planning Policy Framework, MoHCLG, London.

Natural England (2021). Biodiversity metric 3.0: Auditing and accounting for biodiversity – User Guide. Natural England.

Natural England. (2021). Biodiversity metric 3.0: Auditing and accounting for biodiversity – User Guide. Natural England.

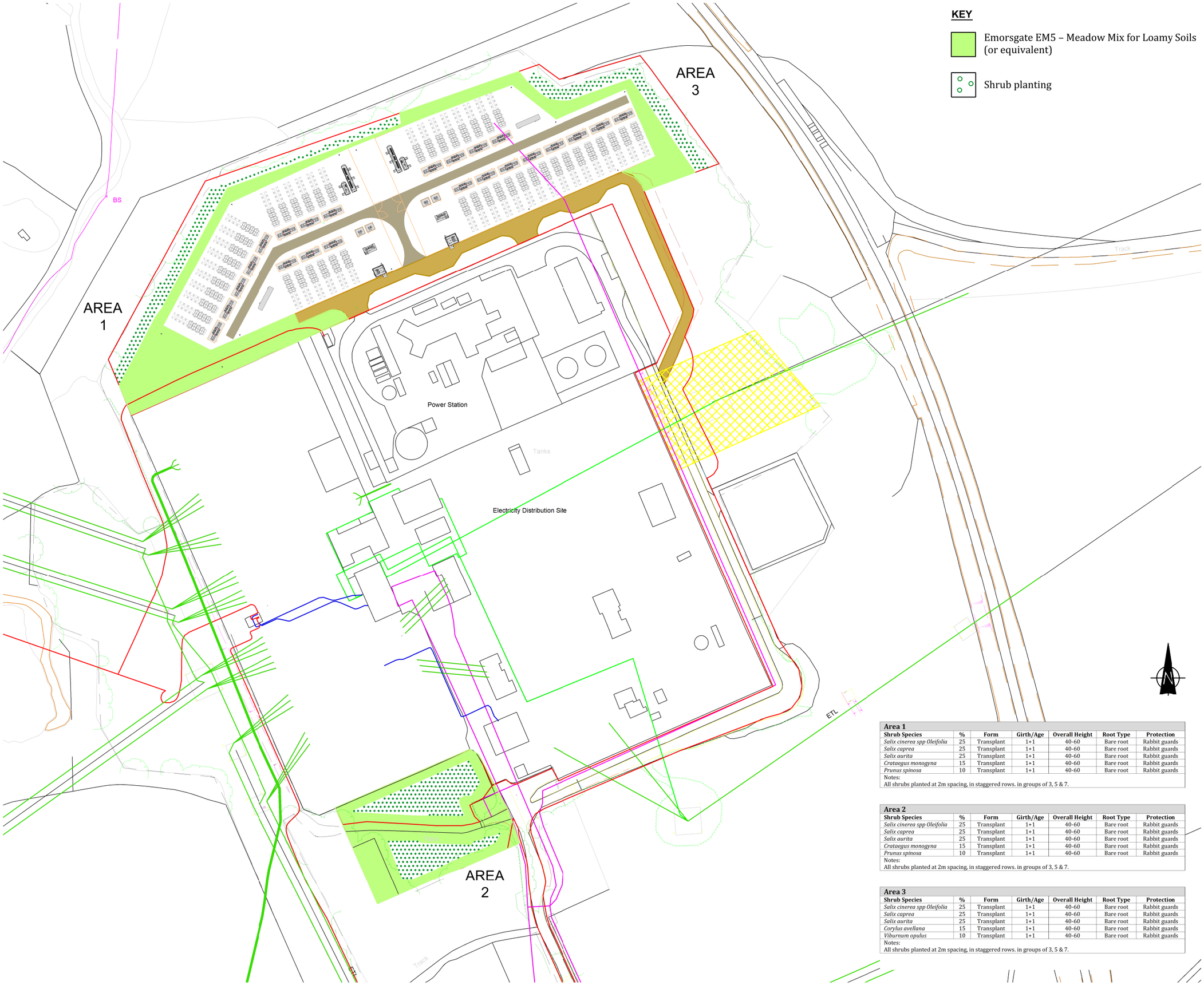
UKHAB Working Group (2020). The UK Habitat Classification User Manual Version 1.1.

APPENDIX 1
--
BNG HEADLINE RESULTS

Project details	
Planning authority:	Cornwall Council
Project name:	Indian Queens Sub-Station - Battery Sites
Applicant:	
Application type:	Full
Planning application reference:	
Assessor:	Joseph Valentine LSC Ltd
Reviewer:	Steven Weber LSC Ltd
Metric version:	3
Assessment date:	07/10/2021
Planning authority reviewer:	

Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	-1.63
	Hedgerow units	0.00
	River units	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	-13.99%
	Hedgerow units	0.00%
	River units	0.00%

APPENDIX 2
--
LANDSCAPING PROPOSALS



KEY

Emorsgate EM5 – Meadow Mix for Loamy Soils (or equivalent)

Shrub planting

SOFTWORKS: Specification Notes
For all drainage, signage and boundary treatments including fencing refer to Engineer's drawings. For existing levels refer to site survey and for proposed levels refer to Engineer's drawings.

GENERAL
Workmanship:
All landscape soft works are to be carried out in accordance with BS4428:1989 'Code of Practice for General Landscape Operations' and BS 3936:1992 'Recommendations for Cultivations and Planting in the Advanced Nursery Stock category'. Works should be carried out at the appropriate season and only in appropriate weather conditions.

SHRUB AREAS
Planting Nursery Stock
Carry out weed control as necessary. Where advised remove dead or diseased plants prior to new planting.

New Shrub Planting:
All transplants are to be planted in staggered rows spaced 2m apart.
Plant each plant upright, carefully replacing backfill and heel well in. Add min 2kg compost (well-rotted horse manure) to the surface around each shrub. Stake transplants with rabbit guards. Water to field capacity. Weed control is to be carried out by periodic herbicide spraying at intervals to be agreed with the Main Contractor.

Species Mix:
Grey willow (Salix cinerea spp oleifolia)
Goat willow (Salix caprea)
Eared willow (Salix aurita)
Hawthorn (Crataegus monogyna)
Blackthorn (Prunus spinosa)
Hazel (Corylus avellana)
Guelder rose (Viburnum opulus)

GRASS AREAS
The area will be sown with Emorsgate EM5 – Meadow Mix for Loam Soils (or equivalent). Sowing rates of 40kg/ha. Rolled. During establishment, mow newly sown meadows regularly throughout the first year of establishment to a height of 40-60mm, removing cuttings if dense. This will control annual weeds and help maintain balance between faster growing grasses and slower developing wild flowers.

In the second and subsequent years the best results are usually obtained by traditional meadow management based around a main summer hay cut in combination with autumn and possibly spring mowing. After flowering in July or August take a 'hay cut': cut back to c 50mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from site.
Mow the re-growth through to late autumn/winter to c 50mm and again in spring if needed.
SOFTWORKS: Aftercare
The Landscape and Ecological Management Plan shall include a 12 month maintenance period following practical completion. Allow for regular inspection visits, establishment and routine site inspection as specified BS 4428. In addition, allow for routine litter clearance from all planting areas.

Aftercare: Nursery Stock Planting
Allow for establishment works, to include weed control, attention to protection from animals, checking stakes and ties, formative pruning to achieve desired form, watering and replacement of failures.

All planting shall be carried out in the first planting season following the completion of the development, or in a programme agreed in writing by the Planning Authority. If any trees or plants are removed or become seriously damaged or diseased during the lifetime of the development they shall be replaced in the next planting season with others of a similar size and species, unless the Planning Authority gives written approval to any variation.

Area 1

Shrub Species	%	Form	Girth/Age	Overall Height	Root Type	Protection
Salix cinerea spp Oleifolia	25	Transplant	1+1	40-60	Bare root	Rabbit guards
Salix caprea	25	Transplant	1+1	40-60	Bare root	Rabbit guards
Salix aurita	25	Transplant	1+1	40-60	Bare root	Rabbit guards
Crataegus monogyna	15	Transplant	1+1	40-60	Bare root	Rabbit guards
Prunus spinosa	10	Transplant	1+1	40-60	Bare root	Rabbit guards

Notes:
All shrubs planted at 2m spacing, in staggered rows. in groups of 3, 5 & 7.

Area 2

Shrub Species	%	Form	Girth/Age	Overall Height	Root Type	Protection
Salix cinerea spp Oleifolia	25	Transplant	1+1	40-60	Bare root	Rabbit guards
Salix caprea	25	Transplant	1+1	40-60	Bare root	Rabbit guards
Salix aurita	25	Transplant	1+1	40-60	Bare root	Rabbit guards
Crataegus monogyna	15	Transplant	1+1	40-60	Bare root	Rabbit guards
Prunus spinosa	10	Transplant	1+1	40-60	Bare root	Rabbit guards

Notes:
All shrubs planted at 2m spacing, in staggered rows. in groups of 3, 5 & 7.

Area 3

Shrub Species	%	Form	Girth/Age	Overall Height	Root Type	Protection
Salix cinerea spp Oleifolia	25	Transplant	1+1	40-60	Bare root	Rabbit guards
Salix caprea	25	Transplant	1+1	40-60	Bare root	Rabbit guards
Salix aurita	25	Transplant	1+1	40-60	Bare root	Rabbit guards
Corylus avellana	15	Transplant	1+1	40-60	Bare root	Rabbit guards
Viburnum opulus	10	Transplant	1+1	40-60	Bare root	Rabbit guards

Notes:
All shrubs planted at 2m spacing, in staggered rows. in groups of 3, 5 & 7.

LANDSCAPE SCIENCE CONSULTANCY LTD
The Old Barracks, Sandon Road
Grantham, Lincolnshire
NG31 9AS

01476 569600
e: admin@landscapescienceconsultancy.co.uk
www.landscapescienceconsultancy.com

PROJECT: TREGONNING FARM BATTERY SITE

TITLE: LANDSCAPING PROPOSALS WHOLE SITE

SCALE: To Scale | DATE: 08/10/2021

SOURCE: Reproduced under OS Licence AL100014007

JOB No	Figure No	Revision	Drawing Size
D78.21	01	A	A1